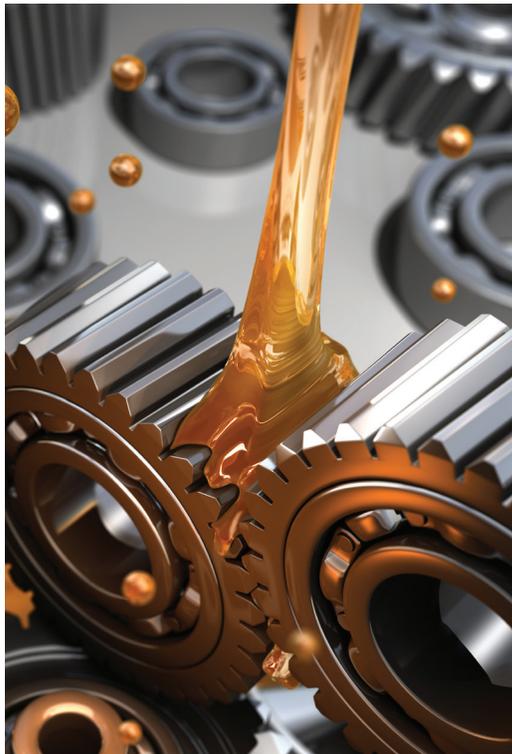


# Hydra King AW Oils

## ISO 32 / 46 / 68



### Summary

Hydraulic systems are very costly to repair. Added to the cost of actual repairs are the formidable costs of downtime and lost production. It has been proven that a small investment in premium fluids and filtration can extend the life of hydraulic systems to at least double, and sometimes up to 4X longer intervals between repairs and rebuilds. Achieving this goal will pay back many times its cost. Success requires the following conditions;

The hydraulic fluid must contain extra levels of Zinc **Anti Wear Additives** compared to typical anti-wear oils. This series of anti wear oils achieve that requirement.

The **Cleanliness** of the hydraulic system must be maintained. Most filtration is woefully inadequate. Cleanliness is up to you.

The oil must have superior resistance to the harmful effects of normal amounts of **Moisture** that inadvertently are present in all hydraulic systems. This series of oils contain additives that are more highly resistant to moisture than most of our competitors.

If the ultimate level of performance is desired, **NT Oil Additive** will reduce temperature rise, energy losses and typically will cut wear rates by 30% to 50%. NT Oil Additive is available as an option in this series of oils, or the product may be added to the system by the owner.

**Hydra King AW** oils utilize the highest quality zinc anti-wear technology available. Most competitive hydraulic oils contain from 225 to about 400 PPM of zinc, but our oils contain 650-700 PPM of zinc. Extra zinc has proven to help reduce wear rates in modern hydraulic systems. Hydra King AW oils are recommended for most automotive and industrial hydraulic systems using gear, vane, axial piston and radial piston designs. They feature excellent resistance to wear, foam, rust, oxidation and harmful emulsions with water. They are usable in systems with extra fine filtration.

**Hydra King AW** oils are formulated with modern additives that are gentle to yellow metal parts such as bronze, brass or copper. They resist acid formation under high temperatures. Properly maintained and filtered systems will remain free of sludge and varnish for long periods of time, beneficial in sensitive computer operated production equipment.

**Hydra King AW** oils are available in the following ISO Viscosity Grades; ISO 22, 32, 46, 68, 100, 150, 220, 320 and 460. Most industrial and automotive systems will require one of the grades on this sheet.

If an owner's manual is not available for choosing the correct viscosity, the following method is usually acceptable.

1. If the temperature at the pump (should be the hottest part of the system) is cold at full operating temperature, use ISO 22.
2. If it is warm to the touch, use ISO 32.
3. If the pump is hot to the touch, so that you can only touch the pump briefly, use ISO 46.
4. Systems that will cause pain from the heat should use ISO 68 or sometimes ISO 100.

**Hydra King AW** oils meet Denison HF-0 and Cincinnati Millicron. They pass many requirements that do not have a formal approval process. These oils are recommended in the following applications in the correct viscosity;

Denison HF-0, and often HF-1 or HF-2  
Vickers M-2950-S and I-286-S  
DIN 51524, Part 2  
Lee-Norse 100-1  
Cincinnati Millicron P-68, P-69, P-70  
Ford M-6C32  
U.S. Steel 136, 127  
B.F. Goodrich 0152  
General Motors LH-04-1, LH-06-1, LH-15-1  
AFNOR E-48-603  
Racine Variable Volume Vane Pumps

**Hydra King AW** oils are used in a wide variety of equipment including; compressors, mist oilers, gear sets, certain vacuum pumps, etc. The ISO 22, 32, 46 and 68 viscosity grades of Hydra King AW series are colored blue for ease in identification and leak detection.

King Oil Company offers filter patch testing or laboratory analysis to determine the cleanliness level of your oil. In major systems, we recommend that you submit samples for filter patch testing every three months.

**Hydra King AW** Viscosity Grades are available in 5 gallon pails, 55 gallon drums, 330 gallon disposable totes and in bulk quantities. See your King Oil Company distributor for any additional information that you may require.

0-102 SERIES

Owners manuals may specify anti-wear oils using the older SUS (or SSU) viscosity system. The chart below will convert SUS at 100°F directly to the corresponding ISO viscosity, measured at 40°C. A few owners' manuals specify an SAE viscosity grade. This is an imprecise method, but the following conversion chart is close enough for these systems.

1. ISO 32 = 150 to 160 SUS = SAE 5W or 10W
2. ISO 46 = 200 to 230 SUS = SAE 10W or SAE 20w20
3. ISO 68 = 300 to 350 SUS = SAE 20W20

### Specification and ASTM Method

ISO Viscosity Grade		32	46	68
Viscosity SUS @ 100°F	D-445	155	215	315
Viscosity Index	D-2270	106	102	98
Viscosity cSt @ 40°C	D-445	32.0	46.0	68.0
Viscosity cSt @ 50°C	D-445	21.5	30.0	42.9
Viscosity cSt @ 100°C	D-445	5.4	6.8	8.7
Pour Point	D-97	-35°C	-30°C	-25°C
Color before blue dye	D-1500	1.0	1.0	1.5
API Gravity	D-287	31.5	32.531.0	
Oxidation Test Hours	D-943	2850	2850	2500
Flash Point, C - COC	D-92	215	225	225
Neutralization Number	D-664	(all grades 1.33- TAN)		
Viscosity cP, -10°C		690	1375	2565
Viscosity cP, -15°C		1150	2400	4625
Viscosity cP, -20°C		2000	4375	8850
Viscosity cP, -25°C		3650	8500	18,000

In addition to the hydraulic filters supplied on new machines from the factory, we recommend that owners add auxiliary filters that are capable of removing particles to 0.5 microns, at a filter beta ratio of 2. Your King Oil Company distributor can help you with sources of this grade of filter.

In Search of **Excellence**

### King Oil Lubricants, LLC

Office: 240-707-6464

Fax: 240-328-4444

12314 Huyett Lane

Hagerstown, MD 21740

**OVER 400 SPECIALTY  
LUBRICANTS**

