

KAZAKOV, M.G.

Effect of extensive bleedings on daily diuresis and on the diuretic effect of mercusal in patients with insufficient blood circulation. Vrach.delo no.2:197-198 F '56. (MLRA 9:7)

1. Kafedra fakul'tetskoy terapii (zaveduyushchiy professor B.S. Shklyar) Vinnitskogo meditsinskogo instituta
(DIURETICS AND DIURESIS)
(BLOOD--CIRCULATIO, DISORDERS OF) (NEPTAL)

KAZAKOV, M.G.

Effect of therapeutic bloodletting on the degree of cyanosis, the size of the liver, and lung capacity in patients with cardiovascular diseases. Vrach.delo supplement '57:16 (MIRA 11:3)

1. Kafedra fakul'tetskoy terapii (zav.-prof. B.S.Shklyar)
Vinnitskogo meditsinskogo instituta.
(BLOODLETTING) (LIVER) (LUNGS)

USSR / Human and Animal Physiology (Normal and Pathological).
Blood.

T-4

Abs Jour : Ref Zhur - Biologiya, No 13, 1958, No. 60331

Author : Kazakov, M. G.

Inst : Vinnitsa Medical Institute

Title : The EKG Changes During Therapeutic Phlebotomy in Patients
with Cardiovascular Lesions

Orig Pub : Sb. nauchn. tr. Vinnitsk. med. in-ta, 1957, 9, 48-51

Abstract : No abstract given

Card 1/1

KAZAKOV, M.G., Cand Med Sci -- (diss) "Effect of
curative bleedings ^{with} of certain hemodynamic and other
indicators in patients with ^{affection} of the cardio-vascular
system. " Odessa, 1958, 20 pp (Odessa State Med Inst in
N.I. Pirogov) 200 copies (KL, 32-58, 111)

- 65 -

KAZAKOV, M.G.

Prophylaxis and therapy of pulmonary emphysema by means of an
elastic chest band. Vrach. delo no.1:79-81 '59. (MIRA 12:4)

1. Kafedra propedevticheskoy terapii (zav. - prof. M.Ye. Milimovka)
Vinnitskogo meditsinskogo instituta.
(EMPHYSEMA, PULMONARY)

KAZAKOV, M.L., inzhener

Gas flame tempering of the thread on a screw pulper. Bum.prom.
30 no.6:25-26 Je '55. (MLRA 8:9)
(Paper making machinery)

Kazakov, M.L.

AUTHOR: Kazakov, M.L., Engineer 135-12-13/17

TITLE: Device for Automatic Gas Cut-Off at Back Surges (Ustroystvo dlya avtomaticheskogo vyklyucheniya gazov pri obratnykh udarakh)

PERIODICAL: Svarochnoye Proizvodstvo, 1957, # 12, p 37-38 (USSR)

ABSTRACT: The gas cut-off device described is invented by the author (author's certificate No. 106328, granted in May 1957). It is introduced into practical use at chemical plants. This short article gives a detailed description and drawings of the cut-off device which comprises an electrical switch but can also work with a mechanical switch.

There are 4 drawings.

AVAILABLE: Library of Congress

Card 1/1

KAZAKOV M.L.

AUTHOR: Kazakov, M.L., Engineer.

122-2-16/23

TITLE: Oxyacetylene surface flame hardening of crank pins by the method of rapid rotation (Poverkhnostnaya gazo-kislorodnaya zakalka sheyek kolenchatykh valov sposobom bystrogo vrashcheniya)

PERIODICAL: "Vestnik Mashinostroyeniya" (Engineering Journal), 1957, No.2, pp. 67 - 70 (U.S.S.R.)

ABSTRACT: Flame hardening with rotation (0.10 to 0.12 m/min surface speed) wherein the surface is first progressively heated and then cooled, is the most suitable method under field conditions. A soft band results from overlapping of the heating regions at the end of quenching. A special head is illustrated and described for oxyacetylene and oxymethane flame hardening. Overlapping is prevented by rapid rotation (10 to 12 m/min surface speed) and simultaneous heating and cooling of the whole surface. The set-up for this operation on an ordinary engine lathe is shown. Service experience has proved favourable.

Card 1/1 There are 7 figures, including 1 graph and 2 tables.

ASSOCIATION: VNIIAVTOGEN

AVAILABLE: Library of Congress

KAZAKOV, M.L.; RAGAZINA, M.F., inzh., ved. red.; L'VOVSKAYA, B.I.,
red.; SOROKINA, T.M., tekhn. red.

[Gas-flame hardening of low-module gear sheels]Zakalka gazovym plamenem melkomodul'nykh zubchatykh koles. Moskva, Filial Vses. in-ta nauchn. i tekhn. informatsii, 1958. 9 p. (Peredovoi nauchno-tekhnicheskii i proizvodstvennyi opyt. Tema 3. (MIRA 16:2)
No. M-58-337/12)

(Steel--Hardening)

KAZAKOV, M. M.

Jun 48

USSR/Medicine - Medical Societies
Medicine - Surgery

"Minutes of the Leningrad Society of Surgeons and Orthopedists," G. Ya. Epshteyn, 7 pp

"Vest Khirurgii" Vol LXVIII, No 6

The 252d meeting opened 14 Apr 48; I. L. Krupko, Chm, Ya. M. Pisarnitskiy, Secy.
The 253d on 28 Apr was a joint meeting with doctors of the Traumatol Inst imeni Prof R. R. Vreden; S. S. Gibrolav, Chm, M. F. Yeretskaya, Secy. Among reports read were
D. M. Zlotnikov's "Two Cases of Surgical Treatment for Pseudoarthrosis and
Osteomyelitis of the Humerus," and M. M. Kazakov's "Some Cases of Osteosynthesis."

57/49T75

KAZAROV, M. M.

Surgical treatment of the fractures of extremities Leningrad Mediz, 1952.
171 p.

KAZAKOV, H.N.

Prospect of the expansion of the canning industry of Kirghizistan.
Kon.i ov.prom. 17 no.11:10-12 N '62. (MIRA 15:11)

1. Upravleniye promyshlennosti prodovol'stvennykh tovarov soveta
narodnogo khozyaystva Kirgizskoy SSR.
(Kirghizistan--Canning industry)

KAZAKOV, M.P.

Cover formation of the Don glacier tongue. Trudy MINKHIGP
no.25:37-108 5%. (MIRA 15:5)
(Don Valley--Soil)

KAZAKOV, M.P.

Tectonics and basic stages in the development of the Caspian
Lowland. Trudy MINKHiGP no.36:49-64 '62. (MIRA 15:6)
(Caspian Lowland--Geology, Structural)

KAZAKOV, M.P.; VASIL'YEV, Yu.M.; MIL'NICHUK, V.S.

Thickness of Pliocene sediments in the Novobogatinsk salt dome
region. Trudy MINKHIGP no.36:119-126 '62. (MIRA 15:6)
(Novobogatinsk region--Geology, Stratigraphic)

KAZAKOV, M. P.

1964

DECEASED

c. '64

KAZAKOV, Moisey Vladimirovich; DEMIDOV, Petr Georgiyevich;
OTKIDACH, A.A., nauchn. red.

[Use of wetting agents to extinguish fires] Primeneni
smachivatelei dlia tusheniia pozharov. Moskva, Stroi-
izdat, 1964. 52 p. (MIRA 18:1)

GUNBIN, Yu.G.; DEMIDOV, P.G., rukovoditel' diplomnogo proyekta; KAZAKOV,
M.V., rukovoditel' diplomnogo proyekta

Use of wetting agents in fire extinction. Pozh. bezop. no.3;
'76-87 '64. (MIRA 18:5)

KAZAKOV, Moisey Vladimirovich; DEMIDOV, Petr Georgiyevich;
OTKIDACH, A.A., nauchn. red.

[Using wetting agents to extinguish fires] Primenenie
smachivatelei dlia tusheniia pozharov. Moskva, Stroizdat,
1964. 52 p. (IIRA 18:3)

KAZAKOV, M. Ya. (Senior Veterinary Surgeon, Breeding Sovkhoz "Krasnaya Zvezda" / "Red Star" / AMITROV, V. K. (Penza Oblast' Veterinary Laboratory) NECHAYEV, S. P. (Veterinary Surgeon, Veterinary Department of Oblast' Agricultural Administration) and MEDVEDEV, N. A. (Main Veterinary Surgeon, Bashmakovsk Raion, Penza Oblast).

"Pasteurellosis of cattle."

Veterinariya, Vol. 38, No. 3, 1961, p. 30.

AMITROV, V.K.; NECHAYEV, S.P., veterinarnyy vrach; MEDVEDEV, N.A.;
KAZAKOV, M. Ya.

Pasteurellosis of cattle. Veterinarlia 38 no.3:30-32 Mr '61

1. Penzerskaya oblastnaya veterinarnaya laboratoriya (for Amitrov).
2. Veterinarnyy otdel Penzenskogo oblastnogo upravleniya sel'skogo khozyaystva (for Nechayev).
3. Glavnyy veterinarnyy vrach Bashmakovskogo rayona, Penzenskoy oblasti (for Medvedev).
4. Starshiy veterinarnyy vrach plemennogo sovkhoha "Krasnoye znanya" Bashmakovskogo rayona (for Kazakov).

KAZAKOV, N.; TITOV, V.; SAKHONENKO, Ye., tekhn. red.

[Intensive production on each farm] Kazhdomu khoziaistvu -
intensivnoe proizvodstvo. Smolensk, Smolenskoe knizhnoe izd-
vo, 1962. 55 p. (MIRA 16:11)
(Smolenak Province--Agriculture)

BERDNIKOVA, Nadezhda Mikhaylovna; KORCHAGIN, Boris Pavlovich;
KAZAKOV, N., red.

[Winter wheat as the main grain] Ozimaya pshenitsa - glavnyi
khleb. Smolensk, Smolenskoe knizhnoe izd-vo, 1963. 17 p.
(MIRA 17:7)

1. Direktor sovkhosa "Zhukovskiy" Smolenskogo proizvodstven-
nogo upravleniya (for Korchagin). 2. Agronom kolkhoza im.
Pushkina Gzhatskogo proizvodstvennogo upravleniya (for
Korchagin).

TARASOV, Stepan Federovich; KAZAKOV, N., red.

[Sugar beet as a strong crop] Sakharnaia svekla - rogu-
chala kul'tura. Smolensk, Smolenskoe knizhnoe izd-vo,
n.d. 22 p. (MIRA 17:7)

1. Glavnyy agronom plemzaveda in. Kominterna, Smolenskoj
oblasti (for Tarasov).

BARASHKOV, Ivan Vasil'yevich, kand.tekhn.nauk; KAZAKOV, Nikolay
Andreyevich, inzh.; ETMANOV, S.Ya., red.; ~~DONSKAYA, O.D.~~;
tekhn.red.

[Improving the organization of maintenance and repair of
automobiles in automotive transportation units] Puti uluchshe-
niia organizatsii tekhnicheskogo obsluzhivaniia i remonta avto-
mobilei v avtokhoziaistvakh. Moskva, Avtotransizdat, 1959.

45 p.

(MIRA 12:9)

(Automobiles--Maintenance and repair)

BARASHKOV, I., kand.tekhn.nauk; KAZAKOV, N.,^{A.} inzh.; MIKHEYEV, G., inzh.

New system for accounting maintenance and repair of motor
vehicles in automotive transportation units. Avt.transp.

38 no.8:14-18 Ag '60.

(MIRA 13:8)

(Motor vehicles--Maintenance and repair--Accounting)

AKULOVA, N.S., kand.veterin.nauk; D'YAKONOV, L.P., kand.veterin.nauk; KUNTASHOVA,
A.N., mladshiy nauchnyy sotrudnik; KAZAKOV, N.A., mladshiy nauchnyy so-
trudnik

Use of chlortetracycline against anaplasmosis in sheep. Veterinariia 40
no.9:29-31 S '63. (MIRA 17:1)

1. Vsesoyuznyy institut eksperimental'noy veterinarii.

KAZAKOV, N. A.

Kazakov, N. A.

15 (3)
4.00

Burning of the solid fuel introduced in the body of ceramic objects. N. A. Kazakov. *Sbornik Trudov Kazansk. Vuzov. Seriya Khim. i Metal. Materialy* 1953, No. 2, 1-18. *Referent. Zhur. Khim.* 1955, Abstr. No. 55783. Based upon theoretical considerations of the question of diffusion burning of the fuel introduced in the clay mass of ceramics, the following conclusions are reached. (1) It is possible to introduce into the clay fuel slag, as well as fines of local coal, thus speeding the firing process, which is very important in the tunnel ovens. (2) For fast burning of the fuel introduced in the clay the firing should be made with maximum excess, during which temperature reached necessary for the firing of the objects. (3) While preserving the necessary strength, the correctly chosen form of the hollow brick with the least equiv. burning depth guarantees the maximum speed of fuel burning. (4) For production of solid porous bricks, the use of high-carbonate clays and volatile-rich fuel which speeds up the firing process, is recommended. N. Vashilov

111

АВТОМОБИЛЬ. Иван Васильевич; КИМЕНОВ, Николай Николаевич; МИННЕНЕВ,
German Nikolayevich; GRIMBERG, P.I., ed.

[Organization of the technical maintenance and running
repair of motor vehicles] Organizatsiia tekhnicheskogo ob-
sluzhivaniia i tekhnicheskogo remonta avtomobilei. Moskva,
Transport, 1964. 202 p. (MIRA 17:11)

L 19838-65 EFA(n)-2/EWT(m)/EPF(n)-2/EWP(t)/EWP(b) Ft-10/Fu-4
IJP(c) JD/WH/JG

ACCESSION NR: AP4049062

S/0148/64/000/011/0011/0015

AUTHOR: Kazakov, N. B.; Pronin, L. A.; Filippov, S. I.

TITLE: Acoustic experiments on liquid Sb-Zn alloys

B

SOURCE: IVUZ. Chernaya metallurgiya, no. 11, 1964, 11-15

TOPIC TAGS: antimony alloy, zinc alloy, liquid alloy, sound transmission, ultrasound velocity

ABSTRACT: The antimony-zinc system was studied and the dependence of the speed of sound on temperature from the melting point to 1000C for Sb and to 850C for Zn was determined by the impulse method conceived by L. A. Pronin and S. I. Filippov. The speed of sound in zinc decreases slightly with increasing temperature, while it remains fairly constant in antimony. Above 850C the experiment becomes difficult as both metals tend to boil around 900C. Three alloys consisting of 31, 59, and 81 at. % Zn were studied acoustically at temperature intervals of 200C from the melting point. Chemical analyses were performed both before and after experimentation, a thick layer of neutral slag was used to lower boiling loss, and a platinum-platinorhodium thermocouple was used to control temperature. The speed of ultrasonic waves for isotherms of 650 and 800C, the adiabatic compressibility or reciprocal of the product of density and speed of sound at those temperatures, and the change in the temperature coefficient of the speed of ultrasonic waves were

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ACCESSION NR: AP4049062

plotted as functions of composition. The fact that the increasing curves for the speed of ultrasonic waves cross each other, as do the decreasing curves for adiabatic compressibility, serve to indicate a region between 30 and 80% Zn where intermetallic compounds are formed. Between 650 and 850C, the speed of sound in and the conductivity of Sb seem to be independent of temperature. The area of intermetallic compounds in the Sb-Zn system demands further experimentation. Orig. art. has: 4 graphs, 1 table, and 1 formula.

ASSOCIATION: Moskovskiy institut stal' i splavov (Moscow Insti. of Steel

AMANOVA
SUBMITTED: 27Jul64

ENCL: 00

SC CODE: MM

NO REF SOV: 004

OTHER: 007

Card 2/2

L 11016-66 INT(M)/ENR(W)/T/ENR(T)/STR IR(c) NA/SS/IE
ACC NR: AP6021706 (N) SOURCE CODE: UR/0148/66/000/003/0008/0014

AUTHOR: Filippov, S. I.; Kazakov, N. B.; Pronin, L. A.

72
67
B

ORG: Moscow Institute of Steel and Alloys (Moskovskiy institut stali i splavov)

TITLE: Speed of the ultrasound and compressibility in molten metals and the relation of these two characteristics to various physical properties

SOURCE: IVUZ. Chernaya metallurgiya, no. 3, 1966, 8-14

TOPIC TAGS: ultrasonic velocity, adiabatic compression, molten metal, atomic property, melting point, heat of vaporization

ABSTRACT: This investigation deals with measurements over a broader temperature range and for a greater number of metals than the study by V. V. Baydov and L. L. Kunin (V sb. "Teoriya metallurgicheskikh protsessov," vyp. 40, TsNIChM, 1965, 94-104). To this end, quartz rods as well as rods of metallic tungsten (coated with silver to protect it against dissolution in the molten metals) were employed as the guides for the ultrasonic waves. For most molten metals the speed of sound decreases in a near-linear manner with increasing temperature. But for Bi and Sb over a certain temperature range above their melting points

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the speed of sound changes insignificantly (Fig. 1). The mass of the atom and valent electrons

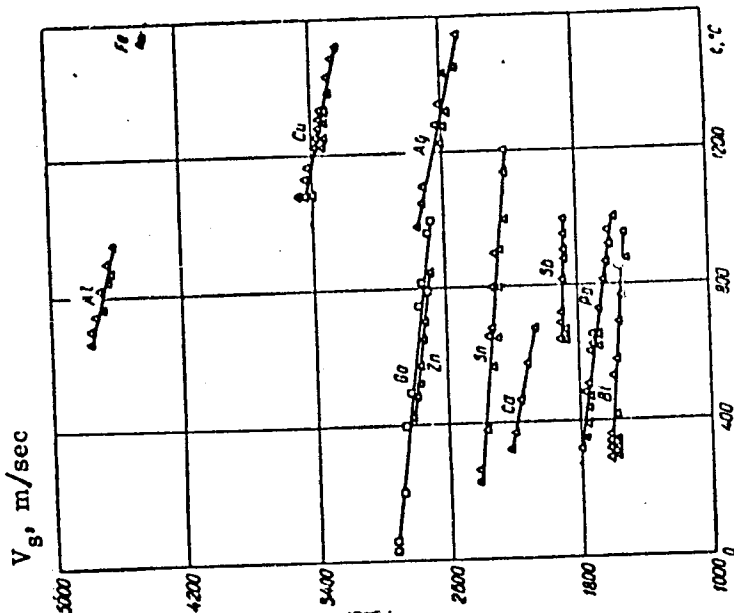


Fig. 1. Speed of sound in molten metals as a function of temperature

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L 04807-67 EWT(m)/EWP(t)/ETI IJP(c) WW/JD/JG

ACC NR: AP6027066

(N)

SOURCE CODE: UR/0148/66/000/005/0131/0134

50
41
B

AUTHOR: Filippov, S. I.; Kazakov, N. B.; Pronin, L. A.

ORG: Moscow Institute of Steel and Alloys (Moskovskiy institut stali i splavov)

TITLE: Effect of ultrasonic treatment on the crystallization of metal melts

SOURCE: IVUZ. Chernaya metallurgiya, no. 5, 1966, 131-134

TOPIC TAGS: ultrasonic effect, metal crystallization, molten metal, metallography, metallurgic research

ABSTRACT: Using the method described by K. G. Plass (Akustische Beihefte, 1963, Hf. 1, 240-244) (variation in a fixed ultrasonic signal on the oscilloscope screen during crystallization of metal melts) the authors observed changes in the signal during cooling of molten Sn, Pb, Bi, Sb, Ga, Zn, Cd, Cu and Al through which ultrasonic waves are passed (pulsed method, frequency of ultrasound 2.5 mega-cps), as illustrated in Fig. 1 which presents the potentiometrically recorded values of the ultrasonic signal during the crystallization of zinc. The variation in signal during the crystallization is chiefly determined by two opposite factors. On the one hand, the segregation of crystals from the melt produces in increase in the absorption

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and scattering of sound waves at the numerous crystal-molten metal interfaces whereas, on

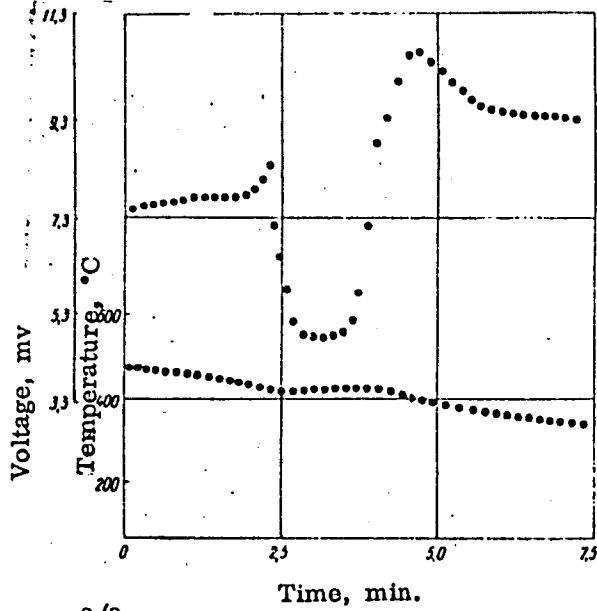


Fig. 1. Recording of the acoustic signal and temperature during the crystallization of zinc

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9

the other, as the metal solidifies and its elastic properties increase, the intensity of the ultrasound passed through it will increase. Observations of the cooling of melts of the binary systems Pb-Sn, Zn-Cd, Ga-Sb, Zn-Sb, Cd-Sb, Cu-Sn, Fe-C indicate that the variation in the ultrasonic signal for these alloys in liquid-solid and solid state is associated with the corresponding phase equilibrium diagrams. Thus, e.g. for the melt Sn-30 wt. % Cu the signal sharply decreases at liquidus temperature and sharply increases at eutectic temperature; microstructural examination reveals that this effect at near-liquidus temperatures is attributable to the segregation of large, well-formed ϵ -phase dendrites. Thus, the variation in ultrasonic signal in the process of the crystallization of metal melts may serve as a means of monitoring the formation of the structure of an ingot while it still is in liquid-solid state, which is of major practical and theoretical interest. Orig. art. has: 3 figures.

SUB CODE: 20, 13, 11/ SUBM DATE: 31Jan66/ ORIG REF: 003/ OTH REF: 001

Card

3/3 *gd*

PRONIN, L. A.; KAZAKOV, N. B.; FILIPPOV, S. I.

Ultrasonic measurement of molten cast iron. *Izv. vys. ucheb. zav.;*
chern.met.7 no. 5:12-16 '64. (MIRA 17:5)

1. Moskovskiy institut stali i splavov.

L 13189-66 EMT(m)/EPF(n)-2/T/EMP(t)/EMP(b)/EWA(h)/EWA(c) IJP(c) JD/WW/JG.
ACC NR: AP5028572 SOURCE CODE: UR/0148/65/000/011/0005/0008

AUTHOR: Kazakov, N. B.; Pronin, L. A.; Filippov, S. I.

ORG: Moscow Institute of Steel and Alloys (Moskovskiy institut stali i splavov)

TITLE: Structure of metal melts with a positive temperature coefficient of the speed of ultrasound

SOURCE: IVUZ. Chernaya metallurgiya, no. 11, 1965, 5-8

TOPIC TAGS: ultrasonics, temperature dependence, molten metal, semiconductor alloy, cadmium, antimony

ABSTRACT: At the present work is a continuation of a previous investigation dealing with the temperature and concentration dependencies of the speed of ultrasound for melts of the Zn-Sb system over a certain range of melt compositions, which established that the speed of ultrasound has a positive temperature coefficient, which previously has been observed for no other fluid except water (N. B. Kazakov, L. A. Pronin, S. I. Filippov. Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, 1964, no. 11, 11-14). Now the investigation is extended to the temperature dependence of the speed of ultrasound for melts of the Cd-Sb system. Positive temperature coefficients of the speed of ultrasound are observed also in this system for alloys of a composition resembling intermetallic compounds. For example, a greater increase in

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UDC: 669.73'6:541.12.03

I. 13189-66

ACC NR: AP5028572

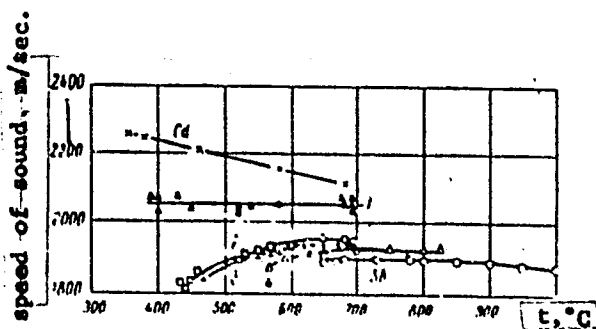


Fig. 1. Speed of ultrasound as a function of temperature for various compositions of Cd-Sb alloys:

- 1 - 26% (at.) Sb; 2 - 41.5% (at.) Sb; 3 - 52% (at.) Sb;
- 4 - 69% (at.) Sb

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L 13189-66

ACC NR: AP5028572

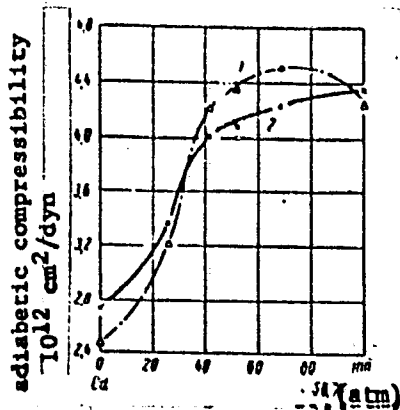


Fig. 2. Concentration changes in adiabatic compressibility for Cd-Sb melts:

1 - at liquidus temperature; 2 - at heating to 200°C above liquidus temperature

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ACC NR: AP5028572

3

the speed of ultrasound is established for the alloy containing 41.5% (at.) Sb (Fig.1). In this case the measurements of the speed of ultrasound at high temperatures were complicated by the low melting point of Cd (765°C). The melts were covered with a thick layer of flux (composition: KCl + 60% LiCl). The composition of each alloy was checked by taking samples for chemical analysis before and after measurements. The speed of the ultrasound was measured by the pulsed method. Further, the values of adiabatic compressibility for Sb-Cd alloys as a function of temperature are tabulated on the basis of experimental findings on the speed of sound and the density of the melts. The concentration changes of adiabatic compressibility for Cd-Sb melts at liquidus temperatures and on heating 200°C above liquidus are illustrated in Fig. 2. The finding that adiabatic compressibility decreases with increasing temperature for alloys with 41.5 and 69% (at.) Sb is difficult to explain; one possible explanation is change in the structure of the melts as in the case of water: it is known that in water, which represents a combination of three structures, the proportion of the closely packed structure increases with rising temperature and compressibility correspondingly decreases. As the elevated temperatures continue, owing to thermal loosening, the compressibility of the water begins to increase. It may thus be assumed that in the alloys investigated the structure at first becomes more compact on heating; the packing coefficient increases and, as a result, compressibility decreases. As the heating continues, the structure gets loosened, the coordination number decreases, and compressibility again increases. Orig. art. has: 4 figures, 1 table.

SUB CODE: 11, 20/ SUBM DATE: 06Aug65/ ORIG REF: 004/ OTH REF: 001

Cord

4/4 DR

L 12078-66 EWT(1)/EWT(m)/EPF(n)-2/T/EWP(t)/EWP(k)/EWP(b) JD/WW/JG/CG

ACC NR: AP6000170

SOURCE CODE: UR/0148/65/000/009/0005/0007

AUTHOR: Kazakov, N. B.; Pronin, L. A.; Filippov, S. I.ORG: Moscow Institute of Steel and Alloys (Moskovskiy institut stali i splavov) BTITLE: Acoustic studies of molten alloys 4SOURCE: IVUZ. Chernaya metallurgiya, no 9, 1965, 5-7TOPIC TAGS: acoustic speed, molten metal, ultrasonics, temperature dependence, semiconductor theory, gallium, antimony

ABSTRACT: The temperature dependence of the speed of ultrasound is an important factor in determining the physical and structural characteristics of semiconductor compounds in solid and molten state, but so far this factor has remained relatively uninvestigated. Hence, the authors performed a comparative investigation of the concentration and temperature dependencies of the speed of ultrasound for two systems with a different character of transition to conducting state. To this end, molten alloys of the Sb-Ga system were investigated by the method described earlier by the authors (Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, 1964, no. 11, 11). It was found that the curve of temperature dependence of the ultrasound flat-tens out with increasing Sb content of the alloys and, in the range of from 750 to 950°C (see Fig. 1), the temperature coefficient for the alloy with >50% (at.) Sb may

Card 1/3

UDC: 669.75.87-154:534.6

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ACC NR. AP6000170

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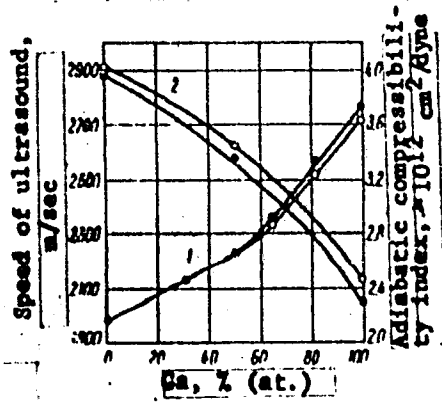
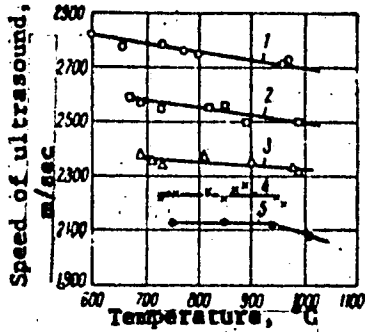


Fig. 1. Speed of ultrasound as a function of temperature and composition for molten alloys of the Sb-Ga system.

1 - 100% (wt) Ga; 2 - 30% (wt) Sb; 3 - 50% (wt) Sb; 4 - 69.5% (wt) Sb; 5 - 80% (wt) Sb

Fig. 2. Isotherms of speed of ultrasound (1) and adiabatic compressibility index (2) for molten alloys of the Sb-Ga system

● - 750°C; ○ - 950°C

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ACC NR: AP6000170

be considered zero. It may be assumed that the type of temperature dependence of the speed of ultrasound reflects structural changes in the molten alloy, but this requires postulating a definite physical model of interaction between particles. So far this problem has not been solved, but qualitative analogies may be based on the following simplified picture of the structure of molten metals: ion composition and free electrons. Assuming that ion composition is incompressible and that compressibility depends on free electrons, a correlation between compressibility (speed of the ultrasound) and electron conduction must exist. Such a relationship can be observed for the systems investigated: The obtained curve of adiabatic compressibility with increasing temperature for GaSb (Fig. 2) coincides with the increase in electric resistance; at the same time, molten ZnSb is characterized, over some interval of temperatures, by a decrease in adiabatic compressibility and electric resistance. Orig. art. has: 2 figures, 1 table.

SUB CODE: 11, 20/ SUBM DATE: 08Jun65/ ORIG REF: 005/ OTH REF: 001

gc
Card 3/3

KAZAKOV, N.F., red.; FROLOVA, Ye.S., otv. za vypusk; SUKHAREVA, R.A.,
tekh.red.

[New problems in metal cutting] Nove voprosy rezaniia
metallov. Moskva, 1958. 38 p. (Peredovoi opyt proizvodstva.
Ser. "Tekhnologiya mashinostroeniia," no.24. Obrabotka metallov
rezaniem). (MIRA 13:1)

1. Moskovskiy Dom nauchno-tekhnicheskoy propagandy imeni F.I.
Dzherzhinskogo.
(Metal cutting)

KAZAKOV, N. F. and KULEYEV, F. T.

"The use of propolis ointment against vaginitis and vestibulitis."

Veterinariya, Vol. 37, No. 1, 1960, p. 53

Kazakov - Caud. Vet Sci, Kazan NIV1

И.Т., ветеринарный врач.

Use of propolis ointment in vaginitis and vestibulitis. Veterinariia
37 no.1:53-54 Ja '60. (MIRA 10:6)

1. Kazanskiy nauchno-issledovatel'skiy veterinarnyy institut.
(Propolis) (Vaginitis in cattle)

BELOV, N.A., kand. med. nauk (Leningrad); GIKALOV, G.S. (Leningrad);
KAZAKOV, N.F. (Leningrad)

Changes in the blood system in Botkin's disease and treatment
with steroid hormones. Sov. Med. 26 no.9:48-52 S '62.
(MIRA 17:4)

KAZAKOV, N. F.

"Investigation of Cutting Forces in Relation to Basic Technological and Physical Factors in Turning." Sub 21 May 51, Moscow Order of the Labor Red Banner Higher Technical School imeni N. E. Bauman

Dissertations presented for science and engineering degrees in Moscow during 1951.

SC: Sum. No. 480, 9 May 55

USSR/Engineering - Machine Building Dec 51

"In the Commission on Machine Building Technology at the Institute of Machine Studies, Academy of Sciences USSR," N. F. Kazakov, Sci Secy of Commission

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 12, pp 1886-1988.

Describe Oct. 1951 session. Chairman... V. I. Dikushin, Corr Mem, Acad Sci USSR. Following sections created: machining, A. I. Kashirin, pressure processing, S. I. Gubkin; foundry, I. I. Pantalov; strengthening technology, E. A. Satei'; precision and interchangeability, I. Ye. Gorodetskiy; surface quality, P. Ye. D'yachenko; automatization of technological processes, V. I. Dikushin. Commission

20571

USSR/Engineering - Machine Building Dec 51
(Contd)

unifies more than 200 prominent scientists and workers of machine-building industry. Commission held expanded session on application of mineral-ceramic materials for high-speed cutting tools.

20571

KALAKOV, N.F.

PA 251T61

USSR/Academy of Sciences - Institute of Machine Studies

"On Coordination and Generalization of Scientific Investigations," V.I. Dikushin, Corr Memb Acad Sci USSR; N.F. Kalakov, Grad Tech Sci

Vest Ak Nauk SSSR, No. 1, pp 74-79

Briefly describes activity of the Commission on Technol of Machine Bldg, functioning since 1 Oct 51. Eight sections of Commission and their chiefs are as follows: Automation of Technological Processes in Machine Bldg -- V.I. Dikushin, Corr Mem Acad 251T61

Sci USSR; Machining -- A.I. Kashirin, Dr Tech Sci; Processing by Pressure -- S.I. Gubkin, Active Mem, Acad Sci Belorussian SSR; Foundry -- L. I. Pantalev, Dr Tech Sci; Technology of Strengthening -- E.A. Satel', Dr Tech Sci; Welding -- G.A. Nikolayev, Dr Tech Sci; Precision and Interchangeability -- I. Ye. Gorodetskiy; Surface Finishing -- P. Ye. D'yachenko, Dr Tech Sci. Sections unify activity of more than 450 scientists. Subject which attracted greatest attention deals with application of mineral-ceramic cutting materials for metal machinery. 251T61

1. KAZAKOV, N. F.
2. USSR (600)
4. Metal Cutting
7. For wider adoption of ceramic cutting tools for metal cutting. Izv. AN SSSR. Otd. tekhn. nauk. No. 2, 1952.

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

KAZAKOV, N. F.

USSR/Engineering - Metal Cutting; Standardization Nov 52

"Conference on the Norms for Metal Cutting," N. F. Kazakov

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 11, pp 1634-1653

Briefly reviews reports presented at conference arranged by Dept of Tech Sci, Acad Sci USSR, Jun 52. About 400 representatives of ministries, sci res institutes, large machine building plants, higher technical schools, and planning and designing

2441761

organizations participated in sessions. Outlines measures recommended by conference for further development of highly efficient metal cutting.

2441761

1. KAZAKOV, N. F.
2. USSR (600)
4. Machine - Tool Industry
7. Results of the conference on norms for machining metals by means of cutting. Vest mash No. 12 1952.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

KAZAROV, N. F.

244765

USSR/Engineering - Metal Cutting

Dec 52

"Investigation of the Process of High-Speed Metal Cutting Using Low-Inertia Equipment," N. F. Kazakov

"12 Ak Nauk SSSR, Otdel Tekh Nauk" No 12, pp 1769-1781

Investigates technological and physical factors of cutting process using piezoelectric dynamometer of high sensitivity. States that results obtained in precise measurements of forces permitted establishment of new phenomena which until now escaped observation due to rapid course of process and

244765

smallness of values to be measured. For example, Nicolson's diagram of oscillations can not be considered reliable since new substantiated data are obtained. Submitted by Acad I. I. Artobolevskiy 8 Jul 52.

244765

RODAROV, N.F.

Metal Cutting

New material for speedy metal cutting. Vest. AN SSSR No. 5, 1952.

Monthly List of Russian Accessions, Library of Congress, October 1952, Unclassified.

1. KAZAKOV, N. F.
2. USSR (600)
4. Metal Cutting-Standards
7. High-speed cutting of metals and technical standards (results of the meeting on standards of metal processing). Vest. AN SSSR. 22, No. 9, 1952.

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

KAZAKOV, N.F.

MECHANICAL ENGINEERING

Tasks of the Commission on the Technology of Machine Construction. Vest. mash. 32, no. 1, 1952.

Monthly List of Russian Accessions, Library of Congress, October 1952, Unclassified.

KAZAKOV, N. F.

Piezometer

Piezoelectric instrument for simultaneous measuring of the component cutting forces during turning. Vest. mash, 32, no. 4, 1952.

9. Monthly List of Russian Accessions, Library of Congress, October 1958~~2~~ Uncl.

KAZAKOV, N.F.

Effect of electric-arc reinforcing of tool bits on the process of
cutting. Trudy Sem.po kach.poverkh,2:82-91 '53. (MLRA 7:2)
(Cutting tools)

1. FAZAKOV, N. F.
2. USSR (600)
4. Metal Cutting
7. Investigating the process of high-speed metal cutting by using an apparatus of low inertia. Izv AN SSSR Otd tekhn nauk No 12 1953

9. Monthly List of Russian Accessions, Library of Congress, Apr'1 1953, Uncl.

1. YAGANOV, N. F.
2. USSR (600)
4. Milling machines
7. Creative cooperation of scientists and innovators of production in machine building. Vest. AN SSSR 23, No. 1, 1953.

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

KAZAKOV, N. F.

TJ1160.A34

TREASURE ISLAND BOOK REVIEW

AID 857 - S

KAZAKOV, N. F.

NOVIY PRIBOR DLYA ISSLEDOVANIYA PROTSESSA REZANIYA METALLOV (New Apparatus for Analysis of the Metal-Cutting Process). In Akademiya Nauk SSSR. Peredovoy opyt novatorov mashinostroyeniya (Progressive Experience of Leading Men in the Machine-Building Industry) 1954. Part I: Skorostnyye metody mekhanicheskoy obrabotki metallov (High-Speed Methods in Machining of Metals). p. 103-118.

The author describes results of his research on the component forces present in the metal-cutting process and the piezoelectric dynamometer used for this research. Forces affecting the three main factors inherent in the cutting of metal: 1) the metal that is machined, 2) the material of the cutting tool, and 3) the process of cutting as it depends on the speeds applied are scrutinized. The regularity in variations of forces, the frequency of oscillation in speed cutting, the influence on each other of the component forces and their correlation are explained. The general layout of a piezoelectric dynamometer, its cutting tool holder, its sender-receiver points (here quartz is used predominantly), the taring of the dynamometer and the equipment used for taring all are described. Temperatures in cutting and setting of shavings are also observed. Eleven pictures, drawings, graphs and 1 table. Nine Russian and 1 American references (1904-1953).

1/1

USSR/Engineering

FD 266

"APPROVED FOR RELEASE: 06/13/2000

CIA-RDP86-00513R000721310005-2"

Card 1/1

Author : Kazakov, N. F.

Title : Investigation of resistance of wear of cutting tools by the method of radioactive isotopes and radiation

Periodical : Iz. Ak. Nauk SSSR, OTN, 1, 41-53, Jan 1954

Abstract : Gives results of study of resistance to wear of cutting tools by the method of radioactive isotopes and radiation. Includes: working with irradiated cutting tools, methods and conditions for experimentation, results of the investigation, and methods of radiography. Tables, graphs, radiographs. Six references; 4 U.S.S.R., 1949-1953.

Institution :

Submitted : January 5, 1954. Presented by Academician I. I. Artobolevskiy.

Evaluation - B-81524, 28 Dec 54

KAZAKOV, N.F.

A book review of "Advanced experience of innovators in machine construction." V.I. Dikushin. Reviewed by N.F.Kasakov. Izv. AN SSSR Otd.tekh. nauk no.11:156-157 N '54. (MIRA 8:4)
(Machinery--Design) (Dikushin, V.I.)

KAZAKOV, N.F.

Summary of the seminar on basic theoretical problems in high production
metal cutting. Izv. AN SSSR Otd.tekh.nauk no.11:158-160 N '54.
(Metal cutting) (MIRA 8:4)

KAZAKOV, N. F.

301

10-13-54
RMZ

Evaluations:
B-78527
B-81594

Study of tool wear by means of radioactive isotopes.
N. F. Kazakov. *Vestnik Mashinostroyeniya* 34, No. 4,
50-6 (1954).--The investigation paralleled that of Na-
deinskaya (preceding abstr.) being supplemented with
photographs showing the distribution of particles of tools
on the turnings. They were obtained by a direct exposure
of film to the turnings and then magnifying the image.
J. D. Gat

DIKUSHIN, V.I., akademik, redaktor; KAZAKOV, N.F.; KOPNOV, Ye.V., redaktor;
AUZAN, N.P., tekhnicheskiy redaktor.

[Advanced technology in machine building] Peredovaya tekhnologiya
mashinostroeniya. Moskva, 1955. 735 p. (MLRA 9:1)

1. Akademiya nauk SSSR, Komissiya po tekhnologii mashinostroyeniya.
(Machinery industry)

USSR/ Engineering - Tool wear

Card 1/1 Pub. 124 - 7/40

Authors : Kazakov, N. F.

Title : Rapid method of determining tool wear

Periodical : Vest. AN SSSR 1, 43-45, Jan 1955

Abstract : The development of a new rapid tool-wear determination method is announced by the Machine Construction Institute of the Academy of Sciences, USSR. The method is based on measuring the radiation activity of the particles contained in the shavings, on the machined object and on the worn machine tool. The tool is made radioactive and the radioactivity value of the shavings become directly proportional to the value of the worn material and this makes it possible to evaluate the degree of wear of the machine tool. Some results obtained with the new method are listed. Graph.

Institution :

Submitted :

KAZAKOV, N.F., kandidat tekhnicheskikh nauk.

In the Commission on the Technology of Machine Construction; seminar
on high-productive metal cutting. Vest. AN SSSR 25 no.2:91-93 F '55.
(Moscow--Metal cutting--Congresses) (MIRA 8:4)

KAZAKOV, N.F., kand. tekhn. nauk.

Over-all automation in the machinery industry. Mashinostroitel'
no.2/3:56-59 N-D '56. (MIRA 12:1)
(Machinery industry) (Automation)

KAZAKOV, N.F., kandidat tekhnicheskikh nauk.

Problems of precision in machine building (Meeting in Moscow).
Vest.AN SSSR 26 no.5:98-101 My '56. (MLRA 9:8)
(Machinery industry) (Measuring instruments)

КАЗАКОВ НИКОЛАЙ ФЕДОТОВИЧ
PHASE I BOOK EXPLOITATION 314

Kazakov, Nikolay Fedotovich

Tekhnicheskii progress i peredovoy opyt novatorov mashinostroyeniya
(Technical Progress and Modern Practice of Innovators in the Machine
Building Industry) Moscow, izd. "Znaniye", 1957. 31 p.
(Vsesoyuznoye obshchestvo po rasprostraneniyu politicheskikh
nauchnykh znaniy. Seriya IV, 1957, no. 32) 55,500 copies printed.

Ed.: Islankina, T.F.; Tech. Ed. : Gubin, M.N.

PURPOSE: This pamphlet intends to familiarize the reader with some
of the technical progress and problems encountered in the
machine building industry. It is published under the auspices
of the All-Union Society for the Propagation of Political and
Scientific Knowledge.

COVERAGE: The pamphlet reviews briefly the technical progress of
the Soviet Machine building industry and describes some aspects
and beneficial results of high-speed cutting of metals. The use

Card 1/3

Technical Progress and Modern Practice (Cont.) 314

of new cutting-tool materials and modern tool designs is also discussed as a decisive factor in increasing the productivity of labor. Some data are given on new Soviet alloys employed in cutting tools. There are 12 Soviet references.

TABLE OF CONTENTS:

Growth of Soviet Machine Building and Development of Technology	4
High-speed Cutting of Metals - an Important Reserve for Increasing Labor Productivity in Machine Building	8
Modern Tool Materials Employed in High-speed Cutting	9
Use of Mineral Ceramic Tools	11
New Tool Designs and Selection of Rational Cutting Tool Geometry	14
Rational Exploitation of Cutting Tools	21

Card 2/3

Technical Progress and Modern Practice (Cont.)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721310005-2

Reduction of Auxiliary Time and Maximum Increase of Machine Time	26
Introduction and Propagation of Modern Practices	29
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AVAILABLE: Library of Congress

VK/ksv
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S/123/60/000/010/004/011
A004/A001

Translation from: Referativnyy zhurnal. Mashinostroyeniye, 1960, No. 10, p. 80,
49385

AUTHOR: Kazakov, N.F.

TITLE: State and Main Development Trends in High-Efficiency Metal Cutting

PERIODICAL: V sb.: Sovrem. napravleniya v obl. konstruirovaniya tekhnol.
oborud., Moscow, Mashgiz, 1957, pp. 166-185

TEXT: The author analyzes problems of increasing the efficiency of cutting processes by improving the cutting properties of tool materials (hard alloys), design and geometry of cutting tools and operation conditions, and also by investigating the wear of cutting tools with the aid of radioactive isotopes. There are 12 figures and 18 references. 14

B.L.D.

Translator's note: This is the full translation of the original Russian abstract.

Card 1/1

APPROVED FOR RELEASE: 06/13/2000

CIA-RDP86-00513R000721310005-2"

AUTHOR
TITLE

KAZAKOV, N.F.

The Second Conference on Complex Mechanization and Automation in Machine Construction Engineering (Vtoroye soveshchaniye po kompleksnoy mekhanizatsii i avtomatizatsii v mashinostroyenii).

PERIODICAL

Izvestiia Akad.Nauk SSSR, Otdel.Tekhn., 1957, Nr 1, pp 156-158 (U.S.S.R.)
Received 3/1957 Reviewed 4/1957

ABSTRACT

The conference was organized at the end of September 1956 by the Institute of Engineering of the Academy of Science of the U.S.S.R. and by the State Committee of the Cabinet Council of the U.S.S.R. and lasted 5 days. A.A.BLAGOBRADOV, Member of the Academy: Of a total of 1.760.000 machine tools only 110.000 work automatically or semi-automatically. Automatic machines take up 41% of the total production. Much experience has been gathered, but generalization of this experience and the establishment of industries with these new types have not yet attained the necessary level. Deputy Minister D.A.RYZHKOV: In the case of the new model of the point-less grinding machine, permanent grinding takes up 85-90% of the total working time of the machine.

Deputy Minister A.N.DEM'YANOVICH: At present all boilers producing more than 50 t of steam per hour are automatized with respect to all essential parameters. In the case of turbines with ultra-high parameters and a performance of 150.000 kw, the usual contrivances as well as steering and control mechanisms are automatically controllable from a central

Card 1/2

KAZAKOV, N.F., kandidat tekhnicheskikh nauk.

Radioisotopes used in the machinery industry. Mashinostroitel'
no.4:40-44 '57. (MLRA 10:5)
(Radioisotopes--Industrial applications)

SOV/137-58-11-23509

Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 11, p 237 (USSR)

AUTHOR: Kazakov, N. F.

TITLE: A Study of the Hardness of Tool and Machinable Steels as Well as of Solid and Mineral-ceramic Alloys During Heating (Izucheniye tverdoti obrabatyvayemykh i instrumental'nykh staley, tverdykh i mineralokeramicheskikh splavov pri nagreve)

PERIODICAL: Nauchn. tr. Mosk. poligr. in-t, 1957, Nr 5-6, pp 57-68

ABSTRACT: The hardness of various tool and machinable materials (M) was measured at temperatures up to 1000°C. An apparatus designed by the IMMASH of the Academy of Sciences, USSR, was employed. In the case of tool materials, the mutual position of curves on the hardness-vs.-test-temperature graphs is representative of the wear resistance of these materials. The manner in which the hardness of a given tool M changes as the temperature is increased permits a determination of the operational temperature range of that M. An investigation of hot hardness of the M's makes it possible to plan methods of obtaining M's with greater hardness and better wear resistance. Bibliography: 9 references.

Card 1/1

M. Ch.

AUTHOR: KAZAKOV,N.F., ANDRIANOVA,M.N. PA - 3618
TITLE: The Determination of the Cutting Properties of Tungsten-Hard-Alloys with Cemented Cobalt and Nickel Compounds. (Opredeleniye rezhushchikh svoystv volframovykh tverdykh splavov na kobaltovoy i nikel'evoy tsementiruyushchikh svyazkakh, Russian)
PERIODICAL: Stanki i Instrument, 1957, Vol 28, Nr 6, pp 24-25 (U.S.S.R.)

ABSTRACT: The hard alloys available at present, which make it possible to use high cutting velocities in metal-working contain tungsten- and titanium carbides of great hardness. Mechanical strength is, however, warranted by the cemented cobalt compounds. Attempts to use nickel instead of cobalt did not give satisfactory results either in Russia or in other countries. At the Moscow combine for hard alloys scientific research work has been carried out since 1953 concerning the production of tungsten-nickel hard alloys, on which occasion it was found that the alloys were more brittle than tungsten-cobalt alloys.

In 1955 an experimental alloy WN3K3 was produced at the same combine, and test work was carried out with the alloys WN 6 and WK 6,

Card 1/2

KAZAKOV, N. S.

2112
Vostochnyye gosudarstvennyye universitety i instituty v SSSR i v stranakh
sobyev i nrupe. Moskva, 1957.

Study. Radioisotopnyye i radiometritovyye (Transistors of the
Academy of Sciences of the USSR. Institute of Radioisotopes and
And Institute in the National Economy and Ministry of Machine
Instrument Manufacturing) Moscow, Izd-vo M SSSR, 1958. 358 p.
4,500 copies printed.

Sponsoring Agencies: USSR, Otkrytoye upravleniye po teplov'sovetnaya
atomnyy energii, and Akademiya nauk SSSR.

Editorial Board: G. S. V. I. Dikulin, Academician (Resp. Ed.), N. S.
Shumilovskiy, (Tech. Ed.), G. S. Zaslavskiy (Deputy, resp.
Ed.), L. I. Kuchenko, B. I. Verkhovskiy, S. V. Maslov, M. I. Petukhov
and N. G. Zaitsevskaya (Secretary).

Ed. of Publishing House: P. M. Belyanin; Tech. Ed.: T. P. Foleeva.
PURPOSE: This book is intended for specialists in the field of ma-
chine and instrument manufacture who use radioactive isotopes in
the study of materials and processes.

COVERAGE: This collection of papers covers a very wide field of the
utilization of tracer methods in industrial research and control
techniques. The topic of this volume is the use of radioisotope
in the machine- and instrument-making industry. The indi-
vidual papers discuss the applications of radioisotope techniques
in the study of metal cutting, problems of friction and lubri-
cation, metal cutting engine performance, and defects in metal
sealing of industrial processes, recording and measuring devices,
level control, flowmeters, level gauges, safety devices, of var-
ious Soviet institutes and laboratories. They were published as
Transactions of the All-Union Conference on the Use of Radioiso-
topes and Stable Isotopes and Radiation in the National Economy
and Science, April 4-12, 1957. No serials are mentioned.
References are given at the end.

Tudis, A. I. (Dzhukovskiy aviatsionnyy institut - Zar'kov Avia-
tion Institute). Study of the Wear of Parts in Fuel Supply Sys-
tems of Aircraft Engines 75

Vysotskiy, D. I., G. I. Trogilasy, V. I. Doloz, V. P. Kamachevskiy,
and Yu. G. Mochalov (Vostochnyy gosudarstvennyy universitety i
mobil'nyy i avtomobily. Institut - Central Scientific Research
Institute for Automobiles and Automobile Engines). Mobile Road-
test Laboratory for the Study of Wear of Parts in Air and
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Melik-Zade, M. (Azerbaydzhanskiy nauchno-issledovatel'skiy insti-
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nyy institut - Central Diesel Research Institute). Scintillation
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Kazakov, N. S. (Institut mashinovedeniya AN SSSR - Institute of
Mechanical Engineering, Academy of Sciences, USSR). Research on
Metal Cutting 94

Lazebnik, B. D. (Institut mashinovedeniya AN SSSR - Institute of
Mechanical Engineering, Academy of Sciences, USSR). Study of the
Wear of Hard-Alloyed Cutting Tools 101

Yakovlev, G. M. (Beloruskiy politekhnicheskiy institut - Belorussian
Polytechnical Institute). Study of the Wear of Cutting
Tools 105

KAZAKOV, N.F., kand. tekhn. nauk, dots.

Diffusion welding of metals and alloys in a vacuum. Nauch. dokl.
vys. shkoly; mash. i prib. no. 2:138-147 '58. (MIRA 12:10)
(Vacuum metallurgy) (Welding)

KAZAKOV N.F.

AUTHOR: Kazakov, N.F., Candidate of Technical Sciences 117-58-5-13/24

TITLE: A New Method of Diffusion Joining of Metalloceramic Plates to a Metal Base (Novyy metod diffuzionnogo krepleniya metallokeramicheskikh plastinok k metallicheskoy osnove)

PERIODICAL: Mashinostroitel', 1958, Nr 5, pp 38-40 (USSR)

ABSTRACT: When metal is being machined, a thin film or "growth" appears on the surface of the cutter. This film is formed not by mechanical pressure exerted by the material machined on the cutter, but as a result of a welding process in those parts of the surface where the oxide film has been destroyed by mutual friction. This has been revealed by an experiment in the vacuum chamber described in the article. For industrial application of the diffusion method of joining a hard alloy to a tool holder, the author has constructed a special device and developed a technology of mass welding. He found that by bringing 2 metal plates so closely together that the interatomic forces of cohesion begin to operate, the physical frontier between the two objects must disappear, provided the oxide film covering the surfaces has been first removed. An uninterrupted and close interchange of atoms can only be

Card 1/2

A New Method of Diffusion Joining of Metallo-ceramic Plates to a Metal Base 117-58-5-18/24

obtained by diffusion. However, the diffusion of one metal into the other can take place only in mutually soluble metals. Speed of diffusion grows with a decrease in solubility. The diffusion processes in cold welding permit the obtaining of very solid whole-metal connections. The principle of the new method of diffusion welding has found a number of practical applications already. The author has succeeded in developing a new diffusion method joining plates of hard alloy with cutter holders (patent Nr 112460). After plates and holders have been thoroughly cleaned and polished, they are heated to 700-900 degrees in a vacuum. Each plate and holder are brought into contact and maintained under a pressure of 10 kg per mm². The strength of the weld obtained by this method is unsurpassed. It is a simple, effective and never-failing method. There are 2 figures and 6 Soviet references.

AVAILABLE:

Card 2/2

Library of Congress

1. Welding-Diffusion 2. Metals-Solubility

AUTHOR: Kazakov, N.F. (Moscow) SOV-125-5#-8-2/16

TITLE: Diffusion Welding in a Vacuum (Diffuzionnaya svarka v vakuume)

PERIODICAL: Avtomaticheskaya svarka, 1958, Nr 8, pp 6-18 (USSR)

ABSTRACT: Information is presented on the effect of pressure, temperature, smoothness of surfaces, composition and properties of metals and alloys on their weldability in a vacuum. A new method of joining metals and alloys in a high vacuum was proposed by the author (Certificate of authorship No 112 460 with priority from 3 February 1956). Information includes description of an experimental device (Fig. 6) designed by the Institute of Machine Study AS USSR, permitting welding in a vacuum at temperatures up to 1,300° C. The experiments proved that the strength of joints in welding metal-ceramic alloys with metals depends on the cobalt content in the hard alloy and on the grain size. Increased pressure entails higher strength of joints at high temperatures. Pressures over 2.5 kg/sq mm have no effect on the quality of joints. Smoothness improves strength of seams. A marked advantage of the described method is the obtaining of equidurable joints of different metals without noticeable changes in their physical and mechanical properties. It can be applied for joining

Card 1/2

Diffusion Welding in a Vacuum

SOV-125-58-2-2/16

different metals, ceramic and metal-ceramic alloys which cannot be joined by fusing.

There are 6 photos, 2 diagrams, 1 graph, 2 tables and 17 references, 16 of which are Soviet and 1 German.

SUBMITTED: February 5, 1958

1. Welding 2. Vacuums--Applications 3. Metals--Properties

Card 2/2

135-58-8-6/20

AUTHOR: Kazakov, N. F., Candidate of Technical Sciences

TITLE: The Pressure Welding of Different Metals in a Vacuum
(Svarka davleniyem v vakuume raznorodnykh metallov)

PERIODICAL: Svarochnoye proizvodstvo, 1958, Nr 8, pp 23 - 24 (USSR)

ABSTRACT: The article contains information on a method of welding in a vacuum under pressure for which the author received an Author's Certificate with priority in 1956, and on a welding installation designed at the Institut mashinovedeniya AN USSR (Institute of Mechanical Engineering AS USSR). The described experiments were carried out in a high vacuum (10^{-4} to 10^{-5} mm mercury column) for joining heat-resistant alloys together and to cast iron; titanium with high-speed steel; aluminum and its alloys, as well as copper, nickel, lead, zinc, silver and other materials. The obtained joints were of a very high strength. The method eliminates the use of solders, fluxes, electrodes etc. It was stated that the success in welding metal ceramics with a metallic base depends on the content of cobalt in the hard alloy and on the grain size. Results of tests on tools tipped with hard-alloy plates are shown in table 2. Industrial tests

Card 1/2

The Pressure Welding of Different Metals in a Vacuum

135-58-8-6/20

of the method, performed at the Moskovskiy kombinat tvêrdykh splavov (Moscow Combine for Hard Alloy), TsNIITOP, and other organizations gave satisfactory results. The method can be applied to join different metals which are hard to weld, ceramic and metal-ceramic alloys. There are 2 tables, 1 graph and 3 references, 2 of which are Soviet and 1 German.

ASSOCIATION: Moskovskiy tekhnologicheskii institut myasnoy i molochnoy promyshlennosti (Moscow Technological Institute of the Meat and Milk Industry).

1. Metals--Welding 2. Pressure--Applications 3. Vacuum--Applications

Card 2/2

PHASE I BOOK EXPLOITATION SOV/5554

Kazakov, Nikolay Fedotovitch

Radioaktivnyye izotopy v issledovanii iznosa rezhushchego instrumenta (Radioisotopes in the Investigation of the Cutting-Tool Wear) Moscow, Mashgiz, 1960. 327 p. Errata slip inserted. 6,500 copies printed.

Reviewer: T. N. Loladze, Doctor of Technical Sciences; Ed.: P. A. Kunin, Engineer; Tech. Ed.: V. D. El'kind; Managing Ed. for Literature of Cold Treatment of Metals and Machine-Tool Making: V. V. Rzhavinskiy, Engineer.

PURPOSE : This book is intended for scientific and technical personnel.

COVERAGE: The book contains a brief discussion of the physical bases of radioactivity and a description of the use of radioisotopes in the study of cutting-tool wear. Soviet and non-Soviet investigations in the field of radioisotope application and other physico-chemical methods for studying metal-cutting processes are reviewed.

Card 1/10

APPROVED FOR RELEASE: 06/13/2000

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Radioisotopes in the Investigation (Cont.)

SOV/5554

The basic means for improving the wear resistance of cutting tools are analyzed, and reference data necessary for radiometric calculations are given. The author thanks the following for their valuable contributions and advice: V. I. Dikushin, Academician; S. P. Solov'yev, Director of the Moskovskiy kombinat tverdykh splavov [Moscow Combine of Hard Alloys]; P. M. Porkhunov, Chief Engineer; T. I. Kozlova, V. S. Stepanov, T. M. Vlasova, and V. Ya. Moiseyev, Engineers; and Ye. A. Studenov, and B. S. Khodakov, Mechanics. There are 236 references: 216 Soviet, 15 English, 4 German, and 1 Swedish.

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PART I. THE PHYSICAL BASES OF RADIOACTIVITY AND METHODS FOR WORKING WITH RADIOISOTOPES

Ch. I. General Considerations Regarding the Isotopy of Elements

1. Structure of atoms and their nuclei

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5

Card 2/10

GAVRILOV, A.N., prof., doktor tekhn.nauk; DEM'YANYUK, F.S., prof., doktor tekhn.nauk; MITROFANOV, S.P., kand.tekhn.nauk; KORSAKOV, V.S., prof., doktor tekhn.nauk; IVANOV, D.P., doktor tekhn.nauk; STO-ROZHEV, M.V., kand.tekhn.nauk; MALOV, A.N., kand.tekhn.nauk; KUDRYAVTSEV, I.V., prof., doktor tekhn.nauk; SHNEYDER, Yu.G., kand.tekhn.nauk; SHUKHOV, Yu.V., dotsent; KAZAKOV, R.F., kand.tekhn.nauk; ZOLOTYKH, B.N., kand.tekhn.nauk; ROZENBERG, I.D., prof., doktor tekhn.nauk; YAKHIMOVICH, D.Ya., inzh.; NIKOLAYEV, G.A., prof., doktor tekhn.nauk; VLADZIYEVSKIY, A.P., doktor tekhn.nauk; SHAUMYAN, G.A., prof., doktor tekhn.nauk; KOSHKIN, L.N., kand.tekhn.nauk; BOBROV, V.P., kand.tekhn.nauk; NOVIKOV, M.P., kand.tekhn.nauk; VIKHMAN, V.S., kand.tekhn.nauk; DERBISHER, A.V., kand.tekhn.nauk; KLIMENKO, K.I., prof., doktor ekonom.nauk; VIATKIN, A.Ye., inzh.; SATEL', E.A., prof., doktor tekhn.nauk; POFANOV, I.G., inzh.; MATVEYENKO, V.V., inzh.; KOCHETOVA, G.F., inzh., red.isd-va; EL'KIND, V.D., tekhn.red.; TIKHANOV, A.Ya., tekhn.red.

[Present status and trends of future development of technological processes in the manufacture of machinery and instruments] Sovremennoe sostoyanie i napravleniia razvitiia tekhnologii mashinostroeniia i priborostroeniia. Moskva, Gos.nauchno-tekhn.isd-vo mashinostroit.lit-ry, 1960. 563 p. (MIRA 13:7)
 (Machinery industry--Technological innovations)
 (Instrument manufacture--Technological innovations) (Automation)

KAZAKOV, N.F.

Современные перспективы развития научно-технических исследований и разработок (Present State of the Manufacturing Processes in the USSR, 1960, 561 p., 51000 copies printed, Moscow, Voenflotizdat, 1960).

PLATE : BOOK EXPLANATION 8/2/78

Dr. N. A. Kazakov, Doctor of Technical Sciences, Professor, Institute for Literature on Machine Building and Instrument Construction (Moscow), N.F. Kazakov, Doctor of Technical Sciences, Professor, Institute for Literature on Machine Building and Instrument Construction, Moscow, U.S.S.R.

FOREWORD: This book is intended for technical and scientific personnel in the higher education.

CONTENTS: The book deals with current theory and practice in the manufacturing processes of the machine and instrument industries and includes chapters on technical-economic features and possibilities of development. Particular attention is given to new and progressive processing methods, automatic control, robotics, and welding, etc. The book consists of papers presented at the All-Union Scientific-Industrial Conference on "Advanced Machine and Instrument Manufacturing Processes," held in 1968. The papers have been revised in the light of recent developments in the field. A chapter is devoted to the situation and mechanization of the industry. Soviet and non-Soviet references accompany some of the chapters.

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SOV/125-60-2-4/21

AUTHOR: Kazakov, N. F.

TITLE: A Unit for Diffusion Welding in Vacuum

PERIODICAL: Avtomaticheskaya svarka, 1960, Nr 2, pp 44-50 (USSR)

ABSTRACT: Detailed illustrated engineering information is given on a new vacuum diffusion welding unit "SDVU", designed by the author in cooperation with A.S. L'vov and Ye. A. Studenov. The unit, shown in a schematic diagram (figure 1), consists of a high-frequency "LGZ-10A" tube generator (300-450 kilcycles), a vacuum welding chamber, and a hydraulic cylinder. A "TsVL-100" vacuum pump is used for fast evacuation. An "EPD-12" potentiometer automatically maintains the set temperature with an accuracy of up to 1%, and switches on and off the voltage in the primary winding of the "LATR-1" transformer used with the unit. As the vacuum pumps very effectively evacuate gases but not vapors (they themselves are a source of vapor formation from pressure

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SOV/125-60-2-4/21⁶⁷⁷⁰²

A Unit for Diffusion Welding in Vacuum

fluids), the vacuum system is provided with an ancillary device for intensive condensation (freezing) of vapors. The "SDVU-1" unit, made for use in industry, (photograph, figure 4) has such a "trap" for vapors, which is much more effective than steam jet or rotary initial-vacuum pumps. The "SDVU-2", which is a further development of this unit (not illustrated), has a coil-pipe trap. The heat is switched off automatically, according to the pre-set time, the welded parts are left to cool down to a definite temperature, and then the welding pressure is removed, and the welding ended. It has been experimentally proved that a large number of machine parts can be vacuum welded in the "SDVU-1" and "SDVU-2" and a list of these parts is given. The metal in the weld zone is high-strength and its specific gravity is higher than that of the metal outside the weld. There are 3 sets of diagrams, 1 photograph,

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SOV/125-60-2-4/21

A Unit for Diffusion Welding in Vacuum
and 5 Soviet references.

ASSOCIATION: Moskovskiy technologiceskiy institut (Moscow Technolo-
gical Institute). 4

SUBMITTED: April 20, 1959

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39551-
S/135/62/000/008/004/004
A006/A101

AUTHOR: Kazakov, N. F., Candidate of Technical Sciences

TITLE: Diffusion welding in a vacuum of grade 45 steel

PERIODICAL: Svarochnoye proizvodstvo, no. 8, 1962, 31 - 34

TEXT: The author presents results of investigating the effect of operational parameters in diffusion welding in a vacuum upon the strength of grade 45 steel welded joints. The operational parameters investigated are the welding temperature, pressure, heating time, rarefaction and the method of preparing the surfaces. The dependence of the weld strength on temperature and pressure of welding is shown in Figure 4. The weld strength is considerably affected by a heating time up to 5 minutes, a further increase of the time has only a slight effect on the strength. At 1,000°C the weld strength increases sharply at up to 10^{-1} mm Hg rarefaction, and at 900°C at up to 10^{-2} mm Hg. A further decrease of rarefaction does not affect the weld strength (Figure 8). For preparing the surfaces, machining consisting in semi-rough grinding is recommended. In chemical treatment best results were obtained with carbon tetrachloride. In the case of

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Diffusion welding in a vacuum of grade 45 steel

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insufficient diffusion during the direct contact of the parts to be welded, a solid metal intermediate layer should be used. This layer prevents the formation of stable oxides on aluminum, titanium and dispersion-hardening alloys inhibiting the diffusion process. This method is the only possible one when dissimilar materials, such as cermets and metals, are to be joined. There are 10 figures.

ASSOCIATION: Nauchno-issledovatel'skaya laboratoriya diffuzionnoy svarki v vakuume (Scientific-Research Laboratory of Diffusion Welding in Vacuum) K

Card 2/0 2

S/125/62/000/007/003/012
D040/D113

AUTHORS: Shechetina, G.A, and Kazakov, N.F.

TITLE: Attaching cermet tips to cutting tool shanks

PERIODICAL: Avtomaticheskaya svarka, no. 7, 1962, 12-17

TEXT: Detailed information is given on a diffusion welding technology used in experiments in which BK 8 (VK8) and T15K6 (T15K6) carbide cutting tips were welded to steel blocks using an intermediate metal layer, powder nickel, or 0.2 mm thick permalloy foil. An CABY-6 (SDVU-6) diffusion welder, with a two-turn induction heater of 6 mm copper tube, was employed. The welding equipment was previously described by Kazakov ("Svarochnoye proizvodstvo", no. 6, 1958; "Avtomaticheskaya svarka", no. 8, 1958). The obtained joints, which were sound and had higher mechanical strength than brazed joints, were tested on the teeth of a coal cutter and loader, in lathe cutters, and inserted-tooth milling cutters. Conclusions: (1) By raising the welding temperature from 1000 to 1100°C, the strength of the joints was 10-15% higher; (2) by increasing the holding time from 1 to 3 min, the shearing strength at 1000°C increased by 12-15%, and by increasing this time to 6 min, the shearing strength increased by another 11-35%; (3) 1.5

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D040/D113

Attaching cermet tips

Kg/mm² pressure during welding produces joints with higher strength than 1.0 or 2.0 Kg/mm² pressure; (4) joints with powder nickel and permalloy foil layers can attain strengths of 26 Kg/mm² and 16.3±17.2 Kg/mm² respectively; (5) the proper vacuum in the welding chamber is approximately 10⁻³ mm of mercury; (6) the surface of the steel shank must be milled, and that of the carbide tip ground, and both have to be degreased by acetone; (7) operational tests have shown that the durability of cutters, diffusion welded in a vacuum, is 2 - 2.5 times higher compared with brazed cutting tools. There are 7 figures and 2 tables.

ASSOCIATION: Moskovskiy tekhnologicheskiy institut myaso-molochnoy promyshlennosti
(Moscow Technological Institute of the Meat and Milk Industry)

SUBMITTED: February 1, 1962

Card 2/2

KAZAKOV, N.F. (Moskva)

Diffusion welding of molybdenum disilicide heating elements.

Porosh. met. 3 no.4:106-110 JI-Ag '63. (MIRA 16:10)

(Molybdenum silicide-Welding)

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EWF(u) ~~TC-L~~ IJP(c) ~~MJW/JD/HM~~

ACCESSION NR: AP3008442

S/0125/63/000/010/0087/0086

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AUTHOR: Kazakov, N. F. (Moscow); Shishkova, A. P. (Moscow); Charukhina, K. Ye. (Moscow)

TITLE: Vacuum diffusion welding of titanium

SOURCE: Avtomaticheskaya svarka, no. 10, 1963, 82-86

TOPIC TAGS: diffusion welding, vacuum welding, titanium, welding evaluation, welder/ SDVU-6L welder

ABSTRACT: Vacuum diffusion welding is the most promising method for welding titanium and its alloys if the shape and dimensions of the parts permit evacuation around the juncture point and if these same parameters allow transmission of axial force for creating a tight contact between the surfaces to be welded. VT5-1 alloy belongs to the class of single phase α -alloys of titanium and contains 3% Al, 2% Sn. Its mechanical properties: $\sigma_v=75-95 \text{ kg/mm}^2$, $\delta=12-25\%$, $a_n=4-9 \text{ kg/cm}^2$, HB 240-300. The basic technological parameters for vacuum diffusion welding are: the degree of evacuation in the working chamber, the temperature in the welding zone, the necessity for tight contact between the surfaces being welded and the duration of the process. Experiments on titanium welding were carried out at temperatures

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ACCESSION NR: AP3008442

of 600, 800, 1000, 1200 and 1400°C. In selecting the welding temperature range, consideration is given to the initial melting point of the base metal which lies in the region of the temperature of recrystallization. In view of the low yield point of titanium as well as the considerable effect of high welding temperatures on this metal, the pressure was chosen within a range from 0.25 to 1 kg/mm² depending on the area of the specimens being welded. The duration of the process was 10 seconds, 1, 5, 7 and 10 minutes. Since titanium is so active, the evaporation in the chamber was held at 10⁻⁵ mm Hg, the maximum possible for the SPVQ-6B laboratory installation. Before welding, holes were drilled in the specimens for the thermocouple, then they were cleaned with a scraper and degreased in acetone. The welding quality was evaluated by making tensile and impact strength tests. The results of the mechanical tests in relationship to the basic welding parameters are presented in tabular form. Tests of samples welded at low temperatures, 600 and 800°C, pressure 0.5-0.8 kg/mm² and holding 1-5 minutes, showed that it is impossible to achieve stable welding results under these conditions. Most of these samples broke at the point of welding. However the data indicate that strong welds may be produced at these same temperatures by increasing the holding time to more than 5 minutes. The microstructure of the joints was also studied. Orig. art. has: 6 figures and 1 table.

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