

The Exerciser™ Hydraulic Valve Exerciser



WARNING

Before operating this unit read and understand the operator's manual. Become familiar with the potential hazards of this unit.

Be sure operator is free of all stationary objects.

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Conventions used in this manual:



- means this is a POINT OF INFORMATION.



- means CAUTION – damage to valve or equipment is possible.



- means STOP – this is a dangerous situation.

General Description

Congratulations on your purchase of the Exerciser™ valve exercising machine. Please take the time to read and understand this manual. This is a powerful tool, capable of generating up to 350 foot pounds of torque. Your understanding of the machine's controls and use are imperative to the safe and productive operation of the Exerciser™

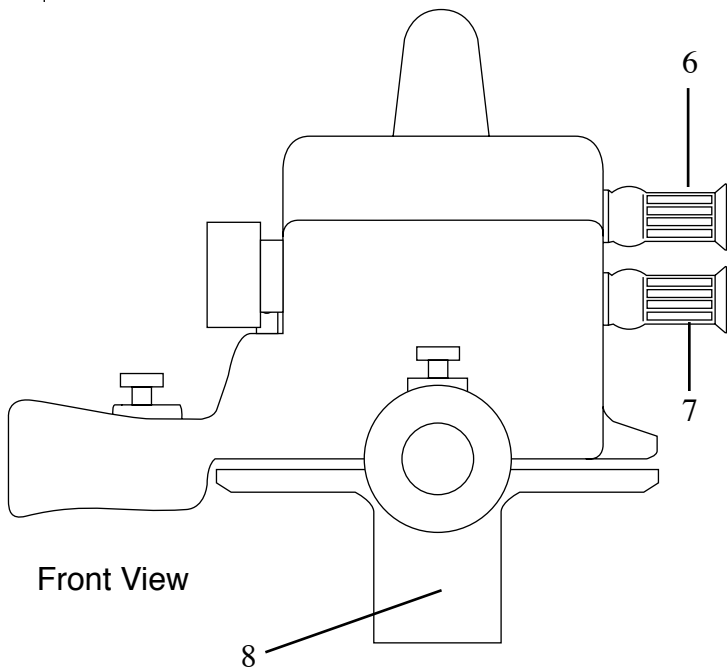
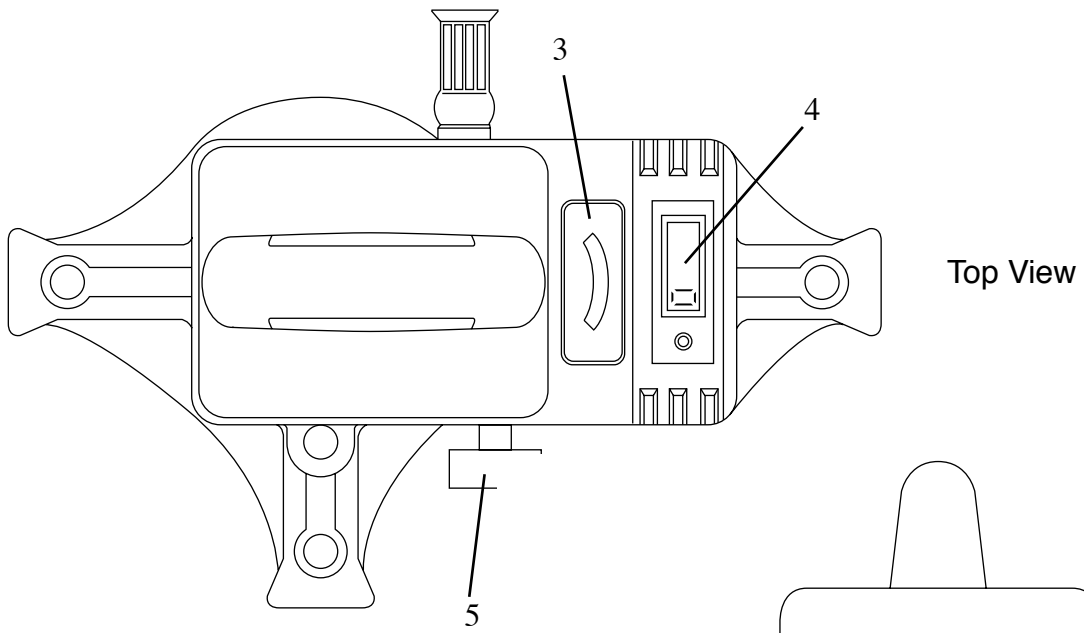
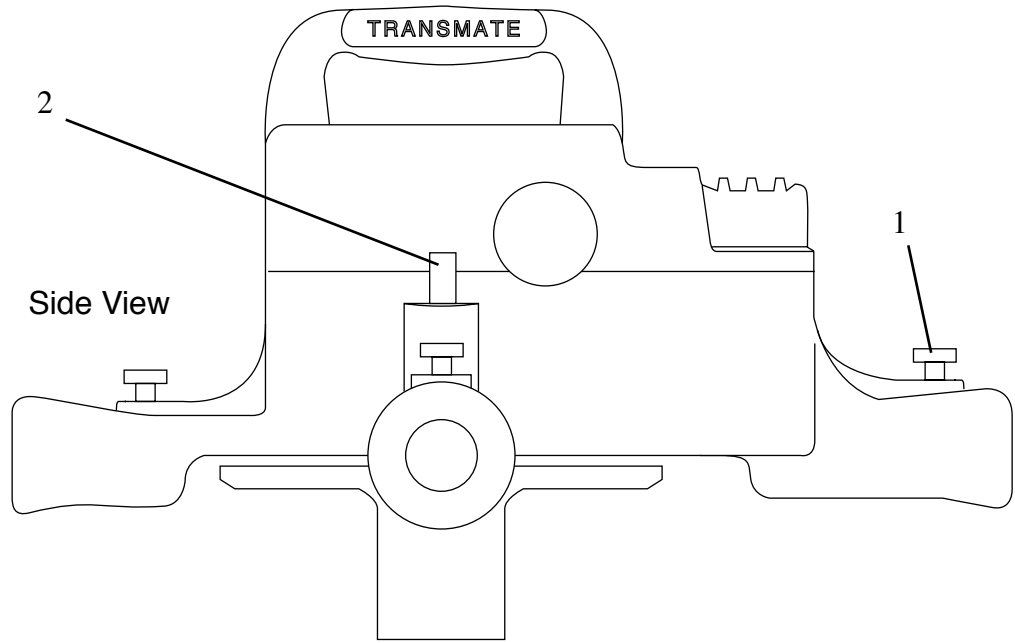
The Exerciser™ consists of:

- a) The Main Drive
- b) The Control Handle
- c) The Auxiliary Handle
- d) The Valve Key

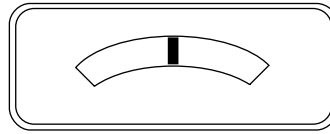
Additionally, you must have a hydraulic system capable of delivering 3.5 - 10 gpm (gallons per minute) at 1750 - 2250 psi (pounds per square inch). The amount of torque available at the Exerciser's™ maximum setting depends upon the pressure output of your hydraulic system.

The Main Drive: consists of a forward and reverse turn counter, a torque control, a torque control gauge, a locking pin, pigtailed for hydraulic connection and three handle holes.

- 1) Handle lock pin: There are three handle sockets, each with a lock pin. The pin is spring loaded. The pin will snap into place when the handle is inserted correctly. (The hole in the handle must align with the spring loaded Handle lock pin.)
- 2) Spring loaded Lock Button: provides a method to lock down the Exerciser™ so it can be used as a manual wrench. Pushing down on the lock pin drives it into a mating hole in the drive hub (8). The Exerciser™ can now be used as a manual wrench. When the torsional tension is released, the Lock Button will spring back up into the open position
- 3) Torque Scale: This is a relative reading torque scale to give the operator an idea how much



Torque Display



Zero Torque
Needle Full Left

Full Torque
Needle Full Right

torque is being applied to the valve stem. The torque applied will depend upon the pressure available from the hydraulic drive. This scale reflects the setting of the Torque Control Knob (#5)

4) Electronic Turn Counter: gives a numeric display of the number of turns applied to the valve during the opening process. It will count back down to zero when closing the valve. The round circle in the drawing represents the red reset button on the unit itself. This is a self contained LCD counter and circuit powered by a seven year lithium battery. When the battery runs out, an entire new LCD unit is reinstalled into the case.

5) Torque Control Knob: adjusts the torque from ZERO or no torque to the maximum allowed by the pressure in your hydraulic system.

6) Hydraulic Fluid Inlet: Hydraulic fluid enters the main drive here. Your pressure should be at least 1750 psi with a flow rate of at least 3.3 GPM. You can use pressures up to 2500 psi with a flow rate of up to 10 gpm. Higher hydraulic fluid pressure gives more torque at the top end of the scale. REMEMBER: Most valves will not take more than 200 foot pounds of torque. The stems are bronze and can be broken.

7) Hydraulic Fluid Return: Hydraulic fluid leaves the main unit through this port.

8) Drive Hub: The hub mates to the top of the valve key so torque is applied to the valve nut. You will notice a series of holes around the circumference of the drive hub. These holes allow you to lock the hub so the Exerciser can be used as a manual valve wrench. See item 2 above. The Control Handle is identified by its distinctive appearance, with the control ring and end connection. The control handle clicks into place into the handle hole that faces the turn counter. The Control Ring gives some control over the rotational speed of the valve key. You must



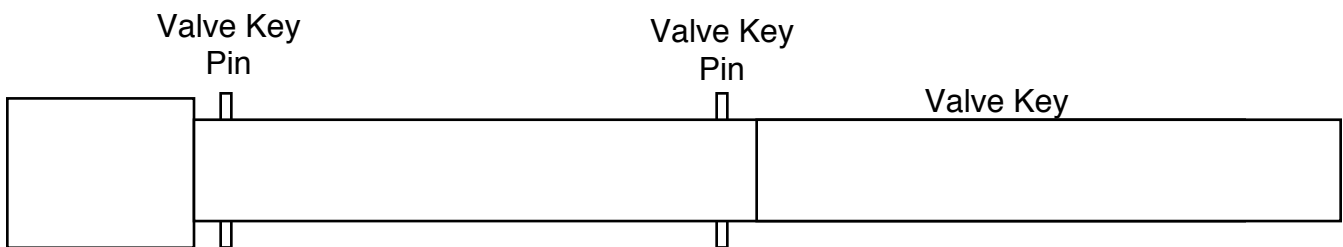
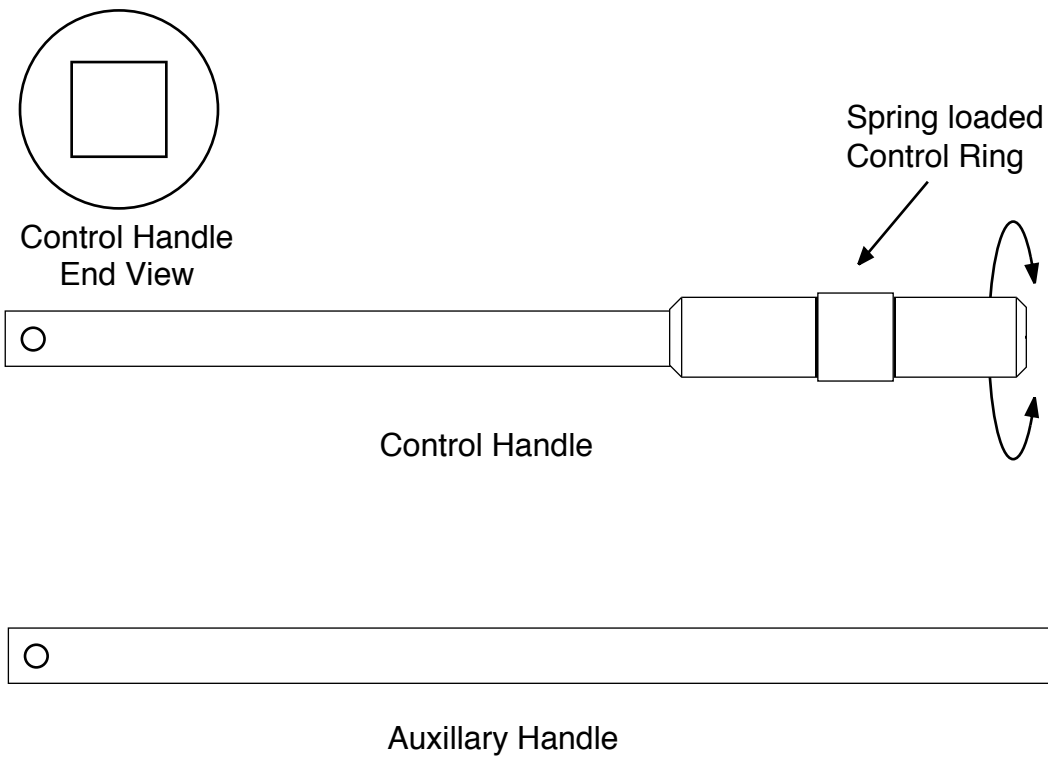
NEVER apply hydraulic power when the Lock Button is down in the locking position. Damage to the Exerciser™ will result.

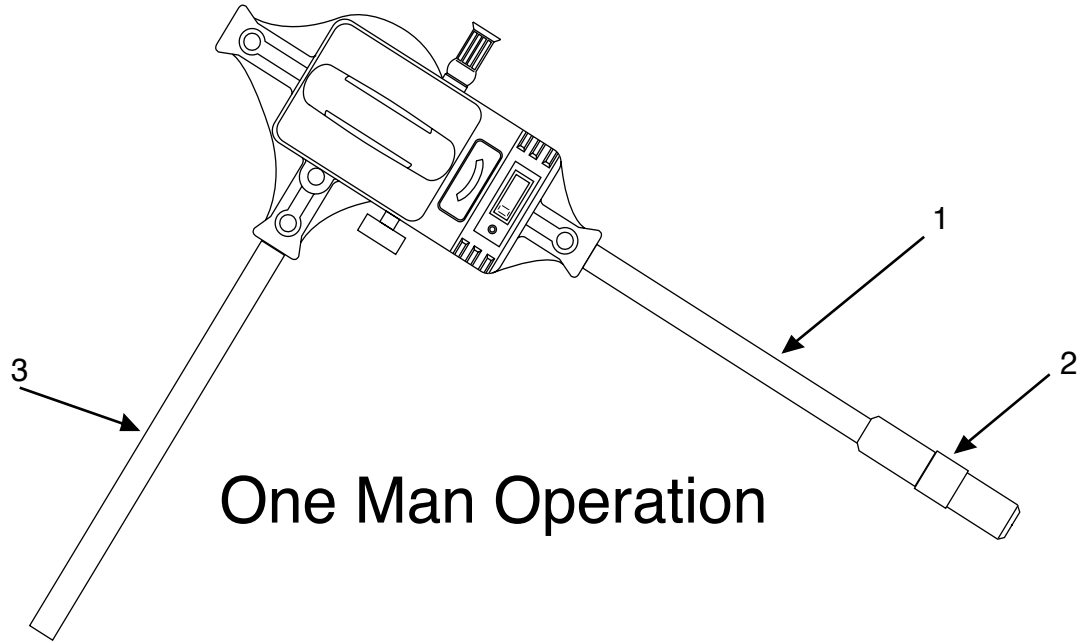
turn the Control Ring to activate the main unit. Releasing your grip on the Control Ring stops all rotation immediately.

The auxiliary handle can be positioned either opposite the control handle or at a 90 degree angle. These configurations are shown on the following page.

The Valve Key extends by removing the valve key pin and letting the inside square tube slide down to the next hole. Replace the pin when the key is in your preferred position.

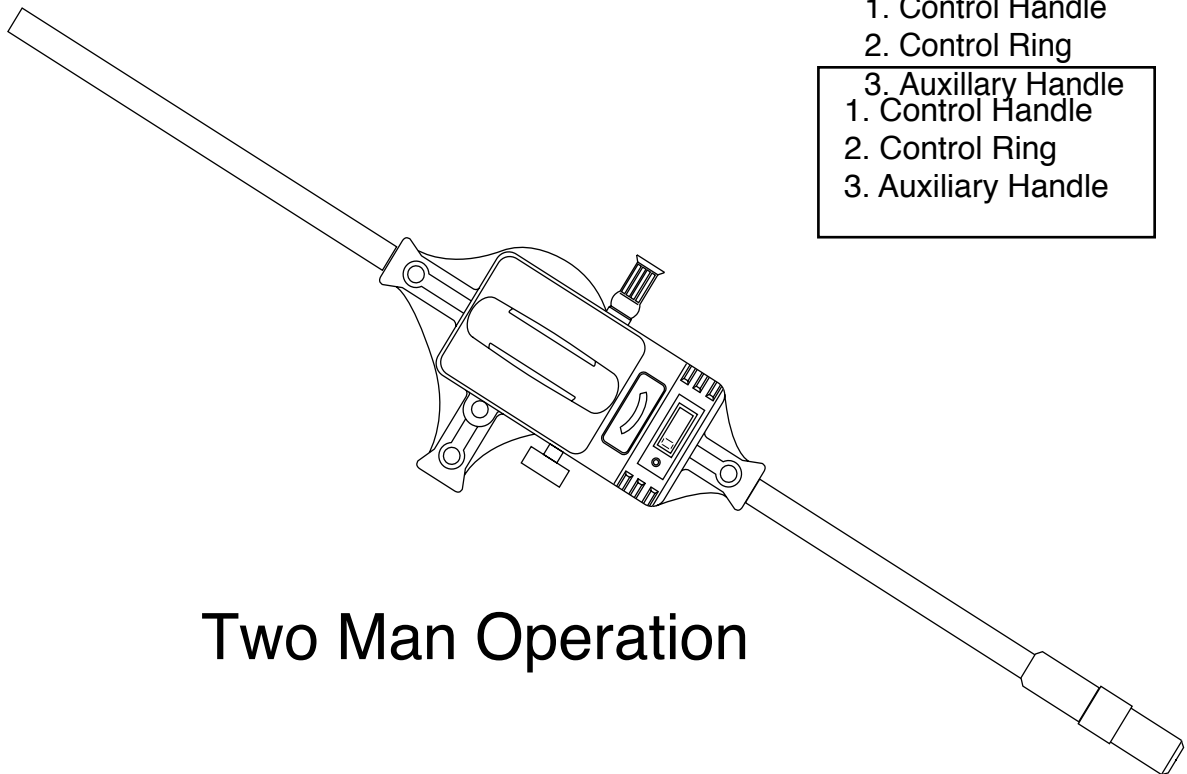
Set Up:





One Man Operation

- 1. Control Handle
- 2. Control Ring
- 3. Auxillary Handle

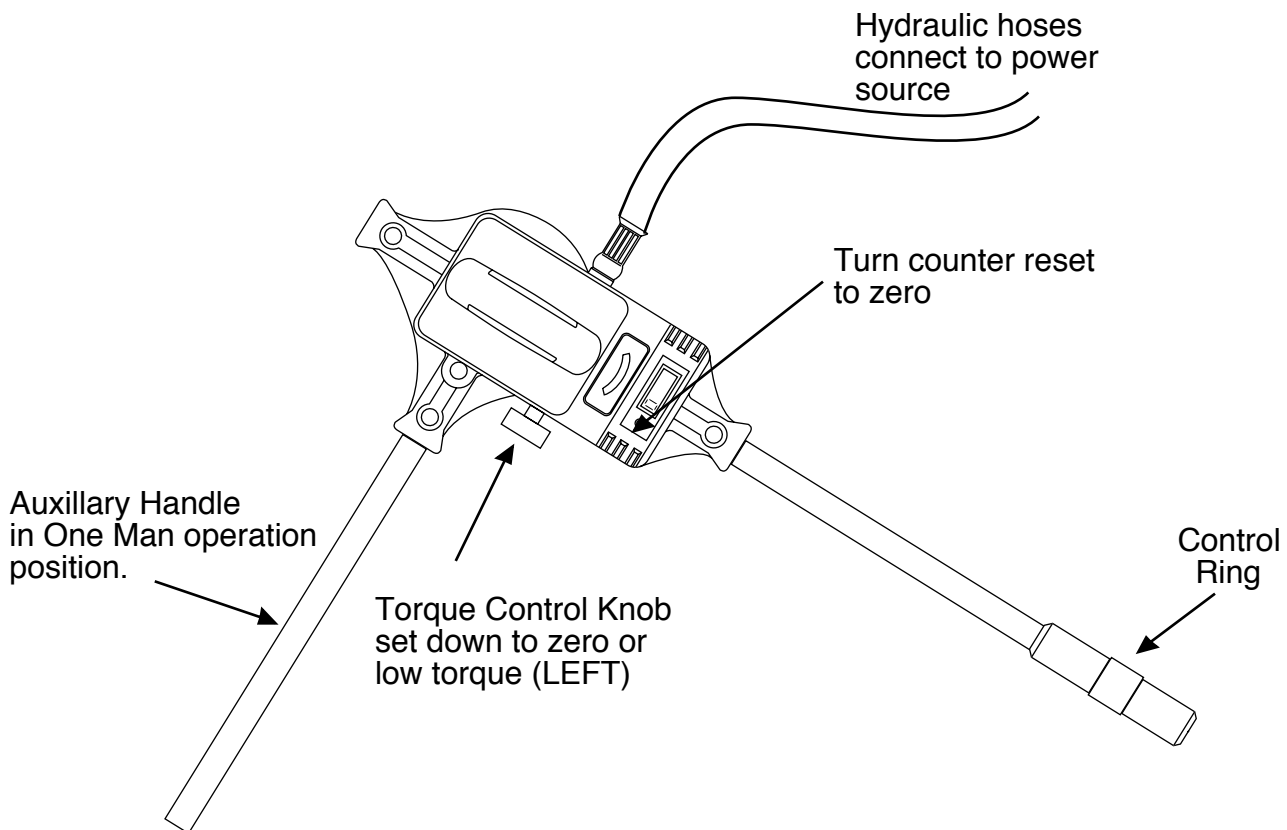


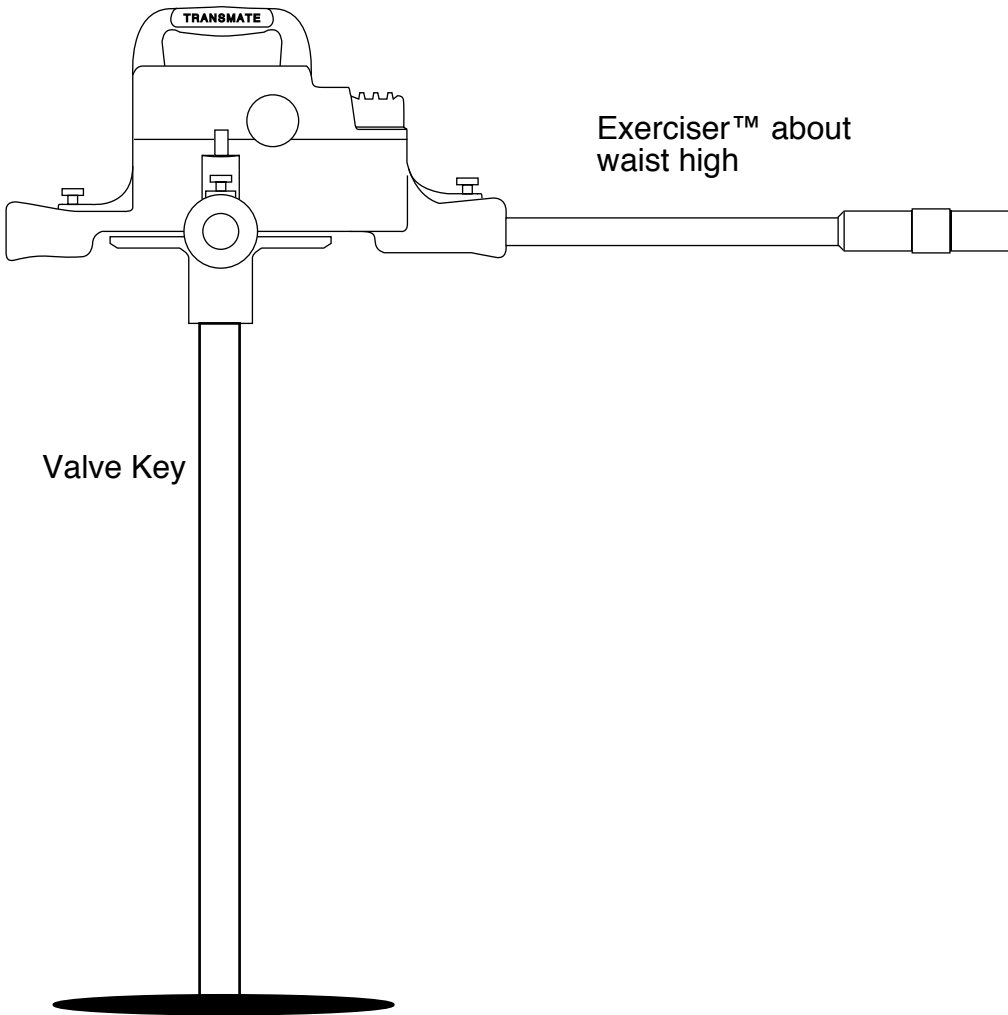
Two Man Operation

1. Set the valve key to the desired length by removing the valve key pin and allowing the two square tubes to extend. Be sure the key nut is in place at the bottom of the valve key. The valve key nut also pins in place with a valve key pin.
2. Place the control handle into the main unit so that it clicks in place. The control handle **MUST** be in the handle hole that faces the turn counter. Otherwise, the unit will not activate. Place the auxiliary handle into either of the other two handle holes and be sure that it clicks into place as well.
3. Connect the main unit to your hydraulic power source. In most cases, the best efficiency in operation will be to use a Power Take Off on your vehicle. That way, power is always available when the vehicles engine is running.
4. Depress the red button on the turn counter to reset the turn counter back to zero.
5. We suggest you turn the torque control knob down so that zero or very little torque is applied initially to the valve stem.

Use:

1. Set the valve key down onto the valve nut. If the key does not protrude up to about waist





Setting for the depth of

of the valve key. Start
not already on line.

the control handle
y increase the applied
until the key begins to

nd under valves is
e plus three turns to
le, a 12" gate valve
n to open the valve.
ected and watch
otational speed when

you feel you may be reaching the full open position of the valve.

5. Close the valve by turning the Control Ring in the opposite direction. CARE MUST BE TAKEN TO AVOID A SHARP CLOSING OF ANY VALVE UNDER PRESSURE. This can set up a water hammer that will do damage to your water system.

6. In the event of a stuck valve, avoid the tendency to increase the torque applied to the valve nut. Most valves under 12" will not take more than 250 foot / pounds. Instead, cycle the valve up and down with the Exerciser until you've cleared the rough spot.

Cleaning and Storage:

Remove all handles. Replace the Exerciser back into the storage box provided. Clean the valve key. It is important to store this equipment in a dry place. Please check your hydraulic fluid for contamination.

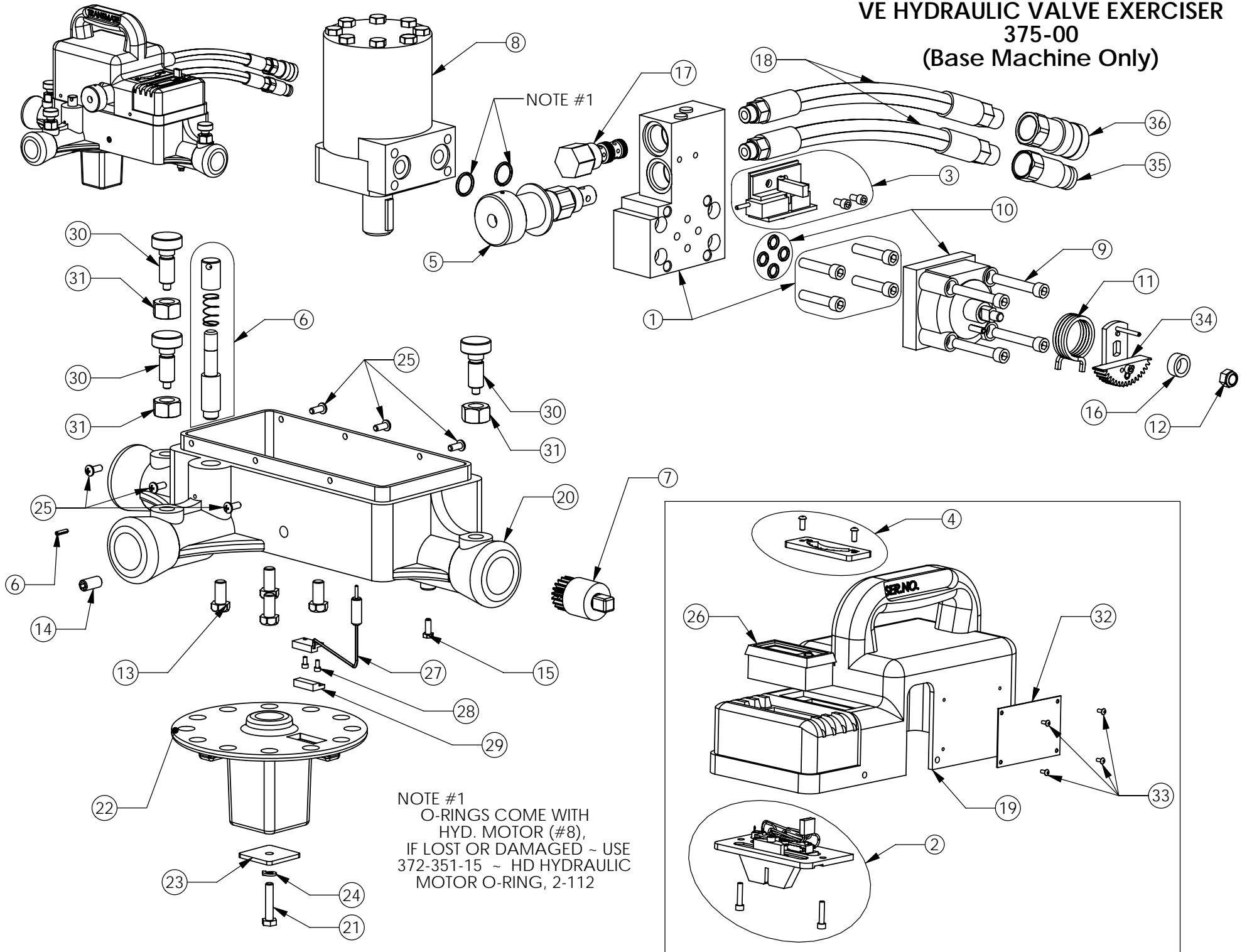
The Exerciser™, if kept clean and out of the elements, will give you many years of trouble free operation.

The battery in your electronic turn counter will have at least a seven year life span. It is not replaceable except by our factory.

The control handle should be checked periodically to assure its smooth operation. This includes the Control Ring. Do not allow dirt to get into the control handle hole on the base unit. If there is dirt within the receptical, clean it out as soon as possible. The Control Ring depends upon the free movement of the control surfaces on the handle, and within the control handle hole on the base unit.

Like all hydraulic tools, you must keep the quality of your hydraulic fluid up to standard. The fluid should be clear. A cloudy fluid always indicates contamination. Follow the recommendations of the manufacturer of your hydraulic power supply.

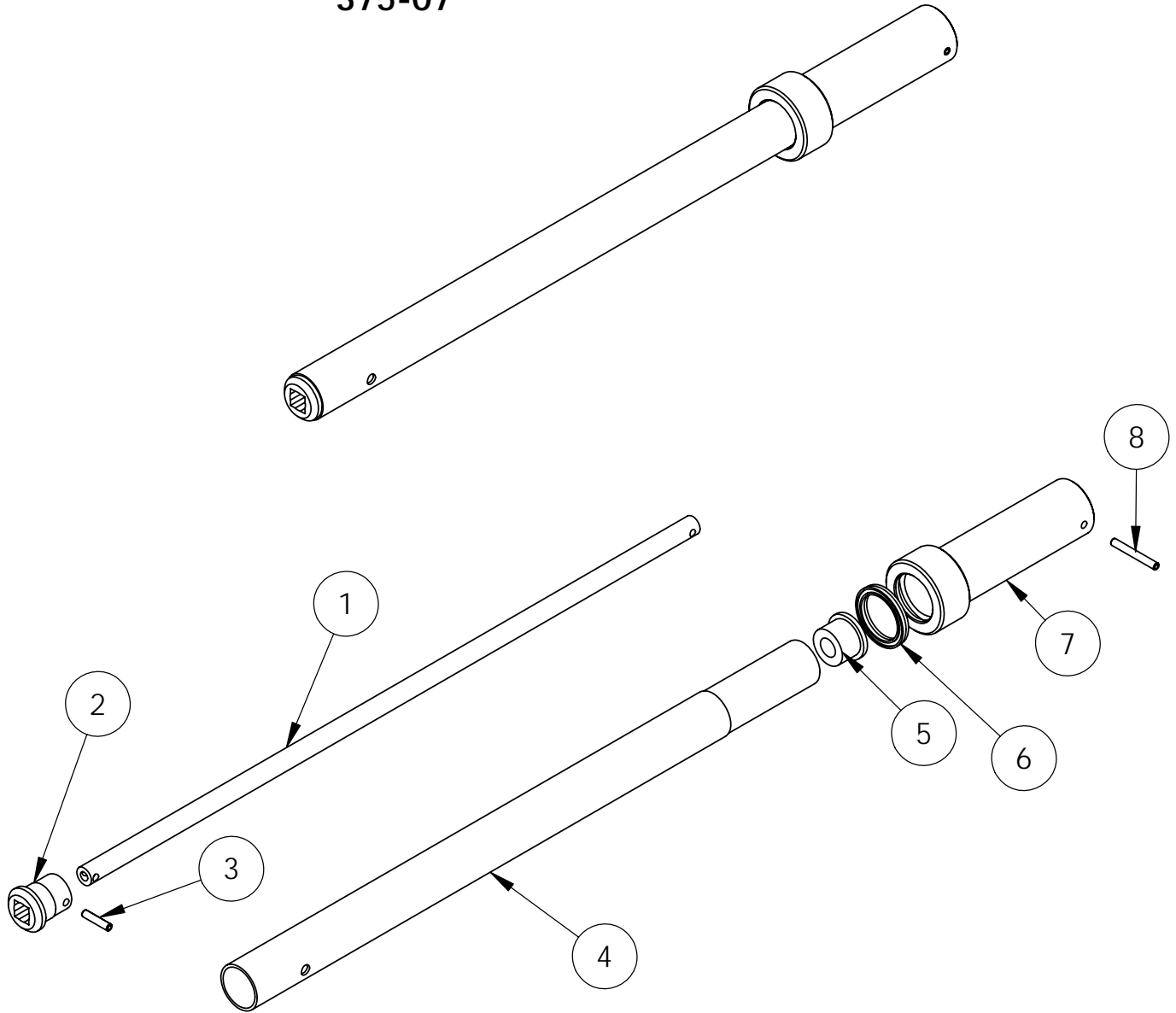
VE HYDRAULIC VALVE EXERCISER 375-00 (Base Machine Only)



375-00, VE HYDRAULIC VALVE EXERCISER (Base Machine Only)

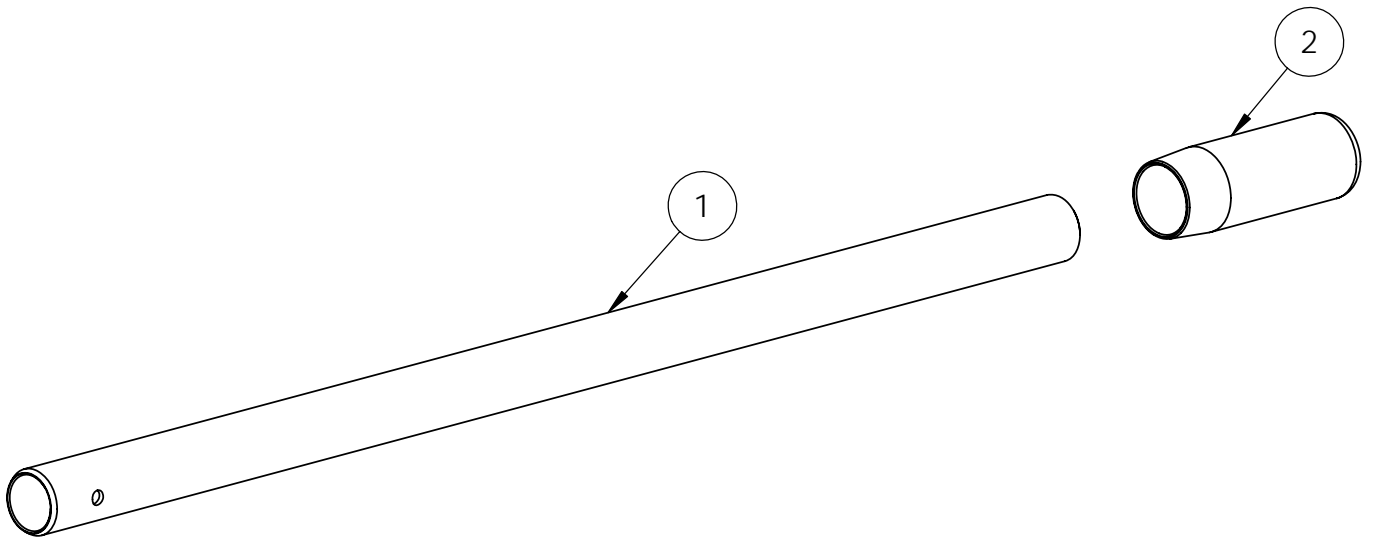
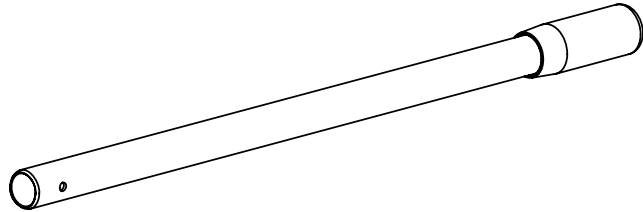
- 1) 375-01 VE MANIFOLD ASSEMBLY
- 2) 375-02 VE SWITCH PLATE ASSEMBLY
- 3) 375-03 VE TORQUE DISPLAY ASSEMBLY
- 4) 375-04 VE LENS ASSEMBLY
- 5) 375-05 VE TORQUE DISPLAY KNOB ASSY
- 6) 375-06 VE SHAFT LOCK ASSEMBLY
- 7) 375-09 VE BEARING PLUG ASSEMBLY
- 8) 375-12 VE HYDRAULIC MOTOR
- 9) 375-21 VE 4-WAY/MANIFOLD BOLT 5/16-18 x 2 IN. SHCS
- 10) 375-22 VE 4-WAY CONTROL VALVE W/ ORINGS
- 11) 375-23 VE 4-WAY CONTROL VALVE SPRING
- 12) 375-24 VE 4-WAY CONTROL VALVE NUT 5/16-18 NYLOC NUT,TS PN 064008-1
- 13) 375-25 VE LOWER CASE TO MOTOR BOLT, 3/8 IN.-16 X 3/4 IN. HHCS, GR. 8, PLAIN
- 14) 375-26 VE LOWER CASE SET SCREW 3/8-16 x 3/4 IN. SHSS,ALLOY
- 15) 375-27 VE LOWER CASE TO BEARING SCREW 10-24 X 1/2 HHCS,T S PN 122202-1
- 16) 375-28 VE VALVE SHAFT NUT SPACER
- 17) 375-30 VE FLOW CONTROL VALVE
- 18) 375-31 VE IN-OUT PIG TAILS
- 19) 375-32 VE UPPER CASE
- 20) 375-33 VE LOWER CASE
- 21) 375-34 VE DR. HUB TO MTR. SCREW 1/4-20 X 1 1/4 IN. HHCS,GR 5
- 22) 375-35 VE DRIVE HUB
- 23) 375-36 VE DR. HUB WASHER PLATE
- 24) 375-37 VE DR. HUB TO MTR. LOCK WASHER 1/4 LOCK WASHER
- 25) 375-38 VE COVER TO BASE SCREW #10-24X1/2 IN.,PAN HEAD PHILLIPS MACHINE SCREW
- 26) 375-39 VE DIRECTIONAL ROTATION COUNTER
- 27) 375-40 VE SENSOR SWITCH
- 28) 375-41 VE SENSOR SWITCH SCREW 5-40 X 1/4 SHCS
- 29) 375-42 VE ACTUATOR
- 30) 375-43 VE RETRACTABLE HANDLE PINS
- 31) 375-50-04 VE RETRACTABLE HANDLE PIN NUT 1/2-13 ZINC HEAVY HEX NUT
- 32) 375-45 VE WARNING PLATE
- 33) 375-46 VE WARNING PLATE SCREWS 4-40 X 1/4 SBHCS
- 34) 375-47 VE PLATE MODIFIED ASSY
- 35) 372-13-2 HD QUICK DISCONNECT,MALE 3/8 FLUSH FACE
- 36) 372-13-3 HD QUICK DISCONNECT,FEMALE 3/8 FLUSH FACE

VE CONTROL-SAFETY HANDLE ASSY 375-07



- 1) 375-07-12 VE CONTROL SHAFT
- 2) 375-07-04 VE CONTROL HANDLE DRIVE SOCKET
- 3) 375-07-05 VE DRIVE SOCKET ROLL PIN 3/16 X 7/8 IN. ROLL PIN
- 4) 375-07-01 VE CONTROL HANDLE
- 5) 375-07-11 VE CNTRL HNDL REAR BUSHING
- 6) 350-57-2 TM,SHAFT POLY PAK SEAL
- 7) 375-07-02 VE KNURLED KNOB
- 8) 375-07-06 VE KNOB ROLL PIN 3/16 X 1-1/2 IN. ROLL PIN

VE HANDLE
375-08

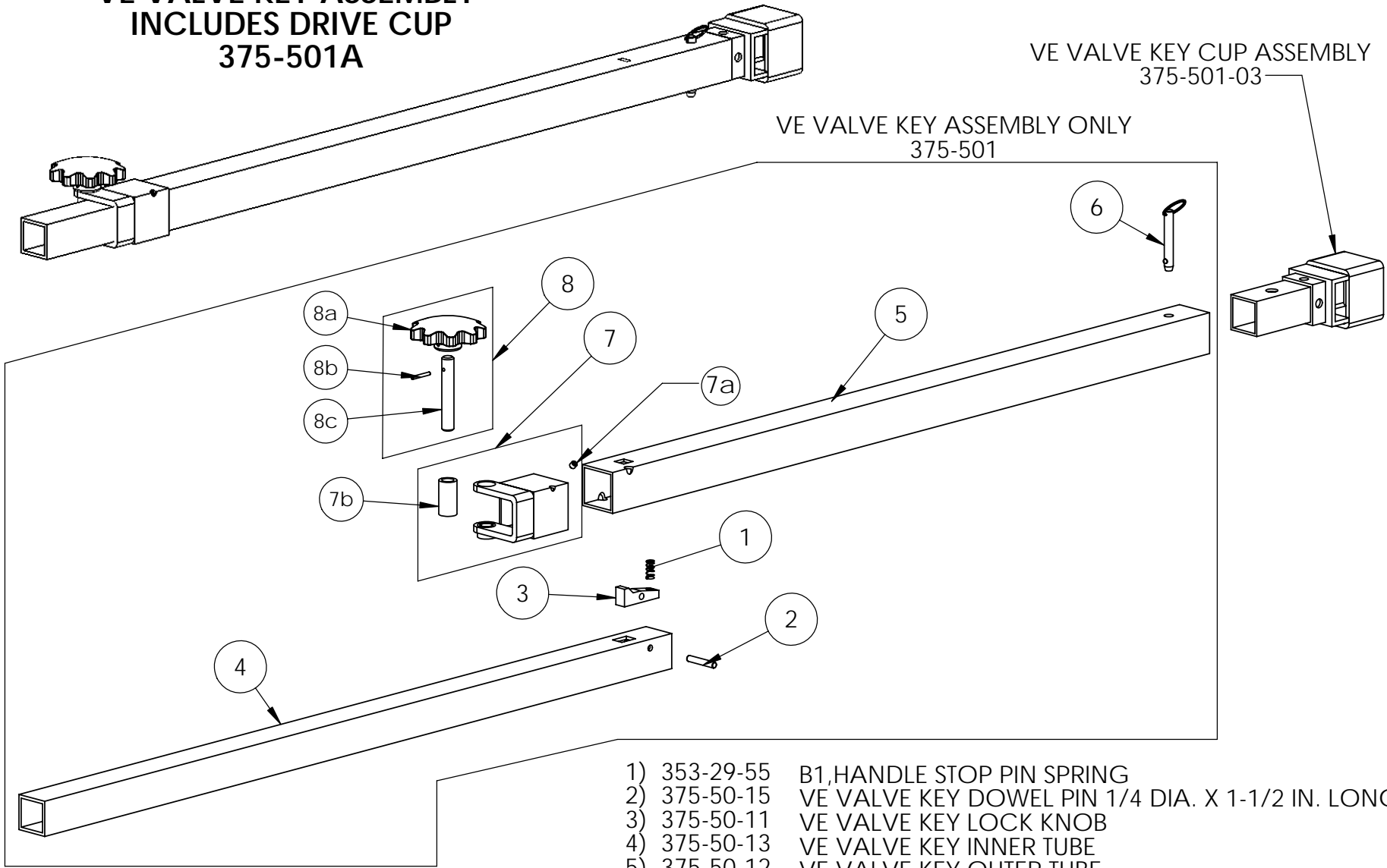


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|--------------|--|-------|
| 1) 935-00116 | TUBING,1020,DOM,1-1/4 OD X 1 ID,(MACHINED) | QTY 1 |
| 2) 375-PT8-1 | VE SPONGE GRIP | QTY 1 |

**VE VALVE KEY ASSEMBLY
INCLUDES DRIVE CUP
375-501A**

VE VALVE KEY CUP ASSEMBLY
375-501-03

VE VALVE KEY ASSEMBLY ONLY
375-501



- | | | |
|----|------------|---|
| 1) | 353-29-55 | B1,HANDLE STOP PIN SPRING |
| 2) | 375-50-15 | VE VALVE KEY DOWEL PIN 1/4 DIA. X 1-1/2 IN. LONG |
| 3) | 375-50-11 | VE VALVE KEY LOCK KNOB |
| 4) | 375-50-13 | VE VALVE KEY INNER TUBE |
| 5) | 375-50-12 | VE VALVE KEY OUTER TUBE |
| 6) | 375-50-14 | VE VALVE KEY QUICK RELESE PIN |
| 7) | 375-501-02 | VE VALVE KEY CLAMP COLLAR |
| | 7a | 351-51-2 TT,LG ARBORS & HANDLE SET SCREW,1/4-20 X 1/4 |
| | 7b | 375-50-05 VE VALVE KEY CLAMP COLLAR |
| 8) | 375-501-01 | VE VALVE KEY CAM KNOB ASSEMBLY |
| | 8a | 375-50-01 VE CAM KNOB |
| | 8b | 351-50-3 TT,BRAKE BODY ROLL PIN 1/8 IN. DIA. 1 IN |
| | 8c | 351-50-02 VE VALVE KEY CAM KNOB ROD |