

# DPS 550 OPERATING PROCEDURES

## TRUCK AND PROBE PLACEMENT

1. Clear site for utilities.
2. Engage Power Take Off (PTO) switch in cab of truck. Make sure truck is in PARK with the handbrake set.
3. **CHECK FOR OVERHEAD UTILITIES BEFORE RAISING MAST! CONTACT OF MAST WITH OVERHEAD UTILITIES MAY CAUSE SERIOUS INJURY OR DEATH.**

## SOIL GAS SAMPLE COLLECTION

1. Grease hammer DAILY.
2. Raise hammer to working height using the left spool valve handle.
3. Thread polytubing and silicon tubing through the interior of the sampling probe, coupler and through the hammer pin hole.
4. Place probe coupler/hammer pin around neck of hammer.
5. Lower hammer onto sampling probe being careful not to pinch the polytubing sampling tube.
6. Place probe coupler pin in place.
7. **IMPORTANT!** Lower the hammer onto the sampling probe until the mast foot lifts off the ground several inches. This places the probe into contact with the impacting hammer. If the probe is not in total contact with the hammer, the hammer unit can be severely damaged.
8. Engage Fast Idle Solenoid.
9. With probe and hammer in proper contact, engage the hammer by pushing down on the Manual Solenoid knob. Coordinate the pressure between the probe and the hammer so that positive pressure is always on the probe and hammer while hammering.
10. Disengage the Fast Idle Solenoid after hammering.
11. Add probe lengths as required.
12. Pull up the probes after sampling and lower the mast.
13. Disengage the PTO.
14. Secure all probes, equipment and tools.

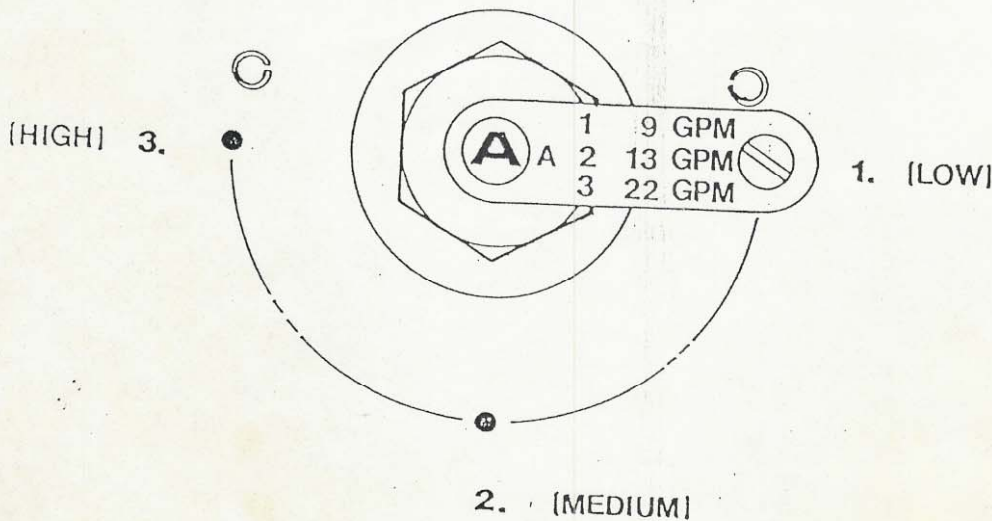
*Questions? call Wes or Tom  
Have fun !!*

STANLEY PRIORITY VALVE  
V-60

FLOW SELECTORS

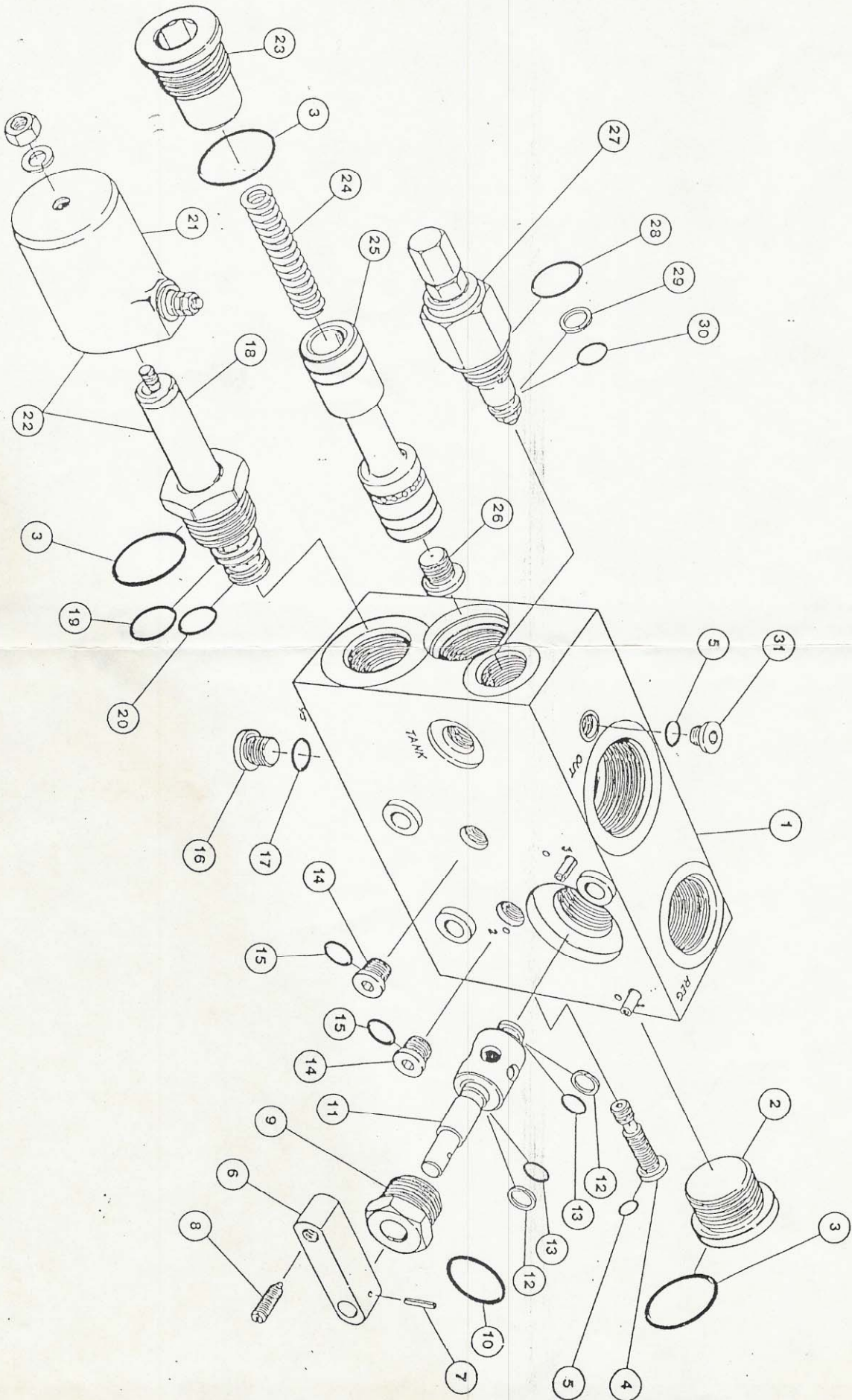
STANDARD FLOW COMBINATIONS AVAILABLE: MANY FLOWS NOT SHOWN ARE AVAILABLE.

<u>SELECTOR</u>	<u>PART NUMBER</u>	<u>REG. FLOW (GPM)</u>
"A"	100950	9-13-22
"B"	100951	13-22-30
"C"	100952	13-16-22
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"D"	100953	9-13-30
"E"	100954	9-13-34
"F"	100955	9-30-34
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"G"	100956	13-22-34
"H"	100957	22-30-34
"J"	100958	9-22-34
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"K"	100959	9-22-30
"Z"	100918	CUSTOMER OPTION



STANLEY PRIORITY VALVE  
V-60  
PART NUMBER 100912 - 12V  
PART NUMBER 100924 - 24V

<u>ITEM</u>	<u>PART NUMBER</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1	100901	BODY	1
2	350233	SAE PLUG (-12 HP50N)	1
3	06891	O-RING (3-912-90D)	4
4	100908	ORIFICE .030	1
5	02901	O-RING (3-902-90D)	2
6	100909	SELECTOR HANDLE	1
7	372043	ROLL PIN	1
8	372042	DETENT	1
9	100902	SELECTOR NUT	1
10	01604	O-RING (3-910-90D)	1
11	OPTIONAL	FLOW SELECTOR	1
12	350780	BACK-UP RING (MS-28774-011)	2
13	350784	O-RING (2-011-90D)	2
14	350023	SAE PLUG (-3HP50N)	2
15	350792	O-RING (3-903-90D)	2
16	350041	SAE PLUG (-4HP50N)	1
17	350770	O-RING (3-904-90D)	1
18	378005	SOLENOID CORE	1
19	350748	O-RING (2-016-90D)	1
20	00175	O-RING (2-014-90D)	1
21	378006	COIL 12 VOLT	1
21	378007	COIL 24 VOLT	1
22	378003	SOLENOID ASSEMBLY 12 VOLT	1
22	378004	SOLENOID ASSEMBLY 24 VOLT	1
23	100905	SPRING CAP	1
24	100907	SPRING	1
25	100906	SPOOL	1
26	100922	ORIFICE SPOOL	1
27	378013	RELIEF CARTRIDGE	1
28	01605	O-RING (3-908-90D)	1
29	350776	BACK-UP RING (MS-28774-012)	1
30	00055	O-RING (2-012-90D)	1
31	350016	SAE PLUG (-2HP50N)	1



# INSTALLATION INSTRUCTIONS DUAL COIL SOLENOIDS

**GENERAL:** Dual coil solenoids have an extremely high work output for their size because of the high amperage "pull" winding and a separate low amperage "hold" winding.

**CAUTION:** If fitted with internal contacts and the plunger does not "bottom" or complete its stroke, the internal switch contact will not disconnect the high current winding. The solenoid will burn out in 30 seconds. On all model solenoids, improper electrical wiring can cause burn out which is not covered in the warranty.

## 1. MECHANICAL ASSEMBLY INSTRUCTIONS:

- (a) Bolt in place using a bracket which is vibration and shock resistant.
- (b) Connect linkage using a ball, swivel joint or bead chain. The linkage or chain must exert negligible side force on plunger. Side forces cause solenoid hobbin wear, reduced pull force due to binding and plunger hang up. The plunger must "bottom" at the end of its stroke to actuate solenoids with internal switch.
- (c) Install a de-energized plunger "stop" in the system to limit the plunger stroke to its specified value or less. Equipment vibration may cause the plunger to move out resulting in a large stroke and binding so the solenoid may not pull in the plunger when it is energized.
- (d) Models with an "S" suffix (ABS, ABCS, or BS) should have an internal spring which can be removed should your application not require it. To remove the internal spring, pull the rubber boot from the solenoid body, remove the spring from the plunger and re-assemble.

## 2. ELECTRICAL ASSEMBLY INSTRUCTIONS:

Solenoid Series	1502		1504		2001		2003		D		
Length of Stroke	1"	1"	1"	1"	1"	1"	1"	1"	1.5"	1.5"	1.5"
DC Volts (rated)	12	24	12	24	12	24	12	24	12	24	32
Pull Amperes	30	17	41	22	43	23	60	37	42	24	17
Hold Amperes	0.7	0.25	0.75	0.35	0.6	0.3	0.8	0.4	0.6	0.3	0.2

Solenoid Series	1751/1756		1753/1757		2370	
Length of Stroke	1"	1"	1"	1"	1.5"	1.5"
DC Volts (rated)	12	24	12	24	12	24
Pull Amperes	44	25	30	18	58	31
Hold Amperes	1.1	0.5	0.8	0.4	1.7	0.6

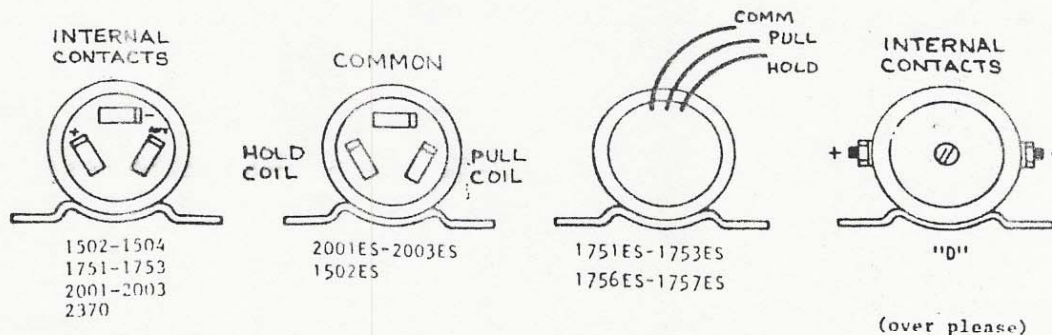
### MAXIMUM WIRE LENGTH (FEET)

Solenoid Series	1502 1753/1757		1504 1751/1756/2001		2003/2370		D		
Volts	12	24	12	24	12	24	12	24	32
Wire Gauge									
16 or 1.5mm <sup>2</sup>	--	--	--	21	--	--	--	17	32
14 or 2.5mm <sup>2</sup>	12	40	9	34	5	9	7	27	51
12 or 4.0mm <sup>2</sup>	19	64	14	54	9	14	12	43	81
10 or 6.0mm <sup>2</sup>	20	102	23	86	14	23	19	68	129

### FUSE OR CIRCUIT BREAKER RANGE IN AMPS

Solenoid Series	1502 1753/1757		1504 1751/1756/2001		2003/2370		D		
Volts	12	24	12	24	12	24	12	24	32
Slow Blow Fuse Type 3AG Breaker (AMPS)	8	6	8	7	20	8	8	8	7
Max 10 Sec Trip (AMPS) Min	8	6	12	6	15	12	14	8	6
	6	4	9	4.5	12	9	10	6	4

### TERMINAL LOCATIONS



### NOTICE

If you do not complete the installation of our product, please ensure that these instructions, and any other design information, literature or drawings relating to the installation of this product are given to the person who does do that installation.



**SYNCHRO-START PRODUCTS, INC.**

6250 WEST HOWARD STREET, NILES, IL 60648

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3. SOLENOID CONNECTIONS:

- (a) Wire Size - The chart indicates the distance from power source (battery) to the solenoid.
- (b) Circuit Breaker - An overload protection device with minimum voltage drop is recommended to protect against solenoid burn out if the plunger fails to bottom on internally switched units. Select a continuous ampere rating per chart having a trip characteristic of 0.1 to 2 seconds.
- (c) Control - Due to the intermittent "Pull Current" requirement, ON-OFF and other control devices may be continuous duty rated at 1/3 the "Pull Current".

4. TEST PROCEDURE TO DETERMINE PLUNGER HAS BOTTOMED:

- (a) On units with an auxiliary terminal, connect a voltmeter or appropriate light (voltage rating) between auxiliary and "+" terminals. When the solenoid is energized and the plunger bottoms, the voltmeter will indicate the battery voltage or the light is energized.
- (b) Visual Method - Push the plunger to the full bottomed position and measure the plunger extension length from the solenoid body before the linkage is connected. Connect linkage and energize the solenoid. If the plunger has fully bottomed, the plunger extension lengths should be the same.

5. TEST PROCEDURE TO DETERMINE ADEQUATE VOLTAGE:

Connect a DC Voltmeter across the solenoid terminals and manually hold the plunger so that it cannot bottom. Energize the solenoid just long enough to obtain a voltmeter reading, then connect the same voltmeter across the power source and manually hold the plunger so that it cannot pull in just long enough to obtain a voltmeter reading. The difference between the two voltmeter readings is the voltage reduction due to wiring which should normally be less than 7% of rated voltage.

6. CORRECTIVE ACTION:

If the power source voltage is low, check for partially discharged battery, etc. If the solenoid voltage is low, check for undersized hookup wire, high resistance connections and underrated control device contacts.

7. WARRANTY:

Proper installation is extremely important. The plunger must bottom to actuate the pull coil on internally switched units. If the contacts fail to open and the circuit is not protected against continuous high amperage, the pull coil will burn out.

Solenoid operation more than 6 times per minute will cause solenoid heating. Coil damage due to improper installation or excessive repetitive operation is not covered in the warranty.

