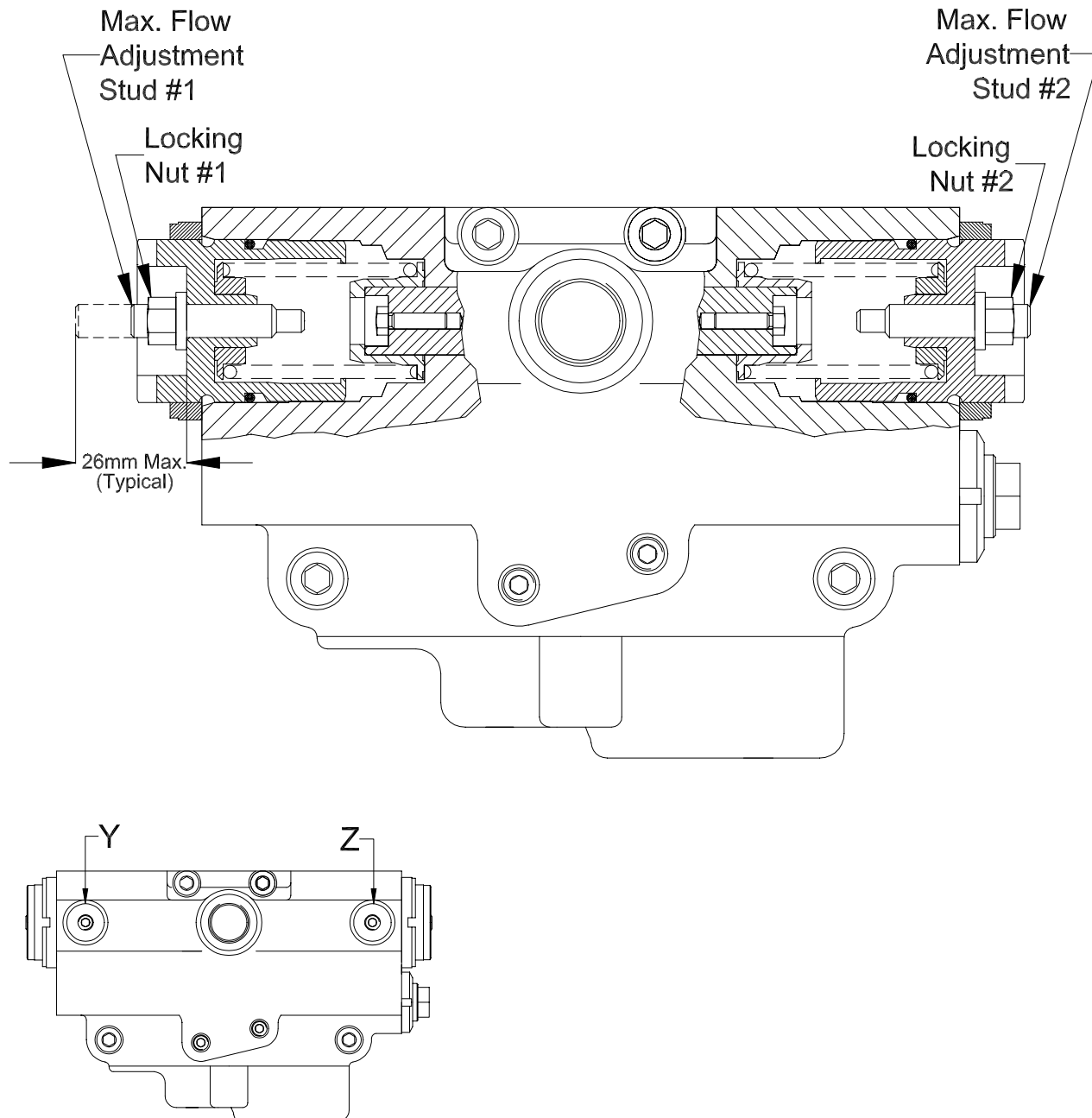


NOTE: This Service Bulletin is valid for HPV-02 pumps with either "H" (Hydraulic Remote) or "E" (Electro-Hydraulic Remote) Controls. For HPV-02 pumps with "M" (Cam Lever) Control, refer to Service Bulletin HPV-CAM-FLOW.doc for the maximum flow adjustment instructions.

NOTE: The drawing below illustrates an "H" Control, but the information is also valid for an "E" Control.



Tools/Equipment Required:

- 0-500 psi pressure gauge or transducer (optional)
- 13mm offset closed-end wrench
- 4mm Allen wrench

WARNING:

If performing this procedure on a vehicle, care must be taken. The pump will be put on stroke during this procedure, hence the vehicle must be safely elevated to allow the motor to free-wheel. If this is NOT possible, then the pump workports "P" and "S" must be short circuited to each other to avoid movement of the motor.

Adjustment Procedure:

1. (Optional) Install the 0-500 psi gauge into gauge port "Y".
2. Set the input speed to high idle.
3. Supply full control pressure to port "Y". (Optional) Confirm that the pressure a port "Y" is adequate to put the pump at full displacement.
4. Measure the rotational speed of the motor, the wheel, the gearbox, etc. and calculate if the pump is supplying enough flow.
5. To Adjust the Maximum Flow:
 - a. Use the 13mm wrench to loosen "Locking Nut #2".
 - b. Use the 4mm Allen wrench to turn "Max. Flow Adjustment Stud #2". Turn it IN to decrease the maximum flow or turn it OUT to increase it.

WARNING: The flow adjustment stud is NOT mechanically restricted from being removed completely from the pump. Care should be taken when turning the flow adjustment stud OUT. **DO NOT** turn the adjustment stud OUT more than 26mm as illustrated on page 1 of this bulletin.

- c. Once the desired maximum flow has been acquired, hold the flow adjustment stud stationary with the 4mm Allen wrench and tighten the locking nut with the 13mm wrench (the proper torque for the locking nut is 10 ft-lb [14 N-m]).

6. (Optional) Install the 0-500 psi gauge into gauge port "Z".
7. Set the input speed to high idle.
8. Supply full control pressure to port "Z". (Optional) Confirm that the pressure a port "Z" is adequate to put the pump at full displacement.
9. Measure the rotational speed of the motor, the wheel, the gearbox, etc. and calculate if the pump is supplying enough flow.
10. To Adjust the Maximum Flow:
 - a. Use the 13mm wrench to loosen "Locking Nut #1".
 - b. Use the 4mm Allen wrench to turn "Max. Flow Adjustment Stud #1". Turn it IN to decrease the maximum flow or turn it OUT to increase it.

WARNING: The flow adjustment stud is NOT mechanically restricted from being removed completely from the pump. Care should be taken when turning the flow adjustment stud OUT. DO NOT turn the adjustment stud OUT more than 26mm as illustrated on page 1 of this bulletin.

- c. Once the desired maximum flow has been acquired, hold the flow adjustment stud stationary with the 4mm Allen wrench and tighten the locking nut with the 13mm wrench (the proper torque for the locking nut is 10 ft-lb [14 N-m]).