

Optimizing Operations. Together.

Hydraulic and Industrial Lubricants Reference Guide





AW Hydraulic Oils

Quaker Houghton AW hydraulic oils are fully inhibited hydraulic oils designed for service in piston, vane or gear pumps operating at pressures over 1000 psi and/or speeds over 1200 rpm. The AW series of hydraulic oils contain anti-wear, rust, oxidation and foam inhibitors, and exhibit excellent water separating characteristics. These oils meet or exceed the requirements of the pump manufacturers that do not prohibit the use of zinc additives.

| AW HYDRAULIC OILS | 22 | 32 | 46 | 68 | 100 | ASTM TEST |
|----------------------------|------|------|------|------|------|--------------|
| Viscosity, cSt at 40°C | 22 | 32 | 46 | 68 | 100 | D445 |
| cSt at 100°C | 4.3 | 5.4 | 6.8 | 8.7 | 11.1 | D445 |
| Viscosity Index | 95 | 95 | 95 | 90 | 95 | D2270 |
| API Gravity | 34 | 31 | 32 | 30 | 29.2 | D1298 |
| Pour Point, °F | -15 | -15 | -15 | -5 | -5 | D97 |
| Flash Point, COC, °F | 360 | 370 | 415 | 415 | 425 | D92 |
| Cu Corrosion | 1B | 1B | 1B | 1B | 1B | D130 |
| Emulsion Test | Pass | Pass | Pass | Pass | Pass | D1401 |
| Turbine Oil Stability, Hrs | 5000 | 5000 | 5000 | 5000 | 5000 | D943 |
| Rust Test | Pass | Pass | Pass | Pass | Pass | D665B |

Zinc Free AW Hydraulic Oils

Quaker Houghton AW 4000 Series are anti-wear hydraulic oils formulated with highly refined base stocks that are blended with an enhanced additive package to provide lubrication, oxidation stability, anti-rust, demulsibility, anti-foam and high temperature hydrolytic stability. These oils are ashless and contain no zinc.

| ZINC FREE AW HYDRAULIC OILS | 4015 | 4020 | 4030 | ASTM TEST |
|--------------------------------|------|------|------|-----------|
| Viscosity, cSt at 40°C | 32 | 46 | 68 | D445 |
| cSt at 100°C | 5.4 | 6.8 | 8.7 | D445 |
| Viscosity Index | 95 | 95 | 95 | D2270 |
| API Gravity | 32.0 | 32.0 | 30.0 | D1298 |
| Pour Point, °F | -10 | -10 | -10 | D97 |
| Flash Point, COC, °F | 400 | 400 | 400 | D92 |
| Cu Corrosion | 1B | 1B | 1B | D130 |
| Rust Test | Pass | Pass | Pass | D665B |

Premium AW Hydraulic Oils

Quaker Houghton AW HD anti-wear hydraulic oils, a blend of highly refined oils containing a complete additive package to provide lubrication, oxidation stability, anti-foam, and high temperature hydrolytic stability. These products are premium quality hydraulic oils formulated to meet or exceed the requirements of pump manufacturers.

| PREMIUM AW HYDRAULIC OILS | HD 32 | HD 46 | HD 68 | ASTM TEST |
|------------------------------|-------|-------|-------|-----------|
| Viscosity, cSt at 40°C | 32 | 46 | 68 | D445 |
| cSt at 100°C | 5.4 | 6.8 | 8.7 | D445 |
| Viscosity Index | 95 | 90 | 90 | D2270 |
| API Gravity | 31.5 | 30.5 | 29.0 | D1298 |
| Pour Point, °F | -10 | -5 | -5 | D97 |
| Flash Point, COC, °F | 370 | 370 | 415 | D92 |
| Cu Corrosion | 1B | 1B | 1B | D130 |
| Rust Test | Pass | Pass | Pass | D665B |

Turbine and Hydraulic Oils (R&O)

Quaker Houghton Turbine and Hydraulic Oils (R&O) are highly refined distillate oils that have excellent thermal and oxidation stability, rust protection, anti-foam and demulsibility. Quaker Houghton Turbine and Hydraulic Oils (R&O) is recommended for turbine lubrication, machine tools, air compressors, circulating oil systems and hydraulic systems operating at less than 1000 psi and/or less than 1200 rpm.

| TURBINE AND HYDRAULIC | 32 | 46 | 68 | 100 | 150 | ASTM TEST |
|----------------------------|------|------|------|------|------|--------------|
| Viscosity, cSt at 40°C | 32 | 46 | 68 | 100 | 150 | D445 |
| cSt at 100°C | 5.4 | 6.8 | 8.7 | 11.1 | 15 | D445 |
| Viscosity Index | 95 | 95 | 95 | 95 | 95 | D2270 |
| API Gravity | 31 | 30 | 30 | 29.5 | 29.5 | D1298 |
| Pour Point, °F | -10 | -10 | -10 | 0 | 0 | D97 |
| Flash Point, COC, °F | 400 | 410 | 420 | 430 | 460 | D92 |
| Cu Corrosion | 1B | 1B | 1B | 1B | 1B | D130 |
| Emulsion Test | Pass | Pass | Pass | Pass | Pass | D1401 |
| Turbine Oil Stability, Hrs | 3000 | 3000 | 3000 | 3000 | 3000 | D943 |
| Rust Test | Pass | Pass | Pass | Pass | Pass | D665B |

Industrial Lubricants

Gear Oils

Quaker Houghton HEP Gear Oils are premium quality extreme pressure gear lubricants formulated with high viscosity index base oils. These products contain a sulfur-phosphorus additive package and do not contain lead, possess good adhesion properties, are non-corrosive and are foam inhibited. They resist oxidation, are thermally stable and have good demulsibility. Quaker Houghton HEP Gear Oils are recommended for circulating, splash, bath or spray lubrication systems on enclosed gear, chain or sprocket drives.

| HEP GEAR OILS | 68 | 100 | 150 | 220 | 320 | 460 | ASTM TEST |
|-----------------------|------|------|------|------|------|------|--------------|
| AGMA Grade | 2 EP | 3 EP | 4 EP | 5 EP | 6 EP | 7 EP | |
| Viscosity cSt at 40°C | 68 | 100 | 150 | 220 | 320 | 460 | D445 |
| cSt at 100°C | 8.7 | 11.1 | 15 | 19 | 25 | 30 | D445 |
| Viscosity Index | 90 | 90 | 90 | 95 | 95 | 90 | D2270 |
| API Gravity | 30 | 29.5 | 27.5 | 28.5 | 27.5 | 27 | D1298 |
| Flash Point, COC, °F | 415 | 415 | 425 | 430 | 450 | 540 | D92 |
| Cu Corrosion | 1B | 1B | 1B | 1B | 1B | 1B | D130 |
| Timken EP, Ibs | 60 | 60 | 60 | 60 | 60 | 60 | D2782 |

Way Oils

PROWAY way oils are formulated using only highly refined paraffinic base oils. They contain friction modifying additives that provide smooth slide way movement, or anti-stick-slip, on sliding machine ways including planers, grinders, shapers, milling and horizontal boring machines. PROWAY way oils have mild EP properties, exhibit good rust prevention and adhere strongly to sliding surfaces, minimizing wear to slide way components.

| PROWAY WAY OILS | 1 | 2 | 3 | 4 | ASTM TEST |
|------------------------|------|------|------|------|-----------|
| Viscosity, cSt at 40°C | 32 | 68 | 150 | 220 | D445 |
| cSt at 100°C | 5.4 | 8.7 | 15 | 19 | D445 |
| Viscosity Index | 90 | 90 | 90 | 90 | D2270 |
| Pour Point, °F | 10 | 20 | 15 | 20 | D97 |
| Flash Point, COC, °F | 405 | 430 | 435 | 445 | D92 |
| Cu Corrosion | 1B | 1B | 1B | 1B | D130 |
| Friction Test | NA | Pass | Pass | Pass | CMM |
| Thermal Stability | NA | Pass | Pass | Pass | CMM |
| Rust Test | Pass | Pass | Pass | Pass | D665B |

Circulating Oils

Quaker Houghton Circulating Oils are blended with premium quality, highly refined base stocks. They have excellent resistance to oxidation and rust and are formulated with a unique demulsifier to enhance water separation characteristics. Quaker Houghton Circulating Oils can be used in any application calling for a general purpose non-antiwear lubricating oil. This product is designed to meet or exceed Morgan Morgoil lubricant specifications, including the Morgan "super demulsibility" advanced lubricant specification.

| CIRCULATING OILS | 8150 | 8220 | 8320 | 8460 | 8680 | ASTM TEST |
|------------------------|------|------|------|------|------|-----------|
| API Gravity | 28 | 28 | 27.5 | 26.5 | 27.5 | D1298 |
| Viscosity, cSt at 40°C | 150 | 220 | 320 | 460 | 680 | D445 |
| Viscosity Index | 90 | 90 | 90 | 95 | 120 | D2270 |
| Flash Point, °F | 460 | 420 | 450 | 550 | 500 | D92 |
| Pour Point, °F | +10 | +10 | +10 | +15 | +15 | D97 |
| Cu Corrosion | 1A | 1A | 1A | 1A | 1A | D130 |

Spindle Oils

Quaker Houghton Spindle Oils are highly refined oils, carefully selected to provide excellent water separation and extremely low foaming tendencies over a wide range of temperatures. They contain inhibitors for rust, corrosion and oxidation. Quaker Houghton Spindle Oils are intended for use in high speed spinning and twister spindle bearings. These bearings typically operate at extremely high rpm's and require a low viscosity, high viscosity index oil to both lubricate and dissipate excessive heat. Quaker Houghton Spindle Oils may be used in hydraulic systems where light viscosity oils are required.

| SPINDLE OILS | 3 | 5 | 10 | 22 | ASTM TEST |
|------------------------|------|------|------|------|-----------|
| Viscosity, cSt at 40°C | 2.8 | 5 | 10 | 22 | D445 |
| Viscosity Index | - | 70 | 90 | 90 | D2270 |
| API Gravity | 43 | 40 | 35 | 32 | D1298 |
| Pour Point, °F | -9 | 15 | 0 | 0 | D97 |
| Flash Point, °F | 235 | 275 | 330 | 340 | D92 |
| Cu Corrosion | 1B | 1B | 1B | 1B | D130 |
| Emulsion Test | Pass | Pass | Pass | Pass | D1401 |
| Rust Test | Pass | Pass | Pass | Pass | D665B |

Forward Together

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