

Lubricant	Speed up to/ above min <sup>-1</sup>	Viscosity ISO VG DIN 51519 at 40 °C (mm <sup>2</sup> /s)	Product				
			Castrol	Castrol performance	Shell	Mobil	Klüber
Mineral oils	500	VG 220	Alpha SP 220	Optigear EP 220 Tribol 1100/220	Shell Omala F220 Shell Omala 220	Mobilgear 600 XP 220	Klüberoil GEM 1-220 N
	1000	VG 150	Alpha SP 150	Optigear EP 150 Tribol 1100/150	Shell Omala F150 Shell Omala 150	Mobilgear 600 XP 150	Klüberoil GEM 1-150 N
	1500	VG 100	Alpha SP 100	Optigear EP 100 Tribol 1100/100	Shell Omala F100 Shell Omala 100	Mobilgear 600 XP 100	Klüberoil GEM 1-100 N
	above 2000	VG 68	Alpha SP 68		Shell Omala 68	Mobilgear 600 XP 68	Klüberoil GEM 1-68 N
Mineral oils for hypoid drives	up to 2000	SAE category 85W-90				Mobilube HD-A 85W-90	
	above 2000	SAE category 80W				Mobilube GX-A 80W	
Synthetic gear oil	500	VG 220	**Alphasyn GS 220	**Tribol 800/220	Shell Tivela S 220 Shell Cassida WG 220	Mobil Glygoyle 30	Klübersynth GH 6-220
Polyglycols (CLP-PG)	1000	VG 150	**Alphasyn GS 150	**Tribol 800/150	Shell Tivela S150 Shell Cassida WG 150	Mobil Glygoyle 22	Klübersynth GH 6-150
	start at 2000	VG 100		**Tribol 800/100		Mobil Glygoyle 11	Klübersynth GH 6-100
Synthetic gear oil	500	VG 220	*Alphasyn EP 220	*Optigear Synthetic PD 220	Shell Omala HD 220	Mobil SHC 630 Mobil SHC Gear 220	Klübersynth GEM 4-220 N
Poly- $\alpha$ -Olefine (CLP-HC)	1000 (3000)	VG 150	*Alphasyn EP 150	*Optigear Synthetic PD 150	Shell Omala HD 150	Mobil SHC 629 Mobil SHC Gear 150	Klübersynth GEM 4-150 N
	1500	VG 100				Mobil SHC 627	
	start at 1500	VG 68				Mobil SHC 626	
Physiologically uncritical oils (PHY-Oil)	1000	VG 220		*Optileb GT 220 **Tribol FoodProof 1800/220	Shell Cassida WG 220	Mobil SHC Cibus 220	*Klüberoil 4 UH1 – 220 N **Klübersynth UH1 6-220
USDA - H1 Certified	1500	VG 150		*Optileb GT 150		Mobil SHC Cibus 150	*Klüberoil 4 UH1 – 150 **Klübersynth UH1 6-150
NSF H1 Certified	start at 1500	VG 100		*Optileb GT 100		Mobil SHC Cibus 100	*Klüberoil 4 UH1 - 68 N

\* Synth. KW-Oil, Ester Oil \*\* Polyglycol Oil

### Oil quantities (dependent on ratio, speed, shaft arrangement and installation position)

Size	P54	P75/X75	P90/X90	P110/X110	P140/X140	P170/X170	P210/X210	P240/X240	P280/X280	P360	P450
Average max amount of oil	0,05 l	0,1 l	0,2 l	0,3 l	0,4 l	1,0 l	2,2 l	2,6 l	3,0 l	9,0 l	22,0 l
	-	-	-	0,35 l	0,6 l	1,2 l	2,5 l	3,5 l	5,0 l	15,0 l	32,0 l

When changing oil, we recommend that you fill the gear unit with the type of oil previously used. In particular, synthetic oils may not be mixed with mineral oils or other synthetic oils. When changing from mineral oil to synthetic oil, the gearbox must be rinsed thoroughly with new oil type.

POWERGEAR gearboxes, size P75 to P140 and X75 to X140 are supplied ready lubricated for life with a high-quality Poly-Alpha-Olefin synthetic oil. They are therefore maintenance free. Up to size P110/X110 there are no oil drain holes included. Only from size P140/X140 do the gearboxes include oil drain holes to enable optional oil changes.

POWERGEAR gearboxes, size P170 to P450 and X170 to X280 are supplied without lubricant if not ordered additionally.

For operating temperatures of max 80 °C, we recommend the use of mineral gear oil CLP DIN 51517 to ISO VG-Class 100 (DIN 51519).

For operating temperatures of up to 90 °C, we recommend the use of Poly-Alpha-Olefin synthetic gear oil CLP DIN 51517, part 3, to ISO VG-Class 150 (DIN 51519).

The lifespan of the oil at 80 °C average temperature in the gearbox without any relevant change in the quality of the oil, indicated by the oil producers are maximum values:

- for mineral oils, biodegradable oil and physiologically uncritical oil at least 2 years or 10.000 operating hours
- for Poly-Alpha-Olefine and Polyglykole at least 4 years or 20.000 operating hours

Please note:

The actual lifespan may be longer but for temperatures of over 80 °C could equally be shorter. As a rule, the lifespan of the oil is reduced by 50% for an operating temperature increase of 10%.

The condition of the gearbox and especially the leak tightness requires checking at regular intervals.

Service kits of wear and tear parts with full instructions are available from our service department.