



SP 300/575 SQUEEGEE/DUAL SPRAY MACHINE

Service Manual August 2019



SP 300/575 SQUEEGEE/DUAL SPRAY MACHINE

Contact Information

HEADQUARTERS:

**2520 South Campbell Street
Sandusky, Ohio 44870**

Phone: 1-800-326-1994

Fax: 419-626-5477

E-mail: info@thorworks.com



SP 300/575 SQUEEGEE/DUAL SPRAY MACHINE

Parts Ordering

CONTACT INFORMATION:

**2520 South Campbell Street
Sandusky, Ohio 44870**

Phone: 800-326-1994/419-626-4375

Fax: 419-626-0842

E-mail: mikeb@thorworks.com

Parts Supervisor: Michael Bechtel

INFORMATION

Please provide as much of the following if available:

- **Customer Name**
- **Complete Shipping Address**
- **Attention to:**
- **Phone Number**
- **Part Number & Description**
- **Equipment Model #**
- **Equipment Serial #**
- **Shipping Method/Date Required**
- **PO# (if necessary)**
- **Quantity & Price**
- **Kubota Model Number**



SP 300/575 SQUEEGEE/DUAL SPRAY MACHINE

Wear Items

- **Wear items are not covered under ThorWorks limited warranty. A wear item is defined as, but not limited to: material, pump, crack fill-in tips, tires, etc.**
- **Note: All engine warranties are covered through the engine manufacturer. If you need information for the engine manufacturer please contact a Kubota representative.**

Parts Warranty

ThorWorks warrants parts purchased through ThorWorks for one year from purchase **

****If the part is found to be within one year of purchase and has not been abused or modified, a credit will be issued to the customer's account or credit card.**

SP 300/575 SQUEEGEE/DUAL SPRAY MACHINE

Return Authorization

- If a part fails to function within the first year of purchase, a **RETURN AUTHORIZATION** number must be obtained.
- Please contact ThorWorks Parts Department to obtain the needed R.A. number.
- Note: If the part has a serial number associated with it, this must be furnished to the parts department and included with the shipped item.
- The customer will then be Emailed or faxed an RA form with all instructions to return the item to ThorWorks.

ThorWorks Returned Goods Authorization Form

Customer Name _____	Date _____
Address _____	Account _____
_____	Phone Number _____
_____	Fax Number _____
Contact Name _____	
Product Description _____	
Product / Model # _____	Quantity _____
VIN / Serial / Batch _____	Manufactured Date _____
Purchase Date _____	Invoice Number _____
Date of Failure _____	Credit Amount Requested _____
Describe Problem _____	

This form must be received by ThorWorks and evaluated before a returned goods authorization number will be issued. Pictures may be required for review and should be e-mailed to returns@thorworks.com along with a copy of this form. If your return is authorized, a returned goods authorization number will be e-mailed to you along with the shipping instructions. Please email the completed form to returns@thorworks.com.

FOR THORWORKS USE ONLY

Authorization Number _____	Date _____
Call Tag Issued (Y/N) _____	Pictures Required (Y/N) _____
Method of Shipping _____	Field Destroy (Y/N) _____
Contact Person _____	
Received by _____	Date Received _____
Item Number _____	Batch _____
Quantity _____	Date Code _____
	Restock Fee (Y/N) _____
<input type="checkbox"/> Sealer Department	Approved By _____
<input type="checkbox"/> Color Department	Restock Charge _____
<input type="checkbox"/> Stock Room	Customer Credit _____
<input type="checkbox"/> Other	Vendor Credit _____
<input type="checkbox"/> Return to Vendor	Date _____

Rev 2016-12

Located in Appendix

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Return Parts

- The same procedure should be followed if a customer has purchased a part but it is no longer needed.
- If the part is returned within 30 days of purchase, no restocking fee is applied.
- If a part is returned after 30 days of purchase, a 15% restocking fee will be charged.

Note: Kits are sold as a whole, you may not return unused parts out of a kit for credit.





SP 300/575 SQUEEGEE/DUAL SPRAY MACHINE

Technical Assistance

Contact Information:

2520 South Campbell Street
Sandusky, Ohio 44870

Phone: 1-800-326-1994

Fax: 419-626-5477

E-mail: info@thorworks.com

ThorWorks Industries, Inc.

Purchased by _____ Model NO. _____
Company Name _____ Serial NO. _____
Address _____ Acceptance Date _____
City _____ State _____ Zip _____

CORRESPONDENCE

All Correspondence regarding this equipment, as well as general correspondence should be addressed to:

ThorWorks Industries, Inc.

PO Box 2277

Sandusky, OH 44870

In referring to the equipment, kindly state the Model Number, Serial Number and any part number involved





SP 300/575 SQUEEGEE/DUAL SPRAY MACHINE

Warranty Information

- **Limited Warranty**
- **Product Registration**
- **Authorized SealMaster Representative Only!**

SealMaster® LIMITED WARRANTY

SealMaster warrants that its products are of quality material and workmanship. SealMaster agrees to replace, within a period of one (1) year from date of delivery, or at its option, repair, without charge, any part of their manufacture which proved defective. The repair or replacement will be free of charge F.O.B. Sandusky, Ohio, proving the damaged part or parts are returned, freight prepaid, to SealMaster and investigation show such repair or replacement is made necessary by an inherent defect of material or workmanship.

It is hereby understood that engines, motors, pumps, or other components purchased by SealMaster for use on its equipment are not warranted by SealMaster and are sold only with the standard warranty of the manufacturer of that component.

SealMaster will make no allowances for repairs or alterations completed by outside sources unless authorization is in writing and approved by an authorized SealMaster representative.

Any claims for defective material or workmanship must be made prior to the expiration of thirty (30) days from the date failure occurs, and in all cases prior to the expiration of the warranty period of one (1) year. It is the intent of this paragraph to limit SealMaster's liability solely to the cost of replacement parts, F.O.B. factory, or at the option of SealMaster to repair of the defective part or parts. No allowances for damages, lost time, or any other claim will be recognized.

This warranty is null and void if other than genuine SealMaster parts are used.

SealMaster is constantly striving to improve their products. Changes in design and improvement will be made whenever the manufacturer believes the efficiency of the product will be improved, without incurring any obligation to incorporate such improvements in any machines which have been shipped or are in service.

In an effort to continue to improve product quality, SealMaster reserves the right to change specifications without notice.

Any modification or alteration of this machine without prior approval of the manufacturer may void this warranty.

SP 300/575 SQUEEGEE/DUAL SPRAY MACHINE

Where to find product information:

- Owner's Manual
- Website: <https://sealmaster.net/>

SP 300 Squeegee & Dual Spray/Squeegee

OWNERS MANUAL



SealMaster®
Pavement Products & Equipment

PO Box 2277 · Sandusky, Ohio 44870 · 419-626-4375

sealmaster.net



SP 300/575 SQUEEGEE/DUAL SPRAY MACHINE

Questions?

SP 300/575 SQUEEGEE/DUAL SPRAY MACHINE



- A manual is furnished with each new SP 300/575 Squeegie/Dual Spray Machine
- The manual will help your machine operators learn to run the equipment properly and understand its mechanical functions for the trouble-free operation.

SP 300/575 SQUEEGEE/DUAL SPRAY MACHINE

SP 300 Squeegee & Dual Spray/Squeegee

OWNERS MANUAL



PO Box 2277 · Sandusky, Ohio 44870 · 419-626-4375

sealmaster.net

Your SP 300/575 Squeegee/Dual Spray Machine is designed to give excellent service and save maintenance expenses. However, as with all specially engineered equipment, you can get the best results at a minimum cost if:

- You operate your machine as instructed in this manual.
- Maintain your machine regularly as stated in this manual.



SP 300/575 SQUEEGEE/DUAL SPRAY MACHINE

Tank Depth Chart

TANK CAPACITY CHART					
GALLONS ARE APPROXIMATE AND MAY VARY SLIGHTLY TANK TO TANK					
MATERIAL DEPTH AND GALLON VOLUME					
MATERIAL DEPTH	318 GALLONS 42"x53"			MATERIAL DEPTH	318 GALLONS 42"x53"
INCHES	GALLONS			INCHES	GALLONS
1	2			25	196
2	6			26	207
3	10			27	217
4	15			28	225
5	22			29	234
6	28			30	243
7	34			31	252
8	42			32	259
9	50			33	268
10	59			34	276
11	66			35	284
12	75			36	290
13	84			37	296
14	93			38	303
15	101			39	308
16	111			40	312
17	122			41	316
18	131			42	318
19	139			43	
20	149			44	
21	159			45	
22	169			46	
23	179			47	
24	187			48	

SP 300/575 SQUEEGEE/DUAL SPRAY MACHINE

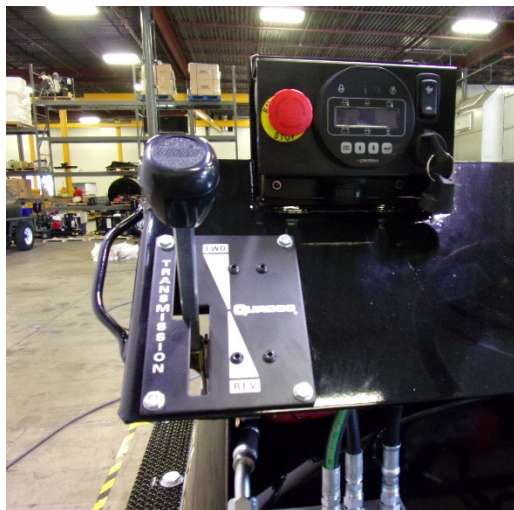
Operation

BEFORE STARTING ENGINE

1. Check the fluid levels.
2. Make certain the forward-reverse control lever (1) is in the neutral position.
3. All hydraulic valve handles (7-8-9) should be in the neutral position.

STARTING PROCEDURE

1. Push the throttle lever (2) about 1/3 of the way up.
2. Turn the key (12) all the way to the left position to activate the engine glow plugs for about 5 seconds, or until the glow plug lamp (6) goes off.
3. Depress and hold the red push button (3) located to the left of the steering wheel, and turn the key all the way to the right. Once the engine starts and gets up to speed, release the red push button.
4. If the engine does not stay running, repeat the procedure. If after three attempts the engine will not stay running, then check the engine oil level and coolant levels. It is possible one of these sensors has failed. Refer to the trouble-shooting guide found later in this manual.





SP 300/575 SQUEEGEE/DUAL SPRAY MACHINE

Operation

OPERATION

1. To move the machine forward, slowly push forward on the forward reverse lever (1). To go into reverse, bring the lever back to neutral, completely stopping before going into reverse.

ALWAYS STOP COMPLETELY BEFORE CHANGING DIRECTIONS!

2. Place the desired amount of material in the tank, add water, additives. Engage the agitator control (7) to the desired position. Speed control is achieved by turning a knob located on the side of the agitator drive motor (21). Turn clockwise to rotate faster. **SLOWLY** add your sand in the center of the tank. Let the agitator mix in each bag before adding another.



SP 300/575 SQUEEGEE/DUAL SPRAY MACHINE

Operation

3. With the machine at your starting point, using valve (9) lower the squeegee assembly. Push with your toes on each foot peddles. This will open the dump valves (16), with the

box full of product start the machine in motion. Keep the box full of product by regulating the foot valves.

4. If the lot is sloped you can close the lower valve to help keep material from overflowing the box. The rear squeegee can be angled left or right by using valve (8). This allows for a 'wet edge' on long pulls. The wet edge aids in reducing line marks.

5. During very hot weather a better adhesion of sealer to blacktop can be obtained by use of the water fogging nozzle. Water spray will cool the surface slightly helping the sealer from being 'cooked' by the super hot surface temperature.

6. On the operators panel is a switch (10) and a pushbutton (11). Both are used to operate the water pump. First, move the toggle switch (10) to the on position, then press the pushbutton (11), holding it in for a few seconds. This will allow the pump to come on and spray thru the fogging nozzle located over the front tire.

7. Water will continue to flow till you shut off the toggle switch or the tanks run out of water. The water pump (29) has a pressure safety switch on it that will shut off the pump when the tank is empty. This keeps from overheating the pump impeller.



SP 300/575 SQUEEGEE/DUAL SPRAY MACHINE

Operation

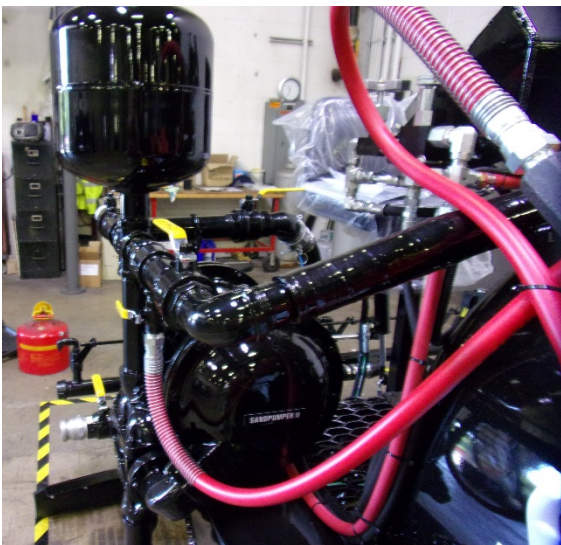
MAINTENANCE

1. Change the squeegee rubbers on an as needed basis.
2. Change the hydraulic oil filters yearly and the oil every two years, or sooner if it becomes contaminated. Use a grade 68, viscosity 352 @ 100°F SUS hydraulic oil.
3. Follow the engine manuals recommendations for type of oil and frequency of changes.
4. Agitator shaft bearings should be greased monthly. Change the shaft seals at the first indication of leaking.
5. All lug nuts and wheel bolts need to have a torque setting of 90 lbs.ft.
6. Once a season tighten the setscrews in the coupler that joins the steering motor to the steering fork shaft.
7. The rubber wipers on the agitator blades are adjustable. Loosen the bolts and slide the rubber strip towards the tank wall so that it just touches. Re-tighten the bolts.

SP 300/575 SQUEEGEE/DUAL SPRAY MACHINE

Operation

SandPumper II Pump Operation



SANDPUMPER II PUMP OPERATION

FILLING THE TANK FROM ANOTHER CONTAINER

1. Start by closing all open valves.
2. Connect a suction hose to valve (59) and to your drum or tank. Open the valve.
3. Open recirculation valve (54).
4. With the engine running, turn on the SandPumper II pump (47) toggle switch (48). Open the pump speed control valve (53) about three turns. You should now be hearing a clicking from the pump and the pressure gauge (56) will be showing pressure. Material is now being drawn from the container and is filling up the machines tank.
5. Monitor the level by looking in thru the lid and using your tank chart as a guide for how much material you want to add. When done, close valve (59) and pump speed control valve (53). Turn off pump toggle switch (48). Detach the suction hose.
6. Add the desired amount of water, and additives. Engage the agitator control (7) to the desired position. Speed control is achieved by turning the knob located on the side of the agitator drive motor (21). Turn clockwise to rotate faster. **SLOWLY** add your sand in the center of the tank. Let the agitator mix in each bag before adding another. Let the agitator rotate slowly during the application process.

SP 300/575 SQUEEGEE/DUAL SPRAY MACHINE

Operation

Spray Wand Application



APPLICATION-SPRAY WAND

1. Start with thoroughly mixed material.
2. Remove the basket strainer lid (46) and check the strainer basket (44), clean if needed.
3. Open main valve (57). Turn on pump toggle switch (48). Open the pump speed control valve (53) about three turns.
4. Open the recirculation valve (54). Let the material recirculate for a few minutes. Now close the valve. The pump will make a few strokes then come to a stop. The pressure gauge (56) needle will be stationary. We want to start with 800 psi showing on the gauge. To increase pressure, turn the pressure control knob (52) clockwise or in. To decrease pressure turn the knob counter clockwise or out.

Note: the thickness of the product determines how much pressure is needed to get the proper spray intensity. It may be necessary to run the pressure higher than 800 psi.

5. Remove the spray hose and wand from the side of the machine and totally stretch out the hose. Open valve (55). Slowly open the valve on the wand as you swing the wand back and forth in an arc. With the valve now open fully continue to swing the wand back and forth overlapping each stroke by about half. Always try to keep the valve fully open as rapid wear will occur if the valve is only half open. When finished shut off the pump controls and close all valves.

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Operation

Spray Wand Application

APPLICATION-SPRAYBAR

1. Perform steps 1-4 from above.
2. Open all valves (42) on the spraybar (41).
3. Start the machine in motion and slowly open valve (49). Completely open the valve as you increase your forward motion speed. You may need to increase the pump speed with control (53) and pump pressure with control (52).
4. Close valve (49) when you reach the end of the pass. Turn around and re-open valve (49). When finished shut off the pump controls and close all valves. While it is not necessary to water flush the system after each use, you may want to as this keeps the spray tips clear.





SP 300/575 SQUEEGEE/DUAL SPRAY MACHINE

Operation

SandPumper II Pump Operation

WATER FLUSH

1. Start with all valves closed.
2. Open valve (58).
3. Turn on pump toggle switch (48). Open pump speed control valve (53) about three turns.
4. To flush out the spray wand open valve (55). Open the lid on the machine, place the wand in the tank and open the wand valve. It is not necessary to run it till you see clear water as this is a waste. However, you need enough water to push the sand out of the hose, otherwise it lays in the coils and plugs the hose.
5. To flush the spraybar (41) open all spraybar valves (42). Now open valve (49). When finished shut off all pump controls and close all valves. Always make sure you close valve (58). While there is a check valve to prevent sealer from flowing backwards into the water tanks, it must not be relied on to always close.
6. This is a good time to remove the lid (46) of the basket strainer and clean out the strainer basket (44). Inspect the lid gasket (45) for tears.

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Tattletale Switch

For models up through year 2017

Located in Appendix

TYPICAL WIRING DIAGRAMS

Figure 1 shows a jumper installed between "SW1" and "SW2". SWICHGAGE® instruments are normally open. This is not a Closed Loop™ circuit.

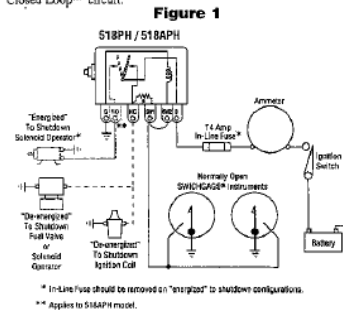
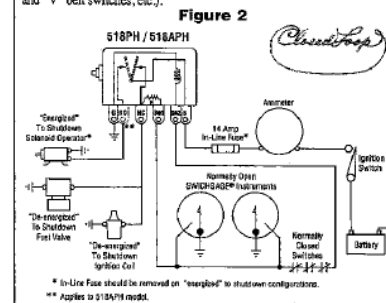


Figure 2 shows a Closed Loop™ circuit with normally open Murphy SWICHGAGE® instruments and Normally Closed switches (alignment and "V" belt switches, etc.).



Push button will not remain in the depressed position after engine startup (wired according to Figure 2).

- Be sure oil pressure is adequate to raise pointer past SWICHGAGE® contact. (Not necessary if oil pressure SWICHGAGE® is equipped with push button lockout.)
- Visually check wiring for loose connections, frayed wiring, etc. on all terminals and within switch loop circuit.
- Check 14 amp fuse connected to "B" terminal.
- Check for good ground on "G" terminal.
- Disconnect switch loop circuit from "SW1" and "SW2" terminals. Place a temporary jumper between SW1 and SW2 and restart engine. If the push button stays in with engine running, the 518PH/518APH is not the problem. This indicates either an open circuit, unwanted ground, or too high resistance in switch loop circuit wiring between "SW1" and "SW2".
- Verify continuity by performing the following:
 1. Disconnect switch loop circuit from "SW1" and "SW2" terminals.
 2. Remove power from "B" terminal.
 3. Use an ohmmeter to check for "good continuity" (25 ohms or less) through switch loop circuit. If good continuity is indicated, proceed to Step 4.
 4. Adjust SWICHGAGE® contact away from pointer. Check continuity between one end of loop circuit, "SW1" or "SW2" and ground. Good

continuity (25 ohms or less) indicates an unwanted ground in loop circuit such as a terminal rotating against the mounting panel. Remove ground, restore loop circuit connections to "SW1" and "SW2".

5. Reconnect power to "B" terminal and restart engine.
6. Using an ohmmeter, check resistance between one end of the loop circuit to the other. Resistance should not exceed 25 ohms. If resistance is too high, check for loose connections in loop circuit. Otherwise select larger size wire for loop circuit.

Engine fails to shutdown when contacts close on one-wire to ground SWICHGAGE® controls (wired according to Figure 1).
With engine running, jumper "SW1" to "G" terminal. If switch trips and engine shuts down, trouble could be SWICHGAGE® contacts not making contact, lack of good case ground on SWICHGAGE®, or broken/cut wire.

Lack of case ground on SWICHGAGE®.
Verify that mounting bracket on the SWICHGAGE® has broken through the panel paint and has made good contact with bare metal. If good contact has not been made, tighten mounting stud nuts accordingly.

Failure of contacts on SWICHGAGE® to make contact.
Adjust contacts back and forth against the pointer to give a wiping and cleaning action on contacts. If this does not correct the problem, replace SWICHGAGE®.

TROUBLESHOOTING



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SP 300/575 SQUEEGEE/DUAL SPRAY MACHINE

Troubleshooting Guide – Squeegee/Spray Machines

1. Diesel Engine Starts but Doesn't Stay running when the Red Push Button is Released

- Check/replace fuel filters. Make certain you are pushing the red button in completely, the rubber boot over the switch can impede pushing it in far enough. The switch overrides the sensors for the oil pressure and radiator coolant. Each sensor has a wire attached to it. One at a time remove this wire. Should the engine now run, replace the sensor.
- Near the top of the engine on the backside is the shutdown solenoid. Attached to the end is a 3-wire connector. Remove the connector to inspect the terminals for corrosion. When reattaching make certain each connector is tight. The black ground wire attaches to one of the mounting screws and sometimes become rusted. Remove and clean.
- Remove the solenoid, there is a plunger that should retract when the engine starts, if it doesn't, then replace it.
- NOTE: THIS DOES NOT APPLY TO THE KUBOTA GASOLINE ENGINE



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Troubleshooting Guide – Squeegee/Spray Machines

2. No Power, Cannot Load on Trailer

- The transmission is possibly scratched internally. Two pressure gauges need to be installed on it. On the front side of the transmission are two large hoses that run to the drive motors. A 5000 psi gauge should be installed in the bottom port. Run the machine up against a wall or solid object. 3000 psi is the target.
- If the reading is considerably lower, then a 500 psi gauge should be installed in the charge pump port. A reading of 300-400 psi is optimum. If lower, this indicates the charge pump is scratched and the transmission needs to be rebuilt or replaced. Should the charge pump pressure be at the desired setting, then the relief valves on the drive motors should be readjusted.



SP 300/575 SQUEEGEE/DUAL SPRAY MACHINE

Troubleshooting Guide – Squeegee/Spray Machines

3. The Machine Jumps or Suddenly Takes off When the Shift Lever is Engaged

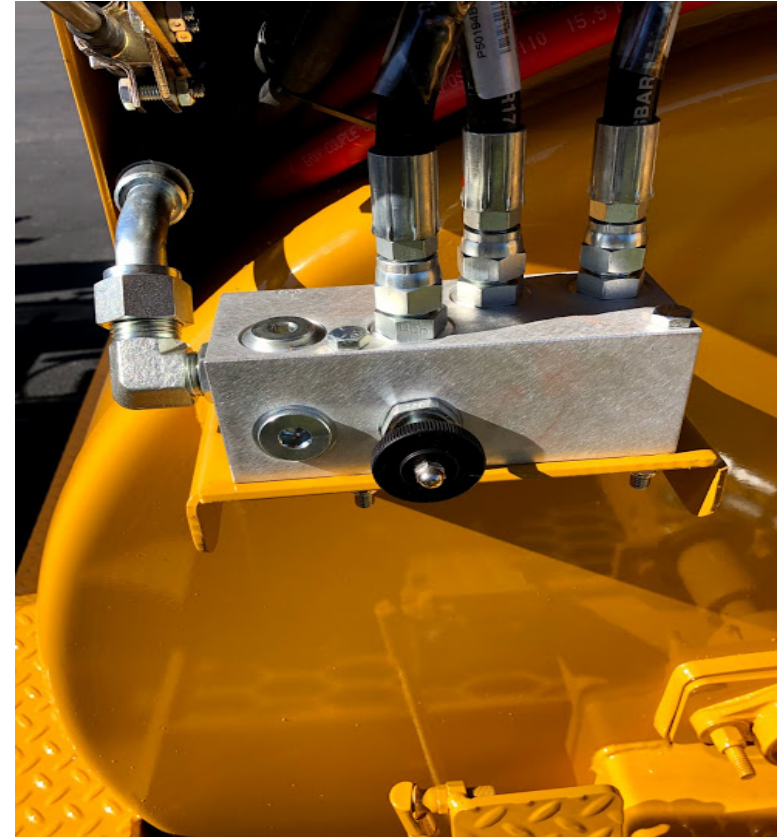
- This indicates the internals of the transmission are scratched and it needs to be rebuilt or replaced.



SP 300/575 SQUEEGEE/DUAL SPRAY MACHINE

Troubleshooting Guide – Squeegee/Spray Machines

4. **Squeegee Assembly Doesn't Lift or Lifts Very Slowly**
 - When on the seat there is a manifold in front of your left knee. Turn the knob counter clockwise to increase the oil flow.



SP 300/575 SQUEEGEE/DUAL SPRAY MACHINE

Troubleshooting Guide – Squeegee/Spray Machines

5. Agitator Doesn't Turn

- On the motor is a thumbwheel, turn it clockwise to increase oil flow. If this doesn't help, turn the know on the manifold in front of your left knee counterclockwise.

Thumbwheel

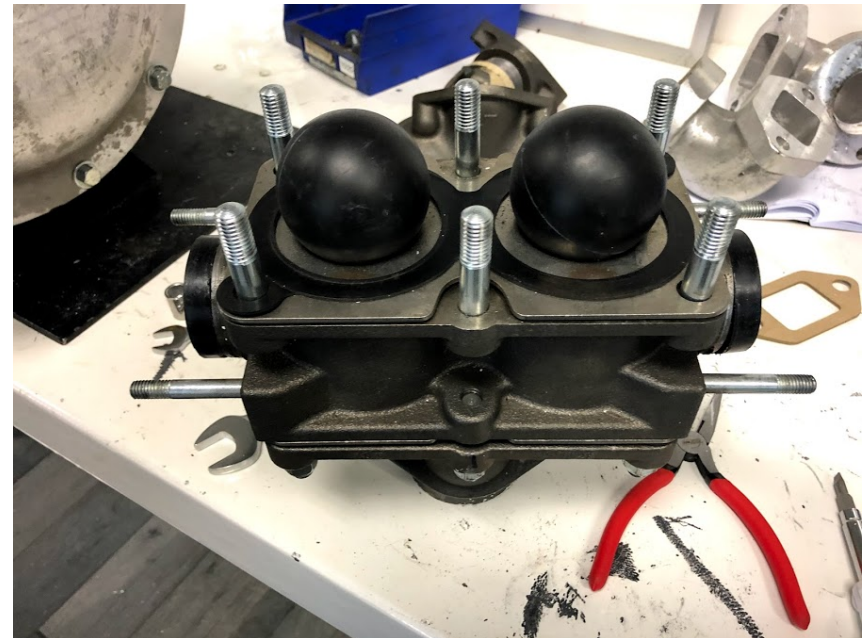


SP 300/575 SQUEEGEE/DUAL SPRAY MACHINE

Troubleshooting Guide – Squeegee/Spray Machines

6. Material Pump Suddenly Stopped

- Remove the cover on top of the pump. Check for power at the fuse and toggle switch. If you have power, then check the various steps listed here.



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Troubleshooting Guide – Squeegee/Spray Machines

6. Material Pump Suddenly Stopped

- A. The rod coming out of one of the chambers has two round collars on it. If one of the collars is touching the swing arm that is attached to the limit switch, just loosen the set screw in the collar and slightly push it toward the swing arm.

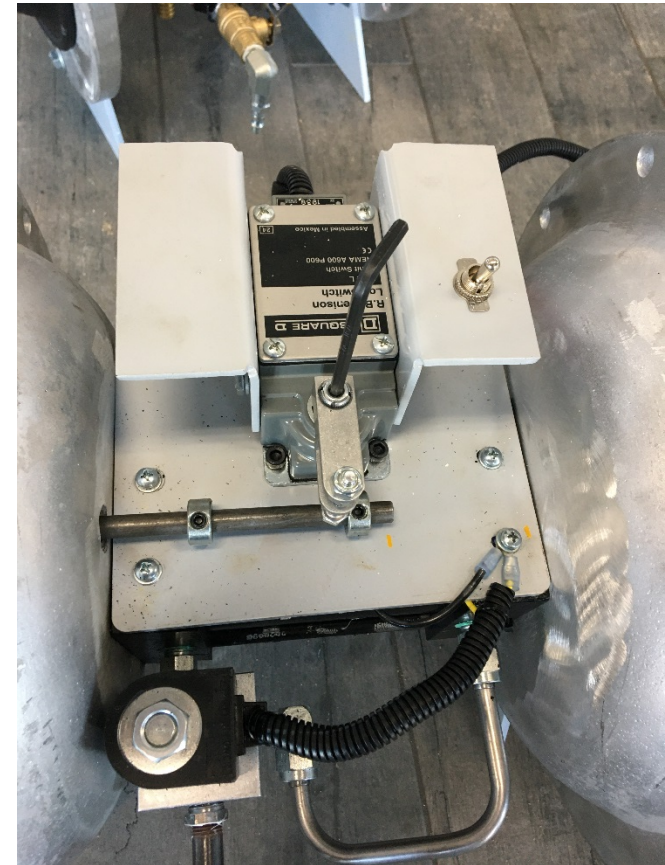


SP 300/575 SQUEEGEE/DUAL SPRAY MACHINE

Troubleshooting Guide – Squeegee/Spray Machines

6. Material Pump Suddenly Stopped

- B. Loosen the Allen Head screw that holds the swingarm to the limit switch and raise it till it clears the collars. Pushing it back and forth you should hear a click each direction. If so, start the engine and push the arm back and forth. If the pump cycles as you push the arm back and forth, turn off the engine. Reset the swing arm and start the engine. If it stops and the arm is up against the collar, then perform step A.

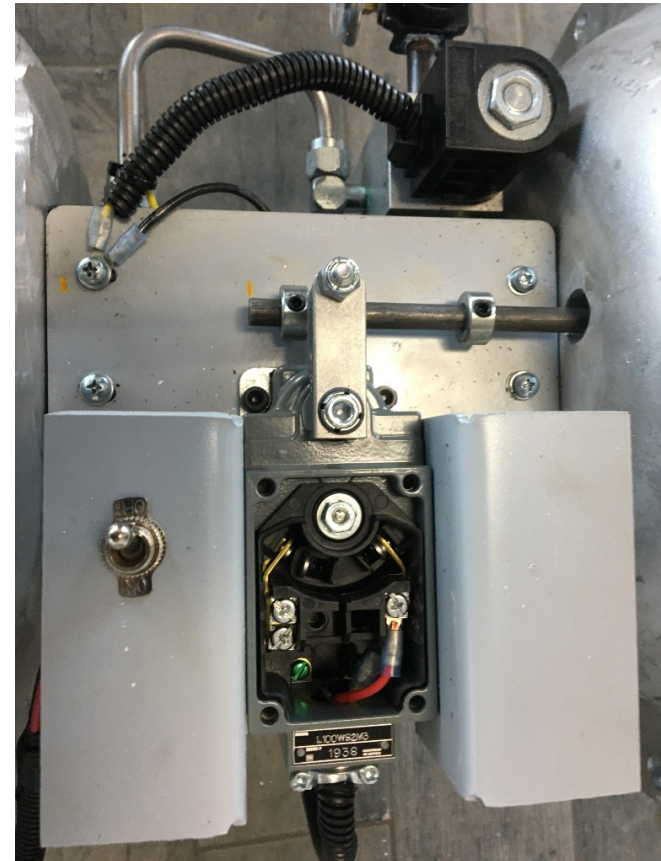


SP 300/575 SQUEEGEE/DUAL SPRAY MACHINE

Troubleshooting Guide – Squeegee/Spray Machines

6. Material Pump Suddenly Stopped

- C. If you don't hear a click in each direction, this means one side of the return spring has come off the mechanism. The limit switch is bolted to a plate that is attached to the hydraulic cylinder by four screws. Remove the screws and lift the whole unit off. Unbolt the limit switch from the plate. Turn the switch upside down and remove the bottom plate. You will see a heavy wire that makes contact with the mechanism as the swing arm moves back and forth. One side of the wire has come off of the mechanism, push it back down and move the swingarm to make sure it stays on. Re-assemble the unit.



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Troubleshooting Guide – Squeegee/Spray Machines

6. Material Pump Suddenly Stopped

- D. Should you have power and the above steps are not the issue, then make certain there is power at the black solenoid coil. When a coil is powered, the metal cartridge it is on becomes magnetized. Touch the nut that holds the coil on. If not magnetized, move the swing arm back and forth to make sure power is going into the coil. If still not magnetized, then change the coil. If magnetized, then the cartridge the coil is on needs replaced.

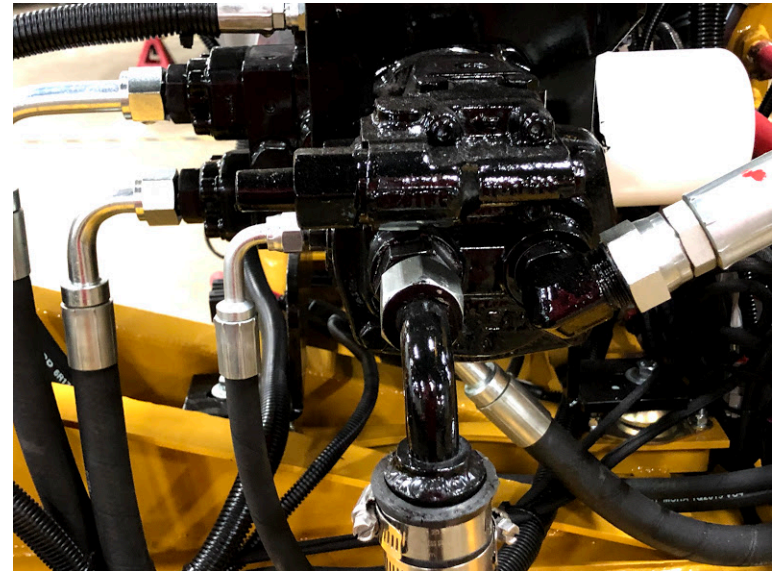


SP 300/575 SQUEEGEE/DUAL SPRAY MACHINE

Troubleshooting Guide – Squeegee/Spray Machines

7. Material Pump Doesn't Build Pressure

- A. Another cause is the pressure compensator located on the main hydraulic pump. It has a rod in it that can get scratched over time and the housing it moves in will also get scratched. The whole unit will need replacing.
- B. The check balls and ball seats can also be worn. The rubber coating on the balls can be ripped or the balls can become deformed. The seats will wear from and the balls will set lower as the seats wear.



SP 300/575 SQUEEGEE/DUAL SPRAY MACHINE

Troubleshooting Guide – Squeegee/Spray Machines

8. Material is Coming Out of a Hole in the Diaphragm Chamber

This means the diaphragm is torn and needs to be replaced. Shut down the pump immediately and repair it. Continuing to use the pump will cause damage to the hydraulic cylinder rod that the diaphragm is attached to.



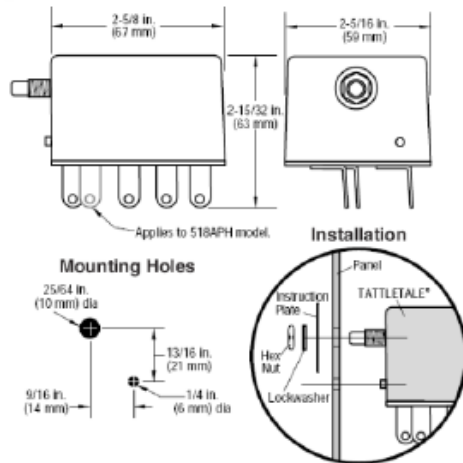


SP 300/575 SQUEEGEE/DUAL SPRAY MACHINE

Questions?

SP 300/575 SQUEEGEE/DUAL SPRAY MACHINE

Dimensions and Installation



Typical Wiring Diagrams

Figure 1 shows a jumper installed between "SW1 and SW2." SWICHGAGE® instruments are normally open. This is not a Closed Loop™ circuit.

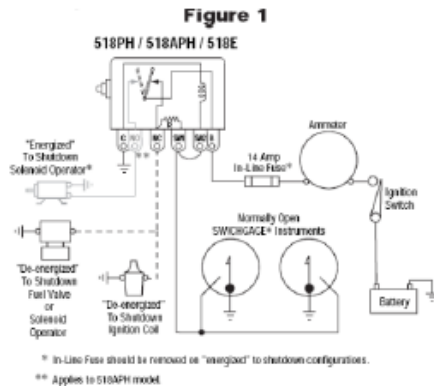
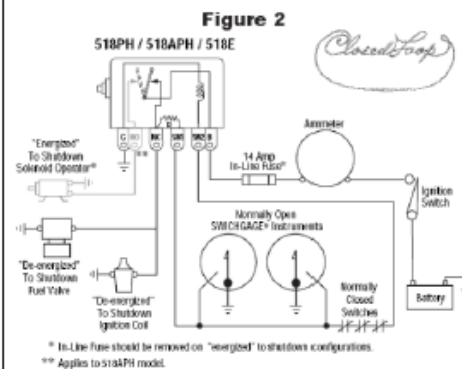
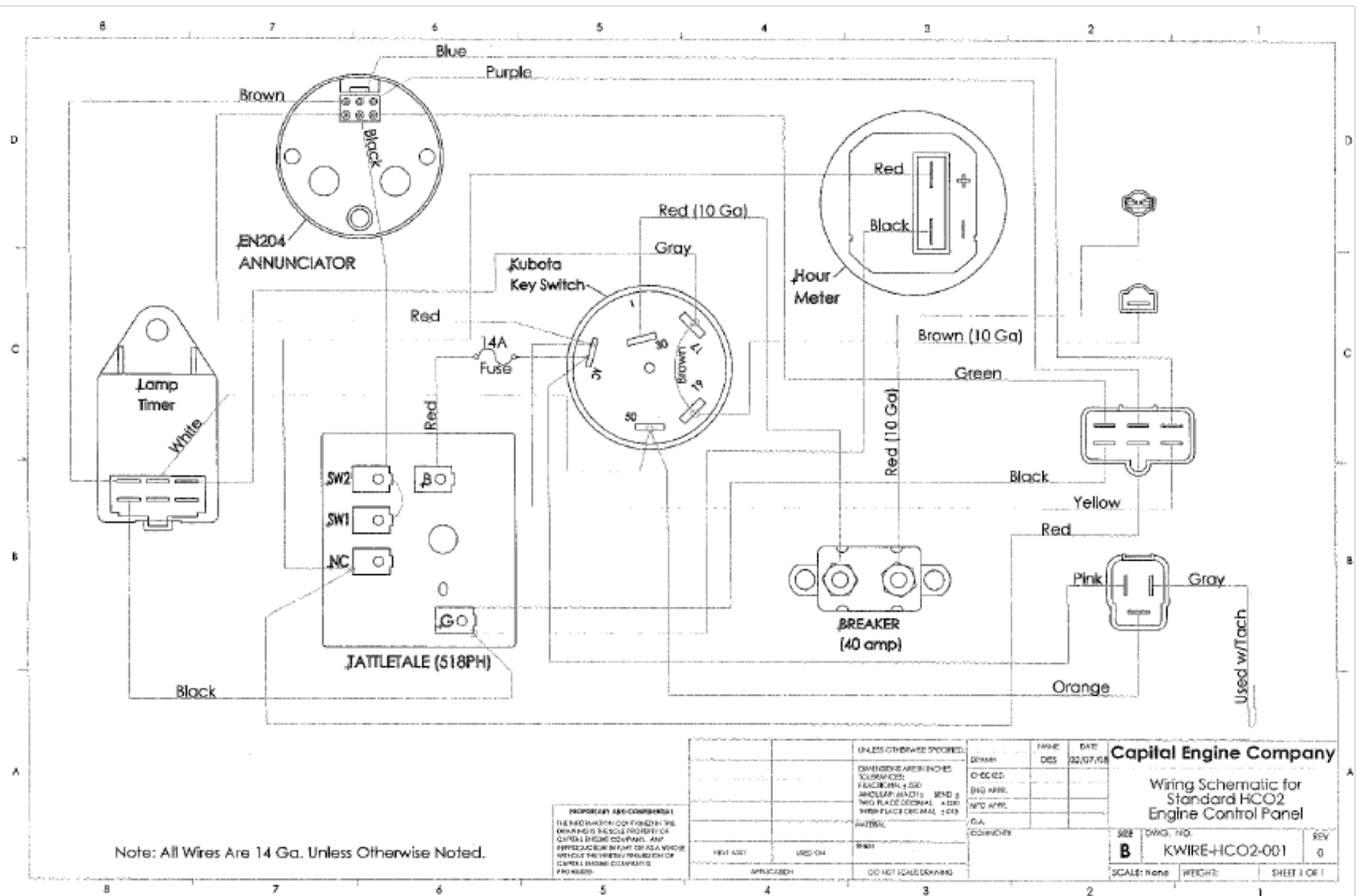


Figure 2 shows a Closed Loop™ circuit with normally open Murphy SWICHGAGE® instruments and Normally Closed switches (alignment and "V" belt switches, etc.).



SP 300/575 SQUEEGEE/DUAL SPRAY MACHINE



IMPORTANT AND COMPENSAL
 THE HCO2 ENGINE CONTROL PANEL IS THE
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 REPRODUCTION IN ANY FORM OR MANNER
 WITHOUT THE WRITTEN PERMISSION OF
 CAPITAL ENGINE COMPANY IS
 PROHIBITED.

UNLESS OTHERWISE SPECIFIED:		DESIGN	DATE
DIMENSIONS ARE IN INCHES	FRAC INCHES	DATE	10/10/18
FRAC INCHES	1/16	DES	
1/8	1/8	CHK	
1/4	1/4	APP	
3/8	3/8	APP	
1/2	1/2	APP	
3/4	3/4	APP	
1	1	APP	
1 1/2	1 1/2	APP	
2	2	APP	
3	3	APP	
4	4	APP	
5	5	APP	
6	6	APP	
8	8	APP	
10	10	APP	
12	12	APP	
16	16	APP	
20	20	APP	
24	24	APP	
30	30	APP	
36	36	APP	
42	42	APP	
48	48	APP	
60	60	APP	
72	72	APP	
90	90	APP	
108	108	APP	
126	126	APP	
144	144	APP	
162	162	APP	
180	180	APP	
216	216	APP	
252	252	APP	
288	288	APP	
324	324	APP	
360	360	APP	
432	432	APP	
504	504	APP	
576	576	APP	
648	648	APP	
720	720	APP	
864	864	APP	
1008	1008	APP	
1152	1152	APP	
1296	1296	APP	
1440	1440	APP	
1584	1584	APP	
1728	1728	APP	
1872	1872	APP	
2016	2016	APP	
2160	2160	APP	
2304	2304	APP	
2448	2448	APP	
2592	2592	APP	
2736	2736	APP	
2880	2880	APP	
3024	3024	APP	
3168	3168	APP	
3312	3312	APP	
3456	3456	APP	
3600	3600	APP	
3744	3744	APP	
3888	3888	APP	
4032	4032	APP	
4176	4176	APP	
4320	4320	APP	
4464	4464	APP	
4608	4608	APP	
4752	4752	APP	
4896	4896	APP	
5040	5040	APP	
5184	5184	APP	
5328	5328	APP	
5472	5472	APP	
5616	5616	APP	
5760	5760	APP	
5904	5904	APP	
6048	6048	APP	
6192	6192	APP	
6336	6336	APP	
6480	6480	APP	
6624	6624	APP	
6768	6768	APP	
6912	6912	APP	
7056	7056	APP	
7200	7200	APP	
7344	7344	APP	
7488	7488	APP	
7632	7632	APP	
7776	7776	APP	
7920	7920	APP	
8064	8064	APP	
8208	8208	APP	
8352	8352	APP	
8496	8496	APP	
8640	8640	APP	
8784	8784	APP	
8928	8928	APP	
9072	9072	APP	
9216	9216	APP	
9360	9360	APP	
9504	9504	APP	
9648	9648	APP	
9792	9792	APP	
9936	9936	APP	
10080	10080	APP	

Capital Engine Company
 Wiring Schematic for
 Standard HCO2
 Engine Control Panel

SCALE: None WEIGHT: SHEET 1 OF 1

SP 300/575 SQUEEGEE/DUAL SPRAY MACHINE

- motions until slipper seal is situated over seal groove. (Figure 29)
- STEP 3 Place power cylinder on blocks of wood (Figure 30). Insert new guide rings in outer grooves. Insert power piston into power cylinder. TIP: A conical (tapered) piece of cylindrical sheet metal (or other tool) will help hold the guide rings in place as they slide into the power cylinder. (Figure 31)

SECTION 7G

TORQUE SPECIFICATIONS

COMPONENT	MAX. TORQUE
Inner Piston Screws*	40 ft. lbs. [54 m-N]
Outer Piston	85 ft. lbs. [114.75 m-N]
Air Valve Bolts	7 ft. lbs. [9.45 m-N]
Inlet/Discharge Manifold Bolts	12 ft. lbs. [16.2 m-N]
Center Section Cover Bolts	40 ft. lbs. [54 m-N]
Air Chamber Screws*	40 ft. lbs. [54 m-N]
Liquid Chamber Bolts	40 ft. lbs. [54 m-N]

Torque all hardware in an opposing torque sequence. Liquid Chamber (LC) bolts may require periodic re-torquing. If LC preload torque values fall below 25 ft.-lbs. [34 m-N], re-torque both Liquid Chambers to 40 ft.-lbs [54 m-N]. LC torque loading must be even. If a bolt is tightened during an LC bolt check procedure, then all LC bolts must be tightened to ensure even distribution.

*Use #242 removable Loctite® on fastener threads. (24 total.)

- STEP 4 Tap piston into cylinder with soft mallet. slipper seal and guide rings are not (Figure 32)
- STEP 5 Check seal integrity in shaft bushing and cover.
- STEP 6 Install cover as shown in Figure 33.
- STEP 7 Follow the reverse order of "disassemblies" starting with Section 7E, Step 3.
- NOTE: Torque fasteners to specifications.

