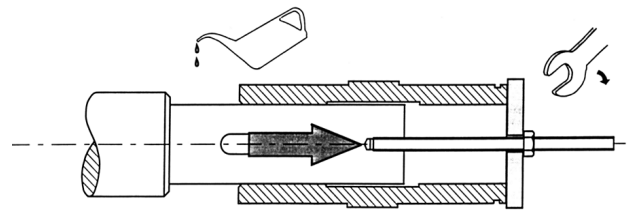


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en

This manual is to be given
to the end user



POULIBLOC 2000-3000

Shaft mount reducer

Installation

POULIBLOC 2000-3000

Shaft mount reducer

This document complements the general instructions ref. 2557 (recommendations), ref. 3711 (ATEX specific recommendations) and the maintenance instructions Poulibloc 2000-3000 ref. 5069.

NOTE

LEROY-SOMER reserves the right to modify the characteristics of its products at any time in order to incorporate the latest technological developments. The information contained in this document may therefore be changed without notice.

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.



Throughout the manual, this symbol warns of consequences which may arise from inappropriate use of the Poulibloc 2000-3000 since risks may lead to material or physical damage.

Despite all the care taken in the manufacture and checking of this equipment, 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.

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POULIBLOC 2000

Shaft mount reducer

1 - POULIBLOC 2000

1.1 - Installation recommendations


Installation must be performed by qualified personnel.
Allow sufficient room around the gearbox for plugs accessibility.

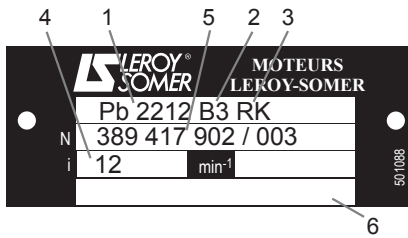
Gearbox:

For the installation of Poulibloc 2000 gearbox, follow the "Recommendations" chapter in the general manual.

1.1.1 - Identification

Gearbox nameplate:

- 1 - gearbox type ;
- 2 - operating position ;
- 3 - RK fixing type : torque arm ;
- possible options (AD) ;
- 4 - reduction ;
- 5- serial number ;
- 6- lubricant :  delivered without oil.



1.1.2 - Tapered bushing mounting

For small bore bushings (fig. 1)

- Fit the bushing key (1) into the keyway on the tapered bushing (2).
- Insert the tapered bushing (2) into the locking ring (3) and driving hollow hub, taking care that bushing key fits into hollow hub keyway.
- Turn locking ring counter clockwise two turns.

For large bore bushings (fig. 2)

- Fit single special key (4) into driven shaft keyway.
- Insert the tapered bushing (2) into the locking ring (3) and driving hollow hub.
- Turn locking ring counter clockwise two turns.

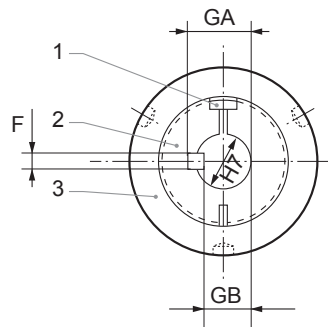


fig. 1

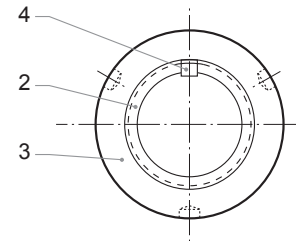


fig. 2

Standard bore sizes (fig. 1)				Taper bushes depending on size							
D H7	F	GB	GA	20	21	22	23	24	25	26	27
20	6	16.5	22.5	●							
25	8	21	28	●	●						
30	8	26	33	●	●	●					
35	10	30	38	●●	●	●	●				
40	12	35	43	●●	●	●	●				
45	14	39.5	48.5		●●	●	●	●			
50	14	44.5	53.5		●●	●●	●	●			
55	16	49	59			●●	●●	●			
60	18	53	64				●●	●	●		
65	18	58	69					●	●		
70	20	62.5	74.5					●●	●	●	
75	20	67.5	79.5					●●	●	●	
80	22	71	85						●●	●	
85	22	76	90						●●	●	
90	25	81	95							●	●
95	25	86	100							●●	
100	28	90	106							●●	●
110	28	100	116								●
120	32	109	127								●
				Minimum length of customer shaft							
				80	82	105	116	134	153	194	260

- Key to be supplied by customer with small bore, GA dimensions indicated.
- Key supplied, GA dimensions non-indicated.

POULIBLOC 2000

Shaft mount reducer

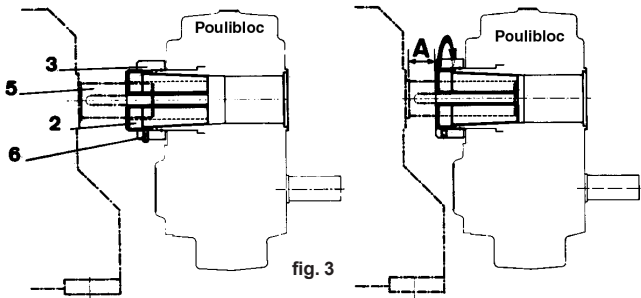
1.1.3 - Reducer mounting (fig. 3)

- Fit bushing reducer assembly onto driven machine shaft (5).
- Note: on large bore bushing, take care special key fits into hollow hub keyway.
- Slide unit to desired position. It should not be mounted such that dimension "A" is less than 6 mm and greater than one shaft diameter.
- Tighten locking ring (3) with special wrench (supplied) allowing the reducer to draw up the bushing (2). Do not exceed 70 N.m of torque on the locking ring.
- Insert and tighten set screw (6).

Note: inspect and tighten tapered bushing after 8 hours of use. To remove bushing or reducer, reverse above procedures.

⚠ Do not remove screw ref. 299 of part list.

Note: protective output shaft cap can be removed in applications where driven shaft is mounted through hollow shaft. In other applications, keep in place for protection against dirt and water.



1.1.4 - Input shaft sheave mounting

Remove protective material from input shaft and clean it with cleaning solvent, if necessary, to remove any residue remaining on shaft.

Mount sheave on input shaft as near as possible to shaft shoulder because excessive overhung loads could occur and

greatly reduce the life of the bearings (fig. 4). In particular do not hammer on reducer or sheave in mounting it. If difficulties occur in the mounting of the sheave, it is advised to use a soft mallet (neoprene type) or heat the sheave for easy installation. Warning: excessive belt tension can greatly reduce V-belt life and damage bearings (motor, reducer). Follow V-belt manufacturers instructions and recommendations. Once sheaves and V-belts have been installed, check for proper alignment. Caution: for safety, user must provide a protective guard mounted around the V-belt and sheave.

1.1.5 - Torque arm mounting

Attach the torque arm housing bracket to the reducer housing. Three positions are recommended, although eight positions are possible (fig. 6).

Assemble the torque arm and attach the torque arm floor support to a rigid base.

Since all the reactive forces go through the torque arm, it is most advantageous to mount the torque arm at 90° to a line between the hollow shaft and the torque arm holding bolt (fig. 7, 8 & 9).

The torque arm must always be mounted so the reactive forces are in tension with the reducer. This is dependent upon the rotation of the output shaft; mount torque arm in:

- section A for clockwise rotation (fig. 5a);
- section B for counter-clockwise rotation (fig. 5b).

1.1.6 - Motor location

Tension of V-belt is adjusted by the torque arm. Install the motor such that the belt be at 90° from the center line between driven and input shaft.

⚠ Do not restrain the housing of Poulibloc on the built of the machine; use the torque arm bracket.

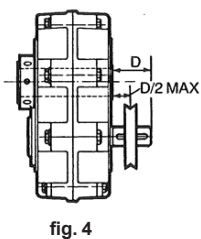


fig. 4

Section A : clockwise rotation

Section B : counter-clockwise rotation

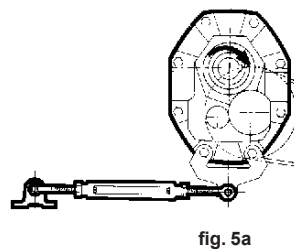


fig. 5a

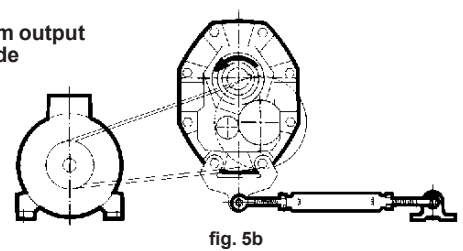
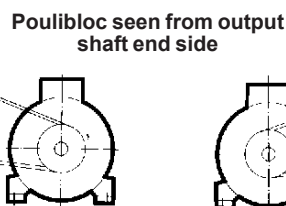


fig. 5b

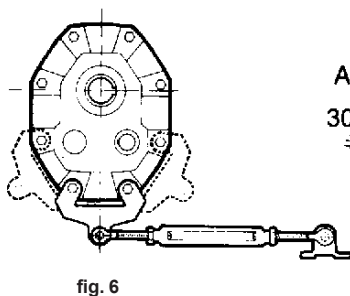


fig. 6

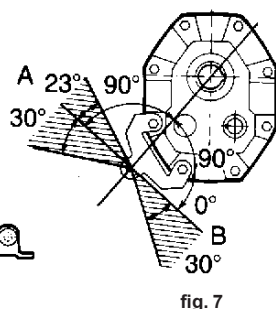


fig. 7

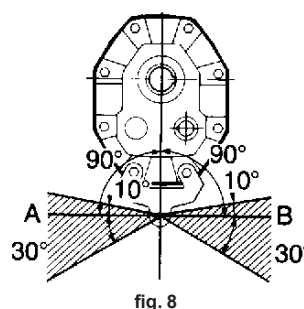


fig. 8

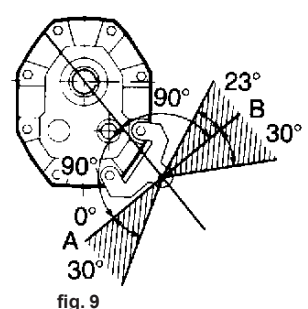


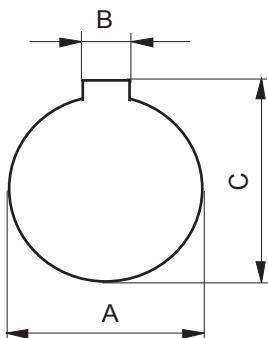
fig. 9

POULIBLOC 2000

Shaft mount reducer

1.1.7 - Mounting a cylindrical hollow shaft into the driving machine shaft

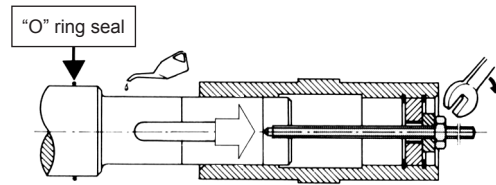
Size	ØA	B	C Hub	C Shaft	Client shaft	
					Mini lenght	Maxi lenght
Pb 20	38	10	41.3	41	75	90
Pb 21	42	12	45.3	45	75	100
	45	14	48.8	48.5	75	100
Pb 22	48	14	51.8	51.5	95	110
	50	14	53.8	53.5	95	110
	55	16	59.3	59	95	110
Pb 23	60	18	64.4	64	95	110
	55	16	59.3	59	105	120
	60	18	64.4	64	105	120
Pb 24	65	18	69.4	69	125	145
	70	20	74.9	74.5	125	145
	75	20	79.9	79.5	125	145
Pb 25	75	20	79.9	79.5	150	185
	80	22	85.4	85	150	185
	85	22	90.4	90	150	185
Pb 26	80	22	85.4	85	190	220
	100	28	106.4	106	190	220
	90	25	95.4	95	260	310
Pb 27	100	28	106.4	106	260	310
	105	28	111.4	111	260	310
	110	28	116.4	116	260	310
	120	32	127.4	127	260	310



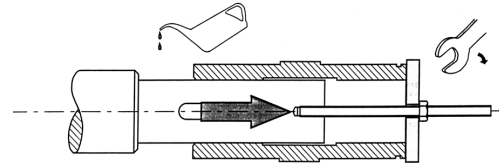
- 1 - Ensure that the cylindrical shaft has been machined according to standard NF - E 22 - 175, with a sliding fit: g6 (the hub is: H7).
 - 2 - Ensure that the keyway is standard and the shaft has a minimum length : see chart § 1.1.2.
 - 3 - Before mounting, clean grease off all parts, taking care not to get solvent on the seals.
- Cover all parts which come into contact with a light coating of oil, so as to prevent corrosion.
- Take care not to knock the shaft when mounting as shown below.
- The Pb 27 gearbox is mounted on the machine shaft with a threaded tierod, screwed to the shaft. By tightening the nut which presses on the washer, the shaft is gently inserted in the cylindrical hub of the Poulibloc.

MOUNTING

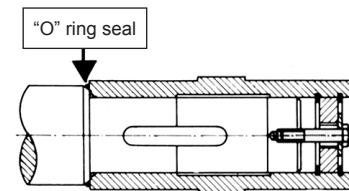
Pb 20-- to Pb 26--



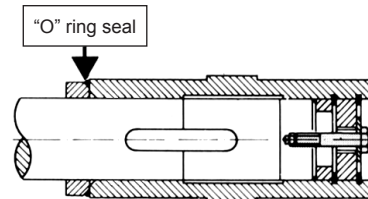
Pb 27--



Fixing on shouldered shaft

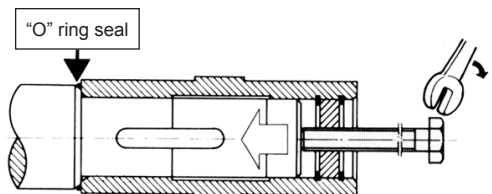


Fixing on shaft without shoulder

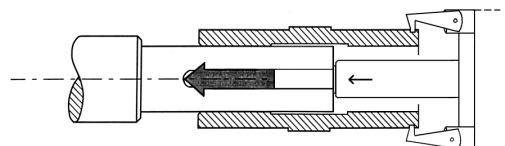


DISMOUNTING

Pb 20-- to Pb 26--



Pb 27--



A hydraulic hub-remover is used for dismantling the shaft, by pressing on the outer groove of the hub.

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POULIBLOC 2000

Shaft mount reducer

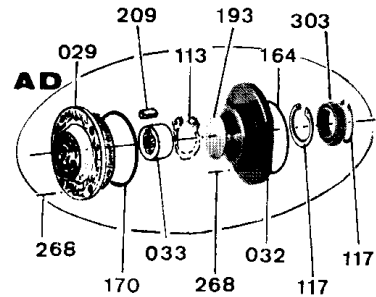
1.1.8 - Backstop installation

The backstop used to prevent the reverse rotation of the gearbox, is mounted on the input shaft (manual ref. 4114) for Pb 20 to 24.

For Pb 2205, 25, 26 and 27 sizes, it is fitted with rotation as specified on the order.

Backstop kit

Ref.	Description	Qty
029	backstop cap	1
032	free wheel flange	1
033	inner race	1
113	external retaining ring	1
117	internal retaining ring	2
118	shims (Pb 2205, 25, 26 and 27)	1 to 3
164	"O" ring seal	1
170	"O" ring seal	1
193	cover cap	1
209	inner race key	1
268	fixing screws, washers	4
303	free wheel	1



1.2 - Lubrication

⚠ Gearbox Poulibloc is supplied without oil. Before running it is necessary to:

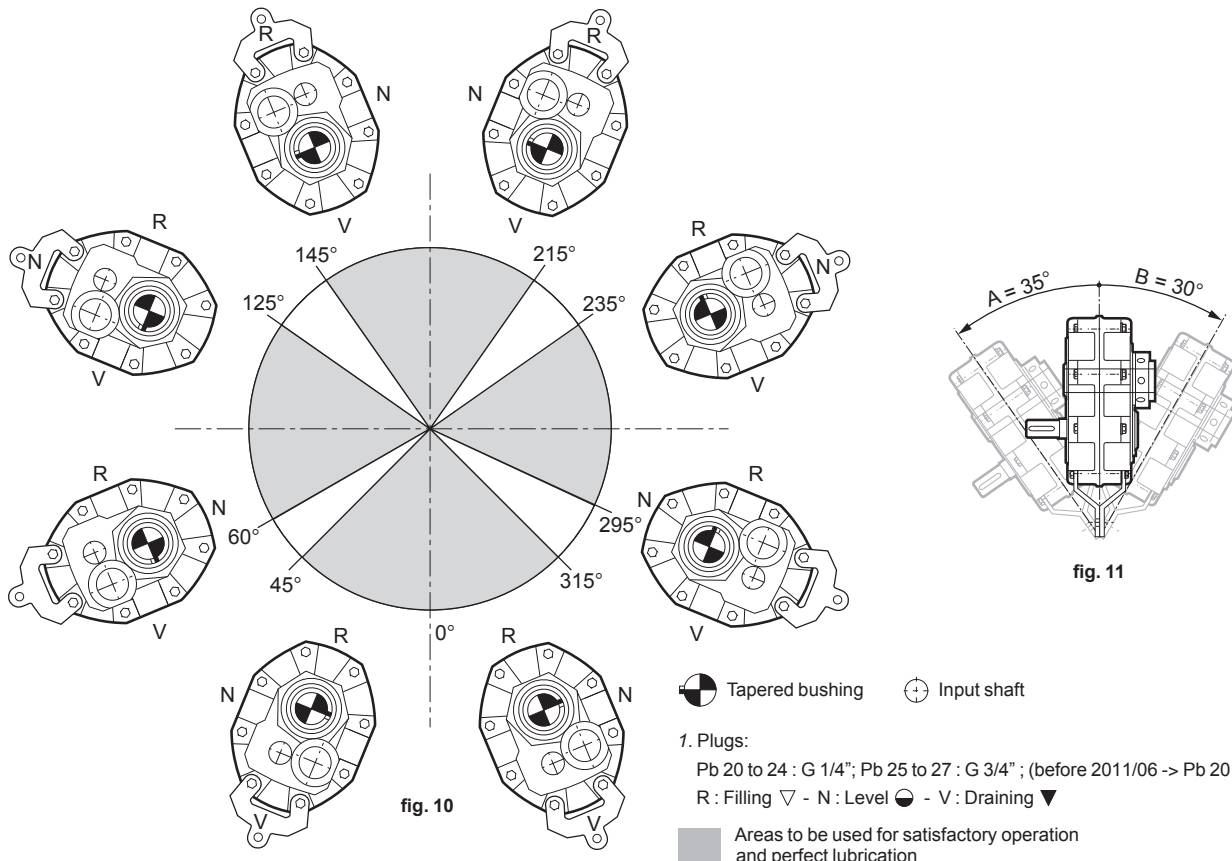
- 1 - determine mounting position (see table § 1.2.2) ;
- 2 - install drain plug (magnetic) to lowest gearbox point ;
- 3 - fill gearbox up to level plug ;
- 4 - place the breather plug to highest gearbox point.

Recommended oil

Gearbox with or without backstop, for operation:

- between -10 and +50°C: mineral oil extreme pressure ISO VG 220 (Mobilgear 600 XP 220, Shell Omala S2 G 220) ;
- between -30 and +50°C: synthetic oil PAO ISO VG 150 (Mobil SHC SIBUS 150).

1.2.1 - Plugs position (R, N, V)¹



POULIBLOC 2000

Shaft mount reducer


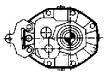



Oil capacities

The oil capacities shown in table are approximative values and should be used only as reference in determining how much oil to provide. The proper oil levels can only be determined by filling the reducer to the level of the plug (fig. 10).

Note: For proper oil level other than horizontal position, maximum inclination allowed is A=35° and B=30° (fig. 11). For special mounting position not shown, please consult LEROY-SOMER.

1.2.2 - Oil quantity (considering operating position)¹

⚠ Place the breather plug at the top of the gearbox

Operating position	Pb 20	Pb 21	Pb 22	Pb 23	Pb 24	Pb 25	Pb 26	Pb 27
	G 1/4" litre ¹	G 1/4" litre ¹	G 1/4" litre ¹	G 1/4" litre ¹	G 1/4" litre ¹	G 3/4" litre ¹	G 3/4" litre ¹	G 3/4" litre ¹
B3 	0.75	1	1.75	2.5	4	5	8.5	14
B6 	0.75	0.9	1.75	2.3	3.55	5.2	8.3	13
B7 	0.75	0.9	1.75	2.3	3.55	5.2	8.3	13
B8 	0.7	0.75	1.4	2	3.3	4.9	7.6	12
V5 	1.25	1.5	2.25	3.5	4.5	6.5	9.5	17

1. Tolerance: ± 0.05 litre for oil quantity < 5 litre
± 2% for oil quantity ≥ 5 litre

1.3 - Maintenance

- Mineral oil: drain every 5000 hours of operation (or every 6 months).
- Synthetic oil: for T° ≤ 70°C, drain every 25000 hours of oper-

ation. It is nevertheless recommended to check proper oil level periodically (every 5000 hours) and oil should be added if the level is low.

POULIBLOC 3000

Shaft mount reducer

2 - POULIBLOC 3000

2.1 - Installation recommendations

Installation must be performed by qualified personnel. Allow sufficient room around the gearbox for plugs accessibility.

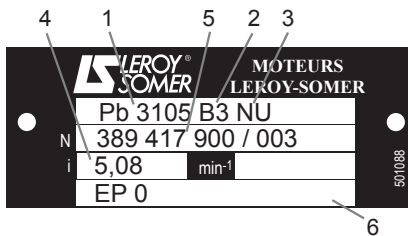
Gearbox:

For the installation of Poulibloc 3000, follow the "Recommendations" chapter in the general manual.

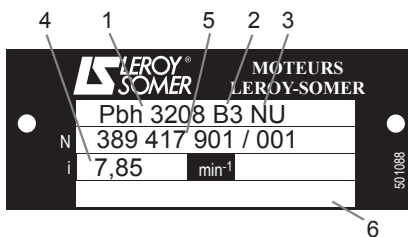
2.1.1 - Identification

Gearbox nameplate:

- 1 - gearbox type ;
- 2 - operating position ;
- 3 - fixing type (NU) ;
- 4 - reduction ;
- 5- serial number ;
- 6 - lubricant : Pb is lubricated with grease for 10 000 hours running.



⚠ Pbh delivered without oil.



2.1.2 - Mounting

Mount the unit directly on the driven shaft of the machine, then secure it axially by tightening two pointed grub screws provided, (Pbh series) or by one screw and washer at the end of the shaft.

In order to make easier the mounting and later a possible removal, it is strongly recommended to coat the driven shaft and the hollow shaft with molybdenum disulfur grease.

⚠ Only parallel keys.

2.2 - Lubrication

Pb 3000 :

For operation between -20°C and +40°C, the gearbox Pb 3000 is normally supplied lubricated for 10 000 hours running with grease (Mobil, MOBILUX EP 0).

Pbh 3000 :

Gearbox Pbh 3000 is supplied without oil. Before running it is necessary to:

- 1 - install drain plug (magnetic) to lowest gearbox point ;
- 2 - fill up approximately to one third of the height (considering B3 position) ;
- 3 - place the breather plug to the highest gearbox point.

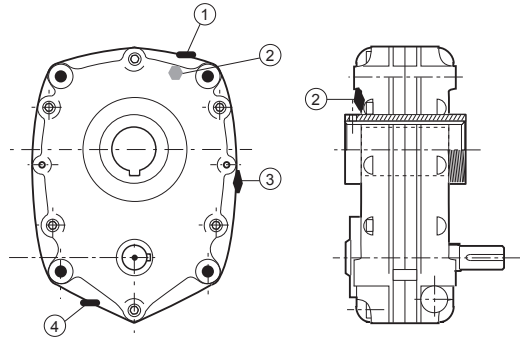
Recommended oil: for operation between -10 and +50°C, mineral oil extreme pressure EP ISO VG 220 ; between -30 and +50°C: synthetic oil PAO ISO VG 150 (Mobil SHC SIBUS 150).

For very low speed applications the gearbox must be completely filled since there is no splash lubrication.

Running in: change oil after approximately 200 hours.

⚠ Never use additive or doping when a backstop is fitted.

2.2.1 - Plugs position



2.2.2 - Oil quantity¹

⚠ Place the breather plug at the top of the gearbox

Operating position	Plugs type	n°	Pbh 31	Pbh 32	Pbh 33
			G 1/2" litre ¹	G 1/2" litre ¹	G 1/2" litre ¹
B3	●	3	1	1.7	2.75
	▼	4			
	△	3			
	▽	1			
B6	●	4	1	1.7	2.75
	▼	4			
	△	3			
	▽	3			
B7	●	2	1	1.7	2.75
	▼	3			
	△	4			
B8	●	3	1	1.7	2.75
	▼	1			
	△	4			
V5	●	1	1	1.7	2.75
	▼	2			
	△	1			
	▽	1			

1. Tolerance: ± 0.05 litre for oil quantity < 5 litre

Level ● - Draining ▼ - Breather △ - Filling ▽

2.3 - Maintenance

The gearboxes do require a minimum of care, and, when dismantled following instructions:

- mineral oil: drain every 5 000 hours.
- synthetic oil: for operating temperature < or = 70°C, drain every 25 000 hours. It is nevertheless recommended to check proper oil level periodically.

It is important to check periodically that the belt tensions are not excessive and that the alignment of the drive is correct. Observe the lubricant instruction.

Consult us for details regarding abnormal temperature conditions and suitable oils.

⚠ An excess of oil may cause overheating and leakage.