

**ELECTRIC ARC FURNACES
CONTROL SYSTEMS**



*We make high-performance
melting appliances*

DIRECT CURRENT ARC FURNACES

STEEL

LOW-CARBON STEEL
ALLOY STEEL
STRUCTURAL STEEL

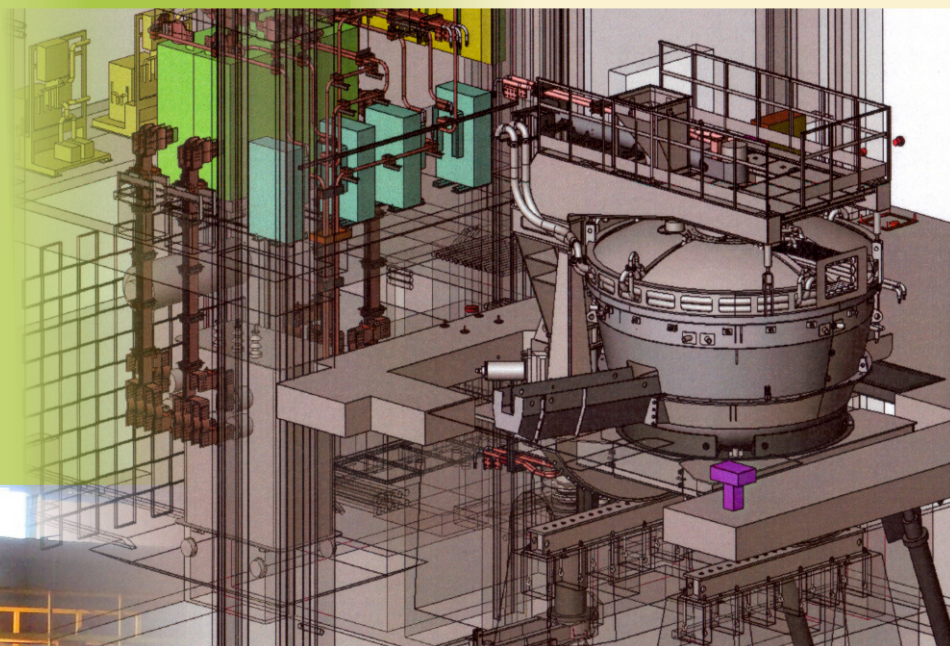
CAST IRON

GREY CAST IRON
HIGH-STRENGTH CAST IRON
ALLOY CAST IRON

ALUMINIUM AND ALLOYS

COPPER AND ALLOYS

0.1 TO 50 TONS



**COBALT
NICKEL
MANGANESE
FERROALLOYS**

**PRECIOUS METALS
SILICOCALCIUM**

**CALCIUM CARBIDE
SILICON**

AUTOMATION OF ALL TYPES OF FURNACES

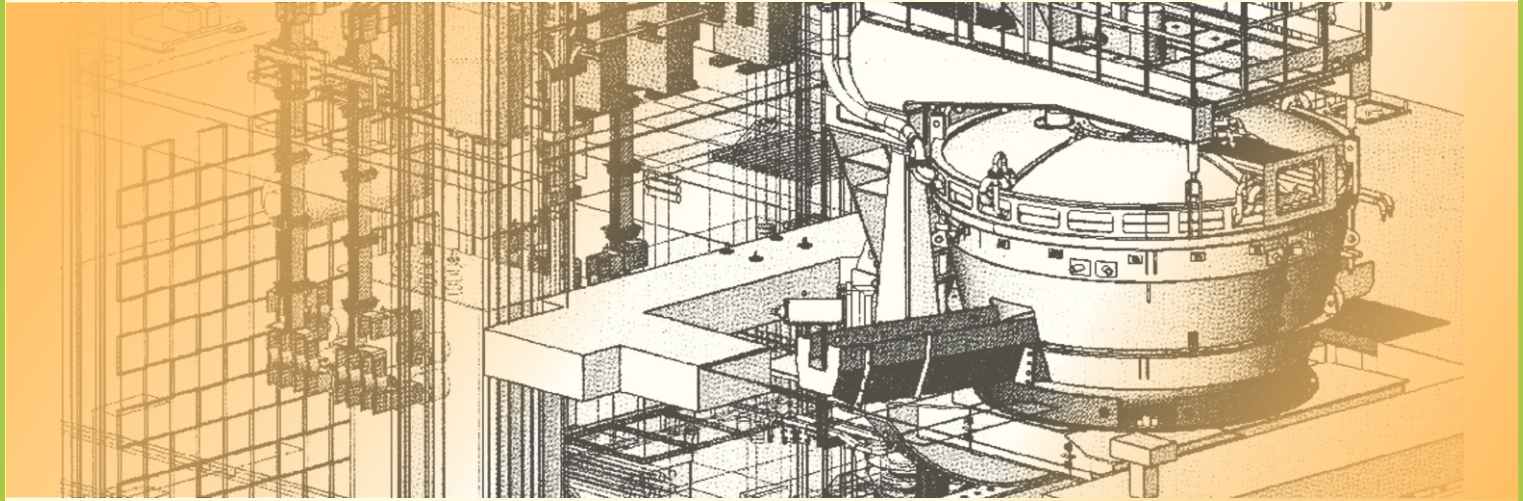


PRODUCTION OF SPARE PARTS

Advantages of direct current arc furnaces over other types of furnaces:

Over induction furnaces:

- ✓ High lining performance;
- ✓ Use of hot reactive slag for desulphurisation, dephosphorisation, and other metallurgical processes;
- ✓ Relaxed requirements to the moisture content and chemical composition of the batch being used;
- ✓ Higher thermal and electrical efficiency factor over 90%, higher power factor, lower specific power consumption;
- ✓ No "hot heel" required, easy liquidation of "salamander", one-time batch loading without size separation.



Over similar alternate current arc furnaces:

- ✓ Flicker effect reduced by 50%.
- ✓ Iron loss reduced to 2 to 4% (yield gain);
- ✓ Consumption of graphite electrodes reduced to 1.5 kg/ton of molten metal;
- ✓ Ferroalloys consumption reduced by 15 to 20% on average; Dust emission reduced 6 to 8 times;
- ✓ Noise level reduced by 15 to 20 decibels (closer to sanitary standard);

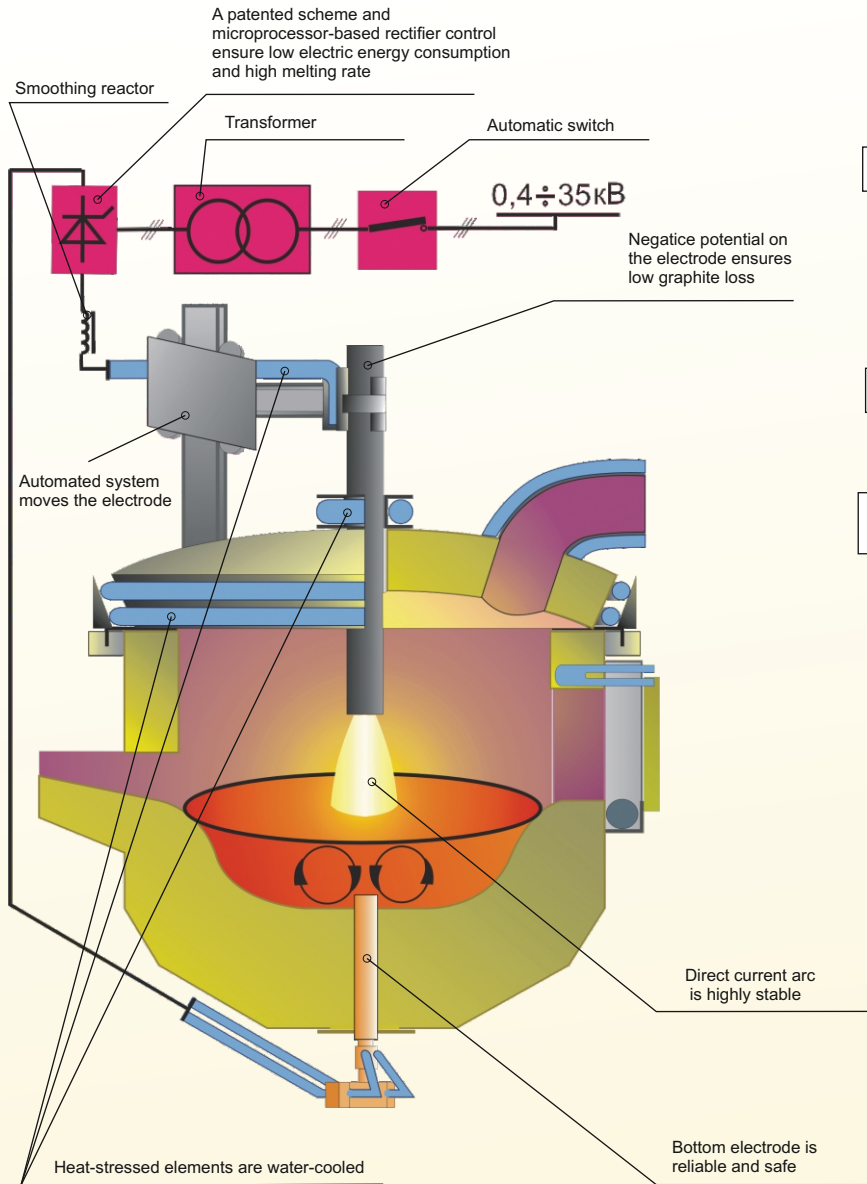
Principal parameters of the series of direct current arc furnaces

Furnace type	DP-0,1	DP-0,25	DP-0,5	DP-0,5	DP-1,5	DP-2	DP-3,0	DP-6,0	DP-12	DP-16	DP-25	DP-50
Power source capacity, kVA	140	400	630	1000	1600	1600	2500	5000	9600	12800	18360; 25600	43200
Supply voltage, kV	0,38	6; 10	6; 10	6; 10	6; 10	6; 10	6; 10	6; 10	6; 10	6; 10	6,10; 35	10; 35
Parameters of furnaces when melting steel and cast iron (DPS)												
Furnace's nominal capacity, tons	0,1	0,25	0,5	0,5	1,5	2	3,0	6,0	12	16	25	50
Specific electric energy consumption, kW*h/t (including overheating)	735	590	560	575	540	535	530	500	495	480	405	380
Burning time, min (including overheating)	40	30	32	21	36	46	46	50	60	55	45	36
Parameters of furnaces when melting aluminium and its alloys (DPA)												
Furnace's nominal capacity, tons	0,08	0,2	0,5	0,5	1,0	1,0	1,5	5,0	10	12	20	30
Specific electric energy consumption, kW*h/t (including overheating)	540	410	450	425	400	400	405	420	360	345	340	325
Burning time, min (including overheating)	22	16	26	17	19	19	22	36	37	29	32	23

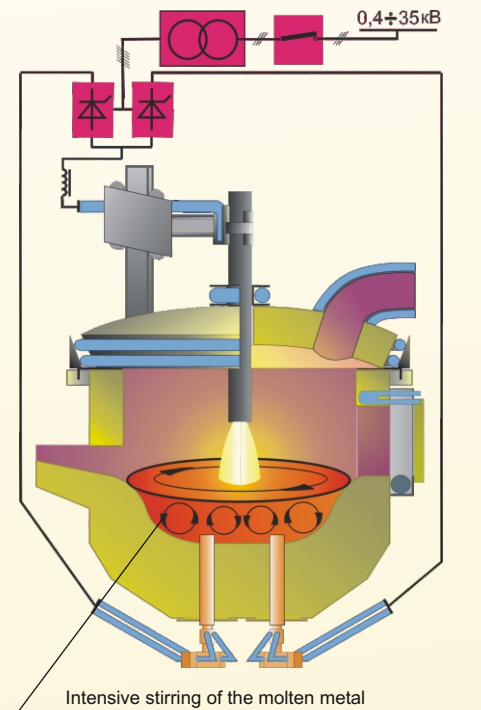
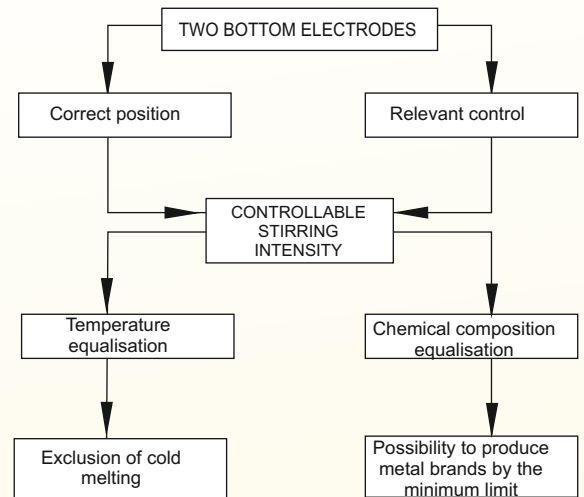
Our furnaces can be used for:

1. Melting steel;
2. Remelting copper scrap;
3. Melting copper alloys;
4. Melting silicocalcium;
5. Melting ferrovanadium;
6. Melting calcium carbide.
7. Melting low carbonylate ferrochrome;

8. Melting aluminium and aluminium alloys;
9. Melting ferrotitanium using titanium scrap;
10. Melting cast iron, including synthetic and high-strength cast iron;
11. Wasteless aluminium-containing slag processing;
12. Melting low carbonylate ferromanganese and metal manganese;
13. Melting crystal silicon in an ore thermal furnace;



A computer system controls and records the melting process



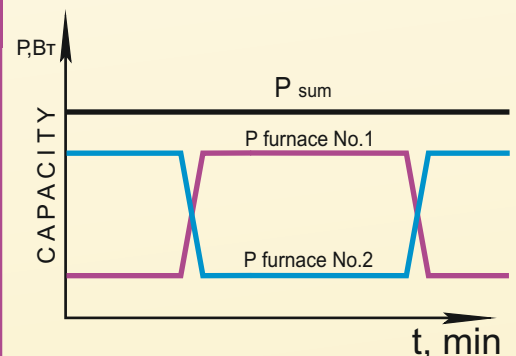
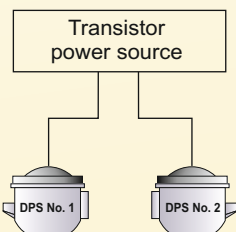
Double arc appliance

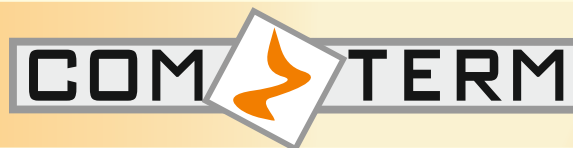
Power redistribution control during the melting process.

Both furnaces are operating simultaneously, power being distributed between them arbitrarily.

Fast melting in one furnace and maintaining the necessary capacity in the second furnace allow to:

- Increase production by 40 to 60%;
- Produce metal continuously;
- Double one-time batch of metal





We work for small, medium, and large organisations which need to establish or develop their own metallurgical or melting production.

Our arc furnaces and control systems combine proven reliability with quality satisfying individual requirements of every customer.



We use technologies, create technical solutions, and aim at making them not only respond to our customers' needs of today, but also become the universal basis for future development of the customer's enterprise.

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