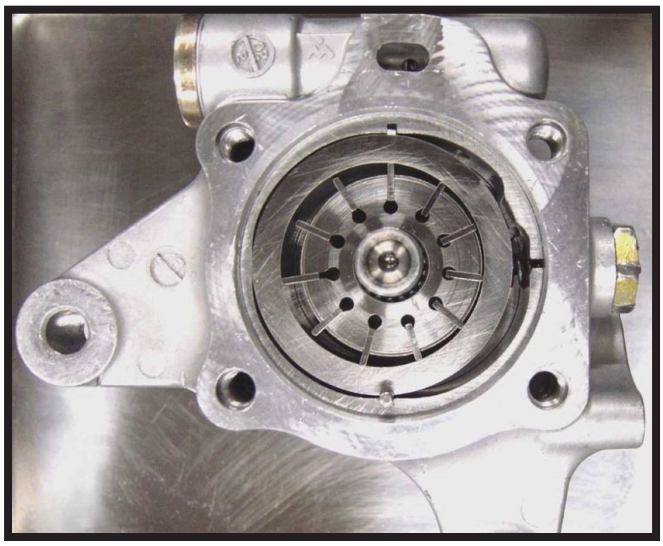
HYDRAULIC OIL

- REDUCES COSTLY WEAR
- RESISTS CHEMICAL BREAKDOWN
- PROTECTS SEALS
- RESISTS FOAMING
- RUST PROTECTION
- DEPENDABLE



Texas Refinery Corp.'s HYDRAULIC OIL provides superior protection for hydraulic systems including vane pumps.

Texas Refinery Corp. has always had good products for hydraulic systems, but continuous research and development has improved things once again. New generation base stocks and powerful additive systems in huge amounts make Texas Refinery Corp.'s HYDRAULIC OIL a high performance giant. In today's hydraulic systems, which operate under higher pressure and heat loads, there's a real need for superior hydraulic oils and the answer comes from Texas Refinery Corp.'s HYDRAULIC OIL.

HYDRAULIC OIL Reduces Costly Wear

HYDRAULIC OIL is a high quality, stable product formulated to provide excellent performance. Increased protection against surface wear is accomplished with the use of HYDRAULIC OIL - - it forms a film on metal surfaces, reducing metal to metal contact. Texas Refinery Corp. incorporates more zinc (an anti-wear additive) into its hydraulic oil, than is required on most equipment specifications - - an extra step to prolong the life of equipment. Reducing friction wear often reduces operating temperatures and that in turn helps increase the life of the oil and the equipment.

HYDRAULIC OIL Resists Chemical Breakdowns

Hydraulic oils are subjected to many problem-causing factors - - high temperatures, water, air, and foreign debris. This combination leads to oxidation, producing sludge, varnish, acids, eventually a thick gummy material in the oil. To prevent this, Texas Refinery Corp. manufactures HYDRAULIC OIL from new generation base oils which have a high stability and then TRC boosts the stability even further with extra portions of powerful anti-oxidation additives. In an oxidation test, HYDRAULIC OIL performed satisfactorily for over 10,000 hours, in most grades - - better than five times the target normally sought.

HYDRAULIC OIL Protects Seals

A hydraulic piston operates under high pressure, requiring a lubricant which reduces friction of the seal material, without damage to the seal itself. HYDRAULIC OIL is formulated with the most up-to-date additives to protect seals. Friction is reduced and longer service life is obtained. This savings is accomplished by using superior quality oils and additives used in Texas Refinery Corp.'s HYDRAULIC OIL formulation.

HYDRAULIC OIL Resists Foaming

For peak efficiency, hydraulic systems must use an uncontaminated oil as an operating medium. Water contamination, among other things, causes foaming, especially where elevated temperatures are encountered. Also, air entrapped in the system, can cause a foaming problem. Texas Refinery Corp.'s HYDRAULIC OIL contains special anti-foam chemistry in large amounts, so the fluid releases any air or water that may be

causing the foam. Reducing foam also decreases heat, and improves the life of the oil and the equipment.

HYDRAULIC OIL Protects Against Rust

If an oil is formulated properly, metals should not rust, even if moisture is present. HYDRAULIC OIL has the special additives in large quantities to protect metal surfaces from rust. The film forming chemistry, coats all metal surfaces with a thin film, preventing moisture and other rust promoters from reaching the surfaces. With the use of HYDRAULIC OIL, the worries of rust are over.

HYDRAULIC OIL Is Dependable

An inferior hydraulic oil becomes thick when cold and cause a pump to cavitate. When weather is hot, the oil becomes thin, causing a loss around the seals. The thin oil also tends to accelerate wear and give other problems. HYDRAULIC OIL shows very little change in its flow characteristics through its service life. The better quality base oils and superior additives in large quantities helps HYDRAULIC OIL maintain its viscosity and performance - - for dependability!

SPECIFICATIONS

HYDRAULIC OIL

Product Code ISO Grade Approx. SAE No.	#6135 22 5	#6140 32 10	#6131 46 15	#6145 68 20	#6148 100 30	#6144 150 40	#6147 220 50
API Gravity, ASTM D-28	30/32	30/32	31/32	29/31	28/30	28/30	27/29
Flash Point, ^{0}F., COC, Min. ASTM D-92	320	400	400	400	415	430	440
Fire Point, ^{0}F., COC, Min. ASTM D-92	340	430	440	440	450	470	480
Pour Point, ^{0}F., (Max.) ASTM D-97	-20	0	+5	+5	+10	+10	+10
Viscosity, SUS at 100^{0}F. ASTM D-445	100/110	170 (typ)	211 (typ)	324 (typ)	615 (typ)	750 (typ)	1142 (typ)
Viscosity, SUS at 210^{0}F. ASTM D-445	40 (typ)	43/47	47	53/58	65/69	75/79	94/98
Viscosity Index (Min.) ASTM D-2270	105	105	105	105	105	105	105
Oxidation Test (hrs.) ASTM D-943	10000+	10000+	10000+	10000+	8000+	8000+	8000+
Aniline Point, ^{0}F., ASTM D-1012	196	227	240	240	245	254	257
Rust Test, ASTM D-665	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Sulfated Ash, Wt. % ASTM D-874	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Timken OK Load, Lbs. (Min.)	30	30	30	30	30	30	30
Zinc, Wt. % (by A A)	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Demulsibility (ASTM D-1401)	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
MAG Cincinnati Machine Approvals		P-68	P-70	P-69	*	*	*

Texas Refinery Corp. HYDRAULIC OIL also meets and exceeds Lee-Norse 100-1, Ford M6C32, DIN 51524-part 2, US Steel 136 and 127, Racine Variable Volume Vane Pumps, AFNOR NFE 48-690 (dry), AFNOR NFE 48-691 (wet), AFNOR NFE 48-603, Jeffrey No. 87, BF Goodrich 0152, General Motors LH-04-1, LH-06-1 and LH-15-1, Eaton-Vickers M-2950-S (Mobile Hydraulic Systems), Eaton-Vickers I-286-S (Industrial Hydraulic Systems), Denison HF-1, HF-2, HF-0. Other Commerical Hydraulics except for PM-500 Series silver containing pumps which require R & O additive systems.

HYDRAULIC OIL meets all major pump manufacturers' specifications.
Handling Information: For safe handling of the product, read the Safety Data Sheet (SDS).

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