

# SV1000

OPERATION AND MAINTENANCE

# MANUAL

## Auto Cycle Pump

MODELS SV1000, SV1000-230V



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**NOTICE**

Industrial grade membrane switch with tactile response buttons and highly visible embedded LED tool selection. Auto-cycle feature allows for continuous rotation and operation of the hydraulic wrench.

Low voltage pendant and circuitry for added safety for the operator.

Pendant controlled auto-cycle or standard tool operation.

Rugged & secure roll-cage protects against damage, while providing additional lifting points.

Advance electronic circuitry maximizes the hydraulic tools speed and torque output.

Removeable, easy to read 4" PSI/BAR industrial gauge for ease of pressure verification and calibration.

**WARNING**

TorcUP Inc. is not responsible for customer modification of tools for applications on which TorcUP Inc. was not consulted.

IMPORTANT SAFETY INFORMATION ENCLOSED.

READ THIS MANUAL BEFORE OPERATING PUMP.

IT IS THE RESPONSIBILITY OF THE EMPLOYER TO PLACE THE INFORMATION IN THIS MANUAL INTO THE HANDS OF THE OPERATOR.

FAILURE TO OBSERVE THE FOLLOWING WARNINGS COULD RESULT IN INJURY.

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TorcUP has taken every care in preparing this Operational Manual that is intended as a technical guideline only. TorcUP accepts no liability in relation to any use or reliance made of any information in this Operational Manual. All information, illustrations and specifications in this Operational Manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice. Equipment operators and installers shall be responsible for ensuring that a safe working environment and safe systems of work are in place before operating the equipment.

*The use of other than genuine TorcUP replacement parts may result in safety hazards, decreased tool performance, and increased maintenance, and may invalidate all warranties. Repairs should be made only by authorized personnel. Consult your nearest TorcUP Authorized Service Center. Refer All Communications to the Nearest TorcUP Office or Distributor.*

For Technical Support & Information Contact:

**TorcUP Inc.**

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email: sales@torcup.com

FAILURE TO OBSERVE THE FOLLOWING WARNINGS COULD RESULT IN INJURY

**Do NOT exceed Maximum Pressure. See Torque Chart with Tool. Damage May Occur.**

Do not use damaged, frayed or deteriorated air/pneumatic hoses and fittings.



Always wear eye protection when operating or performing maintenance on this tool.



**WARNING**

Always wear ear protection when operating this tool.



Do not carry the tool by the hose.



Keep body stance balanced and firm. Do not overreach when operating this tool.



The Torque Reaction Arm must be positioned against a positive stop. Do not use the arm as a dead handle. Take all precautions to make certain the operator's hand cannot be pinched between the arm and a solid object.



**USING THE TOOL**

- Keep hands, loose clothing & long hair away from the reaction arm and working area during operation.
- This tool will exert a strong reaction force. Use proper mechanical support and correct reaction arm positioning to control these forces. Do not position the reaction arm so that it tilts the tool off the axis of the bolt and never use the swivel inlets as a reaction stop.
- Avoid sharp bends and kinks that will cause severe back-up pressure in hoses and lead to premature hose failure.
- Use accessories recommended by TorcUP.
- Use only impact sockets and accessories. Do not use hand (chrome) sockets or accessories.
- Use only sockets and accessories that correctly fit the bolt or nut and function without tilting the tool off the axis of the bolt.
- This tool is not insulated against electric shock.
- This equipment must not be operated or serviced unless the operator read the operating instructions and fully understands the purpose, consequences and procedure of each step.

Depending on the working environment your local health and safety regulations may require you protective gear (i.e. Ear Protection, Safety Shoes, Hard Hat, Gloves, Coveralls, etc.) In case external forces are exerted on the equipment, non-compliance with these regulations may result in injury. **EAR PROTECTION MUST BE WORN WHEN OPERATING THIS TOOL.**

## SAFE AND CORRECT USE

### *Operation of the Equipment in Accordance with Specified Use*

1. Inspect, maintain, operate and install the tool in accordance with all applicable standards and regulations (local, state, country, federal, etc.)
2. Do not remove any labels. Replace any damaged labels immediately.
3. Be sure all hoses and fittings are the correct size and tightly secured.
4. Do not use damaged, frayed or deteriorated hydraulic hoses and fittings. Do not paint hoses.
5. Do not lubricate tools with flammable or volatile liquids such as kerosene, diesel or jet fuel. Use only TorcUP recommended lubricants.
6. Use only proper cleaning solvents to clean parts. Use only cleaning solvents which meet current safety and health standards. Use cleaning solvents in a well ventilated area.
7. Keep work area clean, uncluttered, ventilated and illuminated.

### *Safety Information When Using The Tool*

1. When wearing gloves always be sure that the gloves will not prevent the throttle mechanism from being released.
2. Always wear eye protection when operating or performing maintenance on this tool.
3. Always wear hearing protection when operating this tool.
4. Always use personal protective equipment appropriate to the tool used and material worked. This may include dust mask or other breathing apparatus, safety glasses, ear plugs, gloves, apron, safety shoes, hard hat and other equipment.
5. Keep others a safe distance from your work area, or ensure they use appropriate personal protective equipment.
6. Be aware of buried, hidden or other hazards in your work environment. Do not contact or damage cords, conduits, pipes, or hoses that may contain electrical wires, explosive gases or harmful liquids.
7. Keep hands, loose clothing, long hair and jewelry away from working end of tool.
8. Power tools can vibrate in use. Vibration, repetitive motions or uncomfortable positions may be harmful to your hands and arms. Stop using any tool if discomfort, tingling feeling or pain occurs. Seek medical advice before resuming.
9. Keep body stand balanced and firm. Do not overreach when operating this tool. Anticipate and be alert for sudden changes in motion, reaction torques, or forces during start up and operation.
10. **DO NOT USE THIS TOOL WHEN TIRED, UNDER THE INFLUENCE OF MEDICATION, DRUGS OR ALCOHOL.**
11. Never use a damaged or malfunctioning tool or accessory.
12. Do not modify the tools, safety devices or accessories.
13. Do not use this tool for purposes other than those recommended
14. Never exceed rated pressure of tool.

# SAFE AND CORRECT USE

## *IMPORTANT - READ CAREFULLY*

This manual contains important information for the correct installation, operation and maintenance of this equipment. All persons involved in the installation, operation and maintenance of this equipment must be thoroughly familiar with the contents of this manual. To safeguard against the possibility of personal injury or property damage, follow the recommendations and instructions of this manual. Keep this manual for reference.

## *WARRANTY STATEMENT*

TorcUP products are warranted to be free of defects in materials and workmanship under normal use for as long as the original purchaser owns them, subject to the guidelines and limitations listed. This warranty does not cover: normal wear & tear, cosmetic items, abuse, overloading, alterations, improper fluid, or use in a manner for which they are not intended. If the customer believes a product is defective, the product must be delivered, or shipped freight prepaid, to the nearest TorcUP Authorized Service Center for evaluation and repair. This pump offers 13 month warranty.

## *RECEIVING INSTRUCTIONS*

Important! Make sure to inspect all of the components for shipping damage. If damage is found, notify carrier at once. Shipping damage will not be covered by warranty. The carrier is responsible for all loss associated with shipping damage.

## *SAFETY*

Make sure to read the instructions, warnings and precautions carefully. Follow any recommended safety precautions to avoid personal injury or damage to the unit. TorcUP cannot be responsible for any damage or injury from unsafe use, lack of maintenance or incorrect operation. In the event any questions or concerns arise, contact TorcUP or a local representative for clarification.

The pump's maximum working pressure is 10,000 PSI(700kg/cm<sup>2</sup>). Make sure that all hydraulic equipment such as rams, hoses, etc. used with this pump are rated at 10,000 PSI (700kg/cm<sup>2</sup>) operating pressure.

If you have never been trained on high-pressure hydraulic safety, consult your representative for a free TorcUP Hydraulic Safety Course.

Failure to comply with the following cautions and warnings could cause equipment damage, property damage or personal injury.

**DANGER** is only used when your action or lack of action may cause serious injury or even death.

**WARNING** indicates a potential danger that requires correct procedures or practices to avoid personal injury.

**CAUTION** is used to indicate correct operating or maintenance procedures and practices to prevent damage to, or destruction of equipment, or other property.

## SAFE AND CORRECT USE

**WARNING:** Wear proper personal protective gear when operating hydraulic equipment.

**DANGER:** To avoid personal injury, keep hands and feet away from work-piece during operation.

**WARNING:** Do not exceed equipment ratings. Overloading causes equipment failure and possible personal injury. The pump tools are designed for a maximum pressure of 10,000 PSI (700kg/cm<sup>2</sup>). Do not connect a jack or cylinder to a pump. Never set the relief valve to a higher pressure than the maximum rated pressure of the pump. Higher settings may result in equipment damage and/or personal injury.

**WARNING:** The system operating pressure must not exceed the pressure rating of the lowest rated component in the system. Install pressure gauges in the system to monitor operating pressure.

**CAUTION:** Avoid damaging hydraulic hose. Avoid sharp bends and kinks when routing hydraulic hoses. Using a bent or kinked hose will cause severe back-pressure. Sharp bends and kinks will internally damage the hose, leading to premature hose failure. Do not drop heavy objects on hose. A sharp impact may cause internal damage to hose wire strands. Applying pressure to a damaged hose may cause it to rupture.

**IMPORTANT:** Do not lift hydraulic equipment by the hose or swivel couplers. Use the carrying handle or other means of safe transport.

**CAUTION:** Keep hydraulic equipment away from flames and heat. Excessive heat will soften seals, resulting in fluid leaks. Heat also weakens hose materials. For optimum performance do not expose equipment to temperatures of 65° C (170° F) or higher. Protect hoses and cylinders from weld spatter.

## TECHNICAL SPECIFICATIONS

### WORKING PRESSURE

The pump's maximum working pressure is 10,000 PSI (700kg/cm<sup>2</sup>). Make sure that all hydraulic equipment such as tools, hoses, etc. used with this pump are rated at 10,000 PSI (700kg/cm<sup>2</sup>) operating pressure.

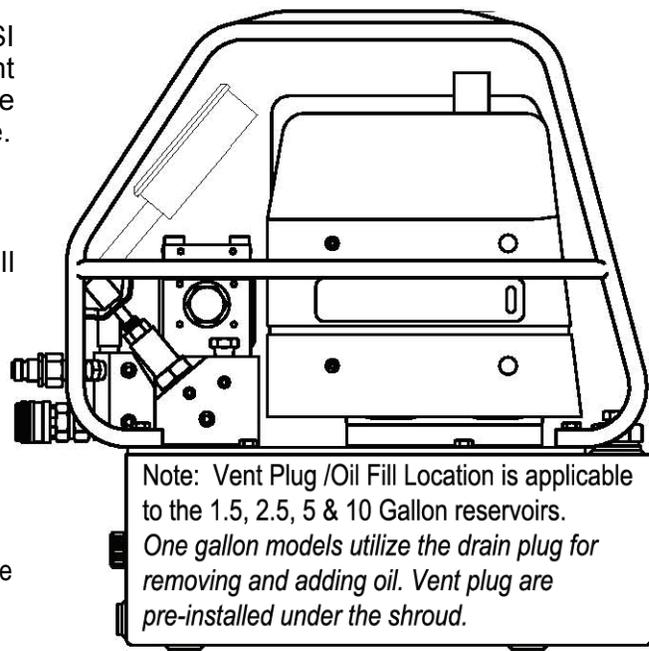
### INSTALL VENT PLUG

Remove shipping plug from reservoir and install vent plug supplied with pump.

### ADDING OIL

Remove oil filler cap and add TorcUP hydraulic oil into reservoir. Oil level should not exceed 1" from the reservoir cover. Oil should be ISO 32 or 46 weight.

\*As a "rule of thumb" oil should be filled about an inch below the top of the reservoir when the unit is powered down and all connected tools or cylinders are retracted.

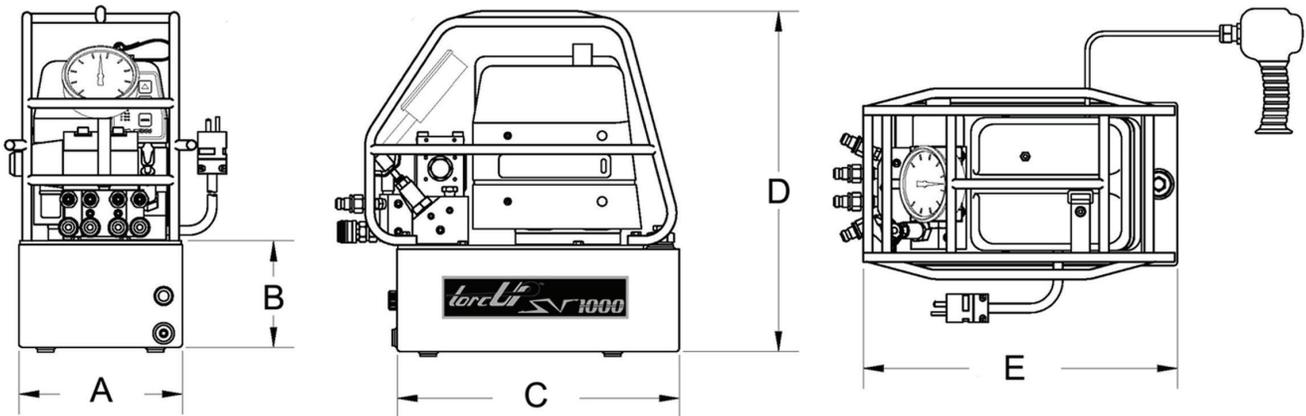


# TECHNICAL SPECIFICATIONS

Usable Reservoir Capacity		A		B		C		D		E	
(Gal.)	(litre)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)
1.5	5,7	8.75	222.25	5.96	151.38	15.13	384.3	18.1	459.74	16.85	427.99

Weight is without oil.

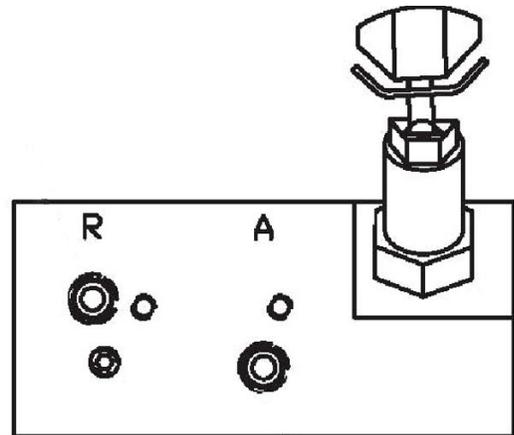
Model Number	Reservoir		Valve			Pendant	Motor Specification	Flow Rate	Weight	
	Gal.	Litre	Model	Style	Function				lbs.	Kg
SV1000	1.5	5,7	Torque	Auto Retract	Advance/ Retract	Motor/ Solenoid Control	1.5 HP @115VAC Single Phase	700 cu.in./min. @ 1,100 psi 55 cu.in./min. @10,000 psi (9.4 litres / min. @ 75 bar 0.9 / min. @ 700bar)	65.75	29,8
SV1000-230V	1.5	5,7	Torque	Auto Retract	Advance/ Retract	Motor/ Solenoid Control	1.5 HP @230VAC Single Phase	700 cu.in./min. @ 1,100 psi 55 cu.in./min. @10,000 psi (9.4 litres / min. @ 75 bar 0.9 / min. @ 700bar)	65.75	29,8



## INSTALL HYDRAULIC CONNECTIONS

Use only tools, hoses and accessories rated at 10,000 PSI (700kg/cm<sup>2</sup>). Remove the shipping plugs from the ports to connect your coupling(s) or hose(s) to manifold. Use 1.5 wraps of Teflon tape (or suitable thread sealant) on all threads, leaving the first complete thread free of tape to ensure no foreign matter enters the hydraulic circuit.

When making connections with quick disconnect couplings, make sure the couplings are fully engaged. Threaded connections such as fittings, gauges, etc. must be securely tightened and leak free.



## TECHNICAL SPECIFICATIONS

### WARNING

Loose or improperly threaded fittings can be potentially dangerous if pressurized; however, severe over tightening can cause premature thread failure. Fittings need to be tightened secure & leak free. Never hold or stand directly in line with any hydraulic connections while pressurizing. Never grab, touch or in any way come in contact with a hydraulic pressure leak. Escaping oil can penetrate the skin and a serious injury can result.

**CAUTION:** Do not subject the hose to potential hazards such as sharp surfaces, extreme heat or heavy impact. Do not allow the hose to kink or twist. Inspect each hose for wear before it is used.

### *ELECTRICAL*

Check for proper electrical supply before connecting. Be sure the electrical connection is grounded. Check that your power supply agrees with the motor nameplate and/or TorcUP model decal.

NOTE: MOTOR MAY SPARK. DO NOT OPERATE IN AN EXPLOSIVE ATMOSPHERE OR IN THE PRESENCE OF CONDUCTIVE LIQUIDS.

1. Do not use a power or extension cord that is damaged or has exposed wires.
2. All single phase motors come equipped with a three prong grounding type plug to fit the proper grounded type electrical outlet. Do not use a two prong ungrounded extension cord as the pump's motor must be grounded.

### *CONNECTING HYDRAULIC TOOLS*

Use only tools, hoses and accessories rated at 10,000 PSI (700kg/cm<sup>2</sup>). When making connections with quick disconnect couplings, make sure the couplings are fully engaged. Threaded connections such as fittings, gauges, etc. must be securely tightened and leak free. Use 1.5 wraps of Teflon tape (or suitable thread sealant) on all threads, leaving the first complete thread free of tape to ensure no foreign matter enters the hydraulic circuit.

### *STARTING THE PUMP FOR THE FIRST TIME*

1. Check for any leaks, repair as needed.
2. When first plugged in the solenoid makes 4 "clicks" relieving any pressure still in the system. When the button to turn off the pump is pressed it goes through the same sequence for the same reason. It is then safe to remove tool and hoses.
3. Shift pendant to the advance position to advance tool and release to retract tool. Look for movement in tool, check for any leaks, repair as needed.

**CAUTION:** Never operate the pump without tool movement for more than 1 minute. Leaving the valve in the advance or retract position without the tool's piston rod moving will overheat the oil.

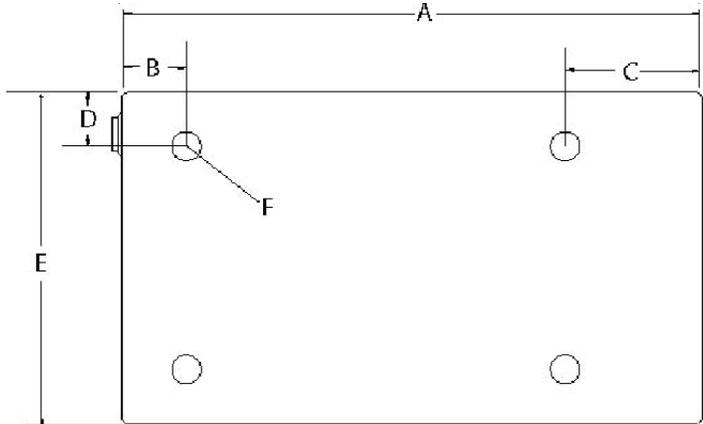
**CAUTION:** Never disconnect or connect any hydraulic hoses or fittings without first unloading the tool, then unplug the electrical cord of the pump. Open manual relief valve to assure that the system has been depressurized.

# TECHNICAL SPECIFICATIONS

## PUMP MOUNTING

Refer to the chart for mounting dimensions to secure the pump to a fixed surface.

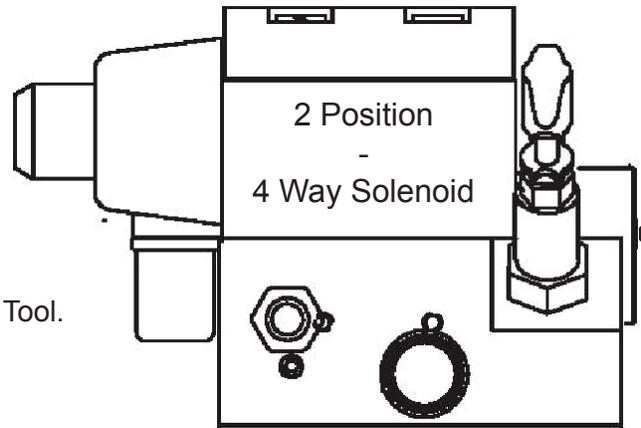
	1 gal. (4L)	1.5 gal. (6L)	2.5 gal. (10L)	5 gal (20L)
A	11	15.13	17	19.6
B	0.56	1.68	2.75	4.69
C	0.56	3.57	4.37	5.03
D	1.16	1.43	1.93	2.93
E	8.19	9.75	9.75	11.75
F	1/4-2unc (4 places)	1/4-2unc (4 places)	1/4-2unc (4 places)	1/4-2unc (4 places)



## CONTROL VALVES

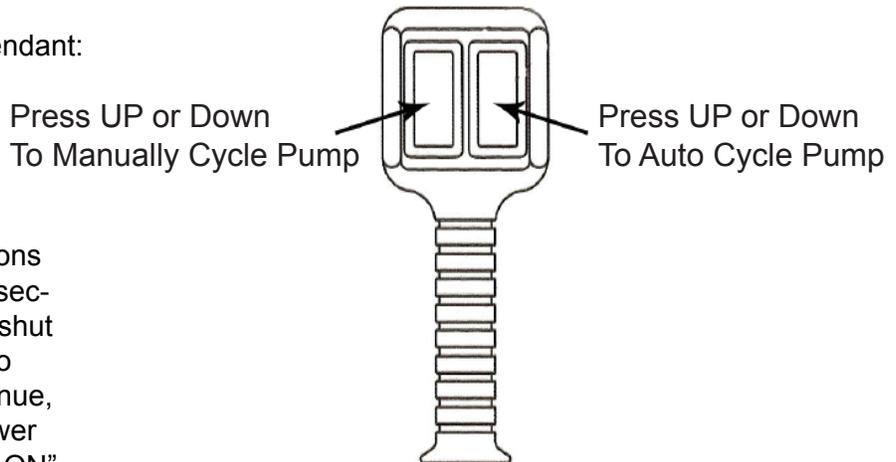
2-Position – 4 Way Solenoid Valve for Hydraulic Torque Wrenches.

To Advance.....depress the Advance Switch  
To Retract.....release advance switch to Retract Tool.



## POWER CONTROL SWITCHES

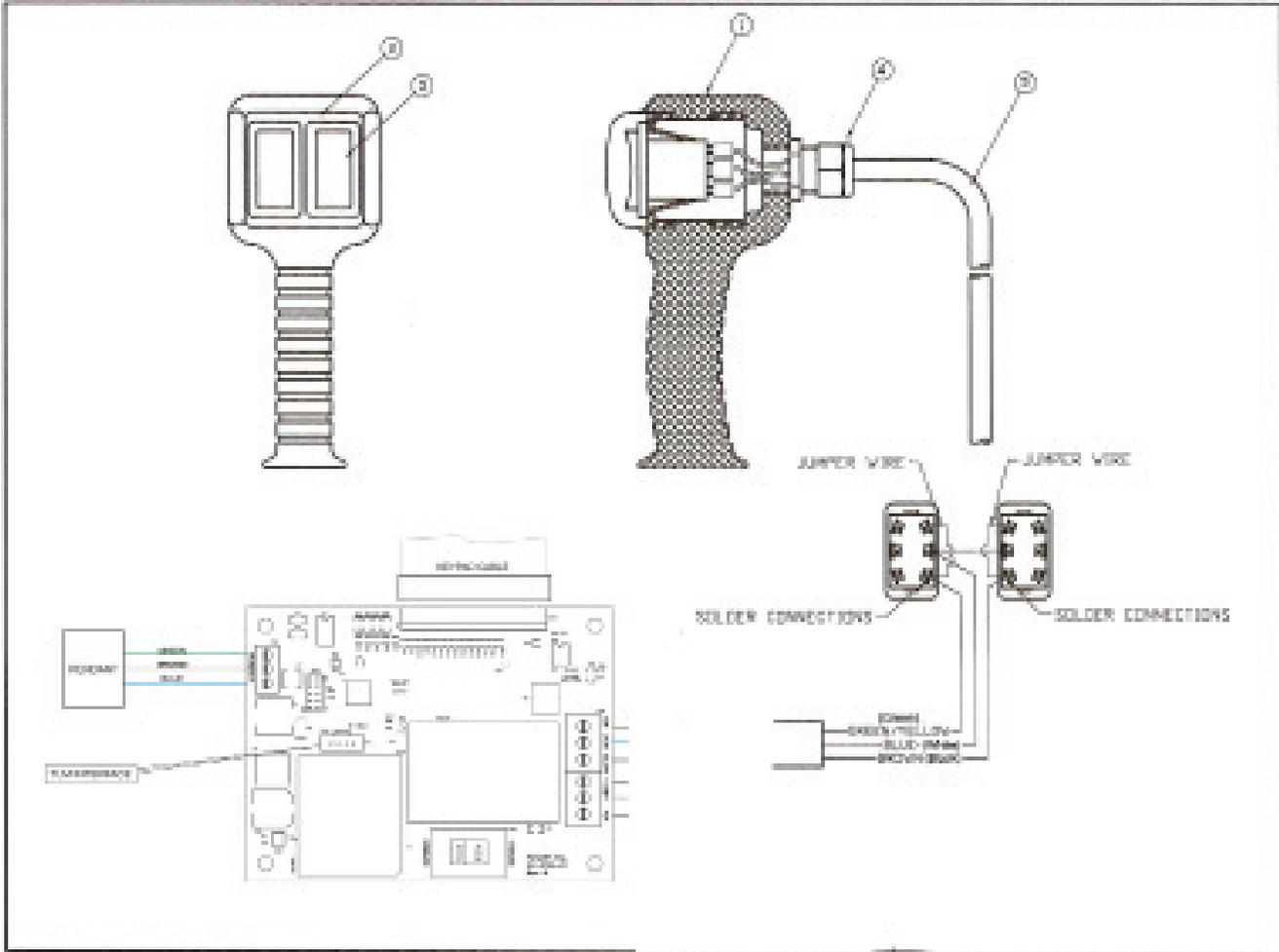
Remote pendant.  
Configured with motor control pendant:



NOTE: In the event multiple buttons are depressed for longer than 5 seconds, the unit is programmed to shut down. To restart, you will need to depress the motor "ON" to continue, or unplug/replug the unit into power supply, then depress the motor "ON" to continue.

Press Either Button To Turn Pump On

# SV1000 PENDANT



ITEM #	PART#	DESCRIPTION	QTY
01	69083	Pendant body	1.00
02	689151	2 Switch Junction Box	1.00
03	69487	Toggle Switch	2.00
04	68375	Cord Fitting	1.00
05	DS1309052	Pendant Wire	1.00

# OPERATION PROCEDURES

## SV1000 & SV1000-230V

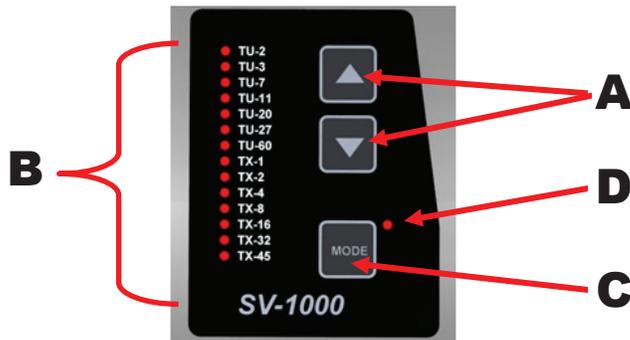
NOTES: The following procedures should be performed after the desired pressure setting has been set on the pump (See pressure torque setting section on page 11 of the manual).

The SV1000 will perform a self diagnostic once the unit has been plugged in. This is noticeable by the pump making three (3) audible “Clicks” once plugged in. The SV1000 WILL NOT turn itself on during this diagnostics.

Selecting tool for auto cycle operation.

### 1. SELECTING TOOL:

Select the torque wrench to be used by pressing the UP & DOWN scroll arrows (A) until the desired tool is highlighted. The red LED light (B) will blink two times after the tool has been selected, confirming tool selection.



### 2. MODE SELECTION:

The mode selection button allows the user to operate the TLM ultrasonic device in conjunction with the SV series auto cycling pumps.

*WITHOUT TLM* - To operate the SV1000 pump in normal and auto cycle mode, press the **MODE** button (C) until the confirmation LED light (D) is **NOT** highlighted.

*WITH TLM* – To operate the SV1000 pump with the TLM unit, the pump will need to have a TLM Interface Modules (TLM-IM) adapted to the pump. Contact TorcUP for more information. Once the Interface module has been adapted and the tool has been selected (see above), press the **MODE** button (C) until the confirmation LED light (D) **IS ON** or highlighted.

### 3. OPERATING TOOL IN AUTO CYCLE

**3a.** Press and HOLD the “Auto” button switch to operate the wrench in auto cycle mode, until nut rundown has been achieved. Press momentary switch for normal “Advance”, and repeat this procedure until final torque has been achieved.

**3b.** Release “Auto” button and torque wrench piston will retract.

**REFER TO TORQUE WRENCH INSTRUCTIONS FOR WRENCH OPERATING PROCEDURE**

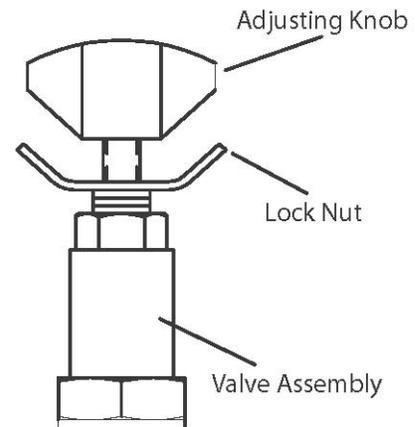
# OPERATION PROCEDURES

## PRESSURE TORQUE SETTING

### WARNING

Make these adjustments BEFORE putting torque wrench on nut or bolt head. The pump pressure setting may be above the pressure needed to provide the required torque for your application. Exceeding required torque will cause equipment damage and may lead to serious personal injury.

1. See torque wrench instructions for amount of pressure required to produce desired torque.
2. Loosen lock nut and back out relief valve to prevent unintended pressure builds up.
3. Turn pump on. Press and the "ADVANCE" switch, and read pressure gauge.
4. While holding the switch, turn relief valve in (clockwise) to increase pressure or out (counter-clockwise) to decrease maximum pressure. Repeat until correct pressure is obtained.
5. Tighten lock nut on the relief valve to maintain setting.
6. Run pump several times to test this setting before setting tool on the nut.



## AFTER COMPLETING THE JOB

Before disconnecting hoses, fittings, etc., first be sure the tool is unloaded and retracted, then unplug the power cord. The pump is designed to cycle valve upon power down "off."

## PERIODIC MAINTENANCE

Completely change the hydraulic oil and clean the intake screen and magnet (located in the reservoir) twice a year. If equipped, change the external oil filter twice a year (Use TorcUP oil only, Model # AO1, 1 gallon). Change the oil more frequently when used in extremely dusty areas or when the oil has been overheated. Using oil other than TorcUP Brand may void the pump's warranty.

The following conditions require more frequent oil changes.

- Rigorous duty, where oil temperature may reach 150° F.
- High humidity environment and extreme changes in temperature that can result in condensation

### WARNING

The electrical power cord must be disconnected from electrical outlets before performing maintenance or repair procedures.

# OPERATION PROCEDURES

## ***MAINTAIN OIL LEVEL***

Check hydraulic oil level every 30 hours of operation (sight gauge should be completely covered in oil when all tools are retracted. Add TorcUP oil (Model # AO1 – 1 gallon) when necessary. Oil level should be no more than 1” from top of reservoir plate – with cylinders retracted and motor off.

## ***CLEAN OIL INTAKE SCREEN ONCE A YEAR***

Loosen and remove reservoir plate bolts. Lift pump unit off the reservoir, being careful not to damage the gasket.

Applies to 1, 1.5, 2, 2.5 gallon reservoirs:

Remove the five allen socket head cap screws, securing the screen to the 1st stage gear pump. Care should be taken not to remove the center plate and gears. Remove and clean with nonflammable solvent, blow dry clean. Reinstall in reverse order and torque bolts to 75 inch pounds. Keep the motor and pump as clean as possible.

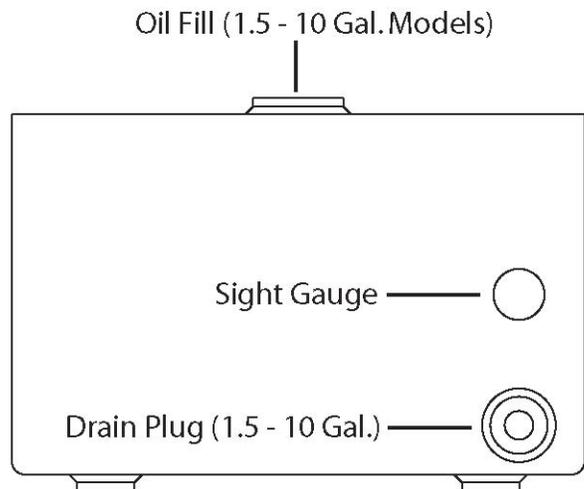
Applies to the 5 and 10 gallon reservoirs:

Unscrew screen from bottom of pump unit and clean with nonflammable solvent. Blow dry and reassemble. Keep areas around pump unobstructed to provide good air flow around the motor and pump. Keep the motor and pump as clean as possible.

## ***FLUSH THE PUMP***

If you suspect your pump has been contaminated or discover sludge or other deposits on internal components, you should thoroughly flush the pump. Remove the old oil from the reservoir, then thoroughly clean the reservoir and refill with a clean, nonflammable flushing oil. Reassemble the pump and motor to the reservoir.

Run the pump in no load condition for 1 or 2 minutes maximum. Unplug the pump and remove the motor and pump assembly again. Now drain the flushing oil and re-clean the inside of the reservoir. (Make sure flushing fluid is also drained from pump assembly). Reassemble the pump and refill the reservoir with TorcUP hydraulic oil and reassemble the pump.



# TROUBLESHOOTING

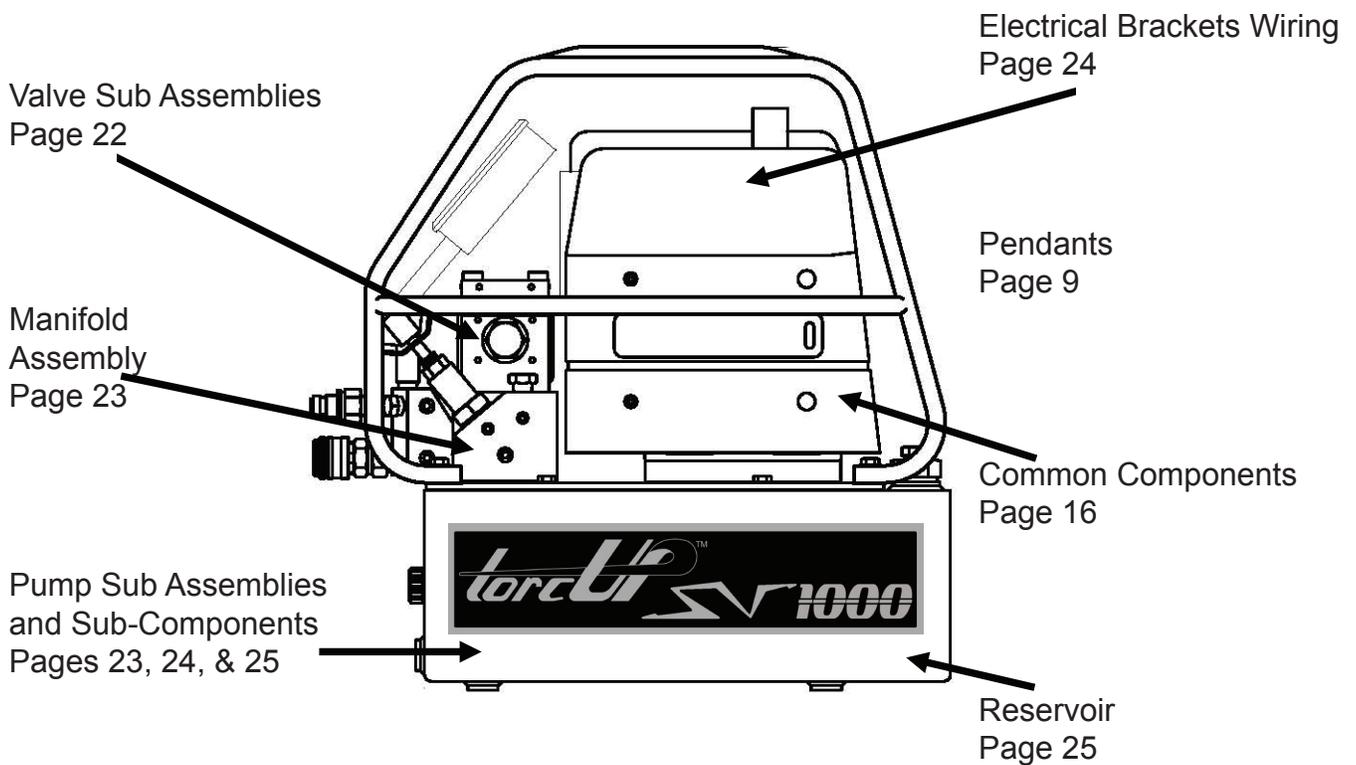
## *PROBLEM*

## *CAUSE-SOLUTION*

- |                                  |  |
|----------------------------------|--|
| Sporadic Tool Action:            | <ul style="list-style-type: none"><li>• Air in the hydraulic system. Bleed the hydraulic circuit.</li><li>• Check reservoir oil level.</li></ul>   |
| Motor Will Not Start:            | <ul style="list-style-type: none"><li>• Be sure power cord is not damaged.</li><li>• Check for tripped circuit breaker; be sure breaker is of adequate size.</li><li>• Have motor checked for proper operation.</li><li>• Have qualified electrician inspect for loose or faulty wiring or switch.</li><li>• Press Mode Button until LED is NOT highlighted</li></ul>  |
| Noisy Operation:                 | <ul style="list-style-type: none"><li>• Air in system.</li><li>• Be sure the oil reservoir is filled to normal level.</li><li>• Check all points where air might leak into system.</li><li>• Clogged or blocked intake screen.</li></ul>   |
| Pump Oil is Over Heating:        | <ul style="list-style-type: none"><li>• Inspect for high pressure leakage at the pump (leaking at plug or relief valve).</li><li>• Oil level is low. Fill reservoir to normal level, or retrofit the pump with larger reservoir or heat exchanger.</li></ul>   |
| Pump Runs But Will Not Pump Oil: | <ul style="list-style-type: none"><li>• Pump is not primed. Run pump a few minutes tipping from side to side.</li><li>• Inspect to make sure that external adjustable relief valve is set properly.</li><li>• Defective control valve, take to nearest TorcUP Authorized Service Center for repair.</li><li>• Incorrect motor rotation, take to nearest TorcUP Authorized Service Center for repair.</li><li>• Check to make sure the intake screen is not clogged. Clean if needed.</li><li>• Check oil reservoir is low. Fill as needed.</li><li>• Oil viscosity is too high. Replace with TorcUP oil.</li></ul> |

# PARTS INDEX

This illustration is for reference purposes only.  
The appearance of your unit may differ from the unit shown.



# PARTS INDEX

## How to Identify Parts for Your Model.

### MODEL NUMBER & DATE CODE LOCATION

For example, the date code and serial number

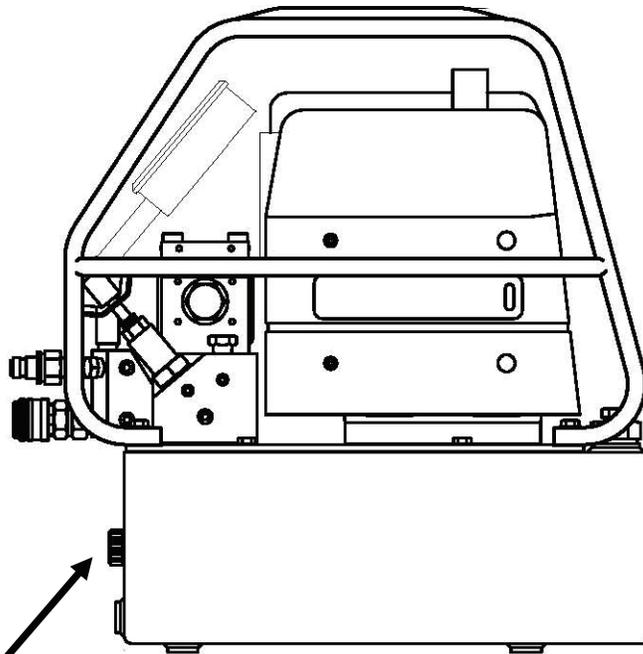
J = **October**

07 = **Year 2007**

42 = **Week number in year**

J 07 42

A	B	C	D	E	F	G	H	I	J	K	L
1	2	3	4	5	6	7	8	9	10	11	12

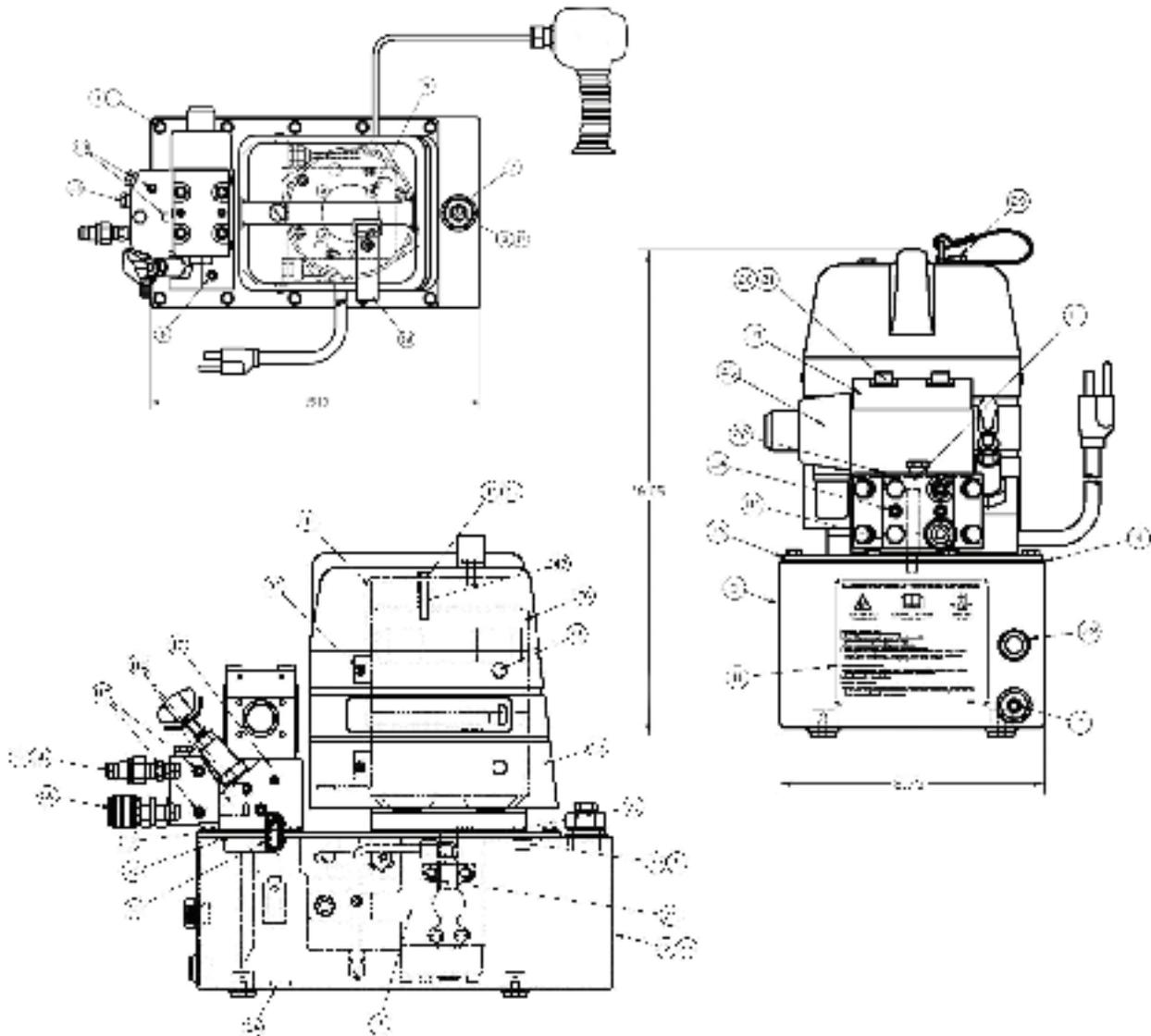


DATE CODE COVER PLATE  
STAMPING LOCATION

MODEL DECAL PLACEMENT

# COMMON COMPONENTS

Note: This illustration is for reference only. The appearance of your unit may differ from unit shown.



# COMMON COMPONENTS

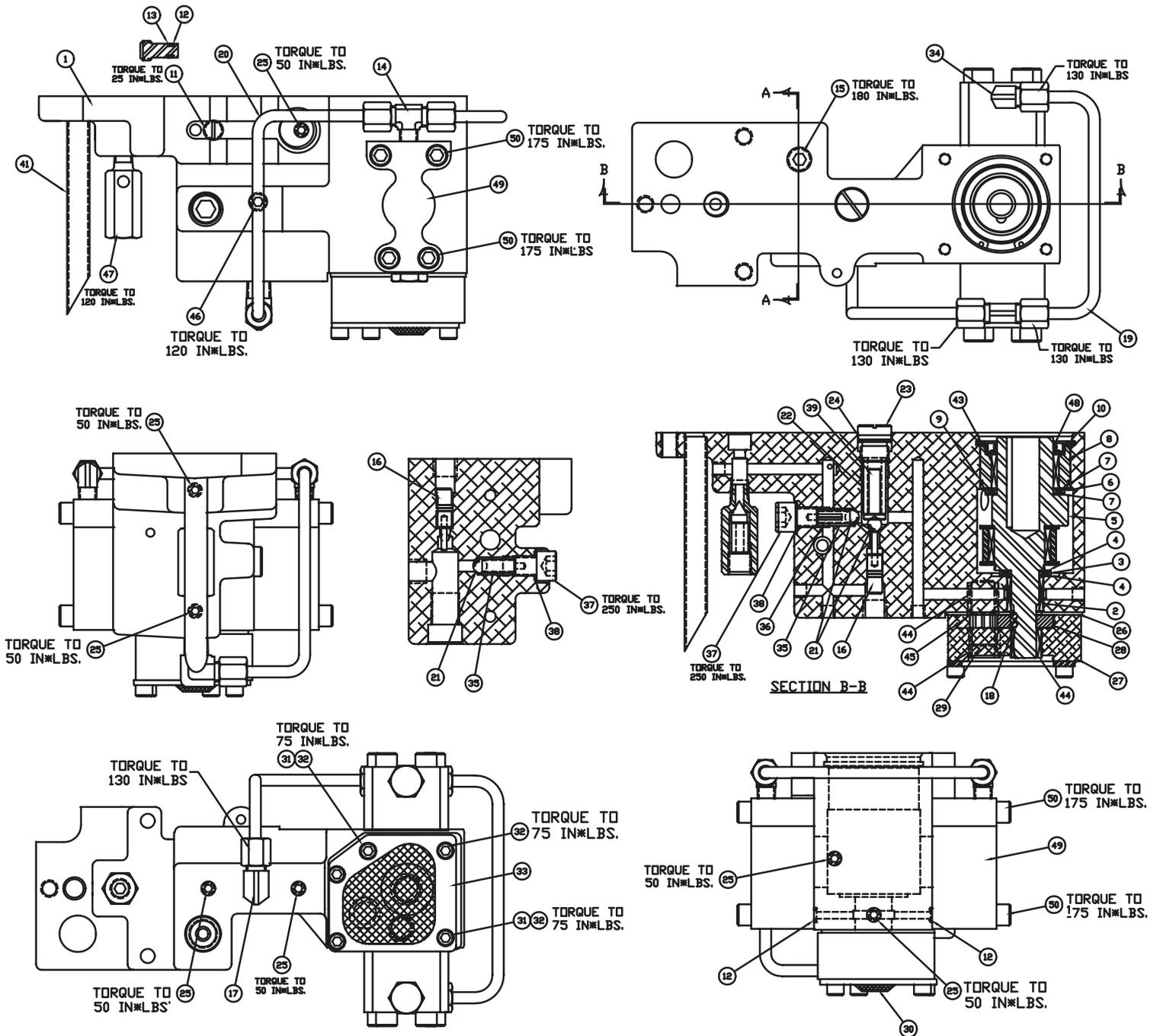
ITEM #	PART # & DESCRIPTION	QTY		ITEM #	PART # & DESCRIPTION	QTY
	46335	1			44491	2
2	PUMP ASM. G5 2 STAGE			37	QUICK DISCON. FLAG BLUE	
	DS1328025	1			69917	1
3	RESERVOIR 1.5 GALLON TORC-			38	RING TERMINAL 1/4"	
	85469	1			45175	1
4	RESERVOIR GASKET			39	SHCS #10-32X1/4" LG PLATE	
	46348	1			46405	4
5	BREATHER VENT 3/8 NPT			42	HOLE PLUG 1/4	
	CN815006	1			69353	2
6	PIPE PLUG			43	SPACER 1"	
	46118	1			84417	2
7	SAE #12 HEX PLUG WITH PORT			44	HHCS 1/4-20 X 1.50	
	65891	14			88429	2
8	HHCS 1/4-20 X .75 PLT			45	WASHER 1/4" SS	
	65892	14			46294	1
9	SEALING WASHER			46	COIL 115V WITH DIN CONNECT	
	68068	1			46009	1
11	LABEL SAFE USE ELEC			52	SIGHT GAUGE	
	87305	1			4100067	1
12	BLANK DECAL 3 X 4			57	1/4IN NIPPLE	
	46292	1			CT210	1
13	MANIFOLD ASM. TORQUE WRENC			58	1/4"NIPPLE	
	69242	1			45765	1
14	VALVE GASKET			59	1/4" SELF-LOCKING COUPLER	
	99921	3			46474	1
15	SHCS 3/8-16 X 2 3/4			62	GAUGE SHROUD ASSEMBLY TORQ	
	68963	1			44559	4
16	ADAPTER ASSY.			64	BHCS10-24X.50 316SS	
	R515245-2	1			46588	2
17	PLUG			65	GAUGE SHROUD MOUNTING PLAT	
	46291	1			46310	1
19	VALVE ASM. 2P/4W TORQUE WR			68	VELCRO STRAP 1x14	
	88363	4			66012	1
20	SHCS 3/8-16 X 3 1/2			70	GASKET-MOTOR	
	93943	6			46032	1
21	LOCKWASHER 3/8 PLATED			71	PUMP GASKET G5	
	561604	1			46334	1
22	ROLL PIN 1/8 X 3/8 LG			73	COVER PLATE G5 TORQUE WREN	
	66021	1			69026	1
24	MAGNET			74	PIN,DOWEL 3/16 1" LONG	

## COMMON COMPONENTS

ITEM #	PART # & DESCRIPTION	QTY		ITEM #	PART # & DESCRIPTION	QTY
	45862	1			93594	2
25	MOTOR SHROUD W/O HANDLE G	1		75	SHCS 3/8-16 X 1	1
	46539				68376	
27	DECAL OVERLAY	1		76	1 1/2HP, PM MOTOR	4
	DS1038900				46279	
28	BRACKET ASSEMBLY G5 TORC-U	2		78	FHCS 1/4-28 x 0.50 LONG	1
	69234				45620	
29	HEAVY HEX JAM NUT 1/4-20			111	MULTIPOINT ADAPTER BLOCK	
	69236	4			45622	2
30	BHCS 10-24 x 3/8 LG			112	VALVE ADAPTER MULTIPOINT AS	
					A1007245	4
				113	1/8 FLUSH PLUG W/SEALANT	
					81907	2
				114	SHCS 1/4-20 X 2 LG	
					A8069006	7
				115	PIPE PLUG	

# SUB PUMP ASSEMBLY

(46335) PUMP ASM.

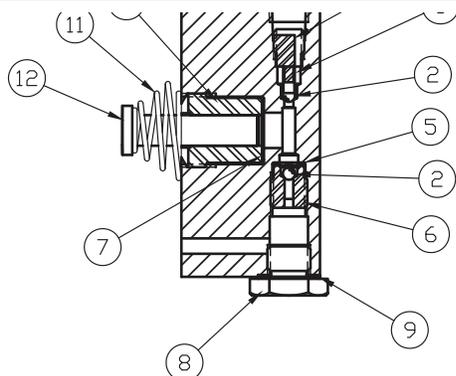


# SUB PUMP ASSEMBLY

(46335) PUMP ASM.

ITEM #	DESCRIPTION	PART #	QTY.
01	PUMP BODY G5	45750	1.00
02	BEARING ROLLER 5/8x13/16x5/8 WIDE	68360	1.00
03	THRUST BEARING	66033	1.00
04	THRUST WASHER	66474	2.00
05	ECCENTRIC SHAFT ASM 5/8" G5	SEE PAGE 19	1.00
06	THRUST BEARING	66106	1.00
07	THRUST WASHER	66108	2.00
08	ECCENTRIC SHAFT ADAPTER G5	45908	1.00
09	O-RING 1 3/4 X 1 7/8	*	1.00
10	RETAINING RING	68978	1.00
11	POW'R BUD DUMP PLUG	43283	1.00
12	O-RING 3/16X5/16	*	3.00
13	BACKUP WASHER	56080087	1.00
14	MALE TEE 1/8" PIPE TO 1/4" TUBE	45426	1.00
15	PIPE PLUG 1/4" FLUSH W/ COATING	46509	1.00
16	UNLOADING PISTON ASSEMBLY	SEE PAGE 7	2.00
17	MALE ELBOW 1/4" TUBE 1/4" PIPE	45929	1.00
18	BALL 1/8"	90906	3.00
19	G3 PISTON BLOCK TUBE	45420	1.00
20	OUTLET TUBE PISTON BLOCK	45815	1.00
21	BALL 5/16"	91701	3.00
22	UNLOADING SPRING	43671	1.00
23	ADJUSTING SCREW G5	45903	1.00
24	O-RING 5/8X3/4 URETH	*	1.00
25	PIPE PLUG FLUSH 1/16 W/ COATING	40049	7.00
26	WEAR PLATE G5	45909	1.00
27	BOTTOM PLATE 9/32" G5	45900	1.00
28	GEAR PUMP 0.281	45824	2.00
29	SHAFT-IDLER	68850	1.00
30	SCREEN	*	1.00
31	TUBE-GUIDE .11	68894	2.00
32	SHCS 1/4-28 X 1 3/4	68255	5.00
33	PLATE-SCREEN MTG.	68927	1.00
34	MALE ELBOW 1/8 PIPE	69354	1.00
35	SPRING	68225	2.00
36	ROLL PIN 1/8 X 3/4 LONG	97782	1.00
37	BALL STOP G5	45904	2.00
38	GASKET 29/64 X 5/8	*	2.00
39	SPRING CAP UNLOADING VALVE	43673	1.00
41	TUBE RETURN	68569	1.00
43	BEARING ROLLER 1 1/4x1 1/2x3/4 WIDE	66030	1.00
44	BEARING ROLLER 1/2x11/16x1/2 WIDE	68891	3.00
45	RING-RETAINING	68892	1.00
46	PIPE PLUG 1/8" FLUSH W/ COATING	46508	1.00
47	CART REL. VAL. ASSEMBLY	66220	1.00
48	SHAFT SEAL G5	*	1.00
49	PISTON BLOCK ASM. 0.255 G5	SEE PAGE 19	2.00
50	SHCS 5/16-24 X 1.75	69392	8.00

## SUB PUMP ASSEMBLY

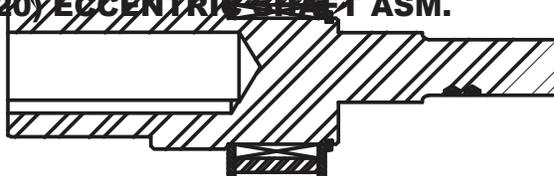


02	BALL 1/8"	90906	2.00
03	SPRING	66042	1.00
04	BALL STOP	68810	1.00
05	BALL RETAINER	66043	1.00
06	INTAKE SEAT	66046	1.00
07	GASKET 25/64X19/32	*	1.00
08	PLUG PISTON BLOCK	68825	1.00
09	GASKET 29/64 X 5/8	*	1.00
10	ADAPTOR .255 DIA.	68909	1.00
11	SPRING, PISTON	68340	1.00
12	PISTON .255 DIA.	68222	1.00

### (45820) ECCENTRIC SHAFT ASM.

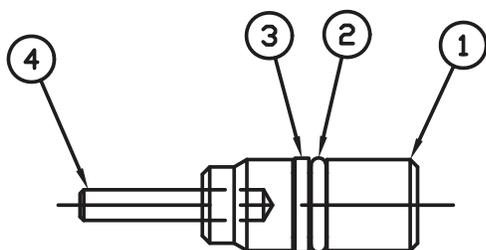


### (45820) ECCENTRIC SHAFT ASM.



ITEM #	DESCRIPTION	PART #	QTY.
01	ECCENTRIC SHAFT 5/8"	45819	1.00
02	ECCENTRIC RING	45907	1.00
03	ROLL BEARING 1 1/8x1 3/8x3/4 WIDE	45926	1.00
04	RETAINING RING EXTERNAL 1 1/8"	45931	1.00
05	THRUST WASHER	68026	2.00

### (43766) UNLOADING PISTON ASM.

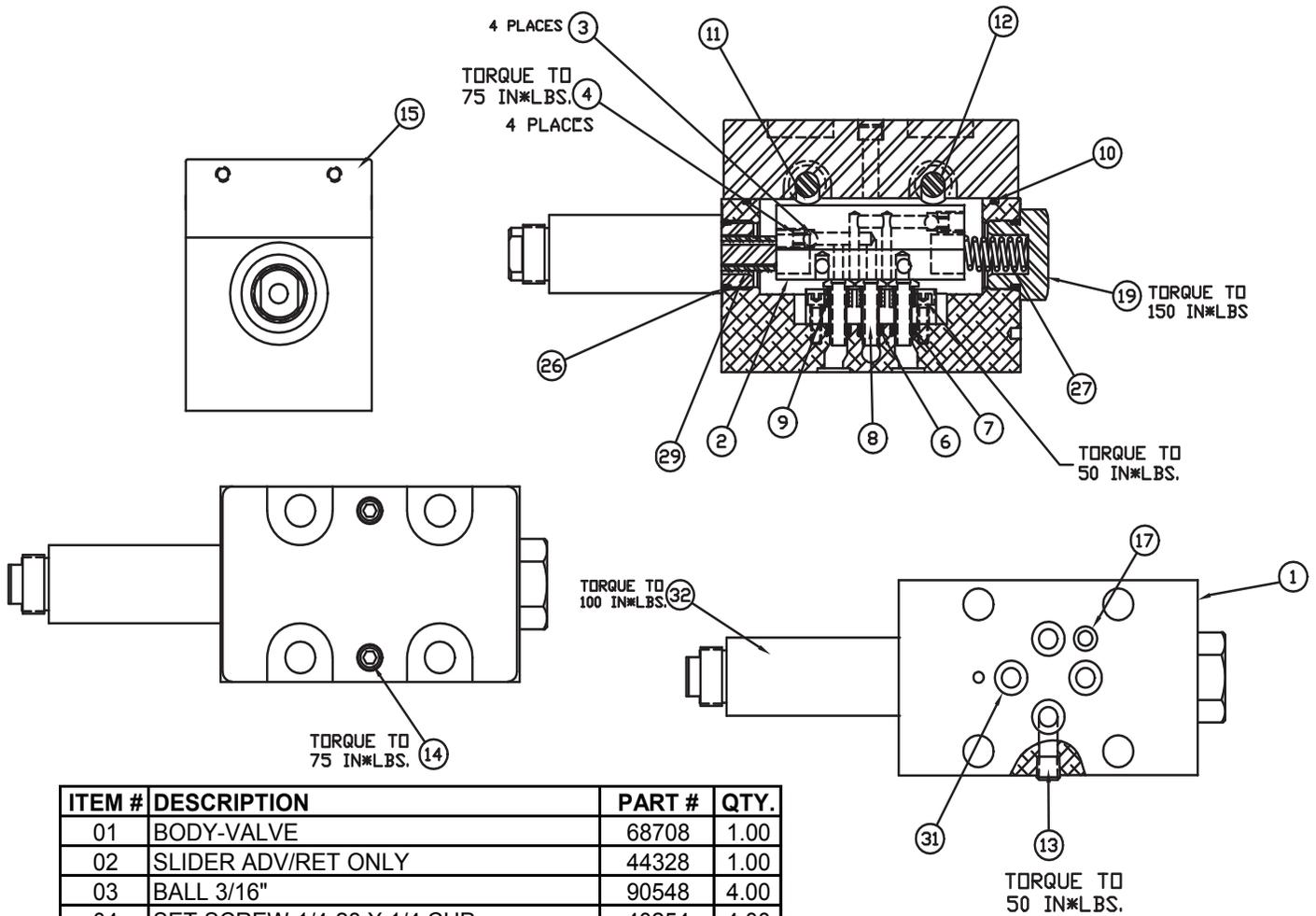


ITEM #	DESCRITPION	PART #	QTY.
01	UNLOAD PISTON	43765	1.00
02	O RING 1/4X3/8	*	1.00
03	BACK-UP WASHER TEF	43768	1.00
04	DOWEL PIN 1/8X3/4 LG	43686	1.00

REBUILD KIT (\* = COMPONENTS) -- PART # 54488

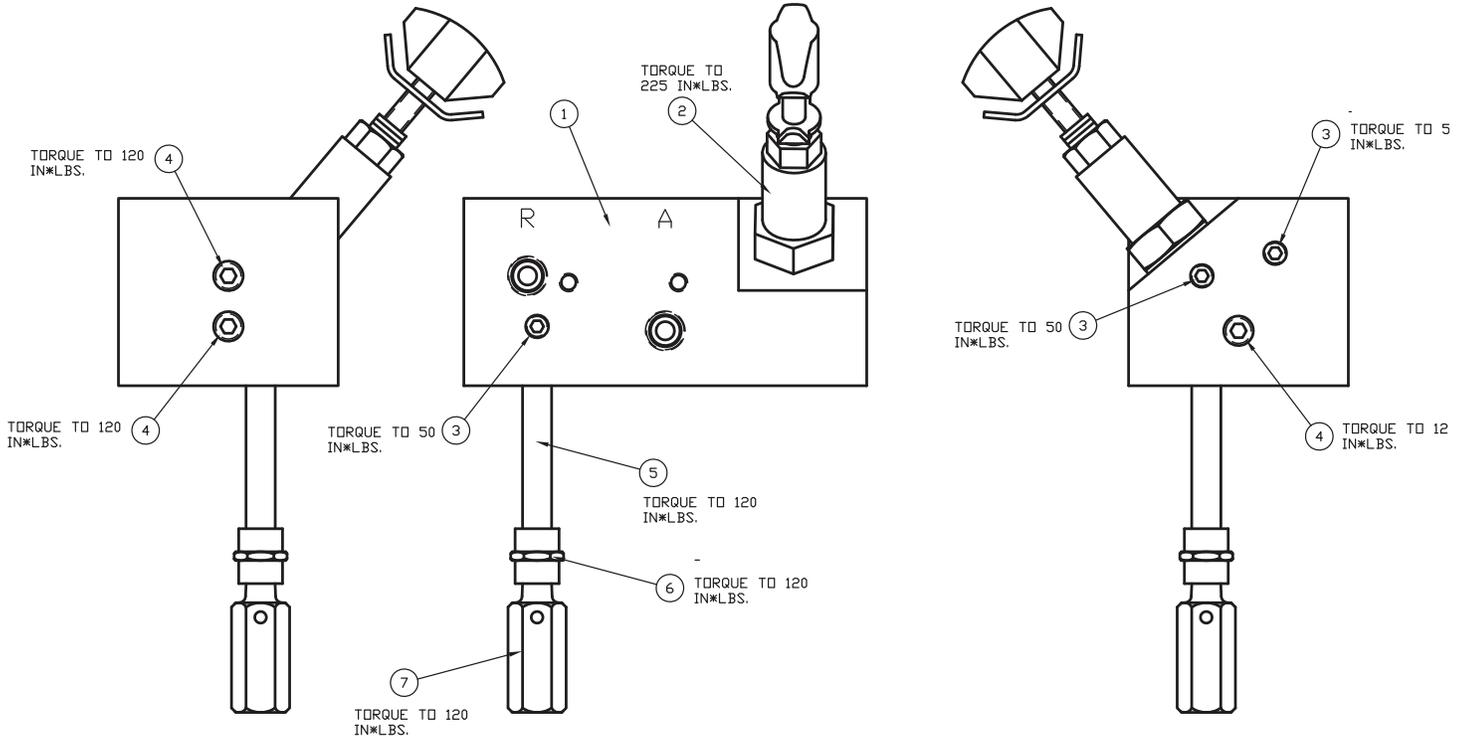
# VALVE SUB ASSEMBLY

## (46291) 3 & 4 WAY SOLENOID VALVE 115V. / 230V.



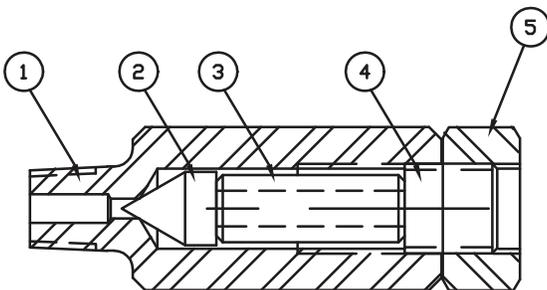
ITEM #	DESCRIPTION	PART #	QTY.
01	BODY-VALVE	68708	1.00
02	SLIDER ADV/RET ONLY	44328	1.00
03	BALL 3/16"	90548	4.00
04	SET SCREW 1/4-28 X 1/4 CUP	40254	4.00
06	O-RING 7/32X11/32	*	3.00
07	BACK UP WASHER	*	3.00
08	SHEAR SEAL	68383	3.00
09	SPRING	68384	3.00
10	O-RING 2 5/8 X 2 3/4	*	1.00
11	BEARING ROLLER 5/16x1/2x5/16 WIDE	68385	4.00
12	PIN BEARING	68390	2.00
13	PIPE PLUG FLUSH 1/16 W/ COATING	40049	1.00
14	SHCS #10-32 X 1" LG PLATED	68264	2.00
15	VALVE TOP PLATE MACHINED	46272	1.00
17	O-RING 3/16X5/16	*	1.00
19	VALVE PLUG 2 POSITION SLIDER	46271	1.00
26	O-RING SAE PORT #10	*	2.00
27	SPRING	68711	1.00
29	SPACER VALVE SLIDER	46418	1.00
31	O-RING 5/16X7/16 URE	*	4.00
32	PUSHER-SOLENOID	68729	1.00

# MANIFOLD ASSEMBLY



ITEM #	DESCRIPTION	PART #	QTY.
01	VALVE MANIFOLD	46270	1.00
02	CARTRIDGE RELIEF VALVE	45423	1.00
03	1/16 PIPE PLUG-FLUSH	40049	3.00
04	PIPE PLUG 1/8" FLUSH	81093	3.00
05	PIPE NIPPLE 1/8" NPT	68917	1.00
06	PIPE COUPLING 1/8"	68918	1.00
07	INT.RELIEF ASM HF	68999	1.00

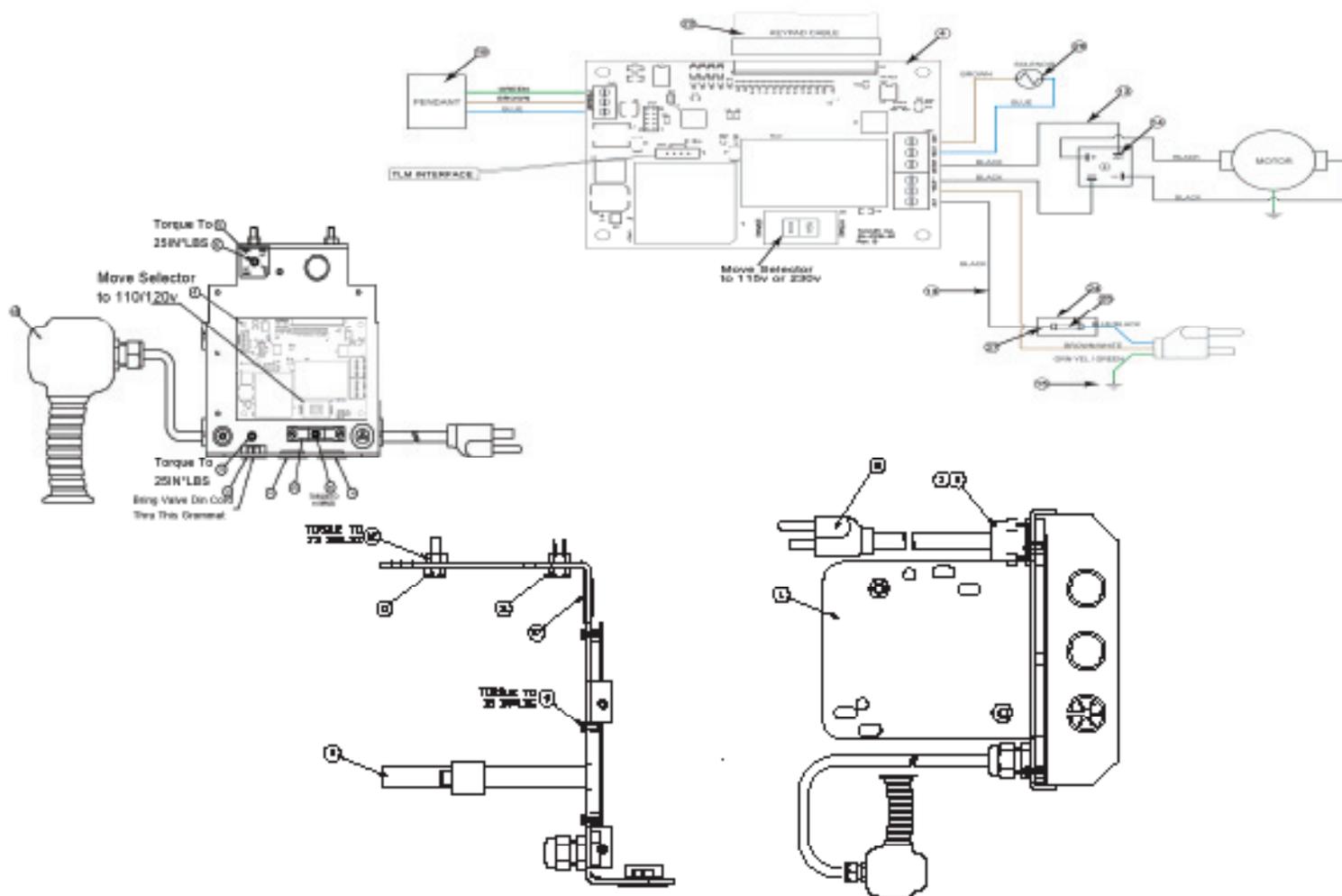
## (68999) INT. RELIEF ASM.



ITEM #	DESCRIPTION	PART #	QTY.
01	CARTRIDGE	66096	1.00
02	CONE REL VLVE	66086	1.00
03	POPPET RELIEF SPRING	44641	1.00
04	RELIEF VALVE ADJUSTING SCREW	66083	1.00
05	HEX NUT 7/16-20	68920	1.00

# BRACKET SUB ASSEMBLY

## (SV-PCB-01) BRACKET SUB ASM. 116V. & 230V



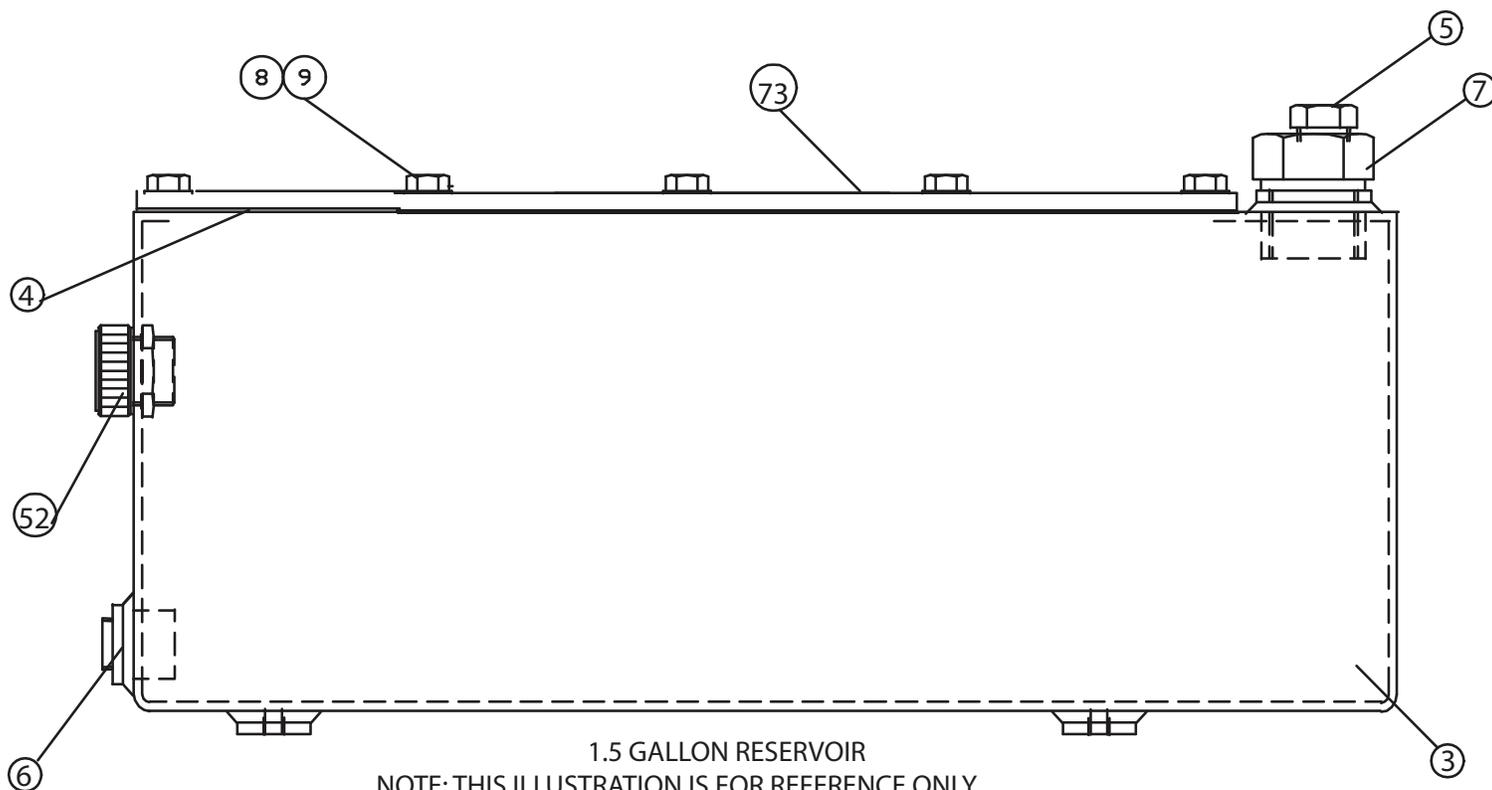
ITEM #	DESCRIPTION	PART #	QTY.
01	MOUNTING BRACKET G3/G5	46233	1.00
02	PLUG AND CORD ASSY	B8585	1.00
03	HOSE CLAMP	B8235	1.00
04	CIRCUIT BOARD BASIC	SV-PCB-01	1.00
05	BRIDGE RECTIFIER 25A	B8623	1.00
06	SHCS #10-32 X 1/2	B8805	1.00
07	FITTING, CORD L-TIGHT	68375	1.00
08	LOCKNUT 1/2 INCH	B551D	1.00
09	MACHINE SCREW W/ LOCK WASH	46248	5.00
10	HOLE PLUG 7/8"	B8652	2.00
11	HHCS 1/4-20 X .75 FLT	65601	2.00
12	HEX NUT 1/4-20 PLATD	B364B	2.00
13	WIRE #14 BLACK	68281B	2.00
14	QUICK DISCON. FLAG BLUE	44481	2.00

ITEM #	DESCRIPTION	PART #	QTY.
15	RING TERMINAL 1/4"	68917	1.00
16	SHCS #10-32X1/4" LG PLATED	45175	1.00
17	GROMMET 7/8" HOLE	68855	1.00
18	PART # S-DS104290D	"	1.00
			1.00
20	MOLDED DIN CONNECTOR W/ CORD	48327	1.00
21	PUSH THRU BUSHING	48420	1.00
22	MEMBRANE CABLE	SV-MCS-01	1.00
		"	1.00
24	FUSE HOLDER 30 AMP	48481	1.00
25	FUSE 25 AMP	48482	1.00
26	SHCS #8-32 x 1/4 LONG	48508	1.00
27	SPADE TERMINAL	68118	2.00

PENDANT DECAL KIT (# = COMPONENTS) – PART # 54489

# RESERVOIR

(DS1328025) S/B 1.0 GALLON RESERVOIR  
 (45996P) 1.5 GALLON RESERVOIR  
 (46213P) 2.5 GALLON RESERVOIR



1.5 GALLON RESERVOIR  
 NOTE: THIS ILLUSTRATION IS FOR REFERENCE ONLY.  
 THE APPEARANCE OF YOUR UNIT MAY DIFFER  
 FROM UNIT SHOWN.

ITEM #	DESCRIPTION	1.0 GALLON	QTY.	1.5 GALLON	QTY.	2.5 GALLON	QTY.
03	RESERVOIR DS1328025 1		.00	4 5995	1	.00	46213P
04	RESERVOIR GASKET	43565	1.00	85469	1.00	85469	1.00
05	BREATHER VENT 3/8" NPT	68000	1.00	46348	1.00	46348	1.00
06	1/4 SOC PIPE PLUG	93950	1.00	93950	1.00	93950	1.00
07	SAE #12 HEX PLUG WITH PORT	N/A	0.00	46118	1.00	46118	1.00
08	HHCS 1/4-20 x 3/4 LG PLATED	65891	9.00	65891	14.00	65891	14.00
09	SEALING WASHER	65892	9.00	65892	14.00	65892	14.00
52	SIGHT GAUGE	46009	1.00	46009	1.00	46009	1.00
73	COVER PLATE	46350	1.00	45928	1.00	45928	1.00

NOTE: ALL RESERVOIRS ARE POWDER COATED BLACK

