TECHNI/TIPS

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OTHER USES FOR TURBINE OILS

"Turbine Oil" was primarily designed for use in turbines. It was originally a high quality, straight mineral oil with good water separating qualities. The turbine oil was kept clean by activated earth filters to remove oxidation products, as well as outside contamination. It has gradually evolved into a rust and oxidation inhibited oil, which gives long service life with the use of conventional filters rather than the activated earth type.

The current generation of turbine oils are composed of top quality base stocks, combined with extremely long life oxidation and rust inhibitors which function at higher temperatures. Some contain wear-reducing additives which contribute to longer equipment life. They may be described as `Turbine Grade' oils.

Turbine oils have many other uses as high quality lubricants. Some manufacturers recommend turbine oils or turbine grade oils for such varied applications as hydraulic oils, air compressor and vacuum pump oils, general shop lubricants, bearing lubricants, heat transfer oils, etc. Lubrication Engineers, Inc. will certainly accept these recommendations where the customer wants it or warranty requires a designed product for each application.

One of the areas where turbine oils should be used is in the replacement of rock drill or air tool lubricants for inplant pneumatic applications. Typical rock drill or air tool lubricants contain extreme pressure material fatty oils or fatty acids, tackiness aids, etc., all of which are more subject to oxidation and oil degradation than turbine oils, and affect tubing, seals and other components if they stay in the system too long.

Where the lubricant is fed into the airstream immediately before the tool being used, and the air and oil mist is exhausted to the outside atmosphere, then rock drill or air tool lubricants are used. Where the lubricant is fed into the airstream at a central point, inside a plant and carried some distance to several or many machines where oil/air mist may be exhausted inside, then turbine oil should be used. This will greatly reduce contamination of the environment and won't adversely affect components and personnel. In oil mist systems where the air is not powering the system, but only carrying oil, turbine oil would again be the preferred lubricant. Again, superior lubrication and lack of effect on components and personnel.

Through long experience, LE's general recommendation is that gears should be lubricated with gear oils. However, many industrial gear manufacturers are recommending R & O inhibited turbine grade oils for steady loads between 50°F. (10°C.) and 150°F. (66°C.) for enclosed helical, herringbone, straight bevel and spur gears. LE will accept these recommendations where the customer wants it or if warranty requires it. If the gears are subject to overloading or shock loading, then extreme pressure gear oils should be used.

Because of LE's high quality level, turbine oils may be used in almost any application not needing engine oils or extreme pressure gear oils.

On the following page is a chart showing viscosities of oils in circulating, spray or splash systems at various speeds and power.

Pinion Speed	Application Method	Drive Unit Horsepower Input	Viscosity, SUS at 100°F. 38°C.		Viscosity, ISO Grade	
			Reduction Ratios Under 10 to 1	Reduction Ratios Over 10 to 1	Reduction Ratios Under 10 to 1	Reduction Ratio Over 10 to 1
Over 5,000	Circulation, spray or splash	Under 1 1 to 10 Over 10	115 165 165	115 165 353	22 32 32	22 32 68
2,000 to 5,000	Circulation, spray or splash	Under 5 5 to 20 Over 20	165 353 353	353 353 522	32 68 68	68 68 100
1,000 to 2,000	Circulation, spray or splash	Under 10 10 to 50 Over 50	353 522 1165	353 522 1500	68 100 220	68 100 320
300 to 1,000	Circulation, spray or splash	Under 20 Under 20	353 522	353 522	68 100	68 100
	Circulation, spray or splash	20 to 75 20 to 75	522 1165	789 1165	100 220	150 220
	Circulation, spray or splash	Over 75 Over 75	1165 1500	1500 2467	220 320	320 460
Under 300	Circulation, spray or splash	Under 30 Under 30	522 to 789 1165	1165 1720	100 150 220	220 320
	Circulation, spray or splash	30 to 100 30 to 100	1165 1705	1705 2467	220 320	320 460
	Circulation, spray or splash	Over 100 Over 100	1705 2467	Special Consideration	320 460	Special Consideration

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