

LIST OF PDA REGULARLY USED FORGING MILLS WITH DETAILS

CODE NO	NUMBER OF EMPLOYEES	CAPACITY TONS/YEAR	TYPICAL FORGINGS			PRODUCTION EQUIPMENT				QUALITY CHECKING		OTHER ACTIVITIES			
			Weight kg	Dimensions mm	Purpose specialized	Heating furnaces	Pressing equipment	Forging equipment	Forging hammers	Metal tests	In/Out tests	Cleaning types	Machining types	H Treatment equipment	Others
FG1	206	6000	0.300-25	30-250	agriculture, hydraulics, energetics, motor car industry	7 pcs forge-and-pressing production lines /FPPL/ - 16 000 kN presses, aided by an induction heating system /HIS/ 450 kW and a trimmer 1600 kN 5 FPPL - 25000 kN presses, aided by an HIS 450 kW and a trimmer 2500 kN Forge production line with a 50 kN steam-air hammer /SAH/, aided by an HIS 800 kW and a trimmer 6300 kN Forge production line with a SAH 30 kN, aided by an HIS 750 kW and a trimmer 4000 kN Forge production lines, horizontal-forge shop type - 4000 kN; 8000 kN; 12 000 kN; 12 500 kN Production line - 4000 kN friction press, gas heating and an electric type trimmer 630 kN Production line - 2500 kN friction press, gas heating and 630 kN trimmer Production line "fork horns"				chemical analysis, metallographic analysis, mechanical testing, flaw detection	YES	shot blast devices - 2 pcs, 48 MT/day capacity	multipurpose machines	furnaces, 17 pcs, PEK type, maximum temperature 1000 degr.centigrade	manufacturing of tool equipment: milling machines, horizontal boring machines, lathes, erosion machines, vertical /turning/ lathe, profilers, jig boring machines
FG2	42	5000	0.2-43	27-920	machine building, axle-making industry, internal combustion engine - making industry, spare parts	KGShtP: Stamping toggle press 16 000 kN, induction heating installation KIN5, toggle trimmer 1600 kN Stamping toggle press 16 000 kN, induction heating installation KIN2, toggle trimmer 1600 kN and overhanging forging rolls 500 kN Stamping toggle press 25 000 kN, induction heating installation KIN2, toggle trimmer 2500 kN and overhanging forging rolls 500 kN Stamping toggle press 40 000 kN, liquid fuel-fired heating furnace and toggle trimmer 4000 kN Stamping toggle press 63 000 kN, liquid fuel-fired heating furnace and toggle trimmer 6300 kN HKM: Horizontal forging machine 4000 kN and liquid fuel-fired heating furnace Horizontal forging machine 12 500 kN and liquid fuel-fired heating furnace PVCh: Steam-air swage hammer 20 kN, liquid fuel-fired heating furnace and toggle trimmer 1600 kN Steam-air swage hammer 40 kN, liquid fuel-fired heating furnace, toggle trimmer 6300 kN and hydraulic press 2500 kN Steam-air swage hammer 100 kN, liquid fuel-fired heating furnace, toggle trimmer 10 000 kN and hydraulic press 2500 kN				chemical analysis, metallographic analysis, mechanical testing, flaw detection	YES	shot blast devices type RT1800,1000 kg/hour capacity		furnaces, 8 pcs, electric resistance type; maximum temperature 900 °C	
FG3	150		800 max	up to dia 300mm/length 2000mm	spare parts			die forging up to 300mm diameter, 200mm length and 120kg weight	hammer forging up to 300mm diameter, 2000mm length and 800kg weight	metallographic analysis, mechanical testing, flaw detection	YES	shot blast	machining up to 1000mm diameter, 8000mm length and 20t weight	heat treatment: annealing/normalization, induction and gas carbonization	cutting up to 500mm ingot diameter, welding
FG4	1150		2000 max	up to dia 400mm	spare parts for mining transportation equipment, heavy mining equipment		1000 t open forging press at forging weight maximum to 2 t	moulding: mould ingots steel castings of weight 1500 and 2350kg		chemical analysis, metallographic analysis, mechanical testing, flaw detection	YES	shot blast	multipurpose machines	heat treatment: annealing/normalization, induction and gas carbonization	welding

FG5	43	1600	2-4000	60-1400	machine building, ship building, metallurgy, mining, chemical industry, food industry	Heating furnaces: type C4 - 10MT capacity - 1 pc; type C3 - 6MT capacity - 2 pcs; type C2 - 4MT capacity - 1 pc	Friction presses /FP/: FP-1600 kN-2 pcs; FP-2500 kN - 1 pc. Hydraulic driven press for deep drawing - 6300 kN force	Forge production line/KGShtP-25 000 kN/ -1 pc with an induction heating complex- 300 kW and a trimmer, type PKZ - 2500 kN	Steam air hammer /SAH/: SAH-20 kN -1 pc; SAH-10 kN -1 pc; SAH-6,3 kN -1 pc; SAH-4,2 kN -1 pc; SAH - 2,4 kN - 1 pc; SAH-1 kN - 1 pc	chemical analysis, metallographic analysis, mechanical testing, flaw detection	YES	shot blast devices - OWT type - 600 kg/hour	multipurpose machines	furnaces, 2 pcs; SDO type; maximum temperature 900 degr. centigrade;	
FG6	120	45,000	200-35,000	200-13,000	large scale forgings, utilized in: metallurgy - working rolls for hot and cold rolling; back-up rolls, spindles, couplings etc.; shipbuilding - propeller, intermediate and generator shafts, rudder stocks, pintles, etc.; mining industry - shafts, axles, gear rims; cement industry, chemical machinery, power generation and general machinery		two hydraulic presses for open-die forging with 3600/4500 t and 1600 t force: forging press 36 000 kN; forging press 16 000 kN	manipulator-rail type		chemical analysis, metallographic analysis, mechanical testing, flaw detection	YES		lathes, boring machines, drilling machines, milling machines suitable for machining of shaft or axles type of items with diam. from 250 mm to 1500 mm and length - to 13 000 mm; flat bars with dimensions up to 600 x 800 x 6000 mm	annual heat treatment of 3 400 tons of rolls for cold rolling and 23 000 tons of other blanks, heat treatment furnaces, oil and water quenching tanks, facilities for volume hardening of rolls, double-frequency induction hardening machine for surface hardening of the barrel of rolls for cold rolling	welding