

Tribol™ 3020 Range

Fluid Greases with TGOA

Description

Castrol Tribol™ 3020 is a range of greases formulated from highly refined petroleum base oils, a lithium thickener, and Tribol Grease Oil Additive (TGOA). The TGOA additive package outperforms all other EP and antiwear additives because of its unique action on frictional surfaces.

The base oils are high-viscosity mineral oils forming a stable lubricant film to withstand high continuous loads, shock loads and vibrations.

The TGOA additive package is activated by high specific loads and corresponding temperatures causing a chemical-physical reaction. This results in an equalization of surface roughness without creating abrasion.

The results of the TGOA additives can be compared with a rolling process in the micro-range. The surface roughnesses are gradually leveled and smoothed.

Through smoothing of the working surfaces, the loads are distributed over increasing areas and the actual load carrying areas are enlarged. During the running-in process, the TGOA additive package creates an optimum of smooth contact surfaces. If, because of shock loads, or stop-and-go operation, surface roughness peaks redevelop, the TGOA additives are automatically reactivated. Surface roughness is again equalized and lubrication optimized.

Corrosion and oxidation inhibitors help maximize effective rust protection and long life of the grease. Tribol 3020 meet NLGI consistency grades commonly available for these types of lubricants.

Application

Typical applications for Castrol Tribol 3020 greases are non-oil-tight gear units, rolling and sliding bearings, bushings, slides and general lubrication designed for fluid-grease lubrication.

Applications include large slow-speed bearings where the Castrol Tribol 3020 greases provide for a sufficient lubricating film due to their high base oil viscosity.

Operating temperatures can range from -40°C to $+120^{\circ}\text{C}$ depending on NLGI grades.

Advantages

Compared to conventional greases provides the following advantages:

- Excellent pumpability in central lubrication systems.
- Repairing of damaged friction surfaces (roughness) due to the TGOA additives.
- Extended lubrication interval.
- Reduced wear and noise.
- Lowering of the operating temperatures.
- Low downtime thus reducing maintenance and repair costs.
- Due to their excellent adhesion, these greases offer an optimum sealing effect.

Typical Characteristics

Name	Method	Units	Tribol 3020/ 1000-2	Tribol 3020/ 1000-1	Tribol 3020/ 1000-0	Tribol 3020/ 1000-00	Tribol 3020/ 1000-000	
Appearance	Visual	-	homogeneous					
Thickener Type	-	-	Lithium	Lithium	Lithium	Lithium	Lithium	
Base Oil	-	-	Mineral Oil	Mineral Oil	Mineral Oil	Mineral Oil	Mineral Oil	
Consistency	ISO 2137/ ASTM D217	NLGI Grade	2	1	0	00	000	
Worked Penetration (60 Strokes @25°C/77°F)	ISO 2137/ ASTM D217	1/10 mm	265-295	310-340	355-385	400-430	445-475	
Dropping Point, Grease	ISO 2176/ ASTM D566	°C/°F	> 175 / > 350	> 175 / > 350	> 160 / > 320	-	-	
Base Oil Viscosity @ 40°C/ 104°F	ISO 3104/ ASTM D445	mm ² /s	1000	1000	1000	1000	1000	
Base Oil Viscosity @ 100°C/ 212°F	ISO 3104/ ASTM D445	mm ² /s	54	54	54	54	54	
Rust Test (distilled water)	ASTM D1743	Rating	Pass	Pass	Pass	Pass	Pass	
Rust Test - EMCOR (distilled water)	DIN 51802	Rating	≤ 0/1	≤ 0/1	≤ 0/1	≤ 0/1	≤ 0/1	
Copper Corrosion (24 hrs, 100°C /212°F)	ASTM D4048	Rating	1B	1B	1B	1B	1B	
Four Ball Wear test - Wear Scar Diameter	DIN 51350-05E	mm	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Four Ball Weld Load test - Weld Point	DIN 51350-4A	N	3600/ 3800	3600/ 3800	3600/ 3800	3600/3800	3600/3800	
SRV Friction and Wear test (300 N / 2hr / 50°C)	ASTM D5707	coeff. of friction	0.08	0.08	0.08	0.08	0.08	
Water Resistance	DIN 51807	Rating	1-90	1-90	1-90	test not suitable for semi-fluid greases	test not suitable for semi-fluid greases	
Roll Stability Test - Shear Stability	ASTM D1831	1/10 mm	≤ 10	≤ 10	≤ 10	test not suitable for semi-fluid greases	test not suitable for semi-fluid greases	
Flow pressure @ -20°C / -4°F	DIN 51805	mbar	350	250	100	-	-	
Flow pressure @ -35°C / -31°F	DIN 51805	mbar	-	-	-	700	500	
Oil separation	DIN 51817	%	≤ 4	≤ 11	-	-	-	
Oil separation	ASTM D1742	%	≤ 3	≤ 3	-	-	-	

Subject to usual manufacturing tolerances.

Additional Information

Castrol Tribol 3020 should not be mixed with greases using a different thickener. Application may be made manually with grease guns or automatic dispensing systems, designed for the respective NLGI grades.

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