



Finnexx Tarchia

Torque Fluid HD

PRODUCT DESCRIPTION

Finnexx Tarchia Torque Fluid HD is a range of heavy-duty transmission and drive train fluids designed for use in powershift transmissions and final drives that require Caterpillar TO-4 fluid type fluids. They are formulated with mineral base oils and a high performance non friction-modified additive system.

CUSTOMER BENEFITS

- Friction level optimized for fast shifting and maximum power throughput in transmissions
- Excellent antiwear protection
- Excellent oxidation stability, preventing oil thickening and formation of harmful sludge, lacquer or deposits
- Good low-temperature fluidity, allowing fast circulation and wear protection during cold weather start-up
- Formulated to be extremely shear stable ensuring that there will be no viscosity drop in service due to shearing effects
- Full compatibility with elastomers used in Caterpillar and related equipment, preventing loss of fluid due to seal deterioration
- Foam inhibition system ensures rapid release of entrained air, ensuring smooth shifting

APPLICATIONS

The Finnexx Tarchia Torque Fluid HD product range is designed for use in Caterpillar powershift transmissions, final drives and marine transmissions. They are also suitable for use in other heavy-duty applications that require TO-4 fluids, including Komatsu powershift transmissions.

Finnexx Tarchia Torque Fluid HD products may also be used in mobile hydraulic systems, hydrostatic transmissions, heavy-duty manual transmissions and final drives for which heavy-duty engine oils are specified. They should not be used in applications that require an EP-type gear oil – for these applications, select a suitable product from the Finnexx EP Gear ranges.

Finnexx Tarchia Torque Fluids HD 10, 30, 50, and 60 correspond to viscosity grades SAE 10W, SAE 30, SAE 50 and SAE 60 respectively. The choice of viscosity grade will depend on ambient temperature conditions and operating severity.

Viscosity grade recommendations are shown below:

| SAE grade | 10 | | 30 | | 50 | |
|-------------------------------|-----|-----|-----|-----|-----|-----|
| | Min | Max | Min | Max | Min | Max |
| Outside temperature range, °C | | | | | | |
| Hydraulic systems | -20 | +40 | -10 | +50 | | |



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|---|-----|-----|-----|-----|-----|-----|
| | | | | | | |
| Hydrostatic transmissions | -20 | +40 | | | | |
| Powershift transmissions | -20 | +10 | 0 | +35 | +10 | +50 |
| Final drive/Differential/Gearboxes (except for off-highway trucks) | -30 | 0 | -20 | +25 | 0 | +50 |
| Final drive (off-highway trucks) | -30 | -10 | -20 | +15 | 0 | +50 |

Finnexx Tarchia Torque Fluid HD 60 is designed principally for final drives, and will not normally be used in the other applications mentioned above. (Note: Caterpillar's primary recommendation for final drives and axles in off-road service is now their newer lubricant performance specification FD-1, although TO-4 type lubricants are still acceptable, although with a shorter drain interval).

Although they are not intended for use in engines, Finnexx Tarchia Torque HD products have API CF-2 capability, offering protection against accidental misuse in diesel engines provided that drain intervals are shortened.

Due to the fact that Finnexx Tarchia Torque Fluid HD grades are not friction modified, they are not recommended for use in systems with wet brakes - for these applications, use Finnex Torque Fluid HD Premium.

PERFORMANCE

| Torque Fluid HD Product grade | | HD 10 | HD 30 | HD 50 | HD 60 |
|-------------------------------|--|-----------------------------------|---|---|-----------------------------------|
| SAE viscosity grade | | 10W | 30 | 50 | 60 |
| Allison | C-4 | Meets requirements | Meets requirements | | |
| Caterpillar | TO-4 | Meets requirements ^[1] | Meets requirements ^[1] | Meets requirements ^[1] | Meets requirements ^[1] |
| Eaton | Fuller/ Roadranger manual transmissions | | Suitable for application ^[2] | Suitable for application ^[2] | |
| Meritor Rockwell | Transmissions | | | Suitable for application | |
| Volvo | 97305-90 | | | Meets requirements | |

^[1] Caterpillar does not operate a formal approval system - each supplier is responsible for the performance of their own product.

^[2] Where the torque capacity does not exceed 2500 Nm.



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TYPICAL TEST DATA

| Characteristic | Test methods | HD 10 | HD 30 | HD 50 | HD 60 |
|-------------------------------|------------------------------|--------|--------|--------|-------|
| SAE viscosity grade | | 10W | 30 | 50 | 60 |
| Viscosity, Kinematic, 100°C | mm ² /s ASTM D445 | 6.5 | 10.9 | 19.1 | 24.0 |
| Viscosity, Kinematic, 40°C | mm ² /s ASTM D445 | 41 | 93 | 224 | 317 |
| Viscosity Index | ASTM D2270 | 110 | 102 | 96 | 96 |
| Viscosity, Brookfield, -15°C | mPa.s ASTM D2983 | | | 40,000 | |
| Viscosity, Brookfield, -25°C | mPa.s ASTM D2983 | | 50,000 | | |
| Viscosity, Brookfield, -35°C | mPa.s ASTM D2983 | 80,000 | | | |
| Density, 15°C | kg/l ASTM D4053 | 0.888 | 0.898 | 0.904 | 0.910 |
| Pour Point | °C ASTM D97 | -39 | -30 | -18 | -9 |
| Copper Corrosion, 2 hr, 100°C | ASTM D130 | 1a | 1a | 1a | 1a |
| Flash Point COC | °C ASTM D92 | 222 | 253 | 258 | |
| Total Base Number | mg KOH/ASTM D2896 | 11.4 | 11.4 | 11.4 | 11.4 |
| Foam all Seq | ml ASTM D892 | 0 | 0 | 0 | 0 |
| Calcium | %w X-RAY | 0.420 | 0.420 | 0.420 | 0.420 |
| Phosphorus | %w X-RAY | 0.093 | 0.093 | 0.093 | 0.093 |
| Zinc | %w X-RAY | 0.108 | 0.108 | 0.108 | 0.108 |

Health & Safety Note – Always maintain good levels of personal hygiene when handling mineral oils. Wear protective clothing/gloves. Wash hands and skin areas where contact has occurred and avoid ingestion. See applicable Material Safety data Sheet for further information