

OPERATING PROCEDURES FOR SQUAT-LINE HIGH PRESSURE TEST PLUGS



WARNING! FOR PROPER OPERATION, SQ2 PLUGS MUST BE ASSEMBLED AS SHOWN.

- **PRESSURE TESTING IS INHERENTLY DANGEROUS. STRICT ADHERENCE TO THESE OPERATION INSTRUCTIONS AND INDUSTRY SAFETY PRACTICES COULD PREVENT INJURY TO PERSONNEL.**
 - **ALL PERSONNEL MUST BE CLEAR OF TEST PLUG WHEN PRESSURE TESTING.**
 - **FOR SAFETY, AN INCOMPRESSIBLE LIQUID SUCH AS WATER SHOULD BE USED AS THE TEST MEDIUM. RESIDUAL AIR OR GAS IS TO BE EVACUATED FROM THE PIPE PRIOR TO TESTING**
 - **SQUATLINE II PLUGS ARE DESIGNED TO WITHSTAND PRESSURE IN THE DIRECTION SHOWN IN THE ABOVE DRAWINGS. DO NOT USE THESE PLUGS IN REVERSE PRESSURE APPLICATIONS.**
1. PRIOR TO USE, replace damaged or worn grippers and seal. The surface between the cone and grippers must be free of friction production dirt or corrosion. Verify proper operation of the test plug by hand tightening the hex nut so that the grippers move freely to the end of the tapered cone surface. Threads should be kept well lubricated with anti-sieze. Inspect threads and apply anti-sieze if necessary before testing. If the nut cannot be easily advanced to allow full gripper extension, **DO NOT USE THIS PLUG FOR TESTING** and contact Elliott Customer Service.
 2. **The pipe ID to be tested must be within the limits specified on the plug.** Schedule 5 wall thickness pipe, or tubes with a wall thickness thinner than equivalent schedule 10 pipe, must have an OD restraint. Contact Elliott Tool Technologies for information. Position the test plug in clean, lubricant free pipe end so that all of the gripper teeth are within the pipe.
 3. Center the plug within the pipe while hand tightening the hex nut. Tighten hex nut until the test plug has gripped the pipe ID. Slight wiggling of the hand-tightened plug may allow further hand tightening of the hex nut.
 4. Tighten the hex nut to the installation torque specified in Table 1. Use of a calibrated torque wrench is recommended.
- WARNING! FAILURE TO APPLY THE INSTALLATION TORQUE SPECIFIED IN TABLE COULD RESULT IN UNSAFE OPERATION OR LEAKAGE**
5. Install the pressure source or vent to the plug, leak tight. For plugs not being used to pressurize or vent the system install a pipe cap, rated to or above plug rating, leak tight.
 6. Fill the pipe with test medium while evacuating any residual air or gas. Slowly introduce the test pressure. The test pressure must never exceed the strength of the weakest component within the system being tested. Maximum test pressure based on ASTM A106 Grade B pipe is shown on next page.
 7. As pressure increases, movement of the shaft as large as 0.10" (2.54mm) may be detected. This movement indicates additional squeeze of the seal and expansion of the grippers and is normal for this plug design. Should movement of the shaft or plug exceed 0.10" (2.54mm), release **ALL** pressure immediately, remove plug, examine, reinstall and begin testing in accordance with this operating procedure. Should movement of the shaft or plug during the test still exceed 0.10" (2.54mm), contact Elliott Customer Service for technical assistance.



8. Imperfections within the pipe being tested may cause small plug leaks as the test pressure is being increased. Should small leaks develop, additional tightening of the plug may be required. Prior to additional tightening remove pressurization from the system. Tighten the hex nut further and repressurize the system. If leakage continues, the imperfections within the pipe must be removed.

WARNING! NEVER STAND IN THE POSSIBLE PATH OF THE TEST PLUG.

WARNING! NEVER EXCEED THE MAXIMUM TORQUE SPECIFIED IN TABLE 1 AS DAMAGE TO THE PLUG MAY OCCUR.

9. At the conclusion of the test, release **ALL** pressure, loosen the hex nut, remove and inspect plug. Any plug component which is worn or damaged must be replaced before attempting further testing. Contact Elliott Tool Technologies for replacement part information.

Prior to storing, dry all parts of the plug and lubricate the shaft threads and hardened steel washer with anti-seize. Store these instructions with the plug.

Table 1. Squat-Line Test Plug Installation Specifications

Part Number	ID RANGE Inches (mm)	NORMAL INSTALLATION TORQUE Ft-lbs (kg-m)	MAXIMUM INSTALLATION TORQUE Ft-lbs (kg-m)	MAXIMUM TEST PRESSURE (1) psi (Bar)
5285-470	.47 - .50 (11.9 – 12.7)	12 (1.7)	16 (2.2)	6500 (446)
5285-500	.50 - .53 (12.7 – 13.5)	12 (1.7)	16 (2.2)	6500 (446)
5285-530	.53 - .56 (13.5 – 14.2)	12 (1.7)	16 (2.2)	6500 (446)
5285-560	.56 - .60 (14.2 – 15.2)	12 (1.7)	16 (2.2)	6500 (446)
5285-600	.60 - .62 (15.2 – 15.7)	12 (1.7)	16 (2.2)	6500 (446)
5285-620	.62 - .65 (15.7 – 16.5)	16 (2.2)	19 (2.6)	6500 (446)
5285-650	.65 - .68 (16.5 – 17.3)	16 (2.2)	19 (2.6)	6500 (446)
5285-680	.68 - .72 (17.3 – 18.3)	16 (2.2)	19 (2.6)	6500 (446)
5285-720	.72 - .75 (18.3 – 19.1)	30 (4.1)	38 (5.3)	6500 (446)
5285-750	.75 - .78 (19.1 – 19.8)	30 (4.1)	38 (5.3)	6500 (446)
5285-780	.78 - .81 (19.8 – 20.6)	30 (4.1)	38 (5.3)	6500 (446)
5285-810	.81 - .83 (20.6 – 21.1)	30 (4.1)	38 (5.3)	6500 (446)
5285-830	.83 - .87 (21.1 – 22.1)	30 (4.1)	38 (5.3)	6500 (446)
5285-870	.87 - .90 (22.1 – 22.9)	30 (4.1)	38 (5.3)	6500 (446)
5285-900	.90 - .93 (22.9 – 23.6)	30 (4.1)	38 (5.3)	6500 (446)

- (1) MAXIMUM TEST PRESSURES HAVE BEEN DETERMINED FROM TESTS PERFORMED IN CLEAN, DRY ASTM-A-106 GRADE B CARBON STEEL PIPE. MAXIMUM OPERATING PRESSURES CAN VARY FOR DIFFERENT PIPE MATERIALS.

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