

A FEW MAINTENANCE GUIDELINES FOR METO-FER AUTOMATION COMPONENTS

COMPRESSED AIR PREPARATION

Meto-Fer automation components are designed for use with compressed air which has been filtered by a 40 micron, or preferably a 5 micron, filter-regulator with gage, a soft start supply valve and a mist type compressed air lubricator (not necessary with new components - they are oil free). The pressure range of Meto-Fer components, excluding hydraulic shock absorbers, is 3-9 Bar, or 43-116 psi. The compressed air should be free of water and water vapors by using a properly sized and serviced refrigerated air dryer. The air service unit should be sized to provide enough airflow to meet the machine maker's specifications. The pressure gage on the filter-regulator should show little motion while the machine is in normal operation. The filter element is designed to block the passage of suspended particulate sized larger than the micron on a scheduled and regular basis. As a rule of thumb, when a filter causes a 10 psi pressure drop across its filter element, the element should be replaced.

SHOCK ABSORBER ADJUSTMENT

Shock absorbers should be used on all Meto-Fer components if they are able to be mounted to the component. The shock is not designed to be used as an end stop. Try to use only 50% of the available travel of the shock. When running at higher speeds, you may increase this to a maximum of 75% of the available travel of the shock. Use a hard endstop, such as a Meto-Fer stop screw assembly, to omit the travel in both directions of a component's cycle. Do not allow a side load on a shock absorber. It is designed for use in a linear travel motion. The pressure range of the Meto-Fer hydraulic shock absorber system is 3-67 Bar, or 43-87 psi.

IMPACT DAMAGE

Impact from collision or other sudden stopping causes damage to the shafts, bearings, seals and shock absorbers. A component can be damaged by collision or impact. The most common time of uncontrolled movement is when the compressed air is first turned on. Flow control valves only control the flow of compressed air as it leaves a component. When a linear or rotary component is not in the end position the valve "thinks" it is in, there is no compressed air to control to slowdown motion. This is the reason for the use of a soft start main supply valve. Rotating motions with loads are most difficult to control if the motion is over the twelve o'clock position. Be sure that all actuators are in the basic starting position before turning on the air to a machine.

LUBRICATION

The recommended oil for air supply lubrication is Airpress compound SAE5, (Kluber type N 063 027), available from Kluber USA at 603-434-7704. Other similar oils may be used. The recommended grease for bearings and seals is Arcanol by the company FAG, number L78/DIN 51502. Or, for bearings you can use Arcanol or Staburags NBU4 Altemp (Kluber type N 005040). The only time grease needs to be applied is when a component is rebuilt. When rebuilding a component, be sure to grease all surfaces before reassembly.

PREVENTATIVE MAINTENANCE

For best results from a machine, components should be replaced or repaired according to a schedule, not just when the component experiences failure. Each machine has a unique set of loads, speeds, cycle frequencies and contaminants. The way to establish a schedule is to keep track of cycle counts between component failure over a long period of time. Using this information, it is possible to service components before their anticipated failure. If a Meto-Fer component is unable to cycle 5-10 (up to 20 million) million times before failure on a regular basis, then there needs to be a study of the possible causes. Using the correct tools to install seals is important. Attached is a copy of the drawings used by Meto-Fer to make their own tools for service to Meto-Fer components. These drawings are internal documents and are, therefore, not to be published. You are welcome to make tools from these drawings, or Meto-Fer will sell the tools to you. When servicing a component, be sure to remove all fittings, old seals, old bearings and debris. Clean the parts in a basin with an industrial solvent compatible with all materials of construction. Wipe clean, rinse and blow out all surfaces to remove foreign particles. Dry all parts. Apply the appropriate grease using fingers. Be sure the grease is fresh. Grease left out exposed to the air will change color and consistency. Keep grease covered when not in use. Do not use discolored or dirty grease. Apply liberally when reassembling parts of a component. Cycle the component by hand as you assemble it to allow for the grease to be evenly spread on the entire surface being lubricated. If there is excess heat or airborne contamination, it may be necessary to disassemble the component and regrease the inside surfaces before the component is scheduled to be serviced. Applying grease to rods is not enough to relubricate because of the wipers on piston rods.