Equipment

1. Compressors C-250, C-350, C-500, C-525, C-905, C-1500, C-1700, C-3250, C-4400, C-5500, CTC-275/9

Compressors C-250 C-500 C-525, CC-135, CTC-275 / 9 were the first centrifugal compressors, developed at the plant in 1997, the composition of this equipment includes a compressor, gearbox, intermediate and terminal coolers, set of nozzles to connect the compressor to the intermediate air coolers, throttle, and back contr surge valves. The impellers are made of high-strength and corrosion-resistant steel, which leads to high yield. The original design of the labyrinth seals provides improved sealing, and maintains a constant level of leaks during operation. Plain bearings compressor shaft creates a stable position in the starting period and during operation, reducing vibration to a minimum. *Reducer is a single-stage chevron rising cylindrical gears. Regulation of the inlet pressure machines is the throttle. Lubrication system in the compressor comes in the form of devices (oil tank, start the pump, oil cooler, valves, pipes, etc.) installed and connected into the system as a factory assembled unit. Compressor drive is a synchronous motor STD. The machine shall complete devices UKAS-AM. In table 1 shows the number of the above specifications of compressors.*

Centrifugal Compressors C-250-61-5 and CTC-275/9

Compressors C-250-61-5 and CTC-275 / 9 are designed to compress and move the air. Compressors stationary automated. Type of climatic performance UHL4.

In the compressor is actually completeness compressor, gearbox, intermediate and terminal coolers, set of sockets to connect the compressor to the intermediate air coolers, throttle, and back contr surge valves.

Lubrication system composed of K-250-61-5 comes in the form of devices (grease tank, start the pump, oil cooler) and other elements (valves, pipes, etc.). All devices are installed and connected to the system when mounting the compressor. Lubrication system is designed as a factory assembled unit. On design features both single-compressor, single-shaft, six-cooled compressed air after every two steps. Reducer is a single stage which increases chevron cylindrical gears. Capacity control by throttle.

Compressor drive is a synchronous motor STDM-1600-23UHL4 1,600 kW, three-phase AC voltage 6000 or 10000, 50 Hz and rotor speed of 3000 rev / min.

Office of compressors by an automatic control system "***Zolotnik***".

Manufacturer NE "Energomash" Co.Ltd. Mounting and installation dimensions of compressor C-250-61-5 and CTC-275 / 9 on the foundation are the same, except for the placement of lubrication systems.

The basic specifications of compressors

Characteristic	Value	
	C-250-61-5	CTC-275/9
1. Displacement, m3/min	250	275
2. The working range of performance, m3/min	145-255	165-275
3. The final pressure, kgf/cm2, no more	8,0	8,0
4. Power consumption in the working range, KW	1500	1135-1535
5. Rotational speed of the compressor rotor, rev / min	10935	11172
6. Overall dimensions, including engine, Ix bx h, m	8,2x6, 3x4,3	8,2x7, 6x4,4
7. Weight without motor, t	15,5	14,5
8. Diameter (DN), the suction pipe, mm	600	600
9. Diameter (DN) discharge line, mm	200	200

The parameters of compressors shown in the table are reduced to the following conditions at the inlet: the initial absolute pressure of 98 kPa (1.0 kgf/cm2), the initial temperature 20°C, relative humidity 50%, the initial temperature of 20 ° C cooling water.

Kits to upgrade and repair of centrifugal compressors.

Upgrade kits, and repairs are intended to update the compressor C-250-61-1 (2 and 5) and C-500-61-1 (2 and 5).Kits should be used for compressors with significant operating time, but a satisfactory condition turbine and gearbox.

Modernization and repair of compressors on-site for use with preservation of the foundations and the use and refinement without removing the compressor housings, gear and coolers plant specialists of NE "Energomash" Co.Ltd . The use of any of the kits produced by the plant makes it possible to completely renovate the compressor and thereby prolong its service life.

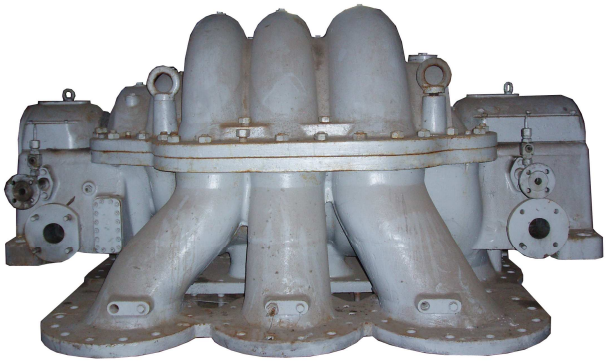
Upgrade kits Compressors C-250-61-1 (2 and 5) and C-500-61-1 (2 and 5).

Modernization provides improved compressor parameters and their stable maintenance in service. Performance of the upgraded compressor C-250-61-1 (2 and 5) increased to 270 m3/min, C-500-61-1 (2 and 5) - up to 550 m3/min, compressor efficiency is increased by 1-1.5 %.

Turbine compressor TC-255/7

Stationary units, compact, modular, automated.

Turbine compressor units are designed to compress and move the air.



The structure of each unit includes a turbocharger unit. Unit combines the core functionality of the unit - compressor, gearbox, motor, oil system. The lubrication system of units collected in the block. Installation of the unit is possible on the existing foundation for compressor C-250 and C-500 and other types.

Drive compressors are AC motors. Turbocharger unit is placed on a concrete pedestal base. Connection with the motor drive shaft is the compressor clutch gear. Compressor rotor aligned with the pinion gear. Highly corrosion-resistant steel from which the impellers are made a condition for high yield. The original design of the labyrinth seals provides improved sealing, and supports the constant level of leaks during operation. Segment bearing bearings compressor shaft creates a stable position in the starting period and during operation, reducing vibration to a minimum.

Equipped REGULATORY INPUTS COMPRESSORS

Provides a wide control range with high efficiency.

The units can produce a daily stop. Increased modularity reduces the installation cost of the unit to a minimum. Simple and compact design for easy maintenance. The units have a significant stock performance, large surface area formed by the cooling air cooler.

*Office of compressors by an automatic control system "**Zolotnik**".*

The basic specifications of turbine compressor

Characteristic	*TC--255/7*
Capacity, m3/min, m3 / h (under suction)	255/15300
The working range of performance based regulation, m3/min	100-255
The initial pressure, kgf/cm2	1,0
The final pressure, kgf/cm2	7,0
Power consumption, kW	1170
Weight of the compressor with a rotor, t	3,35
Number of wheels on the rotor unit.	4
The number of intermediate coolers, pieces.	3
The number of air-end, ea.	1
The initial temperature, 0 C	20
The final temperature, 0 C	30÷40
Rotor speed, rev / min	13530
type of motor	СТД-1250; 4А3М-1250 СТД-1600; 4А3М-1600
The number of revolutions rev / min.	3000
Voltage, K	6,0/10,0
Motor power, kW	1250/1600
Overall dimensions of the unit, including the engine, 1 x bx h, m	6,2x2,6x4,0
Weight of unit with engine, tons	16
Water consumption, m3	150÷180

the basic specifications

№ п/п	type	C-250-61-5 modular	C-250-61-5 not block	CTC-275/9 modular	C-500; C-525 not block	CC-135/8 modular	CC-135/8 frameless
1	*performance, m3/min*	250	255	275	525	135	135
2	*initial pressure kgf/cm2*	1	1	1	1	1	1
3	*final pressure kgf/cm2*	9	9	9	9	7,8	7,8
4	*number of revolutions*	10923/11120	10923/11120	11120	7625	13645	13645
5	*type of motor*	СТД-1600	СТД-1600	СТД-1600	СТД-3150	4АЗМ-1000 СТД-1000	4АЗМ-1000 СТД-1000
6	*motor power*	1600	1600	1600	3150	1000	1000
7	*kV voltage*	6/10	6/10	6/10	6/10	6/10	6/10
8	*number of revolutions*	3000	3000	3000	3000	3000	3000
9	*number of rotors*	1	1	1	1	2	2
10	*Power consumption, kW*	1500	1500	1550	3000	870	870
11	*number in / coolers*	3	3	3	3	3	3
12	*total water consumption*	250	250	250	500	100	100
13	*T^0 gas terminal in the air / coolant*	35÷40	35÷40	35÷40	35÷40	35÷40	35÷40
14	*T^0 the cooling water*	20	20	20	20	20	20
15	*compressor mass, kg*	6800	7000	6800	13000	3500	3500
16	*weight reducer, kg*	1200	1200	1200	2000	1200	1200
17	*motor weight, kg*	7500	7500	7500	13500	5000	5000
18	*total weight of the unit, kg*	30000	25000	30000	45000	24000	21000
19	*weight of the largest unit, kg*	8000	8000	8000	9500	5000	5000

Centrifugal Compressor machines (CCM)
Turbocharged UNITS

type	Q, m^3 / min	P max, кgf/ cm^2	N , kW	I x b x h ,m	m* , t	N_{norm} ,kW	U , V
ТКА 80/9	58-80-86	9 ,0	380-500-530	4,6x2,5x2,0	5,98	630	6000/10000
ТКА 130/9	95-130-140	9,0	560-745-780	5,8x3,1x2,1	7,87	800	6000/10000
ТКА 250/9	170-260-276	9,0	880-1450-1430	7,7x4,1x2,3	12,0	1600	6000/10000

Compressors

type	Q, m^3 / min	P max, кgf/ cm^2	N , kW	I x b x h ,m	m* , t	N_{norm} ,kW	U , V
К-250-61-5	145-255	9 ,0	1000-1445	8,2x6,3x4,3	15,5	1600	6000/10000
ЦТК 275/9	165-275	9,0	1135-1535	8,2x7,6x4,3	14,5	1600	6000/10000

MULTI-AIR Blowers

type	Q, m^3 / min	P max, кgf/ cm^2	N , kW	I x b x h ,m	m* , t	N_{norm} ,kW	U , V
ЦНВ 135/2	115-135-160	2,10-2,00-1,85	200-225-270	4,4x4,9x3,1	7,6	315	6000
ЦНВ 200/3	166-200-226	3,13-3,00-2,73	500-550-572	4,7x4,9x3,1	7,6	630	6000/10000
ЦНВ 280/2,1	230-280-380	2,17-2,10-1,85	450-505-610	4,7x5,1x2,7	7,6	630	6000/10000
360-22-1	260-310-360	2,48-2,40-2,05	586-670-736	5,5x4,3x2,3	7,9	800	6000/10000
360-21-1	300-375-450	1,90-1,80-1,57	465-515-536	5,5x4,3x2,3	8,6	630	6000/10000
ЦНВ750/2	700-750-890	2,04-2,05-1,90	1250-1300-1420	6,6x5,6x3,3	13,3	1600	6000/10000
ЦНВ800/1,6	510-800-920	1,76-1,69-1,59	690-960-1035	6,4x5,6x3,3	12,8	1250	6000/10000
ЦНВ950/2,15	730-950-1150	2,20-2,15-1,40	1570-1760-1880	7,2x5,6x3,3	14,2	2000	6000/10000

MONOBLOCK AIR Blowers

type	Q, m^3 / min	P max, кgf/ cm^2	N , kW	I x b x h ,m	m* , t	N_{norm} ,kW	U , V
Э 35-12	30-50-70	650-600-480	4,7-6,4-7,3	0,7x1,0x1,3	0,5	11	380
Н50-21	25-50-80	1510-1300-755	9-13-15	1,4x1,2x1,3	1,0	22	380/660

SINGLE AIR Blowers

type	Q, m^3 / min	P к max, кgf/ cm^2	N , kW	I x b x h ,m	m* , t	N_{norm} ,kW	U , V
400-12-2	280-415-680	2000-1950-1275	115-150-170	2,9x2,5x2,4	5,0	250	380
700-13-1	500-700-1080	3110-3050-2170	310-390-470	3,5x2,2x2,3	5,2	500	6000
1050-13-1	640-1100-1400	3300-3000-2120	420-580-610	3,7x2,4x2,6	6,0	630	6000/10000

SINGLE Blowers sulfur dioxide

type	Q, m^3 / min	P к max, кgf/ cm^2	N , kW	I x b x h ,m	m* , t	N_{norm} ,kW	U , V
400-12-2	280-425-680	1900-1860-1220	110-145-168	2,9x2,5x2,4	5,0	250	380/6000
700-13-1	500-700-1080	2960-2920-2060	300-370-450	3,5x2,2x2,3	5,2	500	6000/10000
1050-13-1	640-1100-1400	3140-2870-2040	408-555-582	3,7x2,4x2,6	6,0	630	6000/10000
Э1700-11-2М	1100-1850-2350	3510-3150-2240	740-1020-1090	5,0x2,7x2,9	6,2	1250	6000/10000

TWO-STAGE Blowers coke oven gas

type	Q, m^3 / min	P к max, кgf/ cm^2	N , kW	I x b x h ,m	m* , t	N_{norm} ,kW	U , V
750-23-8	450-750-900	3310-3000-2410	270-450-490	5,5x2,0x2,1	13,4	800	6000
1200-27-2	750-1270-1380	3760-3500-3380	600-900-950	5,9x2,6x2,4	17,0	1250	6000
ЦНК 1270/1,3	1270	3500	900	6,4x2,6x2,4	16,5	1600	6000
ЦНК 1900/1,3	1900	3500	1320	6,4x2,6x2,4	16,5	1600	6000

Draft machines (TDM) FANS Mill
The initial temperature of - 700C, working – 2000C

type	Q,1000 m^3 / min	P v mm of water. of Art.	N , kW	I^* x b* x h*, m	m*, t	NP ,kW	n , 1/min.	U , V
ВМ-15	15-38-58	840-730-460	55-92-112	1,8x2,6x2,3	1,61	160	1500	380/660,600
ВМ-17	23-58-84	1085-920-600	105-177-212	1,8x2,8x2,6	2,08	315	1500	380/660,600

High pressure fans
The initial temperature of 700C, the working-up 2000C

type	Q,1000 m^3 / min	P v mm of water. of Art.	N , kW	I^* x b* x h*,m	m*, t	NP , kW	n , 1/ min.	U , V
ВВДН-15	18-38-58	820-730-430	62-92-105	2,3x2,6x2,3	2,21	160	1500	380/660
ВВДН-17	23-58-84	1010-920-590	100-177-210	2,3x2,9x2,6	2,51	315	1500	380/660,600

FANS Mill hot-air
The initial temperature 4000C

type	Q, 1000 m^3 / min	Pv, mm of water. of Art.	N, kW	l^* x b^* x h^*, m	m^*, t	NP, kW	n, 1/ min	U, V
ВМ-40/750-11У	13-27-39	165-170-138	10-18-25	1,8 x 2,0 x 1,9	1,75	45	1000	220/380
	20-40-59	370-382-310	35-60-84			110	1500	220/380
ВМ-50/1000-11У	16-36-53	230-242-205	17-33-50	1,8 x 2,4 x 2,5	2,05	132	1000	380/660
	24-54-80	518-545-460	56-112-167			315	1500	380/660

Hot-blast
the initial temperature and 4000C

type	Q, 1000 m^3 / min	Pv, mm of water. of Art.	N, kW	l* x b* x h*, m	m*, t	NP, kW	n, 1/ min	U, V
ВГД-40/380	13-27-39	165-170-138	10-18-25	2,2 x 2,0 x 1,9	1,50	45	1000	220/380
	20-40-59	370-382-310	35-60-84		1,63	110	1500	220/380
ВГДН-15М	30-50-57	190-165-145	21-27-28			75	1000	220/380
	45-75-85	435-375-325	72-92-94	2,2 x 3,0 x 2,2	2,19	200	1500	380/660
	45-75-85	435-375-325	72-92-94			315	1500	6000
ВГДН-17М	40-73-80	245-213-200	36-51-54			132	1000	380/660
	60-110-120	560-480-450	124-173-182	2,4 x 3,3 x 2,4	2,40	315	1500	380/660
	60-110-120	560-480-450	124-173-182			400	1500	6000

FANS Mill in aggressive gases
the initial temperature of 700C, work - up to 1000C

type	Q, 1000 m^3 / min	Pv, mm of water. of Art.	N, kW	l* x b* x h*, m	m*, t	NP, kW	n, 1/ min	U, V
ВМН-15	15-38-58	840-730-460	55-91-112	1,8 x 2,6 x 2,3	1,67	160	1500	380/660
ВМН-17	23-58-84	1085-920-600	105-175-212	1,8 x 2,9 x 2,6	2,12	315	1500	380/660; 6000
ВМН-15М	10-38-60	840-730-510	38-91-140	2,1 x 2,6 x 2,4	1,85	160	1500	380/660
ВМН-17М	20-58-90	1110-920-510	100-175-210	2,2 x 2,9 x 2,7	2,12	315	1500	380/660; 6000

Fans for corrosive gases
The initial temperature of 300C, work - up to 2000C

type	Q, 1000 m^3 / min	Pv, mm of water. of Art.	N, kW	l* x b* x h*, m	m*, t	NP, kW	n, 1/ min	U, V
ВНЖ-13,5	21-36-53	165-180-170	15-25-40			55	600	220/380
	26-45-66	260-287-270	30-50-78	2,1 x 2,2 x 2,0	1,59	110	750	220/380
	35-60-88	460-500-480	70-115-184			200	1000	380/660
ВНЖ-15,5	30-54-78	215-240-230	28-50-78			90	600	220/380
	38-68-100	335-375-360	55-98-156	2,3 x 2,6 x 2,2	1,89	160	750	380/660
	50-90-130	600-665-640	130-230-360			400	1000	6000

Smoke exhausters with running gears
The initial temperature in the suction mode 2000C, submission - 300C, working - to 2000C.

type	Q,	suction mode		feed mode		l* x b* x h*	m*, t	ND,	1/min
ТДМ	1000 m^3/h	Pv, mm of water. of Art.	N, kW	Pv, mm of water. of Art.	N, kW	m	t	kW	1/min
Д-15/140	7,5-15-28	136-145-135	5-9-17	212-225-210	7-14-27	2,0x2,0x1,9	1,5	30	750
	10-20-37	242-255-240	11-21-40	380-405-375	17-32-63			45;75	1000
Д-60/310	21-36-53	106-115-109	10-16-25	165-180-170	15-25-40			55	600
	26-45-66	166-183-173	20-32-50	260-286-270	30-50-78	2,1x2,2x2,0	1,6	110	750
	35-60-88	295-320-307	45-75-118	460-500-480	70-118-184			200	1000
Д-90/410	30-54-78	135-154-145	18-32-50	215-240-230	28-50-78			55;90	600
	38-68-100	215-240-230	35-64-100	335-375-360	55-100-156	2,3x2,6x2,2	1,9	160	750
	50-90-130	385-426-410	84-150-230	600-666-640	130-233-360			400	1000
ДН-15У	20-38-55	155-140-90	12-18-20	240-215-140	20-28-30			55	750
	27-50-73	275-245-160	30-40-45	425-380-245	45-62-70			75	1000
	40-75-110	620-560-360	95-138-152	960-860-560	150-210-240	2,2x2,5x2,4	2,11	250	1500
	40-75-110	620-560-360	95-138-152	960-860-560	150-210-240			315	1500
ДН-17У	30-55-80	195-175-110	22-32-35	300-270-170	35-50-55			55;90	750
	40-73-107	345-310-195	52-75-82	535-480-300	82-115-125	2,3x2,8x2,6	2,38	160	1000
	60-110-160	780-700-440	180-250-275	1200-1080-680	275-385-425			500;630	1500

Smoke exhausters in aggressive gases NO RUNNING GEAR
The initial temperature and 2000C.

type	Q, 1000 m^3/h	Pv, , mm of water. of Art.	N, kW	l x b x h, m	m, t	Nnorm, kW	n, 1/min	U, V
ДН-8НЖУ	4-10,5-15	175-145-100	3-5-6	1,2x1,3x1,2	0,5	15	1500	380/660
ДН-9НЖУ	6-15-18	220-185-160	6-9-10	1,2x1,5x1,3	0,6	15	1500	380/660
ДН-10НЖУ	8-20,5-32	270-225-130	9-15-17	1,4x1,7x1,4	0,7	30	1500	380/660
ДН-11,2НЖУ	12-29-35	340-285-245	17-27-29	1,5x1,9x1,6	1,0	45	1500	380/660
ДН-12,5НЖУ	16-40-60	430-355-230	29-47-58	1,7x2,1x1,8	1,3	90	1500	380/660

Smoke exhausters in aggressive gases with running gears
The initial temperature 4000C, working - to 4500C.

type	Q, 1000 m^3/h	Pv, , mm of water. of Art.	N, kW	l^* x b^* x h^*, m	m^*, t	Nnorm, kW	n, 1/min	U, V
ДН-15НЖУ	27-50-73	190-165-110	20-27-30	2,2x3,0x2,2	2,2	75	1000	220/380
	40-75-110	425-370-245	64-90-102			200	1500	380/660
ДН-17НЖУ	40-73-107	245-220-150	37-52-61	2,4x3,3x2,4	2,4	132	1000	380/660
	60-110-160	550-495-335	125-177-203			315	1500	380/660

PUMPS
NETWORK CENTRIFUGAL PUMPS TYPE CCN
For pumping water up to 1800C. Replace the pumps, "SE".

type	Q, m^3/h	H, m	N, kW	l x b x h, m	m^*, t	Nnorm, kW	n, 1/min	U, V
СЦН 2500/180-8	2500	180	1380	7,4x2,5x2,0	3,5	1600	3000	6000
СЦН 1250/140-11	1250	140	510	4,3x1,4x2,2	4,6	630	1500	6000
СЦН 1250/70-11	1250	70	255	3,3x1,6x1,3	3,1	315	1500	380/660

The initial temperature of the medium for CCN 2500 – 1200C; for CCN 1250 – 1800C.

Q	***volumetric efficiency at the initial conditions for the CCM and TDM, for pumps - supply;***
$P_к$	***final absolute pressure;***
DP	***increase in pressure;***
Pv	***total pressure (higher pressure);***
H	***pressure;***
N	***power consumption;***
L x b x h	***dimensions of the engine;***
L^* x b^* x h^*	***dimensions without the drive motor;***
m	***weight to the drive motor;***
m^*	***weight without the drive motor;***
N_{norm}	***engine power;***
n	***synchronous speed of the rotor;***
U	***voltage electrical network;***

2. Compressors OTC-7/14, CC-135/8M1, OTC-12,5/35, CTC-2,5/3,5M1 and others.

Since 2000 the plant started producing oxygen compressors such as the OTC 7 / 14 and OTC 12,5 / 35, which are machines with external cooling of compressed gas without guide vanes with coil taps gas after each stage and the outer bypass gas from stage to stage . Compressor unit consists of two (three) stages injection, gearbox and motor. Pivot bearings are installed in all buildings damping sleeve that reduces vibration of the rotor at rated rpm. To cool the gas after each section shall apply intermediate and terminal gas coolers. Drive the compressor is a synchronous motor STD. Office of oxygen compressors by using a complete device UKAS-AM.

Fig. 1 *Housing OTK-7/14*

Fig. 2 Housing CC-135/8M1

Fig. 3 Housing OTC-12,5/35

Fig. 4 Housing CTC-2,5/3,5M1

the basic specifications

type	Purpose and scope	Productivity, m / min	Pressure, MPa (kgf/cm2) abs		motor		Dimensions, mm	Weight, kg
			initial	Final	Power, kW	Voltage, V		
XTK-2,5/3,5M1	Compression of dry chlorine in the chemical industry	41,6	0,093 (0,95)	0,343 (3,5)	315	6000	10240x 1170x 6645	16155
KTK-7/14	Compression of oxygen in the chemical and metallurgical industries	116,6	0,098 (1)	1,37 (14)	1250	6000 10000	11000x 5050x 5700	24885
ГТК7/5М	Compression and transfer of associated gas at gas compressor stations	117	0,098 (1)	0,49 (5)	630	6000	10200x 4620x 3700	15000
ЦК135/8М1	Compressed air or nitrogen in the chemical and	135	0,098 (1)	0,78 (7,8)	1000	6000 10000	9000x 4600x 5000	15400

	metallurgical industries							
КТК-9,6/26	Compression of oxygen in the metallurgical and chemical industries	160	0,1 (1,02)	2,55 (26)	2000	6000	12250x 5600x 6700	25600
КТК-12,5/35	Compression of oxygen in the chemical and metallurgical industries	208	0,1 (1,02)	3,43 (35)	3150	6000 10000	20500x 4500x 5000	38815

№	type	ЦК-125/8 modular	4ВРК-150/280 modular	ЦК-165/8 modular	4ВРК-200/340 modular	ЦК-255/8 modular	4ВРК-250/430 ЦК-255/8 modular
1	working environment	air / nitrogen	air / nitrogen	air / nitrogen	air / nitrogen	air / nitrogen	air / nitrogen
2	performance, m3/min	*125*	*125/130*	*170*	*170*	*255*	*255*
3	initial pressure kgf/cm2	*1*	*1*	*1*	*1*	*1*	*1*
4	final pressure kgf/cm2	*9,0*	*8,0/9,0*	*7,0/8,0*	*7,0/8,0*	*7,0/9,0*	*8,0/9,0*
5	number of revolutions	*22122; 23201 30686; 35282*	*22122; 23201 30686; 35282*	*22122; 23201 30686; 35282*	*22122; 23201 30686; 35282*	*22122; 23201 30686; 35282*	*22122; 23201 30686; 35282*
5	type of motor	*4А3М-630/800 СТД-630/800*	*4А3М-630/800 СТД-630/800*	*4А3М-1000 СТД-1000*	*4А3М-1000 СТД-1000*	*4А3М-1250/1600 СТД-1250/1600*	*4А3М-1600 СТД-1600*
6	motor power	*630/800*	*630/800*	*1000*	*1000*	*1000*	*1000*
7	kV voltage	*6/10*	*6/10*	*6/10*	*6/10*	*6/10*	*6/10*
8	number of revolutions	*3000*	*3000*	*3000*	*3000*	*3000*	*3000*
9	number of rotors	*4*	*4*	*4*	*4*	*4*	*4*
10	Power consumption, kW	*600/650*	*650*	*950*	*950*		*1370*
11	number in / coolers	*4*	*4*	*4*	*4*	*4*	*4*
12	total water consumption	*70*	*70*	*100*	*100*	*200*	*200*
13	t0 gas terminal in the air / cooling.	*35÷40*	*35÷40*	*35÷40*	*35÷40*	*35÷40*	*35÷40*
14	t0 the cooling water	*20*	*20*	*20*	*20*	*20*	*20*
15	sucker	*Ду-350*	*Ду-350*	*Ду-400*	*Ду-400*	*Ду-500*	*Ду-500*
16	Discharge connection	*Ду-150*	*Ду-150*	*Ду-200*	*Ду-500*	*Ду-250*	*Ду-250*
17	mass of unit	*13,5/15,0*	*13,5/16,0*	*21,0/24,0*	*21,0/24,0*	*29,0/33,0*	*29,0/33,0*
18	weight the most. part of the unit, kg	*5000*	*5000*	*7000*	*7000*	*8000*	*8000*
19	Overall dimensions, m	*4,9x2,5x2,15*	*4,9x2,5x2,15*	*5,5x3,0x2,7*	*5,5x3,0x2,7*	*5,8x3,2x2,8*	*5,8x3,2x2,8*

№	Тип агрегата	ЦК-135/8 modular	ЦК-135/8 frameless	ЦК-115/9 modular	ЦК-115/9 frameless	К-150 modular	ЦК-100/6,5 modular
1	working environment	air / nitrogen	air / nitrogen	air / nitrogen	air / nitrogen	air / nitrogen	air / nitrogen
2	performance, m3/min	*135*	*135*	*115*	*115*	*148*	*100*
3	initial pressure kgf/cm2	*1*	*1*	*1*	*1*	*1*	*1*
4	final pressure kgf/cm2	*7,8*	*7,8*	*8,0/9,0*	*8,0/9,0*	*7*	*6,5*
5	number of revolutions	*13645*	*13645*	*13800*	*13800*	*13800*	*13800*
5	type of motor	*4А3М-1000 СТД-1000*	*4А3М-1000 СТД-1000*	*4А3М-800/1000*	*4А3М-800/1000 СТД-800/1000*	*СТД-1000 4А3М-1000*	*4А3М-630 СТД-630*
6	motor power	*1000*	*1000*	*800/1000*	*800/1000*	*1000*	*630*
7	kV voltage	*6/10*	*6/10*	*6/10*	*6/10*	*6/10*	*6/10*
8	number of revolutions	*3000*	*3000*	*3000*	*3000*	*3000*	*3000*
9	number of rotors	*2*	*2*	*2*	*2*	*2*	*2*
10	Power consumption, kW	*870*	*870*	*600*	*780/970*	*970*	*570*
11	number in / coolers	*3*	*3*	*3*	*3*	*3*	*3*
12	total water consumption	*100*	*100*	*100*	*100*	*140*	*80*
13	t0 gas terminal in the air / cooling..	*35÷40*	*35÷40*	*35÷40*	*35÷40*	*35÷40*	*35÷40*
14	t0 the cooling water	*20*	*20*	*20*	*20*	*20*	*20*
15	mass of unit kg	*24000*	*21000*	*24000*	*21000*	*24000*	*18000*
16	weight the most. part of the unit, kg	*5000*	*5000*	*5000*	*5000*	*5000*	*5000*

№ п/п	Тип агрегата	ТК-250/8 modular	4ВРЗ-250/430 not block	4ВРЗ-250/430 modular	К-250-61-5 modular	К-250-61-5 not block	ЦТК-275/9 modular	К-500; К-525 not block
1	volume production., m3/min	250	256	250	250	255	275	525
2	initial pressure kgf/cm2	1	1	1	1	1	1	1
3	final pressure kgf/cm2		7,0/8,0		9	9	9	9
4	Number of Turns	13645/13800	13645/13800	13645/13800	10923/11120	10923/11120	11120	7625
5	type of motor	СТД-1250 СТД-1600	СТД-1600	СТД-1250 СТД-1600	СТД-1600	СТД-1600	СТД-1600	СТД-3150
6	motor power	1250/1600	1600	1250/1600	1600	1600	1600	3150
7	kV voltage	6/10	6/10	6/10	6/10	6/10	6/10	6/10
8	number of revolutions	3000	3000	3000	3000	3000	3000	3000
9	number of rotors	1	1	1	1	1	1	1
10	consumption. , kW	1170	1350	1170/1350	1500	1500	1550	3000
11	number in / coolers	4	4	4	3	3	3	3
12	total water consumption	200	200	250	250	250	250	500
13	t0 air gas conc. in / cooling.	35÷40	35÷40	35÷40	35÷40	35÷40	35÷40	35÷40
14	t0 the cooling water	20	20	20	20	20	20	20
15	weight (kg) RGM. total	27000	25000	27000	30000	25000	30000	45000
16	weight of the largest unit, kg	5000	7000	7000	8000	8000	8000	9500
17	Overall dimensions, m	7,0x2,5x4,0	7,0x6,0x4,3	6,0x2,5x4,3	7,0x3,0x4,3	8x6,3x4,3	7,0x3,0x4,3	12x6,3x6,0

3.Blowers Н-270, Н-280, Н-360, Н-370, Н-400, Н-520, Н-670, Н700, Н-750, Н-1050, Н-1200, Н-1700, Н-1800, Н-6500, Н-7500, ЦНВ-800/1.6, Э-200 and others.

Since 1998, the plant produces one-piece air blowers type Э-35, Н-50 single-stage air blowers such as sulfur dioxide, Н-400 Н-700, Н-1050, Э-1700, two-stage superchargers coke oven gas 750; 1200, in close-coupled design - on the same frame with a drive motor. Blowers are designed for compression and movement of air and gases, including sulfur and coke. Used designs can achieve excellent gas-dynamic characteristics of high, not less than 82%, the value of efficiency.
Blowers type Н and Э represent single-cylinder single-stage double-inlet machine. Two rectangular suction nozzle directed upwards, the discharge nozzle is located at the bottom of the cochlea and is directed horizontally to the left when viewed from the drive. The compressor consists of a welded housing with inserts, a rotor bearing housings with inserts, seals, foundation frames. Housing supercharger welded, made of sheet steel, has the connectors in both vertical and horizontal planes and consists of two suction chambers and snails. The rotor has a single compressor impeller double inlet.

the basic specifications

SINGLE AIR Blower

type	Q, m^3/min	ΔP, mm of water	N, kW	l x b x h, m	m*, тт	Nnorm, kW	U, kV
400-12-2	280-415-680	2000-1950-1275	115-150-170	2,9x2,5x2,4	5,0	250	0,38
700-1-1	500-700-1080	3110-3050-2170	310-390-470	3,5x2,2x2,3	5,2	500	6
	500-700-1080	3110-3050-2170	310-390-470	3,7x2,2x2,3	5,2	630	10
1050-13-1	640-1100-1400	3300-3000-2120	420-580-610	3,7x2,4x2,6	6,0	630	6
Э1700-11-2М	1100-1850-2350	3510-3150-2240	740-1020-1090	5,0x2,7x2,9	6,2	1250	6/10

MULTI-AIR blowers

type	Q, m^3/min	Рк, atm	N, kW	l x b x h, m	m*, t	Nnorm, kW	U, kV
ЦНВ 135/2	115-135-160	2,10-2,00-1,85	200-225-270	4,4x4,9x3,1	7,6	315	6
ЦНВ 200/3	166-200-226	3,13-3,00-2,73	500-550-572	4,7x4,9x3,1	7,6	630	6/10
ЦНВ 280/2,1	230-280-380	2,17-2,10-1,85	450-505-610	4,7x5,1x2,7	7,6	630	6
360-22-1	260-310-360	2,48-2,40-2,05	586-670-736	5,5x4,3x2,3	7,9	800	6/10
360-21-1	300-375-450	1,90-1,80-1,57	465-515-536	5,5x4,3x2,3	8,6	630	6
ЦНВ 750/2	700-750-890	2,04-2,05-1,90	1250-1300-1420	6,6x5,6x3,3	13,3	1600	6/10
ЦНВ 800/1,6	510-800-920	1,76-1,69-1,59	690-960-1035	6,4x5,6x3,3	12,8	1250	6/10
ЦНВ 950/2,15	730-950-1150	2,20-2,15-1,40	1570-1760-1880	7,2x5,6x3,3	14,2	2000	6/10

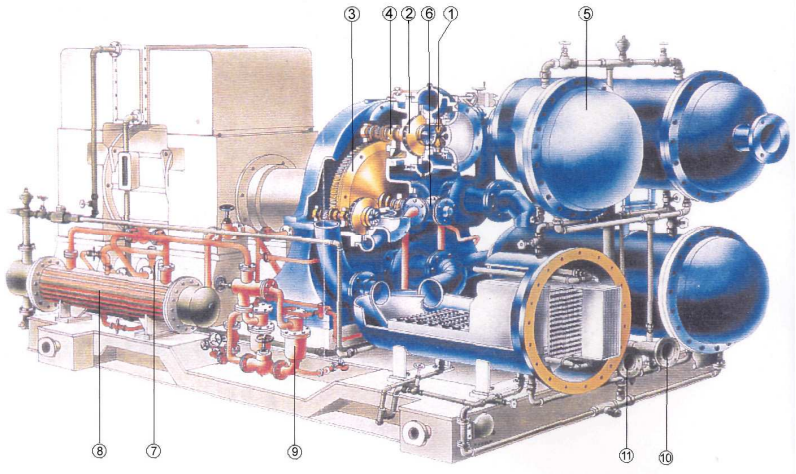
the basic specifications

Blower type	compressible media	γ, kg/m m2	Rated operating conditions					drive			Overall dimensions, mm		
			V, m^3/min	$P_К$, atm	Terms of suction		n, rev / min	N, kW	$N_{пр}$, kV	N_{dr} rev/min	$U_{пр.}$ V	L	B	H
					$T_{ВС}$ ^0C	$P_{ВС}$, atm								
Э-170-11-1 (2)	sulfur dioxide	1,38	1670	3000	40	0,95	2980	1050	1250	2980	6000	5800	3500	6600
1100-11-2	gas	1,1	1100	1200	35	1,045	2975	300	350	2975	6000	4800	4000	8200
1100-12-2	gas	1,1	1000	750 (ama)	35	1,0	2975	190	250	2975	6000	4800	4000	8200
Э-1050-11-4	sulfur dioxide	1,4	1080	2000	50	0,94	2975	430	500	2975	6000	5000	3000	5570
Э-1050-12-4	sulfur dioxide	1,4	1080	2350	50	0,94	2975	480	630	2975	6000	5000	3000	5570
Э-1050-13-4	sulfur dioxide	1,4	1080	2800	50	0,94	2975	570	630	2975	6000	5000	3000	5570
700-11-2	sulfur dioxide	1,34	700	2350	50	0,95	2975	325	400	2975	6000	5100	3000	4800
700-12-2	sulfur dioxide	1,34	700	1900	50	0,95	2975	290	350	2975	6000	5100	3000	4800
700-13-2	sulfur dioxide	1,34	700	2760	50	0,95	2975	375	450	2975	6000	5100	3000	4800
400-12-3	sulfur dioxide	1,4	415	1850	40	0,96	2965	175	250	2965	380	4500	3000	5130
Э-325-11-1	air	1,293	325	4600	20	1,0	7525	300	400	2970	6000	2650	3200	1030
Э-325-11-2	water-gas	0,867	325	2800	40	0,98	7525	200	250	2970	6000	2650	3200	1060
Э-325-11-3	water-gas	0,867	325	1400	40	0,98	6280	125	160	2970	6000	2650	3200	1060
Э-325-11-4	air	1,293	264	2100	20	1,0	5870	140	200	2970	6000	2650	3200	1060
Э-101-11-3	air	1,293	100	2000	20	1,0	6910	45	55	2985	220/380	2550	3000	2200
Э-101-11-4	sulfur dioxide	1,4	100	2000	50	0,96	7000	50	75	2975	380	2550	3000	2200
12000-11-1	sintering gas	1,33	12000	1470	150	0,931	1320	3,8	4000	1500	13600	6200	3000	75000
12000-11-2	sintering gas	1,33	12000	1350	150	0,931	1260	3,1	3500	1500	13600	6200	3000	75000
11000-11-2	sintering gas	1,33	11000	15000	150	0,931	1500	3,0	3500	1500	13600	6200	3000	75000
9000-11-4	sintering gas	1,33	9000	1250	150	0,95	2330	2100	2500	1500	11800	6000	3000	75000
9000-11-5	sintering gas	1,33	1200	1350	150	0,95	1200	3100	3300	1000	13600	6000	3000	75000
7500-11-1	sintering gas	1,33	7500	1290	150	0,98	1500	1980	2500	1500	9400	5400	2500	42500
6500-11-3	sintering gas	1,33	6500	1290	150	0,92	1500	1700	2000	1500	9200	5400	2500	42500
6500-12-1	combustion gas	1,33	4200	1300	70	0,895	1491	1050	2000/500	1491/747	9000	5400	2500	42000
			2000	300	50	1,0	747	125						
7600-13-1	BOF gas	1,33	7500	2150	60	0,875	2275	3,48	4000	1500	9400	5400	2500	42500
540-41-1	nitrous gas	1,29	540	4,2	50	0,96	8455	2150	1600	2980	6000	7650	3300	4200
340-81-4	nitrous gas	1,42	365	12	35	1,01	12740	2500	3150	2980	6000	11200	3600	3600
75-51-1	nitrous gas	2,21	78		50	2,0	13000	820	1000	2980	6000	6000	3000	3600

NE "Energomash" Co.Ltd offers a modernized compressor unit block design MEM-125 / 8, MEM-100 / 8

Block compressor unit is designed to compress the air used for industrial processes in various industries.

Compressor unit is a compact monoblock setup consists of a compressor, electric motor, air coolers, oil coolers, oil filters, fine filters, main and start-up oil pump, oil supply system.



1. Inlet guide.
2. Impeller to the shaft gear.
3. The central gear.
4. Segmental thrust bearing.
5. The cooler.
6. The main oil pump.
7. The oil cooler.
8. Oil filter switchable.
9. Log in cooling water.
10. Log in cooling water.
11. The output of cooling water

All of this equipment is mounted on a common rigid frame, which is at the same time oil tank. The lubrication system - the circulation, forced to the free discharge of oil in the tank. The frame is attached to the wedges by six anchor bolts M36. The depth of concreting anchors – 500 mm.

the basic specifications

№	Designation	МЭМ-100/8	МЭМ-125/8
1	*Capacity, m3/min*	*90÷100*	*100÷125*
2	*Pressure, Kg/cm2: primary*	*1,0*	*1,0*
	final	*7,0÷9,0*	*7,0÷9,0*
3	*Temperature after cooling, 0C: initial*	*20*	*20*
	final	*40*	*40*
4	*The working environment*	*air*	*air*
5	*Power consumption, kW*	*520/550*	*550/670*
6	*number of rotors*	*4*	*4*
7	*Motor type:*	*4A3M; 4APM; СТД*	*4A3M; 4APM; СТД*
8	*Power, kW*	*630*	*800*
9	*Rotation frequency, rev / min*	*2900/3000*	*2900/3000*
10	*Voltage, V*	*6000/10000*	*6000/10000*
11	*Water consumption, m3 / h*	*70*	*72*
12	*Weight, kg*	*12600/14600*	*13500*
13	*Overall dimensions, m*	*4,9/5,4x2,2x2,5*	*5,0/5,5x2,2x2,6*

Compared to other products manufactured compressor has the advantages:

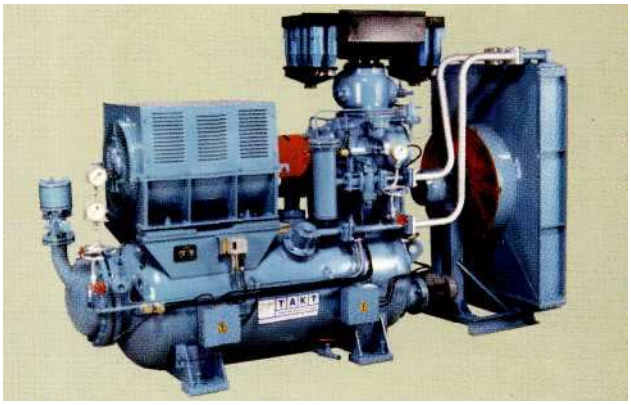
1. A significant reduction in cost and duration of on-site installation, because the unit is supplied as a unit and is ready for operation after connecting to the grid, to the water supply and air networks;

2. Substantial savings in construction costs and building material due to reduced demand for space and space for installation;

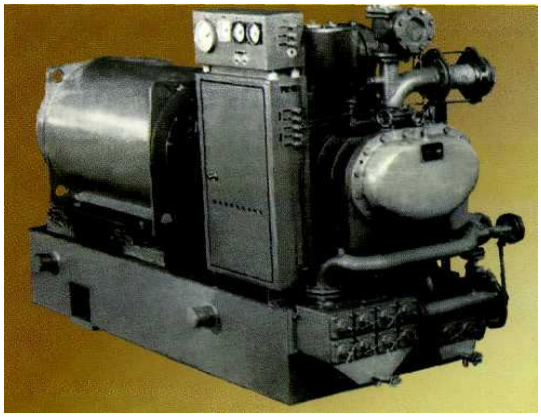
3. Do not want to associate with costly foundation platform, since refrigerators are already on a compressor

Screw air compressors high performance

Designed for compressed air pneumatic machinery used in sinking shafts and horizontal mine workings in the coal and mining industries, are installed on mobile drilling machines may be used in various industries.



Compressors **6BB-25/9, 6BB-32/7**



Compressors **7BKM-50/8**

The installation includes:

1. compressor unit consists of compressor, motor oil filters, coarse and fine filters, piping, valves and control valves and mounted on a common frame-oil tank;
2. water or air cooling unit oil, motor, fan, valves and piping;
remote control panel.
The application of automation eliminates the constant presence of staff and manage the installation, monitoring of key parameters and protection against accidental states.
The system lubricants - circulating pressurized lubricating oil - TP-22s turbine, winter spindle, hydraulic AU with additives. The screw compressor - volume, horizontal, single stage, oil-filled, driven by a motor via a flexible coupling. Consists of a body, the input and output rotor angular contact bearings and seals. To unload the rotor thrust bearing host a discharge piston.

the basic specifications

type	Purpose and scope	Capacity, m3/min	MPa pressure (kgf/cm2) abs	Rotor speed, rev / min	Motor		Dimensions of installation mm	Weight, kg	application
					Power, kW	Voltage, V			
6BB-25/9	*Compression of air and feed it into the pneumatic actuators of machinery used in coal and mining industries, established on the surface mines and other customers of different industries, except food and medicine, where possible direct contact with the compressed air products*	***26***	***0,88 (9)***	***2925***	***200***	***380***	***3300 1125 2000***	***2950***	*Air-cooled oil. For frequent starts before 6 in change.*
6BB-32/7	*Compression of air and feed it to the machine actuators roller cone drill, working on open-pit mines*	***30,5***	***0,68 (7)***	***2925***	***200***	***380***	***3300 1125 2000***	***3000***	*Air-cooled oil.*
7BKM-50/8	*Air compression and flow in pneumatic drilling machines and pneumatic tools.*	***52***	***0,784 (8,0)***	***3000***	***400***	***380***	***5680 2535 2085***	***8517***	*Water-cooled oil.*

4.Turboblowers ТВ-50, ТВ-80, ТВ-125, ТВ-175, ТВ-200, ТВ-300, ТГ-80, ТГ-170, ТГ-300 и др. Gas turbines ГТТ-3, ГТТ-3М, ГТТ-12, ГТК-10

the basic specifications

№	type	The nominal mode of operation when tested in air PH-1, 0 and tn = kgf/cm2; 200C			№	type	The nominal mode of operation when tested in air PH-1, 0 and tn = kgf/cm2; 20C		
		performance m3/min	Pressure, kgf/cm2	Power consumption, kW			performane m3/min	Pressure, kgf/cm2	Power consumption, kW
Turbochargers gas, multi-									
1	2ТГ-80-1,4	100	1,42	85,5	6	ТГ-170-1,7	167	1,63	202
2	2ТГ-80-1,6	100	1,63	128	7	ТГ-200-1,4	200	1,4	165
3	ТГ-80-1,8	100	1,8	150	8	ТГ-60-1,3	60	1,3	56
4	2ТГ-80-1,8	100	1,8	150	9	ТГ-66Л-1,09	66	1,35	56
5	ТГ-300-1,6	333	1,575	367	10	ТГ-200КС-1,4	200	1,4	180
Turbochargers, air, multi-									
1	ТВ-42-1,4	60	1,4	52	6	ТВ-80-1,8	100	1,8	150
2	ТВ-50-1,6	60	1,5	82	7	ТВ-300-1,6	300	1,5	337
3	ТВ-80-1,2	100	1,2	45	8	ТВ-175-1,6	167	1,63	202
4	ТВ-80-1,4	100	1,42	85,5	9	ТВ-200-1,4	200	1,4	165
5	ТВ-80-1,6	100	1,63	128					
Turbochargers single stage, air									
1	ТВ-100-1,12	100	1,12	27	4	ТВ-500-1,08	500	1,08	109
2	ТВ-200-1,12	200	1,14	56,5	5	ТВ-125-5,5	125	5,5	145
3	ТВ-350-1,06	350	1,06	47	6	3ТВ-200-1,12	200	1,14	57
Turbochargers single-stage, gas									
1	ТГ-65-1,06	67	1,13	21	4	ТГ-300-1,18	300	1,2	140
2	ТГ-150-1,12	200	1,14	57	5	ТГ-350-1,06	350	1,06	47
3	ТГ-150-1,14	200	1,14	56,5	6	ТГ-500-1,08	500	1,08	109

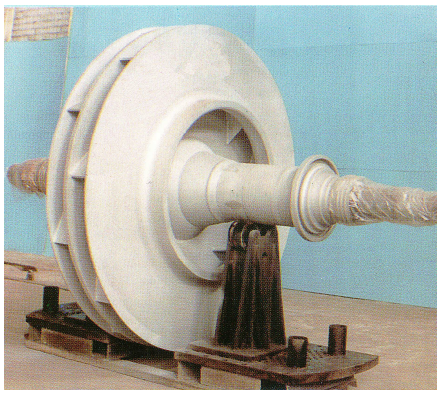
5. Rotary vane compressor stations ПР-12/7, ПР-8/7, ПР-8/2.5, ПРЭ-10/7, ПРЭ-6/7, ПР-3/6 и др.

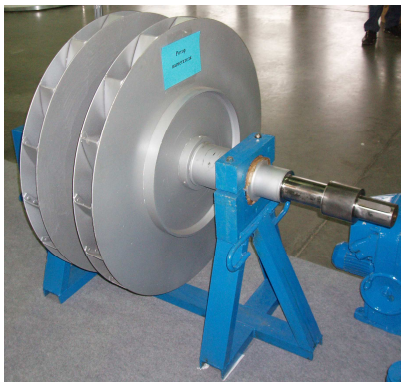
the basic specifications

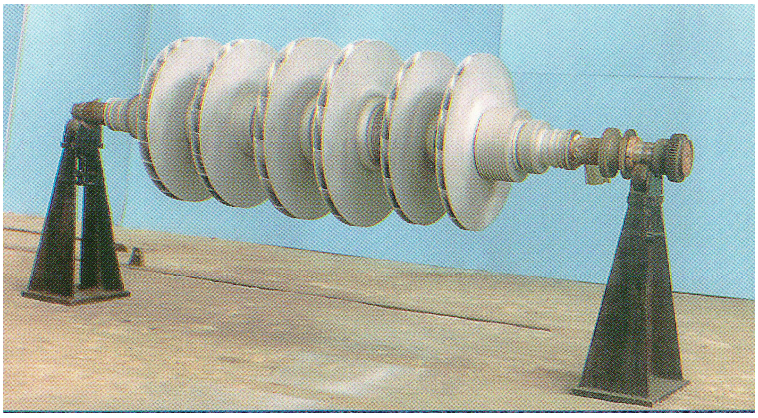
Compressor	Compressor									Compressor
	ПРЭ-14/7	ПРЭ-12/7	ПРЭ-10/7	ПРЭ-8/7	ПРЭ-6/7	ПРЭ-3/6	ПРЭ-5/6	ПРЭ-1,5/6	ПРЭ-2,5/6	ПР-8/1,5 (-0,4)
type of station	Stationary on the frame									stationary
type of compressor	Rotary, vane, oil-injected									Rotary non-driven
Performance, m3/min	*14*	*12*	*10*	*8*	*6*	*3*	*5*	*1,5*	*2,5*	8
Pressure (kg/cm2)	*7*	*7*	*7*	*7*	*7*	*6*	*7*	*6*	*6*	0,15 vacuum 0,4
type of drive	electric drive									Available with actuator
Drive power,kW	*110*	*90*	*75*	*55*	*55*	*30*	*37*	*15*	*18*	*Motor 30kW*
Power consumed by compressor, kW	*92*	*81*	*61*	*51*	*42*	*28*	*33*	*11*	*14*	*22,5*
Rotor speed, rev / min	*1900*	*1700*	*1500*	*1900*	*1500*	*1500*	*1700*	*1500*	*1700*	*1750*
Overall dimensions, mm	*3200* *1700* *2000*	*3100* *1700* *2000*	*3000* *1700* *2000*	*2600* *1700* *2000*	*2500* *1700* *2000*	*1600* *1200* *1100*	*1700* *1200* *1100*	*1400* *850* *1100*	*1600* *850* *1100*	*710* *730* *800*
Weight, kg	*1900*	*1900*	*1700*	*1600*	*1400*	*650*	*720*	*460*	*630*	*175*

Compressor	Compressor								
	ПРЭ-14/7	ПРЭ-12/7	ПРЭ-10/7	ПРЭ-8/7	ПРЭ-6/7	ПРЭ-3/6	ПРЭ-5/6	ПРЭ-1,5/6	ПРЭ-2,5/6
type of station	*Traveling on the pneumatic*								
type of compressor	*Rotary, vane, oil-injected*								
Performance, m3/min	*14*	*12*	*10*	*8*	*6*	*3*	*5*	*1,5*	*2,5*
Pressure (kg/cm2)	*7*	*7*	*7*	*7*	*7*	*6*	*7*	*6*	*6*
type of drive	*electric drive*								
Drive power,kW	*110*	*90*	*75*	*55*	*55*	*30*	*37*	*15*	*18*
Power consumed by compressor, kW	*92*	*81*	*61*	*51*	*42*	*28*	*33*	*11*	*14*
Rotor speed, rev / min	*1900*	*1700*	*1500*	*1900*	*1500*	*1500*	*1700*	*1500*	*1700*
Overall dimensions, mm	*3200* *1700* *2000*	*3100* *1700* *2000*	*3000* *1700* *2000*	*2600* *1700* *2000*	*2500* *1700* *2000*	*1600* *1200* *1100*	*1700* *1200* *1100*	*1400* *850* *1100*	*1600* *850* *1100*
Weight, kg	*1900*	*1900*	*1700*	*1600*	*1400*	*650*	*720*	*460*	*630*

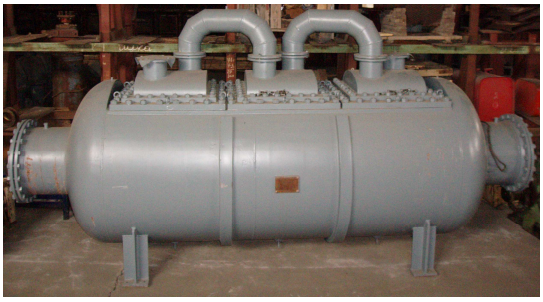
6. Welded and riveted rotors for compressors and blowers

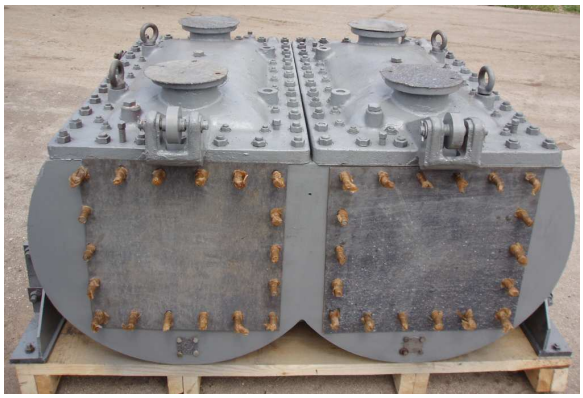






7. Air coolers and tube bundles for compressors





NE "Energomash "Co. Ltd. manufactures and repairs heat exchangers according to TC 3612-014-00220302-99, TC 26-02-1090-88, 26-02-1101-89 TC, TC 26-02-1105-89 the following types of HP, TP, HKV, CGC, HKG, TU, CS, IR, ID; TTON; TTOR, TTM, TN, TC, HC, CC, CN.

1. Shell and tube heat exchangers (OKP code 36 1211) on TC 26.02-1105-89 / providing work and mode of refrigerators / diameter of 159, 273, 325, 426, 600, 800 mm exchange surface of 754 m2 to 1, with a diameter heat exchangers 1000, 1200 mm and higher pressure of 0.6 - 4.0 MPa. Heat exchangers with floating heads and U - shaped tube outer diameter 530, 630, 800, 1000, 1200, 1400 mm, tube bundles for the above devices by TC 26-02-1101-89, 26-02-1062-88 TC, W 26 -02-1069-88, steam-water and water-water heaters with the brass tube bundles, heat exchangers, such as collapsible tube in the pipe for the oil, gas and other industries.

Evaporators with vapor space and tube bundles, with a floating head, and U - shaped tube. Optional equipment is manufactured according to customer drawings. All this equipment is made of carbon and stainless steel!

PTFE Heat Exchangers: Shell and tube and submerged in a heat exchange surface, 2.5, 4, 6.3, 10, 25 m2 of Teflon brand 4MB, 4D. Designed for heating, cooling and condensing of corrosive and highly pure media, as well as during the processes of chemical and electrochemical processing of materials.

2. Plate heat exchangers / heat exchangers / (OKP code 361 251) stainless steel collapsible, welded heat-exchange surface of 0.5 to 400 m2 with plates of 0.07, 0.21, 0.3, 0.35, 0.40, 0 , 53, 0.6, 0.65, 1.0, 1.3 m2 and sealed parts; heaters, coolers, pasteurizers milk, beer, juices, wine and other food products based on plate heat exchangers.

Production time from 30 to 90 days depending on complexity;

Pre-payment - 70% of equipment cost;

The warranty period of 18 months from the date of entry into operation of heat exchangers, but not more than 24 months after shipment from the factory - manufacturer;

Provided technical data sheet for a product with a resolution of State Standard for manufacture.

Heat exchangers are designed for heating and cooling media in technological processes of petroleum, chemical, petrochemical, gas and other industries.

When ordering, heat exchangers shall be given a questionnaire (see overleaf).

Recommendations for use of different types of heat exchangers are given in the recommended application on 7 sheets.

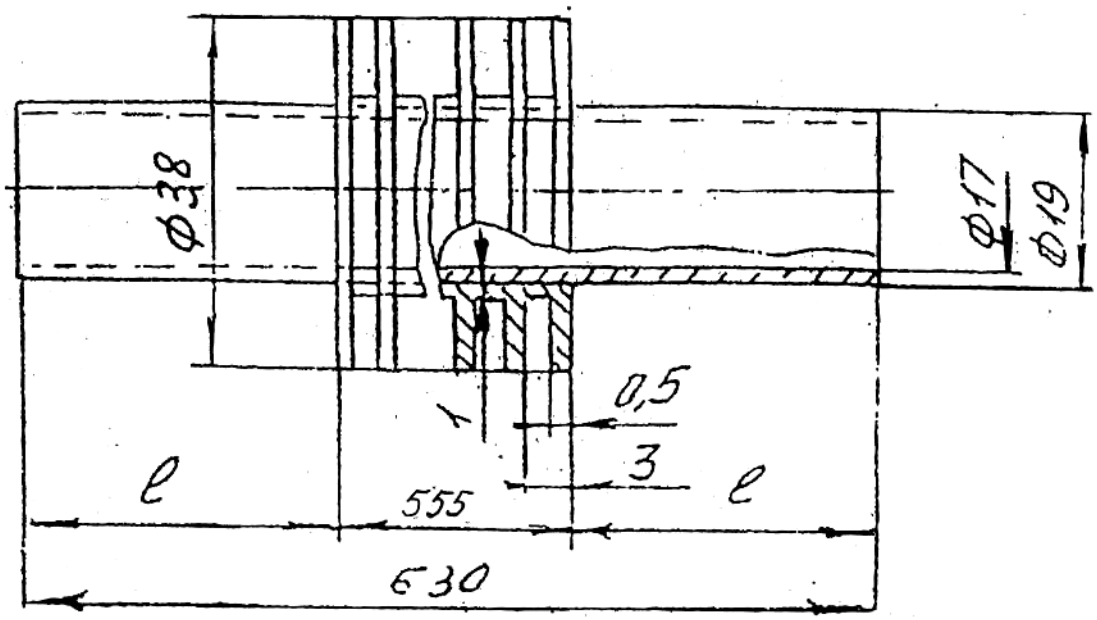
Maximum permissible temperature difference between inlet and outlet of the annular space environment for the heat exchanger type TTOR should not exceed 1500C.

Working environment temperature from -30 C to plus 400C.

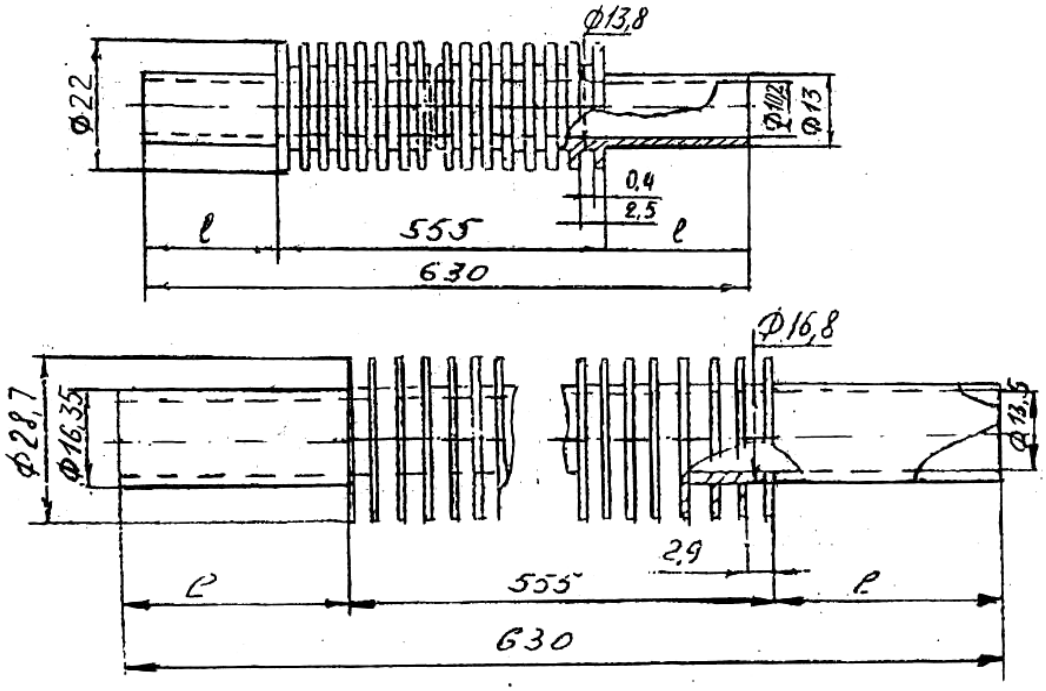
Repair period of 30 days in advance 50% of the cost of repairs.

Prices are directed to the heat exchangers of the request.

Sketch of the tube finned bimetallic
for beam end air coolers ВОК-79,2, ВОК-79,4
the compressor С-250-61-2, С-250-61-5, С-500-61-5, С-500-61-1.
Number of drawings: 371.83.СБ, 371.83.СБ1; 371.83.СБ11.
→ Internal tube МНЖ-5-1 of 19-6 (copper-nickel heat-resistant alloy is used for sea water)
→ outer pipe aluminum АД-1 of 28-4

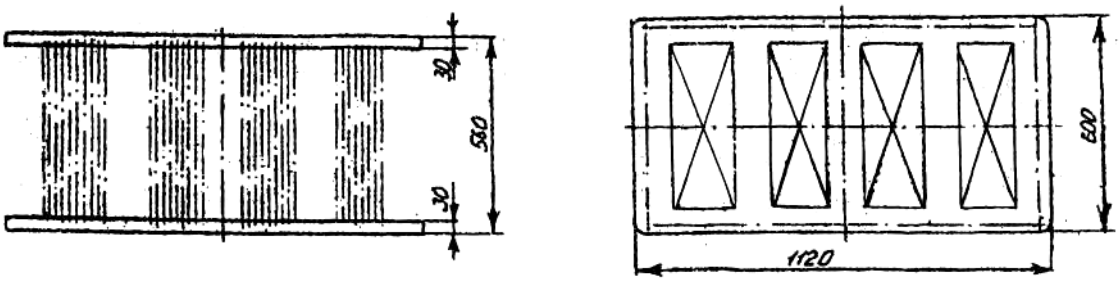


Sketch of the tube finned copper tube for pencils
end air coolers *ВОК-79,2; ВОК-79,4*
to compressors *К-250-61-2; К-250-61-5; К-500-61-5; К-500-61-1; К-525-61-1.*
№ drawings*: 371.83.СБ; 371.83.СБ1; 371.83.СБ11.*

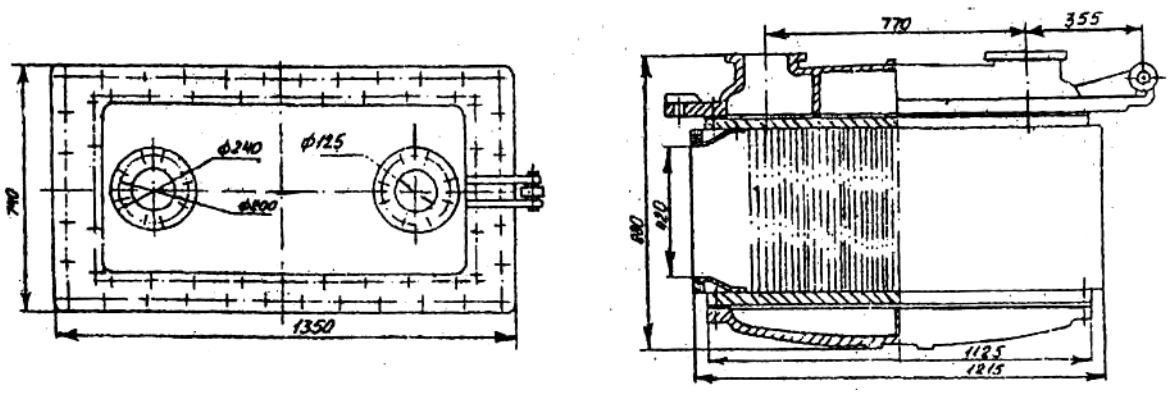


NE " Energomash " Co.Ltd. produces and offers energy spare parts to C-250 compressor.

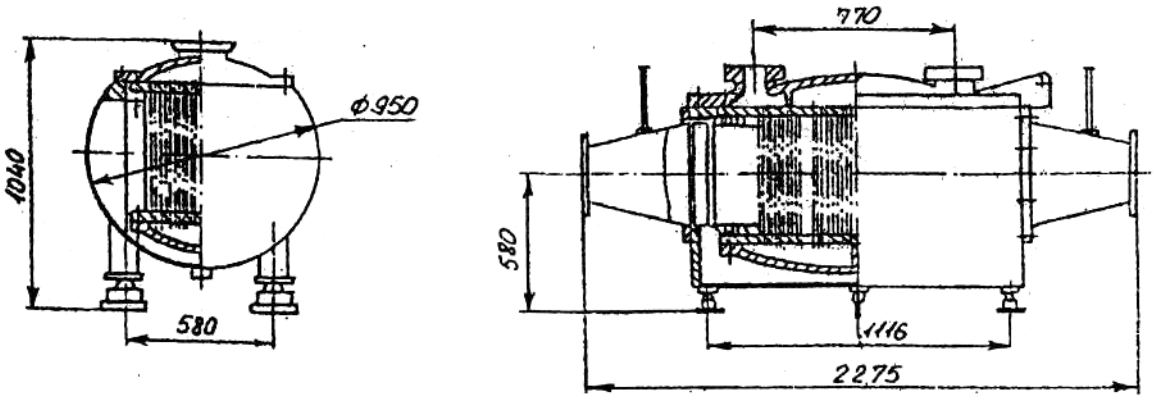
The beam pipe end, drawing 395.84.3ИП СБ5



Beam with a water box terminal drawing 195.84.3ИП СБ2

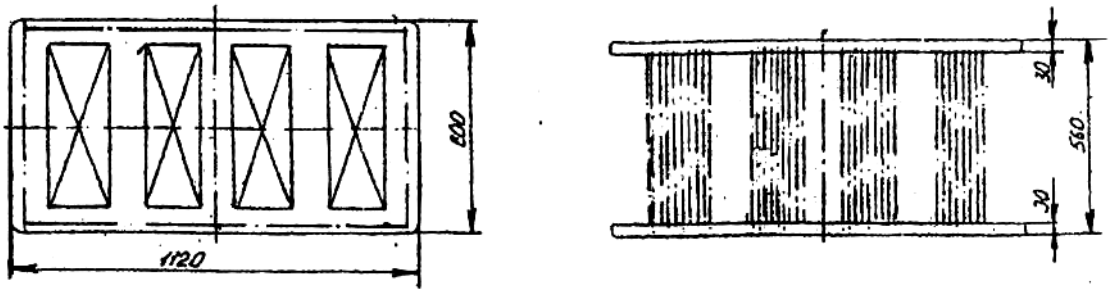


UNIT terminal ***BOK-250-9-1,***
drawing 195.83.СБ

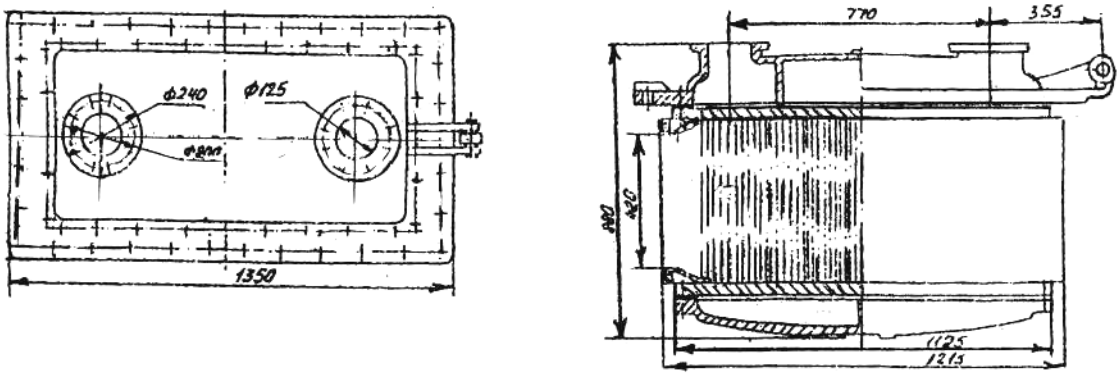


NE " Energomash " Co.Ltd. produces and offers
energy spare parts to C-250 compressor.

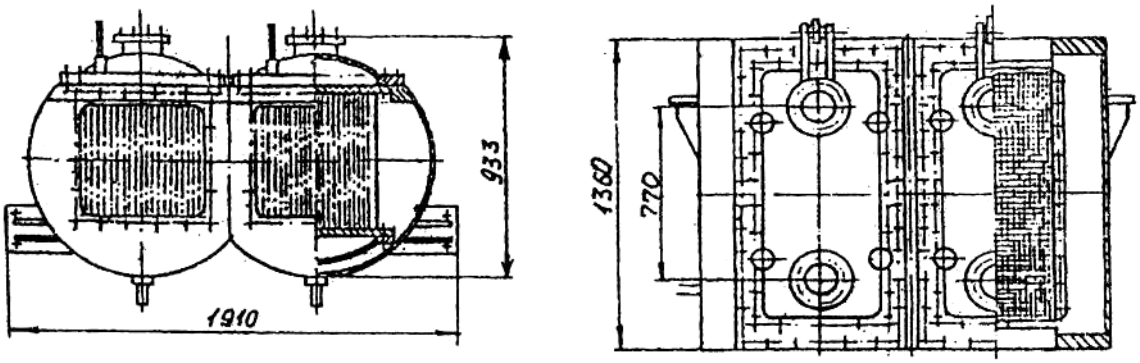
The beam pipe drawing ***395.84. ЗИП СБ5***



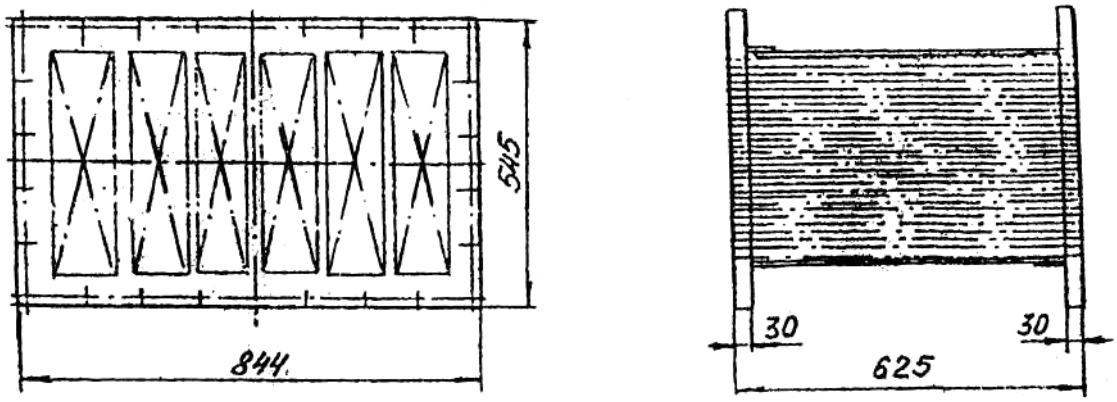
Beam with a water chamber in between, drawing ***195.84. ЗИП СБ2***



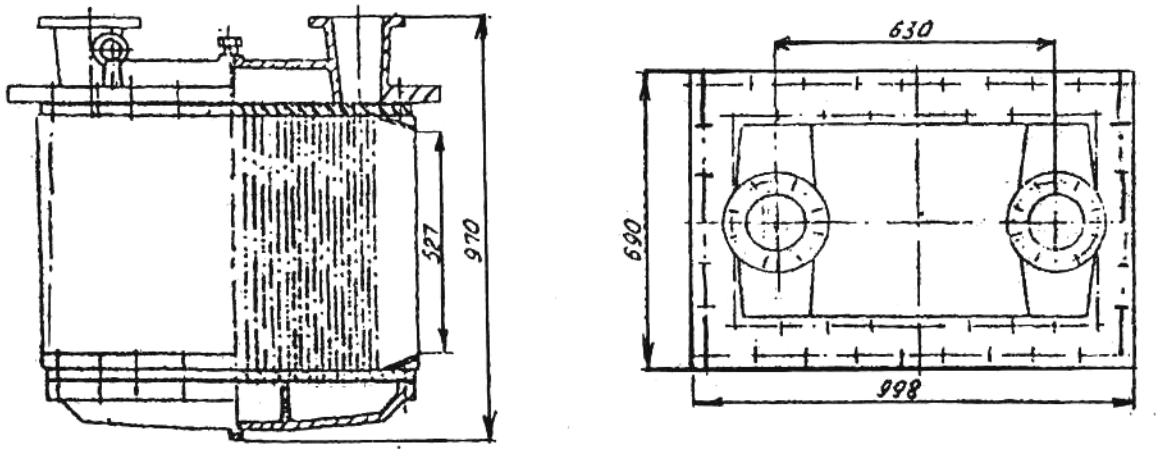
UNIT interim ***ВОК-250-9-1, drawing 195.84.СБ***



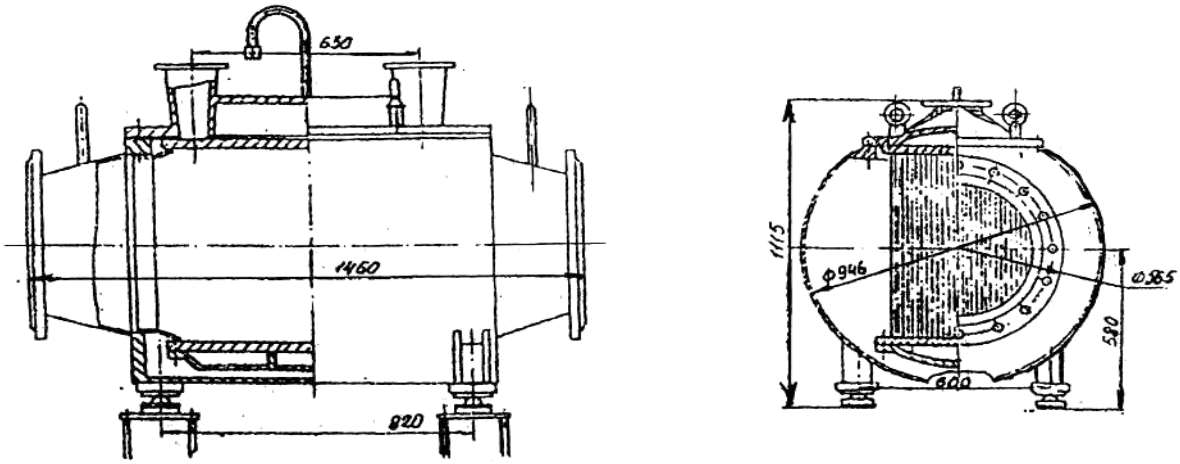
The beam tube end,
drawing 371.83.СБ1



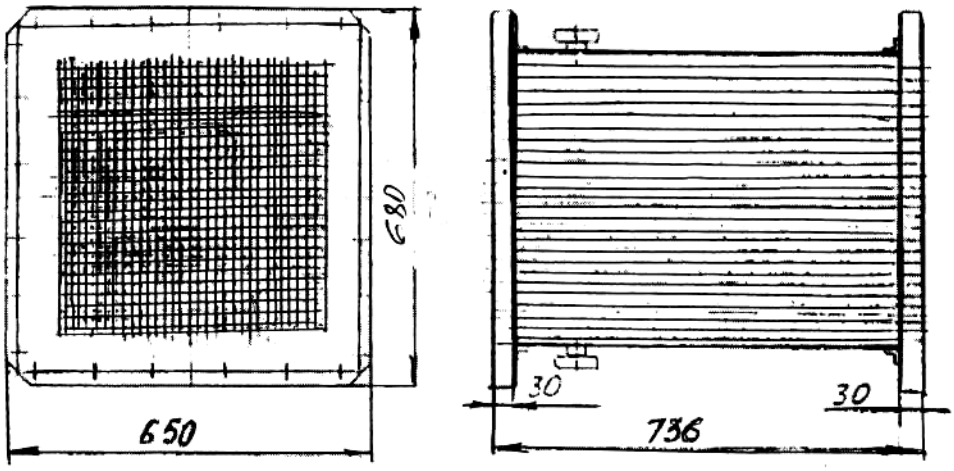
Beam with a water box terminal,
drawing 371.83.СБ11



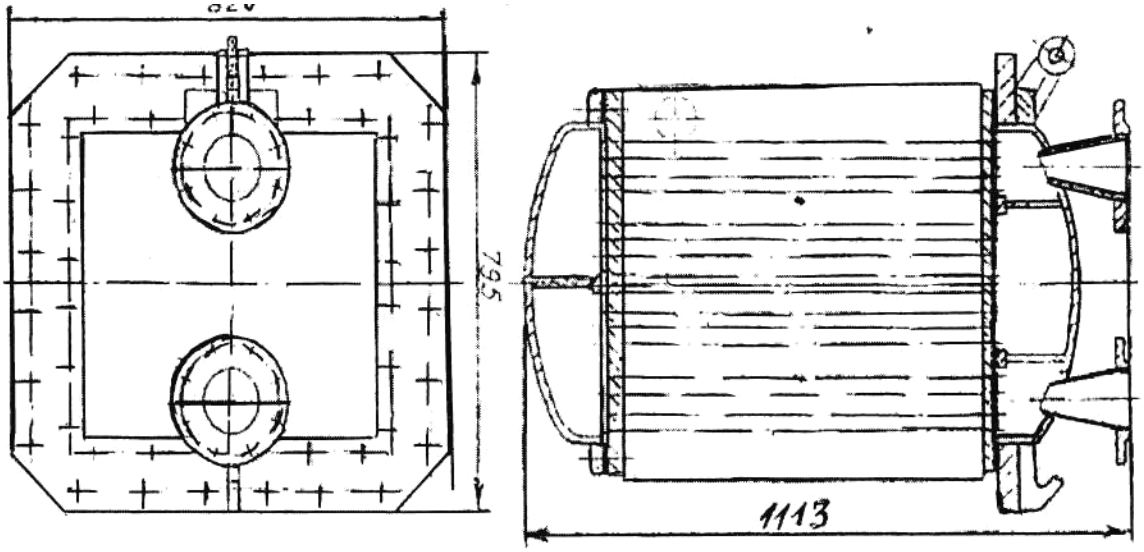
UNIT terminal ***ВОК-79,2,***
drawing 371.83.СБ



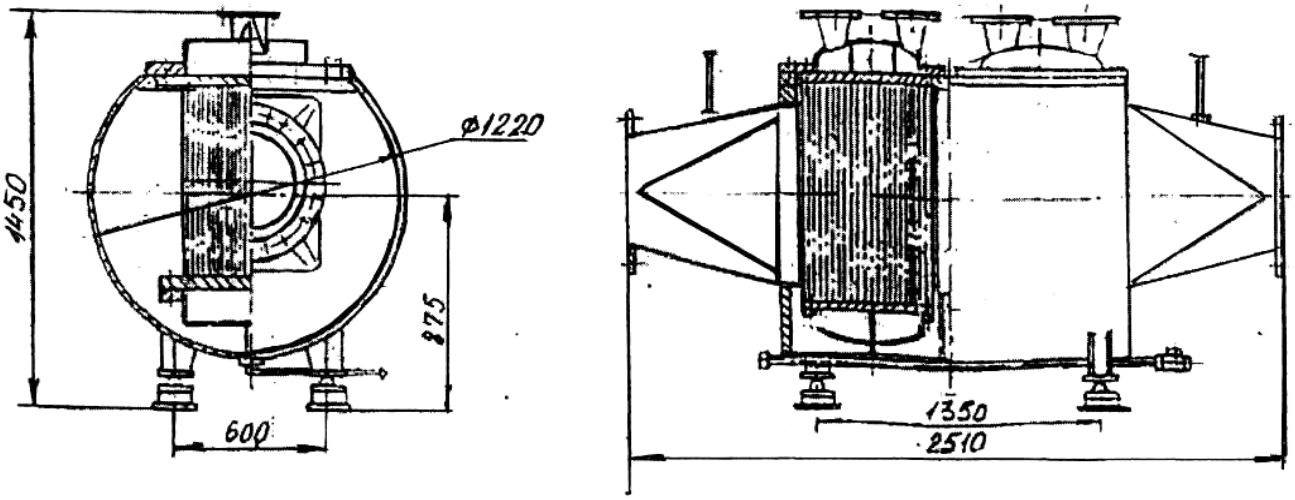
The beam end PIPE**,**
drawing 213.84.3ИП СБ4



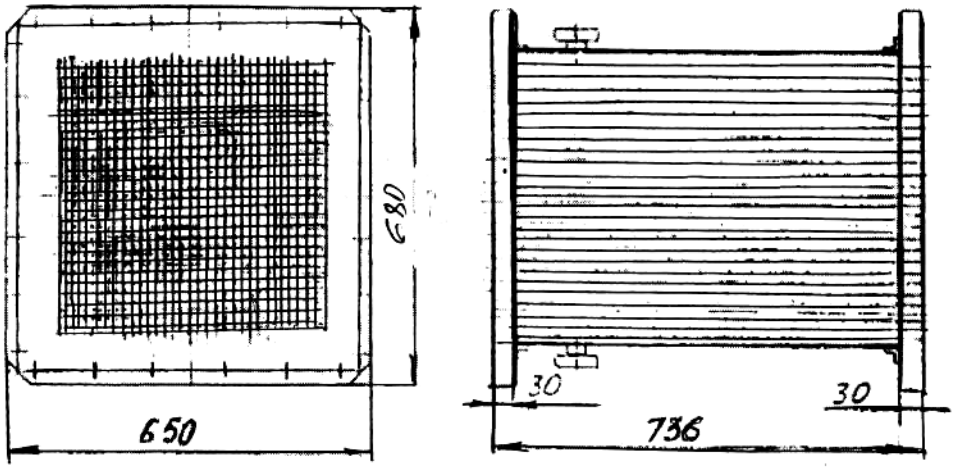
Beam with a water box terminal**,**
drawing 213.084.019СБ



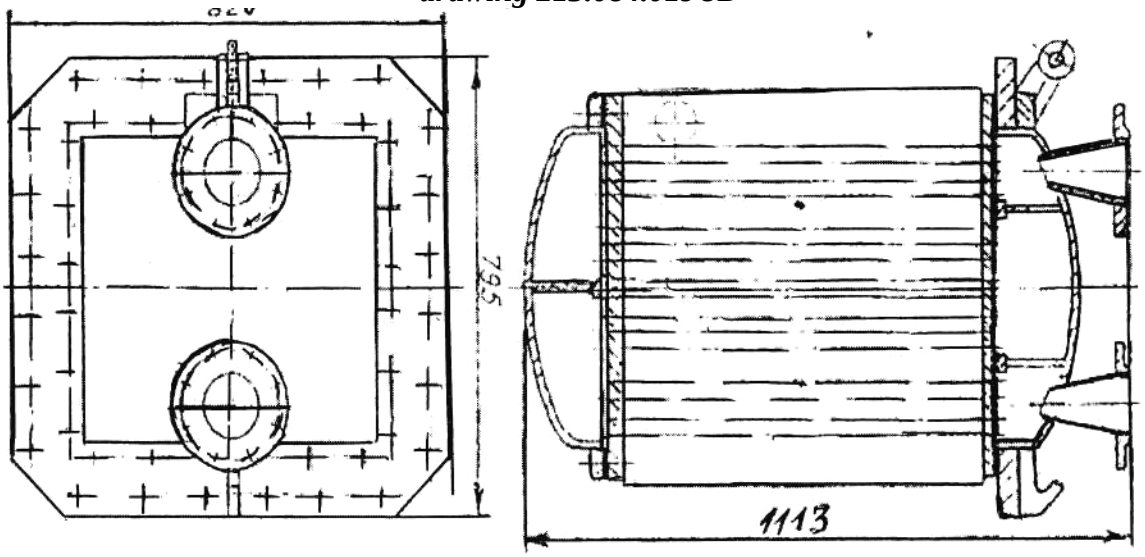
UNIT terminal ***BOK-500-9-1,***
drawing 213.83.СБ



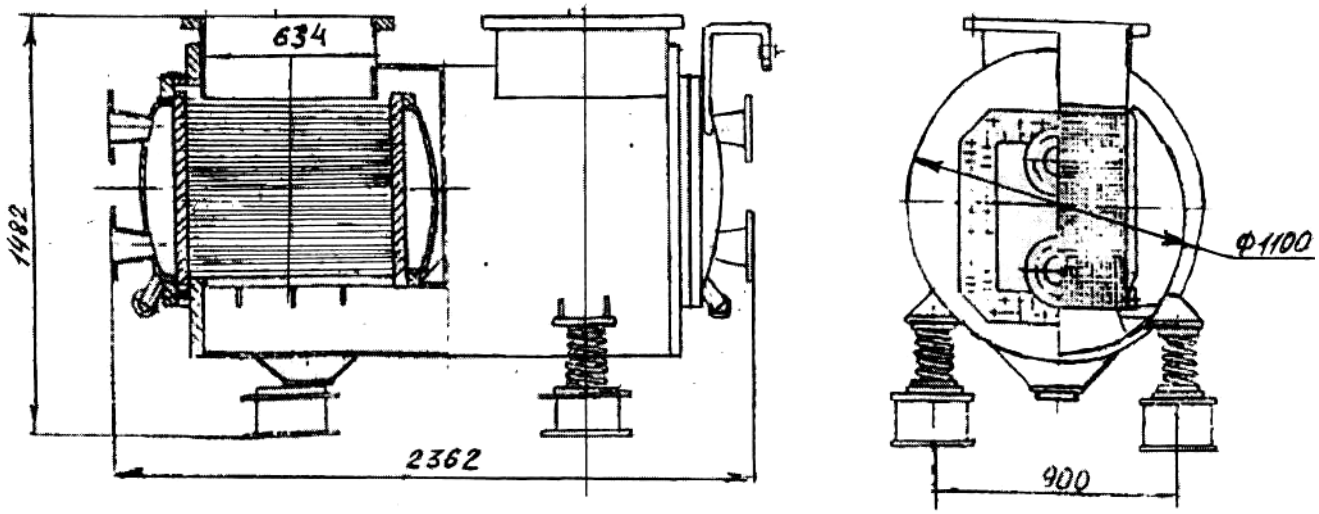
The beam end PIPE**,**
drawing 213.84.ЗИП СБ4



Beam with a water box terminal**,**
drawing 213.084.019СБ

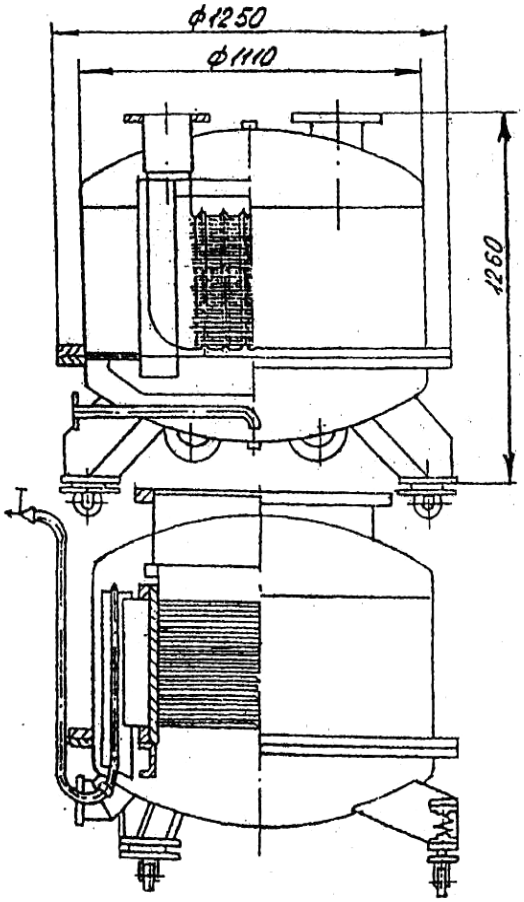


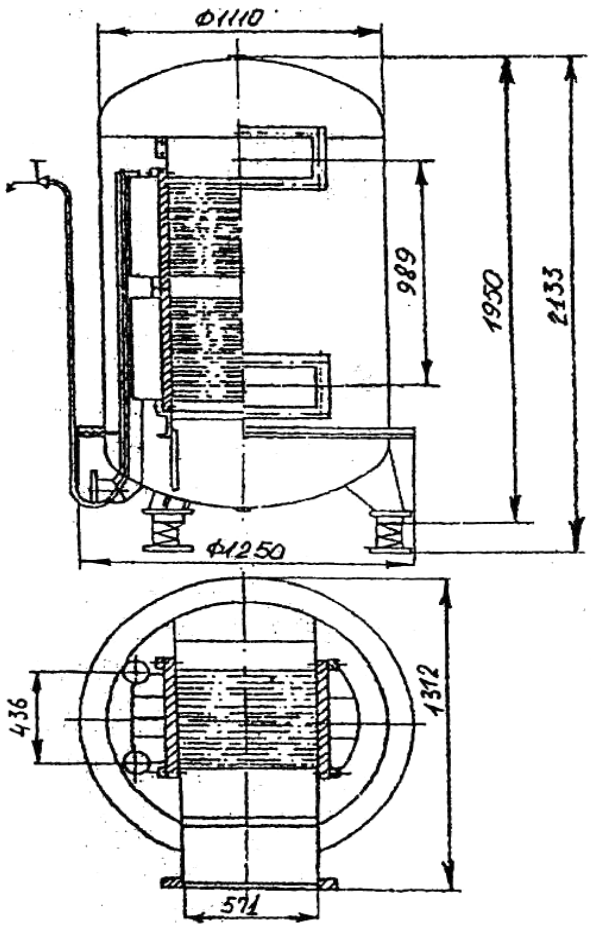
UNIT interim ***ВОТ-180,***
drawing 213.84.СБ



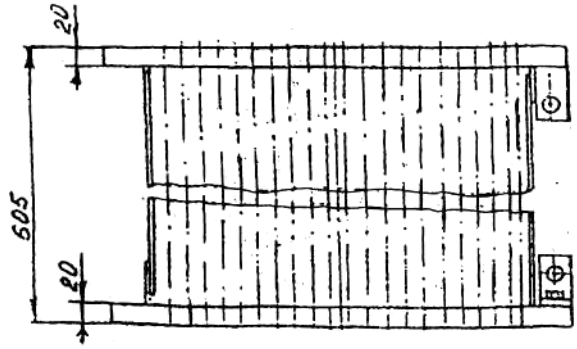
UNIT interim,
drawing 587.84.СБ30

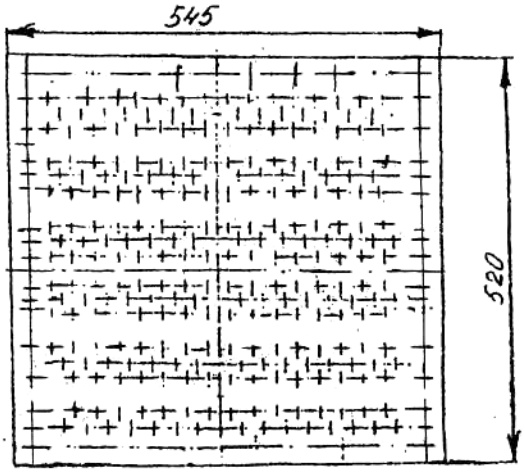
UNIT interim,
drawing 587.84.СБ



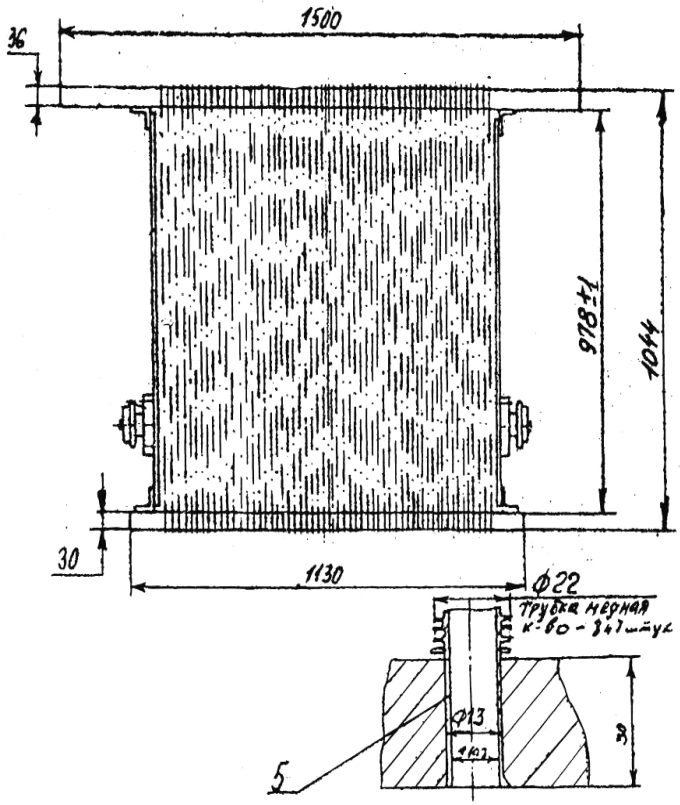


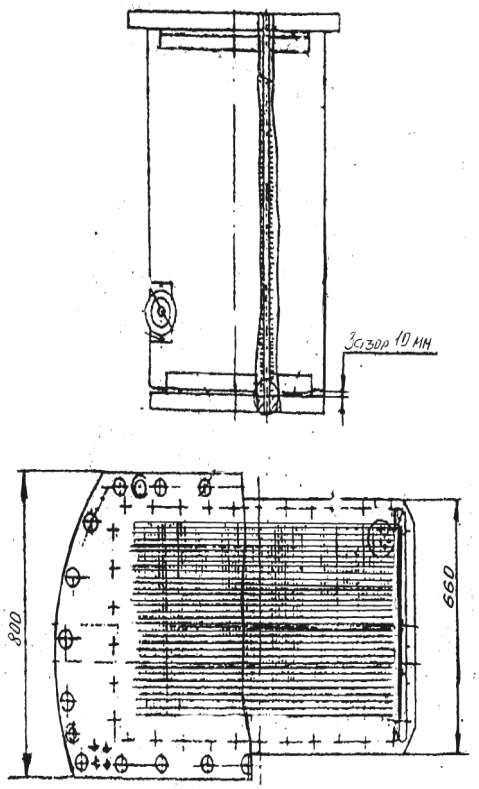
The beam pipe in between drawing **371.84.СБ1**





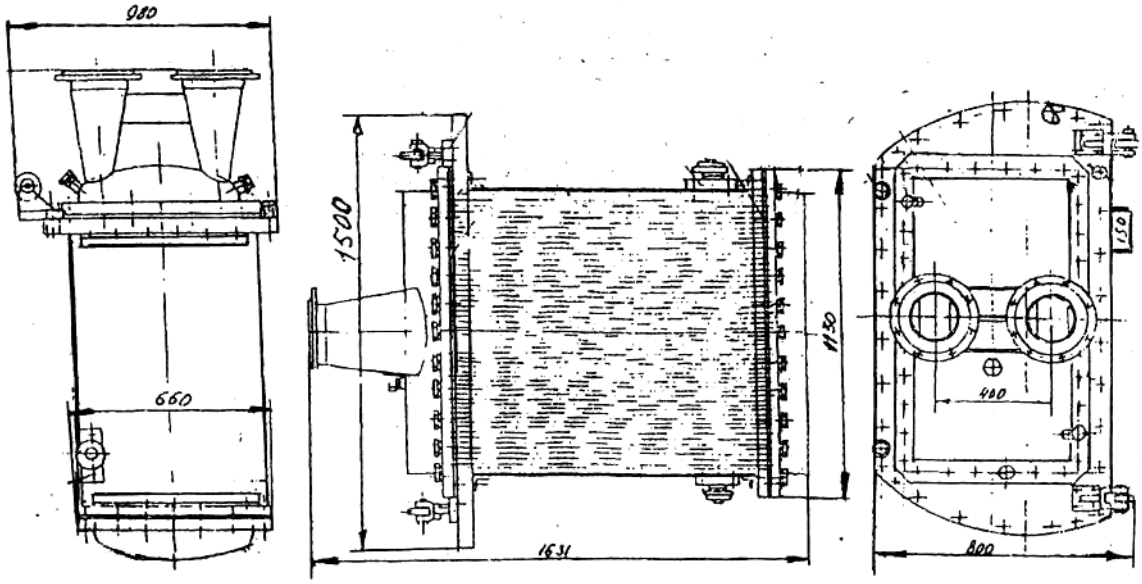
A beam of intermediate,
drawing 304.84.CB15

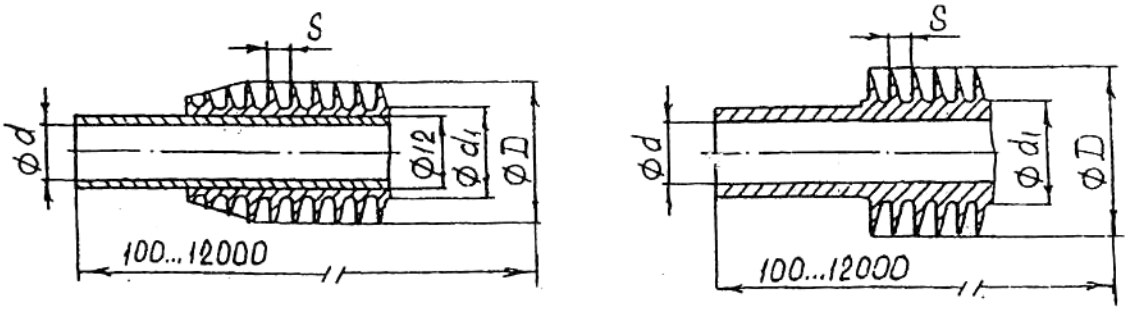




The beam pipe with water chambers,
drawing 304.84.CB17

Beam with a water-hydraulic test chambers
PPR = 4.5 kgf/cm2 on the water side



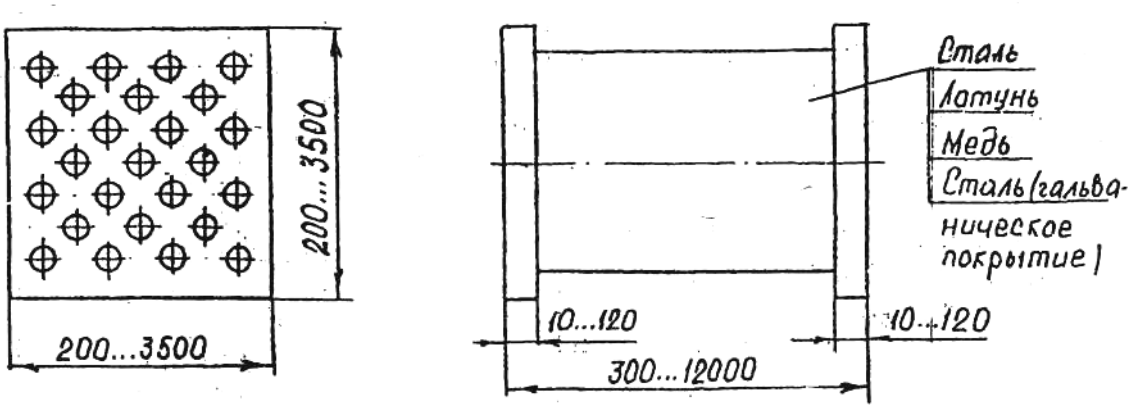


name of parameter	№	Diameter, mm			Fin «S», mm	The thickness of the rib, mm		The surface of a linear m, m2	
		Outside, D	The carrier, d1	Internal, d		grounds	vertices	internal	Outdoor
1. monometallic: Copper МНЖ-5-1 МНЖ-30-1	1 2 3	20 25 55	12,5 15,0 28,0	10 10 20	2 3 4,5	0,4 0,7 0,7	0,2 0,3 0,5		
aluminum alloy АМЦМ GOST 4784-84	4 5 6 7	22,65 32,25 35 41,7	15 16 15 22	13 14 13 17	3 3 3 3	0,7 0,7 0,7 0,7	0,3 0,3 0,3 0,3	0,041 0,044 0,041 0,0534	0,184 0,448 0,56 0,704
aluminum alloy АД-1 GOST 18475-82, ТС-1-5-067-94	8 9 10 11 12 13 14 15 16	44,25 38,25 40,15 22,2 27,1 16,3 19,0 27,0 18-100	21 22 21 16 15 16,8 12,5 17,0 12-40	17 17 17 13 13 13,5 10 13 10-45	3 3 3 3 3 3 2 3 2-6	0,7 0,8 0,8 0,8 0,7 0,7 0,4 0,7 0,4-1,0	0,3 0,6 0,6 0,6 0,3 0,3 0,2 0,3 0,2-0,7	0,0534 0,0534 0,0534 0,041 0,041	0,841 0,571 0,671 0,164 0,301
2. bimetal-fins aluminum АМЦМ GOST 4784-84	1 2 3	10-120 25 38	12-50 13,5 18	6-45 10 12	1,5-10 2,5 3	0,4-1,2 0,4 0,8	0,2-1,0 0,2 0,6		
aluminum АД-1 GOST 18475-82 ТС-1-5-067-94	5 6 7	38 42	21 21	17 17	3 3	0,8 0,8	0,5 0,5		

Note: The basis of bimetallic steel tubes МНЖ-5-1, МНЖ-30-1 (nickel silver, brass, copper, etc.).The performance of equipment is the finned tube 100 tons per month.

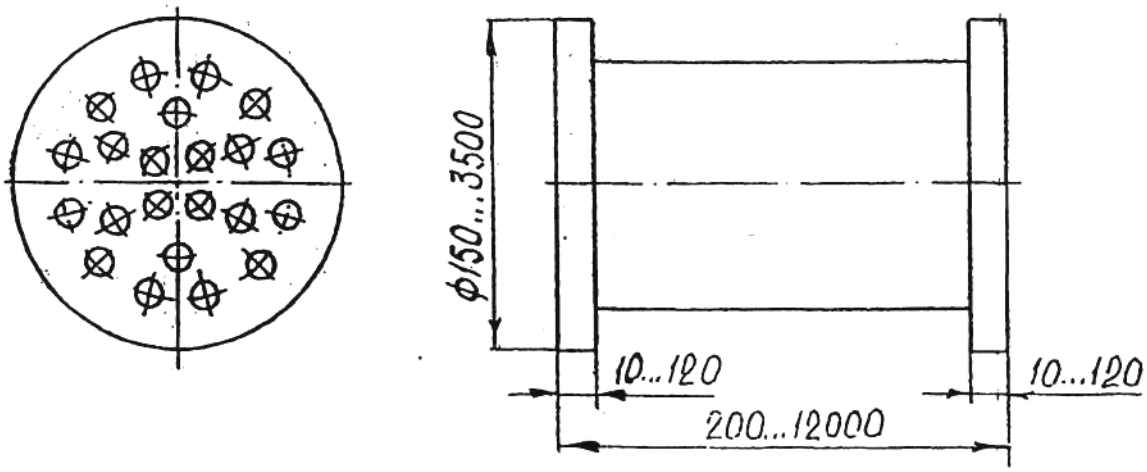
NE "Energomash" Co. Ltd is able to produce according to customer drawings, any heat exchanger coolers, oil coolers, coolers for centrifugal beams, reciprocating and screw compressors of all types and kinds, oil coolers for gas turbines, with a water box without water boxes.

Рис.1



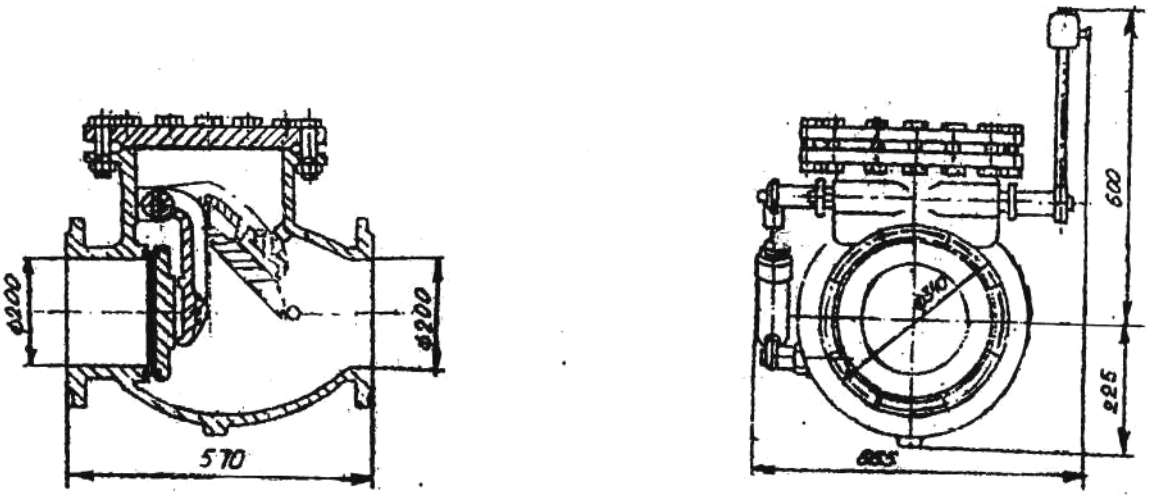
1. Diameter holes from 10 mm 60 mm.
2. Number of holes depending on the diameter ribbed or smooth tube.
3. Suitable rolling tubes to tubesheet (ferrous metal) or welding (black metal).

Рис. 2

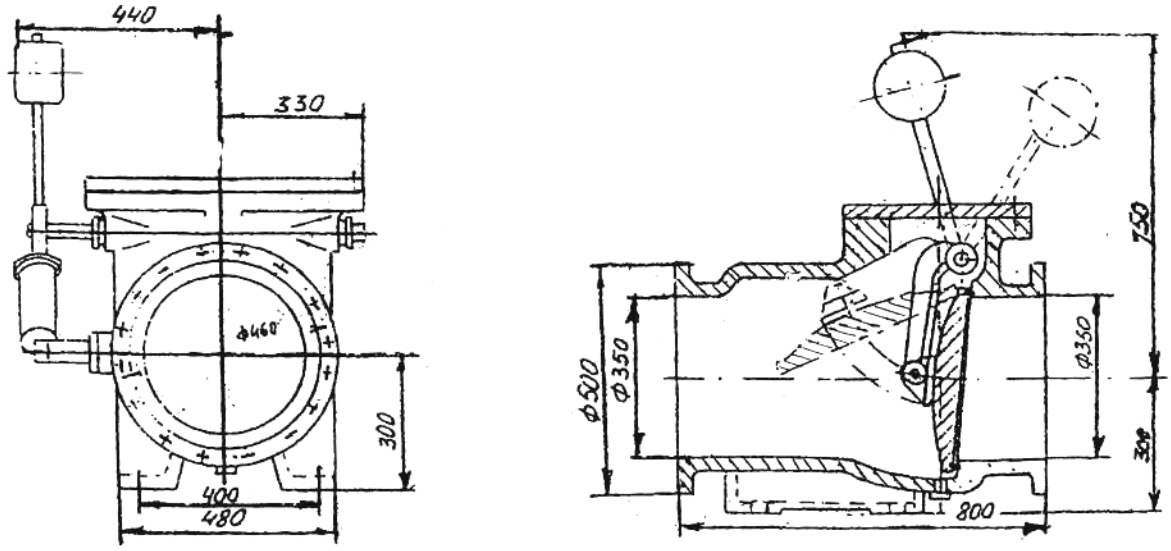


Note: Apply fin tube or smooth.

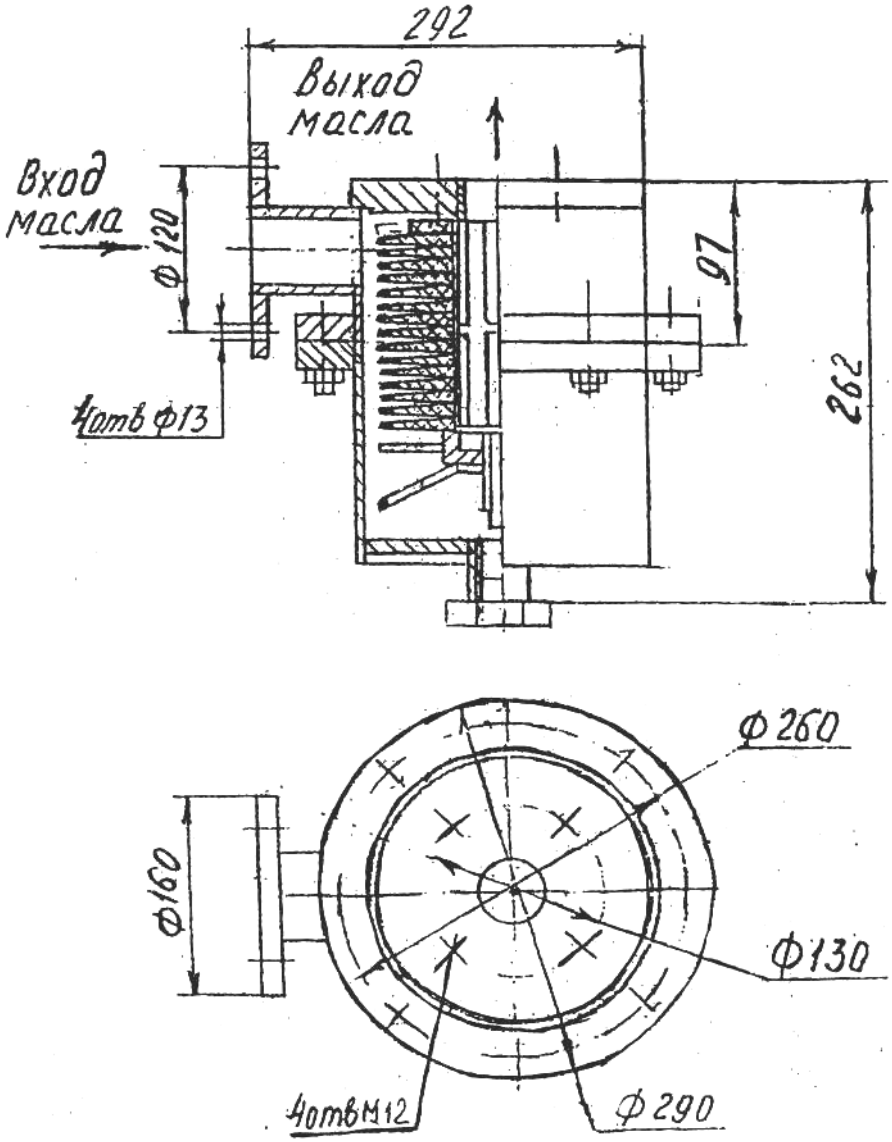
Check Valve ***Ду 200,***
drawing 395.64.СБ, weight – 207,2 kg.



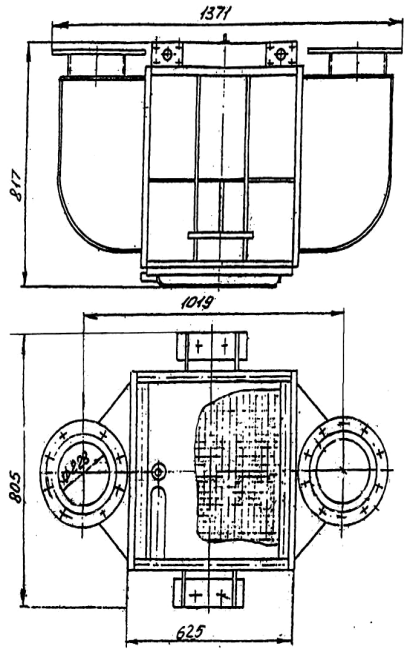
Check Valve ***Ду 350,***
drawing 325.64.СБ, weight – 462 kg.
К-500
К-905



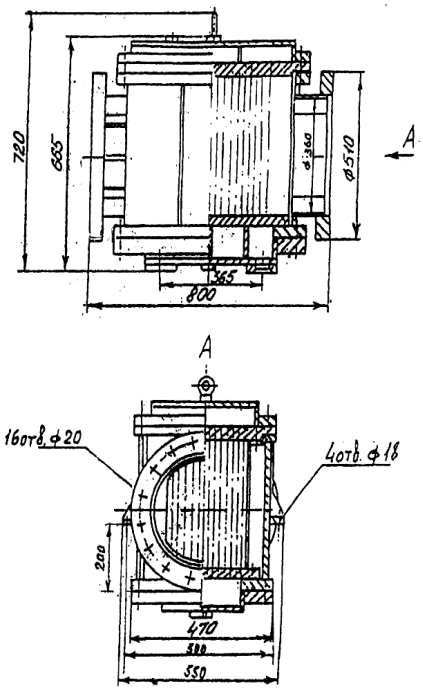
FILTER OIL
polishing with a brass mesh



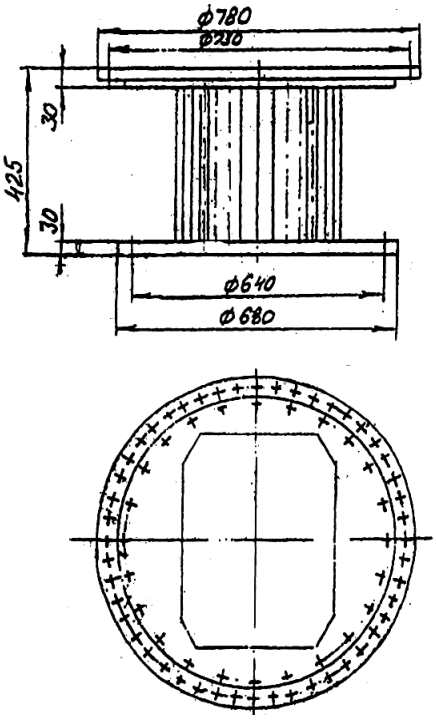
gas cooler ***СС-135/8, drawing 3.340.241СБ***



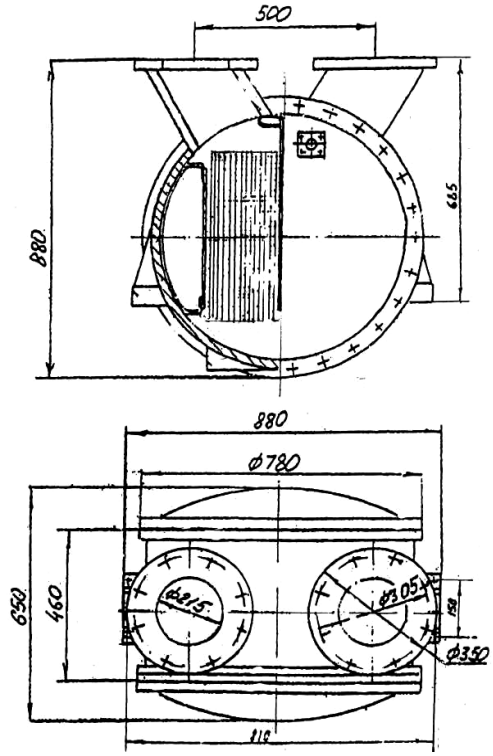
gas cooler ***СС-135/8 концевой, drawing 3.340.254.000СВ***

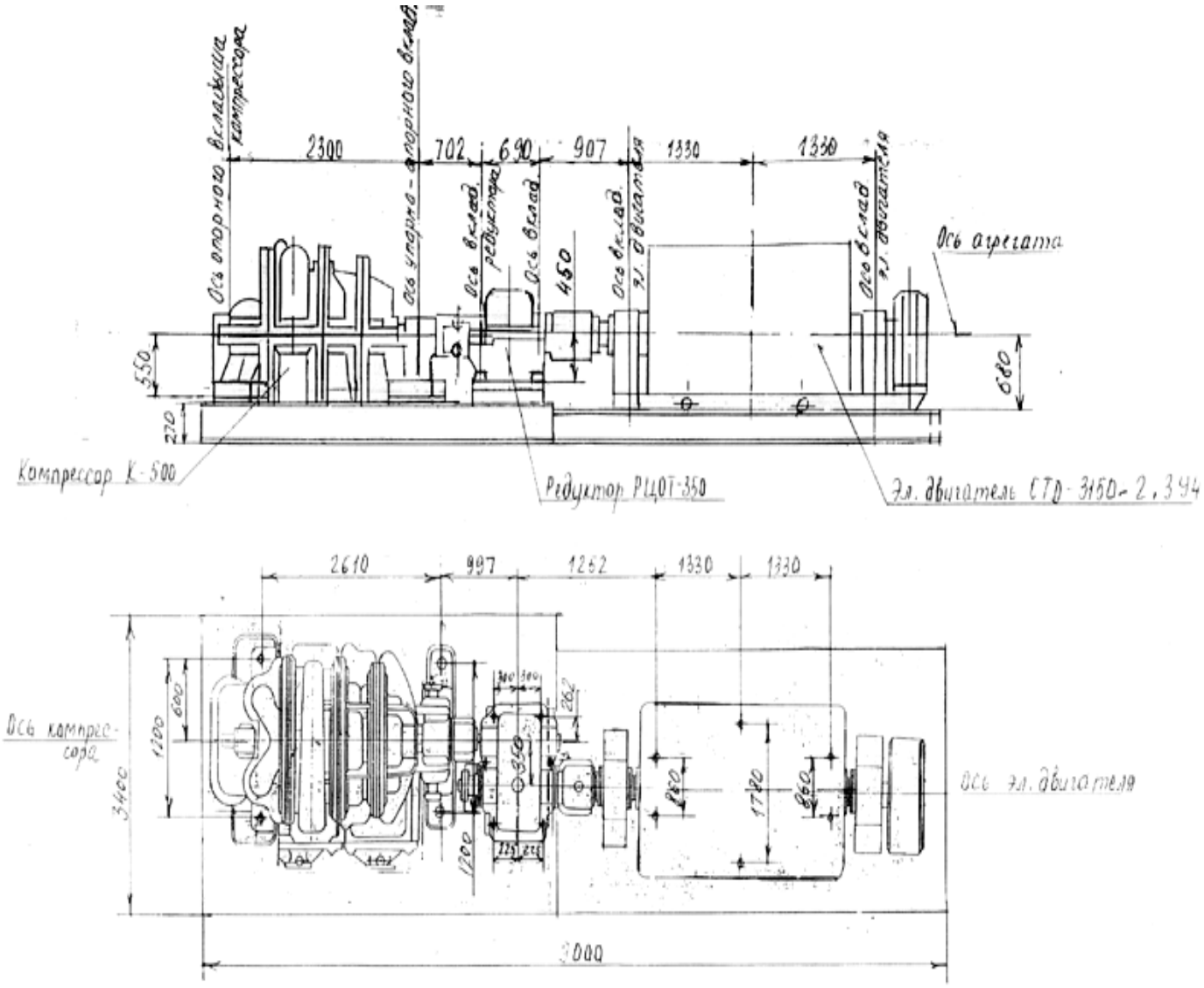


The beam pipe ***ЦК 135/8М1, drawing .340.238.020.СБ***

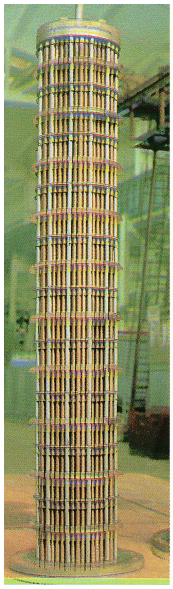
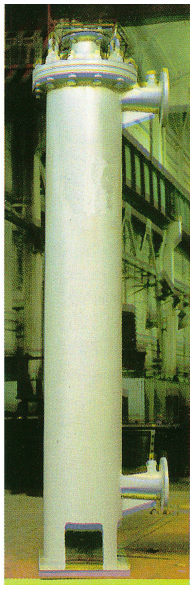
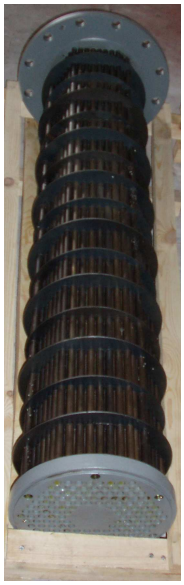


gas coolers ***СС-135/8, drawing 3.340.238.000СБ***




Ось опорно-всасывающего компрессора
Ось упруго-опорного вклада
Ось вклада редуктора
Ось вклада
Ось вклада эл. двигателя
Ось вклада эл. двигателя
Ось агрегата
2300
702
690
907
1330
1330
450
550
270
680
Компрессор К-500
Редуктор РЦДТ-350
Эл. двигатель СТД-3150-2,394
2610
997
1262
1330
1330
Ось компрессора
1100
600
3400
1200
3000
Ось эл. двигателя

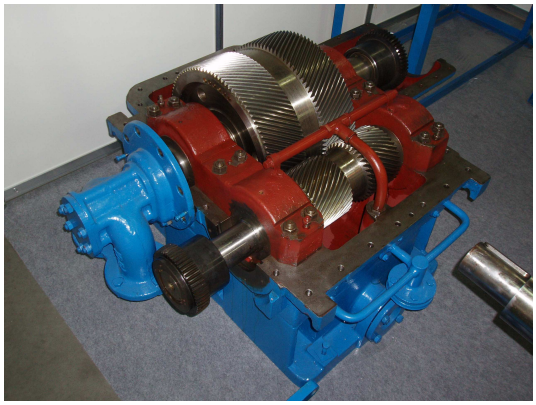
8. Blocks of oil supply, oil coolers and tube bundles them

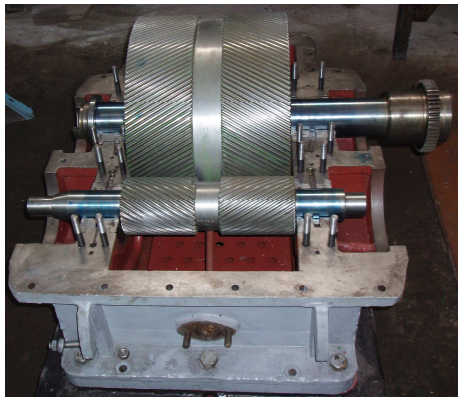





9. Air and oil seals

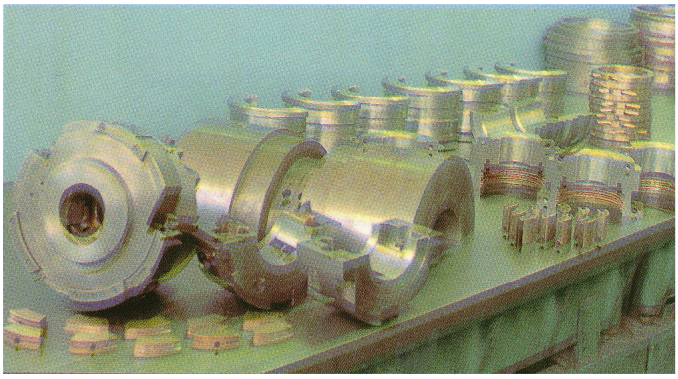

10. Oil pumps

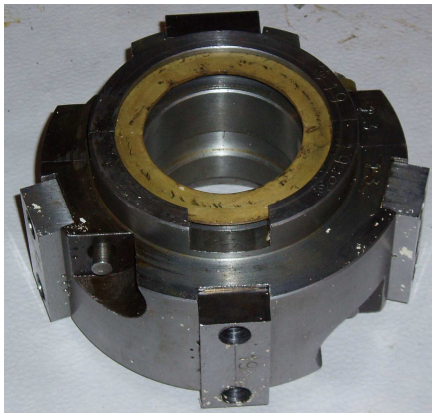
11. Gears





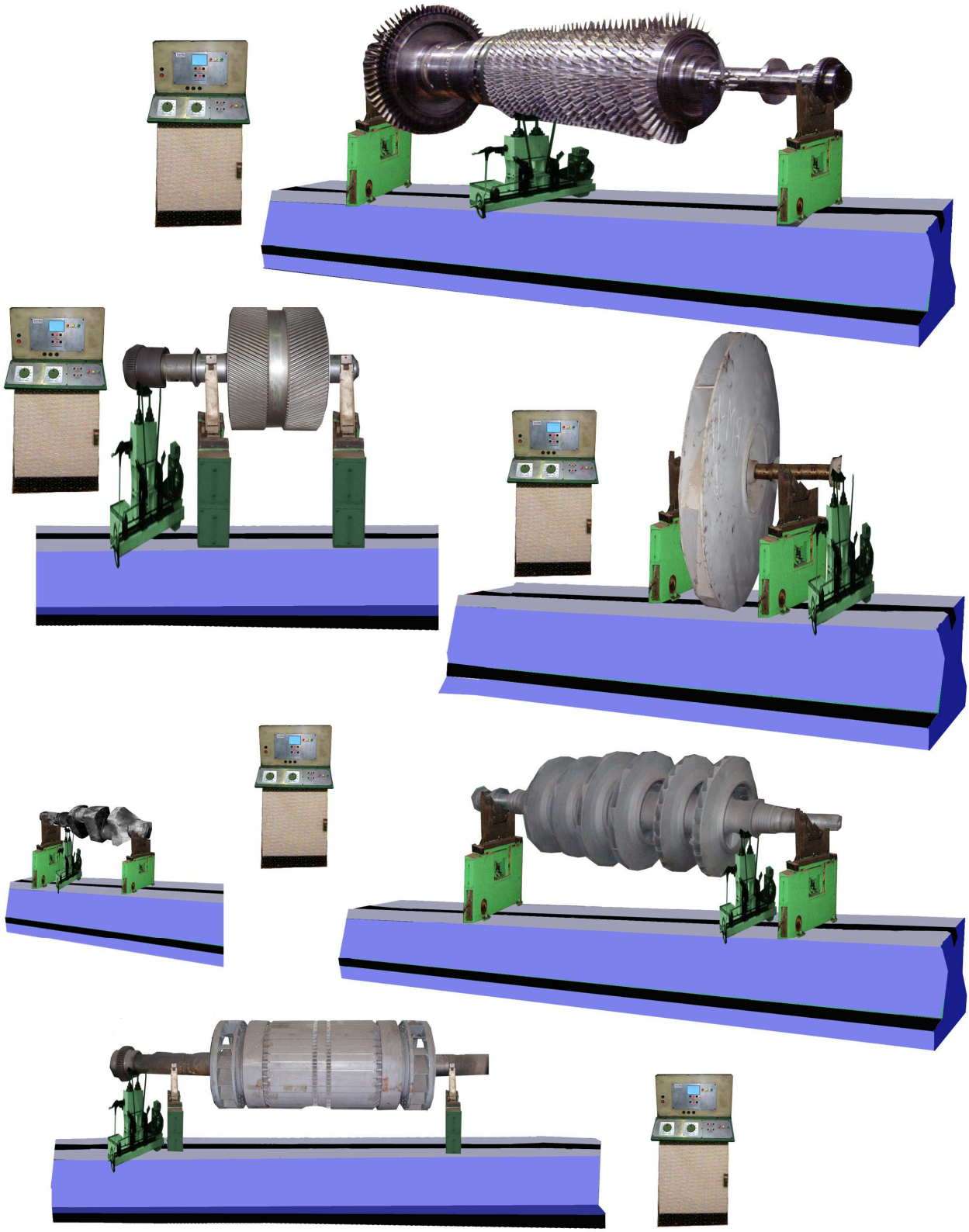
12. Engine and gear bearings for all types of compressors, blowers and turbines.





13. Clutch gear, industrial tree

14. Balancing machines type BS



NA " Energomash ""Co. Ltd offers
balancing machines for rotors weighing from 30 grams to 90 tons and a diameter of 50 mm to 2800 mm.
Manufacturing period of 60 to 90 days

The range of balancing machines includes nine types and makes balancing rotors weighing from 30 grams to 90 tons.

The seller gives the buyer a complete package of services:

1.Timely delivery of quality products.
2.Training of customer personnel working on the machine and balance methods.
3 Full service balancing machines during the warranty period (guarantee period of 18 months) and after 4the warranty period.
5High precision balancing of rotors, compressors, gas and steam turbines, pumps, smoke exhausters, motors.
6Ability to set the machine to a regular floor in the shop, no need to manufacture a special foundation.
7balancing rotors of any configuration, including the console.
8Balancing crankshafts, piston compressors.
9Self-aligning roller bearings eliminate the knurled bearing surfaces of the rotors.
10 A modern microprocessor-based measuring unit with software allows high-performance testing of produce, analyze and organize the measurements.
11Automated process of measuring and calculating the influence coefficients and correcting the masses, printing protocols balansirovok.
12The exact definition of the angular position of the rotor.
13Easy to start, operate and maintain the machine.
14 Low cost of the machine in comparison with analogues and short payback period

NA " Energomash ""Co. Ltd has the technical ability:

1. Perform dynamic balancing of rotors, impellers, screw steam, gears, couplings on the balancing machine with a weight of products from 5 kg to 10 000 kg with an external diameter of the wheels up to 1650 mm and a length of the shaft to 6000 mm.
2. To repair the compressor rotor, blower pumps with replacement of impellers and grinding necks, and the replacement thrust discs, couplings and O-rings on the shaft.
The above work is performed including the following compressors:
C-250 and C-500, CC-135 and C-1500, CTC-12, 5 / 35; CTC-7/14, CC-100; 32VTS-100 / 9, H-750, H-360, H-1200, compressors, compressor, pumps, turbines of all types, including are imported.

Balancing machines type BS

The main technical characteristics

	БС-10	**БС-55**	**БС-310**	**БС-1050**	**БС-3050**
Maximum weight of the rotor (kg)	*10*	*55*	*310*	*1050*	*3050*
The minimum mass of the rotor (kg)	*0,05*	*1,1*	*3,1*	*10,1*	*30,5*
The maximum diameter of the rotor (mm)	*180*	*710*	*1810*	*2010*	*2310*
The minimum diameter of rotor (mm)	*95*	*410*	*1510*	*1610*	*1910*
The distance between the supports: Maximum(mm) Minimum (mm)	*420 40*	*1050 110*	*1400 180*	*2300 230*	*2600 350*
The diameter of the support of the necks of the rotor (mm)	*4…50*	*20…210*	*13…230*	*15…285*	*20…385*
Sensitivity ** (g * mm / kg), maximum.	*0,08*	*0,08*	*0,08*	*0,08*	*0,08*
Speed at balancing * (r / min)	*от 450*	*от 350*	*от 350*	*от 300*	*от 300*
Motor power (kw)	*0,75*	*1,1÷1,5*	*1,1÷1,5*	*1,5÷2,2*	*3,5÷5,0*
instrumentation	Audio Processor				
Requirements for foundation	not required				
Dimensions of the machine in the packaging (mm)	*720 350 380*	*860 1760 1460*	*2120 1320 1860*	*3120 2050 1860*	*3320 1920 1860*
Machine weight (kg)	*40*	*210*	*940*	*1900*	*2680*

Depends on the diameter of the necks of the rotor and pulley gear ratio (up to 3000 rev / min)
All models of machines as rotary drive uses a DC motor with variable speed.
Balancing machine models BS-10 can be installed on the desktop.
This table is for the standard models of machines. The possibility of deviation of the geometric dimensions and weights do not affect the operation of the machine and its accessories.

Balancing machines type BS

The main technical characteristics

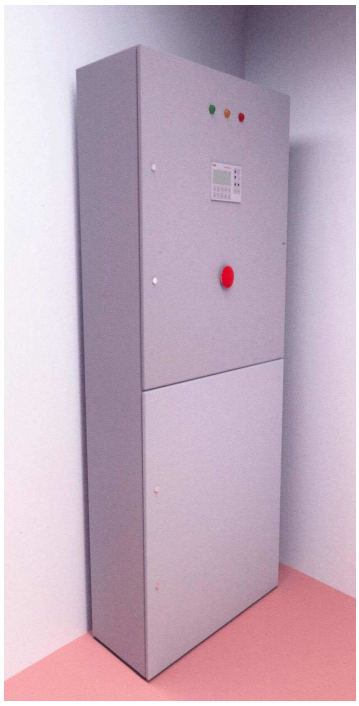
	БС-8100	**БС-20100**	**БС-40100**	**БС-90100**
Maximum weight of the rotor (kg)	8100	20100	40100	90100
The minimum mass of the rotor (kg)	81	1010	7010	10010
The maximum diameter of the rotor (mm)	2620	2520	4020	4000
The minimum diameter of rotor (mm)	2120	1820	1900	2000
The distance between the supports: Maximum(mm) Minimum (mm)	5600 380	12000 1000	8520 900	12050 1500
The diameter of the support of the necks of the rotor (mm)	25…430	90…360	50…510	150…535
Тип опор	Rollers, prisms			
Sensitivity ** (g * mm / kg), maximum.	0,08	0,08	0,08	0,4
Speed at balancing * (r / min)	от 300	от 200	от 100	от 100
Motor power (kw)	15÷22	37	55	75÷90
instrumentation	Audio Processor			
Requirements for foundation	not required			
Dimensions of the machine in the packaging (mm)	4620 2320 1900	4000 2320 2720	4500 2820 3760	6360 3160 3760

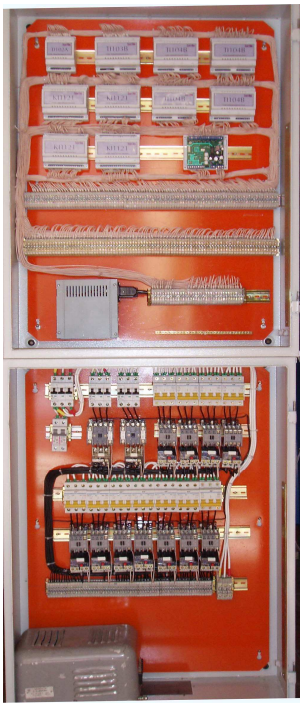
		(2 boxes)	(2 boxes)	(2 boxes)
Machine weight (kg)	4480	11090	19100	23950

* ***Depends on the diameter of the necks of the rotor and pulley gear ratio (up to 3000 rev / min)***
All models of machines as rotary drive uses a DC motor with variable speed.
This table is for the standard models of machines. The possibility of deviation of the geometric dimensions and weights do not affect the operation of machines and accessories.

15. Automatic Control Systems

MIS specialists of our company has developed a unique system of automatic control system (ACS) "spool" and rectifier - the agent of automatic control of excitation of synchronous motors with impulse modulation and digital control (VAUSHM).





SAU "ZOLOTNIK" ***has a wide range of system parameters from the control engine - to set the process control of complex assemblies and system complexes (Turbo installation, engine-gearbox system, compressor, gas producer-consumer). Information about the work of assemblies and systems displayed in a clear and accessible to the staff form. ACS comes with software compatible with PC Pentium-1 and above, which allows to control (temperature, pressure, axial displacement, vibration, flow, speed, etc.) and manage the installation work at a considerable distance from the PC.***
In agreement with the customer comes ACS sensors and actuators of the national or foreign production. This equipment does not require special conditions on site, involves the installation in close proximity to the object of control, which saves cabling and wiring design. Fine adjustment parameters helps to maintain optimal system operation modes complexes, which saves energy and leads to a rapid return on investment.
ACS does not require a further adjustment work during commissioning and executed in the form of blocks, with mount, DIN - rail. To work on this equipment does not require special training of staff. Provides for performance in a wide range of classes of protection. The system is designed to control the compressor C-250 C-500, CTC-275 / 9, CC-115 CC-135, TC-250 / 7, CTC-12, 5, CTC-7/14, 4VRK, 4VRZ, 32VTS -100/9. Dimensions 1600h600h400mm. Operating voltage for power from 80V to ACS 280V. Rated power 350W.

16. Pathogens series TE, VTE

Pathogens Series TE VTE designed to power and control winding excitation current synchronous motors. Pathogens are designed for continuous operation in a closed room in automatic or manual emergency control mode excitation current.

When operating in manual control agent provides:

start a synchronous motor with automatic feed excitation as a function of the stator current and slip;

smooth adjustment of the excitation current of 0.6 to 1.4 rating;

stabilization of the excitation current;

limit the excitation voltage to a minimum;

protect the rotor from the long-term over-current;

forcing the voltage drop in line voltage stator;

accelerated quenching field rotor motor power supply failure.

In automatic mode, but these types of regulatory control provided by one of the following options:

excitation current;

voltage stator;

total stator current;

angle φ;

reactive stator current;

active stator current;

the inner corner of the car.

In emergency mode, manual adjustment is stored excitation current.

17. Soft start compressor system

Our Enterprice is in development and testing of the soft launch of high-voltage high-power electric motors for acceleration turbo installations of the C-250, etc.
The use of the soft launch of our production is intended for the gradual dispersal of the turbo-compressor installation and turn the main engine after a set of given speed, allows you to run a compressor installation in the power saving mode, ie eliminate all the negative factors arising from the direct and the reactor start-up:
- Intensive wear and failure of the motor, gear, bearing inserts, etc.

By experience it can be argued that most outages occur during motor start them, because during start-up electric motor drives a gearbox and compressor, the load increases, the motor windings have 7.8 times the starting current for 10-12 seconds, which leads to strong heating and the gradual destruction of their isolation. In addition to this there is a reduction factor of the life of compressor due to heavy wear of gears and bearings - due to the high shock loads encountered in an instant increase in speed shaft of the compressor after the multiplier.
The use of the soft-start reduces the time of equipment failure on mechanical and electrical parts, extends the operation of the equipment for at least 3-5 years to reduce energy costs.

Brief description of the soft-start (APP):
APP is a member of the upper induction motor, programmable controller, coupling point with the main motor. At the heart of the soft-start is the principle of pre-acceleration of high power electric motor up to speed before applying the specified operating voltage to the stator windings (implementation of the theoretical ideal-start high-high-power synchronous motors).

CPL is set individually for each motor. When starting the CPL is the clutch shaft with upper motor shaft of the motor through a heavy-duty clutch. At the time of start-up and future activities of APP controls the programmable controller. After the dissolution of high-power motor for 20-25 seconds before the specified speed clutch is disconnected and the voltage is applied to the motor windings of large power. Supply voltage motors run does not matter. The device operates in fully automatic mode. At the same time in all situations is preserved the existing system of direct starting. On demand, automatic remote control of APP from PC via RS-232 or RS-485. Bundled with the APP software allows you to completely customize all the startup options, and make manual start program to run automatically at certain times.