

Water Cooled Packings

Cooled packing cases are required for compressor cylinders based upon the average piston speed and average cylinder pressure. Cooled packing cases are supplied to help remove the heat generated as the piston rod/ packing friction increases with the higher pressures and piston speed.

Please refer to the [Packager Standards Section 7: Cooled Packing](#) for further information on this topic. The following chart is an excerpt from the Cooled Packing topic:

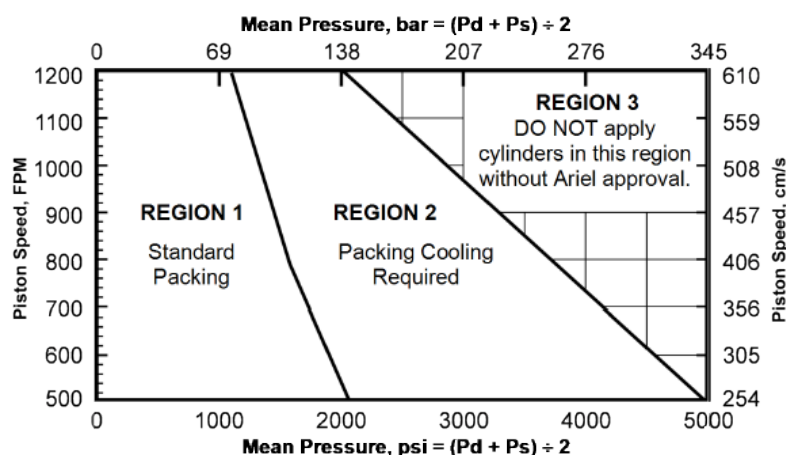
Notes:

1. The Ariel Performance Software will indicate when operating conditions fall within Region 2 or Region 3.
2. All forged steel cylinders have cooled packing as standard and must be connected to a cooling system.
3. All non lubricated cylinders have cooled packing as standard and must be connected to a cooling system.
4. Any deviation from the packing cooling requirements must be reviewed and approved by Ariel Applications Engineering or Technical Services.

Cooling with oil is not as effective due to the lower heat transfer ability and higher pressure losses due to viscosity. In some circumstances, oil can be used as a coolant in the packing cases. This is limited to lower heat load conditions and smaller compressor frames. The advantage of applying oil cooling in the smaller frames, is the ability to use frame oil, making it possible to cool the packing case with the short coupled distance piece. Oil will be taken from the frame oil system, and returned internally, directly into the crosshead guide.

If one packing case is oil cooled on the smaller frames, the oil will be taken from the pressurized frame oil system. This is a closed loop and all tubing provided by Ariel. If more than one packing is oil cooled, a separate oil loop will need to be provided by the packager. Oil can be taken from the sump at the drive end of the frame, through a pump, cooler, and into the packing. The packing return will be internal, directly into the crosshead guide. Below is a schematic showing oil cooling on more than one packing case.

Figure: Packing Cooling Application Guidelines



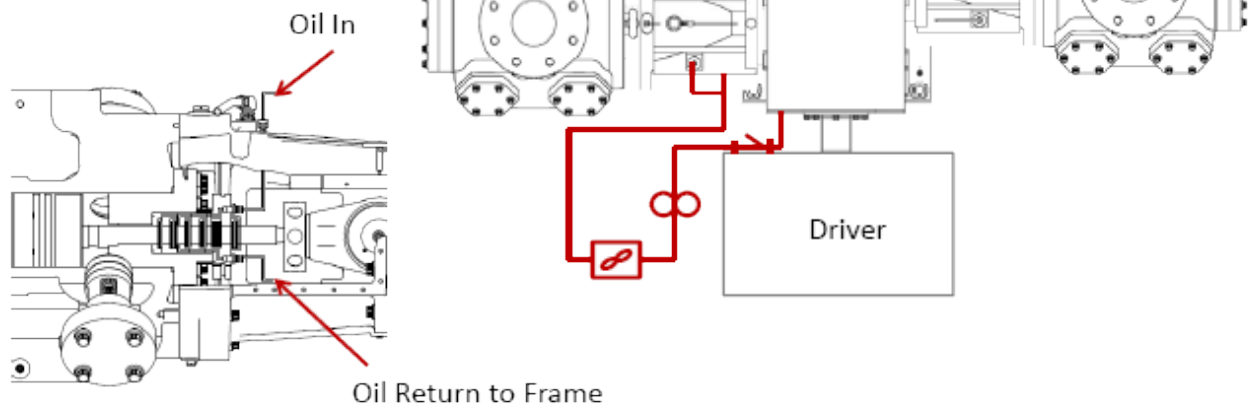
Oil Cooled Packing

By Packager:

Pump
Cooler
Tubing
Strainer

By Ariel:

Cooled Packing
Internal Tubing



rvices.

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