

**TABLE III
OPERATING SPECIFICATIONS**

Fluid Type	Denison		TSE Continuous		TSE Intermittent		TSE Continuous		TSE Intermittent	
	Speed RPM	Pressure PSI	Speed RPM	Pressure Bar	Speed RPM	Pressure PSI	Speed RPM	Pressure PSI	Speed RPM	Pressure Bar
Antiwear Petroleum Base	HF-0	2200	2500	172	2200	3000	207	2200	2500	172
Crackcase Oil	HF-2	2200	2500	172	2200	3000	207	2200	2500	172
Non-Case Oil	HF-6	2200	2500	172	2200	3000	207	2200	2500	172
Non-Antiwear Petroleum Base	HF-1	2200	2500	138	2200	2500	172	2200	2500	172
Water in Oil	HF-3	—	—	—	—	—	—	1800	2000	138
Water Glycols	HF-4	—	—	—	—	—	—	1800	2000	138
Synthetic Fluids	HF-5	—	—	—	—	—	—	1800	2000	138

Petroleum base fluid without anti-wear additives is not recommended, however, if used the reduced ratings listed apply.

NOTE

Fluid Type	Denison Pump Series	Max Temp °F	Max System Pressure PSI	Section Pressure Multiplier
Antiwear Petroleum Base Fluids for Severe Duty	HF-0	220	3000	207
Antiwear Petroleum Base Fluids	HF-2	210	3000	207
Non-Antiwear Petroleum Base Fluids	HF-1	210	2500	172
Crackcase Oil	HF-5	210	3000	207
Water in Oil Invert Emulsions	HF-3	200	2500	172
Water Glycols	HF-4	200	2000	138
Synthetic Fluids Phosphate Ester & Diester	HF-5	160	2500	172

When an inlet strainer is used, it should have a minimum capacity equal to twice the GPM of the pump.

NOTE

Refer to Table III for minimum inlet requirements.

Operating Temperatures and Viscosities — Operating temperatures are a function of fluid viscosity, fluid type, and the pump. Fluid viscosity should be selected to provide optimum viscosity at normal operating temperatures.

Pump Inlet Conditions — During the pump operation, the inlet conditions must be sufficient to provide filling without cavitation. The use of improper grade of oil, improper or restrictive inlet piping may result in an inlet vacuum in excess of recommendations and will reduce the pump service life or may cause damage to the pump parts. An inlet pressure of 1 to 10 PSIG is desirable. During high speed operation, it is particularly important to provide proper inlet pressures. If a pressurized or boosted inlet system is used, the inlet pressure must not exceed 15 PSIG.

Non-petroleum Base or Fire-Resistant Fluids — When it becomes necessary to use these type of fluids, the TSE pump should be used on some types (Fyrquel 220 or equivalent) and must be used with other fire-resistant fluids. To determine performance characteristics or ratings for a particular fluid, a Denison Sales Representative should be consulted.