



PlowGuard - Plow Balance System

Patent No. 6,467,553

PART NUMBER: SG07230012

REV: C DATE: 07/03/14



List of Included Documents

<u>Description</u>	<u>Drawing Numbers</u>
Initial Setup/Adjustment Procedure	SG07230012
Plow Balance Valve – ½ load sense	SG03020003
Plow Balance Valve – full load sense	SG03020008
Custom Valve Setup Procedure	SG07100196
Plow Balance Valve – custom (3 coil)	SG03020024

Initial Set-Up / Adjustment Procedures

1. Operation with Plow Balance "turned off":

Typical Plow Weights of:
2,500 to 4,000 lbs. on the
road surface (scale).



Notice the slack in
the plow lift chains.

2. Operation with Plow Balance "turned on":

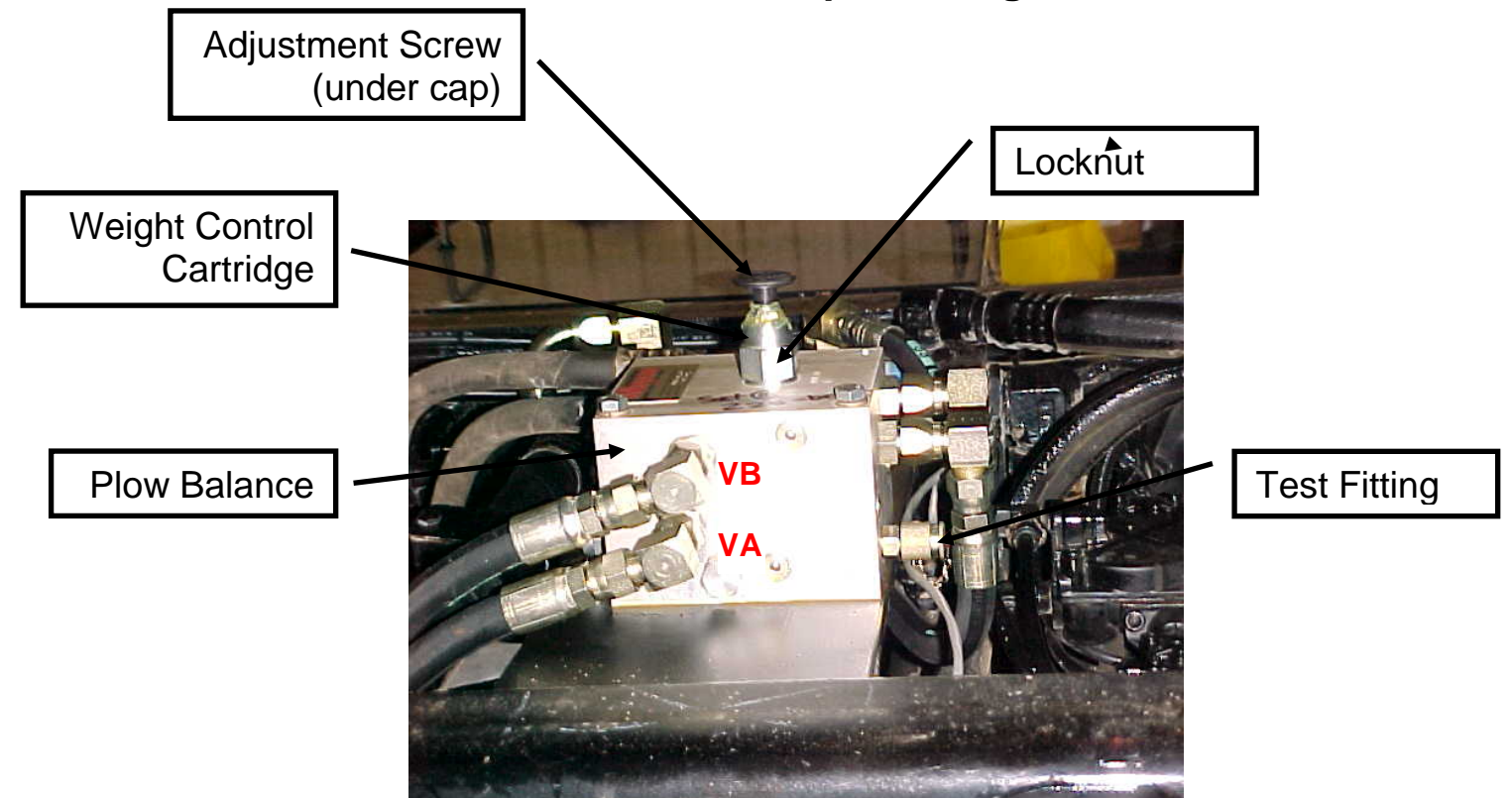
Recommended Plow
Weights of: 500 to 1,000 lbs.
on the road surface (scale).



Notice the plow lift
chains are now tight.

3. Adjust as follows:

- a. With plow on scale and Plow Balance valve turned on (as shown in item 2 above) check the scale reading.
- b. Loosen the Locknut on the Weight Control Cartridge, with a 9/16" wrench.
- c. Remove black plastic cap from the Adjustment Screw. Using a 5/32" allen wrench - turn Screw CW to make the plow *lighter on the road (scale)* - turn Screw CCW to make the plow *heavier on the road (scale)*. Increments of 1/8 to 1/4 of a turn are recommended, until the scale shows the desired plow weight.



Notes:

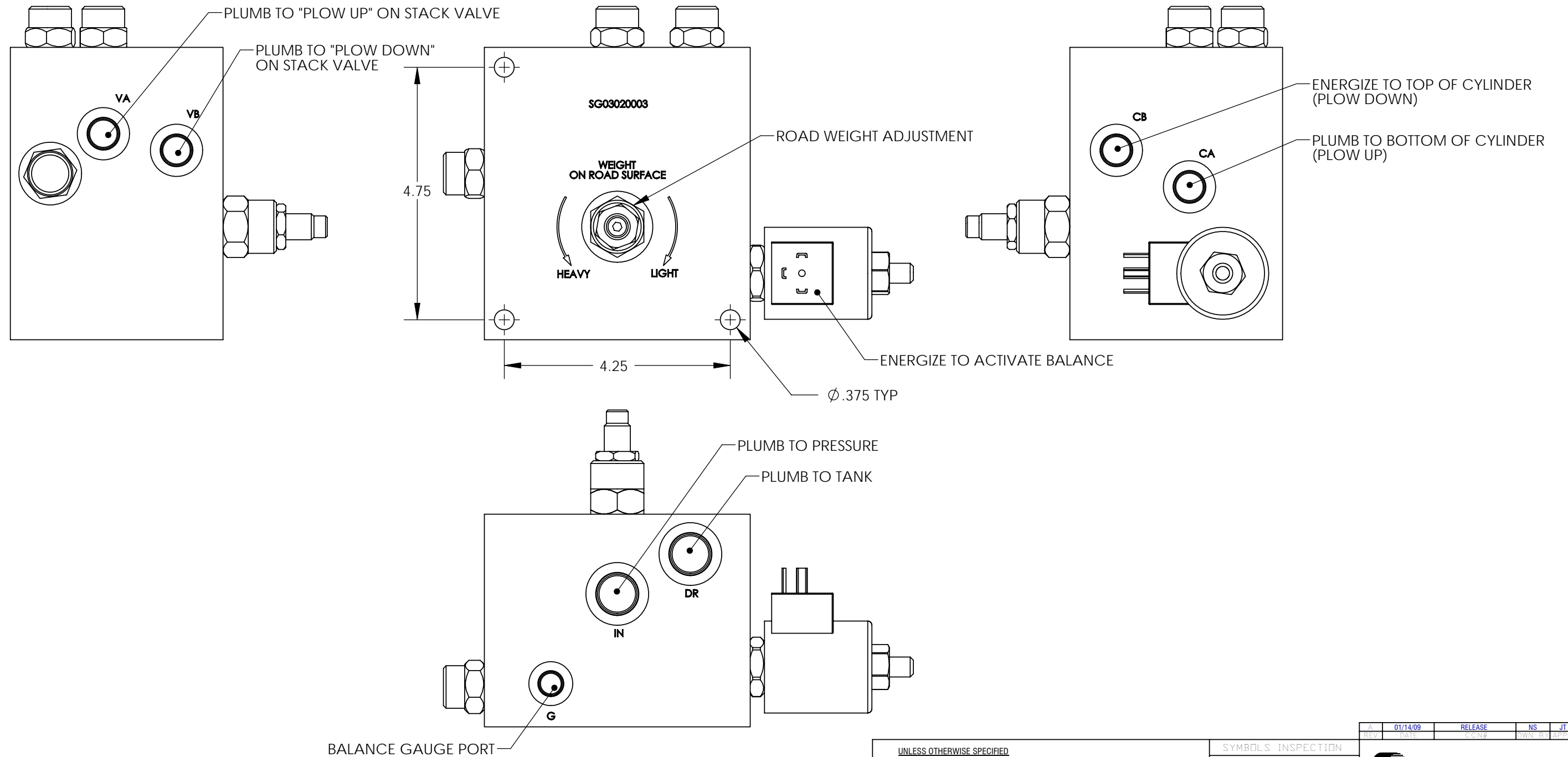
1. After the initial set-up, no further adjustment will be required, unless a lighter / heavier plow is installed on the truck.
2. Observe all safety precautions while making adjustments - stay clear of moving parts!

If you have any questions / comments, don't hesitate to call us: 847-573-3800

PLOW BALANCE VALVE GENERAL INFORMATION

"1/2 LOAD SENSE"

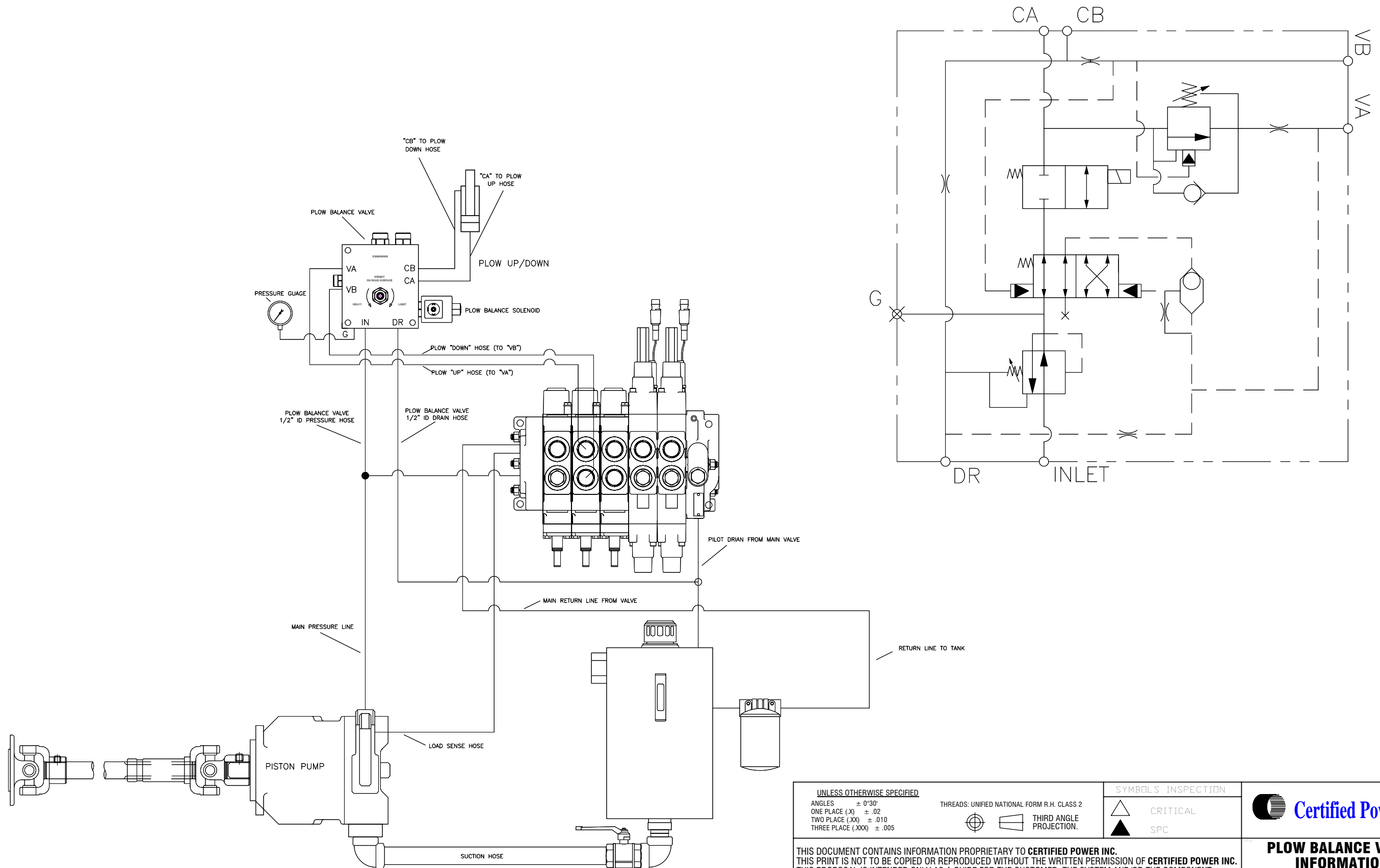
- NOTES:
1. PRESSURE AND DRAIN PORT ARE #8 SAE
 2. CYLINDER/VALVE PORTS ARE #6 SAE
 3. GAUGE PORT IS #4 SAE
 4. IF CYLINDER IS SINGLE ACTING PLUG CB PORT; HOWEVER VALVE MUST BE DOUBLE ACTING



UNLESS OTHERWISE SPECIFIED		THREADS: UNIFIED NATIONAL FORM R.H. CLASS 2		SYMBOLS INSPECTION	
ANGLES	± 0°30'	 THIRD ANGLE PROJECTION.	 CRITICAL	 SPC	
ONE PLACE (X)	± .02				
TWO PLACE (XX)	± .010				
THREE PLACE (XXX)	± .005				
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			NICK SCHULTZ 01/14/09 1-2		JIM TALBERT 01/14/09 1:2
SG03020003				A	

FLOW BALANCE VALVE SCHEMATIC AND PLUMBING OVERVIEW

"1/2 LOAD SENSE"



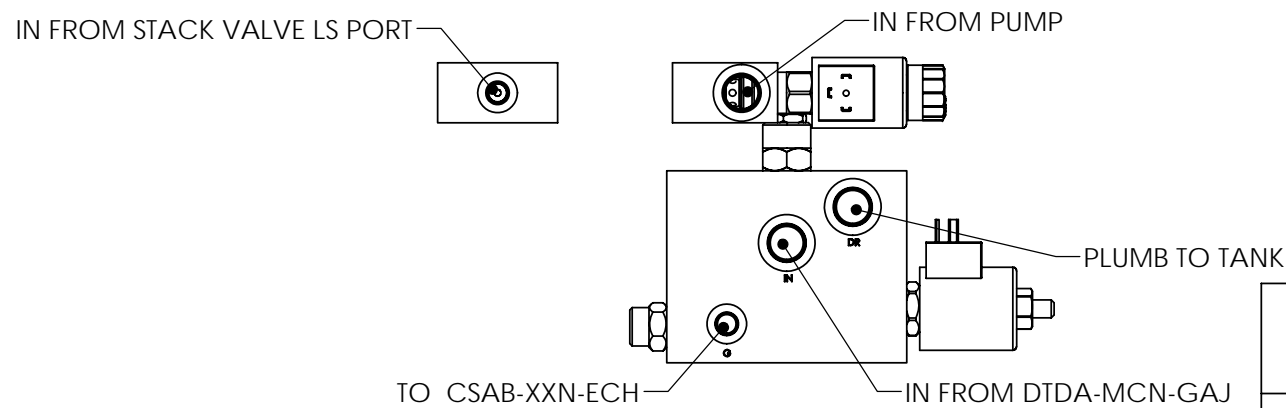
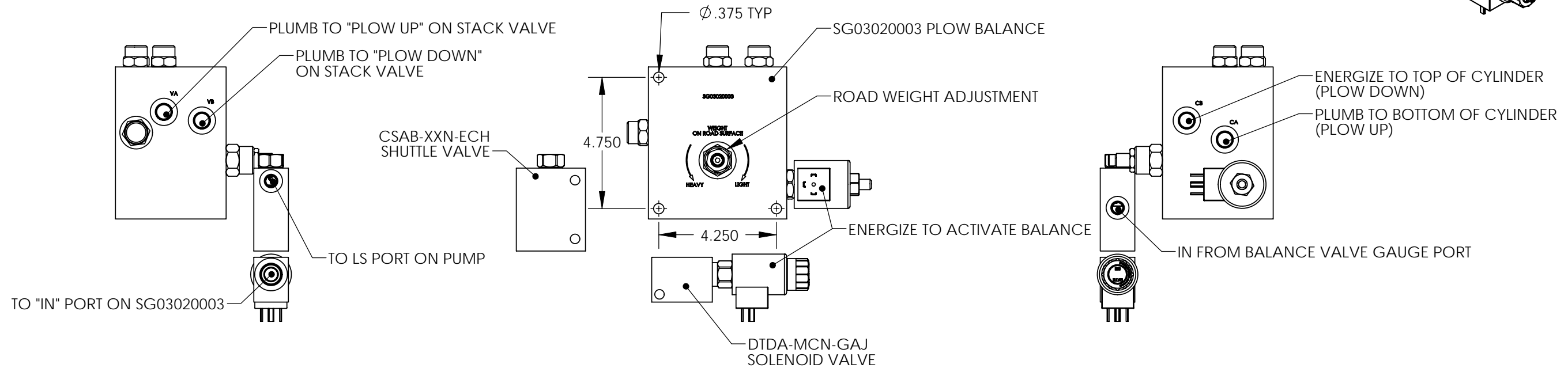
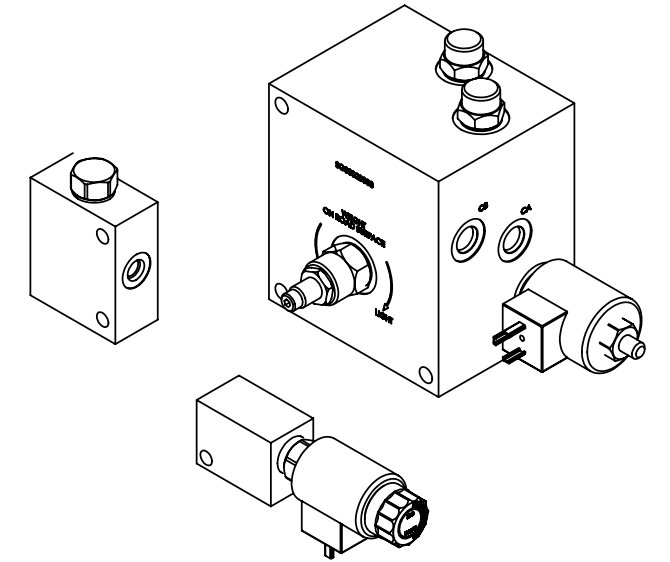
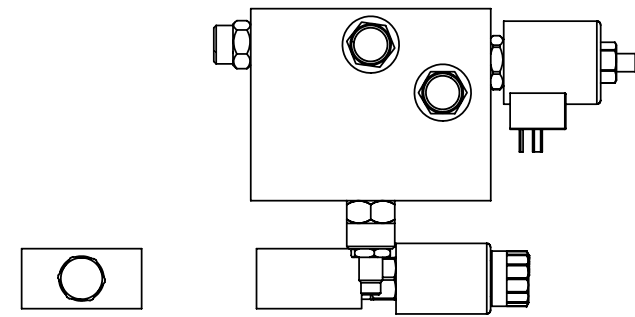
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<p>SG03020003</p>				<p>A</p>

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FLOW BALANCE VALVE GENERAL INFORMATION

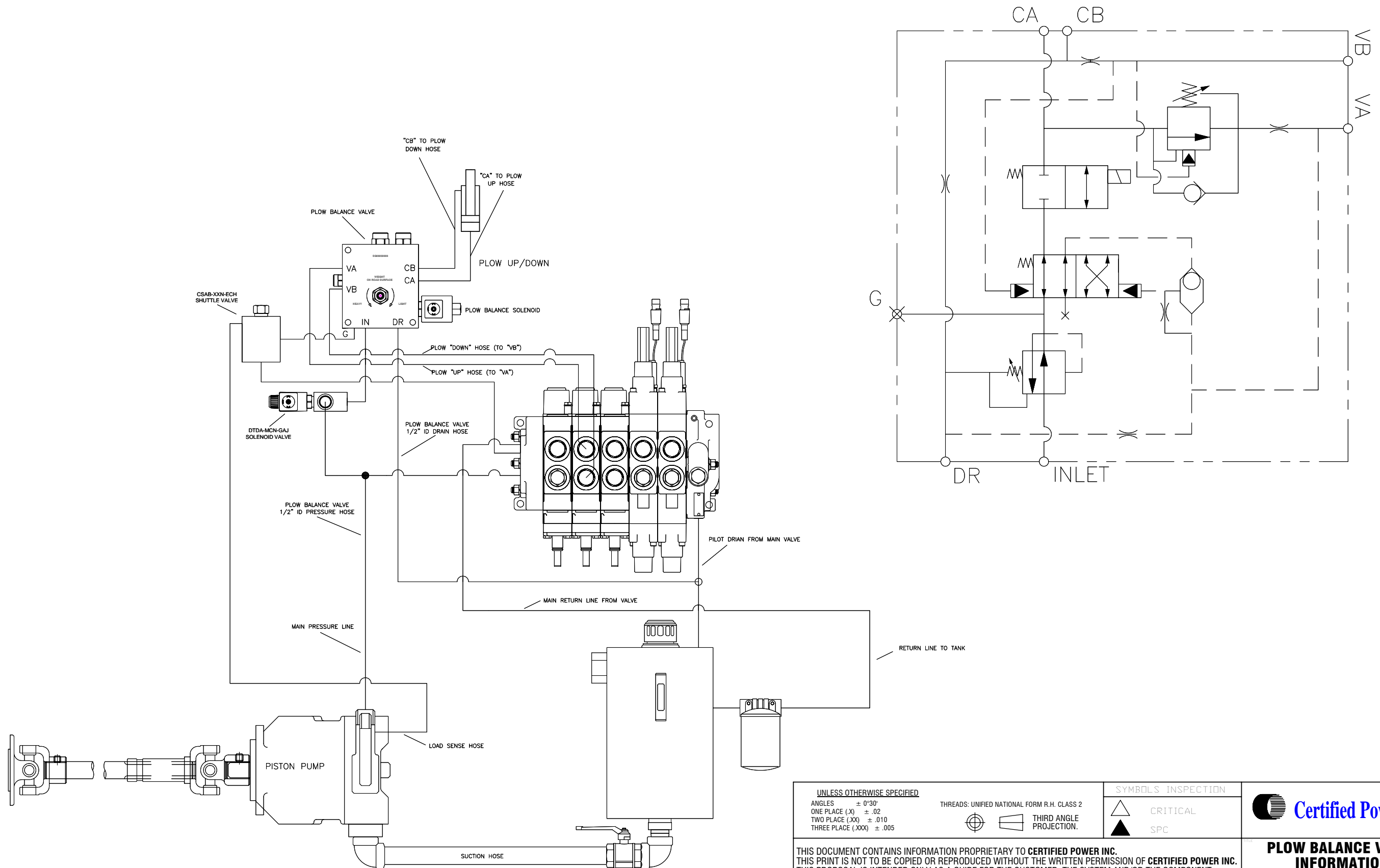
"FULL LOAD SENSE"



UNLESS OTHERWISE SPECIFIED		SYMBOLS INSPECTION											
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FLOW BALANCE VALVE SCHEMATIC AND PLUMBING OVERVIEW

"1/2 LOAD SENSE"



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JIM TALBERT	01/19/09	1:2								
			<p>SG03020008</p> <p style="text-align: right;">A</p>							

Truck Set Up;

1. After valve is mounted and plumbed correctly, truck set up may be done.
2. On PVG32 valves the Plow Down LS pressure should be adjusted to 1000PSI.

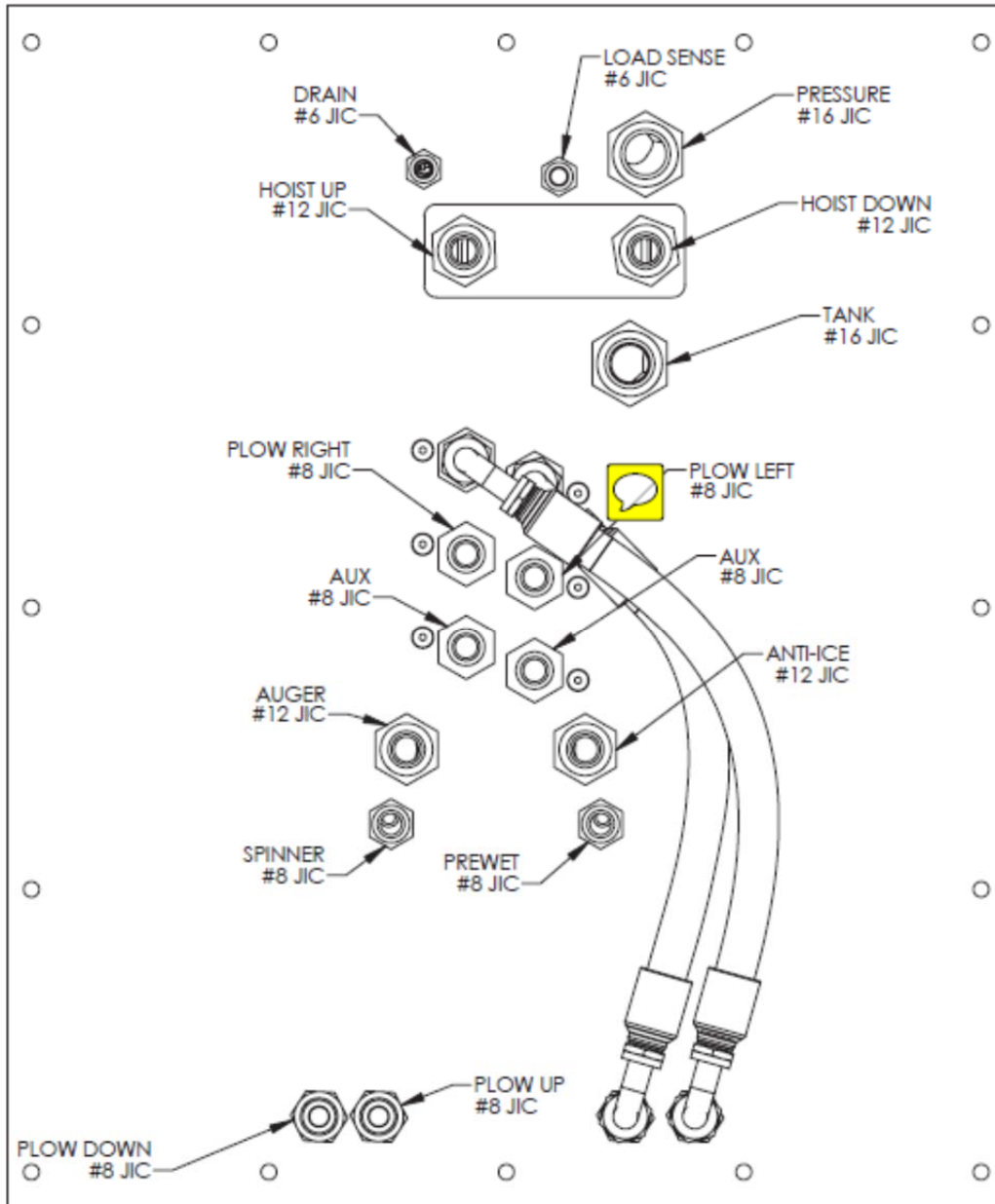
Refer to Setting individual function LS relief valves below if required.

- a. LS relief valves are set in the same fashion as the main relief on the Sauer inlet. You will need a long, ball ended, 4mm allen (hex) key to access them.
- b. Sections equipped with LS relief valves are independently settable between A and B ports. Refer to FIGURE 1 for the location of these ports.



FIGURE 1

To access the LS relief, remove the cover plug for the plow down 'B' port using an 1/8" Allen key



- c. To increase pressure turn the valve clockwise, to decrease counterclockwise.
- d. View the plow down setting on the gauge on the valve stack or on the cab display.

Set pump Stand By pressure to a minimum setting of 550 PSI as seen on gauge.

- a. Loosen retaining screw on side of compensator body
- b. Adjust Stand By pressure turning spool on end of compensator.
- c. Tighten retaining screw after adjustment.

- d. NOTE: System pressure is adjusted on the inboard screw and spool to 2000PSI. Check system max pressure (2000-2200 PSI) by dead head a function, observe the system gauge.



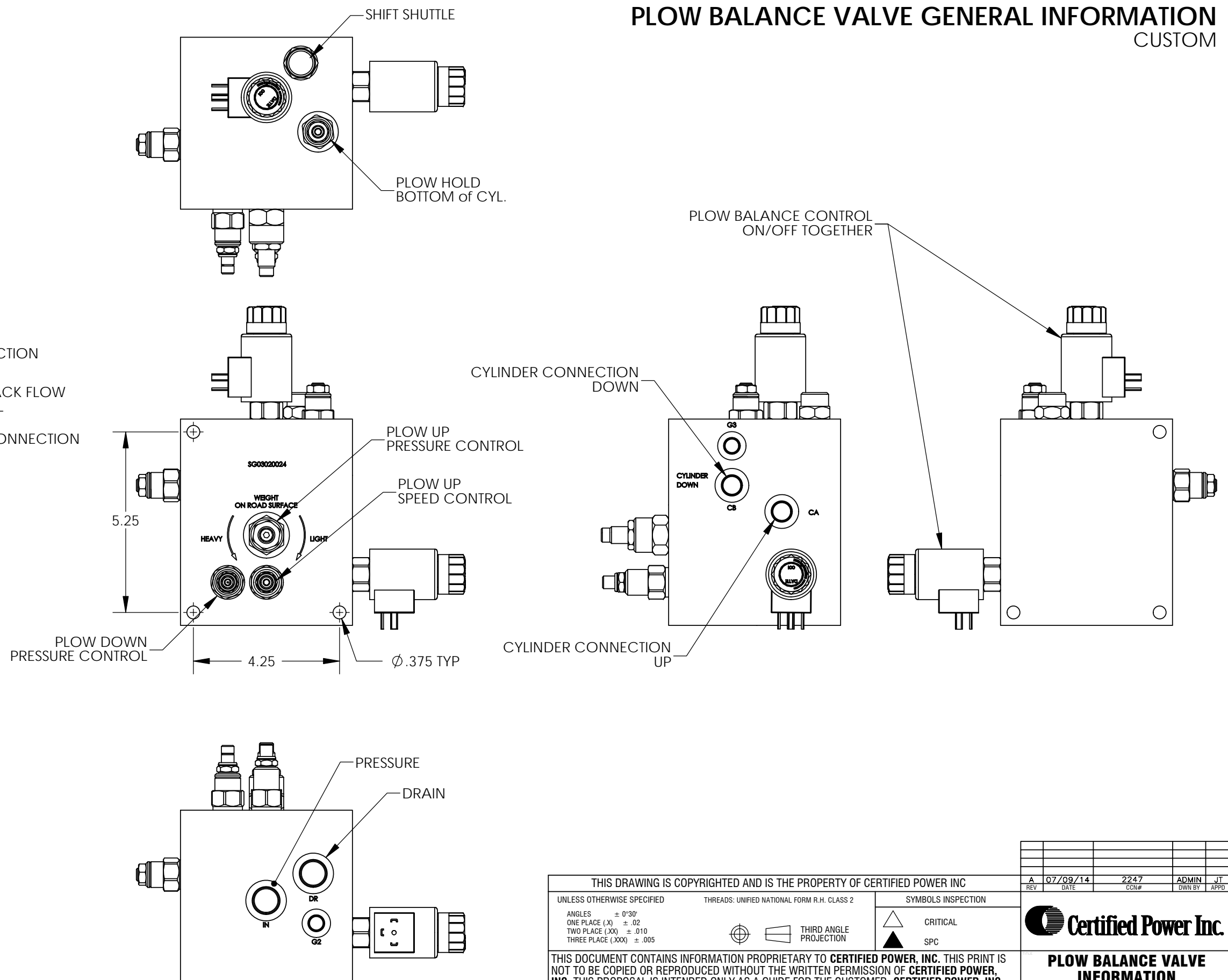
3. Set pump Stand By pressure to a minimum setting of 550 PSI as seen on gauge.
4. Attach gauges to all test ports G1, G2 and G3.
5. Confirm the Stand By pressure at 550 PSI.
6. Exercise plow up & down, without plow balance being energized the plow should act as if the plow balance is not in the circuit. Plow should hold and not drift down. If plow drifts down then check setting on Item [3] 9811-10H as set in bench setting, set valve higher by turning ¼ turn counterclockwise until drift stops.
7. Energize plow balance from cab of truck. With plow balance on inlet solenoid should be lighted and indicated as functional. If not check wiring for correct connections.
8. With plow balance on and coil powered adjust reducing relief valve Item [6] A306-279 by turning clockwise to increase pressure and counterclockwise to reduce pressure. Setting should be 465 PSI at G1 and valve setting should be locked in at this setting with lock nut.
9. With plow balance on and coil powered adjust reducing relief valve Item [8] A905-21H by turning clockwise to increase pressure and counterclockwise to reduce pressure. Setting should be 210 PSI at G3 and valve setting should be locked in at this setting with lock nut.
10. Put system into balance by pulling back on joy stick and then push forward for a short time this should cause plow to go into balance mode and float to the ground. At this time G1 and G2 should have nearly the same pressure reading. The only difference will be pressure drop thru valves.

11. Any additional adjustment of Item [6] or Item [8] may result in changes in the other. Item [6] effects Item [8] and Item [8] effects Item [6]. They are linked and at operational settings G2 should be approximately 465 PSI and G3 should be approximately 210 PSI.
12. All settings confirmed and valve is functional at this time, now a date stamp should be added to the area of the 'X' stamp and a final " personal initial " should be added as well.

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FLOW BALANCE VALVE GENERAL INFORMATION

CUSTOM



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A	07/09/14	2247	ADMIN	JT

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FLOW BALANCE VALVE INFORMATION

EPDM ADMIN	07/09/14	1-1
Jim Talbert	07/09/14	1:3
SG03020024		A