

Maintenance Guide

COMPABLOC 3000

Reference: 5060 en - 2019.09 / e

LEROY-SOMERTM

This document is an addition to the general manual ref. 2557 (recommendations), ref. 3711, ref. 3804 (Atex specific recommendations), and manual ref. 3520 (Compabloc 3000 installation).

NOTE

Nidec Leroy-Somer gives no contractual guarantee whatsoever concerning the information published in this document and cannot be held responsible for any errors it may contain, nor for any damage resulting from its use.

CAUTION



The specifications, instructions and descriptions are for standard operation. They do not take account of structural variants or special adaptations. Failure to comply with these recommendations may lead to premature deterioration of the gearbox and voiding of the manufacturer's guarantee.

Despite all the care taken in the manufacture and checking of this equipment, Nidec Leroy-Somer cannot guarantee that lubricant will not escape during the product's lifetime. If slight leaks could have serious consequences for the safety of people and property, the installer and user should take all necessary precautions to avoid such consequences.

CONTENTS

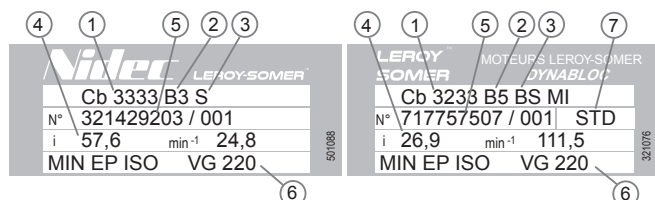
1 - HOW TO ORDER	3
2 - INSTRUCTIONS FOR DISMANTLING AND REBUILDING	3
2.1 - Dismantling.....	3
2.2 - Rebuilding.....	3
3 - EXPLODED VIEWS - PARTS LIST	4
3.1 - Compabloc multistage	4
3.1.1 - Compabloc multistage exploded views:.....	4
3.1.2 - Cb 30xx to Cb 38xx parts list.....	5
3.2 - Compabloc 1 stage	6
3.2.1 - Exploded views: Cb 30 to Cb 3531	6
3.2.2 - Compabloc 1 stage parts list: Cb 3031 to Cb 3531	6
3.3 - Input shaft AP and input shaft with AD backstop.....	7
3.3.1 - Exploded views AP and AP-AD.....	7
3.3.2 - Parts list AP and AP-AD	7
3.4 - MU universal mounting and universal mounting with AD backstop.....	8
3.4.1 - MU and MU-AD exploded views	8
3.4.2 - MU and MU-AD universal mounting parts list	9
3.5 - Motor MI, IM-B5, MI-IM-B5.....	10
3.5.1 - Motor exploded views.....	10
3.5.2 - Motor parts list.....	10
3.6 - MI integral motor with AD backstop	11
3.6.1 - Motor exploded views MI-AD for Cb 30 to 35	11
3.6.2 - Motor parts list MI-AD for Cb 30 to 35	11
3.6.3 - Method for reversing the direction of rotation of AD*	11
3.6.4 - Motor exploded views MI-AD for Cb 36 to 38	12
3.6.5 - Motor parts list MI-AD for Cb 36 to 38*	12

1 - HOW TO ORDER

Necessary information:

a) from the gearbox nameplate

- 1 - gearbox model and size
- 2 - operating position
- 3 - fixing type (S with foot, BS, BDN or BT...)
- 4 - exact reduction
 - possible options
- 5 - serial number
- 6 - lubricant
- 7 - backlash: Standard (DYNABLOC).



b) from the appropriate part list

- part description and item number.

c) Where a motor is fitted to the gearbox, from the motor nameplate

(for the motor: see the corresponding manual)

- motor type
- No. of poles (or speed in min⁻¹)
- power in kW (or N.m).

Caution: the motor requires a special shaft and flange for integral mounting (MI) with the gearbox.

2 - INSTRUCTIONS FOR DISMANTLING AND REBUILDING

2.1 - Dismantling

- Remove the geared motor from the machine.
- Drain the gearbox.
- Remove the motor (undo the nuts 184 on motor side).
- Dismantle the gearbox.



Utilisation of appropriate tools (hub-puller, bearing-puller, mallets, adjustable spanners, circlips pliers, assorted screwdrivers, taps and dies, press...) as well as applying our rigorous procedures (M32 S244 §9 for gearbox and T32 S69 §4 for Universal mounting) the intervention of an authorised Nidec Leroy-Somer Service Centre will be required to maintain the original high performance of the drive system.

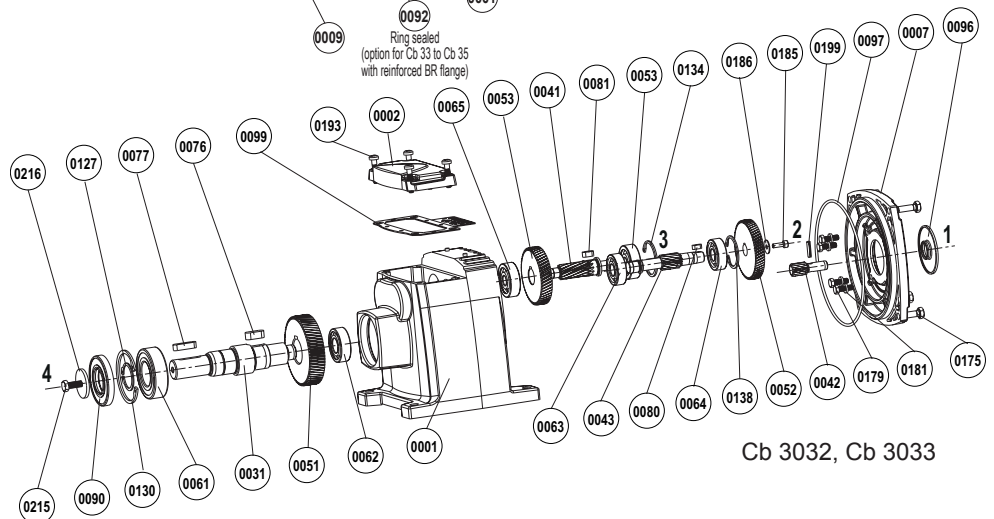
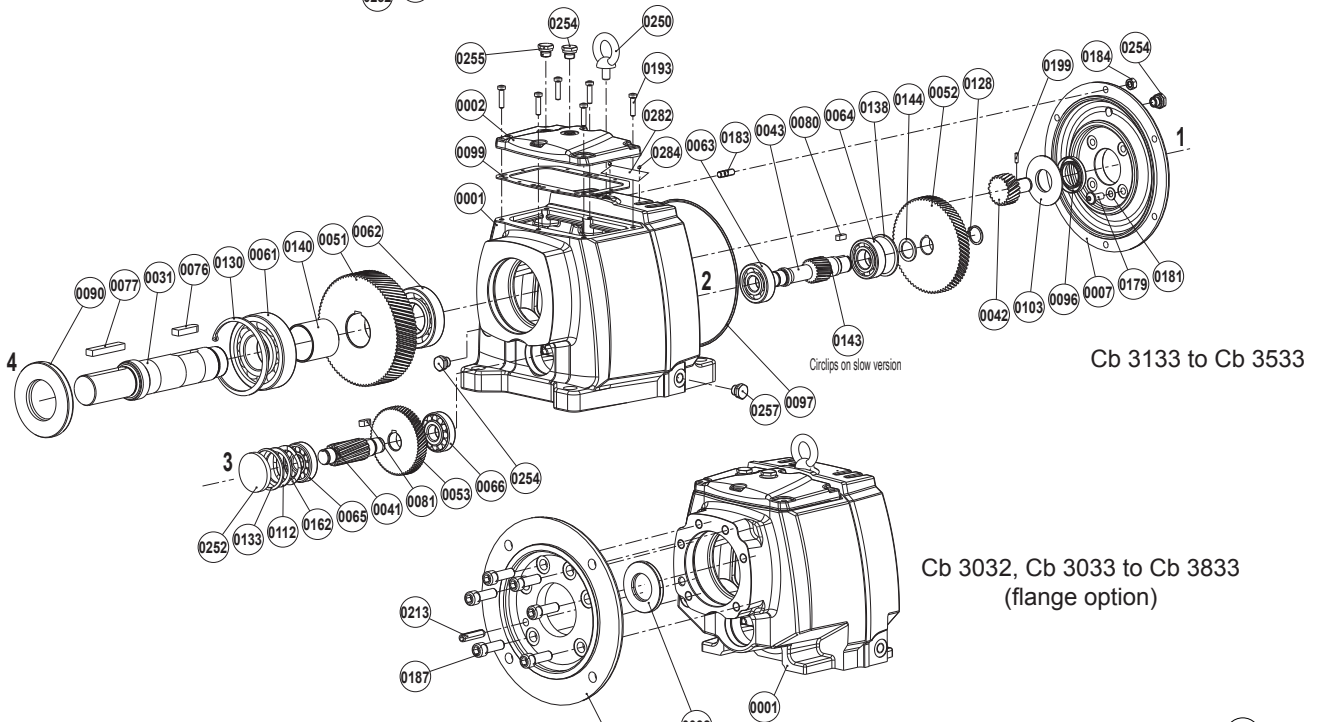
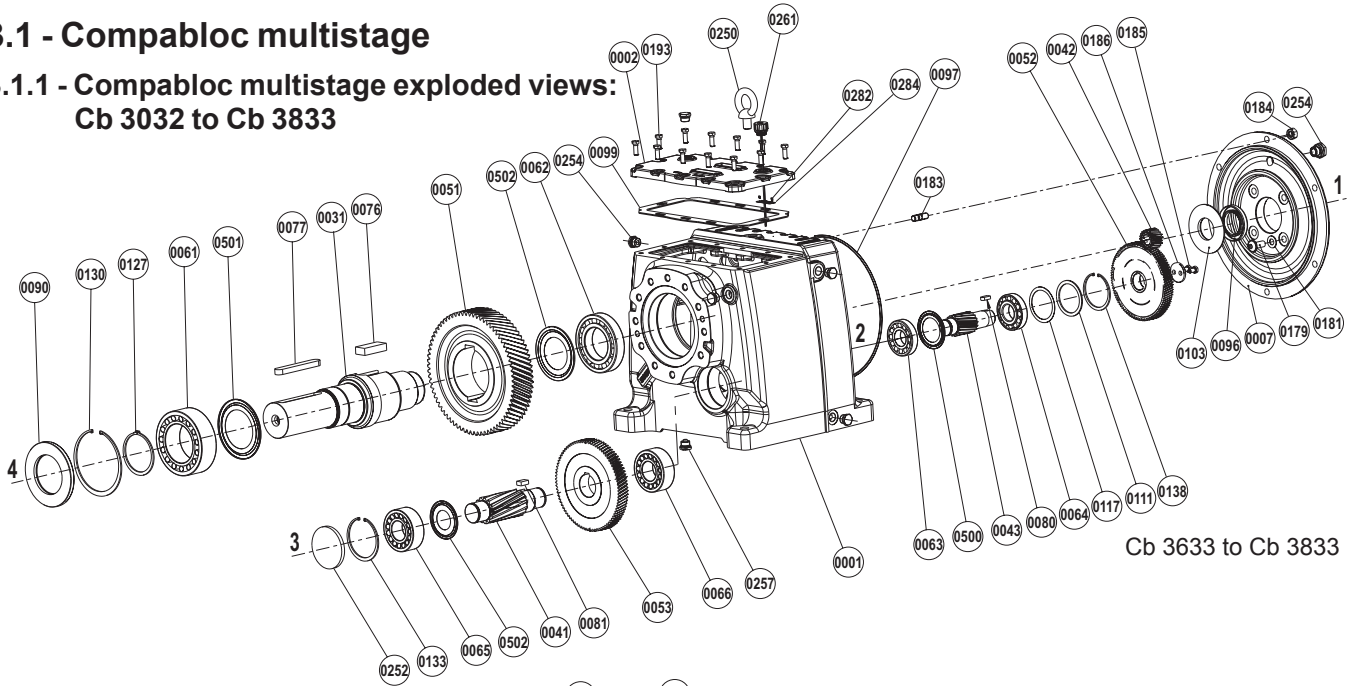
2.2 - Rebuilding

- Proceed in the reverse order to dismantling.
- Oil the lip-seals ; they must be fitted very carefully so as to avoid damage to the running seal area ; the use of protection sleeves is recommended to cover the sharp edges of shaft keyways.
- Nuts must be fixed with medium strength anaerobic adhesive.
- Re-fit the O-rings, checking that they are positioned correctly.
- Fill with oil up to the appropriate level (see § 6).
- Turn the shaft to check that the box is functioning satisfactorily before finally mounting it in position.

3 - EXPLODED VIEWS - PARTS LIST

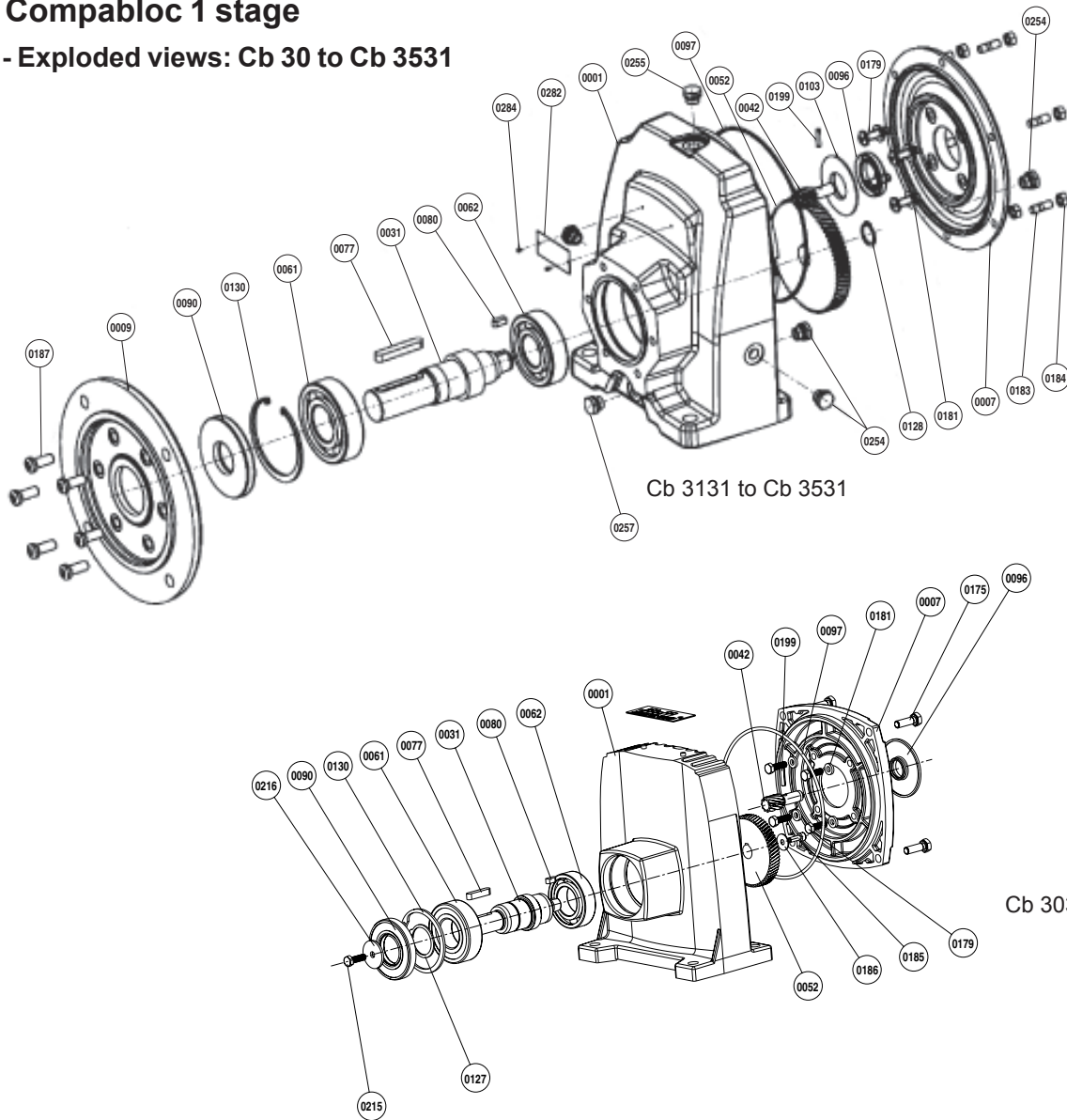
3.1 - Compabloc multistage

3.1.1 - Compabloc multistage exploded views: Cb 3032 to Cb 3833



3.2 - Compabloc 1 stage

3.2.1 - Exploded views: Cb 30 to Cb 3531



3.2.2 - Compabloc 1 stage parts list: Cb 3031 to Cb 3531

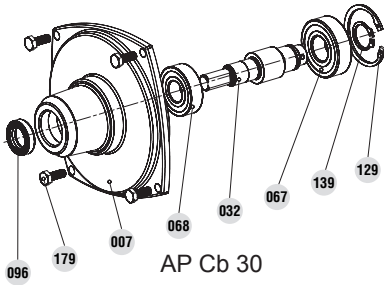
Rep	Description	Compabloc						Rep	Description	Compabloc					
		3031	3131	3231	3331	3431	3531			3031	3131	3231	3331	3431	3531
0001	Housing	1	1	1	1	1	1	0130	Bearing circlips (rep.61)	1	1	1	1	1	1
0007	Face-plate	1	1	1	1	1	1	0175	Screw for face-plate	4	4	5	0	0	0
0009	Built-up flange	1	1	1	1	1	1	0179	Screw face-plate	4	4	4	4	4	4
0031	Output shaft	1	1	1	1	1	1	0181	Screw washer (rep.179)	4	4	4	4	4	4
0042	Pinion GV	1	1	1	1	1	1	0183	Gearbox input fixing stud	4	4	4	6	4	8
0052	Wheel GV	1	1	1	1	1	1	0184	Stud nut (rep.183)	4	4	4	6	4	8
0061	Bearing front	1	1	1	1	1	1	0185	Washer GV wheel	1	0	0	0	0	0
0062	Bearing back	1	1	1	1	1	1	0186	Screw washer	1	0	0	0	0	0
0077	Output shaft key (rep.31)	1	1	1	1	1	1	0187	Fixing screw (rep.9)	4	4	4	6	6	6
0080	Wheel key (rep.52)	1	1	1	1	1	1	0193	Cover fixing screw (rep.2)	4	4	4	4	6	6
0090	Ring seal	1	1	1	1	1	1	0199	Pin GV pinion (rep.42)	1	1	1	1	1	1
0092	Ring sealed reinforced (option)	0	1	1	1	1	1	0213	Flange pin (rep.9)	0	1	1	1	1	1
0096	Ring seal	1	1	1	1	1	1	0250	Lifting ring	0	1	1	1	1	1
0097	Input O-ring seal	1	1	1	1	1	1	0254	Plug E-R/N/V*	1	4	4	4	4	3
0103	Oil deflector	0	1	1	1	1	1	0255	Breather plug	0	1	1	1	1	1
0105	Lifting ring seal	0	1	1	1	1	1	0257	Drain plug	0	1	1	1	1	1
0127	Bearing circlips	1	0	0	0	0	0	0282	Name plate	1	1	1	1	1	1
0128	Stop circlips wheel GV	0	1	1	1	1	1	0284	Nameplate rivets (rep.282)	0	2	2	2	2	2

*E-R/N/V : Breather-Filling/Level/Draining plugs

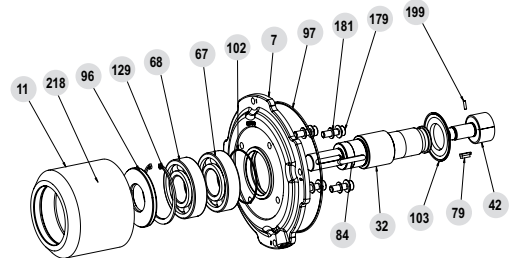
Rep n Maintenance parts

3.3 - Input shaft AP and input shaft with AD backstop

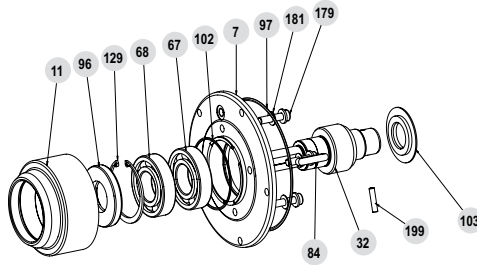
3.3.1 - Exploded views AP and AP-AD



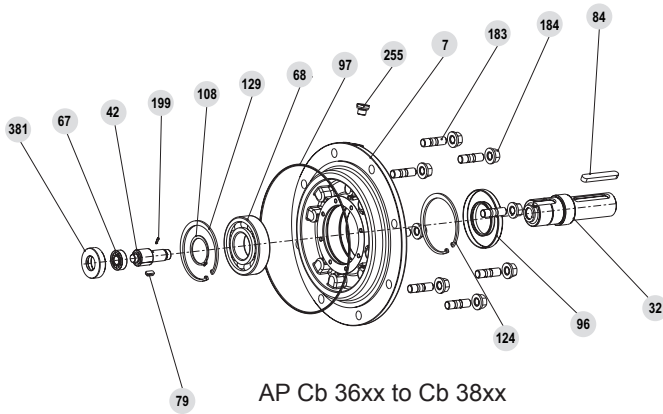
AP Cb 30



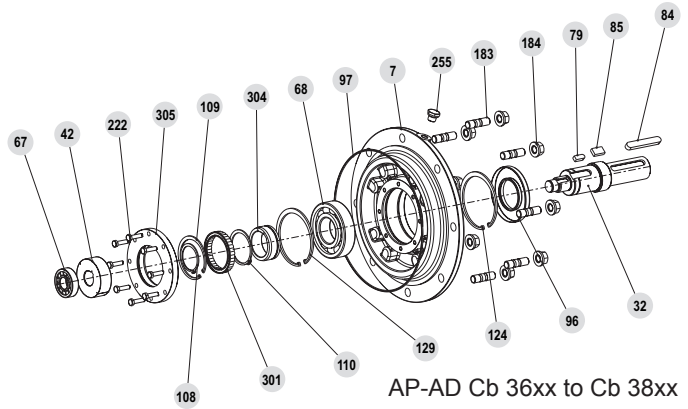
AP Cb 34xx, Cb 35xx



AP Cb 31xx, Cb 32xx, Cb 33xx



AP Cb 36xx to Cb 38xx



AP-AD Cb 36xx to Cb 38xx

3.3.2 - Parts list AP and AP-AD

Rep	Description	Compabloc					Rep	Description	Compabloc					
		30	31-32-33	34	35	36/37/38			30	31-32	33	34	35	36/37/38
7	Face-plate	1	1	1	1	1	139	Bearing circlips back	1	1	1	1	1	1
11	AP shield	0	1	1	1	1	149	Stop circlips (rep.304 s32)	0	0	0	0	0	1
32	Input shaft AP and MU axis 1	1	1	1	1	1	179	Screw face plate	4	4	4	4	4	4
42	Pinion GV	0	1	1	1	1	181	Screw washer (rep.179)	0	4	4	4	4	4
67	Bearing axis 1 gearbox side	1	1	1	1	1	183	Input gearbox fixing stud	4	4	6	4	8	8
68	Bearing axis 1 motor side	1	1	1	1	1	184	Stud nut (rep.183)	4	4	6	4	8	8
79	Stop piece (rep.42)	0	1	1	1	1	199	GV pinion pin (rep.42)	1	1	1	1	1	1
84	AP shaft key	0	1	1	1	1	218	Grease nipple ¹ (rep.11)	0	0	0	1	1	0
96	Ring seal	1	1	1	1	1	220	Screw for pinion (MI h32)	0	0	0	1	1	1
97	O-ring axis 1 input face plate	0	1	1	1	1	222	Screw for ring AD back	0	0	0	1	1	1
102	"U" mounting O-ring	0	1	1	1	1	254	E-R/N/V ² plug	0	0	0	0	1	0
103	Oil deflector	0	1	1	1	0	255	Breather plug	0	1	1	1	1	1
108	Stop circlips (rep.301 s32)	0	0	0	0	1	287	INA ring for ring seal	0	0	0	0	0	1
109	Stop circlips front (rep.301 s32)	0	0	0	0	1	301	AD	0	0	0	0	0	1
110	Stop circlips back (rep.301 s32)	0	0	0	0	1	304	Ring front (rep.301)	0	0	0	0	0	1
124	Stop circlips	0	0	0	0	1	305	Ring back (rep.301)	0	0	0	0	0	1
129	Bearing circlips front	1	1	1	1	1	381	Endshield axis 1	0	0	0	0	0	1

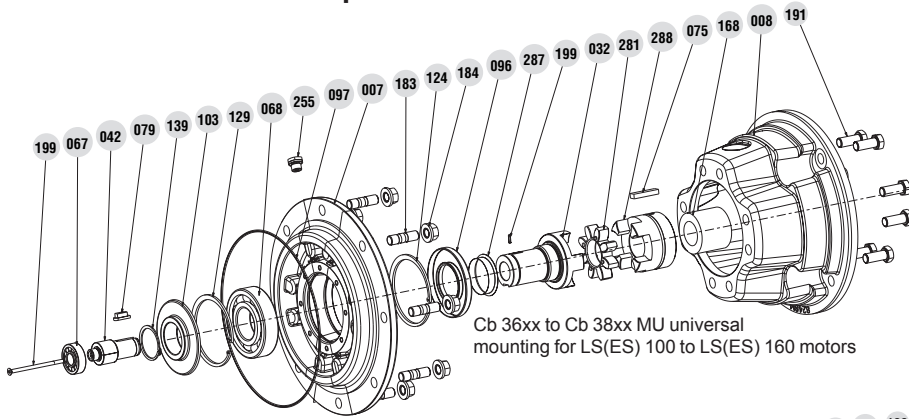
1. See § 2 ref.3520.

Rep n AP maintenance parts

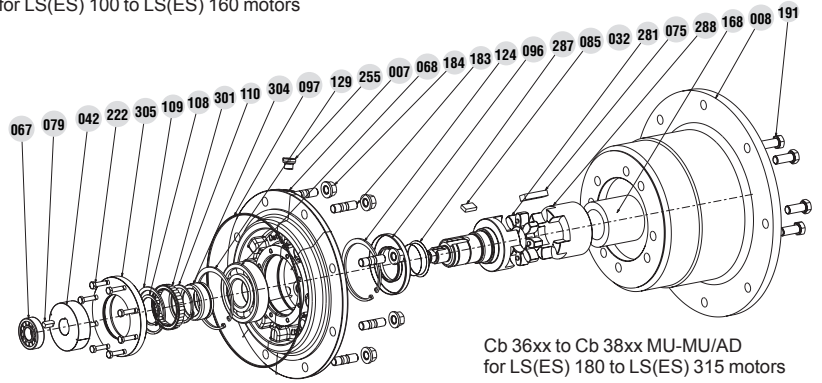
2. E-R/N/V : Breather-Filling/Level/Draining plugs

3.4 - MU universal mounting and universal mounting with AD backstop

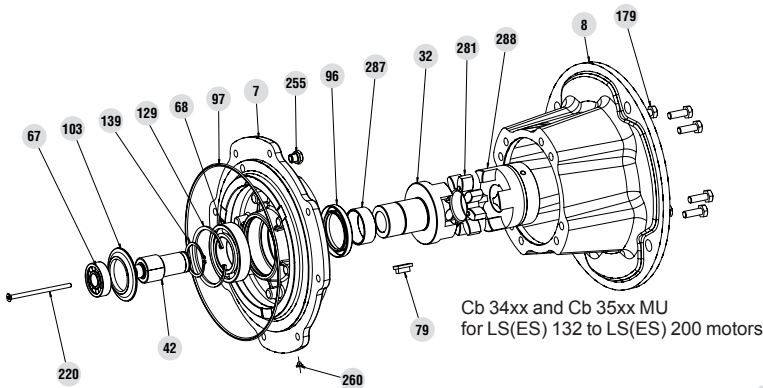
3.4.1 - MU and MU-AD exploded views



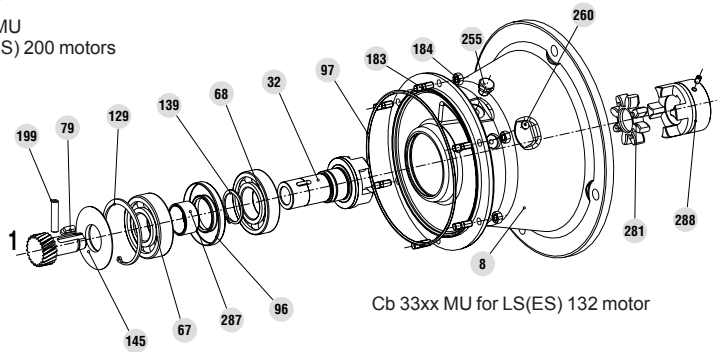
Cb 36xx to Cb 38xx MU universal mounting for LS(ES) 100 to LS(ES) 160 motors



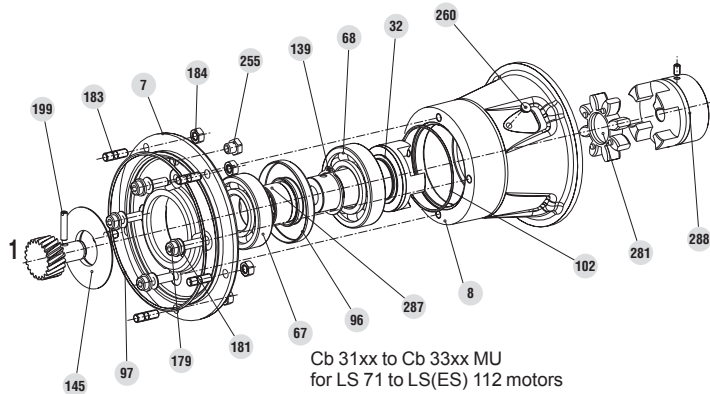
Cb 36xx to Cb 38xx MU-MU/AD for LS(ES) 180 to LS(ES) 315 motors



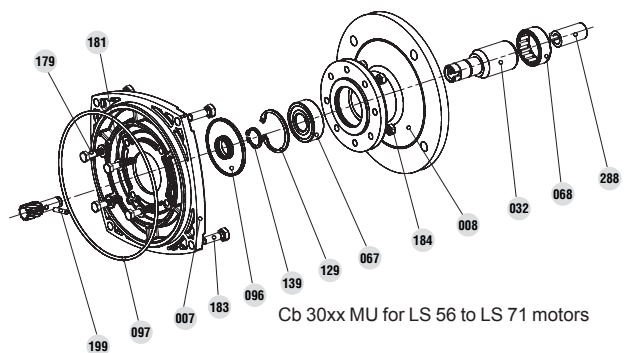
Cb 34xx and Cb 35xx MU for LS(ES) 132 to LS(ES) 200 motors



Cb 33xx MU for LS(ES) 132 motor



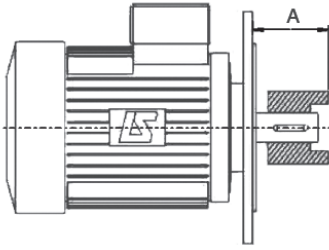
Cb 31xx to Cb 33xx MU for LS 71 to LS(ES) 112 motors



Cb 30xx MU for LS 56 to LS 71 motors

EXPLODED VIEWS - PARTS LIST

Dimension A must be kept according to the table below for Cb 31 to Cb 35 ; you can measure it between the flange face of the motor and the end of the coupling. Cb 36 to Cb 38: mounting with distance piece (rep.168).



Size	Motor Flange	Shaft Ø	A value (mm)			
			Cb 31 / 32xx ¹	Cb 33xx	Cb 34xx	Cb 35xx
LS 71	F 130	14x30	52.5	52.5	52.5	-
LS 71	F 130	19x40	52.5	52.5	52.5	-
LSES 80	F 165	19x40	60.5	60.5	60.5	60.5
LSES 90	F 165	24x50	60.5	60.5	60.5	60.5
LSES 100	F 215	28x60	74.5	74.5	74.5	74.5
LSES 112	F 215	28x60	74.5	74.5	74.5	74.5
LSES 132	F 265	38x80	-	96.5	97.5	96.5
LSES 160	F 300	42x110	-	-	130.5	130.5
LSES 180	F 300	48x110	-	-	130.5	130.5
LSES 200	F 350	55x110	-	-	130.5	130.5

¹. MU before 09/2012

3.4.2 - MU and MU-AD universal mounting parts list

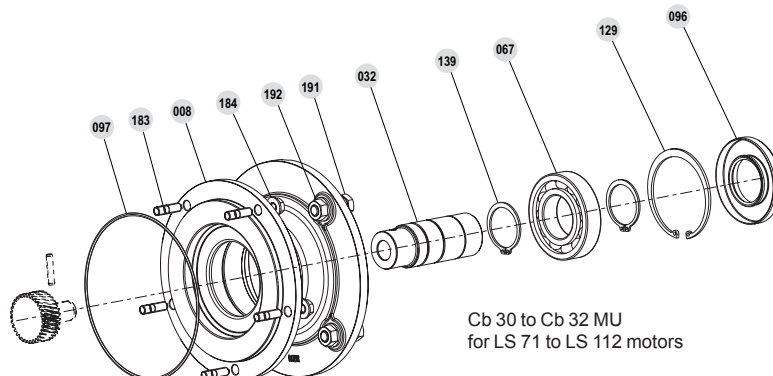
Rep	Description	LS 56-63	LS 71 ¹	LS 71	LS(ES) 80	LS(ES) 90	LS(ES) 100-112	LS(ES) 132	LS(ES) 160	LS(ES) 180	LS(ES) 200	LS(ES) 225	LS(ES) 250 to 315
		Qty	Qty	Qty	Qty	Qty	Qty	Qty	Qty	Qty	Qty	Qty	Qty
7	Face plate	1	1	1	1	1	1	1	1	1	1	1	1
8	"U" mount housing	1	1	1	1	1	1	1	1	1	1	1	1
32	Input shaft MU axis 1	1	1	1	1	1	1	1	1	1	1	1	1
67	Bearing axis 1 gearbox side	1	1	1	1	1	1	1	1	1	1	1	1
68	Bearing axis 1 motor side	1	1	1	1	1	1	1	1	1	1	1	1
75	MU coupling key (rep.288)	0	0	0	0	0	0	0	0	0	0	1	1
79	Stop-piece (rep.42)	0	0	0	0	0	0	0	0	0	0	1	1
85	Key (rep.301)	0	0	0	0	0	0	0	0	0	0	1	1
96	Ring seal	1	1	1	1	1	1	1	1	1	1	1	1
97	O-ring axis 1 input face plate	1	1	1	1	1	1	1	1	1	1	1	1
102	"U" mounting O-ring	0	0	1	1	1	1	0	0	0	0	1	1
103	Oil deflector	0	0	1	1	1	1	1	1	1	1	1	1
108	Stop circlips (rep.301 s32)	0	0	0	0	0	0	0	0	0	0	1	1
109	Stop circlips front (rep.301 s32)	0	0	0	0	0	0	0	0	0	0	1	1
110	Stop circlips back (rep.301 s32)	0	0	0	0	0	0	0	0	0	0	1	1
124	Stop circlips	0	0	0	0	0	0	0	0	0	0	1	1
129	Bearing circlips front	1	1	0	0	0	0	1	1	1	1	1	1
139	Bearing circlips back	1	1	1	1	1	1	1	1	1	1	1	1
145	GV shaft deflector	0	0	1	1	1	1	1	1	1	1	1	1
168	Distance piece (rep.288)	0	0	0	0	0	1	1	1	1	1	1	1
179	Screw face plate	4	4	4	4	4	4	4	4	4	4	4	4
181	Screw washer (rep.179)	4	4	4	4	4	4	4	4	4	4	4	4
183*	Input fixing stud	*	*	*	*	*	*	*	*	*	*	*	*
184*	Stud nut	*	*	*	*	*	*	*	*	*	*	*	*
191	Fixing screw MU	0	0	4	4	4	4	4	4	4	4	4	4
192	Nut (rep.191)	0	0	4	4	4	4	4	4	4	4	4	4
199	GV pinion pin	1	1	1	1	1	1	1	1	1	1	1	1
220	Screw for pinion h32 (rep.34)	0	0	0	0	0	0	0	1	1	1	1	1
222	Screw for ring AD back	0	0	0	0	0	0	0	0	0	0	8	8
255	Breather plug	0	0	1	1	1	1	1	1	1	1	1	1
260	Blow-off plug	0	0	1	1	1	1	1	1	1	0	0	0
281	Flexible joint	0	0	1	1	1	1	1	1	1	1	1	1
287	INA ring for ring seal	0	0	1	1	1	1	1	1	1	1	1	1
288	MU coupling	1	1	1	1	1	1	1	1	1	1	1	2
290	Key	1	1	0	0	0	0	0	0	0	0	0	0
301	AD (Cb 36/37/38)	0	0	0	0	0	1	1	1	1	1	1	1
304	Ring front (rep.301)	0	0	0	0	0	1	1	1	1	1	1	1
305	Ring back (rep.301)	0	0	0	0	0	1	1	1	1	1	1	1

¹. For Cb 30

183* and 184*: quantities are direct connection with size of gearbox (see § 3.1.2)

Rep n MU maintenance parts

2012/09 : New MU, exploded view

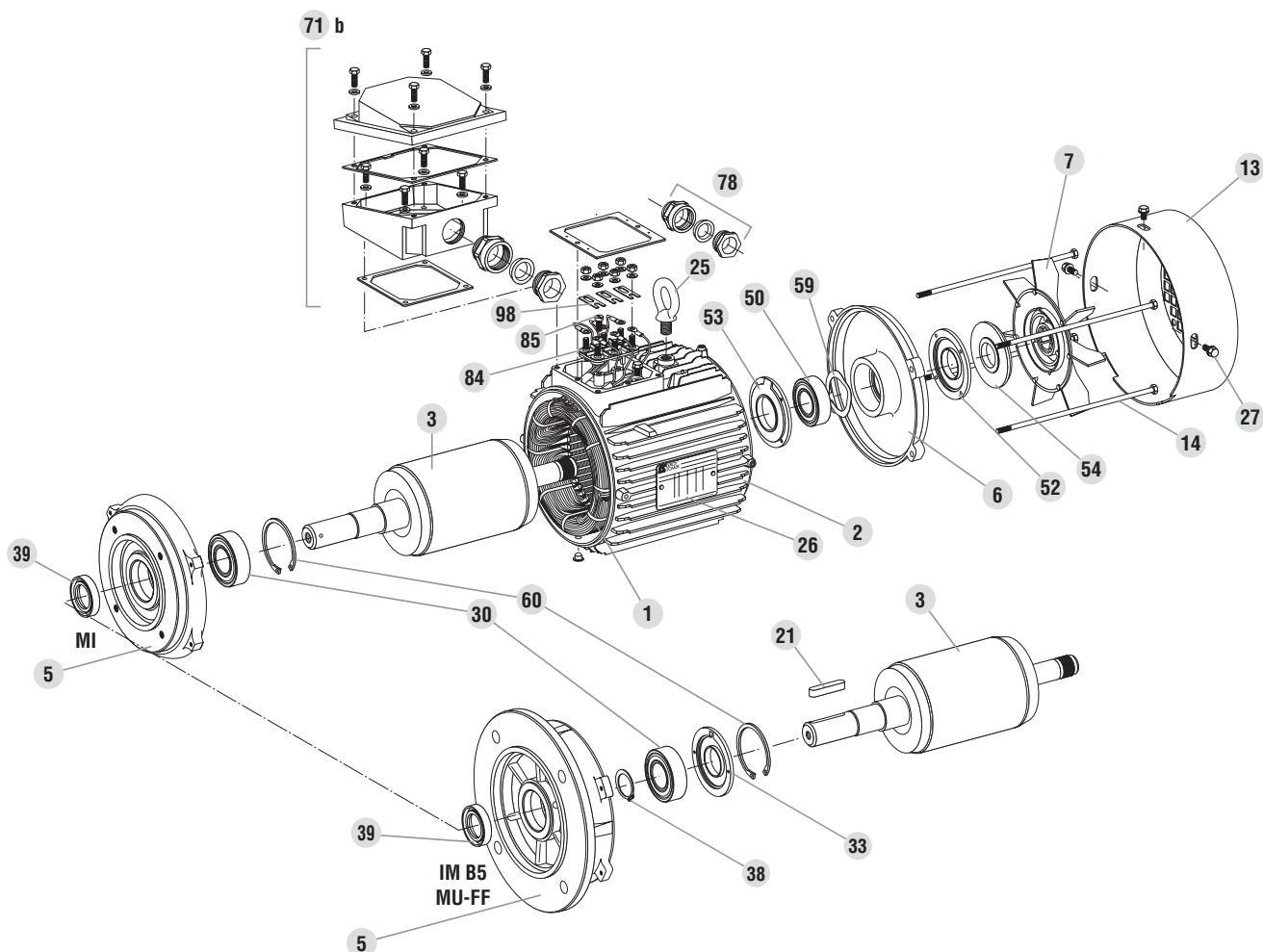


Cb 30 to Cb 32 MU
for LS 71 to LS 112 motors

3.5 - Motor MI, IM-B5, MI-IM-B5

3.5.1 - Motor exploded views

Frame size: LS 56 to LS(ES) 315



3.5.2 - Motor parts list

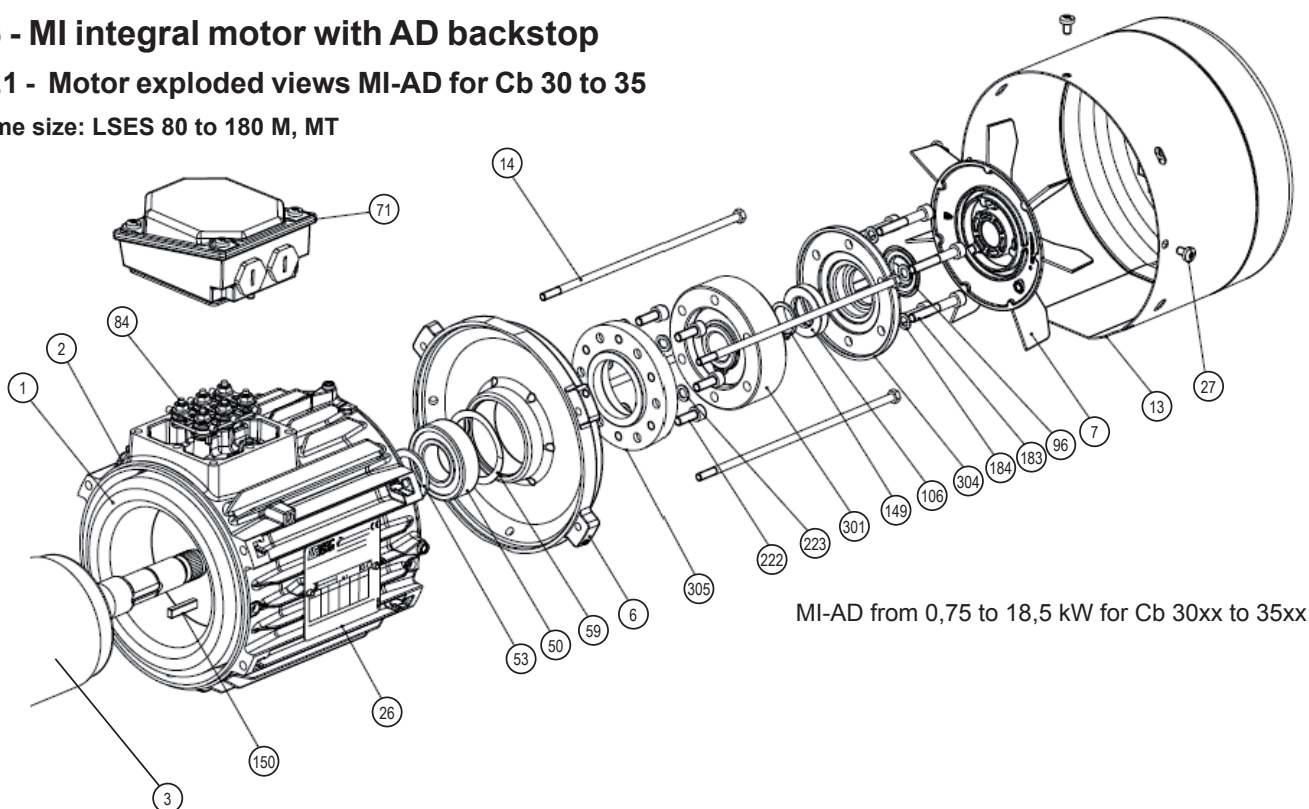
Frame size: LS 56 to LS(ES) 315

Rep.	Description	Rep.	Description	Rep.	Description
1	Wound stator	27	Coverfixing screw	53	NDE internal bearing retainer (LS[ES] 200 --> 315)
2	Housing	30	DE bearing	54	NDE seal
3	Rotor	32	DE bearing retainer (LS[ES] 315)	55	NDE fixed grease valve (LS[ES] 315)
5	Drive end shield	33	Bearing retaining plate (LS[ES] 160 --> 280)	56	NDE mobile grease valve (LS[ES] 315)
6	Non drive end shield	34	DE fixed grease valve (LS[ES] 315)	59	Preloading (wavy) washer
7	Fan	35	DE mobile grease valve (LS[ES] 315)	60	Circlips
13	Fan cover	38	Drive end bearing circlip (LS[ES] 160 --> 280)	71 b	Terminal box
14	Tie rods	39	DE seal	78	Cable gland
21	Keyway	42	Grease nipples (LS[ES] 315)	84	Terminal block
25	Lifting ring	50	NDE bearing	85	Set screw
26	Nameplate	52	NDE external bearing retainer (LS[ES] 200 --> 225 + LS[ES] 315)	98	Connector links

3.6 - MI integral motor with AD backstop

3.6.1 - Motor exploded views MI-AD for Cb 30 to 35

Frame size: LSES 80 to 180 M, MT



3.6.2 - Motor parts list MI-AD for Cb 30 to 35

Rep.	Description	Qty
1	Wound stator	1
2	Housing	
3	Rotor	1
6	Non drive end shield	1
7	Fan	1
13	Fan cover	1
14	Tie rods	3 to 4
26a	Nameplate	1
27	Coverfixing screw	3 to 4
50	NDE bearing	1
53	NDE internal bearing retainer (LS[ES] 200 --> 315)	0 to 1
59	Preloading (wavy) washer	1
71	Terminal box	1

Rep.	Description	Qty
84	Terminal block	1
96	Gamma seal	1
106	Ring seal	1
149	Circlips (rep. 301)	1
150	Key	1
183	Fixing screw (rep. 301+304/305)	6
184	Screw washer (rep. 183)	6
222	Fixing screw (rep. 305/6)	0 - 6
223	Screw washer (rep. 222)	0 - 6
301	AD	1
304	closing cover (rep. 301/305)	1
305	Face plate (rep. 301)	0 to 1

xx Rep n Maintenance part

3.6.3 - Method for reversing the direction of rotation of AD*

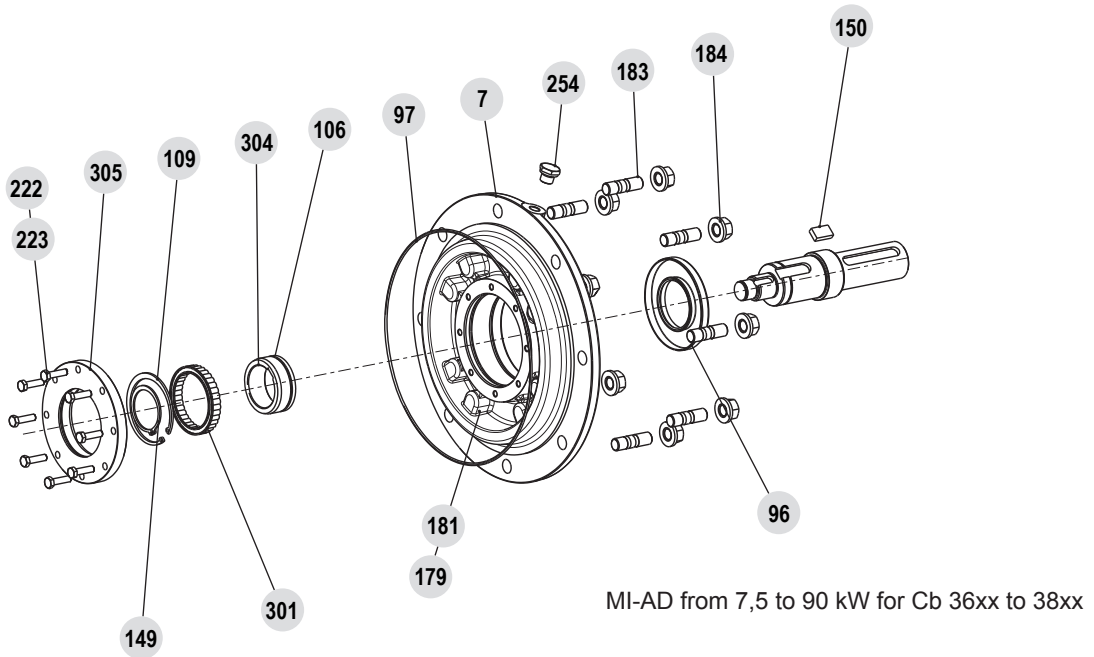
- Remove the cover 13
- Remove the fan 7, by unscrewing the central screw (or ring + screw and washer) if necessary
- Remove the Gamma seal 96
- Unscrew the 6 screws 183 from the closing cover 304, then take off the cover (the seal 106 also comes at the same time) maintaining the AD ring back on the motor shaft
- Remove the circlips 149
- Extract the inner AD 301 ring front (the AD moving parts shall remain in the ring back)
- Clean AD 301 faces, ring back 305 and cover 304
- Apply sealing paste (type: OMNIFIT 100M) in the cover socket and on the ring back
- If necessary, replace the grease contained by the ring seal 106 of the cover
- Flip the 301 assembly by 180° and reposition the wall parts on the motor shaft without forgetting the 150 key
- Ensure that the AD direction of rotation (marked with an arrow on the moving part) corresponds to the motor direction of rotation
- Replace the other parts reversing the disassembly procedure. Fit a new Gamma seal.

*Label indicating the motor shaft (or gearbox output shaft) direction of rotation



3.6.4 - Motor exploded views MI-AD for Cb 36 to 38

Frame size: LSES 132 M, MU to 280



3.6.5 - Motor parts list MI-AD for Cb 36 to 38*

Rep.	Description	Qty	Rep.	Description	Qty
7	Face plate	1	181	Screw washer (rep.179)	4
96	Ring seal	1	183	Input fixing stud	4 à 8
97	O-ring axis 1 input face plate	1	184	Stud nut (rep. 183)	4 à 8
106	Seal	1	222+223	Screw + washer (rep.305)	0 - 6+6
109	Stop circlips (rep. 301)	1	254	E-R/N/V* plug	1
149	Stop circlips (rep. 304 s32)	2	301	AD (Cb 36, 37, 38)	1
150	Key	1	304	Ring front (rep. 301)	1
179	Screw face plate	4	304	Ring back (rep.301)	0 à 1

E-R/N/V: Breather-Filling/Level/Draining plug

xx Rep n Maintenance part

*Label indicating the motor shaft (or gearbox output shaft) direction of rotation

