

Spare Parts Catalogue

Medium-pressure rotary valve

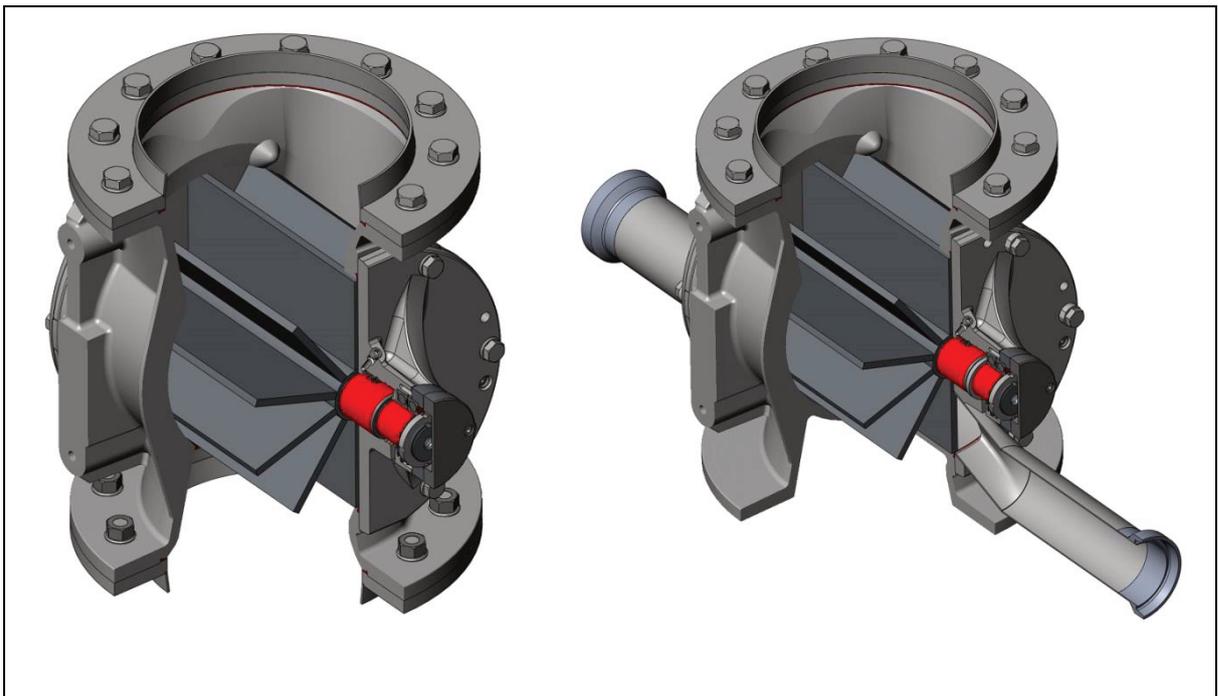
Typ ZRD-CIP / ZRD-ED / ZRD-USDA

Typ ZFD-CIP / ZFD-ED

Typ ZXD-ED

Spare Parts Catalogue Number

S55834_GB_2021-09



If necessary, contact our Service Center:

Mailing address:	Plant and delivery address:
Coperion GmbH	Coperion GmbH
Niederbieger Straße 9	Eisenbahnstraße 15
D-88250 Weingarten	D-88255 Baienfurt-Niederbiegen
Tel:	+49 / 751 4 08-0
	+49 / 751 4 08-450 (service number)
Fax:	+49 / 751 4 08-200
Email:	service@coperion.com

To be able to ensure smooth and speedy handling, we need the following information from you:

- Serial number (information on the name plate)
- Type designation
- Coperion contract number with assembly (if available)
- Operating data (information on the name plate)
- Description of the problem

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Subject to change.
(PLZ 91550)

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1 Spare and wear parts

1.1 Spare parts inventory

Having the most important spare and wear parts on hand at the setup location is an important condition for the continuous operation and operational readiness of the rotary valve.

Please use the spare parts list to order spare parts.

The spare parts drawings listed in the spare parts list can provide additional information.

We only guarantee the genuine spare parts that we supply.

We expressly state that genuine spare parts and accessories not supplied by us have also not been tested or approved by us. Installing and/or using such products may have a negative impact, under certain circumstances, on the properties of the rotary valve specified in the design and consequently may impair active and/or passive safety. Coperion does not assume any liability or provide any warranty for damage resulting from the use of non-genuine spare parts and accessories.



Malfunction or failure of the machine resulting from poor-quality spare parts!

When being used in potentially explosive atmospheres and/or as a protection system, poor-quality or incorrect spare parts may lead to the creation of an ignition source and may trigger explosions.

- ▶ Use only genuine Coperion spare parts.
- ▶ The use of genuine spare parts is required, depending on national specifications.

Keep in mind that, for in-house or foreign parts, there are often special manufacturing and shipment specifications. We always offer you spare parts that are up-to-date and that comply with the latest legislative regulations.

When ordering spare parts, specify the following data:

Machine data:

- Serial number (information on the name plate)
- Type designation (information on the name plate)
- Coperion contract number with assembly (if available)

Spare part data:

- Repair manual number (see the cover sheet)
- Item
- Name
- Quantity

1.2 Service

Regular service performed by our technical personnel is recommended. We would like to increase the operational readiness of your components even after being in service for a long time. For this, we offer the services provided by our Service Center.

- We would be happy to negotiate a maintenance contract with you. With such a contract, we do not just perform the actual maintenance activities, we also monitor maintenance cycles, etc. This works very simply: We enter you into our service EDP file and contact you to schedule a time automatically.
- If you wish to perform maintenance yourself, we would be glad to train your operating personnel intensively regarding the operation and maintenance of Coperion components. In our Technical Center and our training rooms, we give courses that provide comprehensive knowledge about rotary valves, shut-off devices and diverter elements. This improves the option of in-house maintenance and correcting malfunctions.
- Of course, we would also be glad to perform the installation and commissioning of your Coperion components.



Malfunction / failure of the machine due to poor maintenance!

When used in a potentially explosive atmosphere and / or when used as a protection system, inadequate or incorrect maintenance can lead to an ignition source and explosions.

- ▶ Exclusive maintenance by qualified and currently trained personnel.
- ▶ Maintenance by COPERION-Service.

If necessary, contact our Service Center:

Coperion GmbH
Niederbiegerstraße 9
D-88250 Weingarten

Tel: +49 / 751 4 08-0
+49 / 751 4 08-450 (service number)
Fax: +49 / 751 4 08-200



Information

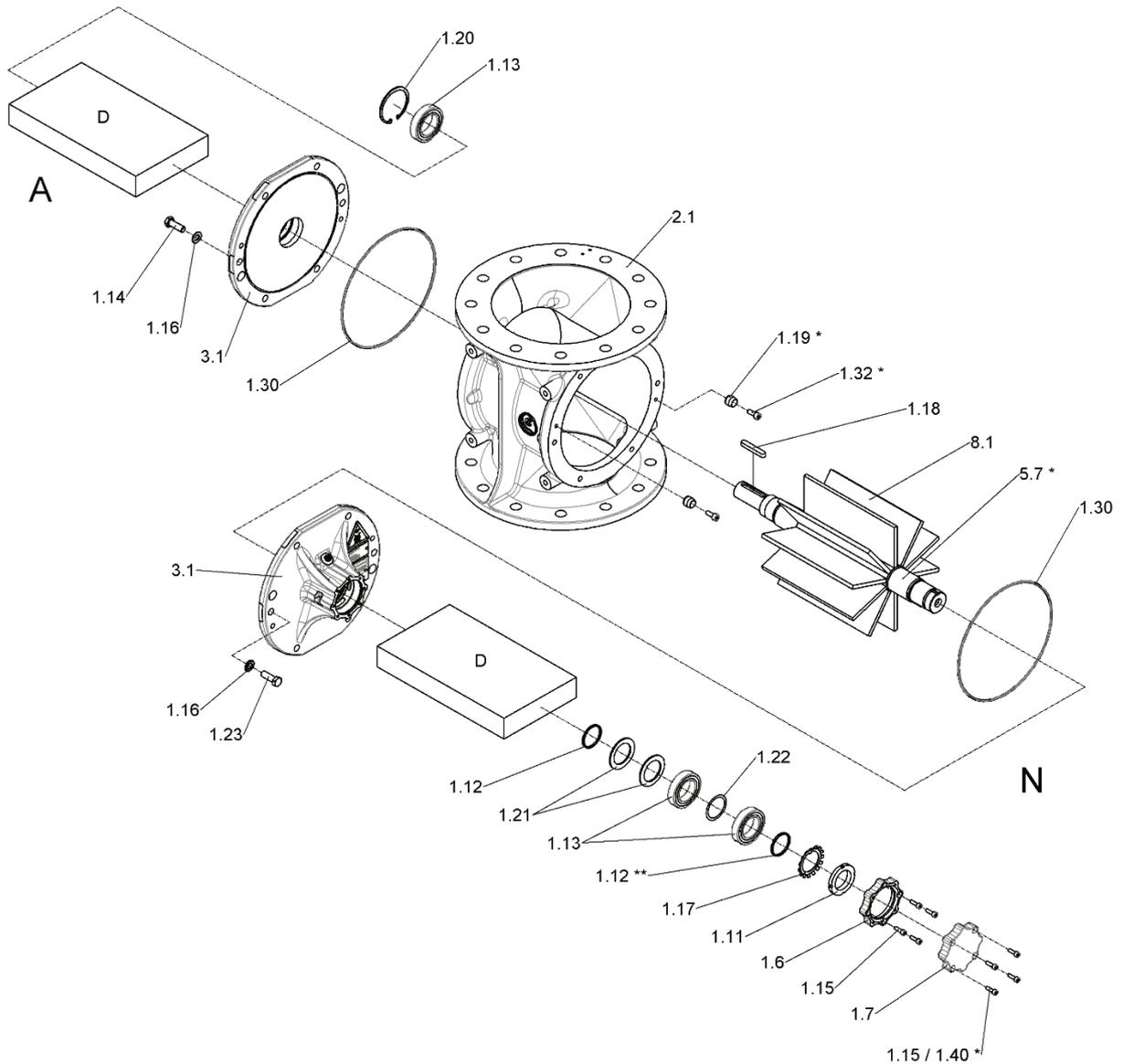
For safety reasons, use only genuine Coperion spare parts.

To be able to ensure smooth and speedy handling, we need the following information from you:

- Serial number (information on the name plate)
- Type designation
- Coperion contract number with assembly (if available)
- Operating data (information on the name plate)
- Description of the problem

1.3 Exploded-view drawing and parts lists

1.3.1 “.1” version (up to size 400 and ZXD up to size 300)



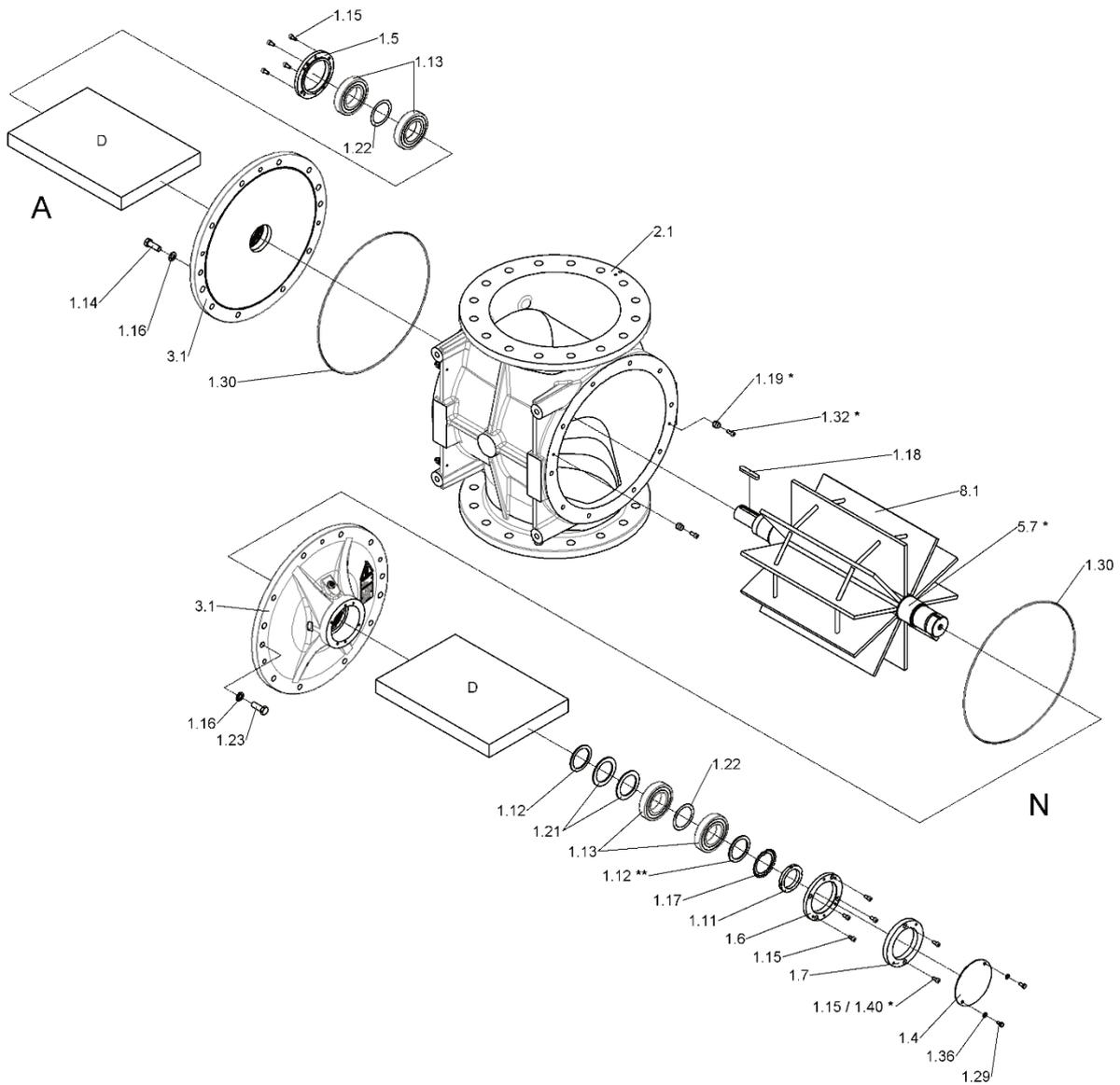
A = Driven end
N = Non-driven end
D = Set of seals

* depending on type

** number depending on size

Item	Name	Pieces/device
1	Base unit	
1.6	Bearing ring	1
1.7	Cover plate/spacer ring	1, depending on the version
1.8	Driving sleeve	1
1.11	Slotted nut	1
1.12	Supporting ring	1-6, depending on the size and the
1.13	Deep-groove ball bearing	3
1.14	Hexagon bolt/tommy bolt	Depending on the version
1.15	Cylinder head bolt	Depending on the version
1.16	Washer	Depending on the version
1.17	Locking plate	1
1.18	Feather key	1
1.19	Centering sleeve/centering bolt	4
1.20	Retaining ring	1
1.21	Spacer ring	1
1.22	Shim	1
1.23	Hexagon bolt/tommy bolt	Depending on the version
1.28	Retaining ring	1
1.30	O-ring	2
1.32	Cylinder head bolt	4
1.40	Cylinder head bolt	Depending on the version
2	Housing	
2.1	Housing ZG_	1
2.1	Housing ZK_	1
2.1	Housing ZP_	1
2.1	Housing ZR_	1
2.1	Housing ZV_	1
2.1	Housing ZDD	1
2.1	Housing ZXD	1
3	Side cover	
3.1	Side cover	2
8	Rotor	
8.1	Rotor	1

1.3.2 "1" version (ZXD size 350)

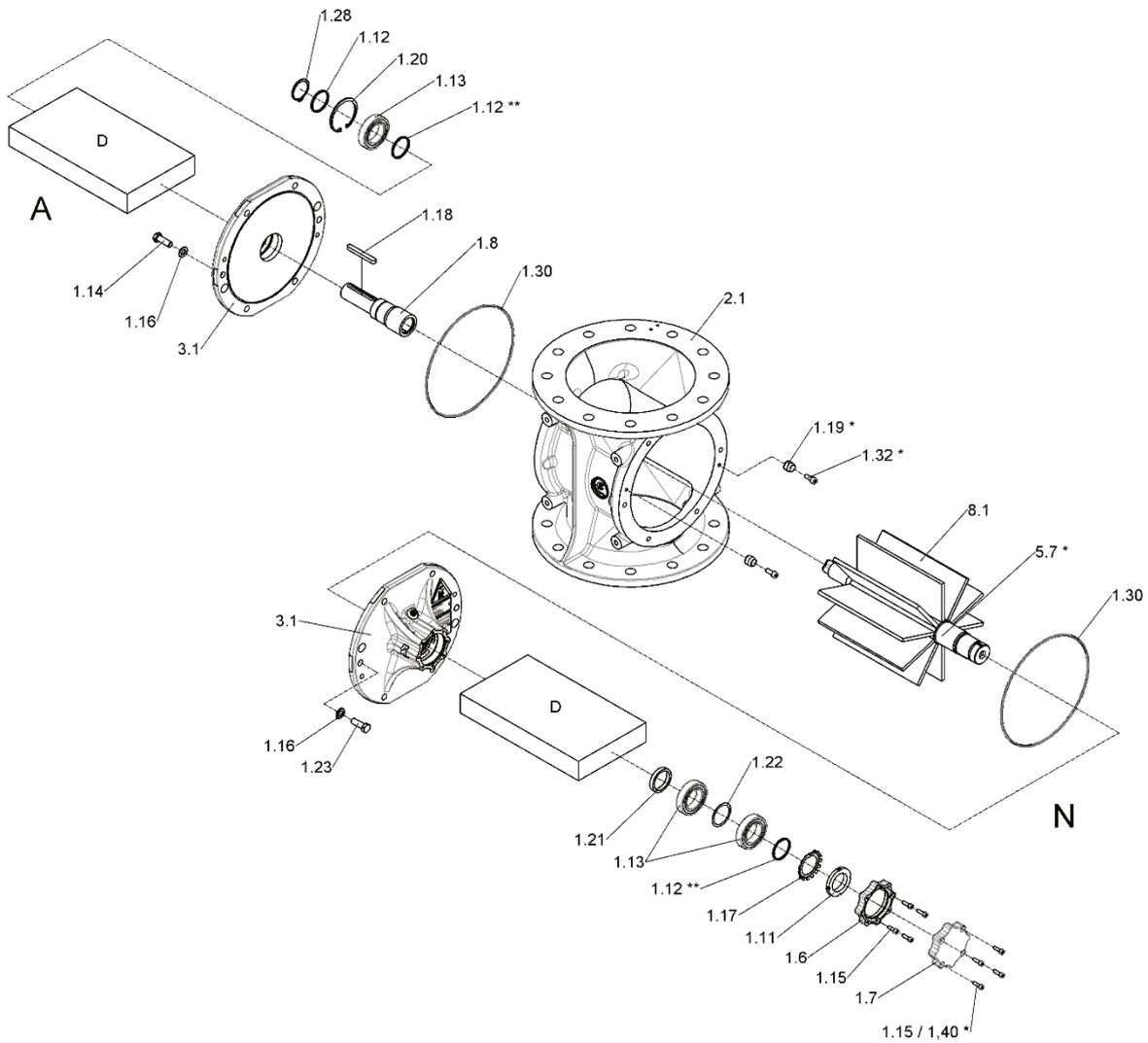


A = Driven end
N = Non-driven end
D = Set of seals

* depending on type
** number depending on size

Item	Name	Pieces/device
1	Base unit	
1.4	Cover plate	1
1.5	Bearing ring	1
1.6	Bearing ring	1
1.7	Cover plate/spacer ring	1, depending on the version
1.11	Slotted nut	1
1.12	Supporting ring	1-6, depending on the size and the
1.13	Deep-groove ball bearing	4
1.14	Hexagon bolt/tommy bolt	Depending on the version
1.15	Cylinder head bolt	Depending on the version
1.16	Washer	Depending on the version
1.17	Locking plate	1
1.18	Feather key	1
1.19	Centering sleeve/centering bolt	4
1.21	Cup spring/spacer ring **	2/1, depending on the version
1.22	Shim	2
1.23	Hexagon bolt/tommy bolt	Depending on the version
1.29	Hexagon bolt	Depending on the version
1.30	O-ring	2
1.32	Cylinder head bolt	4
1.36	Washer	Depending on the version
1.40	Cylinder head bolt	Depending on the version
2	Housing	
2.1	Housing ZG_	1
2.1	Housing ZK_	1
2.1	Housing ZP_	1
2.1	Housing ZR_	1
2.1	Housing ZV_	1
2.1	Housing ZDD	1
2.1	Housing ZXD	1
3	Side cover	
3.1	Side cover	2
8	Rotor	
8.1	Rotor	1

1.3.3 “2” version (up to size 400 and ZXD up to size 300)

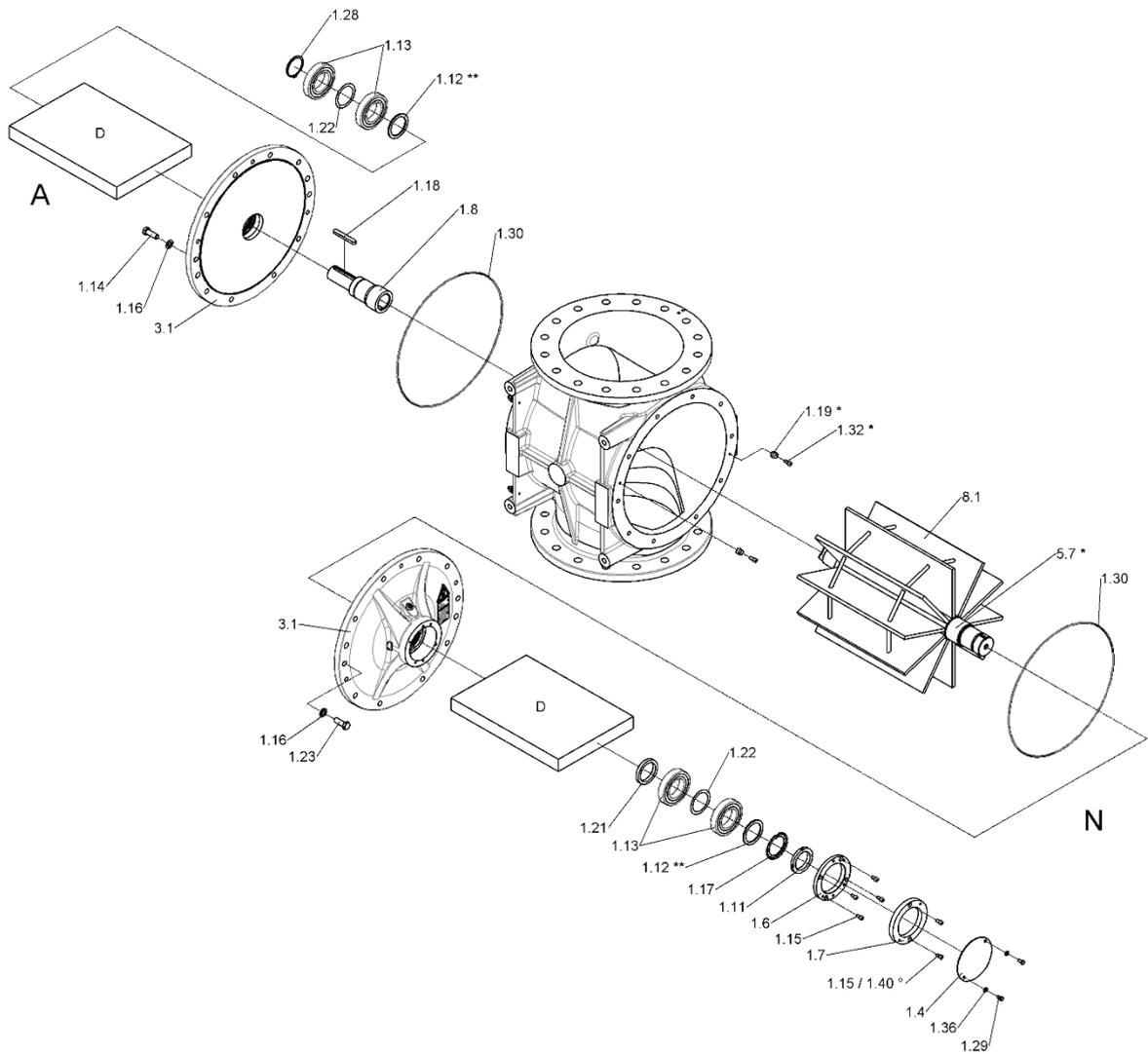


A = Driven end
N = Non-driven end
D = Set of seals

* depending on type
** number depending on size

Item	Name	Pieces/device
1	Base unit	
1.6	Bearing ring	1
1.7	Cover plate/spacer ring	1, depending on the version
1.8	Driving sleeve	1
1.11	Slotted nut	1
1.12	Supporting ring	1-6, depending on the size and the
1.13	Deep-groove ball bearing	3
1.14	Hexagon bolt/tommy bolt	Depending on the version
1.15	Cylinder head bolt	Depending on the version
1.16	Washer	Depending on the version
1.17	Locking plate	1
1.18	Feather key	1
1.19	Centering sleeve/centering bolt	4
1.20	Retaining ring	1
1.21	Spacer ring	1
1.22	Shim	1
1.23	Hexagon bolt/tommy bolt	Depending on the version
1.28	Retaining ring	1
1.30	O-ring	2
1.32	Cylinder head bolt	4
1.40	Cylinder head bolt	Depending on the version
2	Housing	
2.1	Housing ZG_	1
2.1	Housing ZK_	1
2.1	Housing ZP_	1
2.1	Housing ZR_	1
2.1	Housing ZV_	1
2.1	Housing ZDD	1
2.1	Housing ZXD	1
3	Side cover	
3.1	Side cover	2
8	Rotor	
8.1	Rotor	1

1.3.4 “.2” version (ZXD size 350)

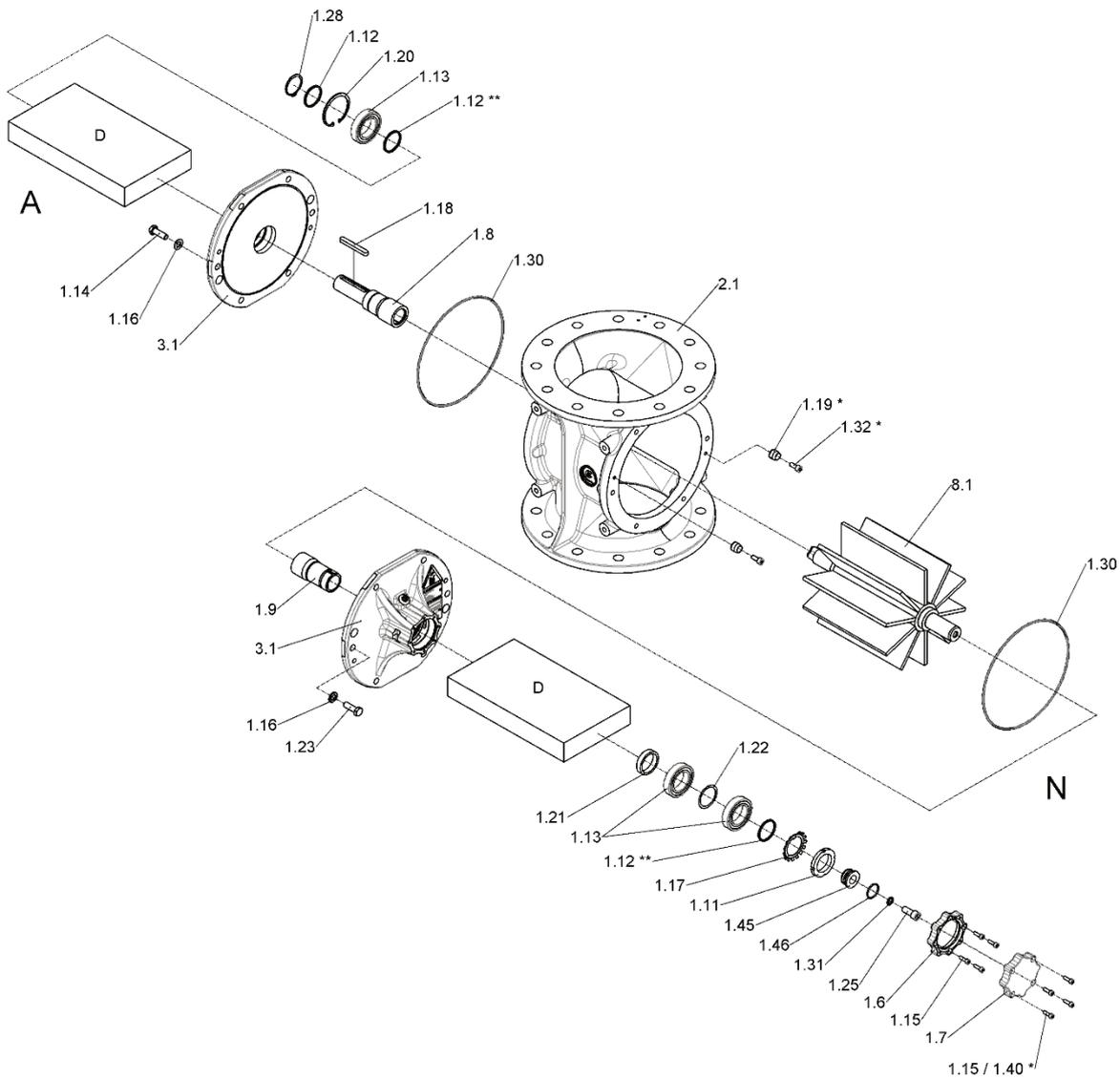


A = Driven end
N = Non-driven end
D = Set of seals

* depending on type
** number depending on size

Item	Name	Pieces/device
1	Base unit	
1.4	Cover plate	1
1.6	Bearing ring	1
1.7	Cover plate/spacer ring	1, depending on the version
1.8	Driving sleeve	1
1.11	Slotted nut	1
1.12	Supporting ring	1-6, depending on the size and the
1.13	Deep-groove ball bearing	4
1.14	Hexagon bolt/tommy bolt	Depending on the version
1.15	Cylinder head bolt	Depending on the version
1.16	Washer	Depending on the version
1.17	Locking plate	1
1.18	Feather key	1
1.19	Centering sleeve/centering bolt	4
1.21	Spacer ring	1
1.22	Shim	2
1.23	Hexagon bolt/tommy bolt	Depending on the version
1.28	Retaining ring	1
1.29	Hexagon bolt	Depending on the version
1.30	O-ring	2
1.32	Cylinder head bolt	4
1.36	Washer	Depending on the version
1.40	Cylinder head bolt	Depending on the version
2	Housing	
2.1	Housing ZG_	1
2.1	Housing ZK_	1
2.1	Housing ZP_	1
2.1	Housing ZR_	1
2.1	Housing ZV_	1
2.1	Housing ZDD	1
2.1	Housing ZXD	1
3	Side cover	
3.1	Side cover	2
8	Rotor	
8.1	Rotor	1

1.3.5 “.3”-version (up to size 400 and ZXD up to size 300)

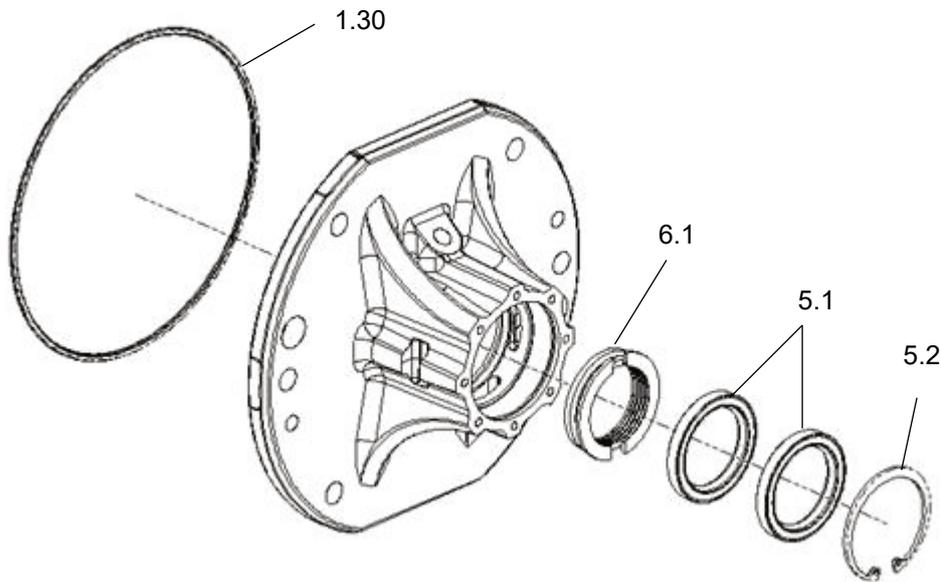


A = Driven end
N = Non-driven end
D = Set of seals

* depending on type
** number depending on size

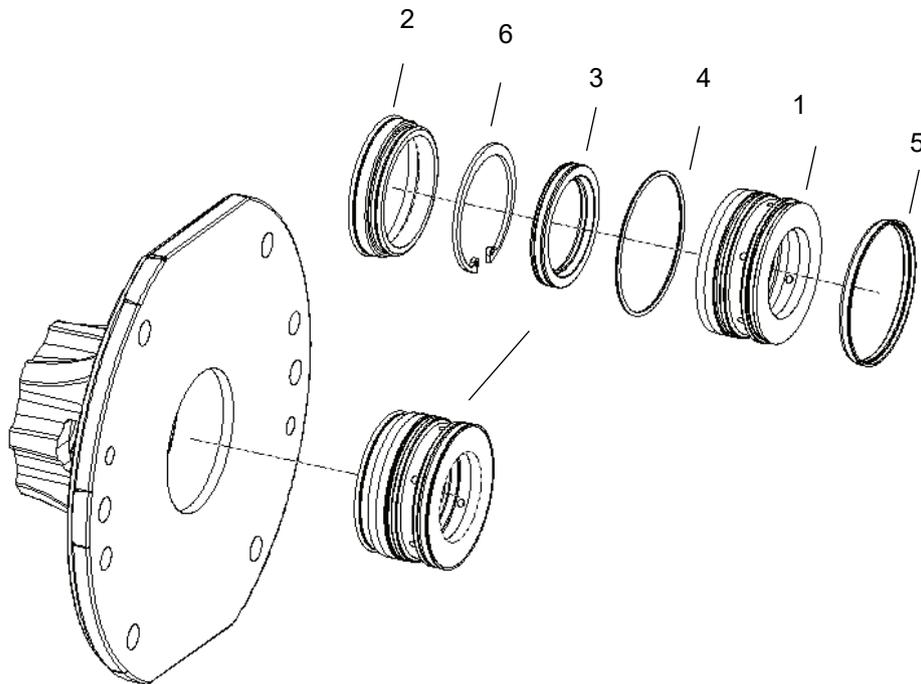
Item	Name	Pieces/device
1	Base unit	
1.6	Bearing ring	1
1.7	Cover plate/spacer ring	1, depending on the version
1.8	Driving sleeve	1
1.9	Sleeve	1
1.11	Slotted nut	1
1.12	Supporting ring	1-6, depending on the size and the
1.13	Deep-groove ball bearing	3
1.14	Hexagon bolt/tommy bolt	Depending on the version
1.15	Cylinder head bolt	Depending on the version
1.16	Washer	Depending on the version
1.17	Locking plate	1
1.18	Feather key	1
1.19	Centering sleeve/centering bolt	4
1.20	Retaining ring	1
1.21	Spacer ring	1
1.22	Shim	1
1.23	Hexagon bolt/tommy bolt	Depending on the version
1.25	Hexagon bolt	1
1.28	Retaining ring	1
1.30	O-ring	2
1.31	Seal ring	1
1.32	Cylinder head bolt	4
1.40	Cylinder head bolt	Depending on the version
1.45	Clamping bush	1
1.46	O-ring	1
2	Housing	
2.1	Housing ZG_	1
2.1	Housing ZK_	1
2.1	Housing ZP_	1
2.1	Housing ZR_	1
2.1	Housing ZV_	1
2.1	Housing ZDD	1
2.1	Housing ZXD	1
3	Side cover	
3.1	Side cover	2
8	Rotor	
8.1	Rotor	1

1.3.6 Set of seals, ED version



Item	Designation	DIN	Quantity/unit
5	SHAFT SEAL		
	Type WLN/WLF/WLE/WLG		
5.1	Shaft seal ring		4
5.2	Retaining ring		2
5.7	Shaft sleeve		only at WLG
1.30	O-ring		2
6	LABYRINTH RING		
6.1	Labyrinth ring		2

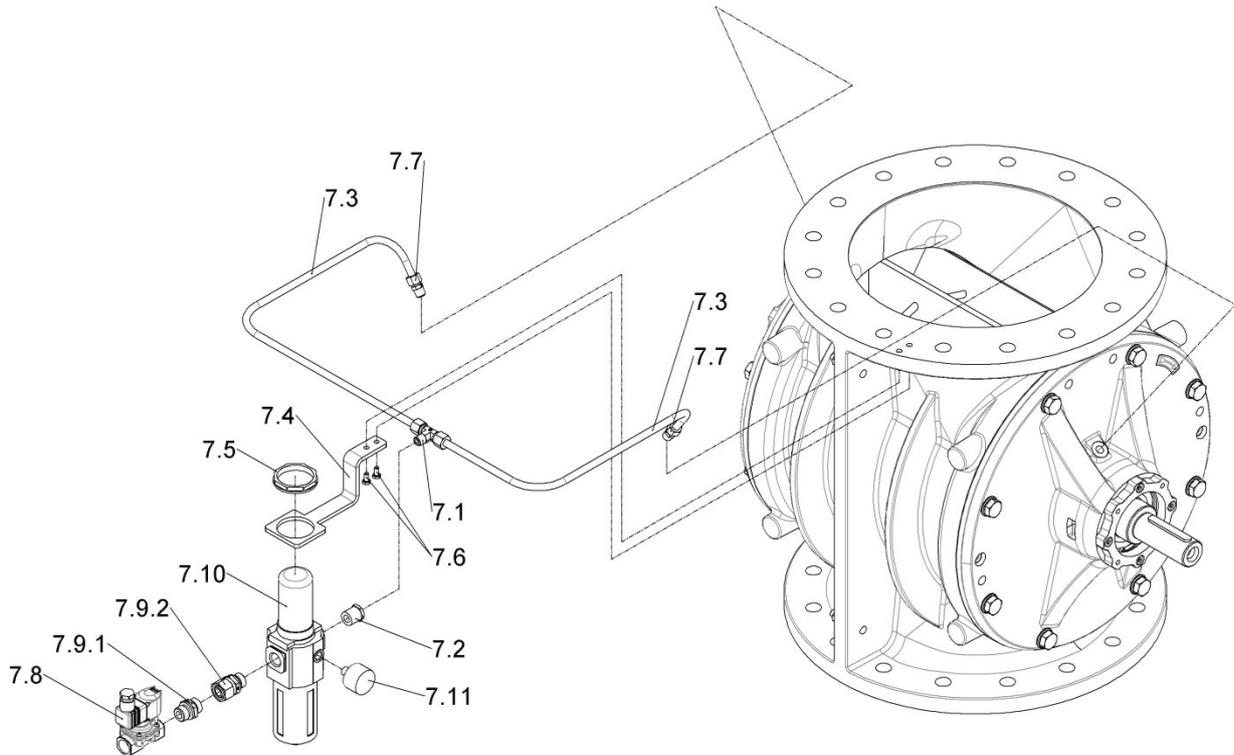
1.3.8 Set of seals, USDA version and version with sealing cartridge



Item	Designation	DIN	Quantity/unit
5	SHAFT SEAL		
	Type WLG		
1	Cassette		2
2	Clamping ring		2
3	Shaft seal ring		2
4	O-ring		4 (2 for CIP)
5	Seal ring (for CIP only)		2
5.7	Shaft sleeve		
6	Retaining ring		2

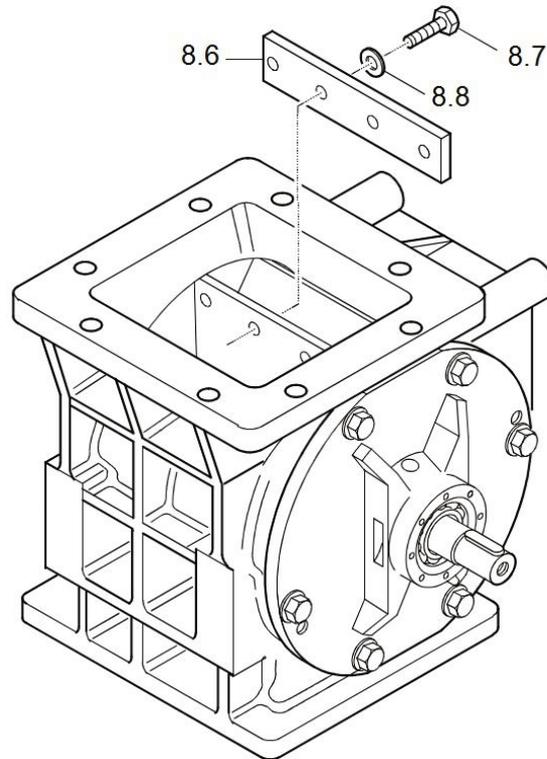
2 Accessories

2.1 Seal purge air piping - standard



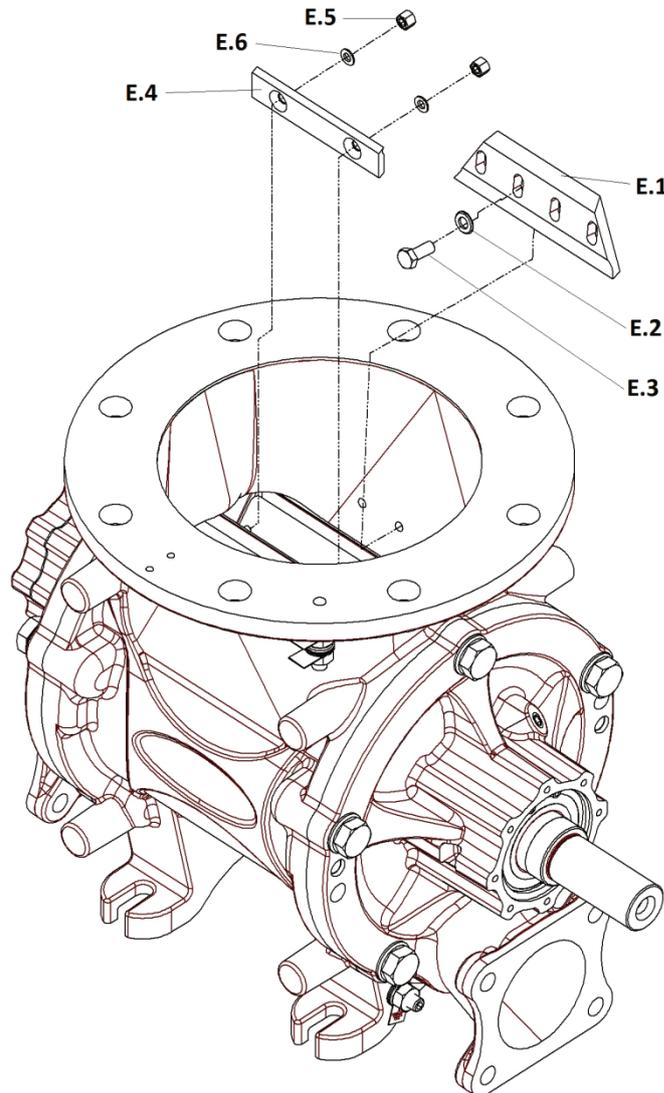
Item	Name	Pieces/device
7	Piping, labyrinth ring purging	
7.1	Threaded pipe joint TE	1
7.2	Reducer	1
7.3	Pipe	2
7.4	Retaining bracket	1
7.5	Nut	1
7.6	Hexagon bolt	2
7.7	Threaded pipe joint GE	2
7.8	Solenoid valve	1
7.9.1	Double nipple	1
7.9.2	Threaded pipe joint GE	1
7.10	Filter regulator	1
7.11	Pressure gauge	1

2.2 Wear blades rotor



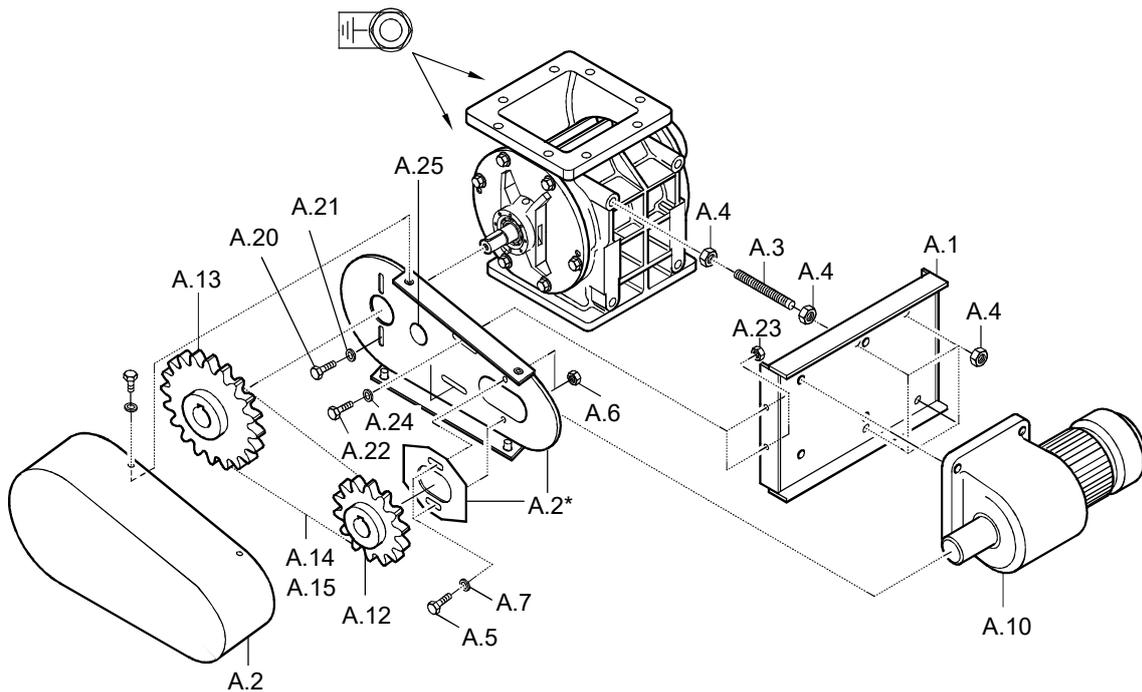
Item	Name	Pieces/device
8	Wear blades, rotor (option)	
8.6	Wear blades	10
8.7	Hexagon bolt	Depending on the type
8.8	Washer	Depending on the type

2.3 Knife attachment



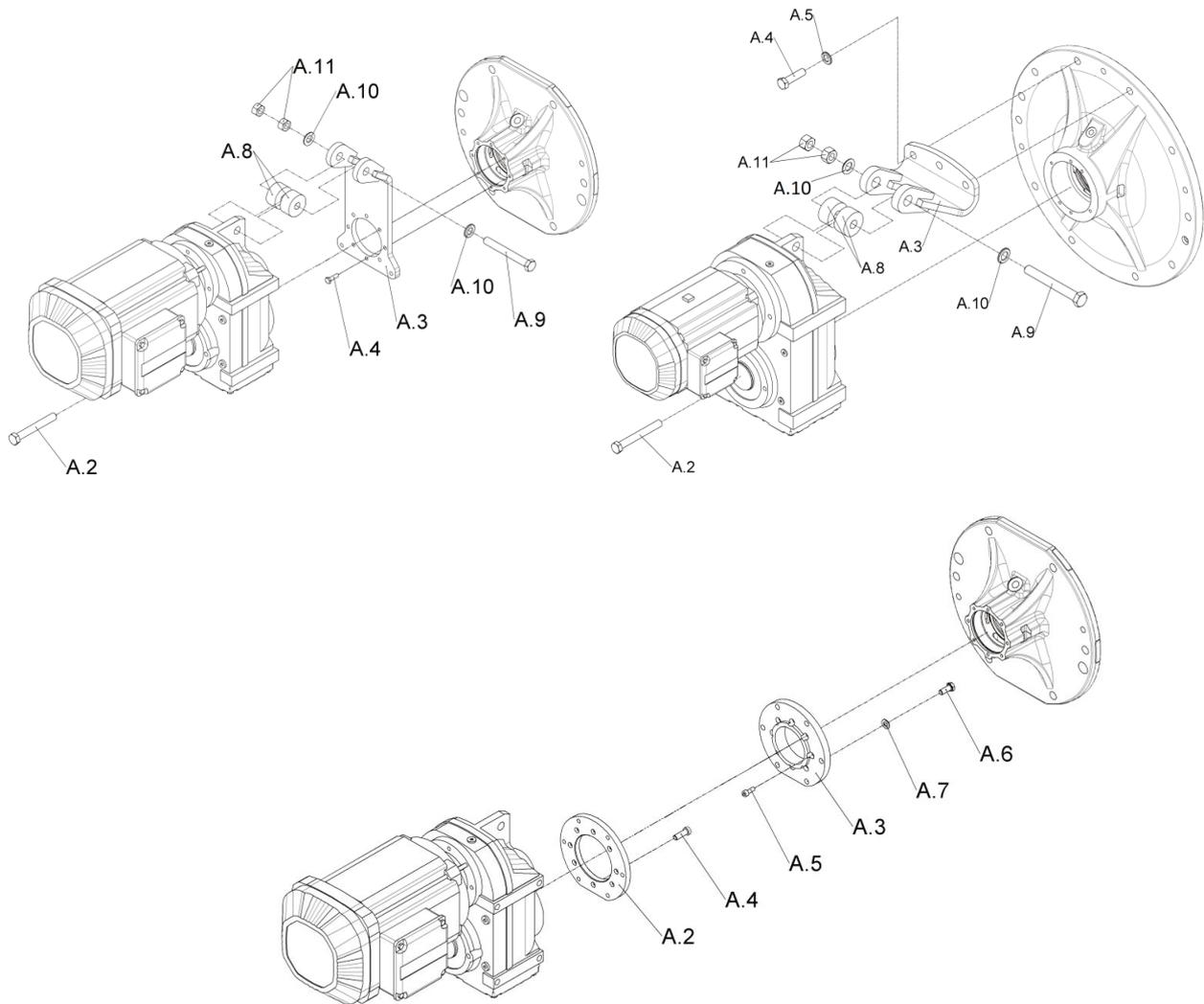
Item	Name	Pieces/device
E	Knife attachment (option)	
	Housing	
E.1	Knife	Depending on the type and size
E.2	Washer	Depending on the type and size
E.3	Hexagon bolt	Depending on the type and size
	Rotor	
E.4	Knife	Depending on the type and size
E.5	Cap nut	Depending on the type and size
E.6	Washer	Depending on the type and size
E.7	Adhesive, Permabond ET5147	1

2.4 Motor attachment – chain drive



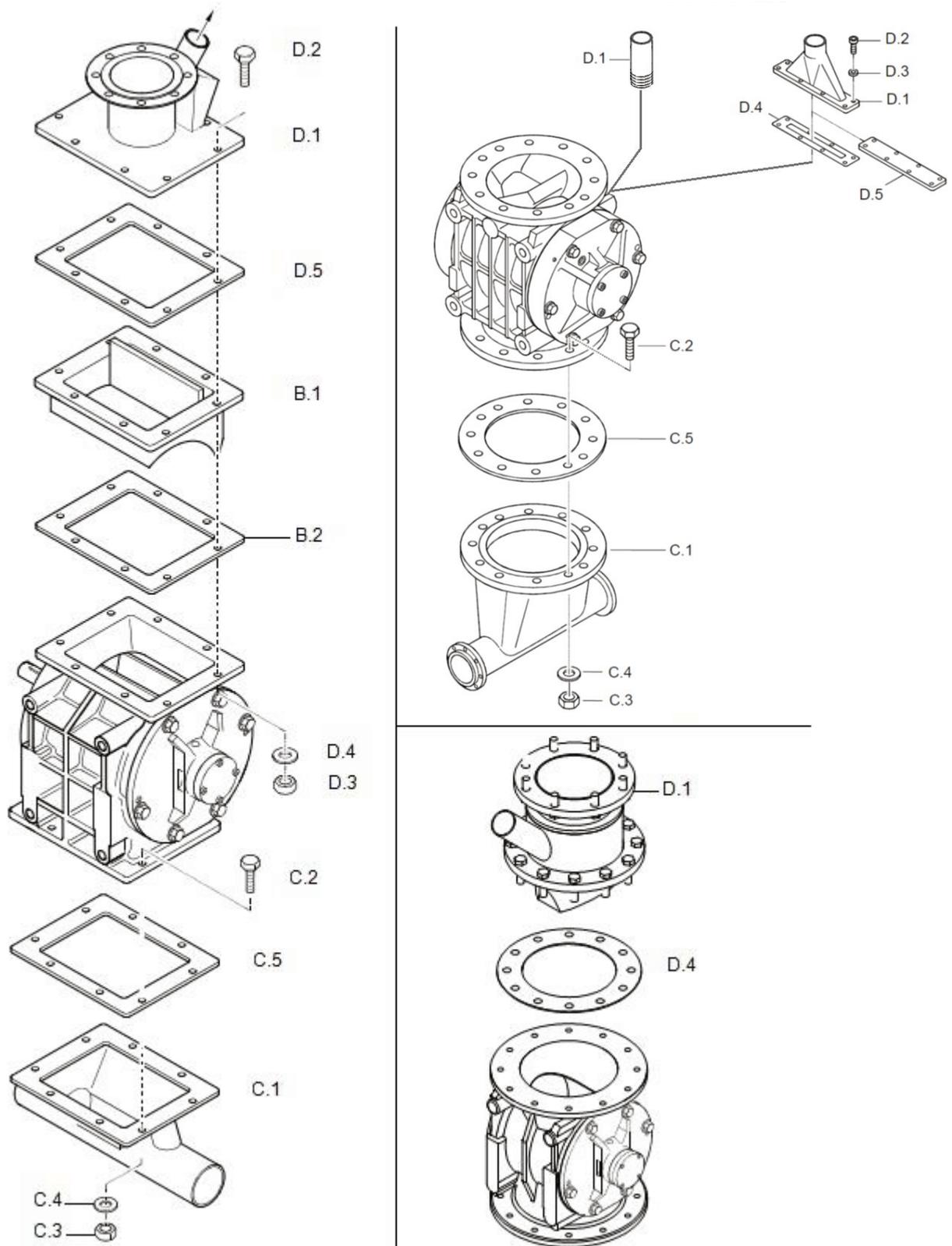
Item	Designation	DIN	Quantity/unit
A	Drive		
	Geared motor with chain drive		
A.1	Motor plate	-	1
A.2	Chain guard complete	-	1
A.3	Threaded rod	-	4
A.4	Hexagon nut	ISO 4032	12
A.5	Hexagon bolt	ISO 4017	4
A.6	Hexagon nut	ISO 4032	4
A.7	Washer	ISO 7090	8
A.10	Geared motor	-	1
A.12	Motor sprocket wheel	-	1
A.13	Rotary valve sprocket wheel	-	1
A.14	Chain	8187	1
A.15	Shackle type connector	-	1
A.20	Hexagon bolt	ISO 4017	2
A.21	Washer	ISO 7090	2
A.22	Hexagon bolt	ISO 4017	2
A.23	Hexagon nut	ISO 4032	2
A.24	Washer	ISO 7090	2
A.25	Grommet	-	1

2.5 Motor attachment – direct drive



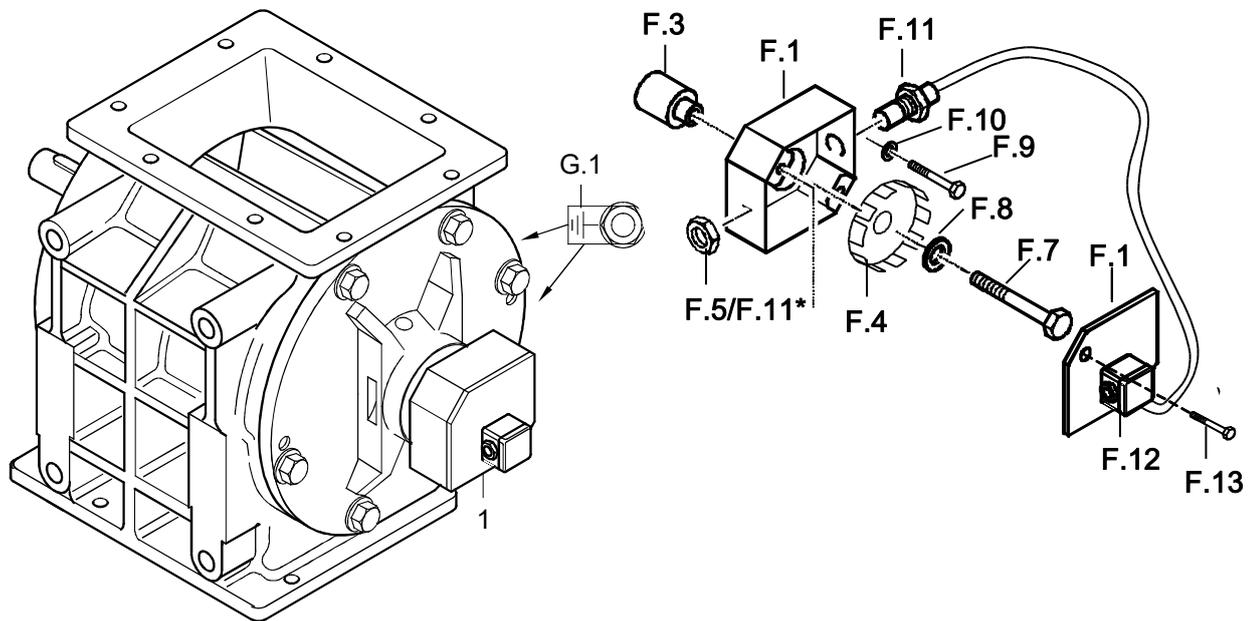
Item	Name	Pieces/device
A	Drive system	
	Gear motor with direct drive “.1” version	
A.2	Hexagon bolt	1
A.3	Torque support	1
A.4	Hexagon bolt	Depending on the size
A.5	Washer	Depending on the size
A.8	Rubber block support	2
A.9	Hexagon bolt	1
A.10	Washer	2
A.11	Hexagon nut	2
	Gear motor with direct drive, “.2/.3” version	
A.2	Flange, gear motor	1
A.3	Flange, side cover	1
A.4	Cylinder head bolt	Depending on the size
A.5	Cylinder head bolt	Depending on the size
A.6	Hexagon bolt	Depending on the size
A.7	Washer	Depending on the size

2.6 Leakage gas deduction and/ or pick-up tee



Item	Designation	DIN	Quantity/unit
B	INLET PLATE		
B.1	Powder inlet plate	-	1
B.2	Gasket	-	1
C	PICK_UP TEE		
	Type ZK_		
C.1	Pick-up tee	-	1
C.2	Hexagon bolt	ISO 4017	Depending on type
C.3	Hexagon nut	ISO 4032	Depending on type
C.4	Washer	ISO 7090	Depending on type
C.5	Gasket	-	1
	Type ZP_ / ZG_ / ZV_ / ZR_		
C.1	Pick-up tee	-	1
C.2	Hexagon bolt	ISO 4017	Depending on type
C.3	Hexagon nut	ISO 4032	Depending on type
C.4	Washer	ISO 7090	Depending on type
C.5	Gasket	-	1
D	GAS VENTING DEVICE/ GAS LEAKAGE CONNECTION		
D.1	Gas venting device ZDD / ZK_	-	1
D.2	Hexagon bolt	ISO 4017	Depending on type
D.3	Hexagon nut	ISO 4032	Depending on type
D.4	Washer	ISO 7090	Depending on type
D.5	Gasket	-	1
D.1	Gas leakage connection ZG_ / ZV_		1
D.2	Cylinder head screw	ISO 4762	Depending on type
D.3	Washer	ISO 7090	Depending on type
D.4	Gasket		1
D.5	Blank flange		1
D.1	Gas leakage connection ZP_		1
D.2	Hexagon bolt	ISO 4017	Depending on type
D.3	Washer	ISO 7090	Depending on type
D.4	Gasket		1
D.5	Blank flange		1

2.7 Speed monitor, non-driven end



Item	Designation	DIN	Quantity/unit
F	SPEED MONITOR		
	Non-driven end		
F.1	Housing	-	1
F.3	Centring bush	-	1
F.4	Speed indicator	-	1
F.5	Safety washer	93	1
F.7	Hexagon bolt	ISO 4017	1
F.8	Washer	9021	1
F.9	Hexagon bolt	ISO 4017	2
F.10	Washer	ISO 7090	2
F.11	Proximity switch	-	1
F.12	Terminal box	-	1
F.13	Cylinder head screw	ISO 4762	2
G	EARTHING		
G.1	Earthing screw, complete		2

2.8 RotorCheck 5.0

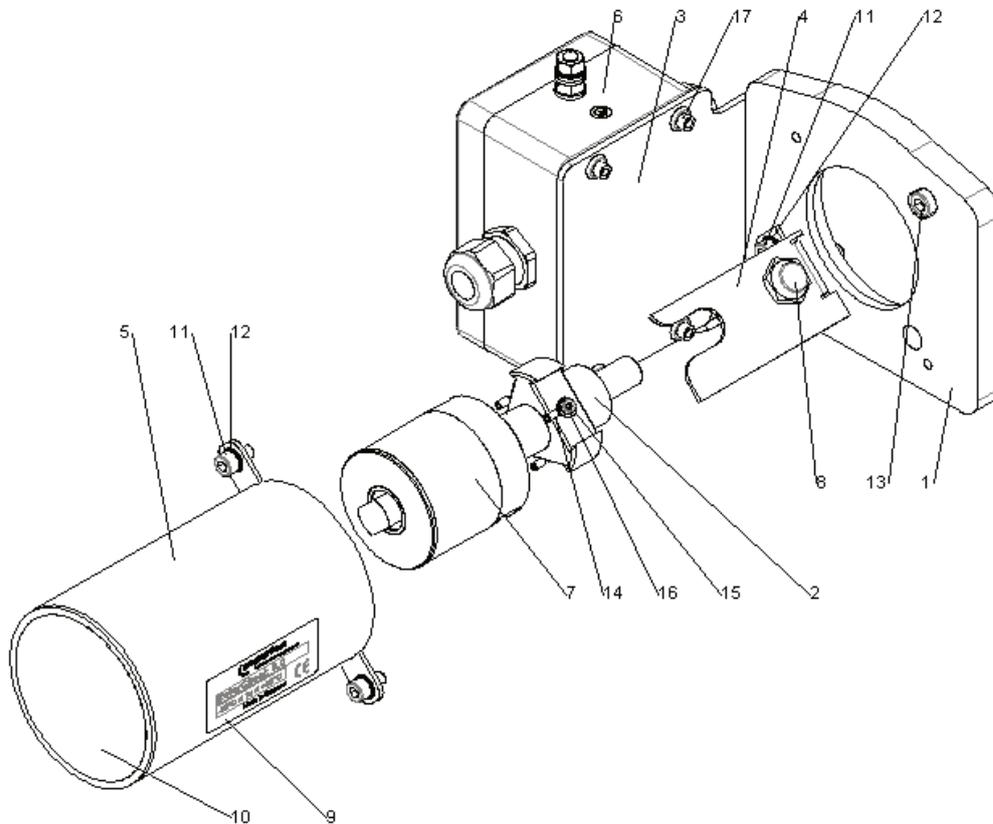


Figure 2.1:

Item	Name	Pieces/device
1	Base plate	1
2	Adapter shaft	1
3	Retaining plate	1
4	Retaining bracket	1
5	Cover	1
6	Terminal box	1
7	Wound rotor	1
8	Limit switch	1
9	Type decal	1
10	Warning decal	1
11	Bolt	6
12	Washer	6
13	Bolt	2
14	Terminal lug	3
15	Bolt	3
16	Toothed washer	3
17	Blind rivet nut	4
18	Ground connection	1
19	Retaining ring	1
20	Bolt	1

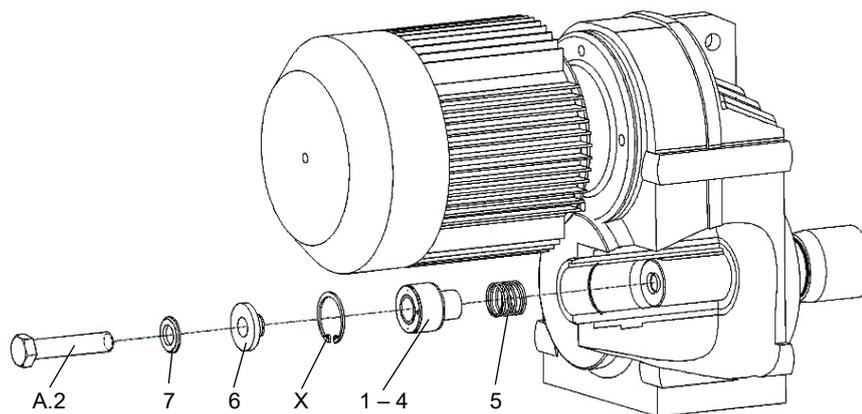


Figure. 2.2:

Item	Name	Pieces/device
1/6	Ground connection	1
X	Retaining ring	1
A.2	Bolt	1
7	Washer	1

3 Appendix

3.1 Tightening torques

If no other data are provided, all fittings on the components must be tightened as per the following tables with due consideration given to the permissible mounting flanges:

Property class (bolt head)	Bolt size										
	M6	M8	M10	M12	M14	M16	M20	M24	M27	M30	M33
	Channel hole [mm]										
	6,4-7	8,4-10	10,5-12	13-14,5	15-16,5	17-18,5	21-24	25-28	28-32	31-35	34-38
Tightening torque M_a [Nm]											
5.6	4	15	21	36	57	90	176	302	446	610	815
8.8	9	23	45	77	122	192	375	645	951	-	-
10.9	14	33	66	114	179	282	551	947	1397	-	-
A2/A4 – 70	6	14	28	48	76	119	233	402	-	-	-
A2/A4 – 50	-	-	-	-	-	-	-	187	275	271	503

5.6 - 10.9: with washer, dry and zinc plated; A2/A4 – XX: with washer, greased

Property class (bolt head)	Bolt size									
	-	-	-	-	5/8"	3/4"	7/8"	1"	1 1/4"	
	Channel hole [mm]									
	-	-	-	-	17-19,1	20-22,2	23,2-25,4	26,4-28,6	32,8-34,9	
Tightening torque M_a [Nm]										
ASTM A 193 B7	-	-	-	-	291	418	679	1015	1827	
18 – 8	-	-	-	-	79	139	224	335	665	

ASTM A 193 B7: with washer, dry and zinc plated; 18 – 8: with washer, greased



Information

The tightening torques given in the tables above must not be exceeded.

3.2 Settings, fixed end gap S_{AF}

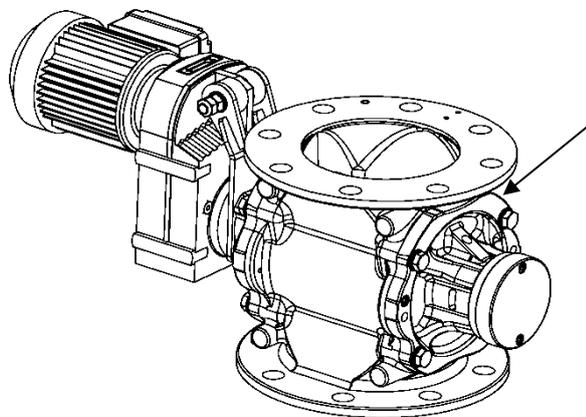
Size	Axial gap, fixed bearing side Rotor Z_D, Z_X S_{AF} [mm] $\leq 60^{\circ}\text{C}$ *
150	0.06-0.13
200	0.07-0.15
250	0.07-0.15
320	0.08-0.16
400	0.09-0.17
480	0.10-0.19
550	0.12-0.21
630	0.13-0.23
700	0.15-0.25
800	0.17-0.27

* Allowed product temperature



Information

If the product temperature is different, contact the manufacturer!



S_{AF} = Axial gap – fixed bearing side
Gap specification between the side cover and the rotor