



OPERATING AND SAFETY MANUAL

**MODEL 10 AND MODEL 10 HS
PORTABLE AND STATIONARY
CAR CRUSHER**

#690 to Present

Study this manual before operating the crusher

**Huron, South Dakota
(605) 352-6469**

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Safety

CAUTION, WARNING & DANGER: WHAT THEY MEAN

Hazards are identified by the “Safety Alert Symbol” and followed by a signal word: Caution, Warning or Danger.



DECALS

The decals on the machine provide instruction for safe and correct operation.

Never make modifications affecting the safe operation or capacity without the expressed written approval of OverBuilt.

When OverBuilt approved modifications are made, the user is responsible for seeing that appropriate decals and instructions are

OPERATOR QUALIFICATIONS AND TRAINING

- ⇒ Only trained and authorized persons should operate the machine. To be qualified, you must understand the written instructions supplied by the manufacture, have training (including the actual operation of this machine) and know the safety rules and regulations of the job site.
- ⇒ Do not operate the machine until you fully understand the function of all controls, indicators and instruments.

LOWER YOUR LID!

***THE LID OF YOUR MACHINE WEIGHS OVER 20,000 LBS. IF LEFT IN THE UPPER POSITION SOME SEEPING OR DRIFTING MAY OCCUR. WE RECOMMEND IT BE LOWERED IF CRUSHING IS HAULTED DURING THE DAY AND AT THE END OF THE CRUSHING DAY!**

IMPORTANT

EYE AND EAR PROTECTION



Safety glasses and ear protection should be used at all times when operating or standing near the crusher.

Safety Devices

Valves are enclosed in a lockable cabinet. This allows you to secure the valves from unauthorized or unintentional use.

Safety locks are located on both ends of the Crusher bed and are ground accessible.

To lock the lid in the upright position.

- ✓ Make sure the lid is in the complete up position. Shut off crusher and remove the keys.
- ✓ Remove the pin on the locking arm and activate the ground accessible Safety Locks on both ends of the crusher by pulling the handle away from the crusher and locking them in the engaged position. Always use both locking devices.
(On older crushers the locking bar must be manually inserted under the lid uprights.)
- ✓ Once the locks are in place, lower the lid slowly onto the locking blocks. The lid is now blocked from falling, lock the cabinet so no one can activate the valves manually.
- ✓ Once the service work is done, reverse the process to unlock the lid. Always unlock both locks before proceeding. Serious damage can be done to the cylinders if one lock is still in place and the machine is operated.

NOTE: These safety locks are to prevent the top lid from falling under its own weight. They may not stop the lid from falling if you apply downward hydraulic pressure to the cylinders.



Putting downward hydraulic pressure on the lid with one or both of the safety lock mechanisms in place may damage the mechanisms or a cylinder rod.

Remove keys and do not run engine when the safety locks are in place.

Always inspect the safety locks to make sure they have not been damaged.

LOCKOUT TAGOUT PRECEDURE



Crusher lid may fall and death or serious injury will occur if the following precautions are not observed before getting on or into the crusher:

1. Raise lid to full height.
2. Activate the Safety Locks per the instructions outlined to the left.
3. Shut off crusher engine and lower lid slowly onto the locking bars.
4. Remove key from ignition.
5. Lock cabinet containing hydraulic valves and remove key, attach a LOTO tag to the handle.
6. Carry all sets of keys with you.
7. When finished, start engine, raise the lid and remove the safety locks from **BOTH** ends of the crusher **BEFORE** lowering the lid.

Important: Never leave the crusher lid in a raised position while the crusher is unattended unless the lid is locked out.

CRUSHER LOCATION



Lid rises higher than the frame of the machine. Operating this equipment near or below power lines may cause serious injury or death.

Machine should be positioned on level hard ground.

Never move crusher unless the crushing chamber is completely empty and the crusher lid is in the closed position.

Safe Operation of this crusher is the operator's responsibility. Listed below are some basic rules that can make an operator aware of dangerous practices to avoid and precautions to take for his own safety and the safety of others. Observance of these rules in addition to frequent examinations and periodic inspections of the equipment may prevent injury to personnel and damage to equipment.

- 1. **DO** study this manual before operating the crusher. If your crusher is equipped with a remote control, refer to that part of the manual for additional precautions.
- 2. **DO** make sure that all persons stay clear of the crusher during operation.
- 3. **DO** promptly report any malfunctions, unusual performance, or damage of the crusher.
- 4. **DO** inspect the crusher regularly, replace damaged or worn parts, and keep appropriate records of maintenance.
- 5. **DO** inspect the hydraulic system for leaks, worn or damaged hoses.
- 6. **DO** inspect the fluid levels prior to starting the engine.
- 7. **DO** keep the crusher clean, paying special attention to the electrical and hydraulic systems.
- 8. **DO** immediately repair or replace any worn or damaged parts prior to operating the crusher.
- 9. **DO** follow the **LOCKOUT PROCEDURE** (see page 2) prior to getting on or in the crusher.
- 10. **DO** lower the lid and shut off the engine prior to doing maintenance on the crusher.
- 11. **DO NOT** at anytime get in or reach in the crusher chamber while the engine is running. The lockout procedure must be strictly followed.
- 12. **DO NOT** operate the crusher without visually inspecting in and around the crusher for other personnel.
- 13. **DO NOT** operate the crusher unless you have a clear view of the machine.
- 14. **DO NOT** reach in or across moving parts.
- 15. **DO NOT** operate the crusher near or under power lines.
- 16. **DO NOT** move the crusher unless the crushing chamber is completely empty and the lid is in the down position.
- 17. **DO NOT LEAVE THE MACHINE UNATTENDED IN AUTO MODE! KEEP MACHINE IN SIGHT AT ALL TIMES!!**
- 18. **MOST OF ALL** use common sense when operating this or any other piece of equipment.

Safety on the job begins with you

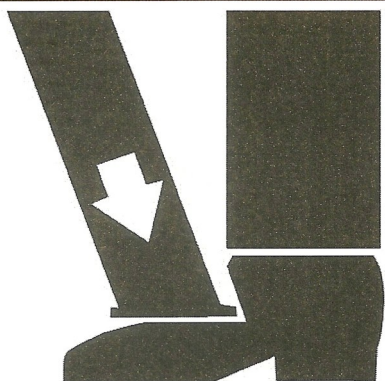
START-UP – DIESEL ENGINE

- ✓ Before starting the engine, read the manufactures engine operator's manual.
- ✓ Check all fluid levels, engine oil, coolant and hydraulic reservoir.
- ✓ Turn the ignition key until the starter engages.
- ✓ Allow the engine to warm up for a couple of minutes.
- ✓ Flip the throttle toggle switch to run at high RPM.
- ✓ You are now ready to run the lid up and down.
- ✓ Raise the lid by pulling the valve handle toward you.
- ✓ Lower the lid by pushing the valve handle away from you.
- ✓ **NOTE:** Operate the crusher manually to get familiar with it and to test its operation prior to using the remote control.
- ✓ Although the machine was tested at the factory it is always a good idea to check for oil leaks.

WARNING

Do not attempt to operate the controls until you have read and fully understand the safety and operating instructions in this manual, on the safety decals and all information provided with each piece of equipment before you operate. Determine the control and how to use it for each function before operating the equipment.

WARNING



CRUSHING HAZARD

Keep away from moving stabilizers.
Failure to do so may result in
serious injury or death

- ✓ **Hydraulic & Manual Landing Gear:** Pull safety pins on landing gear legs. Adjust the landing gear to the desired height using the hydraulic valves (if so equipped) or manually using an appropriate sized jack or the air system on the semi-tractor. Replace safety pins when you are done adjusting legs.
- ✓ **COLD WEATHER STARTING:** 1. Start diesel engine and run at idle for 5 – 10 minutes. 2. Turn high idle switch on to help circulate oil through pump. 3. Move lid up and down manually or with switches on transmitter (hand held) to help warm hydraulic oil.
Note: Allow at least 30 minutes for steps 1–3

START-UP – ELECTRIC MOTOR

- ✓ Before starting the engine, read the manufacturer's motor installation and maintenance manual.
- ✓ Check the fluid levels of the hydraulic reservoir.
- ✓ Disengage E-Stop
- ✓ Push the start button to engage the motor
- ✓ Check motor rotation.
- ✓ Check the power plant for leaks or other problems.
- ✓ You are now ready to run the lid up and down.
- ✓ Raise the lid by pulling the valve handle toward you.
- ✓ Lower the lid by pushing the valve handle away from you.
- ✓ **NOTE:** Operate the crusher manually to get familiar with it and to test its operation prior to using the remote control.
- ✓ Although the machine was tested at the factory it is always a good idea to check for oil leaks.

WARNING

Do not attempt to operate the controls until you have read and fully understand the safety and operating instructions in this manual, on the safety decals and all information provided with each piece of equipment before you operate. Determine the control and how to use it for each function before operating the equipment.

- ✓ **COLD WEATHER STARTING:** 1. Start electric motor and run for 5 – 10 minutes to help circulate oil through pump. 2. Move lid up and down manually or with switches on transmitter (hand-held) to help warm hydraulic oil. **Note:** Allow at least 30 minutes for steps 1 and 2.
- ✓ **MANUAL/AUTOMATIC SWITCH:** (On models prior to 670) Operating the crusher in the manual position deactivates the 20-minute safety shutdown timer (for cold weather warm up) and the remote start/stop function from the transmitter. When the crusher is operating, turn the switch to auto to activate the 20-minute safety timer and the remote start/stop feature.

6-1 THE HYDRAULIC SYSTEM

There are really two separate hydraulic systems. The hydraulic tandem pump contains two sections that draw oil from the tank through two 100-mesh screen filters located inside the tank. Each section pumps oil into one of the two 4-way control valves. The valves can be electrically or manually controlled. The two valves, in turn, control two separate 10" cylinders.

To raise the lid, pull the valve handle toward you, oil is then sent to the bottom port of the cylinder, which will force the lid to go up. The oil in the top of the cylinder is sent through a 10-micron filter and then to the tank

To lower the lid, push the valve handle away from you, oil is then sent to the top port of the cylinder, which will force the lid down. The oil in the bottom of the cylinder is sent through a 10-micron filter and then to the tank.

When the valve handles are in the center position oil is sent through a 10-micron filter and then back to the tank.

There are two safety pressure valves located on each system. A Main Relief on the control valve restricts the valve operating pressure to 2600 psi. The Cylinder relief valves restricts the cylinder operating pressure to 2800 psi and protects the cylinders from extreme pressures that could damage them.



HIGH PRESSURE FLUID HAZARD

To prevent serious personal injury or death:

- Relieve system pressure before adjusting, repairing, or disconnecting components.
- Wear proper hand and eye protection. Use cardboard to search for leaks.
- Keep all components in good repair.

Injection of hydraulic fluid into blood stream will cause serious injury or death.

6-2 STANDARD SPEED CYLINDER OPERATION

On our standard hydraulic system, to raise the lid we pump 32 gallons of oil into the bottom of each cylinder. The 27 gallons of oil in the top goes back to the tank. The 5-gallon difference is equal to the area of the rod.

To lower the lid we pump 27 gallons of oil into the top of each cylinder. The 32 gallons of oil in the bottom goes back to the tank.

The surged tank holds approximately 175 gallons.

HIGH SPEED CYLINDER OPERATION

It is important to understand the principle of how your high-speed crusher works. If you are new to this type of equipment you should run the lid up and down a few times to get acquainted with it. You will find it is totally different than standard speed crushers.

The speed is achieved through the use of 2-1/2" oil bypass valves (Please see illustration on page 24) located on the main cylinders. It's quite simple; a cylinder is always full of oil. The bypass system transfers that oil between the top and bottom cylinder ports, eliminating the need to send oil all the way back to the tank. The oil is transferred directly to the other end of the cylinder. This means to raise or lower the lid we only need to move 5 gallons (rod area) of oil in or out of each cylinder, not the full 32 gallons like the standard system

To raise the lid we take the 27 gallons of hydraulic oil that is in the top of the cylinder and transfer it to the bottom through the 2.5" bypass valve, adding only 5 gallons of oil from the pump. Now in about 8 seconds we have put 32 gallons in the bottom of the cylinder, putting our actual cylinder port oil flow at over 200 gallons per minute.

When you lower the lid, the oil in the bottom of the cylinder transfers to the top through the bypass valve. Since there is more oil in the bottom than the top, only the excess 5 gallons goes back to the tank. It will retract the full 8 feet in just 8 seconds, putting our actual cylinder port oil flow at over 200 gallons per minute.

When you raise the lid the bypass valve opens automatically, giving you high-speed operation on the full up stroke.

The length of time the lid falls in high-speed mode is adjustable. When you lower the lid the bypass valve will start to close. You can adjust how long it takes the valve to close using the needle valve (Please see instructions on page 9 – illustration on 24 part # 6) located on the bottom port of the bypass valve.

As an example you could set it to close in 4 seconds, this means the top lid will lower about 4 feet in the high-speed mode. After the valve closes the lid will slow to the standard speed.

If the lid can fall only 2 feet before landing on the load, it will just sit there for the additional 2 seconds until the valve closes, and then the crusher lid will operate at standard speed and pressure.

AGAIN: When the lid is coming down, you can adjust how far you want it to fall in the high-speed mode. using the needle valve to adjust the time it takes for the valve to close. Once closed the cylinders work at standard speed and pressure.

NOTE: During the down stroke, the cylinders do not operate at high pressure in the high-speed mode. Only when the bypass valve closes can the cylinders create high pressure.

You will create high pressure on the up stroke after the cylinders top out.

ADJUSTING RELIEF VALVES

- MAIN SYSTEM PRESSURE RELIEF MUST BE SET TO 3000 PSI BEFORE CYLINDER RELIEFS CAN BE SET

8-1 Standard Speed Cylinder Relief

The cylinder relief valves are located on the back of the main control valves and should be set at 2900 psi. (Please see illustration on page 13 part #5)

This relief allows the cylinder to extend during the rock cycle, when the opposite end is pulling down and teeter-tottering the lid over the load.

As long as the main control valve can achieve 2600 PSI, the bypass won't need to be adjusted.
To adjust the pressure, call Overbuilt

8-2 High Speed Cylinder Relief

The cylinder relief valves are located on the back of the regen valve assembly and should be set at 2900 psi. (Please see illustration on page 31 part # 4)

This relief allows the cylinder to extend during the rock cycle, when the opposite end is pulling down and teeter-tottering the lid over the load

As long as the main control valve can achieve 2600 PSI the bypass won't need to be adjusted.
To adjust the pressure, call Overbuilt.

8-3 Main Relief

The main relief valves are located on the main control valves and are set at 2600 psi. (Please see illustration on page 15 part #5). The main relief will limit the amount of pressure that can be built up in the system.

To check the main relief setting:

- ✓ Run throttle up to full
- ✓ Lower the lid
- ✓ Push the valve handle away from you to build pressure
- ✓ The valve needs to be all the way open
- ✓ Read the pressure gauge on the valve
- ✓ This pressure is the main relief pressure and should read 2600 psi.

To adjust the pressure, follow these steps. You will need a 3/4" wrench and a 1/4" Allen wrench.
The valve adjustment is located on the back-left side of each control valve.

- ✓ Remove the dust cap with 3/4" wrench
- ✓ Loosen the nut with 3/4" wrench
- ✓ While holding the valve all the way open, adjust the relief to 2600 psi, turn it with a 1/4" Allen wrench.
- ✓ Turn in (clockwise) to increase pressure
- ✓ Turn out (counterclockwise) to decrease pressure
- ✓ Tighten the nut while holding the Allen wrench in place to keep the setting from changing.
- ✓ Check the setting after the nut is tight. In some cases it will have changed and you will have to adjust a second time.

ADJUSTING THE HIGH SPEED BYPASS VALVES

A needle valve (Please see illustration on page 31 part # 6) is located next to the bypass valve on each cylinder. It controls the oil flow into the pilot port of the bypass valve, therefore controlling the length of time it takes the bypass valve to close.

Watch the bypass valve open and close

You can actually see the valve open and close by watching the plunger on top of the bypass valve.

When the plunger is up the valve is closed.

When the plunger is down the valve is open.

Again when the bypass valve is open (the plunger is down) the lid comes down in high-speed mode. Once closed (the plunger is up) the lid will fall at standard speed and pressure. Slowing the oil flow into the valve will lengthen the time it takes to close, thus increasing the distance the lid will fall in the high-speed mode.

How to adjust.

To Increase the distance the lid falls at high speed; turn the **needle valve in** (clockwise) which will **increase** the time it takes to close the bypass valve.

To Decrease the distance the lid falls at high speed; turn the **needle valve out** (counterclockwise) to **decrease** the time it takes to close the bypass valve.

The bypass valves are set at the factory to close in 3-4 seconds.

This means the lid will fall about 3-4 feet in the high-speed mode, then switch to standard speed and pressure for the last 4-5 feet.

On the first and second cars, the lid will slow to standard speed prior to hitting them. As the pile of cars gets taller the lid will make contact with them in the high-speed mode.

Example: If the lid only falls for 2 seconds before hitting the load, it will just sit there until the valve closes. In this example it will sit for an additional 1-2 seconds. After the bypass valve has closed the cylinders will operate at standard speed and pressure.

It is completely normal for the crusher lid to stop for a few seconds on any load that is taller than 6 feet.

Important: If your crusher is equipped with a remote control, changing the factory setting will effect how the rock cycle works. To adjust rock cycle heights, please see illustration on page 48 or call the factory prior to making adjustment.

Adjusting Pressure Switch

Pressure switches are used to send 12V DC signals to the microprocessor. The remote control uses hydraulic pressure to tell when one step of the cycle is ended and another needs to start.

To adjust the pressure switches follow these steps. You will need a small flathead screwdriver or Allen wrench.

Note: There are indicator lights on the receiver (white box) that tells you when each pressure switch is closed. The left one is for the left valve, the right one is for the right valve.

1. Lower the lid.
2. Turn the receiver on.
3. The gauge should read 2600 psi when the valve is fully open. If it does not, go to the **Adjusting Relief Valves** section on page 8.
4. With the lid down push the valve handle away from you and hold, this will allow the maximum pressure of 2600 psi* to be achieved, then release handle. Each pressure switch is wired to an indicator light on the receiver box. This light will tell you when the pressure switch is closed.
5. Slowly push the valve handle away from you and watch the pressure on the gauge. You can tell what pressure the switch is set at, by looking at the pressure reading on the gauge when the light comes on. Important: Let the pressure on the gauge rise very slowly.
6. Set both pressure switches at 2450 psi. This means the light will come on at 2450 psi.
7. To adjust the pressure, loosen the setscrew (flat screwdriver or Allen wrench) on the side of the adjustment ring.
8. Twist the adjustment ring clockwise to increase the release pressure or counterclockwise to decrease the release pressure.
9. Re-tighten the setscrew and check pressure setting again.



Loosen the setscrew

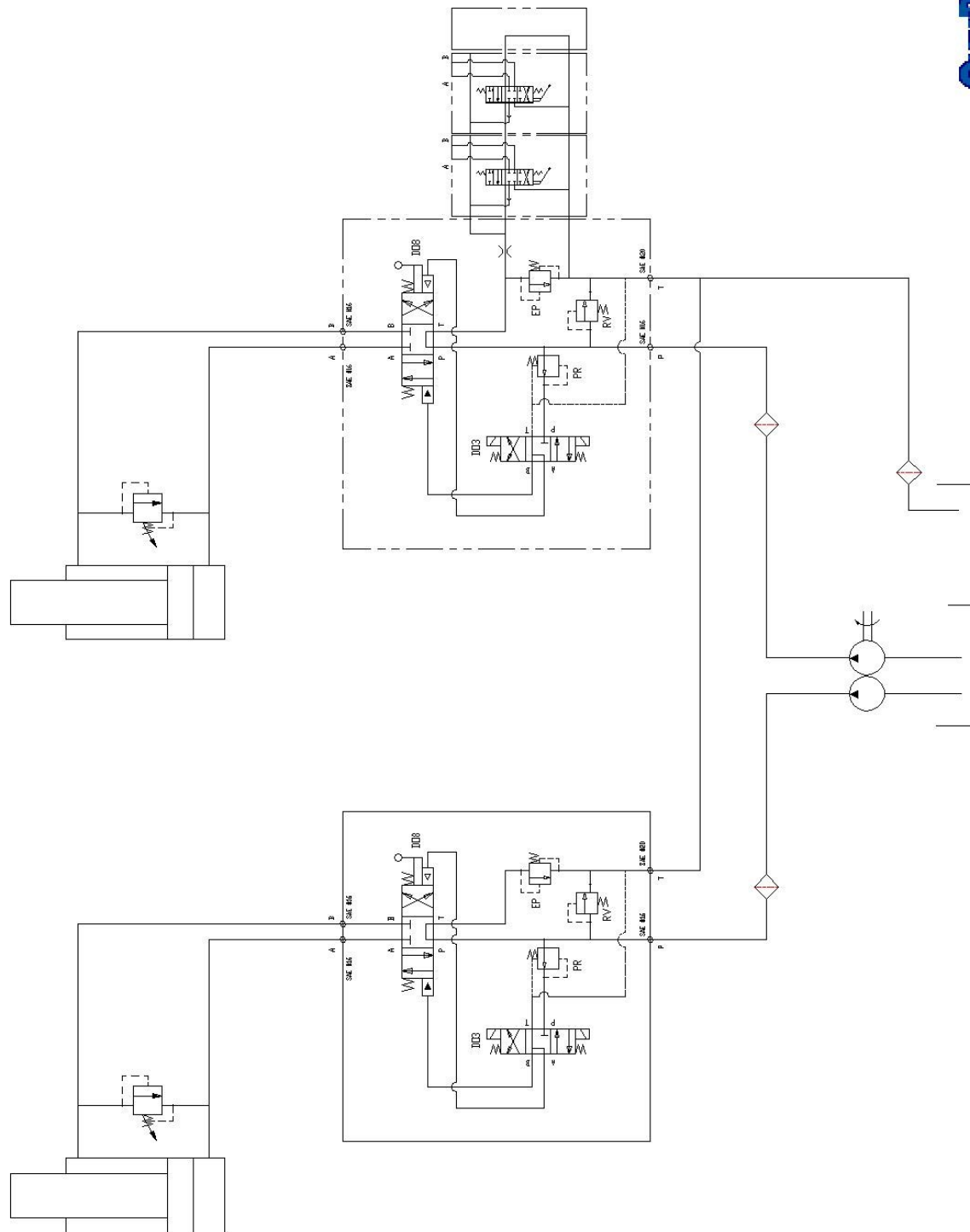


Twist the adjustment ring

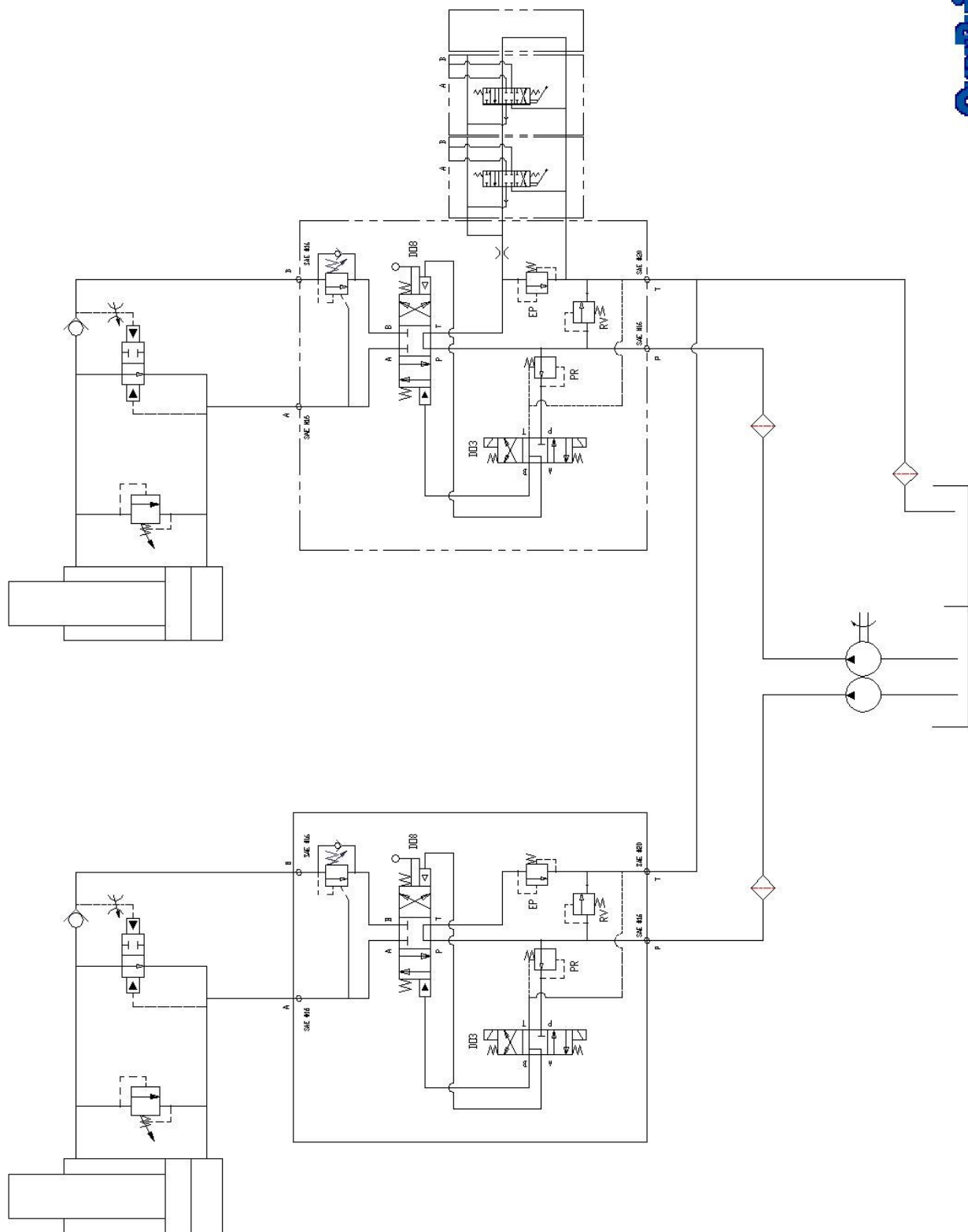


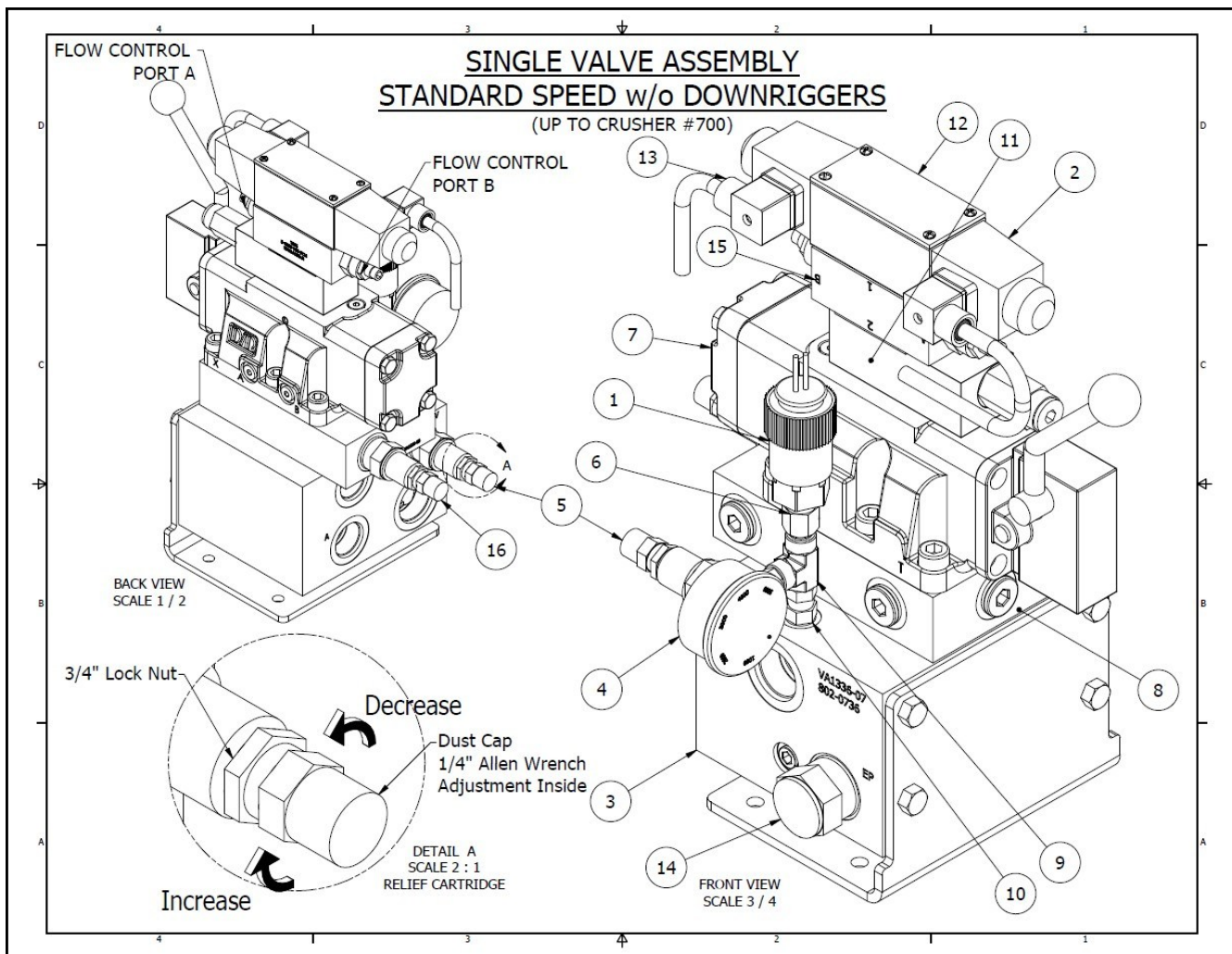
Tighten the setscrew

STANDARD SPEED HYDRAULIC SCHEMATIC



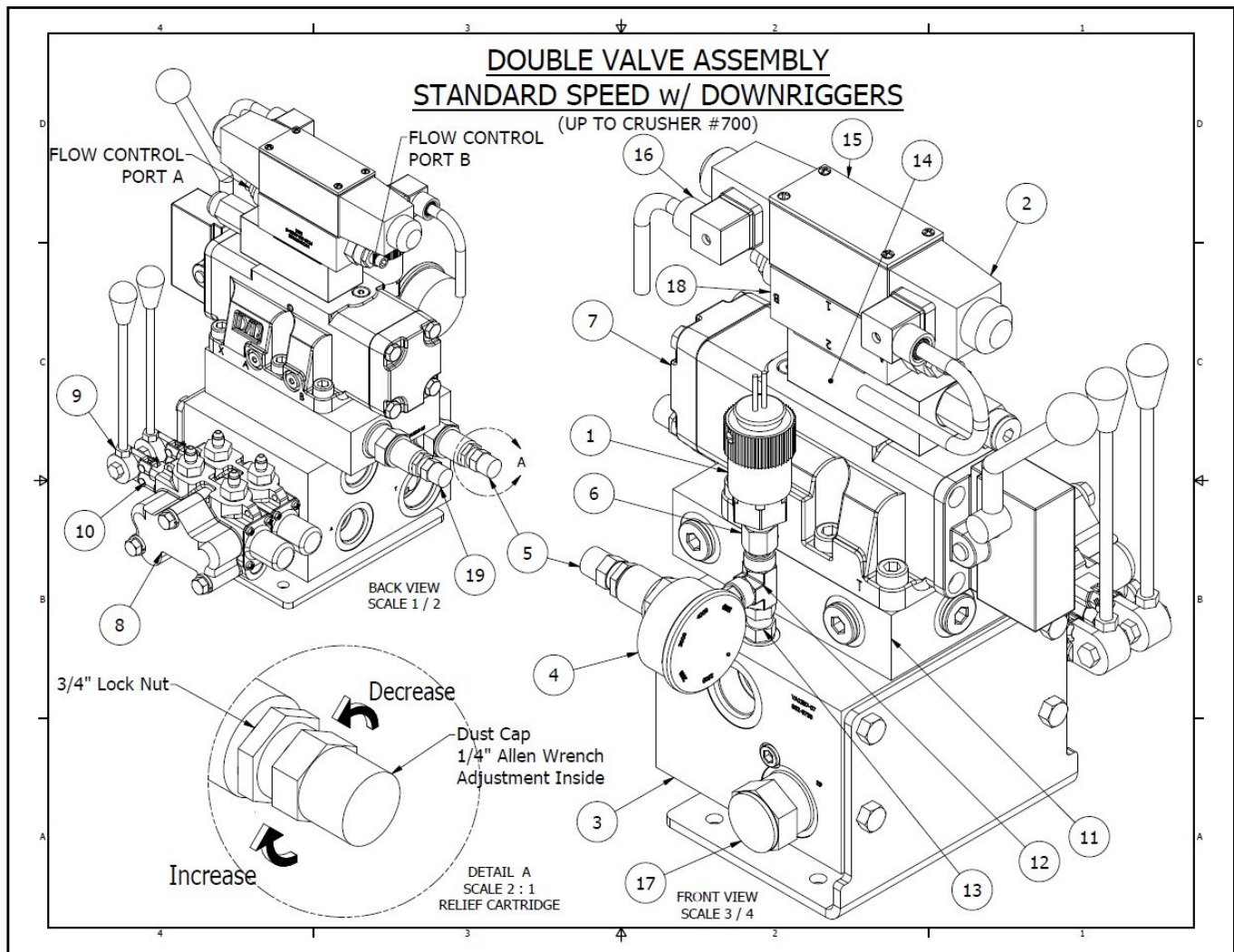
HIGH SPEED HYDRAULIC SCHEMATIC





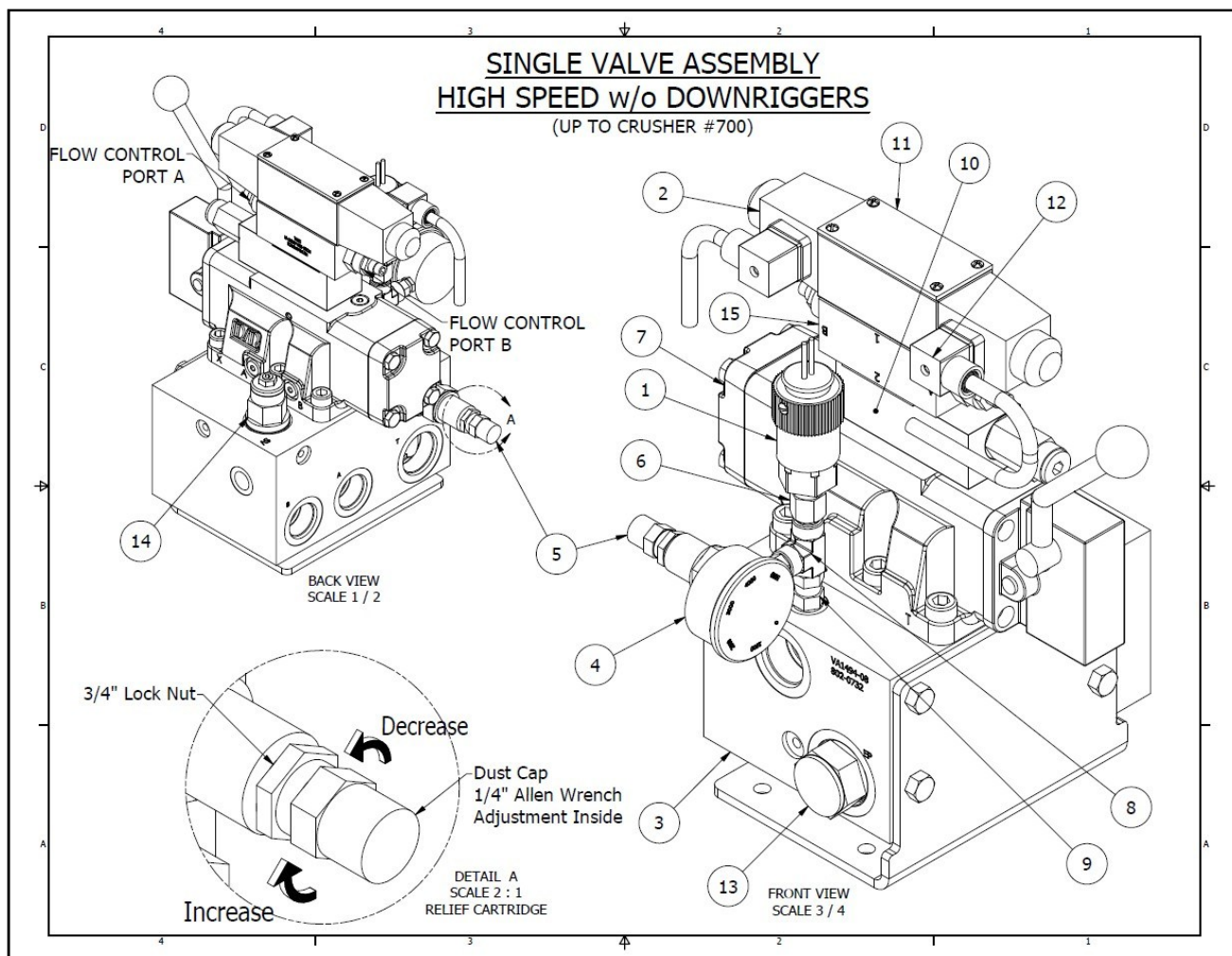
Parts List

Item	QTY	PART NO.	ITEM
1	1	322-1527	Pressure Switch
2	1	331-1001-C	Dynex Coil 12V
3	1	802-0736	D08 Valve Block w/ Auxiliary Ports
4	1	335-1010	Pressure Gauge 0-5000 psi
5/16	2	331-3023	Relief Spool 2800 psi
6	1	335-1050	Snubber 10 Micron
7	1	331-1001	D08 Dynex Valve
8	1	331-0004	Standard Speed Relief Assembly
9	1	336-5604-4-4-4	Hydraulic Tee
10	1	336-6900-6-4	3/8" Swivel
11	1	331-1000	Aluminum Pressure Reducing Valve
12	1	331-0999	D03 Valve
13	2	322-1524	4 Terminal Din Connector
14	1	331-1002	Piloted Spool Logic Element
15	1	331-1018	Flow Control Valve



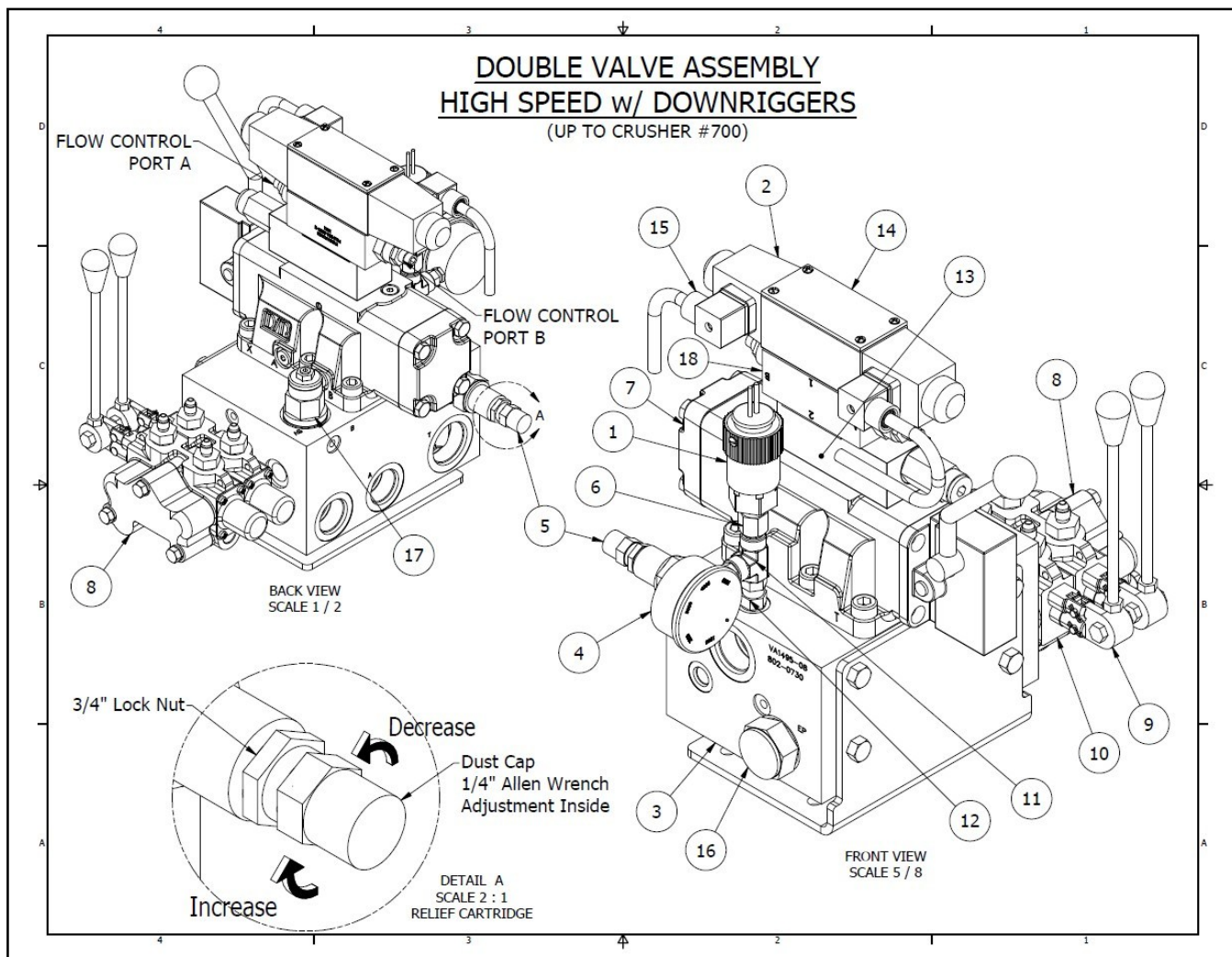
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2	2	331-1001-C	Dynex Coil 12V
3	1	802-0734	D08 Valve Block w/ Auxiliary Ports
4	1	335-1010	Pressure Gauge 0-5000 psi
5/19	2	331-3023	Relief Spool 2800 psi
6	1	335-1050	Snubber 10 Micron
7	1	331-1001	D08 Dynex Valve
8	1	331-1005	Brand Valve Outlet Cover
9	2	331-1007	Brand Valve Handle Assembly
10	2	331-1003	Brand Valve Section
11	1	331-0004	Standard Speed Relief Assembly
12	1	336-5604-4-4-4	Hydraulic Tee
13	1	336-6900-6-4	3/8" Swivel
14	1	331-1000	Aluminum Pressure Reducing Valve
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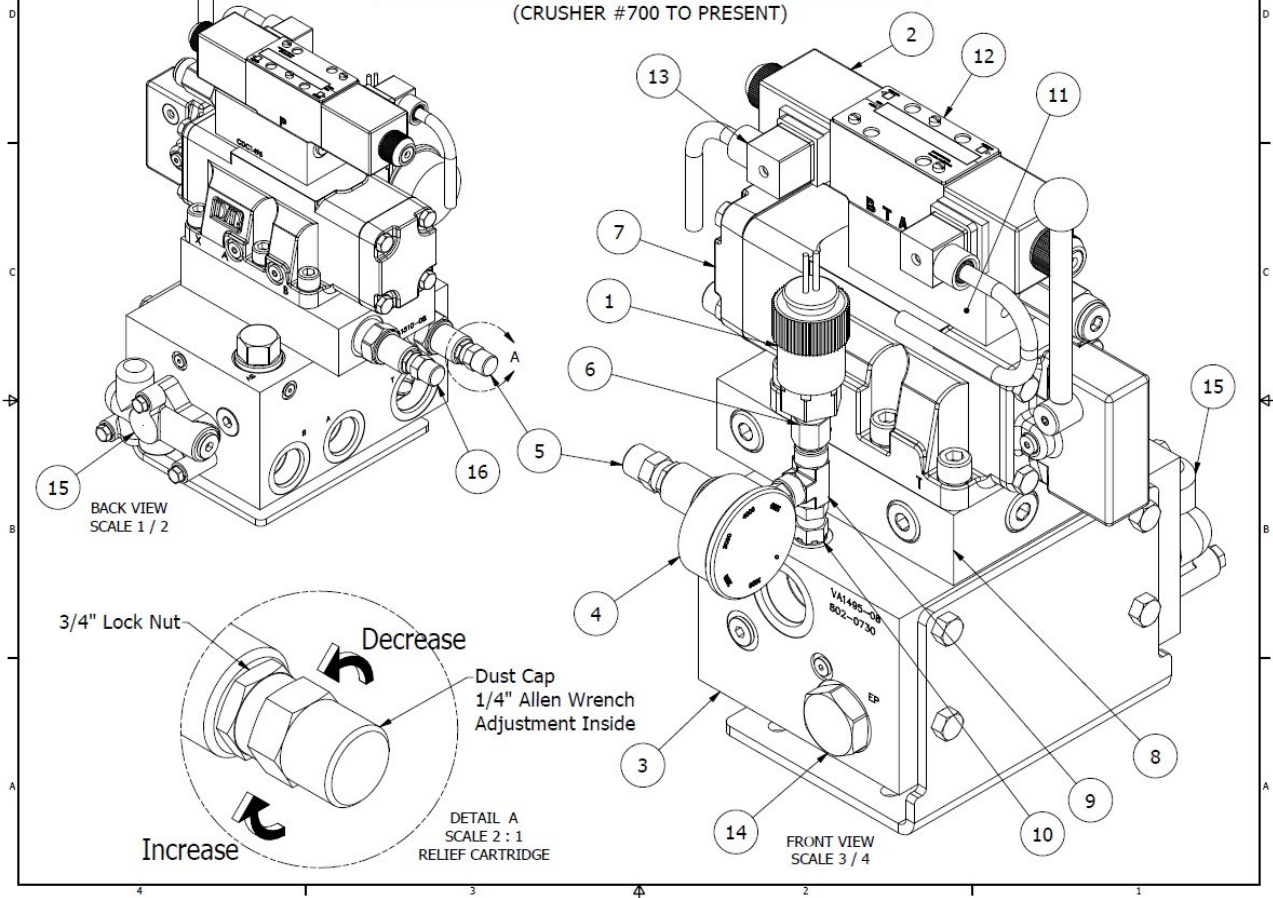
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5	1	331-3023	Relief Spool 2800 psi
6	1	335-1050	Snubber 10 Micron
7	1	331-1001	D08 Dynex Valve
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9	1	336-6900-6-4	3/8" Swivel
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11	1	331-0999	D03 Valve
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6	1	335-1050	Snubber 10 Micron
7	1	331-1001	D08 Dynex Valve
8	1	331-1005	Brand Valve Outlet Cover
9	2	331-1007	Brand Valve Handle Assembly
10	2	331-1003	Brand Valve Section
11	1	336-5604-4-4-4	Hydraulic Tee
12	1	336-6900-6-4	3/8" Swivel
13	1	331-1000	Aluminum Pressure Reducing Valve
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15	2	322-1524	4 Terminal Din Connector
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18	1	331-1018	Flow Control Valve

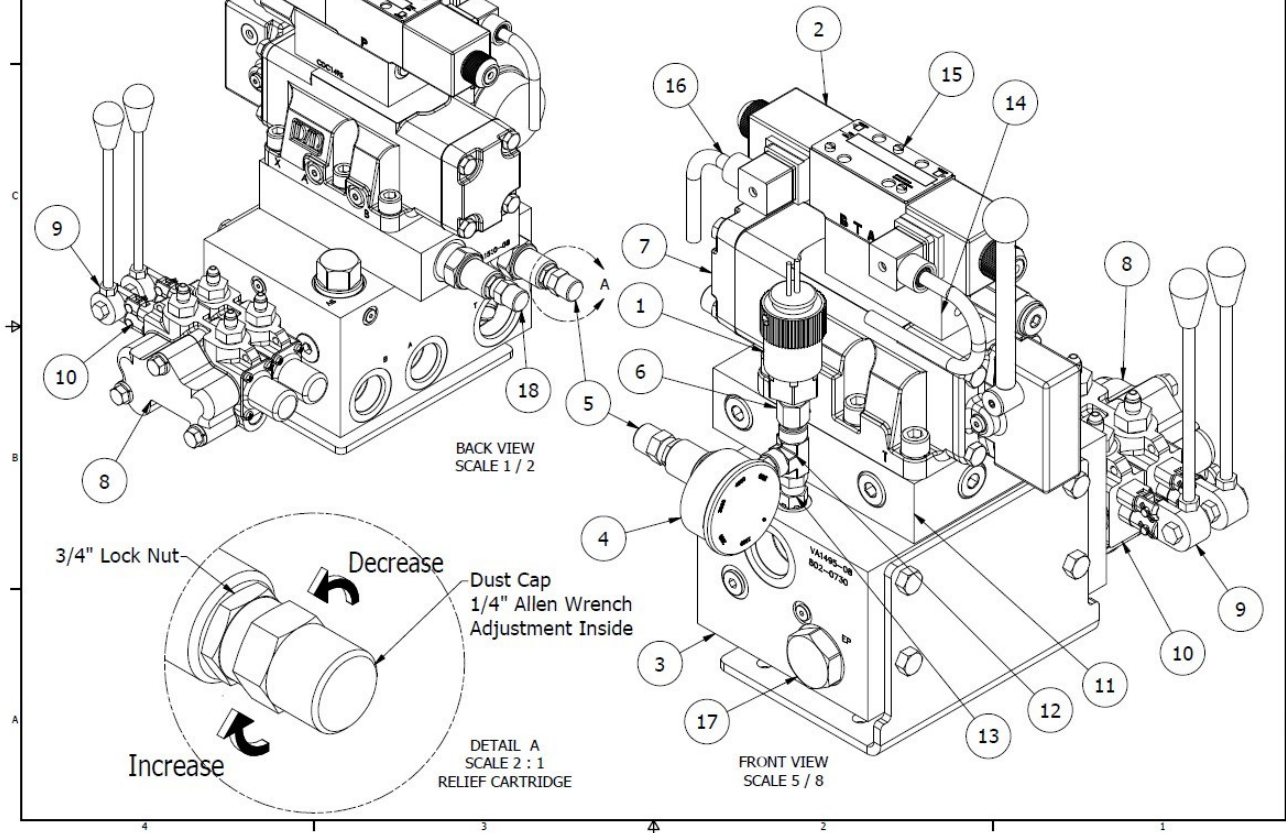
SINGLE VALVE ASSEMBLY
STANDARD SPEED w/o DOWNRIGGERS
 (CRUSHER #700 TO PRESENT)



Parts List

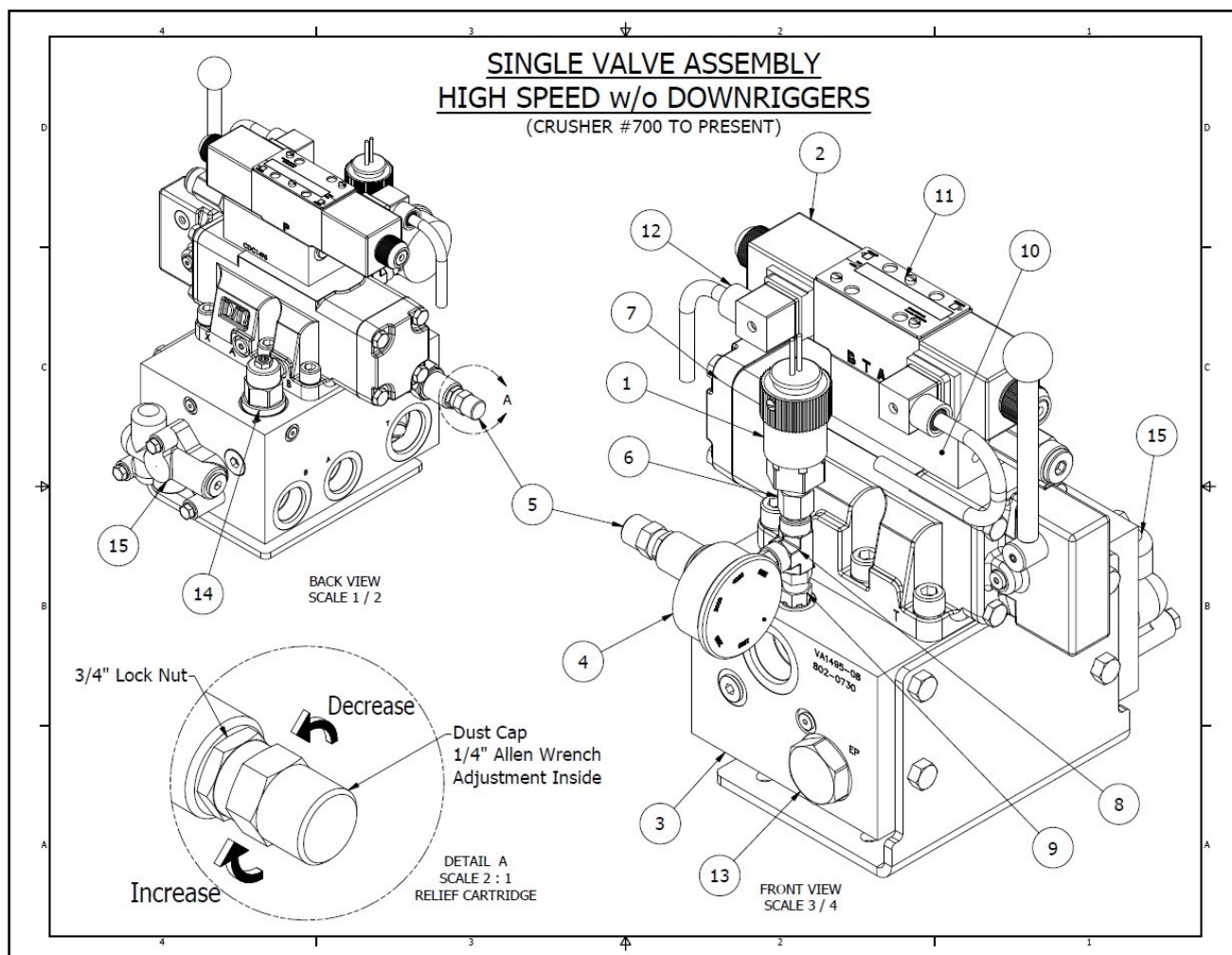
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15	1	331-1005	Brand Valve Outlet Cover

DOUBLE VALVE ASSEMBLY
STANDARD SPEED w/ DOWNRIGGERS
(CRUSHER #700 TO PRESENT)



Parts List

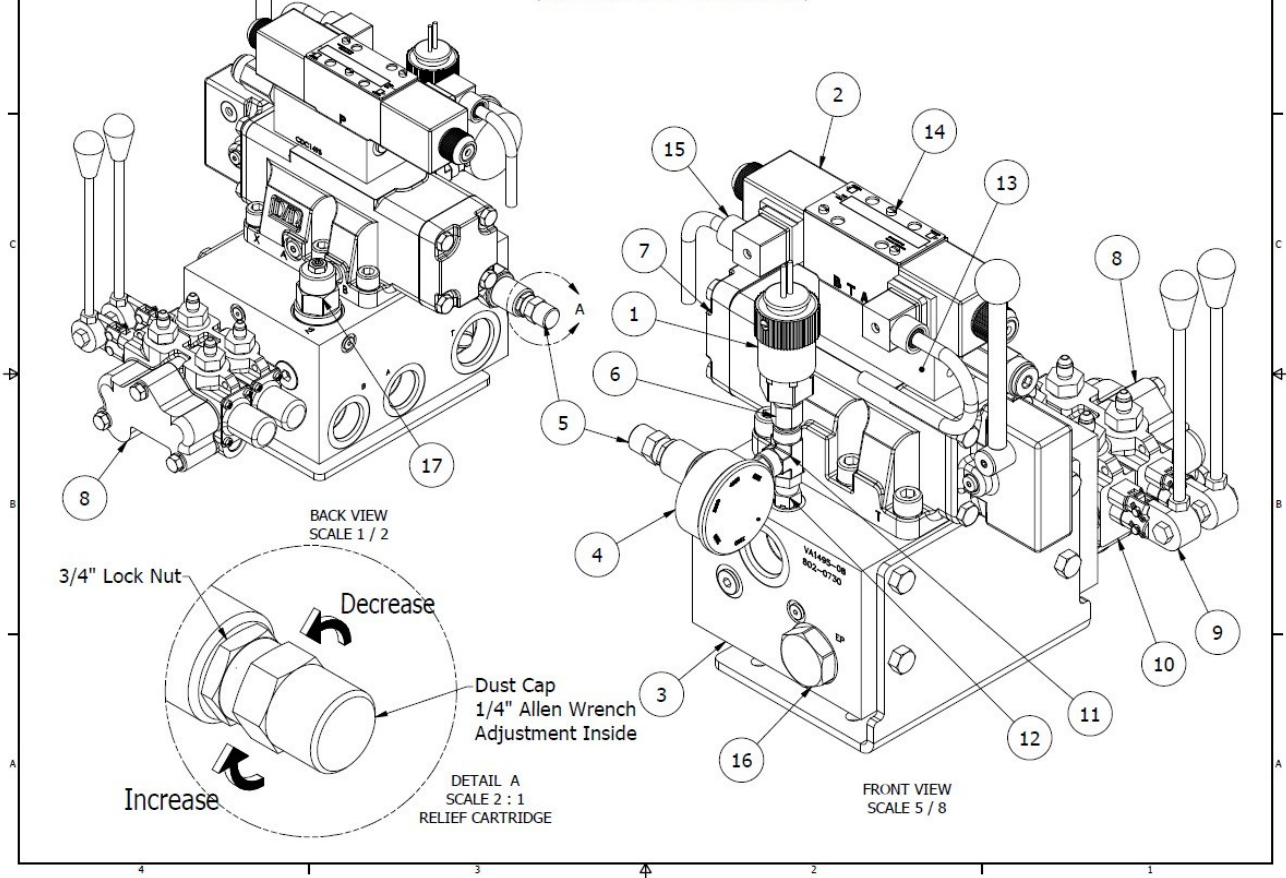
Item	QTY	PART NO.	ITEM
1	1	322-1527	Pressure Switch
2	2	331-1001-C	Dynex Coil 12V
3	1	802-0730	D08 Valve Block w/ Auxiliary Ports
4	1	335-1010	Pressure Gauge 0-5000 psi
5/18	2	331-3023	Relief Spool 2800 psi
6	1	335-1050	Snubber 10 Micron
7	1	331-1001	D08 Dynex Valve
8	1	331-1005	Brand Valve Outlet Cover
9	2	331-1007	Brand Valve Handle Assembly
10	2	331-1003	Brand Valve Section
11	1	331-0004	Standard Speed Relief Assembly
12	1	336-5604-4-4-4	Hydraulic Tee
13	1	336-6900-6-4	3/8" Swivel
14	1	331-1000	Aluminum Pressure Reducing Valve
15	1	331-0999	D03 Valve
16	2	322-1524	4 Terminal Din Connector
17	1	331-1002	Piloted Spool Logic Element



Parts List

Item	QTY	PART NO.	ITEM
1	1	322-1527	Pressure Switch
2	2	331-1001-C	Dynex Coil 12V
3	1	802-0732	D08 Valve Block w/ Auxiliary Ports
4	1	335-1010	Pressure Gauge 0-5000 psi
5	1	331-3023	Relief Spool 2800 psi
6	1	335-1050	Snubber 10 Micron
7	1	331-1001	D08 Dynex Valve
8	1	336-5604-4-4-4	Hydraulic Tee
9	1	336-6900-6-4	3/8" Swivel
10	1	331-1000	Aluminum Pressure Reducing Valve
11	1	331-0999	D03 Valve
12	2	322-1524	4 Terminal Din Connector
13	1	331-1002	Piloted Spool Logic Element
14	1	331-1016	Counter Balance Valve
15	1	331-1005	Brand Valve Outlet Cover

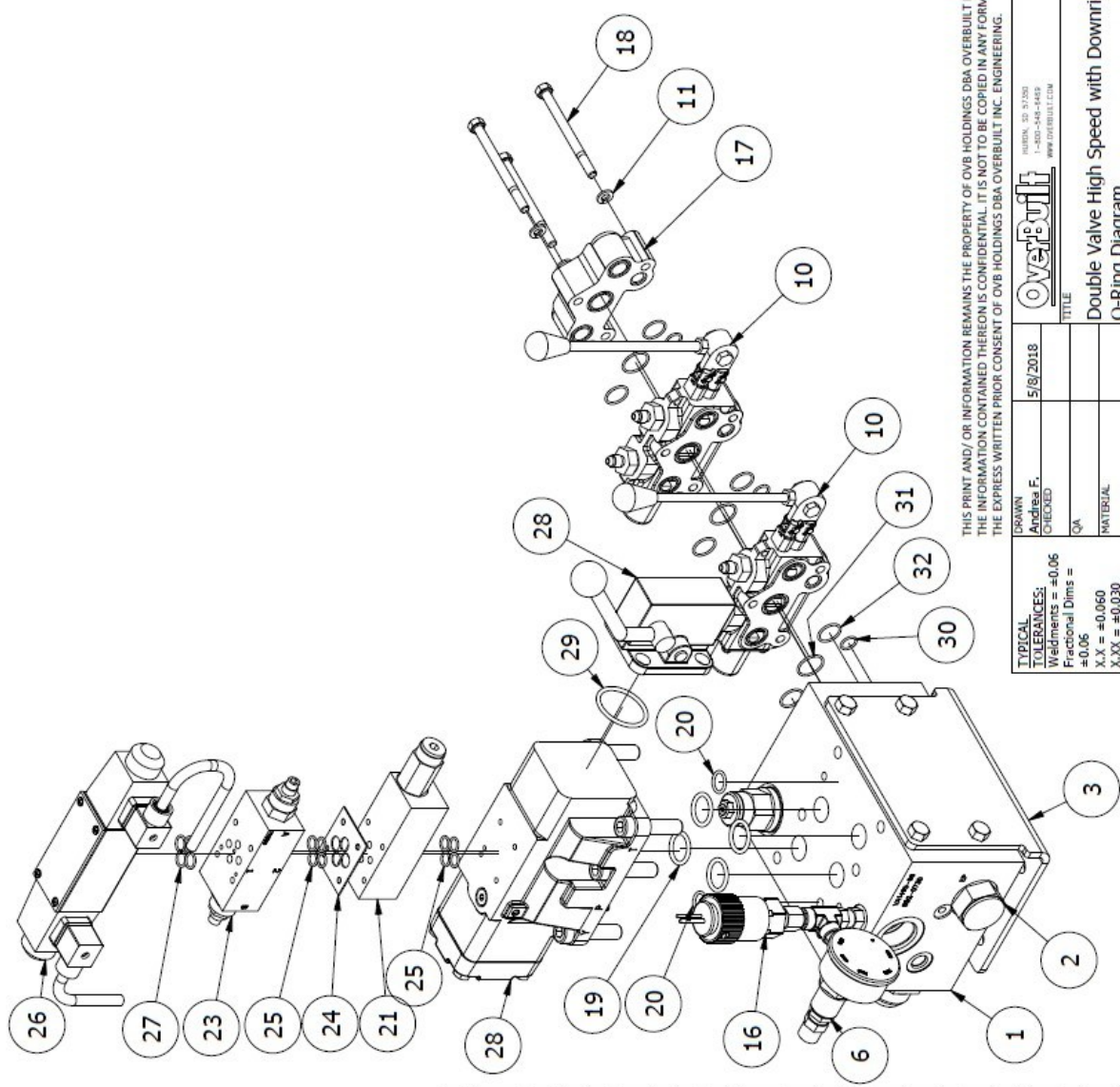
DOUBLE VALVE ASSEMBLY
HIGH SPEED w/ DOWNRIGGERS
(CRUSHER #700 TO PRESENT)



Parts List

Item	QTY	PART NO.	ITEM
1	1	322-1527	Pressure Switch
2	2	331-1001-C	Dynex Coil 12V
3	1	802-0730	D08 Valve Block w/ Auxiliary Ports
4	1	335-1010	Pressure Gauge 0-5000 psi
5	1	331-3023	Relief Spool 2800 psi
6	1	335-1050	Snubber 10 Micron
7	1	331-1001	D08 Dynex Valve
8	1	331-1005	Brand Valve Outlet Cover
9	2	331-1007	Brand Valve Handle Assembly
10	2	331-1003	Brand Valve Section
11	1	336-5604-4-4-4	Hydraulic Tee
12	1	336-6900-6-4	3/8" Swivel
13	1	331-1000	Aluminum Pressure Reducing Valve
14	1	331-0999	D03 Valve
15	2	322-1524	4 Terminal Din Connector
16	1	331-1002	Piloted Spool Logic Element
17	1	331-1016	Counter Balance Valve

4 3 2 1



PARTS LIST		
ITEM	QTY	DESCRIPTION
1	1	D08 HIGH SPEED WITH DOWNRIGGERS
2	1	331-1002 Ploated Spool Logic Element
3	1	802-7024 VALVE BLOCK MOUNTING BRACKET
4	6	216-0840-32 1/2" x 13 x 2" SHCS
5	4	205-0708 7/16" x 14 x 1" Grade 5 Bolt
6	1	331-0023 Relief Spool 2800 psi
7	1	336-6400-20-20 #20 JIC to #20 Male O-Ring
8	1	331-1016 Sun Hydraulics Counter Balance Valve
9	1	335-1010 5,000 PSI Pressure Gauge
10	2	331-1003 Brand Valve Section
11	3	205-6405 5/16" Lock Washer
12	4	336-6400-4-8 #4 JIC to #8 O-Ring
13	1	336-5605-4 M-F-F #4 Female Tee
14	1	336-6900-6-4 3/8" Male o-ring X 1/4" Female Pipe Swivel Part
15	1	335-1050 Shudder 10 micron 1/4" fpt x 1/4" mpt brass Part #28-350
16	1	322-1527 Pressure Switch
17	1	331-1005 Brand Valve Outlet Cover
18	3	205-0532 5/16" x 18 x 4" Grade 5 Bolt
19	4	568-214V D08 1" ID O-Ring (331-1001-SEALKIT)
20	2	568-113 D08 9/16" ID O-Ring (331-1001-SEALKIT)
21	1	331-1000 Pressure Reducing Valve Cartridge
22	1	331-1000S Dynex Pressure Reducing Valve Cartridge
23	1	331-1018 Flow Control Valve
24	1	331-1018-1 Flow Control Valve O-ring Plate
25	8	568-012V Relief Block/D03 3/8" ID 1/16" O-Ring (331-1001-SEALKIT)
26	1	331-0999 D03 Solenoid Valve
27	4	568-013V Flow Control Valve 7/16" ID 1/16" O-Ring (331-1001-SEALKIT)
28	1	331-1010-D08 Dynex D08 Valve
29	2	568-223V D08 1-5/8" ID 1/8" O-Ring
30	3	331-1003-5 #014 O-Ring
31	3	331-1003-1 #020 O-Ring
32	6	331-1003-2 #018 O-Ring

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DATE	5/8/2018
DESIGNED BY	ANDREA F.
CHECKED BY	QA
TITLE	Double Valve High Speed with Downriggers O-Ring Diagram
SIZE	C
SCALE	
QTY	
WEIGHT	
REV	

OVERBUILT
HUNTER, SD 57350
1-800-444-4469
WWW.OVERBUILT.COM

TYPICAL TOLERANCES:
Weldments = ±0.06
Fractional Dims = ±0.06
X.X = ±0.060
X.XX = ±0.030
X.XXX = ±0.005
Angular Dims = ± 2°

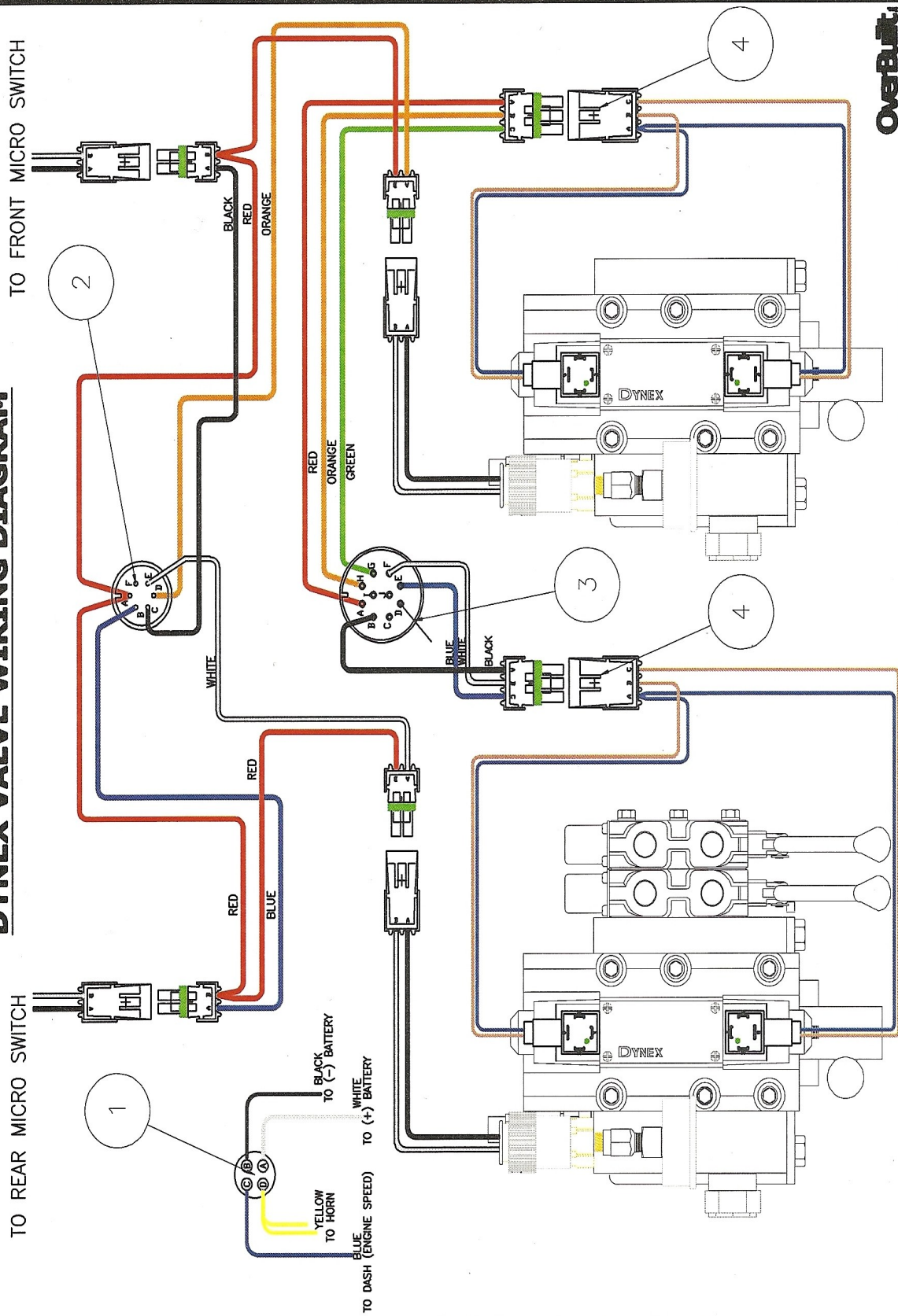
OWG NO
DVHS w/Down O-Ring

SHEET 1 OF 1



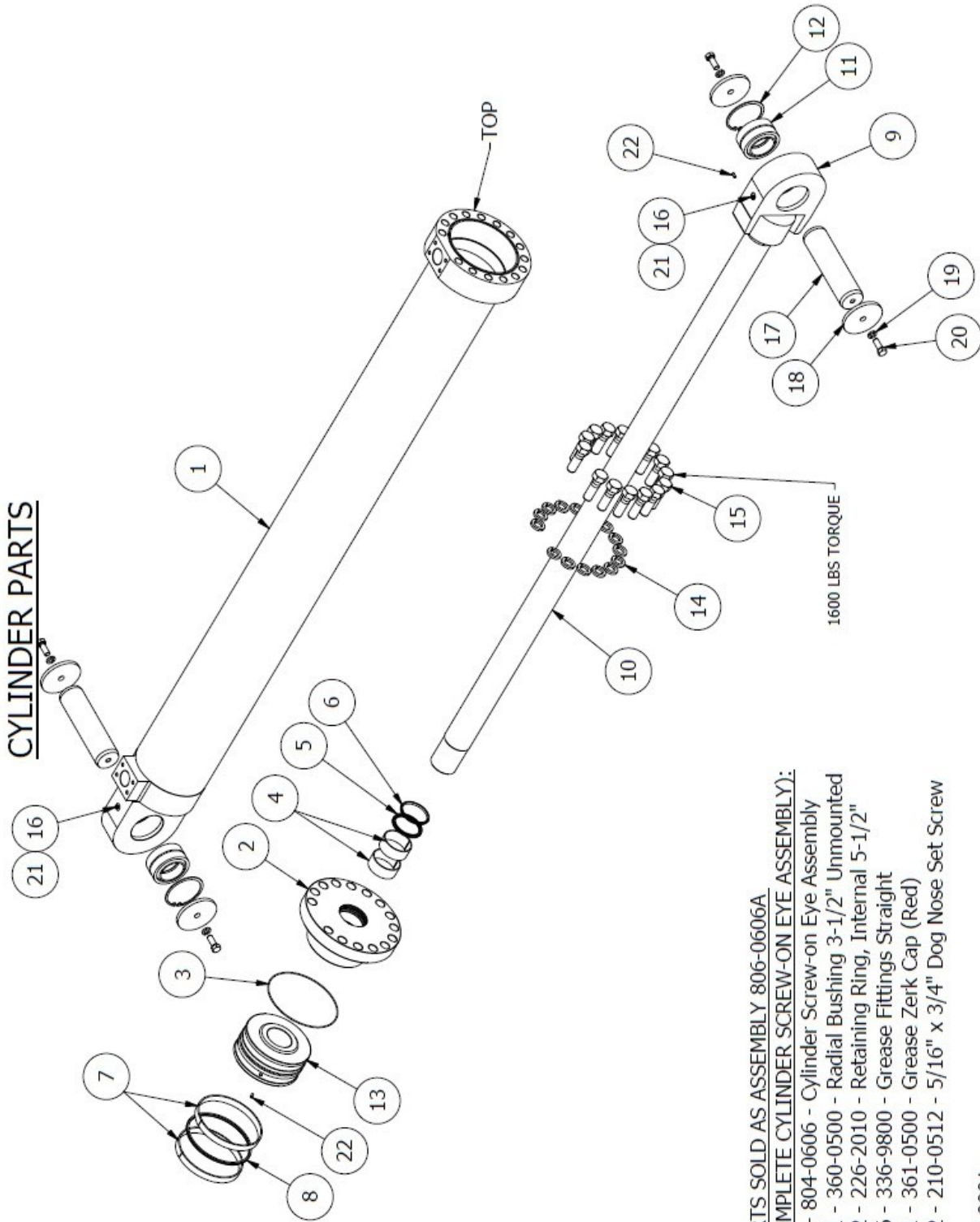
7-4886

DYNEX VALVE WIRING DIAGRAM



PARTS LIST		
ITEM QTY	PART NO.	ITEM
1 1	322-0102	4 Pin Wire Harness
2 1	322-0201	6 Pin Wire Harness
3 1	322-0301	10 Pin Wire Harness
4 1	322-1526	Solenoid Connectors w/ Harness

CYLINDER PARTS



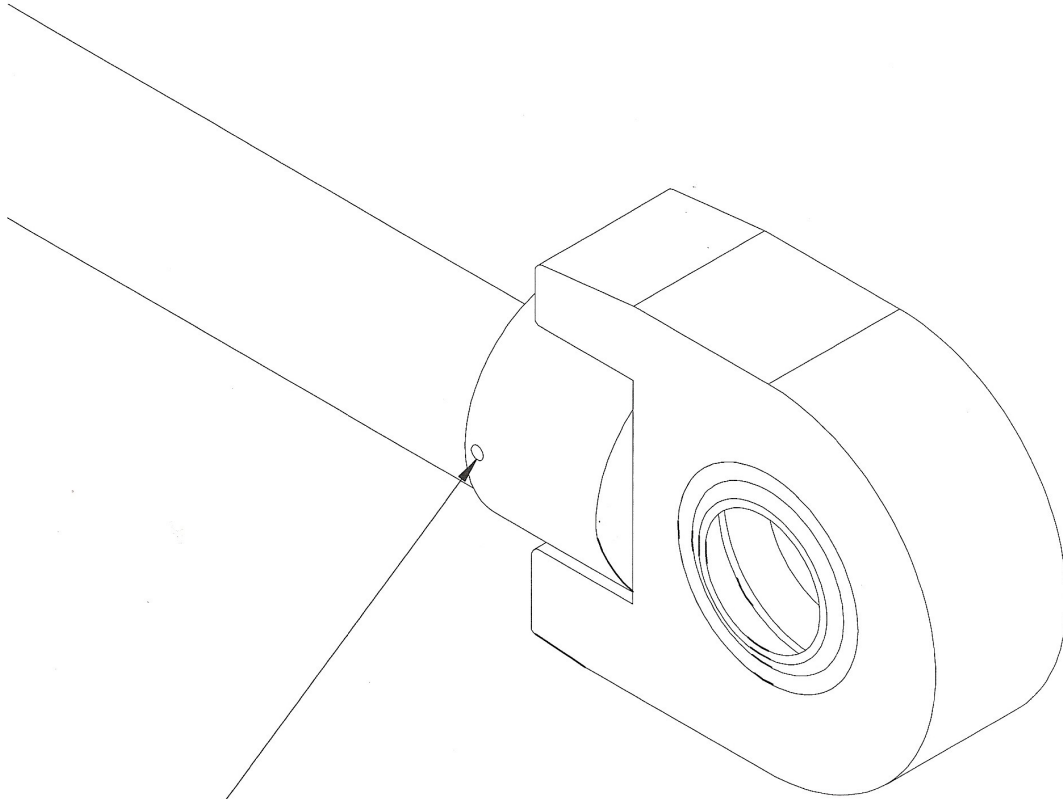
PARTS SOLD AS ASSEMBLY 806-0606A
 (COMPLETE CYLINDER SCREW-ON EYE ASSEMBLY):
 #9 - 804-0606 - Cylinder Screw-on Eye Assembly
 #11 - 360-0500 - Radial Bushing 3-1/2" Unmounted
 #12 - 226-2010 - Retaining Ring, Internal 5-1/2"
 #16 - 336-9800 - Grease Fittings Straight
 #21 - 361-0500 - Grease Zerk Cap (Red)
 #22 - 210-0512 - 5/16" x 3/4" Dog Nose Set Screw

808-0001

Cylinder Parts List (808-0001)			
ITEM	QTY	PART NO.	DESCRIPTION
1	1	804-0001	Cylinder Weldment Assembly
2	1	802-0200	Cylinder Top Gland
3	1	333-m270	Top Gland Seal
4	2	334-4004	Rod Wear Rings
5	1	334-1040	Deep Z Rod Seal
6	1	334-0004	Rod Wiper
7	2	334-4010	Piston Wear Rings
8	1	334-2010	Piston Crown Seal
9	1	804-0606	Cylinder Screw-on Eye Assembly
10	1	802-0400	Cylinder Rod
11	2	360-0500	Radial Bushing
12	2	226-2010	Retaining Ring, Internal 5-1/2"
13	1	802-0300	Cylinder Piston
14	15	208-6820	1-1/4" Lock Washers
15	15	208-2032	1-1/4" x 4" Grade 8 Bolts
16	2	336-9800	Grease Fittings Straight
17	2	802-0009	Cylinder Pins
18	4	800-0105	Pin Plates
19	4	205-6412	3/4" Lock Washers
20	4	205-1216	3/4-10 x 2" Grade 5 Bolts
21	2	361-0500	Grease Zerk Cap (Red)
22	2	210-0512	5/16" x 3/14" Dog Nose Set Screw

ALL SEALS IN A KIT
NOT SOLD SEPARATE
PART NO. 334-9005

ROD END FINAL ASSEMBLY

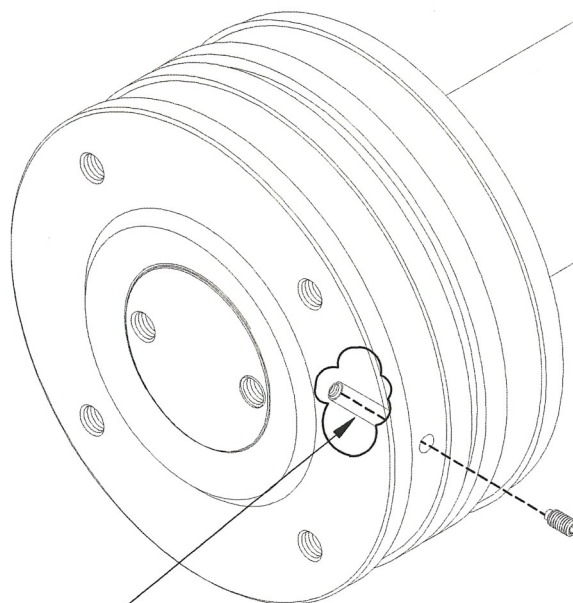


OverBull.

NOTE

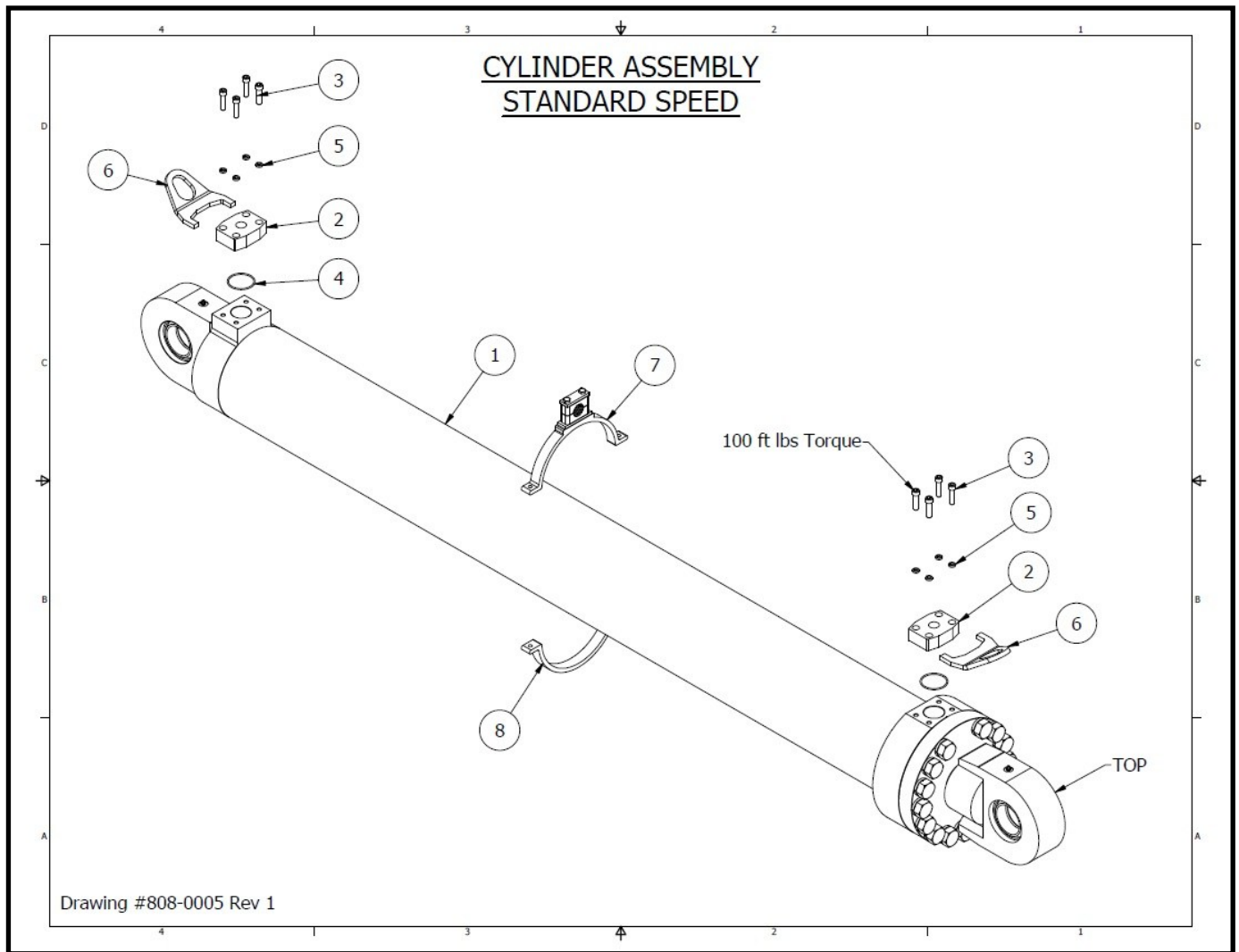
Anti-seize threads, tighten eye, drill shaft through set screw hole with 1/4" drill bit approx. 1/8" deep. Blow out with air and touch one more time with bit by hand and blow out again. Insert set screw and tighten.

PISTON FINAL ASSEMBLY



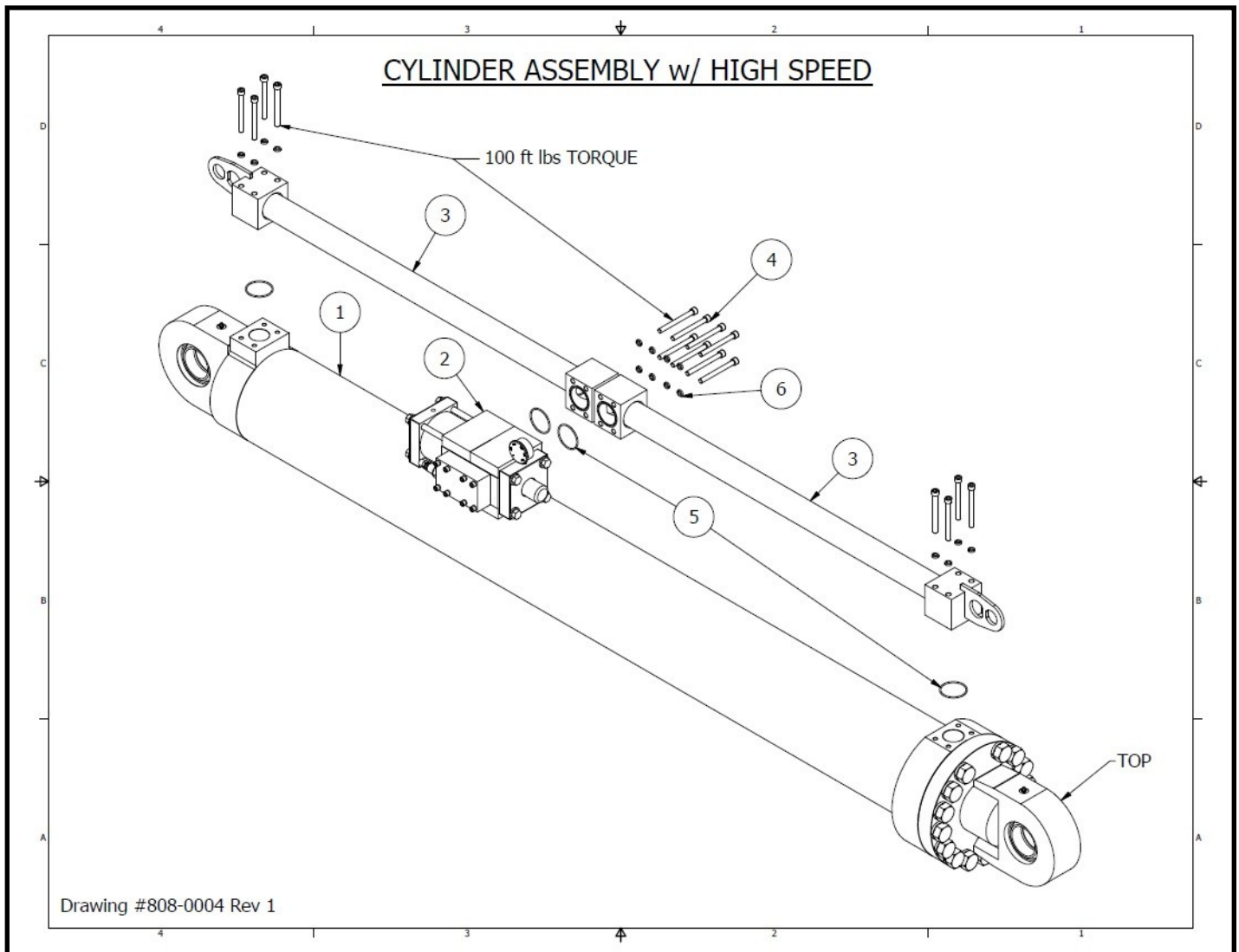
NOTE

Anti-seize threads, tighten piston, utilizing the 4 bolt holes in the piston. Drill shaft through set screw hole with 1/4" drill bit approx. 1/8" deep. Blow out with air and touch one more time with bit by hand and blow out again. Insert set screw and tighten.



Parts List

Item	QTY	PART NO.	ITEM
1	1	804-0001	Cylinder Assembly
2	2	802-0960	Standard Speed Adapter
3	8	216-0840-32	½-13 x 2" Socket Head Cap Screw
4	2	333-0232	O-Ring
5	8	215-6408	½" Lock Washers
6	2	802-0096	Cylinder Lifting Hook
7	1	804-0888	Cylinder Hose Mount Clamp (Front)
8	1	802-0889	Cylinder Hose Mount Clamp (Back)

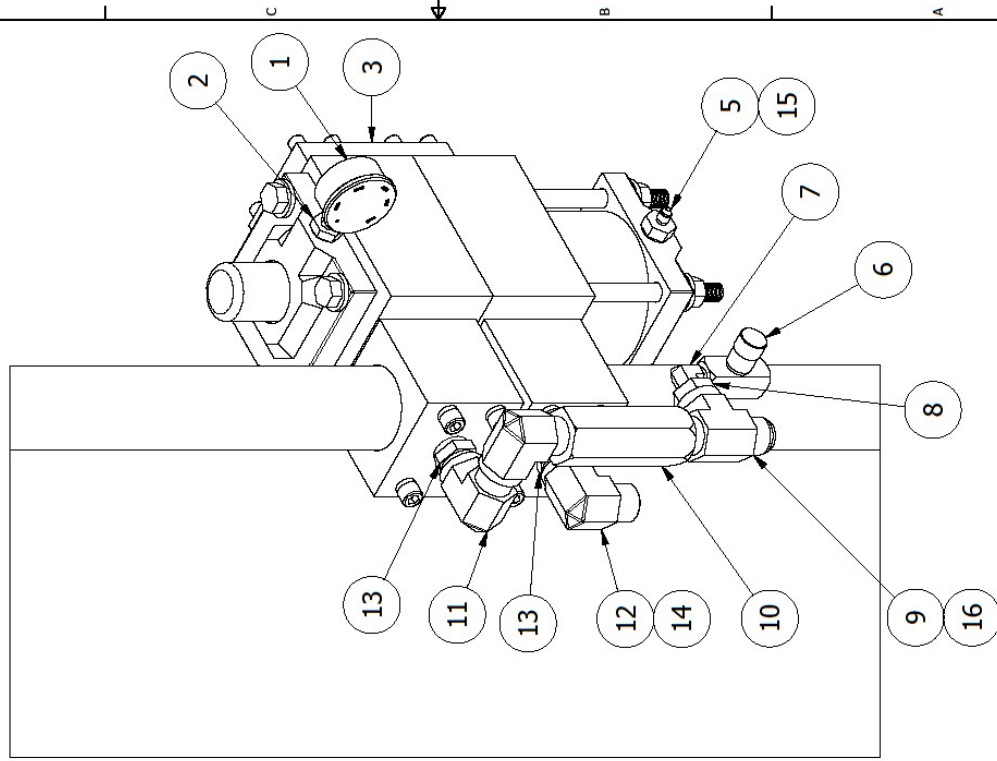


Parts List

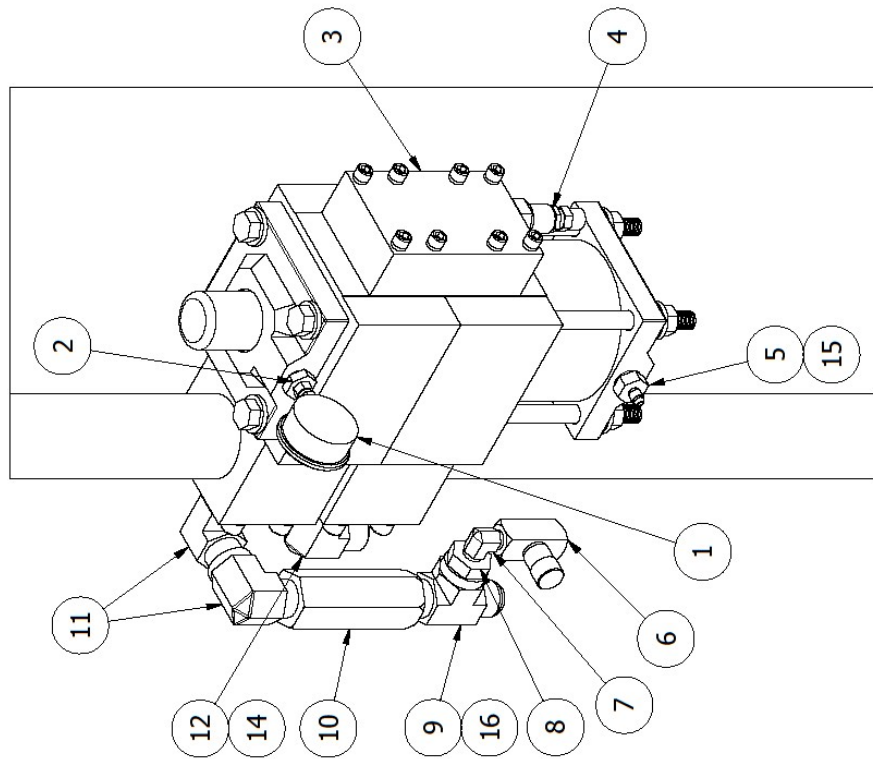
ITEM	QTY	PART NO.	DESCRIPTION
1	1	804-0001	Cylinder Assembly
2	2	806-0901	High Speed Regen Valve Assembly
3	2	804-0647	High Speed Hydraulic Tubes (one right, one left)
4	16	216-0840-80	½-13 x 5" Socket Head Cap Screw
5	4	333-0232	O-Ring
6	16	215-6408	½" High Collar Lock Washer

HIGH-SPEED HYDRAULIC FITTINGS

VIEW1
SCALE 3 / 8

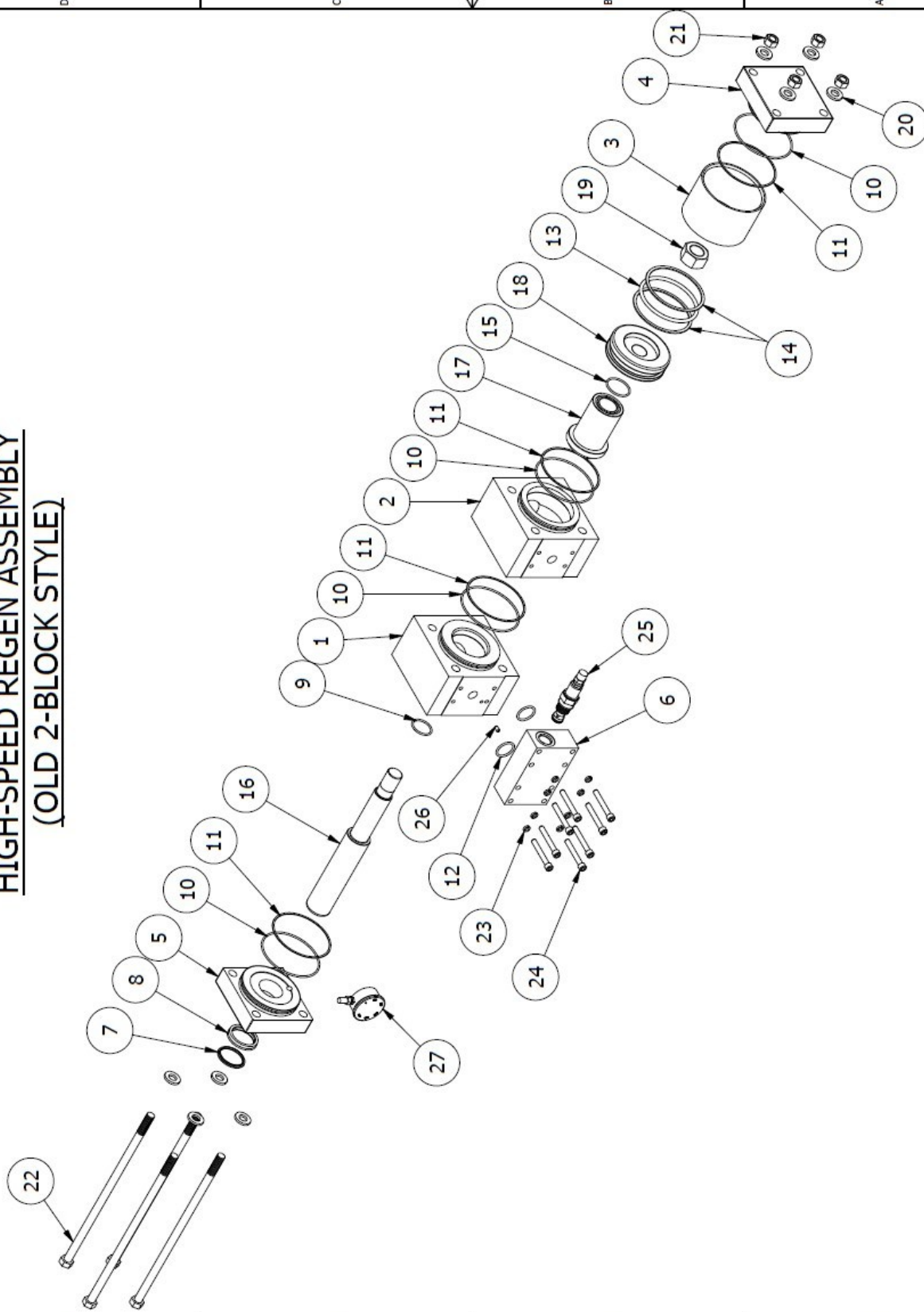


VIEW2
SCALE 3 / 8



High-Speed Hydraulic Fittings Parts List			
ITEM	QTY	PART NO.	DESCRIPTION
1	1	335-1010	Pressure Gauge 0-5000 psi
2	1	336-6405-10-4	7/8" Male O-Ring x 1/4" FNPT
3	1	802-0935	Relief Manifold
4	1	331-3023	Relief Spool 2800 psi
5	1	336-6400-4-10	1/4" MJIC x 5/8" Male O-Ring
6	1	331-4106	Needle Valve #6 NPT
7	1	336-5500-06-06	3/8" MNPT 90
8	1	336-5406-16-06	Reducer Bushing 1" x 3/8"
9	1	336-2611-16-16-16	1" MJIC x 1" MNPT x 1" FNPT
10	1	331-5016	Check Valve #16 FNPT
11	2	336-5502-16-16	1" MNPT x 1" FNPT 90
12	1	336-2502-16-16	1" MJIC x 1" FNPT 90
13	2	336-5404-16	1" Straight Male Pipe
14	1	346-0044-53/83	Hydraulic Hose 53" (Rear) 83" (Front) – Not Shown
15	1	346-0044-26	High Speed Regen Block Hose - Not Shown
16	1	346-0044-50/83	Hydraulic Hose 50" (Rear) 83" (Front) – Not Shown

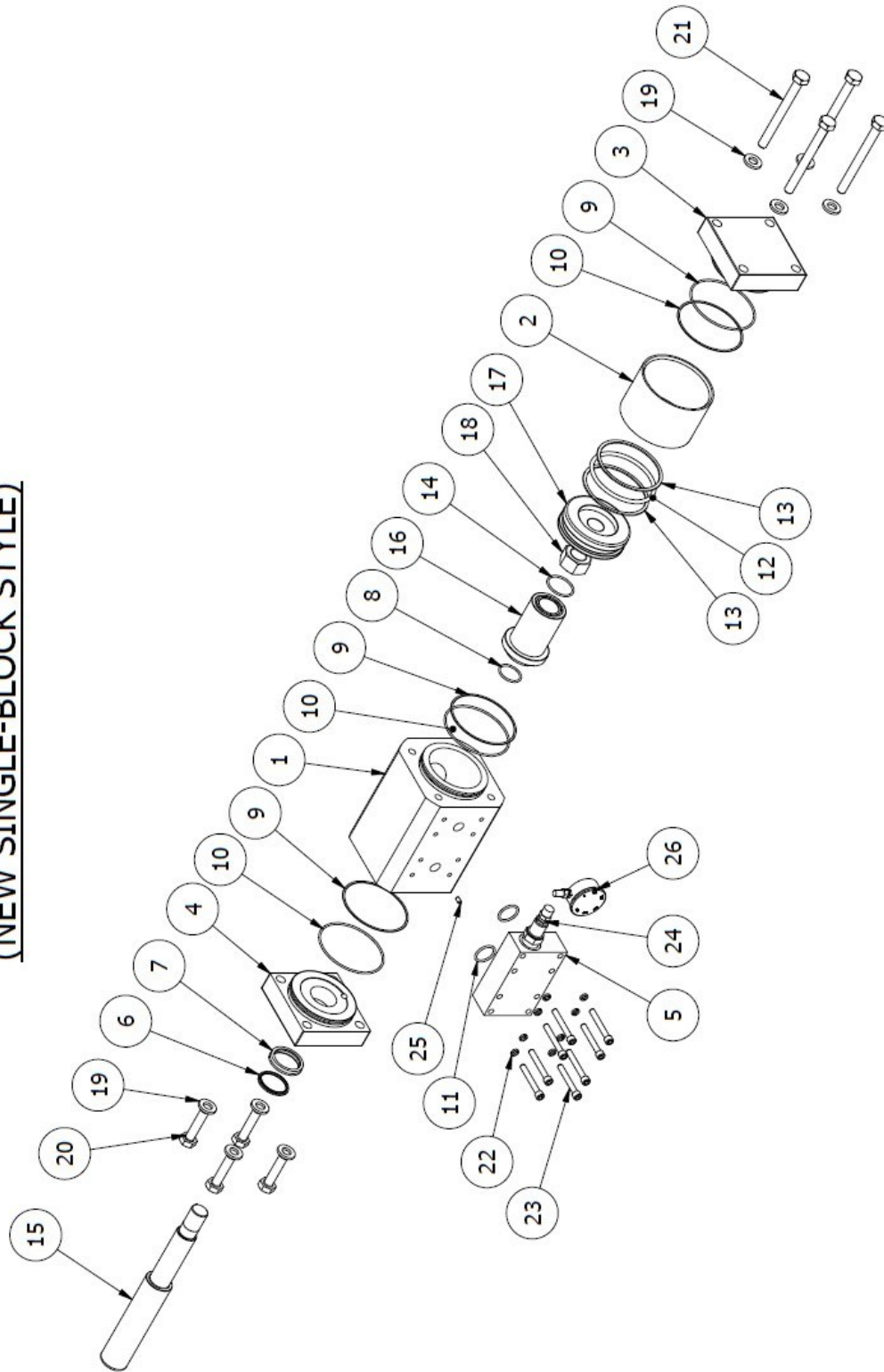
HIGH-SPEED REGEN ASSEMBLY **(OLD 2-BLOCK STYLE)**



High-Speed Regen (2-Block Style) Assembly Parts List			
ITEM	QTY	PART NO.	DESCRIPTION
1	1	802-0920	Top Section (Small)
2	1	802-0900	Bottom Section (Large)
3	1	802-0990	Cylinder Tube
4	1	330-65256	Cylinder Bottom Regen Ass.
5	1	330-65255	Cylinder Top Regen Ass.
6	1	802-0935	Relief Manifold Regen Ass.
7	1	330-65253	Rod Wiper Seal (Outer)
8	1	330-65252	Rod Wiper Seal (Inner)
9	1	330-0224	Shaft O-Ring
10	4	333-1248	Tube to Block Backup O-Ring
11	4	333-0248	Tube to Block O-Ring
12	2	333-0219	Relief Block O-Ring
13	1	330-652500	Piston O-Ring (Regen Block)
14	2	330-65250	Piston O-Ring Spacers
15	1	333-0231	Sleeve to Piston O-Ring
16	1	802-0970	Cylinder Shaft
17	1	802-0980	Cylinder Sleeve
18	1	330-65259	Cylinder Piston
19	1	205-8424	1-1/4" Locking Nut
20	8	208-6210	5/8" Thru Hard Washers
21	4	209-8610	5/8"-18 Grade 8 Nut
22	4	209-10128	5/8"-18 x 16" UNF Cylinder Bolts
23	8	215-6406	3/8" High Collar Washers
24	8	216-0622	3/8"-16 x 2-3/4" Socket Head Cap Screw
25	1	331-3023	Pressure Relief Spool 2800 psi
26	1	226-0408	Dowl Pin, 1/4" x 1/2" Stainless
27	1	335-1010	5,000 PSI Gauge

ALL SEALS IN A KIT
NOT SOLD SEPERATE
PART NO. 334-9006

HIGH-SPEED REGEN ASSEMBLY **(NEW SINGLE-BLOCK STYLE)**

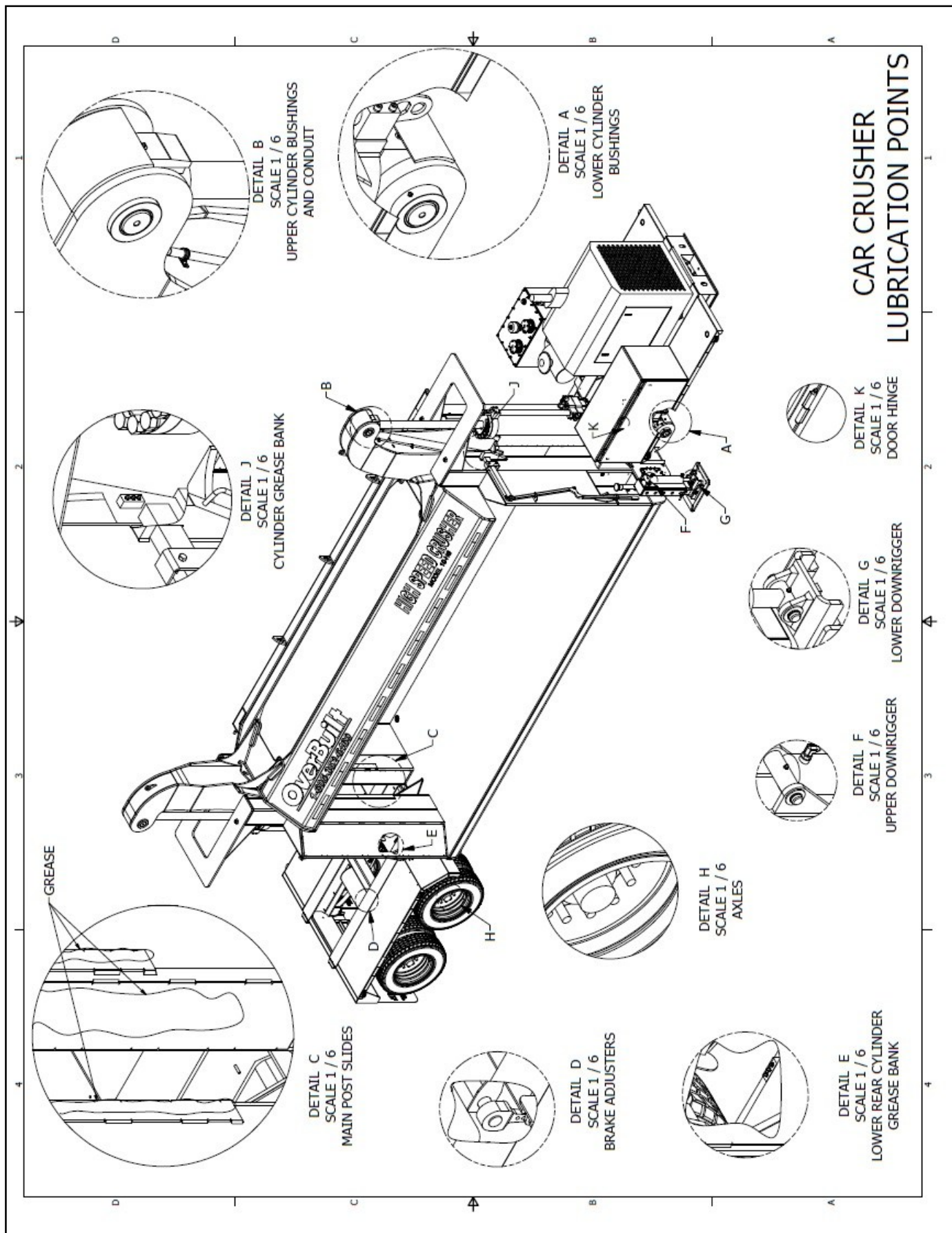


High-Speed Regen (Single Block Style) Assembly Parts List			
ITEM	QTY	PART NO.	DESCRIPTION
1	1	802-0921	Regen Block Single Block
2	1	802-0990	Cylinder Tube
3	1	330-65256	Cylinder Bottom Regen Ass.
4	1	330-65255	Cylinder Top Regen Ass.
5	1	802-0935	Relief Manifold Regen Ass.
6	1	330-65253	Rod Wiper Seal (Outer)
7	1	330-65252	Rod Wiper Seal (Inner)
8	1	330-0224	Shaft O-Ring
9	3	333-1248	Tube to Block Backup O-Ring
10	3	333-0248	Tube to Block O-Ring
11	2	333-0219	Relief Block O-Ring
12	1	330-652500	Piston O-Ring (Regen Block)
13	2	330-65250	Piston O-Ring Spacers
14	1	333-0231	Sleeve to Piston O-Ring
15	1	802-0970	Cylinder Shaft
16	1	802-0980	Cylinder Sleeve
17	1	330-65259	Cylinder Piston
18	1	205-8424	1-1/4" Locking Nut
19	8	208-6210	5/8" Thru Hard Washers
20	4	208-1022	5/8"-11 x 2-3/4" Grade 8 Bolt
21	4	208-1052	5/8"-11 x 6-1/2" Grade 8 Bolt
22	8	215-6406	3/8" High Collar Washers
23	8	216-0622	3/8"-16 x 2-3/4" Socket Head Cap Screw
24	1	331-3023	Pressure Relief Spool 2800 psi
25	1	226-0408	Dowl Pin, 1/4" x 1/2" Stainless
26	1	335-1010	5,000 PSI Gauge

ALL SEALS IN A KIT
NOT SOLD SEPERATE
PART NO. 334-9006

CC Lubrication Recommendation Overbuilt Car Crusher

	<u>Approximate Duration</u>	<u>Brand</u>	<u>Filter #</u>	<u>OverBuilt Order #</u>
Hydraulic Oil	1000 hours or annually	ISO 46 or non-detergent 32 or 46		
High Pressure Filters (two replacement filter cartridges)	1000 hours, gauge or annually	MP Filtri	HP3202A10AN	332-0009
Hydraulic Filters				
10 Micron Nominal (two replacement filters)	500 hours, gauge or annually	OverBuilt	332-1010N	332-1010N
10 Micron Water (two replacement filters)	500 hours, gauge or annually	OverBuilt	332-1010W	332-1010W
In-Tank Filters	500 hours, gauge or annually	OverBuilt	KZW10	332-1000F
Fuel Filters				
Pre Filter on Frame & Auxiliary Fuel Pump	250-500 hours or annually	NAPA/Carquest	4348/89348	332-1004F
Engine Fuel Filters (Final)	250-500 hours or annually	See engine manual		
Engine Fuel Filters (Pre)	250-500 hours or annually	See engine manual		
Air Cleaners				
Primary Element	250-500 hours, air restriction indicator or annually	See engine manual		
Safety Element	250-500 hours, air restriction indicator or annually	See engine manual		
Hydraulic Tank Breather Canister with Filter	Inspect monthly, change as needed	OverBuilt	332-0080	332-0080
Oil Filter	250-500 hours or annually	See engine manual		
Grease				
Main Post Slides Depending on dust conditions	Daily	Check All Fluid Levels & Visually Inspect Crusher Daily <u>Order Info</u> OverBuilt 780 West Park Ave NW Huron, SD 57350 605-352-6469		
Cylinder Bushings	Daily			
Landing Gear	Weekly depending on usage			
Axles	Weekly depending on usage			



OverBuilt Hydraulic Filters

Dual Head External Filters System

Water Filter	332-1010 W X 2
Nominal	332-1010N X 2
(Seals Included w/all)	

In-Tank Filters System

Universal Filter	332-1000F X 4
------------------	---------------

Filter Canister Cap O-Ring	332-1000-OR X 2
(Reusable)	

Compete In-Tank Filter	
Canister w/Filters	332-1000 X 2
(2 per crusher)	

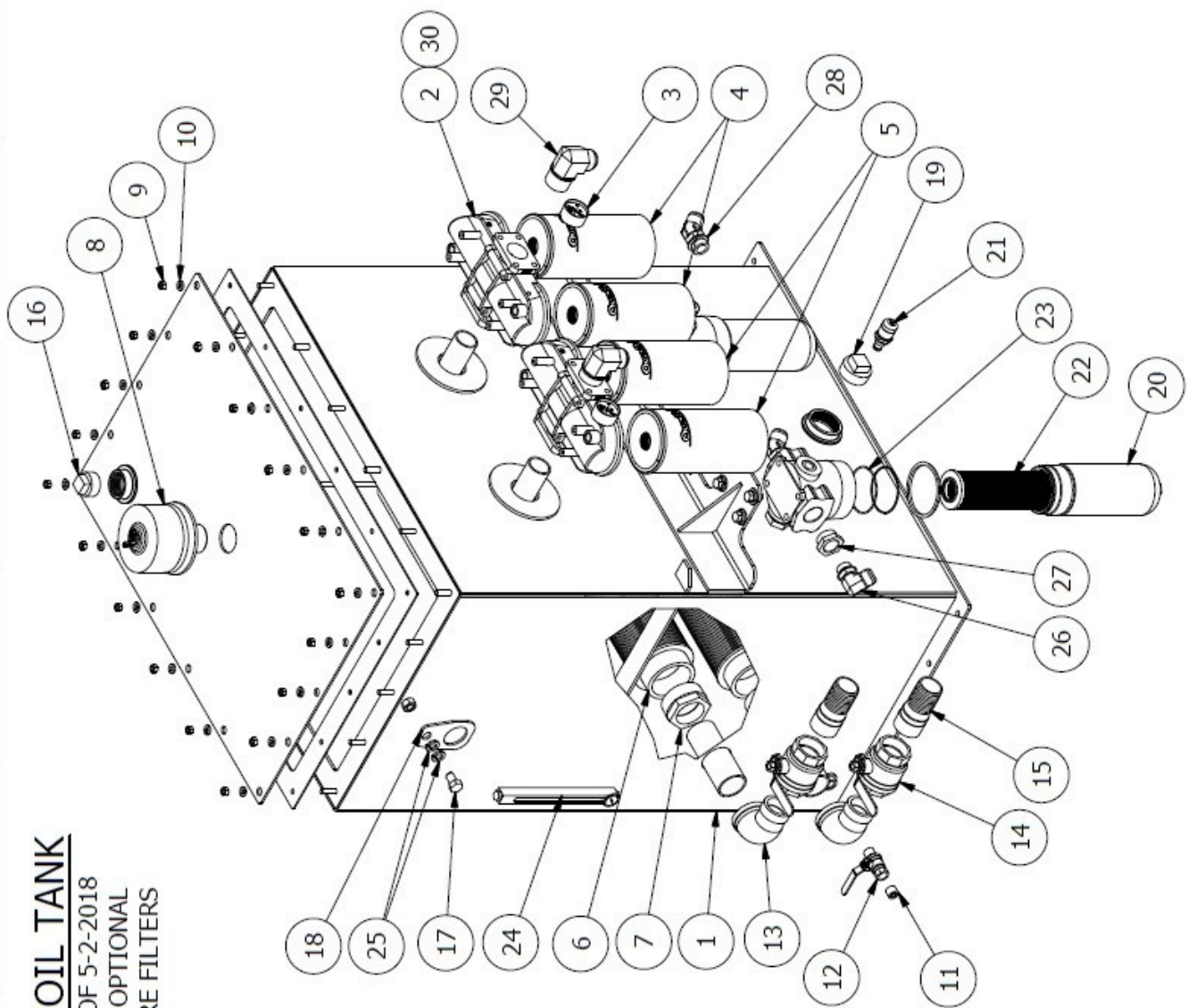
High Pressure Filter (Optional)	332-0009 X 2
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High Pressure Filter Seal Kit (Optional)	332-0009S X 2
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High Pressure Filter	
Canister w/Filters (Optional)	332-0008 X 2

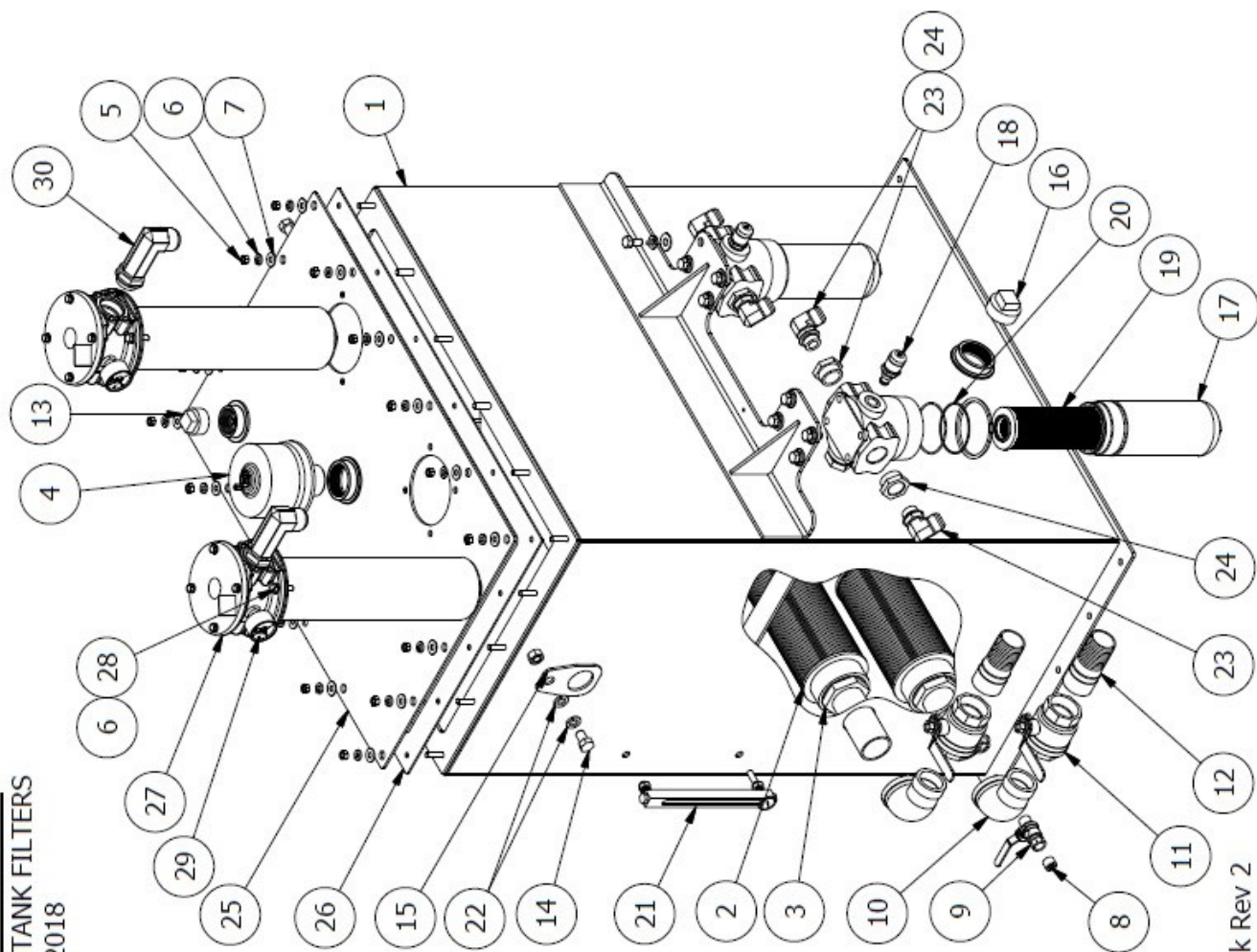
HYDRAULIC OIL TANK

OLD STYLE AS OF 5-2-2018
SHOWN WITH OPTIONAL
HIGH PRESSURE FILTERS



Hydraulic Oil Tank (Old Style) Parts List			
ITEM	QTY	PART NO.	DESC.
1	1	804-4501	Oil Tank Assembly
2	2	332-0007	Dual Filter Head
3	2	335-1001	Filter Gauge
4	2	332-1010N	Filter Element (Nominal)
5	2	332-1010W	Filter Element (Water)
6	2	332-0130	Suction Strainer
7	2	336b-6410-48-32	3" to 2" Reducer Bushing
8	1	332-0080 + 332-0081	Breather Canister & Filter
9	18	205-8006	3/8" Grade 5 Nut
10	18	205-6406	3/8" Lock Washer
11	1	336-5406-H-8	1/2" Hex Head Plug
12	1	331-6008-1	1/2" Ball Valve M-F
13	2	336b-5502-32	2" Street Elbow
14	2	331-6032	2" Ball Valve F-F
15	2	336b-KN32	2" Barb King Nipple
16	2	336b-5406-24	1-1/2" Black Pipe Plug
17	2	205-1008	5/8"-11 x 1" Grade 5 Bolt
18	2	800-9078	Lifting Plate
19	1	336b-5406-32	2" Black Pipe Plug
20	2	332-0008	High Pressure Filter Container
21	2	332-0007 V7	Visual Filter Gauge
22	2	332-0009	High Pressure Filter Element
23	2	332-0009S	Filter Seal O-Ring Kit
24	2	335-1100	Liquid Level Gauge w/ Thermometer
25	4	206-6410	5/8" Lock Washer
26	2	336-6801-16-16	1" Male Tube to 1" Adj. O-Ring 90
27	4	336-6410-20-16	1-1/4" Male O-Ring to 1" Female O-Ring
28	2	336-6802-16-16	1" Male Tube to 1" Adj. O-Ring 45
29	2	336-2501-20-24	1-1/4" MJIC to 1-1/2" MNPT 90
30	4	332-0007-S2	Dual Filter Head– Seals for new filter heads

HYDRAULIC OIL TANK NEW STYLE WITH IN-TANK FILTERS AS OF 5-2-2018

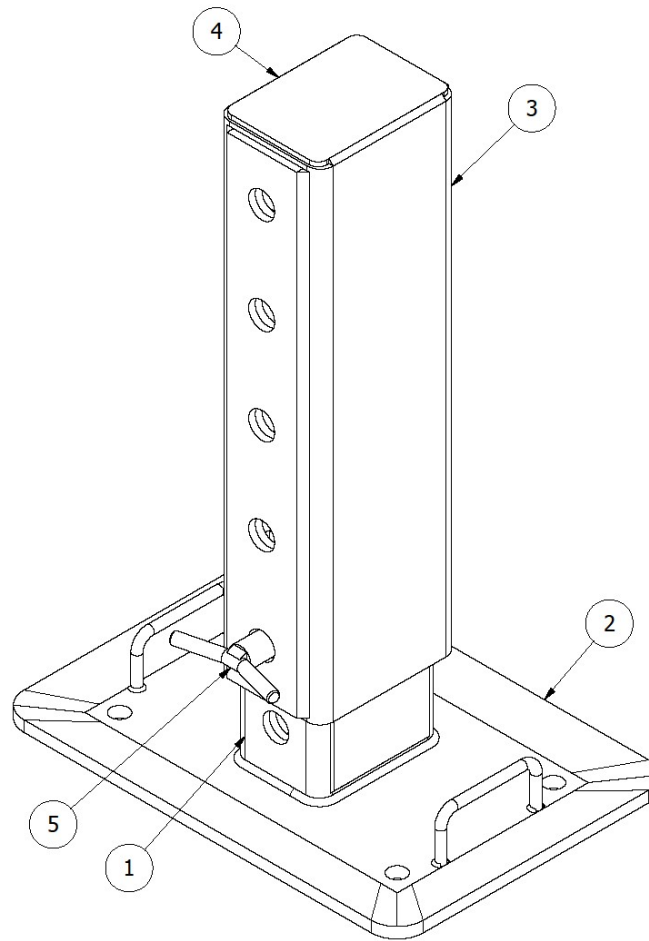


ASSEMBLY #806-4502B
 Drawing # 806-4502 ITF Parts Book Rev 2

Hydraulic Oil Tank with In-Tank Filters (806-4502B) Parts List

ITEM	QTY	PART NO.	DESCRIPTION
1	1	804-4500	Oil Tank Assembly
2	2	332-0130	Suction Strainer
3	2	336b-6410-48-32	3" to 2" Reducer Bushing
4	1	332-0080 + 332-0081	Breather Canister & Filter
5	18	205-8006	3/8" Grade 5 Nut
6	26	205-6406	3/8" Lock Washer
7	18	205-6006	3/8" Flat Washer
8	1	336-5406-H-8	1/2" Hex Head Plug
9	1	331-6008-1	1/2" Ball Valve M-F
10	2	336B-5502-32	2" Street Elbow
11	2	331-6032	2" Ball Valve F-F
12	2	336B-KN32	2" Barb King Nipple
13	1	336B-5406-24	1-1/2" Black Pipe Plug
14	2	205-1008	5/8"-11 x 1" Grade 5 Bolt
15	2	800-9078	Lifting Plate
16	1	336b-5406-32	2" Black Pipe Plug
17	2	332-0008	High Pressure Filter Container
18	2	332-0007 V7	Visual Filter Gauge
19	2	332-0009	High Pressure Filter Element
20	2	332-0009s	Filter Seal-O-Ring Kit
21	1	335-1100	Liquid Level Gauge w/ Thermometer
22	4	205-6410	5/8" Lock Washer
23	4	336-6801-16-16	1-1/4" MJIC x 1-1/2" MPT 90
24	4	336-6410-20-16	1-14" Male O-Ring to 1" Female O-Ring
25	1	804-4504	Oil Tank Lid Weldment
26	1	802-4505G	Oil Tank Lid Mount Gasket
27	2	332-1000 + 332-1000F	In-Tank Mounted Filter
28	8	205-0612	3/8"-16 x 1-1/2" Grade 5 Bolt
29	2	335-1001	Gauge, 0-60 Red
30	2	336-6801-LL-20-20	1-1/4" MJIC x 1-1/4" O-ring Extra Long

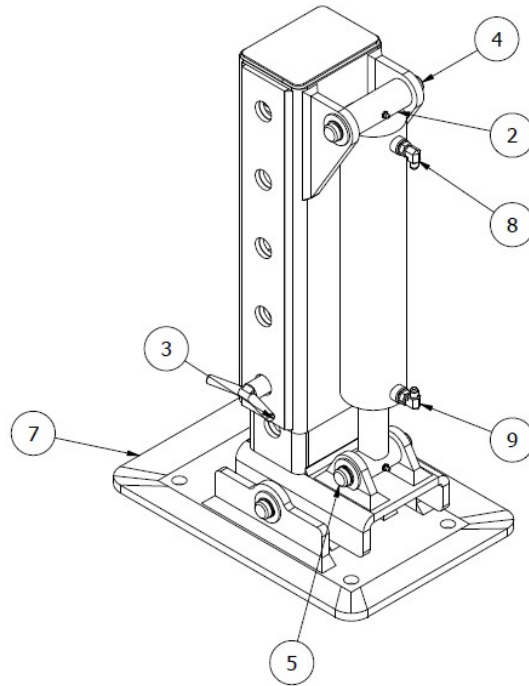
MANUAL DOWNRIGGER ASSEMBLY



Parts List (804-5096)

Item	QTY	PART NO.	ITEM
1	1	804-5103	Inner Tube Assembly
2	1	804-5006	Stationary Foot Assembly
3	1	804-5104	Outer Tube Assembly
4	1	802-5097	Downrigger Tube Cap
5	1	804-5004	Height Adjusting Pin

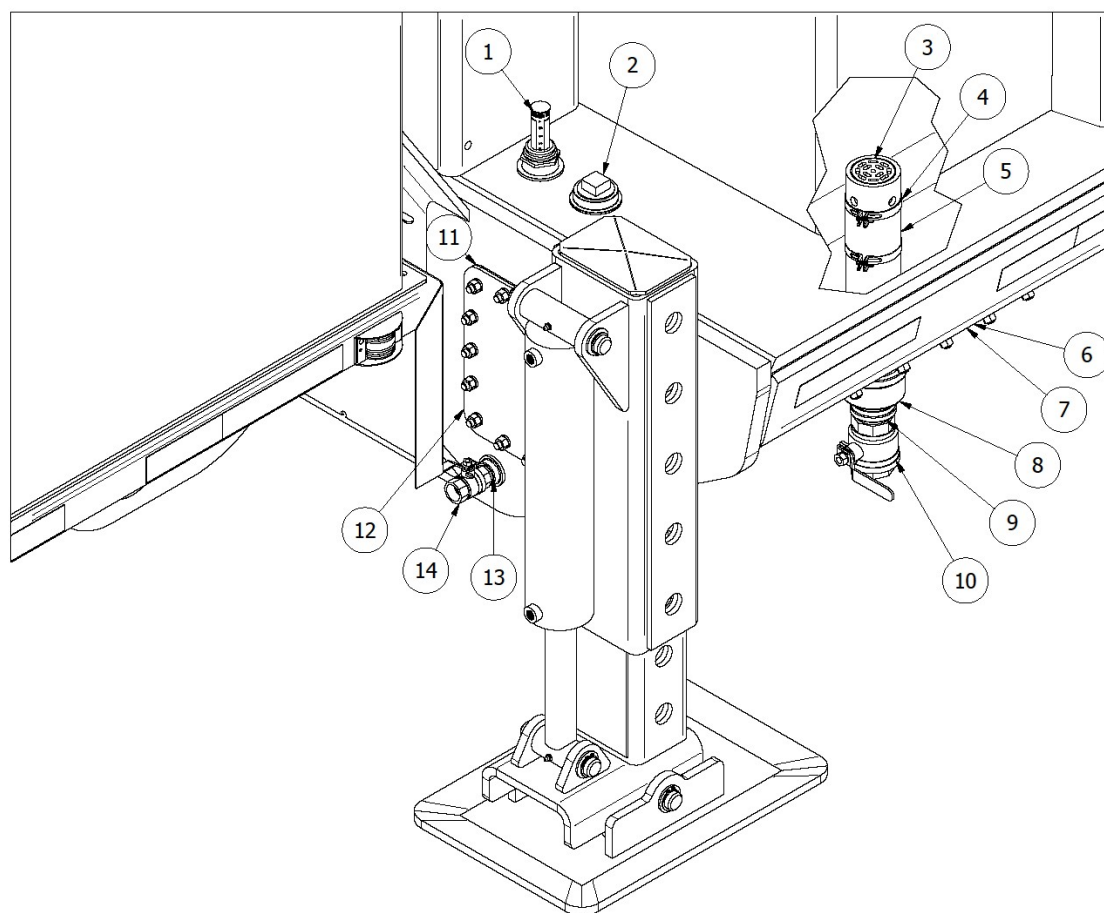
DOWNRIGGER ASSEMBLY
w/ HYDRAULIC CYLINDER Rev 1



Parts List

Item	QTY	PART NO.	ITEM
1	1	806-5000	Downrigger Assembly
2	1	330-6046	4-1/2" x 16" Welded Cylinder Assembly
3	1	804-5004	Height Adjusting Pin
4	1	806-5089	Upper Pin Assembly
5	1	806-5091	Lower Pin Assembly
6	1	806-5090	Foot Pin Assembly
7	1	804-5001	Foot Assembly
8	1	346-0046-100L/112R	Upper/Lower Hose Assembly (Left & Right) (Not shown)
9	2	336-6801-6-8	#6 JIC to #8 O-Ring 90

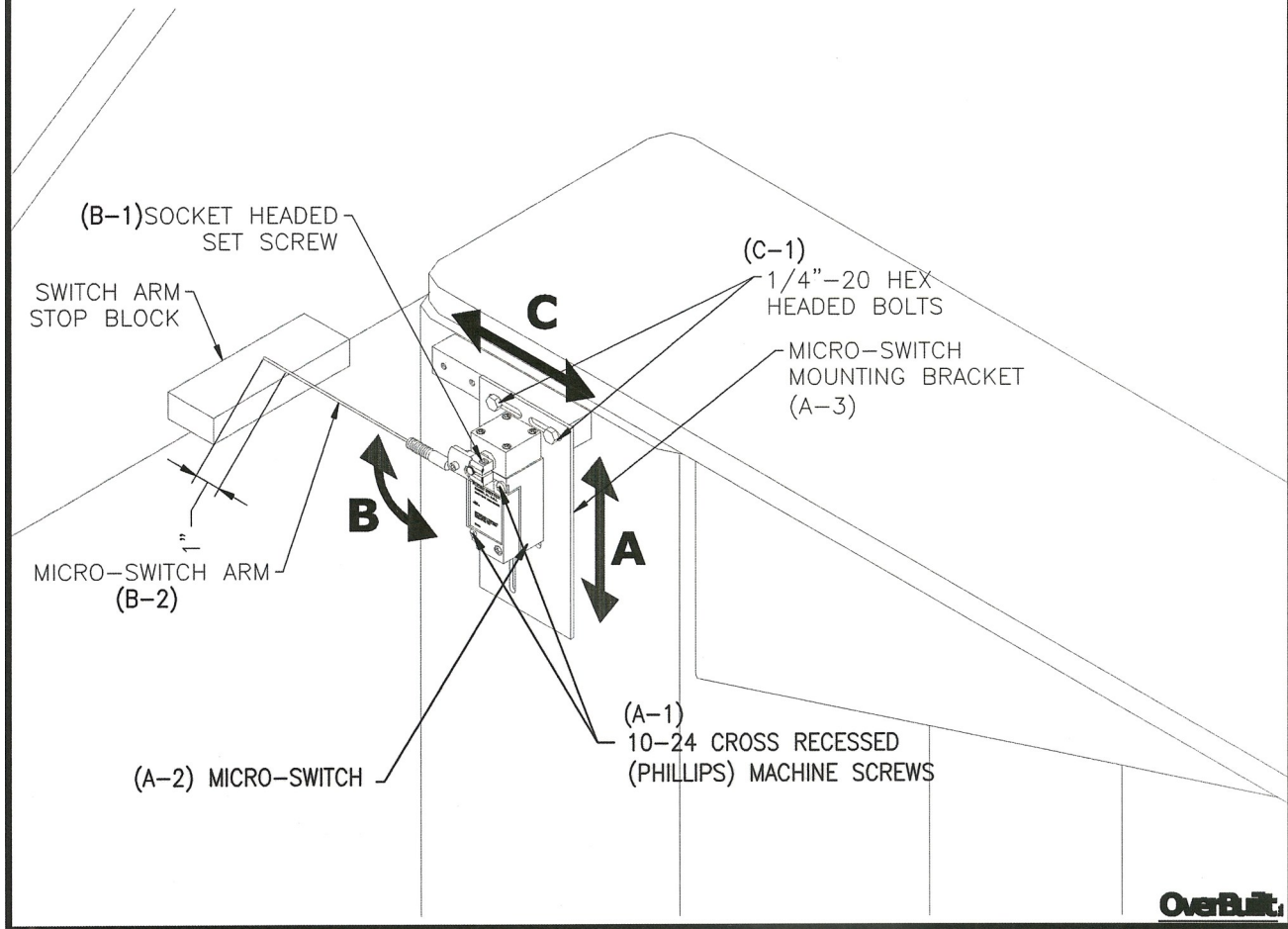
OIL RECOVERY SYSTEM ASSEMBLY



Parts List

Item	QTY	PART NO.	ITEM
1	1	335-1121	Oil Level Gauge
2	1	336b-5406-32	Fill Plug
3	1	802-3021	Drain Cover
4	2	342-8056	Screen Clamp
5	1	332-0002	Perforated Screen
6	2	802-3012g	Cover Gasket
7	1	802-3012	Cover
8	1	336b-6400-32-48	Bell Reducer
9	1	336b-5404-32	Close Nipple
10	1	331-6032	2" Ball Valve
11	1	802-3051g	Cover Plate Gasket
12	1	802-3051	Cover Plate
13	1	336b-5404-16	Close Nipple
14	1	331-6016	1" Ball Valve

LIMIT-SWITCH ADJUSTMENT & PART ASSEMBLY



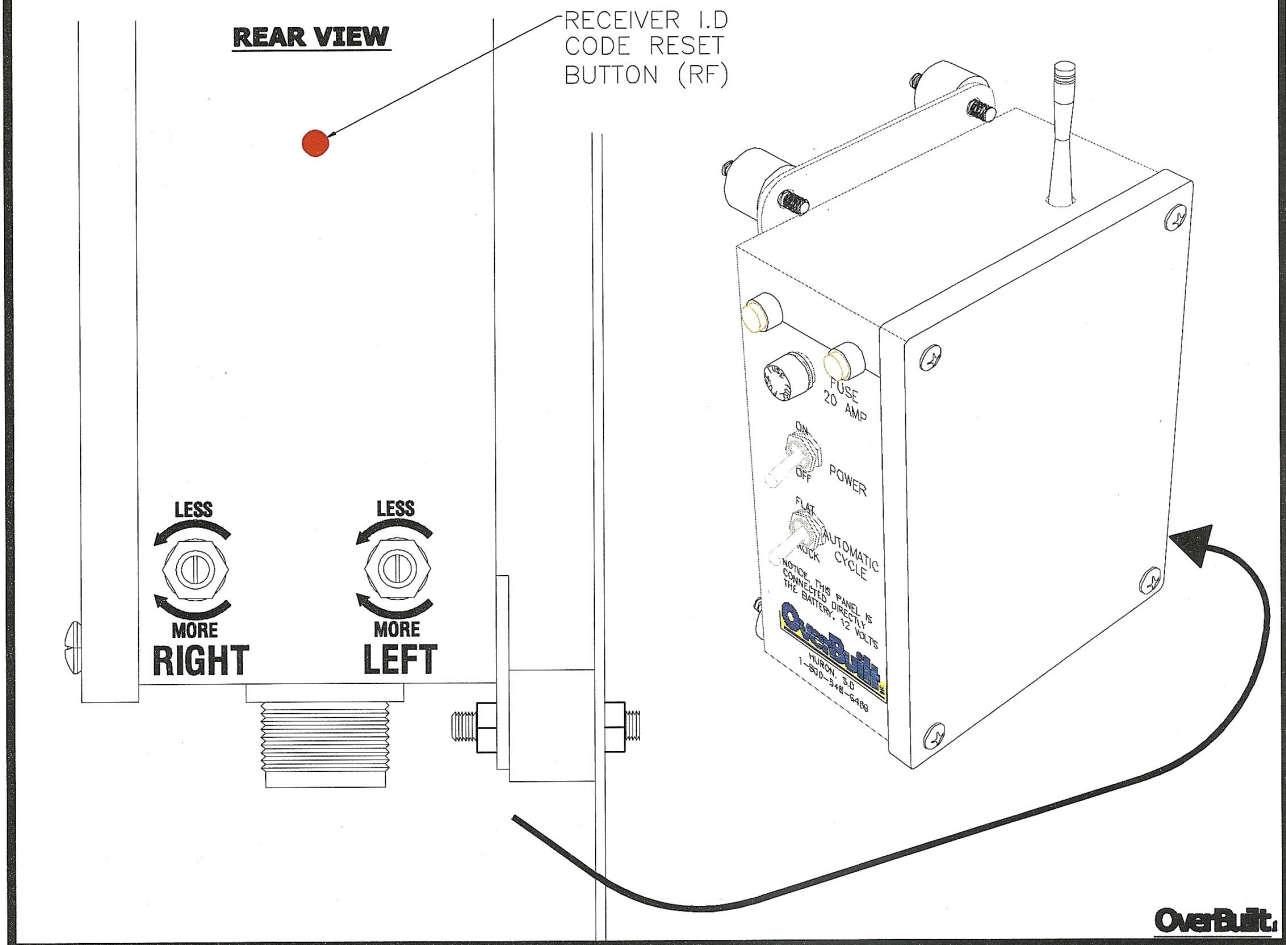
ADJUSTMENT A: LOOSEN 10-24 PHILLIPS HEADED MACHINE SCREWS (A-1) ON LIMIT-SWITCH (A-2) TO ADJUST SWITCH UP AND DOWN.

ADJUSTMENT B: HEIGHT ADJUSTMENT: LOOSEN SOCKET HEADED SET SCREW (B-1) ON LIMIT-SWITCH ARM (B-2) TO LEVEL ARM OR TO MAKE SLIGHT ADJUSTMENT UP OR DOWN

ADJUSTMENT C: LOOSEN 1/4" HEX HEADED BOLTS (C-1) ON LIMIT-SWITCH BRACKET TO ADJUST LEFT OR RIGHT. IF IT CANNOT BE ADJUSTED REMOVE BRACKET AND RELOCATE IN THE NEXT SET OF TAPPED HOLES.

ITEM	QTY	PART NO.	ITEM
A-2	1	306-3000	Micro-Switch
B-2	1	306-3000A	Micro-Switch Arm
A-3	1	802-9014	Micro-Switch Mount Plate

ROCK CYCLE LIFT HEIGHT ADJUSTMENT AND RECEIVER/TRANSMITTER PROGRAMMING



TO ADJUST ROCK: Adjustments are on the right side as shown above.

Turn lift adjustment with screwdriver clockwise to increase lift height and counterclockwise to decrease lift height.
You may need to loosen lock nut to make adjustments.

RECEIVER/TRANSMITTER PROGRAMMING:

1. Turn receiver and transmitter on.
2. Press and hold the reset button on the receiver while pressing right or left up switch on the transmitter.
3. LED's will both go steady, then green L.E.D will flash Release function switch.
4. Program complete.

NEW RECEIVER REMOTE SYSTEM CRUSHER #863 & NEWER

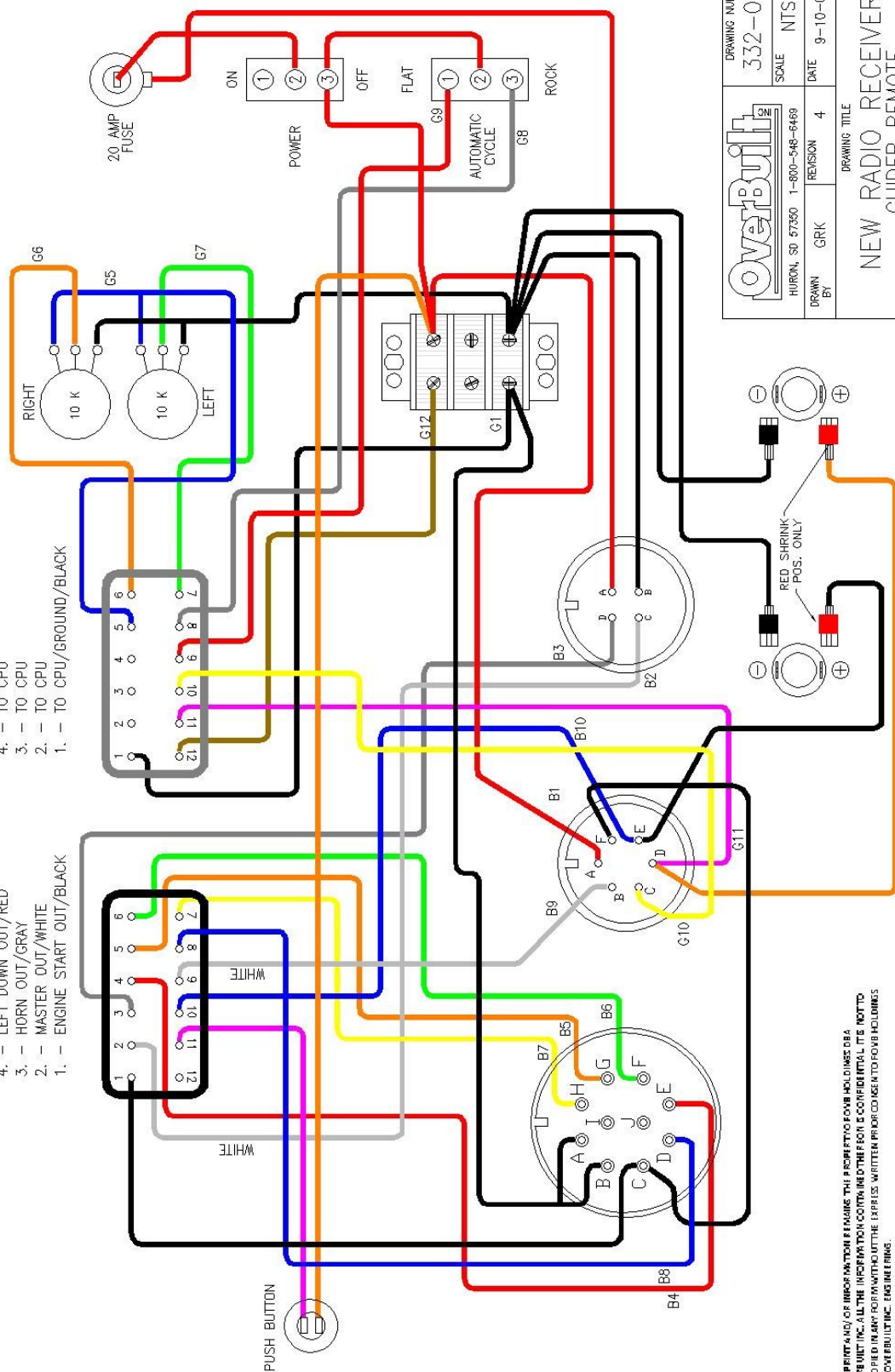
1. Turn the Transmitter & Receiver off.
2. Press & Hold the POWER button on the transmitter for 10 seconds, the LED'S should blink at the same time
3. Turn the Power switch on the Receiver to "ON". The lights on the remote will stay on during teaching.
4. Once the teaching is done the lights on the remote will quit blinking. Pairing is successful

REV:	DATE:	BY:
1	1/27/10	ADT
2	10/17/16	ADT
3	4/9/2018	ADT
4		

UPDATED ROUTE FOR WIRE #1
 REMOVED #8 WIRE, ADDED WIRE ON POWER
 POST #3
 READED WIRE ON B6, ADDED NUMBER
 OUT BLACK WIRE FROM #1 ON BLACK TERMINAL 8/29/2018 ACT
 FROM GOING TO F ON 9 PIN TO C ON 10 PIN, FEEL GARY

- 12. - N/C
- 11. - PROGRAM I.D./PURPLE
- 10. - LEFT DOWN PRESSURE/BLUE
- 9. - LEFT UP PRESSURE/WHITE
- 8. - ENGINE STOP OUTPUT/BLUE
- 7. - RIGHT UP OUT/YELLOW
- 6. - LEFT UP OUT/GREEN
- 5. - RIGHT DOWN OUT/ORANGE
- 4. - LEFT DOWN OUT/RED
- 3. - HORN OUT/GRAY
- 2. - MASTER OUT/WHITE
- 1. - ENGINE START OUT/BLACK

- 12. - +12 VOLT BATTERY/BROWN
- 11. - RIGHT DOWN PRESSURE/PURPLE
- 10. - RIGHT UP PRESSURE/YELLOW
- 9. - ROCK/RED
- 8. - FLAT/GRAY
- 7. - LEFT UP TIMER/GREEN
- 6. - RIGHT UP TIMER/ORANGE
- 5. - +5 VOLT REF/BLUE
- 4. - TO CPU
- 3. - TO CPU
- 2. - TO CPU
- 1. - TO CPU/GROUND/BLACK



DRAWING NUMBER 332-0428	
SCALE NTS	
HURON, SD 57350 1-800-548-6469	
DRAWN BY GRK	REVISION 4
DATE 9-10-07	
DRAWING TITLE NEW RADIO RECEIVER GUIDER REMOTE	

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TROUBLE SHOOTING

<u>Symptom</u>	<u>Problem</u>	<u>Solution</u>
Lid “tops out” cylinder on the up stroke and the crusher continues to build pressure. (Diesel engine will stay on high idle.)	Lid is missing micro switch arm.	Adjust arm – side to side, up and down or rotate arm. (See page 47)
	Lid hits switch but does not stop.	Check arm operation & electrical connection. (See page 24)
Lid stops approximately 2 feet from the top.	Micro switch arm hits the top of the lid instead of the stop tab.	Adjust load if the lid is coming off of an uneven bundle. Adjust arm – side to side up and down or rotate arm. (See page 37)
Lid stops ¼ - ½ of the way up.	Micro switch arm stuck in up position.	Check arm alignment and it’s movement up and down. (See page 47)
	Bad electrical connection.	Check wiring inside of micro switch. Disconnect two-pin connector to micro switch to see if remote will lift lid with automation system. (See page 24)
Lid will not release to go back up on automated cycle.	Automation system not receiving signal from pressure switch.	Check two pin electrical connection to pressure switch. (See page 24) Check connection to automation box by jumping connection to white automation box with wire or paper clip. (The automation light should come on.)
	Pressure switch setting too high.	Decrease pressure by turning switch adjustment counterclockwise. (See page 10)
	Switch is plugged or stuck.	Check and clean pressure switch and snubber filter while tapping them to loosen debris.
Light on the white automation control box stays on all the time.	Pressure switch setting too low.	Increase pressure by turning switch adjustment clockwise. (See page 10.)
	Switch is plugged or stuck.	Check and clean pressure switch and snubber filter while tapping them to loosen debris.
	Wire harness or receiver is faulty.	Swap the two pin electrical connections going to the left and right switches. If the same light remains on replace receiver. (See page 24)

TROUBLE SHOOTING

<u>Symptom</u>	<u>Problem</u>	<u>Solution</u>
Cylinder takes a long time to build pressure. (High-speed crushers only.)	Hydraulic oil contamination or debris blockage does not allow high-speed plunger to set.	Turn needle valve (See page 31 item 6) counterclockwise to open all the way and operate machine to clear system. Watch plunger, in order for it to build pressure it must be all the way up. (The same height as the opposite side.)
Cylinder only builds 400-600 psi going down.	Bad cylinder relief or regen manifold. Bad valve relief or hydraulic pump.	Will it build 2,400 – 2,600 psi by manually running the cylinders to the bottom? If it will build pressure up, it may be a bad cylinder relief or regen manifold. (See page 13, item 5 for normal speed/ and page 15, item 5 or page 33, item 25 for the high speed crusher.) If it will not build pressure up, it may be a bad valve relief or a pump problem. (See pages 13-19, item 5.) To check relief spool, take pressure off of system and remove with a 1¼ inch wrench. Check plunger and o-rings.
The automation transmitter will not operate the machine.	Automation system may have lost transmitter code.	Make sure that both the receiver and the transmitter power are on and program as instructed on page 48.
During a rock cycle the lid lifts up on one side while the other side pulls down.	The high speed plunger has not set, allowing fluid to bypass.	The lid should not free fall more than 3 to 4 feet. Turn needle valve counterclockwise to decrease fall distance. (See page 31, item 6)
The crusher battery is rundown or dead.	Battery may have gone bad or switch was left on.	Make sure ignition is off and that white automation box is shut off at end of day. Test crusher battery and replace as necessary.

OverBuilt
780 West Park Ave. NW
Huron, SD 57350

LIMITED NEW EQUIPMENT WARRANTY

a. OverBuilt warrants solely to purchaser ("Purchaser") of the OverBuilt new equipment ("Equipment") that for a period of 1-year (Warranty Period) commencing on the date of delivery. The equipment shall be free from defect in material and workmanship ("Warranty").

b. In the event of the failure of the Equipment to comply with the warranty Period and in the event Purchaser gives OverBuilt written notice of the Equipment defect in material or workmanship within One (1) month after such defect occurs, then Purchaser's sole and exclusive remedy and OverBuilt sole obligation shall be that OverBuilt shall, at its sole cost and expense, correct all such defects in material and/or workmanship by, at its option, repairing, replacing or modifying the Equipment to comply with the Warranty. Any such repairs, replacement, or modifications of the Equipment, in whole or in part, shall not in any way extend the Warranty Period. Purchaser shall be required to obtain from OverBuilt prior authorization when the Equipment is returned to OverBuilt.

c. Notwithstanding anything to the contrary contained within, in no event shall: (1) cost borne by OverBuilt, for such repair, replacement or modification of any Equipment exceed the Equipment purchase price paid by Purchaser for the Equipment; or (2) OverBuilt, liability to Purchaser or any third party for damages of any nature, including, without limitation, injury to any person or property, whether based on contract, tort, warranty, strict liability or any other theory, exceed the Purchase Price of the Equipment.

d. This warrant does not cover any Equipment defect occurring: (1) from normal wear and tear; (2) in shipment to or from Purchaser; (3) due to force majeure, improper installation or maintenance, misuse, abuse, neglect, accident, negligence, mishandling, lack of maintenance or reasonable care, or any other cause other than ordinary commercial application, by Purchaser or any third party (other than OverBuilt, or OverBuilt, authorized personnel); (4) due to adjustment, repair, alteration, modification or connection any kind by Purchaser or any party (other than OverBuilt, or OverBuilt, authorized personnel); (5) due to improper environment, excessive or inadequate heating or other environmental irregularity; or (6) due to operation not in accordance with any storage, operation or maintenance instructions furnished by OverBuilt, or for any operation not in accordance with generally accepted industry practice.

e. During the Warranty period, all labor and materials to be provided by OverBuilt, pursuant to the Warranty shall be provided by OverBuilt, without charge, as provided herein. There shall be no Warranty for parts or labor after of the expiration of the Warranty Period. OverBuilt, recommends the Equipment be insured when shipped. Equipment returned out of Warranty shall be repaired, replaced or modified at the option of OverBuilt, and Purchaser shall pay OverBuilt, then current standard charges for: (1) labor, parts and materials supplied by OverBuilt, for servicing the Equipment; and (2) any service calls.

f. THE WARRANTY SET FORTH ABOVE IS EXCLUSIVE AND, EXCEPT AS EXPRESSLY SET FORTH IN THE PRECEDING PARAGRAPHS OF THIS WARRANTY: (1) OVERBUILT, MAKES NO OTHER REPRESENTATION, WARRANTY OR GUARANTEE OF ANY KIND TO PURCHASER OR ANY THIRD PARTY, EXPRESS OR IMPLIED, STATUTORY OR OTHERWISE, ORAL OR WRITTEN, DIRECT OR INDIRECT, INCLUDING, WITHOUT LIMITATION, OR REPRESENTATION, WARRANTY OR GUARANTEE OF MERCHANTABILITY OR FITNESS FOR AN ORDINARY, GENERAL OR PARTICULAR PURPOSE, WITH RESPECT TO THE EQUIPMENT (OR ANY COMPONENT OF OR SERVICE RENDERED WITH RESPECT TO THE EQUIPMENT. OR AS TO ANY MATTER WHATSOEVER WITH RESPECT TO THE EQUIPMENT OR ITS PERFORMANCE, INCLUDING WITH LIMITATION, ITS CONDITION OR PERFORMANCE CAPABILITIES OR THE QUALITIES OF AN GOOD OR SERVICE PRODUCED THEREFROM, OR ITS COMPLIANCE WITH THE FEDERAL OCCUPATIONAL HEALTH AND SAFETY ACT OR ANY OTHER FEDERAL, STATE, OR LOCAL CODES.

ANY STATEMENTS MADE BY OVERBUILT, ITS EMPLOYEES OR AGENTS, INCLUDING, WITH LIMITATION, ANY DEALER OR DISTRIBUTOR, DO NOT CONSTITUTE OVERBUILT. REPRESENTATIONS OR WARRANTIES, SHALL NOT BE RELIED UPON BY PURCHASER OR ANY THIRD PARTY AND ARE NOT A PART OF THIS WARRANTY.

g. THIS WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ALL OTHER EXPRESS AND/OR IMPLIED WARRANTIES WHICH NOW OR HEREAFTER MIGHT OTHERWISE ARISE WITH RESPECT TO THE EQUIPMENT. PURCHASER'S SOLE AND EXCLUSIVE REMEDY (AND THAT OF ANY THIRD PARTY), AND OVERBUILT, SOLE OBLIGATION, ARISING OUT OF OR WITH RESPECT TO THE EQUIPMENT (REGARDLESS OF ANY LEGAL THEORY UPON WHICH ANY SUCH CLAIM MAY BE BASED) SHALL BE THOSE SPECIFICALLY SET FORTH IN THIS WARRANTY.

h. NOT WITHSTANDING ANYTHING TO THE CONTRARY CONTAINED HEREIN, IF PURCHASER FAILS TO COMPLY WITH PAYMENT TERMS ESTABLISHED IN THE CONTRACT, THEN THE WARRANTY PROVIDED IN SECTION I SHALL BE NULL AND VOID AND OF NO EFFECT, AND THE EQUIPMENT SHALL BE DEEMED TO HAVE BEEN PURCHASED "AS IS, WITH ALL ITS FAULTS".

i. NOT WITHSTANDING ANYTHING TO THE CONTRARY CONTAINED HEREIN, UNDER NO CIRCUMSTANCES SHALL OVERBUILT, HAVE ANY LIABILITY TO PURCHASER OR ANY THIRD PARTY FOR: (A) ANY SPECIAL INCIDENTAL, INDIRECT, CONSEQUENTIAL OR ANY OTHER DAMAGES, INCLUDING WITHOUT LIMITATION, LOSS OF PROFITS, LOSS OF REVENUES, LOSS OF USE, LOSS OF TIME, INTEREST OR CARRYING CHARGES ON INVESTMENT, EXPENSES ARISING FROM COSTS OF CAPITAL, UNDERUTILIZATION OF LABOR, EQUIPMENT OR FACILITIES, OR ANY OTHER COMMERCIAL LOSS OR DAMAGE (EVEN IF OVERBUILT, HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH POTENTIAL LOSS OR DAMAGE). OR (B) ANY OTHER INJURY TO PURCHASER OR ANY THIRD PARTY, INCLUDING, WITHOUT LIMITATION, INJURY TO ANY PERSON OR ANY PROPERTY: RESULTING FROM OR ARISING OUT OF, WHETHER DIRECTLY OR INDIRECTLY: (X) ANY USE OF THE EQUIPMENT (OR ANY COMPONENT THEREOF) BY PURCHASER OR ANY THIRD PARTY: (Y) ANY PERFORMANCE, NONPERFORMANCE, OR DELAY IN PERFORMANCE BY OVERBUILT, OF ANY OF ITS OBLIGATIONS: OR (Z) ANY WARRANTY RELATED THERETO.

OPERATOR MAINTENANCE RECORD

OVERBUILT CRUSHER

ITEM	DATE	HOURS	SERVICED BY	COMMENTS
250 HOUR SERVICE				
Fuel Filters				
Auxiliary Fuel Pump Filter				
Engine Pre-Filter				
Engine Final Filter				
Air Cleaner				
Primary Element				
Secondary Element				
Engine				
See Engine Manual				
500 HOUR SERVICE				
Fuel Filters				
Auxiliary Fuel Pump Filter				
Engine Pre-Filter				
Engine Final Filter				
Air Cleaner				
Primary Element				
Secondary Element				
Engine				
See Engine Manual				
Hydraulic Filters				
10 Micron Nominal				
10 Micron Water				
In-Tank Filters				
750 HOUR SERVICE				
Fuel Filters				
Auxiliary Fuel Pump Filter				
Engine Pre-Filter				
Engine Final Filter				
Air Cleaner				
Primary Element				
Secondary Element				
Breather Canister				
Engine				
See Engine Manual				
1000 HOUR/12 MONTH SERVICE				
Fuel Filters				
Auxiliary Fuel Pump Filter				
Engine Pre-Filter				
Engine Final Filter				
Air Cleaner				
Primary Element				
Secondary Element				
Engine				
See Engine Manual				
Hydraulic Filters				
10 Micron Nominal				
High Pressure Hydraulic Filters				
Filter Cartridges				
Hydraulic Oil				
Change Oil				

**CHECK ALL FLUID LEVELS, GREASE &
VISUALLY INSPECT CRUSHER DAILY**



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