

HARP

Proven
solutions for you

HARP-AGRO BEARINGS AND UNITS FOR AGRICULTURE INDUSTRY



UPEC Industrial Group is the leading manufacturer in Ukraine and CIS. Range of products include bearings and bearing units (HARP), trailed agricultural equipment (LOZOVA MACHINERY), electric motors and pumps (HELZ), CNC grinding machines (HARVERST), transmissions and chassis (LKMZ), and other 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-century history.



Kharkov Bearing Plant (HARP)



70 years of successful production of ball and roller bearings for agriculture, railway and automotive industries.



HARP® - Registered trade mark HARP. Patents cover more than 50 countries. Production of more than 500 types of bearings with inner diameter from 16 to 260 mm under trade marks HARP, HARP-AGRO, HARP-AUTO, HARP AGRO UNIT, hub and housed bearing units, as well as hot forged and cold-rolled components.



Technical facilities allow to produce up to 30 mln. bearings a year.

Proven solutions for you!



Vast production and design experience

HARP not only produces, but also develops innovative products. Own engineering center (Ukrainian bearing industry design and technology bureau) with professional team develops customized bearing solutions. The inhouse Test center evaluates quality, durability, accuracy and other parameters of products.



Attending every customer

HARP bearings increase competitiveness of machinery, improve its quality and reduce maintenance and repair costs.

HARP products are well-known all over the world and exported to Europe, Asia, Northern America and Middle East.



Expert in bearings production is always ready for challenges

For the agricultural sector we develop new lines of the innovative products for application in tillage, seeding and harvesting equipment of domestic and world manufacturers.

Our main task - to produce reliable products and offer solutions improving in several times technical and operation features of machinery.









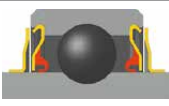


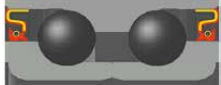











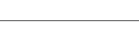
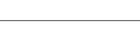
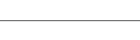




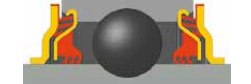




X-SHIELD – multi-lip seals of increased tightness

Every agrarian needs bearings for agricultural machinery, which would increase the average time of failure-free operation, minimize expensive down-time and maintenance time, as well as reduce production losses.

That is why HARP-AGRO bearings for agricultural machinery are produced with special X-SHIELD seals of increased tightness.

Specialists of HARP has developed a brand new line of advanced seals X-SHIELD. The line includes one-lip seals (K10 suffix) and multi-lip seals X-SHIELD-2, -3, -4, -6, -7 (K12-K20), which are designed for different work conditions.

Seal type	Figure	Bearing designation suffix	Number of lips	Maximum rotation speed	Protection from moisture and dust	Protection from mechanical damages
Standard		2RS (ISO)	1			
X-SHIELD		K10	1			
X-SHIELD		K10	1 + protective shield			
X-SHIELD-2		K12	2			
X-SHIELD-4		K14	4			
X-SHIELD-3		K17	3			
X-SHIELD-3		K18	3 + protective shield			
X-SHIELD-6		K19	6 + protective shield			
X-SHIELD-7		K20	7 + protective shield			

Advantages

- Bearing units HARP with new X-SHIELD seals do not require maintenance during the entire period of operation.
- Unique sealing system in combination with protective shield ensure 100% hermeticity of bearings.
- In aggressive operation conditions HARP-AGRO bearings with X-SHIELD seals serve in 2-5 times longer than with standard seals.
- Extended range of the seal operating temperatures: from -40 to +120°C



Lifespan in aggressive medium	Series of HARP bearings with seals	Description
	160000, 180000, 380000, 580000, 1580000, 680000, 1680000	Standard one-lip seal made of rubber, partially reinforced.
	160000, 180000, 380000, 580000, 1580000, 680000, 1680000, 780000K	K10 serial seal is mounted in the groove on the outer bearing ring. The elastic part with one work lip is vulcanized to protective shield and covered from mechanical impact.
	480000, 780000 and other bearings with a wide inner ring	In the series of bearings 480000 and 780 000 (UC, EX) K10 seal is mounted with an additional protective shield on the outer diameter of the inner ring, for additional protection from mechanical damage.
	256000	Seal for double-row angular contact bearings. Two-lip collar with spring preload - high hermeticity.
		Seal for double-row angular contact bearings. Four-lip cassette seal with stainless insert - high hermeticity and corrosion resistance.
	480000, 780000, as well as in bearings 376905 (AA205DD), 966903 (5203KYY2), 530903 (203KRR2), 420905(205KRRB2), and other bearings with a wide inner ring	K10 type seal but with three lips for better moisture and dust protection.
	480000, 780000 and other bearings with a wide inner ring	Sealing system consisting of two elements: reinforced protective shield and three-lip seal K17. Protective shield is made of a sheet of bigger thickness and is several times stronger than standard shield.
		Six-lips sealing system consisting of protective shield with three-lips rubber seal and main seal with three work lips. Maximum protection from external impacts.
	966903 (5203KYY2) and other bearings with a wide inner ring	Seven-lips sealing system consisting of protective shield with four-lips rubber seal and main seal with three work lips. Maximum protection from external impacts.

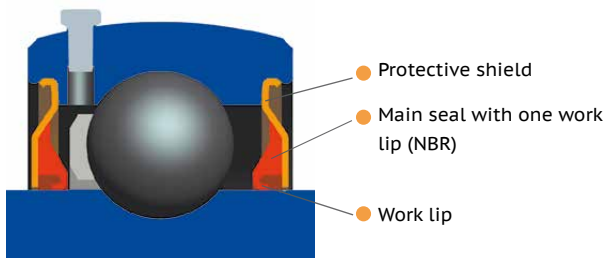
Technical features of X-SHIELD seals

Wear-resistant and reliable material

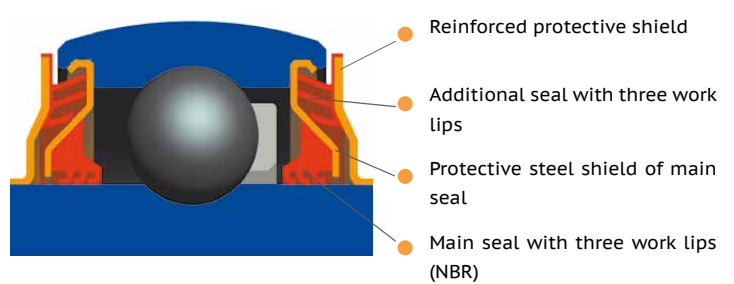
- X-SHIELD seals are made of butadiene-acrylonitrile rubber (NBR), which enables operation in a wide range of temperatures (-40°...+120°C) without sticking to bearing rings, low friction coefficient, high wear-resistance and lifespan, ability of urgent work without grease, resistance to oils, gasoline and fertilizers.
- Metal part of the seal is protected from corrosion and zinc-coated with additional treatment (phosphating, oxidation).

Carefully checked seals design – 100% protection guarantee

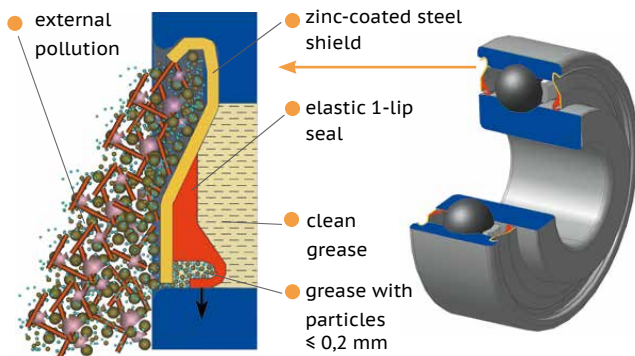
Combined seal X-SHIELD (K10)



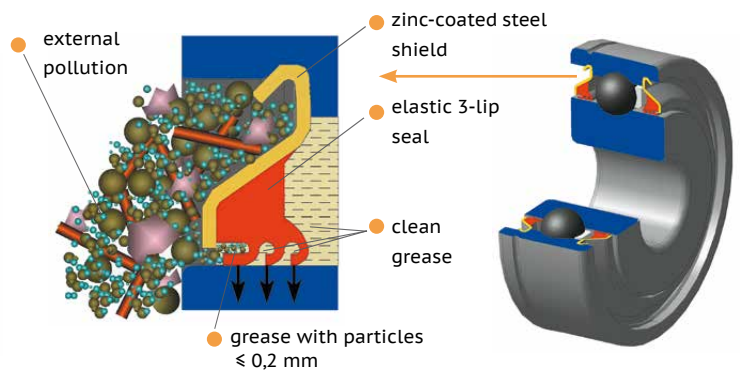
Reinforced combined seal X-SHIELD-6 (K19)



X-SHIELD (K10)



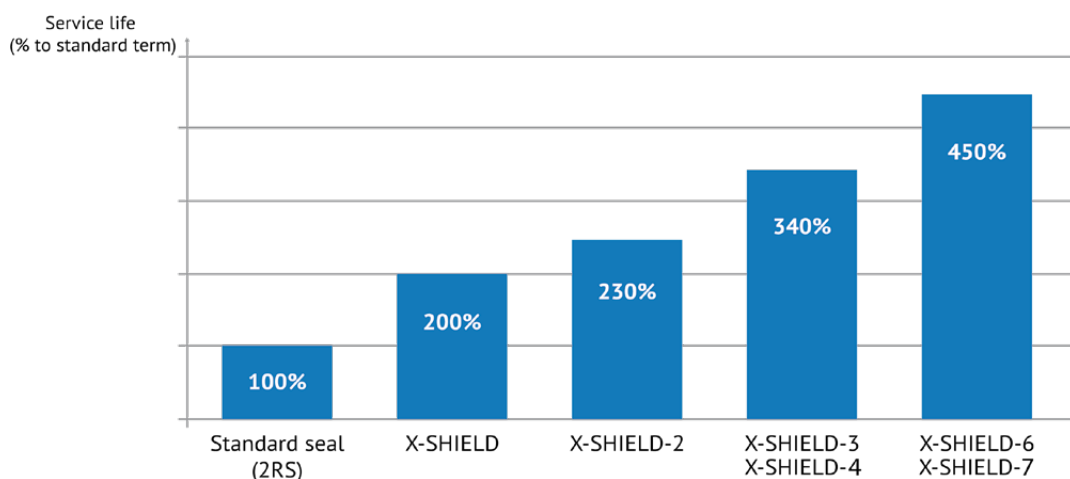
X-SHIELD-3 (K17)



Zero maintenance - costs reduction

Bearings with X-SHIELD seals are distinguished with bigger overhaul interval and zero maintenance.

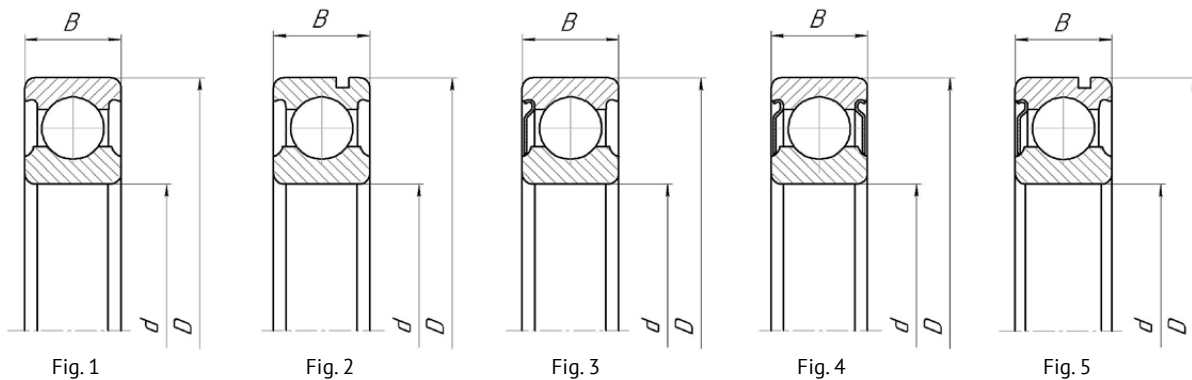
Dependence of lifespan on seal type according to the results of tillage machinery field testing (Ukraine, 2017)





HARP-AGRO BEARINGS

HARP-AGRO bearings



SINGLE-ROW BALL BEARINGS

Designation				Dimensions, mm			Fig. №
HARP (GOST)		ISO (DIN)		d	D	B	
Series	Range	Series	Range				
100	114...130	6000	6014...6030	70...150	110...225	20...35	1
200	204...226	6200	6204...6226	20...130	47...230	14...40	1
300	304...322	6300	6304...6322	20...110	52...240	15...50	1
400	406...416	6400	6406...6416	30...80	90...200	23...48	1
50100	50115	6000N	6015N	75	115	20	2
50200	50204...50218	6200N	6204N...6218N	20...90	47...160	14...30	2
50300	50305...50315	6300N	6305N...6315N	25...75	62...160	17...37	2
50400	50406...50413	6400N	6406N...6413N	30...65	90...160	23...37	2
60100	60120	6000-Z	6020-Z	100	150	24	3
60200	60204...60220	6200-Z	6204-Z...6220-Z	20...100	47...180	14...34	3
60300	60304...60317	6300-Z	6304-Z...6317-Z	20...85	52...180	15...41	3
80100	80120	6000-2Z	6020-2Z	100	150	24	4
80200	80204...80220	6200-2Z	6204-2Z...6220-2Z	20...100	47...180	14...34	4
80300	80304...80317	6300-2Z	6304-2Z...6317-2Z	20...85	52...180	15...41	4
150200	150207...150217	6200-ZN	6207-ZN...6217-ZN	35...85	72...150	17...28	5
150300	150306...150311	6300-ZN	6306-ZN...6311-ZN	30...55	72...120	19...29	5

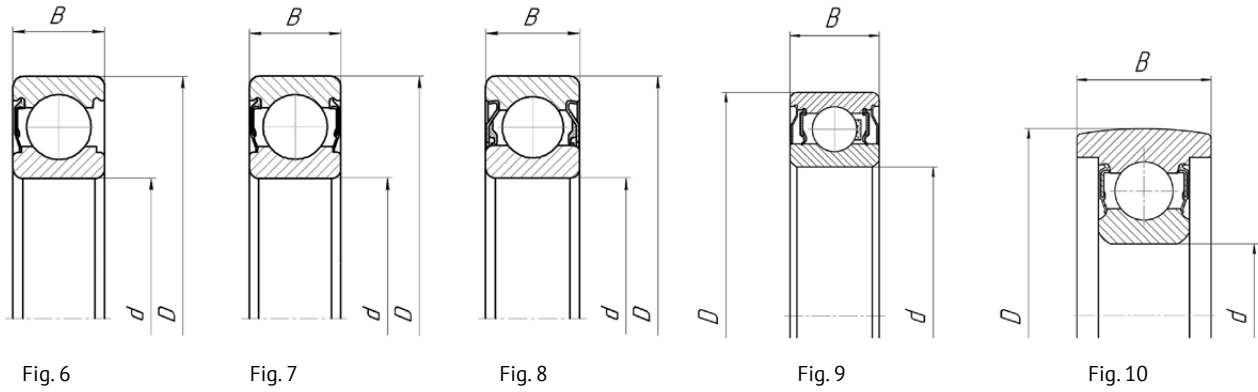
THE BEST AGRICULTURAL BEARING - BEARING WITH X-SHIELD® SEAL OF INCREASED TIGHTNESS

Currently almost all HARP-AGRO bearings for agricultural machinery can be produced with a standard seal (-2RS) or with one of the seals of increased tightness of X-SHIELD series (additional bearing designation contains suffix K - index K10 means one-lip, K12...K20 means multi-lip). Such seals provide 100% protection of bearing from dust, mud, water and abrasive particles, as well as additional protection from mechanical damages and allows the bearing to operate effectively under the extreme conditions.

Most of the bearings are produced with pressed steel or armamide (polyamide reinforced by fibrous glass) cages. The armamide cages have low friction coefficient and high durability, while their flexibility and light weight considerably increase bearing serviceability at impact loads, acceleration and deceleration, or mutual misalignment of rings.

Increased hermeticity,
external protection, reliability





SINGLE-ROW BALL BEARINGS WITH SEALS

Designation				Dimensions, mm			Fig. №
HARP (GOST)		ISO (DIN)		d	D	B	
Series	Range	Series	Range				
160200	160204...160212	6200-RS	6204-RS...6212-RS	20...60	47...52	14...22	6
180200	180204...180217	6200-2RS	6204-2RS...6217-2RS	20...85	47...150	14...28	7
180300	180304...180316	6300-2RS	6304-2RS...6316-2RS	20...80	52...170	15...39	7
180500	180503...180508	62200-2RS	62203-2RS...62208-2RS	17...40	40...80	16...23	7
180600	180603...180612	62300-2RS	62303-2RS...62312-2RS	17...60	47...130	19...46	7
180700	180706	-	-	30	78	28	10
	180707	-	-	35	80	23	7
180900	180902	-	-	16	35	14	7
2180000	2180120	-	-	100	150	30	9

SINGLE-ROW BALL BEARINGS WITH X-SHIELD SEALS

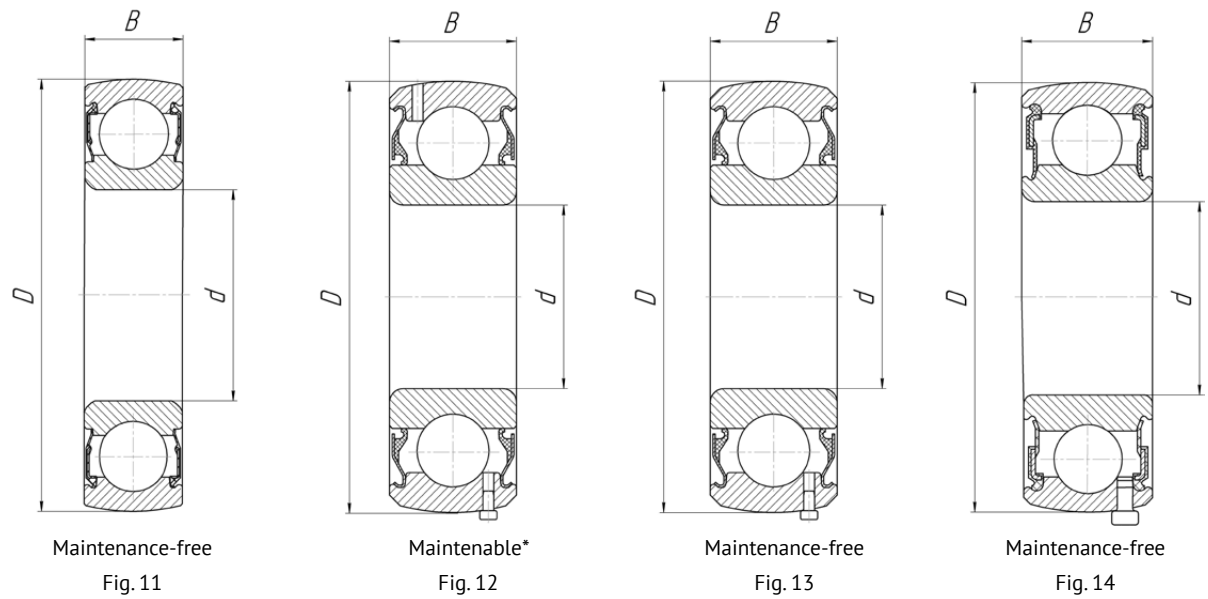
Designation				Dimensions, mm			Fig. №
HARP (GOST)		ISO (DIN)		d	D	B	
Series	Range	Series	Range				
180200	180204...180216	6200-2RS	6204-2RS...6216-2RS	20...80	47...140	14...26	8
180300	180306...180310	6300-2RS	6306-2RS...6310-2RS	30...50	72...110	19...27	8
180500	180508	62200-2RS	62208-2RS	40	80	23	8
180600	180610	62300-2RS	62310-2RS	50	110	40	8
180700	180712	-	-	60	110	24	8

HARP-AGRO BEARINGS APPLICATION:

- combines, tractors, balers, harvesters and other aggregates: CLAAS, John Deere, New Holland, CASE;
- Rostselmash combines (Acros, Torum, Vector, Niva; RSM-161, RSM-1404, DON, Niva and other), Gomselmash PALESSE combines (forage, grain, beet, potato combines);
- tractors of Minsk (Belarus), Kharkov (XTZ), Peterburgsky (KIROVETS) tractor plants;
- trailed and mounted units of Lozova Machinery (LKMZ), Gomselmash, Elvorti (Chervona Zirka), Klever, Bobruyskagromash and many of other manufacturers of agricultural machinery.

For more information about HARP-AGRO bearings application visit our web-site – HARP.UA





SINGLE-ROW BALL BEARINGS WITH SPHERICAL MOUNTING SURFACE OF OUTER RING

Designation		Dimensions, mm			Weight, kg	Load ratings, kN		Maximum rotational speed, RPM	Fig. №
HARP	Analogue	d	D	B	m	Dynamic	Static		
580204AK10C17	76204-2RS 1726204-2RS CS 204	20	47	14	0,10	13,3	6,5	10000	13
580205AC17	76205-2RS 1726205-2RS CS 205	25	52	15	0,12	14,7	7,0	8500	11
580205AEK7C17	76205-2RSTV 1726205-2RSTV CS 205	25	52	15	0,12	14,7	7,0	8500	14
580205AEK10C17	76205-2RSTV 1726205-2RSTV CS 205	25	52	15	0,12	14,7	7,0	8500	13
1580206EK10T2C17	76206-2RSTV** 1726206-2RSTV** CS 206**	30	62	18	0,22	19,5	11,3	7500	13
1580207EK10T2C17	76207-2RSTV** 1726207-2RSTV** CS 207**	35	72	20	0,31	26,8	15,3	6300	13
1580209EK10T2C17	76209-2RSTV** 1726209-2RSTV** CS 209**	45	85	21	0,40	34,9	21,6	5000	13
1580211EHK10T2C17	76211-2RSTV**	55	100	23	0,66	45,8	29,0	4300	12
1580211EK10T2C17	1726211-2RSTV**	55	100	23	0,66	45,8	29,0	4300	13
580306K10C17	76306-2RS 1726306-2RS	30	72	19	0,34	28,1	14,6	6300	13
580306K7C17	76306-2RS 1726306-2RS	30	72	19	0,34	28,1	14,6	6300	14

* Possibility of periodical grease filling

** Differs by size B

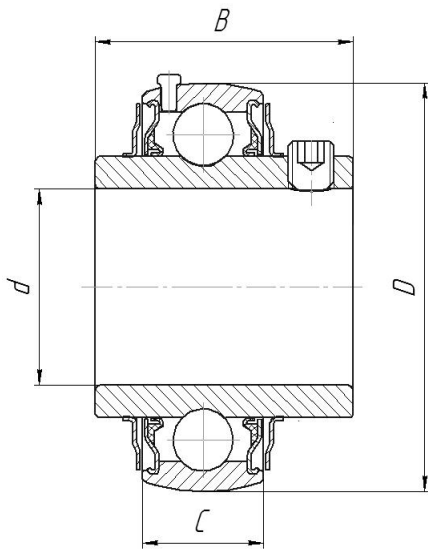
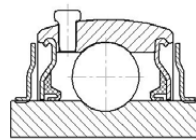
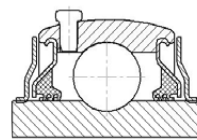


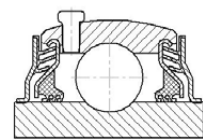
Fig. 15



Maintainable*
a
X-Shield (K10)



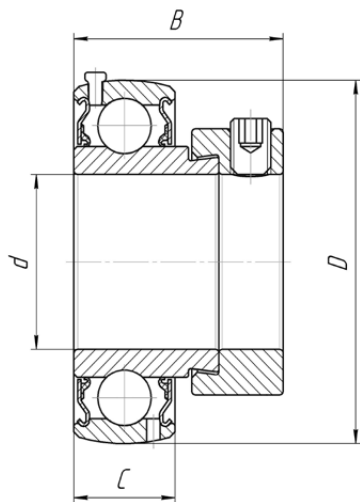
Maintenance-free
b
X-Shield 3 (K18)



Maintenance-free
c
X-Shield 6 (K19)

SINGLE-ROW BALL BEARINGS WITH SPHERICAL SURFACE OF OUTER RING AND LOCKING PINS ON INNER RING

Designation		Dimensions, mm				Weight, kg	Load ratings, kN		Maximum rotational speed, RPM	Fig. №
HARP	Analogue	d	D	B	C	m	Динамическая	Статическая		
480205AEHK10T2C17-UC205	SNR: UC205 SKF: YAR205 FAG: GYE25 FKL: LE205	25	52	34,1	16	0,19	14,7	7,9	7000	15a
480205AEK18T2C17		25	52	34,1	16	0,19	14,7	7,9	1400	15b
480205AEK19T2C17		25	52	34,1	16	0,19	14,7	7,9	900	15c
480206EHK10T2C17-UC206	SNR: UC206 SKF: YAR206 FAG: GYE30 FKL: LE206	30	62	38,1	18	0,31	19,5	11,3	6300	15a
480206EK18T2C17		30	62	38,1	18	0,31	19,5	11,3	1200	15b
480206EK19T2C17		30	62	38,1	18	0,31	19,5	11,3	800	15c
480207EHK10T2C17-UC207	SNR: UC207 SKF: YAR207 FAG: GYE35 FKL: LE207	35	72	42,9	20	0,47	25,7	15,3	5300	15a
480207EK18T2C17		35	72	42,9	20	0,47	25,7	15,3	1000	15b
480207EK19T2C17		35	72	42,9	20	0,47	25,7	15,3	700	15c
480208EHK10T2C17-UC208	SNR: UC208 SKF: YAR208 FAG: GYE40 FKL: LE208	40	80	49,2	21	0,60	32,6	19,8	4800	15a
480208EK18T2C17		40	80	49,2	21	0,60	32,6	19,8	900	15b
480208EK19T2C17		40	80	49,2	21	0,60	32,6	19,8	600	15c
480209EHK10T2C17-UC209	SNR: UC209 SKF: YAR209 FAG: GYE45 FKL: LE209	45	85	49,2	21	0,66	32,8	20,5	4300	15a
480209EK18T2C17		45	85	49,2	21	0,66	32,8	20,5	800	15b
480209EK19T2C17		45	85	49,2	21	0,66	32,8	20,5	550	15c
480210EHK10T2C17-UC210	SNR: UC210 SKF: YAR210 FAG: GYE50 FKL: LE210	50	90	51,6	23	0,75	35,1	23,3	4000	15a
480210EK18T2C17		50	90	51,6	23	0,75	35,1	23,3	750	15b
480210EK19T2C17		50	90	51,6	23	0,75	35,1	23,3	500	15c



Maintenable*
Fig. 16

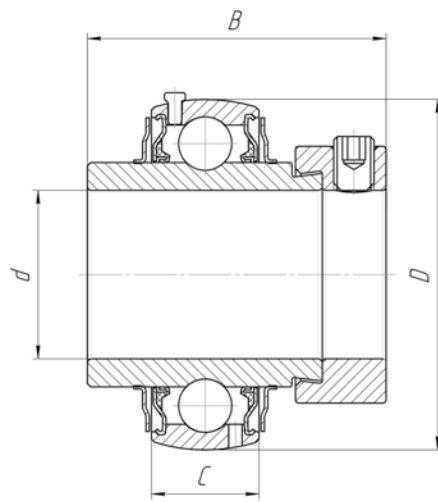
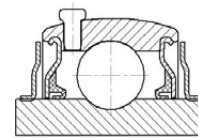
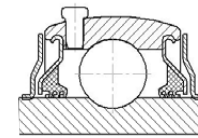


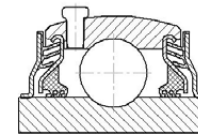
Fig. 17



a
X-Shield (K10)
Maintenable*



b
X-Shield 3 (K18)
Maintenance-free

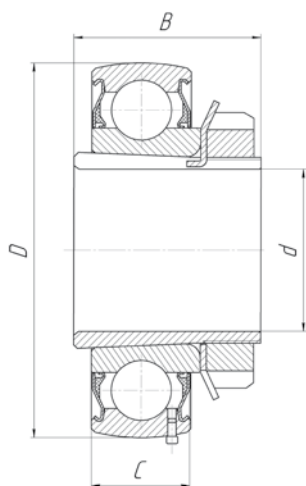


c
X-Shield 6 (K19)
Maintenance-free

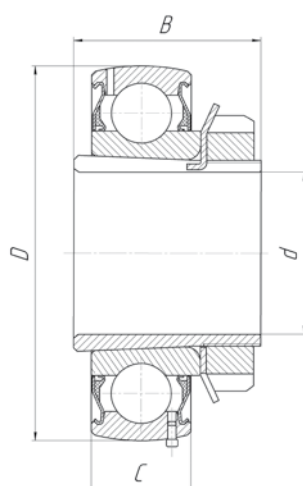
SINGLE-ROW BALL BEARINGS WITH SPHERICAL SURFACE OF OUTER RING AND ECCENTRIC LOCKING RING

Designation		Dimensions, mm				Weight, kg	Load ratings, kN		Maximum rotational speed, RPM	Fig. №
HARP	Analogues	d	D	B	C	m	Dynamic	Static		
780205KAEHK10T2C17-ES205	SNR: ES205; SKF: YET205 FAG: GRAE25; FKL: UY205	25	52	31	15	0,19	14,7	7,9	7000	16
780206KEHK10T2C17-ES206	SNR: ES206; SKF: YET206 FAG: GRAE30; FKL: UY206	30	62	35,7	18	0,32	19,5	11,3	6300	16
780207KEHK10T2C17-ES207	SNR: ES207; SKF: YET207 FAG: GRAE35; FKL: UY207	35	72	38,9	19	0,53	25,7	15,3	5300	16
780208KEHK10T2C17-ES208	SNR: ES208; SKF: YET208 FAG: GRAE40; FKL: UY208	40	80	43,7	21	0,64	32,6	19,8	4800	16
780205AEHK10T2C17-EX205	SNR: EX205 SKF: YEL205	25	52	44,4	16	0,25	14,7	7,9	7000	17a
780205AEK18T2C17	FAG: GE25	25	52	44,4	16	0,25	14,7	7,9	1400	17b
780205AEK19T2C17	FKL: LY205	25	52	44,4	16	0,25	14,7	7,9	900	17c
780206EHK10T2C17-EX206	SNR: EX206 SKF: YEL206	30	62	48,4	18	0,39	19,5	11,3	6300	17a
780206EK18T2C17	FAG: GE30	30	62	48,4	18	0,39	19,5	11,3	1200	17b
780206EK19T2C17	FKL: LY206	30	62	48,4	18	0,39	19,5	11,3	800	17c
780207EHK10T2C17-EX207	SNR: EX207 SKF: YEL207	35	72	51,1	20	0,61	25,7	15,3	5300	17a
780207EK18T2C17	FAG: GE35	35	72	51,1	20	0,61	25,7	15,3	1000	17b
780207EK19T2C17	FKL: LY207	35	72	51,1	20	0,61	25,7	15,3	700	17c
780210AEHK10T2C17-EX210	SNR: EX210 SKF: YEL210	50	90	62,7	23	0,94	35,1	23,3	4000	17a
780210AEK18T2C17	FAG: GE50	50	90	62,7	23	0,94	35,1	23,3	750	17b
780210AEK19T2C17	FKL: LY210	50	90	62,7	23	0,94	35,1	23,3	500	17c
780716EHK7C17	-	80	150	71	39	4,6	71,0	53,0	2400	17a

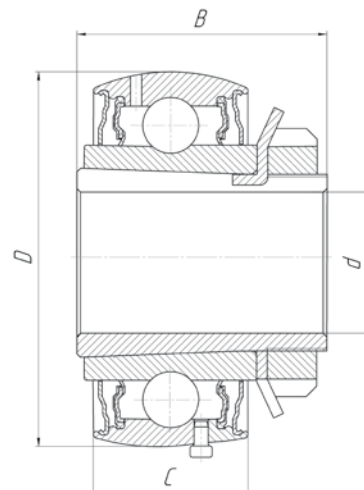
*Possibility of periodical grease filling



Maintenance-free
Fig. 18



Maintainable*
Fig. 19

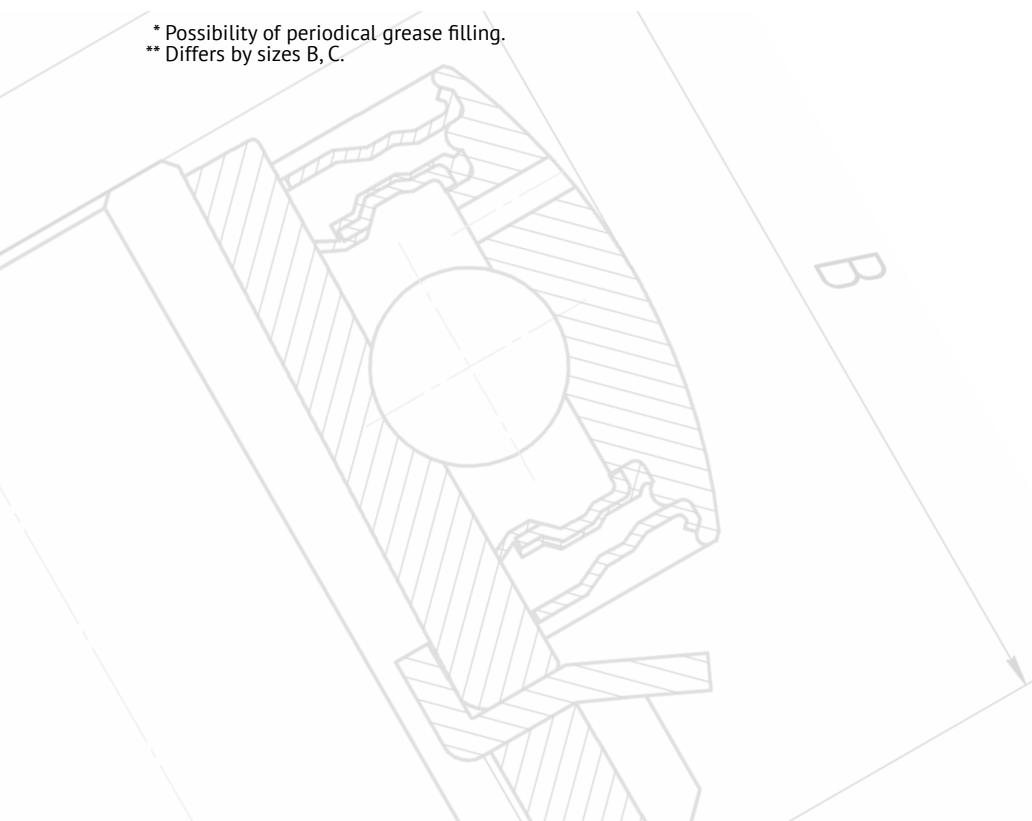


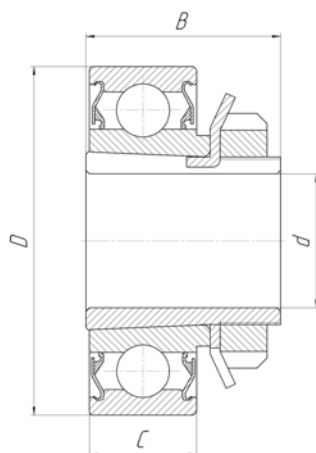
Maintainable*
Fig. 20

SINGLE-ROW BALL BEARINGS WITH SPHERICAL SURFACE OF OUTER RING AND ADAPTER SLEEVE

Designation		Dimensions, mm				Weight, kg	Load ratings, kN		Maximum rotational speed, RPM	Fig. №
HARP	Analogue	d	D	B	C	m	Dynamic	Static		
1680204AEK10C17	SKF: YSA205-2FK+H2305** SNR: UK205G2H**	20	52	29	16	0,20	14,7	7,0	8500	18
1680205EK10T2C17	SKF: YSA206-2FK+H2306** SNR: UK206G2H**	25	62	31	18	0,30	19,5	11,3	7000	18
1680206EK10T2C17	SKF: YSA207-2FK+H2307** SNR: UK207G2H**	30	72	35	20	0,49	26,8	15,3	6300	18
1680207EK10T2C17	SKF: YSA208-2FK+H2308** SNR: UK208G2H**	35	80	36	21	0,54	33,6	19,0	5300	18
1680208EK10T2C17	SKF: YSA209-2FK+H2309** SNR: UK209G2H**	40	85	39	21	0,68	34,9	21,6	4800	18
1680208EHK10T2C17		40	85	39	21	0,68	34,9	21,6	4800	19
680210A2HK7C17	SKF: YSA211-2FK+H2311** SNR: UK211G2H**	50	100	45	25	1,1	45,5	29,6	4000	20
680210AEHK10C17		50	100	45	25	1,1	48,0	29,6	4000	19
1680210AEHK10C17		50	100	45	23	1,0	48,0	29,6	4000	19
680314EHK7C17	-	70	150	70	39	3,6	71,0	53,0	3000	20

* Possibility of periodical grease filling.
** Differs by sizes B, C.





Maintenance-free
Fig. 21

SINGLE-ROW BALL BEARINGS WITH ADAPTER SLEEVE

Designation	Dimensions, mm				Weight, kg m	Load ratings, kN		Maximum rotational speed, RPM	Fig. №
	d	D	B	C		Dynamic	Static		
HARP									
380706T2C17	30	85	35	23	0,76	32,5	18	4800	21
380706K10T2C17	30	85	35	23	0,76	32,5	18	4800	21
380707T2C17	35	85	36	23	0,74	32,5	18	4800	21
380707K10T2C17	35	85	36	23	0,74	32,5	18	4800	21
380708EK10T2C17	40	85	39	23	0,74	27	19,3	4800	21

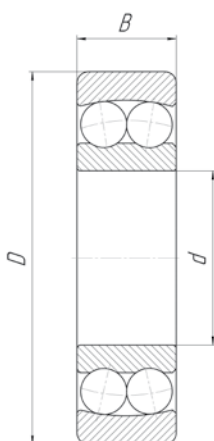


Fig. 22

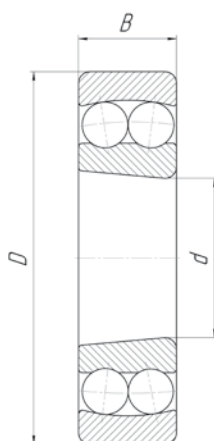


Fig. 23

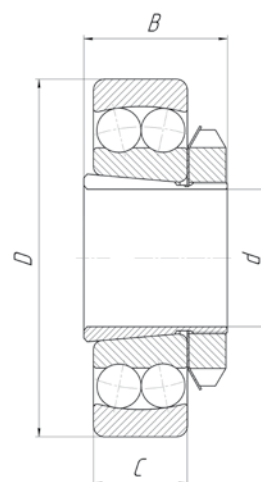
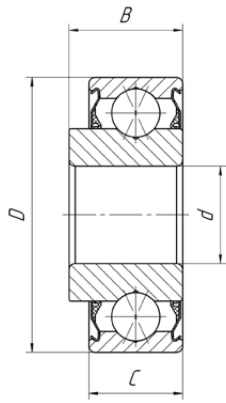


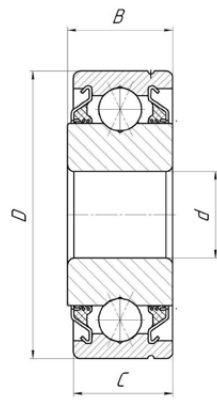
Fig. 24

DOUBLE-ROW SPHERICAL BALL BEARINGS

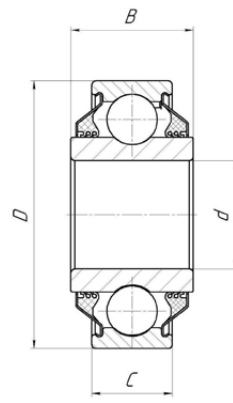
Designation				Dimensions, mm			Fig. №
HARP (GOST)		ISO (DIN)		d	D	B	
Series	Range	Series	Range				
1200	1203...1218	1200	1203...1218	17...90	40...160	12...30	22
1300	1301...1318	1300	1301...1318	12...90	37...190	12...45	
1500	1506...1512	2200	2206...2212	30...60	62...110	20...28	
1600	1605...1613	2300	2305...2313	25...65	62...140	24...48	
111200	111205...111218	1200K	1205K...1218K	25...90	52...160	15...30	23
111300	111306...111318	1300K	1306K...1318K	30...90	72...190	19...45	
111500	111506...111507	2200K	2206K...2207K	30...35	62...72	20...23	
111600	111606...111613	2300K	2306K...2313K	30...65	72...140	27...48	
11200	11204...11216	1200K+H200	1205K+H205... 1218K+H218	20...80	52...160	26...52	24
11300	11305...1318	1300K+H300	1306K+H306... 1318K+H318	25...80	72...190	31...65	
11500	11505...11506	2200K+H300	2206K+H306... 2207K+H307	25...30	62...72	31...35	
11600	11605...11611	2300K+H2300	2306K+H2306... 2312K+H2312	25...55	72...130	38...62	



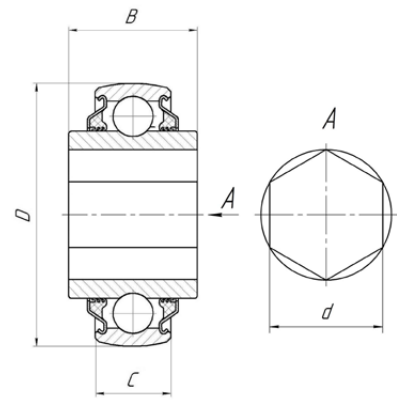
X-Shield
Fig. 25



X-Shield 3
Fig. 26



X-Shield 3
Fig. 27



X-Shield 3
Fig. 28

SPECIALIZED SINGLE-ROW BEARINGS FOR AGRICULTURAL MACHINERY

Designation		OEM codes	Dimensions, mm				Weight, kg m	Load ratings, kN		Maximum rotational speed, RPM	Fig. №
HARP	Analogues		d	D	B	C		Dynamic	Static		
376904EK10L19*	204PY3, 204IY3, BB204-PF3-R-A453 (Peer) 204RY2 (Timken, Fafnir) 204AGR (NTN, SNR) 06C04-2Z (FKL)	AA21480 (John Deere) 1268017C91; 145161C91; 492757R91; 493532R91 (Case) 00240199; 00509465 (Horsch) 820-003C; 822-011C (Great Plains) GA2014 (Kinze) 700732970 (Massey Ferguson)	16	45,2	18,67	15,4	0,12	14,7	7,9	7000	25
376905EKL19*	SL 5316 2T (FKL)	AA205DD, 205VH (John Deere) 188-001V (Great Plains)	16	53,09	18,29	19,4	0,22	19,5	11,3	6300	26
530903L19**	203KRR2, 203KRR2FD (Peer) 203-XL-KRR-AH02 (INA) 203KRR.AH02 (FKL)	AA82881, AN100425, AN142670, AN210540, AN281357, JD9214 (John Deere) F16246, T20623, 149261C91, 479589R91, 571395R91, 611050C91, 666624R91, 712653 (Case) 66553, 80066553 (New Holland) 822-095C (Great Plains) 842623M1, 832651M1 (Massey Ferguson)	16,26	40	18,29	12	0,09	25,7	15,3	5300	27
420905EL19**	205KRRB2 (Peer) SK014-205-KRR-B (INA)	AA22097, JD9260, JD10125 (John Deere) 195293C91 (Case) 50775, 86900821 (New Holland) 822-119C, 822-195C (Great Plains) G2-10003 (Kinze)	22,25	52	25,40	15	0,20	32,6	19,8	4800	28

* Angular-contact bearing with 4-points contact (contact angle is 25°)

** Radial bearing

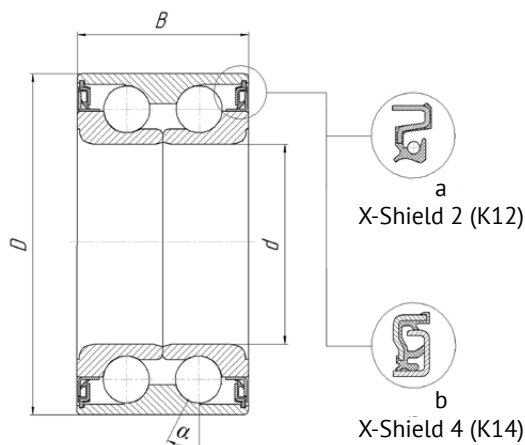


Fig. 29

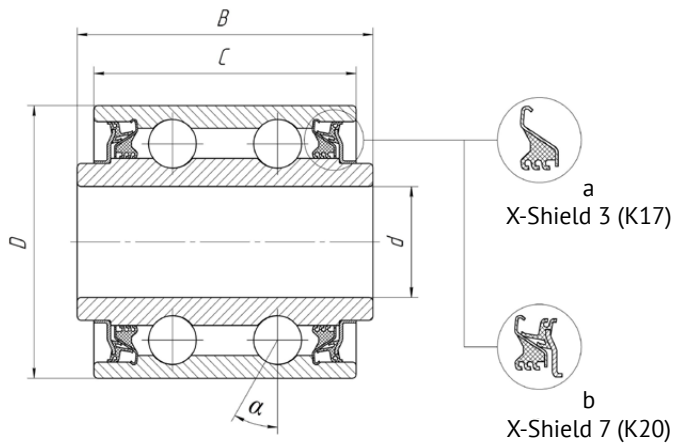


Fig. 30

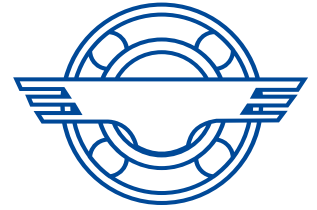
SPECIALIZED DOUBLE-ROW ANGULAR-CONTACT BEARINGS FOR AGRICULTURAL MACHINERY

Designation		OEM codes	Dimensions, mm				Contact angle	Weight, kg	Load ratings, kN		Maximum rotational speed, RPM	Fig. №
HARP	Analogue		d	D	B	C	$\alpha, ^\circ$	m	Dynamic	Static		
6-256907AEK12L19	DAC34640037 309726DA, VKBA1306, VKBA3256 (SKF) 713644160, 713691010 (FAG)	Applied in units Harp Agro Unit: 8395.DLM-4.05 8395.H4-98.65.L28 8395.H5-160.47.f35	34	64	37	-	36	0,46	40,0	27,8	3200	29a
6-256907AEK14L19	GB10884, R153.14, R172.03 (SNR) 34BWD04BCA70 (NSK) F16019 (Fersa)	8395.H5-106.106.f55 8395.S6-76.UNC3/4" 8853.H4-98.60.L28b	34	64	37	-	36	0,46	40,0	27,8	3200	29b
966903EK17L16	5203KYY2, 5203KPP2 (Peer) DAC164044-2RS (Koyo) SL 5203 2T (FKL)	AN212132 (John Deere) 324461A1 (Case) 822-170C (Great Plains) GA6171, GA6615 (Kinze)	16,26	40	44,12	39,12	30	0,21	15,0	9,0	1800	30a
966903EK20L16	5203-KMF-R-A120 (Peer)	81101640 (KUHN) Y00513900 (Amazone)	16,26	40	44,12	39,12	30	0,21	15,0	9,0	900	30b

DEFINITION OF SUFFIXES IN HARP BEARINGS DESIGNATION

Suffix	Description
A	Increased load capacity
E	Armamide cage. Better lubrication, increased service life
H	Bore for lubrication on outer ring
K	Design changes in parts
K7	Locking pin in outer ring
K10	X-SHIELD seal of increased tightness (recommended for dust environment) and locking pin in outer ring
K12-K20	X-SHIELD multi-lip seals with advanced level of protection from dust, mud, water and mechanical damages
T2	Rated temperature of tempering of bearing parts is 250°C
C17	Litol-24 grease
L19	Chevron SRI Greace NLGI2 grease
Ш, Ш1, Ш2	Vibration class

BEARING UNITS



HARP



Housed bearing units HARP

Sealed (maintenable and maintenance-free) bearing solutions

Bearing unit is an assembly component, which combines bearing and bearing housing, and consists of the following components:

- housing made of cast iron or special materials. It can consist of two or more parts with two or more mounting bolt holes;
- one or several bearings which are mounted directly on the shaft or attached by means of an adapter sleeve;
- sealing system X-SHIELD® for bearings protection during operation;
- fitting for the bearings relubrication during operation.

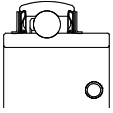
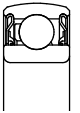
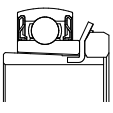
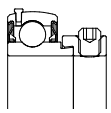
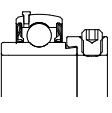
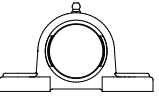

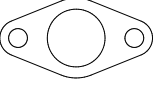
Bearing units can operate at increased loads with low noise level. They are reliable and durable.

A distinctive feature of the bearing unit is that the outer surface of the bearing and inner housing surface are spherical and ensure self-alignment. On both sides there are mounted X-SHIELD® seals consisting of oil-resistant rubber and flingers.

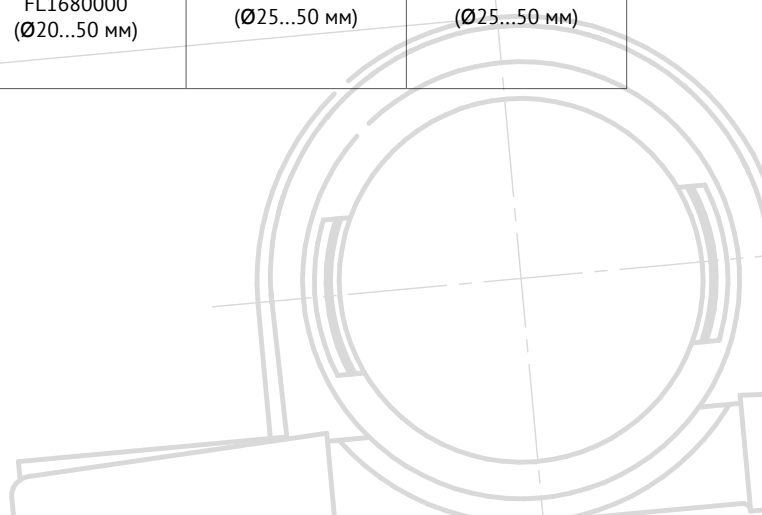
Bearing housing is a part of the bearing unit, which is assembled with a bearing with spherical outer surface and made of high quality cast iron, stamped or pressed steel.

Bearing housings are available in various shapes.

COMPATIBILITY OF HOUSINGS AND BEARINGS

Housing type	HARP bearing (in brackets - range of bearing inner diameters - d)				
					
	P480000-UCP200 (Ø25...50 mm)	P580000, P1580000 (Ø25...55 mm)	P680000, P1680000 (Ø20...50 mm)	P780000K-ESP200 (Ø25...50 mm)	P780000-EXP200 (Ø25...50 mm)
	F480000-UCF200 (Ø25...50 mm)	F580000, F1580000 (Ø25...55 mm)	F680000, F1680000 (Ø20...50 mm)	F780000K-ESF200 (Ø25...50 mm)	F780000-EXF200 (Ø25...50 mm)
	FL480000-UCFL200 (Ø25...50 mm)	FL580000, FL1580000 (Ø25...55 mm)	FL680000, FL1680000 (Ø20...50 mm)	FL780000K-ESFL200 (Ø25...50 mm)	FL780000-EXFL200 (Ø25...50 mm)

H₂



Advantages of housed bearing units HARP

Self-alignment of the bearing outer diameter and housing inner diameter.

The bearing outer diameter has a spherical ground surface matching to the spherical housing inner diameter, which provides self-alignment between the contact surfaces and compensation of the unit misalignment.

Increased service life of the bearing unit.

Bearing units are used in severe operation conditions with dust, dirt and moisture penetration and high temperatures. Under these operation conditions the bearing grease properties deteriorate in a short period of time. Therefore it is necessary to change old grease at appropriate intervals.

Bearing units with one-lip X-SHIELD seals have the grease nipples for periodical relubrication to ensure longer service life.

Bearing units with multi-lip seals X-SHIELD-3 and X-SHIELD-6 do not require relubrication during operation. Increased grease amount and reliable protection with multi-lip seal ensure hermeticity of the bearing cavity and failure-free work with no need in additional maintenance

Effective X-SHIELD seal of increased tightness.

Bearing has X-SHIELD® seal which consists of heat- and oil-resistant seal made of synthetic rubber and steel shield. The seal is mounted on the outer ring and contacts with the inner ring flange surface with certain tension.

Steel shield is mounted on the inner ring flange. Combination of these two sealing elements provides protection from dust, dirt and moisture penetration, as well as preservation of grease in the bearing, which ensures the bearing maximum efficiency even in severe operation conditions



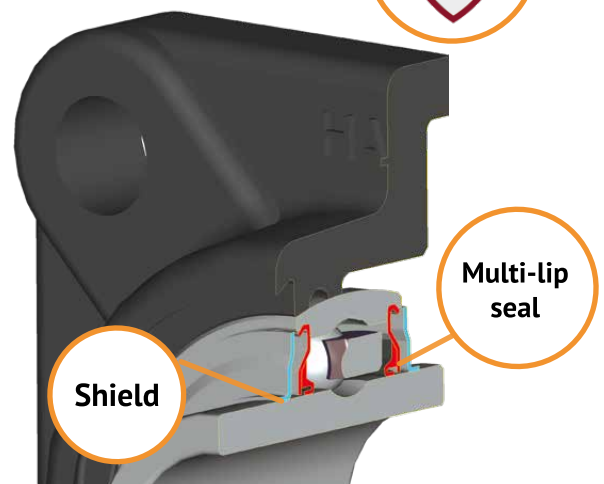
Durable casted iron housing.

Cast iron housing is a solid monolithic construction, which provides maximum durability in all operating conditions.

Standard housing are made of grey cast iron SCh20 (GG20), optionally - ductile cast iron VCh50 (GGG50).

Prevention of the outer ring rotation inside the housing.

There is a locking pin on the bearing outer ring, which provides free self-alignment of units, as well as prevents rotation of the outer ring, increasing the bearing unit service life.

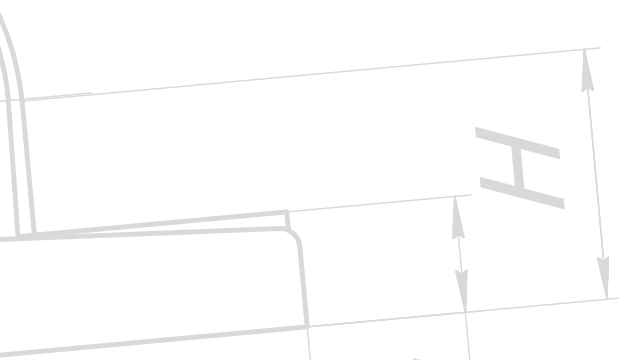


Complete interchangeability of bearing and housing.

High quality of production of the bearing and housing enables their complete interchangeability during operation.

No special requirements to the shaft mounting surface.

The advantage of using this type of bearings is that there are no special requirements to the shaft mounting surface. Quenching or polishing of the shaft are not strictly required, and the surface quality may be poor.

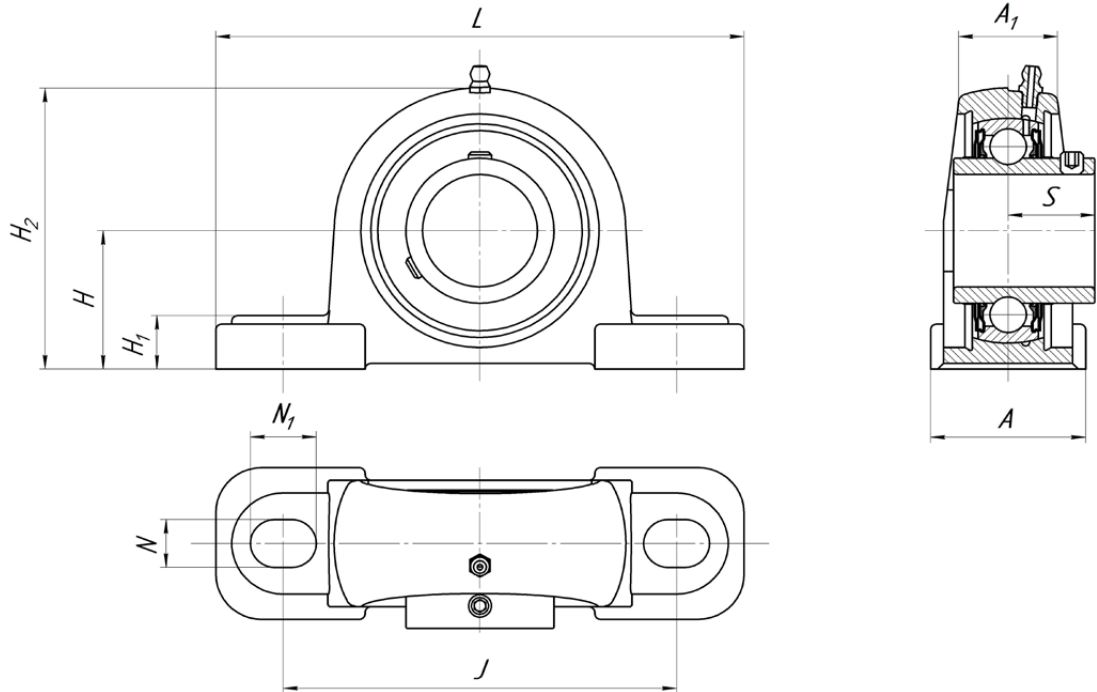


UCP bearing unit



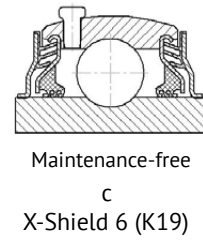
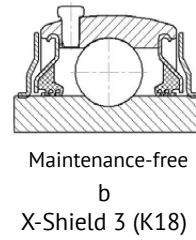
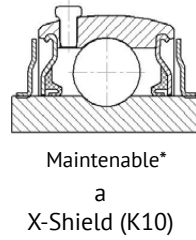
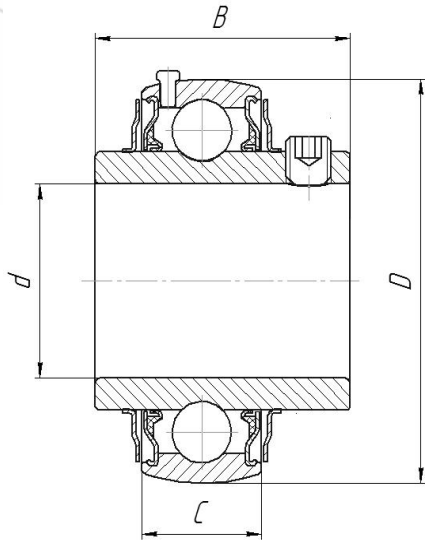
UCP — series of bearing units (pillow block) with P-type housing and UC-series ball bearing with X-SHIELD® seals. Housing is made of SCh20 grey cast iron. Upon customer's request housings can be made of ductile cast iron VCh50 (GGG 50). The housings can be additionally equipped with protective covers.

This housing can be assembled with bearings of another series — see table on page 18



№	HARP bearing unit designation	HARP bearing designation	Bearing unit type	Analogues	Dimensions, mm					
					d	D	B	C	L	J
1	P480205	480205AEHK10T2C17-UC205	Maintenable*	SNR: UCP205 SKF: SY25TF FKL: LES205	25	52	34,1	16	140	105
2	P480205K18	480205AEK18T2C17	Maintenance-free		25	52	34,1	16	140	105
3	P480205K19	480205AEK19T2C17	Maintenance-free		25	52	34,1	16	140	105
4	P480206	480206EHK10T2C17-UC206	Maintenable*	SNR: UCP206 SKF: SY30TF FKL: LES206	30	62	38,1	18	165	121
5	P480206K18	480206EK18T2C17	Maintenance-free		30	62	38,1	18	165	121
6	P480206K19	480206EK19T2C17	Maintenance-free		30	62	38,1	18	165	121
7	P480207	480207EHK10T2C17-UC207	Maintenable*	SNR: UCP207 SKF: SY35TF FKL: LES207	35	72	42,9	20	167	127
8	P480207K18	480207EK18T2C17	Maintenance-free		35	72	42,9	20	167	127
9	P480207K19	480207EK19T2C17	Maintenance-free		35	72	42,9	20	167	127
10	P480208	480208EHK10T2C17-UC208	Maintenable*	SNR: UCP208 SKF: SY40TF FKL: LES208	40	80	49,2	21	184	137
11	P480208K18	480208EK18T2C17	Maintenance-free		40	80	49,2	21	184	137
12	P480208K19	480208EK19T2C17	Maintenance-free		40	80	49,2	21	184	137
13	P480209	480209EHK10T2C17-UC209	Maintenable*	SNR: UCP209 SKF: SY45TF FKL: LES209	45	85	49,2	21	190	146
14	P480209K18	480209EK18T2C17	Maintenance-free		45	85	49,2	21	190	146
15	P480209K19	480209EK19T2C17	Maintenance-free		45	85	49,2	21	190	146
16	P480210	480210EHK10T2C17-UC210	Maintenable*	SNR: UCP210 SKF: SY50TF FKL: LES210	50	90	51,6	23	206	159
17	P480210K18	480210EK18T2C17	Maintenance-free		50	90	51,6	23	206	159
18	P480210K19	480210EK19T2C17	Maintenance-free		50	90	51,6	23	206	159

* Possibility of periodical grease filling.



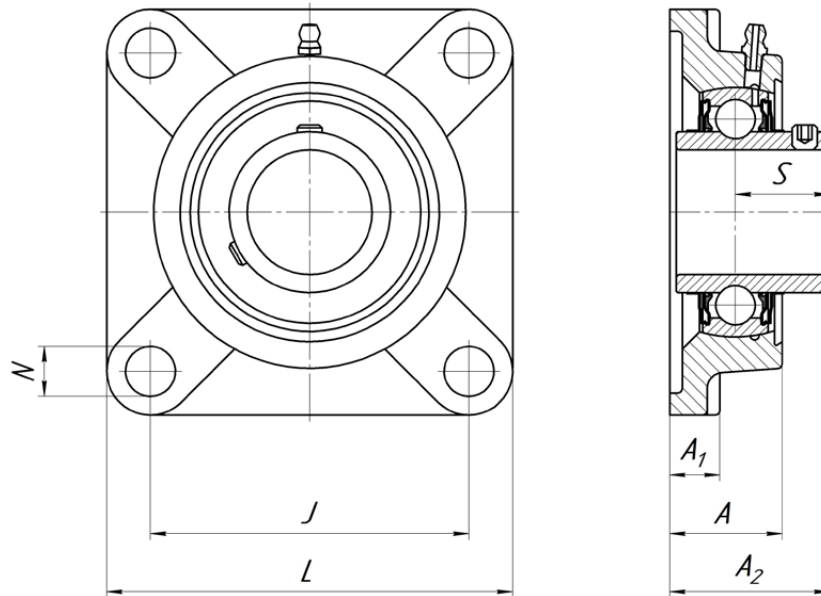
Dimensions, mm								Bearing weight, kg	Unit weight, kg	Load capacity, kN		Maximum rotational speed, RPM
A	A1	N	N1	S	H	H1	H2			m	M	
38	26	13	19	19,8	36,5	16	70	0,19	0,81	14,7	7,9	7000
38	26	13	19	19,8	36,5	16	70	0,19	0,81	14,7	7,9	1400
38	26	13	19	19,8	36,5	16	70	0,19	0,81	14,7	7,9	900
48	30	17	21	22,2	42,9	18	83	0,31	1,1	19,5	11,3	6300
48	30	17	21	22,2	42,9	18	83	0,31	1,1	19,5	11,3	1200
48	30	17	21	22,2	42,9	18	83	0,31	1,1	19,5	11,3	800
48	31	17	21	25,4	47,6	19	94	0,47	1,6	25,7	15,3	5300
48	31	17	21	25,4	47,6	19	94	0,47	1,6	25,7	15,3	1000
48	31	17	21	25,4	47,6	19	94	0,47	1,6	25,7	15,3	700
54	34	17	23	30,2	49,2	19	100	0,60	1,9	32,6	19,8	4800
54	34	17	23	30,2	49,2	19	100	0,60	1,9	32,6	19,8	900
54	34	17	23	30,2	49,2	19	100	0,60	1,9	32,6	19,8	600
54	37	17	23	30,2	54	20	108	0,66	2,2	32,8	20,5	4300
54	37	17	23	30,2	54	20	108	0,66	2,2	32,8	20,5	800
54	37	17	23	30,2	54	20	108	0,66	2,2	32,8	20,5	550
60	39	20	25	32,6	57,2	22	114	0,75	2,7	35,1	23,3	4000
60	39	20	25	32,6	57,2	22	114	0,75	2,7	35,1	23,3	750
60	39	20	25	32,6	57,2	22	114	0,75	2,7	35,1	23,3	500

UCF bearing unit



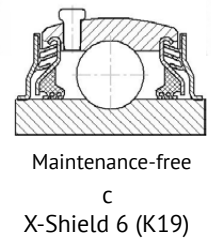
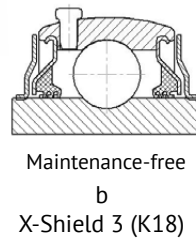
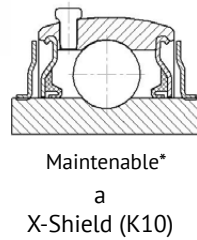
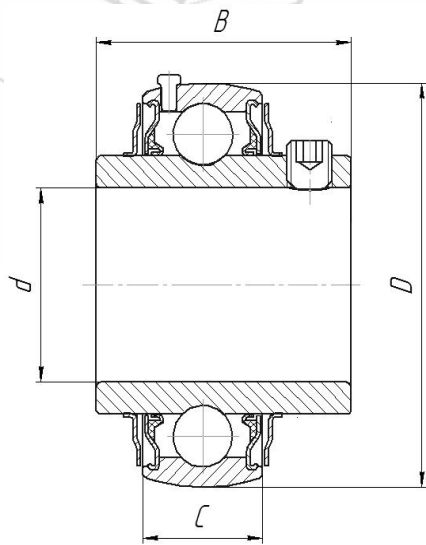
UCF – series of bearing units with square flange F-type housing and UC-series ball bearing with X-SHIELD® seals. Housing is made of SCh20 grey cast iron. Upon customer's request housings can be made of ductile cast iron VCh50 (GGG 50). The housings can be additionally equipped with protective covers.

This housing can be assembled with bearings of another series - see table on page 18.



№	HARP bearing unit designation	HARP bearing designation	Bearing unit type	Analogues	Dimensions, mm			
					d	D	B	C
1	F480205	480205AEHK10T2C17-UC205	Maintenable*	SNR: UCF205 SKF: FY25TF FKL: LEF205	25	52	34,1	16
2	F480205K18	480205AEK18T2C17	Maintenance-free		25	52	34,1	16
3	F480205K19	480205AEK19T2C17	Maintenance-free		25	52	34,1	16
4	F480206	480206EHK10T2C17-UC206	Maintenable*	SNR: UCF206 SKF: FY30TF FKL: LEF206	30	62	38,1	18
5	F480206K18	480206EK18T2C17	Maintenance-free		30	62	38,1	18
6	F480206K19	480206EK19T2C17	Maintenance-free		30	62	38,1	18
7	F480207	480207EHK10T2C17-UC207	Maintenable*	SNR: UCF207 SKF: FY35TF FKL: LEF207	35	72	42,9	20
8	F480207K18	480207EK18T2C17	Maintenance-free		35	72	42,9	20
9	F480207K19	480207EK19T2C17	Maintenance-free		35	72	42,9	20
10	F480208	480208EHK10T2C17-UC208	Maintenable*	SNR: UCF208 SKF: FY40TF FKL: LEF208	40	80	49,2	21
11	F480208K18	480208EK18T2C17	Maintenance-free		40	80	49,2	21
12	F480208K19	480208EK19T2C17	Maintenance-free		40	80	49,2	21
13	F480209	480209EHK10T2C17-UC209	Maintenable*	SNR: UCF209 SKF: FY45TF FKL: LEF209	45	85	49,2	21
14	F480209K18	480209EK18T2C17	Maintenance-free		45	85	49,2	21
15	F480209K19	480209EK19T2C17	Maintenance-free		45	85	49,2	21
16	F480210	480210EHK10T2C17-UC210	Maintenable*	SNR: UCF210 SKF: FY50TF FKL: LEF210	50	90	51,6	23
17	F480210K18	480210EK18T2C17	Maintenance-free		50	90	51,6	23
18	F480210K19	480210EK19T2C17	Maintenance-free		50	90	51,6	23

* Possibility of periodical grease filling.



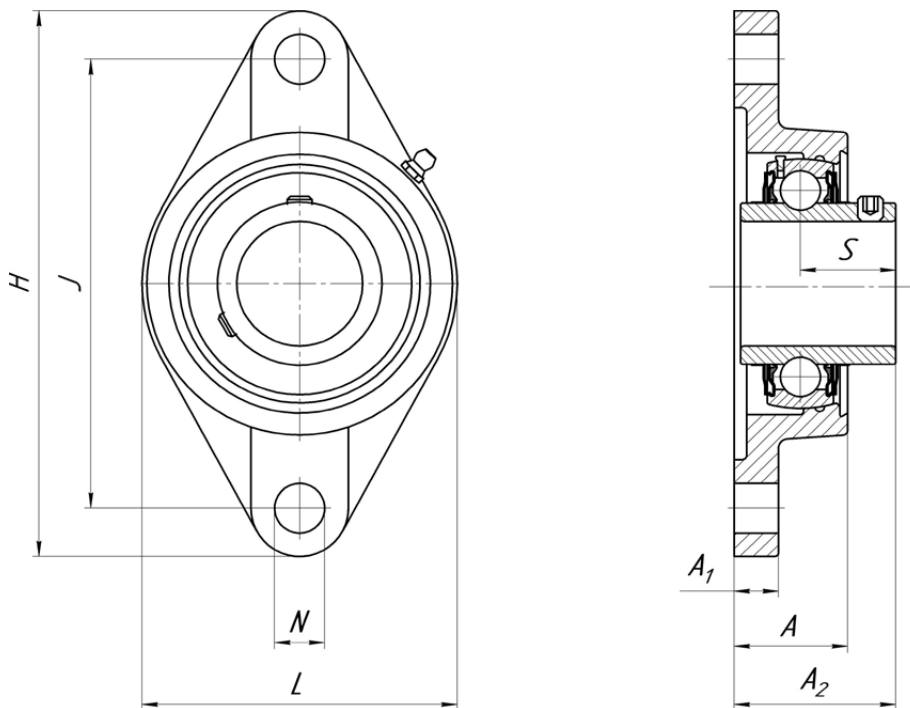
Dimensions, mm							Bearing weight, kg m	Unit weight, kg M	Load capacity, kN		Maximum rotational speed, RPM
L	J	A	A1	A2	N	S			Dynamic	Static	
95	70	27	13	35,8	12	19,8	0,19	0,82	14,7	7,9	7000
95	70	27	13	35,8	12	19,8	0,19	0,82	14,7	7,9	1400
95	70	27	13	35,8	12	19,8	0,19	0,82	14,7	7,9	900
108	83	31	13	40,2	12	22,2	0,31	1,1	19,5	11,3	6300
108	83	31	13	40,2	12	22,2	0,31	1,1	19,5	11,3	1200
108	83	31	13	40,2	12	22,2	0,31	1,1	19,5	11,3	800
117	92	34	16	44,4	14	25,4	0,47	1,5	25,7	15,3	5300
117	92	34	16	44,4	14	25,4	0,47	1,5	25,7	15,3	1000
117	92	34	16	44,4	14	25,4	0,47	1,5	25,7	15,3	700
130	102	36	16	51,2	16	30,2	0,60	1,6	32,6	19,8	4800
130	102	36	16	51,2	16	30,2	0,60	1,6	32,6	19,8	900
130	102	36	16	51,2	16	30,2	0,60	1,6	32,6	19,8	600
137	105	38	16	52,2	16	30,2	0,66	2,2	32,8	20,5	4300
137	105	38	16	52,2	16	30,2	0,66	2,2	32,8	20,5	800
137	105	38	16	52,2	16	30,2	0,66	2,2	32,8	20,5	550
143	111	40	17	54,6	16	32,6	0,75	2,4	35,1	23,3	4000
143	111	40	17	54,6	16	32,6	0,75	2,4	35,1	23,3	750
143	111	40	17	54,6	16	32,6	0,75	2,4	35,1	23,3	500

UCFL bearing unit



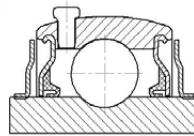
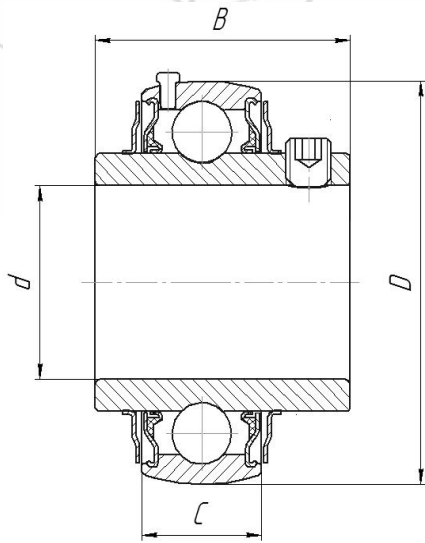
UCFL – series of bearing units with rhombic flanged housing of FL type and UC-series ball bearing with X-SHIELD® seals. Housing is made of SCh20 grey cast iron. Upon customer's request housings can be made of ductile cast iron VCh50 (GGG 50). The housings can be additionally equipped with protective covers.

This housing can be assembled with bearings of another series - see table on page 18.

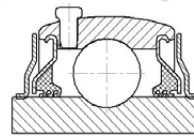


№	HARP bearing unit designation	HARP bearing designation	Bearing unit type	Analogues	Dimensions, mm				
					d	D	B	C	H
1	FL480205	480205AEHK10T2C17-UC205	Maintenable*	SNR: UCFL205 SKF: FYTB25TF FKL: LEN205	25	52	34,1	16	130
2	FL480205K18	480205AEK18T2C17	Maintenance-free		25	52	34,1	16	130
3	FL480205K19	480205AEK19T2C17	Maintenance-free		25	52	34,1	16	130
4	FL480206	480206EHK10T2C17-UC206	Maintenable*	SNR: UCFL206 SKF: FYTB30TF FKL: LEN206	30	62	38,1	18	148
5	FL480206K18	480206EK18T2C17	Maintenance-free		30	62	38,1	18	148
6	FL480206K19	480206EK19T2C17	Maintenance-free		30	62	38,1	18	148
7	FL480207	480207EHK10T2C17-UC207	Maintenable*	SNR: UCFL207 SKF: FYTB35TF FKL: LEN207	35	72	42,9	20	161
8	FL480207K18	480207EK18T2C17	Maintenance-free		35	72	42,9	20	161
9	FL480207K19	480207EK19T2C17	Maintenance-free		35	72	42,9	20	161
10	FL480208	480208EHK10T2C17-UC208	Maintenable*	SNR: UCFL208 SKF: FYTB40TF FKL: LEN208	40	80	49,2	21	175
11	FL480208K18	480208EK18T2C17	Maintenance-free		40	80	49,2	21	175
12	FL480208K19	480208EK19T2C17	Maintenance-free		40	80	49,2	21	175
13	FL480209	480209EHK10T2C17-UC209	Maintenable*	SNR: UCFL209 SKF: FYTB45TF FKL: LEN209	45	85	49,2	21	188
14	FL480209K18	480209EK18T2C17	Maintenance-free		45	85	49,2	21	188
15	FL480209K19	480209EK19T2C17	Maintenance-free		45	85	49,2	21	188
16	FL480210	480210EHK10T2C17-UC210	Maintenable*	SNR: UCFL210 SKF: FYTB50TF FKL: LEN210	50	90	51,6	23	197
17	FL480210K18	480210EK18T2C17	Maintenance-free		50	90	51,6	23	197
18	FL480210K19	480210EK19T2C17	Maintenance-free			90	51,6	23	197

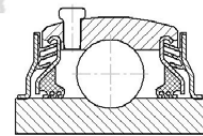
* Possibility of periodical grease filling.



Maintenable*
a
X-Shield (K10)



Maintenance-free
b
X-Shield 3 (K18)



Maintenance-free
c
X-Shield 6 (K19)

Dimensions, mm							Bearing weight, kg	Unit weight, kg	Load capacity, kN		Maximum rotational speed, RPM
L	J	A	A1	A2	N	S			Dynamic	Static	
68	99	27	13	35,8	16	19,8	0,19	0,57	14,7	7,9	7000
68	99	27	13	35,8	16	19,8	0,19	0,57	14,7	7,9	1400
68	99	27	13	35,8	16	19,8	0,19	0,57	14,7	7,9	900
80	117	31	13	40,2	16	22,2	0,31	0,92	19,5	11,3	6300
80	117	31	13	40,2	16	22,2	0,31	0,92	19,5	11,3	1200
80	117	31	13	40,2	16	22,2	0,31	0,92	19,5	11,3	800
90	130	34	14	44,4	16	25,4	0,47	1,1	25,7	15,3	5300
90	130	34	14	44,4	16	25,4	0,47	1,1	25,7	15,3	1000
90	130	34	14	44,4	16	25,4	0,47	1,1	25,7	15,3	700
100	144	36	14	51,2	16	30,2	0,60	1,5	32,6	19,8	4800
100	144	36	14	51,2	16	30,2	0,60	1,5	32,6	19,8	900
100	144	36	14	51,2	16	30,2	0,60	1,5	32,6	19,8	600
108	148	38	16	52,2	19	30,2	0,66	1,9	32,8	20,5	4300
108	148	38	16	52,2	19	30,2	0,66	1,9	32,8	20,5	800
108	148	38	16	52,2	19	30,2	0,66	1,9	32,8	20,5	550
115	157	40	16	54,6	19	32,6	0,75	2,1	35,1	23,3	4000
115	157	40	16	54,6	19	32,6	0,75	2,1	35,1	23,3	750
115	157	40	16	54,6	19	32,6	0,75	2,1	35,1	23,3	500

HARP AGRO UNIT

Hub bearing units

Tillage agricultural machinery works in severe operating conditions: in aggressive environment with dust, dirt, moisture, chemically active fertilizers and protective agents; with intense combined force impacts, including significant static loads, temperature deformations, impact loads, random overloads due to obstacles.

Therefore, bearing units for tillage machinery in comparison with other equipment should have a higher reliability and hermeticity.

HARP AGRO UNIT – solid, maintenance-free (and completely repairable) bearing unit, optimized for using in tillage machinery.

HARP AGRO UNIT is distinguished with:

- Increased service life
- Super-reliable three-level protection of bearing
- Double-row angular-contact ball bearing with high-quality grease, no need in additional lubrication during the entire lifespan
- Possibility of restoration, including the bearing replacement without housing replacement in an ordinary workshop
- Fast assembly and disassembly (maximum reduction of downtime)
- Long term failure-free work

All these features increase durability and ensure long-term high-quality work of the unit and ultimately reduce its life cycle cost.

Application

HARP AGRO UNIT is used with discs of various diameters in a wide range of tillage agricultural machinery: cultivators and harrows, subsoilers, sowing complexes and much more.

Fully compatible with well-know series of machinery:

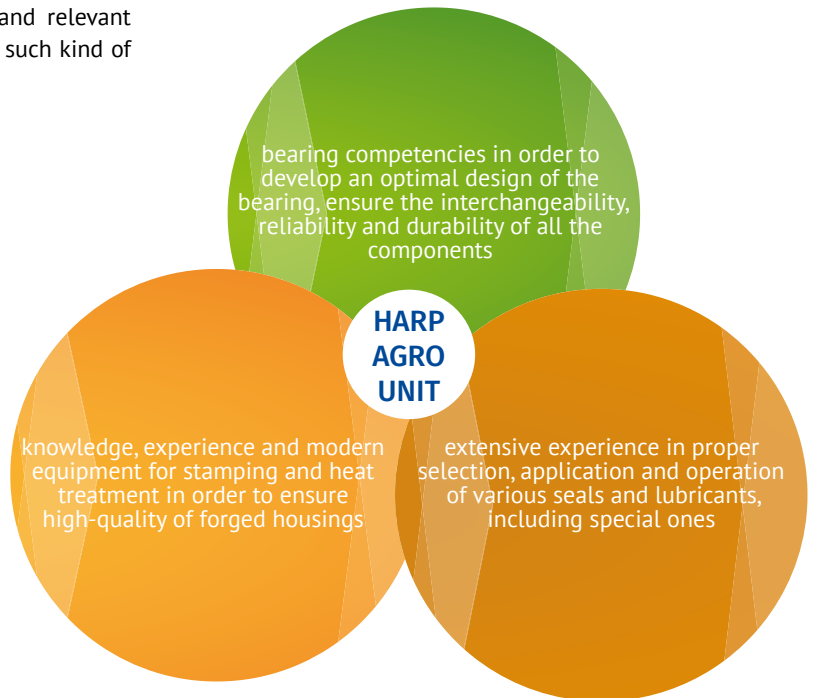


Turnkey solution for manufacturers and users of disc harrows

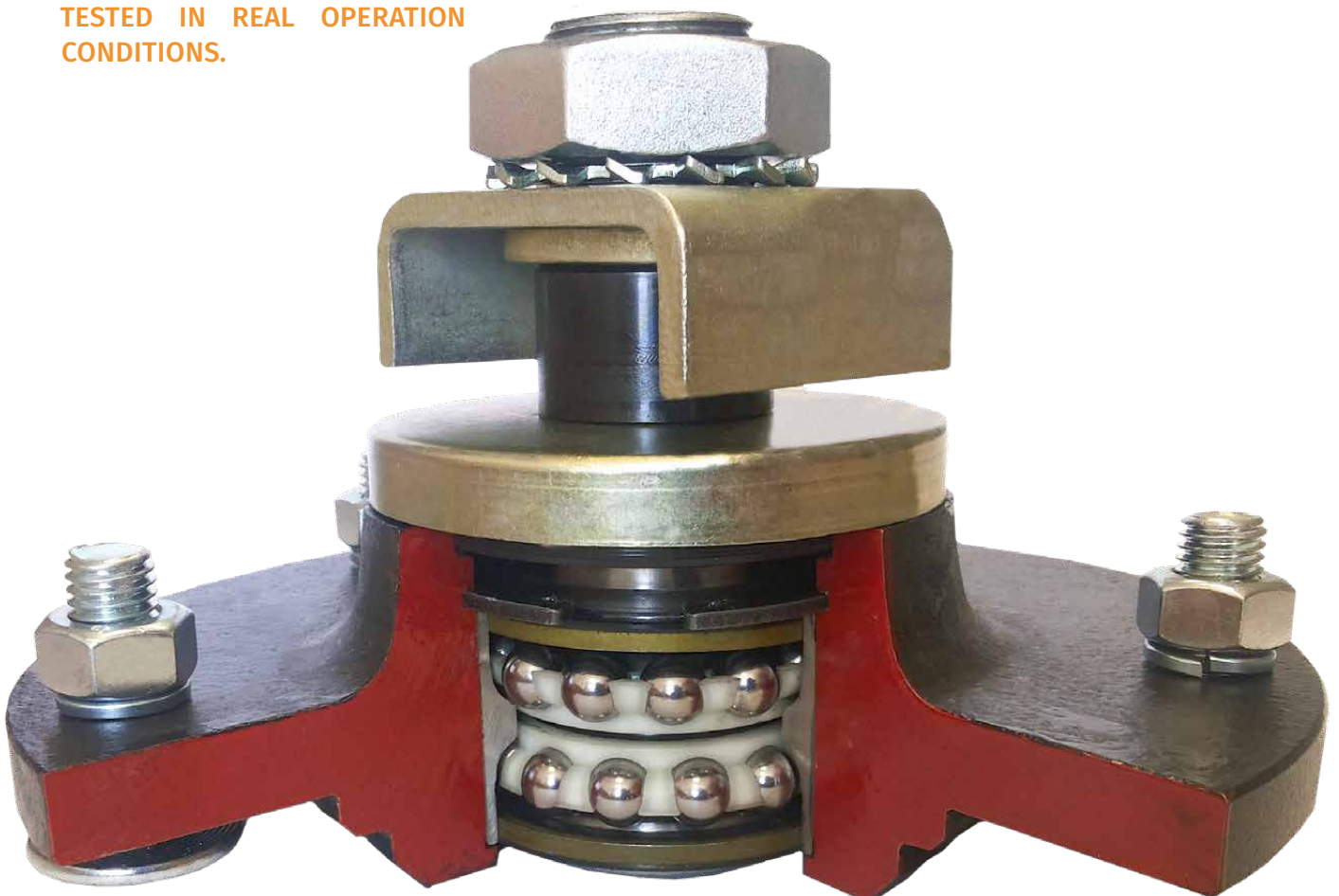
Despite the seeming simplicity of HARP AGRO UNIT, manufacturers shall have at least three important competencies and relevant technological resources to develop and manufacture such kind of bearing unit on high technical level:

The UPEC Industrial Group has all these competencies.

Production process involves: the largest forging company in Ukraine and the CIS - Lozova Forging-Mechanical Plant (LKMZ), the leader in bearing industry of Ukraine - Kharkov Bearing Plant (HARP), Joint Engineering Center with R&D center and Ukrainian Bearing Industry Design and Technology Bureau (UKTBPP).



PRODUCTS ARE SUCCESSFULLY TESTED IN REAL OPERATION CONDITIONS.



Advantages of HARP AGRO UNIT

Simple adaptation and mounting on any tillage equipment.

Mounting of HARP AGRO UNIT is quite simple and can be performed even in the field conditions. The disc is fixed to the unit by several bolts. High quality of the flange steel ensures protection of the thread even after multiple replacement of discs.

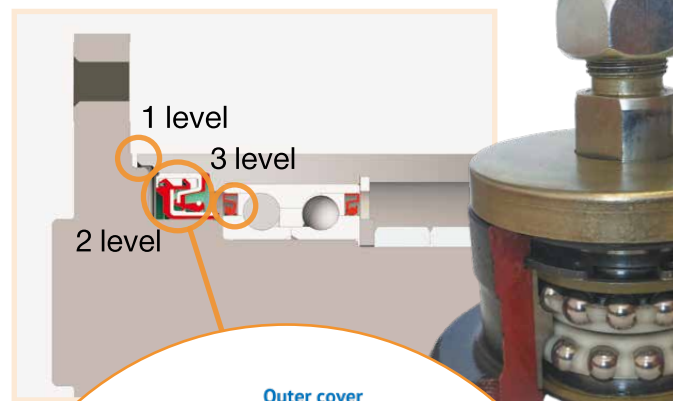
Superreliable bearing three-level protection

HARP AGRO UNIT has three-level protection of the bearing:

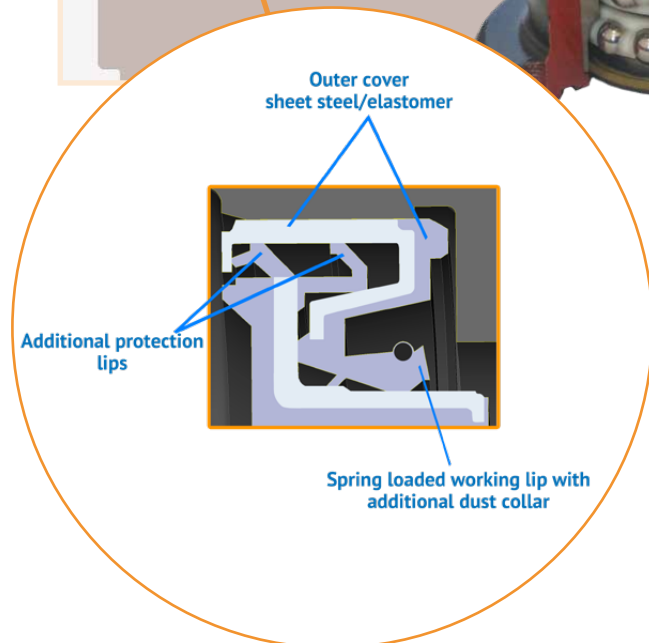
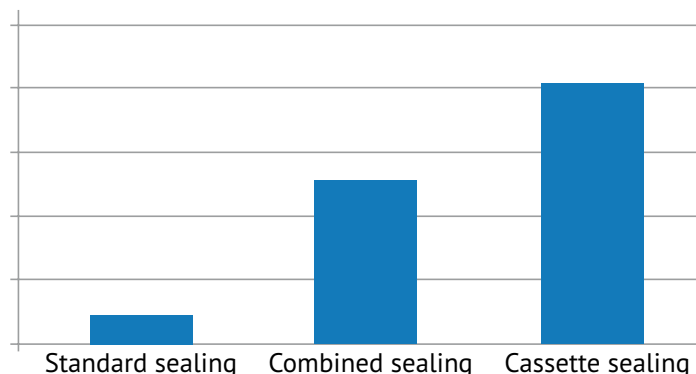
1 level – “Labyrinth cutter” – prevents high pressure of the soil on the sealing and protects unit from mechanical damages.

2 level – “Cassette sealing” from the world leader **Freudenberg Sealing Technologies (Simrit)**, filled with **Kluber Grease** with multi-lip elastomeric element which provides reliable protection of unit from moisture and mechanical impurities from the external environment.

3 level – “Lip sealing” – additional sealing, integrated in the bearing and enhanced for application in agricultural machines.



Sealing service life depending on its type



Such complex of seals provides reliable protection against all types of dirt: dust, dirt, moisture, snow, fertilizers, grass, stones, etc.

Reliable bearing.

The unit is assembled with HARP bearing - one of the most reliable bearings, which quality is proven by long-term application in the most heavy-loaded machines. Bearing rings are hot-forged, which significantly increases bearing durability. Bearing is preloaded, which provides additional rigidity of the whole unit. There is no need in additional lubrication during the entire service life which is more than 6 000 m.h.

High-quality lubrication system.

There are two types of grease used in bearing. Each one is adapted to its friction pair with an optimal compromise between the requirements to wear resistance on the one hand, and reduction of the hydraulic and mechanical losses – on the other hand. The bearing is filled with Chevron SRI Grease NLGI 2 grease, cassette sealing - with Klueber Lubrication grease.

Durable forged housing.

Well-established technologies of forging and heat treatment significantly increase the wear resistance, provide high durability and reliability of the unit under any operation conditions.

Hardened axle.

Special steel grade together with proper heat treatment (quenching+tempering) provide high impact strength of axle, good quality of thread (thread is wear-resistant during multiple mounting/dismantling).

Zinc coating - corrosion prevention.

Surfaces of housing, axle and fasteners are protected from corrosion with zinc coating. Such coating is resistant to mechanical damages and corrosion that is very important for units of agricultural machinery.

Possibility of the unit restoration and bearing replacement.

A distinctive feature of HARP AGRO UNIT is the possibility of bearing replacement at any time with no need to replace the housing. The worn bearing can be replaced in an ordinary workshop, and the unit is ready for operation again.



Environment protection

Bearing unit doesn't require relubrication which allows to reduce grease consumption due to the unique seals design, and prevent «release» of the grease into soil during operation.



Benefits for manufacturers of agricultural machinery

HARP AGRO UNIT is a cost effective solution. Increased reliability allows us to provide longer warranty for the final products. Starting price is lower than for import ones with same technical level, and life-cycle costs (including low cost of ultra reliable exploitation, and, relatively, duration of the life cycle) are considerably lower than for the dismantable and relubricated units.

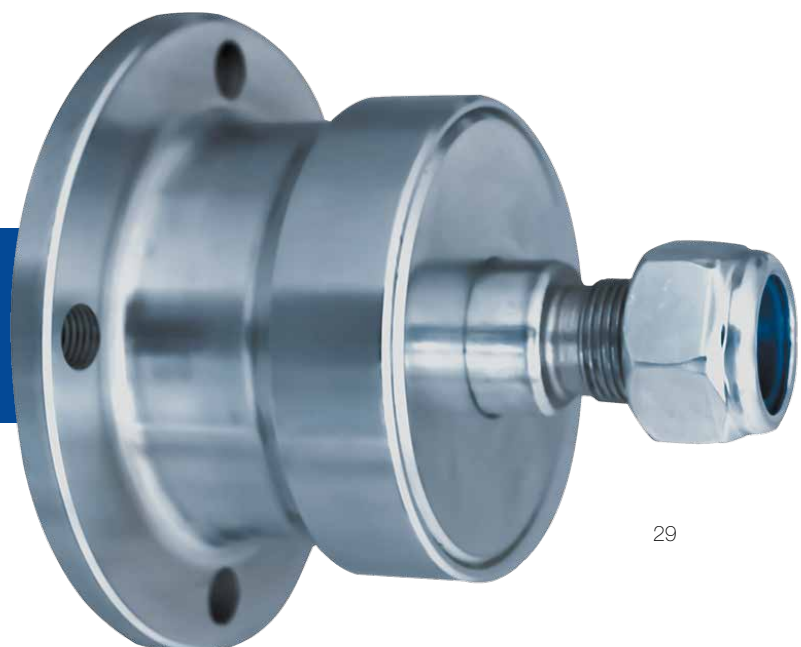


Benefits for owners of agricultural machinery

Application of HARP AGRO UNIT will reduce your costs by 30%.

Load capacity:

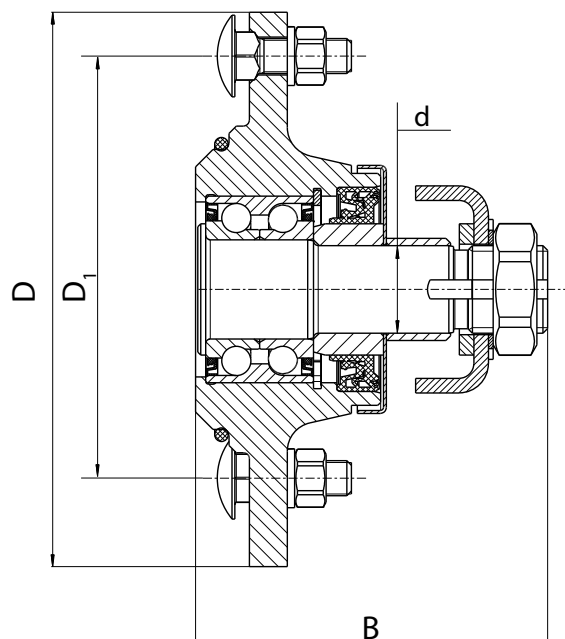
- Static 27.8 kN
- Dynamic 40 kN



HARP AGRO UNIT

Hub assembly 8395.H5-160.47.f35.011

For disc harrow Lemken Rubin 9



Reference designation		Dimensions, mm					Weight, kg	Load rate, kN	
Designation	Analogues	d	D	D ₁	B	Bores/bolts on flange	m	Dynamic	Static
8395.H5-160.47.f35.011	Lemken: 5554502, 5554503, 55510014, 55510015 FKL: PL-185-V30	35	190	160	120	M12x1,25 (5 bolts)	6,3	40	27,8

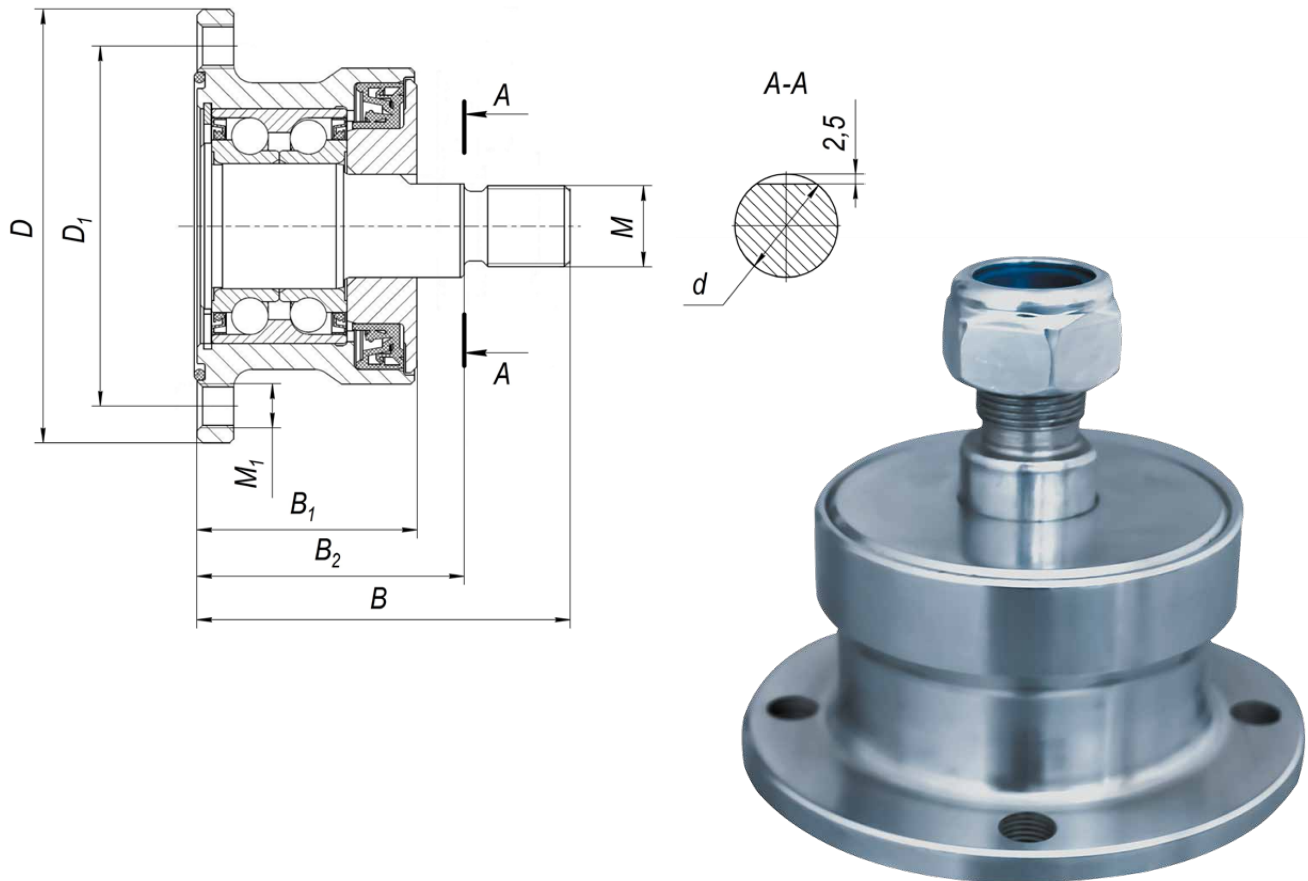
DESIGNATION OF BEARING UNITS FOR DISC HARROWS

8395.TN-DDD.LL.CEE.555

T – basic applicability of bearing unit (H - disc harrow, S - seed drill);
N – number of disc mounting bolts;
DDD (DD) – diameter of disc mounting bolts location, mm;
LL – height of bearing unit from the disc mounting plane to the block in tine plane, mm;
C – conditional characteristic of mounting and fixing the bearing unit on the tine/coulter (w- with welding of fasteners; l – with fixing by lockpatch against rotation; s – with fixing by dowel against rotation; f – fitting on smooth surface with the original fixation against rotation; d – smooth inner bore; M – external metric thread; unc- outer inch thread);
EE – diameter of mounting surface of bearing unit on the tine/coulter, mm;
555 – three-digit bearing unit code.

Bearing unit 8395.H4-98.65.L28.014; 8853.H4-98.60.L28b.014

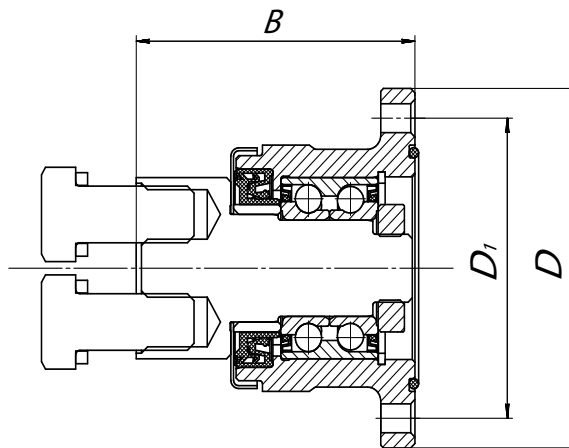
For agricultural machinery: Gaspardo, Köckerling, Vogel&Noot, Farnet, Bednar with disc diameter of 635 mm (25 inches)



Designation	Dimensions, mm								Weight, kg	Load rate, kN	
	d	M	D	D ₁	B	B ₁	B ₂	M ₁	m	Dynamic	Static
8853.H4-98.60.L28b.014	28	M22x1,5	118	98	107	60	73	M12x1,25	2,6	40	27,8
8395.H4-98.65.L28.014			117			65,5	81,5		3		
(4 bores M1)	Analogues: SKF: BAA-0004, BAA-0023, BAA-0009*, BAA-0005* FKL: IL2-117-M22-D, IL50-98/4T-M22							OEM codes: Gaspardo: F06160015, GS000089 Farnet: M11308 Kockerling: 910974, 642668 Vogel&Noot: RA133200			
8853.H5-98.60.L28b.014	28	M22x1,5	118	98	107	60	73	M12x1,25	2,6	40	27,8
8395.H5-98.65.L28.014			117			65,5	81,5		3		
(5 bores M1)	Analogues: SKF: BAA-0012 FKL: IL2-117-M22-G, IL50-98/5T-M22										
8853.H6-98.60.L28b.014	28	M22x1,5	118	98	107	60	73	M12x1,25	2,6	40	27,8
8395.H6-98.65.L28.014			117			65,5	81,5		3		
(6 bores M1)	Analogues: SKF: BAA-0006, BAA-0013* FKL: IL2-117-M22-I, IL50-98/6T-M22							OEM codes: Bednar: 00577697 Vogel&Noot: R2321800*			

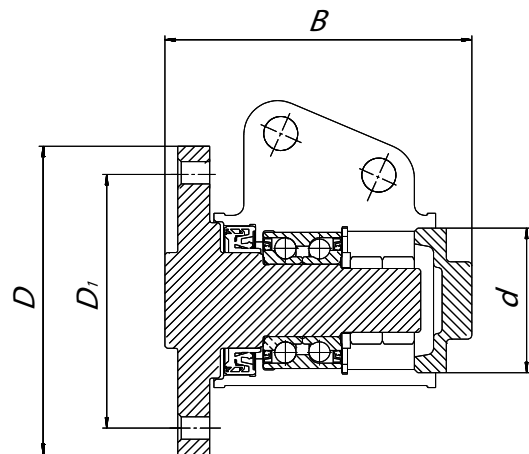
*Differs only by M fastening diameter

Bearing unit 8395.H5-106.106.f55.015
 For compact disc harrows Horsch Joker



Reference designation		Overall dimensions, mm				Weight, kg	Load rate, kN	
Designation	Analogues	D	D ₁	B	Bores/bolts on flange	m	Dynamic	Static
8395.H5-106.106.f55.014	HORSCH: 28085600 28077800, 28077900, 28071300 FKL: PL-127	127	106	106	M12x1,5 (5 bores)	4,3	40	27,8

Bearing unit 8395.DLM-4.05.015
 For compact disc harrows DUCAT (LOZOVA MACHINERY)



Reference designation		Overall dimensions, mm				Weight, kg	Load rate, kN	
Designation	d	D	D ₁	B	Bores/bolts on flange	m	Dynamic	Static
8395.DLM-4.05.015	80	145	120	144	M12x1,5 (6 bores)	6,0/4,9	40	27,8

HARP AGRO UNIT bearing units for agricultural machinery

Nº	Designation	Application	Disc fastening, n/D, mm	Tine fastening, mm	Figure (3D model)
1	8395.DLM 4.05.015	DUCAT compact disc harrows LOZOVA MACHINERY	6 bores M12x1,5/Ø120	2 bores M16x1,5 / 50	
2	8395.DLM 4.05.015-01	ZLATNIK seed drill LOZOVA MACHINERY	6 bores M6x0,75/Ø120	2 bores M16x1,5 / 50	
3	8395.H5 160.47.f35. xxx*	Compact disc harrows Lemken Rubin 9	5 bolts M12x1,25/Ø160	axle Ø35, nut M30x2	
4	8395.H6 160.47.f40. xxx*	DUCAT-GOLD compact disc harrows LOZOVA MACHINERY	6 bolts M14x1,5/Ø160	axle Ø40, nut M36x1,5	
5	8395.H5 106.106.f64. xxx*	Compact disc harrows Horsch Jocker CT	5 bolts M12x1,5/Ø106	2 bolts M20 / 38	
6	8395.H4 98.d30. xxx*	Compact disc harrows Väderstad Carrier	4 bores M12x1,25/Ø98	bore Ø30	
7	8853.H4-98.60.L28b.xxx*	Compact disc harrows analogue SKF Agrihub BAA 0004	4 bores M12x1,25/Ø98	axle Ø28, nut M22x1,5	
8	8853.H5-98.60.L28b.xxx*	Compact disc harrows analogue SKF Agrihub BAA 0012	5 bores M12x1,25/Ø98	axle Ø28, nut M22x1,5	
9	8853.H6-98.60.L28b.xxx*	Compact disc harrows analogue SKF Agrihub BAA 0006	6 bores M12x1,25/Ø98	axle Ø28, nut M22x1,5	

Nº	Designation	Application	Disc fastening, n/D, mm	Tine fastening, mm	Figure (3D model)
10	8395.H5 112.83.f40. xxx*	Compact disc harrows Multiva DiscMaster	5 bores M12x1,5/Ø112	axle Ø40	
11	8395.S6-76.d19. xxx*	Seed drills Sunflower 9000	6 bores Ø8,3MM/Ø76,2	bore Ø19,2	
12	8395.S6-76.unc3/4". xxx*	Seed drills Salford	6 bores UNC5/16"/Ø76,2	bolt UNC 3/4"	
13	8395.S6-76.M20. xxx*		6 bores UNC5/16"/Ø76,2	bolt M20x2,5LH	
14	8395.S5-92.d16. xxx*	Seed drills Elvorti (Chervona zirka)	5 bores Ø6,6MM/Ø92	bore Ø16	
15	8853.S5-92.d16. xxx*	Seed drills	5 bores Ø6,7 /Ø92	bore Ø16 mm	
16	8853.S5-92.d17. xxx*	Seed drills Elvorti (Chervona zirka) Astra, Alfa	5 bores Ø6,7 /Ø92	bore Ø17 mm	

xxx* - the unit is available in various configurations: without fasteners, with a certain type of fastening to the tine or disc.

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UPEC TRADING – official distributor
Kharkov Bearing Plant (HARP)

4, Marshal Batitskiy Str.
Kharkov, 61038, Ukraine

+38 057 711-60-10; 710-10-59

office@upec-trading.com

