

# PENNZOIL AW HYDRAULIC OILS

## Premium Quality Hydraulic Oils

### PRODUCT DESCRIPTIONS

**PENNZOIL AW HYDRAULIC OILS** offer “state-of-the-art” formulations that produce a line of universal anti-wear hydraulic oils having all the wear preventive characteristics required for the most severe of applications, including high pressure vane pumps. At the same time, this oil is stable enough for more sensitive applications, such as coaxial piston pumps and hydraulic transmissions.

**PENNZOIL AW HYDRAULIC OILS** possess excellent thermal and oxidative stability. They can function for long operational periods without forming sludge, varnish or other degradation products, which adversely affect the operation and performance of hydraulic system components.

**PENNZOIL AW HYDRAULIC OILS** have excellent hydrolytic stability, providing protection to all hydraulic system components even in the presence of moisture. Additive used in some hydraulic oil break down under conditions of high temperature and moisture to form acids which can attack copper and its alloys such as brass and bronze, which are widely used in hydraulic pumps and transmissions.

**PENNZOIL AW HYDRAULIC OILS** exhibit good demulsibility, enabling any contaminating water to be drained from the reservoir when the system has been idle for short periods of time. They also contain rust and corrosion inhibitors and defoamants to offer complete system protection from attack by water, corrosive agents and loss of lubricity due to foaming.

### APPLICATION

**AW HYDRAULIC OILS** are recommended for use in hydraulic equipment made by major manufacturers, including Commercial Shearing, Eaton Fluid Power, Joy, Jeffrey, Lee Norse, Sperry Vickers, Hagglands-

Denison, Tyrone, Hydreco, Sundstrand, Oilgear, Cincinnati Milacron, And others. Always follow the manufacturer’s viscosity recommendation for a given temperature range.

These oils can be used in a wide variety of equipment including hydraulic presses, machine tools, hydraulic systems on mining equipment, oil lubricated electric motors and generators, palletizers, gear sets requiring an API GL-1 gear oil, packaging equipment, calendars, grinders, die casting machines and other equipment requiring a premium quality hydraulic oil.

**PENNZOIL AW HYDRAULIC OILS** can also be used for those compressors which call for a non-detergent motor oil.

### BENEFITS

- Good thermal stability
- Highly resistance to oxidation that would result in sludge formation
- Resists formation oil-water emulsions
- Resists foaming and aeration which could result in erratic equipment operation and increased oxidation
- Special anti-scuff and anti-wear agents extend the live of gear, vane, axial and radial piston pumps
- Outstanding hydrolytic stability assures long fluid life and protection of yellow metals
- Exceeds wear prevention requirements of all major hydraulic pump manufacturers  
Exceeds the following manufacturer’s specifications:
  - Denison HF-0
  - Din 51524 part 2

**TYPICAL PHYSICAL AND CHEMICAL PROPERTIES  
PENNZOIL AW HYDRAULIC OILS**

TEST	METHOD	TYPICAL RESULTS		
ISO Viscosity Grade		32	46	68
AGMA Grade		--	1	2
API Service		SA-SB	SA-SB	SA-SB
Gravity, API	ASTM D-287	30.0	29.2	28.7
Pour Point, °C	ASTM D-97	-9	-9	-9
Flash Point, °C	ASTM D-92	221	239	248
Viscosity				
@ 40 °C, cSt	ASTM D-445	31.95	45.45	68.00
@ 100 °C, cSt	ASTM D-445	5.380	6.725	8.780
Viscosity Index	ASTM D-2270	101	101	101
Color	ASTM D-1500	0.5	1.0	1.5
Copper Strip Corrosion	ASTM D-130	1a	1a	1a
Vickers Vane Pump Test	ASTM D-2882	PASS	PASS	PASS
Foam Test, All Sequences	ASTM D-892	0	0	0
Stability, ml				
Rust Test	ASTM D-665 A&B	PASS	PASS	PASS
Dielectric Strength	ASTM D-887	35kV	35kV	35kV
Demulsibility Test	ASTM D-1401	5	10	15
Minute to 40/40/0				

TEST	METHOD	TYPICAL RESULTS		
ISO Viscosity Grade		100	150	220
SAE Viscosity Grade		3	4	5
API Service		SA-SB	SA-SB	SA-SB
Gravity, API	ASTM D-287	27.7	27.5	26.9
Pour Point, °C	ASTM D-97	-9	-9	-9
Flash Point, °C	ASTM D-92	270	278	284
Viscosity				
@ 40 °C, cSt	ASTM D-445	99.61	150.0	220.0
@ 100 °C, cSt	ASTM D-445	11.10	14.50	18.80
Viscosity Index	ASTM D-2270	96	95	95
Color	ASTM D-1500	1.5	1.5	1.5
Copper Strip Corrosion	ASTM D-130	1a	1a	1a
Vickers Vane Pump Test	ASTM D-2882	PASS	PASS	PASS
Foam Test, All Sequences	ASTM D-892	0	0	0
Stability, ml				
Rust Test	ASTM D-665 A&B	PASS	PASS	PASS
Dielectric Strength	ASTM D-887	35kV	35kV	35kV
Demulsibility Test	ASTM D-1401	25	35	40
Minute to 40/40/0				