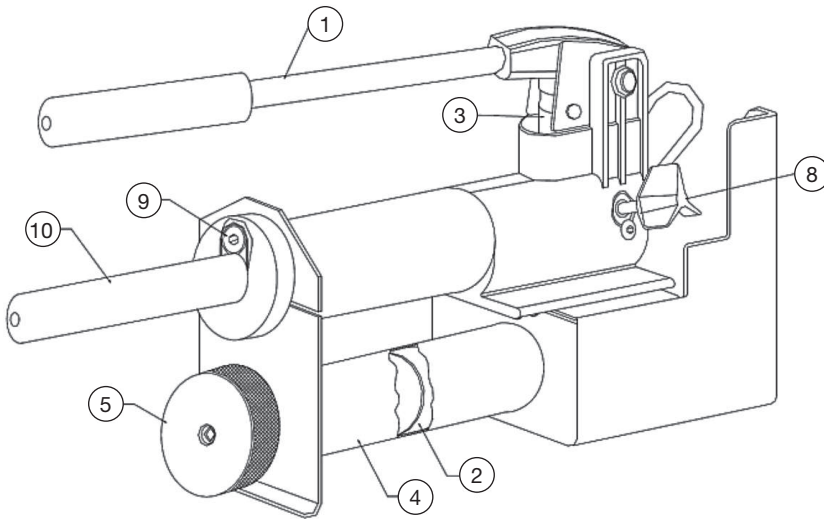


# CMS-2000 Manual Injection System

## Operating Instructions

*The CMS-2000 Injection System is a high pressure tool that should be used with caution and according to these instructions.*



### LEGEND:

- 1 – Pump Handle
- 2 – System Barrel Piston
- 3 – System Hydraulic Plunger
- 4 – System Barrel
- 5 – System Barrel Cap
- 6 – Push Rod (Not Shown)
- 7 – Spanner Wrench (Not Shown)
- 8 – By-Pass Valve
- 9 – Hydraulic Fill Port
- 10 – System Carrying Handle

### 1.0 LOADING

1. Check to ensure by-pass valve (8) is open.
2. Unscrew system barrel cap (5).
3. Load CMS-2000 Injection Compound, packing tightly to avoid air pockets.
4. Replace system barrel cap (5).
5. Tighten system barrel cap with spanner wrench (7).

**IMPORTANT: Ensure that the system barrel cap (5) is firmly attached and that there is full thread engagement between the barrel and the cap before operating the system.**

### 2.0 RELOADING

**IMPORTANT: Before operating the system be sure to have the appropriate CMS-2000 transmission hose assembly firmly attached to the system barrel cap before system operated.**

1. Open by-pass valve to relieve pressure (8). One turn of the valve is sufficient.
2. Remove system barrel cap (5) with spanner wrench (7).
3. Push piston (2) to the bottom of system barrel (4) using push rod (6).
4. Using either bulk or cartridge, refill CMS-2000 Injectable System.
5. Replace system barrel cap (5) with spanner wrench (7).
6. Close by-pass valve (8); hand tight is sufficient.
7. System is ready for service.

### CAUTIONS

These instructions are general in nature. It is assumed that the installer is familiar with mechanical packing and with the plant requirements for the successful use of mechanical packing. If in doubt, get assistance from someone in the plant that is familiar with the product, or delay the installation until a packing representative is available.

All necessary auxiliary arrangements for successful operation (heating, cooling, flushing) as well as safety devices must be employed. These decisions are to be made by the user. The decision to use this or any other Chesterton product in a particular service is the customer's responsibility.

### 3.0 OPERATION

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**PRESSURE LIMIT: Do not exceed 690 bar (10,000 psi).**

**CAUTION: The system must not be carried by the pump handle (1), as this could cause the plunger to break.**

1. Make sure the by-pass valve (8) is fully closed; if open the system will not build pressure.
2. If possible, set unit down on a stable, flat surface. Hold the system carrying handle (10) securely in place as you actuate the pump handle (1).
  - a. Actuating the handle will cause the hydraulic plunger (3) to move the barrel piston (2). As the piston moves, hydraulic fluid will fill the space left behind providing a consistent and uniform positive pressure towards the barrel cap (5).
3. CMS-2000 Compound will flow out through the system barrel cap.
  - a. The system barrel cap contains a standard 1/4" NPT port which is typically fitted to a flexible hose. Chesterton offers 1' and 3' hose options. It is the responsibility of the end user to ensure the other end of the hose is appropriate for their application.
  - b. Because the CMS-2000 will continue to flow after actuating the handle, wait for the system to stabilize between pumps in order to avoid over-pressurizing.
4. When complete open the by-pass valve (8) to relieve system pressure.
5. Use spanner wrench (7) to loosen the system barrel cap (5).
  - a. DO NOT LOOSEN WHEN THE SYSTEM IS UNDER PRESSURE.
6. Remove the system barrel cap (5) and reload CMS-2000 Compound as needed.
7. The push rod (6) can be used to measure the amount of CMS-2000 Compound that is remaining or to push the barrel piston (2) to the desired depth to refill the barrel with CMS-2000 Compound.
  - a. The push rod is marked with a scale in 1-1/8" increments for measuring.
8. Reinstall system barrel cap (5) and tighten with spanner wrench (7).
9. Close by-pass valve to hand tight.
10. CMS-2000 Hydraulic Injection System is now ready for use again.

### 4.0 MAINTENANCE

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The CMS-2000 Injection System comes with Hydraulic Fluid. Fluid should be added or replaced as necessary using only the supplied fluid. **WARNING: Read Safety Data Sheet (SDS) before using hydraulic fluid.**

1. Unscrew the system barrel cap (5) with spanner wrench (7).
  2. Open by-pass valve (8) one turn.
  3. Use the push rod to push the piston (2) to the bottom of the system barrel (4).
  4. Hold the CMS-2000 Injection System vertically, in a pan if available, with fluid port chamber (9) end up.
  5. Use wrench to remove hex socket head cap screw/dip stick from fill port (9); check the fluid level on dip stick.
  6. Add fluid slowly, as needed, according to fluid level on dip stick.
- IMPORTANT: Wait 30 minutes for air to purge from system.**
7. Check fluid level with dip stick and add additional fluid as needed.
  8. Replace cap and tighten with wrench.
  9. Replace barrel cap (5).
  10. Replace by-pass valve (8)



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FORM NO. EN74059 REV 2

11/16