



FROST ENGINEERING SERVICE

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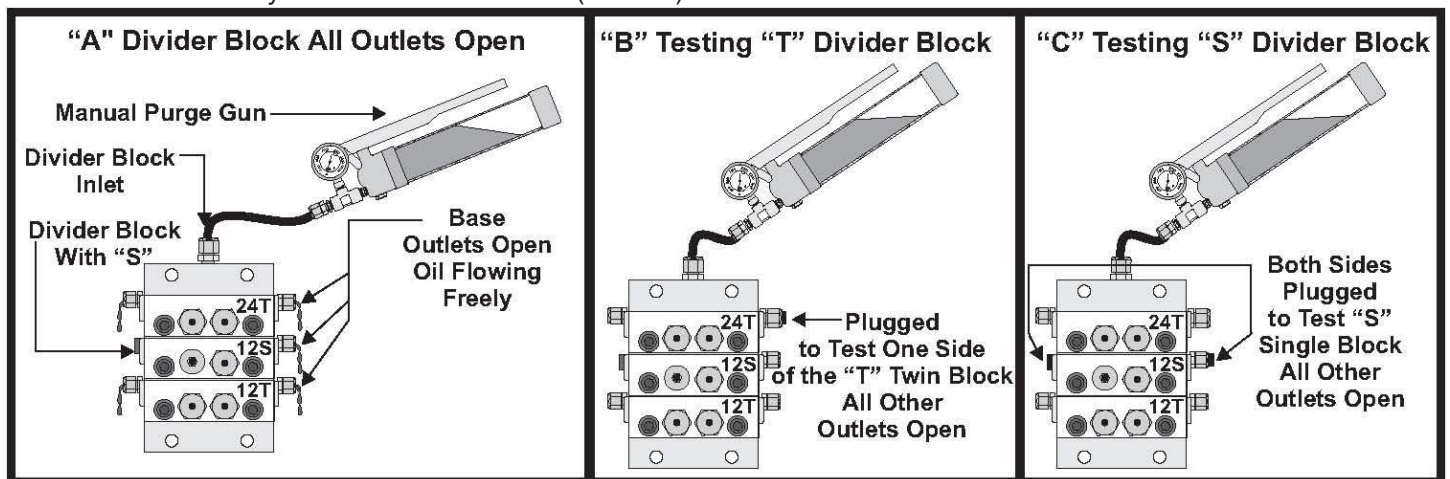
Pressure Testing Divider Blocks For By-Passing

All divider blocks are metal to metal sealing surfaces and the possibility of oil passing around the piston to a point of least resistance is always present. By-passing can be a result of excessive clearance between the piston and bore of a new divider block or from millions of cycles each year causing wear between the piston and bore. For this reason it is necessary to test each individual divider block before installation and/or after continued use. This will confirm the piston to bore tolerances are close enough to build adequate pressure to force oil into the injection point. Note: Never assume tolerances between the piston and bore are acceptable even if the divider block is new and the piston is cycling properly. Pressure test all divider blocks in low to medium service at least every two years. When high injection pressures are present or there is no filtration of the oil before the lubrication system the divider blocks should be pressure tested or replaced every 12 months. Divider blocks are much less expensive to replace than compressor cylinders, rods or packing, not to mention the cost of labor and lost revenue from down time.

Procedure for Testing Divider Blocks For By-Passing

To test divider blocks for by-passing, a manual purge gun equipped with a pressure gauge and capable of developing 5000 PSI is necessary. For pressure testing the divider block use a 10-weight oil at room temperature to simulate hot oil. Test each divider block assembly complete with pin indicators installed. Test only one divider block at a time..

A. Place the divider block assembly in an open container with all base outlets open. Connect the purge gun to the inlet of the divider block assembly. Operate the purge gun to cycle the divider block several times to purge air from the assembly and verify that oil will flow freely from all outlets. Divider blocks should cycle at less than 300 PSI. (See "A")



Divider blocks stamped with a "T" should have only one outlet on the base plugged during testing of that side of the piston. Each outlet of the divider block stamped with a "T" must be plugged and tested one side at a time (See "B"). Individual testing of each outlet ensures both sides of the piston will build adequate pressure. All divider blocks stamped with an "S" on the front should have both outlets on the base plugged to test for by-passing (See Figure "C") This will test both sides of the piston at the same time.

B. Plug the outlet on the base under the divider block being tested with a 1/8" pipe plug. If a tubing fitting is installed in the base, plug the fitting with a tubing plug. Leave all other outlets open. Operate the purge gun until the pressure gauge indicates 4500 PSI. The block may cycle once or twice, but should pressure to 4500 PSI immediately. Stop pumping oil into the divider valve at 4500 PSI. Check the plug in the discharge outlet to confirm there are no external leaks. The pressure gauge should not lose more than 1000 PSI during a 30-second test. Note: Testing the divider blocks at higher pressures is necessary if the application dictates higher system operation.

If the pressure gauge on the purge gun drops suddenly and oil squirts from the other outlets, a by-pass condition exists. The piston is worn and is allowing oil to by-pass. This is not acceptable and the divider block must be replaced. If the tested block does not lose more than 1000 PSI in 30 seconds, relieve the pressure, move the plug to the next outlet and repeat the same test. After all divider blocks have been pressure tested with this recommended procedure, the divider blocks should be reassembled, purged with oil and put back in service.