



## Technical Topic

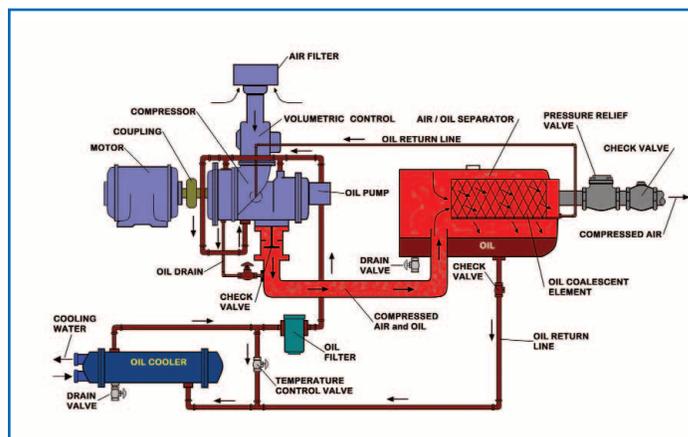
# Procedure for Flushing Oil Flooded Rotary Screw Air Compressors

## Switching to Mobil Rarus SHC 1020 Series Products

Lubricants used in oil flooded rotary screw air compressors come in many different base fluids and additive technologies. The typical base fluids used in air compressor lubricants may be mineral or synthetic. Synthetic base fluids could be Polyalphaolefins (PAO) or Polyglycols (PAG) or Silicones or Esters. These lubricants may not be compatible therefore we recommend flushing when converting your oil flooded rotary air compressor to Mobil Rarus SHC 1020 series lubricants.

This procedure can be used for flushing any type of air compressor lubricant.

1. Start compressor and allow running up to normal temperatures (185°F/85°C) for approximately 1 hour.
2. Shut down compressor.
3. Drain and clean the lubrication system:
  - a. Drain sump tank of as much of the existing product as possible
  - b. Carefully blow out the low system spots or potential oil "traps" in the compressor using compressed air
  - c. If deposits are present, clean (hand) the reservoir, accessible lubrication system parts, bearings, and gears. Dismantle and clean the strainers and filter units
  - d. Blow down and drain air receiver
4. Change oil filter and gravity drain oil out of the fibrous materials of the air/oil separator.
5. Fill compressor sump to normal oil levels with a Mobil synthetic diester product (Mobil Rarus 800 Series - choose correct viscosity). The use of diester product is needed for proper flushing.
6. Start compressor and allow discharge oil temperature to reach a typical temperature of 185°F/85°C. Operate compressor for a minimum of 4 hours. Compressor does not need to be loaded, but must run long enough and at the appropriate temperatures to allow for the thermostat to open.
  - a. Sample and check the lubricant with a regular (10 micron) Millipore membrane filter pad to assist in monitoring the efficiency of the flushing. The filter pad is a visual aid on the relative cleanliness of the compressor.



Flow Diagram for Oil-Flooded Rotary Screw Air Compressor

7. Shut down compressor.
8. Drain compressor of the Mobil Rarus 800 Series flush lubricant, including coolers, sump, tank, and strainers. Disconnect lines as required to drain oil trapped in low areas. Drain the flushing charge (Mobil Rarus 800 Series lubricant) preferably when the fluid is warm (120°F/49°C - 140°F/60°C).
9. Clean strainers; replace air/oil separator and all oil filters that are not permanent. Check inlet filter for signs of oil coating of contaminated fluid and replace as required.
10. Fill compressor with synthetic PAO product (Mobil Rarus SHC 1020 Series - choose correct viscosity) and operate compressor as usual.
11. Circulate the new charge of Mobil Rarus SHC 1020 Series lubricant for 4 - 12 hours. Check the oil filters and air/oil separator for cleanliness and deposit free. If not clean and deposit free repeat flushing procedure.
12. Drain off the Mobil Rarus SHC Series lubricant from the circuit. (Note: This oil may be re-used for flushing other air compressors, if its inspection characteristics are judged satisfactory.)
13. Refill the installation with fresh Mobil Rarus SHC 1020 Series lubricant (choose correct viscosity) and resume normal operation.

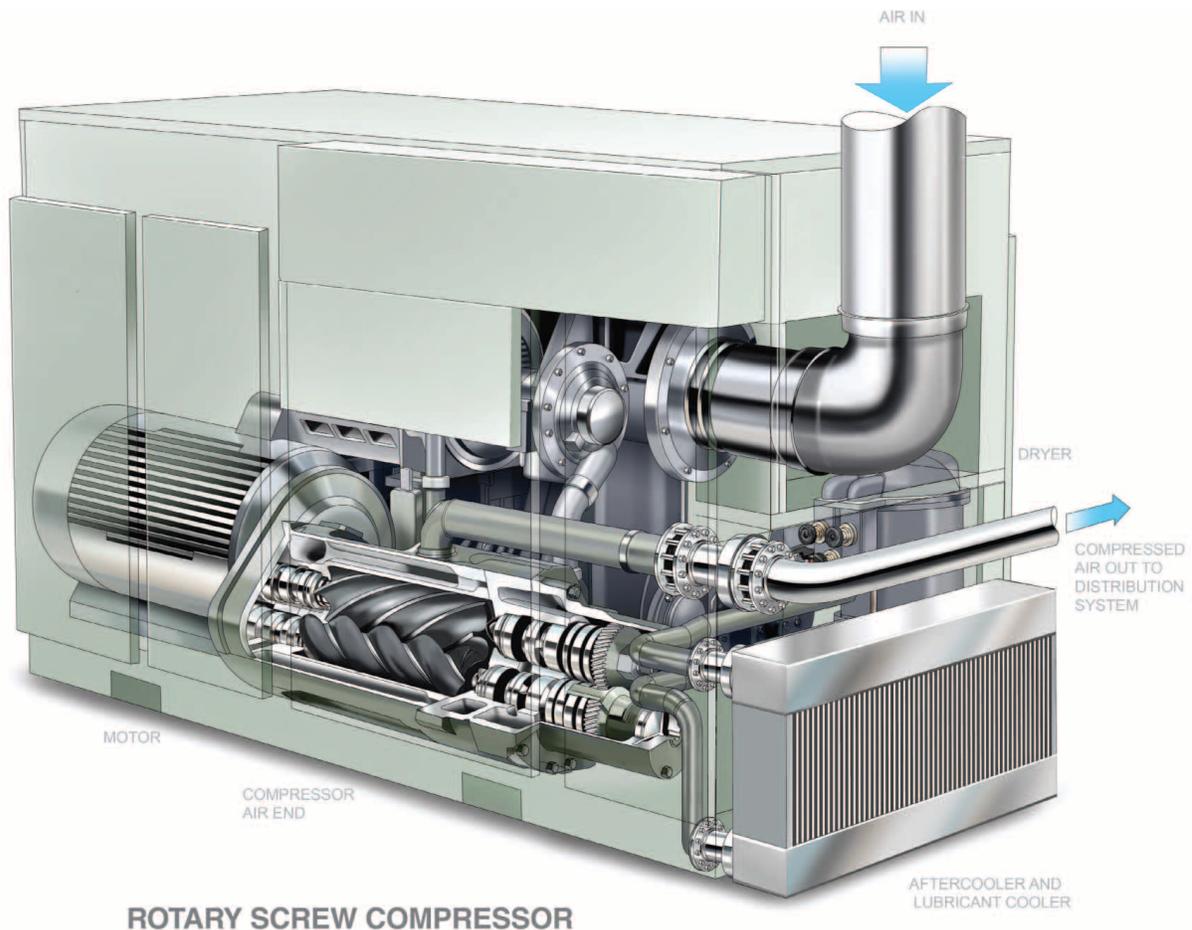
**Note:** Foaming of the lubricant can be caused by high discharge velocities (140+ mph) of the air in oil flooded rotary screw compressors into the air/oil separator. However, foam should dissipate quickly in the separator.

It is also recommended that the Mobil Rarus SHC Series lubricant is analyzed on a periodic basis to ensure proper performance and to get the most out of the product in service. Signum Oil Analysis can be used for this service.

### How our synthetic lubricants help keep your air compressor operating in top form.

Mobil SHC scientifically engineered supreme performance oils are specially formulated for high performance in a wide variety of extreme applications — staying on the job significantly longer than mineral oils. These are just a few of our synthetic lubricants for air compressors:

- **Mobil Rarus SHC 1020 Series** synthetic rotary screw compressor oils  
**Advantages and Benefits:** Designed for longer oil life and to resist deposit formation; reduces maintenance costs as compared to mineral oil products
- **Mobil SHC 600 Series** synthetic gear, bearing, and circulating oils  
**Advantages and Benefits:** Improved operational reliability; extended oil life
- **Mobilith SHC 100 and Mobil Polyrex EM** electric motor-bearing greases  
**Advantages and Benefits:** Helps extend bearing life to improve electric motor reliability
- **Mobil SHC Cibus Series** synthetic lubricants for food-grade applications  
**Advantages and Benefits:** NSF H1 registered lubricants; provides safety and performance for food-related applications



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