

Hydraulic Info: Oil Recommendations

Particular attention must be paid to keep the oil in the circuit clean. Whenever there is a hydraulic component failure (cylinder, pump, valve), and there is a reason to feel that metal particles may be in the system, the oil must be drained, the entire system flushed clean, and any filter screens thoroughly cleaned or replaced. New oil should be supplied for the entire system. Oil suitable and recommended for use in circuits involving pumps and motors should meet the following specifications:

Viscosity Index: Aniline Point: Recommended Additives: Filtration:	90 minimum 175 maximum Foam depressant, rust and oxidation inhibitors. 10 micron recommended for maximum pump life.
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Normal Temperatures:	Minimum	Maximum
Ambient:	0° F (-18° C.)	100dfs° F. (37.8° C.)
System:	100° F. (37.8° C.)	180° F.(82.2° C.)

Other Desirable Characteristics:

- Stability of physical and chemical characteristics.
- High demulsibility (low emulsibility) for separation of water, air and contaminants.
- Resistant to the formation of gums, sludges, acids, tars and varnishes.
- High lubricity and film strength.

General Recommendations:

- A good quality hydraulic oil conforming to the characteristics listed above is essential to the satisfactory performance and long life of any hydraulic system.
- Oil should be changed on regular schedules in accordance with the manufacturers recommendations and the system periodically flushed.
- Oil operating temperature should not exceed 200° F. (93° C.) with a maximum of 180° F. (82° C.) generally recommended. 120° F to 140° F. (50° C. to 60° C.) is generally considered the optimum system operating temperatures. High temperatures result in rapid oil deterioration and may point out a need for an oil cooler or a larger reservoir. The nearer to optimum temperature, the longer the service life of the oil and the hydraulic components.
- The system reservoir capacity should equal, in gallons, the pump output in gpm or the total gpm of all pumps where there is more than one in the system.
- Oil poured into the reservoir should pass through a 100 mesh screen. Pour only clean oil from clean containers into the reservoir.

PHYSICAL PROPERTIES		
TEST	REQUIREMENT	METHOD
Viscosity @ 100 deg. F.	150 SSU Minimum	D88
Viscosity @ 210 deg. F.	42 SSU Minimum	D88
Viscosity index	95-125	D2270
Gravity, API	28.9-31.0	D287
Zinc	.08% Minimum	By Weight
Corrosion at 212 deg. F. Maximum	1	D130
Emulsion at 130 deg. F.	30	D1401
Flash point deg. F. Minimum	380	D92
Foam Test:		
Tendency @ 75 deg. F., M1, Maximum	75	D892-IP146
Stability @ 75 deg. F., M1, Maximum		
Pour Point deg. F., Minimum*	-20	D97
Rust Test	-Pass	D665
Minimum Hours to reach Acid No.2	2,000	D943