

Nidec

All for dreams



*Installation and
maintenance*

Multibloc Mb 4101

Worm and wheel gearbox

Reference: 4125 en - 2017.12 / c

LEROY-SOMERTM

NOTES

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1 - INSTALLATION RECOMMENDATIONS

1.1 - For the gearbox

- Remove the protective material from the shafts (plastic coverings).
- Mount the gearboxes on flat and rigid supports; they must be vibration free.
- Fit the couplings, pinions and pulleys with extreme care (they should be heated). Do not hammer the end of the shaft.
- Ensure that the radial force on the pinions and pulleys is correct (see selection tables).
- Ensure normal tension and correct alignment of the transmission. Keep the shafts parallel.
- For direct connection using a coupling sleeve, check the alignment of the axes.
- Lubricate surfaces that are in contact to prevent seizing or oxidation.

NOTE: In case of prolonged storage, turn the unit by hand before starting up to avoid damaging the seals.

Despite all the care taken in the manufacture and inspection of our products, LEROY-SOMER cannot guarantee 100% against lubricant leakage. If cases where these leaks could be serious, putting at risk the safety of people and property, it is the responsibility of the installer to take all necessary precautions to avoid these eventualities occurring.

Running-in the gearbox:

To increase the lifetime of the gearbox, **it is advisable to run in** the machine at half load for around 48 hours in both operating directions (to obtain perfect **interconnection of the tooth profiles**), in particular for application factors $k \leq 1$. This running-in must be **performed at mid-load**.

1.2 - For the motor

See the recommendations on page 9.

2 - ORDERING SPARE PARTS

Essential information to be provided:

a) From the gearbox nameplate:

- Gearbox name
- Type of fixing
- Exact reduction ratio of the device
- Manufacturing number

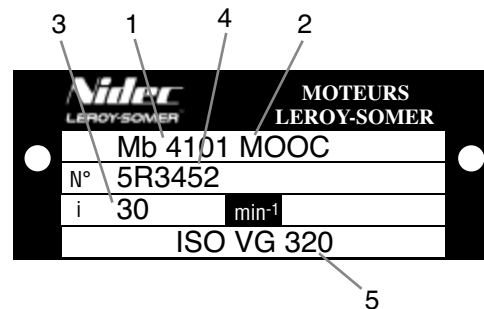
b) From the corresponding parts list:

- Number and description of the part

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

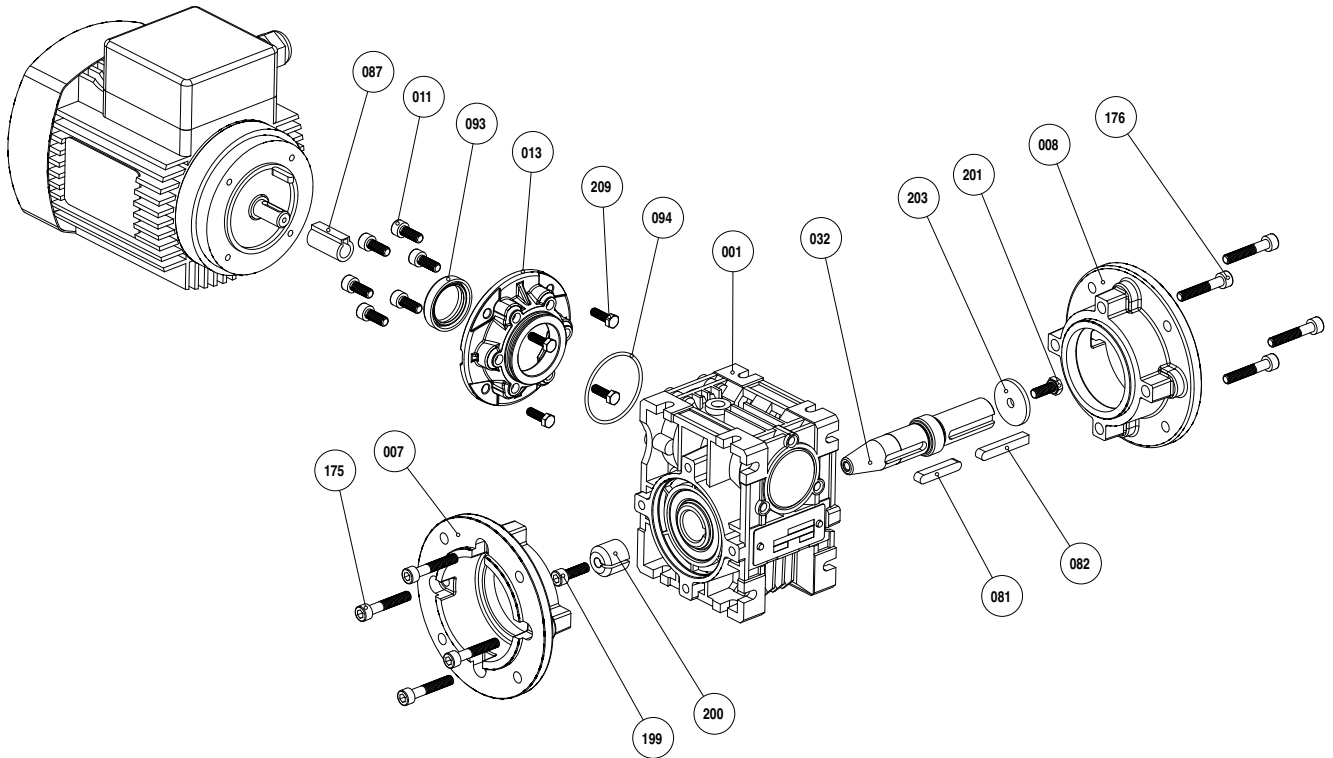
- Motor type
- Number of poles (or speed in min^{-1})
- Power in kW

Example:



- 1- Type of gearbox
- 2- Mounting form
- 3- Exact reduction ratio
- 4- Serial number
- 5- Lubrication

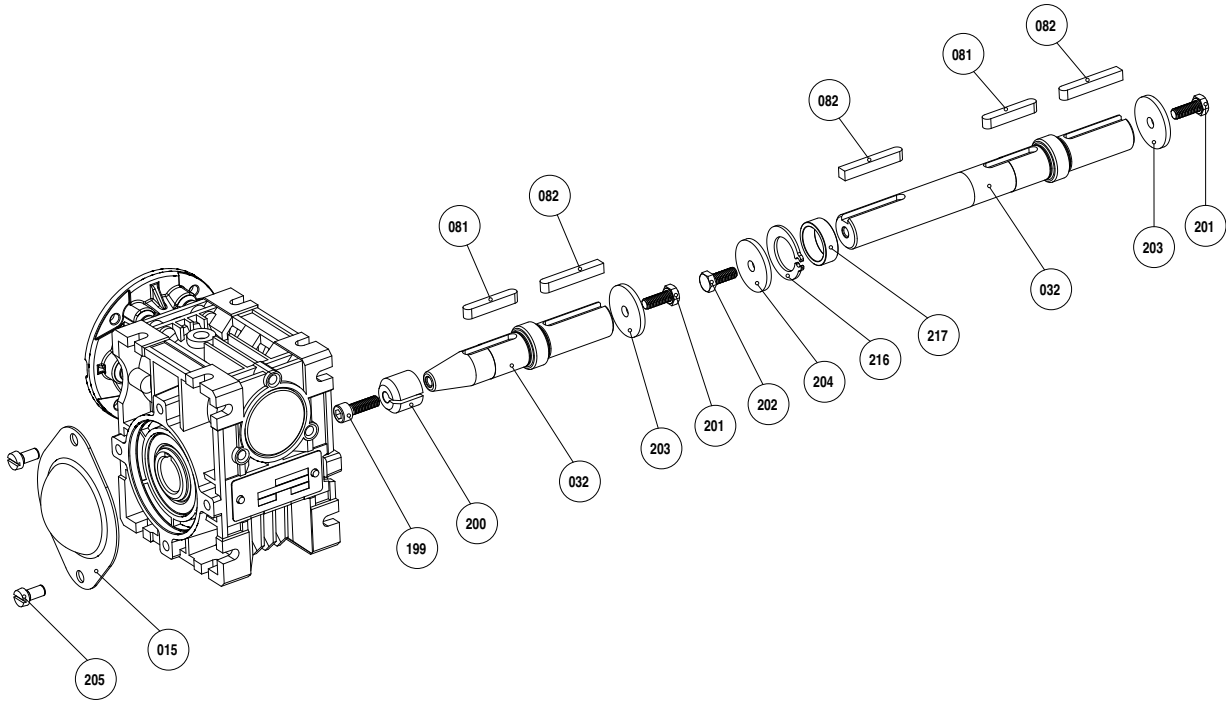
3 - EXPLODED VIEW OF MB 4101



Number	Description	Qty	Number	Description	Qty
001	Housing	1	093	Input seal	1
007	Left flange	1	094	'O' ring seal	1
008	Right flange	1	175	Fixing screw	4
011	Flange adaptor fixing screw	4 or 6	176	Fixing screw	4
013	Flange adaptor	1	199	Shaft retaining screw	1
032	Low speed shaft	1	200	Taper bush	1
081	Hub key	1	201	Shaft end screw	1
082	Client key	1	203	Washer	1
087	Motor/worm screw shaft end adaptor	1	209	Motor fixing screw	4

4 - MB 4101 KITS - EXPLODED VIEWS AND PARTS LISTS

4.1 - Separate G, D or X output shaft kit



G or D output shaft kit

Number	Description	Qty
032	Low speed shaft	1
081	Hub key	1
082	Client key	1
199	Shaft retaining screw	1
200	Taper bush	1
201	Shaft end screw	1
203	Washer	1

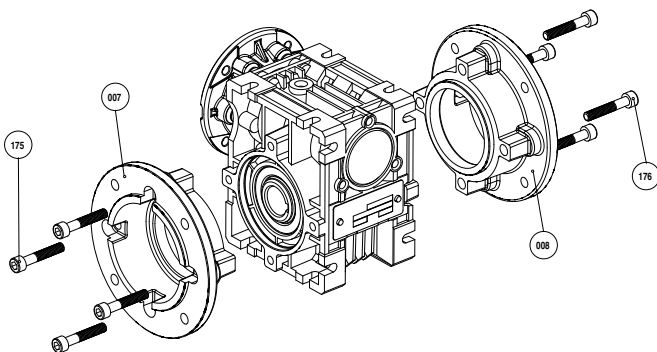
X output shaft kit

Number	Description	Qty
032	Low speed shaft	1
081	Hub key	1
082	Client key	2
201-202	Shaft end screw	2
203-204	Washer	2
216	Truarc ring	1
217	Spacer	1

G or D protective cover kit

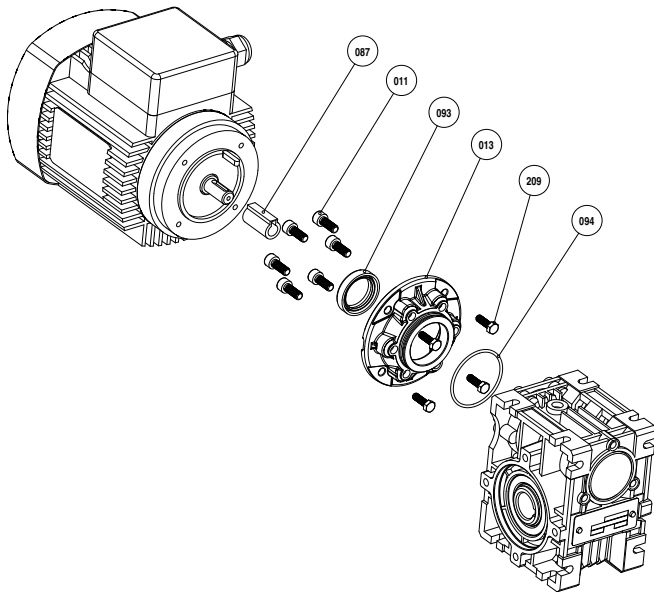
Number	Description	Qty
015	Protective cover	1
205	Cover retaining screw	2

4.2 - Output flange kit



Number	Description	Qty
007	Left flange	1
008	Right flange	1
175	Fixing screw	4
176	Fixing screw	4

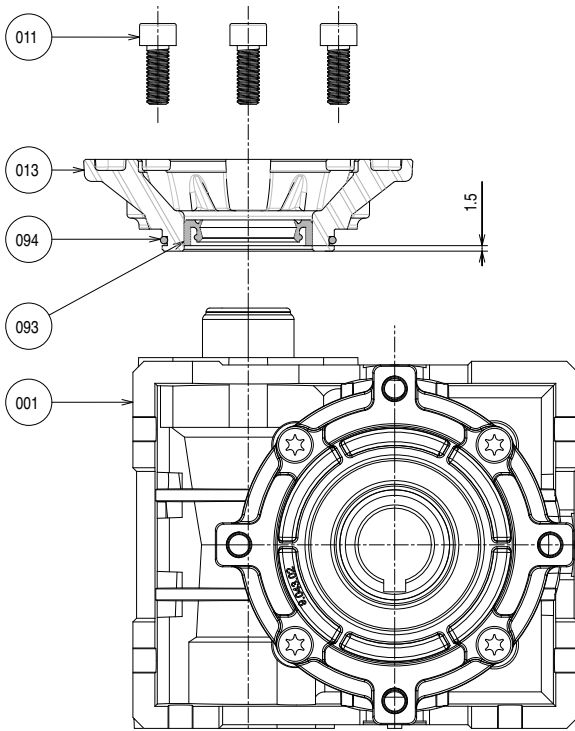
4.3 - Input flange kit (motor side)



Number	Description	Qty
011	Flange adaptor fixing screw	4 or 6
013	Flange adaptor	1
087	Motor/worm screw shaft end adaptor	1
093	Input seal	1
094	'O' ring seal	1
209	Motor fixing screw	4

MOUNTING THE MOTOR ON THE GEARBOX

- Fit the two seals (093) and (094) on the flange adaptor (013).
- Fix the flange adaptor (013) on the motor using the 4 or 6 screws (011).
- Position the shaft end adaptor (087) on the shaft (either the stepped key or the coupling sleeve).
- Mount the motor on the gearbox and tighten the assembly using the 4 screws (209).



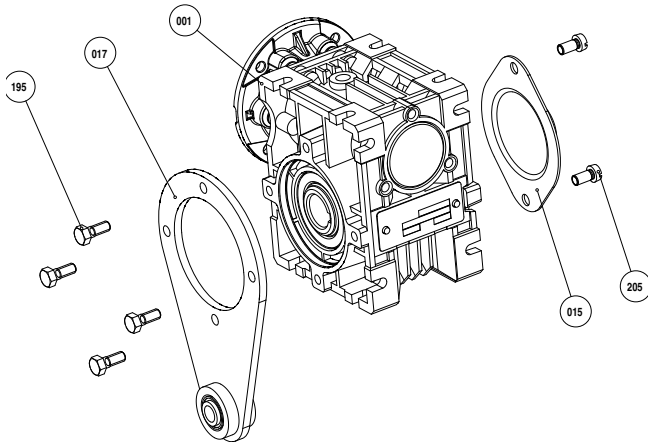
REPLACING THE FLANGE ADAPTOR

- Fit the 'O' ring seal (094) and the lipseal (093) on the input flange adaptor (013).
- Keep to the 1.5 dimension for fitting the lipseal.
- Fit the flange adaptor on the gearbox sub-assembly (001).
- Tighten the whole assembly using the 4 or 6 screws (011).

Input kit selection table

Motor type	Shaft end dimensions	Flange adaptor dimensions	Adaptor type	Kit number
LS56 B14 F65	50 x 65 x 80	9 x 20	Coupling sleeve 9 x 14	EPQG0049
LS63 B14 F75	60 x 75 x 90	11 x 23	Coupling sleeve 11 x 14	EPQG0050
LS71 B14 F85	70 x 85 x 105	14 x 30	Stepped key	EPQG0051

4.4 - Torque arm kit



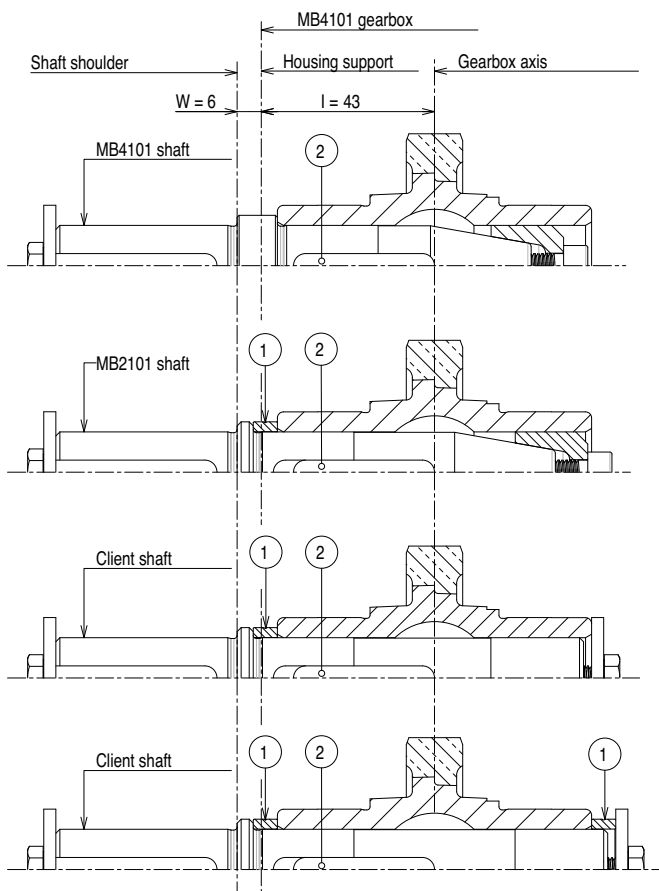
MOUNTING THE TORQUE ARM

The torque arm (017) is fixed on the housing via the 4 holes on the chosen side panel using screws (195).

These 4 screws must be locked with an anaerobic adhesive (Loctite 243 Removable Threadlocker for example) which must resist to vibration but still allow the screws to be removed if necessary.

Number	Description	Qty
015	Protective cover	1
017	Torque arm	1
195	Torque arm fixing screw	4
205	Cover fixing screw	2

4.5 - Mb 2101/Mb 4101 interchangeability



MOUNTING A SEPARATE SHAFT

The separate shaft (Leroy-Somer or customer) for mounting on an Mb 2101 can also be mounted on an Mb 4101.

Add one or two spacers (1) to maintain the same positioning of the shoulder in relation to the gearbox axis.

If using the Mb 2101 shaft, the 6x6x40 2br key (2) must be shortened.

5 - MOTORS

5.1 - 3-phase motors

INSTALLATION

Before installing, check:

- That the shaft rotates freely when turned by hand.

Tip:

If the motor has been in a damp atmosphere, it is advisable to ask your electrician to check the insulation resistance.

This must not be less than 5000 ohms per volt of normal voltage.

CONNECTION

- Select cables with a large enough section to prevent excessive voltage drops (5 amperes per mm²).
- Connect the terminals bloc in accordance with the diagram inside the terminal box.
- Follow the wiring diagrams supplied with the devices in the terminal boxes and the supply voltages indicated on the nameplate.

Very important: After connection, the terminal box cover must be replaced 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.

BEARINGS (TYPES)

Motor type	Drive end	Fan end	Fan end with 2nd shaft
LS 56	6201	6201	6201
LS 63	6202	6201	6201
LS 71	6202	6201	6002
LS 80	6204	6203	6204

Type ZZ bearings are used for IP44 motors and type 2RS for IP55 motors. They are greased for life: 15,000 hours at 3000 min⁻¹, 30,000 hours at 1500 min⁻¹.

5.2 - Single phase motors with permanent capacitor

These are mechanically identical to 3-phase motors. They have an additional permanent capacitor fixed on the terminal box side.

To connect this type of motor, follow the voltage indicated on the nameplate and the wiring diagrams supplied in the terminal box.

6 - LUBRICATION

These gearboxes are lubricated for life with synthetic oil, for operation between -20°C and +40°C. There are no filling or draining plugs.

Original oil:

Polyglycol AGIP TELIUM VSF

Viscosity category ISO VG 320

Ignition point 250°C

Supplier: AGIP

Oil capacity: 80 cm³

7 - DRIVES

1) Geared motors with induction motor:

Refer to the manual "Recommendations for storage and commissioning of induction motors".

2) Geared motors with D.C. motor:

Refer to the manual "Recommendations for storage and commissioning of D.C. motors".

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