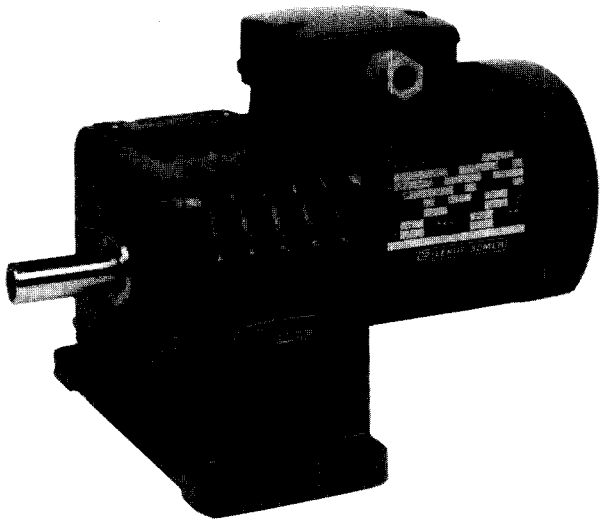
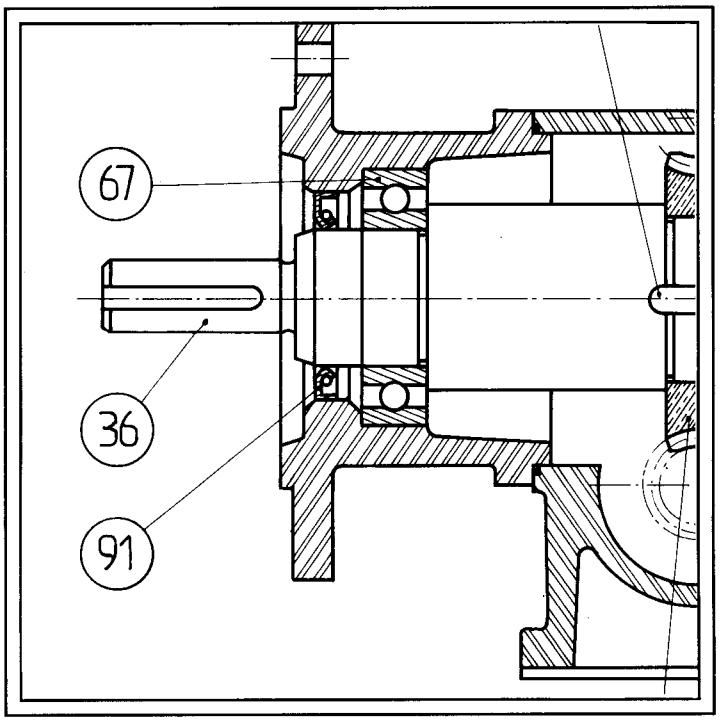
LEROY SOMER®

Réf. 1617 - O33 / a - 3.94





MINIBLOC MVAB

Installation and maintenance

GN 004201

INSTALLATION RECOMMENDATIONS

For the gearbox :

- Remove the protective material from the shafts (plastic coverings).
- Mount the gearboxes on flat rigid supports. They must be free from vibration.
- Mount the couplings, sprockets and pulleys with extreme care (they should be heated). Do not hammer the end of the shaft.
- Ensure that the radial force on the sprockets and pulleys is correct (see selection table).
- Ensure normal tension and correct alignment of the transmission. Check that the shafts are parallel.
- For direct couplings using a coupling sleeve, check the alignment of the axes.

NOTE : In the event of long storage, turn the unit by hand before starting it, to avoid damaging the seals.

Despite all the precautions taken in the manufacture and the checking of equipment, LEROY-SOMER cannot guarantee 100 % against leakage of lubricant. If leaks occur which would risk the safety of equipment or personnel, it is the responsibility of the installer to take all necessary avoiding action.

For the motor : See recommendations on page 7

ORDERING SPARE PARTS

Essential information to quote when ordering

a) From the gearbox identification plate :

1 - Gearbox reference
2 - Type of fixing
3 - Exact reduction ratio of the device
4 - Serial number

b) From the corresponding parts list :

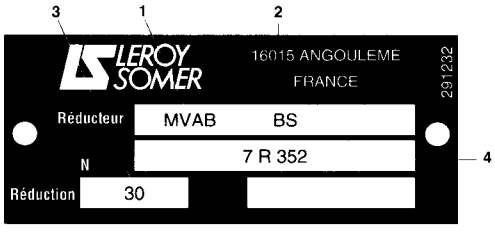
- Number and description of the part

c) If there is a motor connected to the gearbox, quote the following from the motor identification plate :

(For the motor : see the corresponding manual)
- Motor type
- Number of poles (or speed in min^{-1})
- Power in kW

Warning : special flange and motor shaft for these gearboxes.

Example :



Type of gearbox 1	Fixing 2	Ratio 3	Serial number 4	Part number	Type of motor No. of poles - power
Eg. : MVAB	BS	30	7 R 352	Wheel No.51	LS 63 - 0.18 kW

LUBRICATION

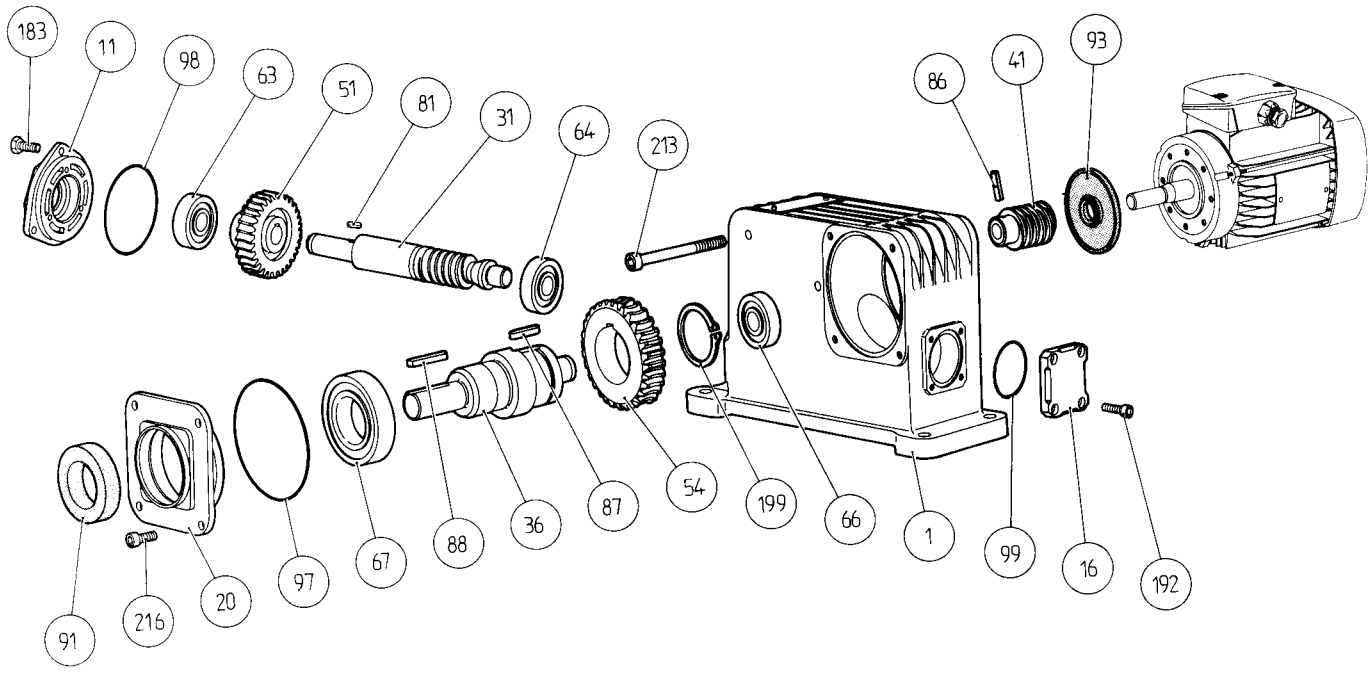
These gearboxes are permanently greased.
They have no filling, draining or level plugs.

-**Original grease :**
LUBRILOG LX DDEB 00 grease
Synthetic base
Grade 00
Worked penetration 400/430
Operating temperature -40°/+150°
Melting point >130
Supplier :
LUBRILOG - 26260 S^t DONAT S/ L' HERBASSE

In the event of dismantling :
Synthetic greases for wheels and worm screws with similar characteristics.
For example :
Structovis P 00 - from KLUBER
Tivella Compound A - from SHELL
Energrease GSF- from BP

Note :
Do not mix greases.
Drain, clean thoroughly with trichlorethylene or a similar product, and refill the housing 2/3 with new grease.

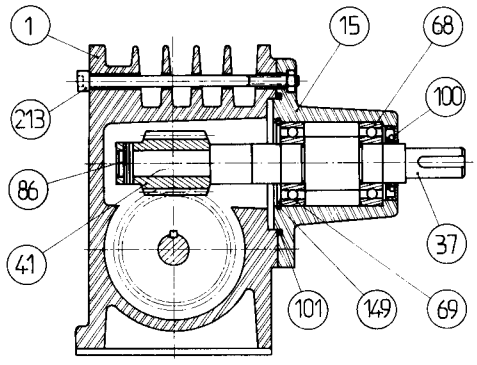
EXPLODED VIEW of MVAB with feet



NO.	QTY	DESCRIPTION
1	1	Housing
11	1	End shield
16	1	Thrust bearing retainer
20	1	Output shaft end shield
31	1	2nd stage worm shaft
36	1	Output shaft
41	1	1st stage worm screw
51	1	1st stage bronze wheel
54	1	2nd stage bronze wheel
63	1	Bearing
64	1	Bearing
66	1	Output shaft bearing on motor side
67	1	Output shaft bearing on shaft end side
81	1	1st gear train bronze wheel key

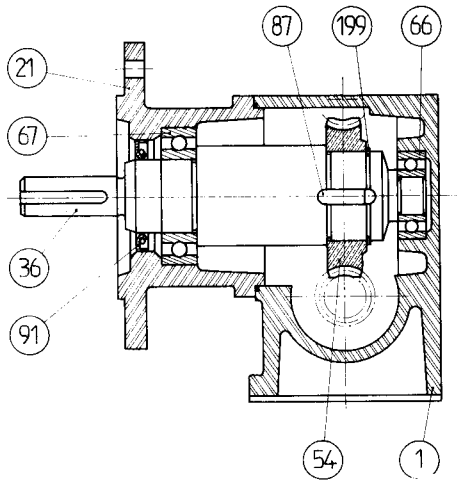
NO.	QTY	DESCRIPTION
86	1	1st gear train worm screw pin
87	1	2nd gear train bronze wheel key
88	1	Output shaft end key
91	1	Output shaft end shield lipseal
93	1	Motor shaft end lipseal
97	1	O-Ring
98	1	O-Ring
99	1	O-Ring
183	3	End shield screws
192	4	Thrust bearing retainer screws
199	1	2nd gear train bronze wheel circlip
213	2	Screws for mounting motor housing
216	4	Screws for mounting output shaft end shield

Assembly with input shaft



NO.	QTY	DESCRIPTION
1	1	Housing
15	1	Input shaft retainer
37	1	Input shaft
41	1	1st gear train worm screw
68	1	Input shaft bearing
69	1	Input shaft 2nd bearing
86	1	Worm screw pin
100	1	Input shaft lipseal
101	1	O-Ring
149	1	Input shaft bearing circlips,in bore
213	1	Screw for mounting motor/housing

Foot and face plate mounting



NO.	QTY	DESCRIPTION
1	1	Housing
21	1	Flange
36	1	Output shaft
54	1	2nd stage bronze wheel
66	1	Output shaft bearing on motor side
67	1	Output shaft bearing on shaft end side
87	1	2nd gear train bronze wheel key
91	1	Output shaft lipseal
199	1	2nd gear train bronze wheel circlip

DISMANTLING AND REASSEMBLY

1°/ Dismantling :

Dismantling the motor
-Remove the 3 fixing screws no. 213 which fix the gearbox to the motor
-Detach the gearbox from the motor (by pulling the gearbox firmly)

Dismantling the 1st gear train worm screw
-Knock out pin no. 86
-Remove worm screw no. 41 from motor shaft
-Remove seal no. 93

Dismantling the 2nd stage worm screw
-Remove the 3 screws no. 183, end shield no. 11, end shield seal no. 98
-Remove the 4 screws no. 192, thrust bearing retainer no.16, O-Ring no.99
-Knock out the worm screw assembly by striking the shaped axle on bearing no. 63 side until bearing no. 64 on thrust bearing retainer side is detached from the housing
-Pull bearing no. 64 off worm screw no. 31
-Extract the worm screw from the housing by pushing it in the opposite direction
-Remove bearing no. 63 and bronze wheel no. 51 from shaped axle no. 31

Dismantling the output shaft
-Remove the 4 fixing screws no. 216 from end shield no. 20
-Remove the entire output shaft assembly by pulling shaft no. 36
-Remove from shaft no. 36, end shield no. 20, bearing no. 67, O-Ring no. 97, bearing no. 66, circlip no. 199, wheel no. 54, key no. 87

2°/ Reassembly :

Before reassembly, clean all the parts thoroughly. It is preferable to change all the seals.

a/ Output shaft assembly
-Perform the operations in reverse order to replace the assembly in the housing

b/ 2nd stage worm screw
-Mount wheel no. 51 and bearing no. 63 on to worm screw no. 31 and replace this assembly in the housing
-Mount end shield no. 11, O-Ring no. 98, screws no. 183
-Place bearing no. 64 on the shaped axle and position in the housing
-Mount retainer no. 16, O-Ring no. 99 and screws no. 192
Check that this assembly rotates freely by turning bronze wheel no. 51 by hand (through the opening for the motor worm screw)
-Fill with grease (see paragraph on greasing)
(about 2/3 of internal capacity)

c/ Worm screw and motor
-Carry out in reverse order

PARTS LIST FOR SEALED INDUCTION MOTORS WITH SQUIRREL CAGE ROTOR

Information which should be provided when ordering spare parts

Warning : when ordering parts for a motor coupled to a gearbox, give full details of the gearbox (see previous pages).

Motor type 1	Speed min^{-1} 2	Power kW 3
Example : LS 71	1500	0,37
Mounting-position	**Serial number : 4**	**Identification n°**
Special B14 flange	370058	Housing and wound stator no.1

LEROY SOMER® N° 370058 1993
MOT. 3 ∿ LS 71
IP 55 I.cl. F 40 °C C µf V
S1 % c/h C µf V

V	Hz	min^{-1}	kW	Cos φ	A
220/230	50	1500	.37	.75	1.85
240	50	1500	.37	.7	1.9
380/400	50	1500	.37	.75	1.05
415	50	1500	.37	.7	1.1

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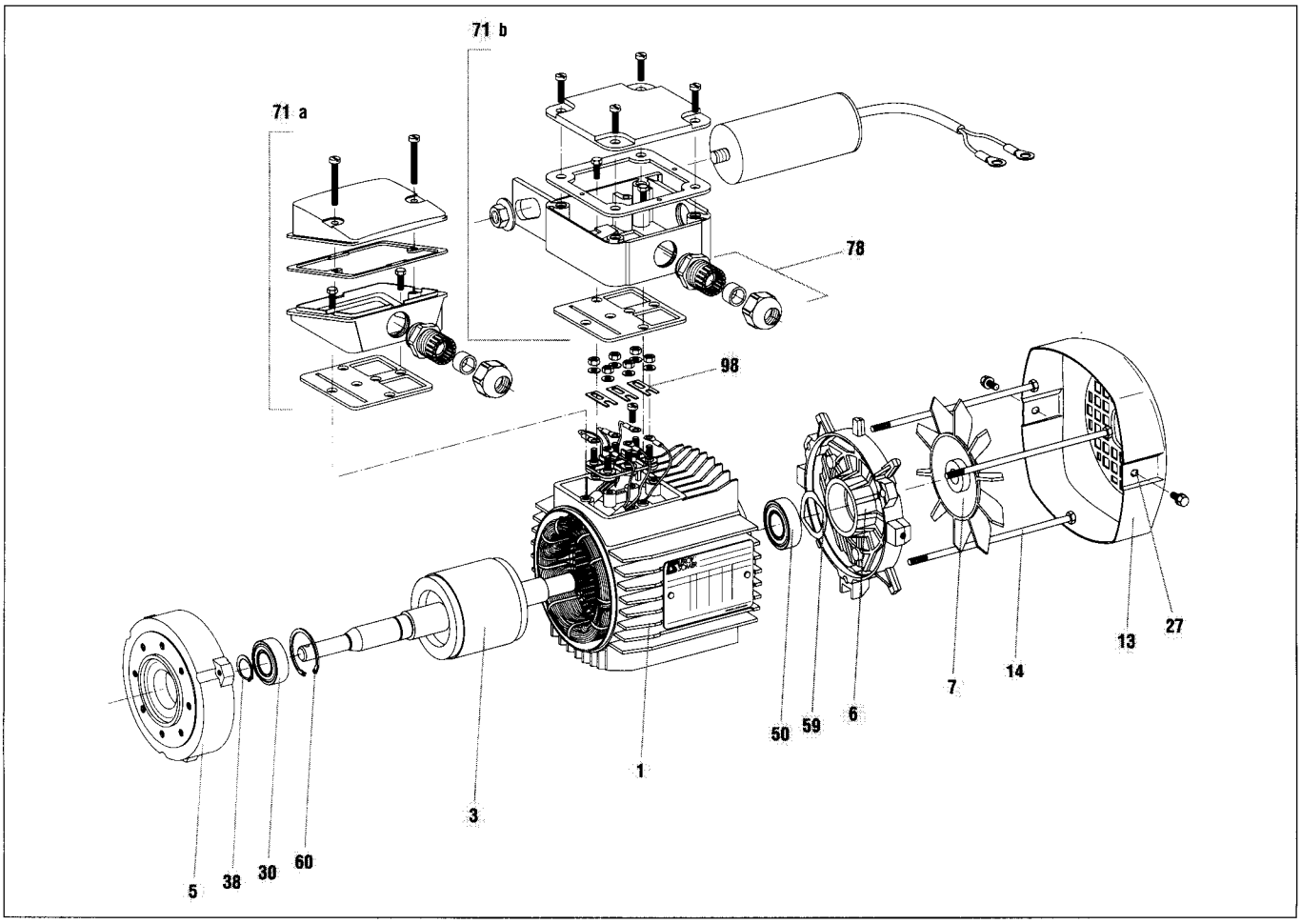

NO.	QTY	DESCRIPTION
1	1	Wound stator
3	1	Rotor
5	1	Drive end shield
6	1	Non-drive end shield
7	1	Fan
13	1	Fan cover
14	2,3,4	Tie rods
27	2	Fan cover screws
30	1	Drive end bearing

NO.	QTY	DESCRIPTION
38	1	Drive end bearing circlip
50	1	Non-drive end bearing
59	1	Preloading (wavy) washer
60	1	Circlip
71a	1	Plastic terminal box fitted for three-phase
71b	1	Metal terminal box fitted for single phase
78	1	Cable gland
98	3	Connecting bars

THREE-PHASE MOTORS

1 - Starting up

Before starting up, check :
- that the shaft rotates freely when turned by hand.

Recommendation :
If the motor has been in a damp atmosphere, it is advisable to ask your electrician to check the isolation resistance.
The resistance should not be less than 5000 ohms per volt of rated voltage.

2 - Connection

- Select cables with a large enough cross-section to prevent excessive voltage drops (5 amperes per mm^2).
- Connect the terminals according to the diagram inside the terminal box.
- Follow the wiring diagrams supplied with the equipment in the terminal boxes and the supply voltages indicated on the identification plate.

Very important : After connection, it is necessary to replace the terminal box cover with care, paying particular attention to the tightening of the cable gland on the power supply cable.

Earthing :
A terminal for connecting an earth conductor is provided inside the terminal box.

3 - Bearings (types)

Motor type	Drive end	Non-drive end	Non-drive end with shaft extension
LS 56	6202	6201	6201
LS 63	6202	6201	6002
LS 71	6202	6201	6002
LS 80	6204	6203	6204

Type ZZ bearings are used for IP 44 motors and type 2 RS for IP 55 motors. They are permanently greased : 15 000 hours at 3 000 min^{-1}, 30 000 hours at 1 500 min^{-1}).

SINGLE PHASE MOTORS WITH PERMANENT CAPACITOR

These are mechanically identical to three-phase motors. They have an additional permanent capacitor fixed on the terminal box side.
To connect them, follow the voltage shown on the identification plate and the connection diagrams in the terminal boxes.