



**FORGINGS, CASTINGS  
AND MACHINED PARTS**

**AUTOMOTIVE DIVISION**



UPEC is one of the leading CIS manufacturers of bearings, electric motors, pumps, CNC grinding machines, transmissions and chassis, air-cycle climate control systems, trailed agricultural machinery, as well as other machines, equipment, units and components for railway, automotive, agricultural, power and electric machinery, defense, metallurgical and other industries.

UPEC was established in 1995, and today it unites a number of leading manufacturing companies and engineering centres with more than half a century of history.



#### The main manufacturing capacities of the UPEC Industrial Group:

Kharkov Bearing Plant (**HARP**) — manufacture of energy-efficient bearing units and "cartridge" bearing products;



Oskol Bearing Plant **HARP** — international localization of **HARP**, manufacture of a new generation of bearing products;

**LKMZ**

Lozova Forging-Mechanical Plant (**LKMZ**) — manufacture of cold- and hot-forged components, transmissions and trailed agricultural machinery;

**HELZ**

Kharkov Electro-Technical Plant Ukrelectromash (**HELZ**) — manufacture of induction electric motors, a wide range of electric pumps and other consumer products;



Kharkov Machine-Tool Plant (**Harverst**) — manufacture and refurbishment of roll and cylindrical grinding machines, as well as special-purpose grinding machines for the bearing industry;



Ukrainian Casting Company (**ULK**) — manufacture of steel and iron castings.

The products of the UPEC Industrial Group are presented on the market by the divisions united in **UPEC TRADING**: Railway, Automotive, Electro-Technical, Machine-Tool and Agricultural.

The **Automotive Division** presents to the market the products of three companies – Kharkov Bearing Plant, Lozova Forging-Mechanical Plant and Ukrainian Casting Company.

The division provides a wide range of products – bearings, forgings, castings, components, complex units and assemblies for automotive industry manufacturers, motor builders, agricultural and transport machine builders. It also supplies components and assemblies to the aftermarket.

*We are focusing on the individual needs of our customers and offering technical solutions with maximum efficiency. We are fulfilling orders in accordance with the customers' drawings.*



# KHARKOV BEARING PLANT (HARP)

*The Kharkov Bearing Plant (formerly GPZ-8) is one of the largest manufacturers of bearing products in the CIS.*

The Kharkov Bearing Plant manufactures over 500 types of bearings with outer diameter from 30 to 400 mm under the HARP, HARP-AGRO and HARP-AUTO trademarks, as well as hot-forged and cold-rolled semi-finished products and components for automotive, railway and industrial bearings.

The Kharkov Bearing Plant has a Hot Forging Shop with an up-to-date manufacturing complex: two high-performance horizontal forging lines with power of 800 and 1500 kN and A/SP 1000 annealing furnace manufactured by the American-Polish company ELTERMA. The Hot Forging Shop also applies hard turning and superfinishing technologies.

The company is ISO 9001:2008 and ISO/TS 16949:2009 certified. It is also a certified supplier for SKF – the world leader in the manufacture of bearings.



## Technical capabilities of the Hot Forging Shop

Main forming equipment	Standard product range	Characteristics of forgings	
L-324.21.100, 800 kN	Forgings of bearing rings, gears, flanged parts	single-piece:	
		diameter: height: weight:	92 mm 60 mm 0.15-1.75 kg
		combined:	
		diameter: height: weight:	80 mm 60 mm 0.15-1.75 kg
L-324.32.100, 1500 kN	Forgings of bearing rings, gears, flanged parts	single-piece:	
		diameter: height: weight:	145 mm 80 mm 0.4-5 kg
		combined:	
		diameter: height: weight:	120 mm 80 mm 0.4-3.5 kg
A\SP 1000 (annealing furnace)		Induction heating Capacity 10 000 t/year	



# LOZOVA FORGING-MECHANICAL PLANT (LKMZ)

*The Lozova Forging-Mechanical Plant (LKMZ) is the largest manufacturer of cold- and hot-forged components in Ukraine and the CIS, as well as transmissions, armoured vehicles and trailed agricultural machinery.*

LKMZ specializes in the high-volume production of about 500 different forgings for railway transport, tractor, automotive and agricultural machinery.

The plant is the leading manufacturer of complex-shaped and high-precision forgings, grader tandem axles, components of transmissions and chassis for tractors and road-building machinery, as well as axles for buses, components and units for tractors and railway rolling stock. It is the largest Ukrainian manufacturer of hulls and transmissions for light armoured vehicles.

Applying of the unique technology makes it possible to produce parts of non-standard shapes with a high level of precision and reduced steel consumption.

In recent years, the company has successfully completed the development of mass production of a new line of tillage equipment for modern energy-efficient and soil-preserving agriculture.

The company has introduced the ISO 9001:2008 quality management system.

The Lozova Forging-Mechanical Plant is an official supplier of components for SKF.



**LKMZ**  
[www.lkmz.com](http://www.lkmz.com)



## Technical capabilities of LKMZ

Forging			
Main forming equipment	Standard product range	Characteristics of forgings	
Crank presses for hot forging (1000, 1600, 2500, 4000, 6300 tons)	Forgings of connecting rods, journals, hubs with flanges	Max. weight of forgings	60 kg
		Max. size of round forgings in plan view	360 mm
		Max. length	400 mm
Horizontal forging machines (400, 630, 800, 1200, 2000 tons)	Forgings of crankshafts	Weight of forgings	0.1-80kg
		Max. length	1600 mm
Cross-wedge rolling mills	Stepped shafts and axes, pinion shaft	Diameter from 20 to 45 mm, max. length – 350 mm Diameter from 40 to 80 mm, max. length – 550 mm	
Steam-driven die hammers with the weight of dropping parts: 1, 2, 3.15, 5, 10, 16 tons	Forgings of crankshafts, gear wheels, track links	Max. weight of forgings	160 kg
		Max. size of round forgings in plan view	600 mm
		Max. weight	1400 mm
Open die forging hammers with the weight of dropping parts: 0.75, 1, 3.15 tons	A wide range of forgings	Max. weight	120 kg
Ring rolling machines	Smooth rings for pinion gears Profiled rings for bearing products	Max. diameter – 250 mm, max. width – 80 mm Diameter from 250 to 450 mm, max. width – 160 mm	

Machining	
Processes	Parameters
Rotation bodies	Single-piece production – max $\varnothing$ = 800/1000, max L = 6 m Batch production – max $\varnothing$ = 150/200, max L = 1 m
Spline shafts with involute and straight-sided splines	max $\varnothing$ of splines = 200 mm, max m = 8 mm, max L = 1200 mm
Cutting of teeth for spur and skew gears	Single-piece production – from m = 3 to m = 20, max $\varnothing$ = 3000 mm, max h = 750 mm Batch production – from m = 3 to m = 12, max $\varnothing$ = 320 mm, max h = 150 mm
Cutting of teeth for straight and spiral bevel gears, also with hypoid offset	From m = 3 to m = 12, max $\varnothing$ = 400 mm, max width of geared rim = 80 mm
Slotting of key slots	Any
Shaping and milling of metalware	Max. overall dimensions – 2500x8000x2000
Shaping and machining of any types of metalware by boring machines	Max. overall dimensions – 3000x8000x3800
Hardening of parts with high frequency current	Max $\varnothing$ 300
Cutting of workpieces	Max $\varnothing$ 400
Grinding	$\varnothing$ 300, L = 3000; Max. surface grinding – 500x500x1000

# FORGINGS

## For automotive industry



№	Designation	Name	Material, steel	Weight, kg
1	7401005020	Crankshaft	42KhMFA	100.0
2	65055-2402120	Pinion gear	15KhGN2TA	46.0
3	263-1005020A	Crankshaft	40KhGNM	125.0
4	245-1004050-055	Connecting rod	40Kh	0.865
5	1102-2304028	Hinge housing	30KhA	0.56
6	245-1701039	Driving shaft	20KhGNM	2.56
7	2103-240.3070	Half axle	35KhGSA	7.6
8	64221-2919016-010	Rod	45	18.9

## For agricultural machinery



№	Designation	Name	Material, steel	Weight, kg
1	245-1006015G	Camshaft	45	7.35
2	240-1005020-B1	Crankshaft	45Kh	44.0
3	240.100.4112	Connecting rod	40Kh	4.14
4	5336-240-5050-A	Pinion gear	38Kh2MYuA	16.65
5	12536102-4	Yoke	40Kh	9.34
6	RSM-10.02.02.644/644-01	Steering knuckle	40Kh	21.6
7	245-1602046	Special throw-out yoke	45	2.557
8	MK 23M 03661	Epicyclic gear	25KhGT	39.9
9	50.240.7122	Driven gear	20KhNR	37.8
10	KLD3.02.00.04	Tine of cultivator	50KhG	14.73

## For bearing industry



N <sup>o</sup>	Designation	Name	Material, steel	Weight, kg
1	42536-01	Outer ring of bearing	ShKh15SG	21.22
2	680.314.01/02	«Combined forgings» of bearing rings	ShKh15V	4.827
3	118.01	Outer ring of bearing	ShKh15V	1.197
4	118.02	Inner ring of bearing	ShKh15V	0.822

## For other industries



N <sup>o</sup>	Designation	Name	Material, steel	Weight, kg
1	NSh 50U-2-04	Gear of hydraulic pump	18KhGT	1.75
2	RS-60	Crushing block	35G2	2.8
3	1160-492Sh	Turbine blade	12Kh13	8.1
4	RBKS-8.180.03.01.045	Bracket of tower crane	09G2S-12	33.0
5	4-120606-04	Blade insert of wind turbine	45Kh	78.5
6	UER004.00.00	Bushing of locomotive motor	20Kh13	31.64
7	90.31.00-111	Packer for track lining machine	35KhM	10.64
8	1.703.03152110-21	Link of subway escalator	35	22.1

## For mining and metallurgical industry



N <sup>o</sup>	Designation	Name	Material, steel	Weight, kg
1	KSD 27.12.201	Scraper	35KhGSA	23.4
2	KSD 28.13-002	Clamp	30KhGSA	3.25
3	KSD 28.00.01	Link	35KhGSA	8.52
4	5001.01.016-02L	Track	38KhS	11.1
5	SP 202.6.0041	Link	35KhGSA	1.4
6	8.34.101	Track	20KhGSNM	8.6



# UKRAINIAN CASTING COMPANY (ULK)

*The Ukrainian Casting Company (ULK) is one of the largest Ukrainian manufacturers of steel and iron casting for the railway, automotive, mechanical and agricultural industries.*

The company has put into operation new metallurgical and molding capacities, making it possible to master the production of iron castings with weight from 5 kg to 3 tons, as well as the production of beds with maximum weight of 5.5 tons.

The company is realizing a strategic investment project to implement equipment and to master new technologies for small-sized casting (line of impulse forming). The following equipment was put into operation: core-making automatic machines with capacity of 40 litres, an up-to-date shot-blasting machine from Slovenia, a complex of hardening and annealing furnaces manufactured by Kerammash, Slavyansk.

The Ukrainian Casting Company is certified according to the ISO 9001:2008 quality management system.



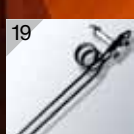
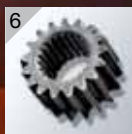
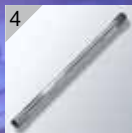
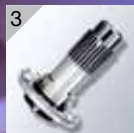
## CASTINGS



№	Designation	Name	Material, steel	Weight, kg
1	L150.39.103	Carrier	St30L	23.8
2	L125.72.105-1	Clip cover	SCh20	3.5
3	120.56.133	Thrust level	St45L	7.4
4	L125.72.136	Adjustable screw nut	SCh20	1.4
5	151.36.116	Right sleeve	SCh15	1.85
6	120.56.111	Stem lever	St45L	16
7	3M197 6060	Body	SCh20	392.0
8	3M197 6004-1	Bushing	SCh20	230.0



# MACHINED PARTS



№	Designation	Name	Material, steel	Weight, kg
Spline shafts				
1	151.36.104	Cardan shaft	45	9.5
2	151.41.126	Support shaft	45	3.4
3	L151.39.105A	Hub	45	15
4	L151.39.101/10/103/104	Shaft	38KhS	12.9
Spur gears				
5	L150.39.106	Planetary pinion	20KhN3A	2.5
6	L150.39.110	Sun gear	20KhN3A	2
7	L150.39.104	Epicyclic gear	38KhS	13.7
Straight bevel gears				
8	L151.72.128	Planetary pinion	25KhGT	0.65
9	L151.72.216	Half axle clutch	25KhGT	2.4
Spiral bevel gears				
10	L150.38.103	Driving gear	20KhN3A	7.3
11	L150.38.104	Driven gear	20KhN3A	12.7
Box-shaped parts				
12	L151.72.012	Axle body	15Kh	89.7
13	L151.38.114	Brake drum	cast iron	38.8
14	L125.72.016	Final drive body	cast iron	43.4
Parts and assemblies for tillage machinery				
15	KLD3.02.00.00	Wing share	-	29.7
16	KLD3.04.00.00	Disc ripper	-	21.1
17	8395.DLM-4.05.010	Tine with disc	-	27.5
18	8395.DLM-4.05.015	Bearing unit	-	6
19	BPU00.01	Spring tooth	65G	1.23
20	8395.DLM-4.11.105	Spring	65G	1.1

# OTHER PRODUCTS

## **Components for christmas tree equipment and shut-off valves:**

- cast wedge gate valves (oil seal, disc, cover, wedge, saddle, base);
- steel wedge gate valves (body, cover, oil seal, frame, flange, wedge);
- valves (shut-off valve, needle shut-off valves, shut-off valves of steam-power group, components of high pressure ball valves);
- ball valves (clip, flange, body, plug).

## **Parts for wellhead and christmas tree equipment:**

- parts for wellhead equipment (wedge, nut, ring, flange, gasket, body);
- parts for tubing elevators (link);
- gate valves (body, saddle, flange, gate, cover, nut, upper gate).

**Forgings of flanges according to GOST 12821, Ru 250; forgings of wellhead equipment.**

**Machined flanges according to GOST 12820, 12821.**

**Machined flanges according to DIN, ANSI.**

## **Other forgings:**

- swivel elbows;
- quick-release couplings (socket, cone, nut, general mechanic rubber goods);
- tees (adapter, cross bar);
- branches;
- tubing heads;
- casing heads;
- bits (forgings: bit cutters, bit frame, leg, bearings, sections, teeth);
- parts for mud pumps (bushes, valves, pistons, rods, pony rods, hydraulic boxes, safety valves);
- wedge grips for concrete sleepers (middle wedge, technological grip);
- dies and plates for floor wrenches;
- wheel discs;
- parts for escalator chain, etc.

**Non-standard products are manufactured according to the drawings of the customers.**





**UPEC Industrial Group**  
**Automotive Division**

**UPEC TRADING** – official distributor

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Ukrainian Casting Company (ULK)

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