

# CALIFORNIA

## Proposition 65 Warning

WARNING: Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer and birth defects or other reproductive harm.

WARNING: Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.



ANY PICTURES CONTAINED WITHIN THIS OPERATOR'S MANUAL THAT DEPICT SITUATIONS WITH SHIELDS, GUARDS, RAILS, OR LIDS REMOVED ARE FOR DEMONSTRATION PURPOSES ONLY. HAGIE MANUFACTURING COMPANY STRONGLY URGES THE OPERATOR TO KEEP ALL SHIELDS AND SAFETY DEVICES IN PLACE AT ALL TIMES.

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# I. SAFETY/DECALS

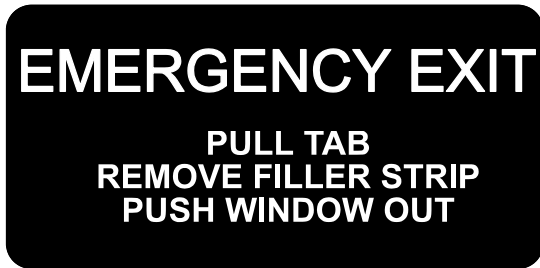
## WARNING DECALS

Decals warning you of avoidable danger are located on various parts of the sprayer. They are there for your personal safety and protection. DO NOT remove them. They will fracture upon attempted removal and therefore must be replaced.

Following are locations of important safety decals. Replace them if they are torn or missing. All

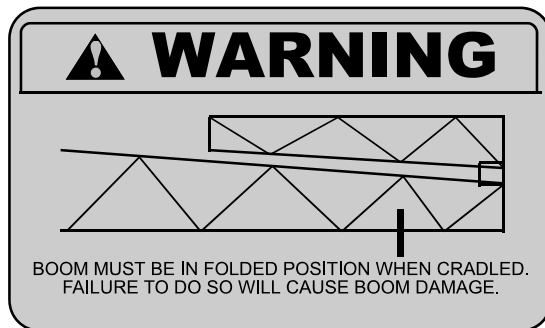
warning decals and other instructional Hagie decals or machine striping may be purchased through the Hagie Customer Support Department. To replace decals, be sure that the installation area is clean and dry; decide on exact position before you remove the backing paper.

## DECAL LOCATION



650320

Rear of right cab window.



650336

On cab insulation above control panel.



### III. SPECIFICATIONS

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#### AUXILIARY HYDRAULIC SYSTEM

Type .....Open  
Pump type .....Tandem gear  
Pressure setting .....2600 PSI

#### SPRAY SYSTEM

##### Booms

Type .....Dry, with variable row spacing  
Standard.....60 ft. (3 spray sections)  
Optional .....60/80 or 90 ft. (5 spray sections)  
Controls .....Electro-hydraulic: fold/lift/level  
Hydraulic level shock absorber .....Hagie boom level accumulator

##### Hoses

Front fill connection (female w/ adapter for male).....2" I.D.  
Solution hose from tank .....1 1/2" I.D.  
Boom section feeder hose .....1" I.D.  
Boom nozzle hose.....3/4" I.D.

##### Solution Tanks

Standard.....Two 400 gal. polyethylene with sight gauge  
  
Agitation .....Mechanical - hydraulically driven with variable speed control

##### General Spray System

Pump.....Centrifugal - hydraulically driven with variable speed control  
Solution valves .....Electric ball valves  
Pressure gauge .....100 PSI glycerin filled  
Monitor .....Raven 460 (GPS-ready)  
Fence row nozzle .....Optional

#### FOAM MARKING SYSTEM

Make.....Hagie Foam Marker  
Type .....Live air

#### RINSE SYSTEMS

Freshsystem rinse (solution tanks, pump, and booms) .....Standard  
High pressure washing system .....Optional

## V. OPERATING INFORMATION

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5. Turn the ignition key switch to the start position to engage the starter. If the engine fails to start after 15 seconds, turn key to "OFF", wait one minute and repeat the procedure. If the engine does not start after three attempts, check fuel supply system. Absence of blue or white exhaust smoke during cranking indicates no fuel is being delivered.
6. When engine starts, immediately reduce throttle lever setting to 1/3.
7. Inspect indicator lights and gauges for correct operation. If any lights or gauges do not operate, shut off engine and determine cause.
8. Always allow at least a five minute warm-up period before operating the engine at high RPM. This means the engine must reach operating temperature and oil pressure must stabilize in the normal operating range before it is run faster than an idle (1000 RPM or less). Cold oil may not flow in quantities adequate to prevent pump cavitation.

### COLD WEATHER STARTING

Using starting fluid without metering equipment:

Spray starting fluid into the air cleaner intake while another person starts the engine. Do not move the sprayer until the other person is off the sprayer and a safe distance away.

#### **CAUTION**

Never use starting fluid near an open flame or pre-heater. This could cause an explosion. Do not breathe starting fluid fumes. Starting fluid fumes can be harmful to your health.

#### **CAUTION**

When using jumper cables to start engine, make sure to connect the cables in parallel: positive (+) to positive and negative (-) to negative. When using an external electrical source to start the engine, turn the disconnect switch to the "OFF" position. Remove the key before attaching the jumper cables to prevent unintentional starter engagement.

#### **NOTE:**

Do not use excessive amounts of starting fluid when starting an engine. The use of too much starting fluid will cause engine damage.

# V. OPERATING INFORMATION



FIG 5.20



FIG 5.21

## Cradling Booms

The booms should always be cradled when traveling, transporting, or parking for an extended period of time. The booms must be folded when cradled. To cradle the booms, fold the boom extensions in, raise the transom, and fold the booms in toward the machine. The closer the booms get to the cradle, the more careful you need to be while making adjustments to avoid damage. Raise each individual boom level until it clears the outer cradle stop (fig. 5.20). Fold the boom in toward the cradle back-stop. When it touches the back-stop, lower the boom level until the full weight of the boom rests in the cradle (fig. 5.21). If the boom does not fold in far enough, the fold cylinder sleeve may need to be adjusted (see page 25).

**NOTE:**

Booms must be in folded position when cradled. Failure to do so may cause boom damage.

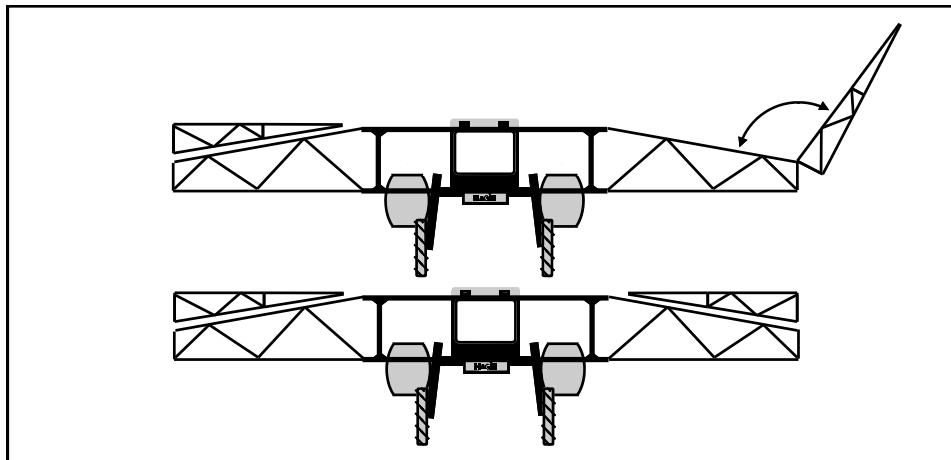
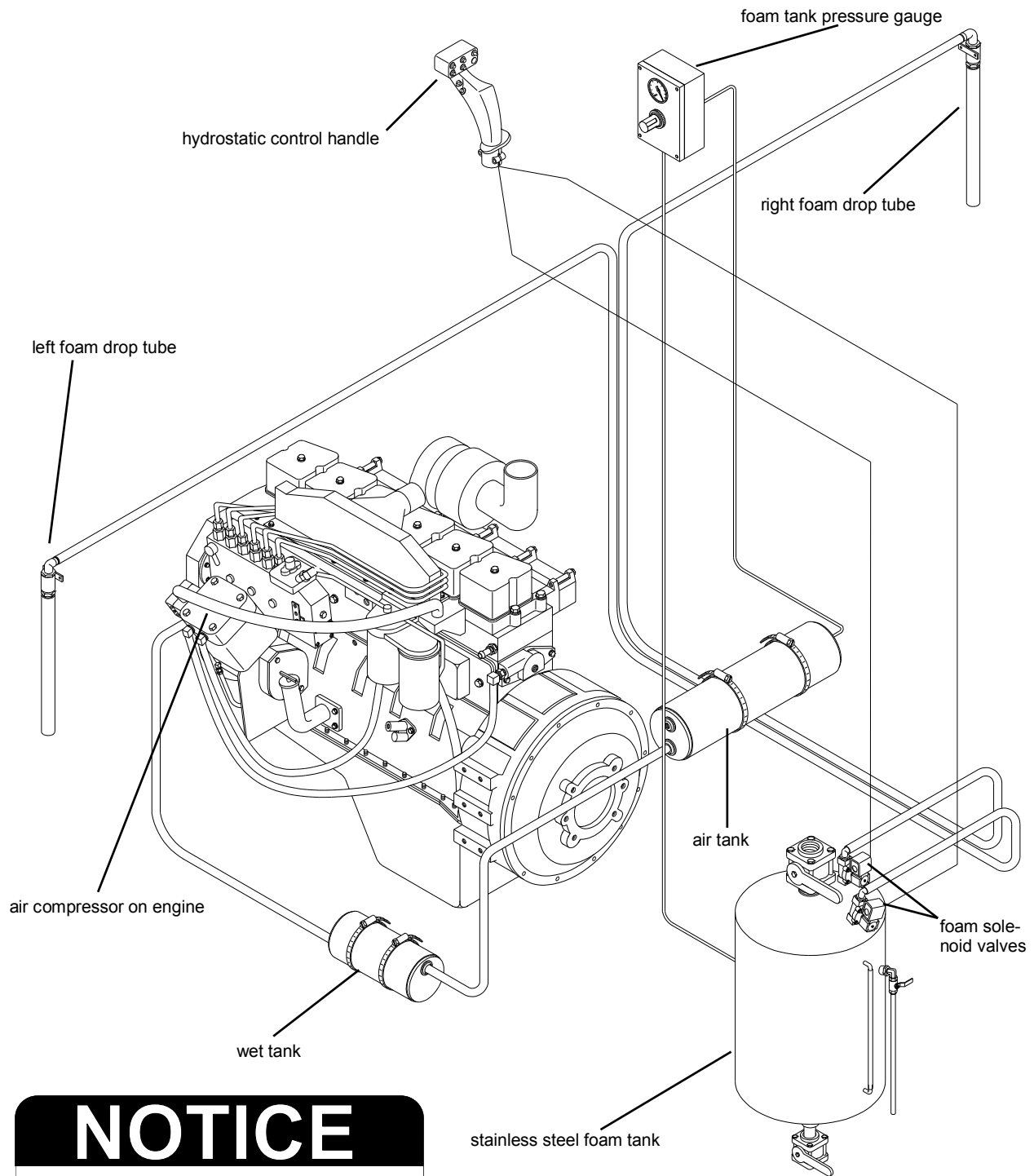


FIG 5.22

# V. OPERATING INFORMATION

## FOAM MARKER SYSTEM



**NOTICE**

**DRAIN WET TANK DAILY TO REMOVE CONTAMINATION**

# V. OPERATING INFORMATION

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## HAGIE DTS 8 CAB



**FIG 5.63**

Emergency Exit.....	59
Climate Controls .....	60
Windshield Wiper/Washer .....	61
Fuel Tank Selector.....	61
Instrumentation .....	62
Air Suspended Seat.....	65
Steering Column .....	66
Auxiliary Power Supplies .....	66

# VI. CALIBRATION

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The measured flow rate should be the same as the flow rate shown on the chart below. The chart shows rate of discharge in gallons per minute for various field speeds and row spacings to apply 10 gallons per acre.\*

If the measured flow rate is not the same as that on the calibration tube's chart, consult the

trouble shooting guide in the service manual for the spray system's monitor.

All nozzles should be spraying at about the same flow rate. If one drives the sprayer at the proper speed and maintains the right pressure setting while spraying, the desired gallons per acre will be applied.

## RATE OF DISCHARGE

Tip Spacing	GALLONS PER MINUTE**				
	4 mph	5 mph	6 mph	7 mph	8 mph
15"	.101	.126	.151	.176	.202
16"	.107	.133	.160	.187	.214
17"	.114	.142	.171	.199	.228
18"	.121	.151	.181	.211	.242
19"	.127	.158	.190	.222	.254
20"	.134	.167	.201	.234	.268
30"	.201	.251	.303	.351	.403
36"	.242	.302	.363	.423	.484
38"	.255	.318	.382	.446	.510
40"	.269	.336	.403	.470	.538

\* Divide by 10 to get 1 gallon per acre rate

\*\* At a rate of 10 gallons per acre

## VIII. SERVICE AND MAINTENANCE

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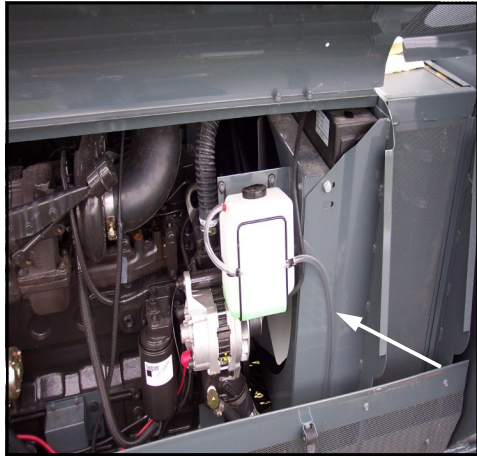


FIG 8.7

**COOLANT RESERVOIR** - The coolant reservoir is located under the right-hand hood behind the radiator (fig. 8.7). Check its level everyday while the engine is cold. Maintain the coolant reservoir level within the normal cold range marks.

**CHANGING COOLANT** - Your coolant should periodically be changed to eliminate the buildup of harmful chemicals. Drain and replace the coolant every other spraying season or every 1,000 hours of operation, whichever comes first. Refill only with ethylene glycol coolant. Antifreeze should be mixed only with soft water because hard water contains minerals which break down the anti-corrosion properties of antifreeze.

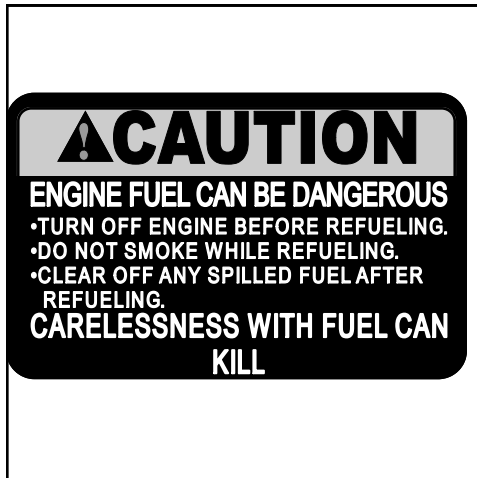


FIG 8.8

### Fuel

**TYPE** - No. 2 diesel fuel is recommended for the best economy and performance under most operating conditions. In operating conditions under 32° F, use a blend of No. 1 and No. 2 diesel fuel. The addition of No. 1 diesel fuel may cause loss of power and/or fuel economy.

**STORING** - See section 9 on sprayer storage.

**REFILLING** - Always turn off the engine and allow it to cool before refueling. Never smoke while fueling. Keep a fire extinguisher within reach while refueling.

Each tank holds 40 gallons - do not fill them completely: fuel can expand and run over. Wipe up all spilled fuel and clean with detergent and water before starting the engine.

**PRIMING** - If the fuel system should happen to run dry and lose its prime, there is a priming bulb located on the left side of the engine for use in filling the engine fuel filters (fig. 8.9).

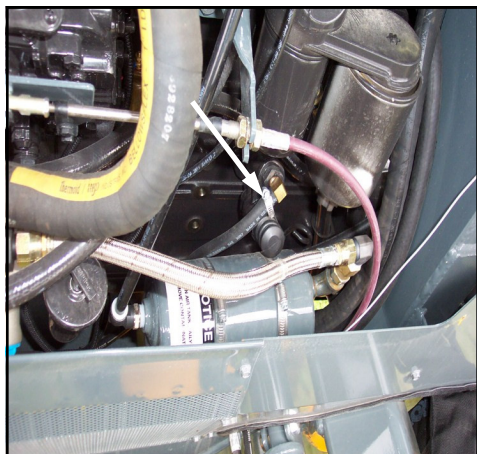


FIG 8.9

# VIII. SERVICE AND MAINTENANCE

## ELECTRICAL

### Battery SAFETY

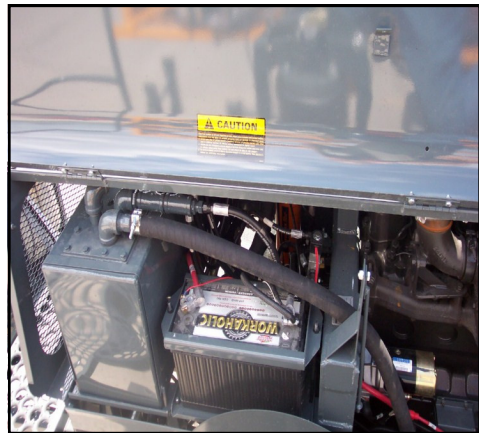


FIG 8.31

**VOLTAGE**..... 12 V (only)

**COLD CRANKING AMPS  
(30 sec. at 0° F)**..... 950 CCA

**RESERVE  
CAPACITY**..... 185 min.  
at 25 amps

FIG 8.32

## CAUTION

Batteries contain sulfuric acid. Avoid contact with skin, eyes, or clothing. Do not inhale fumes or ingest liquid. Batteries contain gases which can explode. Keep sparks and flame away while servicing.

### NOTE:

When servicing electrical system always disconnect the battery. Remove ground cable first and connect it last.

**CLEANING** - Disconnect battery cables from battery. Remove all corrosion with a wire brush or battery post brush. Wash the cable connections and battery posts with a weak solution of baking soda or ammonia. Apply petroleum jelly or grease to prevent future corrosion. Reconnect the cables to the battery making sure they are tight. Clean every 100 hours.



## CAUTION

Electrical system is 12 volt negative ground. When using booster with jumper cables, precautions must be taken to prevent personal injury or damage to electrical parts.

1. Attach one end of jumper cable to positive terminal of booster battery and other end to positive terminal of vehicle battery connected to starter motor.
2. Attach one end of second cable to negative terminal of booster battery and other end to vehicle frame away from battery. Do not attach to cab or cab support.
3. To remove cables, reverse above sequence exactly to avoid sparks. See operator's manual for additional information.

**STORAGE** - See page 102 for proper battery storage.

**REPLACEMENT** - When replacing the battery, install a battery with ratings equivalent to or higher than the specs listed in figure 8.32.

# VIII. SERVICE AND MAINTENANCE

## TOE-IN ADJUSTMENT



FIG 8.53

To adjust the toe-in of the front tires follow these instructions for both front steering cylinders carefully:

1. Remove cotter pin (fig. 8.54, item 5), castle nut (fig. 8.54, item 3), and lock washer (fig. 8.54, item 4).
2. Loosen lock collar bolt and nut (fig. 8.54, item 2).
3. Lightly tap swivel assembly (fig. 8.54, item 1) out of steering arm.
4. Move left and right tires evenly until difference in dimension "A" and "B" (fig. 8.55) are within specified range.

### NOTE:

Dimension "A" should be  $\frac{1}{2}$ " to  $\frac{3}{4}$ " less than dimension "B." For more information regarding toe-in, see page 97.

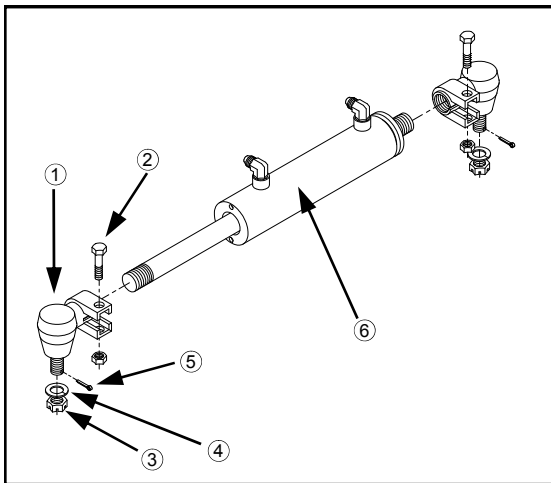


FIG 8.54

5. Screw swivel assembly in or out on steering cylinder (fig 8.54, item 6) until the treaded part lines up with steering arm.
6. Insert swivel assembly into steering arm.
7. Install lock washer and castle nut and tighten.
8. Install cotter pin.
9. Tighten lock collar bolt and nut.

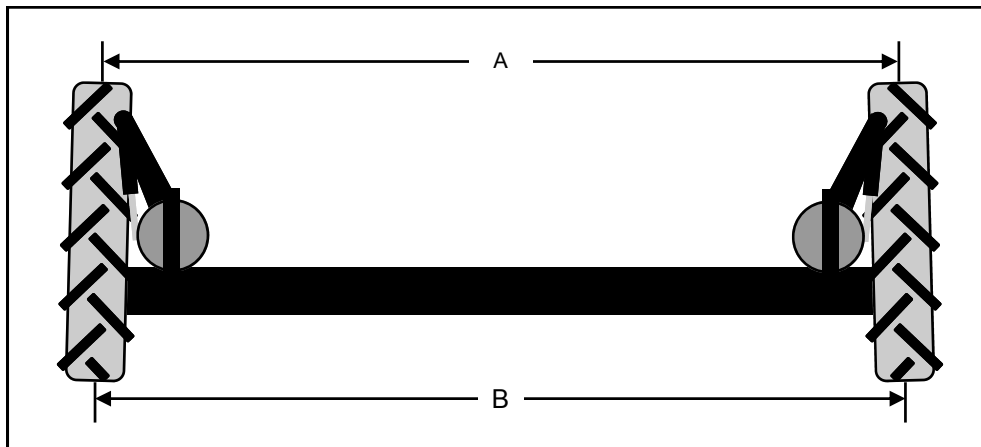


FIG 8.55

# X. TROUBLE SHOOTING

## C. HYDROSTATIC SYSTEM



# CAUTION

**DO NOT GO NEAR LEAKS.** High pressure oil easily punctures skin causing injury, gangrene, or death. If injured, seek emergency medical help. Immediate surgery is required to remove oil. Do not use finger or skin to check for leaks. Lower load or relieve hydraulic pressure before loosening fittings.

PROBLEM	POSSIBLE CAUSE	SUGGESTED REMEDY
Machine won't move in either direction	Engine speed too low  Oil level in reservoir low  Control linkage  Clogged filter  Hydrostatic pump not turning  Faulty hydrostatic pump  Air leak in suction line  Low charge pressure	Set engine at operating RPM before trying to move machine  Fill reservoir to proper level w/ approved oil; see section on Service and Maintenance  Repair or replace  Replace filter  Check drive coupling  Replace pump  Inspect and tighten all fittings on suction line  See section under charge pressure
Machine will move in only one direction	Faulty high pressure relief valve	Switch relief valves from side to side; If problem reverses, replace multi-function valve (Call Hagie Customer Support and refer to parts manual)

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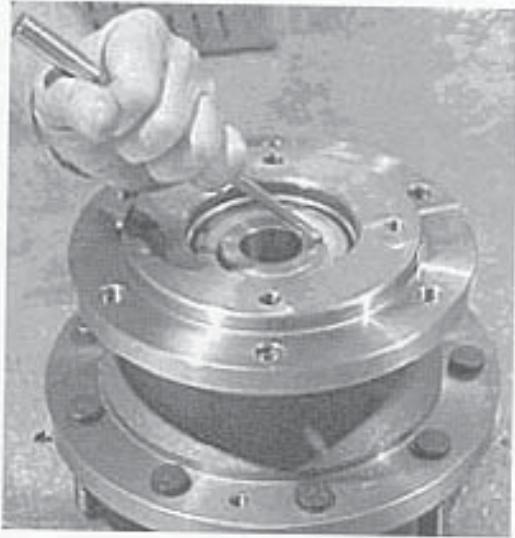
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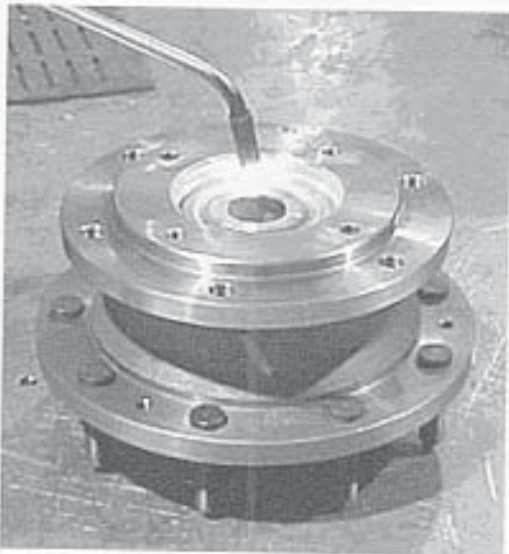
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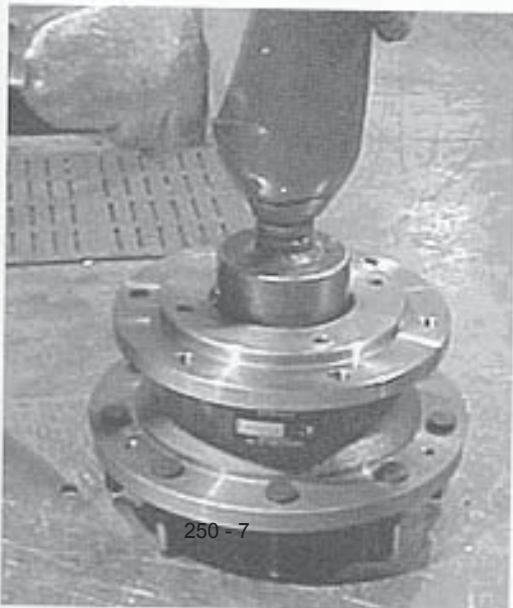




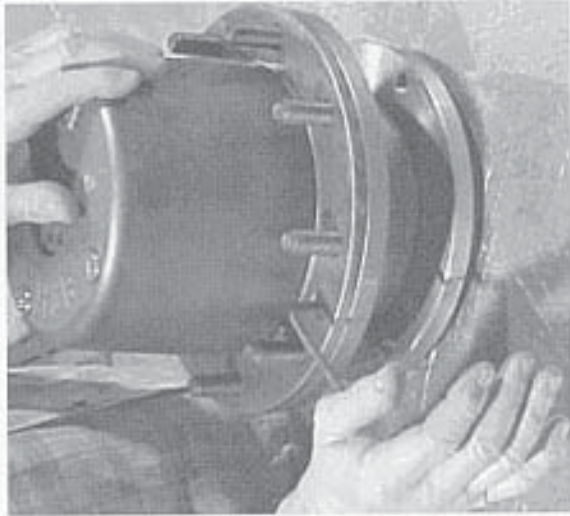
Turn the unit over. You will notice that the stakenut has material depressed into the keyway of the spindle. You will need to use either a punch and drive the material out of the keyway, or a carbide bit and grind the material out.



Sometimes heat may be required to break the loctite down into liquid form.



If a locknut tool has been made, use the tool with an impact to remove the nut. Otherwise, a punch and a chisel may be used to remove the nut.



250 - 17

Install, then tighten the three cover bolts to 15-20 ft. lbs.

**At this time, the main assembly of the unit is complete.**

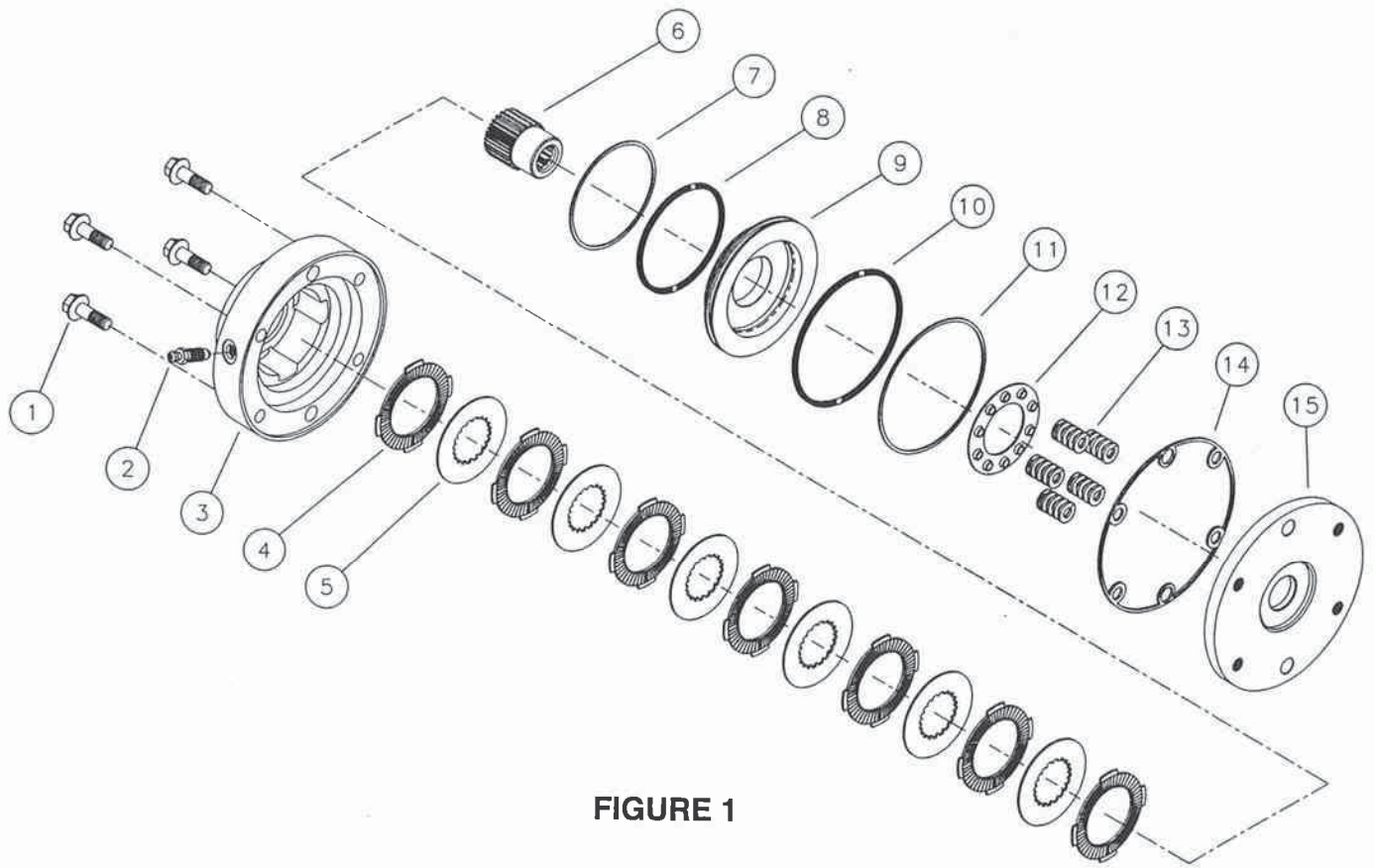


FIGURE 1

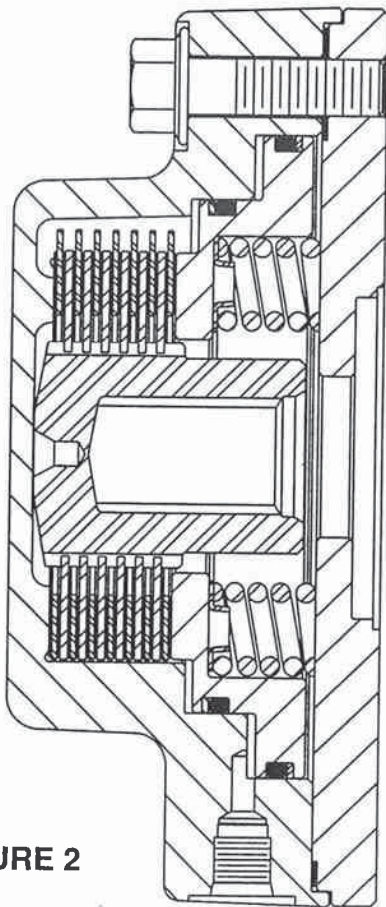


FIGURE 2

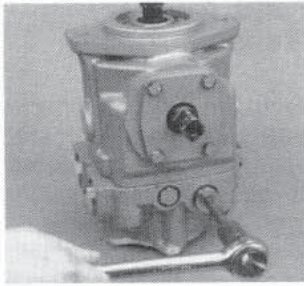
## Product Information Chart

Series	Outputs Available	Ratios Available (x:1)	Planetary Type	Continuous Torque Rating (in-lbs x 1,000)	Intermittent Torque Rating (in-lbs x 1,000)	Max. Speed (x 1,000 rpm)
06	whd	3-222	Simple	6	12	5
07	whd,sho,spo	4,12	Simple	7.5	15	5
1	sho	3-6	Simple	15	30	5
1	whd,sho,spo	18-68	Differential	15	30	4
MW1	whd	15-68	Differential	15	30	4
2	whd,sho,spo	13-49	Differential	25	50	4
MW3	whd	10-110	Simple	30	60	5
3	whd,sho,spo	18-54	Differential	37.5	75	4
4	whd	12-37	Simple	40	80	5.5
6	sho	4-6	Simple	60	120	3
6	whd, sho, spo	13-42	Simple	60	120	5
7	whd,sho,spo	26-94	Differential	75	150	3
9T	whd	35	Simple-2 Speed	90	250	3.75
10	whd,sho,spo	43-123	Differential	125	250	2
11	whd	46,57	Compound	110	220	4
12	whd,sho,spo	20-40	Simple	125	250	4
12T	whd	20,29,40	Simple-2 Speed	125	250	3.75
16	whd,sho,spo	20-40	Simple	160	320	4
16T	whd	20,29,40	Simple-2 Speed	160	320	3.75
20	whd,sho,spo	26-115	Differential	250	500	2
25	whd,sho,spo	19-25	Simple	200	400	3
50	whd,sho,spo	18-40	Simple	500	1,000	3
90	whd,spo	25	Simple	1,200	2,000	2
200	sho	1176	Hybrid	2,000	c/f	2
T2A	sho	3.46-4.09	Simple	6	c/f	4
G07	sho	3.6	Simple	6	c/f	4
IA15	sho	1	Input Adapter	15	c/f	3.6
RA7	sho	1	Straight Bevel	3.7	c/f	3.4
RA708	sho	1.53	Straight Bevel	1.2	c/f	3.4
RA10	sho	2.78	Straight Bevel	3.7	c/f	3.4
Series	Outputs Available	Ratios Available (x:1)	Planetary Type	Continuous Torque Rating (Nm x 1000)	Intermittent Torque Rating (Nm x 1000)	Max. Speed (x1000 rpm)
CW12	whd	18-51	Simple	6	12	units with brake - 5
CW18	whd	26-51	Simple	9	18	
CT18	whd	63-136	Simple	9	18	units without brake - 6
CT26	whd	51-202	Simple	13	26	
CT35	whd	63-136	Simple	17.5	35	
CT45	whd	63-136	Simple	22.5	45	

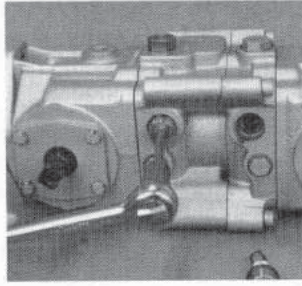
**Key**  
whd = wheel hub drive  
sho = shaft output  
spo = spindle output  
c/f = contact Fairfield

**Technical Data - Variable Displacement Pump / Tandem Pump**

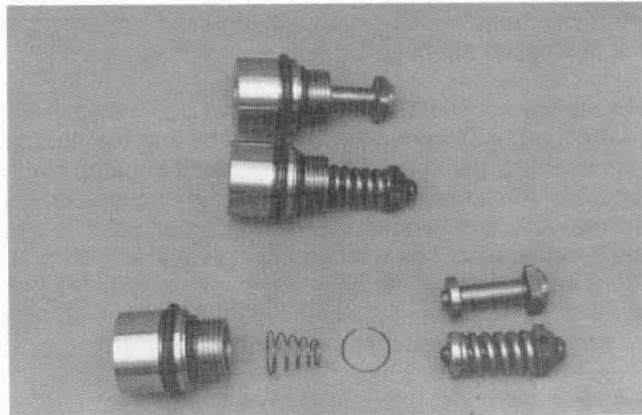
Product Type		M35 Variable Pump	M35 Tandem Pump
<b>Displacement</b>			
In <sup>3</sup> /Rev		2.1	2.1 (each section)
cc/Rev		35	35 (each section)
<b>Input Speed</b>			
Max - RPM (Full Angle)		4500	ALL UNITS →
Continuous - RPM (Full Angle)		3600	
<b>Input Mounting Flange (per SAE J744)</b>			
		SAE B	SAE B
<b>Input Shaft (Std. Spline)</b>			
Number of Teeth		15	ALL UNITS →
Pitch		16/32	
<b>Weight</b>			
LBS		55	99
KG		25	45
<b>Pressure</b>			
Maximum	PSI	5000	ALL UNITS →
	BAR	345	
Continuous	PSI	3000	ALL UNITS →
	BAR	210	
<b>Case Pressure</b>			
Continuous	PSI	25	ALL UNITS →
	BAR	1.7	
Maximum (Cold Start)	PSI	75	ALL UNITS →
	BAR	5.2	
<b>Temperature at Hottest Point in Transmission (normally at case drain)</b>			
Maximum	°F	220	ALL UNITS →
	°C	104	
Continuous	°F	180	ALL UNITS →
	°C	82	
<b>Fluid Viscosity Limits -- SUS (CST)</b>			
Optimum		70 (13)	
Min. Continuous		55 (9.0)	
Min. Intermittent		47 (6.4)	ALL UNITS →
Max. Continuous		500 (110)	
Max. Cold Start		7500 (1600)	
<b>Suggested Filtration</b>			
Dedicated Reservoir		Beta 10 = 1.5 to 2.0	ALL UNITS →
Common Reservoir		Beta 10 = 10 to 20	
<b>Charge Inlet Vacuum at Sea Level</b>			
Normal	in. Hg	5	
	BAR (abs.)	.8	ALL UNITS →
Cold Start	in. Hg	10	
	BAR (abs.)	.7	



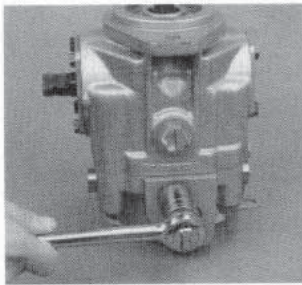
**Fig. 25 - Remove Check and Relief Valve Plug (PV)**



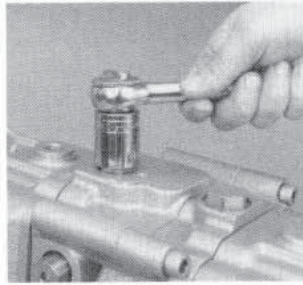
**Fig. 26 - Remove Check and Relief Valve Plug (PT)**



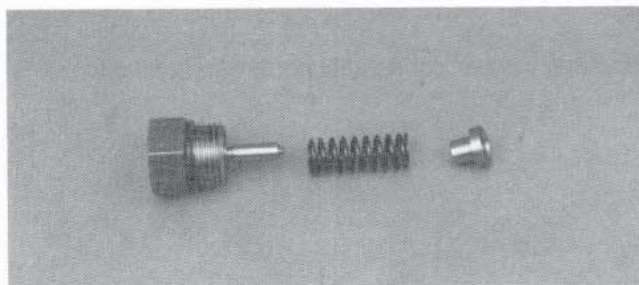
**Fig. 27 - Check and Relief Valve Components**



**Fig. 28 - Remove Charge Relief Valve Plug (PV)**



**Fig. 29 - Remove Charge Relief Valve Plug (PT)**



**Fig. 30 - Charge Relief Valve Components**

### Check and High Pressure Relief Valves

Remove the check and high pressure relief valves with a 5/16" internal hex wrench.

Remove the valve cartridge assembly from the pump end cap. Inspect the valve and mating seat in the end cap for damage or foreign material.

The check poppet or relief valve is retained in the special plug by a circlip. The poppet or valve and check valve spring may be removed from the special plug by pulling straight out. When reassembling, install the check valve spring into the special plug with its larger diameter toward the plug, and snap the poppet or valve into position in the plug.

Reinstall the valve cartridge (with O-rings) into the end cap. Torque the plug to 30 to 50 ft.lbs. (41 to 68 Nm).

#### CAUTION

The relief valves are factory set and should not be tampered with except for replacing the entire valve.

### Charge Pressure Relief Valve

Remove the charge relief valve hex plug with a 1" wrench.

Remove the spring and poppet from the end cap.

#### CAUTION

Do not allow the poppet to fall into the pump housing.

Do not alter the shims (which may be installed between the spring and valve plug) or interchange parts with another valve. Inspect the poppet and mating seat in the end cap for damage or foreign material.

Reinstall the poppet, spring, and plug (with shims and O-ring) into the end cap. Torque the plug to 40 to 100 ft.lbs. (54 to 135 Nm).

## M35 Tandem Pump -- PT (Minor Repair)

COMMON PARTS		
ITEM	DESCRIPTION	QTY
B02	SEAL-LIP	1
B43	PLUG, ST THD	4
B45	PLUG, ST THD	2
B50	SCREW, SOCKET HD METRIC	4
B51	SEAL, LIP	2
E06	O-RING	1
E07	CARRIER, SEAL	1
E08	RING, RETG	2
G05	O-RING	1
G10	O-RING	1
H01	PLUG ASSY, CHG RELIEF	1
H05	O-RING	1
H06	SHIM, CHG. RELIEF	1
H07	SPRING, COMPRESSION	1
H08	POPPET, CHG.RELIEF	1
M01	PLUG, SPECIAL	4
M02	O-RING	4
M03	O-RING	4
M04	SPRING, CONICAL COMP	4
M05	RING, RETAINING	4
N05	SHIM, TRUNNION	4
N06	SPACER	2
N07	O-RING	4
N08	COVER, TRUNNION	2
N09	CARRIER, TRUNNION SEAL	2
N10	SCREW	6

RELIEF VALVE GROUP		
ITEM	DESCRIPTION	QTY
M10A	POPPET-CHECK VALVE	1
M20A	POPPET-CHECK VALVE	1
M10B	VALVE, RELIEF	1
M20B	VALVE, RELIEF	1
M10C	VALVE, RELIEF	1
M20C	VALVE, RELIEF	1
M10D	VALVE-RELIEF	1
M20D	VALVE-RELIEF	1
M10F	VALVE-RELIEF	1
M20F	VALVE-RELIEF	1
M10G	VALVE-RELIEF	1
M20G	VALVE-RELIEF	1
M10H	VALVE-RELIEF	1
M20H	VALVE-RELIEF	1
M10J	VALVE-RELIEF	1
M20J	VALVE-RELIEF	1
M10M	VALVE-RELIEF	1
M20M	VALVE-RELIEF	1

FILTRATION GROUP		
ITEM	DESCRIPTION	QTY
J5AA	PLUG, ST THD	2
J7AA	PLUG, ST THD	1

SHAFT GROUP		
ITEM	DESCRIPTION	QTY
E02C	KEY	1

CHARGE PUMP GROUP		
ITEM	DESCRIPTION	QTY
G07A	O-RING (NO CHARGE PUMP)	1
G08A	SCREW SOCKET HD METRIC	4
G09A	COUPLING	1
G01S	PIN, ST HDLS (11.8 CC/REV)	1
G02S	PIN, STRAIGHT	1
G03S	GEROTOR ASSY	1
G04S	SPACER-GEROTOR	1
G06S	O-RING	1
G07S	O-RING	1
G08S	SCREW SOCKET HD METRIC	4
G09S	COUPLING	1
G01R	PIN, ST HDLS (16.4 CC/REV)	1
G02R	PIN, STRAIGHT	1
G03R	GEROTOR ASSY	1
G04R	SPACER-GEROTOR	1
G06R	O-RING	1
G07R	O-RING	1
G08R	SCREW SOCKET HD METRIC	4
G09R	COUPLING	1

AUXILIARY FLANGE GROUP		
ITEM	DESCRIPTION	QTY
S07A	PLUG ST THD	1
S10A	ADPT. SAE "A" FLANGE (9T)	1
S11A	SCREW-HEX HD	2
S12A	WASHER	2
S13A	COUPLING	1
S14A	O-RING	1
S15A	PLATE COVER	1
S16A	SCREW HEX HD	2
S18A	SPACER	1
S19A	O-RING	1
S07B	PLUG ST THD	1
S10B	ADPT. SAE "B" FLANGE (13T)	1
S11B	SCREW-HEX HD	2
S12B	WASHER	2
S13B	COUPLING	1
S14B	O-RING	1
S15B	'B' FLANGE COVER	1
S16B	SCREW HEX HD	2
S17B	PIN SPG	1
S18B	SPACER	1
S19B	O-RING	1
S04C	FLANGE COVER (NO ADPT.)	1
S05C	O-RING	1
S07C	PLUG	1
S13Z	COUPLING	1
S14Z	O-RING	1
S15Z	GEAR PUMP	1
S16Z	SCREW HEX HD	2

Description	Page
<b>INTRODUCTION</b> .....	1
<b>GENERAL DESCRIPTION</b> .....	2
Hydraulic Schematic.....	2
<b>TRANSMISSION HYDRAULIC SUPPORT SYSTEM</b> .....	3
Basic Closed Circuit.....	3
Case Drain and Heat Exchanger.....	3
Charge System and Inlet Filter.....	3
High Pressure Relief Valves.....	4
<b>SAFETY PRECAUTIONS</b> .....	4
<b>PRODUCT SPECIFICATIONS</b> .....	5
Technical Data - Variable Displacement Pump / Tandem Pump.....	5
Technical Data - Fixed Displacement Motor / Variable Displacement Motor.....	6
<b>CONTROLS AND OPTIONS</b> .....	7
Direct Displacement Control.....	7
Auxiliary Mounting Pads.....	7
Charge Pumps.....	7
Bypass Valve.....	7
<b>START-UP AND MAINTENANCE</b> .....	8
Fluids.....	8
Start-Up Procedure.....	8
Maintenance.....	8
<b>TROUBLESHOOTING</b> .....	9
Gauge Installation.....	9
Fault-Logic Diagrams.....	10
<b>INSPECTIONS AND ADJUSTMENTS</b> .....	11
Direct Displacement Control.....	11
Check/High Pressure Relief Valves.....	11
Pump Charge Relief Valve.....	11
Bypass Valve.....	11
<b>MINOR REPAIR &amp; REPLACEMENT</b> .....	12
General.....	12
Shaft Seal.....	13
Trunnion Seals.....	14
Trunnion Cover.....	14
Check and High Pressure Relief Valves.....	15
Charge Pressure Relief Valve.....	15
Integral Charge Pump and Auxiliary Pump Mounting Pad (Variable Pump).....	16
Integral Charge Pump (Tandem Pump).....	18
Rear Shaft Cover (Tandem Pump).....	20
Auxiliary Pump Mounting Pad (Tandem Pump).....	20
Filtration and Charge Pump Options.....	21
<b>GENERAL PARTS IDENTIFICATION</b> .....	22
M35 Variable Displacement Pump - PV.....	22
M35 Tandem Pump - PT.....	24
M35 Fixed Displacement Motor - MF.....	26
M35 Variable Displacement Motor - MV.....	26
<b>UNIT IDENTIFICATION</b> .....	27
<b>MODEL CODE</b> .....	28
M35 Variable Displacement Pump - PV.....	28
M35 Tandem Pump - PT.....	30
M35 Fixed Displacement Motor - MF.....	32
M35 Variable Displacement Motor - MV.....	33
<b>SUNDSTRAND - SAUER SERVICE CENTERS -- NORTH AMERICA</b> .....	35



## 2. MOUNTING THE FLOW METER AND OPTIONAL PRESSURE TRANSDUCER

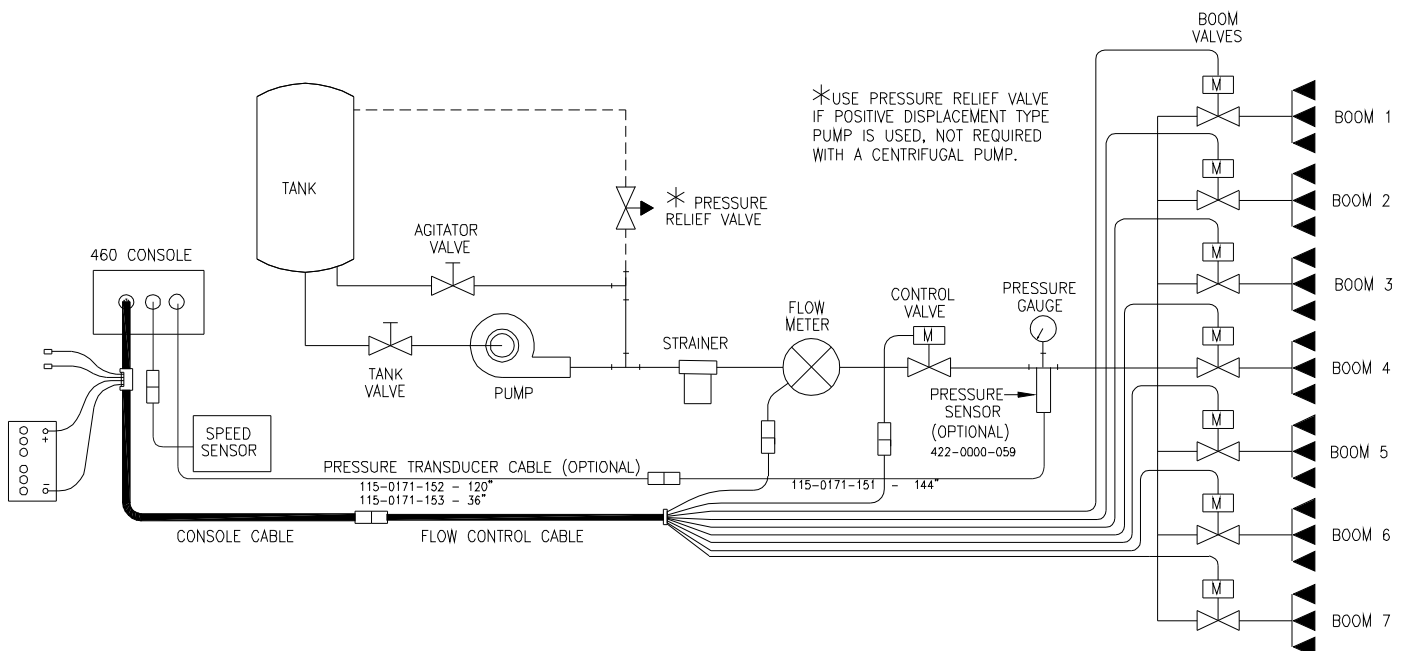
### FLOWMETER

- 1) Mount Flow Meter in the area of the boom valves per [Figure 4](#). All flow through Flow Meter must go to booms only, i.e., no return line to tank or pump after Flow Meter.
- 2) Mount Flow Meter horizontal to the ground. Use the bracket to secure the Flow Meter.
- 3) For best results, allow a minimum of 7 1/2 inches [20 cm] of straight hose on inlet of Flow Meter. Bend radius of hose on outlet of Flow Meter should be gradual.
- 4) Flow must be in direction of arrow on Flow Meter.


**NOTE:** It is essential, when using suspensions, that the system be thoroughly rinsed out each day after use.

### OPTIONAL PRESSURE TRANSDUCER















- 1) Mount optional pressure transducer, part #422-0000-059, on desired location. Use cables 115-0171-152 (or 115-0171-153) and 115-0171-151.
- 2) With pump turned off and 0 PSI [kPa] on the lines, enter 0 for pressure calibration (cal pressure) under Data Menu Key.
- 3) When system is operating, system PSI [kPa] will be displayed when the  or  key is depressed.



**FIGURE 4**




**NOTE:** If an entry selection error is made during steps 1-6, place the power ON/OFF switch to OFF. Depress  and hold while placing the power ON/OFF switch to ON. This will reset the console.

The display will show *CAL US-VOLUME PER ACRE*. The following steps must be followed:

- 1) Display *US-VOLUME PER ACRE*, *SI-VOLUME PER HECTARE*, or *TU-VOLUME PER 1000 SQ FT*.
  - a) Depressing momentarily  steps the display from *US-VOLUME PER ACRE* to *SI-VOLUME PER HECTARE*.
  - b) Depressing momentarily  steps the display from *SI-VOLUME PER HECTARE* to *TU-VOLUME PER 1000 SQ FT*.
  - c) Depressing momentarily  steps the display from *TU-VOLUME PER 1000 SQ FT* to *US-VOLUME PER ACRE*.
- 2) Selecting US, SI, or TU.
  - a) To select US, SI, or TU, press  until the desired code is displayed.
  - b) Momentarily depress , the display will now display *CAL SP1-WHEEL DRIVE*.
- 3) Display *SP1-WHEEL DRIVE* or *SP2-RADAR SPEED SENSOR*.
  - a) Depressing momentarily  steps the display from SP1 to SP2.
  - b) Depressing momentarily  steps the display from SP2 to SP1.
- 4) Selecting SP1 or SP2.
  - a) To select SP1 or SP2, press  until desired code is displayed.
  - b) Momentarily depress , the display will now display *CAL C-SD-STANDARD VALVE*.
- 5) Display *C-SD-STANDARD VALVE*, *C-F-FAST VALVE*, *C-FC-FAST CLOSE VALVE*, *C-P-PWM VALVE* or *C-PC-PWM CLOSE VALVE*.
  - a) Depressing momentarily  steps the display from C-SD to C-F.
  - b) Depressing momentarily  steps the display from C-F to C-FC.
  - c) Depressing momentarily  steps the display from C-FC to C-P.
  - d) Depressing momentarily  steps the display from C-P to C-PC.
  - e) Depressing momentarily  steps the display from C-PC to C-SD.


14) **OFF RATE PERCENT 30**

Used to set the percent of off target value. Alarm sounds when the actual rate is off from the target rate by a specified percent. The off target value is preset to 30%, but may be changed to a different number.

- a) Display will show *OFF RATE PERCENT 30*. Press  .
- b) Display will show *OFF RATE PERCENT E*. Enter new off rate percent and press  .
- c) Momentarily depress  to advance to HIGH PWM OFFSET 253.


15) **HIGH PWM OFFSET 253**

Used to set the maximum desired RPM or hydraulic output of control valve.







- a) Display will show *HIGH PWM OFFSET 253*.
- b) Place product switch on MAN, boom switches and master switch ON. Hold INC/DEC switch to increase. If motor exceeds desired RPM, decrease number by 10 and push INC again.
- c) Decrease the 253 number displayed until motor runs at desired maximum RPM, then enter a number of 10 more.
- d) Momentarily depress  to advance to LOW PWM OFFSET 1.

16) **LOW PWM OFFSET 1**

Used to set the minimum desired RPM or hydraulic output of control valve. Used to set the zero point or shut-off point of control valve.

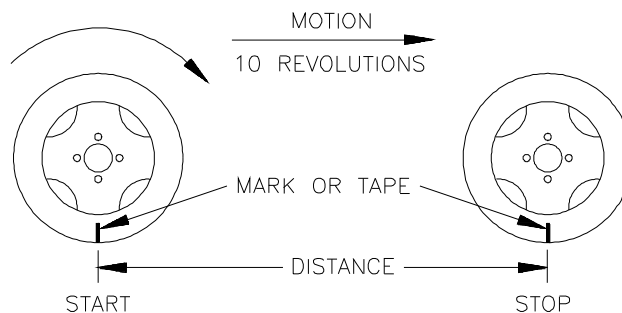
- a) Display will show *LOW PWM OFFSET 1*.
- b) Place product switch on MAN, boom switches and master switch ON. Hold INC/DEC switch to decrease until motor stops. Increase the number displayed until motor runs, then enter a number of 10 less.
- c) Hold INC/DEC switch to decrease. If motor does not stop, lower offset number by 10 and push DEC switch again.
- d) Momentarily depress  to advance to PWM FREQUENCY 122.

17) **PWM FREQUENCY 122**

- a) Display will show *PWM FREQUENCY 122*.
- b) Press  . Enter the coil frequency of the PWM valve being used (i.e. 180 Hz). Press    , depress  again.
- c) Momentarily depress  to advance to DATA-LOCK.

### 3. CALCULATING "SPEED CAL"

- 1) Place a chalk mark or tape onto the vehicle tire that the Speed Sensor mounted to it as shown below.
- 2) Mark the initial spot on the ground.
- 3) Drive vehicle straight ahead counting 10 full revolutions of the wheel. The mark must stop at the same position it was in when the vehicle started.
- 4) Measure the distance from the ground starting mark to stopping mark in inches [dm] (Round off fractions).
- 5) Write down this distance as the SPEED CAL number; keep it for future reference when programming the Console.



**NOTE:** This measurement is critical to the performance of the Console. **MEASURE CAREFULLY.** Be sure tire is properly inflated before measuring. Measure tire in type of soil in which you will be spraying. Circumference of tire will vary when measured in soft soil versus hard packed soil. For best results, measure several times and average the results.

Large tires and very low speed applications may require additional magnets to insure accurate speed readings. Any even number of magnets may be used as long as they are of alternating color and equally spaced. After calculating "SPEED CAL", this number must be adjusted according to the number of magnets used.

$$\frac{\text{Normal Number of Magnets}}{\text{Actual Number of Magnets}} \times \text{Speed Cal} = \text{Adjusted Speed Cal}$$

Example:  $\frac{4}{6} \times 1200 = 800$

SCS 330, SCS 500 and SCS 550 normally use two magnets. All other consoles normally use four magnets.

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