1) Function Test
Once the Cylinder is placed on the test stand and hydraulic lines attached, the cylinder will be
cycled its full stroke a minimum of three (3) full cycles.
The cylinder will be rejected if it functions erratically. Erratic function is excessive chatter,
slapstrick, stalling and uncorrectable misstaging.

2) Proof Pressure Test
After the function test is performed the cylinder will be extended fully and pressure held for a
minimum of thirty (30) seconds. This pressure will be 2500 psi or a pressure indicated on the
assembly print. The cylinder will be rejected for external leakage or structural deformation.
If the cylinder is double acting, it will be fully retracted and pressure held for a minimum of
thirty (30) seconds. The pressure will be 2500 psi or a pressure indicated on the assembly
print. The cylinder will be rejected for external leakage or structural deformation.

3) Internal Bypass Test
This test will be performed on all double acting cylinders and can be done in conjunction with the
Proof Pressure Test. The cylinder will be fully extended and pressure held at 2500 psi. The
retract line will be removed and piston seal bypass will be determined by the flow out of this
cylinder port. Excessive bypass will be a cause for cylinder rejection. The cylinder will be fully
retracted and pressure held at 2500 psi. The extend line will be removed and the piston
bypass will be determined by the flow out of this cylinder port. The cylinder will be rejected for
excessive flow. When making this test the hydraulic line should be completely removed from
the cylinder port, and the open line from the valve should be plugged or capped since a slight
back pressure in the tank return line would spill oil from the line if not plugged.

Pass/Fail criteria if not noted on Assembly drawing is as follows:
Cast Iron Rings Normal Maximum leakage 1 GPM.
Bypass = 1/2 cubic inch per inch of bore diameter per minute.
Extend bypass would be 1/2 cubic inch per inch of plunger piston ring OD
per minute.
Retract bypass would be 1/2 cubic inch per inch of piston ring OD per minute
of each stage added together.
Example SD73 Series;
Extend bypass; 1/2 x 5.25 = 2.62 cubic in / min.
Retract bypass; (1/2 x 7.25) + (1/2 x 6.25) + (1/2 x 5.25) = 9.38 cubic in / min.
Soft Seals Maximum leakage 5 drops per minute.

Please Note
Before Installing a New Cylinder in an old application
Has the problem been corrected that caused the original cylinder to fail?
Is the hydraulic fluid clean of all contamination, water, and entrapped air?
Are the hydraulic system relief valve pressures set and operating properly?
Is the mechanism or unit the cylinder is operating in good mechanical condition?