

## 1. Information

In cases of ambient temperatures not envisaged in the table, call our Technical Service. In the case of temperatures under -22°F or over 140°F it is necessary to use oil seals with special properties. For operating ranges with temperatures under 32°F it is necessary to consider the following:

1. The motors need to be suitable for operation at the envisaged ambient temperature.
2. The power of the electric motor needs to be adequate for exceeding the higher starting torques required.
3. In case of cast-iron gear reducers, pay attention to impact loads since cast iron may have problems of fragility at temperatures under 5°F.
4. During the early stages of service, problems of lubrication may arise due to the high level of viscosity taken on by the oil and so it is wise to have a few minutes of rotation under no load.

Oil must be changed after approx. 10000 hours/2 years of operation; this time varies based on the type of service and on the environment inside which the gear reducer is installed. Units not featuring any oil plug are life-lubricated, and therefore maintenance-free.

## 2. Lubricants

Specifications of lubricants recommended by Motovario.

The units **H032/3 ÷ 101/2/3 and H121** are supplied with LAND OIL GEAR POWER 220 oil, unless otherwise specified by the client.

The units **H122/3 ÷ 142/3** are supplied without lubricant.

	HA32/3 ÷ A62/3 / HR041 ÷ 121 / H032/3 ÷ 142/3	
	Mineral oil	
T <sub>amb</sub> °F ISO/SAE	(+23) - (+104) ISO VG220	(+5) - (+77) ISO VG150
LAND OIL	GEAR POWER 220	-
ENI	BLASIA 220	BLASIA 150
SHELL	OMALA S2 G 220	OMALA S2 G 150
KLUBER	Kluberoil GEM 1-220N	Kluberoil GEM 1-150N
MOBIL	MOBILGEAR 600 XP220	MOBILGEAR 600 XP150
CASTROL	ALPHA SP 220	ALPHA SP 150
BP	ENERGOL GR-XP220	ENERGOL GR-XP150
PETRONAS	GEAR MEP 220	GEAR MEP 150

## 3. Special lubricants

	$T_{amb}^{\circ F}$	Polyglycol synthetic oil
ENI	(-22) - (+86)	Blasia S 150 (ISO VG150)
	(-4) - (+104)	Blasia S 220 (ISO VG220)
MOBIL	(-49) - (+32)	SHC 624 (ISO VG32)
	(-40) - (+41)	SHC 626 (ISO VG68)
KLUBER	(-40) - (+41)	Klubersynth GH 6-32 (ISO VG32)
	(-31) - 50)	Klubersynth GH 6-80 (ISO VG80)
	(-22) - (+104)	Klubersynth GH 6-150 (ISO VG150)
	(-13) - (+104)	Klubersynth GH 6-220 (ISO VG220)
	(+5) - (+122)	Klubersynth GH 6-460 (ISO VG460)
	(+14) - (+158)	Klubersynth GH 6-680 (ISO VG680)
	$T_{amb}^{\circ F}$	Polyglycol synthetic oil for food grade
KLUBER	(-22) - (+59)	Klubersynth UH1-6 100 (ISO VG100)
	(-13) - (+104)	Klubersynth UH1-6 220 (ISO VG220)
	(+5) - (+104)	Klubersynth UH1-6 320 (ISO VG320)
	(+5) - (+122)	Klubersynth UH1-6 460 (ISO VG460)
	(+14) - (+122)	Klubersynth UH1-6 680 (ISO VG680)

If 'special' lubricant is required please contact for Technical Assistance.

## 4. Quantity

- For the gear reducer HA series with 2, 3 stages and for the reducers H series with 1, 2, 3 stages it is always necessary to specify the envisaged position.
- The gear reducer HA series with 1, 2, 3 stages all sizes, HR... series with 1 stage sizes 040, 050, 060 and H... series with 2, 3 stages sizes 030, 040, 050 are supplied complete with lubricant, have no oil plugs and need no maintenance.
- The gear reducer HR... series with 1 stage sizes 80,100,125 and H... series with 2, 3 stages sizes 060, 080, 100 are supplied complete with lubricant and are fitted with oil plugs to suit any mounting position included in the catalogue.
- The gear H... series with 2, 3 stages sizes 125, 140 have no lubricant and are fitted with oil plugs to suit any mounting position included in the catalogue. The oil filling can be done on request, in this case it is recommended, after installation, to replace the closed plug used for transportation with the supplied breather plug. When the reduction unit is supplied without lubricant, it is provided with a label to be filled.

Oil quantity in the table (litres ~) are indicative; for a proper use you will have to refer to the level plug or the dipstick. Any level difference could depend on construction tolerances, but also by the placement of the unit or by the mounting surface at the customer's premises. It is appropriate to check and, if necessary, restores the level when the units are installed.

H - CH	HA31	HA41	CHA41	A51	A61	A32	A42	A52	A62	A33	A43	A53	A63
B3-B5	0,07	0,23	0,13	0,25	0,62	0,68	0,7	1,2	1,9	1,1	1,16	1,9	2,4
B8													
B6-B7								1,6	2,1			2,5	3,1
V5-V1													
V6-V3													

HR - CHR	041	051	061	081	101	121	041M	051M	061M	081M	101M	121M
B3-B5	0,5	0,7	0,7	1,45	3,5	4,7	0,5	0,5	0,5	1,5	3,5	3,9
B5R	0,5	0,5	0,5	1,5	3,5	3,9	-	-	-	-	-	-
B8	0,5	0,5	0,5	1,5	3,5	3,9	0,5	0,7	0,7	1,45	3,5	4,7
B6-B7	0,5	0,7	0,7	1,5	3,5	4,1	0,5	0,7	0,7	1,5	3,5	4,1
V5-V1	0,5	0,7	0,9	1,5	3,5	4,7	0,5	0,7	0,9	1,5	3,5	4,7
V6-V3	0,5	0,7	0,7	1,5	3,5	4,1	0,5	0,7	0,7	1,5	3,5	4,1

H - CH	032/033	042/043	052/053	062/063	082/083	102/103	122/123	142/143
B3-B5	0,8	1,2	1,4	2,4	4,5	8,1	12,5	22,5
B8	0,85	1,2	1,4	3,1	5	8,9	12,5	20
B6-B7	1	1,2	1,8	3	4,6	8,4	12,1	22,5
V5-V1	1,3	1,75	2,15	3,9	7,6	12,7	20,5	30,5
V6-V3	1,2	1,7	2,1	4,4	7,5	14,2	21	38