

## **GS6 Flushing Procedure**

# GS6 Flushing Procedure

## General

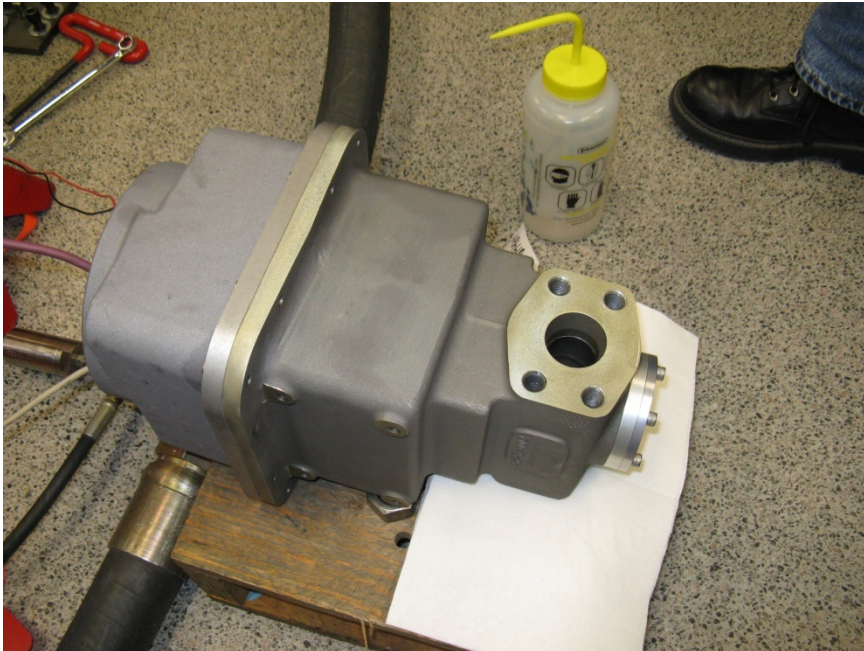
Periodic cleaning may be performed. A petrochemical solvent is recommended to clean (wash and brush) the valve. High-pressure power washing is not recommended. When cleaning the metering element and the inside of the valve body, do not use sharp objects that may scrape or dent the metering element, as this could degrade the accuracy of the valve. A cotton swab or similar soft tool is recommended in combination with the solvent to mechanically remove contaminants that are adhered to the valve internals.

When using solvent or water to clean the valve, be certain that all access points into the enclosure are closed or covered (electronics cover, conduit entry, OBVD port).

## Preferred Flushing/Cleaning Method (Valve Uninstalled)

The following steps show the preferred method for cleaning the lubrication from the GS6 valve metering element and shoe. If the valve can be removed from the turbine without too much difficulty, this method should be employed.

1. The valve should be placed on its side as shown so that the isopropyl alcohol will clean the entire surface. The inlet of the valve should be facing up.



2. The valve should be actuated using a slow ramp triangle wave from either the Falcon Monitor (internal service tool) or from the Control System. The valve should be actuated from 0 to 100% valve position using a 0.05 Hz ramp.

3. While the valve is stroking, an isopropyl alcohol or similar cleaning agent should be used as shown. Use a cotton swab to scrub the valve internals.



**Take care to wear the proper personal protection as required by the cleaning agent.**

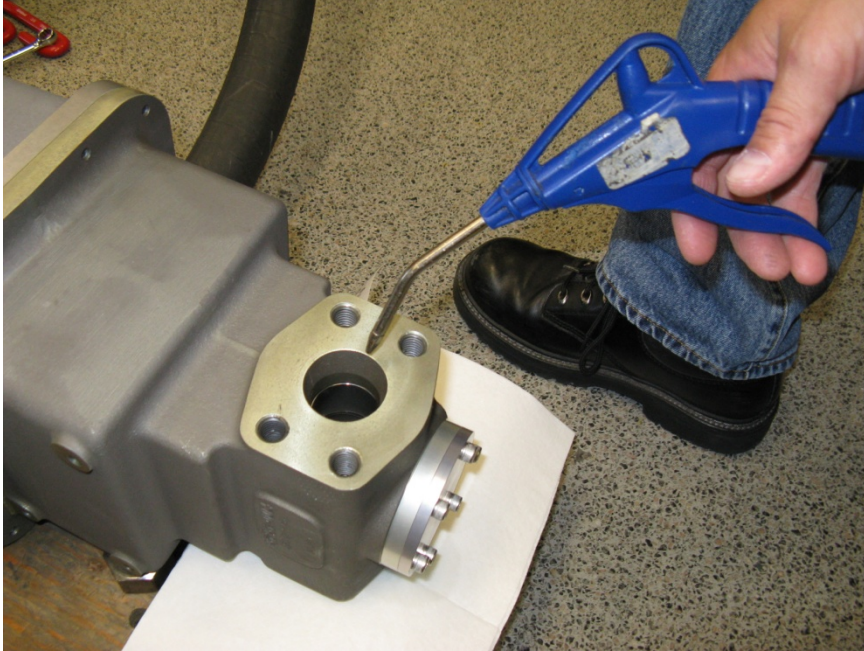
This cleaning should be performed for a few minutes, letting the alcohol wash away the lubrication.

There is a possibility that lubrication can be carried from below the 0% control point back onto the element and shoe. Because of this possibility, the valve should be power-cycled a minimum of 10 times in between the ramp procedure to ensure that all of the lubrication is cleaned off.



4. After the metering element and shoe are thoroughly cleaned, the area should be dried using low-pressure nitrogen or compressed air. Take care not to introduce impurities or oil.

To verify that the port has been entirely cleaned, the valve should be power-cycled and monitored at the 0% valve position point. If the valve starts up OK after a minimum of 10 times, the port has been cleaned effectively.



5. If the valve will not be immediately re-installed on the turbine, cover all openings with the factory shipping caps until re-installation.

## Flushing/Cleaning Method for Installed Valve

The following steps show the method for cleaning the lubrication from the GS6 valve if it is installed on the turbine. If the valve can be removed from the turbine without too much difficulty, the method shown above should be used.

1. The valve should be actuated using a slow ramp triangle wave from either Falcon Monitor (internal service tool) or from the Control System. The valve should be actuated from 0 to 100% valve position using a 0.05 Hz ramp.
2. This valve action will provide the necessary cleaning action to remove the lubrication. This slow ramping valve action should be employed for a couple of hours if possible.
3. To verify that the ramp signal has appropriately cleaned the metering element and shoe, the valve should be power-cycled.
4. After the power cycle, make a careful observation of the feedback signal to ensure that the instability is gone. This will drive the valve past the 0% control point and into the hard stop. There is a possibility that lubrication can be carried from below the 0% control point back onto the element and shoe.
5. If the instability can still be observed, this procedure can be repeated.
6. It is possible that the ramping action does not appropriately remove the lubrication from the metering element and shoe, and the instability remains. If the instability remains, please note:
  - a. The added torque from gas pressure will provide the added friction to settle the valve.
  - b. If this is not acceptable, the valve will have to be removed from the turbine and cleaned according to the 'Valve Uninstalled' procedure above.

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