

**MAINTENANCE MANUAL**  
**for**  
**SKIDMORE-WILHELM**  
**MODEL S**



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## 1. Verifying calibrator accuracy.

You can verify the accuracy of the calibrator gage by placing the unit in a compression press, applying a **known** load through the center, and comparing the known load to the dial reading on the gage.

Place the calibrator in the press on a special fixture or adapter so that the load can be applied through the center of the calibrator. The unit should lie flat, gage facing up. You can put one or more bolt plates on the face of the calibrator to apply the test load

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## 2. Adjusting the gage.

During a calibrator accuracy test, compare the gage reading to the applied load at a number of different points. If the gage is off by the same small increment at each point, adjust it as follows:

- a. For gages with a face "Recalibration Screw":
  - 1) Remove the gage lens.
  - 2) Place a small screwdriver into the recalibration screw slot and turn the screw right or left (as necessary) so that the pointer moves by the amount of the error.
- b. For gages with a "micrometer" style pointer:
  - 1) Remove the gage lens.
  - 2) With one hand, carefully hold the pointer.
  - 3) Insert a screwdriver into the slot in the top of the gear that adjusts the pointer. Turn the screw right or left to move the pointer by the amount of the error.

### 3. Determining the need for gage repair or replacement.

Sometimes during a calibrator accuracy test, when you compare the gage reading to the applied load at various points, the gage will be off by varying increments rather than by the same increment at each point. Adjusting the gage as described in procedure 2 will not correct this condition. In such cases, Skidmore-Wilhelm does not recommend attempting to adjust or repair the gage in the field. Instead, the gage should be replaced or returned to the factory for repair.

**IMPORTANT: Calibrate the gage and calibrator as a unit.**

You may replace the gage yourself, following procedure 7, below. However, the gage and the calibrator will not be in calibration **as a unit**. Replacement gages are not shipped with a new Calibration Test Report.

If you cannot calibrate the gage and calibrator unit in a compression press or if you do not have access to a test laboratory capable of performing the test for you, your unit cannot be considered in calibration. Therefore, if your gage needs repair we recommend that you send the entire unit--gage and calibrator--back to us. We will repair or replace the gage, test the entire unit, and send it back to you along with a new Test Report.

### 4. Determining whether the calibrator oil level is low.

Either of two symptoms usually indicates your calibrator is low on oil:

- A noticeable gap appears between the piston and the snap ring when no load is applied to the calibrator.
- The calibrator operates to a reading short of its maximum, then the piston bottoms out against the body. No higher reading or compression of the unit is possible.

To check oil level, do the following:

- a. Turn the calibrator on its side so that the 1/4" pipe plug is at the 12 o'clock position.
- b. Remove the pipe plug and look into the opening. If the oil level is not at the top of the opening, add oil. See procedure 5.

## **5. Adding hydraulic oil to the calibrator - gage in place.**

- a. Repeat procedure 4 above, if necessary.
- b. Add hydraulic oil through the pipe plug opening until oil flows out the top of the opening. Use oil that is Buna-N compatible.
- c. Work the calibrator piston back and forth to force out trapped air. Add more oil as needed.
- d. When all air has been forced out and the oil level is at the top of the pipe plug opening, replace the plug. Use pipe thread tape or pipe dope on the plug threads.
- e. If air still remains in the system, you will have to remove the gage to get all the air out. See procedure 9, below.
- f. Calibrate the gage and calibrator as a unit.

## **6. Determining the cause of low oil level.**

Low oil level usually means a leak somewhere in the calibrator. Visually inspect the following as the source of the leak:

- Pipe plug is loose or its threads are damaged. Tighten or replace.
- Gage is loose, its threads are damaged, or it has internal leakage. Tighten or replace.
- Calibrator packing is worn or damaged and needs replacement.

You may need to replace pipe thread tape or pipe dope to remedy leaks around plug, gage.

## **7. Adding oil to the calibrator when the gage is removed.**

**Note:** *Any time oil is added to the calibrator, air trapped inside must be removed. The oil will force the air out, but it must flow from the pipe plug opening in the side, up through the calibrator, and out the top. Therefore, when adding oil be sure the unit is in an upright position with the gage opening at the top.*

- a. Push the piston all the way out against the snap ring.
- b. Remove the 1/4" pipe plug on the side of the unit.
- c. Add hydraulic oil through the pipe plug opening until oil comes out the hole at the top of the calibrator. Use oil that is Buna-N compatible.
- d. Apply pipe thread tape or pipe dope to the gage threads and screw gage into place, taking care not to allow air into the system.
- e. Calibrate the gage and calibrator as a unit.

## **8. Replacing the calibrator packing (O-rings).**

**Note:** *You can buy replacement O-rings in standard sizes locally if you wish, or you can order them from Skidmore-Wilhelm. When ordering from us, specify the serial number from the tag permanently attached to your calibrator.*

- a. Remove the gage.
- b. Remove the pipe plug if it is not already out.
- c. Drain the oil from the calibrator.
- d. Remove the snap ring and the piston.
- e. Remove the old O-rings and replace with new O-rings. Wipe them with a small amount of hydraulic oil to ease reassembly.
- f. Reassemble the piston and calibrator body. Tap the piston lightly to avoid cutting the O-rings.

- g. Push the piston all the way back into the body.
- h. Refill with hydraulic oil through the 1/4" pipe plug opening on the side until oil runs out the gage hole at the top.
- i. Reassemble the gage.
- j. Add oil as in procedure 7.
- k. Calibrate the gage and calibrator as a unit.