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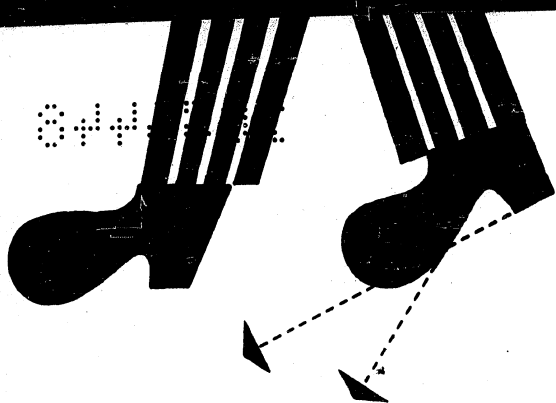
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**II**

**EXHIBITION  
OF CZECHOSLOVAK  
ENGINEERING**

**BRNO, SEPTEMBER 8th - 30th 1956**



## **Your first visit at the Exhibition**

should be to the reception rooms of the Czechoslovak Foreign Trade Corporations, with which you have business relations, viz.

**TECHNOEXPORT  
STROJEXPORT  
KOVO  
MOTOKOV**

The representatives of these corporations will give you information in all the world languages. They will accompany you through the Exhibition and will advise you as regards all your wishes, even personal ones.

**They will do all to make your visit to the  
Exhibition as profitable as possible.**

### CATALOGUE

of The Second Exhibition of Czechoslovak Engineering  
Brno - September 8th-30th 1956



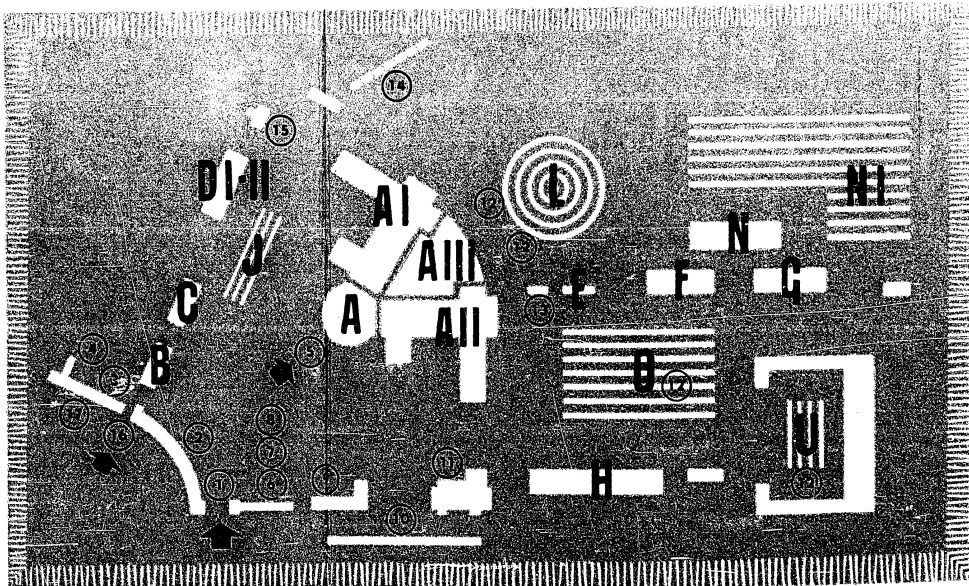
CATALOGUE OF THE SECOND EXHIBITION OF CZECHOSLOVAK ENGINEERING, BRNO-SEPTEMBER 8th - 30th 1956

Всесоюзная выставка достижений народного хозяйства

A/ Entrance hall of the main exhibition building - A/I\* Complete factory equipments - A/II Machine tools, motors, ceramics - A/III Products of automobile industry and general consumer goods - B/ Measuring and laboratory instruments - C/ Medical apparatus, photo and motion picture cameras and equipment, eye optics, motion picture theatre - D/I Textile, shoemaking and printing machines - D/II Accessories to textile machines, drawing instruments - E/ Automatic telephone exchange, telecommunication equipment - F/ Woodworking machines, Diesel engines, fittings, food-processing machines, flour-mill equipment - G/ Compressors, accumulators, hand-trucks, petrol pumps, equipment for brickyards - H/ Telecommunication equipment - I/ Hoisting tower, mining machines and equipment - L/ Means of transport - aeroplanes - N/ Agricultural machines - N/I Grounds for demonstrations - O/ Rail vehicles - U/ Pump



1. Main entrance
2. Exhibition management
3. Business premises of Foreign Trade Corporations
4. Reception room for foreigners
5. Entrance to main exhibition building
6. Čedok
7. Bank
8. Children's nursery
9. Foreign visitor's restaurant
10. Food stalls
11. Restaurant
12. Information bureau
13. Autoservice
14. Refreshment (buffets)
15. Wine restaurant
16. Motorcar entrance for foreign visitors
17. Garages



**SINCE THE TIME OF GOING TO PRESS NEW ITEMS HAVE BEEN  
ADDED TO THOSE ORIGINALLY INCLUDED IN THE CATALOGUE**

(The novelties of the supplement are marked)

**STROJEXPORT**

- 27 SUR 260 Universal Centre Lathe
- \* 29 AD6 Automatic Lathe
- \* 30 ANK 155 Five Spindle Automatic Lathe
- \* 105 BRH 63 Grinder
- \* 106 2 U Universal Grinder
- \* 107 OB 16 Gear Grinding Machine
- 108 N1 Tool Grinder
- \* 142 Double-Spindle Metal Working Compound Unit, Nr. 77020  
(for machining heads of sewing machines)
- \* 143 Four-Spindle Metal Working Compound Unit, Nr. 77024  
(for machining parts of Pionyr sewing machines)
- 150 Drilling, Thread Chasing and Feeding Units
- \* 185 Cylinder Head Production Line
- 186 Assembly Line of Injection Pumps
- \* 206 Gold Treatment LK 400 Extrusion Press
- \* 210 Semi-Automatic Machine for the manufacture of Permanent  
Moulds
- \* 211 Core Blowing Machine
- \* 212 Permanent Mould Gluing Press
- \* 213 Permanent Mould Sand Mixer
- \* 214 Specimens of Permanent Moulds and Castings
- \* 215 Laboratory Instruments for Testing of Moulding Substances
- 216 Hydrocyclone Sand Mixing Unit
- 217 Specimens of mixed sands
- 219 Saw Segment Casting Equipment
- \* 296 XOT 50 Pipe Bending Machine
- \* 337 BP 60 Spot Welder with Electronics
- \* 338 BP 60 Portable Spot Welder
- \* 339 SUM 1000 Automatic Welder
- \* 340 Oxy-Acetylene Cutting Machine
- \* 358 Multi-Spot Welder
- \* 359 Automatic Welding Machine for welding on vertical walls
- \* 360 VUS 1000 KVA Welding Press
- \* 361 New Electrodes for Tool Steel Welding
- \* 362 New Electrodes for Cast-iron Welding with Bimetal
- \* 363 Portable High Pressure Welding Machine
- \* 364 Plastic Welding Machine
- \* 365 Argon Arc Mobile Welding Set
- \* 366 Electrolytic Polisher
- \* 367 Various Welding Equipment
- \* 368 Ultrasonic Tester
- \* 369 Spot Welder with Condenser
- \* 370 Thermite Cartridges for Aluminium Welding
- \* 381 CV 201 Generator and U 201 Rectifier
- 383 RS 32 Cutting Machine
- \* 384 Rail Cutting Machine
- 426 1 P 12 BV Electric Motor
- 427 1 K 91 Z6 Electric Motor
- \* 428 HRP 71S 6 Electric Motor

429	A 9 b 4 Alternator	755	CF 300 P Drilling Set
430	A 16 a 6 Alternator	756	B 120 M Drilling Set
435	V 23 b-013 Air Break Contactor	757	C 1200 Drilling Set
436	V 33 b-023 Air Break Contactor	819	Drum Type Feeder, 1500 in dia
437	V 43 b-033 Air Break Contactor	820	Low-Speed Cylinders, 700 in dia
438	V 43 a-032 Air Break Contactor	821	Metal Loader
439	VMT 100 Circuit Breaker	822	High-Speed Cylinders 700 in dia
440	VMT N 532 Circuit Breaker	823	Vacuum Unit Press
465	FT CA 6-200/11 Single-pole Fuse Base with FTCS-20/11 Fuse Cartridge	824	Fully Automatic Cutter
466	FTCS 10-200/11 Single-pole Fuse Base with FTCA 10-15/11 Fuse Cartridge	890	Cement Conveyor with over-pressure discharge
467	FTCS 22-200/11 Single-pole Fuse Base with FTCA 22-10/11 Fuse Cartridge	905	BD 1 m. Double-Axle Trailer
468	FTCS 35-200/11 Single-pole Fuse Base with FTCA 35-6/11 Fuse Cartridge	909	PRO 1 Platform Cart, capacity 1.5 t.
469	FTCT 6-200/11 Single-pole Fuse Base with FTCT 6-60/11 Fuse Cartridge	924	Trailer, capacity 1 t.
472	FTCT 10-200/11 Single-pole Fuse Base with FTCT 10-60/11 Fuse Cartridge	925	Trailer, capacity 2 t.
473	FTCT 22-200/11 Single-pole Fuse Base with FTCT 22-40/11 Fuse Cartridge	* 934	Railway Wagon Traverser
474	FTCT 35-200/11 Single-pole Fuse Base with FTCT 35-30/11 Fuse Cartridge	935	Shunting Winch
475	NA 186 b Current Transformer	* 947	Battery Truck for transport and lifting bar stock
476	NA 336 b Current Transformer	952	TRA Mechanical Shovel
477	NAFD 421/340 Current Transformer	965	TEX Suspended Conveyor
478	NAFD 642/660 Current Transformer	966	Portable Rubber Conveyor, 8 metres (3 pces.)
479	NAFD 863/850 Current Transformer	967	Mobile Rubber Conveyor, 12 metres
480	NAT 421 b Current Transformer	970	5 to 20 ton Crabs
533	Various Relays	975	Derrick Crane, capacity 10 tons
554	CP 205-35/600 Three-pole Air Blast Circuit Breaker	976	Electric Bridge Crane, 3 tons x 7 metres
555	CPR 401-10/60 Three-pole Air Blast Circuit Breaker	977	Overhead Travelling Crane, 50 tons x 22 metres
556	CPT 1002-35/600 oz Three-pole Air Blast Circuit Breaker for unfavourable weather conditions	* 978	AJ 3022 Hydraulic Crane
557	Iron Stand with Three-pole Air Break Contactors	* 979	Model of SJ 16 Crane
558	HS 25-41 Four-pole Air Break Contactor	980	Model of Wolf Crane
559	—	983	E 25 Excavator
563	Three-pole Air Break Contactors	* 984	Mortar Pump, 6 cu. metres
564	—	* 985	Motor Driven Cart for the transport of concrete
565	Three-pole Thermal Relay	* 986	Off-Road Trailer, 5 cu. metres
566	—	* 987	R 110 Scarifier
567	Three-pole Air Break Contactors	* 988	1900 Soil Cutter
568	—	* 989	Concrete Mixer
569	Limit Switches	* 990	NV 15 Road Roller
570	Tappet Switch	* 1015	Concrete Pump, 6 cu. metres
585	6-35 kV Voltage Testing Rods	* 1016	Excavator
586	6-100 kV Short-Circuit Sets	* 1017	Electric Mortar Mixer, 250 litres
587	22 kV Choke Coils	* 1018	PB 200 Pneumatic Ram
588	SU 3340/75 rp Selenium Rectifier	* 1019	Rubbert
589	60V-45A Selenium Rectifier	* 1020	RT 1 Vitreous Block Machine, hand operated
590	120V-80A Mercury Rectifier	1110	MIKROMETA X-Ray Unit
632	PDN 25N Blower	1125	I H 400 Horizontal Electro-magnet Apparatus
633	PD 35 N Blower Rotor	* 1190	Sand Pump
753	Unit Gearbox	* 1191	Automatic Densimeter
		* 1192	Humprey's Spiral
		* 1193	Azimuthal Inclinator
		1195	Technology
		1255	ZVIL 6 6-cylinder Compressor
		1292	4.2 MW Runner
		1328	Laboratory Filter
		1343	CKD 140 DUPLEX Alkaline Pump

TECHNOEXPORT

- 1344 Minicatex
- 1345 ATR 1 Portable Aerodynamic Thermometer
- 1346 PAR 1 Portable Automatic Gas Analyser
- 1347 Water Hardness Tester
- 1348 Water Impurity Indicator
- \*1365 Induction Smelting Vacuum Furnace, capacity 50 kg, 100 kW
- \*1366 HOA7/5.30 kW Gas Cementing Furnace
- 1383 NOK 150/10/6.5 Trimming Shears with circular knives
- 1387 Coal Sorting and Washing Switchboard Unit
- 1398 Switchboard Unit

**MOTOKOV**

- \*1427 Škoda 1200 (1500)
- \*1499 S706RO Refrigerator Truck
- \*1500 S706RO Motorbus de Luxe
- 1590 ZETOR SUPER Wheel Tractor with air-pressure equipment
- 1591 ZETOR 25A with hydraulic power lift and NUN 100
- 1592 ZETOR 25K with cutter bar
- 1714 7 ton Tractor Wagon
- 1760 UTS Universal Joiner's Machine
- \*1862 Thermostatic Valves and Thermostat
- \*1863 Motor and Railway Truck Cooling Unit
- 1864 700 Compressor Unit
- 1865 MS 630 Freezing Counter
- 1866 HC 125/60 Laboratory Deep-Freezing Counter Czechoslovak

**CZECH CERMAMAN  
Ceramics**

- 1975 Electroporcelain
- 1976 Laboratory Porcelain

**GLASSEXPOR T**

- 1981 Water Distilling Apparatus, 660 mm. in dia., 2 pcs.
- 1982 Large Evaporator
- 1983 Reaction Kettles (4)
- 1984 SIAL and SIMAX Laboratory Glass (95 pcs.)
- 1985 Kipp's Apparatus
- 1986 Flour Mill Glass Piping (filled with coloured liquid)
- 1987 Glass-Blocks

**KOVO**

- \*2320 Semi-automatic Screen Printing Machine
- 2334 NISA-MIRA Electric Calculating Machine
- 2550 ES II/175 Loom
- 2560 H 105 B Jet Loom, wide

**NOTEZ S. V. P. LE CHANGEMENT**

*intervenu au cours de l'impression du catalogue*

**OMNIPOL** S. A.  
PRAGUE 3, WASHINGTONOVA 11

**EST CHARGÉE DES EXPORTATIONS**

D'AVIONS DE SPORT ET DE TRANSPORT,  
D'ARMES DE SPORT ET DE CHASSE AINSI  
QUE DE MUNITIONS

*rentrant auparavant dans le cadre d'activité des sociétés*  
**KOVO ET MOTOKOV**

**Nous exposons** tous ces produits à la II<sup>e</sup> Exposition des  
Machines Tchécoslovaques de Brno

*Veillez nous rendre visite!*



**VERMERKEN SIE EINE ÄNDERUNG**

*die während der Drucklegung des Katalogs eingetreten ist*

**OMNIPOL** A. G.  
WASHINGTONOVA 11, PRAHA 3

**ÜBERNAHM  
VON DER FIRMEN KOVO UND MOTOKOV  
DIE AUSFUHR**

VON SPORT-UND VERKEHRSFLUGZEUGEN,  
SPORT-UND JAGDWAFFEN SOWIE MUNITION

**Sie werden ausgestellt** auf der II. Tschechoslowakischen  
Maschinenbauausstellung in Brno

*Besuchen Sie uns!*

### ПОПРАВКА

*Уже во время издания настоящего каталога  
произошло следующее изменение*

### ЭКСПОРТ

спортивных и транспортных самолетов,  
а также спортивного и охотничьего оружия  
и боеприпасов, которые ранее входили  
в номенклатуру сбыта внешнеторговых  
объединений КОВО и МОТОКОВ,

был передан  
внешнеторговому обществу

## ОМНИПОЛ

Прага 3, Вашингтонова 11

Посетите экспозицию этой экспортной  
организации на II. выставке чехословац-  
кого машиностроения в Брно!



**MAKE A NOTE OF THE CHANGE**  
*which occurred while the catalogue was in progress of printing*

**OMNIPOL** LTD.  
WASHINGTONOVA 11, PRAHA 3

**HAS TAKEN OVER  
FROM THE FIRMS KOVO AND MOTOKOV  
THE EXPORT OF**

**SPORTS AND TRANSPORT AIRPLANES AS WELL  
AS SPORTS AND HUNTING ARMS  
AND AMMUNITION**

**They are exhibited**  
at the II. Czechoslovak Engineering Exhibition in Brno

*Visit us!*

CHAMBER OF COMMERCE OF CZECHOSLOVAKIA  
PRAHA

## CATALOGUE

of The Second Exhibition of Czechoslovak Engineering

Brno - September 8th-30th 1956

Publishers of Technical Literature  
Praha





**STROJEXPORT**

**TECHNOEXPORT**

**MOTOKOV**

**PragoExport**

CZECHOSLOVAN  
**Ceramics**

**KOVO**

This Catalogue is an informative survey, without  
obligation, of the exhibited articles.

Pražské tiskárny, n. p., závod 01

It is a great honour to welcome on Czechoslovak soil, on behalf of the Czechoslovak Chamber of Commerce, our dear foreign guests and business friends from many countries of the world who have come here to visit the Second Czechoslovak Engineering Exhibition at Brno and have thus the opportunity to become acquainted with the latest progress of the Czechoslovak engineering industry.

The Second Czechoslovak Engineering Exhibition continues in the tradition of last year's exhibition. While the first exhibition acquainted our foreign guests with the whole extent and standard of the engineering industry in Czechoslovakia, the chief aim of this year's exhibition is to demonstrate the continuous growth of the technical standard of this branch of Czechoslovak industry and to show the progress made in the introduction of new techniques and technology in our production. The kernel of the exhibition is formed by more than 300 novelties in engineering equipment, most of which have not yet been displayed at any Czechoslovak exposition abroad. Apart from this, the best Czechoslovak products from the branch of investment goods, individually and mass-produced products, of the developed Czechoslovak engineering industry as well

as products of consumer goods character are concentrated at the exhibition.

I am convinced that each of our visitors will encounter products which will be of interest to him. Our country, in whose export programme the products of the engineering industry occupy an outstanding position, already supplies more than 80 near and distant countries. I believe that also our foreign guests and business friends will see for themselves the quality of the Czechoslovak engineering products and that they will duly consider our products when choosing a potential supplier.

I sincerely hope that our dear guests from abroad will spend their sojourn in our country as pleasantly as possible. I also hope that their visit to the Second Czechoslovak Engineering Exhibition at Brno will rank among the most pleasant occurrences of their working days and that we shall have the pleasure of welcoming them, in the same way as we do this year, on the occasion of our future exhibitions.

CHAMBER OF COMMERCE OF CZECHOSLOVAKIA  
PRESIDENT

Ing. F. Adámek

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Various Bulbs and Fluorescent Tubes	
Receiving Tubes	
Miniature indirect-heated Electron Tubes	
Special Electron Tubes	
Special Fluorescent Tubes	
High-speed Photometer	
Registered Flowmeter	
Pyroferal Refractory Alloy	
Putty Grinding Apparatus	
Surface Roughness Measuring Instrument	
Electrostatic Colour Laying	
Plastic Coating Device	
Filtering Apparatus	
Hydraulic Measuring Devices	
Millisecond Mine Dynamo	
Magnetic Amplifiers	
Revolution Regulator	
Radioisotope Paper Thickness Measuring Apparatus	
Railway Communication Equipment Source	
Magnetophone Induction Motor	
d. c. Tachodynamo	
Diehle's Motor 1W	
tg Loss Angle Measuring Instrument	
Remote Measuring Instrument	
Industrial 2-6 Ray Oscillograph	
Twisted Drills	
Drilling Rods	
SK Knives with Mechanical Clamping Bits	
Knives with Corundum Plates	
Radial and Axial Milling Heads	
Cast Milling Cutters	
Saws with Cast Segments	
Knife Heads for Globoid Worms	
Pneumatic Muscle	
Fixtures	
Lathe Tool Holders	
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Electric Coffee Grinder	1806
Whipper Attachment	1808
Mixer Attachment	1807
Electric Shaver	1810
Twin Gas Cooker	1849
Gas Hot Water Reservoir	1850
Bath Heater	1851
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Twin Electric Cooker	1853
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Well Appointed Kitchen with Electric Bathroom	1859
Well Appointed Kitchen with Gas Heated Bathroom	1860
Well Appointed Kitchen with Coal Heated Bathroom	1861

## KOVO

M 6 S Maxigraph	2001
Signal Box	2002
Watt-hour Meter	2003
Regulating Transformer	2004
Current Transformer	2011
Hi 5 Switchboard Instrument V	2021
Hi 5-A	2022
Hi 5-W	2023
Hi 5 Phasemeter	2024
Instrument for the quick and dependable measurement of NULLOMET protective system 45	2044
Small MK Compensator	2050
Large QLK Laboratory Compensator	2072
Desk Set of the Large Laboratory Compensator	2073
MLG Small Handle Type Resistance Bridge	2082
GKM Special Compensator	2083
Switchboard Instruments with 240° Scale	2084
Switchboard Instruments with rotating Magnet R8	2085
Type DHR 8/2 Shock-Proof Instruments	2086
Frequency Recorder	2087
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# STROJEXPORT

Lathes  
 Milling Machines  
 Grinding Machines  
 Boring and Drilling Machines  
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 Shears  
 Bending Machines  
 Spring Hammers  
 Swaging Machines  
 Universal Automatic Coil Spring  
 Manufacturing Machines  
 Diesel Engines and Diesel  
 Generating Sets  
 Electric Spark Erosion Machines  
 Welding Sets  
 Electric Motors  
 Electric Motor Equipment  
 Railway Illumination Equipment  
 Electric Apparatus  
 Lightning Arresters and Torok Tubes  
 Fittings

Central Heating Equipment  
Gearboxes  
Mining Equipment  
Dairy and Soda-Water Manufacturing  
Equipment  
Brick-Making Equipment  
Equipment for Stone Crushing Mills  
and Ore Dressing Plants  
Flour Mill Equipment  
Locomotives  
Locomotive Fittings  
Tramway Car  
Coaches and Wagons  
Mine Cars and Narrow Gauge  
Dumpcars  
Wheels and Axle  
"Dako" Braking Equipment  
Mechanical Shovel  
Electric Battery Trucks  
Belt Conveyors  
Electric Hoists, Pulley-Blocks,  
Travelling Carriages and Pull  
Lifts  
Narrow Gauge Open Cast Mine  
Locomotives  
Excavators  
Bridges (Models)  
Building Machines  
Pumps  
Compressors  
Fuel and Viscous Liquid Pumps  
Various Machine Tools  
Automatic Bottle Filling Plant  
X-Ray Units  
Electromagnetic Testing Devices  
Hardening and Drying Machines,  
Presses and Welders  
Watchmaker's Lathe  
Engine with waste heat Utilization  
equipment  
Auxiliary Machine Tool Instruments  
Commutator Dynamometer  
Galvanizing Sets  
Rotor Squirrel Cage Measuring Set  
Electric Spark Generator  
Selenium and Mercury Rectifiers

**CSA**



**ČESKOSLOVENSKÉ AEROLINIE**

BEOGRAD  
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KØBENHAVN  
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MOSKVA  
PARIS  
SOFIA  
STOCKHOLM  
WIEN  
WARSAWA  
ZAGREB

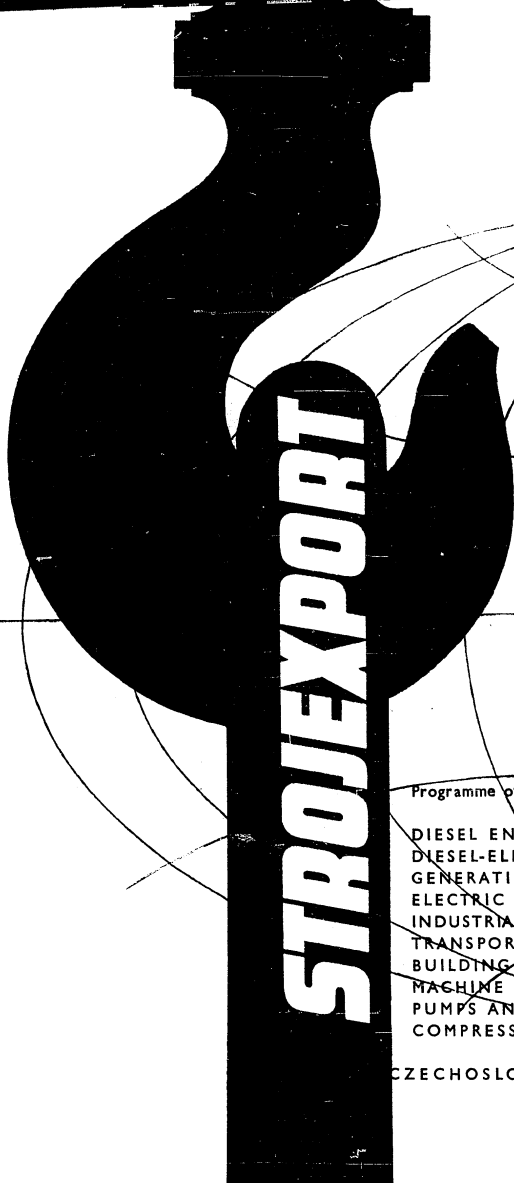


II EXHIBITION  
OF CZECHOSLOVAK ENGINEERING

**BRNO**

September 8th — 30th 1956

**CSA•CSA**



Programme of sales:

- DIESEL ENGINES AND
- DIESEL-ELECTRIC
- GENERATING SETS
- ELECTRIC MOTORS
- INDUSTRIAL EQUIPMENT
- TRANSPORT AND
- BUILDING EQUIPMENT
- MACHINE TOOLS
- PUMPS AND
- COMPRESSORS

CZECHOSLOVAKIA

**1 Center Lathe Mn 80**

Precision centre lathe for machining small parts of all kinds of metals, especially well-suited for the fine mechanical industry.

Swing over bed	160 mm	Speed	160-1 600 r. p. m.
Distance between centers	250 mm	Input	0,25 kW
		Weight of machine	175 kg

**2 LAMA Fine Engineering Lathe**

This machine is designed for precision fine engineering jobs. It is also suitable for short length chasing operations. It is equipped with collet-chuck.

Height of centres above bed	145 mm
Spindle bore	10 mm
Distance between centres	275 mm
Swing over bed	80 mm

**3 Universal Center Lathe S 28**

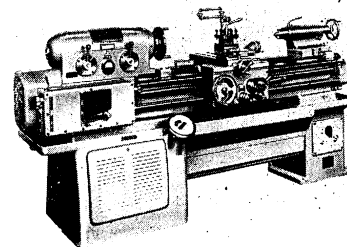
Suitable for piecework and small volume production. Also recommended for tool rooms. Automatic feed switching-off.

Swing over bed	280 mm
Distance between centers	750 mm
Speed	20-1 600 r. p. m.
To special order	63-3 150 r. p. m.
Input	3 kW
Weight of machine	1 080 kg

**4 Universal Lathe SV 18 R with IKS I Hydraulic Copying Attachment**

The machine meets all requirements of high dimensional accuracy and smooth finish of the machined parts. It may be used for both single piece and multiple part production according to pattern (with IKS hydraulic copying attachment).

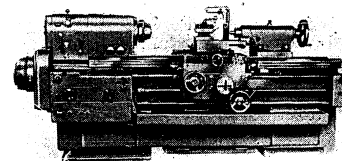
Maximum swing with follow rest	100 mm
Swing over carriage	60 mm
Speed	60 mm r. p. m.
Distance between centers	1 000 mm
Input	6 kW



**5 SU 50 Center Lathe with IKS II Hydraulic Copying Attachment**

Intended for single part and small scale production of medium sized machinery parts. Fitted with copying attachment the machine can be used for quantity production of shaped pieces according to pattern.

Maximum swing in follow rest	120 mm
Swing over carriage	80 mm
Distance between centers	1 500 mm
Spindle speed range	11,2-1 400 r. p. m.
Input	2x5,5 kW



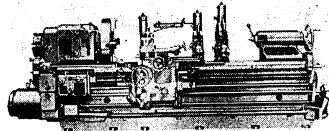
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### 6 Centre Lathe SU 63/2000 with IKS III Hydraulic Copying Attachment

Intended for accurate machining operations using one or more tools. The machine is particularly suitable for the single part production of large non-uniform parts. The attachments make this machine universal and increase its range of application to all operations.

Swing over bed	630 mm
Speed	8—1 180 r. p. m.
Distance between centres	2 000 mm
Input	10 kW



### 7 Centre Lathe SN 45

This new universal lathe is designed for workshops, repairs shops and single piece production. The especially rigid bed is provided with a gap and taper turning attachment.

Swing over bed	450 mm
Swing in bed gap	650 mm
Width of bed before chucking plate	240 mm
Spindle speeds (13 rates)	22—1 400 r. p. m.
Motor output	4,4 kW

### 8 Centre Lathe SN 40/1000

The lathe cuts metric, Whitworth, module and diametral pitch threads. It is designed for precision machining and medium outputs. Its simple and excellent design facilitates operation and maintenance. Suitable for both flange electric motor or transmission drive.

Swing over bed	400 mm
Swing in gap	600 mm
Width of gap before clamping plate	240 mm
Width of bed	320 mm
Spindle bore	48 mm
Range of speeds	22—1 400 r. p. m.
Number of speeds	16
Input	4,4 kW
Weight of the machine with accessories	1 650 kg

The end of the spindle has a short taper with bayonet-joint.

### 9 High-Speed Centre Lathe SRX 1000/400

This new type of heavy duty universal lathe with a wide range of speeds and feeds and powerful motor is designed for roughing, polishing and screwcutting operations on the entire turning length. By means of the electronic copying attachment shapes can be copied according to template up to the angle of 180°. Type SRX 1000/1 is equipped with electronic controlled feeds and the so called electric shaft for precision thread cutting.

Swing over bed	1 000 mm
Maximum weight of workpiece without rests	10 000 kg
Output of main motor	34 kW
Spindle speeds in 36 steps	1,8—400 r. p. m.
Longitudinal rapid traverse	1—1 500 mm per minute

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### 10 Production Lathe SS 50/750

With IZS 200 thread cutting attachment. The machine is designed for the quantity production of medium sized parts in the chuck and between centres. By means of the thread cutting attachment all usual threads can be made up to 81 mm in length.

Swing over bed	500 mm
Distance between centres	750 mm
Spindle speed range	22,4—2 240 r. p. m.
Motors for spindle drive	22 kW
Maximum diameter of external/internal thread	240/250
Pitch of metric threads	0,75—6 mm
Pitch of Whitworth threads	28—4 thr./1"

### 11 Lathe SR 2000/600

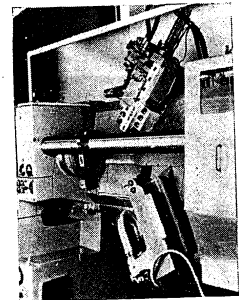
The machine serves for machining of parts up to 50 tons in weight. The bed has three guideways, and the slide travels in guides along the tailstock. Each carriage has its own feed mechanism. The tailstock is power operated.

Swing over bed	2 000/1 600 mm
Spindle speed	1,4—280 r. p. m.
Distance between centers	6 000 mm
Input	115 kW

### 12 Semi-Automatic Lathe SP 31

This machine serves for automatic machining of larger parts of intricate shape according to pattern by means of the hydraulic attachment and indexing card.

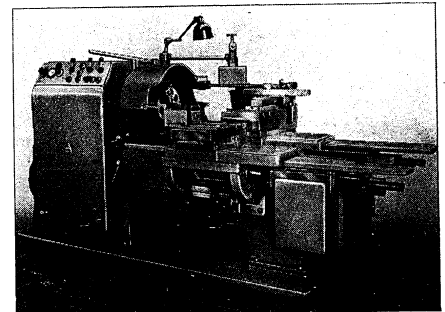
Maximum dia. of workpiece	250 mm
Distance between centers	1 050 mm
Radial swing over carriage	120/140 mm
Speed	71—1 800 r. p. m.
Input	20 kW



### 13 Semi-Automatic Lathe SPE 50

The machine is intended for machining sized parts in quantity and multiple part production. It is especially suitable for machining by means of two tools.

Maximum dia	500 mm
Distance between centers	650 mm
Speed	54—512 r. p. m.
Input	16 kW



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**14 Semi-Automatic Lathe SPT 7**

The machine is designed for machining of cams from stock or forgings. All cams are simultaneously machined by means of the copying method, by the longitudinal feed of the tool rest into mesh. The feed into cut is started by means of the hand lever on the headstock. The machine can be operated in both direction if hydraulic control and guide-rod stops are readjusted. The rapid reverse movement of the rest in the opposite direction to the direction of machining is automatic.

Maximum length of chucked workpiece	650-1 100-1 500 mm
Maximum diameter of cam	70 mm
Range of longitudinal feeds infinitely variable	0.03-0.10 mm/rev.
Maximum longitudinal travel	20 mm
Maximum cross travel (stroke of cam)	12 mm
Main electric motor	5.5 or 7.5 kW

**15 Turret Lathe RT 26**

A heavy duty high-speed precision machine intended for the quantity production of small parts from bar stock or other profiles. The thread chasing attachment enables the cutting of all threads with the aid of a leader.

Bar capacity	26 mm
Swing over bed with thread chasing attachment	225 mm
Swing over bed without thread chasing attachment	340 mm
Maximum chuck capacity	110 mm
Number of tool holes	12
Speed	375-4 200 r. p. m.
Input	3.6 kW

**16 Turret Lathe RN 60**

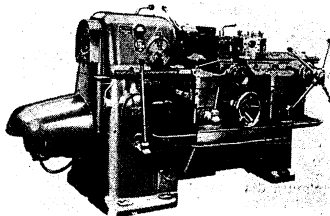
The machine is suitable for machining of parts from bar stock or other profiles in quantity and multiple-part production. Maximum chucking diameter:

for round bars	58 mm
for other profiles	290/170 mm
Longitudinal travel of turret slide	610 mm
Speed	71-1 600 r. p. m.
Input	15.7 kW

**17 Capstan Lathe R 5**

Vertical turret. Preselection of spindle speeds. The machine is suitable for machining of parts from bar stock, forgings and castings.

Bar capacity	50 mm
Swing over bed	510 mm
Speed	28-1 400 r. p. m.
Input	8.5 kW

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**18 Capstan Lathe R 25**

A high production lathe of entirely new design, with enclosed bed, preselection of speeds and feeds, scheduled control, synchronized, with electromagnetic clutches.

Swing over bed	315 mm
Number of tool holes	6
Spindle speeds (16 steps)	18-3 150 r. p. m.
Spindle bore	36 mm
Motor output	5.5 kW

**19 Semi-Automatic Turret Lathe RP 50**

A new type of semi-automatic turret lathe, controlled by the indexing drum. It is especially suitable for machining of individual workpieces and bar stock. The automatic working cycle may consist of maximum five operations on workpieces up to 500 mm in dia. The operator only replaces the machined parts and starts the working cycle.

Swing over bed	500 mm
Travel of turret slide	330 mm
Travel of cross slide rest	125 mm
Speed (4 ranges)	18-1 250 r. p. m.
Motor output	16 kW

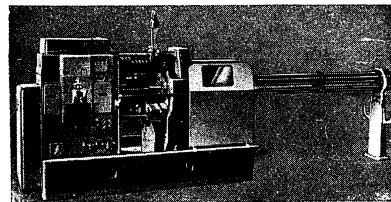
**20-21-22 Automatic Turret Lathes A 12, A 20, A 40**

These heavy duty machines are designed for the quantity production of parts of intricate shape. The various attachments enable the machines to be used for growing and other operations, and contribute to the versatility of the machines.

	A 12	A 20	A 40
Chuck capacity without outside bar feed	12	20	40
Piece rate	2.9-300	2.9-300	4-360 sec.
	712	522	
Range of spindle speeds	4 874	3 565	300-2 000 r. p. m.
Input	2.4	2.4	4 kW

**23 Automatic Lathe AN 35**

Five spindles. The machine is designed for quantity production of parts from bar stock, such as pins, bushings, etc. It is also suitable for hole drilling and thread cutting, if equipped with respective attachments.



Maximum diameter of bar stock	35 mm
Maximum length of machining	100 mm
Length of working cycle	4.1-402
Spindle speed range	143-1 900 r. p. m.
Input	9 kW

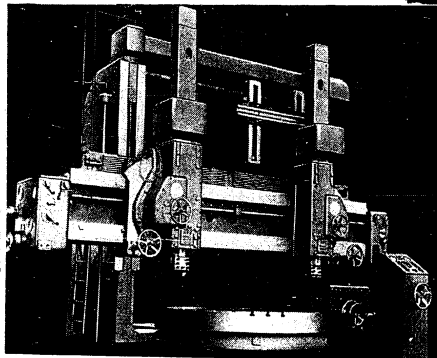
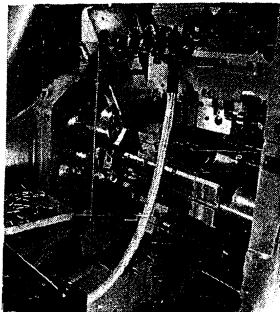
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**24 Automatic Lathe ANK 135**

Five spindles. The machine is suitable for machining of drop forgings, forgings and castings. Four spindles are in operation, the fifth spindle is used for chucking by means of compressed air.

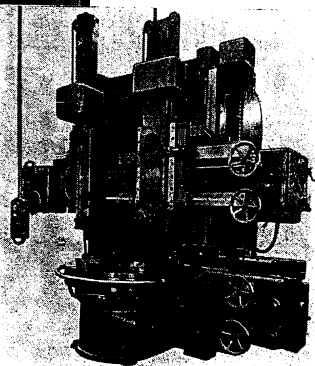
Maximum diameter of workpiece	135 mm
Maximum length of machining	100 mm
Length of the working cycle	4.1—402
Spindle speed	135—1 793 r. p. m.
Input	9 kW



**26 Vertical Lathe SK 12**

The machine is designed for machining of short and heavy parts up to 4 tons in weight.

Swing over bed	1 350 mm
Maximum height of workpiece	1 000 mm
Speed	3,55—150 r. p. m.
Input	27 kW



**41 Vertical Milling Machine F 1 S**

This smallest type of milling machine is intended for common milling operations on small machinery parts, individually manufactured as well as quantity produced.

Clamping surface of table	150×550 mm
Longitudinal travel of table	275 mm
Cross travel of table	125 mm
Vertical travel of table	200 mm
Spindle speed range	190—3 070 r. p. m.
Motor capacity	1,5 kW

**42 Horizontal Two-Lever Milling Machine F 1 J 2**

The machine is intended for quantity production of small parts, or individual simple operations in volume production.

Clamping surface of table	150×500 mm
Longitudinal travel	275 mm
Cross travel	125 mm
Vertical travel	180 mm
Spindle speed range	190—2 100 r. p. m.
Motor capacity	1,1 kW

**43 Vertical Miller FA 2V**

The machine is equipped with hydraulic copying attachment. It is designed for machining of dies, metal patterns, plastic moulds, etc. according to pattern. Copying range.

Length	320 mm
Width	250 mm
Depth	120 mm

**45 Plain Miller FH 2a**

With gear shaving attachment. The machine is intended for single part and quantity production of intricate parts. Its range of application is increased by the shaving gear attachment replacing a single-purpose machine.

Working surface of table	300×1 350 mm
Longitudinal travel	800 mm
Cross travel	310 mm
Vertical travel	485 mm
Range of spindle speeds	31,5—1 000 r. p. m.
Input	4,5 kW

**46 Turbine Blade Repetition Milling Machine PTK 30 (FA 4 V)**

This machine is based on the FA 4 V vertical miller design. It is provided with hydraulic copying attachment, and copying is made according to the master piece. Both convex and concave blades can be manufactured.

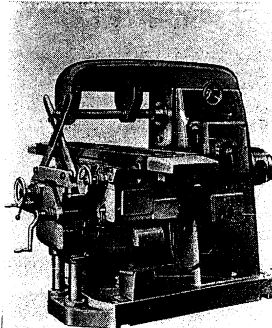
Bracket repetition stroke	80 mm
Maximum speed of bracket travel	10 mm per second
Hydraulic pump motor	0,55 kW

**47 Plain Miller FA 5H**

Automatic feed release by means of adjustable stops. The machine is intended for heavy duty milling.

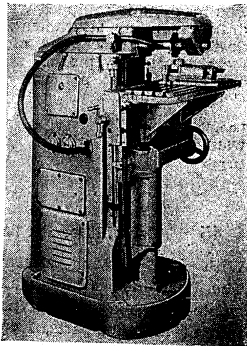
Equipped with automatic feed release the machine is suitable for quantity production of machine parts. Simultaneous chucking and machining provides high economy.

Working surface of table	425×2 000 mm
Longitudinal travel	1 400 mm
Cross travel	440 mm
Vertical travel	450 mm
Range of spindle speeds	18—1 400 r. p. m.
Input	11 kW

**48 Tool Milling Machine FN 22**

The machine is suitable for the manufacture of complex tools, dies, metal gauge patterns, etc. It is especially recommended for tool rooms.

Clamping surface of vertical table	220×640 mm
Clamping surface of tilting table	260×640 mm
Longitudinal travel of table	300 mm
Vertical travel of table	300 mm
Cross travel of headstock	150 mm
Range of spindle speeds	40—2 000 r. p. m.
Input	2.2 kW

**49 Vertical Miller FRV 80**

The machine is suitable for milling of heavy workpieces in both single and multiple part production. Longitudinal and cross travel of the working table. Vertical feed of headstock on slide. The machine is available with a swing table.

Maximum height of workpiece	2 380×780 mm
Chuckling width × length of table	1 000 mm
Longitudinal travel of table	1 500 mm
Cross travel of table	1 500 mm
Vertical travel of headstock	650 mm
Range of spindle speeds	11—900 r. p. m.
Input	15 kW

**50 Vertical Milling Machine FV 1000**

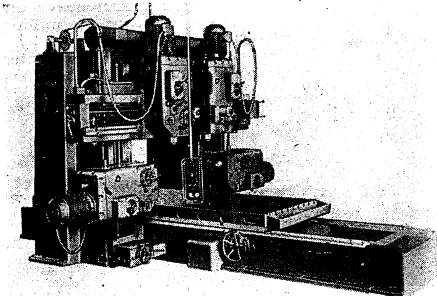
A new type of high duty precision machine, with scheduled control and automatic working cycle. Electronic control of feeds. The machine is suitable for diagonal milling in all quadrants of the horizontal plane. It can be equipped with a swivelling head.

Chuckling width × length of table	1 000×2 500×3 150×4 000 mm
Maximum height of workpiece	600—1 000 mm
Longitudinal travel of table	2 240—2 800—3 350 mm
Cross travel of spindle	1 100 mm
Vertical travel of spindle	600 mm
Spindle speeds arranged in 12 steps	8—950 r. p. m.
or arranged in 24 steps	11.2—1 000 r. p. m.
Motor output	37 or 45 kW

**51 Double Housing Milling Machine FP 20**

This heavy duty precision machine is intended for the heaviest milling on large machinery parts in single or multiple part production. The machine is provided with several headstocks (both vertical and horizontal) with independent drive which may operate simultaneously. The travel of the table is controlled by means of the Ward-Leonard set.

Working surface of table	1 600—4 000 mm
Length of bed	8 000 mm
Distance between housings	2 060 mm
Range of spindle speeds	10—500 r. p. m.
Input according to the number of headstocks	37—100 kW

**52 Universal Miller FRU 63**

Intended for milling of plane surfaces of heavy machine parts in both single and multiple part production. Vertical travel of headstock.

Working surface of table	630×2 240 mm
Longitudinal travel of table	1 750 mm
Cross travel of table	600 mm
Longitudinal travel of headstock	820 mm
Range of spindle speeds	12.5—630 r. p. m.
Input	10 kW

**53 Multi-Spindle Milling Machine FIA 40**

The machine is intended for machining of plane surfaces by means of several spindles working simultaneously. Each headstock has its own motor drive. This machine and the double housing milling machine are similar.

Working surface of table	400×1 600 mm
Travel of table	1 150 mm
Travel of spindles	200 mm
Capacity of motor for headstock drive	3 kW

**54 Milling Machine with draw-out arm FEP 2**

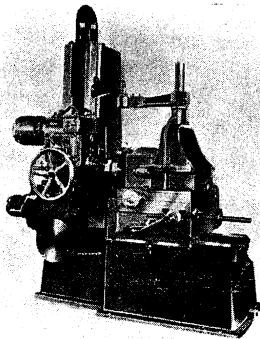
The machine is suitable for milling of surfaces and drilling of holes on large and heavy workpieces which are not easily accessible. The tilting headstock is located on the end of the draw-out arm.

Length of draw-out arm	2 500 mm
Travel of column in bed	3 000 mm
Vertical travel of draw-out arm	2 000 mm
Angle of inclination of the column	0-180°
Electric motor of spindle	11 kW



**55 Universal Cam Milling Machine FEK 80**

This special heavy duty machine is designed for milling of face or peripheral cams by mechanical copying from templates. The headstock moves along the column and can also be moved sideways.



Milling capacity:

peripheral and face cams up to a diameter of	800 mm
cylindrical cams up to a diameter of	750 mm
Range of spindle speeds	100-1 000 r. p. m.
Input	2,2 kW

**56 Die-Sinking Machine FKO 8b**

The machine is intended for heavy duty precision milling of shapes in metals, such as moulding tool dies, die-casting moulds, etc. according to patterns or templates. The machine is manufactured in three models, as follows:

- A - for the sinking in coordinates and for contour die-sinking.
- B - which has the same working facilities but on which objects can also be milled which are the mirror image of the pattern,
- C - which has the same working facilities as both above described machines but has, in addition, two revolving tables for circular die-sinking. The machine is controlled by the electric feeler the impulses of which are governed by three electromagnetic clutches of the three dimensional feed mechanism.

Working surface of table	1 450 × 700 mm
Vertical clamping surface	1 140 × 1 325 mm
Vertical travel of table	1 000 mm
Cross travel of carriage	400 mm
Vertical travel of headstock	800 mm
Range of spindle speeds	70-800 (235-3 600) r. p. m.
Input	7 kW

**57 Vertical Miller FA 5 V with bevel gear milting attachment**

This vertical milling machine of well proven design, is equipped with an attachment for milling of bevel gears with helical teeth. Precision gears may be cut by means of this attachment, without the use of special machinery.

Maximum diameter of milled gear	300 mm
Maximum module of milled gear	9

**58 Dividing Gear Lathe OKU 35/P5**

The machine is intended for machining spur and bevel gears. The teeth may be straight, helical or herringbone. The machine is especially suitable for machining herringbone gears without gap in the centre. For milling cheap end mills are used. The working cycle is fully automatic.

Maximum number of teeth	400
Minimum number of teeth	6
Maximum module	35
Maximum gear diameter 1:1	2 000 mm
Minimum gear diameter	100 mm
Maximum width of rim	300 mm
Input of main motor	12 kW

**59 Gear Hobbing Machine OF 6A**

A new, improved type of gear hobbing machine. The machine is equipped with a powerful motor and a wide range of speeds. It is compact and of rigid design. More economical machining methods can be applied.

Maximum module	6 metres
Maximum diameter of gears	800 mm
Maximum width of gears	300 mm
Work spindle speeds	3,5-200/50-315
Output of main motor	7,5 kW

**60 Gear Hobbing Machine OF 10**

The machine is intended for precision production of spur, helical and worm gears by hobbing.

Maximum module	10
Maximum diameter of gear	1 250 mm
Maximum width of gear	400 mm
Output of main motor	7,5 kW

**61 Gear Hobbing Machine OF 16**

A larger type of machine used for hobbing of spur, helical and worm gears.

Maximum module	16
Maximum diameter of gear	2 000 mm
Maximum width of gear	560 mm
Output of main motor	11 kW

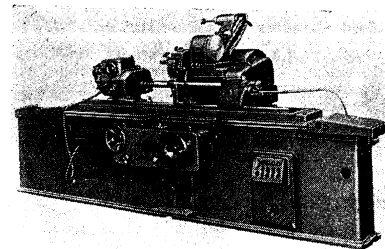
**62 Vertical Miller FA 5 V with bevel pinion milling attachment**

This attachment is a counterpart of the similar bevel gear milling attachment. It is suitable for machining of pinions designed to be in mesh with bevel gears with helical teeth which are produced on the above described machine. No single purpose machine is required.

**63 Semi-Automatic Needle Cylinder Groove Cutter FEAI**

The machine is designed for automatic milling of needle bed and cylinder grooves, 60-900 in dia., 0,2-1 mm in width and 10 mm in depth with an accuracy of 0,02 mm. Number of grooves 48-2400.

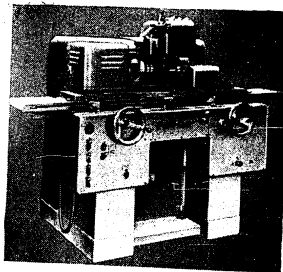
Saw diameter	70-80 mm
Spindle speed	45-450 r. p. m.
Feeds (high-speed feeds)	6,3-80/2 000 mm per minute
Diameter of work table	800 mm
Overall input	2,35 kW



**81 Universal Grinding Machine BUA 20**

This machine of improved design is intended for mass and single part production. Automatic working cycle. Grinding wheel balancing device. Electricity contact diameter meter.

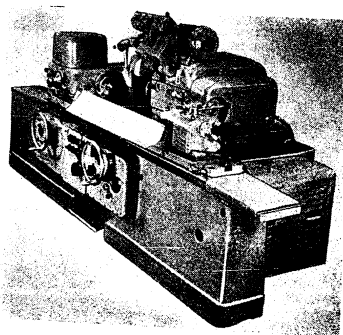
Swing over table	200 mm
Distance between centers	450 mm
Spindle speed range	50-650 r. p. m.
Input	2,7 kW



**82 Universal Grinding Machine BUA 31**

The BUA 20 and BUA 31 grinding machine are similar, the latter is larger. It can also be used for single part or mass production. Automatic working cycle. The grinding wheel is dynamically balanced in operation. Electricity contact diameter meter.

Swing over table	315 mm
Distance between centers	1 000-1 500-2 000 mm
Spindle speed range	20-500 r. p. m.
Wheelhead motor	7,5 kW



**83 Universal Grinder BK5/1000**

The machine is intended for both quantity and single part production. It is suitable for cylindrical, taper and face grinding, both internal and external. The machine is operated by a single hand-lever if the grinding operation of the same workpieces is repeated.

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**STROJEXPORT**

Swing over table	315 mm
Distance between centers	1 000 (1 500) mm
Range of spindle revolutions	25-600 r. p. m.
Input (overall)	6,1 kW

**84 Automatic Hole Grinder BDA 63**

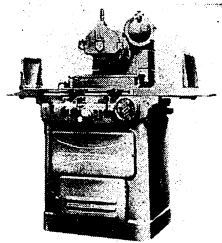
The machine is designed for grinding holes of medium and large dimensions by means of the automatic working cycle. For smaller lots the machine may be controlled by hand. The automatic working cycle control is easy and tool setting does not require much time.

Swing over bed diameter	630 mm
Maximum/minimum grinding diameter	250/80 mm
Maximum grinding diameter by spindle readjustment	400 mm
Maximum depth of hole	315 mm
Overall input	8-10 kW
Speed of wheel spindle	3 000, 6 000, 4 000, 8 000 r. p. m.
Speed of work spindle	28-450 r. p. m.

**85 Horizontal Surface Grinder BPH 20 A**

This machine with automatic, hydraulically or manually controlled working cycle is designed for precision grinding of plane surfaces.

Working surface of table	200x630 mm
Grinding wheel diameter x width	250x 20 mm
Spindle speed	3 600-2 500 r. p. m.
Speed of longitudinal table travel	2-16 m/min.
Cross feed table range	0,5-6 mm



**86 Vertical Surface Grinding Machine BPV 300/1000**

A heavy duty precision machine for grinding of plane surfaces. The grindstones are inserted in the sector type grinding wheel. Suitable for single part or mass production. The wheel head has flat guideways and is adjustable for height. The rapid traverse is driven by an independent electric motor.

Clamping surface of table	300x1 000 (300x1 500) mm
Maximum grinding width	300 mm
Longitudinal travel of table	1 385 (2 050) mm
Rate of longitudinal feed of table	2-16 metres per minute
Motor for grinding wheel spindle drive	15 kW

**STROJEXPORT**

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**87 Centreless Grinding Machine BBZ 60**

Suitable for multiple part and quantity production. Used for through-feed and infeed grinding of cylindrical and tapered surfaces on plain, shouldered and other shaped rotating objects. Hydraulic wheel dressing and wheel head feed.

Maximum dia. of workpiece	60 mm
Minimum dia. of workpiece	1,5-3 mm
Motor for grinding wheel spindle drive	7,5 kW

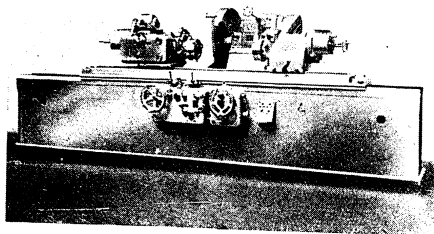
**88 Centreless Grinding Machine BB 10**

This new type of machine is designed for high precision grinding of external cylindrical and tapered surfaces as well as parts of various shapes. It is equipped with the infeed working cycle.

Average diameter of grinding wheel	500/200 mm
Grinding range	3-100 mm in dia.
Speed of grinding wheel	1 200 r. p. m.
Speed of regulating wheel (7 steps)	12,5-35,5 r. p. m.
Overall input	15 kW

**89 Crankshaft Grinding Machine 4C/1700**

A heavy duty precision machine for grinding of main and big end journals of crankshafts. Angle of inclination 90°, 180° and 120°. In view of the fact that the machine is equipped with a hydraulic feed of the table and automatic feed of the wheelhead it can also be used as a standard cylindrical grinder.



Maximum diameter of workpiece	500 mm
Maximum distance between chucks	1 600 mm
Maximum eccentricity of pins	120 mm
Motor capacity	5 kW

**90 Universal Tool Grinder BN 102**

This machine is intended for sharpening various cutting tools, such as cylindrical and tapered reamers, end and side milling cutters with straight or helical cutting edges, recessed milling, cutters, taps, counter-sinks, saws, etc.

Grinding diameter	280 mm
Distance between centres	500 mm
Longitudinal travel of table	440 mm
Cross travel of table	240 mm
Vertical travel of wheelhead	230 mm
Spindle drive motor	1,2 kW

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**STROJEXPORT****91 Lathe Tool Grinder SK BBT 350**

The machine is intended for grinding the cutting surfaces of cemented carbide tipped tools. It is equipped with wheel truing devices mounted on swivelling holders.

External diameter of grinding wheel	350 mm
Internal diameter of grinding wheel	270 mm
Dimensions of tables	210x560 mm
Maximum angle of tilt of tables	± 20°
Electric motor	1,5 kW

**92 Circular Saw Grinder BP 12**

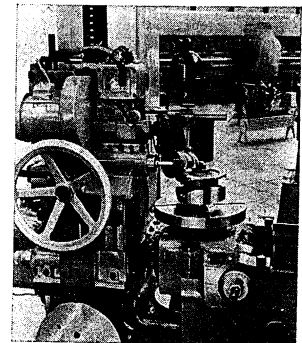
The machine serves for automatic grinding of circular saw blades.

Diameter of saw blade	260-1 200 mm
Grinding wheel dia. X width	220x13
Electric motor	0,75 kW

**93 Universal Cam Grinding Machine BEK 80**

A special heavy duty machine designed for grinding of peripheral, face or cylindrical cams by mechanical copying from templates. The workhead swivels on heavily dimensioned pins by operating a hand crank.

Grinding capacity:	
peripheral and face camps up to a diameter of	800 mm
cylindrical cams up to a diameter of	750 mm
Maximum rise of machined lobe	300 mm
Input	1,1 kW

**94 Circular Saw Grinder BP 2**

The machine serves for grinding of circular saw blades and metal and wood band saw blades with the aid of special attachment.

Diameter of saw blade	20-350 mm
Maximum thickness of saw	10 mm
Electric motor	0,25 kW

**95 End Mill Cutter Grinder BNH 70**

The grinder is used for sharpening of R. H. and L. H. end mill cutters and cutting tools by means of the automatic working cycle.

Maximum and minimum diameter of end mill cutter	150-700 mm
Maximum and minimum number of cutters	40-2
Work speed	7-16 r. p. m.
Grinding wheel speed (3 steps)	1 830-4 420 r. p. m.
Overall output of motors	4,9 kW

**STROJEXPORT**

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**96 Gleason End Mill Cutter Grinder BNG 12**

The grinder is used for sharpening of R. H. and L. H. Gleason end mill cutters by means of the automatic working cycle.

Maximum and minimum diameter of end mill cutter	305-152 mm
Maximum and minimum number of cutters	32-12
Maximum diameter of grinding wheel	200 mm
Grinding wheel speed	2 500 r. p. m.
Overall output of motors	3,4 kW

**97 Table Type Surface Grinder BM 400**

The machine is designed for hand grinding of plane surfaces and edges especially in assembly work.

Dimensions of table	550×800
External/Internal dia. of grinding wheel	400×350 mm
Motor capacity	2,2 kW

**98 Electroabrasive Tool Grinder BJS 18**

The machine is designed for grinding cutting tools by the electroabrasive method. The grinding wheels are made of special sintered material. The machine is equipped with semi-automatic tool grinding attachment.

Dimensions of grinding wheel, dia.×width	180×50 mm
Spindle speed	1 600×3 150 r. p. m.
Motor output	2,2 kW

**99 Twist Drill Grinding Machine BNV 75**

The machine is intended for grinding twist drills with two cutting edges. Epicyclic and simultaneous oscillating movement of the work spindle.

Minimum diameter of twist drill	6 mm
Maximum diameter of twist drill	75 mm
Minimum apex of drill	80°
Maximum apex of drill	130°
Grinding wheel speed	2 200 Ø r. p. m.
Speed of chuck	Ø34 r. p. m.
Motor capacity	0,75 kW

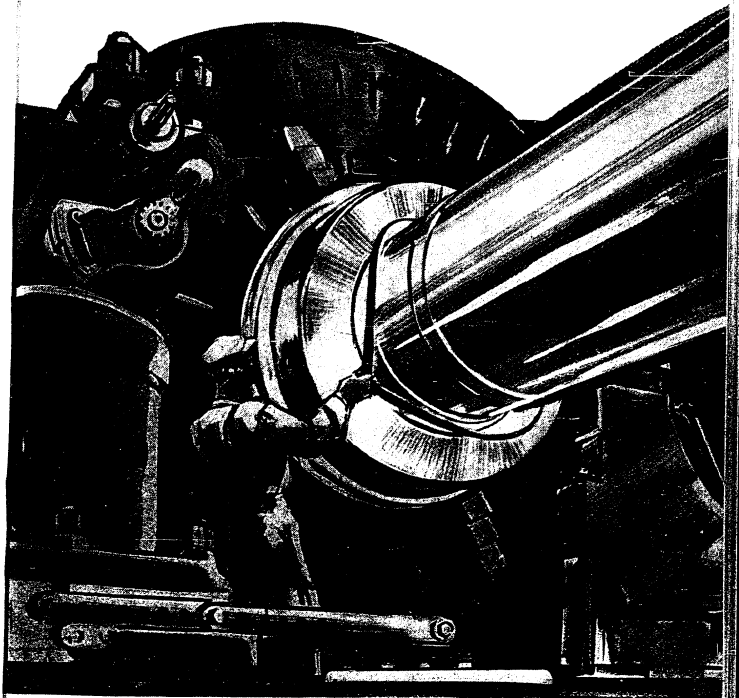
**100 Tool Post Grinder SBMU**

This machine is used for grinding operations on a lathe or planing machine. It can be fitted to any normal lathe, and is suitable for external or internal taper and cylinder grinding as well as face grinding. It is equipped with a micrometric sliding attachment, and a single-phase motor, and can be connected to the plug. Type SBMT is provided with a powerful three-phase motor. The assembly with standard accessories is supplied in a box.

*The periodical CZECHOSLOVAK FOREIGN TRADE supplies information on the export products of all the sectors of the Czechoslovak industry. Reports on fairs and exhibitions, reports on trade policy and foreign press comments, supplement the contents of the richly illustrated periodical, issued six times annually in English, German, Russian, Spanish, Portuguese and French.*

**TRADITION OF MANY YEARS**

A tradition of many years, the guarantee of quality in any production. Tradition helps natural talent to develop into mastery and accumulates



valuable experiences. Czechoslovak machine tools possess such a tradition. All their advantages of design and production are based on the wealth of experiences of the Czechoslovak engineering industry.

The programme of Czechoslovak exports includes more than 400 types of machine tools which are exported exclusively by

**STROJEXPORT**

PRAHA — CZECHOSLOVAKIA



# STROJÍRENSTVÍ

**TECHNICAL  
PERIODICAL OF MECHANICAL  
ENGINEERING FOR ENGINEERS,  
DESIGNERS AND OTHER  
TECHNICAL WORKERS**

Every month an issue of 80 pages

## 101 Cam Grinding Machine BEK

The apparatus has been designed to eliminate many defects in operation of crude oil or petrol internal-combustion engines. The defects were caused by the vibration of the camshaft consisting of cams of three or more semi-circles (harmonic motion cams). The valve springs were unable to stand the stress contact of the various elements so that the tappet broke away from the cam, and contact surface of the cam and tappet or springs were damaged. By means of uniformly accelerated motion cams, vibration can be reduced. The prototype of this simple cam grinding machine is intended to develop the technique and quality in the production of uniformly accelerated motion cams.

## 102 Oscillating Grinders OB1-1 *Kutin 2* The OB 2-I

oscillating grinder is used for grinding races of external ball bearing rings, i. e. single-row, double-row, self-aligned or thrust bearings up to 9 mm, in diameter.

### The OB 1-I

Maximum grinding diameter:	8 + 22 mm
Diameter of grinding wheel	7 + 20 mm
Number of oscillations	90 per minute
Angle of oscillation	± 20°

### Oscillating Grinders OB 2-I

Maximum grinding diameter	22 mm
Dimensions of grinding wheel	300/127×5 mm in dia
Minimum diameter of grinding wheel (worn out)	220 mm
Number of oscillations	± 20

## 103 ✓ Semi-automatic Cam Grinding Machine BEK 15

The BEK 15 cam grinding machine is equipped with the automatic working cycle for camshaft grinding. After tool setting the operator only has to see that the camshafts are inserted and removed. The cams are ground successively, and when the operation on one piece comes to an end, the table automatically moves into position to receive the next workpiece. In view of the automatic working cycle one operator can operate two or even more machines according to the number of machined cams on the camshaft.

Grinding length	900 mm
Hydraulic feed of table	0,1-0,6 m/min
Diameter of grinding wheel	600 mm
Width of grinding wheel	15/40 mm
Bore of grinding wheel	406 mm

105 ✓

107 ✓

From the periodical CZECHOSLOVAK FOREIGN TRADE you can learn about the products you have not seen at the exhibitions. The periodical appears three-times a year in six languages and contains information on the export products of all branches of the Czechoslovak industry.

**STROJEXPORT**

**121 Multi-Spindle Line Drill VN 20/4**

The machine has four independent drilling headstocks which may be stopped simultaneously. It is used for quantity production if operated with various attachments.

Drilling diameter	20 mm
Drilling depth	150 mm
Vertical travel of headstock	340 mm
Range of spindle speeds	71-2 200 r. p. m.
Input of electric motors	4/1.6 kW

**122 Table Type Drilling Machine V 10**

The machine is designed for simple drilling operations. It is equally well suited for single part production in small workshops and assembly work. The machine can also be supplied as a multi-spindle line drill assembled of individual headstocks on a common base.

Drilling diameter	10 mm
Drilling depth	230 mm
Clamping surface of base	220x280 mm
Vertical motion of headstock	230 mm
Speed	500-4 000 r. p. m.
Motor	0,5 kW

**123 Column Drill VS 16**

The drills are supplied as column, table or multi-spindle line drills.

Drilling diameter	16 mm
Drilling depth	125 mm

Vertical motion of headstock	250 mm
Clamping surface of table:	
Horizontal (vertical)	280x350/180x460 mm
Spindle speeds	355-2 800 r. p. m.
Electric motor	0,8 kW

**125 Radial Drill VR 2**

The machine is designed for drilling and boring of holes, as well as for cutting of threads in medium sized machine parts. It is suited for both single part and quantity production. Partial pre-selection of spindle speeds. Raising of arm by power. Clutch reversing mechanism.

Drilling diameter	25 mm
Diameter when drilling in cast iron	35 mm
Drilling depth	225 mm
Taper in spindle	Morse 3
Spindle speeds	90-4 500 r. p. m.
Working surface	850-780 mm
Motor output	1,5 kW

**126 Radial Drill VR 103 A**

The machine is intended for drilling and boring of holes or cutting of threads in big machinery parts. All controls are arranged on the spindle head. Available with box type or universal drilling table.

Maximum drilling diameter	100 mm
Maximum diameter when drilling in grey cast iron	125 mm
Drilling depth	475 mm
Taper in spindle	Morse 6
Speed range	11,2-1 000 r. p. m.
Motor output	13 kW

CZECHOSLOVAK ECONOMIC BULLETIN informs commercial circles and persons interested in this line on the trade relations of the Czechoslovak Republic with all countries of the world and its building up. Published monthly by the Chamber of Commerce of Czechoslovakia.

**124 Upright Drill V 50**

Available in two types: V 40 and V 50

The machine is intended for drilling of holes in medium sized workpieces. The headstock is adjustable on the column for height.

Drilling diameter	50 mm
Drilling depth	265 mm
Taper in spindle	Morse 5
Spindle speeds	37-760 r. p. m.
Electric motor	4 kW

**127 Radial Drill VR 6**

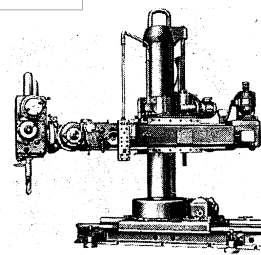
A larger type of VR radial drills, suitable for quantity production of machine parts. Multi-spindle head.

Maximum drilling diameter	60 mm
Maximum diameter when drilling in-cast iron	80 mm
Drilling depth	380 mm
Taper in spindle	Morse 5
Speed range	16-1 400 r. p. m.
Motor output	7 kW

**128 Portable Drill VRM 50**

This new type of drill is designed for drilling of holes and cutting of threads in large workpieces. The headstock can be swivelled around the horizontal axis and tilted sideways by 90° around the axis which is vertical to the horizontal arm motion.

Drilling diameter	50 mm
Drilling depth	350 mm
Taper in spindle	Morse 4-5
Spindle speeds	16-803 r. p. m.
Motor of headstock	4 kW



**129 Multi-Spindle Drilling Machine VM 1/24**

The machine is intended for drilling of holes in medium sized machinery parts, countersinking, reaming and tapping. It is suitable for quantity production, and can be used for simultaneous drilling of 24 holes. The headstock is moved hydraulically.

Number of spindles	24
Maximum drilling diameter	10
Drilling area	250-600
Spindle speeds	180-1 800 r. p. m.
Motor for spindle drive	3,6 kW

**130 Multi-Spindle Drilling Machine VM 8**

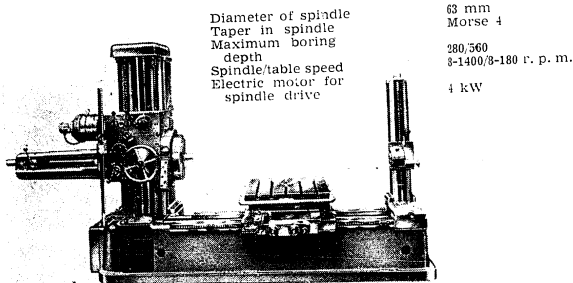
This machine is a larger type of VM 1 drill. It can be provided with maximum 36 spindles. It is used for the same operations as the VM 1 drill.

Maximum diameter of drill	20 mm
Vertical travel of headstock	450 mm
Dimensions of table	630x1 200 mm
Spindle speeds	63-500/125-1 000 r. p. m.
Motor of drilling head	11 kW

KOVOEXPORT, Czechoslovak Export Magazine of the Czechoslovak Light and Precision Engineering Industry.

**131 Horizontal Boring Machine H 63**

The smallest boring machine available. It is designed for drilling, boring, milling, screw cutting, etc. operations in single part production.



Diameter of spindle	63 mm
Taper in spindle	Morse 4
Maximum boring depth	280,560
Spindle/table speed	8-1400/3-180 r. p. m.
Electric motor for spindle drive	4 kW

**132 Horizontal Boring Machine WH 80**

Bench type boring machine with spindle 80 mm in dia. Principal features: Higher output and stability,

- Independent feeds,
- Wide range of speeds and feeds,
- Double drive of the work spindle,
- Infinitely variable feed,
- Automatic revolution adjustment in either direction,
- Illumination of gauges,
- Microelectric stops with electric preselection.

Maximum boring depth by single feed	710 mm
Maximum boring diameter with slide	750 mm
Clamping surface of table	900×1 120 mm
Spindle speed (24 steps)	8-1 600 r. p. m.
Face plate speed	8-250 r. p. m.
Infinitely variable feeds	0.5-1 250 mm per minute
Input of main electric motor	11 kW

**133 Horizontal Boring Machine VH 100**

A new design of a heavy duty boring machine. The machine is controlled by means of push-buttons of the recording plate. The work spindle is used for boring and drilling only. The hollow spindle is intended for milling. Attachments for various machining operations can be fitted to the side of the machine.

Diameter of work spindle	100 mm
Maximum drilling diameter	900 mm
Maximum drilling depth	900 mm
Longitudinal travel of table	1 600 mm
Cross travel of table	1 250 mm
Surface of table	1 250×1 600 mm
24 rates of feed	8.3-1 250
Motor output	17 kW

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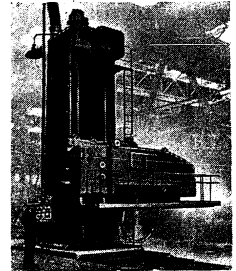
**STROJEXPORT****134 Horizontal Floor Plate Type Boring Machine WD 160**

The design of the machine is based on entirely new principles. The quill contains all controls, and serves as the spindle rest. The machine is equipped with disc type remote measuring gauges, independent, infinitely variable feeds and screwcutting equipment.

Diameter of spindle	160 mm
Maximum length of quill	1 250 mm
Vertical movement of headstock	2 500 mm
Travel of column on bed	2 150 mm
Spindle speeds	2-800 r. p. m.
Output of main motor	35 kW

**135 Horizontal Floor Plate Type Boring Machine WD 250**

The design of the machine is based on entirely new principles. It has two spindles, a main spindle and a high speed spindle, arranged above each other. The headstock has a horizontal movement in the rear slide. The feeds are infinitely variable independently of the spindle speed, and controlled by commutator motors. The high spindle speeds considerably extend the working range and utilization of the machine for high speed machining. The machine is equipped with disc type remote measuring gauges, affording a reading with an accuracy of 0.02 mm, of the distances through which both spindles and the headstock slide travel.



Diameter of main spindle	250 mm
Diameter of high speed spindle	125 mm
Sliding movement of headstock	500 mm
Maximum depth of boring with main spindle	2 250 mm
Maximum depth of boring with high speed spindle	630 mm
Main spindle speeds	2-400 r. p. m.
High speed spindle speeds	6.25-1 250 r. p. m.
Vertical movement of headstock on column	4 000 mm
Travel of column on bed	5 000 mm

**136 Jig Drilling Machine WKV 100**

The machine is designed for drilling and boring in accurate pitches, and milling of accurate vertical surfaces. It is equipped with a horizontal and vertical headstock. The travel of the table is hydraulically operated.

Dimensions of table	1 000×1 600 mm
Vertical travel of cross beam	750 mm
Cross travel of vertical headstock	1 000 mm
Vertical travel of horizontal headstock	750 mm
Spindle speeds (18)	40-2 000 r. p. m.

**137 Electric Bench Drill V 6**

Maximum diameter of drill	6 mm
Drilling depth	60 mm
Speed (4 steps)	1 000-10 000 r. p. m.
Motor output	0.25 kW

**STROJEXPORT**

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**138 Building Block Automatic**

The machine serves for complete machining of the meat mincer body of two sizes. Each type of meat mincer has its own clamping device. Approximate output: 60 meat mincers per hour. Approximate weight of the machine: 8000 kg. Overall motor output 12 kW.

**139 Six-spindle Fine Boring Machine**

The machine has on either side a multi-spindle headstock containing 6 spindles in slide bronze bearings. The boring spindles are divided from the driving spindles by a spring clutch. The machine is provided with a hydraulically controlled cross table. The set of tools consists of 12 carbide tipped boring rods adjusted by means of gauges to the required diameter. The machine is designed for boring holes in the R injection pump body. Pump bodies for 4, 5, 6 or 8 cylinder engines can be machined.

Number of spindles	12
Spindles with thread	M 33
Working table feed	8-200 mm per minute
High-speed table feed	4 000 mm per minute
Maximum stroke of table	800 mm
Input	6.8 kW
Output of the machine	30 pces. per hour

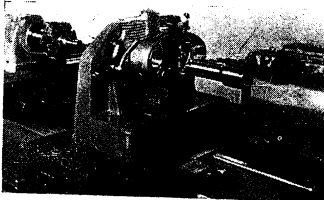
**140 Two-spindle Fine Boring Machine**

The machine is equipped with two heavy headstocks with flange spindles, two driving generating sets with auxiliary motors for automatic adjustment of the spindles into the required position, and the facing attachment which simultaneously controls the slides of both boring rods. In addition the machine has a circular table with four hydraulic clamps, pumping generating set, tool cooling equipment and automatic mechanism for adjustment of the circular table from the starting position into the working position, securing the circular table and starting the headstock. The machine is designed for precision machining of main holes in the rear axle box of the Š 440 passenger car. The parts are made of steel alloys.

Number of headstocks	2
Spindles with flange	180 mm in dia.
Working table feed	8-200 mm per minute
High-speed table feed	4 000 mm per minute
Maximum stroke of work table	800 mm
Hydraulic working pressure	10 at.
Output of the machine	12 parts per hour.

**141 Fine Boring Machine 72009**

The machine is designed for machining of the left half of the PIONYR motor cycle crankcase. The part is a light metal casting. The machine is of horizontal, double-sided type with rigid headstocks and hydraulically controlled table. The parts are chucked hydraulically.



Number of spindles	4
Spindle speed	3-400 r. p. m.
Work table feed/high-speed feed	8-200/4 000 mm per minute
Movement of table	800 mm
Motor of hydraulic power equipment	1.5 kW
Main motor	7 kW

**161 Gear Shaper OH 6**

The machine is used for the production of internal and external spur, helical and herringbone gears, and if provided with special attachment, also for generating racks.

Maximum module	6
Maximum diameter of spur gears	500
Maximum diameter of gears	90 mm
Number of strokes per minute	50-315
Electric motor output	3 kW

**162 Shaving Machine OS 30**

This machine is intended for shaving, i. e. precision finishing of spur gears with straight, worm, helical and herringbone teeth. The machine is provided with automatic working cycle. It stops as soon as the operation or finished.

Maximum pitch diameter of gear	300 mm
Minimum pitch diameter of gear	30 mm
Maximum width of gear	200 mm
Maximum module	6 metres
Maximum distance between centres	410 mm
Output of main motor	3 kW

**163 Gear Shaper ETK 25**

This entirely new machine cuts gears on the new hot moulding-H. F. heat generating principle. The gears are of a high strength and durability, and can be further processed by all machining methods. Eventually teeth are obtained. The process is fully automatic and lasts 1.5 to 2 minutes according to the size of the gear.

Maximum module of cut gear	4 metres
Minimum module of cut gear	1,5 metre
Maximum gear diameter	250 mm
Minimum gear diameter	60 mm
Maximum width of gear	40 mm

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**164 Single Housing Planing Machine HJ 8A**

The machine serves for planing of small workpieces in single part production. It is especially suitable for planing of parts which are larger in width than the clamping surface of the table.

Planing width	800 mm
Planing length	1 250 mm
Infinitely variable speed	30 metres per minute
Electric motor for table drive	5,5 kW

**165 Double Housing Planing Machine HD 16/4000**

The machine serves for planing of heavy workpieces in both single part and quantity production. The working table is driven by means of the Ward-Leonard system.

Planing width	1 600 mm
Planing length	4 000 mm
Planing height	1 600 mm
Maximum pulling power	9 300—8 000—6 300 kg
Table speeds	3—8—30 metres per minute
Input	45 kW

**166 Slotting Machine HOT 100**

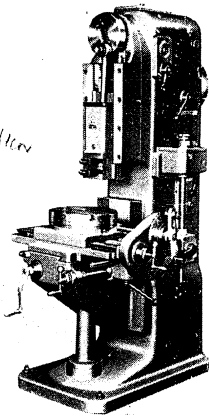
This special machine is designed for large works, for machining of plane surfaces on large workpieces which cannot be chucked on standard machine tools. It is also suitable for machining surfaces of assembled workpieces. The machine is moved to the workpiece.

Height of stroke	1 000 mm
Cross travel of ram	250 mm
Maximum pulling power	800 kg
Travel of table	1 500 mm
Feeds	0,2—1 mm
Cutting speed	5,6—8—11,2 r. p. m.
Motor output	4,5 kW

**167 Slotting Machine HOV 25**

The machine is designed for machining of plane and circular surfaces and internal slots of individually manufactured machinery parts. The power operated longitudinal, transverse and circular movements of the table are adjustable.

Maximum length of stroke	250 mm
Diameter of clamping table	500 mm
Number of up-and-down strokes per minute	22,4—112
Maximum pulling power	1 000 kg
Motor output	4,5 kW



**168 Shaping Machine HO 20**

The machine serves for machining of small workpieces in single part production. It is especially suitable for tool rooms.

Shaping length	200 mm
Shaping width	200 mm
Vertical travel of table	110 mm
Number of up-and-down strokes per minute	52 to 78
Motor output	0,5 kW

**169 Shaping Machine HO 63**

A heavy duty precision machine for machining of medium sized workpieces, suitable for both single part and quantity production. The length of strokes is adjustable in operation. The controls are arranged on one side of the machine.

Shaping length	630 mm
Shaping width	720 mm
Number of speeds	8
Number of up-and-down strokes per minute	11—125
Maximum pulling power	900 kg
Motor output	5,5 kW

**181 Circular Saw P 27**

A cold sawing machine with hydraulic feed for cutting of bar stock, suitable for medium size and large shops.

Maximum diameter of stock	270 mm
Speed of saw blade	5,5—13 r. p. m.



**182 Circular Saw H 350**

The machine serves for cutting of bar stock. It is suitable for small and medium size shops. Hydraulic feed of the saw blade and clamping of the stock.

Maximum diameter of stock	115 mm
Speed of saw blade	10-14-18-26 r. p. m.
Motor output	3 kW

**183 Side Milling Cutter PKM 25**

The machine is designed for cutting plates of non-ferrous or light metals. Hydraulic feed and clamping control.

Maximum diameter of material cut	250×1 400 mm
Speed and diameter of saw	45—225/810 mm
Infinite variable feed	12,5—630 mm per minute
Motor output	13 kW for copper 22 kW for light metals

**191 Gap-Frame Eccentric Press LE 100**

This new welded type of press is designed for cutting, bending and certain drawing operations in multiple part and quantity production. The press is electro-pneumatically controlled by means of a segment clutch and brake.

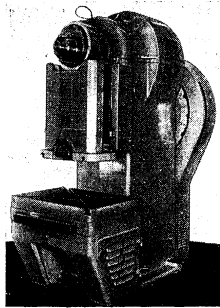
Cutting pressure	100 tons
Throat	320 mm
Stroke	20—120 mm
Surface of table	900×640 mm
Number of strokes per minute	55
Motor output	7 kW

CZECHOSLOVAK HEAVY INDUSTRY scientific and technical monthly for engineering and heavy industry.

**192 Gap-Frame Eccentric Press  
LE 160**

The machine is designed for heavy shearing and punching operations as well as light profiling work.

Maximum pressure	160 tons
Stroke	20-120 mm
Number of strokes per minute	45
Dimensions of table	1 000x705 mm
Motor output	11 kW



**193 Inclinable Eccentric Press  
LEN 40a**

The machine is designed for a variety of cutting and drawing operations by using spring-operated or pneumatic down-holders.

Maximum cutting pressure at the position of crank 30° above the bottom dead point	40 tons
Stroke	10-100 mm
Number of strokes per minute	110
Dimensions of table	480x640 mm
Motor output	3,7 kW

**194 Gap-Frame Eccentric Press LP 20/80-7**

The machine is designed for the quantity production of small objects requiring various successive operations, such as various forgings, bulb holders, etc. The maximum number of operations is seven.

Maximum cutting pressure	50 tons
Maximum pulling pressure	10 tons
Number of tools	7
Stroke	140 mm
Number of strokes per minute	50
Motor output	2,2 kW
Maximum width of band	115 mm

**195 Press Brake LO 200 B**

The machine is intended for simple as well as complex bending and shearing operations on the entire length of the material.

Maximum working pressure	200 tons
Maximum working length	4 250 mm
Throat	305 mm
Distance between housings	2 600 mm
Maximum thickness of sheet metal	12 mm
Number of strokes per minute	22
Motor output	15 kW

**196 Shearing Crank Press LKO 315**

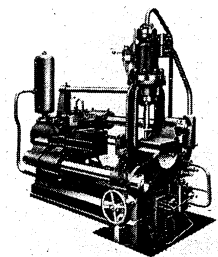
The press is designed for hot or cold shearing of forgings. It is provided with electropneumatic, push-button control. A side-press, used for auxiliary operations, is attached to the machine.

Maximum pressure at end of stroke	315 tons
Clear width below guideways	1 250 mm
Maximum distance, ram to table	710 mm
Drophole in table	400x300 mm
Number of strokes per minute	30
Output of main motor	24 kW

**197 Plastic Moulding Press  
LTR 1245**

This injection type press is designed for processing polystyrenes, polyamides, acetates and other thermoplastics. It is suitable for small and medium sized products.

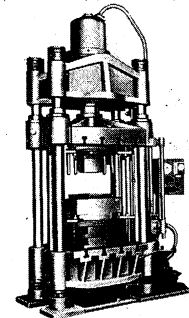
Maximum weight of material moulded per shot	35 grammes
Number of shots per hour	180-300
Specific pressure	360 kg/sq. cm
Force for closing of mould	12 tons



**198 Semi-Automatic Thermoplastic Moulding Press CSB 500, 50-2**

The machine is designed for semi-automatic injection processing of polystyrenes, polyamides, acetates and other thermoplastics. It is suitable for moulding of larger products, up to 1 kg in weight.

Number of shots per hour	90
Melting capacity of 1 chamber per hour	45 kg per hour
Force for closing of mould	500 tons
Output of electric motor	24 kW



**199 Semi-Automatic Thermoplastic Moulding Press CBJ 500**

The machine is used for semi-automatic processing of bakelite, carbamides and resins. It is suitable for large size products.

Maximum surface of flat bakelite moulded products	2 000 sq. cm.
Maximum surface of deep bakelite moulded products	1 000 sq. cm.
Pressing force	500 tons
Distance between platens	1 030 mm
Pressure with standard plunger	400 atm.
Output of pump at 400 atm.	10 litres per minute
Motor output	7 kW

**200 Cold Flow Hydraulic Press CZR 600-1**

The press is especially designed for making of cavities in moulds and dies by pressing the presser foot in steel, and similar operations requiring high pressing force and accurate piston guiding.

Maximum pressing force	600 tons
Withdrawing force	12 tons
Stroke	125 mm
Distance between housings	300 mm

**201 Pressure Die-Casting Machine CLP 408-2**

A universal machine for working up all zinc, aluminium and copper alloys. The design of the machine is simple, accessible and easy to control.

Maximum weight of the casting of Zn and Cu alloys	0,4 kg
Maximum area of castings in the parting line of the die	60-80 sq. cm
Average production rate in 8 hours	1 200-1 400 shots
Die-closing force	39.6 tons

**202 Pressure-Die Casting Machine CLP 2255**

This machine of proven design, provided with a cold pressure chamber is suitable for the manufacture of various larger parts required by the electro-engineering, motor-cycle and other industries, such as rotors of blowers, impellers, crankcase covers, typewriter frames, etc.

Maximum weight of Cu or Zn alloy casting	15 kg
Maximum area of casting in parting line of die	400-900 sq. cm
Die-closing force	220 tons
Pressure applied to metal	10-55 tons
Average production rate in 8 hours	400-600 shots

**203 Hydraulic Assembly Shop Press CDC 30**

The machine is a universal and highly efficient press suitable for straightening and bending of machinery parts, pressing of pins and bushes, straightening of welded parts, etc.

Maximum pressure	30 tons
Opening force	5.7 tons
Stroke of ram	250 mm
Throat	300 mm
Dimensions of table	1 500x350 mm
Motor output	1.5 kW

**204 Forging Crank Press LKM 1600**

A new vertical, welded type of press with adjustable table and electro-pneumatic control. The press is designed for the quantity production of high-precision parts-semi-products for motor cars, tractors, aircraft, etc. It is suitable for steel, non-ferrous or light metals.

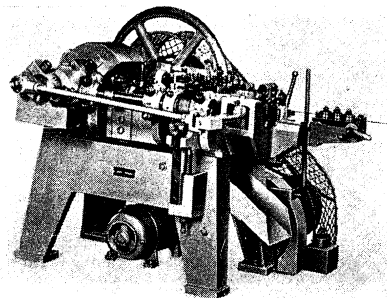
Maximum pressure at end of stroke	1 600 tons
Stroke	300 mm
Number of strokes per minute	60
Clear width below guideways	950 mm
Dimensions of table	940x1 200 mm
Motor output	82 kW

**205 Toggle Stamping Press LLH 1000/90**

The press is designed for heavy duty stamping and punching operations. The ram is balanced by means of the pneumatic balancing assembly. The segment clutch is compressed air controlled.

Maximum pressing force	1 000 tons
Stroke of ram	440 mm
Number of strokes per minute	20
Clear width below guideways	900 mm
Output of main motor	46 kW

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**STROJEXPORT****221 High-Speed Wire Nail Machine LHA 110**

The machine is used for the manufacture of all kinds of nails. Its outstanding feature is its high operating efficiency.

Diameter of wire	2.2-3.8 mm
Length of nail	13-110 mm
Output per hour	175 kg. dia. 3.5x110
Motor output	3 kW

**231 Automatic Swaging Machine KRA 8**

This new, fully automatic machine is designed for cold swaging. It is suitable for gauging and stepping of solid and tubular material with utmost accuracy and fine surface polish.

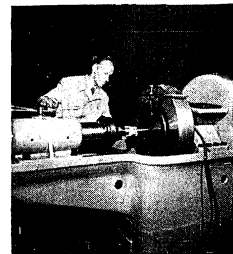
The operation is fast, without wastage in material.

Maximum diameter of solid material	8 mm
Maximum diameter of tube	16 mm
Length of the working cycle	9.8-14.8-21.8-32.8 seconds
Maximum length of workpiece	150 mm
Number of strokes per second	48
Motor output	2.2±0.9 kW

**232 Swaging Machine KR 16**

This machine is similar to the KRA 8 automatic swaging machine. It is not, however, automatic. It serves for swaging under cold or hot treatment. This type of machining belongs to the most economic and fastest methods.

Maximum diameter of bars	16-20 mm
Maximum diameter of tubes	35 mm
Maximum length of workpiece for 1 operation	75 mm
Motor output	7.5 kW

**STROJEXPORT**

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### 241 Universal Automatic Coil Spring Manufacturing Machine AU 1

Diameter of wire	0,1-1 mm
Maximum uncoiled length of spring with automatic cutting	5 000 mm
Output	180 springs per minute
Minimum diameter of spring	1 mm
Maximum diameter of spring	22 mm
Motor output	0,68 kW

### 242 Universal Automatic Coil Spring Manufacturing Machine AU 3

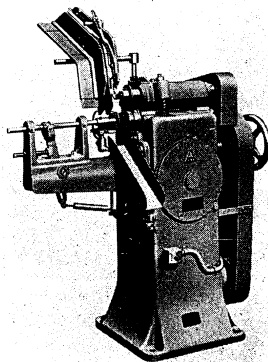
The machine is suitable for the manufacture of pressure coil springs, pressure coil springs with ends pressed plane, tension coil springs, pressure-tension coil springs, single and double bevel springs, springs of special shapes, bowden cables and rings.

Diameter of wire	0,8-3 mm
Maximum uncoiled length of spring with automatic cutting	10 000 mm
Maximum output	120 pcs. per minute
Minimum diameter of spring	6 mm
Maximum diameter of spring	50 mm
Motor output	2,5 kW

### 251 Semi-automatic Pipe Threading Machine ZST 17

Special machine for machining and threading of pipes, collars, nipples, and Graelius rods with sharp, flat, L. H. and R. H. threads. The machine can be fitted with a charging attachment.

Minimum and maximum external diameter of pipe	37-170 mm
Minimum length of pipe chucked in both chucks	1 400 mm
Maximum length of thread	135 mm
Number of threads	2-11
Output of main motor	7,5 kW



### 261 Automatic Nipple Threading Machine 77046

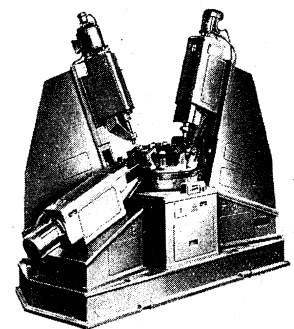
This machine is used for automatic and simultaneous cutting of L. H. and R. H. threads on radiator nipples by means of tangential tools. The nipples are put into a bin, and the machined nipples are dropped into a basket.

Nipple	G 1/4"
Material	tempered pig iron
Output	2 000 pcs. per 8 hours
Input	10 kW

### 271 Heating Platen Drilling Machine 77043

This building block type machine is used for drilling holes, 20 mm in dia. and up to 2800 mm in depth, in heating platens. Six holes are simultaneously drilled. The working cycle is automatic.

Length of bed	6 000 mm
Movement of headstock	2 800 mm
Dimensions of table	6 200x3 000 mm
Overall input	20 kW



### 282 Circular Shears for Cutting Sheet Metal NOT 100/3

The machine is designed for cutting of irregular edges of castings, such as mudguards, parts of motor bodies, etc. It is suitable for shearing of plates of various shape from sheet metal.

Cutting length	1 000 mm
Maximum plate thickness	3 mm
Speed	2,7-6,5 metres per minute
Motor output	2,2 kW

### 283 Combined Power Shears with Punching Press NUD IV

The machine is designed for cutting of plates, various sections and punching.

Maximum plate thickness	20 mm
Maximum round stock thickness	50 mm
Maximum angle iron thickness	120x120x13 mm
Maximum diameter of holes in sheet metal	30 mm
Number of strokes per minute	30
Motor output	5,5 kW

### 284 Universal Power Shears NPM

This small machine, which can be fitted to the working table, is suitable for cutting sheets, flat iron, squares, angles and T sections.

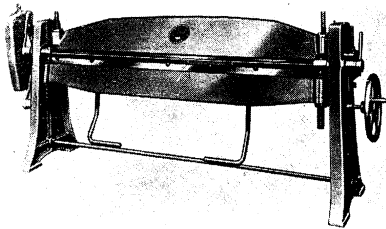
Maximum sheet thickness	10 mm
Maximum thickness of flat stock	12 mm
Maximum diameter of round stock	25 mm
Squares	25x25 mm
Angles and T sections	60/8 mm
Number of strokes per minute	24
Motor output	1,45 kW

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**291 Bending and Rounding Machine XON 100/1, hand-operated**

This machine is well suited for small workshops. It bends sheets up to 1 mm in thickness and 1 metre in width.



**292 Bending Machine XOM 300/3.5**

This machine is well suited for small workshops. It bends sheets up to 1 mm in thickness and 1 metre in width.

Working length	3 000 mm
Maximum thickness of sheet of a tensile strength of 40 kg per sq. mm	3.5 mm
Pipe bends up to maximum diameter	300 mm
Maximum stroke of upper bending cheek	150 mm

**293 Pipe Bending Machine ROH 110**

The machine serves for cold bending of steel pipes (or pipes made of other materials) by means of the bending die, arbor and guiding trough. The machine is welded of steel sheets, and offers a neat and pleasing appearance.

The drive is effected by means of a flange type electric motor over a planet gearbox, bevel gears and two pairs of forks, and actuates the bending table. The design of the machine is based upon the latest research, and provides economic operation.

Maximum bending diameter	110 mm
Maximum length of pipe	6 000 mm
Maximum corresponding pipe diameter	108/4.5 mm
Minimum radius of bending	330 mm
Electric motor output	7.5 kW
Period required for 90° bending	6 sec.

**294 Thread Stamping Machine XVZ**

The machine is intended for thread stamping in sheet caps, flanging of plates, trimming of castings and the manufacture of bulb holders, screw bulb sockets, etc. All operations are fully automatic.

Diameters	15-120 mm
Length of thread	55 mm
Maximum plate thickness	0.8 mm
Motor output	1.1 kW

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### 295 Hydraulic Pipe Bending Machine HTO 3

This highly efficient machine is suitable for cold bending of pipes. It is easy to operate and recommended wherever pipes have to be bent quickly and neatly without sand filling. Also very short pipes are bent on this machine.

### 311 Pneumatic Hammer KB 400

This pneumatic hammer is suitable for the most varied forging work such as punching, cutting, upsetting, drawing and forging of sections.

Weight of hammer	400 kg
Weight of anvil block	7 000 kg
Maximum diameter of forged material	230 mm
Number of strokes per minute	130
Ram stroke	700 mm
Power of blow	2 000 kgm/sec.
Work of blow	950 mkg
Electric motor output	40 H. P.

### 312 Spring Hammer KAH 70

This hammer is designed for all forging operations. The force of blow is hydraulically controlled. The motor has an output of 12 H. P.

### 321 Broken Tool Extractor IJV 1

This electric spark erosion drill serves for the removal of broken tools and drilling of less accurate holes in hardened and tough materials.

Range of machined diameters	2—30 mm
Dimensions of broken tool extractor without taper	90×260 mm
Clamping arrangement	No. 2 Morse taper
Maximum operating current	150 A
Weight	3,5 kg

### 322 Broken Tool Extractor IJV 2

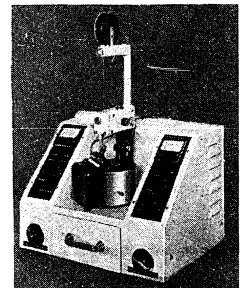
This electric spark erosion drill serves for the removal of broken tools and drilling of less accurate holes in hardened and tough materials from 2 to 40 mm dia. and over.

Current source	10, 20, 40, 60, and 90 A
Approximate voltage	20 V
Approximate maximum volume of removed material	300 cu. mm/min. at 90 A

### 323 Electric Spark Micro-Perforator VJ-03

Used for making the minutest holes, 0,05 to 0,4 in dia. in hard and tough materials and cemented carbides.

Diameter of table	100 mm
Vertical movement of table	40 mm
Horizontal movement of table	40×40 mm
Maximum height of machined part	40 mm
D. c. source	50—90 V
Input	0,4 kW



**STROJEXPORT**

**324 Electric Spark Perforator, Small Type VJ 3**

Used for making small holes, 0,4 to 4 mm in dia. and for the manufacture of fine moulding tools of cemented carbides, tool steels or other hard and tough materials. Automatic adjustment of the working electrode by means of cross slide rests. Automatic process regulation.

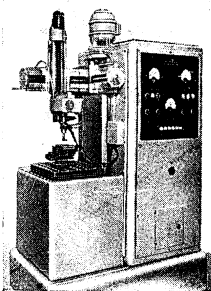
**325 Electric Spark Perforator, Medium Type VJ 15**

Used for the manufacture of small moulding tools. Recommended maximum machined area abt. 1500—2000 sq. mm. Accurate adjustment of the tool electrode by means of cross slide rests. 10 machining steps. Automatic process regulation.

**326 Electric Spark Erosion Die Cutter VJK 1**

Used for the manufacture of medium and large size moulding tools of cemented carbides and other materials.

Maximum machined surface 10 000 sq. mm  
 Vertical movement of table 250 mm  
 Horizontal movement of table 180×180 mm  
 Automatic spindle stroke 250 mm  
 Maximum dimensions of workpiece 350×300×250 mm



**327 Electric Spark Thread Cutter ZJ 1**

Used for making threads in holes of cemented carbides and other hard and tough materials. Approximate working range from 2 mm (M2) to 14 mm (M14), 4 machining steps. Automatic process regulation.

**328 Electric Spark Inscribing Needle IJV 3**

Used for making inscriptions in metal objects. The needle leaves a permanent mark. Approximate output 0,5 m/min.

**329 Small Ultrasonic Perforator VU 3**

Used for machining of hard and tough materials, such as ceramics, precious and semi-precious stones, cemented carbides and the production of fine tools, various shaped holes and cavities of the hardest conductive and non-conductive materials. Table type. Cross slide rests.

**330 Ultrasonic Punching Machine VU 15**

The machine is used for machining hard metals, ceramics, glass and various minerals in fine mechanics and optics.

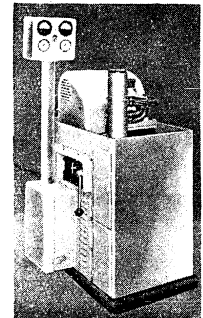
**331 Anode-Mechanical Electric Spark Erosion Saw PA 6 for cutting**

of small tools and objects of hard and tough materials, such as plates of cemented carbides, chucks, etc. 4 working steps. Automatic process regulation.

**332 Anode-Mechanical Electric Spark Erosion Saw for Small Sections PA 30**

for cutting of hard and tough materials, cemented carbides and special alloys, 30 mm. in dia.

Maximum diameter of cutting disc 300 mm  
 Capacity of operating liquid tank 70 litres  
 Maximum working current (at 26 V) 40 A  
 Input 2 kW



**333 Anode-Mechanical Electric Spark Erosion Saw for Stocked Sections PA 70**

for cutting of hard and tough materials up to 70 mm in dia. Automatic process and working cycle regulation. Adjustable stop and number of cut pieces.

**334 Anode-Mechanical Electric Spark Erosion Saw for Medium Sections PA 150**

for cutting of hard and tough materials up to 150 mm in dia. Automatic process regulation.

**335 Ultrasonic Drilling Machine**

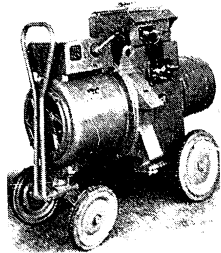
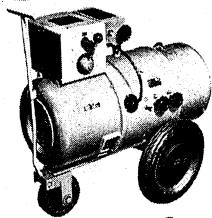
Is used for the manufacture of small dies, drawing dies, irregular holes and recesses and punching holes. Following material is suitable for machining: Sintered carbides, steel alloys, glass, ceramic material, germanium, sapphire, diamonds, etc.

Average accuracy approx. 0,05 mm  
 Roughness of the surface approx. 1 μ  
 Material for grinding: Boroncarbides of different degrees of hardness.  
 Maintenance and operation is simple and inexpensive.

The apparatus is fed from the mains 220 V a. c.  
 Output of the generator 1 kW, frequency used 25 kc/s  
 Dimensions 780×830×1 960 mm

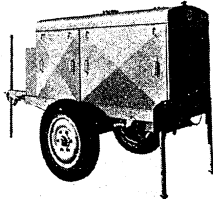
**341 TRIODYN K-320 Mobile Arc Welder**

Rated motor capacity 14 kW  
 r. p. m. 2 900  
 Fixed rated voltage 220, 380, 500 V  
 2-pole welding dynamo current range 30 A/15V-320 A/30 V  
 Weight 314 kg



**342 PRAGA 500 Travelling Arc Welder**

Rated motor capacity 23 kW  
 r. p. m. 1 450 per minute  
 Fixed rated voltage 380-500 V  
 4-pole welding dynamo current range 70 A/15V-500 A/35 V  
 Weight 700 kg



**343 PRAGA 320 DG Mobile Diesel Electric Welding Set**

Rated output of engine 27 H. P.  
 Rated speed 1 500 per minute  
 4-pole welding dynamo current range 50 A 15 V-320 A/30 V  
 Weight 1 620 kg

**344 TR-260 a. c. Mobile Arc Welding Transformer**

Rated primary voltage 190, 220, 380, 440 V  
 Rated input 17,1 kVA  
 Range of welding current 30 A/15 V-268 A/30 V  
 Weight 135 kg

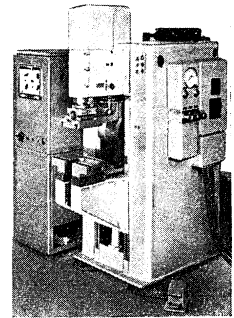
**345 TS-350 a. c. Mobile Arc Welding Transformer**

Rated primary voltage 380 V  
 Rated input 29,8 kVA  
 Range of welding current 50 A/25 V-430 A/45 V  
 Weight 280 kg

*The periodical CZECHOSLOVAK FOREIGN TRADE supplies information on the export products of all the sectors of the Czechoslovak industry. Reports on fairs and exhibitions, reports on trade policy and foreign press comments, supplement the contents of the richly illustrated periodical, issued six times annually in English, German, Russian, Spanish, Portuguese and French.*

**346 VÚS 250-3 Welding Press**

Rated input at 50 % load 1 000 kVA  
 Maximum input 4.15-12 V  
 Welding force continuously regulated 500-3 000 kg  
 Pressing force continuously regulated 500-3 000 kg  
 Forging force continuously regulated 500-3 000 kg  
 Maximum throat height 425 mm  
 Minimum throat height 85 mm  
 Maximum throat depth 300 mm  
 Number of regulation steps 20  
 Suitable for resistance and flash welding  
 Cross-section of mild steel - resistance welding 600 sq. mm  
 Cross-section of mild steel - flash welding 1 200 sq. mm



**347 VÚS 60/120 Suspended Seam Welder**

Input 60-120 kVA  
 Maximum welding pressure 0,5-3,5 metres per minute  
 Speed 70-120 mm in dia  
 Pulleys 250 watt  
 Input of motor of the pump 123 watt  
 Input of the driving motor 3x1 mm  
 Welding sheet thickness 400 kg

**348 Pipe Cutting Machines**

a) Hand operated VÚS RP 1 apparatus for cutting vertical circular holes on pipes and cylindrical vessels.

The apparatus cuts holes 60 to 600 mm in dia. in any position. With regard to the diameter of the pipe or vessel, holes up to 2/3 of the pipe or vessel may be cut, E. g. a hole, 200 mm in dia. may be cut in a 300 mm pipe.

b) VÚS RP 2: Hand operated apparatus for cutting circular holes in cylindrical and other surfaces.

Cylindrical holes may be cut up to 300 mm in dia. at the maximum angle of inclination of 45°. With chamfered cuts, holes parallel to the axis may be cut.

c) Hand operated VÚS RP 3 apparatus: used for cutting of passes at the pipe ends.

1. chamfered or plane cuts are made
  2. round cuts
  3. vertical or chamfered passes of 2 pipes
- Ad 1. By means of a straight plate inclined to the required angle  
 Ad 2. Without template  
 Ad 3. By means of a part of the main pipe or another part of the required shape

CZECHOSLOVAK HEAVY INDUSTRY scientific and technical monthly for engineering and heavy industry.

- d) VÚS RP 4 Hand operated apparatus:  
used for vertical or chamfer cutting of cylindrical and other non-geometrical surfaces.

The apparatus operates in any position, at the angle inclination of 90-45°. Maximum pipe diameter 300 mm. For larger diameters the arms of the mechanism must be extended.

- e) VÚS RP 5 Mobile hand operated machine:  
for circular pipe cutting.

The machine consists of a trolley attached to the pipe by means of a chain. It also uses two burners which may be tilted into the required position. The pipe remains solid, the cut is perfectly clean.

E. g.: A pipe 300 mm in dia. and 10 mm thick, may be cut in three minutes.

Minimum and maximum pipe diameter: 100/600 mm.

### 349 VÚSA Universal Automatic Welding Composition Welder

Plate thickness up to 1,5 mm.

Electrode diameter	1,5-5 mm
Current range	200-1500 A
Maximum welding speed	90 metres per hour
Weight including wire and welding composition	40 kg

Pipes may be welded from 500 mm in dia., and after adjustment from 400 mm in dia.

The welder may operate with or without arc regulation.

### 350 VÚS B 1,5 Miniature Spot Welder

Maximum input 1,5 kVA.  
maximum pressing force 20 kg.  
plate thickness 0,5 mm.  
foot pedal operated.

The pressing force is not dependent on the compressed air oscillations.

Electronic welding current control.

### 351 VÚS KV Adjustable Working Table

Maximum length	2 500 mm
maximum dia.	600 mm
maximum weight	4 000 kg

ERO 320 electronic regulation control. The number of revolutions may be increased up to 3 000 r. p. m.

CZECHOSLOVAK GLASS REVIEW a monthly of the Czechoslovak Glass- and Ceramic Industry brings regularly to persons interested in this line information on the production and delivery possibilities of Czechoslovak Glass- and Ceramic works.

### 352 ARGON/ARC T 350 Mobile Welding Set

The welder is designed for welding of aluminium, magnesium, copper, stainless steels, molybdenum, everdur, nickel, bronze and their alloys by means of the electric arc and non-consumable tungsten electrode, in a zone shielded by a covering of the inert gas of argon.

It consists of

- the TS-350 welding transformer supplying the required welding current,
- the capacitor power-supply unit stabilizing the oscillations caused by d. c. so that the arc is maintained,
- the control panel which also accommodates the high-frequency ionization unit designed for striking and stabilizing the arc during operation,
- the tungsten electrode handle.

Fixed rated voltage	2×380 V, 50 c/s
Transformer output	42 kVA
Welding current	60-420 A
Consumption rate of argon	4,5-19 litres/min.
Total capacity of the capacitor power supply	0,24 F
Ionization unit capacity	5 000 V, 2 Mc
Weight	774 kg

### 353 TAU 40

Automatic Butt Welder  
suitable for welding full cross section steels and section materials.

Rated transformer capacity	40 kVA
Primary voltage	380 V, 50 c/s
Welding capacity	800 sq. mm
Approximate net weight	3 tons

### TAU 80

Automatic Butt Welder  
suitable for welding full cross section steels and section materials.

Rated transformer capacity	80 kVA
Primary voltage	380 V, 50 c/s
Welding capacity	2 000 sq. mm
Approximate net weight	4 tons

### TP 60

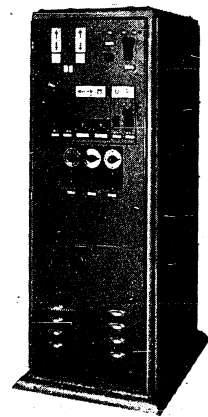
Semi-Automatic Butt Welder  
suitable for welding full cross section steels and section materials.

Rated transformer capacity	60 kVA
Primary voltage	380 V, 50 c/s
Welding capacity	300-2 500 sq. mm
Clamping pressure	12 000 kg
Upsetting pressure	6 000 kg
Approximate net weight	3,7 tons

### SP 60

Semi-automatic Seam Welder  
suitable for welding of steel plates, with electronic H. T. induction switch and circuit breaker.

Rated transformer capacity	60 kVA
Primary voltage	380 V, 50 c/s
Opening of arms	1 000 mm



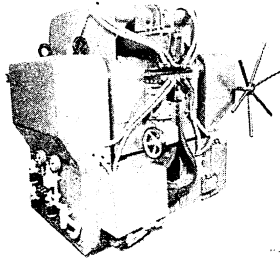
**SPK 600**

Semi-automatic Welding Composition Welder with constant speed of wire feed.

Type of welders with nose, portable

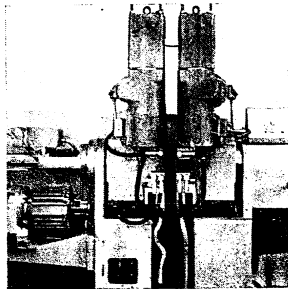
Welding current:  
d. c. 180—630 A  
a. c. 140—650 A  
Primary voltage 3×380 V  
Dia. of welding wire 1.2 mm, 1.6 mm, 2 mm

Contactor box, feeding mechanism, holder with hose, connecting cable.

**STK 1000**

Universal Automatic Welding Composition Welder with constant speed of wire feed and common drive of wire feed and travelling mechanism.

Type of welders:  
portable  
travelling  
Welding current:  
d. c. 200—1 000 A  
a. c. 150—650 A  
Rated voltage of  
contactor box: 3×380 V  
Dia. of welding wire 1.6 mm, 2 mm, 3 mm, 4 mm, 5 mm

**354 Automatic Welding Set with Amplidyne Arc Regulation**

This type of regulation is simple and reliable. The amplidyne arc regulation is similar to the regulation by means of the Ward Leonard set. Only the W-L generator has been replaced. The welding wire must be fed to the arc at a speed corresponding to the melting speed. The arc voltage should be maintained at a constant level  $\pm 2$  V within the range of 25—50 volts and at a current of 200 to 2 000 A. Welding wire diameter 3 to 8 mm. The corresponding speed of the welding wire feed is 0.5 to 2.5 mm per minute. The required ratio is 1 : 5.

CZECHOSLOVAK ECONOMIC BULLETIN informs commercial circles and persons interested in this line on the trade relations of the Czechoslovak Republic with all countries of the world and its building up. Published monthly by the Chamber of Commerce of Czechoslovakia.

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**STROJEXPORT****355 Argon Gas Welding Set T 010**

The exhibited welder is designed for welding of thin aluminium conductors required for the manufacture of electric machines. The set consists of a case, 300×425×315 mm in size and a miniature air-cooled tungsten electrode holder. The set has a wide welding current range from 2,5 to 12,5 A, and can be connected to 220 V, 50 c/s mains. Weight without argon gas cylinder 25 kg. In view of its outstanding features the set is a unique type of welder.

**356 Propane and butane Soldering and Brazing Set**

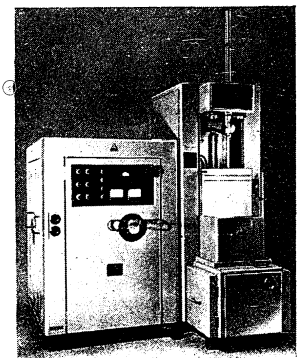
The set is used for propane or butane soldering or brazing under 0—1,5 atm. pressure, reduced in steel cylinders.

**357 Upsetting Flame Welding Machine**

The machine is used for welding of circular bars up to 3 000 mm/sq. mm in cross-section. It is designed for welding wagon connecting rods.

**371 Saw Blade Hardening Equipment:**

Generator and automatic hardening machine, type GV 21 and EKP 3.

**372 Universal Semi-Automatic Hardening Machine for Induction Heating EKS-30**

Intended for single-piece as well as repetition hardening of small machinery parts up to a weight of 20 kg.

Maximum clamping diameter: 300 mm  
Maximum clamping length between centers: 600 mm  
Operating voltage: 24 V  
Mains voltage: 380/220 V, 50 c/s  
Input: 0,75 kW

**STROJEXPORT**

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**373 Continuous Dielectric Drying Oven EDV 1**  
with GU 15 generator.

Dimensions of the drying oven (length X width) 5 000X1 000 mm

Designed for drying of non-conductive materials (e. g. textiles, felt discs for engineering industry, etc.).

**374 Bakelite Moulding Equipment:**  
**CU 3a generator**

Designed for preheating of bakelite tablets, drying, etc.

Maximum H. F. output:	1.5 kW
Thermal H. F. output:	21.5 Kcal/min.
Input at full load:	3.2 kW
Heating area:	max. 250X400 mm
Maximum weight of mould	1,5 kg

**LB 150 Bakelite Moulding Press**

**375 Wood Pressing Equipment GU 7 generator**

Intended for gluing of simple shaped wooden parts under dielectric heat treatment (staves).

Surface of the platens:	600X600 mm
Overall pressure:	100 tons
Input:	10 kW (including generator)

**376 PVC Foot-operated Welding Set**

Including type EDS-4	generator
Output	500 V
Working surface	15 sq. cm.
Welding pressure	3/7 kg per sq. cm.
Foot-operated	

**377 Hydraulic Press used for gluing of laminated moulded wood**

The inserted material is pressed and simultaneously heated by H. F. heat, whereby glue hardening may be shortened to a few minutes as against the normal method by means of heated platens which lasts a few hours. The power source is a GU 7 generator of 4 kW output.

**378 HF Thermoplastic Foil Welders EDS 4**

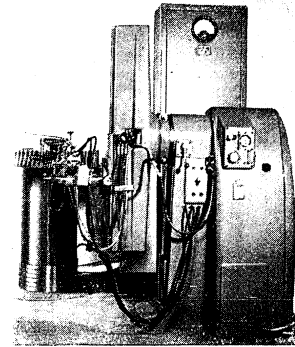
The set is suitable for H. F. welding of containers and various fancy articles made of PVC foils. Welding period 1-4 seconds. The power source is built inside the welder.

CZECHOSLOVAK GLASS REVIEW a monthly of the Czechoslovak Glass- and Ceramic Industry brings regularly to persons interested in this line information on the production and delivery possibilities of Czechoslovak Glass- and Ceramic works.

**379 Flame Hardening Machine**

The machine serves for flame hardening of parts maximum 900 mm in length, and spur gears of higher modules. The equipment consists of three parts: the machine itself, electric assembly in case and accessories.

Feed of burner	60-720 mm
Table tilt	90°
Electric motor: r. p. m.	1 400/2 800
output	0.4/0.5 kW



**380 H. F. Through Drying Plant**

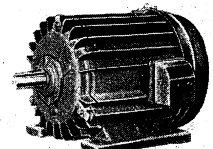
The heat generates by dielectric losses in the processed material. The source of current of a frequency of 13 Mcs is the GU 15 type electronic generator. Application: drying of various materials, such as yarn, felt, casting cores, etc. The drying period is shortened to about 1-2 p. c. of the time normally required for drying.

**391- Type OR 220/380 V, 380/660 V, 50 c/s, 1 400 r. p. m.**

**400 Three-Phase Squirrel-Cage Induction Motors**  
semi-enclosed design.

**401- Type OR 220/380 V, 380/660 V,**  
**410 50 c/s, 1 400 r. p. m.**

Three-Phase Squirrel-Cage Induction Motors  
fully enclosed design.

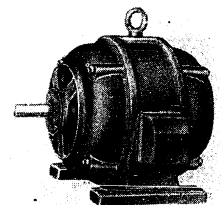


**411- Type REX, 220/380 V, 50 c/s,**  
**415 1 400 r. p. m.**

Single-Phase Squirrel-Cage Induction Motors with automatic switching of the auxiliary phase

**416 Type 1H9bV6, 28 kW, 220/380 V,**  
**50 c/s, 960 r. p. m.**

Three-Phase Induction Motor with slip ring rotor, flangemounted, with free shaft-end, drip-proof design.



- 417** Type 1K92Z/4, 30 kW, 380 V, 50 c/s, 1420 r. p. m.  
Three-Phase Induction Motor  
with slip ring rotor, flange-mounted, with free shaft-end, explosion-proof design including explosion-proof contactor switch and starter.
- 418** Type K51x4, 2,5 kW, 380 V, 50 c/s, 1420 r. p. m.  
Three-Phase Squirrel-Cage Induction Motor  
flange-mounted, with free shaft-end, explosion-proof design including explosion proof contactor switch.
- 419** Explosion-Proof Gutter Fan  
A special fan for airing of gas infested areas.
- 420** Type 2RP63S/6, 6 kW, 40 %, 220/380 V, 50 c/s, 960 r. p. m.  
Three-Phase Induction Motor  
with slip ring rotor, without brush lifting device, flange-mounted, with free shaft-end including controller and resistors.
- 421** Type M 11-40Z/4, 125 kW, 380 V, 50 c/s, 1400 r. p. m.  
Three-Phase Induction Motor  
with slip ring rotor, brush lifting device and switch. The motor can be started only with the brush lifting device in its OFF-position.
- 422** Type A9b/4, 32 kW, 400/231 V, 50 c/s, 1500 r. p. m.  
Three-Phase Synchronous Motor  
semi-enclosed, flange-mounted design with free shaft-end including derivation regulator.
- 423** Type 1H46-42/6, 220 kVA, 400/231 V, 50 c/s, 1000 r. p. m.  
Three-Phase Synchronous Motor  
semi-enclosed, flange-mounted design with free shaft-end including shunt regulator.
- 424** Three-Phase Rotor Switches

The new SOE oil switches are made in five types. The units are of similar design and for various outputs. The switch consists of three main parts, i. e. a contactor, resistor and vessel with cover. The exhibited line of switches is designed for motors of 14, 28, 55, 100 and 200 kW.

CZECHOSLOVAK HEAVY INDUSTRY scientific and technical monthly  
for engineering and heavy industry.

**425 Multiple Reverse Induction Motor**

For various operations normal induction motors for frequent reversing are required. This requires perfect motor insulation (high currents and temperatures).  
The exhibited normal type of motor, provided with class A insulation, is suitable for frequent reverses. It stands 1000 reverses per hour at idle run.

**441**

**442 JM Motor Protective Switch**

(a three-phase protective switch used for small motors) these apparatus should be fitted with other instruments on the control panel.

**443 OVMC Temax Air-Breaker**

(designed for motor protection).

**444 BMT2M Three-phase Brake Magnet**

(used for brake control of cranes)

**445 Type DO53, DO**

**446 Deion Air-Breakers**

for switchboard mounting (designed for the protection of motors against overload).  
(These apparatus serve for electric motor control, and should be fitted to one panel.)

**447 Type VJ25L-03, VJ25L-04, VJ25L-01, V25L-01 Drum Switches**

in cast-iron cabinet (used for switching of electric motors).

**448-452 Type JDO 21 JDO 21 Automatic Base Switches**

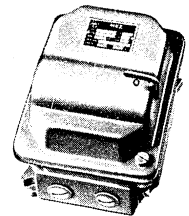
including terminal box cover (for switching of electric motors).

**453 Type VS20-003 Air Contactor, Drip-proof Design**

(used for electric motor control).

**454 Type VMT Three-Pole Air Blast Circuit Breaker**

mounted to the toggle operating mechanism (for the protection of motors against overload).





- 455 **Type VMTN  
Three-Pole Air Blast Circuit Breaker**  
in cast-iron cabinet (for the protection of motors against overload).
- 456 **Explosion-proof Circuit Breaker on stand, type JSJ063**
- 457 **Explosion-proof Starter**
- 458 **NSJ 13 Explosion-proof Circuit Breaker**
- 459 **ELDRO DO-75-50, 380 V, 50 c/s Electrohydraulic Apparatus**
- 460 **Shunt Regulator for alternator, type A94**
- 461 **Shunt Regulator for alternator, type 1 H 46-42/6**
- 462 **Type FIS-GP Steam Turbine Generator**
- 463 **Three-Phase Commutator Shunting Motor**  
The motor is used wherever permanent regulation of speed in a wide range is required. It is manufactured for a mains voltage of 550 V. The motors are adapted to the mains frequency within a range of 40-60 c/s per second.

**471 Rotor Squirrel Cage Measuring Set**

The measuring set provides a fast and cheap method of testing rotor squirrel cages prior to assembly or machining. It also ensures a fast control of the conductivity of squirrel cage rotor rods. The set is portable, of building block type, and the collectors may be tested on a lathe. Rotor squirrel cages with both open or closed grooves may be tested. Principal features:

1. Fast, simple and reliable control
2. The test may be carried out on a lathe or balancing machine, and requires no special equipment
3. Rotors may be controlled prior to assembly and finishing operations
4. The set may be used for all rotor dimensions
5. An accurate image of the squirrel cage is obtained on the screen of the oscillograph
6. Snapshots of the oscillograph may be taken and thus a permanent record obtained

*CZECHOSLOVAK GLASS REVIEW a monthly of the Czechoslovak Glass- and Ceramic Industry brings regularly to persons interested in this line information on the production and delivery possibilities of Czechoslovak Glass- and Ceramic works.*

**481 SZ R Engine with waste heat utilization equipment**

The equipment for the utilization of waste heat of crude oil engines increases economy in operating these units. By means of this equipment the heat generated by crude oil engines can be utilized up to 75 %, while the capacity of the crude oil engine itself is 35 % only. The heat obtained by steam can be used for technological processes, heating or service water heating (e. g. on ships).

The equipment is suitable for medium-sized and large units; for technological reasons, however, the equipment has been tested on a small high-speed 6 R 140 generator. Due to the researches of the Thermal Technique Research Institute, plans have been drawn for the erection of a thermal plant operating on this principle. Use is made of the engine pressure water cooling system which permits water to be heated to a temperature exceeding 100 °C, and reduces the specific fuel consumption at an overall higher temperature of the engine.

The heat developed by exhaust gases is transmitted to the hot engine water by means of the surface changer. Due to the expansion of pressure water in the evaporator, water partially evaporates, and the rest cools down to a temperature which corresponds to the pressure in the vessel. The circulation pump returns cool water to the engine. The produced low-pressure steam condenses in the apparatus or auxiliary condenser, and the condensate is automatically fed into the evaporator.

The fully automatic equipment of the apparatus does not require special maintenance. In view of increased power, fuel economy and prolonged life of the engine full benefit is enjoyed from this investment.

- 491 **Railway Lighting Dynamo and Era Regulator**  
492 **Type ODF 24 V, 1 kW**

- 493 **Layout of a locomotive with a complete set of lamps including**  
494 **bulbs**

- 495 **Locomotive with mounted lamps**

- 496 **Accumulator battery used for railway coach lighting**

- 501 **Three-Phase Oil Immersed Transformer, 285/10, 200 MVA**

- 502 **Five Panel Switchboard with accessories**

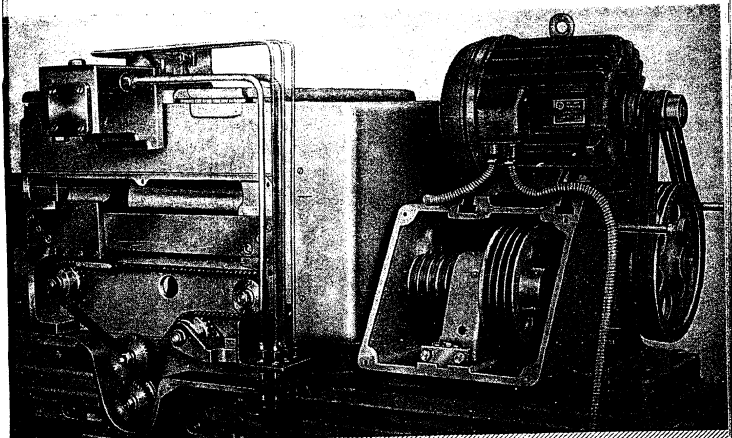
- 503 **R. F. Telecommunication Equipment Cabinet**

*Are you interested in Czechoslovak products? CZECHOSLOVAK FOREIGN TRADE, a periodical of the Chamber of Commerce of Czechoslovakia, regularly contains reports on traditional export articles as well as novelties of the Czechoslovak industrial production.*

- 504 FTCS 6-200/11-200 A Single-Pole Base
- 505 FTCS 10-200/11-200 A Single-Pole Fuse Base
- 506 FTCS 22-200/11-200 A Single-Pole Base
- 507 FTCA 6-15/11 15 A Fuse Cartridge
- 508 FTCA 10-2/11 2 A Cartridge
- 509 FTCA 22-10/11 10 A Fuse Cartridge
- 510 Voltage Transformer  
Type NV 101 dry, two-pole insulated transformer, ratio 1 000/10 V, insulating voltage 1 kW, testing voltage 10 kW, rated output 60 VA, 1 % class of accuracy.
- 511 Voltage Transformer  
Type NV 184 dry, two-pole insulated transformer, insulating voltage 3 kW, testing voltage 18 kW, ratio 3 000/110-100 V, 60 VA, 0,5 % class of accuracy.
- 512 Voltage Transformer  
Type NV 334 dry, two-pole insulated transformer, insulating voltage 3 kW, testing voltage 18 kW, ratio 3 000/110-100 V, 60 VA, 1 % class of accuracy.
- 513 Voltage Transformer  
Type NV 444 dry, two-pole insulated transformer, insulating voltage 10 kW, testing voltage 42 kW, ratio 10 000/110-100 V, 120 VA, 1 % class of accuracy.
- 514 Current Transformer  
NAD 42b dry bushing type transformer, insulating voltage 15 kW, testing voltage 44 kW, ratio 100/5/5 A, rated output 30/30 VA, 1 % class of accuracy.
- 515 Current Transformer  
NAD 64 dry bushing type transformer, insulating voltage 22 kW, testing voltage 64 kW, ratio 200/5/5A, 15/30 VA, 0,5. class of accuracy.

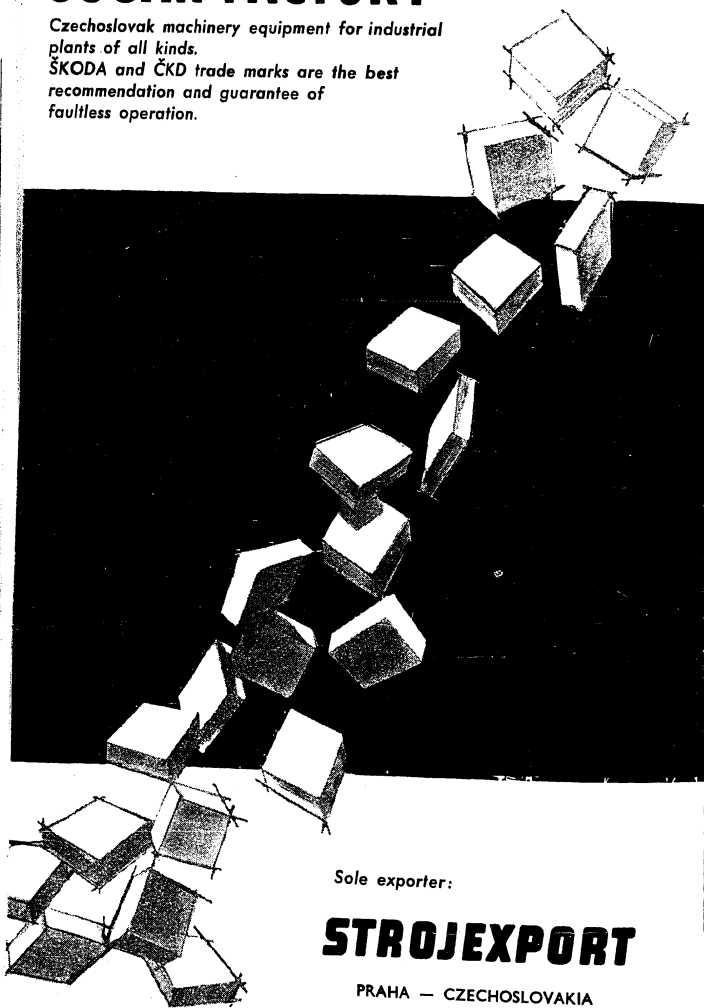
KOVOEXPORT, Czechoslovak Export Magazine of the Czechoslovak Light and Precision Engineering Industry.

STROJÍRENSKÁ VÝROBA



# SUGAR FACTORY

Czechoslovak machinery equipment for industrial plants of all kinds.  
SKODA and ČKD trade marks are the best recommendation and guarantee of faultless operation.



Sole exporter:

## STROJEXPORT

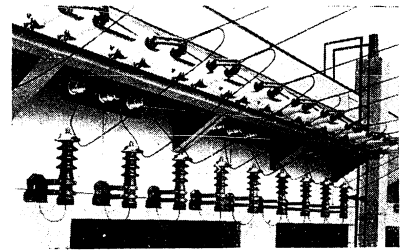
PRAHA — CZECHOSLOVAKIA

- 516 Current Transformer**  
NAD 86 a dry bushing type transformer, insulating voltage 35 kV, testing voltage 86 kV, ratio 100/5A, 30 VA, 0,5 class of accuracy.
- 517 Draw-out Metal Enclosed Switchboard**  
Draw-out metal enclosed switchboard for high voltages, with CP 205-10/600, 10 kW, 600 A, 200 MVA air-blast circuit breaker.
- 518 Short Circuit Foolproof Current Transformer**  
Type NAFD 643/850 compound filled bushing transformer, insulating voltage 22 kV, testing voltage 64 kV, ration 300/5A, rated output 30 VA, 1% class of accuracy.
- 519 Draw-out Metal Enclosed Switchboard**  
Draw-out metal enclosed switchboard for high voltages, with VO 10/691, 10 kW, 600 A, 150 MVA oil circuit breaker.
- 520 FTCS 35/200-11 Single-Pole Fuse Base**
- 521 FTCA 35-20/11 Fuse Cartridge, 35 kV, 20 A, 400 MVA**
- 522 CP 205-35/600 Three-Pole Air Blast Circuit Breaker**  
CP205-35/600 15 kW, 600 A, 200 MVA circuit breaker with WM6 10—12 atm. control valve, mounted to a permanent underbase.
- 523 CP 605-22/600 Three-Pole Air Blast Circuit Breaker**  
CP 605-22/600, 22 kV, 600 MVA circuit breaker with MW 6 control valve for 18—20 atm., mounted to a permanent underbase.
- 524 BTB 22/400-34, 22 kV, 400 A, 10 MVA Three-Pole Disconnecting Circuit Breaker.**
- 525 TSPC 22/400-031, 10 kV, 400 A Three-Pole Isolating Switch with accessories.**
- 526 FTGS 6-200/11 Single-Pole Fuse Base**
- 527 FTCS 10-200/11 Single-Pole Fuse Base**
- 528 FTCS 35-200/11 Single-Pole Fuse Base**
- 529 FTCB 6-46/11 40A High-Capacity Fuse Cartridge**

**STROJEXPORT**

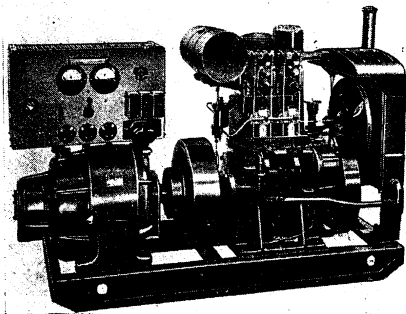
- 530 FTCB 10-40/11 40A High-Capacity Fuse Cartridge
- 531 FTCB 22-40/11 40A High-Capacity Fuse Cartridge
- 532 FTCB 35-40/11 40A Fuse Cartridge
- 533 FTCB 6-60/11 High-Capacity Fuse Cartridge
- 534 FTCB 10-60/11 High-Capacity Fuse Cartridge
- 535 FTCB 22-60/11 High-Capacity Fuse Cartridge
- 536 FTCB 35-60/11 High-Capacity Fuse Cartridge
- 537 Single-Pole Outdoor Disconnecting Switch  
with double knife motion, type TEPD 35/600-11, air blast  
circuit, 35 kV, 600 A.
- 538 FTTS 22/200-31, 22 kV, 200 A Three-Pole Disconnecting Fuse  
Base
- 539 FTCA 22/20/11, 22 kV, 20A, 400 MVA Fuse Cartridge
- 540 CPR Three-Pole Air Blast Circuit Breaker with Resistance  
Extinguisher  
CPR 401.10 600, 10 kV, 600 A, 400 MVA air blast circuit  
breaker with resistance extinguisher and control valve on  
underbase.
- 541 CP 405-35/1000 Three-Pole Air Blast Circuit Breaker with  
Resistance Extinguisher  
and control valve.
- 542 CP 1001-10/2000 Air Blast Circuit Breaker  
on underbase
- 543 CP 1001-22/1000 Three-Pole Air Blast Circuit Breaker
- 544 SUr 33 40-75 Selenium Rectifier
- 545 SUj 22 48-10 Selenium Rectifier
- 546 SUj 20 24-5 Selenium Rectifier

- 547 ODT 10/600 VP + VZ7/89 Disconnecting Switch
- 548 ODT 10/1500VP + VZ7/1013 Disconnecting Switch
- 549 RS-6N, 100 MVA Explosion-Proof Case  
For No. 2 Emergency Degree, with plate closure IV.
- 550 VMA Small Volume Oil Circuit Breaker, 100 MVA
- 551 ST 4/60 Three-Pole Contactor  
Rated voltage 6 kV  
Rated current 200 A.
- 571 LV 0.5 Autovalve Lightning Arrester
- 572 LV 0.85 Autovalve Lightning Arrester
- 573 LV 1.5 Autovalve Lightning Arrester
- 574 LV 3n Autovalve Lightning Arrester
- 575 LV 6n Autovalve Lightning Arrester
- 576 LV 10n Autovalve Lightning Arrester
- 577 LV 15n Autovalve Lightning Arrester
- 578 LV 22n Autovalve Lightning Arrester
- 579 LV 30n Autovalve Lightning Arrester
- 580 LV 35n Autovalve Lightning Arrester
- 581  
6 kV Torok Lightning  
Arrester
- 582  
10 kV Torok Lightning  
Arrester
- 583  
22 kV Torok Lightning  
Arrester
- 584  
35 kV Torok Lightning  
Arrester



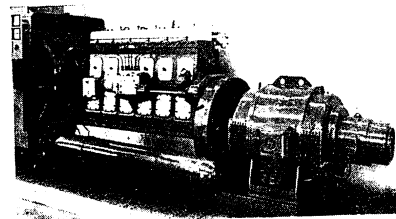
- 591 Diesel Generating Set with Škoda 4S 275 Engine and Generator  
Diesel Generating Set with Škoda 4 S 275 engine and generator. Output 200 kVA (160 kW) 400/231 V, 50 c/s, 500 r. p. m. with switchgear. Consumption 175 gr.  $\pm$  5%, weight 13,500 kg. Used as power source for medium sized industrial establishments.
- 592 Diesel Generating Set with Škoda 6S 350 Engine and Generator  
Output 550 kVA (440 kW), 400/231 V, 50 c/s, 375 r. p. m. with switchgear. Fuel consumption 170 gr  $\pm$  5%. Weight 28,500 kg. Used as power source for larger industrial establishments.
- 593 Škoda, Type 2S 110 Diesel Engine  
Output 30 H. P., 1500 r. p. m., started by hand, consumption 185 gr.  $\pm$  5%. Used for driving of various machinery, such as generators, dynamos, pumps, etc.
- 594 Škoda, Type 3S 110 Diesel Engine  
Output 45 H. P., 1500 r. p. m., pneumatic starting, extended shaft, outer bearing, pulley and radiator on frame. Consumption 185 gr.  $\pm$  5%, weight 815 kg. Used for driving of various machinery.
- 595 Škoda, Type 4SB 110 Diesel Engine  
Output 48 H. P., 1200 r. p. m., electric starter. Consumption 185 gr.  $\pm$  5%, weight 1020 kg. For use with 0.5 cu. m. dredgers.
- 596 Škoda, Type 6S 110 Diesel Engine  
Output 90 H. P., 1500 r. p. m., electric starter and radiator. Consumption 185 gr  $\pm$  5%, weight 1200 kg. Used for driving of generators, dynamos and various machinery equipment.
- 597 Stationary Diesel Generating Set with Škoda 2S 110 Engine and Generator.  
Started by hand, output 20 kVA (16 kW), 1500 r. p. m., 230/127 V, 50 c/s, radiator on frame, switchgear, weight 1200 kg. Used as power source for smaller industrial establishments.
- 598 Stationary Diesel Generating Set with Škoda 3S 110 Engine and Generator  
Pneumatic starting, output 25 kVA (20 kW), 1000 r. p. m., 400/231 V, 50 c/s, radiator on frame, switchgear. Weight 1470 kg. Used as power source for smaller establishments.
- 599 Stationary Diesel Generating Set with Škoda 4S 110 Engine and Generator  
Diesel generating set with pneumatic starter and 32 kVA (25 kW) generator, 1000 r. p. m., 400/231 V, 50 c/s, radiator on frame, switchgear. Weight 1710 kg. Used as power source for smaller establishments.
- 600 Stationary Diesel Generating Set with Škoda 6S 110 Engine and Generator  
Output 50 kVA (40 kW), 1000 r. p. m., 400/231 V, 50 c/s, with radiator on frame and switchgear. Weight 2400 kg. Used as power source for medium sized establishments.
- 601 Slavia, Type D 12 Diesel Engine  
Output 12 H. P., 700 r. p. m., fuel consumption 210 gr.  $\pm$  5%, weight 494 kg. Designed for agricultural purposes. Minimum maintenance.
- 602 Slavia, Type D 15 Diesel Engine  
Output 15 H. P., 650 r. p. m., fuel consumption 210 gr.  $\pm$  5%, weight 705 kg. Designed for agricultural purposes. Minimum maintenance.
- 603 Škoda, Type 1S 110 Diesel Engine  
Output 15 H. P., 1500 r. p. m., started by hand. Fuel consumption 200 gr.  $\pm$  5%, weight 400 kg. Used for agricultural purposes and machinery drive.
- 604 Stationary Diesel Generating Set with Škoda 1S 110 Engine  
Started by hand. Output 10 kVA (8 kW), 400/231 V, 50 c/s, radiator and switchgear on common frame, weight 870 kg. Used as power source for smaller establishments.
- 605 T 60 3-B ZG 62 Mobile Petrol-Electric Generating Set with Generator  
With Tatra petrol engine and 15 kVA (12 kW), 380/20 V, 50 c/s, generator, 1500 r. p. m. Weight 875 kg. Used for outdoor assembling jobs, building sites, and the like.
- 606 Slavia, Type D 5 Diesel Engine  
Diesel engine output 5 H. P., 900 r. p. m., fuel consumption 210 gr.  $\pm$  5%, weight 265 kg. Used in agriculture. Minimum maintenance.
- 607 Slavia, Type D 8 Diesel Engine  
Diesel engine output 8 H. P., 800 r. p. m., fuel consumption 210 gr.  $\pm$  5%, weight 355 kg. Used in agriculture. Minimum maintenance.

- 608 Slavia, Type 2 S 115 A Diesel Engine**  
Output 27 H. P., 1 500 r. p. m., fuel consumption 205 gr.  $\pm$  5%, weight 750 kg. Extended shaft, clutch, pulley, electric starter on common frame. Designed for agriculture and industry.
- 609 Slavia, Type 1 S 100 A Diesel Engine**  
Output 9 H. P., 1 500 r. p. m., radiator, fuel consumption 205 gr.  $\pm$  5%, weight 295 kg. Used in industry — for driving alternators, dynamos, pumps, etc.
- 610 Stationary Diesel Generating Set with Slavia 1 S 100 A Engine and Generator**  
Stationary Diesel generating set with Slavia 1 S 100 A engine and generator. Output 7.5 kVA (6 kW), 1 500 r. p. m., 400/231 V, 50 c/s, radiator and switchgear on frame. Weight 635 kg.  
Used as power source for smaller establishments.
- 611 Stationary Diesel Generating Set with Slavia 2 S 100 A Engine**  
Electric starter, 15 kVA (12 kW) generator, 1 500 r. p. m., 400/231 V, 50 c/s, radiator and switchgear on frame, weight 750 kg.  
Used as power source for smaller establishments



- 612 Mobile Diesel Generating Set with Slavia DR 27 Engine and Generator**  
Electric starter and generator, output 20 kVA (16 kW), 1 500 r. p. m., 400/231 V, 50 c/s with radiator and switchgear, mounted on unsprung chassis with bonnet, disc wheels and tyres. Weight 1 400 kg.  
Used as power source in building trade, and the like.

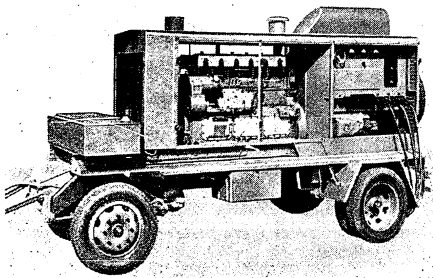
- 613 Škoda, Type 4 SB 160 Diesel Engine**  
Output 90 H. P., 750 r. p. m., pneumatic starting. Fuel consumption 180 gr.  $\pm$  5%, weight 2 800 kg.  
For use with 1,5 cu. m. dredgers.
- 614 Škoda, Type 6 S 160 Diesel Engine**  
Output 135 H. P., 750 r. p. m., pneumatic starting, radiator, extended shaft, clutch, bearing and pulley on frame, Fuel consumption 180 gr.  $\pm$  5%. Weight 4 400 kg.  
For use with boring and various machines.
- 615 Škoda, Type 8 S 140 R Diesel Engine, Output 228 H. P., 1,500 r. p. m.**  
Diesel engine with electric starter. Fuel consumption 185 gr.  $\pm$  5%. Weight 2 700 kg.  
Used for driving various machinery, such as pumps, alternators, etc.
- 616 Stationary Diesel Generating Set with Škoda 4 S 160 Engine and Generator**  
Pneumatic starter, generator. Output 75 kVA (60 kW), 750 r. p. m., 400/231 V, 50 c/s, with radiator on frame and switchgear. Weight 3 900 kg.  
Used as power source for medium sized industrial establishments.
- 617 Stationary Diesel Generating Set with Škoda 6 S 160 Engine and Generator**  
Stationary Diesel generating set for pneumatic starting, with generator. Output 100 kVA (80 kW), 750 r. p. m., 400/231 V, 50 c/s, radiator on frame, switchgear. Weight 5 000 kg.  
Used as power source for medium sized establishments.



- 618 Stationary Diesel Generating Set with Škoda 8 S 160 Engine and Generator**  
With pneumatic starter and generator. Output 125 kVA (100 kW), 750 r. p. m., 400/231 V, 50 c/s, with radiator and switchgear. Weight 6 100 kg.

**619 Mobile Diesel Generating Set with Škoda 6R 140 Engine and Generator**

With electric starter and generator. Output 125 kVA (100 kW), 400/231 V, 50 c/s, with switchgear and radiator on motor car chassis, braking device and bonnet. Weight 6 000 kg. Used for outdoor assembling jobs and building sites.

**620 BD 1 S 72 A Petrol Engine**

Output 5.3 H. P., 230 r. p. m., weight 45 kg. Used for driving of various small machinery equipment, such as pumps, etc.

**621 Bd 1 S 50 A Petrol Engine**

Output 1.6 H. P., 300 r. p. m., weight 15 kg. Used for driving of various small machinery equipment, such as pumps, etc.

**622 Mobile Petrol-Electric Generating Set with BD 1 S 72 Engine and Generator**

Output 2.5 kW, 300 r. p. m., 220/231 V, 50 c/s, with switchgear and cables, all on two wheel chassis with bonnet and tyres. Weight 311 kg. Used as power source for small establishments.

**623 Stationary Petrol-Electric Generating Set with BD 1 S 72 A Engine and Generator**

Output 2.5 kW, 3 000 r. p. m., 220/380 V, 50 c/s, with switchgear on frame. Weight 170 kg. For use in small establishments.

**624 Škoda, Type 6L 275 Marine Diesel Engine**

Output 323 H. P., 412 r. p. m. (reduction to 300 r. p. m.), with control table, fuel consumption 175 gr.  $\pm$  5%. Weight 12 000 kg. Used for ships.

**625 Type 6L 160 Škoda Diesel Engine**

Output 135 H. P., 750 r. p. m., with double piston cooling pump. Fuel consumption 180 gr.  $\pm$  5%. Weight 2 750 kg. Suitable as a marine Diesel engine.

**Type PDH 25 N Blower**

Volume of sucked air 2 500 cu. metres per hour. Filling pressure 1.35 atm. Weight 195 kg. Application: Used to increase the normal output of the Diesel engine to 270-400 H. P. The main parts of the blower are exhibited.

**626 Type 4 L 160 ŠKODA Diesel Engine**

Output 90 H. P., 750 r. p. m., with double piston cooling pump. Fuel consumption 180 gr.  $\pm$  5%. Weight 2 200 kg. Suitable as a marine Diesel engine.

**627 3 L 110 ŠKODA Diesel Engine**

Output 45 H. P., 1 500 r. p. m., with double piston cooling pump. Fuel consumption 185 gr.  $\pm$  5%. Weight 780 kg. Suitable as a marine Diesel engine.

**628 Type 12 V 170 DR CAD Diesel Engine**

Output 410 H. P., 1 360 r. p. m., V cylinder arrangement. Water cooled. Fuel consumption 170 gr.  $\pm$  5%. Weight 2 600 kg. Also suitable as a marine Diesel engine.

**629 Filament Set for Short Time Transmitters**

The set consists of a d. c. A 5022-6 shunt dynamo. The dynamo is designed for 70 kW output, 2 000 A current, 1.5-35 V voltage and a speed of 730 r. p. m. The dynamo is driven by a slip ring induction motor of MSRL 208i type, with firm Db, Ho brushes. Output 85 kW, 740 r. p. m., voltage 380 V.

**631 Commutator Dynamometer**

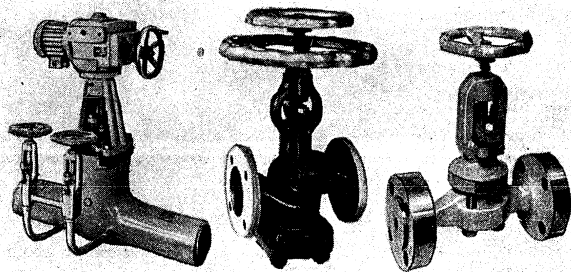
The commutator type dynamometer is basically a stator fed variable speed polyphase commutator motor. The stator of the dynamometer has a winding like a conventional induction motor.

Height power factor in the whole regulating range can be obtained through a special connection of compensating condenser (Czechoslovak patent). The r. p. m. characteristic of the dynamometer is of shunt type, i. e. the dynamometer speed varies only a little with the load,

CZECHOSLOVAK ECONOMIC BULLETIN informs commercial circles and persons interested in this line on the trade relations of the Czechoslovak Republic with all countries of the world and its building up. Published monthly by the Chamber of Commerce of Czechoslovakia.

thus enabling easy measurement. The dynamometer can be operated as a braking generator or as a driving motor.

The motor run can be changed into generator run without shutting down the equipment. For instance if the dynamometer is used for running idle and internal combustion engine, it can act as a braking generator as soon as the fuel is introduced in the combustion chamber of the internal combustion engine.



**641 Gate Valve, Nominal Pressure 10, Dia. 200**

Hydraulic control. Water, oil or air remote-controlled. Hydraulic drive is supplied including the respective fittings and union pipes. Types are available for mounting to the floor.

**642 Gate Valve with Electric Drive on Lid, Nominal Pressure 6, Dia. 150.**

**643 Gate Valve with Electric Drive on Lid, Nominal Pressure 10, Dia. 130**

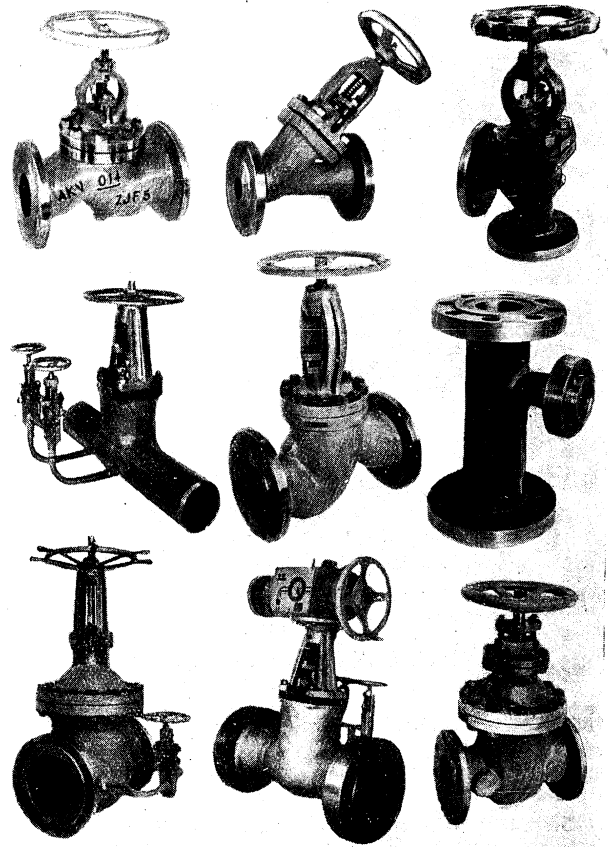
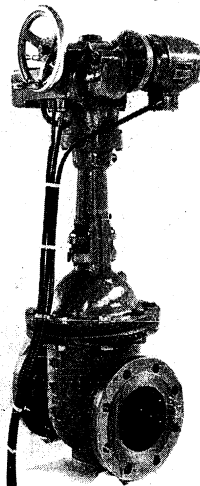
**644 Gate Valve with Electric Control on Strap, Nominal Pressure 10, Dia. 130**

Electric drive. Controlled from one operator's post. Gate valves are available with electric drive mounted on a pillar.

**645 Gate Valve, Nominal Pressure 6, Dia. 100**

**646 Gate Valve, Nominal Pressure 6, Dia. 250**

Grey cast-iron gate valves for cold water user for water installations and central heating.



Fittings for all kinds of various pressures and temperatures for various industrial branches will be supplied by the sole exporter.



**647 Gate Valve with Stuffing Box, Dia. 150**

Gate valves with stuffing boxes are used whenever volatile and harmful liquids should be prevented from escaping.

**648 Cross-Section on Gate Valves Welded of Pressed Parts, Nominal Pressure 16, Dia. 30**

The advantage of gate valves is their light weight which is especially important for some chemicals.

**649 Cross-Section of Double-Seat Plunger Type Gate Valve, Dia. 150**

The double-seat plunger type gate valve, nominal pressure 10, controls and regulates the water level in reservoirs.

**650 Cross-Section of Swing Check Valve with Hot Water Bypass, Dia. 150**

Swing Check Valves are designed for damping of reverse impacts in horizontal piping. The bye-pass is used for filling or draining of the connected pipes. Smooth closing is ensured by means of various pistons which are supplied with the swing check valves.

**651 Gate Valve, Nominal Pressure 6, Dia. 80 — Cross-Section**

Cross-section of the cast-iron gate valve showing the wedge shutter.

**652 Stuffing Box Compensator, Dia. 100 — Cross-Section**

Cross-section of the stuffing box compensator, nominal pressure 10, used for levelling of piping dilatations.

**653 Strap-Type Stop Valve, Nominal Pressure 40, Dia. 25****654 Strap-Type Stop Valve, Nominal Pressure 40, Dia. 65**

Strap-type stop valves, nominal pressure 40, with flanged ends are available for various temperatures and media.

**655 Direct Stop Valve, Nominal Pressure 16, Dia. 25****656 Direct Stop Valve, Nominal Pressure 16, Dia. 80**

Direct cast-iron stop valves with flanged ends, nominal pressure 16 are supplied with or without stuffing boxes

**657 Non-Return Valve, Nominal Pressure 16, Dia. 80**

Horizontal piping non-return valve, nominal pressure 16, direct or angle type, flange connected.

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**STROJEXPORT****658 Safety Valve with Weights, Nominal Pressure 40, Dia. 25****659 Safety Valve with Weights, Nominal Pressure 64, Dia. 40**

Low lift safety valves with weights, angle type for nominal pressures of 16—100.

**660 Spring Safety Valve, Nominal Pressure 16, Dia. 50****661 Spring Safety Valve, Nominal Pressure 16, Dia. 100****662 Spring Safety Valve, Nominal Pressure 40, Dia. 32**

Low lift spring safety valves with flanged, socket or screwed ends with atmospheric blow-off, or with outlet flange.

**663 Spring Safety Valve, Stainless, Nominal Pressure 16, Dia. 50**

Low lift spring safety valve, nominal pressure 16, stainless, designed for corrosive chemicals.

**664 Spring Reducing Valve, Nominal Pressure 160, Dia. 50/80****665 Self-Stop Valve, Nominal Pressure 16, Dia. 25****666 Feed Valve, Nominal Pressure 100, Dia. 150**

The feed valve provides automatic feed control with electric drive.

**667 Double Safety Valve with Weights, Nominal Pressure 100, Dia. 65****668 Reducing Valve, Nominal Pressure 16, Dia. 150/300**

Spring weight reducing valve, dia. 150/300, nominal pressure 16, with water cooled diaphragm for steam.

**669 Reducing Valve, Nominal Pressure 16, Dia. 150/300 with Steam Weight**

Steam weight reducing valve, direct with water cooled diaphragm for steam.

**670 Direct Stop Valve, Stainless, Nominal Pressure 16, Dia. 50****671 Direct Stop Valve, Stainless, Nominal Pressure 16, Dia. 200****672 Angle Type Valve, Stainless, Nominal Pressure 16, Dia. 50****673 Oblique Valve, Stainless, Nominal Pressure 16, Dia. 50**

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**STROJEXPORT**

**674 Direct Stop Valve, Stainless, Nominal Pressure 16, Dia. 32**

Direct, angle type or oblique stop valves, made of stainless materials are designed for corrosive chemicals.

**675 Blow-Down Valve, Dia. 15****676 Blow-Down Valve, Dia. 25 (50 L 4, 100)****677 Blow-Off Valve, Dia. 40 (50 KS 5, 100)**

Blow-down and blow-off valves are designed for permanent or periodic blowing-off of steam boilers.

**678 Steam Traps, Nominal Pressure 100, Dia. 25****679 Steam Traps, Nominal Pressure 250, Dia. 25**

Gate valve or valve system steam traps.

**680 Inspection Sight-Windows, Stainless****681 Inspection Sight-Windows, Bronze****682 Inspections Sight-Windows, Aluminium**

Inspection sight-windows are made from different materials for various active chemicals.

**683 Valve K 6****684 Valve T 6****685 Valves with Hard Rubber Lining, Dia. 50**

Valves with hard rubber lining are designed for sulphuric acid and other suitable chemicals.

**686 Valve made of non-ferrous metal, Dia. 50-5716****687 Reversing Valve, Stainless (angle shaped), Dia. 150**

Intended for special chemical purposes.

**688 Stop Valve, Nominal Pressure 100, Dia. 10****689 Stop Valve, Nominal Pressure 250, Dia. 10****690 Stop Valve, Nominal Pressure 64, Dia. 25****691 Stop Valve, Nominal Pressure 200, Dia. 25**

Small stop valves with spring mounted spindle for identical pressures.

**692 Stop Valves with Unsprung Spindle**

Small stop valves with spring mounted spindle for identical pressures.

**693 Reflexion Water Level Indicator**

The reflexion water level indicators show the water level in the steam boiler. They are supplied with valve or cock heads, double or inclined.

**694 Water Gauge Glass/Mica**

Glass/Mica water gauges with relief glass are designed for overpressures of 90 and 125 atm. Also available with coloured indicator.

**695 Pressure Gauge Valve, Nominal Pressure 40, Dia. 15****696 Feed Head, Nominal Pressure 40, Dia 50****697 Non-Return Ammonia Valve, Nominal Pressure 40, Dia. 15****698 Non-Return Ammonia Valve, Nominal Pressure 25, Dia. 100****699 Direct Ammonia Stop Valve, Nominal Pressure 25, Dia. 40****700 Direct Ammonia Stop Valve, Nominal Pressure 25, Dia. 100**

Non-return and ammonia stop valves, nominal pressure 25, special direct or angle types.

**701 Model of a Power Plant****702 Model of a Reducing Station****703 Weld End Valve, Nominal Pressure 160, Dia. 65 — Cross-Section**

Cross-section of the weld end valve with air-tight cover and welded sockets.

**704 Stop Valve, Nominal Pressure 250, Dia. 8 - Cross-Section****705 Weld End Stop Valve, Nominal Pressure 250, Dia. 8****706 Flange End Stop Valve, Nominal Pressure 250, Dia. 15****707 Flange End Stop Valve, Nominal Pressure 250, Dia. 25****708 Flange End Stop Valve, Nominal Pressure 250, Dia. 40****709 Flange End Stop Valve, Nominal Pressure 250, Dia. 65****710 Non-Return Vertical Valve with automatic side relief at minimum load, Nominal Pressure 100, Dia. 80**

Suitable for vertical pipes.

**711 Non-Return Horizontal Valve, Nominal Pressure 160, Dia. 65**  
Non-return valve designed for horizontal high-pressure piping.

**712 Weld End Gate Valve, Nominal Pressure 160, Dia. 200**

**713 Weld End Gate Valve, Nominal Pressure 160, Dia. 65**  
High-pressure weld end gate valves for steam, nominal pressure 160, with pressure-tight cover for steam 575° hot.

**714 Gate Valve for Flange Connection with electric drive, Nominal Pressure 160, Dia. 200**

High-pressure gate valve for flange connection, nominal pressure 160, electrophone controlled.

**715 Gate Valve, Nominal Pressure 40, Dia. 80**

**716 Gate Valve, Nominal Pressure 40, Dia. 200**

Standard wedge type cylindrical gate valves for nominal pressure of 40 and various working conditions. Available with straps or cover.

**717 Bye-Pass Gate Valve, Nominal Pressure 64, Dia. 350**

Wedge type bye-pass gate valve, nominal pressure 64.

**718 Crude Oil Socket Slide Valve, Dia. 2"**

**719 Crude Oil Flange Slide Valve, Dia. 3"**

Crude oil slide valves are of special design.

**720 Gas Gate Valve with elastic gland**

Divided wedge gate valve with elastic glass gland.

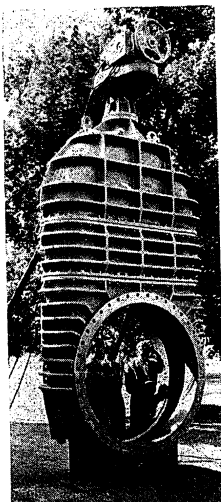
**721 Gate Valve with electric drive, Dia. 800**

**722 Nominal Pressure 2.5, Dia. 2 000 Gate Valve with electric drive,**

Gate valves large in dia., for water or gas, with rack and pinion and electric drive, remote-controlled.

**723 Swing Check Valve, Nominal Pressure 64, Dia. 300**

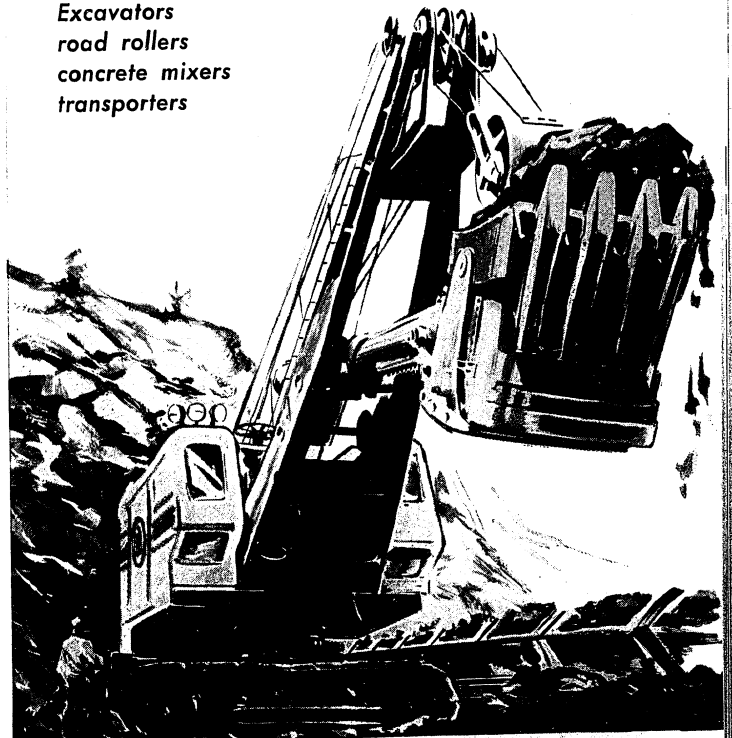
Swing check valve, nominal pressure 64, for damping of reverse impacts in horizontal piping. Various types of bye-pass and piston swing check valves are available.



# EXCAVATOR

Excellent in work, backed by the Škoda reputation

*Excavators  
road rollers  
concrete mixers  
transporters*



*all types of cranes  
bridges  
factory hall constructions  
cableways  
new machines  
for the building trade*

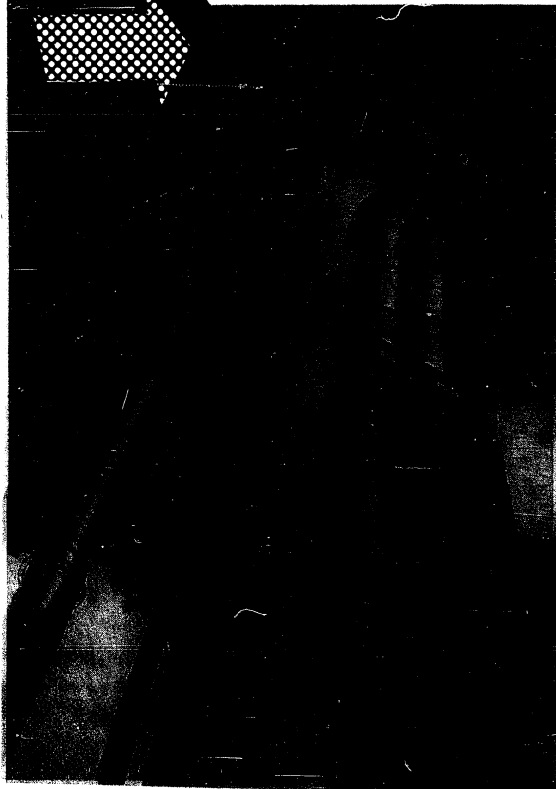
Sole exporter:

**STROJEXPORT**

PRAHA  
CZECHOSLOVAKIA

## PRODUCTS of the Czechoslovak Heavy Engineering

Represented by the names of ŠKODA, ČKD, Vitkovice Iron Works, First Brno Engineering Works, Královo Pole Engineering Works, Přerov Engineering Works, Transporta, Komárno Shipyard, Electrical Engineering Works, etc. Products of these marks are supplied to all parts of the world.



### 724 Stuffing Cock, Nominal Pressure 10, Dia. 100

### 725 Three-Way Stuffing Cock, Nominal Pressure 10, Dia. 100

Stuffing cocks, nominal pressure 10, are available in various types — direct, three-way and multiple-way stuffing cocks — and for various connections: screwed, socket, flange or combined. Stuffing cocks are made of different materials for various media.

### 726 Suction Basket, Nominal Pressure 10, Dia. 150

The suction basket ensures pumping of pure water and maintains the required water column.

### 727 Stand with Opening Indicator

The stand with opening indicator is fitted above the floor, and serves for the control of fittings and shows the lift opening.

### 741 Radiators

for hot water or low-pressure steam heating are supplied of 100, 150 and 200 mm in depth and 300, 500 and 1 000 mm in height.

### 742 Sectional Cast Iron Boilers

for hot water and low-pressure steam for central heating boiler houses or hot service water for kitchens and bathrooms. There are boilers available of 0,9 to 53 sq. metre heating area and 10 800 to 424 000 kcal output. The boilers are used for heating flats, floors, offices, cafés, restaurants, cottages, stores and factories.

### 743 System SLATINA Automatic Low-pressure Boilers

are highly economical boilers used for central heating. Their grates are suitable even for inferior industrial fuels which are burned up to 80 % without any fumes whatsoever. The high capacity of these boilers varies between 75 and 80 % according to the granulation, contents and properties of ashes. The boilers are also equipped with air supply regulators for steam or hot water control.

### 751 Z Variators

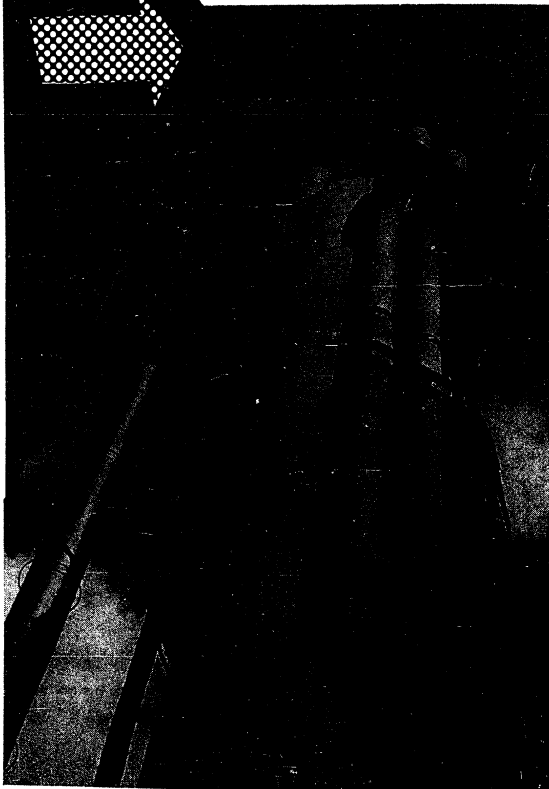
are mechanical devices by means of which the number of revolutions may be maintained at any given rate even at variable load. Precision manufactured parts, made of high-grade material ensure smooth and trouble-free operation. Variators which are easy to operate, are available in various types and sizes.

From the periodical CZECHOSLOVAK FOREIGN TRADE you can learn about the products you have not seen at the exhibitions. The periodical appears three-times a year in six languages and contains information on the export products of all branches of the Czechoslovak industry.

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**STROJEXPORT**

**752 Gearboxes**

are used for transmitting the torque at the simultaneous change of the number of revolutions. Gearboxes are supplied for various industries, such as for mines, foundries, steel works, engineering works, cement works, etc.

**761 F20 HONM Shearing Coal Cutting Machine**

Suitable for drivages in coal and inclines up to 28°. Approximate size: 4 500 X 1 200 X 700 mm.

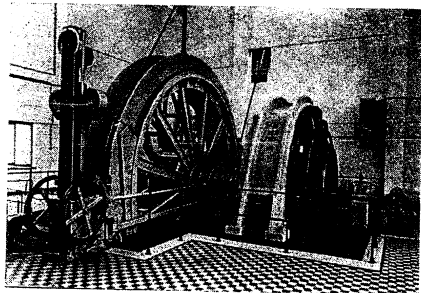
Principal features:

- a) Easy Control
  - b) Low Height
  - c) Automatic Travel and Cutting Head Rotation
  - d) Mechanical Feeds
- Sucked air consumption 45-50 cu. metres per hour/1 H. P.  
 Cutting chain motor 20 H. P.  
 Travelling mechanism motor 10 H. P.  
 Mechanical feed motor 1 H. P.  
 Weight of the machine 2 500 kg

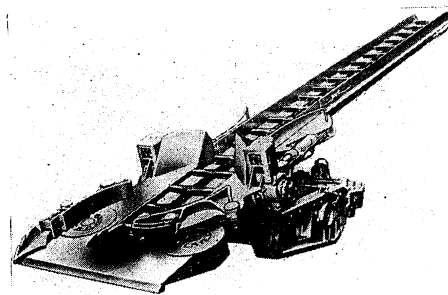
**762 Shovel Loader NL 12 V**

The machine is used for preparatory work in mines, tunnels, etc. The mineral handled may be of various kind, either in grains or lumps of 30 X 30 X 30 cm.

- Dimensions of loader 1 890 X 1 120 X 1 240 mm
- Output of loader per hour 40 cu. metres
- Capacity of shovel 0,12 cu. metre
- Air consumption for 1 motor per hour 320 cu. metres as required
- Gauge as required
- Approximate weight 2 200 kg



**763 Double Drum Winding Machine B 3508** *CRD Slamm*  
 Dia. of drum 3 500 mm. 250 kW electric motor. Speed control. The mine hoist with cage is 17 metres high.

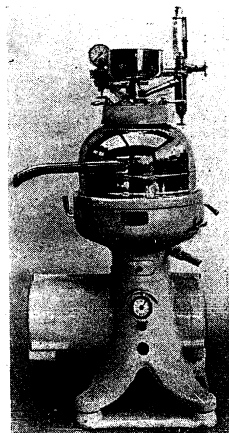


**764 Praga NJ 8-11 Loader**

- Net weight of loader 5 500 kg
- Maximum length of loader 7,55 metres
- Maximum height of loader 1,70 metre
- Maximum width of loader 1,74 metre
- Maximum loading height 175 mm
- Maximum loading height 3 metres
- Clearance above rear axle 1,4 metre
- Driving motor electric explosion motor
- Voltage 380-500 V/50 c/s
- Motor output 20 H. P.
- Normal Loader capacity in loose material 90 tons per hour
- Maximum loader capacity in loose material 120 tons
- Travelling speed, forward- 1 1,13 km per hour
- reverse 11 3,54 km per hour

**781 PD 300 Plate Type Milk and Cream Pasteurizer**

Output 3 000 litres per hour. The working plates and other fittings coming in contact with milk are of stainless steel. The packing is of special rubber and other parts are made of steel or cast iron.



**782 SMF 5 Cream Separator**

Output 5 000 litres per hour. It is designed for cream separation, milk purification and equalisation, i. e. for regulating fat contents of milk immediately after de creaming.

**784 Type PS 8 Rotary Filling Machine**

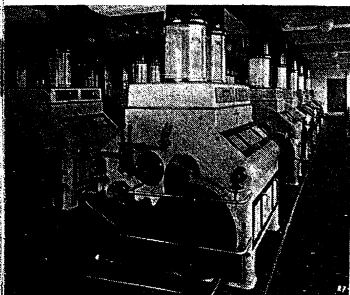
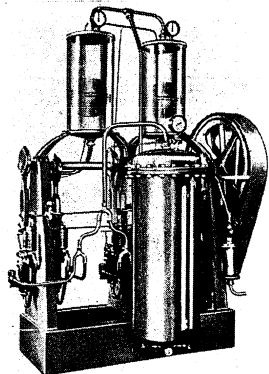
The machine is designed for filling bottles with soda-water and lemonade. It is suitable for maximum 0,5 liter bottles, 75 mm in dia. and 260 mm in height. Output: 700—1 200 bottles per hour.

**785 Automatic Vacuum Carbonator IS 2**

The automatic vacuum carbonator is designed for the manufacture of soda-water, i. e. water saturated with carbon dioxide (CO<sub>2</sub>). Output 900 litres per hour.

**791 NAMA Automatic Bottle Filling Plant**

The plant is designed for filling bottles with lemonade, soda or mineral water at a rate of 6 000 bottles per hour. In addition the bottles are washed, dosed and crowned. The plant, consisting of various machines, is suitable for all kinds of bottles. Maximum dimensions of bottles: 90x270 mm. Minimum dimensions of bottles: 60x240 mm. Approximate input 20 kW.



**801 Four Roller Mill with mechanical discharging equipment, Type M**

Diameter and length of rollers 250x1 000 mm  
 Output 60—70 kg of wheat on 1 decimetre roller length  
 Input (for wheat grinding) 0,3—0,4 kW on 1 decimetre roller length  
 (for rye grinding) 0,6—0,7 kW on 1 decimetre roller length

**802 Pneumatic Flour and By-product Conveyance in a Mill**

Diameter of piping 70/76 metal  
 60—70 kg of wheat on  
 Diameter of separators 250 mm metal  
 300 mm glass  
 Packing dia. 200 mm, length 160 mm

**Brick-Making Set**

The set produces full and hollow bricks and prepares materials for stamping of tiles on turntable presses. The described layout is especially suitable for the production of thin bricks and tiles where careful processing and preparation of material is required. Brick-making sets consisting of machines for various outputs corresponding to the properties of various clays, individual machines and complete brickwork equipment are supplied. Approximate output 3 500—4 500 pces. per hour. The set includes:

**811 The Box Feeder**

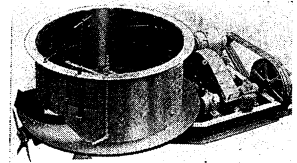
3 chambers, 90x100x500 cm for uniform feeding of clay, including electric motor.

**812 The Edge Mill**

2 wet process milling tracks with light-weight runners and electric motor.

**813 The Tray Mixer**

tray dia. 2 500 mm, for mixing of materials coming from the edge mill, including electric motor.

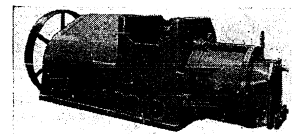


**814 The High-Speed Rollers**

differential roller speeds, roller dia. 800 mm, width 600 mm, including 2 electric motors.

**815 The Vacuum Worm Press, Type 450 LiSV**

with single-shaft mixer, especially suitable for pressing thin ware, including vacuum pump and electric motor for both the press and the pump.

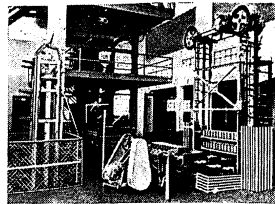


**816 The Automatic Cutting and Conveying Equipment**

designed for cutting and automatic conveying of the goods into the multistage truck. Output 5-7 thousand pcs. per hour.

**817 The Multistage Truck** receiving the goods from the loader or automatic cutting equipment.

**818 The Electric Bogie** by means of which the multistage



trucks are conveyed from the moulding room into the drying room.

**831 Jaw Crusher, Type V-3-2-N**

Size of mouth 320/200 mm  
Output per hour in cu. metres with a gap of 60 mm 4-6  
Required input 9-10 H. P.  
Approximate weight 1 750 kg

**832 Jaw Crusher, Type V-4-2-N**

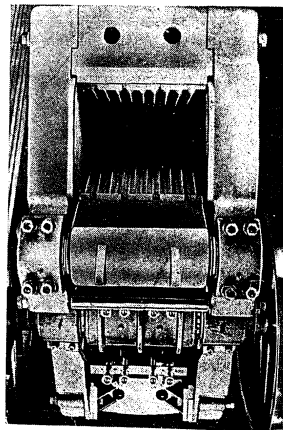
Size of mouth 400/250 mm  
Output per hour in cu. metres with a gap of 60 mm 6-9  
Required input 13-15 H. P.  
Approximate weight 3 300 kg

**833 Jaw Crusher, Type V-5-2-N**

Size of mouth 500/320 mm  
Output per hour in cu. metres with a gap of 60 mm 10-15  
Required input 20-25 H. P.  
Approximate weight 5 200 kg

**834 Jaw Crusher Type V-6-2-N**

Size of mouth 9 600 kg  
Output per hour in cu. metres with a gap of 60 mm 16-24  
Required input 32-40 H. P.  
Approximate weight 640/400 mm

**835 Mobile Crushing and Sorting Set, Type MPV-4**

The set is used for crushing and sorting any kind of stone. Its application is of extraordinary advantage in places far from any communication. The material is crushed into three fractions and delivered into the truck by means of conveyor belts which are included in the accessories.

The crusher, sorter, fan and belt conveyors are driven by a Diesel engine of 27 H. P. capacity.

Output of the set 6-8 cu. metres per hour  
Approximate weight 8 000 kg

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**STROJEXPORT****836 Vibrating Screen, 500/1500 mm**

Width of screen 500 mm  
Length of screen 1 500 mm  
Approximate required input 2 H. P.  
The machine may be supplied with one, two, three or four screens.  
Approximate weight 750 kg

**837 Screening Drum, 900 mm in dia.**

Diameter of screen 900 mm  
Length of screen 4 500 mm  
Output for gravel 10-15 cu. metres per hour  
Required input 2 H. P.  
Approximate weight 1 500 kg

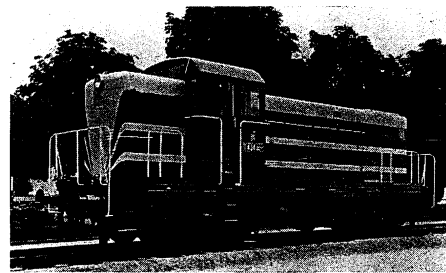
**838 Laboratory Crushing Mill, Type MK 380**

The laboratory crushing mill is used for crushing minerals and laboratory tests. It is also suitable for lime-kilns, gravel-pits, cement factories, etc.

Diameter of rotor 380 mm  
Width of rotor 730 mm  
Speed 900 r. p. m.  
Approximate output 300-2 000 kg per hour  
Weight 500 kg

**851 1435 BH 150 Shunting Diesel Locomotive**

Gauge 1 435 mm  
Axle system B  
Maximum speed 40 km per hour  
Speed 150 H. P.  
Adhesion weight 24 tons

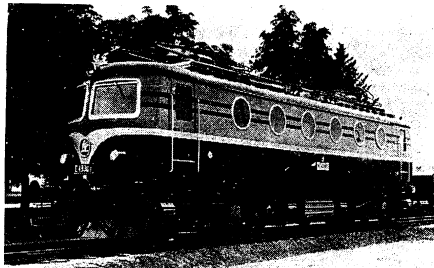
**852 T 434,0 Shunting and Line Diesel-Electric Locomotive**

Gauge 1 435 mm  
Axle system Bo'Bo'  
Maximum speed 70 km per hour  
Engine output 700 H. P.  
Adhesion weight 63,6 tons

87

**STROJEXPORT**



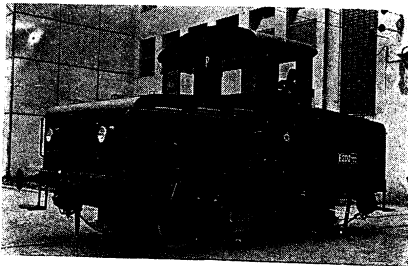


**853** ✓ E 499.0 Electric Universal Overhead Wire Locomotive

Gauge	1 435 mm
Axle system	Bo' Bo'
Maximum speed	120 km per hour
Voltage	3 000 V d. c.
Permanent output	2 000 kW
Adhesion weight	89 tons

**854** 150 T Electric Open Cast Mine Locomotive

Gauge	1 435 mm
Axle system	Bo+Bo+Bo
Maximum speed	65 km per hour
d. c. voltage	1 500 V
Output	1 500 kW
Adhesion weight	150 tons



**855** E 202.1 Industrial Electric Accumulator Locomotive

Gauge	1 435 mm
Axle system	Bo
Maximum speed	60 km per hour
Voltage	300 V
Output	80 kW
Weight	24 tons

CZECHOSLOVAK HEAVY INDUSTRY scientific and technical monthly  
for engineering and heavy industry.

**856** Coke-Plant Three-Phase Electric Locomotive

Gauge	1 435 mm
Maximum speed	7 km per hour
a. c. voltage	500 V
Output	80 kW
Weight	17,6 tons

**857** ✓ Diesel-Electric Track Locomotive T 47.0

Gauge	750 mm
Axle system	Bo' Bo'
Maximum speed	40 km per hour
Output	350 H. P.
Adhesion weight	32 tons

**858** Industrial Steam Locomotive 900 BS 290

Gauge	900 mm
Axle system	0-2-0
Maximum speed	30 km per hour
Tractive force	7 460 kg
Weight in full trim	22,9 tons

**859** Open Cast Mine Electric Locomotive

Gauge	900 mm
Axle system	Bo' Bo'
Maximum speed	45 km per hour
d. c. voltage	1 500 V
Output	620 kW
Weight	64 tons

**871** Locomotive Fittings

NVL 9 injector	FSA lubricator
RS 11 injector	FS lubricator
PO mud valve, complete	DV lubricator
LFM X injector	LB lubricator, complete
LFM X changeover valve	D/3 lubricator
LFM X separating valve	BO III oil sprayer
AEY 6 injector	Olva I-II-III sealing devices
Duplex II pressure reducing valve	2 x piston oil distributor
end closing device	č x piston oil distributor
double end closing device	flexible hose
locomotive steam coupling	A-72521 valve
half-coupling for steam heating	B-72522 valve
spray ejector	Ga-72504 valve



**881 T 1 Tramway Car**

The car is driven by four traction motors. Each axle has an independent drive. Two wheel-sets.

Line voltage	600 V
Maximum speed	65 km per hour
Weight of empty car	16 tons

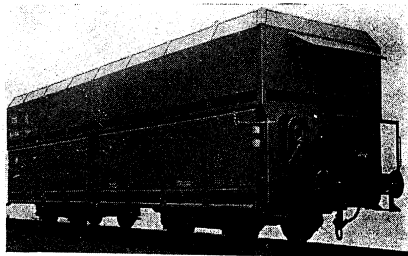
**891 Series Car Eight-wheel Coach**

Number of seats	80
Weight of empty coach	33 tons
Electric lighting system	ERA 48 V

**892 BCa Eight-wheel Coach, Gauge 1435 mm, Knorr Pressure Brake****893 Series M 131.1 Four-wheel Motor Coach**

Tatra twelve-cylinder Diesel engine, air cooled. Capacity 14 825 litres, 1 600 r. p. m.

Weight of empty coach	16 tons
Number of seats	48

**894 Series Wa Eight-wheel Hopper Balast Wagon**

Mechanical side discharge, for coal

Weight of wagon	25 tons
Capacity	47 tons
Cubic capacity	75 cu. metres

The frame and chassis are welded.

**895 Ra Series Tank Wagon**

Used for the transport of minerals and inflammable materials.

Capacity	480 litres
Weight of wagon	21 tons
Maximum load	43 tons

Through-going heating with a heating surface of 32 sq. metres.

90

**STROJEXPORT****896 Vtr Four-wheel Freight Wagon, High-sided**

"Božić" pressure brake. Gauge: 1435 mm.

**897 Otdr Four-wheel Freight Wagon, Low-sided**

Similar to the high-sided freight wagon.

**898 Series Pao Eight-wheel Platform Truck**

40-50 ton loading capacity. The truck corresponds to RIV Standards. Gauge 1435 mm.

**899 Narrow Gauge Dumpcar**

Body capacity	0,75 cu. metre
Gauge	600 mm

**900 Narrow Gauge Dumpcar**

Body capacity	1 cu. metre
Gauge	600 mm

**901 Dumpcar for surface mines and quarries**

Capacity	3,5 tons
Gauge	900 mm

**902 Aluminium Four-wheel Tank Wagon without insulation**

Gauge	1 435 mm
Capacity	200 hectolitres

"Božić" pressure brake.

**Aluminium Four-wheel Tank Wagon, insulated**

Gauge	1 435 mm
Capacity	200 hectolitres

"Božić" pressure brake.

**903 Four-wheel Tank Wagon**

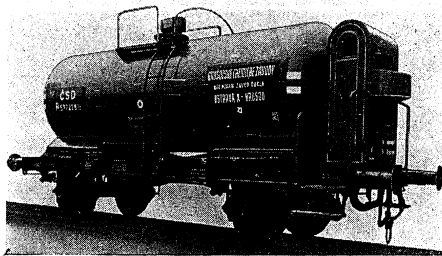
Capacity of tank	240 hectolitres
Weight of wagon	11 tons
Maximum load	20,5 tons

Used for inflammable materials, crude oil and minerals oil (spec. weight 0,87).

*From the periodical CZECHOSLOVAK FOREIGN TRADE you can learn about the products you have not seen at the exhibitions. The periodical appears three-times a year in six languages and contains information on the export products of all branches of the Czechoslovak industry.*

**STROJEXPORT**

91



**904 Four-wheel Tank Wagon**

Capacity of tank 125 hectolitres  
 Weight of wagon 11 tons  
 Maximum load 20 tons

**905 Eight-wheel Dumpcar**

Used for loose materials.

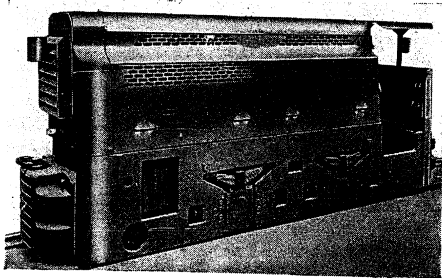
Weight of car 31 tons  
 Maximum load 45,5 tons  
 Capacity 23,5 cu. metres

**906 Mine Car for 12 People**

**907**

**908 Narrow Gauge Dumpcar**

Gauge 600 mm  
 Body capacity 1,75 cu. metre



**911 Stavoloko-Škoda Open Cast Mine Locomotive Type BDN 30**

Output 30 H. P.  
 Gauge 450-600 mm  
 Weight 6 300 kg

**912 Stavoloko-Škoda Open Cast Mine Locomotive Type BND 15**

Output 15-20 H. P.  
 Gauge 450-600 mm  
 Weight 3 800 kg

**913 Type Ald 2 Accumulator Mine Locomotive**

Gauge 600 mm  
 Output 3 kW  
 Speed 4-8 km per hour  
 Number of driven axles 2  
 Accumular battery type 4-K-225, 320 Ah,  
 Weight 40 V lead battery  
 2 100 kg

**914 Explosion-proof Mine Locomotive, Type BVD 35**

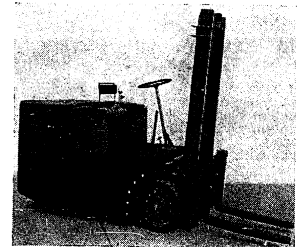
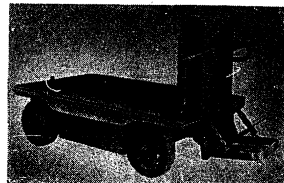
Wheelbase 1 000 mm, gauge 600 mm, tank air pressure 175 atm., approximate radius 6 km, minimum and maximum tractive force 500/700 kg - 1200/1500 kg. Weight 9 000 kg. The locomotive is especially used in mines with explosive gases, emergency degree 2.

**921 Wheels and Axle**

**931 "Dako" Braking Equipment**

**941 High Lift Fork Electric Battery Truck, Type AV 1522**

Lead battery 5K 380  
 Rated capacity 1 500 kg  
 Maximum capacity 1 750 kg  
 Weight 3 260 kg  
 Lift 3 000 mm  
 Hoisting period 60 sec.  
 Fork shifting to the left 100 mm either side  
 to the right 2,5 sec.  
 Forward tilting period 5 sec.  
 Backward tilting period 8 km per hour  
 Maximum speed, fully loaded 500 mm  
 Front axle wheel gauge 500X150 mm in dia.  
 Rear axle wheel gauge 350X100 mm in dia.  
 Driving wheels  
 Steering wheels

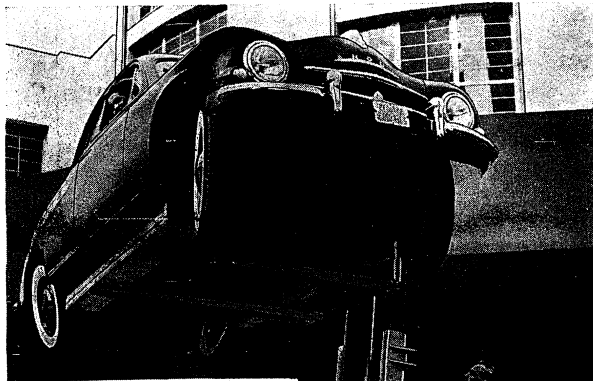


**High Lift Fork Electric Battery Truck, Type AV 1522 with Tilting Basket**

Basket capacity 0,5 cu. metre,  
i. e. about  
1000 kg  
70°  
Maximum basket tilting angle  
The movements of the basket are operated by two hydraulic,  
vertically set rollers.  
Weight of basket 400 kg

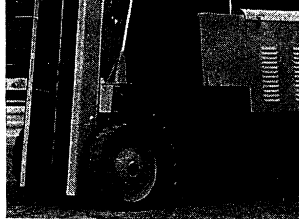
**942 Low Lift Electric Battery Truck, Type AN 1522**

Lead battery 5K 210  
Rated capacity 1 500 kg  
Lift 140 mm  
Hoisting period 10 sec.  
Maximum speed fully loaded 9 km per hour  
Weight with battery 1 530 kg



**943 Platform Battery Truck, Type AP 1522**

Lead battery 5K 225  
Rated capacity 1 500 kg  
Maximum capacity 2 000 kg  
Maximum speed fully loaded 9,5 km per hour  
Weight with battery 940 kg

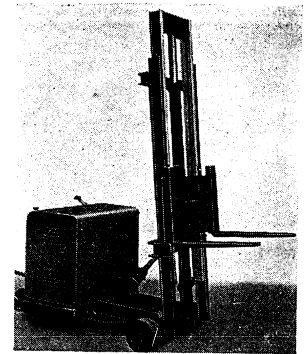


**944 Platform Battery Truck, Type AP 522**

Lead battery 5K 210  
Rated capacity 500 kg  
Maximum speed, fully loaded 12 km per hour  
Weight of truck with battery 640 kg

**945 Electric Battery Pedestrian Hand Operated Truck with Lift Forks, Type AVR 511**

Lead battery 500 kg  
Rated capacity 500 kg  
Travel forward, I speed 2-3 km per hour  
backward II speed 4-5 km per hour  
Lift 3 000 mm  
Weight of truck with battery 900 kg



**946 Electric Battery Pedestrian Hand Operated Truck with Low Lifting Platform, Type ANR 511**

Lead battery 500 kg  
Rated capacity 500 kg  
Travel forward, backward I speed 2-3 km per hour  
II speed 4-5 km per hour  
Lift 140 mm  
Weight of truck with battery 700 kg

**951 Mechanical Shovel with Conveyor, Type MLP 1**

Motor of winding drum 4,4 kW  
Motor of conveyor 0,7 kW  
Speed of rope 0,35 metre per second  
Traction power 500 kg  
Approximate weight 680 kg  
Maximum working distance from the winding drum axle 15 metres  
Output 15-25 cu. metres per hour

**961 Portable Slat Conveyor Type 408**

Maximum load 100 kg  
Conveyor speed 0,35 metre per second  
Motor output 0,27 kW  
Conveyor length 3 980 mm  
Weight 145 kg

**962 Portable Belt Conveyor, Type 426**

Capacity 100 tons per hour, i. e. 35 cu. metres per hour  
Speed of belt 1,4 metre per second  
Motor output 0,7 kW  
Conveyor length 6 810 mm  
Weight 280 kg

**Portable Belt Conveyor, Type 428**

Capacity 400 tons per hour, i. e. 35 cu. metres per hour  
Speed of belt 1,4 metre per second  
Motor output 0,7 kW  
Conveyor length 8 810 mm  
Weight 350 kg

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**963 Wheel Mounted Belt Conveyor, Type 410**

Capacity	80 cu. metres per hour
Speed of belt	1.25 metre per second
Motor output	2.2 kW
Conveyor length	10 metres
Weight	1 260 kg

**Wheel Mounted Belt Conveyor, Type 415**

Capacity	80 cu. metres per hour
Speed of belt	1.25 metre per second
Motor output	3 kW
Conveyor length	15 metres
Weight	1 800 kg

**964 Roller Conveyor**

Length of track	3 000 mm
Rated width of track	800 mm
Diameter of roller	76 mm
Number of rollers per metre	10
Maximum capacity per metre	500 kg
Distance of trestles	1 500 mm

**971 Electric Hoist, Type L III 8**

Capacity	750 kg
Height of lift	10 metres
Speed of lift	10 metres per minute
Intermittent rating of lifting motor	1.8 kW
Speed of travel	35 metres per minute
Intermittent rating of travelling motor	0.4 kW
Weight	210 kg

**972 Chain Pulley-Block**

Capacity	3 tons
Testing load	4 500 kg
Weight incl. 3 metre chain	65 kg
Speed of lift	0.5 metre per minute
Lifting force required	59 kg
Length	875 mm

**973 Double Travelling Carriage, Type D 513**

Carrying capacity	3 tons
Testing load	4 500 kg
Weight incl. 3 metre chain	64 kg

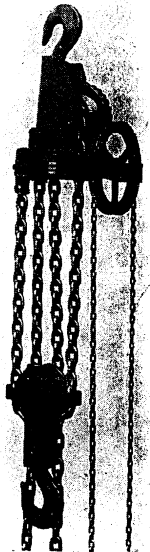
**974 BRANO Pull Lift**

Capacity	2 000 kg
Lift	1 500 mm
Force on lever	35 kg
Speed of lift	0.69 metre per minute
Weight	22 kg

**981 Universal Shovel Excavator D-500**

The excavator is built to dig, swing and dump fast.

Shovel capacity	0.5 cu. metre
Diesel engine	48 H. P.
Weight of excavator	19.9 tons
Length of excavator with shovel	8.5 metres
Height of excavator when towed	3.5 metres



Mines and metallurgical works  
Hydraulic and steam power stations  
Light and heavy chemical industry

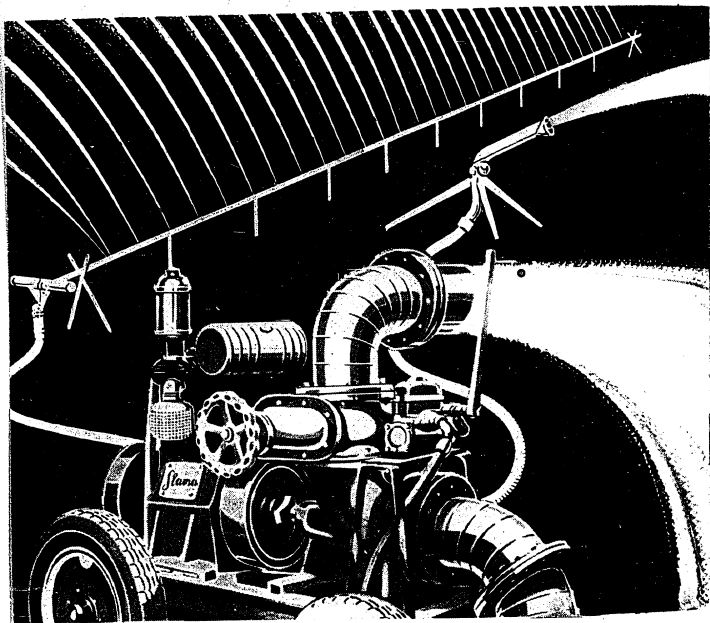
**TECHNOEXPORT**

PRAHA — CZECHOSLOVAKIA

- **Foodstuff industry**  
sugar cane or sugar beet mills, breweries, alcohol distilleries, cooling plants, etc.
- **Building industry**  
cement works, etc.
- **Woodworking industry**  
saw mills, plywood and veneer works
- **Other technical industry**  
textile plants, equipment for the manufacture of rubber and leather boots and shoes, sewing machines, bicycles, motorcycles, etc.

## THOUSANDS of TYPES a single HIGH QUALITY

**SIGMA PUMPS** *for the foodstuffs industry  
for mines, steel mills, construction jobs  
for household applications  
for fuels  
special pumps*



### PUMPS OF ALL KINDS

which have proved their worth everywhere in the course of 90 years.

Supplied exclusively by:

# STROJEXPORT

PRAHA — CZECHOSLOVAKIA



### 982 ✓ Universal Shovel Excavator Ry-1

The excavator is built to dig, swing and dump fast.

Shovel capacity	1 cu. metre
Diesel engine norm./max.	80/96
Weight of excavator	34,800 kg
Width of excavator	3 metres
Height of excavator when towed	3.8 metres



### 991 Road Roller NV7E

Electric starter, Skoda 2S110 Diesel engine, 20 H. P., 1,000 r. p. m., net weight 6 800 kg.

**STROJEXPORT**

**992 Road Roller NV10E**

Electric starter, Skoda 3S110 Diesel engine, 30 H.P., 1 000 r. p. m., net weight 10 000 kg.

**993 Immersion Vibrator PVB 500**

5.5 H.P. petrol engine, 2 flexible shafts, 4 metres in length, 2 vibration heads, 70 mm in dia., 2 vibration heads, 50 mm in dia. Weight 132 kg.

**994 Surface Vibrator Type EVU 250**

With 220/380 V, 925 kW electric motor, 3 000 vibrations per minute. Weight 40 kg.

**995 Immersion Vibrator D 1135**

220/380 V electric motor, 1.1 kW, 50 c/s. Number of vibrations: 3 000 per minute. Approximate weight 60 kg.

**996 Immersion Vibrator PV 500 A**

220/380 V electric motor, 1.6 kW, 7 500 vibrations per minute, approximate weight 68 kg. Flexible shaft 4 metres in length.

**997 Immersion Vibrator IT 1135**

220/380 V electric motor, 1.1 kW, 50 c/s, 8 600 vibrations per minute. Approximate weight 47 kg. Flexible shaft 4 metres long.

**998 Surface Vibrator A535**

220/380 V electric motor, 0.55 kW, 3 000 vibrations per minute, weight 26 kg.

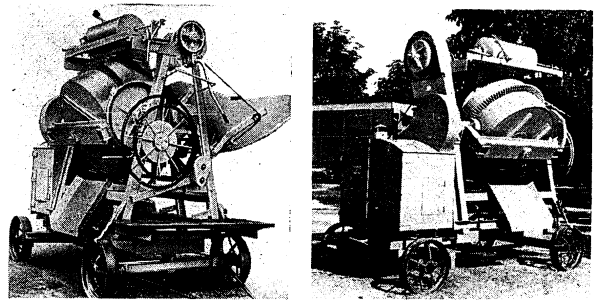
**999 Immersion Vibrator PV200**

220/380 electric motor, 0.5 kW, 8 400 vibrations per minute. Weight 25 kg. Flexible shaft 2.5 metres long.

*Should you be interested in the opening of trade relations with Czechoslovak Glass- or Ceramic works you will acquire the best information on the trade possibilities by regularly following the richly illustrated monthly CZECHOSLOVAK GLASS REVIEW.*

**1000 Special 250 litre Mortar Mixer**

The mixture is mixed in a stable drum where curved blades rotate. The machine is provided with a hopper, and is mounted on a three-wheel bogie. The front wheel can be steered. Weight 1 300 kg; 4.4 kW electric motor drive.



**1001 Concrete Mixer C 250**

A mobile concrete mixer with 220/380 V electric motor. Drum capacity 250 cu. decimetres. Weight 2 700 kg.

**1002 Hollow Block Machine T 1**

Complete, with 2 vibrators and 1 standard mould. 220/380 V electric motor, compressor, conveyor, 40 metres long. Weight 2 450 kg.

**1003 Cement Gun CD 150**

The machine is used in the building trade, for building of bridges and water dams, solidifying of weathered and damaged buildings, reinforcing of mine galleries and adits.

Output up to 200 sq. metres of layer, 2 cm thick, per 8 hours  
 Optimum pressure range 2.5 to 3.5 atm.  
 Maximum pressure 4 atm.  
 Required compressor 4.5 to 5 cu. metres per minute

**1004 Mortar Pump and Plastering Machine OB3**

With compressor and 220/380 V electric motor. Weight including compressor 950 kg.

KOVOEXPORT, Czechoslovak Export Magazine of the Czechoslovak Light and Precision Engineering Industry.

**1005 Construction Steel Bending Machine OS 41**  
 With 220/380 V electric motor. Bending wheel speed: 4 r. p. m.  
 Weight 450 kg.

**1006 Vibrator A1135**

**1007 Surface Vibrator EVU 65**  
 220/380 V. 0.175 kW electric motor. number of vibrations: 3 000  
 per minute. weight 17 kg.

**1008 Surface Vibrator EVU 500**  
 220/380 V. 1.1 kW electric motor. number of vibrations: 3 000  
 per minute. overall weight 65 kg.

**1009 Surface Vibrator EVU 1000**  
 220/380 V. 2.4 kW electric motor. number of vibrations: 3 000  
 per minute. overall weight 96 kg.

**1010 Electric Ram B535**  
 220/380 V. 0.55 kW electric motor. number of strokes: 560 per  
 minute. approximate overall weight 47 kg.

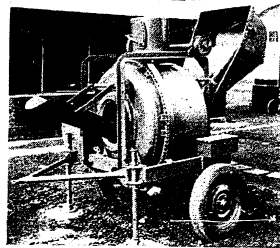
**1011 Rope Conveyor LT-1**  
 For use with TI press. Electric motor drive. 0.4 kW. 220/380 V.  
 dia. of endless rope 12 mm. Overall weight: incl. 20 metre  
 rope: 350 kg. Maximum working length: 80 metres.

**1012 Sectional Transporter DD 800/200**  
 Is used for transport of loose material to greater distances

Max. output	370 tons/h.
Max. transporting distance	200 m
Width of the transport belt	800 mm
Max. speed of the belt	1.25 m/sec.
Min. speed of the belt	1 m/sec.

**1013 Dosing Set DV 110**  
 The set serves for determining of individual fractions of the  
 concrete mixture in 500 litre concrete mixers. The machine is  
 mounted on a two-wheel bogie. It has 4 supports and a shaft.  
 Weight 1 250 kg. Weighing capacity up to 1 000 kg.

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**1014 Concrete Mixer K500**  
 220/380 electric motor.

**1021 A model of the Minia electric revolving bridge supplied to Egypt**

Length	41 metres
Width	12.30 metres
Drive: 2 d. c. electric motors, output 10 kW.	700 r. p. m., 440 V
2 d. c. electric motors, output 8,5 kW,	700 r. p. m., 440 V
Riveted construction	
The bridge revolves by 90° within 1 minute	
Weight 177 tons	



**1022 A model of the bridge across the river Váh, at Púchov, Czechoslovakia**  
 Welded throughout. Length 187 metres

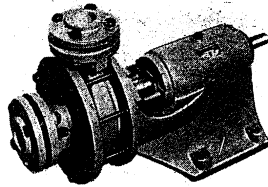
**1023 A model of the Ismailia Canal bridge in Cairo**  
 The bridge was supplied in 1955.

Length	102 metres
Width	30 metres
Weight	570 tons
Welded throughout.	



**1031 CH Centrifugal Pumps**

Special series CH centrifugal pumps are used for pumping of acids, alkaline solutions and other active fluids. Long life and reliable service are ensured by the various materials used for the manufacture of these pumps according to the type of handled chemicals. The pumps are made of cast iron, cast steel, aluminium, lead, bronze, ferroalloys. Rubber-lined spiral casing.



Capacity	50-4 000 litres per minute
Delivery head	3-75 metres
Diameter of branches	40-150 mm

**1032 NZ Centrifugal Sewage Pumps**

These pumps are especially designed for handling sludge, sewage and slush up to a temperature of 80 °C. They provide excellent service on building sites, in paper mills and mines.

Capacity	100-2 500 litres per minute
Delivery head	5-30 metres
Diameter of branches	50-125 mm

**OZ Centrifugal Sewage Pumps**

The OZ spiral casing non-clogging centrifugal pumps are built to handle mechanically or chemically polluted liquids containing heavy concentrations of solids, sludge, sewage and slush. In the sugar industry they are used for pumping of sugar beet pulp, foam and refuse, in paper mills for pumping of paper pulp and cellulose, and in the building trade and other industries they find a wide range of application. The largest type of this pump is used for floating potatoes.

Capacity	1 000-15 000 litres per minute
Delivery head	10-50 metres
Diameter of branches	100-300 mm

**1033 N Spiral Casing Centrifugal Pumps**

The N spiral casing pumps are designed to handle clean water up to the temperature of 80 °C. By reason of their easy design they can also be used for pumping impure water.

Capacity	50-12 000 litres per minute
Delivery head	5-45 metres
Diameter of branches	40-250 mm

Should you be interested in the opening of trade relations with Czechoslovak Glass- or Ceramic works you will acquire the best information on the trade possibilities by regularly following the richly illustrated monthly CZECHOSLOVAK GLASS REVIEW.

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**STROJEXPORT****1034 DELTA Centrifugal Pumps**

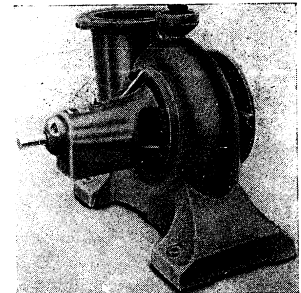
These light-weight pumps of simple design ensure a maximum of economy in operation. They are especially intended for irrigation purposes.

Capacity	150-5 000 litres per minute
Delivery head	5-40 metres
Diameter of branches	40-150 mm

**DE Diagonal Centrifugal Pumps**

These pumps are built for handling a large volume of water at a comparatively low delivery head.

Capacity	2 000-30 000 litres per minute	Delivery head	2-15 metres
		Diameter of branches	200-450 mm

**1035 Q Spiral Casing Centrifugal Pump**

These spiral casing double-entry impeller centrifugal pumps are designed for handling of clean or troubled water without coarse impurities.

Capacity	3 000-40 000 litres per minute
Delivery head	30-120 metres
Diameter of branches	150-500 mm

**1036 TT-V Hot Water Impeller Pumps**

The TT-V pumps are designed for continuous operation under high static pressure corresponding to the water temperature up to 300 °C.

Capacity	150-1 500 litres per minute
Delivery head	160 metres
Diameter of branches	50-125 mm

**1037 UZA-4 Self-priming Pumping Set**

A pumping set of the latest design. Flange connected to the Diesel engine. Mounted on a two-axle chassis.

Capacity	1 500-2 000 litres per minute
Delivery head	15-10-6 metres
Engine output	9 H. P. at 1 500 r. p. m.

Are you interested in Czechoslovak products? CZECHOSLOVAK FOREIGN TRADE, a periodical of the Chamber of Commerce of Czechoslovakia, regularly contains reports on traditional export articles as well as novelties of the Czechoslovak industrial production.

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**STROJEXPORT**

**1038 IRIPA 5 Pumping Unit**

The pumping unit is mounted on a four-wheel truck or welded slide. It is fitted with NG-3a or NG-3 centrifugal pump driven by means of V-belts by a Slavia Diesel engine, 5 H. P., 900 r. p. m.

<b>NG-3a pump:</b> Capacity	600—1 000 litres per minute
Delivery head	16—13 metres
<b>NG-3 pump:</b> Capacity	1 000—2 000 litres per minute
Delivery head	10—6 metres
Diameter of branches	4"

**1039****1040 IRISKO Irrigation Pumping Unit**

DE-200 or ND-5a centrifugal pump directly connected to the 15 H. P. or 30 H. P., 1 500 r. p. m. Škoda Diesel engine.

	<b>IRISKO — 15</b>	<b>IRISKO — 30</b>
Capacity, litres per minute	4 000—6 000	3 000—6 500
Delivery head, metres	10—7	19—12
	Dia. of branches 8"	

**1041 Suction capacity generating set****1042 ZCV Spinning Mill Pumps**

High quality pumps used for the production of artificial fibres in the textile industry. High-grade material and precision workmanship ensure trouble-free, uninterrupted service. The design of these pumps is similar to that of the rotary geared pumps delivering the same volume of the liquid after each revolution.

Capacity	0,3—36 sq. cm/rev.
N-20—30/min.	

**1043 ORDH 3-EFPO Rotary Blower**

Frictionless operation. No lubrication of working surfaces required. The apparatus delivers pure air or gas. The direction of delivery can be changed by simply reversing the rotary motion.

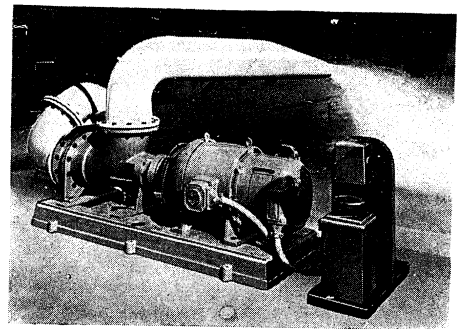
Volume delivered	7,7—11 cu. metres per minute
Pressure	4—6 metres of water column
Delivered medium	air or gas

**1044 IRILO 7 Irrigation Pump**

Mounted on a four-wheel truck. The DELTA-5a centrifugal pump is directly connected to the Slavia 7 H. P., 1 300 r. p. m. horizontal Diesel engine.

Capacity	1 300—2 100 litres per minute
Delivery head	13—8 metres
Diameter of branches	5"

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**STROJEXPORT****1045 IRIPA 8 Pumping Unit**

The pumping unit is mounted on a four-wheel truck or welded slide. It is fitted with NG-4a or NG-4 centrifugal pump driven by means of V-belts by 8 H. P., 800 r. p. m. Slavia Diesel engine.

<b>NG-4a pump:</b> Capacity	1 000—2 000 litres per minute
Delivery head	16—10 metres
Diameter of branches	4"
<b>NG-4 pump:</b> Capacity	1 500—3 000 litres per minute
Delivery head	10—7 metres
Diameter of branches	5"

**1046 IRIPA 12 Irrigation Set**

Mounted on a four-wheel truck or welded frame. The self-priming IRI-NZ-8 pump is directly connected to the 12 H. P., 700 r. p. m. Slavia Diesel engine.

Capacity	2 500—4 500 litres per minute
Delivery head	8—6 metres
Diameter of branches	8"

**1047 IRIPA 27 Irrigation Pump**

The pump is mounted on a four-wheel truck or welded slide. The centrifugal pump is directly connected to 27 H. P., 1 500 r. p. m. Slavia Diesel engine.

Capacity	8 000—10 000 litres per minute
Delivery head	7—6 metres
Diameter of branches	10"

**1048 PXO-19 Pump for Beet**

The design of this type of pump is backed by long experience in the manufacture of centrifugal pumps designed for pumping of various floating solid matters. Its compact but easy construction permits the lifting of beet and water without causing the slightest damage to the beet. The excellent design of the PXO-19 centrifugal pump with opened two-vane impeller fully meets the latest requirements in delivering beet from the ELFA washing plant for storage.

**STROJEXPORT**

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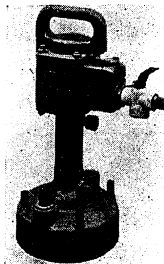
**1049 LILA Single-acting Hand Pump with Two Cylinders**

The pump is used for pumping drinkable or service water in houses and farms, house hold water systems, irrigating gardens, etc. The interchangeable cylinders are 75 mm in dia. The pump can be mounted to the wall. Suction head 7 metres.

**1050 RUBINA Portable Mine Pump**

The RUBINA portable pumps are especially suitable for pumping work at forward points in mines.

Capacity 50-250 litres per minute  
 Delivery head 6-50 metres  
 Diameter of branches 40 mm



**1051 NORA 100 Portable Pneumatic Pump**

The pump is used in mines. It has no rotating parts, requires no lubrication and operates reliably even when dirty water is pumped.

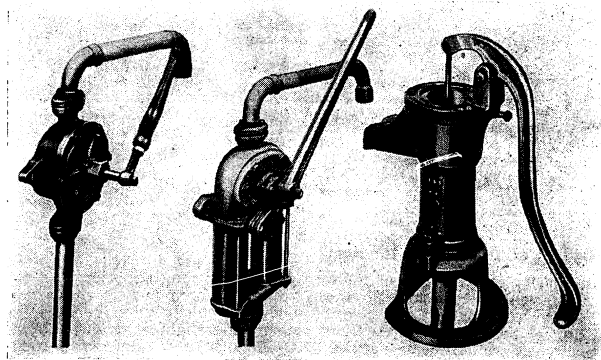
Capacity 50-175 litres per minute  
 Delivery head 45-8 metres  
 Working pressure 5 atm.

**1052**

**1053**

**1054 DARLING Automatic Water Supply Systems**

Built in standard types with tanks of a volume of 150 to 500 litres. Larger water supply systems are made for villages, towns and factories.



**1055 ORIENT Hand Pump**

This type of pump belongs to the series of simple light-weight pumps used for bored, dug or excavated wells up to 5 metres in depth (with ram driving point).

Size	2	3	4	5
Dia. of cylinder	mm 76	89	102	114
Dia. of suction branch	1 1/4"	1 1/4"	1 1/2"	2"

**NP-225 Shallow Well Stand Suction Pump**

These pumps are widely used for household purposes, gardens, farms, etc. The maximum suction lift is 7 metres. The piston is inside the pump stand. They are suitable for bored, dug or excavated wells. Capacity 30 to 50 litres per minute.

Size: Dia. of cylinder	mm 75	90
Dia. of suction branch	1 1/4"	1 1/4"

**STANDARD and DURAL Lift Stand Pumps**

These pumps are designed for pumping of drinkable or service water from bored, dug or excavated wells up to 30 metres deep. In addition to this type of pump DURAL pressure pumps and STADUR lift and pressure pumps are produced. The working cylinder is operated between the suction and lift branch.

Diameter of suction branch	1 1/4"
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**1056 Wing Pumps**

Wing pumps are suction or pressure double-acting hand pumps. They are especially suitable for pumping of volatile liquids, such as petrol, benzol, alcohol or beer, liqueurs, wine, tar, oils, hot or cold water, etc.

Size	0	1	2	3	4	5	6	7	8
Dia. of branches	1/2"	3/4"	1"	1 1/4"	1 1/2"	1 3/4"	2"	2 1/4"	2 1/2"

**1057 RR Sprayer**

Used for circular spraying of soil, especially by gardeners and farmers. Simple design ensures trouble-free service. Available in various sizes according to the irrigated area.

**1058 V-1 Small Multi-Stage High-Pressure Turbine Pumps**

These pumps are suitable for house water systems and garden irrigation. They are used in industry for pumping of water up to the temperature of 80 °C.

Capacity	80-120 litres per minute
Delivery head	7,5-40 metres
Diameter of branches	1 1/4"

**1059 KDD Piston Pumps**

The pumps give good service where, by reason of safety, other pumps with electric drive or combustion engines cannot be used, or where the use of compressed air provides economy.

Capacity	55-540 litres per minute
Delivery head	8-10 atm.
Diameter of branches	50-125 mm

**1060 NAUTILUS Submersible Pumps**

The pumps are used for handling clean, or service water, containing no hard mechanical impurities, and for bore-holes, minimum 145 mm in dia. They are driven by special electric motors up to 60 H. P. The pumps are suitable for bore-holes up to 150 metre deep.

**1061 H Two-Stage Centrifugal Pumps**

Robust medium-pressure pumps designed to handle clean or slightly impure water.

Capacity	150-3 500 litres per minute
Delivery head	5-100 metres
Diameter of branches	50-150 mm

**1071 New Kerbside Pump with swing arm - Type 8632**

Motor pumping output	45 litres p. min.
Manual pumping output	15 litres p. min.
Dimensions:	760×400×1 740 mm
Weight:	175 kg

Low and light design enables reading from both sides.

**1072 New Kerbside Pump - Type 8631**

Motor pumping output	45 litres p. min.
Manual pumping output	15 litres p. min.
Maximum suction head	5 metres of water column
Input	0.8 kW
Flow meter accuracy	0.5%
Dimensions:	700×400×1 660 mm
Weight:	165 kg

Low and light design enables reading from both sides.

**1073 A new type of Kerbside Pump with counter (computer)**

Output (motor pumping)	45 litres per minute
Output (hand pumping)	15 litres per minute
Maximum suction head	5 metres in w. c.
Input	0.8 kW
Accuracy	0.5%
Dimensions:	700×400×1 660 mm
Weight:	165 kg

**1074 Oil Rinsing Wagon**

Used for sucking old lubricating oil from the headstock, gearboxes, etc. and rinsing with preheated oil.

Capacity of the 2 tanks	75 litres
Maximum working pressure	6 atm.
Maximum operating vacuum	9 metres of water column
Suction capacity	6 cu. metres per hour
Dimensions:	1 730×800×960 mm
Weight:	150 kg

**1075 Tank Trailer**

Designed for the delivery of fuel, oil, petrol, lubricating oil and water, and refuelling of tractors in tractor stations and motor vehicles on large building sites. For use with motor vehicles. Tank capacity 500 litres.

Oil tank capacity	45 litres
Water tank capacity	150 litres
3 petrol can capacity	60 litres
Output of the fuel hand pump	25 litres per min.
Output of the oil hand pump	0.5 litre per min.
Dimensions:	3 200×1 880×1 700 mm
Weight of empty trailer:	1 000 kg

slow vehicles need not run to distant depots for refuelling

**1076 Stationary Oil Tank**

Used for storing and controlled delivery of oils into cans.

Tank capacity	400 litres
Maximum output of the hand pump at 30 double-strokes	15 litres per min.
Rated pressure	6 atm.
Dimensions:	800×750×1 453 mm
Weight:	110 kg

Provides economic storing of smaller quantities of oil in engine rooms and controlled oil delivery.

**1077 Mobile Oil Tank**

Designed for small delivery of oil in engine rooms, etc.

Oil tank capacity	150 litres
Maximum output of the hand pump at 30 double-strokes	15 litres per min.
Rated pressure	6 atm.
Dimensions:	880×700×1 300 mm
Weight:	130 kg

Facilitates the delivery of oils to engines, etc. and serves for oil metering. Used with the oil rinsing wagon it serves for refilling of gearboxes, etc.

**1078 Mobile Oileconom Pump** with flow meter used for filling of cans with lubricating oils, etc.

Tank capacity	150 litres
Output	0,5 litre per rev.
Dimensions:	600×500×1 250 mm
Weight:	85 kg

Facilitates storing of lubricating oils and their delivery to lubricators, cans, etc.

**1079 Oileconom Oil Piston Hand Pump**

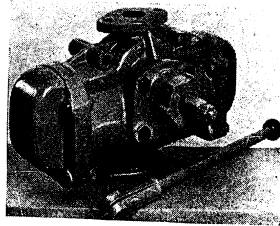
designed for metering and delivery of small quantities of lubricating oils, etc. from barrel into cans at a rate of  $\frac{1}{2}$  litre per rev.

Output	0,5 litre per rev.
Number of revolutions	30 litres per minute
Dimensions:	250×1 250 mm
Weight:	20 kg

**1080 Piston Hand Pump for fuel, etc.**

Intended for delivery of small quantities of liquids from barrels into bottles, cans, etc.

Maximum output at 30 double-strokes	15 litres per min.
Dimensions:	280×250×250 without hose
Weight:	19 kg without hose

**1081 L-300 Flow-Meter for liquid fuels, etc.**

Motor or gravity fuel feed.  
One-way system.

Minimum metered delivery:	100 litres per min.
Metering accuracy:	0,5%
Maximum flow:	300 litres per min.
Rated pressure:	5 atm.
Output per revolution:	1,25 litre
Dimensions:	300×280×370 mm - Dia. 50
Weight:	32 kg

**1082 L-600 Flow-Meter for liquid fuels, etc.**

Motor or gravity feed.  
One-way system.

Minimum delivery:	100 litres per min.
Metering accuracy:	0,5%
Maximum flow:	600 litres per min.
Rated pressure:	6 atm.
Dimensions:	360×340×420 mm - Dia. 80
Weight:	48 kg

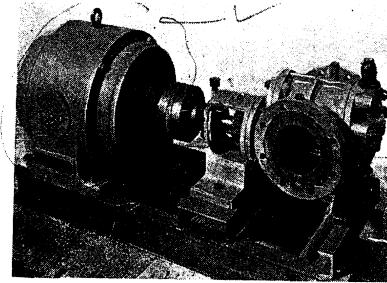
The simple design of type L flow-meters ensures long life and smooth operation.

A 5 cm difference in levels is sufficient to put the flow-meter into operation. Minimum metering accuracy  $\pm 5\%$ .

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**STROJEXPORT****1083 PZu 10 Geared Pump**

Designed for pumping of pure viscous liquids, such as lubricating oils, grease, etc. up to 80 °C — 50 °E.  
Maximum capacity Q — 10 litres per min., 5 atm., 1 400 r. p. m.

**1084 PZu 250 Geared Pump**

Designed for pumping of pure viscous liquids, such as oils up to 80 °C — 300 °E.  
Maximum output 250 litres per min., 10 atm., 930 r. p. m.  
Available for a capacity of 8 to 250 litres per min., up to 10 atm.  
Diameter of branches: 25, 32, 40, 80 and 100 mm.

**1085 ZUS 150 Geared Pump**

Designed for pumping of pure viscous liquids, thick oils, tar and syrups from 50 °E onwards to 100 °C.  
Maximum output 630 litres per min., 5 atm. 190 r. p. m.  
Also available in diameters: 50, 65, 80, 100 and 125.  
Capacity from 100 to 630 litres per min.  
Diameter of branches: 50, 65, 80, 100, 125 and 150 mm.

**1086 AL 32/I-KFE One-stage Self-priming Pump**

designed for pumping clean water.

Maximum output 80 litres per min., 10 metre water column, 1 400 r. p. m.  
Available for a capacity of 30 to 120 litres per min.  
H—10—97 metre water column.  
Diameter of branches 32 and 40 mm.

**1087 PD 40/3-S Three-stage Self-priming Pump**

for pumping of pure, volatile and inflammable liquids of a maximum viscosity of 5 °E, temperature 40 °C, maximum output Q 100 litres per min., 1 400 r. p. m., diameter of branches: 40 mm.

Series PD self-priming pumps are available for outputs from 100 to 180 litres per min., delivery head 15—42 metres of water column, 1 400 r. p. m.  
Diameter of branches 40 and 50 mm.

**STROJEXPORT**

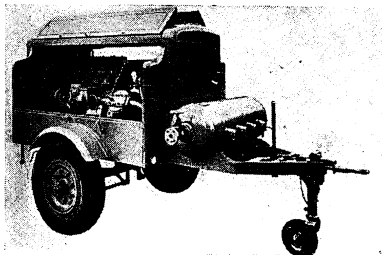
111

**1088 PDV 32/1 Vertical One-stage Self-priming Pump**

for pumping of pure liquid fuels of a maximum viscosity of 5°E, max. temperature 40 °C, maximum output Q 30 litres per min., 2 atm., 1 400 r. p. m.  
Diameter of branches 32 mm.

**1089 PA 80/1 One-stage Self-priming Pump**

for pumping of pure volatile liquids, maximum viscosity 50°E, maximum temperature 40 °C, maximum output Q 550 litres per min., delivery head 80 metres of water column, 1 400 r. p. m.  
Series PA self-priming pumps are available for outputs of 550 litres per min., maximum delivery head 80 metres of water column, 1 400 r. p. m., diameter of branches 80 mm.



**1091**

**1092**

**1093 DK-2, EK-2, DK-4-R Mobile Compressors**

Compressors for pneumatic tools, such as hammers, drills and other pneumatic appliances. Used in the building trade, for railroad and road building, quarries, mines, etc.

	DK-2	EK-2	DK-4-R
Working pressure	7 atm.	7 atm.	7 atm.
Speed	1 000 r. p. m.	950 r. p. m.	1 250 r. p. m.
Number of stages	2	2	2
Sucked volume	3.7 cu. m. p. min.	3.53 cu. m. p. min.	9.2 cu. m. p. min.

**1094 V-4-C-1600 Compressor**

High-pressure compressor set of excellent design. Careful manufacture, assembly and through shake down tests ensure trouble-free and reliable operation.

Sucked volume	85 cu. metres per hour
Working pressure	30 atm.
Number of stages	3
Drive	28 kW
Speed	960 r. p. m.

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**STROJEXPORT**

**DIESEL ENGINES**  
*and* **DIESEL SETS!**

**ŠKODA · SLAVIA · LORENZ**



Reliable in operation - minimum fuel consumption - small operating expenses - long life - favourable purchase price.  
Supplied in various designs with output from 5 to 2000 HP as stationary, portable, mobile and marine engines.

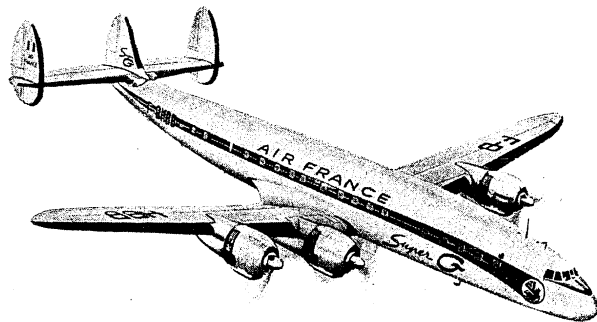
Supplied exclusively by: **STROJEXPORT**

PRAHA — CZECHOSLOVAKIA

# Super G

*the newest aircraft on international long-distance flights*

range: 4,200 miles **the longest non-stop flight**  
 maximum speed: 371 m.p.h. **the fastest speed**  
 petrol capacity: 7,750 gallons **the greatest safety**  
 practical, luxury fittings **the finest comfort**  
 tasty and exquisite meals **the most delicious cuisine**



## AIR FRANCE

**SPECIALIZES IN LONG - DISTANCE FLIGHTS**

### 1095 R 200 Rotary Compressor

Used as compressor or air pump if inversely connected to the piping. Especially designed for conservancy trucks. Easy-to-operate. Air-cooled.

Volume of sucked air at overpressure

water column metres	atm.	sucked volume in cu. metres per hour
25	2.5	220
20	2	230
10	1	240

Volume of sucked air at under-pressure

water column metres	atm.	sucked volume in cu. metres per hour
5	0.5	190
8	0.2	120
9	0.1	0

### 1096 K-1-S-1000 Compressor

Used for spraying of paints and lacquers, inflating of tyres and various air appliances.

Sucked volume	28 cu. metres per hour
Working pressure	6 atm.
Electric motor	3 kW

### 1097 P-1-EKO Compressor

Used for inflating tyres and various air appliances.

Sucked volume	5.5 cu. metres per hour
Working pressure	6 atm.
Electric motor	0.55 kW

### 1098 3 DSK 350 Compressor

For a wide range of application in industry. Stationary type with a Diesel engine or electric motor on a common base frame.

Sucked volume of air	1 600 cu. metres per hour
Working pressure	8 atm.
Electric motor	170 kW
Diesel engine	230 H. P.

### 1099 36 cu. metre Filling Compressor

Used for filling of steel cylinders for starting of Diesel engines. Vertical, stationary type.

Sucked volume	36 cu. metres per hour
End pressure	35 atm.

### 1100 4.8 cu. metre Filling Compressor

Used for filling of steel cylinders for starting of Diesel engines. Vertical, stationary type.

Sucked volume	4.8 cu. metres per hour
End pressure	35 atm.

**STROJEXPORT**

**1111 MACROPHOS 250 Industrial X-Ray Unit**

serves for non-destructive examination of coarse structure materials.

Mains voltage	3-phase, 220/380 V, 50 c/s
Maximum input	10 kVA
Output	20 mA according to the X-ray tube
X-ray intensity	up to 100 mm for steel up to 80 mm for copper

**1112 UNIPOLAR 150 Industrial X-Ray Unit**

designed for the radiographic examination of light metals, plastics, wood, rubber, etc.

Mains voltage	220/380 V
Maximum operating voltage	150 kV
X-ray intensity for steel	25-30 mm
Approximate weight of the cabinet	1 000 kg

**1113 MONTIX A 200 Industrial X-Ray Unit**

for taking radiographs of steel up to 70 mm in thickness

Output of the apparatus	220 kV, 10 mA
X-ray tube	220 kV, 10 mA
Maximum thickness of steel	70 mm
Mains voltage	3-phase 380/220 V, 2 kVA
Net weight	280 kg

**1121 Structure Comparator SK 1**

Designed for fast structure examination of ferromagnetic materials.

Mains voltage	220 V
Approximate current consumption	100 W
Dimensions	320×340×220 mm
Weight	14 kg

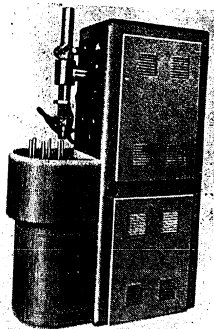
**1122 Automatic Vertical AV-400 Electromagnetic Crack Detector**

Maximum output	7 kVA
Mains voltage	220/380 V, 50 c/s
Maximum clamping length	400 mm
Maximum cross-section	25 sq. cm

**1123 Inkar Horizontal Electromagnetic Tester I H 400**

Input	7 kVA
Clamping length	0-400 mm
Max. test cross section	40 sq. cm
Operating Voltage	3×380/220 V, 50 c/s

Used for ascertaining of defects and cracks in ferromagnetic material by non-destructive method.

**STROJEXPORT**

*JAWA-CZ is the trade-mark of the motor-cycles which are conquering the world. Detailed information on these machines is regularly to be found in the illustrated monthly CZECHOSLOVAK MOTOR REVIEW.*

**1124 Electromagnetic Weld Tester ZS 500**

Designed for the examination of welds by a. c. and hand electrodes by means of the flow method.

Mains voltage	220/380/500 V, 50 c/s
Input	5.5 kVA
Circular magnetization	500 A
Dimensions	400×530×380 mm
Weight	70 kg

**1131 Selenium Rectifier controlled by a magnet. amplif., 60 V, 45 A**

This rectifier is employed, as a d. c. source, for charging of telephone batteries, or as a feeder.

©

**1132 RP Mercury Rectifier**

120 V, 80 A, for charging of mine lamps. Dimensions 1050×950×2000 millimetres.

**1141 Torsion Oscillation Recorder**

This apparatus can be axially mounted to the free end of the crank-shaft. During the rotary movement of the apparatus the housing of the recorder with a permanent built-in magnet, strictly follows the movement of the shaft (i. e. the rotary and superimposed oscillation movement) while the local system of the recorder consisting of a pivoted unprung coil, uniformly rotates.

The relative curve deviations in the magnetic field induce currents in the coil corresponding to its speed, of a frequency similar to that of the recorded oscillation. The induced electric impulse is transmitted to the rings of the recorder, and by means of copper brushes, passes from the rotating mechanism to the recording device.

Loop or cathode oscillographs with series-connected integrating circuit are used for recording. The recorded oscillation can also be electro-analyzed by means of an analyser and the magnitude of the individual harmonics ascertained, if frequency and accurate resonance spectrum should be determined.

The recorder is suitable for usual measurements of torsion oscillations of a frequency of 1500-2000 oscillations per minute, up to 4000 r. p. m.

*There are servicing depots with the greatest possible variety of spare parts in more than 120 states on the continent as well as overseas which is a guarantee of safe riding.*

**STROJEXPORT**



*In all continents, in all countries with a progressive and mature technology the ŠKODA and TATRA makes have been known for many decades past.*

#### 1142 Ultrasonic Defectoscope

By means of this ultrasonic apparatus defects and thicknesses of various parts can be ascertained which are accessible from one side only. The apparatus is suitable for industrial and laboratory use. It can also be used in engineering and chemical works, power plants, transport, etc. It is portable and its manufacture is not expensive.

According to the latest methods materials are tested by means of X-ray, gamma-ray or ultrasound devices. The latter method is preferred because of its versatility and speed. It is not harmful to the operator's health.

Though the prototype of this apparatus has not reached the quality of West-German apparatus, it is six times better than similar devices made in Poland.

#### 1151 1000 A, 9 V or 500 A, 9 V Galvanizing Sets

Improved design.  
Larger vertical galvanizing sets will be shortly manufactured.

#### 1161 Type M 011 Electric Spark Generator

By means of the generator the air-tightness of novodur, rubber, umaplex and other insulating materials can be tested. The slightest cracks in the insulating coating are discovered and serious future damage is prevented.

The electric spark generator consists of two sections. Approximate weight 4 kg. Maximum length of H. F. spark 50 mm. The generator can be connected to the 220 V or 24 V (by means of a transformer) mains. It is supplied in a portable leather case and especially designed for chemical and other works.

Dimensions	250×200×200 mm
Dimensions of handle	50 mm in dia., length 400 mm
Extending bars	3 pcs., 550 mm each, 20, 25 and 15 mm in dia.

*Jawa-ČZ motor-cycles and ŠKODA and TATRA motor cars are extensively exhibited at international fairs and industrial fairs all over the world.*

# TECHNOEXPORT

## LIST OF TECHNOEXPORT PRODUCTS

Sugar Mills  
Electrical Equipment of Heavy Machines  
Electric Power Plants  
Refrigerating Equipment  
Water Power Plants  
Equipment of Ships  
Steam Turbines and Steam Power Plant Equipment  
Air Treatment Plants  
Chemical Purification Equipment  
Steam Boilers  
Cement Mills  
Electric Switchboards  
Rubber Factory Machines  
Scrap Cutting Shears (Rolling Mills)  
Mixer for Various Applications  
Condensing Turbine

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- Electrical Equipment of Heavy Machines
- Electric Power Plants
- Refrigerating Equipment
- Water Power Plants
- Equipment of Ships
- Steam Turbines and Steam Power Plant Equipment
- Air Treatment Plants
- Chemical Purification Equipment
- Steam Boilers
- Cement Mills
- Electric Switchboards
- Rubber Factory Machines
- Scrap Cutting Shears (Rolling Mills)
- Mixer for Various Applications
- Condensing Turbine



**1201 Semi-Automatic Horizontal Centrifugal, 1000 mm dia.**

Used for the intermittent centrifuging of all kinds of lyes containing crystalline and grainy substances. Driven by an electric motor of explosion proof design for localities with degree 2 of explosion hazard in accordance with Standard Specifications.

**1202 Polymerization Unit**

The 12 cu metre polymerization unit consists of a vertical cylindrical vessel of an inside diameter of 2364 mm with a domed bottom, a tapered transition piece (a single welded unit) and an upper flat, removable cover. Inside are fitted a system of cooling tubes and a frame type stirrer directly driven from a gear box. On the transition piece and over the necessary branches are fitted. The 12 cu. metre polymerization unit is made for the following operating conditions:

Operating pressure in vessel 8 atm. g. (test pressure, water 12 atm. g., air 8 atm. g.)  
Operating pressure in cooling jacket 3 atm. g. (test pressure, water 4,5 atm. g.)  
Operating pressure of system 3 atm. g. (test pressure, water 4,5 atm. g.)  
Operating temperature +5 °C to +10 °C  
Specific gravity of operating medium 1,0  
Viscosity of operating medium 250 santiquaz  
Speed of stirrer 48 r. p. m.

**1203 Cane milling station of 12 rollers**

consists of 1 three-roller cane crusher 28×56" and 3 three-roller mills 28×56" of approved ŠKODA type including 3 intermediate bagasse carriers between the mills. The sheats of the rollers are of a special coarse grained cast iron of best quality, the shafts are forged of steel of a tensile strength of 50—60 kg/mm<sup>2</sup>. The rollers are provided with scrapers with dismountable knives of a special steel.

The upper scraper moves according to the movement of the upper roller, the scraper of the cane roller is fastened on an adjustable bagasse bridge of cast steel.

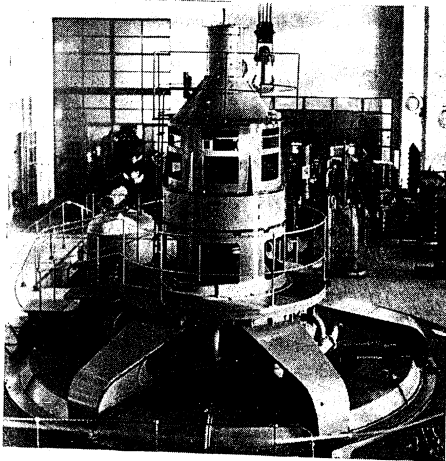
**1204 Cane cutter dia. 48" X56"**

is provided with a plate cover and two flywheels equalizing the irregular run.

**1221 Three-Phase Vertical Water Wheel Alternator, Type HV 6445/20,**

Open Design, for Direct Coupling to Kaplan Water Turbine

Rated capacity	1 250 kVA
Power factor	0.8
Rated frequency	50 cycles
Rated voltage	6 300 Volts
Rated current	114 Amps.
Regulating range of voltage	± 7 %
Rated speed	300 r. p. m.
Runaway speed	786 r. p. m.
Connection of stator phases	Y
Number of ends of winding brought out	6
Rated output of exciter	26 kW
Rated voltage	110 Volts
Rated current	236 Amps.
Rated speed	300 r. p. m.



The periodical CZECHOSLOVAK FOREIGN TRADE supplies information on the export products of all the sectors of the Czechoslovak industry. Reports on fairs and exhibitions, reports on trade policy and foreign press comments, supplement the contents of the richly illustrated periodical, issued six times annually in English, German, Russian, Spanish, Portuguese and French.

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**1222 Current Transformers**

Current transformers are intended for the feeding of ammeters and of the current coils of measuring, recording and protective instruments. Their primary winding is connected in series with the very high voltage circuit (with the line) the current of which is measured and therefore their operating properties as series transformers are different from power transformers and voltage transformers.

**1223 Voltage Transformers**

Voltage transformers are intended for the feeding of voltmeter and of the voltage coils of measuring, recording and protective instruments. Their primary winding is connected between a phase conductor and earth so that a voltage transformer acts as a normal power transformer with the difference that its short circuit voltage is low and the transformation is done with a small voltage error defined in advance.

**1224 Three-Phase Concrete Reactor**

Concrete reactors are choke coils without an iron core. They are used to limit short circuit currents.

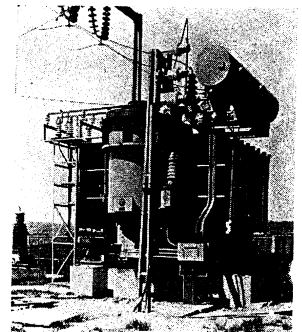
Rated voltage	6 000 Volts
Reactance	5 %
Rated current	600 Amps.
Frequency	50 cycles

**1225 Arc Extinguishing (Petersen) Choke Coils**

with infinite Variation

Used for earth current compensation in L. T. circuits. Design: Oil Immersed, for outdoor and indoor erection. Specification:

Rated voltage	23 000/3 kV
Rated current	800 kVA
Rated frequency	50 cycles
Rated range	6 to 60 Amps.

**1226 Oil Immersed Tap Changing Transformer, Capacity 16/16/5 MVA**

A transformer for a capacity of 16/16/5 MVA, 50 cycles, type 1 ER 29 M, no-load transformer ratio  $\frac{100\ 000 \pm 8 \times 2 \%}{23\ 000/6\ 300}$  Volts, connection YyC/d 1/.

The tap changing equipment is connected in the fully insulated neutral of the 100 kV winding. Up to 80 % of the rated output the oil is cooled in radiators naturally, at higher outputs with a blast of air. The air blast is remote controlled by push-buttons from the control room or automatically.

Weight without oil	45 370 kg
Weight of oil	20 000 kg
Weight of transformer with oil	65 370 kg

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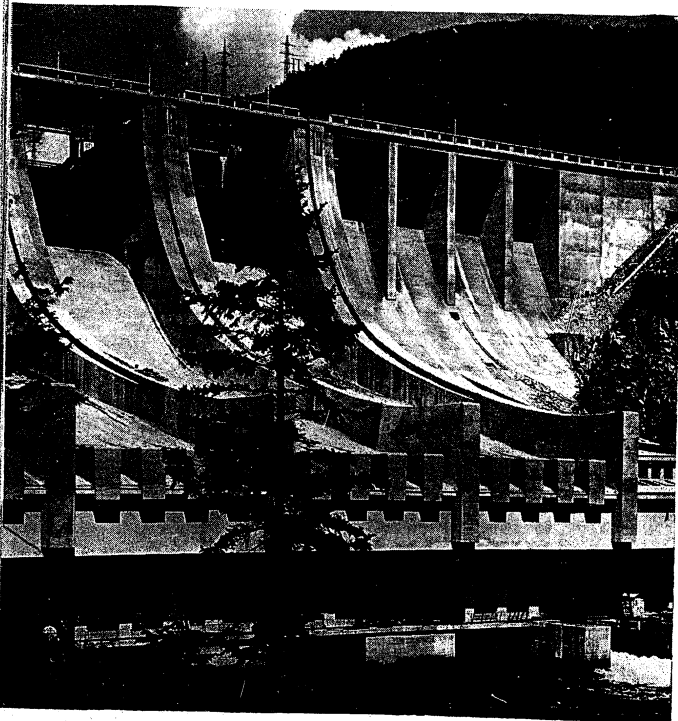
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**1227 Air Blast Circuit Breaker VV 100/d**

The type VV 100/d three-pole air blast circuit breaker is a high power circuit breaker, safe against fire and explosion, for a voltage of 110 kV. a rated current of 1 000 Amps. and a rupturing capacity of 3 000 MVA at a rated pressure in the air tank of 16 atm. g.

**1228 Three-phase Synchronized Induction Motor, M 5649 S/16**

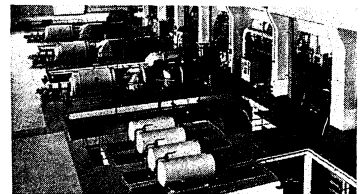
400 kW, 300 Volts, 117/89 Amps., 50 cycles, 375 r. p. m., efficiency 91,5 %, power factor 0,95 %, leading. Rotor: Induction operation: 1 060 Volts, 235 Amps. Synchronous operation: d. c. excitation, 34 Volts, 425 Amps. Overload capacity during synchronous operation 150 %, insulation of rotor winding: class »B«, of stator winding: class »A«. The exciter required has a capacity of 18 kW, 38 Volts, 475 Amps. The motor serves for the drive of type 4 DSK 450 piston compressors.



**1241 Packaged Power Plant, Capacity 1500 kW**

A packaged power plant is a complete equipment for the generation of electric power which is designed to make the minimum claims as regards erection, maintenance and operation. The equipment is divided into smaller transportable assembly units the size of which does not exceed the international truck section of RIC when loaded on common platform trucks. In view of the possibility of road transport individual units do not exceed the weight limit of 15 000 kg. The complete packaged power plant comprises:

- 1 boiler set
- 2 forced draught fans
- 2 induced draught fans
- 1 coal handling equipment
- 1 slag removing equipment
- 1 water treatment equipment
- 1 turbine-generator set



**1251 Air Turbo-Compressor, 15 000 cu metres**

The turbo-compressor for refrigerating plants has a synchronous motor of an output of 1 800 kW with starting by an auto-transformer and a control switchboard. The weight of the complete turbo-compressor is 12 tons, the floor space 24 sq. metres, the height 1,6 metres.

**1252 Ammonia Compressor, BV NH, 320/300**

Gross refrigerating capacity	1 330 000 kcal per hour
Evaporating temperature	- 12 °C
Condensing temperature	+ 35 °C
Output control	100 to 40 %

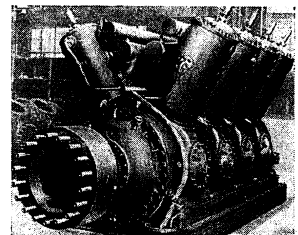
A vertical, 8-cylinder uni-flow unit with cylinders arranged in a 60° »V«.

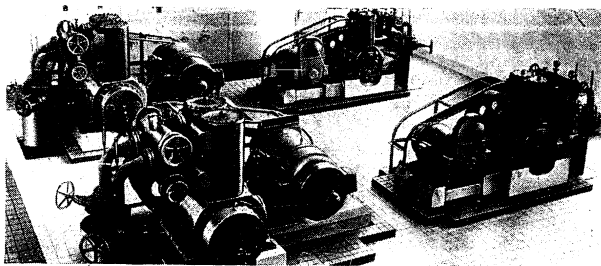
Cast iron design, cylinders water cooled.

Piston stroke 300 mm, cylinder bore 320 mm.

Direct drive by synchronous electric motor of an output of 650 kW at 330 r. p. m. through flexible coupling.

The compressor is intended for a constant output or fitted with automatic regulation.





#### 1253 Turbo-Compressor

A refrigerating turbo-compressor for propane-propylene mixture of the following parameters:

Refrigerating capacity	1 900 000 kcal per hour
Evaporating temperature	-30 °C
Inter-stage temperature	+10 °C
Condensing temperature	+37 °C
Propane pressure on turbo-compressor suction side	1,7 atm. abs.
Propane pressure on turbo-compressor delivery side	13,1 atm. abs.
Speed of turbo-compressor	6 000 r. p. m.

#### 1254 Birdsey Deep Freezing Cabinet

Used for the deep freezing of foodstuffs. Type of machine A 70-11, refrigerating capacity 26 500 kcal per hour at an evaporating temperature of -35 °C. Output of machine 3 000 to 5 000 kg of deep frozen foodstuffs in 24 hours of operation.

#### 1261 Vertical Spiral Casing Francis Turbine, Model F 20

The turbine is exhibited as a complete set including the spiral, the runner, the shaft and the drive, by means of gears, of the hydraulic governor pendulum. A noteworthy feature of the design of the turbine on display is the fact that the runner is built for the relatively high head of 162 metres and 375 r. p. m., a specific speed of 200 r. p. m.

#### 1262 Medium Size Trash Rack Cleaning Machines

This machine differs from small machines used in the past chiefly in the following points.

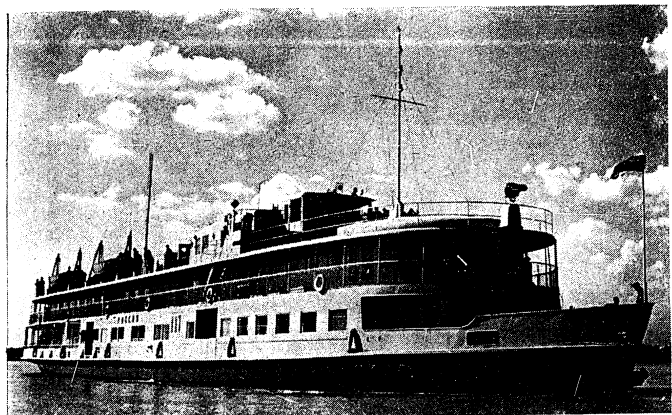
- Operation push-button controlled
- Travel to new cleaning position electrically operated
- Operation from enclosed cabin
- Trash raked up drops directly into rubber wheel-truck and is removed away from flushing channel

Maximum stroke of scraper	15 metres
Minimum automatic stroke	2 metres
Width of scraper	1 900 mm
Electric drive	380 Volts, 50 cycles
Angle of trash racks	60 °C
Operating personnel	1 machinist
Maximum length of track of machine	40 metres

Used for removal of leaves, weeds, twigs and drift ice.

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#### 1271 D. C. Marine Generator, LM 8029-10

The generator is a source of power for the feeding of the main propeller motors and one generator may feed one propeller motor of a full output or two motors of half the output each.

Rated and continuous output	273 kW
Speed	550 r. p. m.
Voltage	490 Volts
Foreign excitation by special exciter, type MLR 1610 Efficiency	91,5% with a tolerance of $\pm 2\%$

#### 1272 D. C. Propeller Motor, Type LM 8052-10

The motor is intended to drive a ship's propeller and is fed d. c. power from a type LM 8029-10 marine generator. It is designed for reversing duty.

Rated and continuous output 250 kW, speed 240 r. p. m., voltage 487 Volts, foreign excitation 220 Volts, 22 Amps. by exciter type MR 2218. Efficiency with tolerance  $\pm 90,5\%$ .

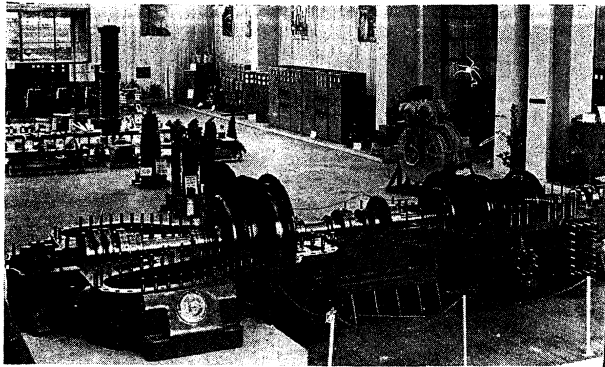
#### 1273 Complete Shaft Guide, Type RR (Series III)

The shaft guide transmits, directly by its pressure and propeller shafts, the rotary movement from the gear box and the main Diesel engine to the propeller.

Pressure shaft diameter 175 mm,	length 5 716 mm,
	weight 1 112 kg
Propeller shaft diameter 180 mm,	length 8 620 mm,
	weight 21 002 kg
Propeller: Number of blades	4
Diameter	2 000 mm
Pitch	1 840 mm
Weight	691 kg
Weight of both complete shafts	16 100 kg

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#### 1274 Steering Equipment of Passenger Ships

The steering equipment serves for steering the ships and for ensuring their safety.

Main components:

1. The helm with electric and hand control of drive erected in the wheelhouse
2. The steering transmission
3. The steering engine with electric hand operation erected in the stern of the ship
4. The steering gear erected in the stern of the ship
5. The balanced rudder

#### 1275 De Luxe Stateroom on Third Deck

The stateroom consists of: a drawing room, a bedroom, a bath room.

#### 1281 Single Cylinder Condensing Steam Turbine, 4 000 kW, for Turbo-Generator Drive

Output on generator terminals	4 000 kW
Speed	3 000 r. p. m.
Operating steam pressure	35 atm. abs.
Operating steam temperature	435 °C
Circulating water temperature	30 °C

The turbine is of the reaction type with a two-row regulating stage.

#### 1282 Steam Turbine, Type MD 550, for Boiler Feed Pump Drive

Output on turbine coupling	175 kW
Speed	3 000 r. p. m.
Operating steam pressure	35 atm. abs.
Operating steam temperature	435 °C
Back pressure	1,2 atm. abs.

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#### 1283 Steam Turbine, Type PC 550, for Pump Drive

Output on turbine coupling	40 kW
Speed	2 900 r. p. m.
Operating steam pressure	8 atm. abs.
Operating steam temperature	240 °C
Back pressure	2 atm. abs.

#### 1284 Oil Burner for Steam Boiler

A pressure oil burner for the burning of mazout of a calorific value of 9 600 kcal per kg, type TOH-6.

Output of burner	600 kg per hour
Working pressure of mazout in nozzle	20 atm. g.
Air pressure of burner	30 to 120 mm of water column
Diameter of nozzle at 20 atm. g. pressure	2,4 mm
Required viscosity of mazout in burner	1,6 to 2,8 °E

#### 1285 Pressure Heating Station for Fuel Oil or Mazout

Output of station	2 600 kg per hour of fuel oil
Viscosity of fuel oil at 35 °C	42 °E
Viscosity of fuel oil at 110 °C	5,2 °E
Viscosity of fuel oil at 140 °C	1,8 °E
Operating pressure of fuel oil	22 atm. g.
Heating from temperature of 35 °C to	110 to 140 °C
Specific heat consumption for heating of steam from 45 °C to 140 °C	0,125 kg of steam per kg of oil

#### 1286 Oil Burner for Steam Automization for Rotary Cement Kiln

An oil burner with steam automization of fuel for a rotary cement kiln of an output of 100 tons of clinker in 24 hours. Type POH-RP-9.

Output of burner	900 kg per hour
Fuel oil of a calorific value of	9 300 kcal per kg
Operating pressure of oil	3 to 4 atm. g.
Operating steam pressure	5 to 6 atm. g.
Steam temperature	220 to 260 °C
Pressure of primary combustion air	60 to 150 mm of water column
Viscosity of oil in burner	2 to 4,5 °E

#### 1287 Fittings for Steam Turbine and Boilers

#### 1288 Model of Steam Power Plant, Scale 1 : 50

The model of the steam boiler represents a two-drum radiating heat boiler of a capacity of 130 tons per hour, a licensed pressure of 80 atm. g. and a superheat temperature of 500 °C.

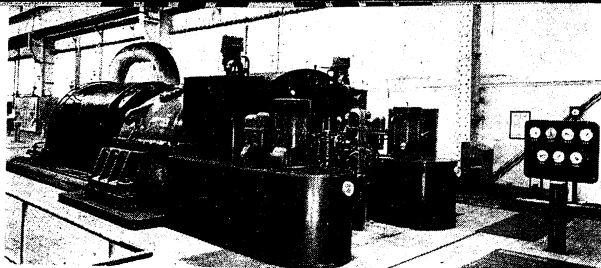
The model of the steam turbine represents a two cylinder type of condensing turbine with 4 bleeding points and a generator of a maximum capacity of 32 000 kW and a speed of 3 000 r. p. m., maximum live steam pressure 81 atm. abs., maximum live steam temperature 500 °C and circulating water temperature 27 °C.

#### 1289 Casing with Thrust Bearing and Blades

Segment type thrust bearing, diameter 360 mm, capacity 10 tons, 3 000 r. p. m., of latest patent design with increased operating reliability, permitting uniform distribution of rotor thrust between individual segments.

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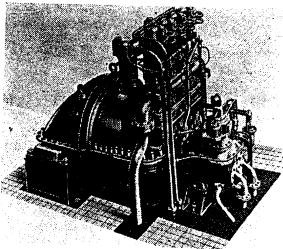


**1290 Condensing Turbine, Type AT 6**

A turbine of a capacity of 6 000 kW at 3 000 r. p. m. with extraction of 35 tons of steam per hour at a pressure of 1,2 atm. abs. Steam inlet pressure 35 atm. abs., temperature 435 °C. Circulating water temperature 20 °C.

This turbine is the governing type of a unified series of nine turbine with outputs from 2 500 to 6 000 kW. It is built on the unit assembly principle of assemblies which, to a large extent, are identical for all the turbines of this series.

The rotor wheel of a gas turbine of an output of 4.2 MW with an inlet temperature of combustion gases of 750° C and a pressure of combustion gases of 2.8 atm. abs. Fuel: Blast furnace gas. Speed 8 500 r. p. m. Material of blades: Poldi AKNC.



**1291 Double-casing steam condensing turbine**

with one regulated bleeder, output 25 600 kW.

Speed	3 000/min.
Live steam	pressure 90 at. a., max. 120/110 at. a.
Temperature	500 ° degrees, max. 510 °C
Cooling water	27 °C
Number of non-regulated bleeders	5
Regulated bleeder	8 at. a.,
Adjustability	6 to 11, max. 100 t/h

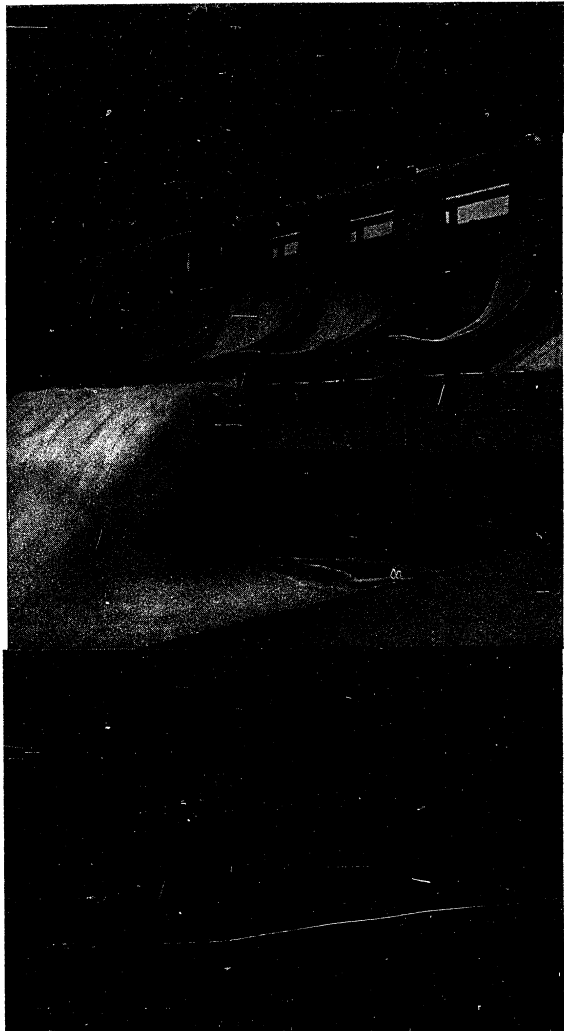
**1301**

**1302 Fans, 1500 and 1400**

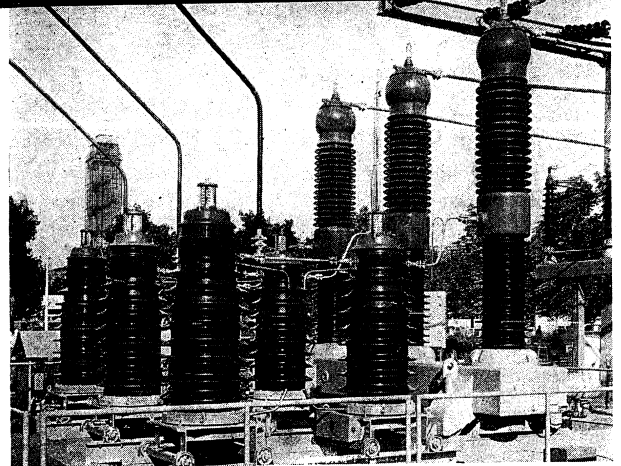
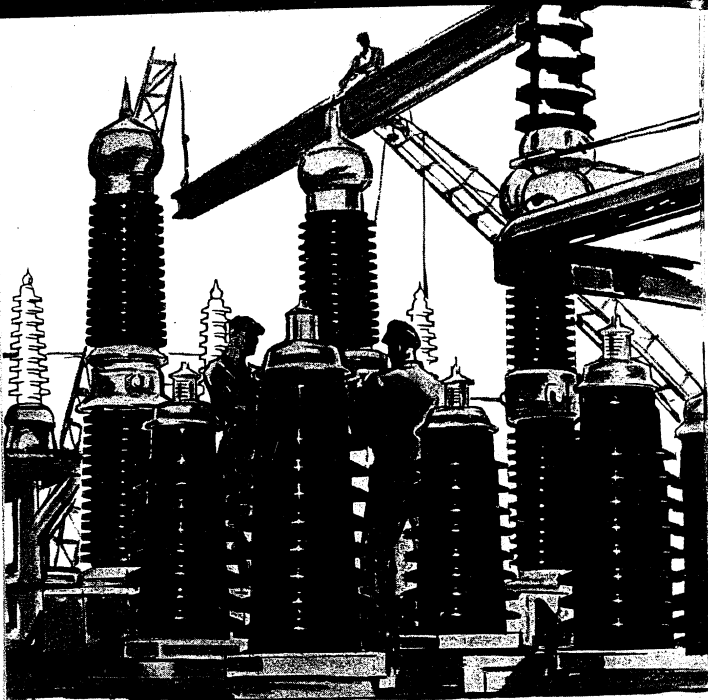
Axial flow fans serve for the supply of air or other gases. They are used chiefly in the electric power industry, in mines and in dust extraction stations.

**1303 Blower, Type ORDH**

The type ORDH blower serves for blowing air into vertical and other kilns in the ceramic industry, metallurgical plants, foundries, etc. The blower operates without friction and therefore requires no lubrication. The flow of the air delivered can be reversed by simple reversal of the direction of rotation. The range of blowing is 1,3 to 200 cu. metres per minute and the overpressure 1 to 6 metres of water column.







## Electric engineering

ELECTROMOTORS, GENERATORS, TRANSFORMERS, HIGH FREQUENCY AND DIELECTRIC HEATING EQUIPMENT, ELECTRO-EROSIVE MACHINE TOOLS — WELL PROVEN PRODUCTS OF CZECHOSLOVAK ELECTRIC ENGINEERING INDUSTRY OF ČKD, ŠKODA, KRÍŽÍK AND MEZ TRADE MARKS

SOLE EXPORTER:

# STROJEXPORT

PRAHA, CZECHOSLOVAKIA

### 1304 Band Filter

For the cleaning of air metal filters of various designs are used, with a layer of oil which binds dust. Filters are supplied and manufactured for quantities from 10 000 to 40 000 cu. metres of air per minute at a resistance of 12 to 15 mm of water column. Rotary branch filters driven by a MEZ geared electric motor, 0,45 kW, 720 r. p. m., with a 1 : 31,5 reduction gear, i. e. 23 r. p. m., 220/380 Volts, with automatic humidification and removal of accumulated dust.

### 1305 Parapet Unit

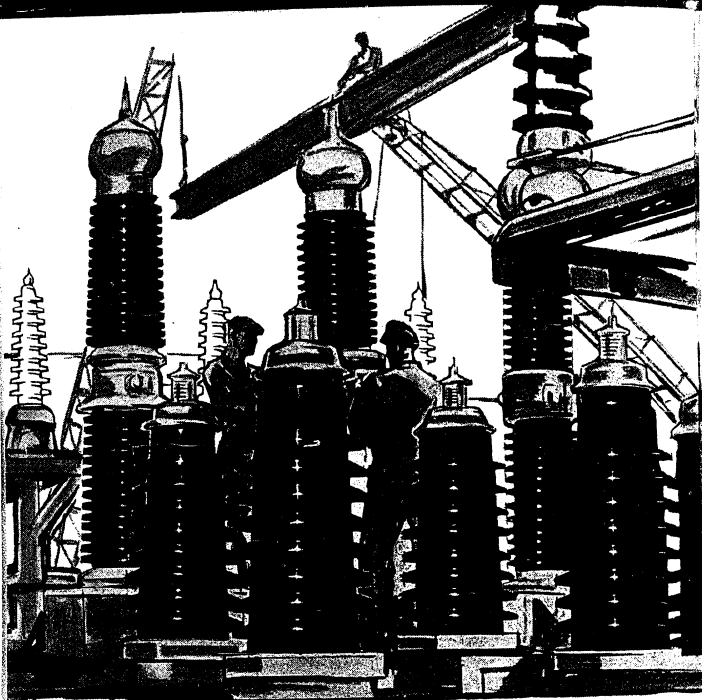
Parapet units are used for hot air heating and ventilation of larger halls, workshops, dining rooms, gymnasia and offices and wherever central heating cannot be used on account of the costly adaptation work involved. The units are practically noiseless and are manufactured in three sizes of the following outputs:

- Size I of an output of 1 000 cu. metres of air per hour, weighing 160 kg
- Size II of an output of 1 500 cu. metres of air per hour, weighing 170 kg
- Size III of an output of 2 000 cu. metres of air per hour, weighing 185 kg.

### 1306 UNEX Unit Dust Extractor

For spacious welding shops of steel structures, undercarriages, towers, boilers and other large welded parts on which the welder works standing, moving from point to point. Also suitable to extract dust directly from dusty points with the exhaust piping supplemented by a centrifugal separator, a pressure filter or a dust chamber.

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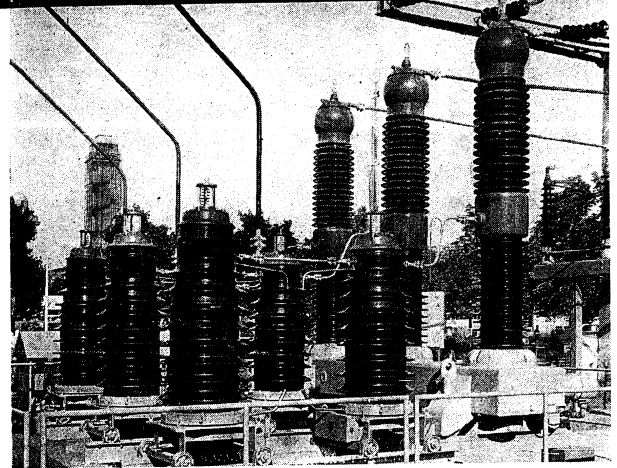
## Electric engineering

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**1307 Type VFD Industrial Vacuum Cleaner.**

For the cleaning of floors and machines of dust, flying ashes, grinding dust, fibres and ashes in spinning, weaving and ready made clothing establishments of all kinds, production and assembly halls, establishments of the foodstuffs industry such as flour mills, bakeries, tobacco factories and storerooms, etc.

**1308 Air Cooler**

Finned air coolers serve for the cooling of air at a constant volume of water or with condensation of water vapour depending on the cooling water temperature or on the surface temperature of the finned surface.

**1309 Plan of Air-Conditioning Equipment**

Illustrates the influence of a given kind of ventilation equipment upon the treatment of air in production establishments. By increased airing an increased productivity of work is achieved. Belongs among hygienic and sanitary equipment.

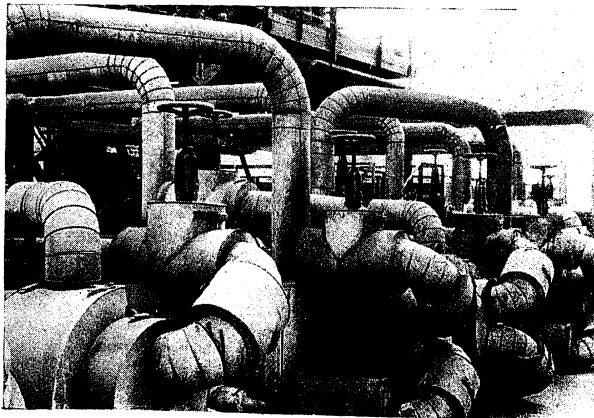
**1321 Heat Exchanger, 1 627 sq. metres**

The heat exchanger is a cylindrical vessel of a diameter of 220 mm and an overall length of 11 200 mm. It consists of a shell of 10 mm thick plates to which 40 mm thick tube plates are welded. 25 mm dia. X 2 mm tubes are expanded into the tube plates. The shell is enclosed, at one end, by a flat bottom 16 mm thick, at the other end by a deeply domed bottom 12 mm thick.

Used in the chemical and petroleum industries.

**1322 Drum Type Channel Filter**

This filter is used chiefly for the densification, dehydration and washing of cellulose. It is a rotary, drum type chamber filter for continuous operation.



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**1323 Ammonia Evaporator, 250 sq. metres**

Serves for the evaporation of liquid NH<sub>3</sub> and, at the same time, cools water for the air cooler. Designed as a horizontal tubular unit of a diameter of 1 400 mm and an overall length of 5 870 mm. Inside is fitted a rigid nest of 640 tubes, 30 mm in dia. X 2,5 mm, expanded into tube plates.

**1324 Raking Crusher, Type MS 220**

The crusher is designed as an axial-flow propeller pump with a cutting propeller. The cutting mechanism consists of the rotating propeller, an adjustable flat front knife fitted in front of it and a cutting grate fitted behind it. A ring with cutting edges is arranged around the propeller.

The entire housing of the crusher is made of cast iron, the entire cutting assembly of alloyed and hardened steel. This ensures a maximum life of the machine. All machined parts are protected against corrosion by phosphating.

**1325 Air Spray Nozzle**

The air spray nozzle serves for injecting and finely dispersing gas into a liquid medium or for spraying a liquid mist into a gaseous medium.

Q 7:	Quantity of air dispersed	70 litres per min.
	Pressure loss in nozzle	10 cm of water column
	Quantity of operating water	6 litres per minute
	Pressure loss in nozzle	7 metres of water column
Q 20:	Quantity of air dispersed	250 litres per min.
	Pressure loss in nozzle	10 cm of water column
	Quantity of operating water	14 to 15 litres per minute
	Pressure loss in nozzle	7 to 8 metres of water column

**1326 Wire-Wound High Pressure Vessel**

Wire-wound high pressure vessels are manufactured as replacements for forged vessels.

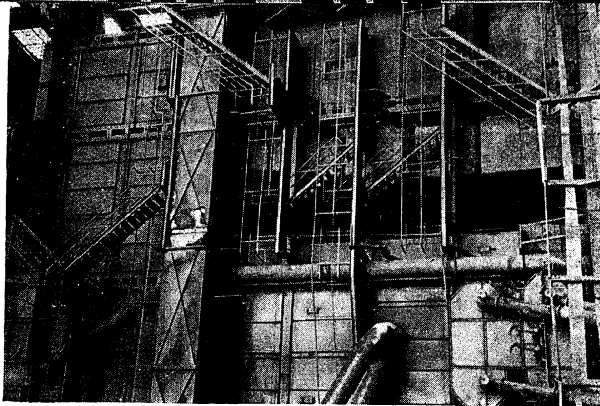
For the examination of the technology of the production process a vessel was designed with an inside diameter of 600 mm, a length of 6 000 mm, a pressure of 350 atm. g. and a temperature of 50 °C, i. e. a vessel the parameters of which corresponded to operating dimensions. The principle involved is the winding of a strip 6,5 X 65 mm in cross-section on a thin-walled core tube. The vessel will be tested to the destruction of the shell which will take place at approximately 1 200 atm. g.

**1327 Return Bends**

The headers—return bends—on display are the components of a tubular system of furnaces in topping and vacuum distillation equipment for the processing of crude oil. They serve for the connection of 152 mm dia. tubes and operate at a pressure of 550 °C and a pressure of 100 atm. They are made of heat resisting alloy steel.

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**1341** CKD Radiation Type Steam Boiler with Travelling Grate

Rated capacity 2,5 tons per hour, 12 atm. g., with steam dryer, for feed water temperature of 105 °C.

Rated capacity of boiler	2,5 tons per hour
Normal (economical) output of boiler	2,0 tons per hour
Working overpressure	12 atm. g.
Maximum working overpressure	14 atm. g.
Overpressure before feed head	15 atm. g.
Working feed water temperature	105 °C
Heating surface of boiler	80 sq. metres
Effective width of grate	1,2 metres
Effective grate area	4,8 metres
Fuel, brown coal dust	
Efficiency of boiler:	
at rated capacity	77 %
at normal output	78 %

**1351** HYDRANA Hydraulic Drive of Rotary Kilns

This hydraulic drive is intended for driving rotary kilns and similar rotary equipment. The type on display is built for an output of 66 kW at various speeds of the rotary kiln. A total of 11 different speeds is available, ranging from 0,08 to 0,97 r. p. m. and arranged in an arithmetical progression of a difference of 0,08 r. p. m. which, for all practical purposes, replaces infinite variation.

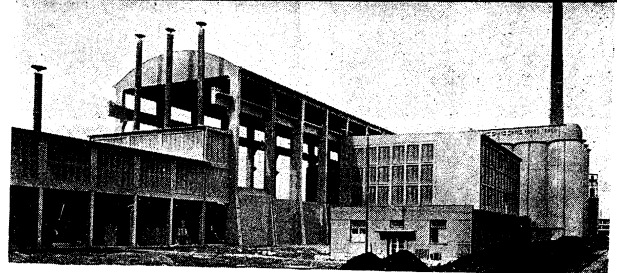
It is supplied for practically all commonly used outputs. The density of control can be adapted to the given technological requirements by a combination of typified pumps and oil motors.

**1361** Wall Mounted Unit Type Switchboard

The basic unit is a box ideally divided vertically into three parts of the net dimensions of 310×310 mm. The rated depths of the box are 200, 300 and 400 mm. The basic dimensions of the cover are 324×324 mm. In addition to that covers are manufactured with double, 1½ times and half the width. The latter are, at the same time, flange covers.

The rated currents of the bus bars are 200, 400 and 600 Amps.

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**1362** Steel Sheet Desk Type Switchboard

Manufactured in several kinds and in a number of sizes

1. For normal localities (cover C) and dust-proof (cover F)
2. Switchboards with 1 panel, built up of several panels and in the shape of a writing desk with legroom and a drawer
3. For setting-up against a wall or accessible also from behind
4. With a flat top panel inclined at an angle of 10°, with a superstructure with a mounting surface 300 mm high and inclined at an angle of 60° or with a high vertical superstructure with a mounting surface of 600×900 mm.

The rated dimensions of desk cabinets or panels are arranged in 200 mm increments. Width 600 to 1000 mm, depth 400 to 1000 mm, height in front 850 mm. The width of switchboards in the shape of a writing desk is 1800 to 3000 mm.

**1371** Five-Roll Calenders

The machines are used for rolling rubber strips, plain as well as with patterns, for the manufacture of all kinds of rubber footwear. The machine is a five-roll unit for rolling plants and ready-made shoe shops producing »faxing«.

Maximum thickness of strip rolled	12 mm
Maximum width of strip rolled	380 mm
Output of machine	2,7 to 6,6 metres per minute
Steam and cooling water pressure	1 to 3 atm. g.
Steam consumption per hour	11 kg

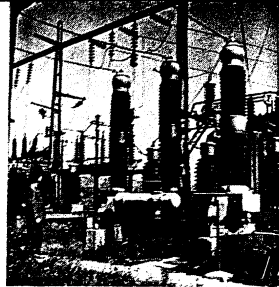
**1372** Simple Short Worm Extrusion Machine, 125 mm dia.

The extrusion machine is used for the extrusion of material by a worm rotating in a bush. The material is extruded through a die of the required shape which it keeps when it passes through the die. The extrusion on these machines is done in endless lengths in the shape of tubes, bars and various other cross sections.

Diameter of worm	125 mm
Working length of worm	600 mm
Speed of worm, maximum - minimum	13-58 r. p. m.
Electric motor	11 to 14 kW/960 r. p. m.
Input of heater element of extrusion head	300 Watts (1 to 3 pcs)
Quantity of material worked	40 to 250 kg per hour

TECHNOEXPORT

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**1373 ✓ Three-Roller Grinding Machine Type KA 600**

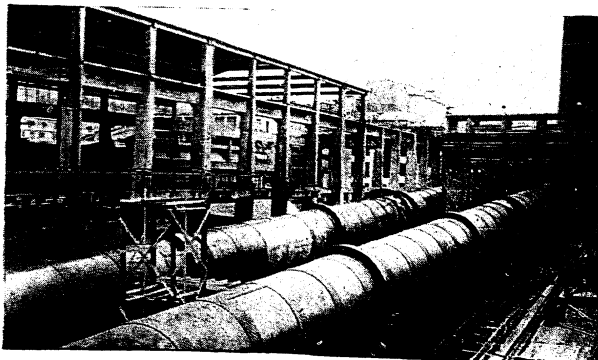
The scope of application of the machine is very wide in the paint industry for the grinding of paints and similar substances and in the chocolate industry for grinding chocolate and also generally in the chemical and foodstuffs industries and wherever liquid and semi-liquid substances have to be ground and completely homogenized in large quantities.

Diameter of rollers	400 mm
Input of electric motor	16 to 18 kW
Quantity of material worked	200 to 300 kg per hour

**1374 ✓ Single-Roller Grinding Machine with 320 mm dia. X 650 mm Roller, Type 01052**

The machine is intended for rough grinding and final grinding of oil, photo-gravure, nitro-cellulose, synthetic, chlorine-rubber and printing inks, paints, enamels, Indian inks and similar substances in a liquid and semi-liquid state. The machine can be used for the purification of these substances, since the grinding ruler does not pass any foreign fibrous bodies into the ground substance.

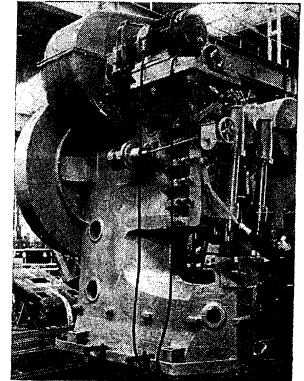
Diameter of roller	320 mm
Working length of roller	650 mm
Input of electric motor	4 kW
Quantity of material worked	100 to 250 litres per hour



**1381 Scrap Cutting Shears**

Rated cutting force	630 tons
Number of cuts per minute	22
Length of knives	1 000 mm
Material cut:	145 mm dia.
Maximum dimensions	130 mm
Tensile strength up to	50 kg per sq. mm
Thickness of sheets	35 mm ⊙

1382 ✓



**1382 ✓ Transmission gearing with built in pinion stand of a normal output 400 kW, max. output 800-900 kW, for four-high rolling mill.**

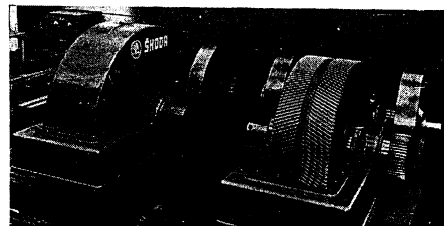
Winding equipment provided with expansible winding drums, supporting turnable bearings with pneumatic pressing on of the coils on the drum, with shifting device for removing of the coils, driven by a reversible DC electric motor of an output 540 kW.

Speed	0-480-680.
DC electric motor of an output control	0-770-770 kW 0-230-350 r. p. m.

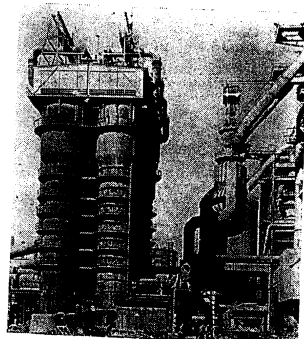
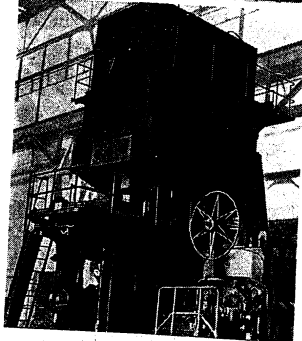
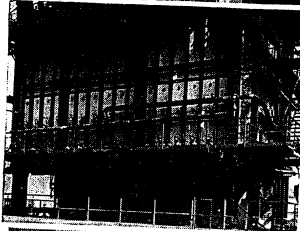
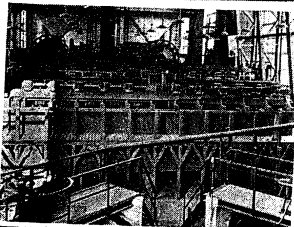
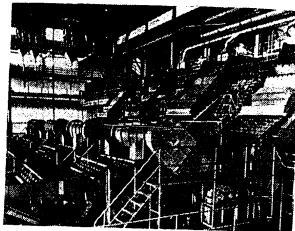
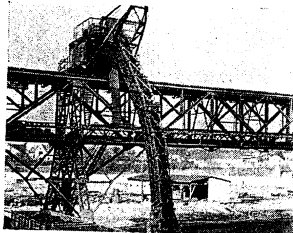
**1385 Mixing Machines, Type MVM 13**

The type MVM 13 mixing machine is particularly suitable for mixing and kneading materials under rather heavy duty conditions.

Useful capacity	400 litres
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TECHNOEXPORT



**Models**

- 1386 model of a slaughter house
- model of an ice rink
- model of blast furnace works
- model of a cement factory
- model of chemical equipment
- model of a railway mounted mobile steam power plant
- model of glass works
- model of water dam
- model of plywood plant
- model of steam power station
- model of engineering works
- model of ship engine room

# MOTOKOV

## LIST OF PRODUCTS SUPPLIED BY MOTOKOV:

- Passenger Cars
- Motorcycles and Accessories Car Equipment
- Machine Tools for Wood
- Trucks and Special Purpose Vehicles
- Tyres and Rubber Goods
- Farm Machines and Implements
- Tractors
- Farm Machines and Implements
- Aircrafts and Accessories
- Trolleybus
- Household Accessories



**1401 ŠKODA 440 Export**

The ŠKODA 440 passenger car is the latest model of the ŠKODA passenger car - Export type in this case.

Technical data: Swept volume 1 809 c. c., number of cylinders 4; power output 40 HP at 4 200 r. p. m., fuel consumption 8 lit/100 km or 35.3 miles p. g., number of seats 4, peak speed 115 km p. h. or 71.5 m. p. h.

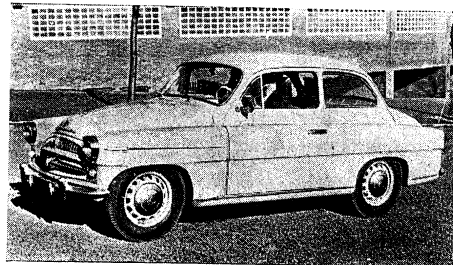
Car dimensions:

1 600×4 065×1 430 mm,  
fuel tank capacity 30 litres or  
6.6 Imp. gall.

**1402 ŠKODA 440 Standard**  
Standard model of ŠKODA 440 passenger car.

Technical and performance data equal to those of Export Model.

**1403 ŠKODA 440 Chassis**  
Chassis of ŠKODA 440 Passenger Car.



**1404 ŠKODA 1201 Ambulance Car**

ŠKODA 1201 ambulance car - emergency car for speedy transport of patients.

Technical data: Swept volume 1 221 c. c., number of cylinders 4; power output 45 HP at 4 200 r. p. m. fuel consumption 10.5 lit/100 km or 27 m. p. l. g., carrying capacity 2+1 stretchers; peak speed 110 km or 68.4 m. p. h.

Car dimensions 4 550×1 680×1 600 mm,  
Fuel tank capacity 35 litres or 7.7 Imp. gall.

**MOTOKOV**



**1405 ŠKODA 1201 Estate Car (Station Wagon)**

Technical and performance data equal to those of ŠKODA 1201 Ambulance Car with the following differences:  
Carrying capacity: 4 to 5 passengers + 250 kg payload,  
2 passengers + 500 kg payload.  
Dimensions, overall: 4 360 X 1 690 X 1 580 mm.

**1406 ŠKODA 1201 Delivery Van**

Model ŠKODA 1201 delivery van; technical data identical to those of ŠKODA 1201 Ambulance Car with the following differences:  
Carrying capacity 2 passengers + 500 kg payload.  
Dimensions, overall: 4 360 X 1 690 X 1 580 mm.

**1407 ŠKODA 1201 Sedan**

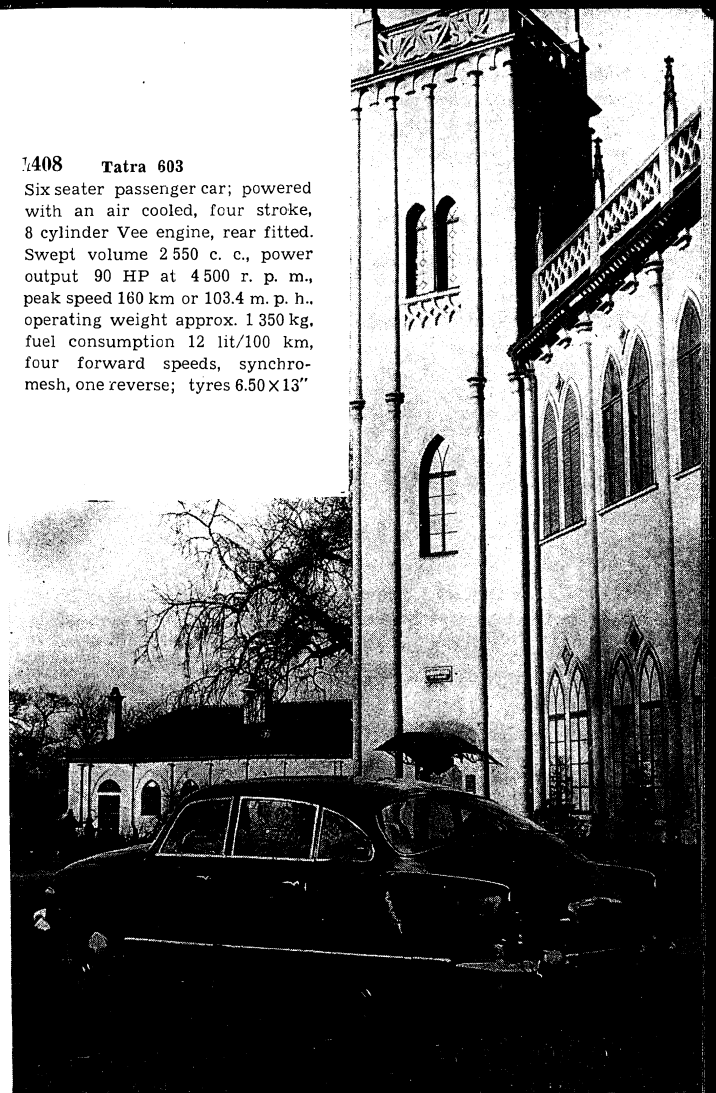
The ŠKODA 1201 Sedan passenger car has the following technical data. Swept volume 1221 c. c., number of cylinders 4, power output 45 HP at 4 200 r. p. m., fuel consumption 8 to 9 lit/100 km or 31.4 to 35.3 m. p. l. g., number of seats 4 to 5; peak speed 115 to 120 km or 71.5 to 74.8 m. p. h., overall dimensions 4 500 X 1 690 X 1 520 mm. Fuel tank capacity 35 litres.

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**MOTOKOV**

**1408 Tatra 603**

Six seater passenger car; powered with an air cooled, four stroke, 8 cylinder Vee engine, rear fitted. Swept volume 2 550 c. c., power output 90 HP at 4 500 r. p. m., peak speed 160 km or 103.4 m. p. h., operating weight approx. 1 350 kg, fuel consumption 12 lit/100 km, four forward speeds, synchromesh, one reverse; tyres 6.50 X 13"



**MOTOKOV**

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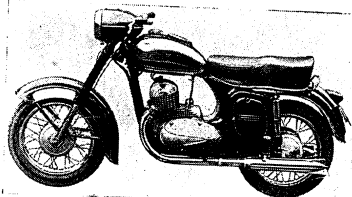


**1409 Jawa-ČZ Motorcycle 250 c. c.**

Model 353, two stroke, one cylinder, power output 12 HP at 4750 r. p. m., peak speed 105 km or 65 miles p. h., fuel consumption 3 lit/100 km at 50 km p. h. or 94 m. p. I. g. at 31 m. p. h., four speeds, automatic starting and gear shifting by means of a single lever, swinging rear fork

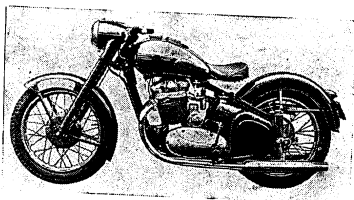
**1410 Jawa-ČZ Motorcycle 350 c. c.**

Model 354, two stroke, twin cylinder, power output 16 HP at 4750 r. p. m., peak speed 120 km or 74.6 miles p. h., fuel consumption 3.25 lit/100 km at 50 km p. h. or 86.76 m. p. I. g. at 34 m. p. h., four speeds, automatic starting and gear shifting by means of a single lever, swinging rear fork.



**1411 Jawa Motorcycle 500 c. c.**

Four stroke, twin cylinder OHC, power output 28 HP at 5500 r. p. m., peak speed 140 km or 87 m. p. h., fuel consumption 4 lit/100 km at 60 km. p. h. or 70.6 m. p. I. g. at 37.3 m. p. h., four speeds, automatic starting and gear shifting, swinging rear fork.



**1412 Jawa-ČZ 250 c. c. Competition Model**

Special competition model (Six Days' Trial), power output 14 HP at 5500 r. p. m., peak speed 120 km or 74.6 miles p. h.

**Jawa-ČZ 350 c. c. Competition Model**

Special competition model (Six Days' Trial), power output 18 HP at 4750 r. p. m., peak speed 130 km or 80.8 miles p. h.



**1413**

**1414 Motorcycle - Sectional View**

**1415**

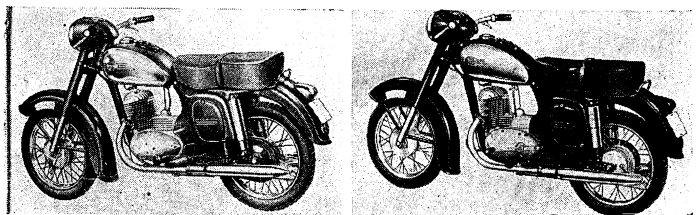
**1416 Engine - Sectional View**

**1417 Scooter ČZ 175 c. c.**

Model 501, power output 8 HP at 4750 r. p. m., peak speed 88 km or 54.67 miles p. h., fuel consumption 2.6 lit/100 km at 50 km. p. h. or 80.8 m. p. I. g. at 31 m. p. h.

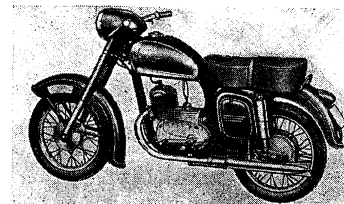
**1418 Jawa-ČZ Motorcycle 125 c. c.**

Model 355, two stroke, one cylinder, power output 6.8 HP at 4750 r. p. m., peak speed 80 km or 50 miles p. h., fuel consumption 2 lit/100 km at 50 km. p. h. or 141 m. p. I. g. at 31 m. p. h., four speeds, starting and gear shifting automatic by means of a single common lever, rear fork swinging.



**Jawa-ČZ Motorcycle 175 c. c.**

Model 356, two stroke, one cylinder, power output 9.5 HP at 4750 r. p. m., peak speed 90 km or 56 miles p. h., four speeds, fuel consumption 2.3 lit./100 km at 50 km. p. h. or 122.6 miles p. I. g. at 31 m. p. h., automatic starting and gear shifting by means of a single common lever, swinging rear fork.



**1419 Competition Motorcycles**

ČZ 125 Motorcycle as special competition model, power output 6.5 HP at 5100 r. p. m., peak speed 85 km or 50.3 m. p. h.

ČZ 150 c. c. as special competition model, power output 8.5 HP at 5200 r. p. m., peak speed 95 km or 56.5 m. p. h.

ČZ 175 as special competition model, power output 10.5 HP at 4750 r. p. m., peak speed 105 km or 65.2 m. p. h.



**1420 ESO S 45 OHV Dirt Track Motorcycle**

Power output 48.6 HP at 7 500 r. p. m., compression ratio 14 to 1 (methylated spirit), power output 41 HP 7 200 r. p. m., compression ratio 8.4 to 1 (80 octane petrol), maximum safe speed 8 000 r. p. m.

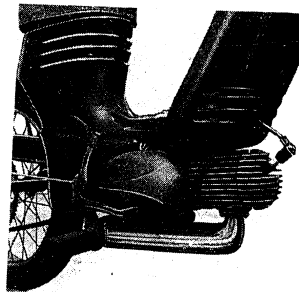
**ESO 350 B OHV Dirt Track Motorcycle**

Compression ratio 9.2 to 1, power output 32 HP at 7 800 r. p. m., maximum safe speed 8 200 r. p. m.

**1421 Twin Steering**

Twin steering motorcycle for schooling.

**1422 Service Shop Vehicle**

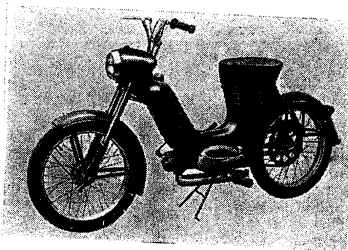


**1423 Jawa-Pioneer Light Motorcycle 50 c. c.**

Model 550, two stroke, one cylinder, power output 1.6 HP at 5 000 r. p. m., peak speed 45 km or 28 miles p. h., fuel consumption 1.5 lit/100 km at 25 km p. h. or 188 m. p. I. g. at 15.5 miles p. h.

**1424 Three Historical Motorcycles**

**1426 Motorcycle Attachments**



**THE CENTRAL ASSOCIATION  
OF MANUFACTURING  
COOPERATIVES  
PRAHA**

*manufactures:*

**METALWORKING MACHINES**

*lathes, drilling and grinding machines*

**WOODWORKING MACHINES**

*band and circular saws, planing machines, thicknessing machines, drills for knots*

**BUILDING MACHINES**

*concrete mixers, asphalt kettles, asphalt sprayers*

**AGRICULTURAL MACHINES**

*grain-blowers, hay-blowers, ploughs including ploughs for shallow ploughing, cultivators*

**MACHINES FOR BAKERS**

**MACHINES FOR BUTCHERS AND SAUSAGE-MAKERS**

**TOOLS**

**MEASURING INSTRUMENTS**

**METAL FURNITURE**

**VARIOUS ARTICLES FOR HOUSEHOLDS,  
FARMS AND FACTORIES**

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to see exhibits of the high-quality production of the Czechoslovak heavy engineering, such as

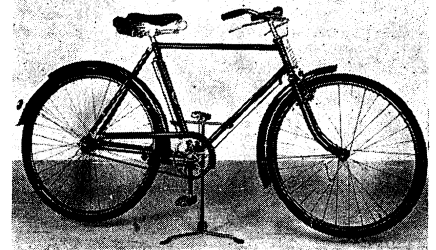
- Equipment for power stations
- Turbo-compressors
- Equipment for ships
- Equipment for chemical plants
- Equipment for foodstuff plants
- Air-treatment equipment

At our Exhibition in Brno you will find also interesting exhibits from other branches of the Czechoslovak engineering production.

**TECHNOEXPORT**  
PRAHA  
CZECHOSLOVAKIA

**1425 Bicycles**

- P1 Children's Bicycle
- P2 Children's Bicycle
- F 11 Road Racing Bicycle
- F 7 Off-road Racing Bicycle
- K 2 Performance Bicycle
- B 2 Bicycle-ball Bicycle
- Sp 10 Boys' Bicycle
- Sp 10 Girls' Bicycle
- Sp 17 Sport Bicycle
- Sd 17 Sport Bicycle
- Tp 4 Touring Bicycle
- Td 4 Touring Bicycle
- Tp 5 Touring Bicycle
- Td 5 Touring Bicycle
- Tp 6 Touring Bicycle
- Tp-E 9 Touring Bicycle
- Td-E 9 Touring Bicycle

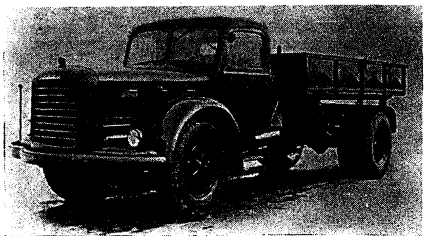
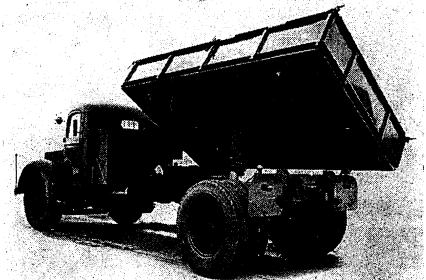


**1451 Skoda 706 R Truck**

The Škoda 706 R Truck is powered with a four stroke, six cylinder water cooled Diesel engine of 11,781 c. c. or 718 cu. in. swept volume; power output 135 HP/1750 r. p. m., five forward speeds & one reverse; fuel consumption 30 lit./100 km or 9.42 miles per Imp. gal., oil consumption 0.8 lit./100 km or 353 m. p. I. g.; fuel tank capacity 150 lit. or 23 Imp. gal.; overall length 8285 mm or 326", overall width 2500 mm or 98", overall height of loaded vehicle 2400 mm or 94,5", carrying capacity 7300 kg or 16,093 lbs, operating weight of vehicle 6460 kg or 13,242 lbs.

**1452 Skoda 706 RS Tipper**

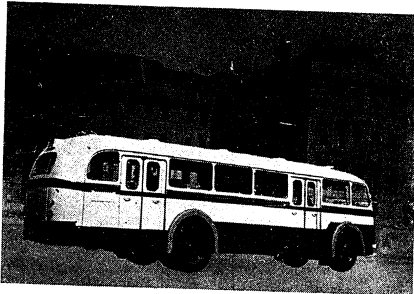
The Škoda 706 RS Tipper has a four stroke, water cooled, six cylinder Diesel engine of 11,781 c. c., or 718 cu. in. swept volume; power output 135 HP at 1750 r. p. m., five forward speeds & one reverse, fuel consumption 30 lit./100 km or 9.42 miles per Imp. gall, oil consumption 0.8 lit./100 km or 353 m. p. I. g., fuel tank capacity 150 lit. or 23 Imp. gall.; overall length 7870 mm or 310", overall width 2500 mm or 98", overall height of loaded vehicle 2400 mm or 94,5". Carrying capacity 6500 kg or 14330 lbs, operating weight of vehicle 7260 kg or 16000 lbs.



**MOTOKOV**

**1453 Škoda 706 RO Chassis**

The Škoda 706 RO chassis is fitted with a four stroke, water cooled, six cylinder Diesel engine of 11 781 c. c. or 718 cu. in. swept volume; power output 135 HP at 1 750 r. p. m., five forward speeds & one reverse, fuel consumption 29 lit./100 km or 9.72 miles p. I. g., oil consumption 0.8 lit./100 km or 353 m. p. I. g., peak speed 68 km or 42 miles p. h., optionally can be increased to 86 km or 53 miles p. h.; overall length 10 058 mm or 396", overall width 2 500 + 50 mm or 98 + 2", operating weight 5 200 kg or 11 464 lbs, carrying capacity 8 800 kg or 19 400 lbs.

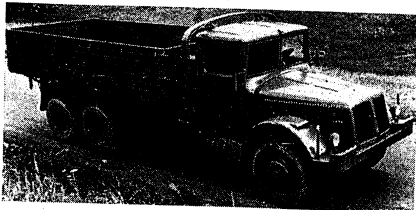
**1454 Škoda 706 RO Bus**

The Škoda 706 RO city Bus is powered with a four stroke, water cooled six cylinder Diesel Engine of 11 871 c. c. or 718 cu. in. swept volume; power output 135 HP at 1 750 r. p. m., five forward speeds & one reverse; fuel consumption 29 lit./100 km or 9.72 miles per Imp. gall., oil consumption 0.8 lit./100 km or 353 m. p. g., peak speed 68 km or 42 miles p. h., can be increased optio-

nally to 86 km or 53 m. p. h.; overall bus length 10 660 mm or 420", overall width 2 500 mm or 98", overall height of loaded bus 2 970 mm or 117"; operating weight of bus 8 700 kg or 19 180 lbs, permissible payload 5 300 kg or 11 687 lbs.

**1455 Škoda 706 RO Long Distance Car-Bus**

Technical data principally identical with those of City Bus.

**1456 Tatra 111 R  
1457 Truck**

The Tatra 111 R Truck is powered with an air cooled, twelve cylinder Diesel engine of 14 825 c. c. or 904 325 cu. in. swept volume; power output 180 HP at 1 800 r. p. m., four speeds forward one reverse, road and off-road ratio, front and rear wheel drive, differential gear lock, fuel consumption 35 to 40 lit./100 km or 7.06 to 8.08 miles p. I. gall.; fuel tank capacity 135 litres or 29.71 Imp. gall., oil consumption 0.8 lit./100 km or 353 miles p. I. g.; overall length of vehicle 8 300 mm or 327", overall width 2 500 mm or 98", overall height of unloaded vehicle 2 680 mm or 105", with tarpaulin raised 3 050 to 3 270 mm or 121 to 128.6", carrying capacity, members of crew included 10 240 kg or 22 575 lbs, operating weight of vehicle 8 400 kg or 18 500 lbs.

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**MOTOKOV****1458 Tatra 111 S Tipper**

The Tatra 111 S Tipper is fitted with a four stroke, air cooled, twelve cylinder Diesel engine of 14 825 c. c. or 904 325 cu. in. swept volume, power output 180 HP at 1 800 r. p. m., four forward speeds, one reverse, road and off-road ratios, front and rear wheel drive, differential gear lock, fuel consumption 35 to 40 lit./100 km or 7.06 to 8.08 miles per Imp. gall., oil consumption 0.8 lit./100 km or 353 m. p. I. g., fuel tank capacity 135 lt. or 29.7 Imp. gall., overall length of vehicle 8 220 mm or 323.6", overall width 2 500 mm or 98", overall height 2 540 mm or 100"; carrying capacity 10 240 kg or 22 575 lbs, operating weight of vehicle, crew excluded—approximately 8 960 kg or 19 753 lbs.

**1459 Tatra 111 R Chassis**

The chassis can be used for various bodies of special purpose vehicles. General technical data unaltered.

**1460 Tatra 111 R c/w turn table & DA 5 Trailer**

Serves for transport of long timber. The length of the set corresponds to that of the transported timber.

**1461 Tatra 111 R Truck c/w 3 A 5 V Trailers**

In this set full advantage has been taken of the properties of T 111 R as a towing vehicle.

**1462 Tatra 111 N Truck c/w Power Winch**

pull of winch cable 6 000 kg or 13 228 lbs; permissible max. front pull 4 700 kg or 10 361 lbs; length of winch steel cable 60 metres or 197 ft.

**1463 Tatra 111 C Motor Tanker**

Serves for transport of fuels and oils; can be used for refuelling vehicle and aircraft tanks. Tanker capacity 7 000 lt, or 1 541 Imp. gall.; output of Tanker pump 400 lt or 88 I. gall. per minute.

**1464 Škoda 706 Road Sprayer**

Serves for spraying water or other liquids the volume of which can be rationed according to the surface to be rolled or conditioned; suitable for gravel roads, for washing firm roads, for fire extinguishing purposes, for spraying trees and plants, for sanitation of every description.

Water tank capacity 6 000 litres or 1 321 Imp. gall., nominal output of pump at 8 kg/cm<sup>2</sup> or 114 psi: 1 600 lt or 352 I. g./min.

**MOTOKOV**

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**1465 Škoda 706 City Sprayer**

Serves for spraying water the volume of which can be controlled, for washing firm runways, for fire extinguishing purposes, for spraying trees and plants as well as for sanitation of every description. Water tank capacity 6 000 litres or 1 321 Imp. gall., output of pump at 8 kg/cm<sup>2</sup> or 114 psi—1 600 litres or 352 Imp. gall. per minute.

**1466 Škoda 706 ROK**

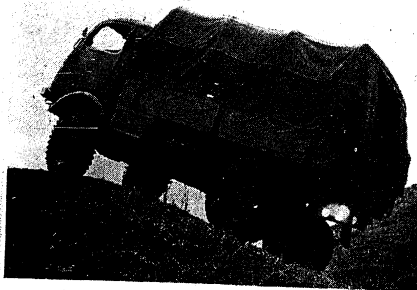
This vehicle serves for collecting dust and refuse. Dust drum capacity 10 c. m. or 353 cu. ft. The vehicle is fitted with an automatic dust bin shaker.

**1467 A 3 V Trailer**

It is a trailer of 3 metr. tons or 6 600 lbs capacity, suitable for light lorries.

**1468 A 5 V Trailer**

This trailer has a capacity of 5 metr. tons or 11 000 lbs. Suitable for heavy duty lorries.



**1469 Tatra 805**

Powered with an air cooled, eight cylinder petrol engine; swept volume 2 500 c. c., power output 75 HP; pull 2 400 kg carrying capacity 1.5 to 2.25 metr. tons.

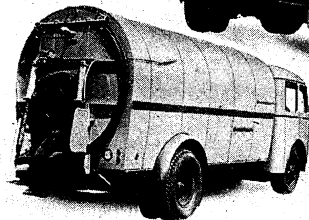
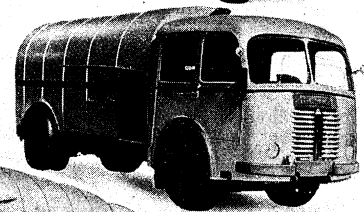
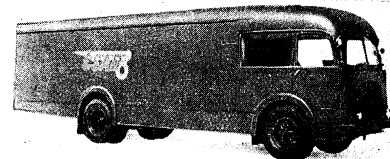
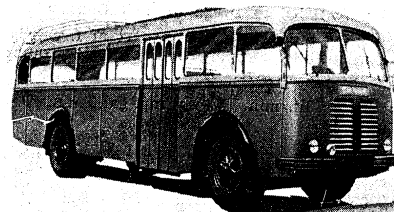
**1470**

**1471 ✓ Praga V3S**

Praga V3S Truck and Van have common technical data: air cooled six cylinder Diesel engine of 7 412 c. c. swept volume; power output 98 HP at 2 100 r. p. m.; carrying capacity from 3 500 to 5 000 kg.

**1472 Škoda 706 Furniture Van**

It is a furniture van fitted to a Škoda 706 RO chassis with Diesel engine.



**1473 Motor Fire Engine fitted to Praga or V3S Chassis**

Serves for fire extinguishing purposes, for transport of fire brigades with complete fire extinguishing equipment. The water pump is driven from the engine of the vehicle.

Pump output:	lit./min.			Imp. gall./min.		
Nominal water flow	1600	960	800	352	211	176
at delivery height, m	80	120	80	ft 262	394	262
and geodetic suction height, m	1,5	7,5	ft	4,92	24,6	

**1474 Dung Cart**

Fitted to Praga V3S chassis, has an engine of equal power output as that of Praga V3S.

**1475 Škoda 706 RP Bus**

The Škoda 706 RP Bus is a single door city bus. Description and technical data identical with those of Škoda 706 RP City Bus.

**1476 Škoda 706 RO Long Distance Bus**

Škoda 706 RO Bus modified for long distance transport. Technical data identical with those of Škoda 706 RO City Bus.

**1477 Škoda 706 TR Tram-Bus**

Powered with a water cooled six cylinder Diesel engine with direct fuel injection, giving a power output of 170 HP at 1850 r. p. m. Carrying capacity 9300 kg, fuel consumption 25 lit./100 km or 10,7 m. p. Imp. gall.

**1478 Praga S5T**

Praga Truck, fitted with an air cooled, six cylinder Diesel engine of 7412 c. c. swept volume; maximum power output 94 to 98 HP at 2100 r. p. m.; carrying capacity 5000 kg.

**1479 Praga S5T Tipper**

Technical data identical with those of Truck.

**1480 Tatra 141**

Tatra Road Tractor, powered with an air cooled, twelve cylinder Diesel engine; maximum road speed approximately 38 km p. h., off-road speed approximately 13 km p. h. Pull 100000 kg.

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**MOTOKOV****1481 ŠKODA 906 R**

ŠKODA Truck, powered with a water cooled, six cylinder Diesel engine of 135 HP power output at 1750 r. p. m.; carrying capacity 9300 kg.

**1482 ŠKODA 806 RS**

ŠKODA Tipper, powered with a water cooled, six cylinder Diesel engine of 135 HP output at 1750 r. p. m.; carrying capacity approximately 8000 kg.

**1483 Tatra 137**

New model of Tatra Truck, fitted with an air cooled, eight cylinder Diesel engine of 11760 c. c. swept volume; power output 145 HP at 1800 r. p. m., carrying capacity 7 metr. tons.

**1484 Tatra 138**

New model of Tatra Truck, having a carrying capacity of 12 metr. tons, powered with an air cooled, eight cylinder, Diesel engine of 11760 c. c. swept volume; maximum power output 190 HP at 1800 r. p. m.

**1485 Tatra Dumpcar of 5 m' capacity**

Prototype of new dumpcar fitted to Tatra chassis powered with an air cooled, twelve cylinder Diesel engine of 180 HP power output at 1800 r. p. m.; carrying capacity of dumpcar approximately 9240 kg.

**1486 Mobile Motor Repair Shop**

Set of three Praga V3S Vans; two trailers with van bodies and one electric power plant. Technical data of V3S vehicles identical with those of V3S Truck. This set will be found of advantage for standard and medium reconditioning of motor vehicles and automotive materials.

**1487 Snow Plough**

The snow plough is mounted on a crawler tractor and serves for the removal of snow at points where there are no large snowdrifts. It has a relatively high speed so that its daily capacity is high.

**1488 Library Bus**

The library bus is a bus modified as a travelling library with a librarian's office and a small reading room. It serves for lending books and, as a travelling reading room, it drives into industrial plants or to places in the country where there are no libraries.

*Jawa-ČZ motor-cycles and ŠKODA and TATRA motor cars are extensively exhibited at international fairs and industrial fairs all over the world.*

**MOTOKOV**

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**1489 Mobile Dental Clinic**

A bus modified as a small dental clinic with a small waiting room and a very well equipped dental office. It serves primarily for mass examinations of teeth in industrial plants where there is no dental clinic and in the country and also for minor dental operations.

**1490 Travelling X-Ray Office**

A bus modified for the carrying out of X-ray examinations and taking of radiographs during mass examinations in industrial centres where the clinic is not equipped with X-ray apparatus and in the country.

**1491 Mobile Post Office**

A bus specially modified as a mobile post office with an office for the post office employees. It takes over the mail at points where it would not be justified to open a permanent post office for a limited period because the demand for it is only temporary as is the case at times of exhibitions, fairs, etc.

**1492 Television Car**

A bus specially modified for direct television transmission of sporting events, cultural meetings, etc. It is fitted out with the most modern equipment for television reporting.

**Broadcasting Car**

A bus specially fitted out with the most modern equipment for the broadcasting of interesting sporting events, tape recording, direct transmission and other modern broadcasting equipment.

**1493 Mobile Sales Shop**

A bus modified as a shop with an auxiliary store of goods ready for sale. Serves particularly for driving into industrial plants directly to the area of work of the employees and to the country for improving the selection and supplies of goods.

**1494 HSC 4 Mobile Crane fitted to Tatra 111 Chassis**

Carrying capacity of crane 4 000 kg or 8 818 lbs at a distance of 6 metres or 20 ft, and 2 500 kg or 5 511 lbs at a distance of 8.5 metres or 27.6 ft. Gross weight 12 500 kg or 27 557 lbs.

**1511 8 Tr Trolleybus**

The trolleybus has 19 seats, 61 standing accommodations; maximum carrying capacity 6 000 kg; motor of 120 kw power output, speed 1 600 r. p. m.; voltage 600 V.

**1521 Sundry Equipment for Motorists**

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**MOTOKOV****1531 Gumoide and Texgumoide (Rubberoide and Fabric-Rubberoide)**

Sealing and insulation plates are made in sizes 1 150×650 mm and 1 000×1 000 mm or 45,3×25" and 39,4×39,4", in natural colours, thickness from 0.5 to 50 mm or from .02 to 2".

They are made either of hardened paper or of fabric and resins.

**1532 Igelite Belts**

Made of plastics in widths from 20 to 700 mm or from .8 to 27.6", in lengths from 1 to 100 metres or from 3.3 to 330 ft. The drive belts are designed for torque transmission to various machines.

**1533 Leather Belts**

Used for power transmission to various machines. Made in widths from 20 up to 300 mm or from .8 to 12", thickness from 4 to 6.5 mm or from .16 to .25", length of maximum 120 metres or 394 ft.

**1534 Igelite Separators**

Made of polyvinylchloride, these plates are used in the production of storage batteries as separators between the electrodes. They can be made in dimensions according to customer's wish.

**1535 Asbestos Plates (sheets)**

Made of asbestos, cotton and hemp. Used as packings for steam engines and locomotives. Produced in various sizes according to customer's wish.

**1537 Armoured Hoses for Water Pumps**

Made in sizes from 25 to 305 mm or from 1 to 12", length from 1.5 to 20 metres or 4.92 to 65.6 ft. The metal spiral (armour) is vulcanised, the colour scheme of the fabric plaiting is black or beige. Tested underpressure 8 metres or 26.25 ft water column.

**Water Hoses for Cold Water**

Made in sizes from 10 to 25 mm or from .4 to 1" in lengths per 25 metres or 82 ft, surface plain or fluted, colour black. Working pressure 6 kg/cm<sup>2</sup> or 85.34 psi, water tightness up to 40° C or 104° F.

**Hoses for Torch Welding**

Made in diameters of 6.8 and 10 mm or .236, .315 and .394", in lengths per 25 metres or 82 ft, surface plain or fluted, colour black. Working pressure 12 kg/cm<sup>2</sup> or 170.67 psi, test pressure 36 kg/cm<sup>2</sup> or 512 psi.

**1538 Flat Rubbercoated Fabric Belts**

Produced in widths from 25 up to 1 000 mm or from .984 up to 39.4", with two up to ten fabric layers, edges cut or plied; colour black or beige, lengths per 100 metres or 330 ft. Suitable for driving various machines.

**Rubbercoated Fabric Conveyor Belts**

Produced in lengths per 100 metres or 330 ft, qualities according to customer's wish and to application. Serve for conveying coal in mines and for building materials.

**1539 Fluted Mat**

Made in coils of 1×10 metres or 3.3×33 ft in various patterns. To special order also coils of 1 yard width and 10 metres or 10,940 yards length can be produced. Used in motor industry.

**1540 Tubeless Tyres**

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**MOTOKOV**

**1541 Tubular Tyres**

26x175" Full Width Tread  
 27x1 Criterion  
 27x118 PBW and PBW Extra Special  
 27x114 Cross Country Full Width Tread  
 For use with dirt track and road racing bicycles.

**1542 Motorcycle Tyres**

Produced in dimensions from 4.00-13" up to 7.00-19"; model Standard or Tropic, Tread pattern Sport, Polar. Motorcycle tyres having special racing tread pattern are also produced.

**1543 Car Tyres**

Made in dimensions from 4.00-13" up to 7.00-15" model Ideal; from 4.75-16.5 to 5.50-19" models Superb, Polar and Grip Standard or Tropic. Car tyres with white sides can be also supplied. Purpose: for passenger cars or various farm machines.

**1544 Bantam Tyres**

Made in sizes 12x4", 16x4", 4.00x8" for Scooters. The Bantam Tyres are fitted to various transport vehicles and will be found of great advantage everywhere where goods are conveyed to short distances. The Bantam Tyres save labour, provide for longer life of vehicles and protect the goods against shocks and jerks while on run.

**1545 Tyres for Animal Traction**

Made in sizes:  
 6.00x16" four or six 160x18"/6  
 fabric layers)  
 30x5"/6 170x20"/6  
 32x6"/8 190x20"/8  
 130x18"/4 210x20"/8  
 150x18"/4 7.00x16"/6

For use on vehicles with animal traction. The tyre-fitted wheels do not sink in the soil and the beast draught can pull a heavier load with less effort. Of particular advantage in farmwork.

**1546 Tractor Tyres**

Dimensions 5.50-16" and 6.00-20". These tyres are fitted to front wheels of tractors and are made as model Standard or Tropic with leading tread pattern. 8.00-20" to 13.00-28" for use on tractor rear wheels. Model Standard and Tropic.

**1547 Heavy Duty Tyres**

Made in dimensions from 6.00-18" up to the heaviest duty tyres 14.00-24", model Standard or Tropic.

Purpose: Tread pattern BUS for road service. Tread pattern Polar for off-road work.

**1548 Bicycle Tyres**

Produced in dimensions from 22 X114" up to 28x175"; cable or bead type, black or red interior. Suitable for children's sporting and touring bicycles.

**1549 Brake Lining**

Band brake lining models Special and Extra Stop can be supplied in a width up to 200 mm or 8" and thickness 6 to 15 mm or 236 to 6". Standard packing in coils per 25 metres or 82 ft.

Purpose: Special — for lining band brakes of every description.

Extra Stop — flexible band with high temperature resistance.

Fibre — for lining brake shoes of heavy duty vehicles, trolleybuses, street cars.

Woven — pressed with metal layer and optionally also with drilled holes for fast mounting. For motorcycles and passenger cars.

For conical clutches — according to customer's drawings, with metal layer for twin cone clutches of cranes and excavators which are subject to extra heavy stress and strain.

Clutch lining — woven or fibre type. Oilproof durability. Suitable for lining clutches in automotive and machine industry.

**1550 Radiator Hoses**

Made in diameters from 28 to 75 mm or from 1.1 to 2.95, wall thickness 5 mm or 2", surface plain, colour black. Number of fabric layers one or two. Maximum production length 3 metres or 10 ft. Suitable for engine radiators.

**1551 Battery Boxes**

Made of hardened rubber.

Purpose: Starter batteries for motorcycles, cars, commercial vehicles, etc.

Stationary — wound containers according to Catalogue. Serve for building batteries or required voltage.

**1552 GUFERO Seal Rings**

The purpose of these seals is to protect the shafts against dirt. The seals resist to oils, greases and lubricants up to a temperature of 100° C or 212° F; to a slight overpressure of up to 1.5 kg/cm<sup>2</sup> or 21,33 psi.

Advantageous features: Perfect sealing of rotating parts even under slight overpressure. Provides for longer life of rotating parts and bearings. Eliminates seized or rusty bearings. Prevents losses of lubricants.

**1553 Vee-Belts**

**Industrial Vee-Belts**, made in black colour scheme and various sections from 8 to 40 mm or from .315 to 1.57". Serve for driving machines in industry, farming, etc.

**Fan Vee-Belts** are made in sections 10 to 25 mm or .394 to 1" and 9 series for foreign motor vehicles. Serve for driving fans, refrigerators, washing machines, etc.

*Instruction, advice, suggestions as well as entertainment is to be found every month in the richly illustrated motorist monthly CZECHOSLOVAK MOTOR REVIEW, Praha I, Ul. 28. října 13.*



1561 ✓

1562 Zetor 25 K

General duty row crop farm tractor; hydraulic power lift for mounted implements, twin cylinder Diesel engine of 24 HP power output at 1600 r. p. m.; fuel consumption 4 litres or .88 Imp. gall./hour. Six forward speeds from 3.8 to 18 km p. h. or from 2.36 to 11.18 m. p. h. and two reverse speeds; PTO shaft: 540 r. p. m., Complete 12 V electrical equipment. Tyres, front 5.50X16", rear 9X36" or 13X18".

1563 ✓

1565 Zetor 25 A

General duty farm tractor with hydraulic power lift. Twin cylinder Diesel engine of 26 HP power output at 1800 r. p. m. Pull on hook 1350 kg or 2976 lbs; belt pulley output 23 HP; fuel consumption while ploughing 4 litres or .88 Imp. gall./h. Six forward speeds from 3.4 km/h. up to 29 km/h. or from 2.11 m. p. h. up to 18.3 m. p. h., two reverse speeds; speed of P. T. O. shaft 540 r. p. m.; 12 V electrical equipment; tyres, front 5.50X16", rear 11.25X24".

1566 ✓ Zetor 25 A with Hydraulic Power Lift & Three Point Linkage

1567 ✓ Zetor 25 K with Hydraulic Power Lift and Swinging Drawbar 13 x 28

1568 ✓ Zetor Super, Hydraulic Power Lift not fitted  
Description identical with that of Zetor Super with Hydraulic Power Lift (not fitted).

1569 ✓ Zetor Super with Hydraulic Power Lift

Wheeled tractor of frameless design, powered with a four cylinder in-line Diesel engine with direct fuel injection; swept volume 4160 c. c. or 253.76 cu. in.; power output 42 HP; 1500 r. p. m., specific fuel consumption 195 g/HP/h. or 6.89 oz/HP/h. — Hydraulic Power lift with remote ram control; belt pulley output 38 HP; standard P. T. O. runs at 540 r. p. m. Tyres, front: 6.00X20", rear 13X28".

1570 ✓ Zetor 25 A with Bottom Drawbar, Hydraulic Power Lift not fitted

1571 ✓ Zetor 25 K 9 x 36 Standard Drawbar

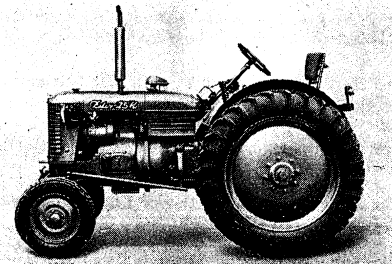
JAWA-CZ is the trade-mark of the motor-cycles which are conquering the world. Detailed information on these machines is regularly to be found in the illustrated monthly CZECHOSLOVAK MOTOR REVIEW.

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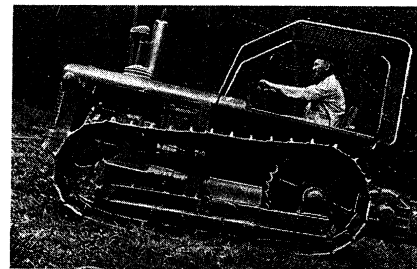
**MOTOKOV**

1572 ✓ Zetor 25 A with Hydraulic Power Lift and Adjustable Drawbar

1573 ✓ Zetor 25 A, Hydraulic Power Lift not fitted



1574 ✓ Zetor 25 K, 9 x 36 Bottom Drawbar, Hydraulic Lift not fitted



1575 ✓ Zetor Super P (Tracklayer) and Zetor Super with Power Winch

1576 ✓ Zetor 25 A with Hydraulic Power Lift and Bottom Drawbar, Plain

1577 ✓ Zetor 25 K with Hydraulic Power Lift & Standard Drawbar 13 x 28

1578 ✓ Zetor 25 A with Hydraulic Power Lift and Bottom Drawbar

**MOTOKOV**

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**1579** ✓ **Zetor Super Tracklayer**

A tracklayer tractor of frameless design suitable for any kind of field work, forest work and building industry. Power unit: Four cylinder Diesel engine with direct fuel injection, giving an output of 42 HP; swept volume 4 160 c. c. or 253.76 cu. in., 1 500 r. p. m.; specific fuel consumption 195 g/HP/h. or 6.89 oz/HP/; pull on hook 3 000 kg or 6 600 lbs; standardized P. T. O. speed: 540 r. p. m. Instead of tyres, the tractor is fitted with tracks of 330 mm or 13" width, adhesion area 1 250 cm<sup>2</sup> or 198.25 sq. in.; specific pressure .350 kg/cm<sup>2</sup> or 5 lb/sq. in.

**1580** ✓ **Zetor 25 A, Hydraulic Power Lift not fitted, Pressure Air Brakes & Driver's Cabin fitted****1581** ✓ **Zetor 25 with Hydraulic Power Lift & Adjustable Drawbar 13 x 28****1582** ✓ **Zetor 25 with Hydraulic Power Lift, Adjustable Drawbar & Pressure Air Brake System****1583** ✓ **Zetor Super, Hydraulic Lift not fitted, Pressure Air Brakes & Driver's Cabin fitted****1584** ✓ **Zetor Super P (Tracklayer) with Bulldozer Blade**

Zetor Super Tracklayer fitted with Bulldozer blade controlled with the hydraulic power lift by means of steel cables. The blade can be arranged as angledozer or bulldozer. Working width 2 300 mm or 130", height 750 mm or 29.5". capacity 1 m<sup>3</sup> or 35.31 cu. ft.

**1585** ✓ **Zetor Super, Wheeled Type****1586** ✓ **Zetor Super, Wheeled, with Hydraulic Power Lift****1587** ✓ **Zetor Super Tracklayer with Hydraulic Power Lift****1601** **MLOV Fishing Power Plant**

An outstanding power partner in fish stock-raising. Serves for fishing generation fish, for artificial milting, for fishing out and cleaning fry brooks, for inspection of fish abundance, etc.

The generator builds a voltage of 250 V, being driven by a petrol engine of 2,8 HP output, swept volume 153 c. c., 3 000 r. p. m., Gross weight of power plant assembly: 72 kg or 159 lbs.

**1602** **P 900 Sprayer**

Trailing sprayer for tractors, for pest control of field crops and fruit trees. Two to six extensions can operate simultaneously. Filling capacity 900 litres or 193 Imp. gall. Working with a flat spraying with nozzle frame 12 mt or 39.4 ft, output with nozzle frame 1.3 to 2 ha or 3.21 to 4.94 ac. per hour. Weight 570 kg or 1 256 lbs.

**1603** **3 PZ 35 Three Bottom Trailing Plough**

Heavy duty trailing plough with fore-bottoms and disc blade. Furrow depth 30 cm or 12", working width 1 050 mm or 41,3"; weight of plough 1 400 kg or 3 086 lbs. One bottom detachable. The plough is designed to suit tracklaying tractors up 35 HP output.

**1604** **UNIKUM 16-SLN-150 Spoon Drill**

To be mounted on tractors of 25 to 35 HP. Can be used for sewing farm products similar to cereals. Working width 2 400 mm or 94,5", sixteen two-disc shoes of 150 mm or 5,91" pitch. Weight approximately 500 kg or 1 100 lbs.

**1605** **5 PZ 35 Five-Bottom Trailing Plough**

Heavy trailing plough for tracklayer tractors up 50 HP power output, with forebottoms and disc blade. One bottom is detachable. Working depth 30 cm or 12", working width 175 cm or 69", weight 1 990 kg or 4 387 lbs.

**1606** **17-SVBP-105 Drill for Animal Traction**

Roller system with top and bottom sowing, auto-forecarriage. Number of rows 17; pitch 105 mm. Can be adjusted to 15 rows, pitch 120 mm or 4.72", or 13 rows, pitch 150 mm or 5.91", also 4 rows, pitch 450 mm or 17.7" for beetroot sowing; Filling capacity 100 dm<sup>3</sup> or 6 102 cu. in., weight of machine 455 kg or 1 004 lbs.

**1607** **Electric scythe sharpener BEPKU 125**

Driven by electric motor of 0.30 kW, 220/380 V, 2 800 r. p. m.; weight of machine 30 kg or 66 lbs.

**1608** **Blower-chopper RVM 37**

Suitable for dry and fresh fodder. The chopper is driven by an electric motor of 5.5 kW; chopper wheel speed 300 r. p. m., weight of machine approximately 400 kg or 880 lbs. Transport of dry fodder up to a distance of 25 mt. or 82 ft.

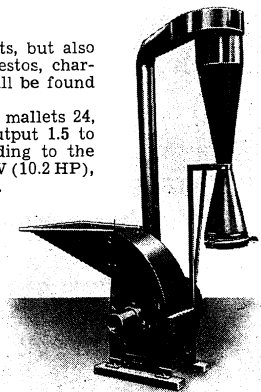
**1609** **SK 24 Shredding Mill**

For shredding cereals and fodder-plants, but also industry materials, such as paper, asbestos, charcoal, etc., the SK 24 Shredding Mill will be found of particular advantage.

Drum dia. 450 mm or 17.7", number of mallets 24, belt pulley width 180 mm or 7.09", output 1.5 to 11 metr. q. or 350 to 2 925 lbs, according to the kind of material. Necessary input 7.5 kW (10.2 HP), 3 300 r. p. m., weight 260 kg or 573 lbs.

**1610** **SK 36 Shredding Mill**

For shredding all kinds of cereals, maize, chestnuts, stalky plants, etc. Necessary input of motor 25 kW. Output according to sieve used 500 to 1 500 kg or 1 100 to 3 300 lbs p. hour. Weight 250 kg or 550 lbs.

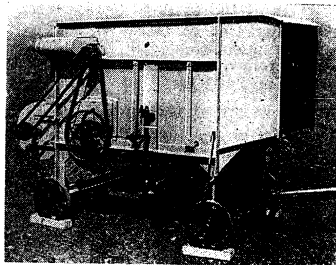


**1611 VSDP 25 Hay Blower with Pulping and Conveying System**

Serves for conveying hay and straw both dry and fresh, for their pulping for silage purposes. The pulping mechanism is detachable. Electric motor of 7.5 kW output, pipes of 500 mm or 20" dia. Weight of machine approximately 700 kg or 1540 lbs.

**1612 Clover Seed Husker**

Serves for husking clover heads. Width of threshing drum 870 mm or 34.3". Necessary input - 4 HP - 1250 r. p. m. Outstanding output of 600 to 1200 kg or 1323 to 2646 lbs seeds within 10 hours, according to quality. Weight of machine 495 kg or 1092 lbs.



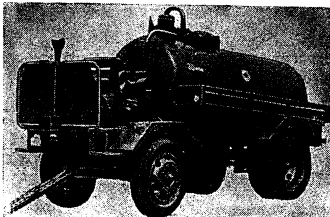
**1613 VAJMA Baling Machine (Power Plant)**

For gardening and farming, pre-cultivation of plants. Output approximately 20 000 bales (soil cubes) per day. The plant comports:

1. Filling machine with flanged electric motor of 1 kW input, weight of machine 230 kg or 507 lbs.
2. Pressing-out machine. Weight 130 kg or 286.6 lbs.
3. 9 pcs of grille of light aluminium alloy - weight of one grille approximately 7 kg or 15.43 lbs.

**1614 JARO hand-operated drill**

An efficient partner on small lots for sowing any kind of seeds in rows. Filling capacity 2 litres or .44 I. gall., weight of machine approximately 15 kg or 33 lbs.



**1615 Intake - Eruption Dung Cart**

For transport of liquid dung. Chassis fitted with 7.5x20" tyres, boiler of 2 m<sup>3</sup> or 70.6 cuf ft. useful capacity, with fittings for petrol pulverisation, level mark and tripple (three-part) intake pipe line. Underpressure 0.54 kg/cm<sup>2</sup> or 7.68 psi, intake interval 120 to 220 sec. Weight of machine 1 830 kg or 4 034 lbs.

**1616 PK V X Mobile Scolding Set**

Serves for washing, conveying, scolding and mashing potatoes designed for silage or for feeding purposes. The set comports three scolding bodies, high-speed steam generator with water tank, mobile washer PP III, potato masher, conveyor and undercarriage. Filling capacity of one scolding body 830 litres or 183 Imp. gall., useful filling of potatoes 600 kg or 1323 lbs. Output of set 1 500 kg or 3 300 lbs per hour.

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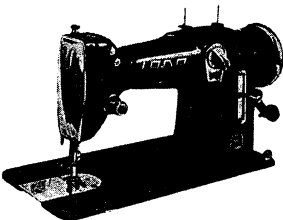
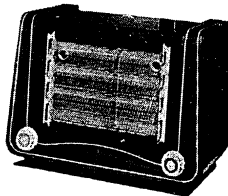
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PRIMARNA IZJAVA PROSLOVA

**1617 ESOX M II Aquatic Mower**

Machinery built-in to punt of 350 cm or 138" length, 115 cm or 45.3" width and 40 cm or 15.7" depth. Two stroke petrol engine of 5.5 HP output driving vane wheels and cutter bars. Horizontal cutter bar of 163 cm or 65.77" length can mow to a depth of 80 cm or 31.5" below water level. Weight of machine 325 kg or 716.51 lbs.

**1618 Potato Sorter**

Serves for assorting and cleaning potatoes. Fitted with three working frames for replaceable sieves (five pcs.). Driven by built-in electric motor. Additional hand drive. Weight of machine 260 kg or 573 lbs.

**1619 ESOX M Aquatic Mower**

For mowing reeds growing in water. (Sheet metal punt of 180 cm or 70.9" length, 100 cm or 39.4" width and 40 cm or 15.7" depth.) Both cutter bars are driven by a twostroke petrol engine, air cooled, of 2 HP output. The machine has no special travelling drive, its weight being 180 kg or 397 lbs.

**1620 HPV 1 Hiller for Animal Traction**

Serves for hilling potatoes. Working width 500 mm or 20", weight approximately 29 kg or 84 lbs. Designed for one horse power.

**1621 STELLA 30 Hoe for Animal Traction**

Three-row model, suitable for beetroot hoeing. The individual systems of the hoeing points are independent. Working width 1 070 mm or 42", maximum working depth 100 mm or 4", weight 125 kg or 276 lbs.

**1622 PLANTAGE NM Hoe for Animal Traction**

Serves for hoeing potatoes, being adjustable both axially and vertically. The three rear tines can be replaced on repeated hoeing. Weight 52 kg or 115 lbs.

**1623 MHD 2 Plough for Animal Traction**

Working width 220 mm or 8.66" maximum, working depth 60 to 140 mm or 2.36 to 5.51", weight 24 kg or 53 lbs.

**1624 HMLR 1 Plough for Animal Traction**

Working width of share 220 mm or 8.66" max., working depth 60 to 140 mm or 2.36 to 5.51", weight 30 kg or 68 lbs. With one handle and RH slide.

**1625 TP 100 Plough for Animal Traction**

Working width of share 170 mm or 6.69", working depth 50 to 130 mm or 1.97 to 5.12", weight 12 kg or 26.4 lbs.

**MOTOKOV**

**1626 SP 6 L St Plough for Animal Traction**

Single share plough of 230 mm working width (9.06"), working depth 90 to 170 mm or 3.54 to 6.69", with land wheel. Weight of plough 40 kg or 88 lbs.

**1627 SP 7 L St Plough for Animal Traction**

Light model, working width 250 mm or 9.84", working depth 90 to 230 mm or 3.54 to 9.06", weight 39 kg or 86 lbs.

**1628 SP 9 R Plough for Animal Traction**

Plough-shaped blade, working width 300 mm or 12", working depth 100 to 230 mm or 3.94 to 9.06", weight 61 kg or 134 lbs.

**1629 OPKSO Plough for Animal Traction**

Single share reversible plough with model 5/6 NR forecarriage with auto control, working width 210 mm or 8.27", working depth 60 to 150 mm or 2.36 to 5.91", weight 65 kg or 143 lbs.

**1630 OPK SOST Plough for Animal Traction**

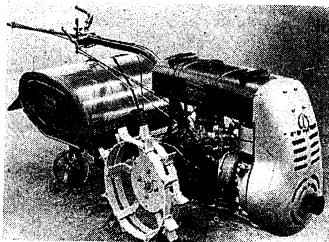
Single-bottom turning plough fitted with land wheel; width 21 cm or 8.27", working depth 6 to 15 cm or 2.36 to 5.91"; weight 41 kg or 90.4 lb.

**1631 RV 42 Chopper-Blower**

Purpose: chopping dry or fresh fodder. Weight 1066 kg or 3 350 lbs. Transport length of chopped fodder 8 m or 26.25 ft, height 15 m or 50 ft. Output per hour: when chopping straw to 2 cm or .787" or dry fodder 3 000 kg or 6 614 lbs. Necessary input 8 to 10 HP from built-in electric motor. Weight 1 100 kg or 2 425 lbs.

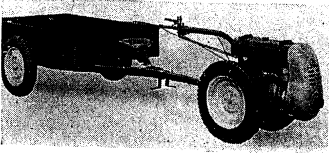
**1632 PF 6 Motorobot**

The petrol engine is a two-stroke single cylinder air cooled, giving a power output of 6 HP; three forward speeds, one reverse. Weight c/w attachments 400 kg or 880 lbs. Purpose: Light tractor for gardening. Can be supplied to operate on paraffin oil (kerosene).



**1633 F 651 Soil Fraise**

Working width 400 to 600 mm or 15.75 to 23.62", maximum working depth 250 mm or 9.84"; three kinds of blades, weight 110 kg or 242 lbs.

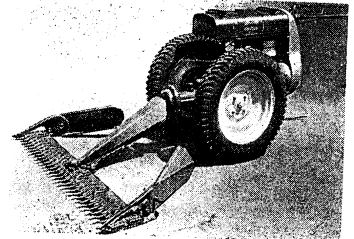


**1634 PV 81 Farm Trailer**

Disc wheels fitted with tyres 6.00x16"; carrying capacity 1 000 kg or 2 200 lbs; weight 260 kg or 573 lbs. Cargo platform 210x135 cm or 83x53".

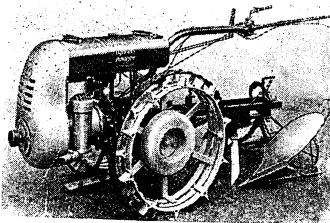
**1635 PP 23 Auxiliary undercarriage**

For transport purposes and for operation with implements requiring no attention. Wheels fitted with bantam tyres run on roller bearings. Weight of undercarriage 72 kg or 158.7 lbs.



**1636 VCM Roller**

Steel tube frame fitted with driver's seat. Weight of roller 485 kg or 1 069 lbs.



**1637 z 151 Cutter Bar**

Semi-thick with 28 bits. The bar operates at reverse speed of Motorobot which is 3.5 km or 217 miles p. h. Weight of cutter bar 110 kg or 242 lbs.

**1638 POM 25 Single share reversible plough**

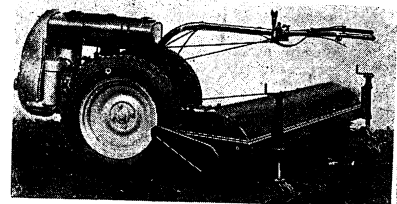
Single share reversible plough for ploughing medium heavy soil to a maximum depth of 210 mm or 8.3". For use with Motorobot PF 6. Working width 250 mm or 9.8"; weight 52 kg or 114.6 lbs.

**1639 3 DHK Vserob (All Purpose Plough)**

Can be used as digger, moulder, hiller or row drop cultivator by simple replacement of implements. Gross weight of All Purpose Plough assembly 138 kg or 304 lbs.

**1640 ZM 12 Power Sweep**

For sweeping yards, and play grounds. Weight of mechanism 160 kg or 353 lbs. Working width of roller 1 265 mm or 40.8", travelling speed 4 to 5 km or 2.4 to 3.1 m. p. h.



**1641 VLM Digger**

For digging holes, planting trees to a dia. of 280 mm, depth 300 mm or 11" dia., 12" depth. Two borers: auger and drill, both with screwed on points. Weight of machine 60 kg or 132 lbs.

**1642 CPM 60 Circular Saw**

For cutting wood. Saw output 2 to 4 c. m. or 70 to 140 cu. ft. according to the kind of wood, with two operators. Weight of machine 83 kg or 242.5 lbs.

**1643 Plain Roller**

**MOTOKOV**

**1644 PM 200 Adapter Sprayer**

For pest control of orchards and vegetable crops. Tank capacity 200 lt. or 44 Imp. gall. fluid. Weight of machine approx. 220 kg or 485 lbs. Output per hour 0.8 ha or 1.98 ac., or 180 to 350 fruit trees.

**1645 VM Borer**

Semi-mounted implement for PF Motorobot serves for drilling perpendicular and diagonal holes of 300 mm and 450 mm or 12" and 17.7" dia. to a depth of 700 mm or 27.6", for building purposes and orchard cultivation.

**1646 BDM 100 Disc Harrow**

Serves for preparation of seed beds and turning of stubble fields. The machine is fitted with four LH and four RH discs which are axially adjustable. Working width 1 000 mm or 39.4", weight 94 kg or 207 lbs.

**1647 KRM 116 Three-row cultivator**

Working width 1 160 mm or 45.66", maximum working depth 120 mm or 4.72", weight 40 kg or 88 lbs.

**1648 KM 64 Cultivator**

Serves for soil loosening. Fitted with five points having a total working width of 640 mm or 25.2". Maximum working depth 90 mm or 3.54", weight 40 kg or 88 lbs.

**1649 N 12/26 Belt Pulley**

Special attachment to PF 6 Motorobot suitable for driving light agricultural machines. Belt pulley dia.: 120 mm or 4.72", width 70 mm or 2.76", speed 2 300 r. p. m.

**1650 PT 10 Tracklayer Tractor c/w Sprayer**

Two stroke, twin-cylinder, air cooled petrol engine of 689 c. c. or 42 cu. in.; power output 7 HP; three forward speeds, one reverse. For work in vineyards and hopfields. Gauge 960 mm or 38". PT 10 Tractor having a gauge of 850 mm or 33.5" is also available.

**1651 Sprayer**

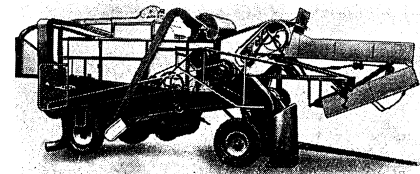
Filling capacity 300 litres or 66 Imp. gall., spraying height up to 1 metre or 3.3 ft. Weight of sprayer 130 kg or 286.6 lbs.

**1652 PT 10 Plough**

Will be found of exceptional advantage particularly for hopfields. Working width variable, weight of plough 70 kg or 154 lbs.

**1653 PRIM Harvester for Animal Traction**

With oil bath; ball and roller bearings, sweep (working width) 1 520 mm or 60", weight of machine 440 kg or 970 lbs.

**1654 MA 90 Thresher**

For threshing any kind of cereals, legumens and oil plants. 4 to 5 operators. Output 20 metr. q. or 4 800 lbs p. hour while threshing wheat of 43.5% yield & 16% moisture. Weight of machine 3 800 kg or 8 378 lbs; drive by electric motor Model RFU 92 A, 25 kW, 2 960 r. p. m. for A. C. 380/220 V.

**1655 130 LSP Straw Press to Thresher**

Designed for MA 90 and NTZ 48 Threshers, but suitable also for other threshers of equal output. Weight 1 025 kg or 2 260 lbs. Press output per hour: 30 to 35 metr. q or 660 to 770 lbs.

**1656 ZM 330 Harvester Thresher**

Working width 3 300 mm or 130", four speeds stepped up from 1.5 to 10.5 km or .932 ip to 6.52 miles p. h.; feeding table, grain dividers and reel in vertical plane hydraulically operated, engine output 60 HP, threshing drum dia. 550 mm or 17.7", two-stage cleaning. Weight 4 200 kg or 9 259 lbs.

**1657 LSK 130 Straw Baler Press**

Purpose: collecting and baling of dry straw; weight 1 400 kg or 3 086 lbs, working width 1 300 mm or 51.2"; suitable for Zetor 25; output per hour 0.5 to 1 ha or the tractor driver — one for the press, the other for the truck.

**1658 H 303 Farm Cart for Animal Traction**

Carbo platform dimensions 3.5x1.8 metres or 11.5x5.9 ft. Gross weight approximately 800 kg or 1 764 lbs. Maximum permissible speed of cart 10 km or 6.2 miles p. hour.

**1659 LV 5 Harvester Binder for Animal Traction**

Light model with minimum traction effort required - approx. 160 kg or 353 lbs - two light horses. Working width 5 ft, RH cutting mechanism. Weight 710 kg or 1 565 lbs. Output per 10 hours: 3 to 5 ha or 7.41 to 12.4 ac.

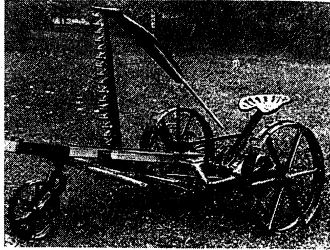
Detailed reports with a large number of pictures are to be found in the CZECHOSLOVAK MOTOR REVIEW.

**1660 Cert Potato Digger for Animal Traction**

For digging potatoes. Single-row, extremely light operation, weight 280 kg or 617 lbs.

**1661 HEROS 138 Grass Mower for Animal Traction**

Central cutter bar, working width 1380 mm or 54.35", cranked hitch with wheel, gears running in oil bath, weight 360 kg or 794 lbs. Both hitch and cutter bar can be adjusted as necessary.

**1662 FAMOSA 12 Sprayer**

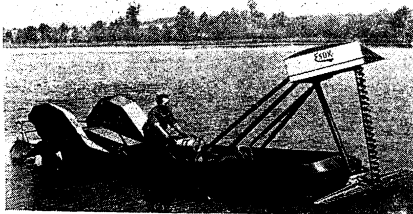
Hand operated pressure sprayer, portable on back. Weight 7 kg or 15.43 lbs, filling capacity 12 litres or 2.64 I. g. consumption of liquid per ha 425 litres or 93.5 I. gall.

**1663 FAMOSA 22 Sprayer**

Hand operated, pressure type, portable on back. Filling capacity 22 litres or 4.84 Imp. gall. Suitable for areas of 1 up to 2 ha or from 2.5 to 5 ac. Weight of apparatus 14 kg or 30 lbs.

**1664 FLORA 16 Sprayer**

Hand operated pressure-less sprayer, portable on back. Weight 7.5 kg or 16.5 lbs, filling capacity 16 litres or 3.5 Imp. gall. Suitable for vineyards and vegetable gardens.



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**MOTOKOV****1665 TRT Tractor Driven Sprayer**

Weight 30 kg or 66 lbs. Filling capacity 30 litres or 6.6 Imp. gall. Working pressure 6 kg/cm<sup>2</sup> or 85.33 psi. Range 700 mm or 27", consumption of liquid per ha 400 to 425 lit. or 88 to 93.5 Imp. 4all.

**1666 NEZMAR Sanitation Sprayer**

Made of non-ferrous metals. Filling capacity 20 litres or 4.4 Imp. gall., maximum pressure 5 kg/cm<sup>2</sup> or 71.12 psi.

**1667 Z 3 A Grain Blower**

For Conveying grain pneumatically. Easily movable, simple preparation to work. Weight approx. 320 kg or 705.5 lbs.

**1668 ESOX B 2 Aquatic Mower**

For moving reeds and other water plants. Working width 210 mm or 8.2", output per hour 6 ha or 14.83 ac. Drive from built-in engine. 2 operators needed. Weight of machine 900 kg or 1984 lbs.

**1669 Z 102 Grain Blower**

Designed for pneumatic conveying of grain and loose matter of every description. Due to its high output of 120 q/h. it will be found of great advantage for large farms and industrial works. Pipe dia. 300 mm or 12", maximum transport length 60 mt. or 197 ft., height 35 mt. or 115 ft. Driven by electric motor of 7.5 kW, 2 800 r. p. m.

**1670 Z 103 Grain Blower**

Suitable for smaller and medium size farms. Output 609/hr. Piping 220 mm in dia. Transport distance 50 metres, height 20 metres. 7.5 kW electric motor drive, 2 800 r. p. m.

Accessories: 25 metres of piping, 3 elbows, 1 endpiece, 18 high-speed couplings.

Weight of the machine: 160 kg without accessories.

Attachments: 31 mt or 101.7 ft. pipes, 5 elbow-pieces, one end-pieces, 25 fasteners.

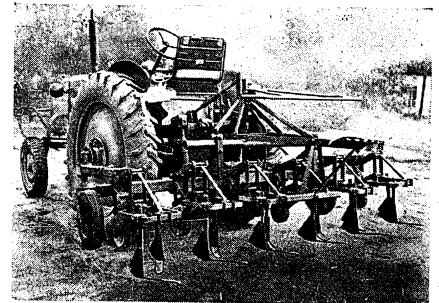
Weight of machine, attachments excluded: 460 kg or 1 014 lbs.

**1673 PDP 120 Half-Mounted Disc Plough**

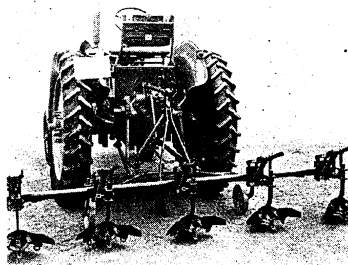
Serves for ploughing stubble fields while simultaneously sowing stubble field fodder plants. Working width 1 200 mm or 47", disc diameter 500 mm or 20", number of disc 9, pitch 180 mm or 7". Weight approximately 550 kg or 1 212 lbs. Output per hour 1 ha or 2.47 ac. Designed for Zetor 25.

**1674 KPN 6 Hoer**

6 bodies, variable working width 380 to 800 mm or 15 to 31.5", maximum working depth, side points 800 mm or 3.15", maximum working depth, medium points and chiseling 120 mm or 4.72". Output 0.8 ha or 1.97 ac. at a speed of 6 kg or 3.72 m. p. h.

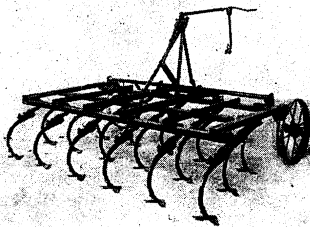
**MOTOKOV**

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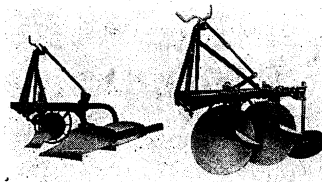
**1675 HN 41  
Mounted Hiller**

Has five bodies adjustable to a row pitch of 600 to 700 mm or 2.36 to 2.78". The wings of the hilling bodies are adjustable both horizontally and vertically. Maximum working depth, 180 mm or 7.06", weight of machine 160 kg or 352 lbs. Output while ploughing: 1.3 ha or 3.11 ac. at a speed of 4 km or 2.5 m. p. h.



**1676 PN 532 Five Bottom  
Mounted Plough**

Working width 1250 mm or 49.2", maximum working depth 100 mm or 4", weight 235 kg or 518 lbs. Output 0.35 ha or .86 ac. at a speed of 5 km or 3.1 m. p. h.



**1677 PN 252 Two Bottom  
Mounted Plough**

Working width 600 mm or 23.6", maximum working depth 250 mm or 9.84", weight 265 kg or 452 lbs. Output 0.25 ha or, 61 ac. at a speed of 5 km or 3.1 m. p. h.

**1679 2 PDN 35 Two Disc  
Mounted Plough**

Maximum furrow depth 220 mm or 8.27", working width 700 mm or 27" (one disc 350 mm or 13.8"). Weight approx. 260 kg or 573 lbs. Discs are adjustable both in vertical and horizontal plane.

**1680 UPS Universal  
Forecarriage**

Basic component of the range of trailing ploughs. Can be fitted with plough or cultivator bodies. Fitted with automatic lifting mechanism. Stroke of fallow wheel max. 400 mm or 15.7", weight 190 kg or 479 lbs.

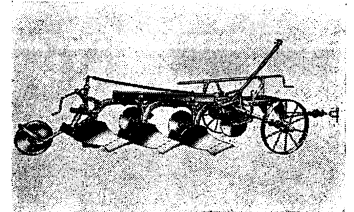
*There are servicing depots with the greatest possible variety of spare parts in more than 120 states on the continent as well as overseas which is a guarantee of safe riding.*

**1681 U 22 Two Bottom Body**

Maximum working depth 250 mm or 9.84", overall working width 600 mm or 23.6". Weight of plough assembly 450 kg or 992 lbs. Weight of plough body 260 kg or 573 lbs. Output 0.29 ha or .61 ac. at a speed of 5 km or 3.1 miles p. h.

**1682 U 322 Three Bottom  
Body**

Identical with U 22 body, but having three bottoms. Working width 900 mm or 35.4", weight 345 kg or 760 lbs. This plough body is suitable for a tractor up 35 HP output.



**1683 U 327 Three Bottom Body**

Designed for medium heavy soil to a working depth of 220 mm or 8.68", overall working width 750 mm or 29.5". Weight of plough assembly 470 kg or 1036 lbs., weight of body 280 kg or 617 lbs. Output 0.34 ha or .84 ac. at a speed of 5 km or 3.1 miles p. h.

**1684 U 51 Five Bottom Body**

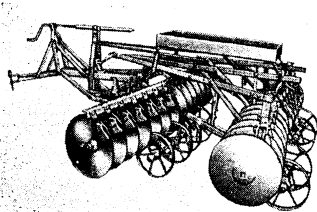
Maximum working depth 150 mm or 5.91", overall working width 1250 mm or 49.2". Weight of Body c/w attachments 245 kg or 540 lbs. Output 0.35 ha or .86 ac. at a speed of 5 km or 3.1 miles per hour.

**1685 UK 153 Cultivator Body**

Has fifteen points of 150 mm or 5.91" pitch; working width 2100 mm or 82.7", working depth 120 mm or 4.72". Weight of assembly 364 kg or 802 lbs., weight of body 174 kg or 384 lbs. Output 0.34 ha or .84 ac. at a speed of 5 km or 3.1 m. p. h. Optionally with extirpator blades instead of points.

*JAWA-ČZ is the trade-mark of the motor-cycles which are conquering the world. Detailed information on these machines is regularly to be found in the illustrated monthly CZECHOSLOVAK MOTOR REVIEW.*



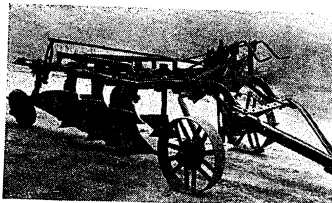


**1686 NTB 28 Trailing Disc Harrow:**

28 discs, disc dia. 450 mm or 17.7", working width 2 240 mm or 88.2", weight 510 kg or 1 323 lbs. Additional weight can be fitted, output 1,1 ha or 2.72 ac. at a speed of 5 km or 3.1 miles p. h.

**1687 Mars Piccolo 332 Three Bottom Trailing Plough**

Overall working width 750 mm or 29.5", maximum working depth 210 mm or 8.27", weight 236 kg or 521 lbs. Output 0.35 ha or .86 ac. at a speed of 5 km or 3.1 m. p. h.



**1688 3 PZ 35 Three Bottom Trailing Plough**

Heavy trailing plough with front shares, disc blade. Working depth 30 cm or 12"; working width 1 050 mm or weight of plough 1 400 kg or One share detachable. The plough is designed for use with a tracklayer tractor up 35 HP.

**1689 KHN 280 Cultivator for Depth Loosening**

Working width 2 800 mm or 110", maximum depth 200 mm or 8", number of tines 19. Designed for Zetor Super—working speed 5 km or 3.1 miles p. h. Weight 470 kg or 1 036 lbs.

**1690 PDZ 17 Disc Plough for Stubble Fields**

17 discs of 500 mm or 19.7" dia., pitch 18 mm or .09", working depth 50 to 80 mm or 1.97 to 3.15". For stubble field ploughing and simultaneous sowing. Working width 2 500 mm or 98.4".

**1691 KHZ 200 Trailing Cultivator for Depth Soil Loosening**

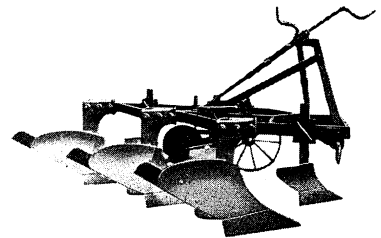
Working width 2 000 mm or 65.62 ft., maximum depth 300 mm or 12", number of tines 9 (7). Necessary power input 35 to 40 HP, working speed 5 km or 3.1 miles p. h. Weight 750 kg or 2 645.5 lbs.

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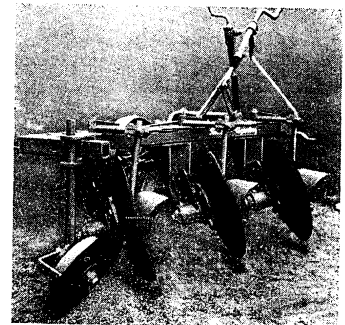
**1692 3 PN 35 Three Bottom Heavy Duty Mounted Plough**

Overall working width 1 050 mm or 41.3", working depth 280 mm or 15"; last bottom detachable, one disc blade, three pre-shares, weight 410 kg or 904 lbs. Complete set of spare blades as equipment. Longitudinal pitch between bottoms 650 mm or 25.6".



**1693 3 PDN 35 Three Disc Mounted Plough**

Maximum furrow depth 220 mm or 8.27"; working width 1 050 mm or 41.3". Discs are adjustable both in vertical and horizontal plane.



**1694 S PN 35 D Mounted Three Bottom Plough**

Extended frame - longitudinal pitch between bottoms 70 cm or 27.6". Last bottom detachable. Working width 105 cm or 41.3", maximum working depth 28 cm or 11", weight of plough 430 kg or 947.5 lbs.

**1695 TDBT 5 A Tractor Point Harrow**

For preparation of seed beds. Overall working width 4 800 mm or 18.9", number of points 100. Number of squares 5. Weight 240 kg or 529 lbs., output approximately 2.4 ha or 6 ac. at a speed of 5 km or 3.1 m. p. h.

**1696 35 SVBZ 75 Narrow Pitch Drill**

The machine can be fitted with a device for clover sowing. Universal drill for cereals. Weight 730 kg or 1 609 lbs. Number of rows 35, pitch 75 mm or 2.95", working width 2 625 mm or 111.8", handling: 1 person, overall width 3 310 mm or 13.4".

**1697 Novitas 3 m Fertilizer Spreader**

Working width 3 000 mm or 1181". Suitable for any tractor model fitted with drawbar or coupling hook. Weight 300 kg or 660 lbs. Output 1.8 ha or 4.44 ac. at a speed of 6 km or 3.72 miles per hour.

**MOTOKOV**

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**1698 Novitas 2 m Fertilizer Spreader**

Working width 2 000 mm or 78.74". Output 1.2 to 1.6 ha or 2.76 to 3.95 ac. at a speed of 6 km or 3.72 miles p. h.



**1699 TLZ 120 Flax Puller**

For flax pulling behind Zetor 25 Tractor; working width 1 200 mm or 47.2", weight 925 kg or 2 435 lbs.

**1700 Flax Combine**

The combine pull the flax, de-seeds it and stores for dewing. Working width (sweep) 1 200 mm or 47", output 6 ha or 15 ac. per hour. The necessary tractor power is 25 HP, maximum travelling speed 10 km or 6.21 miles p. h. The actual combine mechanism is driven by a petrol engine having a weight of 2 180 kg or 4 806 lbs.

**1701 SŘZ 42 Sillage Combine**

Designed for fresh and dry fodder, has detachable sets; for low-stalk fodder up to 1 500 mm or 59", for high-stalk fodder above 1 500 mm or 59" height and for dry fodder. The machine mows the fodder, chops it and blows the chopped fodder into an accompanying vehicle. Minimum operators needed. Working width of cutter bar 1 292 mm or 50.8"; length of machine 1 300 kg or 2 864 lbs.

**1702 2 SZ-210 Fodder Piler and Turner**

Two purpose machine. Adaptable for animal traction. Working width of both parts connected 4 200 mm or 165", operating speed 8 km or 4.35 miles p. h.; output p. h. 2.4 or 5.93 ac.; 2 operators needed for preparation, one tractor driver for operation.

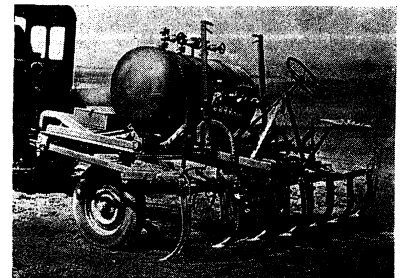
**1703 TORON S 2 Hay Blower**

For pneumatic conveying of hay, straw, etc. Weight 370 kg or 815.7 lbs. Exceptionally easy preparation to work. Net weight of Blower 195 kg or 530 lbs.

Information on the service is to be found in the CZECHOSLOVAK MOTOR REVIEW, Praha 1, Ul. 28. října 13.

**1704 Ammonia Spreader**

Serves for additional fertilizing with compressed ammonia. Comprises two undercarriages with tanks and fertilizing system fitted to tiller. Filling capacity 535 litres or 117.5 Imp. gall. Points can be adjusted from 300 to 700 mm or from 12 to 27". Working depth 100 to 150 mm or 4 to 6". Working width 2 700 mm or 106". Weight of set 1 850 kg or 4 079 lbs.



**1705 ŽTZ 183 Trailing Cutter Bar for Tractors**

Tine pitch 76.2 mm or 1.97", working width 1 830 mm or 72", half-mounted, RH-cut, thin cutter bar. Travelling speed 6 km or 3.73 miles p. h., weight of machine 210 kg or 462 lbs.; crankshaft speed 860 r. p. m.

**1706 MBK 180 P Tractor Binder**

Direct tractor drive. Cutting bar width 1 830 mm. For use with low-powered tractors. Approximate output 0.5 hectare per hour. Approximate weight 960 kg.

**1707 ZVZ 210 Tractor Driven Binder**

Three-sheet LH cut, working width 2 100 mm or 83". Light construction of pressed sheet metal. Fitted with worm type separator. Two wheels only, both for transport and operation. Weight approximately 850 kg or 1 874 lbs.

**1708 2 SKŘ Beet Combine**

Two-row beet cropper which cuts the beet leaves first and then digs and collects the heads. Outputs approximately 2 ha or 5 ac. per 10 hours. Weight of machine 1 200 kg or 2 645 lbs. To be used with Zetor Super Tracklayer.

**1709 T 3.5 P VB 2 Trailer**

Tractor trailer for heavy loads. Payload 3 500 kg or 7 700 lbs. Operating weight 1 450 kg or 3 196 lbs. Tipping mechanism operated by hand crank (360). The trailer is fitted with pressure air brakes and with additional mechanically operated hand brake.

Technical and scientific articles following the development of technology in motorism are regularly to be found in the illustrated periodical CZECHOSLOVAK MOTOR REVIEW, popular all over the world. It is published in English, French, Spanish and German.

**1710 T 3.5 P NB 2 Trailer**

Equal to model T 3.5 P VB 2, but differs by its run-on brake. Weight of trailer 1450 kg or 3196 lbs. Additional mechanically operated hand brake.

**1711 DP-2.5 P Two Wheel Trailer**

Can be hydraulically tipped to three sides, loading area 4.8 m<sup>2</sup> or 51.67 sq. ft., carrying capacity 2500 kg or 5500 lbs., maximum speed 30 km or 18.6 m. p. m., weight of trailer approximately 710 kg or 1785 lbs.

**1712 FPT 2.5 Dung Cart**

For any liquid dung with the exception of acids. Fitted with Vacuum-compressor for pumping liquid manure. Empty weight 2400 kg or 5290 lbs. Filling capacity 2.5 c. m. or 88.28 cu. ft. Maximum front axle pressure 3700 kg or 8157 lbs., max. rear axle pressure 3400 kg or 9446 lbs. Filling within 3 minutes, draining within 2 minutes.

**1713 T 5 P Trailer**

For use with tractors, payload 4700 kg or 10360 lbs. Weight of trailer 1850 kg or 4078 lbs. Tipping mechanism is controlled by means of a hand crank. The vehicle is fitted with a pressure air brake. Can be supplied with run-on mechanically operated brake. Cargo platform 8 m<sup>2</sup> or 86112 sq. ft.

**1731 Aero Super**

Twin motor aircraft four seater, suitable for sporting, training, courier or aerotaxi purposes. Fitted with two Walter Minor 4-III motors or 105 HP nominal output. Peak speed 265 km or 164 m. p. h., cruising speed 240 km or 149 m. p. h. at a fuel consumption of 20.5 lt/p. 100 km or 13.75 m. p. I. g.

**1732 Z 126 »Trenér«**

Single motored low-wing tandem suitable for training, sail-plane towage and aerobatics. The built-in Walter Minor 4-III motor of 105 HP enables the plane to develop a top speed of 205 km or 127 m. p. h., cruising speed 180 km or 112 m. p. h. at a fuel consumption of 13 lt/100 km or 24.76 m. p. I. g.

**1733 LF 109 »Pionýr«**

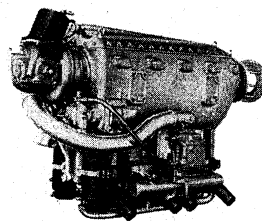
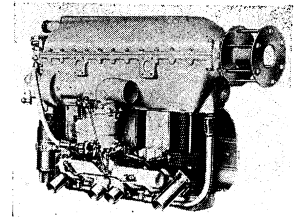
Two seater sail-plane of mixed construction, trainer-schoolplane. Optimum glide ratio, fully loaded, speed 80 km or 50 m. p. h.; 18.5 to 1, minimum drop 1.06 m/sec. at 62 kg or 38.5 m. p. h. Permissible speed on winch 95 km or 59 m. p. h., in tow behing aircraft 120 km or 74.6 m. p. h.

**1734 Aeroplane Model**

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**MOTOKOV****1735 Mikron III**

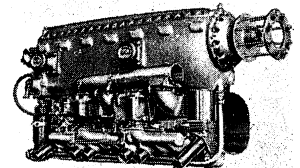
Light, air-cooled, four cylinder in-line motor of 65 HP at 2600 r. p. m. Fuel consumption at cruising output of 48 HP at 2350 r. p. m.: 225 g/HP/h or 7.98 oz/HP/h. Suitable for aircraft and light motor launches.

**1736 Walter Minor 4-III**

Aircraft Motor, inverted four cylinder in-line, air cooled; power output 105 HP at 2500 r. p. m. Cruising output 80 HP at 2300 r. p. m. at consumption of 225 g/HP/h or 7.98 oz/HP/h.

**1737 Walter Minor 6-III**

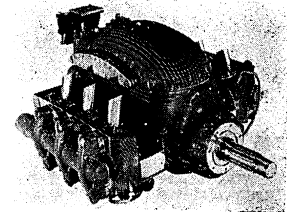
Four stroke, air cooled, six cylinder in line aircraft motor. Nominal output at sea-level 160 HP at 2500 r. p. m., cruising output 125 HP at 2300 r. p. m. and fuel consumption of 225 g/HP/h or 7.98 oz/HP/h.

**1738 Praga Doris B**

Air cooled flat six cylinder of 220 HP at 3000 r. p. m.; cruising output 180 HP at 2300 r. p. m. and fuel consumption of 210 g/HP/h or 7.45 oz/HP/h.

**1739 Aircraft dashboard instruments**

For airplanes and sail planes; gyroscopic, navigation, motor performance gauges, gauges checking operation of various power units, etc.

**1740 Test station for aircraft instruments****1741 Airport lighting set**

Signalisers of every description used in aircraft service. Seriously interested parties will be shown novelties such as Z 226, Démant, swinging sail-plane; LD 40—all-metal Sokol; L 60—agricultural airplane and L 13—all-metal two seater sail-plane at the airport.

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**1742 V 401 E Air Screw**

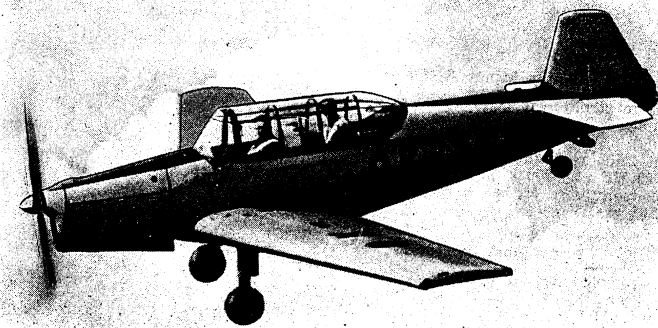
Electrically adjustable in flight, Has two wooden blades, can be used for motors up to 2 600 r. p. m.; controlled electrically from the cockpit to four pre-set positions: start, climb, top speed and cruising.

**1743 V 411 Air Screw**

Mechanically adjustable in flight. Has two wooden blades and can be used for powerful engines.

**1744 Aero Super**

Same as 1731.



**1745 Z-226 T**

A new development type of aircraft with a six cylinder engine. A novelty of the Czechoslovak aircraft industry.

**1746 Diamond**

Weight, empty 260 kg, weight, maximum 460 kg, payload 200 kg, wing span 18 metres, length 7.60 metres, wing area 16.15 sq. metres, slenderness ratio 20, minimum speed 54 km per hour, optimum gliding angle 1:35 at a speed of 85 km per hour, descent at a speed of 100 km per hour 1 metre per second at a gliding angle of 1:27. Maximum speed for towing by aircraft 150 km per hour, for towing by winch 120 km per hour, maximum permissible speed 250 km per hour.

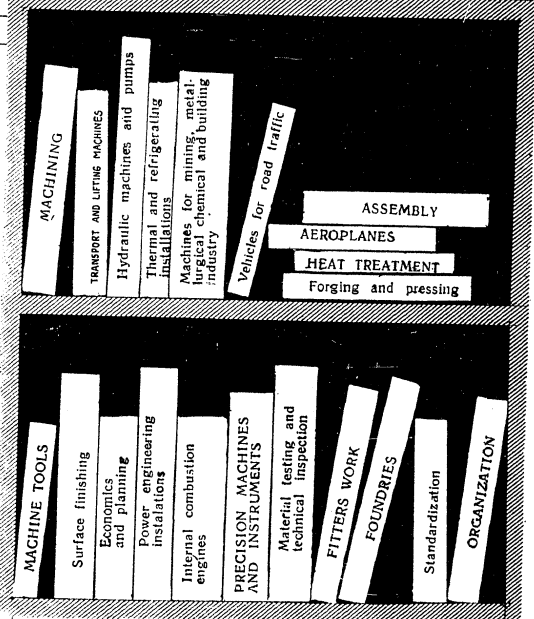
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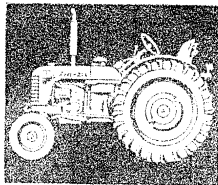
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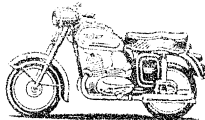
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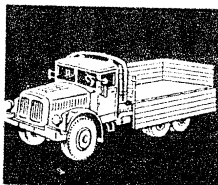
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- Automobile and Motorcycle Outfit
- Bicycles and Spare Parts
- Workshop Machinery Equipment, Tools and Implements
- Kitchen Machines and Equipment for Tradesmen
- Enamelware and Enameled Cast-Iron Goods
- Technical Rubber and Leather

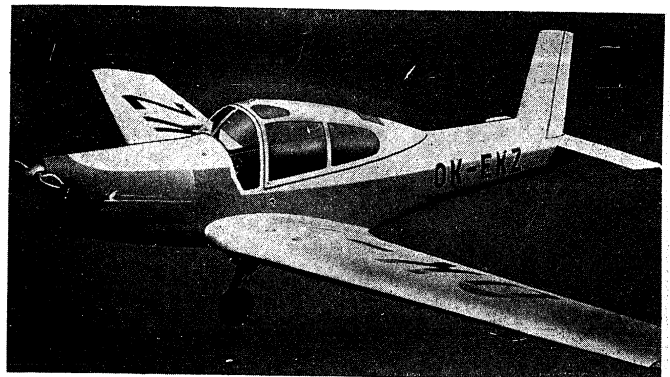


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See for yourself at the Exhibition in Brno



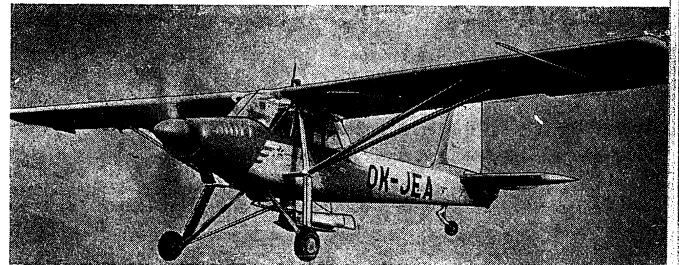
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PRAHA — CZECHOSLOVAKIA



**1747 LD-40 — All-Metal Aircraft**

Also a new development type of the aircraft industry which will be demonstrated as a novelty for the first time at the Brno exhibition.

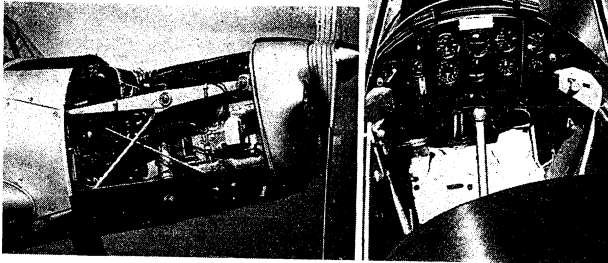


**1748 L-60 — Agricultural Aircraft**

Wing span 13.96 metres, length 8.54 metres, weight of empty aircraft 670 kg, load 445 kg, operating weight 1 415 kg, maximum speed 191 km per hour, cruising speed 180 km per hour, minimum flying speed 12 km per hour, practical ceiling 5 300 metres, take-off distance over 15 metre obstacle 227 metres, landing distance over 15 metre obstacle 195 metres, minimum take-off distance 123 metres, minimum landing distance 76 metres, range 700 km, fuel consumption at cruising speed 37.8 litres per hour.

The aircraft is driven by a type M 208B 6-cylinder flat twin engine. It is a multi-purpose aircraft intended particularly for crop spraying.

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**1749 Z-126**

Same as item 1732.

**1750 Type L-13 Glider**

An all-metal two-seater glider of a new type which will be also on display for the first time at the exhibition as an interesting novelty.

**1751 Type LF 109 Glider**

Same as item 1733.

**1761 KRU Universal Circular Saw**

for cross and oblique cuts or angle cuts with inclined saw blade. By turning the motor to a vertical position and exchanging the saw blade for a cutting or some other tool the machine becomes a shaping machine. When fitted with a planing head straight or shaped joints can be made.

**1762 Type EV Carpenter's Hand Drill**

Drill holes up to a diameter of 60 mm even in hard wood. When a screwdriver blade or a socket with an internal hexagon is fitted to this tool it can be used also for tightening wood screws. The tilting supporting plate permits slanting holes to be drilled up to an angle of 45°.

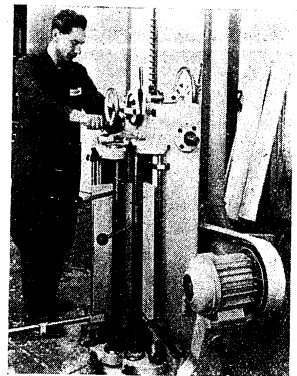
Spindle speed	450 r. p. m.
Motor speed	2 800 r. p. m.

*Instruction, advice, suggestions as well as entertainment is to be found every month in the richly illustrated motorist monthly CZECHOSLOVAK MOTOR REVIEW, Praha I, Ul. 28. října 13.*

**1763 Type JMP One-Man Saw**

The saw serves for felling smaller trees, for shortening and for cutting off branches.

Design of I. C. engine	inclined single-cylinder
Method of operation	petrol, two-stroke
Cooling	forced, air
Cylinder bore	45 mm
Piston stroke	45 mm
Swept volume	71.55
Rated output	2 HP



**1764 Type EH 250 Electric Hand Planer**

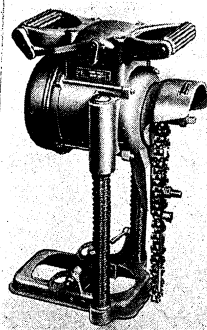
Serves for machining the surface of soft as well as hard wood by accurate, smooth and perfectly level planing.  
Planing width 250 mm  
Maximum depth of cut 3 mm  
Speed of cutterblock 4 000 r. p. m.  
Output of electric motor 0.8 kW



**1765 Type EO 85 Electric Circular Hand Saw**

Indispensable for erection work on construction sites, repairs of floors, building of roof structures, in shipyards and railways workshops, etc. The circular saw blade which is adjustable for the required depth of cut (from 0 to 25 mm) permits grooving, cutting of tenons as well as cutting at an angle and cutting off of wood. 1 400 r. p. m., output of electric motor 0.75 kW.

*Technical and scientific articles following the development of technology in motorism are regularly to be found in the illustrated periodical CZECHOSLOVAK MOTOR REVIEW, popular all over the world. It is published in English, French, Spanish and German.*



**1766 Type DĚ 150  
Electric Hand  
Mortising Machine**

Serves for accurate, heavy duty cutting of mortises of various sizes in soft and hard wood. Used chiefly for making tenon joints.

Maximum depth of mortise 150 mm

Output of electric motor 0.96 kW

Speed 2 800 r. p. m.

**1767 Type MĚP Two-Man Chain Saw**

For felling trees and cutting up logs in forests. The driving part is a single-cylinder air-cooled petrol engine. A friction clutch disengages the movement of the chain automatically at low speed. The cutting part can be turned from a vertical to a horizontal position. A protective bar protects the operator in case the chain breaks and prevents access of the operator's hand to it.

Cutting length of saw 600 mm, 800 mm, 1 000 mm

Cutting speed 7 metres per second

Maximum output 3 800 r. p. m., 5.5 HP

**1768 Type C 800 Single-Spindle  
Dove-Tailing Machine**

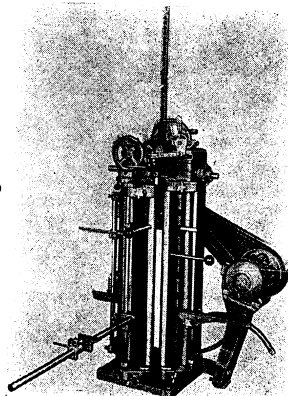
The machine moulds enclosed, semi-enclosed and open dove tails. It also shapes crossbar slots and levels edges of plates. It can make dove-tail joints of any pitch by means of exchangeable templates, a dividing arm and suitable cutter heads.

Working width 800 mm

Maximum thickness of wood 60 mm

Speed of cutter shaft 15 000 r. p. m.

Output of electric motor 1.5 HP



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**1769 HBR 4 Hot Glung Machine**

for feeding from the broad side. Controlled by a single hand wheel with fully automatic electro-hydraulic pressure regulator.

Number of heating plates	16
Thickness of heating plates	40 mm
Number of clear layers	15
Stroke	1 050 mm
Maximum specific pressure	25 kg per sq. cm.
Maximum total pressure	747,5 tons
Number of pressure cylinders	4
Diameter of plungers	260 mm
Maximum water pressure	353 atm.
Closing period of empty press, approx.	25 seconds
Time required to reach full pressure	12 seconds
Weight of machine	370 000 kg

**1770 XDV Quadruple Acting Machine**

for production of wood wool

**1771 FMA Automatic Pattern Makers Shaping Machine**

for manufacturing of wooden articles of complicated shapes. Its design enables several operation with one clamping, which would otherwise require several individual machines. Especially the internal machining of patterns is substantially quicker and more accurate than on the existing machines.

**1772 Type KSS Saw Bench for Jointing Circular Sections of Patterns**

Serves for the manufacture of rough cylindrical patterns glued together of circular layers. The jointing is done with a circular saw mounted on the shaft a special motor travelling on guideways and guided by 12 ball bearings. The safety is increased, in cases of sections of small diameters, by a lever clamping equipment. It can also be used as a cut-off and angle cutting saw for lengths up to 1 500 mm. Speed 2 800 r. p. m.

**1773 Type KVH Multi-Blade Saw Bench**

Intended for the heaviest cuts by a single saw blade or for the cutting-up of laths by several saw blades. Suitable for furniture, motor vehicle body and box factories, etc.

Maximum height of cut	100 mm with 350 mm dia. saw blade
Rates of feed	150 mm with 450 mm dia. saw blade
	blade 4.5 - 7 - 9 - 10 - 11 - 5 - 14 metres per min., 13 - 20 - 23 - 26 - 36 - 52 metres per min.

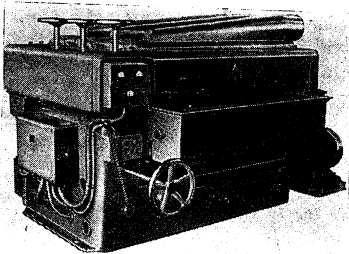
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**1774 Type HPK Portable Thicknessing Machine**

Serves for precision planing of wood. The feeds are power driven and operate by means of four driven rollers. The table has an automatic wedge type raising mechanism. The table rollers are easy to set above the surface of the table by means of a lever in accordance with the kind and humidity of the wood. The motor for the movement of the table is stopped, in its extreme positions, automatically by limit switches.

Maximum planing width	800 and 1 000 mm
Maximum planing height	200 mm
Speed of cutterblock	4 300 r. p. m.
Feeds: number	4
range	7.5 - 11 - 15 - 22.5 metres per minute
Number of cutters per cm	22.5-15, 2-11, 4-7.6

**1775 THREE ROLLER KNIFE CRINDER****1776 Type FMM Veneer Cutting machine**

Serves for cutting veneer of well prepared, steamed wood. The working feed is driven by a ratchet arrangement which is operated by a striker attached to the ram of the tool slide. The following thicknesses can be cut without the gears being changed:

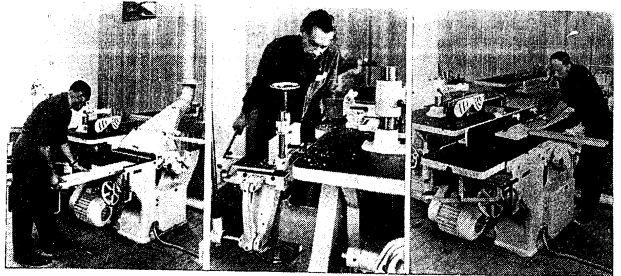
0.1 to 1 mm in 0.05 mm increments  
0.1 to 2 mm in 0.1 mm increments  
0.25 to 5 mm in 0.25 mm increments  
0.5 to 10 mm in 0.5 increments

Maximum working length 3 100 and 4 000 mm  
Maximum working width 1 200 and 1 200 mm  
Maximum working height 1 200 and 1 200 mm  
Main motor: output 20 kW and 32 kW  
speed 950 r. p. m. and 1 430 r. p. m.

**1777 M 800 Veneer Peeling Machine**

the thickness of the veneer can be adjusted by a single lever. A device for instantaneous stopping of the machine. Improved lubricating system. Produces veneers from 0.2 mm thickness.

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**MOTOKOV****1778 Small Type UMS (POKROK) Universal Machine**

This is a portable planing machine for all branches of the wood-working industry. It surfaces, thicknesses, cuts, drills or mortises, for the machine can be converted into the machine concerned by a simple adaptation.

Width of roller	260 mm
Diameter of roller	90 mm
Number of cutters	2 HP
Maximum depth of cut	4 mm
Speed	2 800 r. p. m.

**1779 Type BAS Automatic Saw Grinding Machine 708 Lipnile**

Intended for grinding circular frame, and light and heavy band saws. It grinds the entire contour of the tooth in one operation the grinding being done either perpendicularly or at an alternating slant. All the standard shapes of teeth, i. e. straight teeth, wolf teeth as well as round teeth and also intermittent teeth can be ground on it.

**1780 Type G 71 Frame Saw**

with hydraulic control. Intended for cutting beams and boards from logs. For establishments where the working of large quantities of timber is demanded. The easily removable frame moves in the housing. Spontaneous movement of the frame for the fitting of saw blades can be stopped by an easily controllable brake. The log is fed into the cut by the bottom grooved rollers which have a large diameter and the drive of which is derived from the crank by means of link motion and is adjustable within wide limits.

**1781 Metalization Workshop with Equipment Metal Spraying Gun**

for reinforcing of weakened or worn-out parts which should be built up to the original size,  
for improving of parts with regard to good antifriction properties of sprayed metal,  
for protection against corrosion,  
for protection against the effect of high temperatures (950 °C),  
for repairs of porous castings,  
for repairs of cracks in castings  
for repairs of cracks in castings of cavitation defects, etc.,  
for metal spraying of non-metallic objects to increase the surface hardness or to achieve electric conductivity, etc.  
for protection against cementation,  
as an independent means of production.

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**1791 Calex Household Refrigerators, Compressor Type**

Capacity 100 and 200 litres; precision workmanship, complete range of up-to-date attachments; hermetically enclosed refrigerator plant operating on freon 12. Low current consumption of some 1 kW per 24 hours annual average.



*N. 2 m. k. g.*  
**1793 ELEKTROSVIT Household Refrigerators, Absorption Type**

Capacity 60 litres, motorless, containing no moving parts, consequently no worn parts. Completely automatic operation on electric current, gas or paraffin

oil (kerosene). Special design to suit the high temperature of ambient air in tropics.

**1794 PERUN TRI 15 Apparatus for Chemical Cleaning of clothes**

Operates on trichlorethylene. Washing drum capacity 15 kg. Daily output approximately 180 kg. Cleaning and distillation of used trichlorethylene is effected automatically while in operation, at trifling losses due to evaporation. Owing to this arrangement exceptional working economy. Simple and easy handling.

**1795 P 650 Washing Machine for Steam Heating**

Filling capacity to 40 kg dry clothes; electric motor of 0.75 kW.

**1796 P 600 Hydro Extractor, Centrifugal**

Filling capacity 16 kg dry clothes; drum diameter 600 mm.

**1797 P 1600 Ironing Press, Steam**

Output per hour 10 to 15 kg clothes; consumption 15 kg steam per hour; diameter of pressing roller 200 mm; drive by electric motor of 0.25 kW.

**1798 T 130 Electric Range**

Suitable for: 3 X 380/220 V,  
3 X 220 V,  
3 X 110/120 V,  
220 V,  
110/120 V.

Inputs:  
Cooking plate, small 800 W  
Ditto, medium 1 200 W  
Ditto, large 1 800 W  
Baking oven 1 200 W  
Maximum overall input: 5 000 W

Are you interested in Czechoslovak products? CZECHOSLOVAK FOREIGN TRADE, a periodical of the Chamber of Commerce of Czechoslovakia, regularly contains reports on traditional export articles as well as novelties of the Czechoslovak industrial production.

From the periodical CZECHOSLOVAK FOREIGN TRADE you can learn about the products you have not seen at the exhibitions. The periodical appears three-times a year in six languages and contains information on the export products of all branches of the Czechoslovak industry.

**1799 VP 32 Alba-Cygnus Electric Washer**

Single-phase electric motor 220/110 V (variable), 50 c/s, Input 250 W, speed: gyrator 1 500 r. p. m., centrifugal hydroextractor : 1 485 r. p. m. Tub capacity 35 litres, washing interval 2 to 5 minutes with a filling of 1.5 kg dry clothes; hydro-extracting interval one minute.

**1800 VP 52 Alba Cygnus Electric Washer**

Specifications identical with VP 32. Special attachments: heater element 1 000 W, 220/110 V (variable) wheels for easy handling.

**1801 CALORIA 114 Gas Range** ○

Oven fitted with two burners: lower - for baking  
top - for grilling,  
alternative models: gas or  
liquid gas (propane-butane).

**1802 CALORIA 611 Gas Oven c/w Double Cooker**

Alternative models: gas or  
liquid gas (propane-butane).

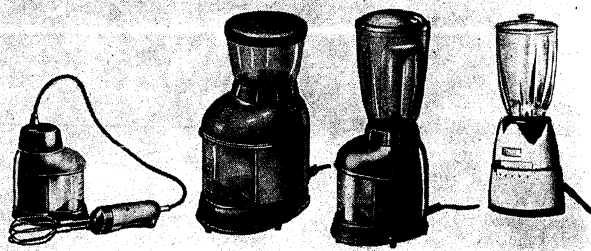
**1803 CALORIA Gas Heater**

Radiative, with ceramic element, for gas or liquid gas (propane-butane).

**1804 CALORIA 811 Gas Frier-Cooker**

Alternative models: gas or  
liquid gas (propane-butane).

CZECHOSLOVAK GLASS REVIEW a monthly of the Czechoslovak Glass- and Ceramic Industry brings regularly to persons interested in this line information on the production and delivery possibilities of Czechoslovak Glass- and Ceramic works.



**1805 PRAGOMIX SPECIAL Model 030 Electric Mixer**  
5 speeds from 5 000 r. p. m. up to 10 000 r. p. m. under load;  
220 V or 120 V, 50 c/s, maximum input 250 W.

**1806- PRAGOMIX  
1808 UNIVERSAL**

Electric coffee grinder with mixer attachment and whipper attachment on flexible shaft;  
220 V or 120 V, 50 c/s.

**1809 ELECTRIX 401 Vacuum Cleaner**

220 or 120 V, 50 c/s, Input 275 W, underpressure 950 mm water column.

**1810 HS 530 Electric Shaver**  
220/120 V, 50 c/s, input 5 W, 9 000 r. p. m.

**1811 Model 033 Electric Cooker**

220 V, 600 W, plate dia. 145 mm.

**1812 Model 032 Electric Cooker**

220 V, 1 200 W, plate dia. 110 mm.

**1813 E 603 III Electric Drilling Machine**

Capacity: in steel up to 4 mm or .157", in wood and light metal up to 6 mm or .236",

220 V, 110 V or 42 V; 50/60 c/s; input 120 W.

**1814 EV 123 Electric Drilling Machine**

Capacity: in steel up to 23 mm or .908", in wood and light metal up to 30 mm or 1.2",

220 or 110 V, 50/60 c/s; input 640 W.

**1815 EV 313 Electric Drilling Machine**

Capacity: in steel up to 13 mm or .512", in wood and light metal up to 18 mm or .709".  
220 or 110 V, 50/60 c/s; input 250 W.

**1816 EŠ 110 Electric Screw Driver**

Capacity: in metal 5 to 10 mm or .2 to .4".

**1817 EGS 612 Electric Thread Chaser**

Capacity: steel M 6 to M 10, light metal M 6 to M 12;  
220 V, 110 V or 42 V; 50/60 c/s, input 250 W.

**1818 NJ 102 Electric Shears**

Capacity: steel 2 mm or .08", speed 2 metres/sec;  
220 V or 110 V; 50/60 c/s, input 220 W.

**1819 EB 312 Electric Grinder**

Wheel dia. 120 mm or 4.72",  
220 V or 110 V; 50/60 c/s; input 250 W.

**1820 EB 15 Electric Grinder**

Wheel dia. 150 mm or 6";  
3×380 V, 3×220 V, 3×125 V;  
input 400 W.

**1821 MORA 242 Gas Range**

Specification equal to MORA 244; extra: central lighting of cooker burners, inspection hole in baking oven and electric illumination of interior.



**1822 MORA 241 Gas Range**

For specifications see MORA 242; extra: Thermostatic control of oven burners.

**1823 MORA 242 Gas Range**

Universal (gas, propane-butane, methane)  
Two ovens: top for baking, low for grilling.

**1824 MORA 231 Gas Range**

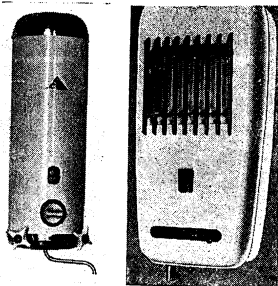
Popular model; universal (gas, propane - butane - methane).

**1825 MORA 310 Gas Cooker**

Universal (gas, propane - butane - methane).

*The ŠKODA and TATRA automobiles have numerous advantages on which you will be informed by the CZECHOSLOVAK MOTOR REVIEW, Praha 1, Ul. 28. října 13.*

*CZECHOSLOVAK ECONOMIC BULLETIN informs commercial circles and persons interested in this line on the trade relations of the building up. Published monthly by the Chamber of Commerce of Czechoslovakia.*



**1829** Thermostatic Controls-  
Sectional Views

**1830** PO 13 Flow Heater,  
Sectional Views

**1831** MAFLEX A 2 Grinding Machine

3x220/360 V; 0.5 kW; 2 800 r. p. m.; shaft: dia. 15 mm or 6", length 2 mt or 6.6 ft; wheel dia. 100 to 150 mm or 4 to 6".

**1832** MAFLEX A 3 Grinding Machine

3x220/380 V; 1.3 kW; 2 800 r. p. m.; shaft: dia. 20 mm or 8", length 2.5 mt or 8.2 ft; wheel dia. 100 to 150 mm or 4 to 6".

**1833** MAFLEX FFO Grinding Machine

3x220/380 V; 1.6 kW; 2 800 r. p. m.; shafts: dia. 6 mm or 236"; length 1 metre or 3.3 ft. Speed 3 000 - 5 300 - 10 500; 18 500 r. p. m., dia. 10 mm or 4", length 2 mt. or 6.6 ft. speed 1 150, 2 000, 4 000; 700 r. p. m. Tools up to 6 mm or .236" dia.

**1834** MAFLEX GO Grinding Machine

3x220/380 V; 1.6 kW; 2 800 r. p. m.; shaft: dia. 15 mm or .6", length 2 mt, or 6.6 ft., speed: 1 400 2 800-5 600 r. p. m.

*In all continents, in all countries with a progressive and mature technology the ŠKODA and TATRA makes have been known for many decades past.*

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**1826** MORA PO 5 Gas Flow  
Heater

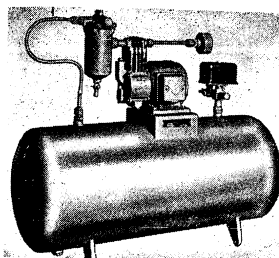
Output 5 lit./min. by 25 °C. Alternative models: gas, liquid gas (propane - butane, methane).

**1827** MORA PO 13 Gas Flow  
Heater

For specifications see PO 35; cowl of up-to-date styling.

**1828** MORA PO 35 Gas Flow  
Heater

Output 13 lit./min. y 25 °C, automatic lighting safety device; alternative models: gas, liquid gas (propane - butane, methane).



**1835** V 180 FRIGERAX  
Refrigerator Bar

Has four taps for an annual retail of beer of some 500 hl; refrigerator chamber for storage of bottled drinks with automatic refrigerator system.

**1836** Air Compressor Plant

For temperatures to minus 40 °C; fitted with air well, electric motor of 0.5 HP and pressurestat for maintaining uniform pressure in pipe line.

**1838** SA 900 Refrigerator Case

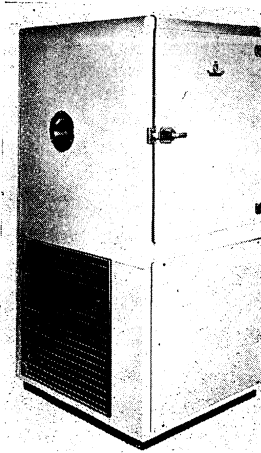
Suitable for boarding houses, dairies, sales of food stuffs and drinks. Maintains automatically an inside temperature of some -4 °C, has two entrance doors. Useful capacity 900 litres. Built-in refrigerator plant. Electric motor of 0.33 HP.

**1840** HC 270/60 High Efficiency Laboratory Refrigerator Table

For temperatures down to 60 °C below zero; for testing material. Useful capacity 270 litres. Double sliding screens in top plate. Two-stage freon power plant built-in to RH part of table together with control board for instruments.

**1841** Model HVS 900 Three-Shelf Glass Case for Self-Service

Useful capacity 900 lit. Outer dimensions 2 140x800x1 530 m. All-metal crate; garnish mouldings of plastic; plastic shelves; sliding doors glazed; built-in refrigerator plant in bottom part of case.



**1837** Model HS 270/40 Laboratory  
Case

For temperatures to minus 40 °C; useful capacity 270 litres; with built-in refrigerator plant, filled with freon 12 coolant; with a single insulated door.

**1839** CPV Cooler for Drinking  
Water

For offices, schools and work-shops; cools drinking water from tap by 10 °C. Output per hour approximately 30 litres. Built-in air compressor of 0.75 HP. Top plate plastic with fountain outlet.

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**1842 Model OVSD 630 Refrigerator Glass Case for Self-Service**  
Top Part fitted with mirrors. Useful capacity 630 litres, all-metal frame, garnish mouldings and crates (shelves) of plastic; extension open; built-in refrigerator plant in bottom part of case.

**1843 Model CS 630 Refrigerator Selling Table**  
Useful capacity 630 litres; outer dimensions 800×2140×900 mm; panelled sides and doors in top half of rear panel; built-in refrigerator plant.

**1844 DM 48 Evaporation Batteries for Freezing Plants**  
To be placed in the actual freezing plant hall; for temperatures down to -20° C, eliminating the fitting of individual evaporation containers; operating on freon; with duplex exhaustors; drive by electric motor; calorific output 2800 cal./h., outer dimensions 1200×480×2100 mm.

**1845-**

**1848 Freon Refrigerator Air Compressor Plant**  
With built-in V 540 water cooled condenser of 4000 Kcal/h output; electric motor of 3 HP; sturdy up-to-date design for automatic operation. Machine of outstanding quality, the individual organs of which form an assembly particularly suitable for trade refrigerator halls for meat, milk and other food stuffs. Weight approximately 260 kg.

**1849 Twin Gas Cooker**  
A high stand incorporates a grill with a pan for gravy.

**1850 Gas Hot Water Reservoir**  
Pressureless reservoir; lighting safety device closes the valve in case of extinguishing. Suitable for a bath tub with a by-pass for wash-up sink or basin.

**1851 Bath Heater**  
Can be also placed on the wall to secure more floor space. Available also with ceramic radiative plate.

**1852 Automatic Electric Range**  
Has a time-switch, transparent door and inside illumination of baking oven. Thermostatic temperature control enables pre-setting of required temperature.

**1853 Twin Electric Cooker**  
Special arrangement enables baking as well.

180

**MOTOKOV**

**1854 Model 203 Electric Iron with Thermostatic Temperature Control**

Weight 1.60 kg, input 800 W; the control lever of the thermostat enables setting of required temperature according to the kind of material to be pressed. The thermostat then automatically maintains the required temperature height.

**1855 Electric Iron with Thermostat and Moistener**

Weight 1.06 kg, input 800 W; the control lever of the thermostat enables pre-setting of the required temperature according to the material to be pressed. The thermostat then maintains the temperature at the necessary height.

**1856 Vertical Electric Boiler of 125 lit. Capacity**

Has a bath-tub mixing battery and hand spray.

**1857 Case-type Cloth-Drier for Sundry Household Clothes**

**1858 Hair Drier of New, Advantageous Line**

**1859 Electric Kitchen with Bath Room**      **1860 Gas Kitchen with Bath Room**

Complete electric kitchen with the following equipment:

Automatic electric range  
Electric refrigerator  
Electric washing machine with drier  
Through-flow water heater in sink  
Drilux cooker  
Iron with thermostat  
Electric kitchen robot with accessories and electric mixer  
Vacuum cleaner  
Floor polisher  
Other equipment including dishes.

Electric bathroom with electric storage water heater, electric heating, bath tub, wash basin and accessories.

Complete gas kitchen with the following equipment:

Automatic gas range  
Gas refrigerator  
Instantaneous gas water heater in sink  
Hand operated kitchen robot  
Enamelled dishes  
Gas room heater  
Gas bath room with instantaneous gas water heater, gas room heater, bath tub, wash basin and accessories.

**1861 Kitchen with Coal Heated Bath Room**

Complete coal and gas fired range  
Stainless steel dishes and other equipment

Bathroom with coal fired water heater, bath tub, wash basin and accessories.

**Small Housing Unit - Bachelors Single-Room Flat with Kitchenette**

A fitted-out single room housing unit with kitchenette, gas oven and two-burner cooker, mixer, stainless steel dishes, instantaneous water heater and other essential equipment.

**MOTOKOV**

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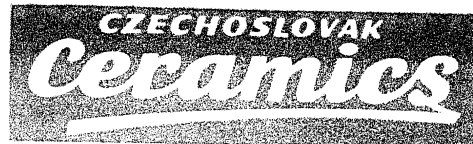
*Are you  
interested in Czechoslovak  
products?*

**CZECHOSLOVAK  
FOREIGN TRADE,**

a periodical  
of the Chamber of Commerce  
of Czechoslovakia,

regularly contains reports on  
traditional export articles as  
well as novelties of

the Czechoslovak industrial production



**ABRASIVE PRODUCTS**

*Abrasive wheels  
Abrasive paper  
and cloth*

**REFRACTORY PRODUCTS**

*Dinas  
Magnesite  
Fireclay*

**BASALT PRODUCTS**



*Foreign Trade Corporation*  
PRAHA II, V JÁMĚ 1 — CZECHOSLOVAKIA

# Prago-Export

Textile of quality is guaranteed by  
Czechoslovak measuring instruments:

Yarn Testing Machine (Planiskop), Fabric  
Strength Testing Machine, Automatic Moisture Testing  
Machine, Waterproofness Testing Machine, Crease  
Resistance Testing Machine, Yarn Tension Meter  
and a number of other instruments which are indispensa-  
ble for up-to-date textile laboratories and testing rooms

*Inspect our instruments of quality*

EXPORTED BY:

# Prago-Export

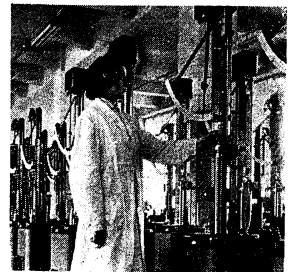
PRAHA — CZECHOSLOVAKIA

# Prago-Export

Textile Measuring Instruments and  
Supplements  
Technical Office Supplies  
Office Equipment

#### 1901 Yarn Strength Tester

On this machine strength and tensility tests are performed on yarn, string bunches of fibre, and various other materials. These data indicate the properties of the yarn and must be known in the following textile production. The apparatus is of advantageous design and highly sensitive and is intended for laboratory and research work, as well as for routine tests in production.



#### 1902 Electrically Driven Twist Tester

Tests and ascertains quickly the amount of twisting in single and doubled yarns.

#### 1903 Cotton Wrap Reel

The purpose of this apparatus is to measure quickly and precisely the length of tested yarn which is then weighed on a quadrant balance indicating the yarn count.

#### 1904 Yarn Quadrant Balance

For ascertaining the English or the metric count of yarns used in the textile industry. Range according to suspended length and type of machine.

#### 1905 Dye Fastness Tester

The machine tests by the rubbing method. The dye fastness of dyed and printed fabrics, knitwear, leather, etc.

#### 1906 Crease Resistance Tester

The amount of creasability can be ascertained by various methods. This crease resistance tester tests according to the Soviet Standard Specifications GOST 3814-47. The fabric is zig-zag folded around 5 rulers and then laid below a two kilos weight for 20 minutes. Thereafter the sample is suspended from the string of the apparatus and after two minutes the length of the unfolded waveline is read on the scale.

#### 1907 Heat Conductivity Tester

With this apparatus the heat insulating properties of fabrics, knitted material, leather, and imitation leather for garments is tested. The principle of the apparatus consists in ascertaining the time it takes for 50 °C warm water contained in a vessel around which the tested material is wrapped, to cool down to 40 °C, at a room temperature of 20 °C  $\pm$  2 °C, and at a relative air humidity of 65  $\pm$  2 %.

**1908 Thickness Meter**

With a measuring precision of up to 1/100 mm this machine measures the thickness of fabrics, felts, leather, etc.

**1909 Sample Bag**

Textile samples contain a certain amount of moisture which is measured with precision instruments. These may not always be in the place and therefore the samples must often be sent to a testing laboratory. During the transport the samples must not change their moisture and therefore they are sent in this sample bag.

**1910 Tensometer**

The tensometer is used in the weaving industry for ascertaining the tension of warp and weft yarns during the winding, the twining warp beaming, sizing, and weaving. The use of a tensometer ensures production of fabrics of the correct width, and obtaining of the correct shed. The latter reduces the danger of the yarn breaking at high working speeds. When working synthetic textile fibres the measuring of the tension is indispensable if loss of stretch and formation of lustrous spots are to be prevented.

**1911 Length Counter**

For quickly measuring the length of fabrics of all kinds, laid out on cloth folding table or folding machine. The apparatus is floatingly arranged in a holder and so adjusted that the measuring wheels are pressed against the fabric under the required pressure which is adjustable with a weight. To prepare the length counter for work the measuring wheel with the centimetre scale is set to zero against the rigid mark, and the indicator of the metre scale is also set to zero.

**1912 Fabric Marking Pen**

The design of this pen allows safe use in the textile industry or in such other branches of industry where indelible and washproof marking of the product is required.

**1913 Shuttle Strength Tester**

For ascertaining the compressing force or tensioning effect of springs. It is used during the setting up of mechanical looms when the friction of the shuttle in the shuttle box the pressure of the arresting flap and the tension of the heads are to be ascertained.

**1914 Picking Intensity Meter**

This instrument is used for comparing purposes when setting up automatic looms of the Type Roscher and Hrdina which have a shuttle with a 30 mm clip, or for setting up other looms having the same shuttle box inside space as the mentioned type.

KOVOEXPORT, *Czechoslovak Export Magazine of the Czechoslovak Light and Precision Engineering Industry.*

**1915 Blotting Capacity Tester**

- Use:
1. For ascertaining the blotting capacity of blotting papers, filtering papers and mill-board.
  2. For ascertaining the amount of sizing of papers which to a certain extent repel water, ink, and printer's ink.
  3. For ascertaining the absorbing capacity of papers intended for insulating and impregnating purposes.

**1916 Yarn Examining Machine (Planiscope)**

The machine serves the purpose of examining and comparing yarns. The yarn is wound into boards of contrasting colours in dense evenly spaced turns from two cops simultaneously. As a result all the impurities in the yarn become distinctly visible, such as spun in dust, husks, crushed seeds notches of dead fibre, too thin or too thick spots, fluffines, etc. Therefore even very negligible difference between two kinds of compared yarn are visible.

**1917 Quadrant Balance**

is used for ascertaining the strength and density of fabrics.

**1918 The Flax Gauge**

serves for the ascertaining of the linen yarn thickness.

**1919 Pirn Compactness Tester**

The apparatus ascertains the compactness of wound bobbins and warp beams, i. e. the density and the tension of the wound yarn. Every kind of yarn can be tested with this apparatus with the exception of very fine special yarns which might suffer damage from the contact with the spring loaded pin. The correct density and tension of the winding is of great importance in the subsequent weaving.

**1920 Textile Machines Accessories**

Wooden: Automatic pirns, warper bobbins and all kinds of other spools, all types of shuttles, picking sticks, etc.

Leather and paper:

Paper tubes and cones, leather accessories for looms and textile industry (pickers, buffers, spring buffers, picking straps, shaft straps, card clothing.

Metal:

Spindles, scrolls, rollers, temples, card and gill pins, travellers, wire healds, reeds, belt hooks, drop wires, etc.

**1921 Lesto-Apparatus**

Used for measuring the length of fabrics.



**1922 Ozalide Printing Machine Model KVS 100** <sup>113</sup>

The machine is intended for multiplying ozalide material. It enables quick and immediate multiplying of technical drawings, production specifications, detailed calculations, and material drawn or printed on transparent paper.

**1923 Humidity Tester**

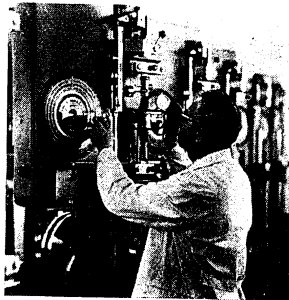
For ascertaining the humidity of textile materials.

**1924 Hand Operated Twist Meter**

For testing and ascertaining the amount of twist in single and in doubled yarns.

**1925 Fabric Strength Tester with Recorder**

A strength testing machine ascertaining the strength and the tensility of fabrics, knitted material, leather, wire, and other materials. The four testing ranges enable universal use in laboratories and test shops.



**1926 Rotary Wear Resistance Tester**

For ascertaining the wear resistance of fabrics in friction.

**1927 Hygrostatic Conditioning Cabinet**

For obtaining a certain humidity of textile samples. The desired humidity of 65% at a temperature of 20 °C is obtained automatically.

**1928 Staple Machine**

For ascertaining the quality of the staple.

**1929 Tension Meter**

For determining the tension of yarns.

**1941 KINEX Drawing Apparatus**

is a precision instrument for a drawing board (size 100×150 cm) with a universal stand which enables to set the drawing board into any position. Indispensable device for technicians, architects, trade schools, etc.

*Jawa-CZ motor-cycles and ŠKODA and TATRA motor cars are extensively exhibited at international fairs and industrial fairs all over the world.*

**1942**

**1943 C A 1 and C A 2 Drawing Apparatus**

are small drawing instruments for horizontal drawing boards, suitable for technicians, architects, draftsmen, workshops, schools, etc. C A 1 is a larger and perfectly executed apparatus for drawing boards size 65×95 cm.

C A 2 is of a simpler execution for drawing boards size 48×68 cm, suitable especially for schools.

**1944 PREMA Perspectograph** *Koncept - Pragma*

designed according to Ing. Salner patent represents a specially simple drawing device, which enables point construction of a perspective drawing of any object by means of horizontal, longitudinal or side projection.

**1945**

**1946 Sets of Mathematical Instruments**

First-class mathematical instruments of all types for every requirement, from the most simple school type to the most elaborate one for complicated designing.

**1947 Edge Binder**

is used for binding edges of drawings (copies and originals) with a special adhesive tape to protect the edges of drawings from fraying, tearing or destruction.

**1951**

**1952 Filing Cabinets**

Cabinets for vertical filing, have 4 drawers which can be safely locked and in many cases are used as safes.

**1953 Karto Cabinets**

These cabinets are designed for horizontal filing of index cards. The advantage consists in quick finding of the relevant card the cards are placed on top of each other, the titles are well visible and consequently it is not necessary to "leaf" through cards.

*There are servicing depots with the greatest possible variety of spare parts in more than 120 states on the continent as well as overseas which is a guarantee of safe riding.*

CZECHOSLOVAK  
*Ceramics*

Ceramic Products

**1971 Abrasive Cloths and Papers**

are used for hand grinding and polishing of wood, metals and plastics. Following articles are produced for industrial purposes: Ruby combination, endless corundum cloth belts, pads for footwear industry, Vulcan fibre boards, water resisting abrasive paper, etc.

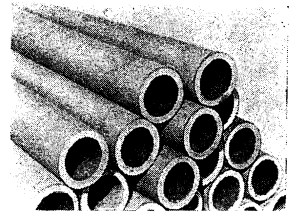
**1972 Abrasive Wheels**

are manufactured of standard corundum under the trade mark of ELECTRITE A or of refined corundum called ELECTRITE 99. Both types are used for grinding tools and various kinds of steel.

**1973 Silicate, Magnesite, Chrome-Magnesite and Fire-Clay Bricks** ○

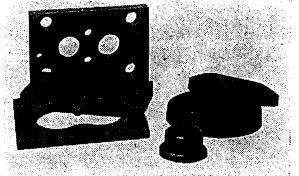
Silicate bricks have a high cold crushing strength (1640—1680 °C) and are an important building material for Siemens-Martin electric arc furnaces, for coke and gas plants, glass and enamel furnaces and furnaces for zinc production, etc.

Magnesite and chrome-magnesite bricks are mainly used in steel furnaces and cement kilns. They possess high refractorines over 42 Seger cones (2 000 °C) and a high cold crushing strength approaching the cold crushing strength of silicate material for blast furnaces, pre-heaters of air, in gas, coke and glass works, in ceramic and chemical industries.



**1974 Basalt Products**

are used especially in coal mines, for pneumatic loading, further in hydraulic transport of coal, coke, ores, coal dust, slag, ashes, sand, etc.



# **KOVO**

**Measuring and Laboratory  
Instruments**  
**Sewing Machines**  
**Tobacco Working Machine**  
**Clocks and Alarm Clocks**  
**Surgical Instruments**  
**Office, Graphical and Statistical  
Machines**  
**Machines for making Cardboard  
Boxes**  
**Sports Arms, Cartridges,  
Ammunition**  
**Photo- Ciné- Optics**  
**Precision Tools and Measuring  
Instruments**  
**Textile and Finishing Machines**  
**Shoemaking and Knitting Machines**  
**Statistical Machines**  
**Telecommunication**  
**Wire Broadcasting**  
**H. F. Carrier Telephone for Power  
Stations**

Telemetering Equipment  
Transmitters  
Television  
Equipment for Diversity Reception  
Televisors and television measuring  
instruments  
Receiving sets and Musical Cabinets  
Wireless Stations  
Magnetophones  
Railway Dispatching Equipment  
Equipment for Air Transport  
Loudspeakers, Microphones, Wireless  
Parts  
Electronic Microscopes  
Electronic Measuring Instruments  
Video components, electron tubes,  
semiconductors, selenium cells,  
lamps, fluorescent lamps, plane  
transistors, thermistors, silical  
diodes and mixers.  
Various devices employed in the  
vacuum technique.

**2001- Maxigraph M6S. Universal Measuring and Graphic  
2004 Instrument**

Marks on a paper chart the average value of the load taken within each integration cycle, and indicates, by means of a separate pointer, the value of the achieved average load within the integration period. This instrument is supplemented by a signal box provided with a measuring instrument for indicating at arbitrarily set time intervals whether the supply of energy is above or below the set value. A signal is given on reaching the permissible value. This device is primarily intended for use in power and switching stations and industrial undertakings for the perfect control of the consumption of electrical energy in accordance with the demand schedule and the agreed maximum.

**2005 Three-Phase Three-System Four-Wire Watt-Hour  
Meter ET4**

An integrating meter for direct measuring energy from 5 A to 100 A and 3 X 500 V at any one frequency within in the range of between 40 — 60 c/s.

**2006 Three-Phase Double-System Three-Wire Watt-Hour  
Meter ET3D**

Two-rate tariff meter for direct measuring energy from 5 A to 100 A and 3 X 500 V at any one frequency within the range of between 40 — 60 c/s.

**2007 Three-Phase Three-System Four-Wire Watt-Hour  
Meter ET4DM**

Two-rate tariff with maximum demand indicator for direct measuring energy from 5 A to 100 A and up to 3 X 500 V at any one frequency within the range of between 40 — 60 c/s. This electricity meter indicates the whole consumption at two different rates (two-rate tariff) and the maximum average value of the load within a certain time interval — the so-called integration period.

**2008 Three-Phase Three-System Four-Wire Watt-Hour  
Meter ET4M**

With maximum-demand pointer, for direct measuring energy from 5 A to 100 A and 3 X 500 V at any frequency of between 40 — 60 c/s. This electricity meter indicates the whole energy supplied, as well as the maximum average value of the load, within a certain time period, the so-called integration period.

**2009 Switch-Over Clock H2DM**

For changing-over the tariffs and switching on the maximum indicator of two-rate electricity meters with maximum demand indicator. They are equipped with a small squirrel-cage induction motor for a voltage of 120/220 V or 220/380 V, input 16 W. This clock has a three-day spring operation reserve.

**KOVO**

**2010 Time Switch H2VS1**

For automatic switching-on and off public illumination, illumination of shop windows, of neon advertisements, accumulating stoves, different appliances, etc.

It is equipped with a squirrel-cage induction motor for a voltage of 120/220 V, or 220/380 V, input 16 W. It has a three-day spring operation reserve.

**2011 Current Transformer**

Bushing type, service voltage up to 0,5 kV, testing voltage 2,5 kV, primary currents from 100 to 600 A.

Output at 400 - 600 A: 30 VA in class of accuracy 1,5 current number  $n = 2,5$

300 A: - 15 VA, in class of acc. 0,5 current number  $n = 3,5$

200 A: - 7,5 VA in class of acc. 0,5, current number  $n = 5$

100 - 500 A: - 7,5 VA in class of acc. 3 current number  $n = 8 - 10$

Secondary current 5 A.

**2012 Current Transformer JVD**

Service voltage up to 0,5 kV, testing voltage 2,5 kV, primary currents 50 - 800 A, secondary output 15 VA in class of acc. 0,5, and 30 VA in cl. 1, secondary current 5 A, or 1 A.

**2013 Current Transformer JVP**

For slipping over bus-bars, service voltage up to 0,5 kV, testing voltage 2,5 kV, primary currents 1000 - 2000 A, secondary output 15 VA in class of acc. 0,5, or 30 VA in cl. 1.

**2014 Auxiliary Current Transformes JVNS**

Summation transformers, or with further tapings on the primary or secondary side for different ratios up to 40 A. Secondary output 15 VA in cl. of acc. 0,5, or 30 VA in cl. 1, overcurrent number  $u = 5 - 10$ , secondary current 5 or 1 A.

**2015 Seconds Meter**

is used for accurate time measuring when calibrating and testing mechanical and electrical instruments and machines in factories, laboratories, calibrating bureaus and electrical switchrooms (f. i. when gauging time or distance relays).

rated voltage of the motor	110/120 V, 50 c/s
power consumption	2.7 VA
measuring range	up to 200 seconds
time error	less then 0.02 sec.

**KOVO**

**MORE  
BETTER  
CHEAPER**

For More Efficient Work in any kind of business select Zeta, Zetaprinton, Grafopress typewriters and printing machines - select TESLA telecommunication equipment

**KOVO**  
PRAHA  
CZECHOSLOVAKIA

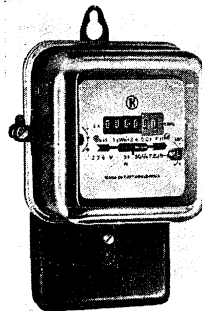


**SIGNIFICANT NOVELTIES**

from various branches of the Czechoslovak engineering industry displayed at the Exhibition in Brno:

- Prototype of an air-blast circuit-breaker with disconnecting switch
- Hydraulic drive of the HYDRANA rotary furnace
- Medium-sized thru-track cleaning machine
- Wire-wound high-pressure vessel
- 1,500-kW packed power station
- Ammonia compressor 8 V
- Dust-proof switchboard
- Unit-type switchboard
- Air-admission nozzles
- Desk switchboard
- Band oil filter

**TECHNOEXPORT PRAHA CZECHOSLOVAKIA**



**2016 Single-Phase Watt-Hour Meter EJE 8**  
 For direct measuring energy from 2,5 A to 80 A maximum, and up to 400 V at any one frequency within the range of 40 – 60 c/s.  
 This electricity meter complies with BSS 37/1952.  
 (Two different designs.)

**2018 Single-Phase Watt-Hour Meter EJE 6**  
 For direct measuring energy from 2,5 A to 20 A, and up to 400 V at any one frequency within the range of 40 – 60 c/s.

**2019 Auto-Transformer**  
 One phase, protected against touch, portable, primary 120 V or 200 V, secondary 220 V or 120 V, output from kVA to 5 kVA.

**2020 Three-Phase calibration Desk Veitečna CS III**  
 For testing and calibrating single-phase and three-phase active and reactive power in testing stations and electricity meter in production shops.  
 Connected to a voltage of 3x380/220 V, 50 c/s.  
 Number of electricity meters under test at-a-time:

single phase . . . . .	360
three phase up to 50 A . . . . .	120
three phase up to 100 A . . . . .	60
	Input 6 kV
	Weight 930 kg/2156 lbs

**2021-2023 Switchboard Instruments III 5**  
 For mounting into switchboards, in angular semi-enclosed housing, back connections. The housing is pressed of black electro-insulating material. The measuring system is either of the moving-coil type DHI5 or electro magnetic type EHI 5.  
 Delivered as voltmeters, ammeters, wattmeters, phasemeters.

**2024- Ship Switchboard Instruments HR 16/L**  
 For mounting into switchboards, in angular semi-enclosed housing, back connection. The housing is pressed of black electro-insulating material. The measuring system is either of the moving-coil type DHR 16/L or electromagnetic type EHR 16/L.  
 Delivered as voltmeters, ammeters, wattmeters, phasemeters, frequency meters, speedometers. These instruments are constructed for very heavy service conditions with temperature variations of from -25° +60° relative humidity 92 ±32 %.

**KOYO**

2030

**2031 Switchboard Instruments in Profile Design, Pp4 and Pp6**

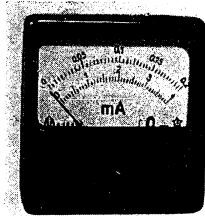
For horizontal or vertical mounting into switchboards. The housing is pressed of black electro-insulating material. The measuring system is either of the moving-coil type DPP4-6, or the electromagnetic type EPp4-6. Supplied as voltmeters, ammeters, wattmeters, phase-meters, frequency meters.

2032

**2033 Switchboard Instruments, DHR3, 2034 DRH5 and DHR8**

Moving-coil instruments for measuring direct currents or voltages, mainly in the field of light current electrical engineering. They are constructed for use in connection with contact rectifiers DsHR or thermocouples DiHR for measuring high frequency alternating currents and voltages.

The angular semi-enclosed housing is pressed of black electro-insulating material.

**2035 Graphic Instrument RgF**

These are instruments for producing a graphic record of the voltage, current, energy, power factor, etc. as a function of time in A. C. and D. C. installations. They can be delivered for flush-mounting, projecting-mounting, or in portable design. They are provided with black enamelled metal casing.

**2036 Box Type Electromagnetic Voltmeter Es3/III**

or ammeters designed for operation in localities containing explosive and inflammable materials and gases. In connection with the flame-proof box they present a unit in firm enclosure. The measuring system is accommodated in a black enamelled cast-iron box.

**2037 Box Type Electro-Magnetic Voltmeters Es5**

or ammeters, bottom connections. The black-enamelled waterproof cast-iron box is designed for mounting on switch-boxes.

**2038 Wall-Type Synchronising Arm, RSyO**

For synchronising or controlling the parallel operation of machines in power stations. The synchronising arm comprises a double frequency-meter, double volt-meter and synchroscope. All these instruments are accommodated in a common black-enamelled metal case designed for wall-mounting by means of 4 screws.

*Motor-cycleists who are exacting with regard to the quality and output of their machines ride on JAWA-CZ.*

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**KOVO****2039 Wall-Type Synchronising Arm RVO**

For synchronising and controlling the parallel operation of machines in power stations.

The synchronising arm comprises a double frequency meter, double voltmeter, zero voltmeter, and two lamp holders for the synchronising bulbs.

The synchronising arm RVO is constructed exactly as the RSyO type.

**2040 AVOMET-Unit 1200**

Comprises the universal Avomet instruments covering 34 measuring ranges for measuring alternating and direct current and voltages,

shunt 60 mV for 30 A and 120 A, current range, 15, 25, 50, 100, 150, 300 A, slip-through bus conductor for the measuring transformer, series resistor for 1 200 V D. C. and A. C.

**2041 Small Wheatstone Bridge OMEGA I**

In portable design for quick measurement of fix ohmic resistances of from 0,05 to 50 000  $\Omega$ .

**2042 Small Wheatstone Bridge OMEGA II**

For the quick measurement of fix ohmic resistances as type OMEGA I, with the possibility of measuring electrolytic resistances by means of alternating current and a hammer for abt. 800 c/s with a telephone receiver instead of a galvanometer. A triple-pole change-over switch located on the instrument box serves for the purpose of selecting the kind of measurement.

**2043 Small Wheatstone Bridge OMEGA III**

Used for the measurement of small resistances of from 0,0001 to 20  $\Omega$  with the aid of an auxiliary, external source of abt. 2 V and 3 A maximum.

**2044 Insulation-Resistance Meter MEGMET 1000**

Suitable for use on D. C. and A. C. networks, electric machines and installations. The measured insulation resistance of the tested equipment is read on a scale directly in M $\Omega$ . These instruments are manufactured in three types, in compliance with Standard Specifications IEC, BSS, ESC.

**2045 Earthing-Resistance Meter, TERROMET**

Intended for the measurement of resistances of lightning arresters, heavy and light-current installations and protective equipments. It is also suited for the measurement of fix non-inductive an non-capacitive resistances.

**2046 Instrument for the quick and dependable measurement of protective systems NULLOMET**

For all electric machines and appliances where the neutral wire is employed as earthing conductor.

**KOVO**

211



**2047 Measuring Set — Box Q**

Serves for all routine measurements of current, voltage and energy in industrial installations. This set covers all requirements of engineers employed throughout the industries. Fundamentally, this is a small portable testing station comprising all necessary measuring instruments.

**2048 Universal Measuring Instrument AVO-M**

Comprising 19 measuring ranges for direct and alternating currents and voltages up to 10.000 c/s.

**2049 Small Portable Compensator THERMOMET**

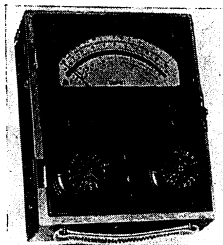
Intended for the quick measurement of voltages up to 50 mV by means of the compensation method, i. e. under no-load condition of the tested source, and for the measurement of thermo-couples Fe-Ko, CH-A (Ni Cr-Ni) and Pt Rh-Pt directly in centigrades corresponding to the basic temperature of the junctions 0° C.

**2050 Small Compensator MK**

In portable design, serves for quick measurements of voltages of from 0—80 mV by means of the compensation method, i. e. at no-load condition of the measuring source.

**2051 Universal Measuring Instrument UNIMET**

Used for measurements in service, erection works and laboratories. It measures directly direct and alternating currents and voltages, capacitive resistances, delivered energy, and the level of l. f. signals. This instrument comprises altogether 42 measuring ranges without using an external, auxiliary equipment.

**2052 Clamping = Type Voltammeter Ds K 65**

Intended for the measurement of alternating currents and voltages without breaking the measured circuit. The conductor must be single-pole, and may be armoured.

Ranges: — 15 — 30 — 60 — 150 — 300 — 1 000 A  
150 — 300 — 600 V.

**2053 Clamping-Type Ammeter SKr 86**

Intended for the measurement of direct currents without opening the measured circuit. The conductor must be single-pole, and may be armoured.

Range: — up to 1 000 A, service voltage 22 kV, test voltage 86 kV.

**2054****2055 Single Drum = Type Sliding Resistors OPK OOPK.**

Employed wherever it is necessary to insert into a circuit a variable resistance for the purpose of current regulation. It can also be used as a potentiometer (potential-divider).

**2056 Small portable Voltmeters or Ammeters DtLi**

This is a moving-coil instrument with thermal rectifier, intended for measurements in high-frequency A. C. circuits. These instruments indicate always the R. M. S. value, also for non-sine-shaped current-wave forms. Also interrupted and direct-currents can be measured. Class of accuracy 0,5 %

**2057 Small Portable Laboratory-Type Electromagnetic Voltmeters or Ammeters ELi**

Intended for measurements of alternating currents and voltages at frequencies of 15—100 c/s. Class of accuracy 0,5 %.

**2058 Small Portable Laboratory Frequency-Meter, KLi**

For measuring the frequency of an alternating current within the range of 45—55 c/s. Class of accuracy 0,5 %.

**2059 Laboratory Current-Transformer SLi**

Form part of the outfit of the series Li laboratory instruments, and is used for extending the current-ranges of type ELi Ammeters and Type GLi Wattmeters up to 600 A. Class of accuracy 0,2 %.

**2060 Series Resistors RLi**

Intended for extending the current-ranges of the following instruments:

DLi — voltmeter 60 mV, 5 Ω  
PLi — wattmeter with voltage-range 60 V, 33½ Ω  
CLi — wattmeter with voltage-range 60 V, 100 Ω.

**2061 Laboratory Precision-Instruments-Ammeters, Voltmeters- or 2062 Wattmeters, PsLL**

Serve to measure accurately the values of direct and alternating currents. They are suitable for all measurements where a maximum accuracy is required.

*The ŠKODA and TATRA automobiles have numerous advantages on which you will be informed by the CZECHOSLOVAK MOTOR REVIEW,  
Praha I, Ul. 28. října 13.*

**2063 Laboratory-Type Precision Moving-Coil Instruments for measuring direct current and voltages, DLL**

They can be suitably employed for all measurement where a maximum accuracy is required.

**2064 Laboratory-Type Precision Tongue Frequency-Meters KLL**

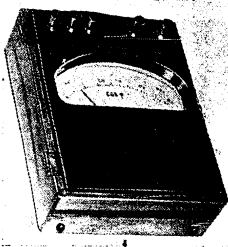
For measuring technical frequencies in A. C. networks, for tests and measurements in laboratories, testing and calibrating stations.

**2065 Laboratory-Type Precision Power-Factor Meter CLL**

Used in laboratories and testing stations. They are supplied either in single-phase or three-phase design, and for measurements in inductive and capacitive circuits.

**2066 Laboratory-Type Precision Current-Transformer SLL**

Intended as part of the outfit of laboratory instruments—series LL. Employed in connection with the type PsLL Ammeter, 5 A, or with the type PsLL Wattmeter, for extending the current range up to 100 A.

**2067 Laboratory Shunt-Resistors BLL**

Supplied as auxiliary outfit of the type LL laboratory instruments for the purpose of extending the current ranges.

**2068 Measuring Set DG<sub>2</sub> + OS 20.**

Comprises a mirror galvanometer with an accuracy of 10<sup>-9</sup> A per grade on the scale, illuminating and reading parts. This set is used for measuring extremely small currents in laboratories, testing and calibrating stations.

**2069 Laboratory Pointer Galvanometer DG**

Intended for measuring extremely small currents in laboratories, testing and calibrating stations.

**2070 Standard Resistors RN**

Used as primary standards for the basic decadic resistance values for the most accurate measurements in laboratories.

**2071 Weston Cell, W 100**

Employed as primary standard cell and prepared according to international specifications, having electrodes of mercury and cadmium amalgam in a saturated electrolyte of cadmium sulphate. Suitable for all measuring methods where it does no supply current, particularly for compensation measurements.

**2072 Large Laboratory Compensator QLK**

Intended for the most precise measurements of voltages up to 1.5 V (thermocouples and standard cells) by means of the compensation method. When supplemented by auxiliary outfits the compensator can be applied for measuring D. C. voltages up to 750 V, for measuring direct current with the aid of standards RN, and for measuring ohmic resistances with the aid of standard resistors RN.

**2073 Desk Set of the Large Laboratory Compensator, QSLK**

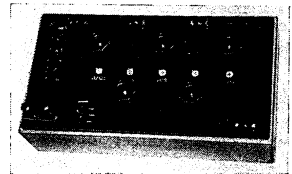
Serves for most accurate measurements of voltages up to 1.5 V by means of the compensation method, for measuring of D. C. voltages up to 750 V, direct currents, D. C. voltages and currents up to 710 V in short time intervals, and ohmic resistances.

**2074 Small Laboratory Precision Wheatstone Bridge — with Handle ML**

For routine measurements of resistances in laboratory testing and calibrating equipments.

**2075 Large Laboratory Precision Wheatstone Bridge — with Handle, MLL**

For accurate measurements of resistances in laboratories, testing and calibrating stations.

**2076 Large Plug-Type Precision Laboratory Bridge MLLk**

In Wheatstone connection serving for most accurate measurements of resistances up to abt. 11 MΩ in laboratories, testing and calibrating stations.

**2077 Small Handle-Type Precision Laboratory Decadic Resistor XL**

For routine measurements in laboratories, testing and calibrating stations.

**2078 Large Handle-Type Precision Laboratory Decadic Resistor XLL**

For accurate measurements in laboratories, testing and calibrating stations.

**2079 Large Handle-Type Precision Laboratory Decadic Resistor XLLk**

For accurate measurements in laboratories, testing and calibrating stations.

**2080 Technical Compensator QTK**

Intended for quick and accurate measurements of D. C. voltages of from 10 μV up to 600 V without current-load of the measuring source. Its field of application being very wide it is particularly suited for measuring the voltage of thermocouples, the voltage of D. C. sources, for testing the calibration of measuring instruments such as voltmeters and ammeters, and for measuring resistances with the aid of standard resistors.

**2081 Measuring Bridge MGK**

Intended chiefly for use in the telecommunication techniques for which it is particularly constructed. It can also be employed, without any adjustments in power electrical engineering.

**2082 MLG SMALL HANDLE-TYPE RESISTANCE BRIDGE**

For routine measurements of resistances in laboratories, testing and calibrating stations; the bridge is arranged in Wheatstone connection.

**2083 QKM Special Compensator**

Used in research and development of petroleum sources; a mono-cell 1.5 kV is used as the inner voltage source.

**2084 Switchboard Instruments with 240° Scale**

Switchboard instrument of medium size, square shaped, all types and ranges for measuring direct and alternating currents. Their scale is double that of the 90° scale instrument of equal overall dimensions.

**2085 Switchboard Instruments with Rotating Magnet R8**

With square front 110 × 110 mm and cylindrical tube 80 mm dia. Serve for measuring direct and low-frequency currents and voltages.

**2086 Type DHR 8/z — Shock-Proof Instruments**

Water-proof and shock-proof moving-coil instruments covering all standard ranges, for measuring direct current and voltage, and, in conjunction with dry or thermal rectifiers, also alternating currents and voltages.

These instruments are manufactured in three sizes:

DHR 8/z — square front 110×110 mm	tube 80 mm dia,
DHR 5/z — square front 70×70 mm,	tube 50 mm dia,
DHR 3/z — square front 44×44 mm,	tube 30 mm dia.

**2087 Frequency Recorder**

Line recorder for voltages of 100 V and above, measuring range 45—55 c/s, or 47—53 c/c, respectively.

**2088 D. C. Clamping-Type Ammeter**

Intended for measuring current in D. C. and A. C. installations with exchangeable indicators for 60—200—600 A, and service voltages up to 650 V. Accuracy 2.5—5%.

*Instruction, advice, suggestions as well as entertainment is to be found every month in the richly illustrated motorist monthly CZECHOSLOVAK MOTOR REVIEW, Praha 1, Ul. 28. října 13.*

**2089 Radiosound**

In conjunction with meteorological instruments. For determining atmospheric conditions in higher earth spheres.

**2090 Thermograph**

Recording instrument producing a graph of room temperatures.

**2091 Hygograph**

Recording instrument producing a graph of the relative humidity of air.

**2092 Barograph**

Recording instrument producing a graph of changes of the barometric pressure graduated in 1 mm Hg = 1 mm on the chart.

**2093 Microbarograph**

Recording instrument producing a graph changes of the barometric pressure graduated in 1 mm Hg = 2 mm on the chart.

**2095 Small Aneroid**

Instrument for measuring atmospheric pressure. Scale range 560—790 m Hg. Accuracy 0.2 m Hg per 10 mm Hg. Temperature correction — 30 to 50° C.

**2096 Large Aneroid**

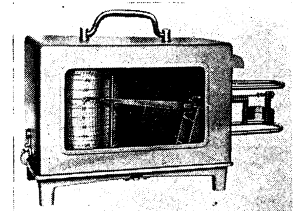
Precision instrument for indicating barometric pressure, suitable for transport. The instrument is springmounted in a portable box provided with a handle. Scale range 500—800 mm Hg. Accuracy ± 0.1 mm per 10 mm Hg. Temperature correction — 35 to + 50° C.

**2097 Pyranograph**

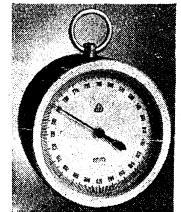
registers automatically the amount of radiating energy (in gr/cal) falling on a level unit (1 sq. cm) horizontally placed in a certain time (1 min.).

**2098 Direction Recorder**

Instrument for recording wind direction in four main and four auxiliary directions. One revolution of the drum in 10 hours. Eight-day run of the clockwork.

**2094 Heliograph**

Recording instrument producing a graph of the time and duration of sun radiation.

**2099 Triple-Pointer Anemometer**

For measuring the traveling distance of the wind over a selected time period.

**2100 Anemometric Contact Head (Anemograph)**

For precision measurement and registration of the average speed of air flow.

**2101 Ombrograph**

For automatic registration of rain falls. 1 mm water fall = 5 mm on the graph. One revolution of the drum in 26 hours.

**2102 Analytical Scale A 3**

Single-dish scale for weighing quickly and precisely extremely small quantities, with optical reading of submultiples of milligrams. Capacity 200 gr, sensitivity 1/10 mg. Automatic adding of weights.

**2103 Analytical Scale SMA**

Semi-microscale for precision weighing with optical reading of submultiples of milligrams. Charge 100 gr, sensitivity 1/100 mg.

**2104 Torsion Scale**

Intended for precision weighing of small quantities, fibres, etc. Scale range 10 mg, sensitivity 0,02 mg.

**2105 Corn Meter**

(hectolitre scale), for determining the quality of corn by the weight of a certain quantity. Capacity 1 litre.

**2106 Geliograph**

Instrument for measuring and registering the quantity of snow fall.

**2107 Manometer**

Graphic instrument for precision measuring and recording of pressure in boilers, pipelines, etc. on chart rolls.

**2108 Thermometer**

Recorder, mercury, capillary, for remote measuring of heat in boilers, pipelines, etc.

**2109 Thermometer**

Dairy thermometer with dial chart, for remote measuring, mercury filled. Range +30 to +100° C.

**2110 Thermometer**

Recorder with strip-chart, for remote measuring, capillary type, range -35 to +600° C.

**2111 Line Recorder**

Impulse type, fourteen graph, for controlling and recording the operation of certain machines and equipments, such as presses, pumps, vulcanization equipments, mixers, etc.

**2112 Receiver**

Recorder with strip-chart, for receiving impulses corresponding to changes of level, producing a graph on a chart roll. Impulses are transmitted by a limnigraph.

**2113 Limnigraph IBA**

Remote-recorder transmitter for registering the water level on a point remote from the measuring point.

**2114 Dam Tensometer**

String-type electro-acoustic instrument for measuring the tension in concrete structures (dams, etc.)

**2115 Dam Thermometer**

String instrument for measuring the heat inside concrete structures.

**2116 Hair Hygrometer**

For measuring relative humidity of air.

**2117 Optical Kymograph**

Instrument recording phenomena in relation to time, with photo-recording over a galvanometer.

**2118 Mechanical Kymograph**

Instrument recording phenomena in relation to time, by mechanical means on a sooted paper strip.

**2119 Vibrator**

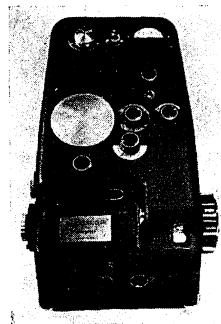
Supplied with a set of laboratory sieves for determining the size of grains, of pulverized materials.

**2120 Micro-Polarograph**

For quick chemical analysis by the polarographic method. Suitable for field work, driven by a clockwork, photo-recording.

**2121 Interflex**

Box-type galvanometer. Suitable for potentiometric, calometric, etc., measurements. Exchangeable scales graduated in pH, millimeters, Millivolts, absorption and extinction. Galvanometer 10<sup>-9</sup> A.

**2122 Galvanometer Z**

Double circle type with suspended coil for measuring small direct current, sensitivity 10<sup>-9</sup> A.

**Galvanometer N**

With moving coil mounted on a stretched hair. For measuring small direct current and voltages. Sensitivity 10<sup>-9</sup> A.

**2123 Vertical Reading Device**

For objective reading of galvanometer deflections. Vertical arrangements.

**Horizontal Reading Device**

For objective reading of galvanometer deflections. Horizontal arrangement.

**2124 Centrifuge**

Laboratory type Chirota for centrifugal work in laboratories, universal design with adjustable deflection and angle heads, with vessels for 50, 100 and 200 millilitres, and inserts for retorts 15 ml for Wassermann vessels and haematocrite. 8 000 revolutions.

**2125 Centrifuge**

Laboratory medical type Media 815 for sedimentation of different substances. For plane precipitating of eight pendulums, and 15 ml, or a Wassermann vessel, or haematocrite. Maximum revolutions per minute 4 200 = 3 200 g.

**2126 Aeroscope**

For ascertaining the number of microbes in the atmosphere for the purpose of testing the purity and sterility of the air in operating theatres, nursing homes, nursery schools, dairies, etc.

**2127 Vibrator**

Type »Kahn« for mixing solutions, making emulsions, etc.

**2129 Drying Box LS 110**

For drying and heating various materials, for sterilizing, etc. Automatic heat regulation up to 200 °C. Enforced circulation of hot air. Dimensions 110 X 90 X 60 cm.

**2130 Drying Box LS 60**

For drying and heating various materials, for sterilizing bandages, surgical instruments, etc. Automatic heat regulation up to 200 °C. Useful dimensions 60 X 50 X 60 cm.

**2131 Thermostat**

Bacteriological type TH 60, for sheltering specimens and keeping various materials under accurate and steady temperatures. Temperature range 25–60 °C, sensitivity  $\pm 0,1$  °C.

**2132 Watermeter**

Single inlet 13 mm dia. For measuring water consumption in houses, households, and small industrial plants. Capacity 3 m<sup>3</sup>/hour. Sensitivity 18 litres an hour.

**2134 Watermeter**

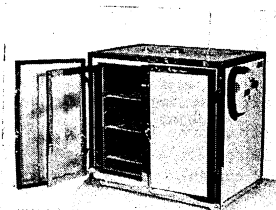
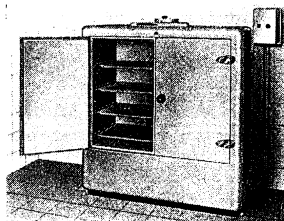
Screw-type »Woltman« 100 mm dia for measuring the water consumption in large industrial undertakings. Capacity 400 m<sup>3</sup> per hour.

**2135 Watermeter**

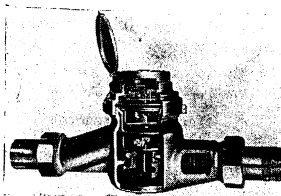
Hydrant-type for direct measurement of water from hydrants. Watermeter mounted in the hydrant extension.

**2128 Polaroscope**

System Heyrovský-Forejt, electronic device for quick analysis of solutions by the method of oscillographic polarography.

**2133 Multi-Inlet Water Meter**

Diameter 40 mm for measuring water consumption in houses and industrial enterprises. Flow 20 cu. m/h, sensitivity 100 l sec.

**2136 Condensate-Meter**

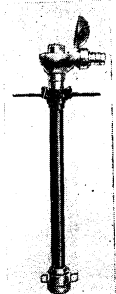
For measuring the steam consumption in buildings with central heating.

**2137 Watermeter**

Combined for measuring small and large water consumptions. Automatic change-over to the small or large flow. The diameter of the small watermeter is 25 mm, of the large one 80 mm.

**2138 Watermeter**

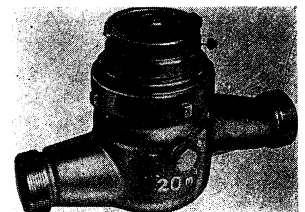
Volume watermeter for precision measurement of water consumption. Volume-type measuring system.

**2139 Watermeter for Boilers**

For measuring the water consumption of large steam boilers.

**2140 Watermeter**

Watermeter with removable construction for measuring the water consumption of large steam boilers. When troubles occur the mechanism can be removed without interfering with, or interrupting the operation of the plant.

**2141 Gasmeter PS2**

For measuring gas consumption in households. Capacity 2 m<sup>3</sup> per hour. Dry construction.

**2142 Gasmeter PS 6**

For measuring gas consumption in households or smaller industrial plants. Capacity 6 m<sup>3</sup> per hour. Dry construction.

**2143 Gasmeter PS20**

For measuring gas consumption in industrial plants. Capacity 20 m<sup>3</sup> per hour. Dry construction.

**2144 Gas Meter**

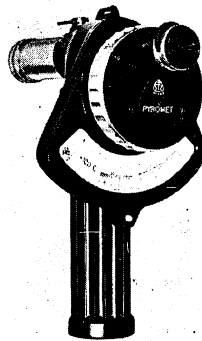
Laboratory gas meter for laboratory measurements of the quantity of passing gas and, simultaneously, temperature measurements.

**2145 Thermostatic Bath**

Serves for the Quick test, with condenser illuminating the water bath. Contact thermometer for 37, 38, 42, and 56 °C. Heating element 180 W. Stirrer about 800 r. p. m.

**2146 Optical Pyrometer  
»PYROMET«**

Serves for measuring high temperatures up to 2300 °C. Two temperature ranges 500 to 1500 °C, and 1200 to 2300 °C.



**2147 Resistance Thermometers**

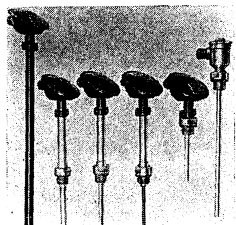
Resistance thermometers with various ranges up to 550 °C, with resistance element Pt, 100 Ω at 0 °C.

**2148 Pyrometers**

Pyrometers with various thermocouples (FeCo, NiCrNi, PtRhPt).

**2149 Locomotive Pyrometer**

With thermocouples CuKo, measuring range 20 — 450 °C.



**2150 Indicator, type KV**

Type KV indicator with cross — coil measuring system for connection to resistance thermometers.

**2151 Temperature Controller with depression mechanism**

Type RD dotting heat controller with moving-coil for connection to thermocouples.

**2152 Ring Scale**

Low-pressure graphic ring scale for measuring flow or pressure, with strip-chart recording mechanism.

**2153 Low-pressure Ring Scale**

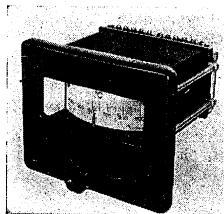
Indicating instrument for measuring flow or pressure.

**2154 Floater-type Flow Indicator**

Type MUP 100 for service pressures up to 100 kg per cm<sup>2</sup> with counter.

**2155 Floater-type Flow Recorder**

Type MZP 100 with strip-chart recording mechanism, for service pressures up to 100 kg per cm<sup>2</sup> with counter.



**2156 Six-point Recorder**

Type DZb6, with moving — coil measuring system for connection to thermocouples.

**2157 Level Indicator**

Remote-indicating level gauge, type MS 100 (floatermanometer).

**2158 Electrical Fume-Gas Analyser**

Type REGULA, measuring range 0—20 per cent CO<sub>2</sub> and 0—4 per cent CO + H<sub>2</sub>.

**2159 REGULA Electromagnetic Solenoid Valve**

is used for automatic regulation of small flows.

**2160 REGULA Diaphragmatic Regulating Valve**

for regulation steam pressure, etc.

**2161 Lever Servomotor**

is used for automatic regulation of various shutting devices such as slides, flaps, etc.

**2162 Servomotor With Rotary Motion**

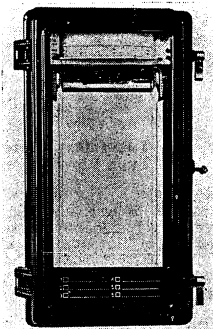
is used for automatic regulation of various shutting devices.

**2163 Servomotor With Straight Line Motion**

is designed for automatic regulation of various shutting devices.

**2164 Complete Cabinet With Two Flexible REGULA TORS**

There are two oil regulators: pressure, quantity, level, etc.



**2165 REGULA Distributing Box**

is a complete distributing panel with instruments for measuring and regulating of steam boiler operation.

**2166 Electrical Blood-Corpuscule Counter**

Serves for determining blood corpuscles by means of the method of diffused reflected light.

**2167 Tension Meter**

Double-duct resistance tensiometer for static and dynamic measurements in components and constructions subjected to stresses.

**2168 Optical Vibration Meter**

Serves for determining all kinds of vibrations, for precision balancing of rotors of motors, turbines, etc.

**2169 Floater-Type Flow Recorder**

(Rotameter). For measuring and recording the instantaneous flow of liquid or gas.

**2170 Floater-Type Flow Indicator**

For remote indication (rotameter) of the instantaneous flow of liquid or gas.

**2171 Laboratory Floater Type Flow Meter**

(Rotameter). For measuring the flow of liquid and gas. With five exchangeable tubes and floaters.

**2172 Thermostat**

With water mantle and cooling for keeping bacteriological cultures at accurate temperatures that may also be below the room temperature. Temperature range +4 to +60°C. Automatic cooling.

**2173 pH-Meter Multoscope III**

Direct inducing electronic pH-meter for high and low resistance glass electrodes. Accuracy 0.05 pH. Ranges 0-800 mV, 600-1400 mV, 0-8 pH, and 6-14 pH. Incoming resistance above  $10^{11}$  ohms.

**2174 pH Meter Multoscope IV**

Portable case-type electronic pH-meter for high and low resistance electrodes. Accuracy 0.05 pH = 5 mV 600-1400 mV, 0-8 pH and 6-14 pH, incoming resistance above  $10^{11}$  Ω.

**2175 pH Meter Multobat**

Electronic instrument in portable case for measuring the pH value directly in service. Specially arranged immersion glass-electrode in conjunction with a silver electrode Ag (Ag-Cl). Range 0-8 and 6-14 pH. Incoming resistance  $10^9$  Ω.

**2176 Electronic pH Recorder**

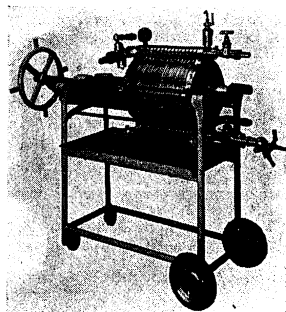
for measuring waste water, direct measuring in ducts, etc. Rigid electrode adapted for fast flowing water. Cable 25 m.

**2177 Bridge-Type Conductoscope**

Instrument for measuring ohmic resistances, capacities specific resistances of electrolytes and for conductometric titration. Two scales: specific and percentage +20 to -17%. Frequencies 50-5000 c/s. Ranges 0.05 - 20 MΩ - 10 pF to 20 μF.

**2178 Titroscope**

For potentiometric titration, measuring the pH value with all kinds of electrodes except glass electrodes. Used also as microammeter, millivoltmeter, etc. Ray may be changed-over to three scales, pH, millivolt, and millimetre.



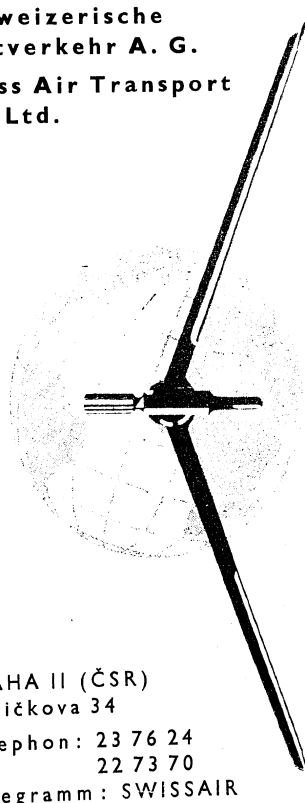
**2179 Seitz Filter**

300 mm dia. 20 chambers, transportable, for filtering and draining deposits of bacteriological solutions.

# SWISSAIR

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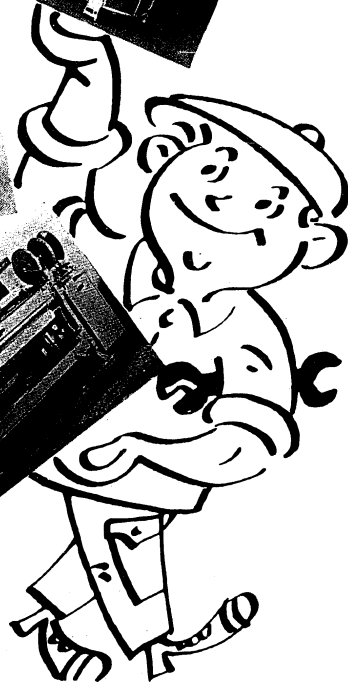
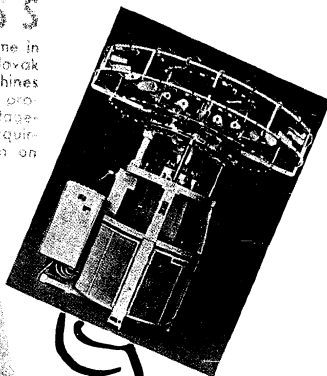
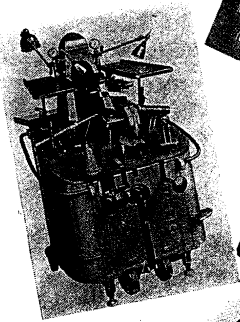
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## PROGRESS

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PRAHA  
CZECHOSLOVAKIA

### 2180 Ultra-Sound device LP 400

Clean high-frequency output of the quartz 400 W. Self-frequency of the generator 1 Mc. For research, emulsion, etc.

### 2181 Metal-Plating Device

Intended for metal-plating under high vacuum. For metal plating of non-electrical and electrical materials by means of metal evaporation. For depositing thin metal-layers of the order of molecules and above. For metal-plating optical components, mirrors, reflectors, instruments, etc.

### 2182 Single-Cell Photo Colorimeter

For measuring the concentration of solutions by the colorimetric method.

### 2183 Calorimeter

For determining the calorific value of solid fuels by means of measuring the combustion heat.

### 2184 Conductometer

Šandera Conductometer for conductometrical analysis, determining ashes for the conductometrical titration and for quick determination of the content of anorganical components in solutions.

### 2185 Laboratory Mixer

Electrical mixer with a set of stirrers for longtime stirring of solutions. Speed regulation.

### 2186 Laboratory Mixer

Electromagnetic type with heating plate for long-time stirring of solutions and potentiometric titration.

### 2187 Titrating Mixer

It serves for potentiometric titration and simultaneous stirring and heating of solutions, with electrode and thermometer holder.

### 2188 Flash-Point Instrument

Flash-point instrument in open crucible intended for determining the flash-point of inflammable liquids, particularly oils, within the range of 120 to 350 °C. Automatic burner movement.

### 2189 MacLeod Vacuum Gauge

Serves for measuring the degree of vacuum within the range of 10 mm, and 0,01 mm Hg.

### 2190 Pirani Vacuumeter

for measuring vacuum in the range from 10<sup>-1</sup> mm Hg to 10<sup>-4</sup> Hg. The instrument works on the principle of thermal conductivity of heated filament at different pressures.

### 2191 Manometric Instrument

Van Slicke manometric instrument for detecting gases (CO — CO<sub>2</sub> — O<sub>2</sub>) in blood and other solutions, extractions in vacuum, and manometric measurements.

### 2192 Viscosity Meter

Engler viscosity meter for measuring viscosity of oils by means of the Engler method.

### 2193 Electrical Vacuum Tester

Serves for detecting vacuum in glass tubes, electric bulbs, electronic valves, etc. Also for determining insulating capacity of glass, ceramics, plastic materials, insulating paper, etc.

**KOVO**



**2194 Electrodes**

For measuring the pH value. Various kinds of metal and glass electrodes for measuring the acidity and basicity of solutions.

**2195 Pumping Unit**

Intended for producing low and high vacuum. Pre-vacuum rotating oil-pump capacity 7 m<sup>3</sup> per hour, with final vacuum 10<sup>-2</sup> mm Hg in conjunction with a diffusion paraffing pump, capacity 10 l per second, and final vacuum 10<sup>-6</sup> mm Hg.

**2196 Diffusion Pump**

Diffusion paraffin pump. Pumping speed 70 l per second, final vacuum 10<sup>-6</sup> mm Hg.

**2197 Rotating Pump**

Single step rotating oil pump, capacity 30 m<sup>3</sup> per hour, vacuum 10<sup>-2</sup> mm Hg.

**2198 Autoclaves**

Rotating high-pressure autoclave recorder for chemical operations under high pressure and temperature. Capacity of the steel vessel 1,5 or 2,5 litres. Pressure 320 kg per cm<sup>2</sup>, temperature 350 °C. Pressure recording, temperature indication.

**2199 Polarograph LP 55**

With photo-recording for carrying out chemical analysis by means of a mercury drop electrode. New patent construction with vertical projection of the galvanometer beam, for precise scientific work

*The JAWA-ČZ motor-cycles participate in important contests and trials. Extensive reports on these events are to be found in the illustrated periodical CZECHOSLOVAK MOTOR REVIEW, Praha I, Ul. 28. října 13.*

**2200 Polarograph LP 54**

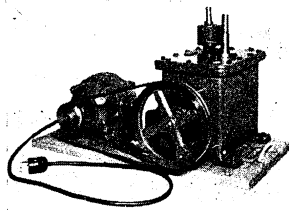
Manual type serving for polarographic analysis of substances, with hand recorded curve directly on the working spot. Readily portable.

**2201 Tar Separator**

Intended for determining the quantity of tar in fumes and generator gases. Suction capacity 3 — 7 l per minute, measuring vessels 100 — 200 and 300 cm<sup>3</sup>. Voltage in the condensing chamber adjustable from 10 — 15 kV. Temperature 120 °C.

**2202 Device for Determining the Octane Number**

Serves for testing the resistance to detonations of motor fuels (petrol, spirit, benzene, etc.).

**2221 Device for Determining the Cethane Number**

Intended for testing the self-inflammability of motor petroleum by subjecting it to the effects of pressure and heat.

**2222 T 132 Sewing Machine**

A modern portable sewing machine with a free arm (for darning, etc.), is provided with an electromotor and built-in light. Sews straight or zig-zag stitch.

**2223 L 233 Sewing Machine**

A household sewing machine with a straight or zig-zag stitch and a large field of use by housewives or seamstresses.

**2224 L 121 Sewing Machine**

A household sewing machine with a straight stitch. Has all the advantages of a simple machine. Sews forward or backward, is provided with an automatic bobbin winder and a drop feed, which enables embroidering and darning.

**2225 T 124 Sewing Machine**

A modern household sewing machine with a built-in light and several other improvements. It is equipped with an automatic bobbin winder and drop feed.

**2226 T 224 Sewing Machine**

is a single needle tailors sewing machine. A quiet run is its great advantage. It can be either treadle or motor driven.

**2227 M 122 Sewing Machine**

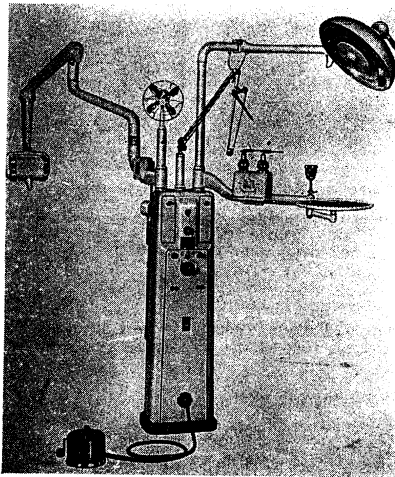
is a household sewing machine with a straight stitch, which is equipped for all types of sewing: hemming, felling, darning, embroidering, etc.

**2228 Sewing machines — open section models**

**2229** Open section models of sewing machines L 233 and M 122 for showing the function of the mechanism.

**2241 C 6 Cigarette Making machine**

Škoda C-6 cigarette making machine has an output of 540 000 glued seam or 450 000 crimped seam cigarettes per hour. The machine is equipped with new mechanism, ramming device and a new fully automatic cigarette cutter.



**2251 Alarm-clocks**

Various kinds of alarm-clocks, as e. g. type B — 90 alarm-clocks, miniature type alarm-clocks, style and traveling alarm-clocks, etc.

**2252 Clocks**

Several kinds of clocks in various models, e. g. kitchen wall-clocks, striking kitchen wall-clocks, striking wall-clocks, striking mantle-piece-clocks, etc.

**2253 Time-relay RZF**

A town model showing the usefulness of a uniform time central electric clock equipment.

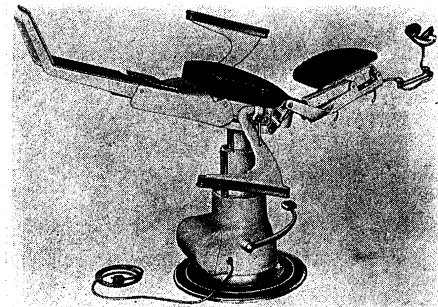
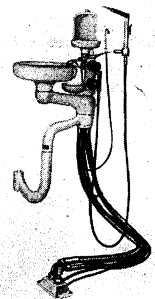
**2261 Dental surgery equipment**

Chirodent equipped with Minident. This set comprises all necessary instruments for general dental surgery including a built-in compressor. Minident Dental X-ray Apparatus of output of 55 kW and 12 Am, 50—60 c/s can be fitted on Chirodent equipment.

CZECHOSLOVAK MOTOR REVIEW, Praha I, Ul. 28. října 13, will gladly send you a complimentary copy.

**2262 Dental Flushing Cuspidor with Warm and Cold Water Syringe**

The dental flushing cuspidor has been designed to be mounted to the dental chair in all dental surgeries where pressure water supply is available. The dental flushing cuspidor incorporates: a bowl with pressure water flushing system, a saliva ejector, a tumbler bowl with a shield, a small bowl to receive artificial dentures, an electric water heater, and a warm and cold water syringe. The electric water heater can be designed for 200 V or 120 V power supply voltage. Power consumption: 200 W.

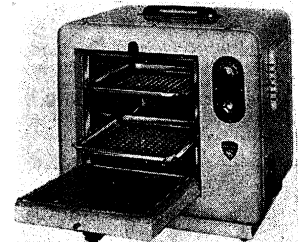


**2263 Combined Motor and Oil Pump Anaesthetic Dental Chair, Model 97**

By depressing the raising pedal the motor of the oil pump is switched on and the chair is being lifted. During power supply failures or motor defects, the chair can be lifted by treading the raising pedal. The chair is designed for operation on 220 V or 120 V. A. C. mains. Power consumption: 200 W.

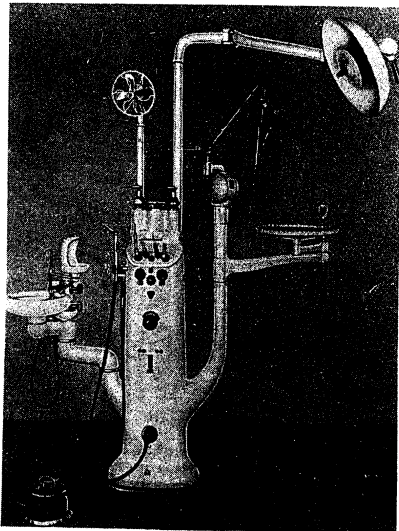
**2264 Neosteril Electric Hot Air Sterilizer with Stand**

The electric hot air sterilizer is suitable for sterilization of surgical instruments, glass-ware, dressing material, etc. The required sterilizing temperature is automatically controlled. Sterilizing temperature range: 60°—200° C. Operating voltage 220 V or 120 V, power consumption: 1 000 W.



**2265 Mobile Operating Stool, Model 95**

The mobile operating stool ensures comfortable working and minimizes the dentist's fatigue during long lasting operations.

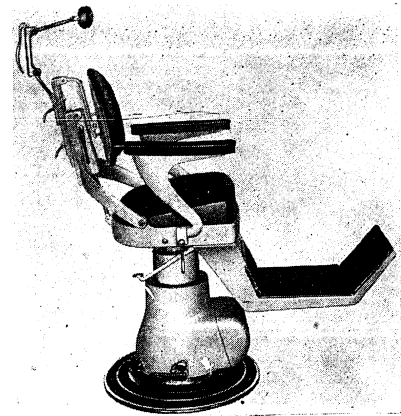


**2266 Complet D Universal Dental Equipment with Air Compressor**

The universal dental equipment comprises all the necessary instruments required by the dentist during routine work. All the instruments are so arranged as to be always conveniently at hand for the dentist. Operating voltage 220 V or 120 V.

The piston compressor provides compressed air for cleaning tooth cavities, crowns, etc., and for spraying of medicinal solutions. The compressor can also supply compressed air to the dental laboratory. Operating voltage 220 V or 120 V, power consumption: 125 W.

*Information on the service is to be found in the CZECHOSLOVAK MOTOR REVIEW, Praha I, Ul. 28. října 13.*

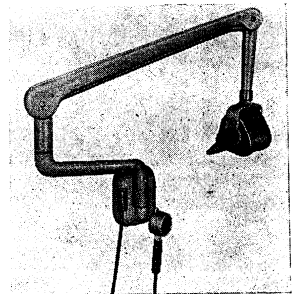


**2267 Motor Dental Chair, Model 94**

The double-telescope motor dental chair is designed for operation on 220 V or 120 V power supply. Power consumption: 200 W.

**2268 Minident Mobile Stand Dental X-ray Unit**

The easily mobile dental X-ray unit is suitable for intra-oral and extra-oral dental radiography as well as for radiography of the temporo-mandibular joint and maxillary sinuses. The folding bracket, to which the tube head is mounted, can be adjusted to any position and height of a sitting patient. The radiation efficiency, of the X-ray tube is equivalent to 55 kV, 12 mA. Operating voltage 220 V or 120 V, power consumption: 800 W.

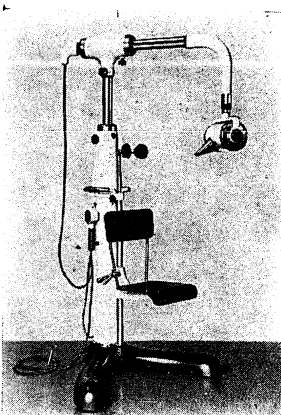


**2269 Minident Wall-Mounted Dental X-ray Unit**

The folding wall-bracket mounted type is used for the same radio-

graphy and is of identical output as the Minident mobile stand X-ray unit.

*CZECHOSLOVAK HEAVY INDUSTRY scientific and technical monthly for engineering and heavy industry.*

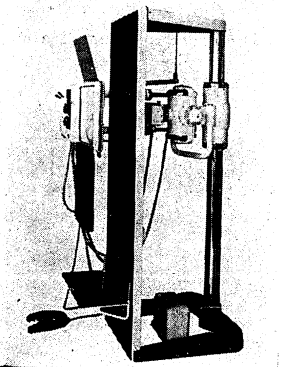


**2270 Stomax Dental X-ray Unit**

Suitable for radiography of teeth, jaws, skulls, bones and different parts of the human body. The stand is mobile. The radiation efficiency of the X-ray tube is equivalent to 65 kV, 15 mA. Operating voltage 220 V or 120 V, 40-50 c/s.

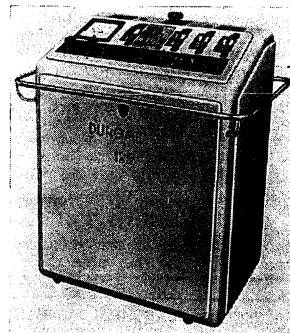
**2271 Chirax Portable X-ray Unit**

The Chirax is a small portable X-ray unit of high output, suitable for radiography of bones. Fluoroscopy can be carried out with the use of a fluoroscope. The X-ray unit is easily portable in two carrying cases. Operating voltage 220 V or 120 V. The radiation efficiency of the X-ray tube is equivalent to 65 kV, 15 mA.



**2272 Klinik III Diagnostic X-ray Unit for Fluoroscopy and Radiography**

In spite of light weight this X-ray unit is of high output. Fluoroscopy can be carried out of a standing, sitting or a recumbent patient on an auxiliary table. Maximum output of the X-ray tube during fluoroscopy is 3 mA at 80 kV. The X-ray unit can be operated on 220 V or 120 V A. C. mains.



**2273 Durometa 125 Four-Valve X-ray Unit**

This X-ray unit is suitable for diagnosis by means of direct and indirect fluoroscopy and radiography. Maximum kilovoltage of the high-voltage generator is 125 kV during radiography and 100 kV during fluoroscopy.

**2274 Megameta 125 Four-Valve Diagnostic X-ray Unit**

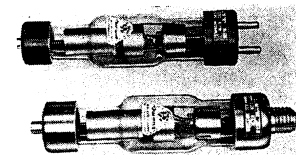
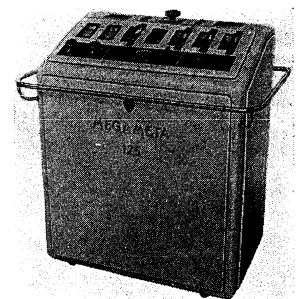
Two or three diagnostic sets can be connected to this X-ray unit which is suitable for big medical institutions with a heavy working volume. It is designed for hard ray technique. Maximum output 800 mA at 125 kV.

**Motoskop 122**

is a motor-driven tilting table suitable for perfect clinical X-ray examination by fluoroscopy and radiography. By means of an electromotor the table can be tilted from the vertical position up to the Trendelenburg position. The seat for the patient as well as the fluoroscopic screen are also motor operated.

**2275 X-ray Tubes and Valves**

A set of X-ray tubes from the smallest type up to the rotating anode X-ray tube. A set of rectifier valves suitable for X-ray units of various outputs.



**2276 Helios SLU 1 Portable Ultra-Violet Radiator**

Suitable for medical surgeries as well as for homes. Operating voltage 220 V, power consumption: 250 W.

**2277 Syringes**

A set of syringes of different sizes. Suitable for injection therapy. Sterilizable at a temperature of up to 200° C.

**2278 Hypodermic Needles**

Made of non-corrosive material, different sizes.

**2279 Oxymeter**

The oxymeter is designed to determine the arterial oxygen saturation. It is in principle a photoelectric colorimeter.

**2280 Electrophonendoscope**

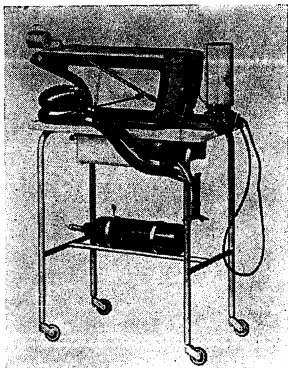
It is used to pick up amplified pulmonary and arterial murmurs and foetal heart sounds. The taking of phonocardiograph is provided.

**2281 Bronchoscope**

This instrument is used for bronchoscopic diagnosis and therapy in thoracic surgery.

**2282 Thoracoscope**

This instrument is used for thoracic surgery, especially for severing pleural adhesions by means of electrically heated cautery knives.



**2283 Electric Metabolimeter**  
An apparatus for measuring the basal metabolism.

**2284 Diaphanoscope**  
This instrument is employed for illumination of nasal and frontal cavities.

**2285 Sterilizing Dressing Containers**

These containers are designed for sterilization and storing of dressing materials, waddings, bandages, etc.

**2286 Sterilizing Dressing Drums**  
These drums are designed for sterilization and storing of dressing materials, waddings, bandages, etc.

**2287 Chirus Universal Operating Table**  
Designed and equipped to permit carrying out of all routine surgical as well as orthopaedic operations.

**2290 Plaster of Paris Saw**  
An apparatus which by swinging motion of a oscillatory disc saw permits easy and safe cutting and removing of plaster of Paris bandages. The soft part of the human tissue cannot be hurt by the saw.

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**KOVO**

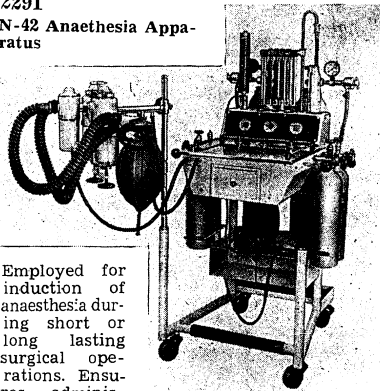


**2288 Single-Channel Battery Electrocardiograph**  
An apparatus for recording of the heart action potentials.

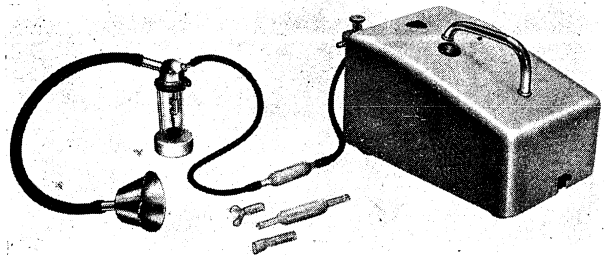
**2289 Mains-Operated Four-Channel Electrocardiograph**

An apparatus fitted with four independent channels, employed for recording of the heart action potentials

**2291 N-42 Anaesthesia Apparatus**



Employed for induction of anaesthesia during short or long lasting surgical operations. Ensures administration of long lasting and deep anaesthesia with the possibility of controlled respiration during thoracic or other surgical operations.

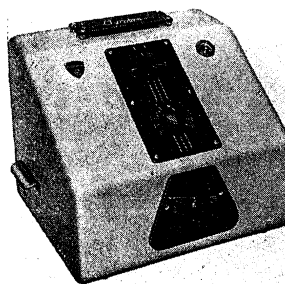


**2292 Portable Inhaler**  
Employed for treatment of respiration organs by finely atomized liquid medicines, such as penicillin, etc. Operating voltage 220 V or 120 V.

**2293 Chirax Unit**  
A universal electro-medical apparatus which incorporates in a mobile cabinet: an electromotor permitting revolution speed control, and a flexible shaft to which a rotary or oscillatory instrument can be attached as required for the appropriate operation. Further accessories are the instrument for coagulation and electric tissue cutting, and the surgical drainage apparatus.

**2294 Portable Electric Shock and Electric Coma Therapy Apparatus**

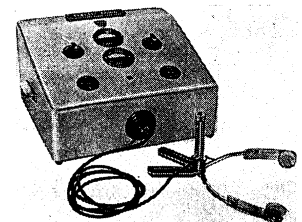
Suitable for treatment of psychosis and psychoneurosis by means of electric current. Operating voltage 220 V or 120 V.



**2296 Chirotom**

An electronic surgical apparatus designed for all kinds of surgical operations by means of a knife or a cutting loop. Suitable for haemostasis, coagulation an even subaquatic incisions. Operating. voltage: 220 V or 120 V.

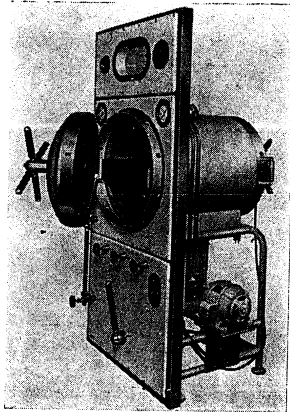
**KOVO**



**2295 Mobile Stand Operating Theatre Shadowless Light**

The luminous flux of this light can be directed to any required direction. Uniform, concentrated, shadowless illumination of the operating area is ensured.

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**2298 Pressure Instrument Sterilizer**

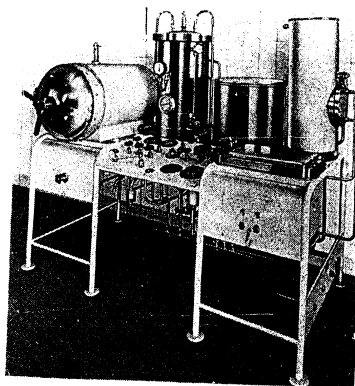
Suitable for sterilization of surgical instruments, syringes, etc., under pressure. Steam, gas or electrically heated.

**2299 Washer and Sterilizer**

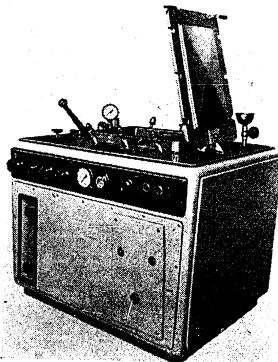
An apparatus for sterilization of surgical instruments, syringes, etc., combined with hot water washing of the used instruments

**2300 Battery of Sterilizers**

An installation for production of distilled and sterile water as well as for sterilization of surgical instruments, bandages, dressings, etc.



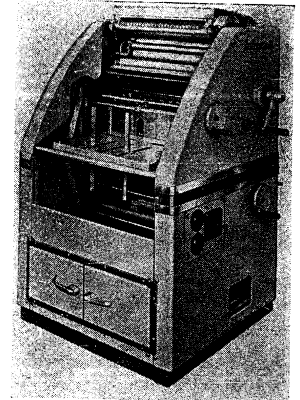
**2297 Horizontal Autoclave**  
Intended for sterilization of bandages, dressings, laboratory glassware, etc.



**2321 Zetaprinton 30**

Offset printing machine for A-3 small size paper. The machine is equipped with an electromotor for 110/220 V or 220/380 V, input 0.8 kW, r. p. m. 1450. The paper can be of the following sizes: from 105 X 148 mm up to 365 X 500 mm and of weight from 30 g/sq. m to 350 g/sq. m. Maximum output of the machine is 5 000 prints per hour.

The advantages of this machine are: simplicity, easy operation, low price and reliability. It can be used for single colour printing such as letter heads, forms, technical drawings or for multicolour work such as calendars, fashion magazines, various publications, etc.



**2322 ZETAPRINTON 20**

Is an offset printing machine for paper size 210 X 297 cm. The machine is equipped with an 110/120 V electromotor. The paper can be of following sizes and weights, from 105 X 148 mm to 229 X 356 mm, 40 g/sq. m to 150 g/sq. m. Maximum output of the machine is 3 500 prints per hour.

Simplicity, easy operation, low price and reliability are the advantages of this machine. It is especially suitable for offices for printing of various forms, circulars, etc. Simple multicoloured prints can also be printed on ZETAPRINTON 20.

**2323**

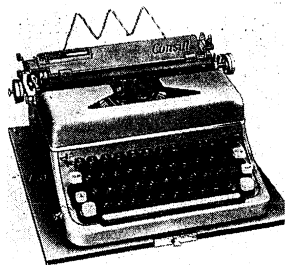
**2324 Consul Typewriter**

in standard and new execution. Both types are produced with a 13"/33 cm or 18"/46 cm carriage.

With Pica 1 or Elite small type and with a standard columnar or decimal tabulator. It can be supplied in 45 different keyboards. It is of relatively light build, weighs only 12 kg in contrast to 15 - 18 kg of other makes, because it is manufactured of first-class steels and the large parts are made of aluminium or spray castings.

The operation of the typewriter is very simple, all levers are easily accessible from the outside without opening of the cover. The automatic margin setting and setting of paragraphs is especially advantageous.





**2327 Nisa M Calculating Machine**

has a numerical range of 8 X 8 X 16. This machine with a complete keyboard is manufactured of quality material in a first-class execution and weighs only 4,10 kg. It is easy to operate and is extremely efficient. The machine can be supplied in grey wrinkle finish. A machine in beige glossy lacquer with modern square key tops is being prepared for delivery.

**2328 Consul Electric Adding Machine**

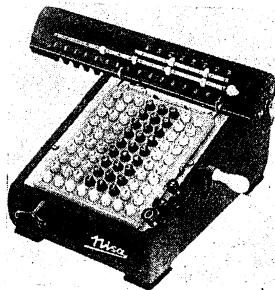
Easily movable. Only best material is used for its manufacture. The machine adds normally even in case when the total of negative items is larger than the positive negative balance. If in such case the subtotal or the total key is pressed the total is printed in red. The machine is equipped with a check register sight window which makes even multiplication possible. The speed of the machine is 120 operating strokes per minute. The machine is delivered now in modern execution with the electromotor covered, with modern square shaped key tops in beige glossy lacquer.

**2329 Nisa Electric Calculating Machine**

is an electric calculating machine with a complete keyboard of 8 X 8 X 16 capacity without automatic division.

**2325  
2326 Portable Typewriter**

in standard and new execution is equipped and executed in the same way as a standard typewriter, the roller is only 24,5 cm long and the weight is 8,40 kg together with the case. The number of keys is 44 against 46 keys of the standard typewriter and could be therefore classified as a medium size typewriter. The advantages and outstanding features of this typewriter are the same as those of the standard one.

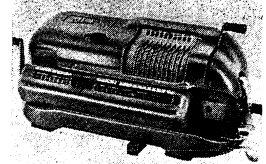


**2330 Nisa P Calculating Machine**

Nisa hand lever calculating machine has a capacity of 10 X 8 X 16 with decimal places carried over in the proof register.

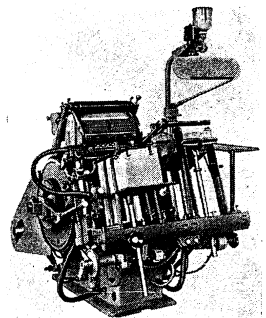
**2331 Grafopress**

an automatic platen printing machine suitable for simple or complicated multicoloured jobs, further for embossed printing and printing of folders. Maximum output 5 000 prints per hour.



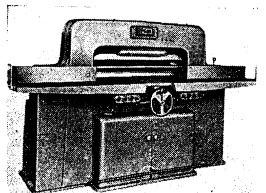
**2332 Zetacont B**

is an offset proof press with an automatic ink spreader for maximum paper size of 80 X 160 cm. The most up-to-date machine of this type for pulling of various proofs and printing of precision maps. Can also be used for printing on glass, tin sheets, wood or other material.



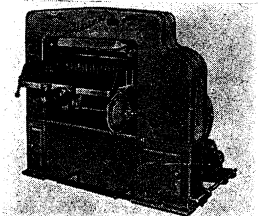
**2333 Zetalis**

High speed letterpress printing machine of high output suitable for all kinds of book printing, including multicoloured prints. Maximum paper size 56 X 76 cm, 3 000 / 3 600 prints per hour.



**2341 Maxima H 106**

High speed paper cutting machine of great output with a 106 cm width of cut. This machine is equipped with hydraulic cutting and clamping device which removes all the deficiencies of the present mechanical systems. The pressure of the knife and of the clamping mechanism can be adjusted.



**2342 Maxima N 78**

High speed paper cutting machine of a 78 cm cutting width, is of simple design with hand clamping and mechanical cutting. Excellent for small printing shops and paper mills.



**2351 9 mm Smallbore Single Shot Rifle**

with a smooth barrel for shooting small birds with shot. It is equipped with a Mauser breech and eccentric firing pin. Flobert cartridges with rim fire are used.

**2352 Brno 2 Smallbore Rifle**

is a new improved type of Brno 1 smallbore rifle. The barrel is longer, the cartridge chamber and trigger mechanism newly designed. It is used for shooting vermin with 22 long rifle cartridges. The magazine holds five rounds. The stock is of walnut. The design of Mauser breech is very accurate.

**2353 Brno 3 Smallbore Rifle**

is designed for contest shooting and the weight has been adjusted to 4,5 kg. The fore-end of stock is re-inforced and the barrel is especially strong. The sights are adjusted for contest shooting, provided with peep sight and a set of sights to be chosen according to marksman's judgement.

**2354 Double Barreled Shotgun Bore 12**

with an English stock is provided with an automatic safety catch, the barrels are made of one forging, the barrel lugs are of Poldi steel. Lock plates and trigger guard are engraved and can be gold decorated if desired. It is used for shooting small game with shot filled cartridges.

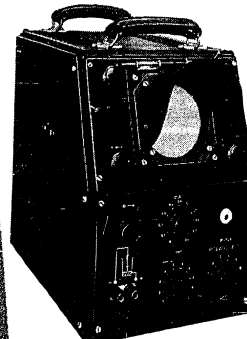
**2355 ZG 8 X 57 S Rifle with »LOVEC« Telescope**

is designed for shooting big game. This rifle has many new improvements, newly designed Mauser breech, new safety catch which arrests simultaneously the motion of bolt lever. It is provided with slots for attaching of the OP 4X or LESAR 3X telescopes.

**2356 Hornet Rifle**

HORNET rifle 5,6 X 36 R is a weapon of great efficiency with a Mauser breech, especially suitable for shooting of medium sized vermin. Cartridges with central firing are used. Shoots very accurately even at great distances.

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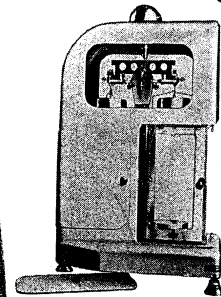


**P 524 Electronic Polaroscope**

serves for carrying out of practical analyses.

**A 3 Analytical Balance**

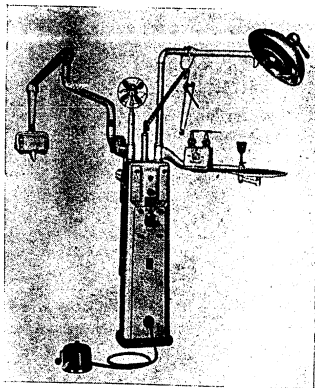
A half-automatic balance for precision weighing in factory laboratories, research institutions, etc. Sensitivity 0,1 milligramme, maximum load 200 grammes.



**UNIMET**

A universal measuring apparatus with forty-two measuring ranges for measurements of alternating current and voltage, resistance, capacity, power output, the level of low-frequency signals.



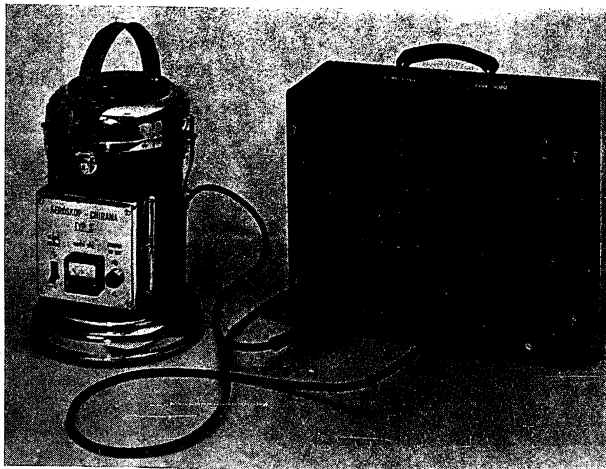


Czechoslovak electronic microscope and MINIDENT, the smallest X-ray unit in the world.

**KOVO**

PRAHA — CZECHOSLOVAKIA

The many hundreds of articles in the Technological Review magazine and articles begin from a heavy balance which is also known a line made by hand. We present the best of series of these a new type of...



Motor-cyclists who are exacting with regard to the quality and output of their machines ride on JAWA-CZ.



**2357 Automatic Shotgun R 16**

is smooth, without a rib, designed for 3 cartridges. Its great advantage is the rapid firing cadence, easy loading and dismantling of the shotgun for transport.

**2358 Air Rifle Model 47**

is accurate for short distances. Its advantage is easy loading of 15 to 20 shots and easy cocking of the spring. It uses balls Model 47/4,45.

**2359 ZV 3 Air Rifle**

is a light single shot airgun, excellent for sports training of boys, etc. The barrel is rifled. Diabolos are used as ammunition.

**2360 ZV 4 Air Rifle**

is similar to type ZV 3 only slightly heavier.

**2361 Duo 6,35 Pistol**

is an automatic pistol with a 6 groove rifling. The safety catch is on the right hand side of the grip. The advantage of the pistol is its small size, on account of which it can be easily carried in the pocket. The magazine holds six rounds.

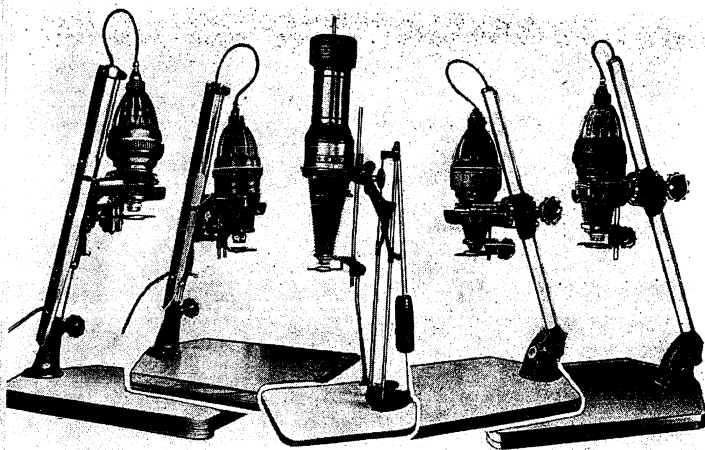
**2362 Air Pistol**

for shooting in rooms.

**2363 Cartridges**

The JAWA-CZ motor-cycles participate in important contests and trials. Extensive reports on these events are to be found in the illustrated periodical CZECHOSLOVAK MOTOR REVIEW, Praha 1, Ul. 28. října 13.

**KOVO**



2374                      2375                      2371                      2372                      2373

**2371 Herkules 18 X 24**

A professional-type precision enlarger for research institutes and laboratories for 18 X 24 mm maximum negative size with the following optical outfit: a BELAR f 4,5, F = 300 mm lens, a condenser 320 mm in diameter.

**2372 Opemus 4 X 4**

An amateur-type precision enlarger for 4 X 4 cm maximum negative size; a BELAR f 4,5, F = 55 mm lens, a plano-convex condenser 68 mm in diameter. Three easels are supplied as accessories. Advantage: oblique stand rod.

**2373 Opemus 6 X 6**

An amateur-type precision enlarger for 6 X 6 cm maximum negative size; a BELAR f 4,5, F = 75 mm lens, a double-convex condenser 98 mm in diameter. Accessories: a metal easel with glasses and a set of masks.

**2374 Opematus 4 X 4**

A precision enlarger with automatic focusing adjustment for 4 X 4 cm maximum negative size; a BELAR f 4,5, F = 55 mm lens, a plano-convex condenser 68 mm in diameter. Accessories: three easels.

**2375 Opematus 6 X 6**

A precision enlarger with automatic focusing adjustment for 6 X 6 cm maximum negative size; a BELAR f 4,5, F = 75 mm, a double-convex condenser 98 mm in diameter. Accessories: a metal easel with glasses and a set of masks.

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**KOVO**

**2376 Magnifax 6,5 X 9**

A precision enlarger both for amateurs and professionals, for 6,5 X 9 cm maximum negative size. A BELAR f 4,5 F = 105 mm lens, a double-convex condenser 120 mm in diameter. Accessories: a set of masks.

**2377 Magnitarus 10 X 15**

A precision enlarger designed for use in scientific institutes and laboratories, for enlarging from a maximum size of negatives of 10 X 15 cm and less. Optical outfit: a BELAR f 4,5, F = 180 mm lens, a double-convex condenser 200 mm in diameter. Supplied with a set of wooden easels and a set of masks for work with smaller negatives.

**2378 Magnolar 13 X 18**

A precision enlarger designed for use in scientific institutes and laboratories, for enlarging from a maximum size of negatives of 13 X 18 cm and less. Optical outfit: a BELAR f 4,5, F = 210 mm, a double-convex condenser 240 mm in diameter. Supplied with a set of wooden easels and a set of masks for work with smaller negatives.

**2379 Masking easel equipment 18 X 24**

Accessories to the precision enlargers, designed for masking the borders of the positive picture and for holding the photographic paper in position. Suitable up to a maximum size of 18 X 24 cm.

**2380 Masking easel equipment 30 X 40**

Accessories to the precision enlargers, designed for masking the borders of the positive picture and for holding the photographic paper in position. Suitable up to a maximum size of 30 X 40 cm.

**2381 Focusing adjustment**

Accessories to precision enlargers. Used for easier focusing of the enlarged image with enlargers which are not equipped with automatic focusing adjustment.

**2382 Correcting colour filters 75 X 75 mm — 135 X 135 mm**

Designed as correcting filters for colour photography, a set consisting of 33 filters. Used on enlarging with the aid of the MEOKOLOR-Adapter.

**2383 Equalizing colour filters 75 X 75 mm — 135 X 135 mm**

These filters are supplied as accessories to the correcting colour filters. They are used for accelerating the colour correction during enlarging. A set comprises 3 filters.

**2384 Macro-adapter**

This is supplied as accessories to the OPEMUS 6 X 6 II precision enlarger and serves for making macro-pictures by means of the reproducing method.

**KOVO**

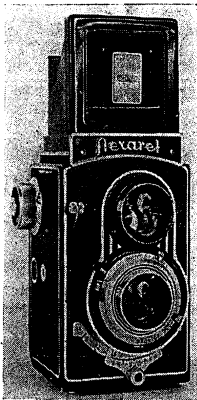
243

**2385 Reproducing arm**

Accessories to precision enlargers; with the aid of a photographic camera it substitutes a reproducing apparatus, i. e. it can be used for making reproductions from original pictures.

**2386 Axomat 24 X 36**

A new type of precision enlarger for black-and-white photography for use with 24 X 36 mm negatives (Leica size) or smaller sizes (16 mm film). Optical outfit: a BELAR f 4,5, F = 50 mm lens with snap-in diaphragm; an easel with slit-type focusing adjustment and negative counter window; oblique stand rod with scale; efficient cooling.

**2387 Flexaret IV**

A twin-lens reflex camera for use with 6,5 X 9 cm roll film (12 pictures 6 X 6 cm in size). Taking lens: a BELAR f 3,5, F = 80 mm, viewing lens f 3,0, F = 80 mm. Depth of focus scale engraved on the focusing lever, release on camera body, semi-automatic viewfinder, interlocking mechanism against double exposures.

**2388 Flexaret IV a**

A twin-lens reflex camera for use with 6,5 X 9 cm roll film (12 pictures 6 X 6 cm in size) and for 35-mm cine film (with adapter). The rewind knob fitted with indicators of the kind of film used. Otherwise the outfit similar to that of the preceding Flexaret IV camera.

**2389 Leather case for Flexaret cameras**

An everyday leather case protecting the camera against mechanical damage and effects of weather, permitting, however, the camera to be put in action instantaneously.

**2390 Auxiliary lenses**

Adapter lenses to be slipped on the objectives for shots made from a distance closer than 1 meter.

**Parallax wedges**

For the same purpose, with parallax correction, for use on making close-distance shots.

**Various filters**

For various corrections of films, colours, etc.

**2391 Set of Meokolors**

These are adapters to precision enlargers. Suitable for colour photography with the aid of correcting filters.

**2392 Mikroma II.**

A small-size camera for use with 16mm cine film. Shutter with conventional exposure times up to 1/500 sec. release mounted on the camera body, built-in flashight equipment. Optical outfit: a MIRAR f 3,5, F = 20 mm lens.

**2393 Magnola**

A camera for professional portrait photography, for scientific and research work; for enlarging from negatives up to a size of 13 X 18 cm. Complete equipment.

**2394 Tripod**

A telescopic-type flat-head tripod consisting of six parts (retractable legs); tripod head fitted with two conventional threads.

**2395 Pioneer camera**

A simple, inexpensive bakelite camera designed for the beginners. For use with 6.5 X 9 cm roll film; picture size 6 X 6 cm, or 4.5 X 6 cm (on using masks). Fix-focus lens.

**2396 Aladdin-lamp**

A practicable dark room illuminator. Three kinds of colour filters actuated by means of a knob located at the side of the instrument. An indispensable expedient for enlarging laboratories.

**2397 OKA Printer 18 X 24**

A contact printer for negatives up to 18 X 24 cm in size, with continuous light intensity control.

**2399 Driers**

Drying cabinets and drums for drying and polishing of photographs; both for professionals and amateurs.

**2398 Set of proto-dishes**

Dishes for developing, fixing and washing of films and positives.

**2400 Amateur laboratory equipment**

Complete instrumentary equipment for amateur enlarging laboratories.

*The JAWA-CZ motor-cycles participate in important contests and trials. Extensive reports on these events are to be found in the illustrated periodical CZECHOSLOVAK MOTOR REVIEW, Praha I, Ul. 28. října 13.*

**2401 Projection room equipment**

Complete instrumentary outfit of a projection room for 35-mm film, including soud equipment and screen.

**2402 Projection room equipment**

Complete instrumentary outfit of a projection room for 35-mm film, including sound equipment and screen.

**2403 Meopton I.**

A professional-type stationary sound-film projector for 16-mm film. Equipped with adapter for slide projection. Optical outfit: a POLAR f 1.3 (or f 1.5), F = 40 (or 60) mm, respectively. Projection head encased in a dustproof housing. 1000 W projection bulb.

**Meopton II.**

A professional-type stationary high-performance soundfilm projector for small public cinemas and lecture halls, for 16-mm film. The same projection lens as with Meopton I. Light source: a 40 a 60 amp. high-intensity arc lamp; full-encased projection head.

**Meopton III.**

A new professional-type stationary sound-film projector for 35-mm film; full-encased, fitted with various mechanical devices and safety equipments. A 40 to 60 amp. high-intensity arc lamp. Suitable for medium size cinema halls (for about 400 spectators). Supplied with a POLAR f 1.9 (or f 2.8), F = 80 mm (or 160 mm) lens, respectively.

**2404 Optilux**

A new 8-mm cine-projector for amateurs, institutes and schools; fitted with a POLAR f 1.3, F = 25 mm lens and a 500 W projection bulb. Supplied with a transformer for conventional mains voltages from 110 V up to 240 V. Reversible movement of film.

**2405 OP 16-mm Sound-film Projector**

A 16mm soud-film projector with a 500 W projection bulb. Variable transformer for 110 to 240 V voltages; projection lens: a POLAR f 1.5, F = 50 mm; 8w amplifier; complete equipment portable in two cases.

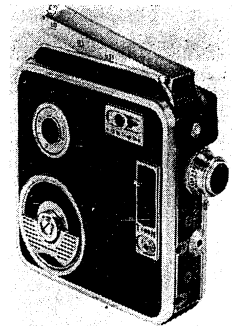
**2406 Meo »8« Projector**

A simple and light-type projector designed for home projection, for use with reels of 120 m maximum film length; fitted with a POLAR f 1.5, F = 18 mm lens and a 200 W projection bulb. Portable case design; suitable for all conventional mains voltages from 110 up to 240 V.

*Should you be interested in the opening of trade relations with Czechoslovak Glass- or Ceramic works you will acquire the best information on the trade possibilities by regularly following the richly illustrated monthly CZECHOSLOVAK GLASS REVIEW.*

**2407 Admira 8 E**

An amateur-type motion picture camera for use with 2 X 8 mm film, fitted with a MIRAR f 2.8, F = 12.5 mm lens, open frame finder with parallax correction, frequency control from 10 up to 64 frames/sec. Acoustic scene control; spring drive; single-shots adjustment.

**2408 Admira 8 II**

A cine camera of the same design as Admira 8 E, fitted, however, with two objectives mounted on a revolving carrier, i. e. a MIRAR f 2.8, F = 12.5 mm standard lens and a TELE-MIRAR f 3.5, F = 35 mm tele-photo lens.

**2409 Filters to the Admira cine camera, 18 and 22 mm in diameter**

Suitable for various kinds of filming, for correcting the colours and the density of film.

**2411 Revolver-type holders**

Supplied as accessories to Admira cine cameras; enable the camera to be held firmly and comfortably while filming.

**2412 Interchangeable eyepieces**

Accessories to the Admira cine camera for short- or long-sighted operators (accommodation up to  $\pm 3$  diopters by inserting of suitable eyepieces).

**2413 Locking release**

Accessories to the Admira cine camera; enable the operator to be filmed by himself (both single-frame and continuous shots).

**2414 Trimat Splicer**

A semi-automatic splicing machine for 3 film sizes, i. e. 8-mm, 9.5-mm, and 16-mm. Made of non-corrosive material, thus securing minimum wear and long life of the instrument.

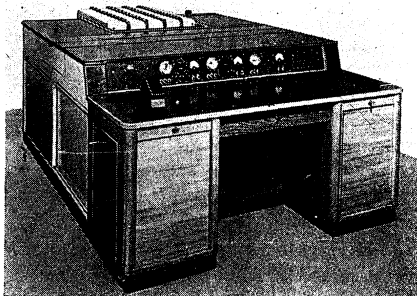
**2415 Rewinder 8-mm and 16-mm**

These are used for correct rewinding of 8-mm or 16-mm film band.

**2416 Photo-elasticimeter FMB** *Meopta Brno*

An apparatus designed for determining the amount and the direction of strain in constructions and their parts. Possibility of experimental checking of complicated computation. The apparatus utilizes the polarized light which is transmitted through a precise experimental model.

Up-to-date design, perfect cooling of the light source which is easily interchangeable by slightly turning the control knob; large field of view. Indispensable for laboratories, research and projecting institutes and enterprises.

**2417 Electrophoresis EMB — 52**

This apparatus is used for blood serum and plasma analysis, for examining the effect of new medicaments and therapeutical methods, for the research of animal and vegetable albumens, for analysis of materials which are significant from the technical point of view, for research of wool, silk, latex, etc. Attractive design, working table shape; no dark room required; enables three testing procedures to be performed simultaneously and independently of each other; cooling, automatic compensators, electronic stabilizers.

**2418 Trichinoscope**

An instrument for determining the trichinae in flesh. Suitable for making whole series of subsequent tests.

**2419 Optirex**

A reproducing instrument for making reproductions from model pictures. Supplied with a variable transformer for conventional mains voltages and a set of easels.

**2420 Panoramic head**

To be attached to a tripod of a photo or a motion picture camera; two conventional threads. Used for making panoramic shots.

**2421 REF**

A reproducing instrument for making reproductions from model pictures corresponding to the A6 to A3 size on 35-mm film. Magazine capacity 60 m.

**2422 Reproscope**

A new type of a micro-film reading instrument.

**2424 Diaprojector according to Doctor Hrdina**

Design not yet known. Private manufacture.

**2423 Diaprojector OP 5 X 5**

A slide projector for 5 X 5 cm slides in frames or 35-mm film band pictures. Outfit: a MIRAR f 2,8, F = 100 mm lens, a 35 W/12 V projection bulb.

**2425 BR-Cine Camera**

A professional-type cine camera for use with 35-mm film; four objectives mounted on a revolving head; complete accessories. Magazines for 120 and 300 m film, accumulator battery. 12 V/D.C. drive. Three tripods of different kinds; complete equipment is supplied in transport cases.

**2426 8-mm and 16-mm Editing Table**

A set for examining, rewinding and splicing of 8-mm and 16-mm film; fitted with a film length counter and a time control; case-type design.

**2427 Projection screens**

Projection screens as accessories to projectors; available in various sizes and different types of material.

**2428 Projector reel**

Accessories to cine projectors. Available in various capacities for 8, 16 and/or 35-mm film.

**2429 A Set of Spectacles****MICROSCOPES**

The Meopta Microscopes are used for observation of microscopical objects both in schools (simple types) and for scientific research work in medicine, biology, natural sciences, etc. Due to their optical outfit and perfect craftsmanship they meet the most critical demands. The Meopta Microscopes are used with great success in industry, technical laboratories, etc. The Meopta Microscopes can be divided into three principal groups, each group being characterized by the design of the stand.

Detailed reports with a large number of pictures are to be found in the CZECHOSLOVAK MOTOR REVIEW.

**2430 Microscopes of the C-type group  
C 36 Bi:**

Most advanced type of the C-type group, and, simultaneously, the most advanced type of the Meopta Microscopes. Built-in illuminator in the stand foot. Outfit the same as that of B 36 Bi, total magnification 43 X up to 1 800 X.

All the three types mentioned above are designed for scientific and research work.

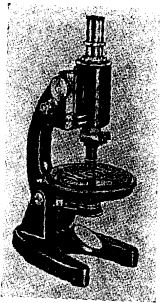


**2431 Stereoscopic Microscope  
G 11 P**

Designed for stereoscopic observation of objects; mostly used in workshops for observation e. g. of surface finish of fine mechanical parts, etc. Optical outfit: objectives: 1.8 X, 3.5 X, 10 X. Eyepieces: 6 X, P 10 X.

**G 20 P  
Stereoscopic Microscope**

A new type of a stereoscopic microscope swivel-mounted on an upright column stand. Optical outfit identical with that of the G 11 P-type. Outstanding feature: possibility of observation of large-sized objects.



**2432 Polarizing Microscope**

Designed for use in petrography. Enables observation of the structure of various minerals by means of the polarized light. Suitable also for use in medicine.

**2433 Microscopes of the A-type group  
A 36 Bi:**

Most advanced type of the A-type group. Fitted with large-type ABBÉ substage condenser unit, large square mechanical stage, binocular body with a coefficient of 1.5 X. Optical outfit: achrom. objectives 6 X, 10 X, 20 X, 45 X, 100 X oil immersion; correcting objective 60 X available on special request. Eyepieces: H 6 X, P 10 X, 15 X. Condenser N. A. 1.4. Total magnification: 54 X up to 2250 X.

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**KOVO**

**2434 Microscopes of the B-type group  
B 36 Bi:**

Most advanced type of the B-type group. Substage condenser unit, square mechanical stage and optical outfit conform to the preceding type. The binocular body has a coefficient of 1.2 X. Total magnification 43 X up to 1 800 X.

**2435 Traveling Microscope**

As regards to optical outfit, this microscope corresponds with the most advanced types of the Meopta Microscopes. Monocular body tube, medium-type substage condenser unit; attachable mechanical stage is fitted to the microscope stage. The instrument is deposited in a dustproof metal hood. Suitable for use in laboratories and hospitals.

**2436 Drawing instrument-Camera Lucida**

This instrument serves for depicting observed microscopical objects by means of drawing. The forming of the image is based on the principle of a reflex prism which is fitted in a mount on a swing-of holder. The instrument is set up on the eyepiece of the microscope.

**2437 Vertical Illuminator**

A suitable supplement to the microscope; used for examination of opaque objects observed in incident light.

**2438 Preparation magnifier (»dissecting microscope«)**

Application similar to that of the stereoscopic microscope. For stereoscopic examination of objects.

**2439 Microscope Lamp »T« and »Šikl«-type**

These are used for illumination of the observed microscopical specimens.

**2440 Attachable mechanical stage**

This device enables a cross movement of the specimen under observation. It is attached to the microscope stage instead of the spring clips.

**2441 Objectives and eyepieces**

These form the principle optical outfit of the Meopta Microscopes.

**2442 Paraboloid condenser**

This condenser serves for observing the specimens in a dark-field illumination.

**2443 Bürker's Counting Chamber**

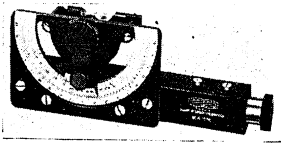
Used in medicine on examining the characteristics of blood.

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**KOVO**

**2444 Large-type Sliding Microtome**

Used for preparing microscopical specimens; a set of knives is supplied as accessories.

**2445 Clinometer**

Server for determining the slope of ground, e. g. in building of roads, regulation of rivers, etc.

**2446 »KODYM« Compass**

This compass is used for geological surface and underground investigation, for measuring the declivity of mineral layers, etc. Suitable as an aid on drawing of simple situation plans.

**2447 Pal Compass**

Pal wrist compass is used for setting of the four cardinal points with a map (handy for tourists).

**2448 Orienting Compass**

Serve for orienting in the terrain; suitable also for military purposes.

**2449 TH 30 X Theodolite**

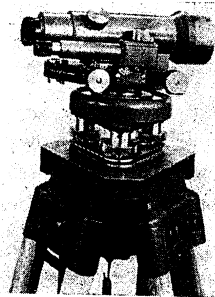
A universal angle measuring instrument with a detachable tripod. It is intended for engineering tacheometry and lower order triangulation polygonal measuring, setting out curves and surveying work on building sites. It is delivered with a wooden sliding-leg tripod.

**2450 THO 30 X Theodolite**

A universal theodolite of the same design as the Th 30 X Theodolite, supplemented, however, with electric illumination. Suitable preferably for surveying work in underground areas. Accessories: three telescopic-type tripods and two targets fitted with electric illumination.

**2451 NK 30 X Surveyor's Level**

Designed for accurate levelling work of the 2nd and 3rd order of precision (2nd and 3rd Class bench marks), for high-precision constructional work (bridges, tunnels, etc.), melioration projects, etc. The angle values of the circle are read by means of an auxiliary reading microscope.



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**KOVO****2452 NNK 25 X Surveyor's Level**

Application the same as with the preceding instrument, the telescope having, however, a magnification of 25 X only. The instrument is deposited in a wooden cabinet. Both of the two surveyor's levels are supplied with telescopic-type tripods.

**2453 T/c Angle-measuring instrument**

A universal-type angle-measuring instrument, fitted with a glass circle. Enables both the vertical and the horizontal angles to be read-off simultaneously; eliminates errors on reading. Fitted with illumination, so that it can be used for night work and in underground areas. Telescope magnification 28 X.

**2454 Pilot Theodolite**

Designed for determining the direction and velocity of wind with the aid of piloting rubber balloons. Used particularly on aerodromes.

**2455 Comparing Microscope**

Designed for comparing the roughness of surfaces; suitable particularly on finishing of metal parts. Enables the machined parts to be compared with master samples; in the textile industry for comparing of fabrics, comparing of colour shades, for testing the mesh of screens, etc. Magnification: 12 X up to 45 X.

Outstanding feature: oblique illumination which has not yet been applied by any other manufacturer for products of the same kind.

**2456 Mineralogical Microscope**

A microscope designed preferably for use in mineralogy, petrography and geological research work.

**2457 Pocket Surveyor's Level**

Designed for levelling work of a lower order of accuracy. Used for surveying of building lots, and in all instances where a perfect accuracy is not essential. Due to its small dimensions it is easily portable; supplied with a levelling tripod and a folding rod. Suitable also for measuring of distances.

**KOVO**

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**2458 Colposcope**

A special type of microscope for medical purposes. Used particularly in ophthalmology and gynecology.

**2459 Geological Compass**

A compass designed preferably for work in underground areas, particularly in mines, e. g. for drawing maps of corridors in mines, etc.

**2460 Universal Abbé-Refractometer**

An optical instrument designed for chemical analysis; consists of a telescope and two compensating prisms. Enables long-lasting chemical processes to be shortened.

**2461 Portable Refractometer — Type I, II, and III**

Designed for determining the percentage of sugar content in solutions. Mostly used in sugar industry (determining of sugar content of sugar-beet). When equipped with necessary supplements, it is suitable also for use in fruit-culture.

**2462 Polarimeter**

Designed for determining the amount of concentration of solutions. Used in sugar industry, medicine, chemistry, food-stuff and cosmetic industry. As a source of light a monochromatic (yellow), the so-called sodium light, is used.

**2463 Simplex Polarimeter**

An instrument used particularly in medicine for examining various solutions.

**2464 Sodium Lamp**

A lamp for yellow light; supplied as accessory to the polarimeter.

**2465 White Light Lamp**

This is a conventional electric bulb supplied as accessory to the saccharometer.

**2466 Wedge Type Polarimeter**

else »Sacharimeter« use in sugar factories for determining the concentration of sugar solutions.

**2467 Universal Prism Square**

Designed for setting-off perpendiculars. Used particularly on building lots. Substitutes the function of 90° and 180° pentagonal prisms.

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**KOVO**

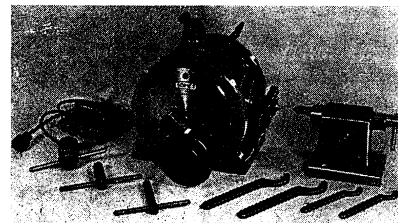
*Detailed reports with a large number of pictures are to be found in the CZECHOSLOVAK MOTOR REVIEW.*

**2468 Binoculars**

Used as observing, touristic, hunting, telescopes; suitable also for military purposes, for observation in naval service. Supplied in leather cases.

**2469 Dolonit-Spectacles Resistance Testing Machine**

An apparatus for continuous bending of the Dolonit-Spectacles hinges. Serves for exhibiting the long life properties of these spectacles.

**2501 Optical dividing head**

is used for manufacturing of gears by dividing method and to check the accuracy of the division.

**2502 Profile Projector**

is used for checking small parts of various shapes by projecting of the profile of the tested piece on screen at a certain enlargement. Max. enlargement 100 X.

**2503 Optical Level**

is used for checking of accuracy of surfaces under certain angle. Reading of the values is done by means of a small microscope.

**2504 Optical Protractor**

is used for angle measuring in the same way as a mechanical angle meter, but it is not as heavy and the reading by means of magnifying lens is more accurate.

*Information on the service is to be found in the CZECHOSLOVAK MOTOR REVIEW, Praha I, Ul. 28. října 13.*

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**2505 Lathe Microscope**

is used for work on lathes

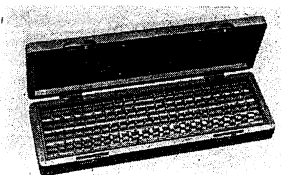
**2506 Magnifying Glasses for Checking of Drills**

are manufactured in three sizes according to the diameter of the drill and are used for checking the angle of the cutting edge.

**2508 Micrometer**

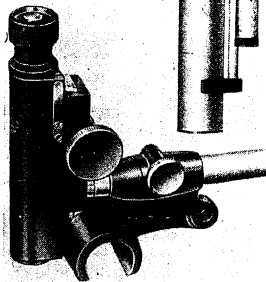
are manufactured in many types and ranges, also for special purposes such as measuring of sheets, threads, etc.

2506

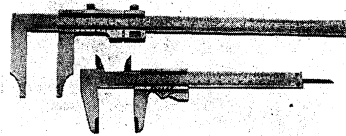


**2509 Slip Gauges**

are delivered in three degrees of accuracy and are used as basic elements for control measurements.



2505



**2507 Sliding Gauges**

measuring instruments used most extensively in the engineering industry are produced in various lengths, for measuring ranges of 140 to 2000 mm with reading accuracy of 1/10, 1/20 and 1/50 mm.

**2510 Gauges for Current checking on grinding Machines and Electric Contact Indicators**

are used on cylindrical grinding work with the possibility of disconnecting the machine.

**2511 Twin Point Gauge**

**2512 Surface Roughness Measuring Instrument**

is used for checking the quality of surfaces.

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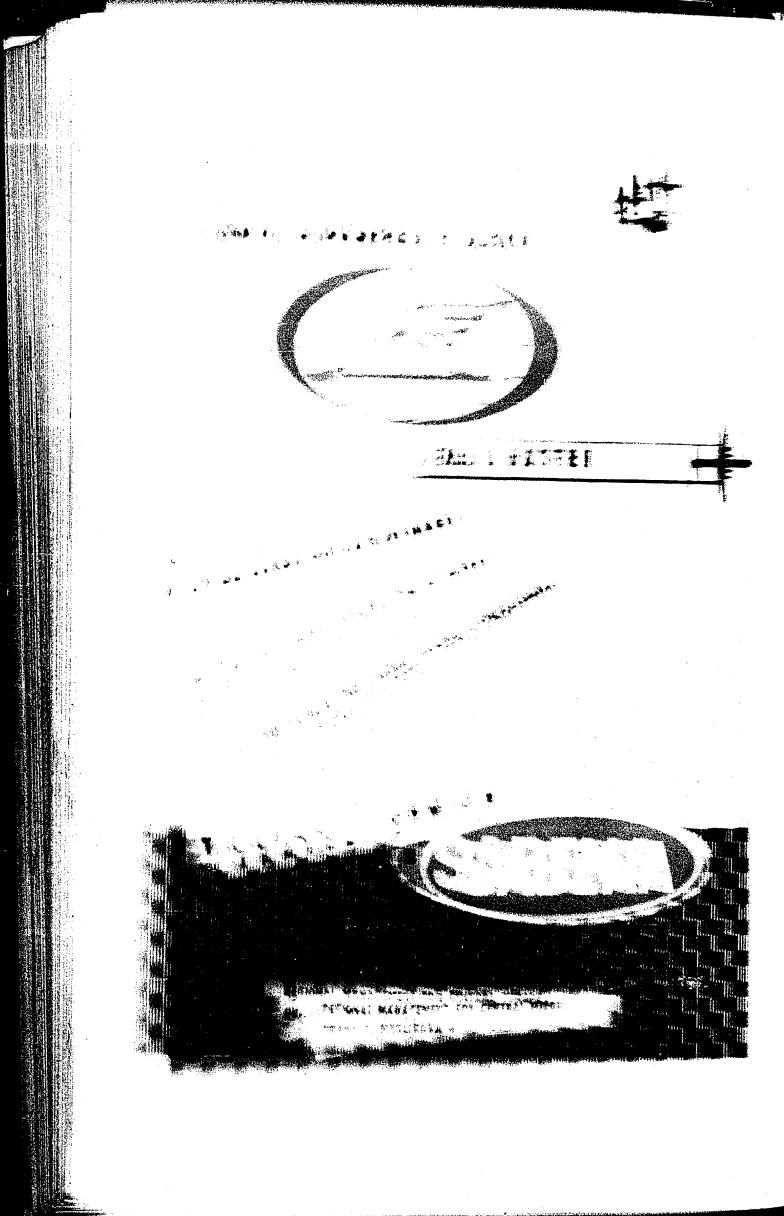
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23-48-46**



CZECHOSLOVAK HEAVY INDUSTRY *scientific and technical monthly for engineering and heavy industry.*

- 2513 Chucks for Lathes**  
are manufactured in several sizes and are used for external or internal clamping of the work piece.
  
- 2514 New Types of Mechanical Tools**  
are manufactured in several types such as grinders drills, hammers, etc. to be used in such places where it is necessary to replace electric tools, even though their running is cheaper, but their output is smaller and the work with them is dangerous.
  
- 2515 Spirit Levels (New Types)**  
in contrast with old types they are lighter and of modern design.
  
- 2516 Wire Gauges**  
for measuring threads.
  
- 2517 M 0,3 — M 1 Thread Cutting Tools**  
are manufactured for precision mechanics for cutting threads of screws and nuts on automatic machines or by hand.
  
- 2518 Thread Dies (New Types)**  
used especially by plumbers for hand cutting of male threads; are manufactured in several types.
  
- 2519 Fine twist Drills With a Stepped Shank**  
are used in precision mechanics for drilling cylindrical holes of diameter from 0,1 to 0,5 mm.
  
- 2520 Chucks for Drilling Machines**

*Technical and scientific articles following the development of technology in motorism are regularly to be found in the illustrated periodical CZECHOSLOVAK MOTOR REVIEW, popular all over the world. It is published in English, French, Spanish and German.*

**KOVO**

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- TO CLINCH THE ORDER BEFORE COMPETITION!

**TRAVEL - SEND BY**



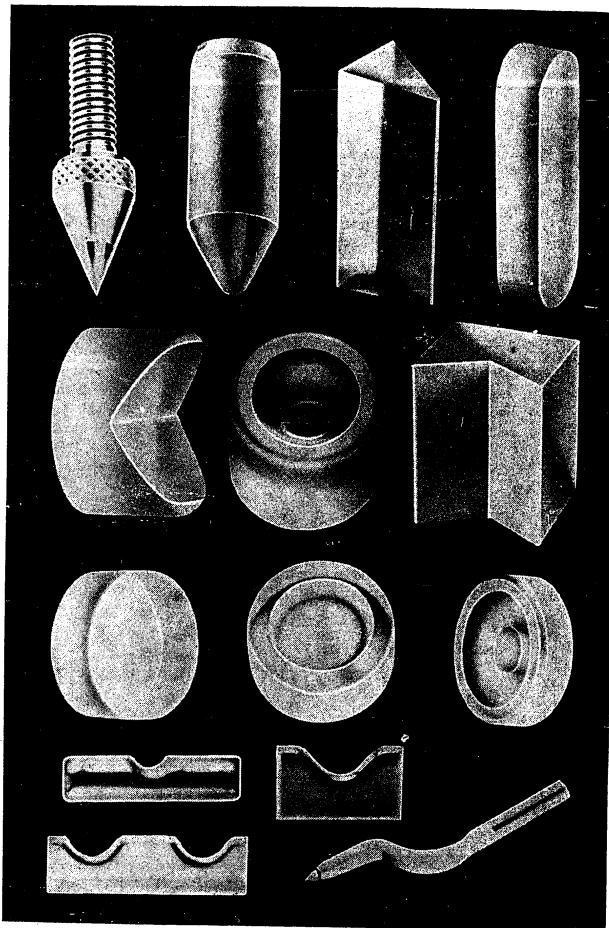
**REGIONAL MANAGEMENT FOR CENTRAL EUROPE:**  
PRAHA 2, MYSLIKOVA 4

CZECHOSLOVAK HEAVY INDUSTRY *scientific and technical monthly for engineering and heavy industry.*

- 2513 Chucks for Lathes**  
are manufactured in several sizes and are used for external or internal clamping of the work piece.
- 2514 New Types of Mechanical Tools**  
are manufactured in several types such as grinders drills, hammers, etc. to be used in such places where it is necessary to replace electric tools, even though their running is cheaper, but their output is smaller and the work with them is dangerous.
- 2515 Spirit Levels (New Types)**  
in contrast with old types they are lighter and of modern design.
- 2516 Wire Gauges**  
for measuring threads.
- 2517 M 0,3 — M 1 Thread Cutting Tools**  
are manufactured for precision mechanics for cutting threads of screws and nuts on automatic machines or by hand.
- 2518 Thread Dies (New Types)**  
used especially by plumbers for hand cutting of male threads; are manufactured in several types.
- 2519 Fine twist Drills With a Stepped Shank**  
are used in precision mechanics for drilling cylindrical holes of diameter from 0,1 to 0,5 mm.
- 2520 Chucks for Drilling Machines**

*Technical and scientific articles following the development of technology in motorism are regularly to be found in the illustrated periodical CZECHOSLOVAK MOTOR REVIEW, popular all over the world. It is published in English, French, Spanish and German.*

**KOVO**



**2521 Technical Stones**  
 manufactured from natural agate and synthetic sapphire.

*Complimentary copies will be sent to persons interested in this line by the Czechoslovak Motor Review, Praha 1, Ul. 28. října 13.*

- 2522 Twisted Drills**  
 are drills manufactured by twisting the material.
- 2523 Sintered Carbide Knives With Mechanical Clamping Bits**
- 2524 Knives With Corundum Plates**
- 2525 Progressive Hobbing Milling Machine**  
 for manufacturing gear wheels.
- 2526 Knife Heads for Globoid Worms**
- 2527 Pneumatic Muscle**
- 2528 Cast Milling Cutters**  
 Milling cutters produced by casting.
- 2529 Saws With Cast Segments**
- 2530 Chucks for Automatic Clamping**
- 2531 Rockwell Rapid RR IV Hardness Tester**  
 Portable hardness tester for measuring hardness of metals according to Rockwell, Brinell or Vickers. The indentation is effected by means of a diamond pyramid or a steel ball through exchangeable weights and an oil brake.

*Apply for complimentary copies to the CZECHOSLOVAK MOTOR REVIEW, Praha 1, Ul. 28. října 13.*

**2532 Bricknell Hardness Tester**

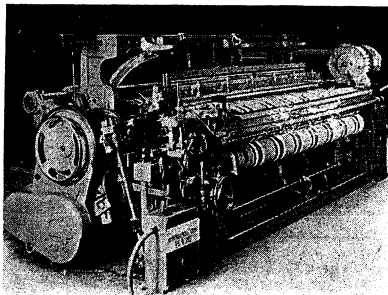
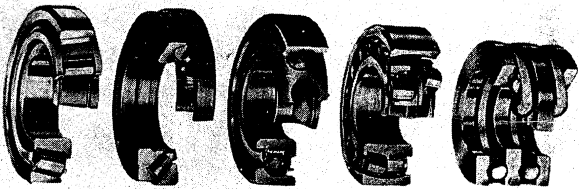
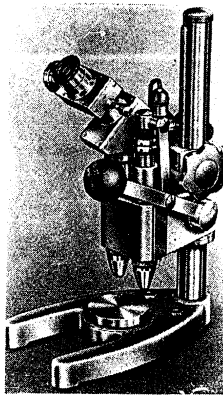
**2533 Meopta 56801 Hardness Tester**

Portable instrument for measuring hardness according to Vickers or Brinell. The indentation is effected by means of a diamond pyramid or a steel ball through constant pressure of a spring compressed by a hand lever.

**2534 Rockwell Portable Hydraulic Hardness Tester Bearings**

**2535 Bearings**

are manufactured in following types: single row ball bearings, double row ball bearings, one way thrust ball bearings, single row roller bearings, double row roller bearings, taper roller bearings.



**2551 ES 225 Loom**

is designed for weaving of cotton and shearing yarn fabrics.

Working width	215 cm
Reed width	225 cm
R. p. m.	110/120
Weight gross	3 250 kg
net	2 350 kg

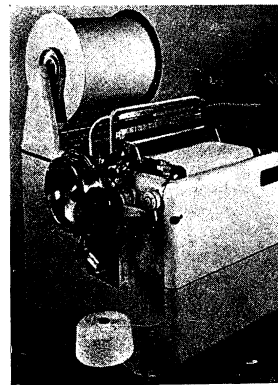
ES 175



**2552 F 44/2 Loom**

is used for weaving of cotton and shearing yarn fabrics.

Working width	113 cm
Reed width	120 cm
Electric motor	0,8 kW
R. p. m.	180/200
Weight gross	1 650 kg
net	1 200 kg



**2553 Vitek Loom**

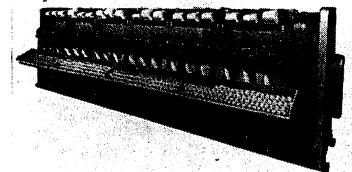
Suitable for weaving of cotton, silk and rayon fabrics.

Working width	136 cm
Reed width	143 cm
R. p. m.	120/130
Electric motor	0,36 kW
Electric motor	11 kW
Weight gross	2 110 kg
net	1 552 kg

**2554 P 45 Narrow Jet Loom**

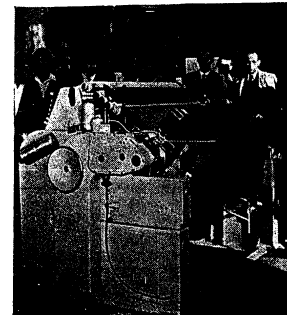
is designed especially for weaving bandaging material in plain weave. This is a shuttleless loom and the weft picking is effected by means of air jet from crosswound bobbin.

Working width	30-45 cm
R. p. m.	800
Input	0,7 kW
Weight gross	500 kg
net	310 kg



**2555 Crosswinding Machine**

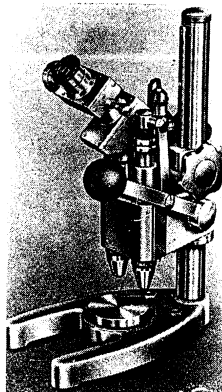
is designed for winding wool, cotton or cellulose on crosswound bobbins. The winding speed is 680 m per min.



**2532 Bricknell Hardness Tester**

**2533 Meopta 56801 Hardness Tester**

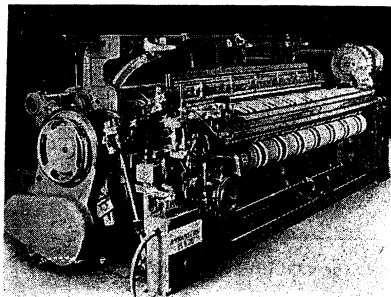
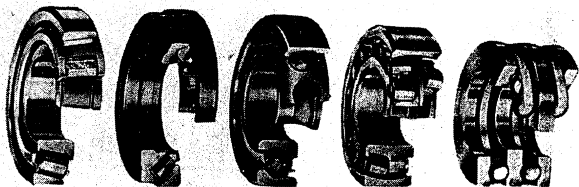
Portable instrument for measuring hardness according to Vickers or Brinell. The indentation is effected by means of a diamond pyramid or a steel ball through constant pressure of a spring compressed by a hand lever.



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ES 175

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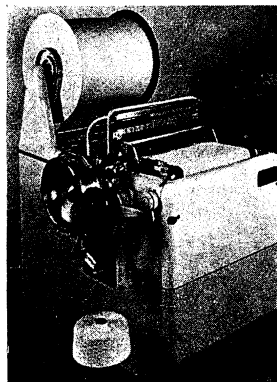
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Reed width	120 cm
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R. p. m.	180/200
Weight gross	1 650 kg
net	1 200 kg

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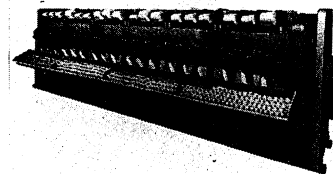
Working width	136 cm
Reed width	143 cm
R. p. m.	120/130
Electric motor	0,36 kW
Electric motor	11 kw
Weight gross	2 110 kg
net	1 552 kg



**2554 P 45 Narrow Jet Loom**

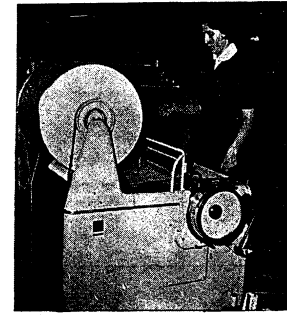
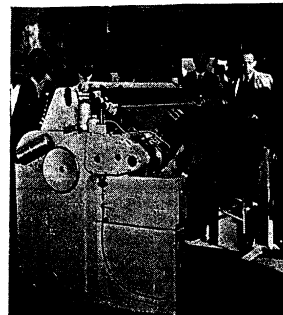
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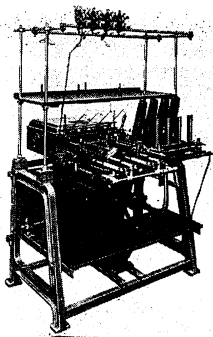
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R. p. m.	800
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**2555 Crosswinding Machine**

is designed for winding wool, cotton or cellulose on crosswound bobbins. The winding speed is 680 m per min.





**2556 D F 2 Automatic Weft Winding Machine, Type 2051**

is a machine for winding cotton and silk on weft pirns. Maximum r. p. m. 6 000.

**2557 4 Roller Printing Machine, Type 4412,04**

Is suitable for printing fabrics up to a maximum width of 1 100 mm, maximum printing speed 70/min., minimum printing speed 10/min. Circumference of the printing rollers  
max. 550 mm  
min. 350 mm

**2558 3 Roller Foulard for Starching and Dyeing Type 4655**

The length of rollers is 2 000 mm, working speed 6-36 m/min., maximum pressure between the rollers 4 000 kg. The gross weight of the machine is 2 260 kg, the net weight 1 820 kg.

**2559 Centrifuge 4510-14**

The diameter of the centrifugal drum is 850 mm for 5-6 fillings per hour, weight of a single filling of wet goods 80 kg, drum r. p. m. 1 000. Gross weight of the machine 1 160 kg net weight 960 kg.

**2571 Duplex Eyeletting Machine**

The machine is used for punching eyelet holes and for clenching eyelets. Always two opposite lying eyelets are clenched into the right and left upper edge in one operation. Can also be used for eyeletting other leather, cloth or rubber parts. Output of the machine 2 000 upper pairs in 8 working hours.

**2572 Tackless Toe-Lasting Machine for McKay sewn Footwear No. 02002/P2**

The machine is used for pulling over the forepart of the upper over the last up to the shank, and for attaching the upper to the insole by cementing, instead of the usual tacking. The machine combines several operations which were previously produced on several machines, i. e. pulling over, lasting of the sides, and pounding up. The advantages of this machine are: high productivity, improved quality, physical fatigue, reduced maintenance costs, saving in space, improved working conditions, and particularly, noiselessness.

KOVOEXPORT, Czechoslovak Export Magazine of the Czechoslovak Light and Precision Engineering Industry.

**2573 Veldtschoen Toe Lasting Machine**

The machine pulls veldtschoen foreparts over the last on one single operation and at the same time moulds and cements the middle sole to the shoe. Output of the machine approx 1 200 left or right shoes, i. e. 600 pairs in 8 working hours.

**2574 Surface Upper Trimming Machine**

For trimming the surplus lasting allowance on the forepart of welted work. Output 1 500 pairs in 8 working hours.

**2575 Universal Heel Seat Lasting Machine**

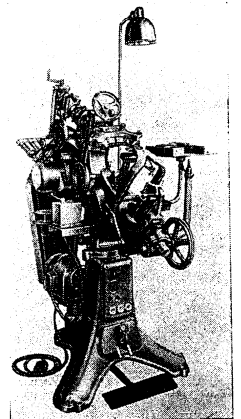
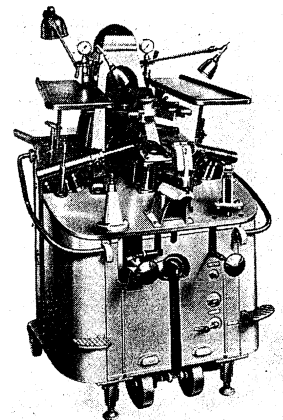
For lasting the heel seat of men's ladies' or children's shoes in a single operation. The shoe is lasted with tacks. Output in 8 hours according to the kind of footwear, maximum 2 000 pairs. To be used with lastings tacks 8-14 mms. Number of tacks driven into the heel seat adjustable according to the kind of footwear to 12, 14, 16, 18, or 20 tacks.

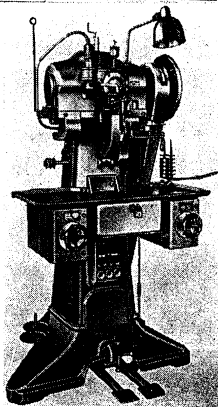
**2577 Toe Wiping and Pulling Over Machine**

The machine pulls the upper over the last in the forepart; the fastening is done by hand with wire. Output approx. 500 pairs in 8 hours.

**2576 Pulling Over Machine No. 02042/P1**

The machine is used in the shoe making industry for the pulling over operation. i. e. for pulling the upper over the last on the forepart by means of three pincers, and for fastening the upper to the insole with 5 tacks, of which one is driven in the toe section, and two in the sides. On this machine it is possible to pull-over any kind of footwear, i. e. ladies' fancy shoes, working and sports boots, children's footwear, and welted footwear. The size of the shoe is of no importance, as the machine allows quick adjustment for any shoe size. Approximate output 1 000 pairs in 8 hours.





2578

**2578 High Speed Outsole Stitcher**

For attaching leather or rubber soles to the welt or the upper. Output in 8 hours depends on the kind of work and the skill of the operative.

When stitching light-weight footwear 500-600 pairs

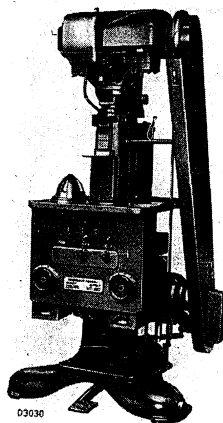
When stitching heavy footwear 350-400 pairs

Maximum number of stitches 960/760 per min.

Maximum stitch length 5 mm  
Maximum thickness of the wide edge 15 ms

**2579 Chain Stich Welt Sewing Machine**

For attaching welts to shoes with a single thread chainstitch lying on the top of the welt. The machine can be used for stitching welted work of any kind from the smallest shoes for children to the heaviest sporting shoes with plain American, or skiing boot welts. Output approx. 500 pairs in 8 working hours.



03030

2579

**2580 Sole Rolling Machine with Moistening**

Used in shoe repair shops for rolling and condensing soles in order to obtain increased elasticity and to improve the wearing quality of the sole. Working height measured to the clearance between the rolls 1000 m. Roll clearance adjustable from 2-12 mm.

**2581 Rounding and Channeling Machine**

For simultaneous rounding and channeling of welted and flexible shoes on the last.

Output in 8 hours approx. 1000 pairs of welted footwear, or 1500 pairs of flexibles.

**2582 Sole Laying Press No. No04041/P1**

The machine is used in the shoe production for laying the sole prior to stitching. The sole laying is performed moulding units into which compressed air is driven under a pressure of 1-5 atm. Where steel fillings are laid below the sole the machine can be used for levelling welted footwear on the last. The operation levels all the unevenness on the sole bottom. The levelled sole does not harden and remains flexible.

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**KOVO**

**2583 Sole Screwing Machine**

The machine is used for attaching soles to heavy leather boots (working and skiing boots) with the aid of screws cut by the machine from screwed wire. This method gives a very firm purchase with the sole, or of two soles with the insole. Output of the machine approx. 800 to 1000 pairs in 8 hours.

**2584 Surplus Trimming Machine for Welted Work**

The machine is used in the production of welted footwear for trimming the surplus on the inside edge of the welt after the stitching to the upper. Output approx. 1200 pairs in 8 hours.

**2585 Roughing up Machine No. 04152**

The machine is used for roughing up uppers and bottoms before cementing soles, and for cleaning away the roughing up waste. An exhauster with filter draws off the dust arising during work. The good design of the fan hood with exhausting mouth of ample size enables unobstructed handling of the worked shoe.

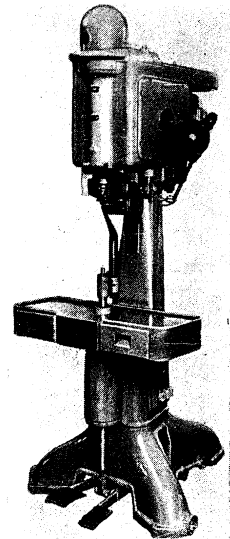
**2586 Combined Channeling and Skiving Machine**

The machine is used for cutting a single channel into the insoles for welted footwear; after adjustment and exchange of the respective mechanism it can also be used for skiving ladies' soles in the forepart and the waist.

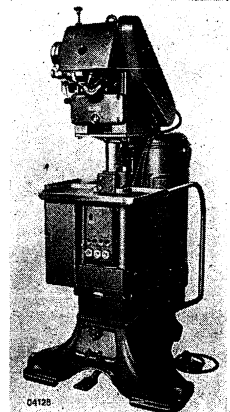
Output approx. 2000 to 2400 pairs in 8 hours.

**2587 Upper Part Marking Machine**

The machine is used for marking and numbering various semifinished parts made from leather, textile, rubber or wood, either by heat branding, branding over a coloured ribbon, or cold embossing. The output of the machine varies from 2000 to 4000 pairs, in 8 hours, according to the kind of work.



2583



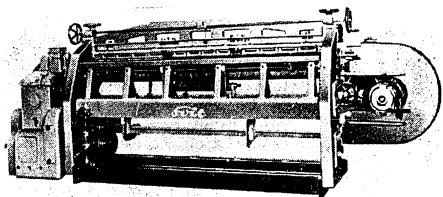
04120

2584

**KOVO**

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**2588 Band Knife Splitting Machine**

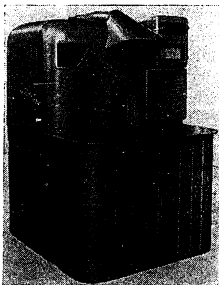
Used for splitting leather in the wet state (vegetable tanned pelts or chrome tanned leathers), mainly cowhides of a green weight ranging from 30—50 ks. The machine splits the leather into a grain portion of even thickness, and the flesh side split leather. After exchange of the feed roll wet pelts can be split. Output of the machine approx. 500 to 600 cowhides in 8 hours.

**2589 Shaving Machine No. 07437**

The machine is used for shaving, i. e. evening the thickness of all kinds of upper leather. The present model of the machine represents an improvement on older types it being equipped with a grinding equipment. Another technical improvement is the seating of the bladed cylinder. The main difference between the old and the new machine is, that the new machine has a rigid mandrel on which the cylinder rotates. Output of the machine approx, 280 calf leathers in 8 hours.

**2590 Continuous Leather Rolling Machine No. 07445**

The machine serves for continuous rolling of bottom stock bends. It consists of several rolls as used in the machine 07431. These are arranged in series to ensure that the leather does not wrinkle so that a perfectly rolled leather is obtained.



**2591 Plimsoll Moulding Press**

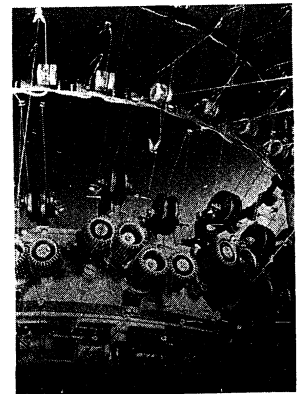
The machine is used for moulding of foreparts of lasted plimsolls, i. e. levelling of the pleats on the lasting allowance, and for forming the feather-line of the plimsoll. The operation is carried out by means of electric heated moulds which may be changed according to the type and size of men's, ladie's and children's footwear. Output 1 000 pair per 8 hours.

**2592 Press for Toes of Lasted Uppers**

The machine is used for moulding the lasted foreparts in electrically heated moulds which are exchangeable to suit the various shapes and sizes of men's ladie's, and children's footwear. Output in 8 hours 1 000 pairs of shoes.

**2593 Interlock Knitting Machine**

For the production of children's ladies', and men's underwear and of top garments.  
 Technical Data: 18", gauge 20.  
 Motor 220/380V, 50 c/s±, input 1,1 kW, 1 400 r. p. m.  
 Rotations of bed plate 38 per min.  
 Number of feeders 24.



**2594 Double Cylinder Knitting Machine D2Lc**

For the production of children's, ladies' and men's hose, semihose, and three-quarter hose in plain or ribbed pattern, with cross stripes of any desired width, in two basic and one additional colour altering after one course. Also children's leggings can be knitted on this machine. The hose can further be knitted in tuck pattern, with tuck pattern or nap pattern wales.  
 Type D2Lc, needle gauge 14, dia. 3 1/2" — 156 needles. Motor 0,25 kW.  
 Output in 8 working hours 40—80 pairs, according to size and kind.  
 Speed of the machine for knitting the welt, the leg, and the foot 150 courses/min. to 316 courses per min., speed for knitting the heel and the toe 90 r. p. m.

**2595 Single Cylinder Knitting Machine JDa**

The machine has been designed for completely automatic knitting of seamless ladies' stockings from polyamidic fibre. The output of the machine varies from 14—15 pairs per 8 hours according to the desired length of the stockings.  
 Cylinder diameter 3 3/4", gauge 34, i. e. 34 needles per inch. Number of needles over the whole circumference 400.

**2596 Automatic Double Cylinder Twin System Knitting Machine D2Rc**

This is a hose knitting machine equipped with pattern tackle for patterned welts, with a two-feeder striping equipment, and with an attachment for elastic laying. The second system incorporated in this machine increases the productivity of work by 30 to 40+ and increases the colour variation of the pattern. It is specially suitable for seamless plated men's and ladies' three-quarter hose with an elastic laid into the 1:1 welt, and for semihose and anklets of the usual kinds.

**2597 Cotton's Frame**

A fully automatic machine with uninterrupted operation, not requiring any operation by the worker, producing fully fashioned ladies' stockings. The machine allows working any of the usual viscose, cupric natural, and polyamide fibres. The machine is a twin unit consisting of two sections. Width of one section 15 inches, i. e. 381 mm, needle gauge 48, i. e. 48 needles per half an inch. Output of the machine 100 courses per min. i. e. 14—15 pairs of stockings per 8 hours.

**2598 Flat Bed Knitting Machine**

This machine is intended for manual knitting of fashion ware, such as pullovers, blouses, shawls, etc. Needle Gauge 10, i. e. 10 needles per inch. Working width 100 cm, weight of machine 150 kg.

**2599 Post Bed Sewing Machine with Trimmer No. 01090/P6**

The machine is used for sewing folded uppers under simultaneous trimming of the lining, or of the lining with the upper. It is a high speed machine making 2700 stitches per minute, equipped with a drop feed ensuring uniform and safe feed of the material. The machine is engaged by a pedal controlling a friction clutch with a brake. The latter enables quick acceleration, any desired speed, and quick stopping without any impacts. Engagement and disengagement of the trimmer is possible during operation of the machine.

**2600 Single Needle Sewing Machine with Wheel Feed No. 01153/P2**

This high speed machine makes 2800 stitches per min. It is equipped with a rotary shuttle, a wheel feed and a presser wheel and finds use in the shoe upper closing shop for attaching toecaps, counters and vamps, and for joining and sewing fancy trimmings. It allows sewing semistiff leather and textile materials. Equipped with a friction clutch and a brake the machine enables quick starting, speed variation at will, and stopping of the machine without impact.

**2601 Heavy Duty Single Needle Post Bed Sewing Machine No. 01192**

The machine is used for closing vamps of heavy boots, for attaching welts to veldtschoen, and for attaching moccasin vamps. The machine makes 1400 stitches per minute. It is equipped with a rotary shuttle which is vertically arranged, with a drop feed, and a presser wheel. The stitch length can be adjusted by turning of the eccentric wheel.

268

**KOVO****2621 Postal Automatic District Telephone-Network**

(Complete plant in service.)

**2622 Automatic Railway-Station Telephone-Network**

(The exchange is equipped with all elements used in the railway-network.)

**2623 Despaching Installation with Loud Telephones**

(The despaching plant will serve for communication between several points of the exhibition, i. e., it will be operated during the fair. Sound telephones will be installed at the terminals.)

**2624 Automatic Electronic Telephone Exchange**

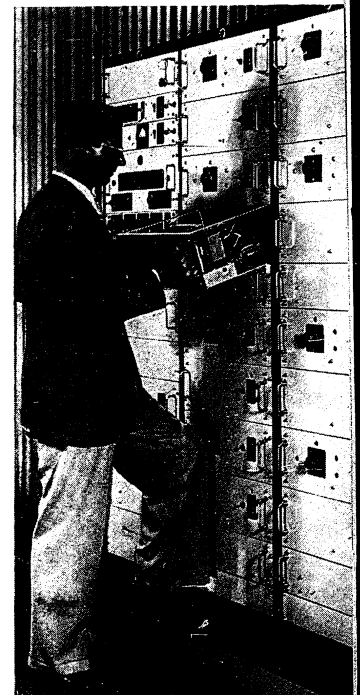
Electron tubes with cold cathodes and transistors are used for building up communication links. The exchange operates without any electromechanical elements.

**2625 Branch Exchange with Motor-Operated Selectors**

For 40 participants with 5 direct links and 5 public links. Newly developed motor-operated selectors TESLA are being used. The exchange is provided for co-operation with the public network with fully-automatic trunk service.

**2626 Telephone Equipment for Fire Service****2627 Telephone Instruments for Public Exchanges**

Various types of telephone instruments.

**2628 Various Telephone Working Spots****2629 Automatic Branch Exchanges**

Finder and relay systems.

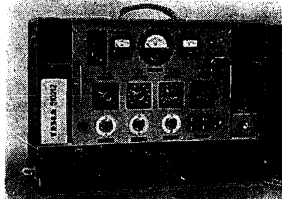
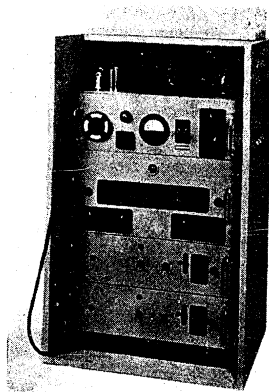
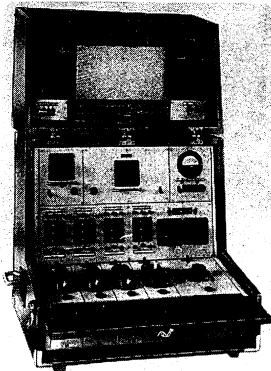
**2630 Various Components for Communications Equipment**

Sound instruments, bells buzzers, bell reducers, hooters, electrical gate-keeper, house stations, etc.

**KOVO**

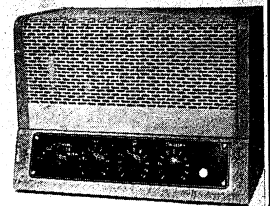
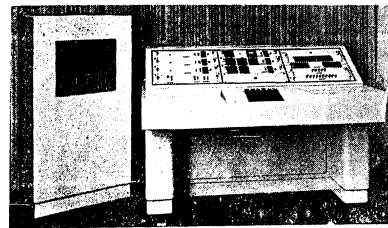
269

**2631 Electrical Power Sources**  
Rectifiers, feeders, switchboards.



**2632 L. E. Amplifying Station**

**2633 H. F. Amplifying Station**



2632

**2641 Closed-Circuit Transmission DR 80**

Complete exhibition of a closed-circuit transmission installation.

**2691 Diversity Reception Equipments**

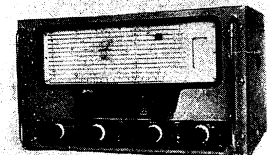
SW. three-times = Type ZVP3  
double = Type ZVP2  
Range ZVP 2 3-24 Mc  
ZVP 3 0.3-30 Mc  
Sensitivity better than 1 u V.

**2651 Telecommunication Equipment in Power Stations**

H. F. telephone and remote measuring and signalling equipment in power stations.

**2661 Measuring Instruments for Telecommunications**

Various kinds of measuring instruments for telecommunications. KRV 1, RUV 020.



**2671 Short-Wave Radio-Transmitters**  
KRV 1, RUV 020.

**2672 Television Transmitter**

**2681 Television Reporter Repeater Station**

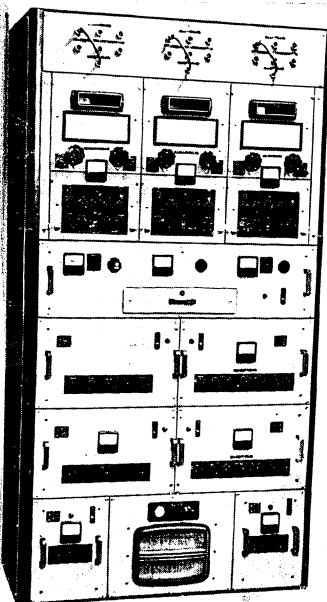
For retransmitting television signals; mobile design operating in the 3,2 cm band. Directional parabolic antenna.

**2692 Communication Receiver Lambda V**

11 ranges 0,3-30 Mc.

**2682 Model of a Remote Television Repeater**



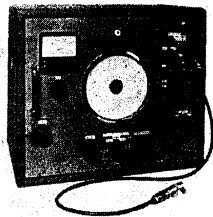


2691



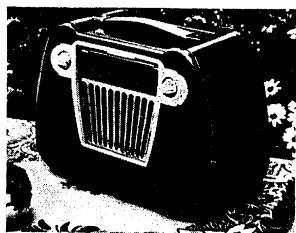
**2712 Transistor Receiver Minor**

The L. F. amplifier is replaced by transistors.



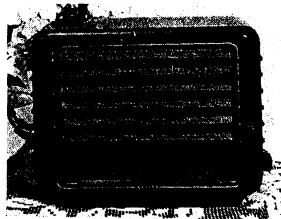
**2701 Television Measuring Equipment**  
Equipment TMZ 1.

**2702 Large-Screen Television Receivers**  
Various television receivers.



**2711 Radio Receiver**

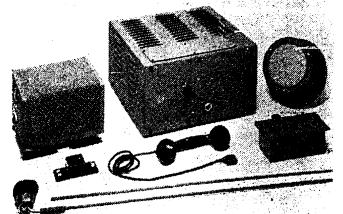
Various new wireless sets for quality reception.



**2713 Subminiature Transistors Receiver**

Superheterodyne receiver, electron tubes replaced by transistors, supply battery 22,5 V with ferrite antenna.

**2714 Musical Set Jubilant**  
Gramoradio with magnetophone.



**2721 Various Kinds of Radio Stations**  
Radio stations Fremos, Orlik.

**2731 Magnetophone Case**

Band-Type portable magnetophone. Band speed 19 and 9 1/2 cm per sec. Sensitivity for the microphone 0,5 mV. Sensitivity for the radio 50 mV. Double-impress record Acoustic control by means of an earpiece.



**2732 Studio Magnetophone**  
Band speed 77 cm per sec., incoming voltage 0,2 mV.

**2741 Railway Despatch Equipment**

Establishes communications between the despatcher and the moving locomotive thus speeding up traffic and increasing its safety. Receiver-transmitter on USW.

**2751 Automatic UKV Range-finder**

Designed for air-traffic. It shows the direction of the aircraft by means of a scanning screen. Automatic course ranging. Range of frequencies 118—136Mc/s. Remote indication up to 5 km. Five frequency channels.

**2752 25 Channel Deck Radio Station**

For aircraft communication, 25 frequencies, crystal operated, service Simplex on USW.

*Motor-cyclists who are exacting with regard to the quality and output of their machines ride on JAWA-ČZ.*

*CZECHOSLOVAK MOTOR REVIEW, Praha I, Ul. 28. října 13, will gladly send you a complimentary copy.*

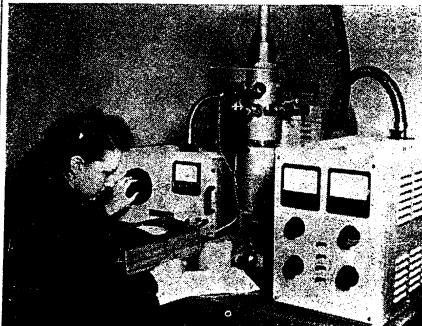
**2761 Repeaters**  
Various types of repeaters.

**2762 Microphones**  
Various types of microphones with auxiliary equipments.

**2771 Model of the Strahov Stadium**  
Communications equipment as installed and operated during the first State Spartakiade.

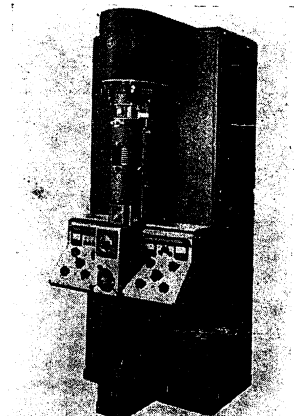
**2763 Constructional Components for Modern Radio-Communication Techniques**

Up-to-date technology tuning condensers, miniature condensers with thermal coefficient 0. Sub-miniature interfrequency transformers, etc.



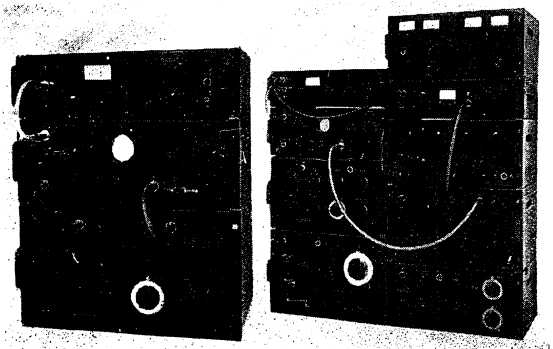
**2781 Desk Electronic Microscope**

Type BS 242, maximum magnification 25 000 to 30 000 times, discriminating capacity abt 50 Å, suitable for photographing specimens, replacement of specimens without deteriorating vacuum.

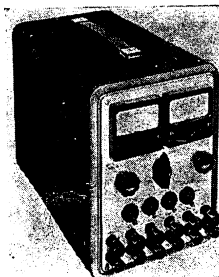
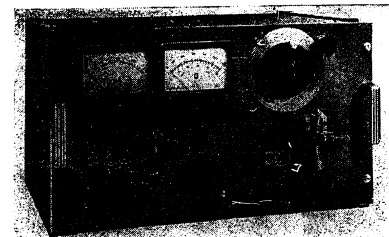


**2782 Universal Electronic Microscope**

Type BS 241, the same properties as type BS 242, only without the possibility of replacing specimens without deteriorating the vacuum.



**2791 Electronic Measuring Instruments**  
Various types of electronic measuring instruments.



CZECHOSLOVAK HEAVY INDUSTRY (under the best technical standards)  
for engineering and heavy industry.



**2800** Various Types of Lamps

Standard, car, projection, motor, illuminating, shock-proof, railway, mines, anti-freeze, manufactory, photogrammetry, glass, tubular, operation, drying, etc.

**2810** Various Fluorescent Lamps

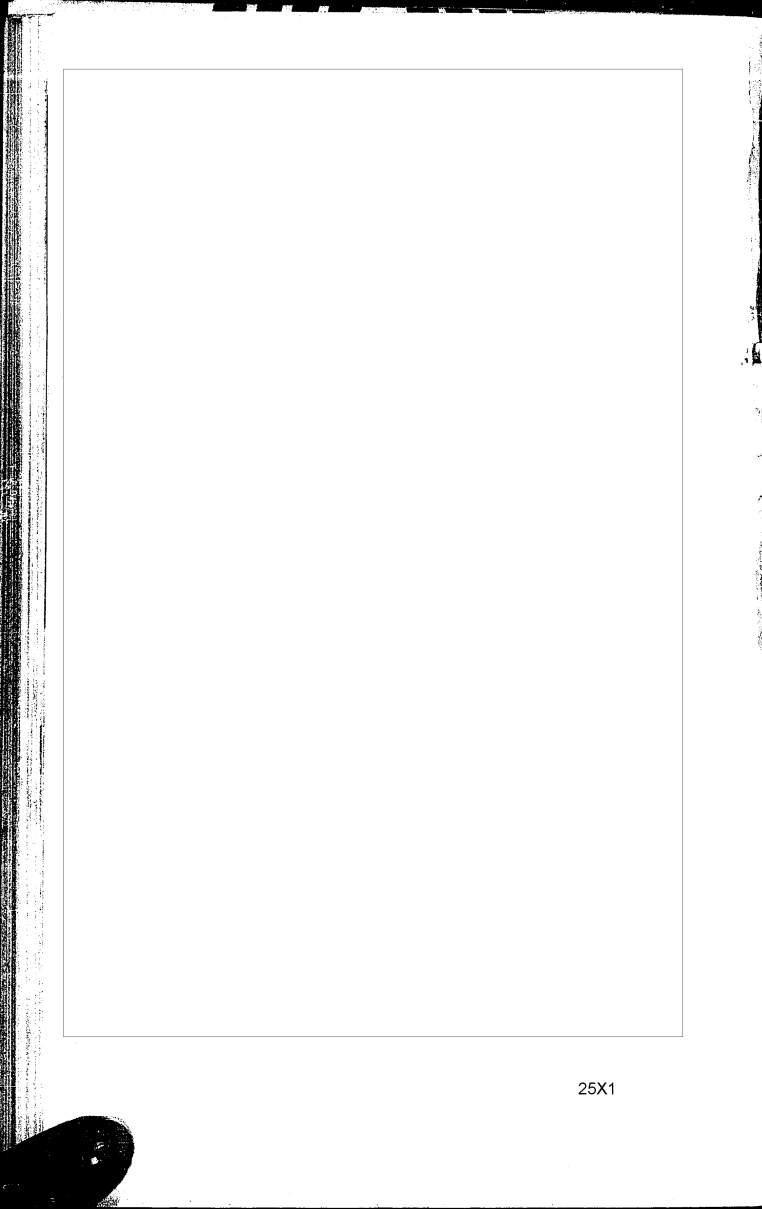
20 W, 25 W, 40 W

- |   |   |
|---|---|
| <b>2801</b> Special Electron Tubes for Transmitter Rectifiers | <b>2811</b> Plane Transistors, Type N-P-E   |
| <b>2802</b> Miniature direct-heated battery electron tubes    | <b>2812</b> Thermistors   |
| <b>2803</b> Miniature indirect-heated electron tubes          | <b>2813</b> Silical diodes and mixers   |
| <b>2804</b> Video electron tubes for oscillographs            | <b>2814</b> Subminiature Reception Electron-Tubes   |
| <b>2805</b> Video electron tubes for television               | <b>2821</b> Various Equipments for the Electro Vacuum Technique                             |
| <b>2806</b> Semiconductors (germanium point diodes)           | Measuring desk, leakage finder, point spectrograph, viscosity meter for testing glass, etc. |
| <b>2807</b> Selenium photoelectric cells                      |   |
| <b>2808</b> Beiger Müller tubes                               |   |

The ŠKODA and TATRA automobiles have numerous advantages on which you will be informed by the CZECHOSLOVAK MOTOR REVIEW.

Praha 1, Ul. 28. října 13.

REMARKS:



25X1

**SYMBOLS  
OF QUALITY**

**TECHNOEXPORT**

**ŠKODA - MEOPTA - CHIRANA -  
TESLA  
KOVO  
- K  
OV**

**STROJEXPORT**  
**ŠKODA - SIGMA - TOS - ČKD**

**MOTOKOV**