

## Installation Of Air Cooled Heat Exchangers

**Plumbing.** Unless approved by Dynacool, use flexible rubber hoses for connection. The hose size should be the same size or greater than the port thread size. Solid steel pipes are not recommended as they may place excessive loads on the core element. If long hoses are used support them as close to the ports as possible. Threaded connections must be fully sealed. We recommend BSPP o-ring face seal type fittings. Should oil be permitted to leak it may cover the core fins and result in the collection of dust and sludge which reduces cooling performance.

**Note.** Do not fit steel fittings to aluminium ports without lubrication as they may bind and damage the port.

**Site Location And Environment.** Some cooling elements resist corrosive attack better than others, please consult our Engineering Dept. for details of suitability if a corrosive environment exists. For best heat transfer performance, determine the usual direction of air flow at the site and face the cooling element towards the incoming air flow without restriction from objects at air inlet or outlet. The unit should be bolted down through the base slots provided.

**Positioning In The Circuit.** In hydraulic circuits, the cooler should always be positioned to receive return oil from the circuit. Do not install the cooler in the pressure circuit. Care should be taken to select a oil source which passes oil at a constant flow rate not exceeding maximum recommended. If operating viscosity is likely to exceed 100 cSt consult our sales dept. Unrestricted oil flow path must be maintained

from the outlet oil port of the cooler into the oil reservoir.

**DC Electric Motor Connections.** Ensure the voltage supply matches that of the cooler. Wire the supply to the 2 pin connector with polarity as shown in the diagram provided in the installation instructions. Start the motor and check the direction of fan rotation, a decal shows the correct direction. All fans should pull the cooling air through the cooling element and discharge it through the fan guard. For Versacool refer to separate instruction forms VC03, VC04 or VC05 if thermostatic controls are to be fitted.

**AC Electric Motor Connections.** Remove motor junction box and carefully check instructions on wiring which may be displayed inside or outside of junction box. Electric motors of various brands are used, some motors have star connections and others may be wired delta. After wiring has been completed start the motor and check for rotation of the fan. Rotation is usually c/w when viewed from the motor or ac/w when viewed from element. The fan should pull the cooling air through the cooling element and discharge it through the fan guard. All AC electrical wiring should be carried out by a licenced electrician.

**Hydraulic Motor Driven Fans.** Some units are supplied fitted with Hydraulic fan motors. Hydraulic Motors fitted as fan drives must be piped to permit the fan to rotate freely after the oil flow has been shut off to the motor. Failure to provide such a device may cause the fan to be damaged due to shock loads caused by fan inertia.

## Maintenance

Continued efficient operation of the air cooled heat exchanger is dependent on the heat transfer surface being kept clean. In dirty conditions the core element should be cleaned frequently to remove dust and dirt.. Should the fins be blocked with oil saturated dirt, use a petroleum based cleaning fluid followed by water sprayed from a medium pressure hose. Do not use high pressure hoses for cleaning heat exchangers with aluminium fins.

**CAUTION. DO NOT USE CAUSTIC BASED FLUIDS FOR CLEANING ALUMINIUM COOLING ELEMENTS.**

PERFORMANCE CORRECTION FOR AIR DENSITY ( TEMPERATURE AND ELEVATION)									
AIR TEMP. °F (°C)	ELEVATION ABOVE SEA LEVEL - FEET (METERS)								
	0	1000 (305)	2000 (610)	3000 (914)	4000 (1219)	5000 (1524)	6000 (1829)	7000 (2134)	8000 (2438)
70 (21.1)	1.00	0.97	0.94	0.91	0.88	0.86	0.83	0.81	0.78
80 (26.7)	0.99	0.96	0.93	0.90	0.87	0.85	0.82	0.80	0.77
90 (32.2)	0.97	0.94	0.91	0.89	0.86	0.83	0.81	0.78	0.76
100 (37.8)	0.96	0.93	0.90	0.87	0.85	0.82	0.80	0.77	0.75
110 (43.3)	0.94	0.91	0.89	0.86	0.83	0.81	0.79	0.76	0.74
120 (48.9)	0.93	0.90	0.88	0.85	0.82	0.80	0.77	0.75	0.73
130 (54.4)	0.92	0.89	0.86	0.84	0.81	0.79	0.76	0.74	0.72
140 (60.0)	0.90	0.88	0.85	0.83	0.80	0.78	0.75	0.73	0.71
150 (65.6)	0.89	0.87	0.84	0.81	0.79	0.77	0.74	0.72	0.70

## Heat Transfer Performance At High Oil Viscosity

Air cooled heat exchanger performance and flow capacity will degrade rapidly when oil operating viscosity exceeds 100cSt. Consult the chart inside the back cover to establish operating viscosity of your application. Please check with Dynacool before selecting heat exchangers for use with high viscosity oil.