



Castrol Tribol 4020

High performance bearing grease

Description

Castrol Tribol™ 4020 greases are formulated from highly refined petroleum base oils, a lithium complex thickener, and Tribol Grease Oil Additive (TGOA), the latest advancement in the field of friction reducing and surface improving additive technology. These multi-service greases are designed to extend the service life of bearings in heavy duty and elevated temperature applications. The load-carrying, anti-wear, and friction reducing capabilities of Tribol 4020 greases exceed conventional complex greases due to the advanced TGOA additive technology. Under relatively high specific loads and related temperatures, this technology promotes a non-destructive smoothing of surface roughness in the micro-range. This smoothing effect reduces friction and leads to an increase of the actual load-bearing surface. If surface roughness peaks redevelop because of shock loads or stop-and-go operation, the TGOA additive package automatically reactivates. Surface roughness is again smoothed and lubrication optimised.

Application

Tribol 4020 greases were formulated as multi-service lubricants for heavy duty applications of plain and anti-friction bearings under medium to high loads. The TGOA additives are very effective in protecting the machined surfaces of bearings during the critical 'running-in' period. Good bearing surfaces are essential for long bearing life. Tribol 4020 is commonly used as a plant wide lubricant in the automotive industry as well as industries where the preference is for a high performance non-dark grease.

Advantages

- Advanced TGOA additive technology – multiple benefits including reduced friction, temperatures and noise, increased load carrying ability, and superior surface protection
- Excellent water resistance – the coating film stays on the surface even in the presence of water
- Excellent mechanical stability and adhesion – the grease keeps its consistency in service ensuring long term protection and reduced consumption as film stays between lubricated surfaces
- Superior oxidation resistance – prevents corrosive activity on bearings in aggressive environments
- Formulated to address environmental concerns – it is free of antimony, barium, lead, and zinc

Typical Characteristics

Name	Method	Units	220-1	220-2	460-1	460-2
Appearance	Visual	-	Light amber	Light amber	Amber	Amber
Thickener type	-	-	Lithium complex	Lithium complex	Lithium complex	Lithium complex
Base oil	-	-	Mineral oil	Mineral oil	Mineral oil	Mineral oil
Consistency	ISO 2137 / ASTM D217	NLGI Grade	1	2	1	2
Density @ 20°C / 68°F	ASTM D4052	kg/m ³	920	916	-	908
Worked Penetration (60 strokes @ 25°C / 77°F)	ISO 2137 / ASTM D217	0.1 mm	310-340	265-295	310-340	265-295
Dropping Point	ISO 2176 / ASTM D566	°C/°F	240/464	240/464	240/464	240/464
Base Oil Viscosity @ 40°C / 104°F	ISO 3104 / ASTM D 445	mm ² /s	220	220	460	460
Base Oil Viscosity @ 100°C / 212°F	ISO 3104 / ASTM D 445	mm ² /s	19	19	28.5	28.5
Flash Point - open cup method	ISO 2592 / ASTM D92	°C/°F	225/437	225/437	232/450	232/450
Rust Test (distilled water)	ASTM D1743	Pass	Pass	Pass	Pass	Pass
Rust Test - EMCOR (distilled water)	ISO 11007 / ASTM D6138	Rating	0/0	0/0	0/0	0/0
Copper Corrosion (24 hrs, 100°C / 212°F)	ASTM D4048	Rating	1b	1b	1b	1b
Four Ball Wear test - Wear Scar Diameter (40 kgf / 75°C / 1200 rpm / 1 hr)	ISO 51350 / ASTM D2266	mm	0.5	0.5	0.5	0.5
Four Ball Weld Load test - Load Wear Index	ISO 11008 / ASTM D2596	-	80	80	80	80
Four Ball Weld Load test - Weld Point	ISO 11008 / ASTM D2596	kgf	400	400	400	400
Four Ball Wear test - Wear Scar Diameter	DIN 51350-5E	mm	0.7	0.7	0.7	0.7
Four Ball Wear test - Weld Load	DIN 51350-4A	N	4200/4400	4200/4400	4200/4400	4200/4400
Timken OK Load	ASTM D2509	kg / lbs	23/50	23/50	23/50	23/50
SRV Friction and Wear test (300 N / 2 hr / 50°C)	ASTM D5707	coeff. of friction	0.08	0.08	0.08	0.08
FE-9 Bearing Life test - A/1500/6000-140	DIN 51821-2	Pass	>100	>100	-	>100
Water Wash-out @ 79°C/175°F	ISO 11009 / ASTM D1264	%wt loss	4	4	4	4
Water Resistance	DIN 51807-1	Rating	1	1	1	1
Roll Stability test - Shear Stability	ASTM D1831	0.1 mm	10	10	10	10
Flow pressure @ -20°C / -4°F	DIN 51805	mBar	500	850	1150	1300
DIN Classification	DIN 51502	-	KP 1 N-30	KP 2 N-30	-	KP 2 N-20
ISO Classification	ISO 6743/9	-	L-XBDHB-1	L-XBDHB-2	-	L-XBDHB-2

Subject to usual manufacturing tolerances.

Additional Information

In order to minimise potential incompatibilities when converting to a new grease, all previous lubricant should be removed as much as possible prior to operation. During initial operation, re-lubrication intervals should be monitored closely to ensure all previous lubricant is purged.

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