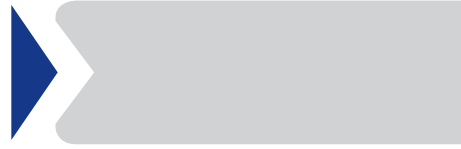
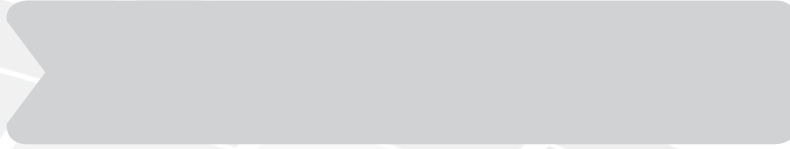
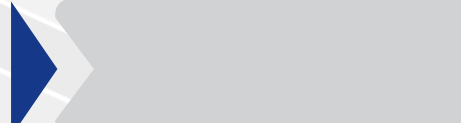


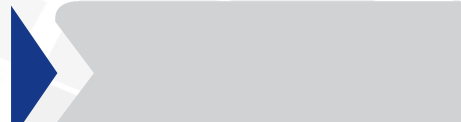
Special & Service



Special gearboxes



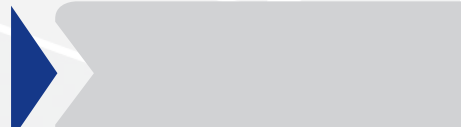
ATEX gearboxes



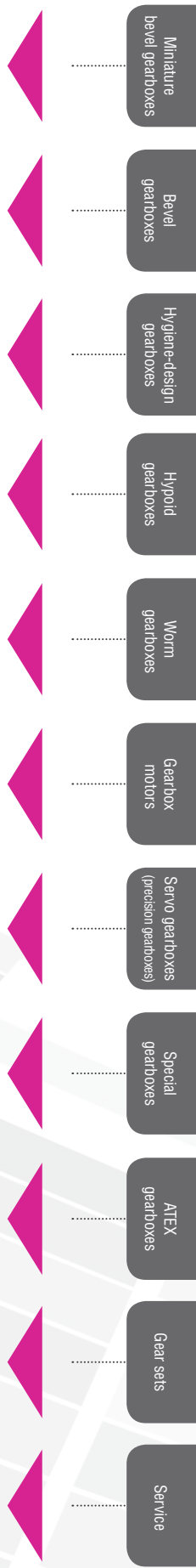
Gear sets



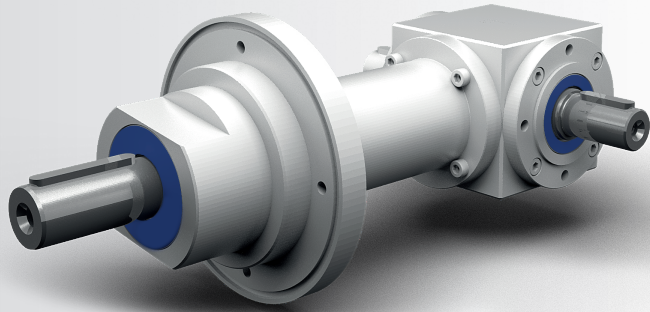
Service



In addition to our standard program we develop and manufacture special gearboxes according to customer requirements.
Questionary
We offer gearboxes for use in potentially explosive atmospheres According to EU Directive 2014/34 / EU (ATEX).
Design sheet
Spiral-toothed bevel gear sets High-quality worm gear sets Gear ratios: $i = 1:1$ to $83:1$ Maximum output torque: 13,720 Nm Toothing module from 0.8 to 12.5 mm
Service Spare parts drawings for bevel gearboxes Spare parts drawings for worm gearboxes
Lubricant table

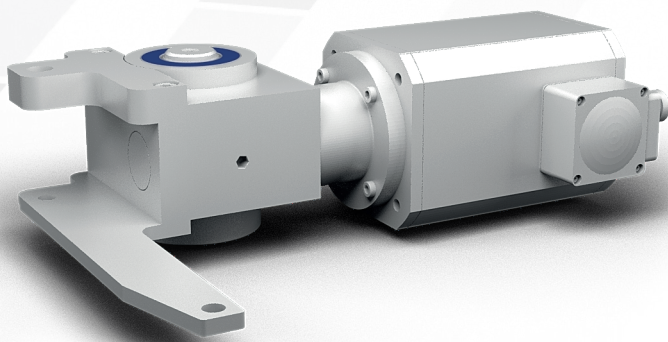
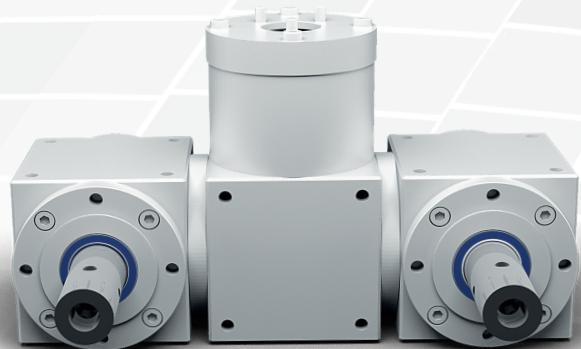
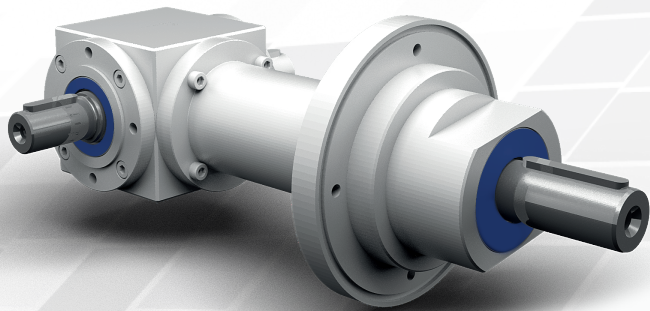


12 Special gearboxes



In addition to our standard range of products, we develop and manufacture special gearboxes according to the customer's request. These are used, for example, in the food industry sector and in offshore facilities. In most cases, they are based on our proven solutions from the range of single-stage bevel and worm gearboxes. But also combinations and other solutions are possible.

Examples thereof are:



The special gearboxes profit from our long-term experience gained from our bevel and worm gearboxes.

12.1.1 Data collection

Below and in the Downloads section of the ATEK Internet site, you can find a questionnaire for the collection of the most important technical data of the gearbox to be developed.

Core data – company

1.1	Company name	
1.2	Street + no.	
1.3	Postal code + location	
1.4	Phone number	
1.5	Fax number	
1.6	E-mail address	

Core data – interested person

2.1	Name	
2.2	E-mail	
2.3	Phone number	

Selection

6.1	Gearbox type	
6.2	Gearbox size	
6.3	Gear ratio	i
6.4	Construction type	
6.5	Fixing side	
6.6	Installation position	

Power transmission

Unit

7.1	Speed of fast-rotating shaft	n_1	[rpm]	
7.2	Speed of slowly rotating shaft	n_2	[rpm]	
7.3	Effective input power	P_1	[kW]	
7.4	Effective output torque	T_2	[Nm]	
7.5	Existing radial force (FR) and axial force (FA) at n_1		[N]	
7.6	Existing radial force (FR) and axial force (FA) at n_2		[N]	

Motor data

8.1	Motor manufacturer and motor designation	
-----	--	--

Flange data of motor to be mounted

9.1	Flange	Standard/special	
9.2	Motor shaft	Standard/special	

Factors

10.1	Operating factor	f_1	
10.2	Starting factor	f_2	
10.3	Ambient temperature	f_4	[°C]
10.4	On-period per hour	f_5	%

Special requirements

13.1	Complete stainless steel type (incl. housing)	V2A	Yes/No	
13.2	No-Tox lubrication, with USDA approval	NT	Yes/No	
13.3	Type with reduced backlash (see catalogue)		S2/S1/S0/No	
13.4	Special colour	SF	RAL	

Project – Remarks / Notes

14.1

Our sales department would be pleased to assist you in completing the questionnaire and will discuss the special requirements with you in a personal dialogue.

We offer gearboxes according to the EU Directive 2014/34/EU (ATEX) for the use in explosion-hazardous areas. These are gearboxes of the equipment group II in the category 2 for gases (G) and dust (D) for bevel gearboxes, and category 3 for worm gearboxes.

The first step for a safe work equipment according to the Ordinance on Industrial Safety and Health is hazard assessment. This is always an installation-related consideration. The operator having the knowledge on the installation must assess the hazards and ensure the implementation of the protective measures.

As part of the safety-related consideration, the operator defines the requirements for the equipment and component assemblies to be used. These data also form the basis for the planning and design of the gearboxes. Therefore we ask you to send us the attached project planning sheet fully completed and signed.

You will find the current version in the Downloads section of the ATEK Internet site.

The available types are:

	Miniature bevel gearboxes	Bevel gearboxes	Hygiene-design bevel gearboxes	Worm gearboxes	Hypoid gearboxes
Category 2	Upon request	II 2G, II 2D	Upon request	Upon request	Upon request
Category 3	Upon request	II 3G, II 3D	Upon request	II 3G, II 3D	Upon request

12.1.1 Data collection

Gearbox design for explosion-proof drives

Company		Name	
Order no.		Offer no.	
Gearbox type	/ AX	Application	

Type-Size-Gear ratio-Constr. type-Mountg.-Instal. pos.-Speed/Model
V 120 3:1 D0 -1 5- 500 / AX..

e.g. rotary table, auger, ...

Required explosion-proof model

Equipment group

Zone		Explosive atmosphere	Category
Gas	Dust		
1	21	occasionally	2
2	22	seldom, short-time	3

Explosive atmosphere | G=gas; D=dust; G/D=gas or dust

Temperature class | T1 up to 450°C; T2 up to 300°C; T3 up to 200°C; T4 up to 135°C;
(surface temperature at which the mixture will ignite)

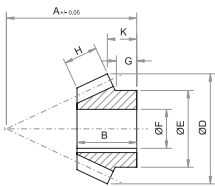
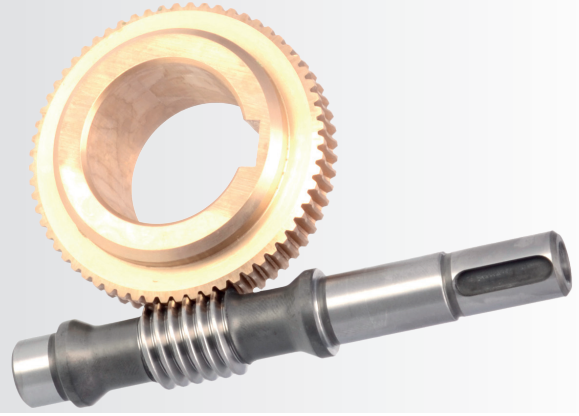
**max. surface temperature
for dust deposits up to 5mm**

(in °C, only required in dust-contaminated atmosphere)

Ex II c k / °C

Data for gearbox design		Your entry
S.., ..%ED	Operating mode and relative on-period (duty ratio) ED	[%]
Z	Switching frequency	[per h]
n₁	Input speed	[rpm]
n₂	Output speed	[rpm]
n_{2 max}	Maximum output speed	[rpm]
T_{2N}	Nominal torque	[Nm]
T_{2max}	e.g. max. acceleration/braking/emergency-stop torque	[Nm]
Z_{T2max}	Switching frequency T_{2max}	[per h]
T_R	Retrodriving torque from mass inertia if > T_{2N}	[Nm]
P_{1mot}	Motor output	[kW]
H	Installation altitude ≤1000	[m above MSL]
T_{Umg}	Ambient temperature >-20°C and <+60°C	[°C]
IP	Required protection rating: IP54 or IP56	[-]
F_{Rn1} / F_{Rn2}	Lateral force in centre of drive shaft (for n₁) / output shaft(s) (for n₂)	[N]
F_{An1} / F_{An2}	Axial force in centre of drive shaft (for n₁) / output shaft(s) (for n₂)	[N]

Please complete the table entirely, and, if possible, include a freehand sketch for illustrating the installation, operating and load conditions. If frequency converters are used we ask for additional information on the frequency and voltage changes (at 87Hz)



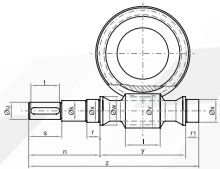
Bevel gear sets

Spiral toothing, case-hardened and lapped in pairs

Module 0.8 – 8.1

Gear ratios: $i = 1:1 - 1.5:1 - 2:1$

Max. output torques up to $T_{2max} = 5400 \text{ Nm}$



Worm gear sets

High-performance gear set for tailored solutions

9 sizes with centre-to-centre distance $A = 040 \text{ to } 250 \text{ mm}$

Nominal gear ratios: $i = 5:1 \text{ to } 83:1$

Maximum output torques $T_{2max} = 13,720 \text{ Nm}$

14.1 Bevel and worm gear sets

You can buy the bevel and worm gear sets used by us.
Please enquire these.

Contact us directly or inform yourself on our Internet page by accessing www.attek.de and the DOWNLOADS section.

There you will find information on:

- housings
- the support by bearings
- the circumferential backlash
- available sizes
- dimensioned drawings

Examination of gearboxes
Cost estimates for repairs and alterations
Handling of complaints
Preparation of spare part offers
Technical assistance on ATEK gearboxes



General information

Spare parts

Lubricant table

Local contacts

15.1 General information

Our service department will help you with technical assistance with regard to the ATEK gearboxes, prepare spare parts offers for you, and examine gearboxes. The department will prepare cost estimates for repairs and alterations, and support you in the handling of complaints.

We will be able to help you faster and to ascertain the required information more accurately if you communicate the serial number or the order number with the gearbox designation to us. You can find the serial number and the gearbox designation on the type plate.



The repair effort can often be determined only after a thorough examination. In such a case, we recommend to send us your gearbox. This will also apply in the case of a complaint when we have to determine the cause of the failure.

Prior to the shipment, the vent filters have to be removed, and the threaded holes must be plugged with dummy plugs. Additionally, all mounted add-on parts must be removed.

Free delivery to:
ATEK Antriebstechnik Willi Glapiak GmbH
Service
Siemensstraße 47
D-25462 Rellingen

Contact:
E-mail: service@atek.de
Phone: +49 (0)4101 7953-0

15.3 Spare parts

It is principally possible to purchase spare parts by specifying the serial number.

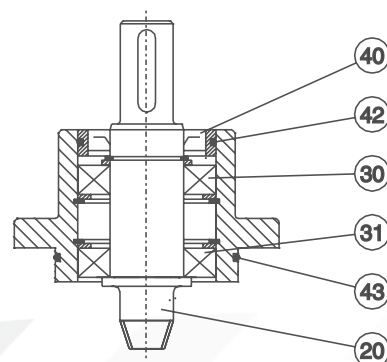
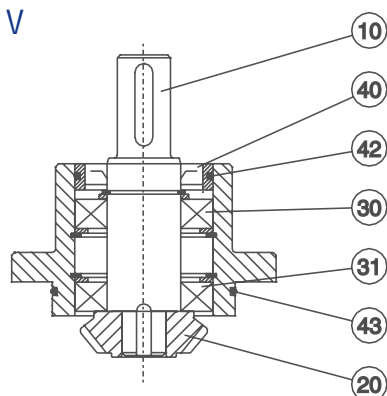
The serial number enables us to identify the originally delivered parts as part of the traceability and to deliver appropriately.

For spare part enquiries or orders, please use the following drawings of the individual gearbox types for the identification of the required parts.

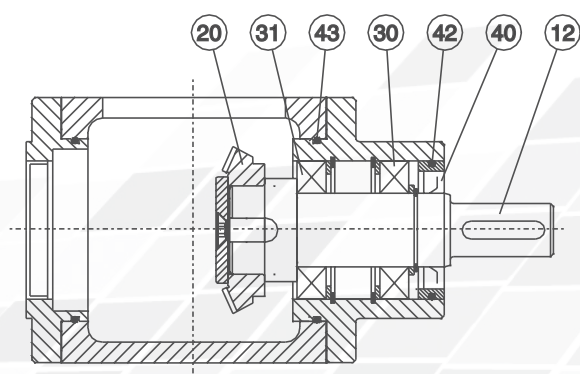
Note: We cannot assume any warranty for the proper execution of a repair by the operator or any third party and for the functioning of the gearbox. We therefore recommend to send us the gearboxes for repair.

15.3 Spare parts

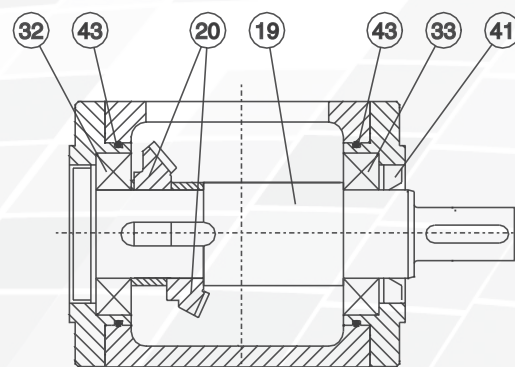
Type V



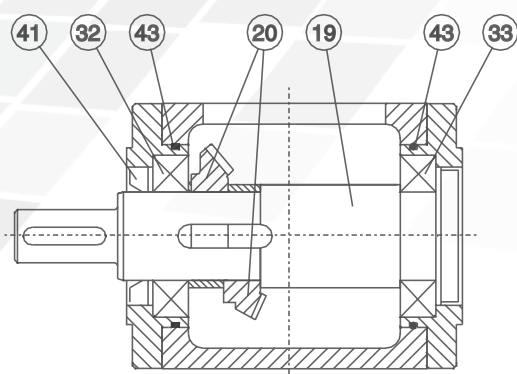
Construction type A (F)



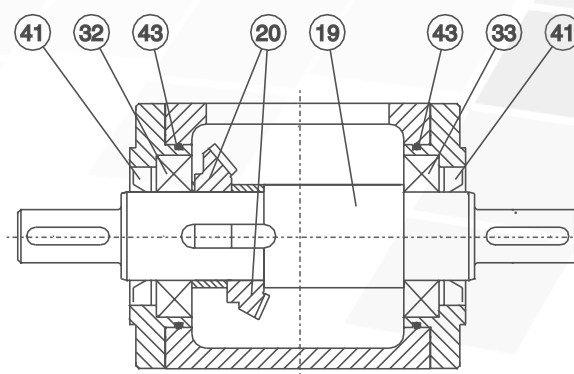
Construction type B (G)



Construction type C (H)

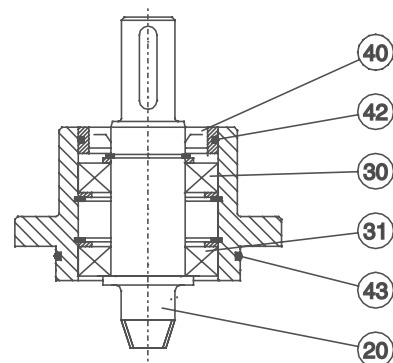
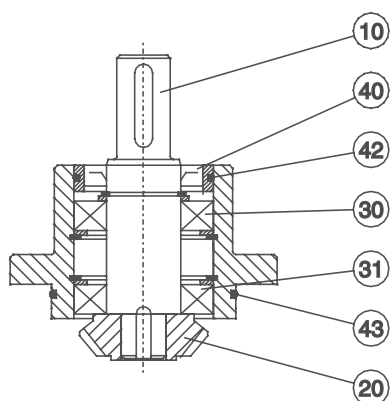


Construction type D (J)

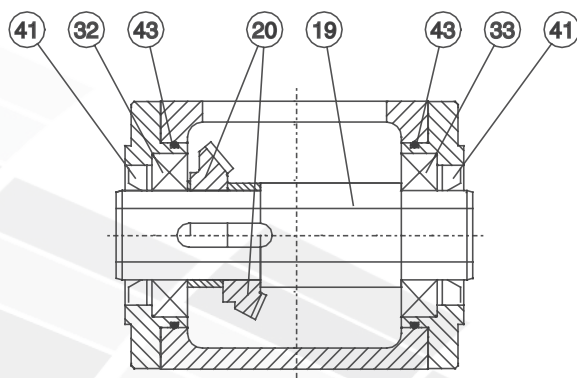


No.	Designation
10	Drive shaft
12	Output shaft
19	Output shaft
20	Bevel gear set
30	Roller bearing
31	Roller bearing

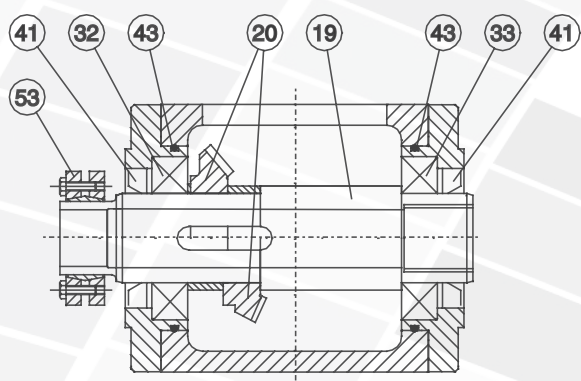
No.	Designation
32	Roller bearing
33	Roller bearing
40	Radial seal
41	Radial seal
42	O-ring
43	O-ring



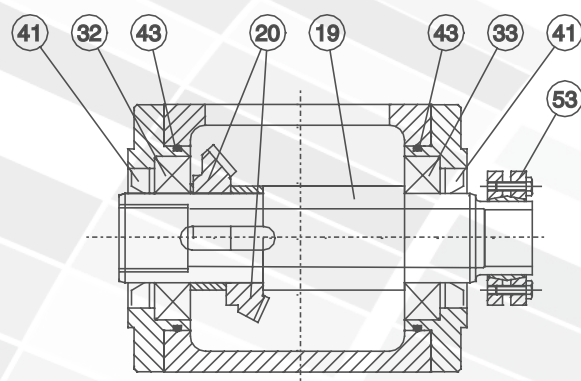
Construction type E (K)



Construction type E (K) - S5



Construction type E (K) - S6

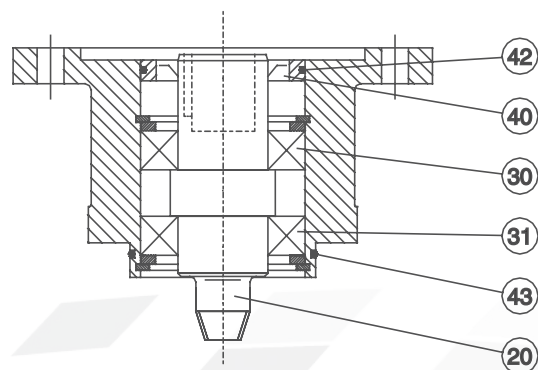
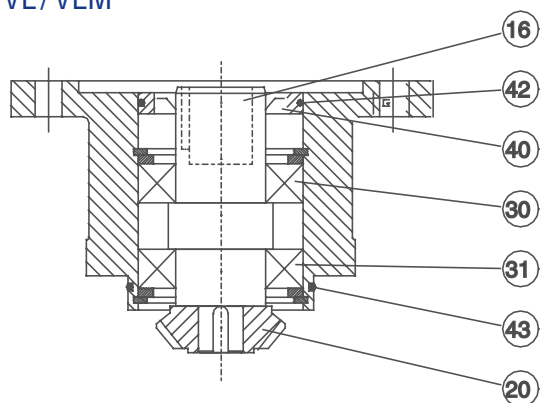


No.	Designation
10	Drive shaft
19	Drive shaft
20	Bevel gear set
30	Roller bearing
31	Roller bearing
32	Roller bearing

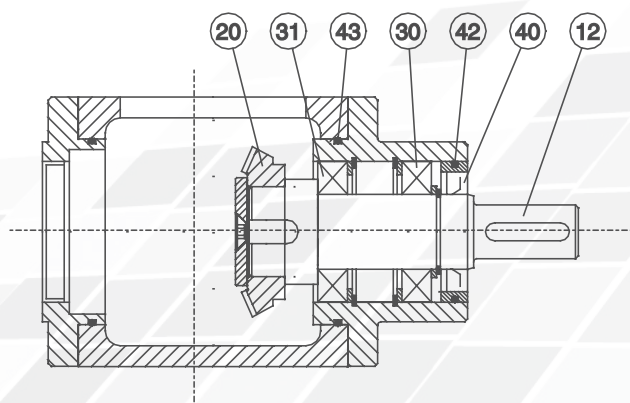
No.	Designation
33	Roller bearing
40	Radial seal
41	Radial seal
42	O-ring
43	O-ring
53	Clamping set

15.3 Spare parts

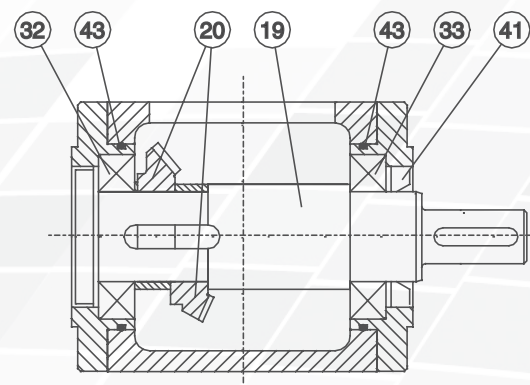
Type VL/VLM



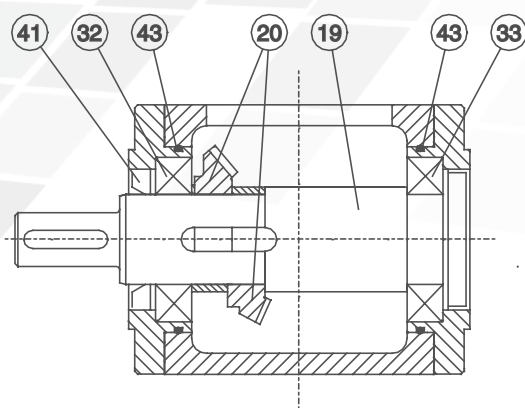
Construction type A (F)



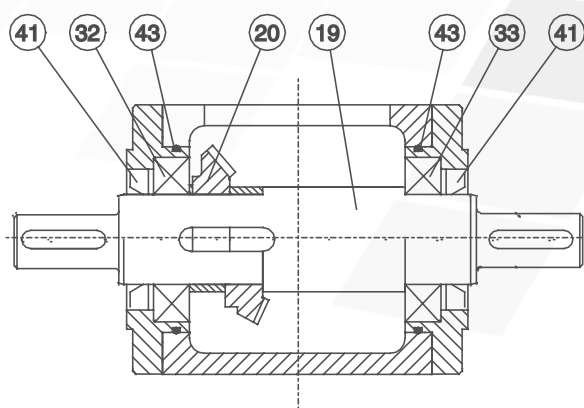
Construction type B (G)



Construction type C (H)

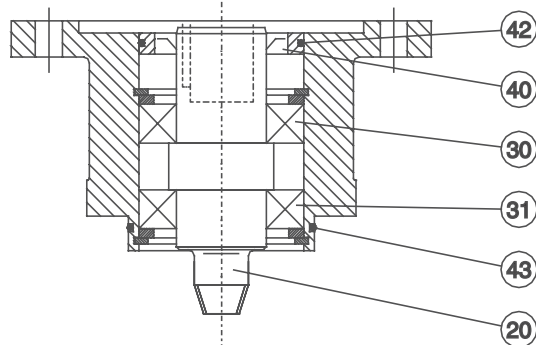
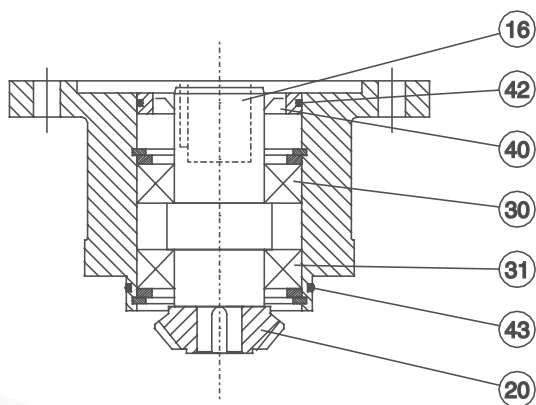


Construction type D (J)

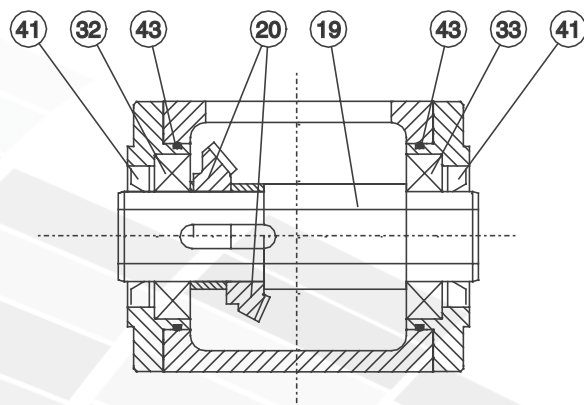


No.	Designation
12	Output shaft
16	Drive shaft
19	Output shaft
20	Bevel gear set
30	Roller bearing
31	Roller bearing

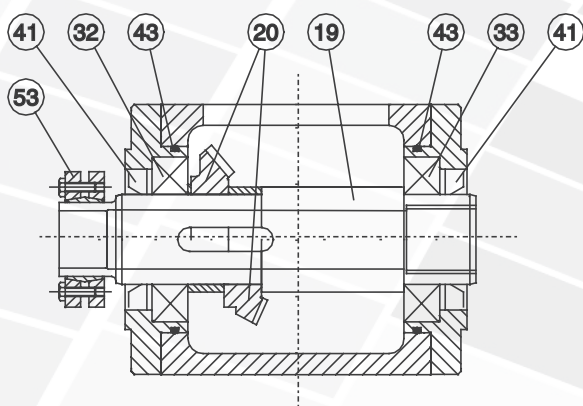
No.	Designation
32	Roller bearing
33	Roller bearing
40	Radial seal
41	Radial seal
42	O-ring
43	O-ring



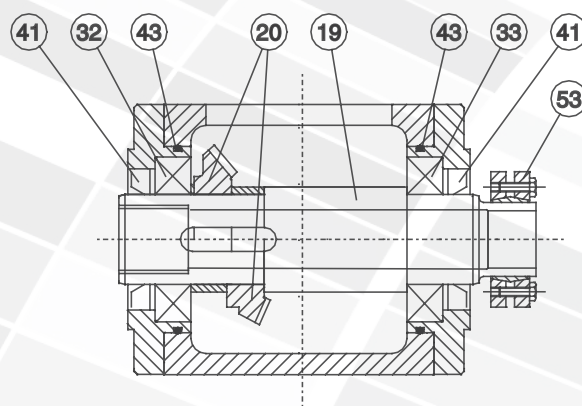
Construction type E (K)



Construction type E (K) - S5



Construction type E (K) - S6

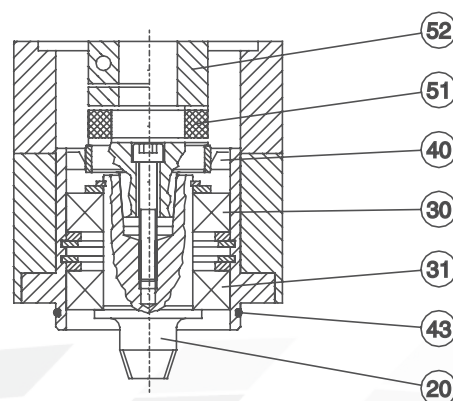
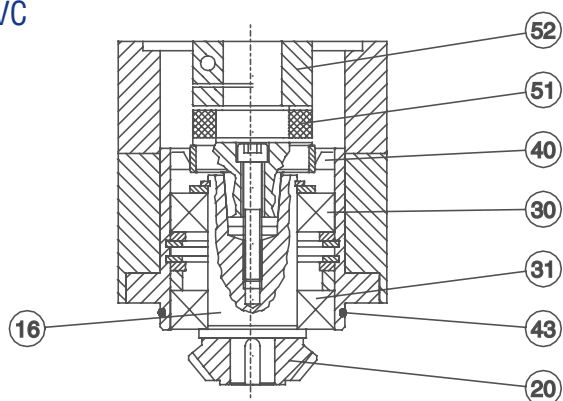


No.	Designation
16	Drive shaft
19	Output shaft
20	Bevel gear set
30	Roller bearing
31	Roller bearing
32	Roller bearing

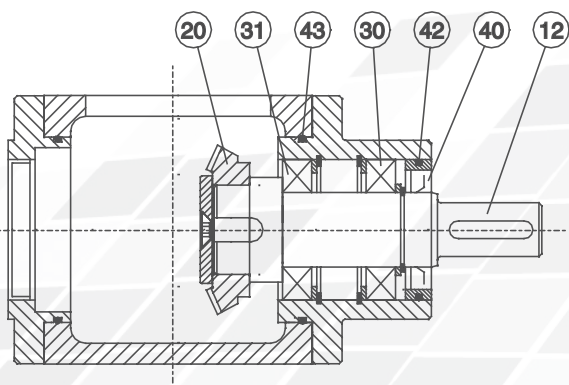
No.	Designation
33	Roller bearing
40	Radial seal
41	Radial seal
42	O-ring
43	O-ring
53	Clamping set

15.3 Spare parts

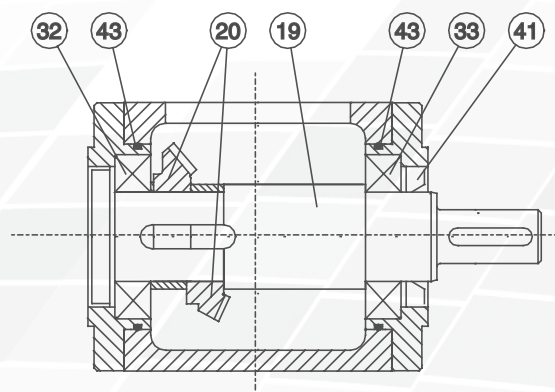
Type VC



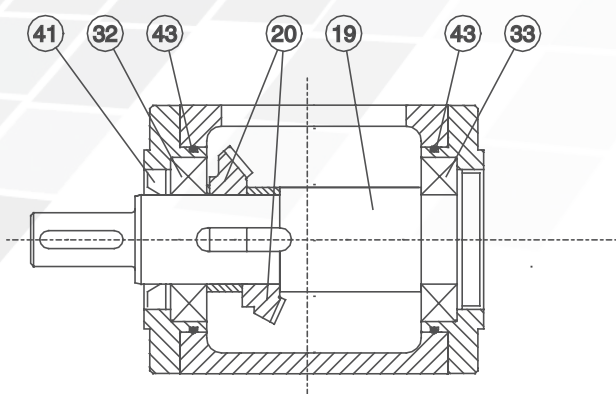
Construction type A (F)



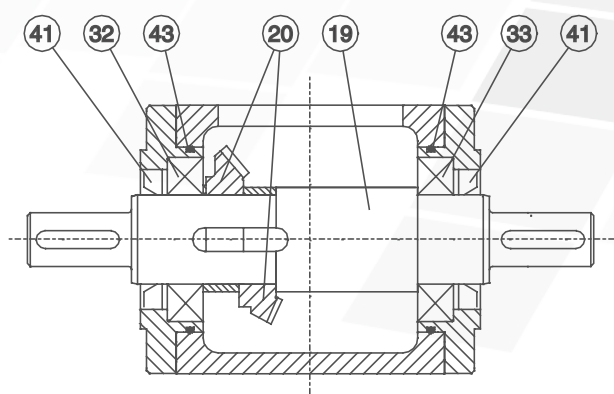
Construction type B (G)



Construction type C (H)

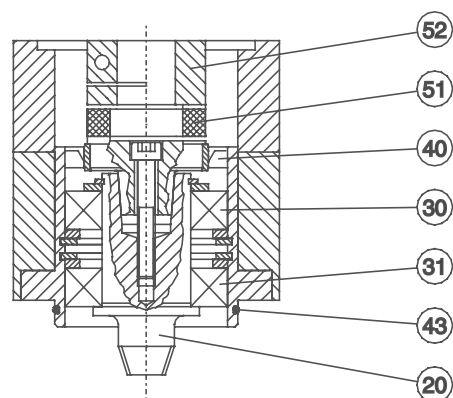
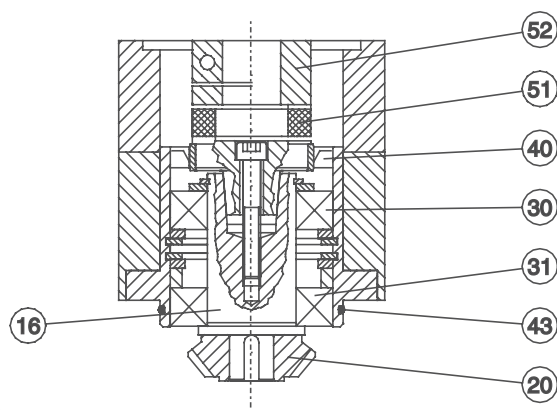


Construction type D (J)

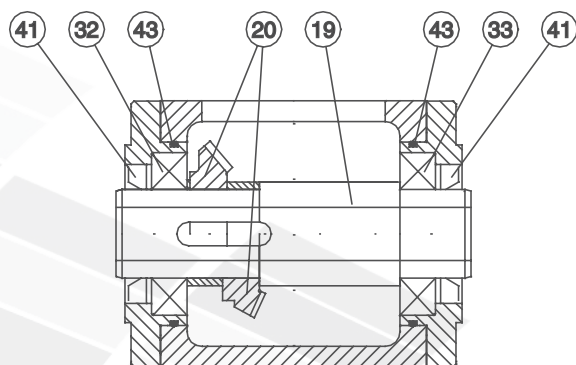


No.	Designation
12	Output shaft
16	Drive shaft
19	Output shaft
20	Bevel gear set
30	Roller bearing
31	Roller bearing
32	Roller bearing

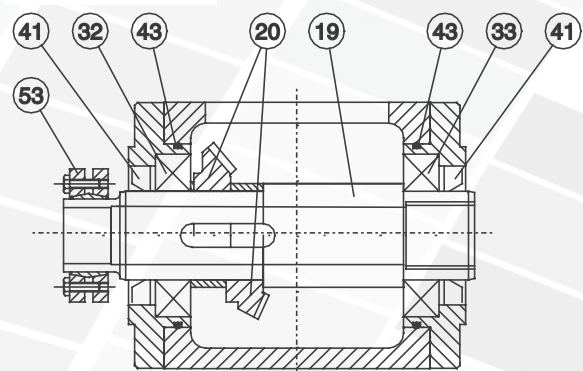
No.	Designation
33	Roller bearing
40	Radial seal
41	Radial seal
42	O-ring
43	O-ring
51	Toothed ring
52	Coupling



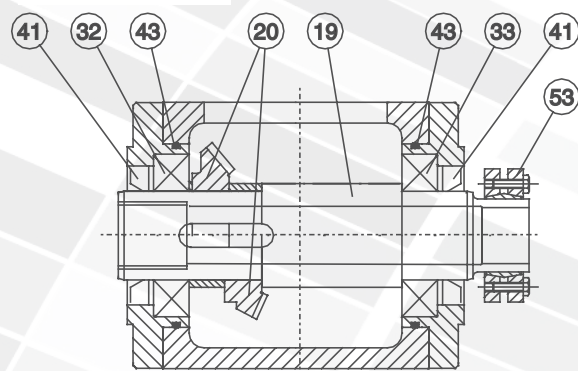
Construction type E (K)



Construction type E (K) - S5



Construction type E (K) - S6

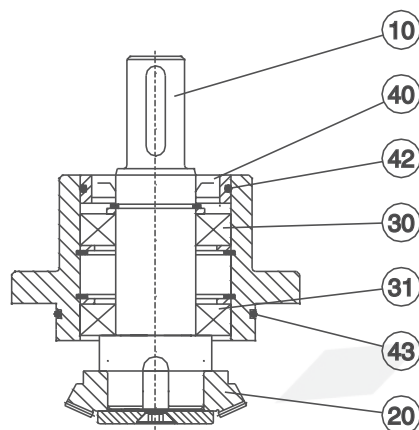


No.	Designation
16	Drive shaft
19	Output shaft
20	Bevel gear set
30	Roller bearing
31	Roller bearing
32	Roller bearing
33	Roller bearing

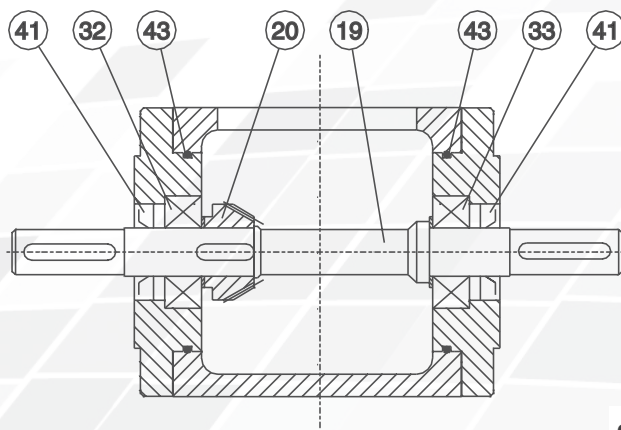
No.	Designation
40	Radial seal
41	Radial seal
42	O-ring
43	O-ring
51	Toothed ring
52	Coupling
53	Clamping set

15.3 Spare parts

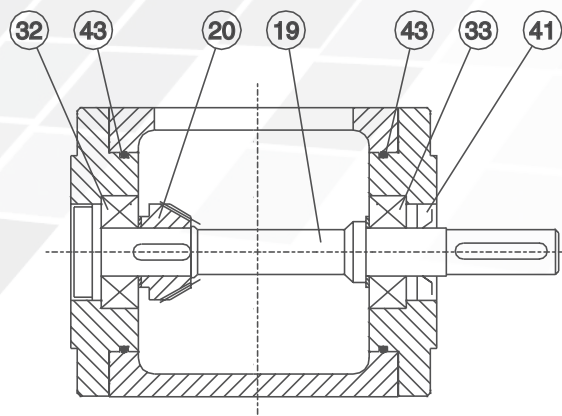
Type VS



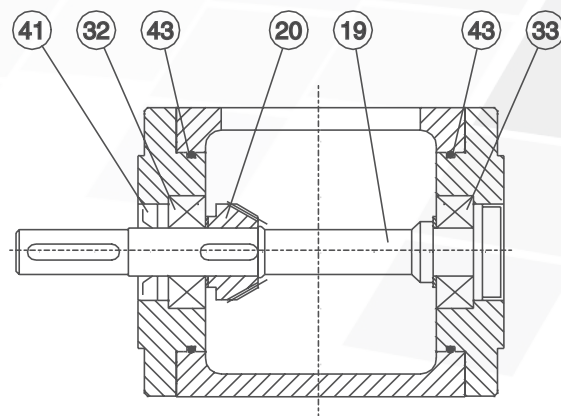
Construction type D.



Construction type B.



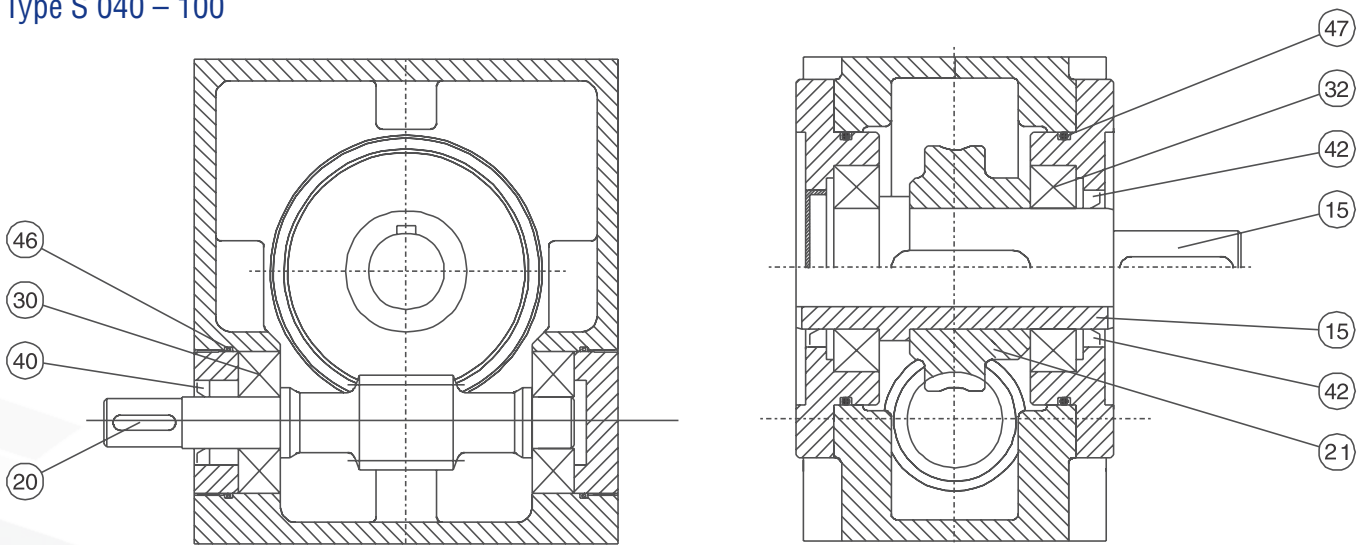
Construction type C.



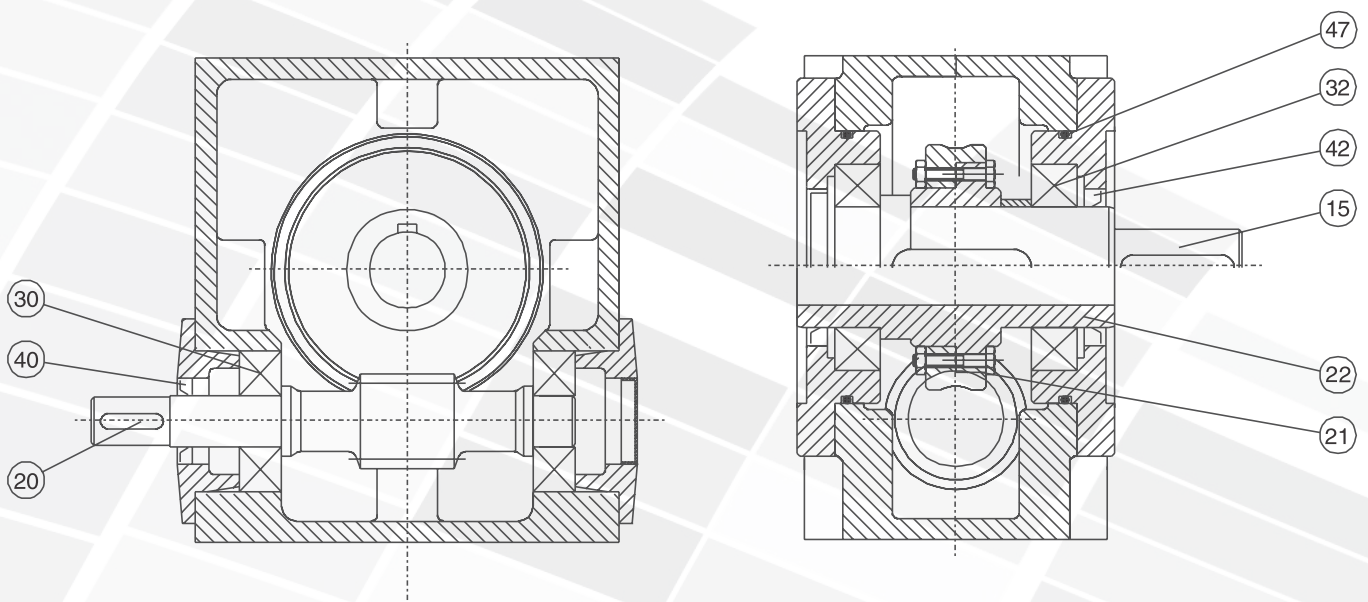
No.	Designation
10	Drive shaft
19	Output shaft
20	Bevel gear set
30	Roller bearing
31	Roller bearing
32	Roller bearing

No.	Designation
33	Roller bearing
40	Radial seal
41	Radial seal
42	O-ring
43	O-ring

Type S 040 – 100



Type S 125 – 250

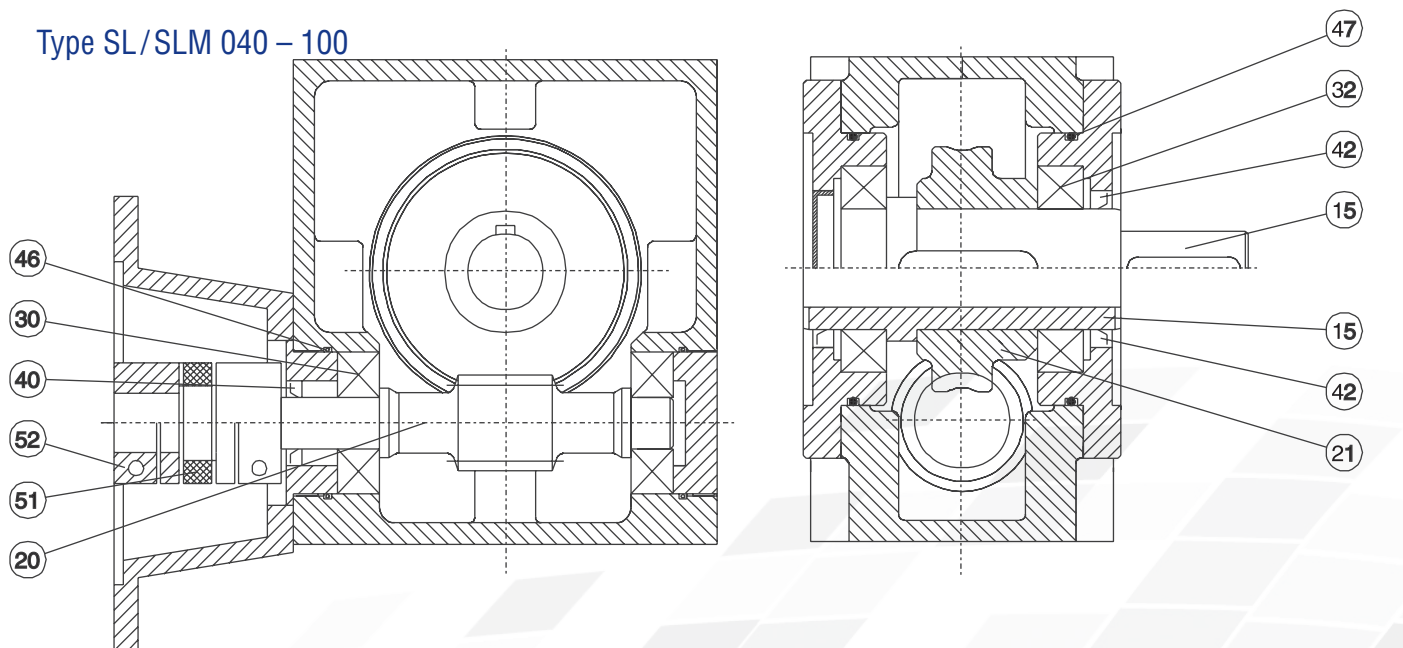


No.	Designation
15	Output shaft
20	Worm
21	Worm gear
22	Hub
30	Roller bearing

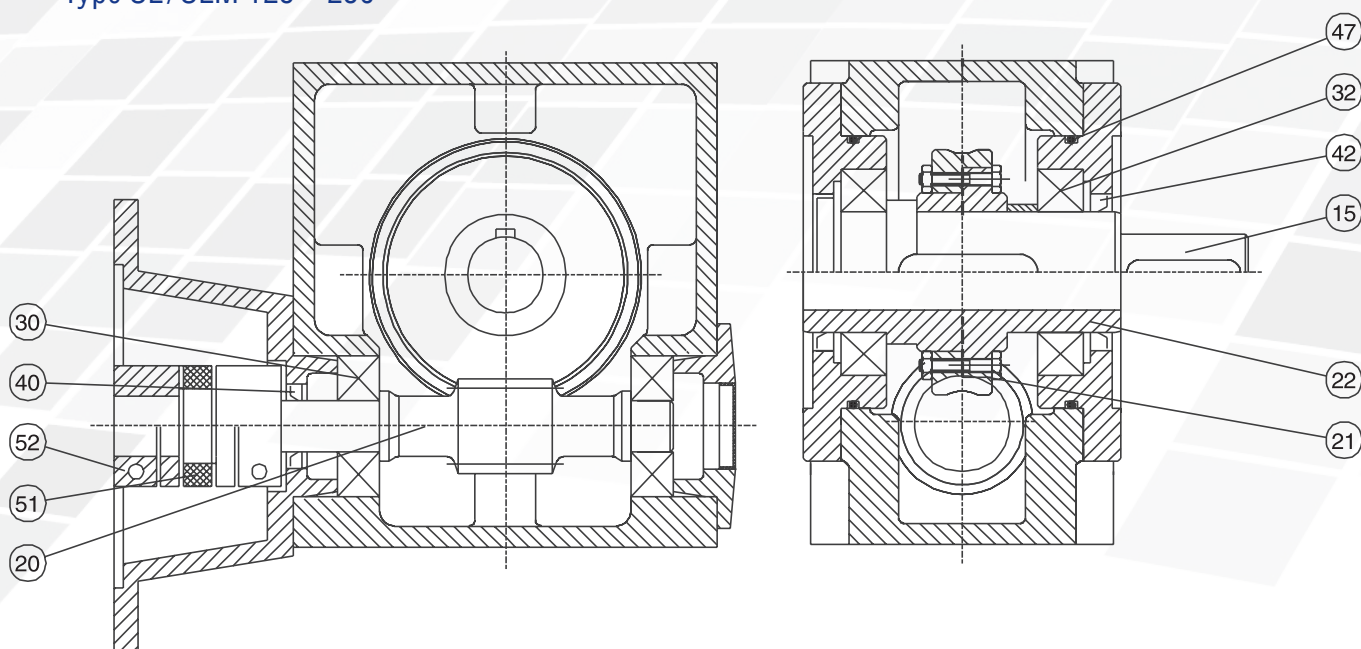
No.	Designation
32	Roller bearing
40	Radial seal
42	Radial seal
46	O-ring
47	O-ring

15.3 Spare parts

Type SL/SLM 040 – 100



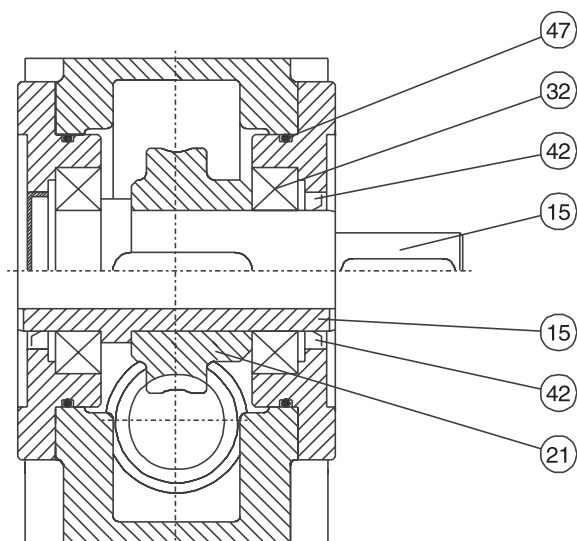
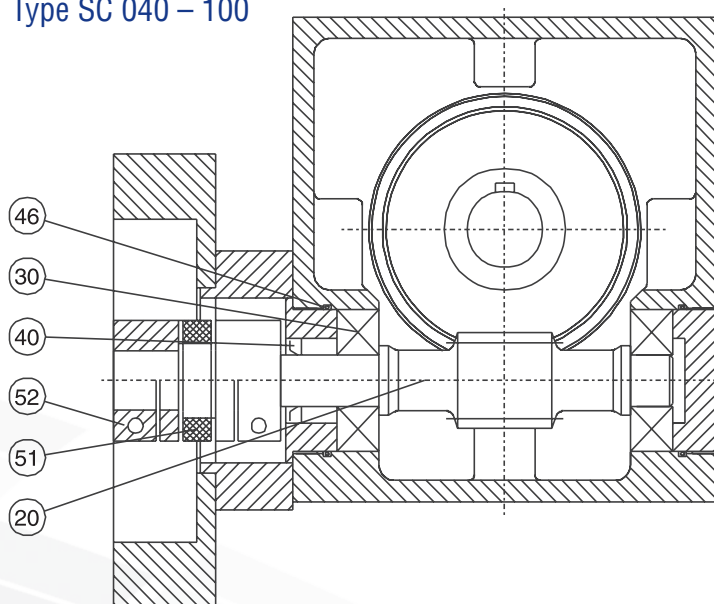
Type SL/SLM 125 – 250



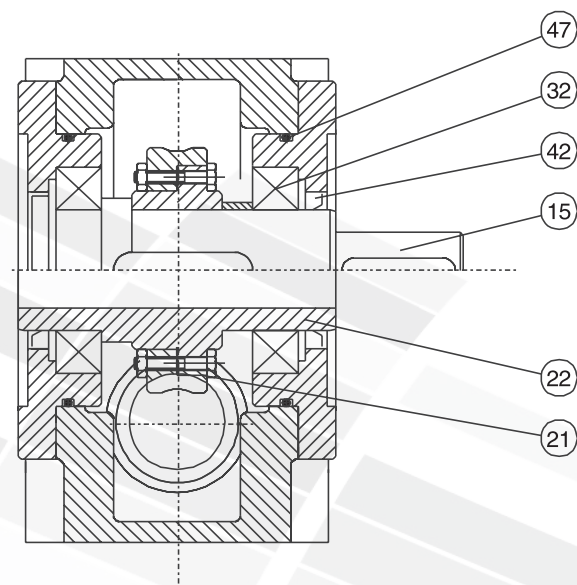
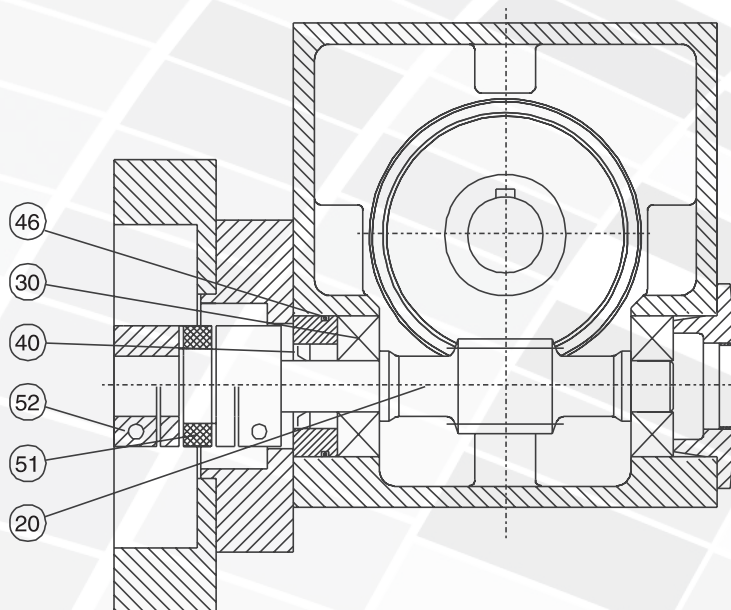
No.	Designation
15	Output shaft
20	Worm
21	Worm gear
22	Hub
30	Roller bearing
32	Roller bearing

No.	Designation
40	Radial seal
42	Radial seal
46	O-ring
47	O-ring
51	Toothed ring
52	Coupling

Type SC 040 – 100



Type SC 125 – 200



No.	Designation
15	Output shaft
20	Worm
21	Worm gear
22	Hub
30	Roller bearing
32	Roller bearing

No.	Designation
40	Radial seal
42	Radial seal
46	O-ring
47	O-ring
51	Toothed ring
52	Coupling

15.4 Lubricant table

If you specify the serial number, you will receive the information on the lubricant quantities from our service department.

Oils	Identifier						
Polyglycol-based synthetic gear oil CLP-PG (not mixable with mineral oil and other synthetic lubricants)	VG 680	-	-	Alphasyn GS 680 Tribol 800/680	Klübersynth GH 6-680	-	Omala S4 WE 680
	VG 460	Aral Degol GS 460	-	Alphasyn GS 460 Alphasyn PG 460 Tribol 800/460	Klübersynth GH 6-460	-	Omala S4 WE 460
	VG 220	Aral Degol GS 220	BP Enersyn SG-XP 220	Alphasyn GS 220 Alphasyn PG 220 Tribol 800/220	Klübersynth GH 6-220	-	Omala S4 WE 220
	VG 150	-	-	Alphasyn GS 150 Alphasyn PG 150 Tribol 800/150	Klübersynth GH 6-150	-	-
	VG 100	-	-	Tribol 800/100	Klübersynth GH 6-100	-	-
	VG 68	-	-	-	-	-	-
Synthetic gear oils, polyalphaolefins, PAO CLP-HC	VG 460	-	Enersyn HTX 460	Alphasyn EP 460 Alphasyn HTX 460 Optigear Synthetic PD 460	Klübersynth EG 4-460	Mobil SHC Gear 460	Omala S4 GX 460
	VG 320	-	Enersyn HTX 320	Alphasyn EP 320 Alphasyn HTX 320 Optigear Synthetic PD 320 Tribol 1510/320	Klübersynth EG 4-320	Mobil SHC Gear 320	Omala S4 GX 320
	VG 220	-	Enersyn HTX 220	Alphasyn EP 220 Alphasyn HTX 220 Optigear Synthetic PD 220	Klübersynth EG 4-220	Mobil SHC Gear 220	Omala S4 GX 220
	VG 150	-	-	Alphasyn EP 150 Alphasyn HTX 150 Optigear Synthetic PD 150	Klübersynth EG 4-150	Mobil SHC Gear 150	Omala S4 GX 150
Gear oils (mineral oils) CLP	VG 680	Aral Degol BG 680	BP Energol GR-XP 680	Alpha EP 680 Alpha SP 680 Optigear BM 680 Tribol 1100/680	Klüberoil GEM 1-680	Mobilgear 600 XP 680	Omala S2 G 680
	VG 460	Aral Degol BG 460	BP Energol GR-XP 460	Alpha EP 460 Alpha SP 460 Optigear BM 460 Tribol 1100/460	Klüberoil GEM 1-460	Mobilgear 600 XP 460	Omala S2 G 460
	VG 320	Aral Degol BG 320	BP Energol GR-XP 320	Alpha EP 320 Alpha SP 320 Optigear BM 320 Tribol 1100/320	Klüberoil GEM 1-320	Mobilgear 600 XP 320	Omala S2 G 320
	VG 220	Aral Degol BG 220	BP Energol GR-XP 220	Alpha EP 220 Alpha SP 220 Optigear BM 220 Tribol 1100/220	Klüberoil GEM 1-220	Mobilgear 600 XP 220	Omala S2 G 220
	VG 100	Aral Degol BG 100	BP Energol GR-XP 100	Alpha EP 100 Alpha SP 100 Optigear BM 100 Tribol 1100/100	Klüberoil GEM 1-100	Mobilgear 600 XP 100	Omala S2 G 100
	VG 68	Aral Degol BG 68	BP Energol GR-XP 68	Alpha EP 68 Alpha SP 68 Optigear BM 68 Tribol 1100/68	Klüberoil GEM 1-68	Mobilgear 600 XP 68	Omala S2 G 68
Food-grade gear oils Gear lubricant with NSF-H1 approval CLP CKC	VG 460	-	-	Optileb GT 460 (PAO) Tribol 1800/460 (PG)	Klüberoil 4 UH1-460 N (CLP HC) Klübersynth UH1 6-460 (CLP PG)	Mobil SHC Cibus 460	-
	VG 220	-	-	Optileb GT 220 (PAO) Tribol 1800/220 (PG)	Klüberoil 4 UH1-220 N (CLP HC) Klübersynth UH1 6-220 (CLP PG)	Mobil SHC Cibus 220	-
	VG 150	-	-	Optileb GT 150 (PAO)	Klüberoil 4 UH1-150 N (CLP HC) Klübersynth UH1 6-150 (CLP PG)	Mobil SHC Cibus 150	-
	VG 68	-	-	Optileb GT 100 (PAO, VG 100) Optileb HY 68 (HLP 68, PAO)	Klüberoil 4 UH1-68 N (CLP HC)	-	-
Greases	Identifier	-	-	-	-	-	-
Lubr. grease	DIN 51825	-	-	-	-	-	-
-	KP 2 K-30	Aralub HLP 2	Energrease LS-EP 2	Longtime PD 2 Olista Longtime 2 Spheroil EPL 2	Klüberplex BEM 41-132	Mobilux EP 2	Gadus S2 V220 2 *)
Fluid grease	GP 00 K-30	Fliessfett N	Energrease LS-EP 00	Olit 00 Olit CLS 00 Longtime PD 00	Klüberplex BEM 11-680	Mobilith SHC 007 GPH-COOK-30)	Gadus S2 V220 00
Food-grade multi-purpose grease NSF-H1	KHC 2 K-30	-	-	Obeen UF 2	Klübersynth UH1 64-62	Mobil SHC Polyrex 462 (KPF2P-20)	-
Food-grade fluid grease NSF-H1	GHC 00 K-30	-	-	Obeen UF 00	Klübersynth UH1 14-1600	Mobil SHC Polyrex 005 (GPF-HC00K-30)	-

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