

A Cyclotron With a Radial Travelling Wave of the
Magnetic Field

SOV/83-7-1-9/26

particle acceleration occurs. In the case of the second variant, the travelling wave is superimposed on to the constant magnetic field of the cyclotron, so that acceleration takes place in a superposition field. The spatial distribution of the field in the wave causes the formation of a stability range, which is displaced in the radial direction according to the radial velocity of the particles. The stability range exists also if the absolute magnitude of the magnetic field increases sharply in the acceleration zone in the direction from the center to the exterior diameters. By means of the system suggested it is possible, in principle, to produce cyclotrons for any particle energies. Irrespective of the fact that these accelerators operate cyclically, there are reasons to suppose that the average intensity in these accelerators is better than in a synchro-cyclotron because of better focusing. The calculations given as an example show that the weight and the dimensions of the suggested accelerator are considerably lower and smaller respectively than the corresponding values of other types of accelerators for the same energy. There are 9 figures and 4 tables.

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A Cyclotron With a Radial Travelling Wave of the
Magnetic Field

SOV/89-7-1-9/26

SUBMITTED: January 6, 1959

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8(5),8(1)

SOV/105-60-1-2/25

AUTHORS: Gashev, M. A., Komar, Ye. G., Monoszon, N. A., Spevakova, F. M.,
Stolov, A. M.

TITLE: The Supply System of the Electromagnet for the Proton-
synchrotron at the Consolidated Nuclear Research Institute

PERIODICAL: Elektrichestvo, 1960, Nr 1, pp 6-10 (USSR)

ABSTRACT: The biggest particle accelerator is at present the proton-synchrotron of the Ob"yedinennyi institut yadernykh issledovaniy (Joint Institute of Nuclear Research). Protons with energies of up to 10 billions ev are obtained here. The supply system of the electromagnet is used for the production of a periodically alternating magnetic field with a repetition frequency of 5 per minute in the acceleration chamber of the proton-synchrotron. The main rated data of the supply system are: peak output 140 Mw, peak amperage 12.8 ka, peak voltage 11 kv, the energy stored in the magnetic field of the electromagnet $148 \cdot 10^6$ joule and the losses in the coil of the electromagnet 4 Mw. While connecting the coil of the electromagnet to the direct voltage, the current increases in accordance with an

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The Supply System of the Electromagnet for the Proton-synchrotron at the Consolidated Nuclear Research Institute SOV/105-60-1-2/25

exponential curve with a time constant of $T = 25$ seconds. When the current has reached 12.8 ka, the voltage changes its sign and the current drops. The source for the direct voltage is a system of synchronous generators driven by induction motors and of converters. The latter operate as rectifiers during the increase of the current and as inverters during the drop of the current. The schematic circuit diagram of the supply system of the electromagnet is shown in figures 1 and 2 and explained. The reduction of the output impulses in the supply system of the aggregate motors is obtained with the help of fluid slip controllers. The sealed pentode-ignitrons of type IVU 100/1500 with a mean rated current of 100 a and a return voltage of 15 kv, specially developed at the Vsesoyuznyy elektrotekhnicheskiy institut (All-Union Electrotechnical Institute) are used as valves for the converter installation. The method of operation of the valves is explained in detail and the influence of distributed capacitances on the operation of the valves is pointed out. These capacitances cause strong high-frequency oscillations with frequencies of dozens of kilocycles. The measures taken for eliminating these influences are mentioned.

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The Supply System of the Electromagnet for the SOV/105-60-1-2/25
Proton-synchrotron at the Consolidated Nuclear Research Institute

in brief. The control system of the converter is supplied by an auxiliary generator (on the shaft of the main generator). The firing of the ignitrons is controlled with the help of a customary thyatron-condenser-circuit. This produces an impulse at the igniter lasting from 200 to 250 milliseconds at peak amperages of from 40 to 60 a. The phase shift between the controller impulses corresponding to the rectifier- and the inverter method of operation, amounts to approximately 140 degrees. The moment of the beginning of the method of operation as rectifier (of the converters) is controlled by a pickup with a contact system which conveys the signal to the trigger. In order to warrant the homogeneity of the magnetic field and to reduce the influence of residual magnetism on the magnetic field, the magnetic system is demagnetized during the interval of the main cycle. This is done with the help of impulses of the current of different polarity with an amplitude decreasing in accordance with a certain law. These demagnetizing impulses are produced by 2 converters with ignitrons of type IVU 100/1500. During backfiring, the converter is protected by back current quick-break switches. Each of the converters is protected against

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The Supply System of the Electromagnet for the Proton-synchrotron at the Consolidated Nuclear Research Institute SOV/105-60-1-2/25

short circuit currents by peak-current quickbreak switches. The windings of the electromagnet are protected against excess voltages by dischargers. The specific feature of the supply system investigated here is the circumstance that, during abnormal methods of operation the amperage in the converter (where the normal method of working was disrupted) is increased and the amperages in the other converters decrease, when the converters operate as inverters. To prevent this, a grid protection system is provided. Endurance tests showed that the supply system operates in a stable manner and warrants all methods of operation. There are 5 figures.

SUBMITTED: July 27, 1959

Card 4/4

7 KOMAR, Ye. G.

3/07/60/009/012/001/011
R019/2036

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ARTICLES:

Afrosimov, V. V., Glubikh, V. A., Golant, V. Ye.,
Zardali, A. M., Kozak, I. G., Kostin, B. P.,
Malyshov, G. M., Malyshov, I. P., Monosov, B. A.,
Stolov, A. M., Fedorenko, B. V.

TITLE: Plasma Studies With "All'ya" Research Installation
PERIODICAL: Zhurnal tekhicheskoy fiziki, 1960, Vol. 20, No. 12,
pp. 1901 - 1991

TEXT: A research installation for producing high-power pulsed discharges in a toroidal chamber (the diameter of the chamber is 1.2 m and the inner cross-section diameter of the chamber is 0.8 m) is described. The chamber is filled with hydrogen, and discharge is obtained at a pressure of about $2 \cdot 10^{-4}$ mm Hg, and with an external magnetic field of 100-720 oe. Discharges are produced by 2-3 msec electric pulses coming from a capacitor battery capable of storing $1.5 \cdot 10^6$ joules of energy. The entire installation is shown in a photograph, and is schematically represented in Fig. 2.

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The electric and magnetic characteristics of a plasma discharge are described in detail, after which microwave studies, spectrum analyses, experiments with the atomic flux emitted by the plasma, are discussed. The characteristics of a discharge do not correspond to general concepts of a selfcontracting quasisteady discharge. The other consequences of this opinion owing to the lack of a long plasma column, which follows from measurements of the electric and magnetic characteristics, from microwave studies, from the existence of a large azimuthal current, from the asymmetry of discharge, from the occurrence of oscillations therein, and from a considerable inhomogeneity of plasma. Besides, there is an inhomogeneous hydrogen-ion distribution, which is indicated by a large quantity of protons with energies exceeding 10 kev. An explanation of these effects is not possible as yet. There are 6 figures and 22 references: 1) Borde, J. Russian, and 6 US.

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ASSOCIATION: Fiziko-tehnicheskii Institut AF SSSR (Institute of Physics and Technology of the AS USSR), Moscow - (Moscow, formerly Institute of Radio-Physics and Electronics Apparatus) (Scientific Research Institute of Electrophysics Apparatus)

SUBMITTED: July 15, 1960

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87455

S/057/60/030/012/002/011
B019/B056

26.2311

AUTHORS: Glukhikh, V. A., ~~Komar, Ye. G.~~, Larionov, B. A.,
Malyshev, I. F., Monoszon, N. A., Stolov, A. M., and
Strel'tsov, N. S.

TITLE: Technical Data and Main Parameters of "Al'fa" Research
Installation

PERIODICAL: Zhurnal tekhnicheskoy fiziki, 1960, Vol. 30, No. 12,
pp. 1394 - 1403

TEXT: The results obtained by calculation were checked during planning of this research installation on a model having the scale 1/20. The following essential data were given: Mean diameter of the torus: 3200 mm, diameter of the cross section: 1000 mm. Margin of energy of the capacitor battery: 1500 kilojoules. Field strength of the rotational field: 0.2-8 v/cm. Maximum field strength of the magnetic longitudinal field: 1500 oe. Maximum discharge current: 300 ka. Leakage intensity of the six turns of the primary coil: $1.6 \cdot 10^{-2}$ henries. Maximum induction of the magnetic conductor with a discharge current of 300 ka: 12,000 Gauss.

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87455

Technical Data and Main Parameters of
"Al'fa" Research Installation

S/057/60/030/012/002/011
B019/B056

Weight of the magnetic conductor: 110 t. Weight of the vacuum chamber: 4.5 t; total weight 156 t. The magnetic conductor is made of Э-42 (E-42) transformer steel, the primary coil for the rotational field consists of 25 turns of a copper tube having a diameter of 26 mm. The coil for the longitudinal field consists of a copper tube with rectangular cross section, constructed from 40 single coils having 12 turns each. Current supply is discussed on the basis of the scheme shown in Fig.4. For the pre-ionization in the interior of the chamber, a high-frequency generator is used (4 mc). The outer chamber consists of 27 mm Al-sheets, the inner chamber of 0.2 mm stainless steel, and at the bushings, it is reinforced with 2 mm sheets. The vacuum system consists of 8 diffusion units, two pre-vacuum pumps, and one booster pump. L. B. Dinaburg, D. Ye. Zavarin, Ya. L. Mikhelis, B. I. Produvnov, B. V. Rozhdestvenskiy, D. G. Sorokin, et al. took part in developing this research installation. There are 7 figures.

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87455

Technical Data and Main Parameters of
"Al'fa" Research Installation

S/057/60/030/012/002/011
B019/B056

ASSOCIATION: Nauchno-issledovatel'skiy institut elektrofizicheskoy
apparatury (Scientific Research Institute of Electro-
physical Apparatus)

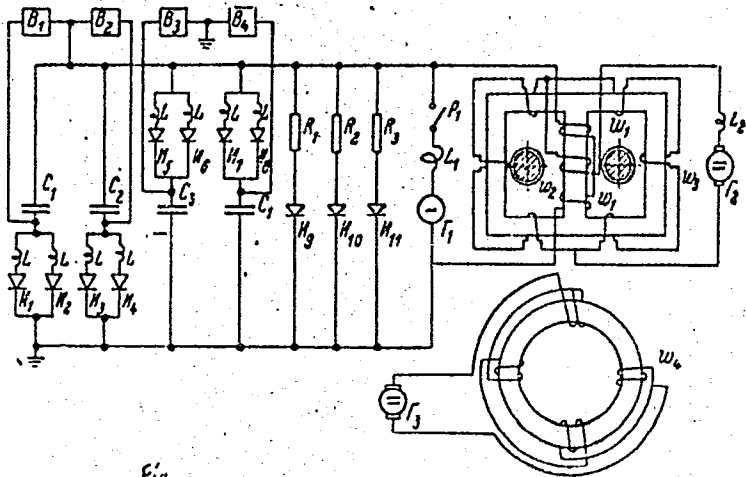


Fig. 4

Card 3/4 Fig. 4. Блок-схема системы питания установки.

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Legend to Fig.4: 1) $B_1 - B_4$ are thyatron rectifiers. 2) $\mathcal{H}_1 - \mathcal{H}_{11}$ are
ignitrons. 3) Γ_2 and Γ_3 are generators for degaussing
and for the longitudinal field.

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87456

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B019/B056

26.2311

AUTHORS: Klukhikh, V. A., Zavarin, D. Ye., ~~Komar, Ye. G.~~
Larionov, B. A., Monoszon, N. A., Skotnikov, V. V., and
Stolov, A. M.

TITLE: An Investigation of the Electric and Magnetic Discharge
Characteristics of "Al'fa" Research Installation

PERIODICAL: Zhurnal tekhnicheskoy fiziki, 1960, Vol. 30, No. 12,
pp. 1404 - 1414

TEXT: The authors studied the electric and magnetic discharge charac-
teristics under single-period conditions. The total discharge current
is measured by means of a Rogovskiy girdle, having the shape of a
spiral made of nichrome. The signal was integrated in an RC element,
fed to one of the two channels of a double-beam oscilloscope. In a
similar manner, the field strength of the rotational field was measured.
According to voltage and current oscillograms the mean resistance of the
plasma column and the energy generated in it were calculated, a constant
inductivity of the discharge coil being assumed. Accordingly, the

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An Investigation of the Electric and
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discharge column has an inductivity of $(2-3) \cdot 10^{-6}$ henries. Furthermore, an electron- and ion temperature of about $40 \cdot 10^6$ °K was obtained with a pressure of $2 \cdot 10^{-4}$ mm Hg and a discharge energy of about 100 kilojoules. The distribution of the magnetic field over the cross section of the chamber was determined with probes. The results obtained are graphically represented in Fig.9. It was found that the electric current lines in the discharge are of helical character similar to the shape of the magnetic field, which leads to an increase of the longitudinal magnetic flux in the chamber. In order to conserve current constancy, it is necessary that rotational currents be induced in the walls of the outer chamber. This leads to a change in the field direction of the longitudinal magnetic field in the exterior discharge ranges and in the space between outer and inner chamber. The already mentioned increase of the field strength of the longitudinal magnetic field corresponds to a maximum azimuthal current in the plasma of $(2-2.5) \cdot 10^6$ a. Exactly this current must be induced in the walls of

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An Investigation of the Electric and
Magnetic Discharge Characteristics of
"Al'fa" Research Installation

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the outer chamber. From an analysis of the distribution curves of the magnetic fields and the discharge currents, it is found that the density vector of the electric current has a direction over the total discharge cross section, which nearly agrees with the direction of the magnetic field. Further, some experimental conditions were determined, under which the discharge current in the outer regions of discharge has a direction inverse to the discharge current in the inner regions. There are 11 figures, 1 table, and 6 Soviet references.

ASSOCIATION: Nauchno-issledovatel'skiy institut elektrofizicheskoy apparatury (Scientific Research Institute of Electrophysical Apparatus)

SUBMITTED: July 15, 1960

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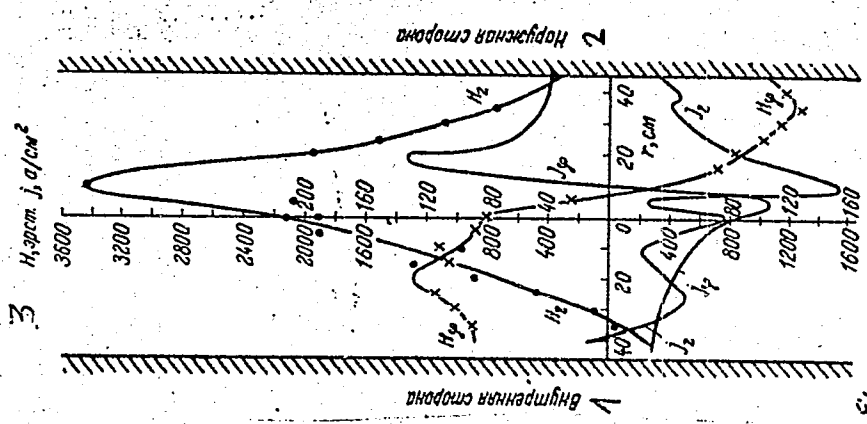


Рис. 9. Распределение напряженности магнитного поля и плотности тока по сечению разряда.
 $U_C = 15$ кВ, $n_{i0} = 3 \times 10^{18}$ эрст. (горизонтальная линия).

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Legend to Fig.9: 1) and 2): Internal and external side. 3) H in oe,
j in a/cm^2 .

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GHERNICHKIN, D.S.; BORISENKO, N.I.; MESHCHERYAYKOV, K.N.; KOMAR, Ye.G.; FEDULOV,
L.N.; KOZLINSKIY, V.A.; MAKSIMOV, A.S.; GEL'PERIN, B.B.

Professor D. V. Efremov; obituray. Elektrichestvo no.2:95-96 F '61.
(MIRA 14:3)

(Efremov, Dmitrii Vasil'evich, 1900-1961)

VLADIMIRSKIY, V.V.; KOMAR, Ye.O.; MINTS, A.L.; GOL'DIN, L.L.;
MONOSZON, N.A.; RUBCHINSKIY, S.M.; TARASOV, Ye.K.; VASIL'YEV, A.A.;
VODOP'YANOV, F.A.; KOGHAREV, D.G.; KURYSHEV, V.S.; MALYSHEV, I.F.;
STOLOV, A.M.; STREL'TSOV, N.S.; YAKOVLEV, B.M.

The 7 bev. proton synchrotron. Prib. i tekhn. eksp. 7 no.4:5-9
Jl-Ag '62. (MIRA 16:4)

1. Institut teoreticheskoy i eksperimental'noy fiziki Gosu-
darstvennogo komiteta po ispol'zovaniyu atomnoy energii SSSR,
Nauchno-issledovatel'skiy institut elektrofizicheskoy apparatury
Gosudarstvennogo komiteta po ispol'zovaniyu atomnoy energii
SSSR i Radiotekhnicheskiy institut Gosudarstvennogo komiteta
po ispol'zovaniyu atomnoy energii SSSR.
(Synchrotron)

38440

S/089/62/012/006/003/019
B102/B104

24 6730

AUTHORS: Vladimirskiy, V. V., Komar, Ya. G., Mints, A. L.,
Gol'din, L. L., Monoszon, N. A., Rubchinskiy, S. M.,
Tarasov, Ye. K., Vasil'yev, A. A., Vodop'yanov, P. A.,
Koshkarev, D. G., Kuryshv, V. S., Malyshev, I. F., Stolov,
A. M., Strel'tsov, N. S., Yakovlev, B. M.

TITLE: The design of the 7-Bev proton synchrotron

PERIODICAL: Atomnaya energiya, v. 12, no. 6, 1962, 472-474

TEXT: The history of the first Soviet cyclic accelerator with rigid focusing is briefly described, and the most important data on its planning and operation are presented. Planning was started in 1953. The parameters of this proton accelerator, the energy of which exceeds the antinucleon production threshold, were so chosen that the dependence of the orbital circumference on the particle momenta was completely compensated. This was achieved by employing 14 quadrupole magnets with orbits of negative curvature. Technical data: output current, 10^{10} protons/pulse; maximum field strength, 8475 oe; length of equilibrium orbit, 251.2 m; radius of

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... and at the end, $5 \cdot 10^{-5}$. There

SUBMITTED: March 12, 1962
Card 2/2

EWT(m)/EPA(w)-2/EWA(m)-2 Pub-10/Pt-7 IJ(c) 85
S/1000/64/000/000/0058/0064
ATSC07913

Boynikov, N. I.; Monoszon, M. A.; Titov, V. A.; Shukeylo, I. A.; Komar, L. I.

High-energy accelerator with a supplementary control beam of particles

International Conference on High Energy Accelerators. Dubna, 1963.
Moscow, Atomizdat, 1964, 58-64

High energy accelerator, particle accelerator, particle beam

Data is presented to show the technical and economic feasibility of
building a 1000-Gev proton accelerator with strong focusing, which accords with
experience in the development and operation of cyclotrons. The basic de-
terminers and tolerances permitted in this accelerator are discussed. An
experimental team would be employed to determine the accuracies of the magnets and
the stability of the foundation, thus permitting the needed corrections to be
made to the main orbit of particles. An auxiliary chamber of large cross-section
will permit determination of the beam's position at various cross-sections and the

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NR: AT5007913

...ulation of the height and radius of the magnets. Corrections similar
...gled by the displacement of the orbit of the auxiliary beam would be
~~introduced during the operation of the machine when the foundation is unstable.~~
...e of the main beam has been chosen to be 3×3 cm, close to that planned
...en. The auxiliary beam would have no bearing on the tolerated errors and
... of the magnetic fields of the main electromagnet, since it would control
...ometric configuration of the blocks of the electromagnet, considered the
... in the case of very large orbital radii. With an electrostatic
... having a potential of 35 kv between the plates, it is calculated,
... potential difference of only 10^{-5} of the main potential would exert no
... on the position of the auxiliary beam. The stray fields in the straight
... have negligible effect on the main beam, because the auxiliary beam
... static system is situated in a zone of small stray fields (one oerst-
... shielded (by permalloy) just as in the case of the magnet system of the
... The alternative of an optical auxiliary beam for alignment was not
... since a proton beam was found simplest to employ. No attempts were made
... stray fields in the straight sections of the main electromagnet, which
... problem for all accelerators and not therefore considered in the pres-
... The stray fields' effect on the orbit of the auxiliary beam is small

REF: AT5007913

and reduced by a factor of 90-100 by normal shielding such as is used in linear accelerators. Orig. has 3 figures, 2 tables.

Nauchno-issledovatel'skiy institut elektrofizicheskoy apparatury imeni G. I. Gerasimova GKAE SSSR (Scientific Research Institute of Electrophysical Apparatus, SSSR)

26May64

ENCL: 00

SUB CODE: NP

001

OTHER: 000

KOMAR, YEG.

18

L 43088-65 EWT(m)/ EPA(w)-2/EWA(m)-2 Pub-10/Pt-7 IJP(c) JT/GS
ACCESSION NR: AT5007918 S/0000/64/000/000/0197/0201

AUTHOR: Vladimirskiy, V. V.; Gol'din, L. L.; Koshkarov, D. G.; Tarasov, Ye. K.;
Yakovlev, B. H.; Gustov, G. K.; Komar, Ye. G.; Kulikov, V. V.; Malyshev, I. F.;
Monoszon, N. A.; Popkovich, A. V.; Stolov, A. M.; Strel'tsov, N. S.; Titov, V. A.;
Vodop'yanov, E. A.; Kuz'min, A. A.; Kuz'min, V. F.; Hints, A. L.; Rubchinskiy,
S. H.; Uvarov, V. A.; Zhadanov, V. M.; Filaretov, S. G.; Shiryayev, F. Z.

TITLE: 60-70 Gev Proton Synchrotron

SOURCE: International Conference on High Energy Accelerators. Dubna, 1963. Trudy.
Moscow, Atomizdat, 1964, 197-201

TOPIC TAGS: high energy accelerator, synchrotron

ABSTRACT: A 60-70 Gev proton synchrotron with strong focusing is being constructed
not far from Serpukhov, as has been reported earlier (e.g. "Research Institute for
Electro-Physical Equipment, Leningrad," in Proceedings of the International Confer-
ence on High Energy Accelerators and Instrumentation (CERN, 1959), p. 373). The
present report describes parameter changes and improvements in precision structural
characteristics of the accelerator, and the present state of construction in mid-
1963. The parameters of the magnet are presented in a table. A small change in
the original plans permitted an increase in the length of a part of the free
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sections, some of which are utilized for input and exit of beams. The super-period design is described. The lengthened sections were obtained as a consequence of shortening the focusing and defocusing blocks by 112 cm. The focusing properties of the magnetic channel were diminished consequently, but very little; and the limiting energy was lowered by 2-3 Gev. The construction of the magnet is described. Each of the magnetic blocks is divided lengthwise into 5 sub-blocks which are enveloped by the common winding. These sub-blocks consist of laminar two-millimeter silicon steel. These steel sheets were stamped out without subsequent mechanical working, and were subjected to sorting and intermixing in order to smooth out their magnetic characteristics. The sub-blocks are constricted by lateral welded plates without adhesion. Provision was made for windings on the poles in order to correct for pole nonlinearity and for variations in the drop reading. These windings make it possible to introduce artificial quadratic (square) nonlinearity that changes the dependence of the frequency of transverse oscillations during a pulse. In order to correct for straying of the residual field, provision has been made for windings on the yoke in series with the main winding. The sub-blocks must undergo calibration on a magnet stand in order to make correcting systems more precise and to determine the most convenient disposition of the sub-blocks along the ring. The winding of the electromagnet is made of aluminum busbars with hollow cores for cooling water. The length of the busbar is so selected that there would be no

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welded joints inside the coils. The winding consists of 4 sections, two of which are disposed on the upper pole and two on the lower. The most important characteristics of the electromagnet and power supply system are described in a table. Also described are the vacuum chamber and accelerating field (obtained by 53 paired resonators with ferrite rings, which operate at the 30-th harmonic of revolution and give accelerating potential of 350 kilovolts). The ring tunnel and the general arrangement of the accelerator are shown in figures and described. The building for the injector and portions of the ring tunnel from the injector to the experimental room have been completed in the main and are ready for installation of equipment. This room, in the form of a single-aisle building without internal supports, permits one to work on beams brought into the inner and outer sides. A 90-meter arch covers this room, whose overall length is 150 meters. Provisions have been made for a second experimental room at the southwest part of the ring. Orig. has 4 figures, 2 tables.

ASSOCIATION: Institute teoreticheskoy i eksperimental'noy fiziki GKAE SSSR (Institute of Theoretical and Experimental Physics, GKAE SSSR). (2) Nauchno-issledovatel'skiy institut elektrofizicheskoy apparatury imeni D. V. Yefremova GKAE SSSR (Scientific Research Institute of Electrophysical Apparatus, GKAE SSSR).

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L 43088-65

ACCESSION NR: AT5007918

(3) Radiotekhnicheskiy Institute AN SSSR (Radio Engineering Institute, Academy of Sciences SSSR). (4) Gosudarstvennyy proyektnyy institut GKAE SSSR (State Planning Institute, GKAE SSSR). 2

SUBMITTED: 26May64

ENCL: 00

SUB CODE: EE, KP

NO REF SOV: 002

OTHER: 001

am
Card 4/4

AP4047415 S/0089/64/017/004/0287/0294

8
Mashev, M. A.; Gustov, G. K.; D'yachenko, K. K.; Konar,
Myshev, I. F.; Monoszon, N. A.; Popkovich, A. V.;
K.; Rozhdestvenskiy, B. V.; Romyantsev, M. N.; Saksa-
L.; Spevakova, F. M.; Stolov, A. M.; Strel'tsov, V. S.;
Sh.

technical characteristics of the "Tokamak-3" experi-
thermonuclear installation

Atomnaya energiya, v. 17, no. 4, 1964, 287-294

thermonuclear pinch, thermonuclear fusion, plasma re-
search, plasma pinch / Tokamak-3

ABSTRACT. The "Tokamak-3" is intended for the investigation of a
quasi-stationary discharge in the strong longitudinal mag-
netic field. The toroidal discharge is produced in the vacuum cham-

AP: AP4047415 /

tical electric field, and acts as an equivalent secondary pulse transformer. The produced plasma pinch is stabilized by a longitudinal magnetic field of a toroidal solenoid, inside a vacuum chamber is located. The magnetic core of the pulse transformer carries the primary vortical-field winding, the demagnetizing winding, and the winding for induction heating. The system is powered by special power systems. The electromagnetic system, the power supply, and the vacuum system are described in some detail. The longitudinal field intensity reaches 40 kG. The vortical field intensity is 150 and 50 V per turn with pulse durations 10 and 50 milliseconds and with programming of the waveform such as to maintain a constant current in the plasma pinch. The power supply delivers a maximum power of 77,000 kW, maximum 7000 A, no-load voltage 11 kV, and energy 180 million Joules. The vortical field is fed from four capacitor banks rated 1000 μF at 20 kV, 11,000 μF at 10 kV, 78,000 μF at 5 kV, and 30,000 μF at 5 kV. The capacitor-bank parameters are varied over a wide range. The vacuum in the liner does

NR: AP4047415

$1-2 \times 10^{-7}$ mm Hg during the interval between gas admis-
sion and the pressure in the outside chamber being $1-2 \times 10^{-6}$
mm. art. has: 8 figures.

REF: None

DATE: 23Nov63

ENCL: 00

NP, ME

NR REF SOV: 000

OTHER: 000

GASHEV, M.A.; GUSTOV, G.K.; D'YACHENKO, K.K.; KCMAR, Ye.G.; MALYSHEV,
I.F.; MONOSZON, N.A.; POPKOVICH, A.V.; RATNIKOV, B.K.; ROZHDESTVENSKIY,
B.V.; RUMYANTSEV, N.N.; SAKSAGANSKIY, G.L.; SPEVAKOVA, F.M.; STOLOV,
A.M.; STREL'TSOV, N.S.; YAVNO, A.Kh.

Principal mechanical characteristics of the experimental thermo-
nuclear plant "Tokamak-3." Atom. energ. 17 no.4:287-294 0 '64.

(MIRA 17:10)

KOZAKEVICH, P. P.; LEYBA, S. P.; KONAR, Ye. P.

"Viscosity in the Ternary Systems Forming Open-Heart Slags. The System FeO--CaO--SiO₂"; Zhur. Fiz. Khim; Insti. of Metals, Physico-Chem. Lab., Kar'kov; Rcd 17 July 1938.

Report U-1613, 3 Jan. 1952.

BARMOTINA, Z.G.; DUSHSKAYA, R.Ye.; KOGAN, R.B.; KOMAR', Ye.P.;
KONONENKO, A.F.; ORLOVA, R.S.

Analysis of chromites. Trudy Ukr.nauch.-issl.inst.met.
no.5:264-272 '59. (MIRA 13:1)
(Chromites) (Metallurgical analysis)

SIDORSKI, T.; BIENIEK, J.; KOMAR-KLATT, K.; KUZINOWICZ, E.

Causes of the appearance and therapeutic results in delayed union and pseudarthrosis of the long bone according to our material. Chir. narz. ruchu ortop. polska 26 no.5:575-583 '61.

1. Z Kliniki Ortopedycznej AM i Oddziału Ortopedycznego Szpitala Wojewodzkiego we Wrocławiu Kierownik: dr J.Kowalski.
(FRACTURES UNUNITED) (PSEUDOARTHROSIS)

KOMARA, S.; ~~SECRET~~.

Second Regular Annual Assembly of the Union of Chambers of Agriculture and Forestry of Yugoslavia. p. 5.

A session of the Administrative Committee of the Union of Chambers of Agriculture and Forestry of Yugoslavia. p. 18.

Vol. 4, no. 8/9, 1958.

Periodical: FNRJ. GLASNIK. Beograd.

AGRICULTURE

SO: Monthly List of East European Accessions (EEAI) LC

Vol. 8, No. 4
April 1959, Uncl.

SZAMOSI, Jozsef, dr.; KOMARAS, Ilona, dr.; VARGA, Tibor, dr.

Diagnostic significance of intravenous pyelography in urinary tract infections in children. Orv. hetil. 105 no.37:1734-1738 13 S '64.

1. Fovarosi Tanacs, Kozponti Gyermekeszesi Ugyi Modszertani, Tudomanyos Kutato es Tovabbkepzo Intezet, Gyermekosztaly Rtg. Osztaly.

KOMARAS, M.

BARNA, Konstantin; KOMARAS, Milan

Iodine pregnancy test. *Cesk. gyn.* 22[36] no.5:392-393 June 57.

1. Ustav pre lekarsku chemiu, prednosta s. do. Dr D. Tomkuljak a porodnicko-gynekologicka klinika, prednosta prof. Dr. T. Schwarz, LFUK v Kosiciach.

(PREGNANCY TESTS

iodine test, technic (Gz))

LEVNTAL, Zdenko, doc., dr.; STRASER, Toma, doc., dr.; KOMARECKI, Viktor, dr.

On certain mental factors in the development of hyperthyroidism.
Med. glasn. 15 no.2/2a:91-96 F '61.

1. Interna klinika B Medicinskog fakulteta u Beogradu (Upravnik:
prof. dr R. Berovic). 2. Urednik, "Medicinski glasnik" (for Levntal).

(HYPERTHYROIDISM psychol)

KCMARCEVIC, D.

KCMARCEVIC, D. Some observations on the performing of selected tests with winter wheat. p. 52

Vol 2, no. 10, Oct. 1954

POLJOPRIVREDA

AGRICULTURE

Beograd

SO: MONTHLY LIST OF EAST EUROPEAN ACCESSIONS, (EEAL), LC, VOL. 4, no. 9.
Sept. 1954, Encl.

KOMARCHEV, A. I.

SUBJECT: USSR/Welding 135-2-8/12

AUTHORS: KOMARCHEV, A.I., Engineer, and SHRAER, A.B., Candidate of Technical Sciences.

TITLE: Radial spot-welding machine for light alloys, (Radial'naya tochechnaya mashina dlya svarki legkikh splavov).

PERIODICAL: "Svarochnoye Proizvodstvo", 1957, # 2, pp 23-26 (USSR)

ABSTRACT: The welding machine MT NP-600, put into production in 1956 at the plant "Elektrik". The machine, designed by VNIIESO for welding light alloys, accommodates stock from 0.5+0.5 to 1.5+1.5 mm thick, has an overhang of 900-1200 mm, and the distance between shoulders is adjustable between 200 and 600mm. Supplied together with the machine is the ignitronic circuit breaker ПИТМ-150 which controls the current value in the range between 40 and 100 % of its maximum, and the duration of the current impulse between 0.02 and 0.5 sec.

An editor's note to the article states that the welding machine MTNP-600 is stated to be less complicated than the type МТМП. Simultaneously it consumes high single-phase power at $\cos \varphi = 0.25$. It is yet to be found out where each

Card 1/2

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000824020012-2

TITLE: Radial spot-welding machine for light alloys, (Radial'naya tochechnaya mashina dlya svarki legkikh splavov). 135-2-8/12

of the two types is to be most rationally applied.

The article contains detailed description of the electric scheme, 4 diagrams, 1 drawing and 2 photographs.

INSTITUTION: ВНИИЭСО (VNIIESO) *All Union Sci Res Inst*

PRESENTED BY: *Electric Welding Machines*

SUBMITTED:

AVAILABLE: At the Library of Congress.

Card 2/2

KOMARCHEV, A.I.; MIRKIN, A.M.

The MTPU-300 universal resistance spot-welding machine.
Biul. tekh.-ekon.inform.Gos.nauch.-issl.inst.nauch.i tekh.
inform. no.9:31-32 '62. (MIRA 15:9)
(Electric welding--Equipment and supplies)

44999

S/135/63/000/002/012/015
A006/A101

1.2300

AUTHORS: Zaychik, L. V., Candidate of Technical Sciences, Komarchev, A. I.,
Engineer

TITLE: Capacitor machine for spot welding large-size light-alloy struc-
tures

PERIODICAL: Svarochnoye proizvodstvo, no. 2, 1963, 35 - 38

TEXT: In 1961, VNIIESO has designed and tested an experimental model of
the MKK-75 type capacitor machine, intended to weld large-size up to 2.5+2.5 mm
thick, light-alloy structures. The machine will be produced in series at the
"Elektrik" Plant. It operates on three-phase current. The upper electrode is
pneumatically driven by means of membranes. The electric power part of the ma-
chine consists of a charge and discharge device. Its operation is described in
detail. Values $I_{weld,max}$, t_1 and t_2 , characteristic of the welding pulse, are
regulated within a wide range. By tuning the initial voltage on the operating
capacitor battery (within 300 - 400 v), its capacitance, and the coefficient of
transformation $\left(\frac{W_1}{W_2}\right)$ of the welding transformer, an unlimited number of different

Card 1/3

S/135/63/000/002/012/015
A006/A101

Capacitor machine for spot welding...

welding current pulses can be obtained within the range of extremal pulses. The machine was tested at NIAT. The tests show that the extremal deviations of the rupture load from mean values do not exceed (8 - 12)%, against 14 - 20% for specimens which were welded by using current directly from the network. The main advantages of the machine are the efficiency and stability of pulses and constant welding quality. The relatively low capacitor voltage assures safe operational conditions. As the shape and magnitude of pulses do not depend upon the network voltage and the power required is low, the machine is particularly valuable in cases when high-quality welds are required, using a weak or overloaded electric circuit. Some technical characteristics are:

- Rated power from a three-phase network in kvamp 75
- Thickness of parts in mm from 0.5+0.5 to 2.5+2.5
- Efficiency in welding parts of maximum thickness; spots per minute . . . 30
- Maximum welding current pulse
 - a) amplitude in kamp 80
 - b) time of current increase from 0 to the amplitude value in sec . 0.04
 - c) full pulse time sec 0.12

X

Card 2/3

Capacitor machine for spot welding...

S/135/63/000/002/012/015
A006/A101

Capacitor battery

- a) maximum power storage in kw.sec 22
- b) regulation limits of the battery capacitance in
 μ f (15 steps) 9,800 - 274,000
- c) limits of smooth control of the operational voltage
 of the capacitor battery in v. 300 - 400

There are 8 figures.

ASSOCIATION: VNIIESO

Card 3/3

L 28869-66 EWP(k)/EWI(m)/I/EWP(v)/EWP(t)/ETI LJP(c) JD/AM

ACC NR. AP6011540

SOURCE CODE: UR/0135/66/00C/004/0040/0041

AUTHOR: Zaychik, L. V. (Candidate of technical sciences); Komarchev, A. I. (Engineer); Chuloshnikov, P. L. (Engineer)

ORG: none

43
B

TITLE: Percussion welding machines for the spot welding of light alloys

SOURCE: Svarochnoye proizvodstvo, no. 4, 1966, 40-41

TOPIC TAGS: welding equipment, welder, spot welding, aluminum alloy, magnesium alloy, brass, titanium steel / MTK-4 welder, MTK-10 welder, MTK-15 welder, MTK-40 welder, MTK-75 welder, MTK-100 welder

ABSTRACT: Following is a brief description of the newly developed, improved MTK-4, MTK-10, MTK-15, MTK-40, MTK-75, MTK-100, and MTR-1 Soviet welding machines adapted for the quality welding of light (Al and Mg) alloys, brass and titanium, as well as of stainless, high temperature, and low-carbon steels. These machines are designed with capacitors of a low charging voltage (up to 400 v) and they assure a high heating rate and a wide range of the amplitudes and durations of the current pulse. Their power requirement is 10-20 times as low as that of the conventional single-phase machines. For example, to weld Al alloys measuring 1.5 + 1.5 mm in

Card 1/2

UDC: 621.791.037

L 28859-66

ACC NR: AP6011540

thickness, a single-phase machine consumes ~300 kva whereas a percussive machine needs only 15 kva. The use of these machines dispenses with the restrictions on the employment of resistance welding due to the inadequate power of the shop electric systems. The MTK-40 and MTR-1 are already regularly produced; as for the production of the other models, its organization should be expedited, since it is so much more economically expedient than the modernization of the old single-phase machines. Orig. art. has: 4 figures, 2 tables.

SUB CODE: 11, 13/ SUBM DATE: none/ ORIG REF: 004

Card 2/2

KOMARCHEVA, A. G.

"Diagnosis and Treatment of Noma," Fel'dsher i Akusher., No. 4, 1949.

KOMARCHEVA, A. G.

"Transfusion of Placental Blood," Fel'dsher i Akusher., No. 12, 1949.

KOMARCHEVA, A.G.

Exercise therapy in the treatment of injuries of tendons of the wrist and fingers. Sovet. med. 16 no. 7:19-21 July 1952.

(CJML 22:4)

1. Of the Traumatological Clinic (Director -- Honored Worker in Science Prof. M. O. Fridland) and of the Division of Therapeutic Physical Culture (Head -- A. A. Troyanovskiy) of Hospital imeni S. P. Botkin.

KOMARCHEVA, A. G.

"Primary Tendinous Comissures of the Fingers, Wrists, and Forearms."
Cand Med Sci, Central Inst for the Advanced Training of Physicians, 7 Dec
54. (VM, 24 Nov 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher
Educational Institutions (11)

SO: Sum. No. 521, 2 Jun 55

KOMARCHEVA, A.G., kandidat meditsinskikh nauk

Paget's disease. Ortop., travm. i protez. no.6:36-38 N-D '55.
(MLRA 9:12)

1. Iz travmatologicheskogo otdeleniya (nauchnyy rukovoditel' -
prof. D.K.Yasykov) Bol'nitsy im. Botkina.
(OSTEITIS DEFORMANS
clin. aspects & ther.)

KOMARCHEVA, A.G., kandidat meditsinskikh nauk

Late results of the primary tendon suture of the hand and fingers.
Ortop., travn.protax. 17 no.5:37-40 S-0 '56. (MIRA 10:1)

1. Iz travmatologicheskogo otdeleniya (nauchnyy rukovoditel' - prof.
D.K.Yazykov) Moskovskoy klinicheskoy ordena Lenina bol'nitsy im.
S.P.Botkina (glavnyy vrach - prof. A.N.Shabanov)

(HAND, surg.

tendons, primary suture, remote results)

(FINGERS, surg.

same)

VILL', V.I.; KOMARCHEVA, E.S.

Friction welding of immovable parts by means of rotating
a third body. Avtom.svar. 13 no.6:23-27 Je '60.
(MIRA 13:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut
elektrosvarochnogo oborudovaniya.
(Cold welding) (Reinforcing bars---Welding)

32774

S/135/62/000/001/004/007
A004/A101

1 2310 1573

AUTHORS: Shternin, L.A., Komaracheva, E.S., Val'ter, I.G., Engineers

TITLE: Friction welding in the manufacture of turbo-compressors.

PERIODICAL: Svarochnoye proizvodstvo, no. 1, 1962, 14 - 16

TEXT: The authors analyze the results of technological investigations of the friction welding of austenitic 3X 572 (E1572) steel to pearlitic steels of the OKM (OKhM) and 40 X (40Kh) grades. They describe the welding conditions and heat treatment and present the results of mechanical testing of the welding joints. The investigations to study the possibility of using friction welding in the manufacture of turbo-compressor runners were carried out by VNIIESO and TsNIDI. The 40Kh grade steel was subjected to preliminary heat treatment: oil-hardening at 840°C, tempering at 550°C (with subsequent water cooling) - while the OKhM steel was welded as delivered. The austenitic steel blanks were produced by investment pattern casting and subjected to the following heat treatment: austenizing 1,160 - 1,180°C with water quenching, dispersion hardening at 750°C with 15 hours holding and air-cooling. Specimens 16, 20 and 28 mm in diameter were welded. The chemical and mechanical properties of the steels are shown in Card 1/3

32774
S/135/62/000/001/004/007
A004/A101

Friction welding ...

a number of tables. The major part of the welding operation was carried out on the MCT -31 (MST-31) machine, developing an axial stress of up to 14,000 kg, while the relative rotation speed of the blanks being welded amounted to 1,000 rpm. The authors give a description of the welding conditions and point out that an analysis of the results obtained at different welding conditions showed that the notch toughness of the welding joint was stable only under the condition of using a specific peening force equal to 21 kg/mm². In this case, the specific heating stress amounted to 6 kg/mm². A batch of specimens friction-welded under these conditions, was subjected to mechanical tests the results of which are shown in a table. Moreover, fatigue strength tests of the welded specimens with alternating loads were carried out on the BY -8 (VU-8) machine at the Leningradskiy politekhnicheskii Institut im. Kalinina (Leningrad Polytechnic Institute im. Kalinin). In the tensile and endurance tests all welding joints were destroyed along the EI572 steel base metal. The authors present a number of microsections, showing the microstructure of the welded specimens after etching. The analysis of the mechanical and metallographic investigations reveals that the friction welding of austenitic steel to pearlitic steel yields a dependable joint with a sufficiently high strength, exceeding in some cases the indices of welded austeni-

Card 2/3

32774

S/135/62/000/001/004/007
A004/A101

Friction welding ...

tic steels. The equipment existing and being under construction at present for friction welding makes it possible to weld turbo-compressor runners with shafts up to 50 mm in diameter. There are 6 figures and 5 tables.

ASSOCIATIONS: VNIIESO (Shternin, L.S., Komarcheva, E.S.); TsNIDI (Val'ter, I.G.)

4

Card 3/3

ACCESSION NR: AP4040701

8/0135/64/000/006/0023/0024

AUTHORS: Vill', V. I. (Candidate of technical sciences); Komarcheva, E. S. (Engineer); Shternin, L. A. (Engineer)

TITLE: Friction welding of thin-wall pipes made of aluminum alloys

SOURCE: Svarochnoye proizvodstvo, no. 6 (630), 1964, 23-24

TOPIC TAGS: welding, pipe, thin-walled pipe, aluminum alloy, steel lKh18N9T, aluminum ADL, aluminum AMts, welder MST31

ABSTRACT: Butt-welding of pipes with the ratio $D/\delta = 25-30$ often produces deformation and lowers thermal properties. To avoid this, a new method was developed for welding thin-wall pipes different metals with different thermal properties (such as steel and aluminum). This improved friction-welding technique resulted in higher quality of welds, localized heating, small power consumption, and the even distribution of temperature along the welding surface. A serious obstacle in the practical application was the initial ellipticity of pipes and their off-axial alignment in the welder. These shortcomings were eliminated by the design of a special device shown in Fig. 1 of the Enclosure. Here two cylindrical plugs (1 and 2) were fitted into the pipes, a cylindrical rod (3) freely entered

Card 1/3

ACCESSION NR: AP4040701

the bearing (4) which was fixed in the plug (1). The guide placing the rod in the bearing secured an accurate axial alignment of the details; it did not prevent their free rotation before and during welding. Plugs fitting tightly into the pipes eliminated their ellipticity. Experiments were performed with steel 1Kh18N9T and aluminum alloys AD-1, AMts in a MST-31 welder. Brittle interlayers were eliminated, destroyed, or removed in the course of friction welding by the low rate of heating which slowed down the diffusive processes, and by forging-pressures. Orig. art. has: 1 table and 4 figures.

ASSOCIATION: VNIIESO

SUBMITTED: 00

ENCL: 01

SUB CODE: MM

NO REF SOV: 000

OTHER: 000

Card 2/3

ACCESSION NR: AP4040701

ENCLOSURE: 01

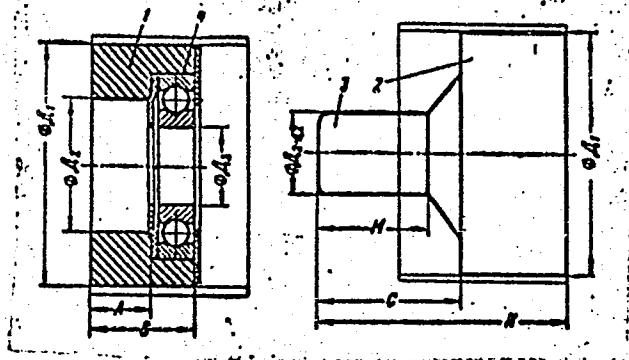


Fig. 1. Device for friction welding of thin-wall pipes.

Card 3/3

APR 11-2/571 (M) EWP (w) ...
PI-u ...
ION NR: AP5007352 S/0125765/000/003/0035/0038

Y. I. (Candidate of technical science), Komarcheva, E. S.

Investigating the processes of friction welding of ferrous metals

Automaticeskaya svarka, no. 5, 1984

Friction welding, compression

The results are briefly reported ...
under these conditions ...
during heating ...
cases ...
shaft welding ...
E1893-40MAG E1785-40MAG

AP 5997352

Each friction-welded lap joint of steel wire mesh fully operated
Nov64; three manufacturing methods compared with normal welding
practices. Also, friction welding of cutting and
concrete-reinforcing rods, and other related work.
Fig. art. has: 3 figures and 1 table

NON: VNIESO

END: 19Nov64

ENCL: 00

SUB CODE: MM

SOV: 000

OTHER: 000

L. 36056-66 EWT(m)/DHP(y)/T/EMP(t)/EWT/EWP(x) TID(a) ID/ry
ACC NR: AP6014156 (N, A) SOURCE CODE: UR/0114/65/000/012/0026/0029

AUTHOR: Val'ter, I. G. (Engineer); Komarchava, E. S. (Engineer) 41
40
B

ORG: none

TITLE: Friction welding of high-alloy steels used in diesel supercharger elements

SOURCE: Energomashinostroyeniya, no. 12, 1965, 26-29

TOPIC TAGS: austenitic steel, pearlitic steel, low alloy steel, friction welding, supercharger, welding technology/EI696ML austenitic steel, EI787L austenitic steel, EI893L austenitic steel, 40G pearlitic steel, 40Kh pearlitic steel

ABSTRACT: One of the requirements which must be met by the austenitic high-alloy steels used as the material of supercharger elements (rotors) is the possibility of welding them to the low-alloy pearlitic steels of which the rotor shafts are manufactured; this makes for special problems considering that the arc and resistance welding techniques are inadequate for such cases. In this connection, the authors point to the advantages of employing friction welding, as based on experimental findings for the welding of the following combinations of austenitic and pearlitic steels: 1) EI696ML + 40G; 2) EI696ML + 40Kh; 3) EI787L + 40G; 4) EI787L + 40Kh; 5) EI893L + 40G, for which the following conditions are established as optimal: heat-generating pressure $p_h = 6 \text{ kg/mm}^2$; contact pressure $p_c = 21 \text{ kg/mm}^2$;

Card 1/2

UDC: 621.791.669.15-194:621.436

E 35056.66

ACC NR: AP6014156

heating time $t_h = 12 \text{ sec}^{-1}$; total upset $\Sigma U = 3-3.5 \text{ mm}$; relative rotational speed $n = 1000 \text{ RPM}$. This regime assures stable, high-quality joints, as verified by tests of impact strength, tensile strength and static bending as well as by metallographic examinations. Moreover, the employment of friction welding markedly reduces the time required to prepare the rotor and the shaft for welding, as well as the welding time itself, and it also reduces power consumption and dispenses with the need for expensive austenitic electrodes. Orig. art. has: 3 tables and 4 figures.

SUB CODE: 13,11/ SUM DATE: none/ ORIG REF: 010

Joining of Dissimilar Metals ¹³

Card 2/2 vmb

VAJGAND, Vilim; KOMARCEVIC-JEV TIC, Divna

A way for rapid determination of lead and antimony in metallic antimony. Gl hem dr 23/24 no.5/6:321-326 '58/59. (EEAI 10:4)

1. Fakulty of Sciences, Institute of Chemistry, Beograd.
(Lead) (Antimony) (Sulfuric acid)
(Hydrazine sulfate)

SECRET

1. The purpose of this document is to provide information on the activities of the [redacted] in the [redacted] area. This information is being provided to you for your information only and is not to be disseminated outside your agency.

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5. The [redacted] has been identified as a [redacted] and is being monitored for [redacted] activities. The [redacted] has been identified as a [redacted] and is being monitored for [redacted] activities.

1. SHEYKO, A. N., ENGRAZON, L. I. : KOMARDIN, N. T.
2. USSR(600)
4. Soup
7. Applying Bogad's method in the "novyi mylovar" Factory. Masl. Zhir. prom. 17, n0.3 1952.

9. Monthly List of Russian Accessions, Library of Congress, Febuuary 1953. Unclassified/

KOMARDIN, N.T.

Advantages in boiling 60% household soap by the direct method.
Masl.-zhir. prom. 24 no.1:41 '58. (MIRA 11:3)
(Soap)

RUDITSKIY, M.G.; KOMARDINA, G.A.

Errors in the diagnosis of gastric cancer. Vop.onk. 7 no.11:
95-99 '61. (MIRA 15:5)

1. Iz Kurskogo oblastnogo onkologicheskogo dispansera (glav.
vrach. - T.S. Kondrashova) i fakul'tetskoy khirurgicheskoy
kliniki (zav. - prof. M.G. Rudnitskiy) Kurskogo gosudarst-
vennogo meditsinskogo instituta.
(STOMACH--CANCER)

KOMARDINA, G.A.

Late results of surgical treatment of stomach cancer. Vop. onk.
8 no.12:73-77 '62. (MIRA 17:6)

1. iz fakul'tetskoy khirurgicheskoy kliniki (zav. - prof. M.G. Ruditskiy) Kurskogo meditsinskogo instituta (dir. - prof. A.V. Savel'yev) i Kurskogo oblastnogo onkologicheskogo dispansera (glavnyy vrach - T.S. Kondrashova).

1970R 2a 000-2 (SBC/V)-7/EWP(d)/EWP(1) ...
AT 011635 ITR/000/000 000/000 023 0630

Mardina, L. P.; Fel'dman, B. Ya.

27
R+1

Storage transformer memories working under near short-circuit

UNCLASSIFIED. Vsesoyuznoye soveshchaniye po magnitnyim elementam avtomatiki, telemekhaniki i vychislitel'noy tekhniki. Leningrad, 1962. Magnitnyye elementy avtomatiki, izmeritel'noy i vychislitel'noy tekhniki (Magnetic elements of automatic control, remote control, measuring and computing systems)

автоматизации, телемеханики, измерений и вычислительной техники (Magnetic elements of automatic control, remote control, measurement and computer engineering);
Механика. Киев, Naukova dumka, 1964, 62-630

extended storage memory, transformer-coupled near-shortcircuit memory, utilization

необходимое количество информации можно хранить в простейшем и наименьшем количестве оборудования, используя трансформаторно-связанные запоминающие устройства (ЭСМ) в трансформаторно-связанном режиме (М. Б. Великовский, Б. А. Квасов, Вопросы радиоэлектроники, no. 11, 1959; В. С. Баранов, Вопросы радиоэлектроники, no. 1, серия VII,

ATSO11635

In a case, the transformer core becomes remagnetized during the ter-
 address current pulse. The author proposes a new mode of trans-
 in which the remagnetization proceeds during the entire length of
 current, and the rate of change of current is limited by a series res-
 tant. The shape of the resulting current pulse is then close
 . This reduces the magnitude of the remagnetization and, consequently,
 interference stability of the device. These ideas were tested on
 models utilizing ferrite-transistor logic elements and current-
 respectively. The design part of the article describes the short-circuit
 article describes the design and operation of a general memory
 address current shaper, and an alternative design based on current
 limits. Orig. art. has: 5 figures.

ASSOCIATION: None

SUBMITTED: 29Sep64

ENCL: 00

SUB CODE: DP

NO REF NO: 003

OTHER: 000

KOMAFDINA, M. G., POBLESKIY, G. I.

"The fleas of the Kara-Kums near the Aral sea and their importance in the epizootology of the plague." Page 262

Desyatoye soveshchaniye po parazitoloicheskim problemam i prirodnoochagovym boleznyam. 22-29 Oktyabrya 1959 g. (Tenth Conference on Parasitological Problems and Diseases with Natural Foci 22-29 October 1959), Moscow-Leningrad, 1959, Academy of Medical Sciences USSR and Academy of Sciences USSR, No. 1 254pp.

Aralamorskaya Antiplague Station

KOMARDINA, M.G.

Some data on trombiculid mites in the northern part of the Aral
Sea region. Biul. MOIP. Otd. biol. 65 no.5:139 8-0 '60.

(MIRA 13:12)

(ARAL SEA REGION—CHIGGERS) (MITES)

KRYLOVA, K.T.; VARSHAVSKIY, S.N.; SHILOVA, Ye.S.; SHILOV, M.N.; POZLESSKIY, G.I.;
KOMARDINA, M.G.

Characteristics of interspecific contact in colonies of the greater
gerbil (*Rhombomys opimus* Licht.) in the northern part of the Aral
Sea region. Zool. zhur. 40 no.3:434-446 Mr '61. (MIRA 14:3)

1. Aral Sea Anti-Plague Station and Aral Branch of the Moscow
Society of Naturalists.

(Aral Sea Region—Gerbils as carriers of disease)

KOMARDINA, M.G.; LOSEVA, Ye.I.; YEREMITSKAYA, N.A.

Occurrence of the tick *Hyalomma asiaticum asiaticum* infected
with plague on a camel. *Biul.MOIP.Otd.biol.* 67 no.4:157-158
Jl-Ag '62. (MIRA 15:10)
(ARAL SEA REGION--TICKS AS CARRIERS OF DISEASE)
(PARASITES--CAMELS)

KOMARDINKINA, G.N.

KONYUKHOV, I.A. KOMARDINKINA, G.N.

Regional lithology of upper Jurassic carbonate deposits of the
Northeastern Caucasus. Dokl. AN SSSR 111 no.6:1318-1321 D '56.
(MLRA 16:3)

1. Moskovskiy gosudarstvennyy universitet in. M.V. Lomonosova.
Predstavleno akademikom S.I. Mironovym.
(Caucasus, Northern--Geology, Stratigraphic)

KOMARDINKINA, G.N.

AUTHOR: Komardinkina, G.N.

132-12-3/12

TITLE: Facies Characteristics and Oil and Gas-Bearing Possibilities of Upper Jurassic Sediments in the North-Eastern Caucasus (Fatsial'nyye osobennosti i neftegazonosnost' verkhneyurskikh otlozheniy Severo-Vostochnogo Kavkaza)

PERIODICAL: Razvedka i okhrana nedr, 1957, # 12, p 10-18 (USSR)

ABSTRACT: Three essentially different lithologic complexes were involved at the forming of the Upper Jurassic layers of the Kabardince Balkar and North-Osetiya ASSR. They are:

1. The Lower carbonate terrigenous layer, corresponding the Callovian stage.
2. The middle carbonate, including the Upper Callovian, Oxfordian and Lusitanian stages.
3. The upper sulfate-carbonate stage, belonging to the Kimeridgian-Tithonian stages, in several districts replaced by terrigenous deposits.

After reviewing the characteristics of the different geologic strata of the Caucasus, the author gives a detailed account of the oil and gas-bearing properties of the Upper Jurassic formations. Deposits of crude oil and gas located in Upper Jurassic sediments in north Caucasus show various oil-gas manifestations:

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commercial deposits of oil and gas, asphaltites in porous rock formations, high bituminous carbonate rocks, secretion of carbohydrate gases and hydrogen sulfide gases from the surface of Upper Jurassic sediments (Fig. 5). The first oil and gas deposits were discovered in the Barakayevskaya district of north-western Caucasus in 1951. The second deposit was located at Datykh, where a well drilled through the upper part of Upper Jurassic carbonate sediments produced very light crude oil of the condensation type (approximately 5 tons in 24 hours). At several points of the North-Osetiya and Kabardino-Balkar ASSR in rocks of the Upper Jurassic layers were located asphaltite deposits, whereby the most important deposits were found to be associated with cavernous and porous dolomites and limestones at places where the Lusitanian stage is thickest. The highest content of bitumen was found in the limestone layers of the Oxfordian stage, especially in the basin of the Gisel'don, Flagdon, and Baksan rivers. It must be noted that a number of strata of the Upper Jurassic complex have sufficiently good retaining properties, for which reason they may be considered as

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likely prospects of oil and gas deposits. The sandstones and siltstones of the Callovian stage have the highest retaining properties, (up to 20 %). The author is of the opinion that the most promising zones for prospecting for oil and gas in the eastern Cis-Caucasus area are located at:

1. The eastern anticline zone of Dagestan in the region of the Kukur-Tausk and the Chubararkinsk elevations, especially at the first of these elevations with shallow Upper Jurassic sediments.

2. The vast territory of the Chernogorsk monocline, where the "Benoy" and "Datykhskoys" elevations are of special interest, and where the thickness of layers covering the Upper Jurassic deposits does not exceed 2,500-2,600 m.

3. The zone of upper layers of the Grosnyy district with relatively shallow deposits of the Upper Cretaceous period, proved by drill holes at Karabulak and Achaluk. Exploitation of Mesozoic complexes of greater depth, including Upper Jurassic strata can be accomplished at these formations. The depth of Upper-Jurassic deposits has been established to be

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KOMARDINKINA, G. N.

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20-3-49/59

TITLE

The Kelloway Deposits of the Central Part of North Caucasus.
(Kelloveyskiya otlozheniya tsentral'noy chasti Severnogo Kavkaza).

PERIODICAL

Doklady Akademii Nauk, 1957, Vol. 115, Nr 3, pp. 597 - 600 (USSR.).

ABSTRACT

Geological research works detected in recent years an exploitable gas-, petroleum resp. occurrence in the Kelloway deposits in the district of Maykop. Therefore this complex can be considered as promising also in other districts of North Caucasus, especially in its central part. Therefore it is extremely important to explain the character of the deposits of this level here. The field- and laboratory investigations, especially those of the sector of the Chegem river in the Kabardinian-Balkar autonomous republic up to the Great Laba river facilitated the determination that terrigenous rocks are predominating here to which carbonaceous rocks are subordinated. The lower sublevel is built of terrigenous rocks whereas carbonaceous rocks occur in the central- and lower level. Of clastic rocks occur here gravelites more rarely conglomerates. The gravelites are, according to their composition, similar to "arcasis". The conglomerates form under the gravelites and arenaceous rocks intermediate layers of varying thickness or occur as basalt horizon of the level. Sands and arenaceous rocks preserve the same mineral composition as the gravelites. In the heavy fraction of the arenaceous rocks and gravelites minerals of the constant group occur in considerable quantities. zirconium, garnet,

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The Kelloway Deposits of the Central Part of North Caucasus.

turmaline and rutile and such of the ilmenite-magnetite group, furthermore of the glimmer- and titaniferous group. The middle- and fine-grained arenaceous rocks are irregularly sorted. Argillaceous rocks take part only to an unimportant extent in the building of the level. Marly and carbonaceous rocks have a restricted distribution, especially in the west of the district. The authors succeeded by means of detailed petrographic-mineralogical investigations to detect the main conformities of the mentioned rock types. The localization plan of the lithic facies appearing from it facilitated the indication of the position of the main- and partial sources of the clastic material. As far as a general coarsening of the material is indicated beginning with the South districts towards the north, it is possible to indicate the position of the main continent within the boundaries of which the metamorphized carbonaceous rocks were eroded. This general picture is complicated by the occurrence of a partial elevation in the district of Pyatigor'ye which projected over the sea level in the middle jurassic age. Mainly palaeozoic granites and grandiorites were corroded. Then a part of these massifs took part in a depression and was covered by the deposits of the Kelloway sea. Henceforth a continental district near Kislovodsk and in the north of it exercises the main influence. In most recent time the presence of eruptive rocks under the upper jurassic mass was detected in the vicinity of Yessentuki. These eruptive rocks are quartz diorites.

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The Kelloway Deposits of the Central Part of North Caucasus
APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000824020012-2

(There are 1 figure, 1 table, 3 Slavic references).

ASSOCIATION Petroleum Institute AN USSR (Institut nefti Akademii nauk SSSR).

PRESENTED By S. I. Mironov, Academician, January 25, 1957

SUBMITTED January 21, 1957.

AVAILABLE Library of Congress

Card 3/3

KOMARDINKINA, G. N., Cand Geol-Min Sci -- (diss) "Petrography of
Upper Jurassic deposits in the eastern and central part of ^{the} ~~Northern~~
Caucasus and paleogeography of the time of their formation." Mos, 1958.
15 pp (Acad Sci USSR, Inst of Petroleum, Laboratory of Paleography
in Prof V. P. Baturin), 120 copies (KL, 15-58, 113)

- 14 -

KOMARDINKINA, G.N.; PRYAKHINA, Yu.A.; KONYUKHOV, I.A.

Studying fractured reservoir rocks and their importance for oil and gas prospecting in Daghestan. Razved. i okh. nedr 27 no.3: 17-26 Mr '61. (MIRA 14:5)

1. Moskovskiy gosudarstvennyy universitet.
(Daghestan—Petroleum geology)
(Daghestan—Gas, Natural—Geology)

KOMARDINKINA, G.N.

Siliceous formations in upper Jurassic deposits of the northeastern
Caucasus. Dokl. AN SSSR 140 no.2:445-447 S '61. (MIRA 14:9)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
Predstavleno akademikom N.M.Strakhovym.
(Caucasus--Silica)

KONYUKHOV, I.A.; KOMARDINKINA, G.N.

New mineral formations in Upper Jurassic deposits of the
northeastern Caucasus. Vest.Mosk.un.Ser.4: Geol. 17 no.2:20-27
Mr-Apr '62. (MIRA 15:5)

1. Kafedra geologii i geokhimii goryuchikh iskopayemykh
Moskovskogo universiteta.
(Caucasus, Northern--Minerals)

KONTUKHOV, I.L.; PRYAKHINA, Yu.A.; KOMARDINKINA, G.N.

Lithologic characteristics of Upper Cretaceous sediments in
Daghestan. Izv. vys. ucheb. zav.; geol. i razv. 6 no.2:69-83
F 163. (MIRA 1616)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.
(Daghestan--Geology, Stratigraphic)

GRACHEVSKIY, M.M.; KHACHATRYAN, R.O.; KOMARDINKINA, G.N.

Reefy nature of the Khilkovo carbonate massif. Dokl. AN SSSR 153
no.2:429-432 N '63. (MIRA 16:12)

1. Predstavleno akademikom D.I.Shcherbakovym.

KOMARDINKINA, G.R.; YURIN, G.A.

Jointing of Upper Jurassic carbonate sediments of Daghestan.
Razved.i okh.nedr. 28 no.11:14-19 N '62. (MIRA 15:12)

1. Institut geologii i razrabotki goryuchikh iskopayenykh
AN SSSR (for Komardinkina). 2. Moskovskiy gosudarstvennyy
universitet (for Yurin).
(Daghestan—Jointing (Geology))

KOMAREK, A.

96-1-23/31

AUTHOR: Komarek, A., Engineer.

TITLE: The Economic Use of Coal Mills (Ekonomicheskoye ispol'zovaniye ugol'nykh mel'nits)

PERIODICAL: Teploenergetika, 1958, Vol.5, No.1, p. 82 (USSR)

ABSTRACT: This summarises a Czech article*which compares fine and coarse milling of pulverised fuel. If the fuel is coarsely milled, the milling costs fall, but the fuel is rather harder to burn.
There are 1 figure and 1 Non-Slavic reference.

AVAILABLE: Library of Congress.

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* Energetika Nr 4, 1957, pp. 198-205

KOMAREK A

AUTHOR: Komarek, A.

96-4-19/24

TITLE: The effect of system frequency-fluctuations on the operating reliability of steam-turbine blades.
(Vliyaniye izmeneniy chastoty seti na ekspluatatsionnyu nadezhnost' lopatok parovykh turbin).

PERIODICAL: Teploenergetika, 1958, 5, No.4, pp.89-90 (USSR).

ABSTRACT: This is a summary of an article that appeared in the Czech journal "Energetika", No.8, 1957. It is concerned with the vibration of turbine blades as affected by variations in turbine speed and other conditions. Quite small speed changes may cause serious harm by altering the vibration of blades.
There are 3 figures and 1 Czech reference.

AVAILABLE: Library of Congress.

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SOV/96-59-4-16/21

AUTHORS: ~~Komarek, A., Engineer~~
Morozov, B.I., Candidate of Technical Sciences

TITLE: A Steam Turbine of 100 MW (Parovaya turbina moshchnost'yu 100 Mwt)

PERIODICAL: Teploenergetika, 1959, ⁶Nr 4, pp 84-86 (USSR)

ABSTRACT: The engineering works imeni Lenin in Plzen is manufacturing the first Czechoslovakian steam turbine of 100 MW for initial steam conditions of 135 atm and 555°C with reheat to 530°C. A cross-sectional drawing of this set is given in Fig.1, it will operate as a unit with a drum type boiler. The blading of the last stage is 585 mm long. The high pressure rotor is a solid forging and the discs of the first nine stages of the medium pressure cylinder are also forged integral with the shaft. The discs of the last four stages of the medium pressure cylinder and of the low pressure cylinder are fitted on the shafts. The twisted blades of the last two low pressure stages are stampings, all the others are machined forgings. Seven stage regenerative feed water heating is used to a temperature

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SOV/96-59-4-16/21

A Steam Turbine of 100 MW

of 230°C. For the sake of thermal flexibility the high pressure turbine casing has two walls, an inner and an outer, so that the cylinder wall can be made relatively thin and the horizontal flange is narrow. Steam from the forward gland is passed into the flange. The quantity of steam used is such that the flange heats up at practically the same rate as the cylindrical part of the framework. The set is started up from the cold with reduced steam conditions; starting from the hot condition is also described. Lagging has been used to prevent the lower part of the frame from cooling more rapidly than the top. The turbine design was affected by the circumstance that for the first half of its life the set will take base load and will be kept as fully loaded as possible but after 1970 the base load will be taken by atomic power stations and this set will be used to cover variations in the load on the power system. It will, therefore, be necessary to stop the set every day and so austenitic steels cannot be used for large parts. In fact, austenitic steels were only used to make the

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SOV/96-59-4-16/21

A Steam Turbine of 100 MW

relatively thin superheater tubes. Brief data are given about the size of the power station buildings and other facilities. There are 2 figures and 2 Czech references.

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SOV/96-59-7-18/26

AUTHORS: Komárek, A., Engineer, and Morozov, B.I., Candidate of Technical Sciences

TITLE: A Combined Steam-gas Installation. (Kombinirovannaya parogazovaya ustanovka)

PERIODICAL: Teploenergetika, 1959, Nr 7, pp 87, (USSR)

ABSTRACT: A combined steam-gas turbine installation of 4 000 kW is now commencing to operate in Czechoslovakia. A schematic circuit diagram of the installation is given in Figure 1. A single-stage centrifugal compressor with radial blades compresses the air to a pressure of 2.8 atm. Another compressor operates on blast-furnace gas which is compressed in the combustion chamber to a pressure of 3.2 atm. The gas is mixed with sufficient air to ensure complete combustion. At the outlet from the combustion chamber the combustion products are mixed with an additional quantity of air sufficient to reduce the temperature to 900°C. The gases are still further cooled on passing through a heat exchanger. At a temperature of 750°C the gas flow

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SOV/96-59-7-18/26

A Combined Steam-gas Installation

is delivered to a turbine, leaving it at a temperature of 568°C and a pressure of 1.03 atm. These exhaust gases pass to a boiler where they are cooled to 120°C. The boiler generates saturated steam, at a pressure of 25 atm heated to 600°C in a super-heater, which drives a steam turbine. The gas turbine works on the open cycle and has an efficiency of 27.3%. The main characteristics of the turbine are given. It has been calculated that when an additional combustion chamber has been installed between the gas turbine and the boiler the power station burning blast-furnace gas will operate with an efficiency of 32% and an output of 20 MW. The gas will be delivered to the turbine at a temperature of 700°C, and the steam conditions will be 40 atm and 500°C. The cycle described is suitable for installations of 20 - 50 MW. There are 2 figures and 2 references, one of which is Soviet and 1 Czechoslovak.

Card 2/2

KOMAREK, A.; STRIGIN, B.K.

Temperature dependence of the emissivity of stainless steel for
different types of surface treatment. Teplofiz. vys. temp. 1
no.1:30-32 JI-Ag '63. (MIRA 16:10)

1. Moskovskiy energeticheskly institut.

S/170/63/006/003/011/014
B104/B186

AUTHORS: Agababov, S. G., Komarek, A.

TITLE: Experimental determination of the ^{emissivity} degree of blackness of platinum and of platinum-rhodium wires

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 6, no. 3, 1963, 99 - 102

TEXT: The temperature dependence of the degree ϵ of blackness of platinum and platinum-rhodium wires was determined by measuring the quantity of heat transferred from electrically heated wires to the inner surface of a watercooled glass container in vacuo (10^{-5} - 10^{-6} Newton/m²). The aim was to eliminate systematic errors due to convective heat transfer. Results: ϵ as a function of temperature t (°C) may be described by $\epsilon = 0.0386 + 1.29 \cdot 10^{-4}t - 0.863 \cdot 10^{-9}t^2$ (platinum) and by $\epsilon = 0.0809 + 0.571 \cdot 10^{-4}t + 0.0565 \cdot 10^{-6}t^2$ (platinum-rhodium). The maximum relative error of the experimental results was about 2 %, the mean square deviations were about $\frac{\Delta^2}{\epsilon^2} = 0.14$ % and $\frac{\Delta^2}{\epsilon^2} = 0.47$ %, respectively. There are 2 figures.

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Experimental determination of ...

S/170/63/006/003/011/014
B104/B186

ASSOCIATION: Energeticheskiy institut, g. Moskva (Power Engineering
Institute, Moscow) Zavod imeni V. I. Lenina, g. Pl'zen,
ChSSR (Plant imeni V. I. Lenin, Plzeň, Czechoslovakia)

SUBMITTED: September 19, 1962

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APR 04 1965 Z. 0038/52.000.009/0312/0322

Novak, Jan (Gulovets, Ya.); Juza, Jan (Juza, Ya.); Komarek, Arnost; Kozel, Karel (Kerzhenek, Ya.); Wagner, Karel (Vagner, K.); Krizak, Vladimir (Krizak, V.); Tomcik, Jan (Tomchik, Ya.)

Development and construction problems of the first Czechoslovak nuclear power plant

Prerna energie, no. 9, 1964, 312-322

nuclear power plant, reactor, pressure vessel, power output, fuel

The article reports on the principal directions of research which was connected with the testing of the reliability of all the important parts of the first Czechoslovak nuclear electric power plant. It also reports on the present stage of the development and construction of the technological scheme and of the construction of the power plant. The plant uses gas cooled heavy-water reactor with natural metallic uranium as fuel being built at the time in the CSR. The relatively large output capacity of the Czechoslovak nuclear power plant, reactor, pressure vessel, power output, fuel