



**Morehouse**  
THE FORCE IN CALIBRATION SINCE 1925

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## Operation and Instruction Manual

# Auxiliary Hydraulic Screw Pump



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## General Specification

- 1- The Auxiliary Hydraulic Screw Pump is designed to be used with a Morehouse hydraulic jack along with the existing hand pump or hydraulic power control. The screw pump displaces 0.043 in<sup>3</sup> (0.70 cm<sup>3</sup>) of fluid per revolution, with 3.0 in<sup>3</sup> (49 cm<sup>3</sup>) maximum total displacement which can provide up to 0.12 inch of stroke on the 100,000-pound hydraulic jack. The screw pump is intended to maintain the load during testing and calibration and will allow the generation of decreasing loads.
- 2- The Auxiliary Hydraulic Screw Pump can also be used on the Universal Scale Calibrator along with the existing hand pump. The screw pump can provide up to 0.19 inch of stroke on the 60,000-pound force jack. The screw pump is intended to maintain the load during testing and calibration of aircraft scales.

## Installation Instructions (If Not Pre-Installed)

### Install the screw pump on a Morehouse Universal Calibrating Machine

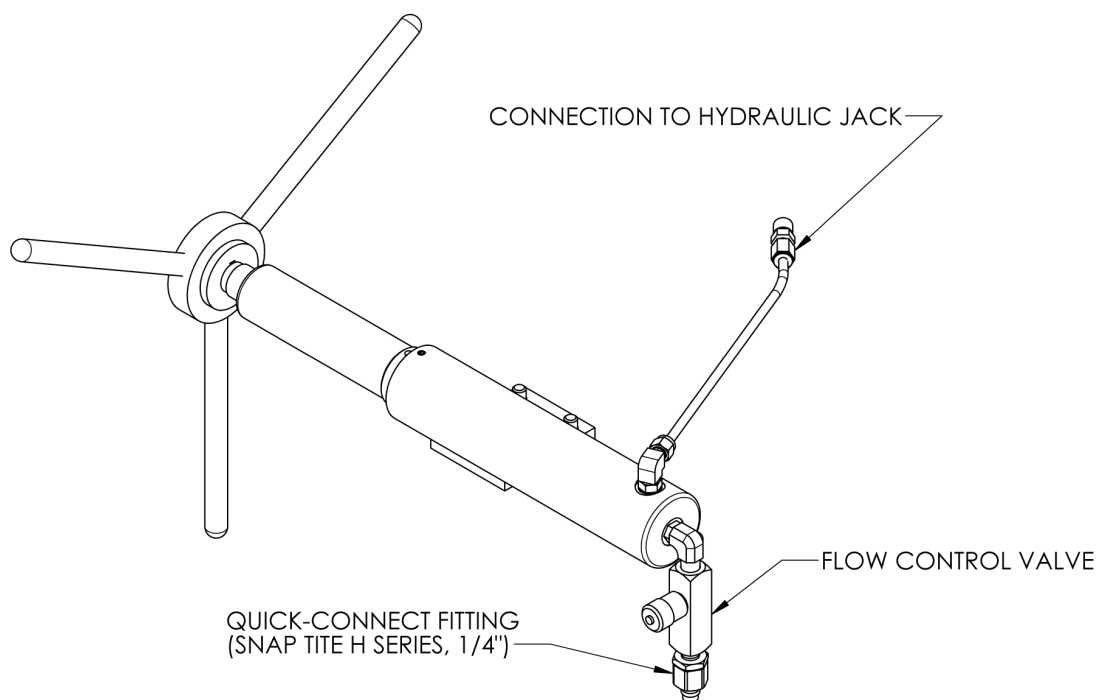
- 1- Remove the hose fitting from the jack and install the compression fitting.
- 2- Hold the screw pump in position and mark the mounting holes to be drilled using the steel line to locate the position.
- 3- Drill two 5/16" holes in the frame, and tap them to 3/8"-16.
- 4- Mount the pump and connect the steel line, it may be necessary to bend the line to align the fittings. Connect the hand pump to the quick connect fitting on needle valve.
- 5- The system can be bled, if necessary, by operating the hand pump to extend the jack, and then unscrewing the compression fitting on the side of the pump.

### Install the screw pump on Morehouse Scale Calibrator

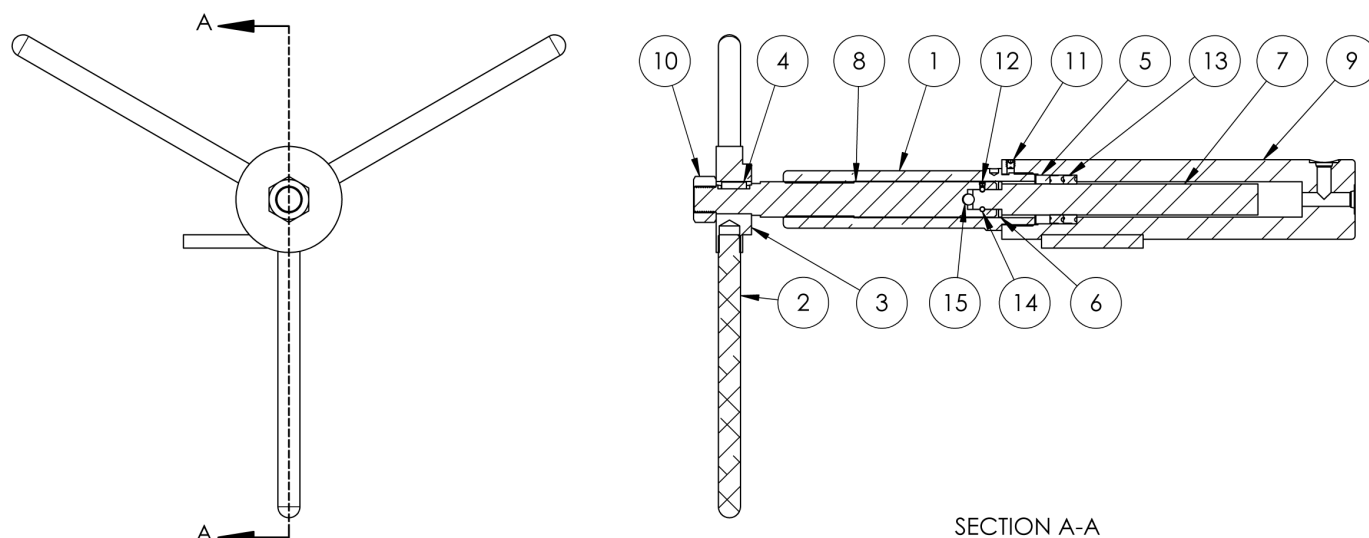
- 1- Remove the jack from the frame.
- 2- Remove the hose fitting from the jack, and install the 90-degree compression fitting.
- 3- Drill two clearance holes in the frame located 7.5 inches from the right end of the beam, 3.0 and 6.0 inches down from the top.
- 4- Mount the pump, and connect the steel line. It may be necessary to bend the line to align the fittings. Connect the hand pump to the quick connect fitting on needle valve.
- 5- The system can be bled, if necessary, by operating the hand pump to extend the jack, and then unscrewing the compression fitting on the pump.

## Operating Instructions

- 1-** The Morehouse Auxiliary Screw Pump may be ready to use as received. If the Auxiliary screw pump is not installed on a Morehouse Universal Calibrating Machine or Aircraft Scale Calibrator, please see installation instructions above first
- 2-** The Morehouse Auxiliary Screw Pump should be used in combination with a Morehouse Universal Hydraulic Pump or Morehouse Hand Pump. To apply pressure, first close the flow control valve by turning the knob clockwise, then use hand pump or Universal Hydraulic Pump to apply the needed force and use the screw pump to fine-tune and maintain the force. When decreasing the force, open the flow control valve as needed by turning the knob counter clockwise.
- 3-** It is suggested that the Auxiliary and Vernier screw pumps be kept at their mid-position of travel to allow small increments of pressure or force to be increased or decreased. Experience will dictate the best position for individual requirements.

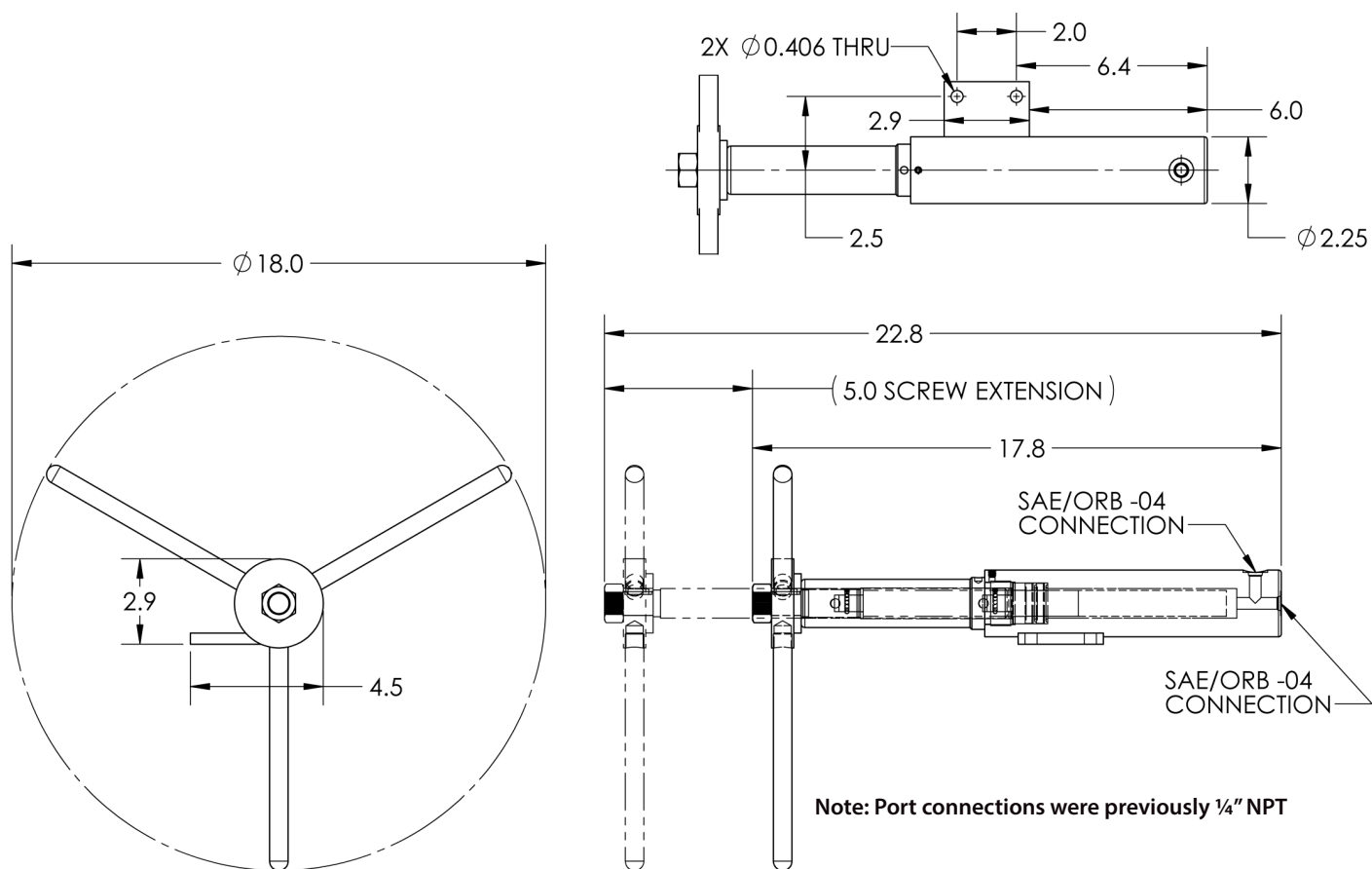


**Figure 1: Auxiliary Hydraulic Screw Pump with Flow Control Valve**



**Figure 2: Outline for Auxiliary Hydraulic Screw Pump**

Part List for Morehouse Hydraulic Screw Pump			
Item	Part No.	Description	Quantity
1	UP-003-01	GLAND NUT	1
2	UP-005-01	HANDLE ARM	3
3	UP-006-01	HANDLE HUB	1
4	UP-007-01	KEY LOCK PIN	1
5	UP-008-01	BACKUP WASHER	1
6	UP-009-01	STOP WASHER	1
7	UP-010-01	SMOOTH SHAFT	1
8	UP-011-01	THREADED SHAFT	1
9	UPS-A0-100-01	BRACKET WELDMENT ASSEMBLY	1
10	ZF-04-019	HEX NUT	1
11	ZF-09-011	SET SCREW	1
12	ZF-09-012	SET SCREW	1
13	ZH-01-001	HYDRAULIC SEAL	2
14	ZM-08-0.125	LOAD BALL	13
15	ZM-08-0.313	LOAD BALL	1



**Figure 3: Outline for Auxiliary Hydraulic Screw Pump**