

**OPERATING INSTRUCTIONS  
AND  
MAINTENANCE MANUAL  
FOR**

**HAMMONDS MODEL HCG600-1S-1P\*  
2 ADDITIVE TOWABLE CART  
(\* Pump Models Vary)**

**FLUID POWERED  
ADDITIVE INJECTOR CART**

Manufactured by:



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# Hammonds Model HCG600-1S-1P Dual Additive Towable Cart Manual

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### Attachments:

- HCG600 2 Additive Cart Layout
- Hydraulic Schematic
- 2 Additive Recirculate Panel Instructions
- Model 600 Driver
- Injector Pumps
- Diaphragm Replacement Instructions
- Calibration Gauge Parts
- Calibration Gauge Instructions
- Tank Assembly
- Grounding Reel Instructions
- Fueling Nozzle

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## SPECIAL NOTICE TO USERS PLEASE READ CAREFULLY BEFORE OPERATING EQUIPMENT

This additive injector system is designed to give consistent dependable performance when operated and maintained according to manufacturer's recommendations. However, being a mechanical device, it is subject to failure from improper installation, wear, human error and operating environments beyond the control of the system. Because of this fact, it is the responsibility of the operator to make certain that:

- A. The system is installed properly.
- B. The system is being operated properly.
- C. The system is actually running during product transfer.
- D. The system is checked after the transfer operation to make certain the proper amount of additive was injected during the operation.

The performing of these checks by the operator eliminates the possibility of product not having the proper additive ratio as required. Therefore, since the manufacturer cannot be present during each transfer operation, the responsibility for checking the performance of the system is that of the operator. Should there be any questions whatsoever, the operator should consult the distributor from whom the unit was purchased.

**Do Not Take Chances.....Do Not Guess.....Be Absolutely Certain That The System Is Installed And Working As It Should.**

**The user/operator carries the final responsibility to make certain the system is operating properly.**

## INSTALLATION AND PREPARATION FOR STARTUP

In most cases, the Hammonds fluid powered injector is shipped complete and ready to operate. The system should include appropriate fittings to suit your specific application. Flow direction is marked on additive pumps and check valves.

### FLOW CONSIDERATIONS

The Hammonds Model 600 requires a minimum of 20 and up to 200 GPM to deliver consistent ratios. This does not mean that the system cannot be used in cases where startup and shutdown fall under the 20 GPM minimum. However, these installations require calibration to compensate for the lower flow rates during

these periods of operation. Check with the factory if you have any questions in the area of performance.

### MATERIALS OF CONSTRUCTION

The standard material in a Hammonds Model 600 fluid driver is anodized cast aluminum housing. Optional material is carbon steel.

### CAUTION

**Do Not Attempt To Use This Device Without Understanding And Following Proper Safety Precautions Regarding System Grounding, Fire Safety, And Special Handling For Potentially Dangerous Additives.**

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Consult your Engineering Department for their specific instructions. Make certain all personnel involved with this system are thoroughly familiar with safe operating practices.

If your system has been purchased "bare," consult your equipment distributor for help in selecting hoses, fittings and other related accessories. Selection of materials

compatibility, location of unit within the system, effect of the unit on the system and injection point of the additive are also factors that should be discussed by factory authorized personnel.

If no factory-authorized distributor is available, consult the factory directly for assistance.

## PREPARATION FOR CALIBRATION AND STARTUP

### **Before Attempting To Start The System Or Make Calibrations, Please Read The Following Information Carefully.**

During startup and calibration, you will be bleeding the system of air and checking for possible leaks throughout the system. Provisions should be made for collection or clean-up of spilled fluid. Attempts should be made to minimize losses during these procedures. If the additive being handled is flammable, fire safety precautions should be taken.

### **A WORD ABOUT ADDITIVES**

Most additives being used in fuels today have at least some degree of toxicity. Many are very dangerous. Extreme caution should be taken in handling additives. Remember, the additive is placed under pressure when being injected into the line. Be careful; wear protective clothing including eye protection. Be sure you have facilities to wash off any additive that may

come in contact with your skin. Read all additive manufacturers safety precautions and Material Safety Data Sheets, following them to the letter.

### **HERE IS WHAT IS NEEDED:**

- Appropriate safety protection equipment.
  - Eye protection in the form of safety goggles.
  - A marked graduated glass bottle that is marked in either cc's or ounces. (At least 16 oz.)
  - A stop watch.
  - A means of determining the flow rate of the main system.
  - A small pocket calculator is helpful.
  - A clipboard is helpful with pad of paper.
- AT LEAST ONE AND PREFERABLY TWO HELPERS**

**REMEMBER:** Any plumbing system varies with temperature and fluid being pumped. The system also changes as parts of the pump wear.

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## **CALIBRATION AND STARTUP**

**USE THE OPERATING INSTRUCTIONS  
FOR THE HAMMONDS HCG600-1P7-1P5  
BIOCIDE INJECTION CART  
IN THE BACK OF THIS MANUAL.**

**NOTE: THE PUMPS ARE DIFFERENT,  
BUT THE PROCESS IS SIMILAR**

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## TROUBLESHOOTING THE SYSTEM

The following conditions are given as a means of troubleshooting the system. Each condition lists a number of possible causes. In most cases, trouble can be solved by the use of this section. Please read it carefully before attempting repairs or making changes in the system.

### FLUID MOTOR IS NOT TURNING

- A. Insufficient flow to turn the motor. A minimum flow of about 20 GPM is needed to start the system.
- B. A rag or some other object is jammed in the line preventing the fluid motor from turning.
- C. A diverter valve is blocked downstream of the system, blocking the fuel flow through the system.
- D. A valve is closed upstream of the fluid motor starving the product flow.
- E. If the unit has been recently serviced internally, or it is new, the rotor might be installed backwards. Consult the factory before disassembly.

### INJECTOR IS TURNING AND PUMP IS RUNNING, BUT WITH NO OUTPUT

A. Pump is air-locked. In some cases where there is a very long line running from the injector head and the point of injection into the system, there is sufficient air volume to cause the pump to act as a compressor. It is not able to open the valves throughout the system and therefore, cannot pull a suction of fluid to the pump. Loosen the connection at the injection point check valve and allow it to remain open until the pump begins

pumping. This is rare, but can happen in some cases of unusual installations.

B. One or more of the suction or discharge check valves are not working. While the pump is running, tap on the side of the valves, one at a time. This will generally jar them loose. The poppet/seal is very small, and will sometimes become stuck. After the valve is loosened and has a supply of fluid, usually it will not stick again.

C. The pump is not getting additive. Check that the valve between the pump and the tank is open. Check all connections in the line between the pump and the tank.

D. The vent on the tank is not open causing the pump to pull a vacuum. Open the vent. Check to see if the cap has been removed from the dryer cartridge, if so equipped.

E. The pump stroke is set at zero. Check to see if the locking screws have been left loose, allowing the adjustment knobs to rotate to zero percent (0%) of stroke.

F. The additive tank is empty...don't laugh, it happens.

### THE INJECTOR IS OPERATING BUT WITH REDUCED OUTPUT

A. Leaking suction line or trash in one of the pump check valves.

B. Air leak in suction side of system.

C. Defective tubing or piping on suction side.

D. Leaks in threaded connections - suction side.

E. Injector diaphragm may be pulled out in back causing injector to pump in forward portion of stroke only. This will not create a visible leak but will reduce output by 50%.

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It usually happens after many hours of operation.

F. If equipped with a plunger pump, the plunger seal (o-ring) may be worn and

needs replacing. Also, check plunger for signs of wear, replace if necessary.

G. Fluid motor vanes are badly worn. This would only be probable after a very high number of hours of operation.

## PREVENTIVE MAINTENANCE

1. Make certain to use only clean, fresh additive that has been stored in a sealed container. Most additives are moisture sensitive. Some will form heavy crystals if allowed to accumulate moisture. These crystals will stop the pump in very short order, if not cause calibration to be changed due to clogging of the valves and other parts.

2. Check the additive filter screen at least every six months. More often if there is an indication of possible contamination.

3. Check the system for leaks at every use. This is an extremely important safety procedure, since some additives are flammable, caustic and corrosive.

4. Check for leaks from the seal that is located at the exit point of the injector output shaft in the side plate housing. This should be done at each operation. Leakage at this point usually indicates that the mechanical seal inside the rotor housing is leaking. A leak here will be fuel, and is not only dangerous from a fire standpoint, but will quickly ruin the bearings on the rotor shaft, since all lubricant will be washed away.

5. Check the fittings for leakage around the Calibration Gauge or Sight Flow Indicator, if one is used on the pump. Check this fitting each time the filter is changed or cleaned. Make certain there are no leaks in the suction line. A very

small leak will either change the operation of the pump or prevent it from operating altogether.

6. Visually check around the pump head and make certain there is no leaking of additive around the fluid ends. If there is, check the tightness of the head bolts. (40 inch pounds each).

7. Check the grease around the eccentric drive bearing in the pump every 6 months. Use a good quality white lithium spray lubricant.

8. It is recommended that the injector diaphragm or plunger o-ring be changed at least every 12 months. Every 6 months under extreme operating conditions. Doing so will prevent unexpected failures and unscheduled downtime.

Hammonds injectors are very dependable. If installed properly and sized appropriately to the application, they require very little maintenance. With the exception of the grease on the eccentric bearing mentioned in STEP 7, there is very little actual maintenance to do. Remember; keep the additive clean, and the suction filter clean. If you have problems with the pump working, it is usually in the suction side of the system (between the injection pump and the additive tank). Suction lines and fittings are notorious for leaking just enough to prevent the system from working. Always check to ensure optimum suction conditions should problems occur.

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Remember, a leak in the suction allows air from the outside to be introduced into the system. It does not always mean a

visible leak of additive. If the pump loses its prime or output is erratic, chances are good that there are problems in the suction side. Otherwise, if it is working...leave it alone!!!!

## PREVENTATIVE MAINTENANCE SCHEDULE

**NOTE:** It is important to read the previous pages on preventative maintenance. These intervals are general, and may vary according to individual applications and severity of service.

SERVICE FUNCTION	0-4 HRS DAILY	5-8 HRS DAILY	8+HRS DAILY
Check gear oil level (if equipped with worm gear reducer)	Monthly	Monthly	Monthly
Check additive filter screen	Monthly	Monthly	Monthly
Check system for additive/fuel leaks	Daily	Daily	Daily
Inspect diaphragms/plunger seals	12 Months	6 Months	3 Months
Replace diaphragms/plunger seals	12 Months	As needed	As needed
Check eccentric bearing grease	6 Months	3 Months	Monthly
Check stroke adjustment parts for looseness	Monthly	Monthly	Monthly
Replace stroke adjustment parts	24 Months	As needed	As needed
Disassemble and inspect turbine housing and internal parts	24 Months	12 Months	8 Months
Grease bearings	12 Months	6 Months	3 Months

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## DESICCANT DRYER

Your Hammonds Additive Injector Cart includes 1 or more additive tanks. These tanks may come equipped with a desiccant dryer cartridge. These dryers come in several different sizes.

Most systems are equipped with the standard 3/4" cartridge. This unit is attached to the tank via a short length of black rubber hose. The cartridge has a housing constructed of a clear poly material and is filled with a blue colored desiccant crystal. All these units are shipped from the factory with a small yellow cap on the each end of the cartridge.

Some systems may come equipped with a large canister measuring approximately 2" diameter and 10" in length. These units perform the same function, just on a larger scale. Due to their greater capacity, they last longer between service. These units are sealed from the factory by a small, plastic plug which is located either on the bottom or one side of the canister.

The purpose of all desiccant dryers is simply to remove moisture from the air as the system breathes. All tanks or portable sources of additive supply must be vented to atmosphere in order for the injector to operate. If moisture in this venting air is not removed, some additives are either ruined or seriously damaged. Fuel system icing inhibitor (FSII), for example, is designed to seek out water in a fluid. So, when enough moisture is absorbed into the container, the FSII is diluted and at some point will be ruined. Biobor® JF, an anti-fungal material, will form crystals in the presence of moisture and not only perform

unsatisfactorily as an additive, but will stop up pumps and lines as well.

The following instructions apply to all desiccant cartridges:

A. Remove the caps or plugs when the system is placed into service.

B. Observe the color of the desiccant. The original color is blue. As moisture is absorbed, the color will change to pink. When the cartridge is completely pink, it should either have its contents removed, dried and replaced, or the entire unit replaced.

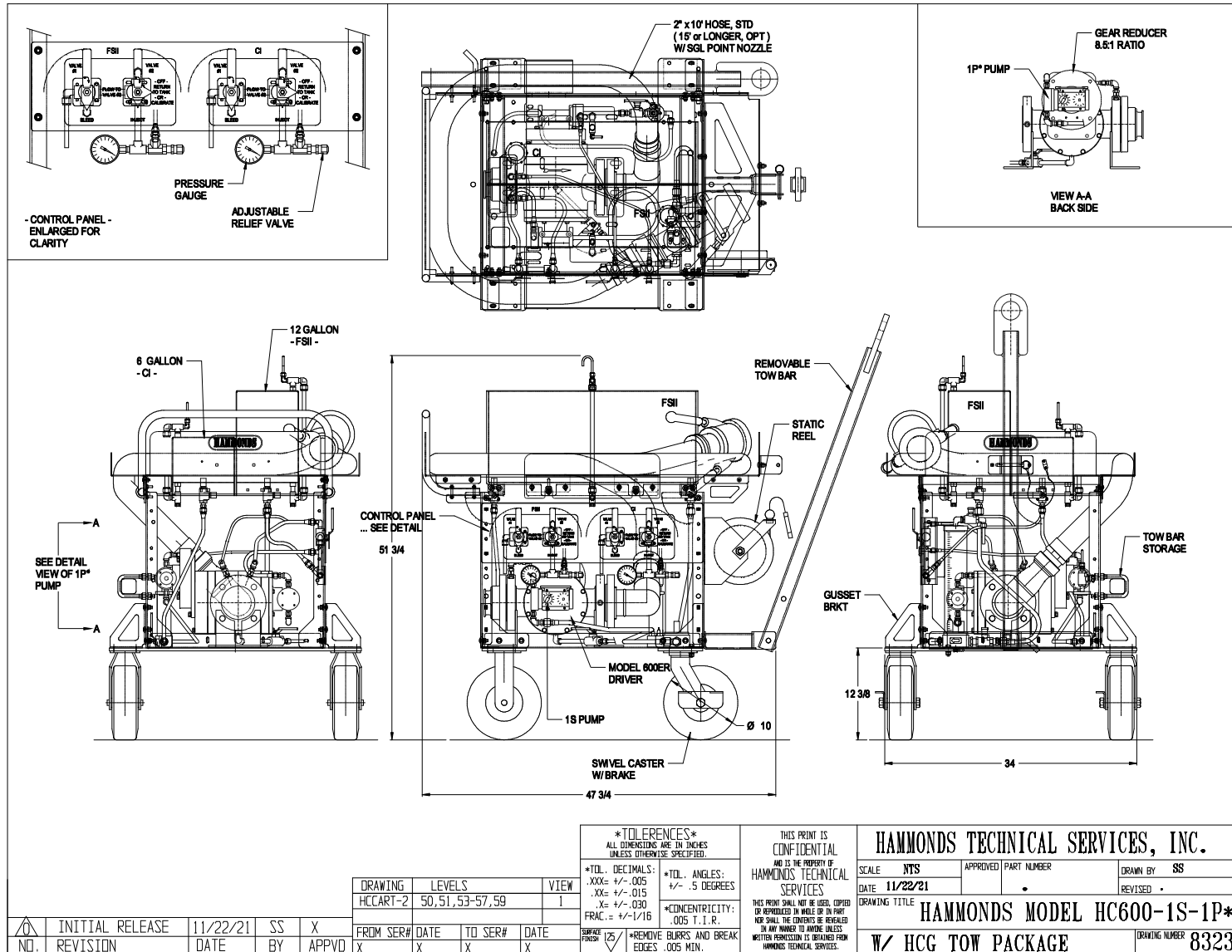
C. **NOTE:** The contents can be removed from plastic container, placed on a pan and baked at 400°F in a conventional oven until the moisture has been removed. When the color blue returns, the cooled material may be reinstalled into plastic containers and is again ready for service.

D. Color change and cartridge life is totally dependent on humidity. The more moist the air, the shorter the life. Keeping it dry is especially important if additive is not consumed rapidly. Check daily and service as needed.

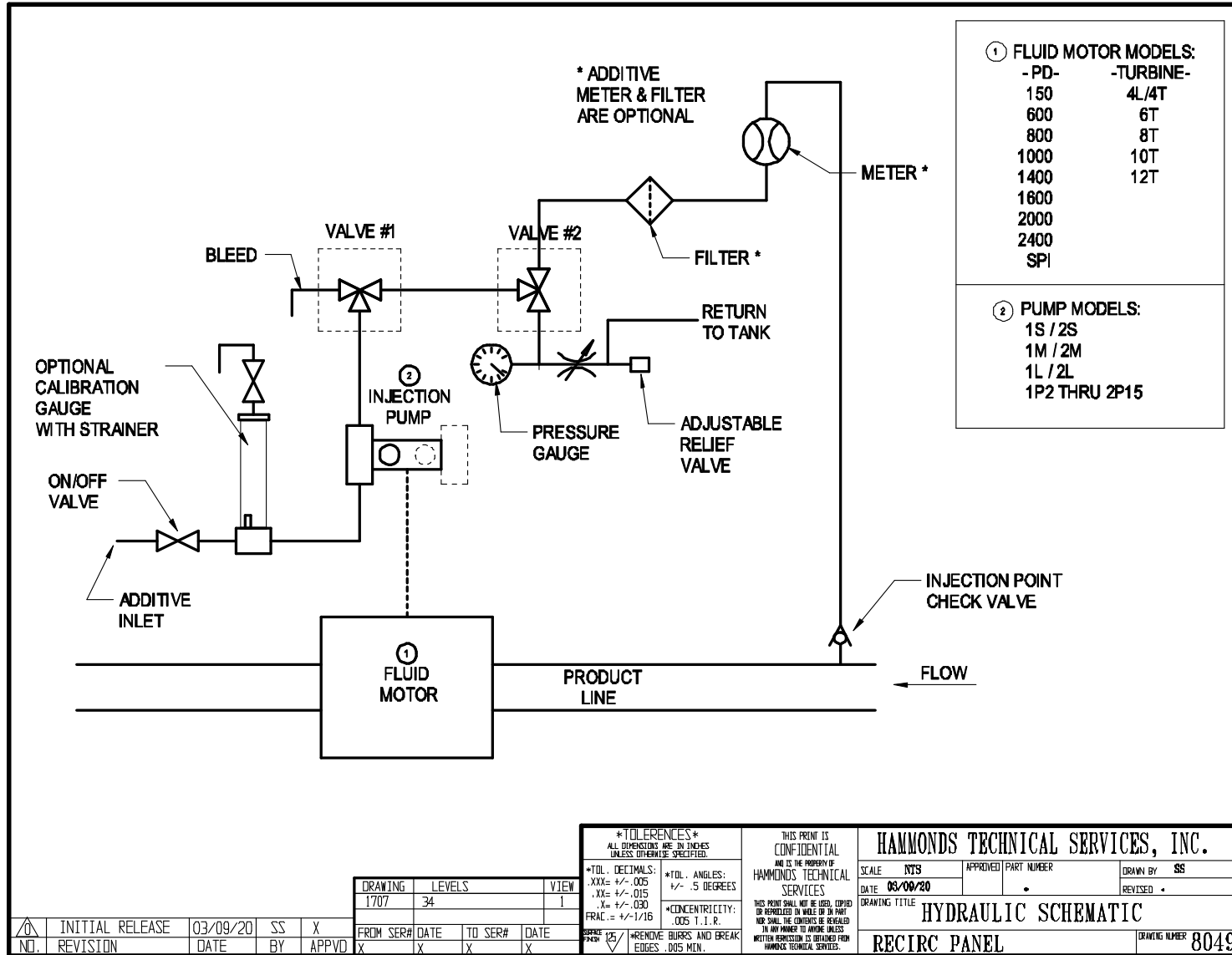
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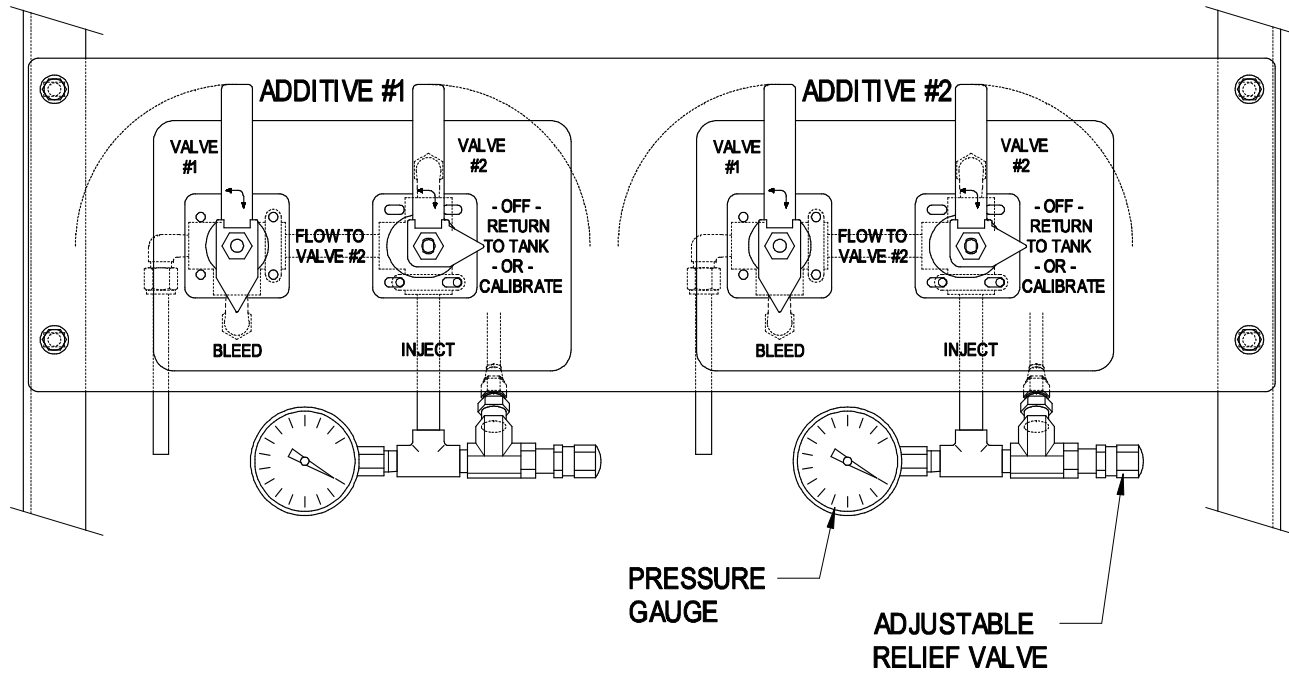


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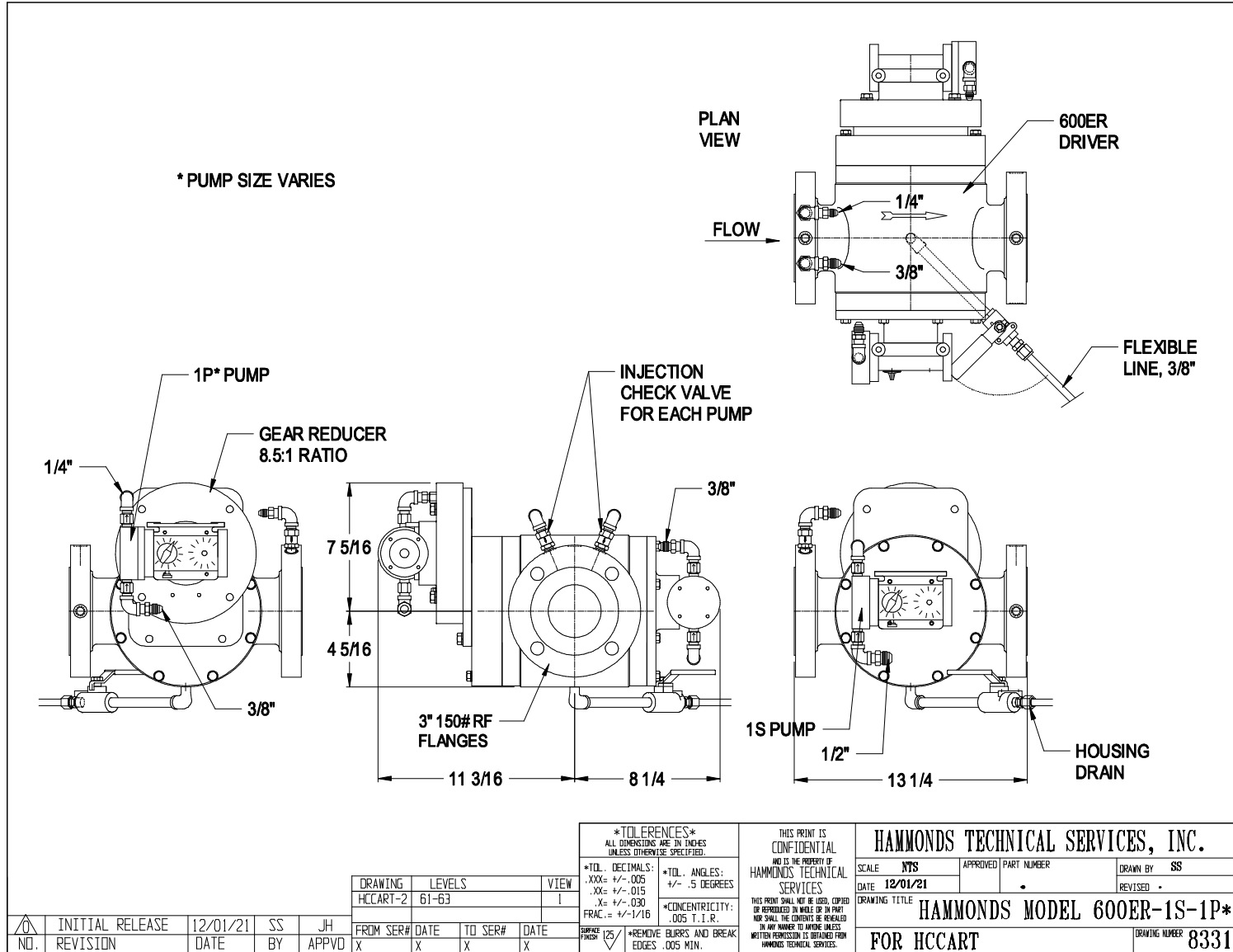
## 2 ADDITIVE HC CART DUAL RECIRCULATE PANEL



### OPERATION OF EITHER ADDITIVE

- 1) TO BLEED AIR FROM PUMP, POSITION VALVE #1 TO "BLEED"
- 2) NORMAL OPERATION ( INJECTION OF ADDITIVE )...
  - POSITION VALVE #1 TO "FLOW TO VALVE #2" &
  - POSITION VALVE #2 TO "INJECT"
- 3) OPERATION WITHOUT INJECTION OF ADDITIVE...
  - POSITION VALVE #1 TO "FLOW TO VALVE #2" &
  - POSITION VALVE #2 TO "RETURN TO TANK"

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ITEM	PART NO.	QTY.	DESCRIPTION
1	101045	1	SNAP RING
2	881157	1	PUMP DRIVE BEARING
3	881629	1	SPACER
4	881120	2	BEARING
5	881121	2	SNAP RING
6	881119	3	SNAP RING
7	882011	1	PUMP SIDE PLATE
8	212001	1	SHAFT
9	212002	2	KEY, 3/16" SQ. x 1"
10	141006	1	MECH. SEAL, VITON, STD
	141048	1	MECH. SEAL, BUNA (OPT)
	141009	1	MECH. SEAL, HP (OPT)
11	882012	2	WEAR RING
12	212097	6	VANE, TEFLON
13	212006	1	ROTOR
14	881910	2	O RING, VITON
	881154	2	O RING, BUNA-N (OPT)
15	212008	1	HOUSING, 3" VIC.
	212250	1	HOUSING, 3" 150#
16	151005	1	PIPE PLUG, 1/4"
17	212272	1	BEARING, SHIELDED
18	212473	1	BACK PLATE, HD
19	881124	16	LOCKWASHER, 5/16"
20	881125	8	BOLT, 5/16" x 1"
21	881269	8	BOLT, 5/16" x 2 1/4"

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		*TOL. ANGLES: +/- .5 DEGREES		APPROVED PART NUMBER	
		*CONCENTRICITY: .005 T. I. R.		DRAWN BY <b>SS</b>	
		*REMOVE BURRS AND BREAK EDGES .005 MIN.		DATE <b>02/18/08</b>	
				REVISED <b>12/10/14</b>	
				DRAWING TITLE <b>MODEL 600 DRIVER</b>	
				DRAWING NUMBER <b>5833</b>	

△	ADDED BUNA-N OPT	12/10/14	SS	X	DRAWING	LEVELS	VIEW	
△	ADDED HP SEAL OPT	01/15/14	SS	X	140, 151, 153-156, 158,		I	
△	INITIAL RELEASE	02/18/08	SS	X	250			
NO.	REVISION	DATE	BY	APPVD	FROM SER#	DATE	TO SER#	DATE
					X	X	X	X

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ITEM	PART NO.	QTY.	DESCRIPTION
1	101014	1	POWER FRAME
2	101016	1	DIAPHRAGM, S
	101455	1	DIAPHRAGM, S, VITON (OPTION)
3	102001	1	FLUID END, S
4	882949	8	LOCK WASHER, #10
5	101037	4	SCREW, 10-32 x 1 1/2"
6	101842	1	CROSSHEAD GUIDE
7	101007	2	RETURN SPRING
8	101008	1	CROSSHEAD
9	101152	2	SLIDE BEARING
10	101005	1	STROKE ADJUSTMENT CAM
11	101003	1	CAM GUIDE
12	101001	1	STROKE ADJUSTMENT KNOB
13	101002	1	POWER FRAME COVER
14	101004	1	LOCK SCREW
15	101009	4	SCREW, 8-32 x 3/8"
16	881086	4	LOCKWASHER, #6
17	101010	4	SCREW, 6-32 x 3/8"
18	881089	4	SCREW, 10-32 x 3/4"
18A	881660	4	SCREW, 10-32 x 2 1/4" (OPT)
19	102463	2	CHECK VALVE, AFLAS, STD.
	102464	2	CHECK VALVE, VITON (OPT)
	104228	2	CHECK VALVE, BUNA-N (OPT)
	102642	2	CHECK VALVE, KALREZ (OPT)
20	882911	1	CHECK VALVE, 5 PSI, AFLAS (STD.)
	101576	1	CHECK VALVE, 5 PSI, VITON (OPT.)
	104229	1	CHECK VALVE, 5 PSI, BUNA-N (OPT.)
	102643	1	CHECK VALVE, 5 PSI, KALREZ (OPT.)
21	101088	1	3/8 x 1/4 FNPT TUBE ADAPT.

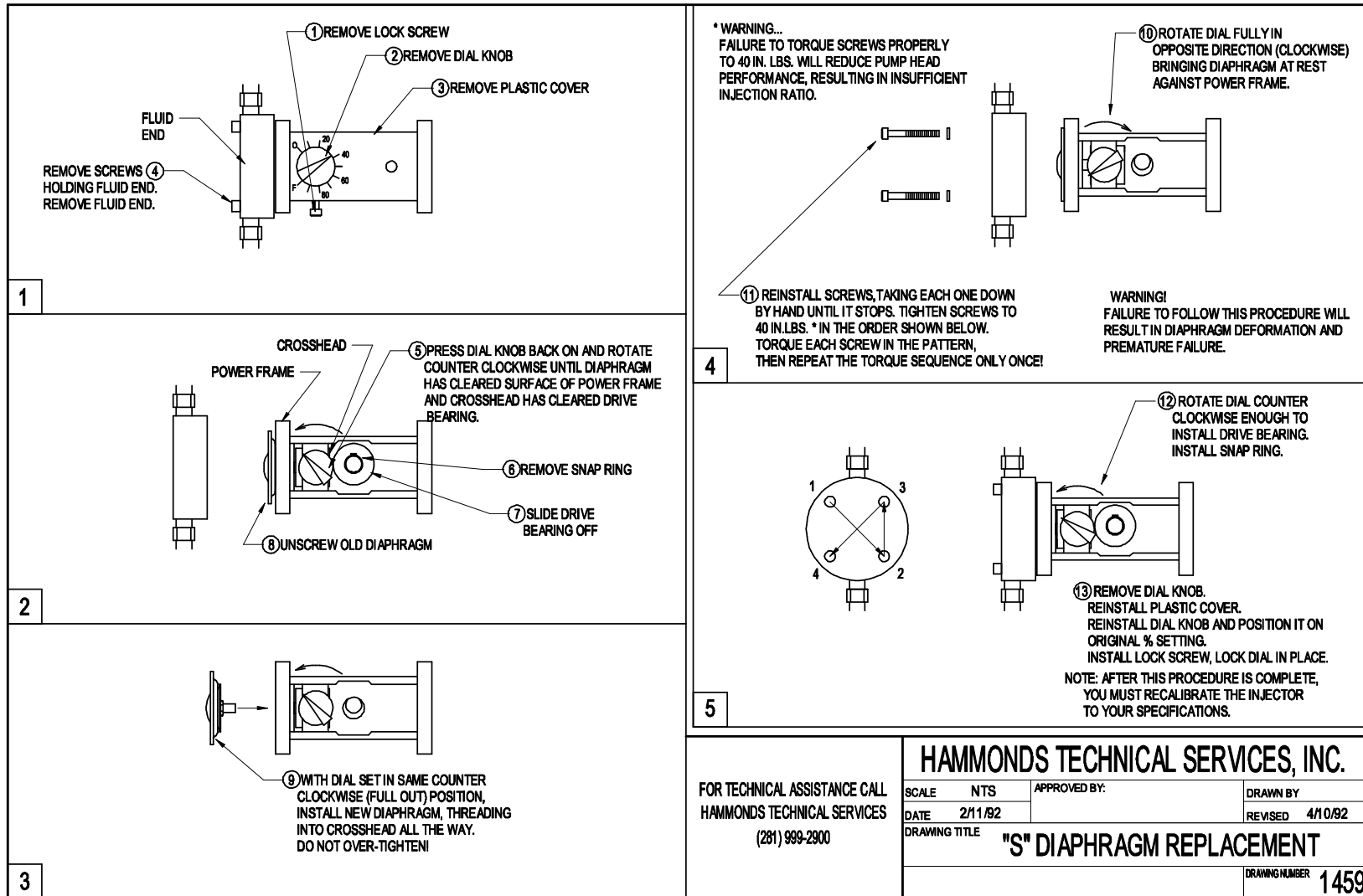
NO.	REVISION	DATE	BY
△	ADDED BUNA-N OPT	03/01/18	SS
△	NEW CHECK VALVES	03/15/04	SS
△	SOFT SEAT CHK VLV	09/03/02	SS
△	WAS #101008	08/99	SS
△	ADDED INJ CHK VLV	01/06/98	SS

DRAWING		LEVELS		VIEW	
INJECTOR	10, 12, 14, 16, 18, 20, 24, 28,				7
	30-33, 37, 39-44, 129				
FROM SER#	DATE	TO SER#	DATE		
X	X	X	X		

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	.XX± +/- .015	*CONCENTRICITY:	.005 T. I. R.
	.X± +/- .030		
REMOVE BURRS AND BREAK EDGES .005 MIN.			

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SCALE: NTS	APPROVED BY:	DRAWN BY: SS	
DATE: 10/15/91		REVISED: 03/01/18	
DRAWING TITLE: HAMMONDS 1S PUMP ASSEMBLY			
			DRAWING NUMBER: 1358

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ITEM	PART NO.	QTY.	DESCRIPTION
1	101014	1	POWER FRAME
2	102266	1	PLUNGER, P2
3	102267	1	FLUID END, P2
4	882949	8	LOCK WASHER, #0 INT. TOOTH
5	881780	4	SCREW, 10-32 x 2 3/4"
6	101842	1	CROSSHEAD GUIDE
7	101007	2	RETURN SPRING
8	101006	1	CROSSHEAD
9	101152	2	SLIDE BEARING
10	101005	1	STROKE ADJUSTMENT CAM
11	101003	1	CAM GUIDE
12	101001	1	STROKE ADJUSTMENT KNOB
13	101002	1	POWER FRAME COVER
14	101004	1	LOCK SCREW
15	101009	4	SCREW, 8-32 x 3/8"
16	881086	4	LOCKWASHER, #6
17	101010	4	SCREW, 6-32 x 3/8"
18	881089	4	SCREW, 10-32 x 3/4"
18A	881660	4	SCREW, 10-32 x 2 1/4" (OPTION)
19	102783	2	CHECK VALVE, 1/8", VITON
20	102269	1	O-RING, AFLAS
20A	102270	1	O-RING, VITON (OPTION)
21	102268	1	SEAL HOUSING, P2
22	881024	1	SEAL, LIP
23	881045	1	SETSCREW, 1/4-20 x 1"
24	882911	1	CHECK VALVE, 5 PSI, AFLAS
	101576	1	CHECK VALVE, 5 PSI, VITON (OPTION)
25	101058	1	1/4 x 1/4 FNPT TUBE ADAPT.

DRAWING		LEVELS	
WAS #102463	02/20/08	SS	X
WAS #101933	03/15/04	SS	X
NO. REVISION	DATE	BY	APPVD

FROM SER#	DATE	TO SER#	DATE
X	X	X	X

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SCALE: NTS	APPROVED PART NUMBER: .	DRAWN BY: SS	REVISED: 02/20/08
DATE: 06/20/95	DRAWING TITLE: <b>HAMMONDS 1P2 PUMP</b>		DRAWING NUMBER: 4567

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ITEM	PART NO.	QTY.	DESCRIPTION
1	101014	1	POWER FRAME
2	102339	1	PLUNGER, P5
3	102340	1	FLUID END, P5
4	882949	8	LOCK WASHER, #10 INT. TOOTH
5	881317	4	SCREW, 10-32 x 2"
6	101842	1	CROSSHEAD GUIDE
7	101007	2	RETURN SPRING
8	101006	1	CROSSHEAD
9	101152	2	SLIDE BEARING
10	101005	1	STROKE ADJUSTMENT CAM
11	101003	1	CAM GUIDE
12	101001	1	STROKE ADJUSTMENT KNOB
13	101002	1	POWER FRAME COVER
14	101004	1	LOCK SCREW
15	101009	4	SCREW, 8-32 x 3/8"
16	881086	4	LOCKWASHER, #6
17	101010	4	SCREW, 6-32 x 3/8"
18	881089	4	SCREW, 10-32 x 3/4"
18A	881660	4	SCREW, 10-32 x 2 1/4" (OPTION)
▲ 19	102463	2	CHECK VALVE, AFLAS, STD.
	102464	2	CHECK VALVE, VITON (OPTION)
▲ 3	102642	2	CHECK VALVE, KALREZ (OPTION)
20	101856	1	O-RING, AFLAS
▲ 3	101857	1	O-RING, VITON (OPTION)
	103514	1	O-RING, KALREZ (OPTION)
21	102341	1	SEAL HOUSING, P5
22	881079	1	SEAL, LIP
23	881045	1	SETSCREW, 1/4-20 x 1"
▲ 2	882911	1	CHECK VALVE, 5 PSI, AFLAS
	101576	1	CHECK VALVE, 5 PSI, VITON (OPT)
▲ 3	102643	1	CHECK VALVE, 5 PSI, KALREZ (OPT)
25	101088	1	3/8 x 1/4 FNPT TUBE ADAPT.

▲ ADDED KALREZ OPT ▲ WAS #101671 ▲ WAS #101933 NO. REVISION	06/25/09 SS 03/15/04 SS 03/15/04 SS	SS SS SS	. . .	DRAWING LEVELS INJECTOR 10, 12, 14, 16, 18, 20, 24, 28, 30 39-41, 89-93, 95-97, 99, 118, 119	FROM SER# DATE TO SER# DATE X X X	DATE DATE X X X	DATE DATE X X X
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*TOLERANCES* ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED. *TOL. DECIMALS: .XXX= +/- .005 .XX= +/- .015 .X= +/- .030 FRAC. = +/- 1/16 SURFACE FINISH: 125 *REMOVE BURRS AND BREAK EDGES .005 MIN.	*TOL. ANGLES: +/- .5 DEGREES *CONCENTRICITY: .005 T. I. R.	THIS PRINT IS CONFIDENTIAL AND IS THE PROPERTY OF HAMMONDS TECHNICAL SERVICES THIS PRINT SHALL NOT BE LOANED, COPIED OR REPRODUCED IN WHOLE OR IN PART NOR SHALL THE CONTENTS BE RELEASED IN ANY MANNER TO WHOMEVER WITHOUT WRITTEN PERMISSION AS OBTAINED FROM HAMMONDS TECHNICAL SERVICES.
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<b>HAMMONDS TECHNICAL SERVICES, INC.</b>	
SCALE: 3/16"	APPROVED PART NUMBER: .
DATE: 10/07/99	DRAWN BY: SS
DRAWING TITLE: <b>HAMMONDS 1P5 PUMP</b>	
DRAWING NUMBER: 3836	REVISED: 06/25/09

# Hammonds Model HCG600-1S-1P Dual Additive Towable Cart Manual

ITEM	PART NO.	QTY.	DESCRIPTION
1	101014	1	POWER FRAME
2	102137	1	PLUNGER, P6
3	102138	1	FLUID END, P6
4	882948	8	LOCK WASHER, #10 INT. TOOTH
5	881317	4	SCREW, 10-32 x 2"
6	101842	1	CROSSHEAD GUIDE
7	101007	2	RETURN SPRING
8	101006	1	CROSSHEAD
9	101152	2	SLIDE BEARING
10	101005	1	STROKE ADJUSTMENT CAM
11	101003	1	CAM GUIDE
12	101001	1	STROKE ADJUSTMENT KNOB
13	101002	1	POWER FRAME COVER
14	101004	1	LOCK SCREW
15	101009	4	SCREW, 8-32 x 3/8"
16	881086	4	LOCKWASHER, #6
17	101010	4	SCREW, 6-32 x 3/8"
18	881089	4	SCREW, 10-32 x 3/4"
18A	881680	4	SCREW, 10-32 x 2 1/4" (OPTION)
19	102463	2	CHECK VALVE, AFLAS, STD.
	102464	2	CHECK VALVE, VITON (OPT)
	102642	2	CHECK VALVE, KALREZ (OPT)
20	101491	1	O-RING, AFLAS
	101417	1	O-RING, VITON (OPTION)
	103544	1	O-RING, KALREZ (OPTION)
21	102139	1	SEAL HOUSING
22	881024	1	SEAL, LIP
23	881045	1	SETScrew, 1/4-20 x 1"
24	882911	1	CHECK VALVE, 5 PSI, AFLAS, STD.
	101576	1	CHECK VALVE, 5 PSI, VITON, (OPT)
	102643	1	CHECK VALVE, 5 PSI, KALREZ, (OPT)
25	101088	1	3/8 x 1/4 FNPT TUBE ADAPT.

*TOLERANCES*													
ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.													
*TOL. DECIMALS:	*TOL. ANGLES:	THIS PRINT IS CONFIDENTIAL AND IS THE PROPERTY OF HAMMONDS TECHNICAL SERVICES											
.XXX± 1/4-.005	+/- .5 DEGREES	THIS PRINT SHALL NOT BE USED, COPIED OR REPRODUCED IN WHOLE OR IN PART NOR SHALL THE CONTENTS BE REVEALED IN ANY MANNER TO ANYONE UNLESS WRITTEN PERMISSION IS OBTAINED FROM HAMMONDS TECHNICAL SERVICES.											
.XX± 1/4-.015													
.X± 1/4-.030	*CONCENTRICITY: .005 T.I.R.												
*REMOVE BURRS AND BREAK EDGES .005 MIN.		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="text-align: center;"><b>HAMMONDS TECHNICAL SERVICES, INC.</b></td> </tr> <tr> <td>SCALE: NTS</td> <td>APPROVED BY: _____</td> </tr> <tr> <td>DATE: 09/22/92</td> <td>DESIGNED BY: SS</td> </tr> <tr> <td colspan="2" style="text-align: center;">DRAWING TITLE: <b>HAMMONDS 1P6 PUMP</b></td> </tr> <tr> <td colspan="2" style="text-align: right;">DRAWING NUMBER: <b>1687</b></td> </tr> </table>		<b>HAMMONDS TECHNICAL SERVICES, INC.</b>		SCALE: NTS	APPROVED BY: _____	DATE: 09/22/92	DESIGNED BY: SS	DRAWING TITLE: <b>HAMMONDS 1P6 PUMP</b>		DRAWING NUMBER: <b>1687</b>	
<b>HAMMONDS TECHNICAL SERVICES, INC.</b>													
SCALE: NTS	APPROVED BY: _____												
DATE: 09/22/92	DESIGNED BY: SS												
DRAWING TITLE: <b>HAMMONDS 1P6 PUMP</b>													
DRAWING NUMBER: <b>1687</b>													

NO.	REVISION	DATE	BY	FROM SER#	DATE	TO SER#	DATE
△	KALREZ OPTION	07/13/21	SS				
△	NEW CHECK VALVES	03/15/04	SS				
△	WAS #102263	09/03/02	SS				

DRAWING	LEVELS	VIEW
INJECTOR	10, 12, 14, 16, 18, 20, 24, 28, 30 39-41, 89-93, 95-97, 99, 113, 114	7

# Hammonds Model HCG600-1S-1P Dual Additive Towable Cart Manual

ITEM	PART NO.	QTY.	DESCRIPTION
1	101014	1	POWER FRAME
2	102192	1	PLUNGER, P7
3	102193	1	FLUID END, P7
4	882949	8	LOCK WASHER, #10 INT. TOOTH
5	881317	4	SCREW, 10-32 x 2"
6	101842	1	CROSSHEAD GUIDE
7	101007	2	RETURN SPRING
8	101006	1	CROSSHEAD
9	101152	2	SLIDE BEARING
10	101005	1	STROKE ADJUSTMENT CAM
11	101003	1	CAM GUIDE
12	101001	1	STROKE ADJUSTMENT KNOB
13	101002	1	POWER FRAME COVER
14	101004	1	LOCK SCREW
15	101009	4	SCREW, 8-32 x 3/8"
16	881086	4	LOCKWASHER, #6
17	101010	4	SCREW, 6-32 x 3/8"
18	881089	4	SCREW, 10-32 x 3/4"
18A	881660	4	SCREW, 10-32 x 2 1/4" (OPTION)
19	102463	2	CHECK VALVE, AFLAS
	102464	2	CHECK VALVE, VITON (OPTION)
	102642	2	CHECK VALVE, KALREZ (OPTION)
20	101490	1	O-RING, AFLAS
	101226	1	O-RING, VITON (OPTION)
	101754	1	O-RING, KALREZ (OPTION)
21	102194	1	SEAL HOUSING
22	881765	1	SEAL, LIP
23	881045	1	SETSCREW, 1/4-20 x 1"
24	882911	1	CHECK VALVE, 5 PSI, AFLAS, STD.
	101576	1	CHECK VALVE, 5 PSI, VITON, (OPT)
	102643	1	CHECK VALVE, 5 PSI, KALREZ, (OPT)
25	101088	1	3/8 x 1/4 FNPT TUBE ADAPT.

NO.	REVISION	DATE	BY	*TOLERANCES* ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED. *TOL. DECIMALS: .XXX= +/- .005 .XX= +/- .015 .X= +/- .030 FRAC. = +/- 1/16 SURFACE FINISH: 125 *REMOVE BURRS AND BREAK EDGES .005 MIN.	THIS PRINT IS CONFIDENTIAL AND IS THE PROPERTY OF HAMMONDS TECHNICAL SERVICES THIS PRINT SHALL NOT BE USED, COPIED OR REPRODUCED IN WHOLE OR IN PART AND SHALL BE RETURNED TO THE ORIGINAL OWNER UNLESS WRITTEN PERMISSION IS OBTAINED FROM HAMMONDS TECHNICAL SERVICES.
*ADDED PART NOS. 01/21/14 SS WAS #101671 03/15/04 SS WAS #101933 03/15/04 SS WAS #102263 09/03/02 SS WAS #101008 08/99 SS ADDED INJ CHK VLV 01/06/98 SS				DRAWING LEVELS INJECTOR 10,12,14,16,18,20,24,28,30 I FROM SER# DATE TO SER# DATE X X X X	HAMMONDS TECHNICAL SERVICES, INC. SCALE: NTS DATE: 05/11/93 DRAWING TITLE: HAMMONDS 1P7 PUMP ASSEMBLY APPROVED PART NUMBER: . DRAWN BY: SS REVISED: 01/21/14 DRAWING NUMBER: 1911

# Hammonds Model HCG600-1S-1P Dual Additive Towable Cart Manual

ITEM	PART NO.	QTY.	DESCRIPTION
1	101014	1	POWER FRAME
2	102224	1	PLUNGER, P10
3	102225	1	FLUID END, P10
4	882949	8	LOCK WASHER, #10 INT. TOOTH
5	881317	4	SCREW, 10-32 x 2"
6	101842	1	CROSSHEAD GUIDE
7	101007	2	RETURN SPRING
8	101006	1	CROSSHEAD
9	101152	2	SLIDE BEARING
10	101005	1	STROKE ADJUSTMENT CAM
11	101003	1	CAM GUIDE
12	101001	1	STROKE ADJUSTMENT KNOB
13	101002	1	POWER FRAME COVER
14	101004	1	LOCK SCREW
15	101009	4	SCREW, 8-32 x 3/8"
16	881086	4	LOCKWASHER, #6
17	101010	4	SCREW, 8-32 x 3/8"
18	881089	4	SCREW, 10-32 x 3/4"
18A	881660	4	SCREW, 10-32 x 2 1/4" (OPTION)
19	102463	2	CHECK VALVE, AFLAS, STD.
	102464	2	CHECK VALVE, VITON, (OPTION)
20	101537	1	O-RING, AFLAS
	1018353	1	O-RING, VITON (OPTION)
	101883	1	O-RING, EPDM (OPTION)
21	102226	1	SEAL HOUSING
22	881908	1	SEAL, LIP
23	881045	1	SETScrew, 1/4-20 x 1"
24	882911	1	CHECK VALVE, 5 PSI, AFLAS, STD.
	101576	1	CHECK VALVE, 5 PSI, VITON (OPT)
25	101088	1	3/8 x 1/4 FNPT TUBE ADAPT.

NO.	REVISION	DATE	BY	APPVD
△	WAS #101671	03/15/04	SS	X
△	WAS #101933	03/15/04	SS	X
△	WAS #102263	09/03/02	SS	X
△	WAS #101008	08/99	SS	X

DRAWING	LEVELS		
INJECTOR	10, 12, 14, 16, 18, 20, 24, 28, 30		
	39-41, 89-93, 95-97, 99, 116, 117		
FROM SER#	DATE	TO SER#	DATE
X	X	X	X

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*REMOVE BURRS AND BREAK EDGES .005 MIN.		DRAWING TITLE <b>HAMMONDS 1P10 PUMP</b>	

<b>HAMMONDS TECHNICAL SERVICES, INC.</b>		DRAWN BY SS
SCALE: NTS	APPROVED PART NUMBER	REVISED 03/15/04
DATE: 09/23/93		
		DRAWING NUMBER 2668

# Hammonds Model HCG600-1S-1P Dual Additive Towable Cart Manual

**▲ PARTS INCLUDED IN KITS ARE IDENTIFIED WITH → NOTE: OPTIONAL O-RING ELASTOMERS ARE AVAILABLE.**

**INSTALL CAP HAND-TIGHT... DO NOT OVER-TIGHTEN!**

**NOTE: ADAPTER FITTINGS VARY PER APPLICATION... SEE YOUR ASSEMBLY ILLUSTRATION**

**IMPORTANT! NOTE DIRECTION OF FLOW**

**VALVE DETAIL SCALE: 2X**

ITEM	PART NO.	QTY.	DESCRIPTION
▲ 1	152075	1	BODY, STD.SIGHT FLOW
→ 2	152002	1	FILTER ELEMENT
→ 3	151018	1	GAUGE GLASS
→ 4	151002	2	GASKET, BUNA (OPT)
→	151007	2	GASKET, VITON (OPT)
→	151027	2	GASKET, NEOPR (OPT)
▲	151020	2	GASKET, AFLAS (OPT)
▲	151036	2	GASKET, TEF ENCAPSULATED
5	151005	1	PLUG
▲ 6	152069	1	CAP ASSEMBLY
▲ 7	101070	1	NIPPLE, 1/4" x 1-1/2"
▲ 8	101059-01	1	VENT TUBE, 1/4"
▲▲ 9	101230	1	ON/OFF VALVE, 1/4"
▲ 10	101057	1	TUBE ADAPTER, 1/4"
▲ 11	152070	1	GUARD, GAUGE GLASS
→ 12	102787	1	1/4" CH VLV, 5 PSI, AFLAS (OPT)
→	881715	1	1/4" CH VLV, 5 PSI, VITON (OPT)
→	102644	1	1/4" CH VLV, 5 PSI, KALREZ (OPT)

NO.	REVISION	DATE	BY
▲	REMY'D #102735 VLV	07/13/21	SS
▲	ADD TEF ENCAPSUL	07/13/21	SS
▲	ADDED AFLAS OPT	09/04/20	SS
▲	ADDED KIT INFO	04/30/18	SS
▲	ADDED FLUSH VALVE	02/15/17	SS
▲	ADDED KALREZ OPT	01/18/17	SS
▲	ADDED NEOPR. OPT	09/27/11	SS
▲	ADDED OPT VALVE	03/04/10	SS
▲	WAS #152035	05/13/99	SS
▲	WAS #152018	05/13/99	SS
▲	WAS 1/8" NIPPLE	01/23/97	SS

DRAWING		LEVELS		VIEW
2489		5,6		I
FROM SER#	DATE	TO SER#	DATE	
X	X	X	X	

<p>*TOLERANCES* ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.</p> <p>*TOL. DECIMALS: .XXX± +/- .005 .XX± +/- .015 .X± +/- .030</p> <p>*TOL. ANGLES: +/- .5 DEGREES</p> <p>*CONCENTRICITY: .005 T.I.R.</p> <p>*REMOVE BURRS AND BREAK EDGES .005 MIN.</p>	<p>THIS PRINT IS CONFIDENTIAL AND IS THE PROPERTY OF HAMMONDS TECHNICAL SERVICES</p> <p>THIS PRINT SHALL NOT BE LOANED, COPIED OR REPRODUCED IN WHOLE OR IN PART OR SHALL THE CONTENTS BE REVEALED TO ANY PERSON TO WHOM UNLESS WRITTEN PERMISSION IS OBTAINED FROM HAMMONDS TECHNICAL SERVICES.</p>	<p><b>HAMMONDS TECHNICAL SERVICES, INC.</b></p> <p>SCALE: NTS      APPROVED BY: <b>SCG206</b>      DRAWN BY: SS</p> <p>DATE: 07/20/93      REVISED: 07/13/21</p> <p>DRAWING TITLE: <b>SUCTION CALIBRATION GAUGE</b></p> <p>MAT'L:      DRAWING NUMBER: <b>3067</b></p>
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# Hammonds Model HCG600-1S-1P Dual Additive Towable Cart Manual

**INSTALL CAP HAND-TIGHT...  
DO NOT OVER-TIGHTEN!**

ITEM	PART NO.	QTY.	DESCRIPTION
2	1	1	BODY, STD.SIGHT FLOW
2	152002	1	FILTER ELEMENT
3	151015	1	GAUGE GLASS
* 4	151002	2	GASKET, BUNA
5	151005	1	PLUG
3	6	1	CAP ASSEMBLY
1	7	1	NIPPLE, 1/4" x 1 1/2"
8	101059-01	1	VENT TUBE, 1/4"
9, 4	9	1	ON/OFF VALVE, STD. 1/4"
5	10	1	TUBE ADAPTER, 1/4"
5	11	1	GUARD, GAUGE GLASS
4	12	1	STRAP, VINYL COATED
4	13	1	1/4-20 x 3/4" SOC. HD. CAP SS
4	14	1	1/4" FLAT WASHER SS
4	15	1	1/4-20 LOCK NUT SS
OPTIONAL			
* 4	151007	2	GASKET, VITON
* 4	151023	2	GASKET, EPDM
6	* 4	2	GASKET, KALREZ
7	* 4	2	GASKET, AFLAS
8	* 4	2	GASKET, TEF ENCAPSULATED

REM' D 102735 VALV	07/13/21	SS
ADD TEF ENCAPSUL	07/13/21	SS
ADDED AFLAS OPT	09/04/20	SS
ADDED KALREZ OPT	01/18/17	SS
WAS #101071	02/14/14	SS
ADDED PARTS	06/2008	SS
WAS #152035	05/13/99	SS
WAS #152018	05/13/99	SS
WAS 1/8" NIPPLE	01/23/97	SS
NO. REVISION	DATE	BY

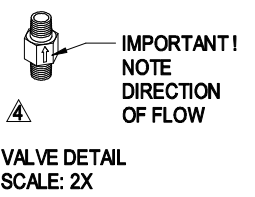
DRAWING				LEVELS				VIEW			
2489	1,2										
FROM SER#	DATE	TO SER#	DATE	FROM SER#	DATE	TO SER#	DATE	FROM SER#	DATE	TO SER#	DATE
X	X	X	X	X	X	X	X	X	X	X	X

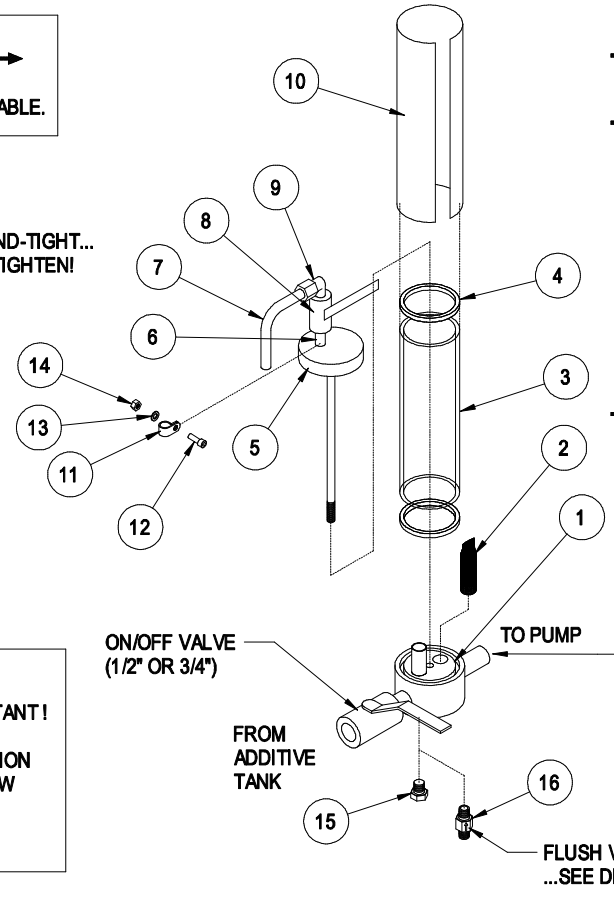
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*REMOVE BURRS AND BREAK EDGES .005 MIN.		HAMMONDS TECHNICAL SERVICES, INC. SCALE: NTS APPROVED BY: SCG212 DRAWN BY: SS DATE: 07/20/93 REVISED: 07/13/21	
DRAWING TITLE: SUCTION CALIBRATION GAUGE			
MAT'L:			DRAWING NUMBER: 2489

# Hammonds Model HCG600-1S-1P Dual Additive Towable Cart Manual

**⚠ PARTS INCLUDED IN KITS ARE IDENTIFIED WITH → NOTE: OPTIONAL O-RING ELASTOMERS ARE AVAILABLE.**

**INSTALL CAP HAND-TIGHT... DO NOT OVER-TIGHTEN!**

**IMPORTANT! NOTE DIRECTION OF FLOW**  
  
**VALVE DETAIL SCALE: 2X**



ON/OFF VALVE (1/2" OR 3/4")

TO PUMP

FROM ADDITIVE TANK

FLUSH VALVE ...SEE DETAIL

NOTE: ADAPTER FITTINGS VARY PER APPLICATION... SEE YOUR ASSEMBLY ILLUSTRATION

ITEM	PART NO.	QTY.	DESCRIPTION
→ 1	152080	1	BODY, LARGE SIGHT FLOW
→ 2	152025	1	FILTER ELEMENT
→ 3	151014	1	GAUGE GLASS
→ 4	151013	2	GASKET, VITON
→	151010	2	GASKET, NEOPRENE, OPT.
→	151025	2	GASKET, BUNA-N, OPT.
→ 5	152042	1	CAP
→ 6	101070	1	NIPPLE, 1/4" x 1 1/2"
→ 7	881139-05	1	VENT TUBE, 3/8"
→ 8	101230	1	ON/OFF VALVE, 1/4"
→ 9	101068	1	ELBOW TUBE FITTING
→ 10	881899	1	GUARD, GAUGE GLASS
→ 11	882562	1	STRAP, VINYL COATED ( OPT )
→ 12	881292	1	1/4-20 x 3/4" SOC HD CAP ( OPT )
→ 13	103028	1	1/4" FLAT WASHER SS ( OPT )
→ 14	881881	1	1/4-20 LOCK NUT SS ( OPT )
→ 15	151005	1	PIPE PLUG, 1/4"
→ 16	102787	1	1/4" CH VLV, 5 PSI, AFLAS (OPT)
→	881715	1	1/4" CH VLV, 5 PSI, VITON (OPT)

⚠ WAS 102735 VALVE	07/13/21	SS	JH			
⚠ ADDED KIT INFO	04/30/18	SS	X			
⚠ ADDED FLUSH VALVE	05/23/14	SS	X			
⚠ WAS 881139	03/07/14	SS	X	DRAWING	LEVELS	VIEW
⚠ ADDED PLUG	03/24/10	SS	X	2395	1-3	I
⚠ ADDED PARTS	06/2008	SS	X			
NO.	REVISION	DATE	BY	APPVD	FROM SER#	DATE
					X	X

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*TOL. DECIMALS:	.XXX= +/- .005 .XX= +/- .015 .X= +/- .030 FRAC. = +/- 1/16	*TOL. ANGLES:	+/- .5 DEGREES
*CONCENTRICITY:	.005 T. I. R.	*REMOVE BURRS AND BREAK EDGES	.005 MIN.

<b>HAMMONDS TECHNICAL SERVICES, INC.</b>			
SCALE: NYS	APPROVED: PART NUMBER	DRAWN BY: SS	
DATE: 07/20/93	SCG314	REVISED: 07/13/21	
DRAWING TITLE: <b>SUCTION CALIBRATION GAUGE</b>			
MAT' L:			DRAWING NUMBER: <b>2395</b>

# Hammonds Model HCG600-1S-1P Dual Additive Towable Cart Manual

## HAMMONDS SUCTION CALIBRATION GAUGE

### CALIBRATION INSTRUCTIONS

- 1) IN ORDER TO CALIBRATE, THE PUMP MUST BE PRIMED AND PURGED OF ALL AIR. THE 3-WAY VALVE MUST BE SET TO INJECT.
- 2) WITH SUPPLY VALVE OPEN, SLOWLY OPEN VENT VALVE. THIS WILL FILL CALIBRATION GAUGE. FILL TO ZERO MARK. DO NOT OVERFILL. ONCE FULL, CLOSE VENT VALVE.
- 3) MAKE NOTE OF ADDITIVE LEVEL IN CALIBRATION GAUGE AND MAIN PRODUCT METER READING. BEGIN CALIBRATION BY FIRST CLOSING THE SUPPLY VALVE AND THEN OPENING THE VENT VALVE. START THE PRODUCT FLOW (SET FOR A SHORT TRIAL RUN).
- 4) AT THE END OF THE RUN, RECORD THE AMOUNT OF ADDITIVE THAT WAS DRAWN FROM THE CALIBRATION GAUGE. RECORD THE AMOUNT OF FUEL PUMPED. CLOSE THE VENT VALVE. OPEN THE SUPPLY VALVE.
- 5) DIVIDE THE AMOUNT OF ADDITIVE USED BY THE VOLUME OF FUEL THAT WAS PUMPED GIVING YOU PPM.
- 6) INCREASE OR DECREASE PERCENTAGE OF STROKE ON DIAPHRAGM PUMP TO OBTAIN DESIRED INJECTION RATIO.

EXAMPLE: (METRIC)  
ADDITIVE INJECTED = 500 ML  
FUEL DELIVERED = 1785 LITERS

$$\frac{500}{1785} = .280$$

$$\frac{.280}{1000} = .000280 \text{ (280 MILLIONTHS)}$$

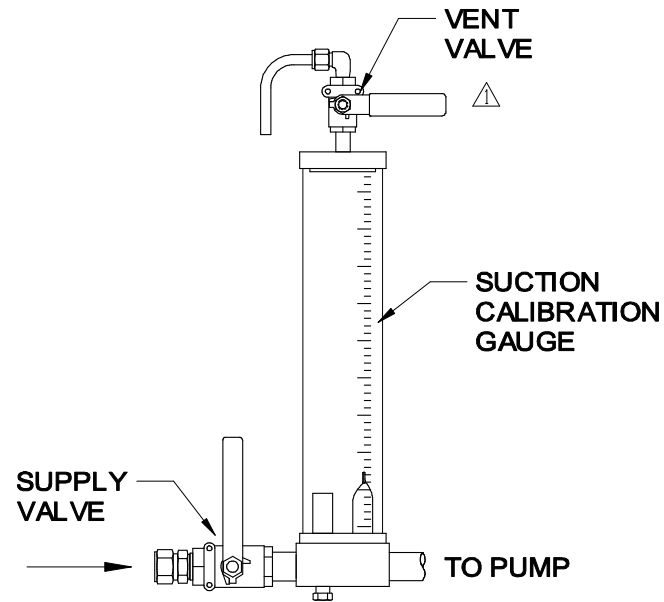
$$\text{OR } 280 \text{ PPM (PARTS PER MILLION)}$$

EXAMPLE: (US)  
ADDITIVE INJECTED = 11.5 oz  
FUEL DELIVERED = 350 GALLONS

$$\frac{11.5}{350} = .0328$$

$$\frac{.0328}{128 \text{ oz/gal}} = .000256 \text{ (256 MILLIONTHS)}$$

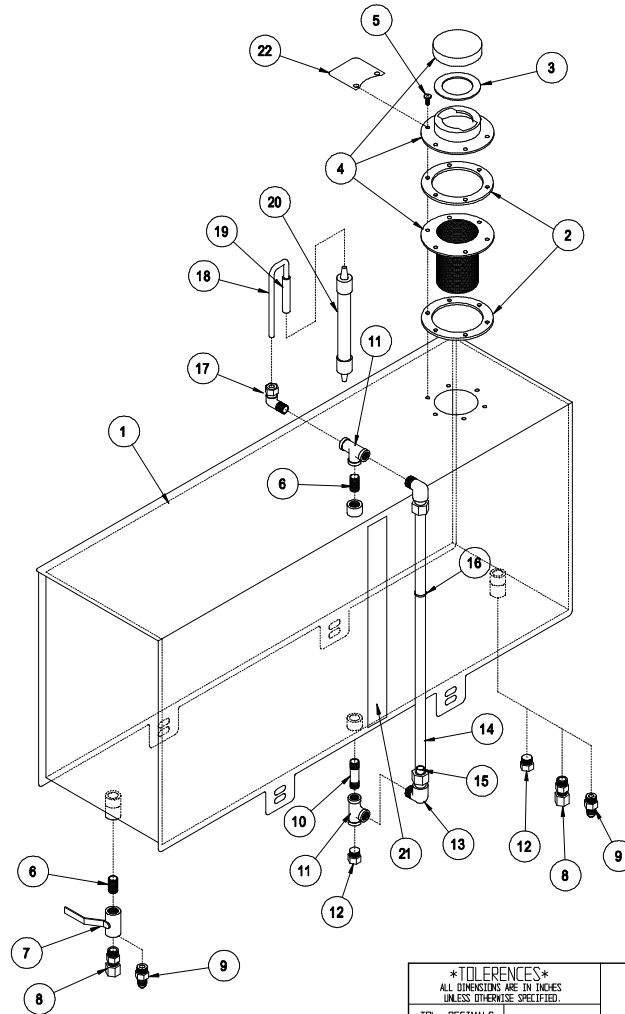
$$\text{OR } 256 \text{ PPM (PARTS PER MILLION)}$$



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*TOL. DECIMALS: .XXX± +/- .005 .XX± +/- .015 .X± +/- .030		*TOL. ANGLES: +/- .5 DEGREES *CONCENTRICITY: .005 T. I. R.		THIS PRINT SHALL NOT BE LOANED, COPIED OR REPRODUCED IN WHOLE OR IN PART NOR SHALL THE CONTENTS BE REVEALED IN ANY MANNER TO ANYONE UNLESS WRITTEN PERMISSION IS OBTAINED FROM HAMMONDS TECHNICAL SERVICES.		SCALE	NTS	APPROVED BY:	SS	DRAWN BY	SS
DATE 04/07/93		DATE 07/13/21		REVISION 07/13/21		DRAWING TITLE SUCTION CALIBRATION GAUGE		DRAWING NUMBER 1891			
*REMOVE BURRS AND BREAK EDGES .005 MIN.		*TOLERANCES* ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.		THIS PRINT IS CONFIDENTIAL AND IS THE PROPERTY OF HAMMONDS TECHNICAL SERVICES		HAMMONDS TECHNICAL SERVICES, INC.		SCALE NTS		APPROVED BY: SS	
DATE 04/07/93		DATE 07/13/21		REVISION 07/13/21		DRAWING TITLE SUCTION CALIBRATION GAUGE		DRAWING NUMBER 1891			

△	WAS ECONOMY VALVE	07/13/21	SS	DRAWING	LEVELS	VIEW
△	INITIAL RELEASE	04/07/93	SS	1891	1,2	I
△	REVISION	DATE	BY	FROM SER#	DATE	TO SER#
				X	X	X

# Hammonds Model HCG600-1S-1P Dual Additive Towable Cart Manual



ITEM	PART NO.	QTY.	DESCRIPTION
1	104303	1	TANK SHELL, 12 GALLON
2	102460	2	GASKET, VITON
	102854	2	GASKET, BUNA-N (OPT)
	102712	2	GASKET, NEOPRENE (OPT)
3	102482	1	GASKET, VITON
	102855	1	GASKET, BUNA-N (OPT)
	102713	1	GASKET, NEOPRENE (OPT)
4	700089	1	FILLER / STRAINER
5	881223	6	SCREW, 10-32 x 1/2" PHIL INCLUDED W / #4
6	101069	2	1/4" x CL NIPPLE
7	101230	1	1/4" ON / OFF VALVE
8	101034	1	TUBE ADPT, 3/8" x 1/4" MNPT
	101170	1	TUBE ADPT, 1/2" x 1/4" MNPT (OPT)
9	882342	1	1/4" JIC x 1/4" MNPT ADAPTER
	882339	1	3/8" JIC x 1/4" MNPT ADAPTER
	882447	1	1/2" JIC x 1/4" MNPT ADAPTER
10	101070	1	1/4" x 1-1/2" PIPE NIPPLE
11	101023	2	1/4" TEE
12	151005	2	1/4" PIPE PLUG
13	101095	2	1/2" x 1/4" ELBOW TUBE ADAPT
14	101379	1.5'	1/2" x 3/8" TEFLON TUBING
15	101685	2	1/2" x 3/8" TUBE INSERT
16	101337	1	O-RING
17	101071	1	ELBOW TUBE ADAPTER, 1/4"
18	101059-01	1	1/4" VENT TUBE
19	881347	1	VACUUM HOSE
20	881142	1	DESICCANT DRYER
21	886416	1	SCALE, 12 GAL
22 *	882362	1	CI TANK TAG
22 *	882373	1	SDA TANK TAG
22 *	885022	1	FSII TANK TAG

\* OPTIONAL TANK TAGS

**ASSEMBLY NUMBER EXAMPLE:**

HC12X-B8J6JFS...INCLUDES:  
1/2" JIC FITTING, BUNA-N GASKETS,  
3/8" JIC RETURN TO TANK, FSII TAG

INITIAL RELEASE ND REVISION		12/02/21	SS	JH	FROM SER# X		DATE	TO SER#	DATE	*TOLERANCES* ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED. *TOL. DECIMALS: .XXX= +/- .005 .XX= +/- .015 .X= +/- .030 FRAC. = +/- 1/16 *TOL. ANGLES: +/- .5 DEGREES *CONCENTRICITY: .005 T.I.R. *REMOVE BURRS AND BREAK EDGES .005 MIN.	THIS PRINT IS CONFIDENTIAL AND IS THE PROPERTY OF HAMMONDS TECHNICAL SERVICES THIS PRINT SHALL NOT BE USED, COPIED OR REPRODUCED IN WHOLE OR IN PART NOR SHALL THE CONTENTS BE REVEALED IN ANY MANNER TO WHOMEVER WRITTEN PERMISSION IS OBTAINED FROM HAMMONDS TECHNICAL SERVICES.	HAMMONDS TECHNICAL SERVICES, INC. SCALE: NTS DATE: 12/02/21 DRAWING TITLE: HC-12 GAL, TALL TANK 12 GALLON CAP, SS	APPROVED PART NUMBER SEE NOTE DRAWN BY: SS REVISED: - DRAWING NUMBER: 8332
DRAWING: 2813 LEVELS: 123, 124 VIEW: 1					FROM SER# X	DATE X	TO SER# X	DATE X					

# Hammonds Model HCG600-1S-1P Dual Additive Towable Cart Manual

ITEM	PART NO.	QTY.	DESCRIPTION
1	102929	1	TANK SHELL, 6 GALLON
2	102460	2	GASKET, VITON
	102654	2	GASKET, BUNA-N (OPT)
	102712	2	GASKET, NEOPRENE (OPT)
3	102482	1	GASKET, VITON
	102655	1	GASKET, BUNA-N (OPT)
	102713	1	GASKET, NEOPRENE (OPT)
4	700089	1	FILLER / STRAINER
5	881223	6	SCREW, 10-32 x 1/4" PHIL INCLUDED W / #4
6	101069	2	1/4" x CL NIPPLE
7	101230	1	1/4" ON / OFF VALVE
8	101034	1	TUBE ADPT, 3/8" x 1/4" MNPT
	101170	1	TUBE ADPT, 1/2" x 1/4" MNPT (OPT)
9	882342	1	1/4" JIC x 1/4" MNPT ADAPTER
	882339	1	3/8" JIC x 1/4" MNPT ADAPTER
	882447	1	1/2" JIC x 1/4" MNPT ADAPTER
10	101070	1	1/4" x 1-1/2" PIPE NIPPLE
	271084	1	1/4" x 3" PIPE NIPPLE (OPT)
11	101023	2	1/4" TEE
12	151005	2	1/4" PIPE PLUG
13	101095	2	1/2" x 1/4" ELBOW TUBE ADAPT
14	101379	1'	1/2" x 3/8" TEFLON TUBING
15	101685	2	1/2" x 3/8" TUBE INSERT
16	101337	1	O-RING
17	101071	1	ELBOW TUBE ADAPTER, 1/4"
18	101059-01	1	1/4" VENT TUBE
19	881347	1	VACUUM HOSE
20	881142	1	DESICCANT DRYER
21	886377	1	SCALE
22 *	882362	1	CI TANK TAG
22 *	882373	1	SDA TANK TAG
22 *	885022	1	FSII TANK TAG

\* OPTIONAL TANK TAGS

**ASSEMBLY NUMBER EXAMPLE:**

**HC6-VXBB...INCLUDES:**  
**3/8" JIC FITTING, VITON GASKETS,**  
**PLUGGED RETURN, BIOBOR LABEL**

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*TOL. DECIMALS:	*TOL. ANGLES:	AND IS THE PROPERTY OF <b>HAMMONDS TECHNICAL SERVICES</b>		SCALE	APPROVED PART NUMBER
.XXX= +/- .005	+/- .5 DEGREES			DATE	DRAWN BY
.XX= +/- .015	*CONCENTRICITY:	04/14/20	SS	SEE NOTE	
.X= +/- .030	.005 T.I.R.	REVISED 12/10/20			
FRAC. = +/- 1/16	*REMOVE BURRS AND BREAK EDGES .005 MIN.			DRAWING TITLE	
		HC-6 GALLON TANK			
				6 GALLON CAP. SS	

ADDED PART #	12/10/20	SS	JH	DRAWING	LEVELS	VIEW	
INITIAL RELEASE	04/14/20	SS	JH	2813	114-116	1	
REVISION				FROM SER#	DATE	TO SER#	DATE
				X	X	X	X