

# ***ODP 200 PPS***

[Parts Manual](#)



The information, specifications, and illustrations in this manual are on the basis of information available at the time it was written. The specifications, torque values, pressures of operation, measurements, adjustments, illustrations, and other items can change at any time. These changes can affect the service of the given product. For the complete and most current information, contact:

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P.O. Box 405 / 3800 Eagle Loop  
Odell, OR 97044-0405  
541-354-1001  
541-354-1080 Fax

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version please visit:**  
[www.hoggdavis.com](http://www.hoggdavis.com)

# **ODP 200 PPS 20,000 Lb Drum Puller**

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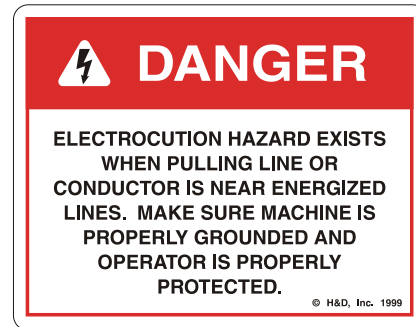
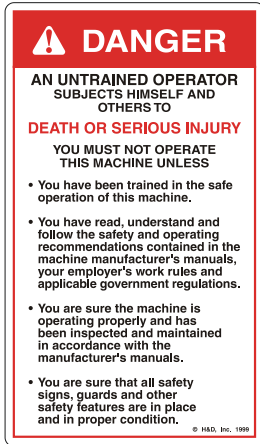
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# **ODP 200 PPS 20,000 Lb Drum Puller**

## **Product Warnings**



***These warning labels and others like  
it are placed in critical areas of the  
machine. The warnings are to be  
read and fully understood prior to  
operation of the unit.***



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# **ODP 200 PPS 20,000 Lb Drum Puller**

## **General Specifications**

This unit is designed to install / tension overhead cable/conductor.

- Single Reel Puller
- Pulling Computer
- Constant Line Pull System
- 20,000 lbs Maximum Line Pull
- 275 hp Tier III Diesel
- 22,000 5/8 swaged wire rope capacity
- Four Way Post Style Level wind
- Dual Drive System
- Fuel Capacity – 60 Gallons
- Hydraulic Oil Capacity – 50 Gallons

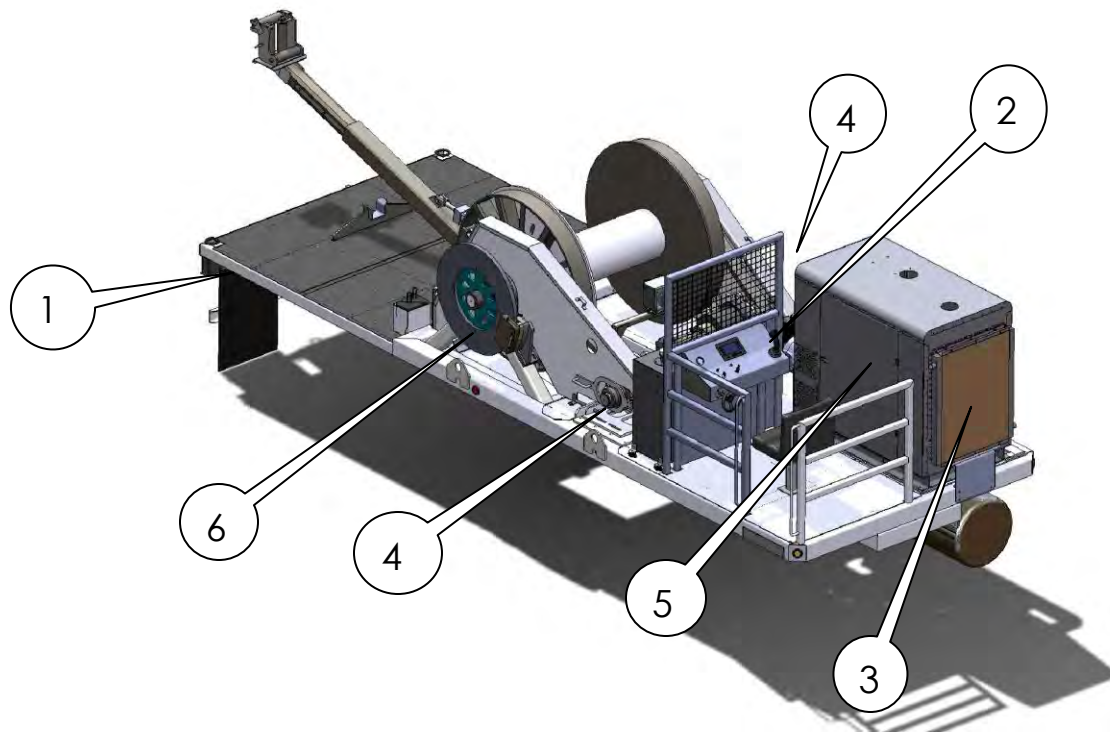


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# **ODP 200 PPS 20,000 Lb Drum Puller**



## **Operating Instructions**

All persons operating this machine must read and understand this manual as well as the operating, danger, and warning decals placed on the machine. Failure to read and understand these items subjects the operator and others to **DEATH or SERIOUS INJURY**.

***Operators shall make themselves familiar with the placement of the following operating and safety features of the machine.***



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# **ODP 200 PPS 20,000 Lb Drum Puller**

## **Puller – Main Unit Curb Side**

1. Grounding Lugs. There are two lugs welded to the rear of the unit on the hitch plate section. They are to be used for grounding only.
2. Operators Station
3. Hydraulic Oil Cooler. This unit transfers the heat from the hydraulic oil during use. It is to be kept clean and clear of dust and debris. Failure to do so may increase hydraulic system operating temperature and may also damage the components in the system.
4. Drive Dog Clutches. There is a unit located on both sides. These are the primary drives for the pulling operation. They are able to be engaged and disengaged by removing the drive pin and pulling or pushing on the lever provided. **DO NOT OPERATE THE UNIT WITHOUT BOTH DRIVES ENGAGED.** It may be necessary for the operator to rotate the reel to allow for the drive dogs to be engaged. Placing pressure on the lever while rotating the reel allows for this to happen. **NEVER OPERATE THE UNIT WITHOUT THE CLUTCHES AND PINS ENGAGED.**
5. Engine Access. This door allows for access to the engine from the operators station. Do not operate the unit with this door open. The enclosure has been designed to minimize sound and heat during operation.
6. Brake Rotor and Caliper. This brake system is for use during the free wheel payout of the installation rope. During the free wheel operation of the unit, this rotor will become extremely hot. **DO NOT OPERATE THE PULLING FUNCTION OF THIS UNIT WHILE THE BRAKE SYSTEM IS APPLIED.**

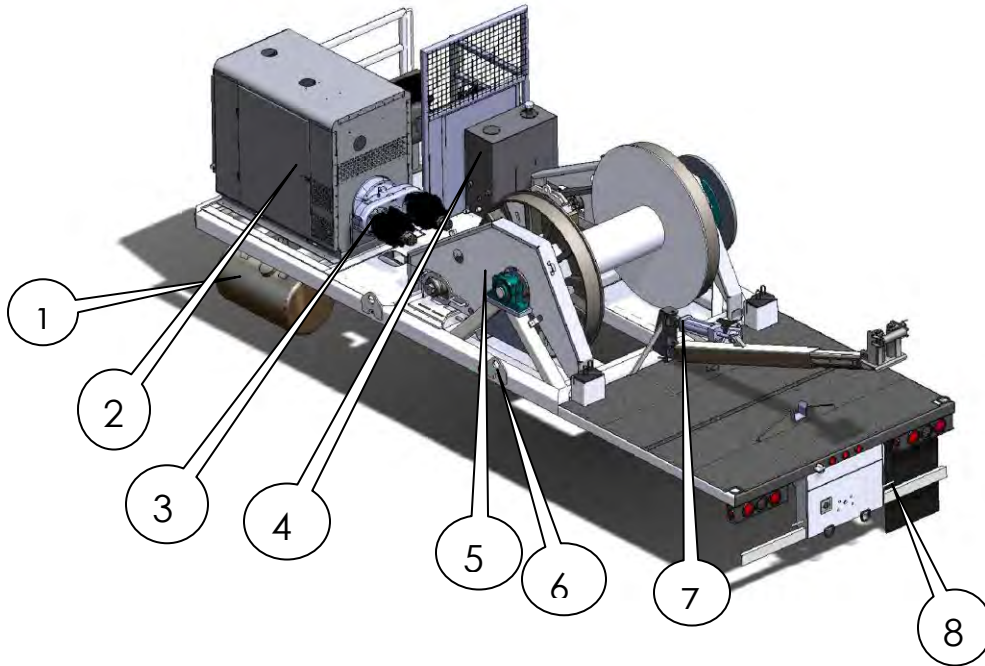


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# **ODP 200 PPS 20,000 Lb Drum Puller**



## **Puller – Main Unit – Street Side**

1. Fuel Tank. **DIESEL FUEL ONLY.** 60 Gallon capacity
2. Engine access cover
3. Hydrostatic Pumps
4. Hydraulic Tank. 50 Gallon Capacity. ISO 46 or equivalent.
5. Chain Guards. Located on both sides of large secondary sprocket. There are access panels on both guards on the secondary sprocket. Lubricate chain daily. **DO NOT OPERATE PULLER WITHOUT GUARDS IN PLACE.**
6. Lifting Points. **DO NOT USE D RINGS ON REAR DECK**
7. Level Wind
8. Grounding lug location



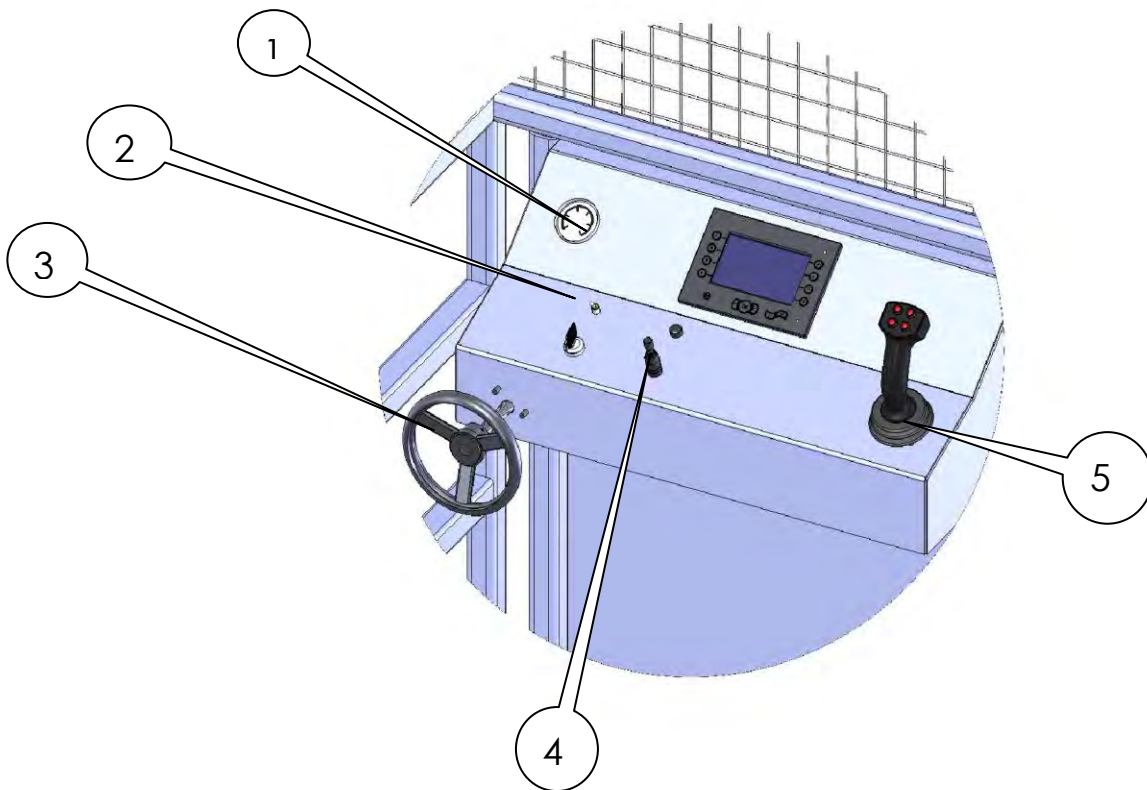
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# **ODP 200 PPS 20,000 Lb Drum Puller**

## **Control Panel**



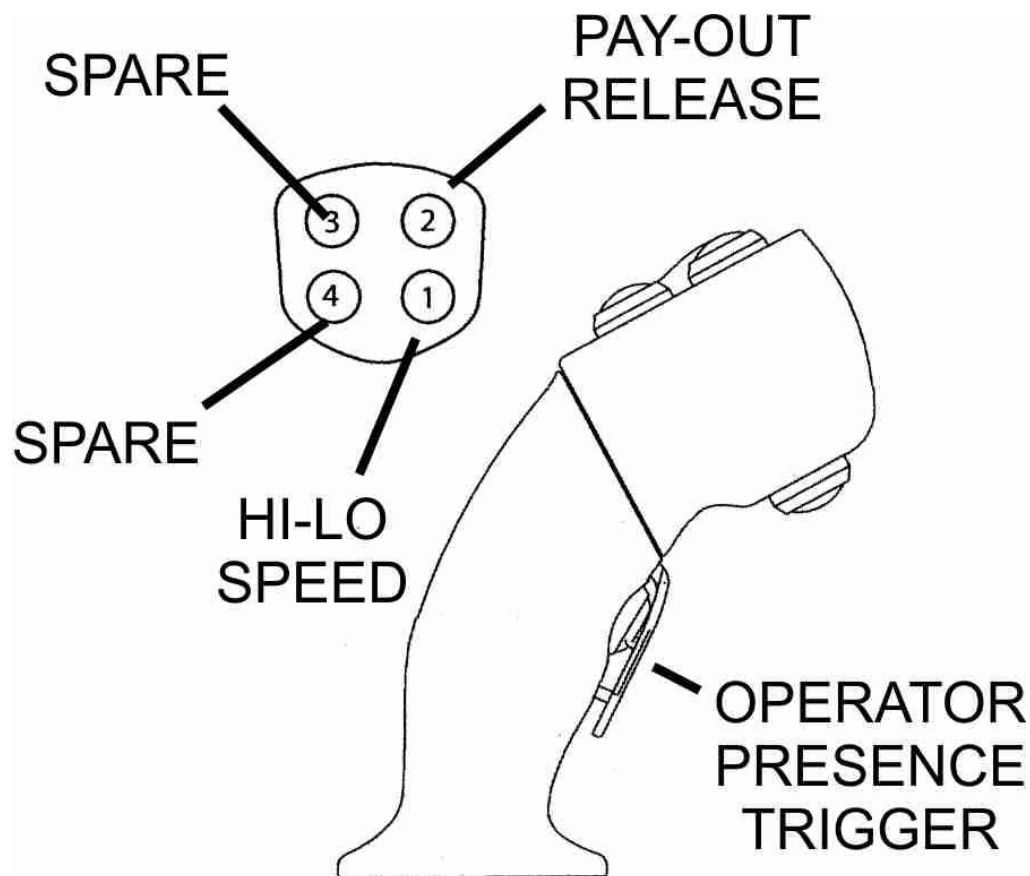
1. Over spin Brake Pressure. This gauge displays the pressure at which the Over spin Brake is operating. **DO NOT EXCEED 600 PSI.**
2. Sensor Heat. In cold conditions, it may be necessary to heat the pulling sensor for a few minutes prior to operation



## **ODP 200 PPS 20,000 Lb Drum Puller**

3. Over spin Brake. This controls the over spin brake and at what pressure you apply. Clockwise to apply and counter clockwise to release. **DO NOT OPERATE PULLER WITH BRAKE APPLIED.** Damage to the brake caliper and rotor may occur as well as providing false pressure readings.
4. Level wind control.
5. Joystick. This joystick is a friction style control. It has a positive stop but releasing control will NOT return control to neutral. In order to stop pull, operator must return joystick to neutral.

### **Joystick Functions**



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## **ODP 200 PPS 20,000 Lb Drum Puller**

- Pay Out Release. This button must be pressed while attempting to pay out under power. By pressing the Operator Presence Trigger while pressing the Pay Out Release, moving the Joystick towards the Pay Out position will allow the reel to pay out under power. Once the reel begins to pay out, these buttons may be released. The Pay Out Lockout will automatically reset when the Joystick is returned to neutral.
- Hi-Lo Speed. Pressing this button during take up or payout will manually shift the pull speed. Although the computer is still in control of the maximum line speed and line pull and it will not be exceeded.
- Operator Presence Trigger. This button must be pressed during the beginning of all Joystick functions. Once the unit is working, it may be released. The trigger will reset when the Joystick is returned to neutral.

***Warning: These functions are present to protect the operator and the crews on the ground. If any of these are not functioning properly, contact vendor immediately. These are not to be circumvented in any way. Creating shortcuts to control machines of this nature can cause SERIOUS INJURY or DEATH to those operating this machine and those that are working with it.***

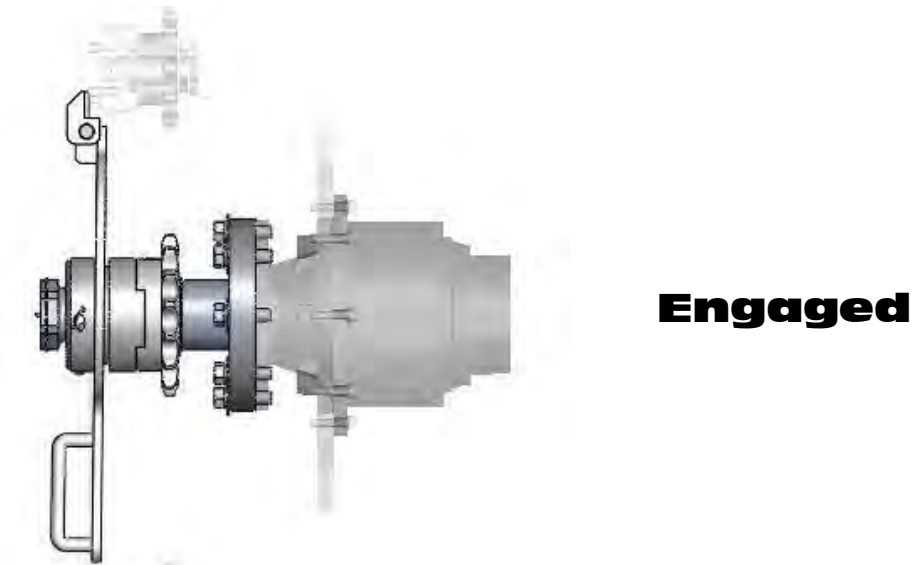


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# **ODP 200 PPS 20,000 Lb Drum Puller**



**Engaged**



**Disengaged**

## **Drive Engagement**

Above is a top view of the drive dog couplers in their engaged and disengaged state. Please be sure all clutch pins are installed when engaged and disengaged, or damage may occur.



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# **ODP 200 PPS 20,000 Lb Drum Puller**

## **Setup on the Job**

### **Setup of the unit**

Hogg & Davis, Inc. recommends following the methods described in the following publications:

IEEE Std 524-1992

IEEE Guide to the Installation of Overhead Transmission Line Conductors

IEEE Std 542a-1993

IEEE Guide to Grounding During the Installation of Overhead Transmission Line Conductors

### **Position of unit**

Position the unit with the centerline of the truck in line with the pull. Place the unit at a minimum of two times the height of the first block. Positioning the unit this way decreases the stress on the level wind system.

### **Tie Down/ Brake/ Chock**

Chock all wheels and set brakes (if applicable). It should be noted that the fully loaded puller weight may exceed the tension desired during the pull. As the pull progresses, the weight of the puller may increase or decrease, therefore proper securing procedures should be followed during operation.



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# **ODP 200 PPS 20,000 Lb Drum Puller**

## **Rope Payout Procedure (Free Wheel)**

When beginning the rope payout feature, be sure that the engine is turned off. Ensure that all tension is removed from the pulling rope before attempting to remove drive pin.

Adjust reel brake to provide tension to the reel of rope. Disengage the drive dog(s) from the sprocket drive(s). Begin to pull rope through the blocks while continuing to adjust the over spin brake. When the rope install is completed, engage the sprocket drive(s). Manual rotation of the reel may be needed to properly install drive dog(s). It may be necessary to engage one drive dog at a time with an operator at the control and one at the drive clutch. Be sure that the hydraulic drive brakes are not set during this “bump” process.



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# **ODP 200 PPS 20,000 Lb Drum Puller**

## **Pulling Computer**

This unit is equipped with a computer control that allows the operator to preset the Maximum Line Pull as well as the Maximum Line Speed. During the pull, no matter the length of cable in the air, the computer calculates the drum diameter and adjusts the hydraulic system to provide a constant pulling control. Throughout the pull, the Line Pull and the Line Speed will be maintained at a constant set by the operator. This type of system allows for greater control of the overall pull, as well as eliminating the "estimation process" and constant adjustment of hydraulic system to maintain the maximum preset.

## **Operation**

Setup Screen. Select the page using the "up-down" buttons and then press enter.

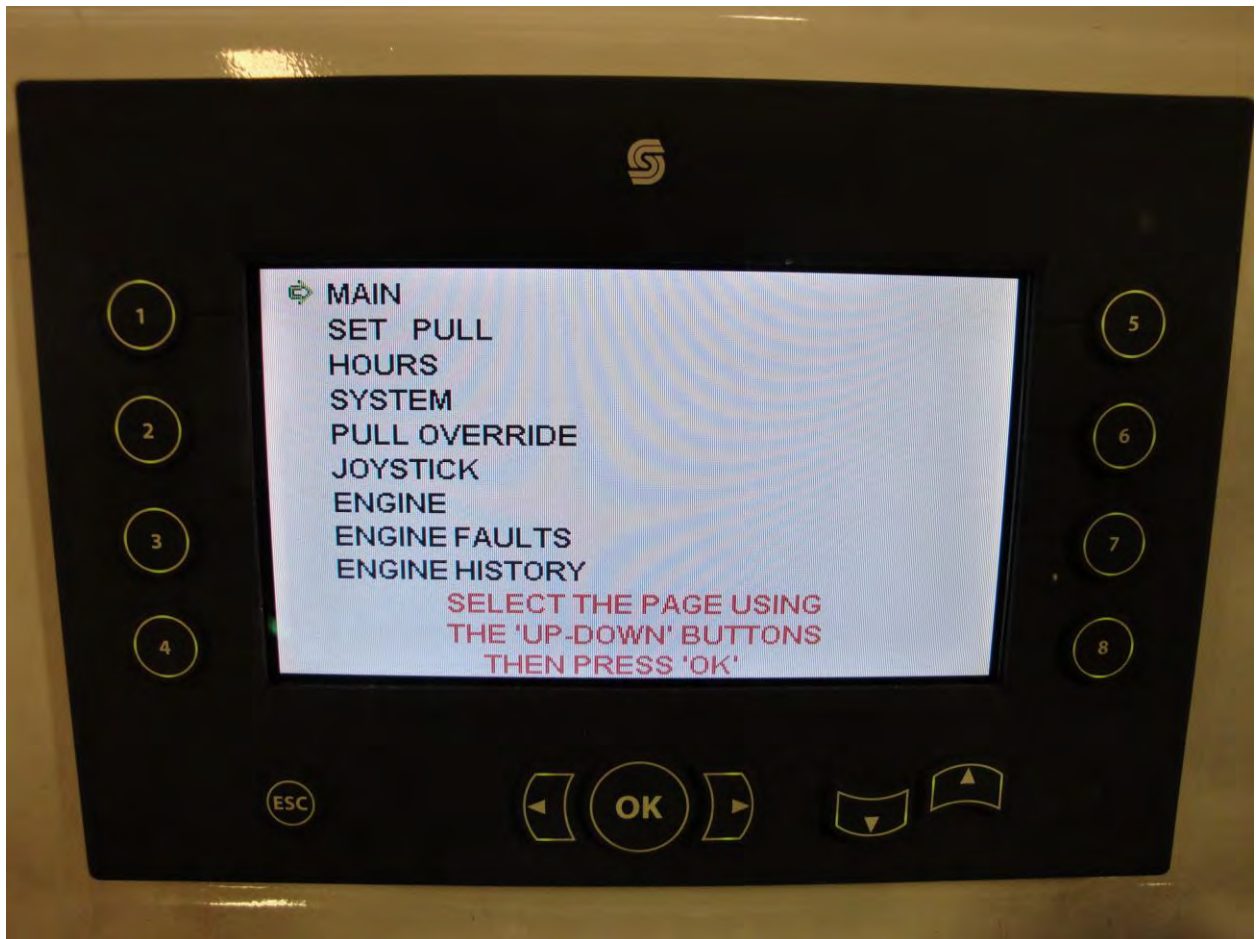


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20,000 Lb Drum Puller**



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# **ODP 200 PPS 20,000 Lb Drum Puller**

## **Set Pull**

There can be up to four preset "Pulls" in the computer at one time. They are labeled, Pull 1-4 and utilize the corresponding buttons on the left hand side of the pulling computer control.

Select the pull you wish to modify and increase the Maximum Pull by using the "up-down" buttons. When the desired Line Pull Max is set, press enter.

The computer can also control the line speed for that set pull. The buttons on the right side of the pulling computer 5-8 correspond with the pulls set 1-4. Pressing the 5-8 buttons will allow the operator to set the maximum Line Speed for the pull. FPM and MPH are both displayed. They are set relevant to the other. Example 352 FPM = 4.0 MPH

When the Maximum Line Pull and Line Speed are set, press the ESC key and return to Pull Screen

## **Pull Screen - MAIN**

The pull screen displays the most needed displays for the pull.

- Pull – This displays the Current Line Pull in lbs. NOT THE MAXIMUM
- Fuel – Fuel Level in the Puller tank
- Drum Diameter – Current diameter of the drum
- FPM – Current FPM
- MPH – Current MPH
- Engine Gauges – This display's the engine temp, oil pressure, RPM PCT of Load and battery voltage
- Throttle – The engine throttle is increased or decreased by using the Left-Right buttons on each side of the OK button



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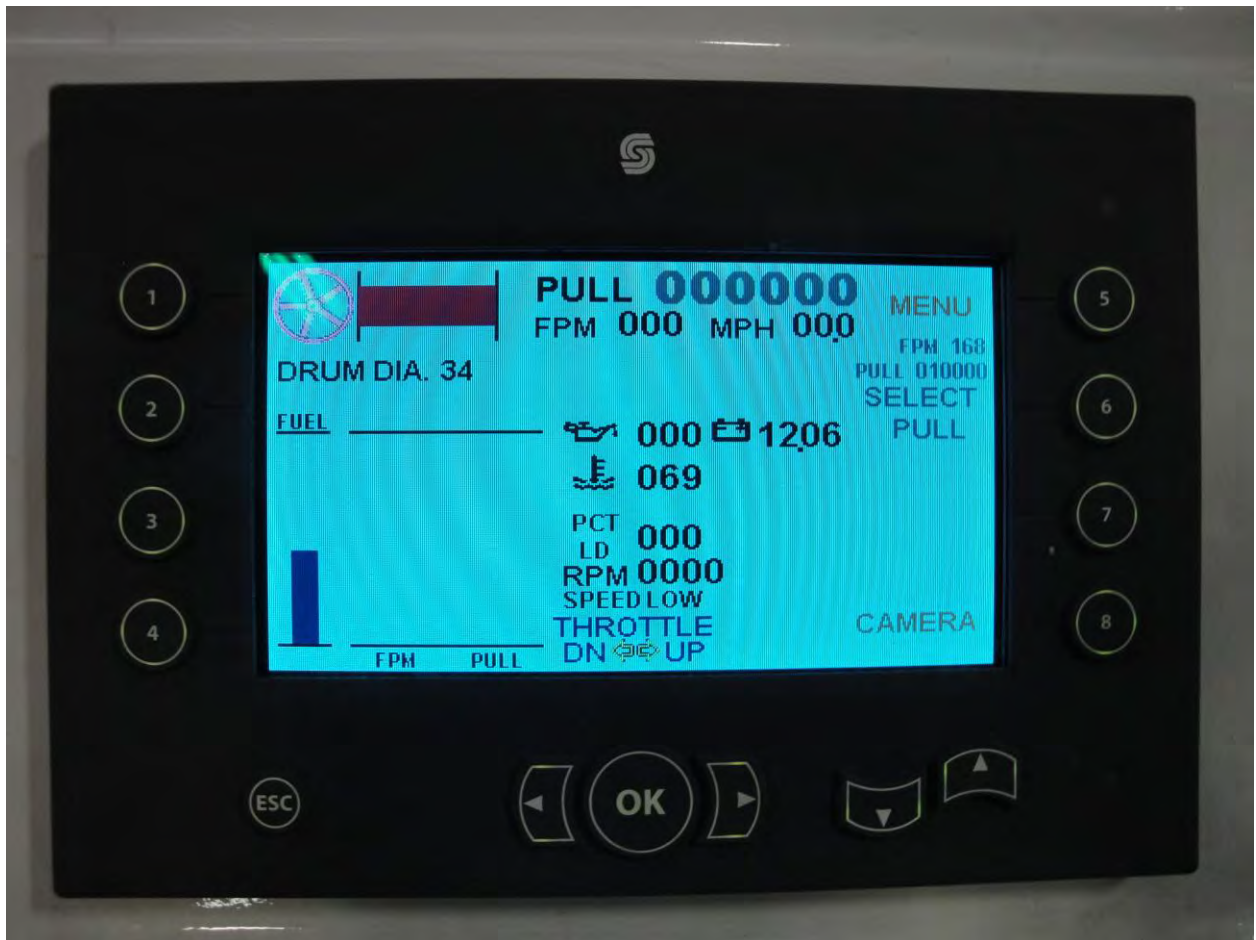
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## **ODP 200 PPS 20,000 Lb Drum Puller**

- Menu – Returns to the Main Menu Screen
- Pull and Speed – Below the Menu label on the screen, the PRESET Maximum Line Pull and Speed are displayed
- Select Pull – This button brings up the Select Pull Screen
- Camera – If the unit is equipped, this will allow for remote viewing



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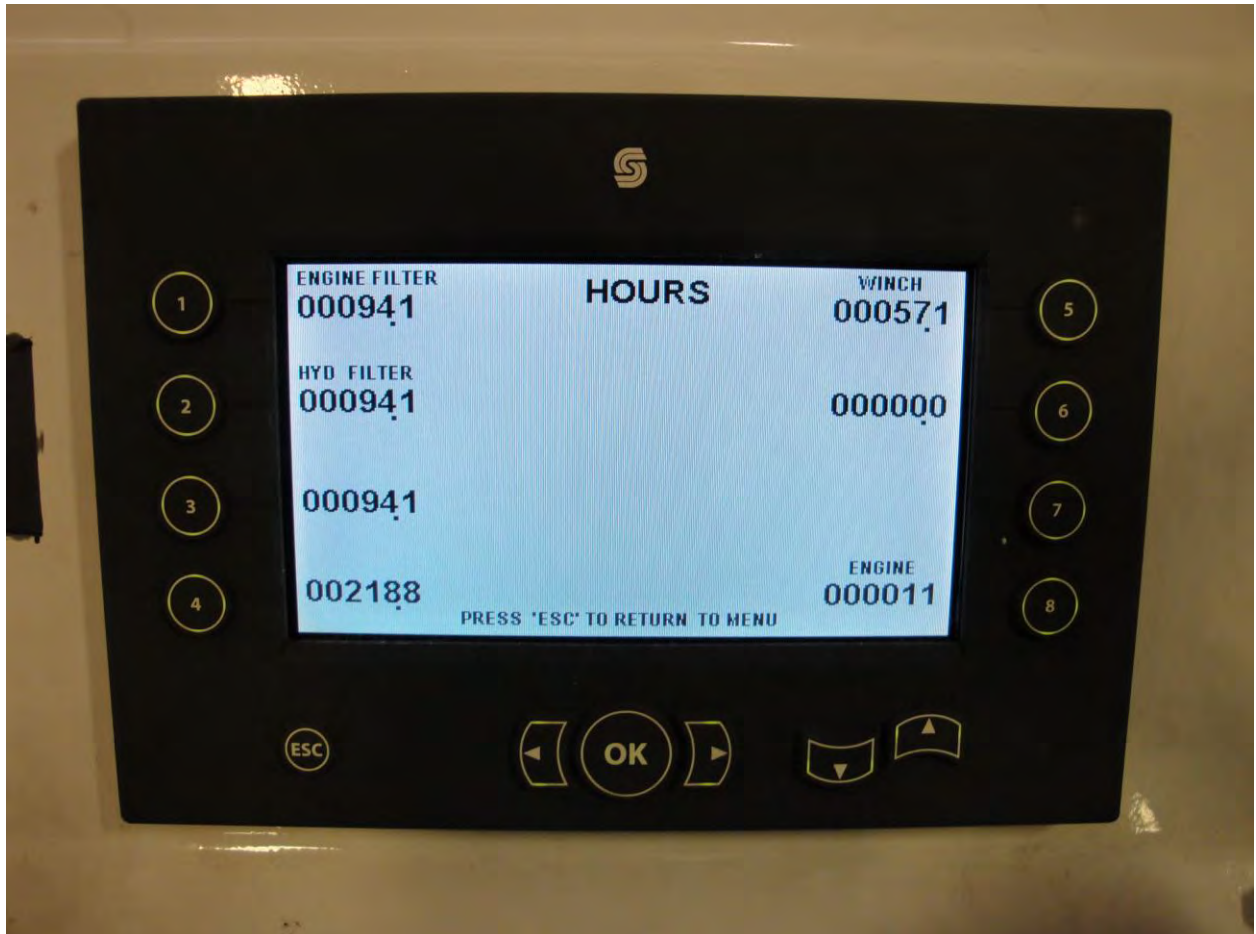
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# **ODP 200 PPS 20,000 Lb Drum Puller**

## **Hours Screen**

This screen displays the current hours on the engine oil filters, hydraulic oil filters, the time the winch has been activated (pay in and pay out time) and engine hours.



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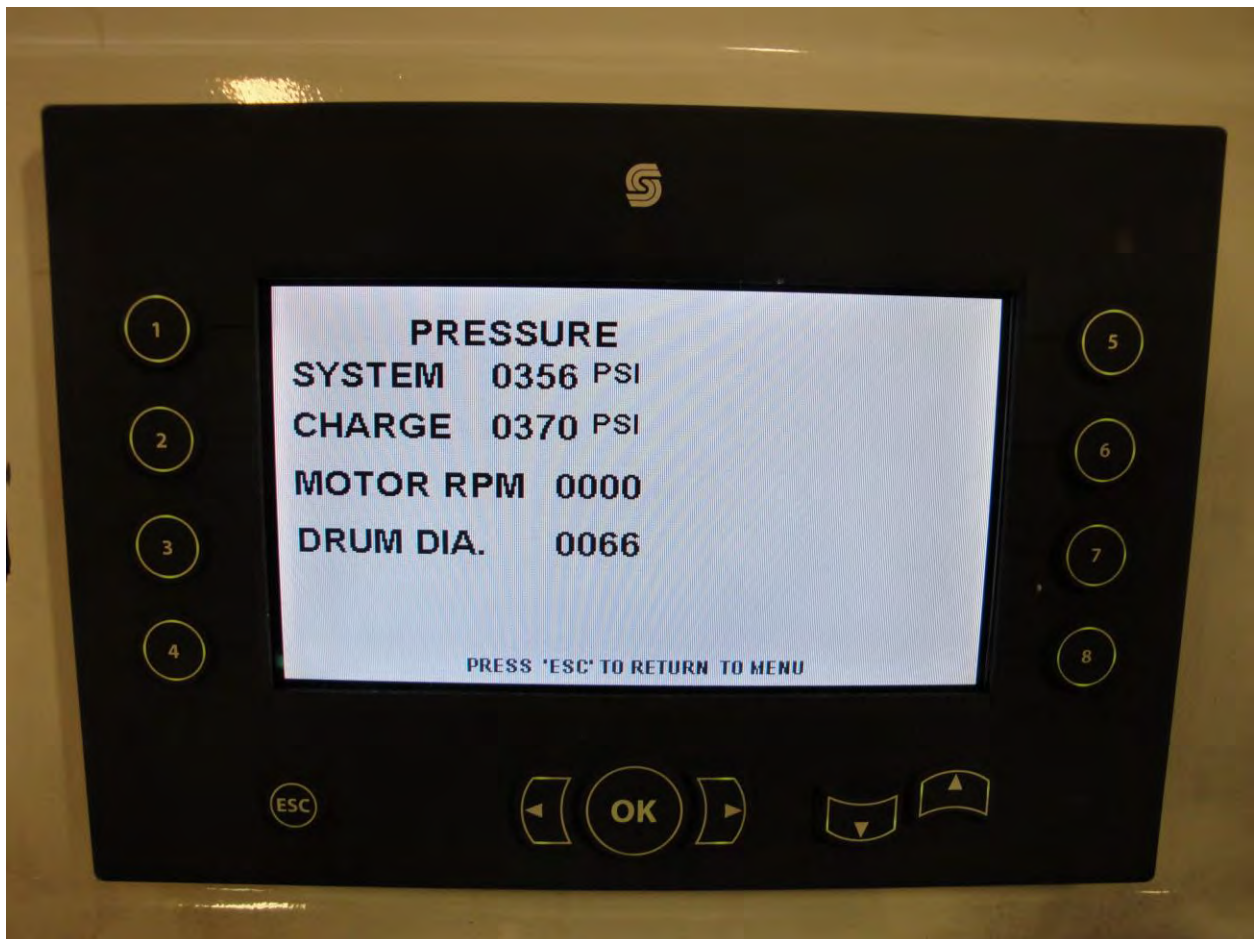
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# **ODP 200 PPS 20,000 Lb Drum Puller**

## **System Screen**

This screen displays the current System Pressure, Charge Pressure, Motor RPM, and the Drum Diameter. This screen is primarily used for troubleshooting.



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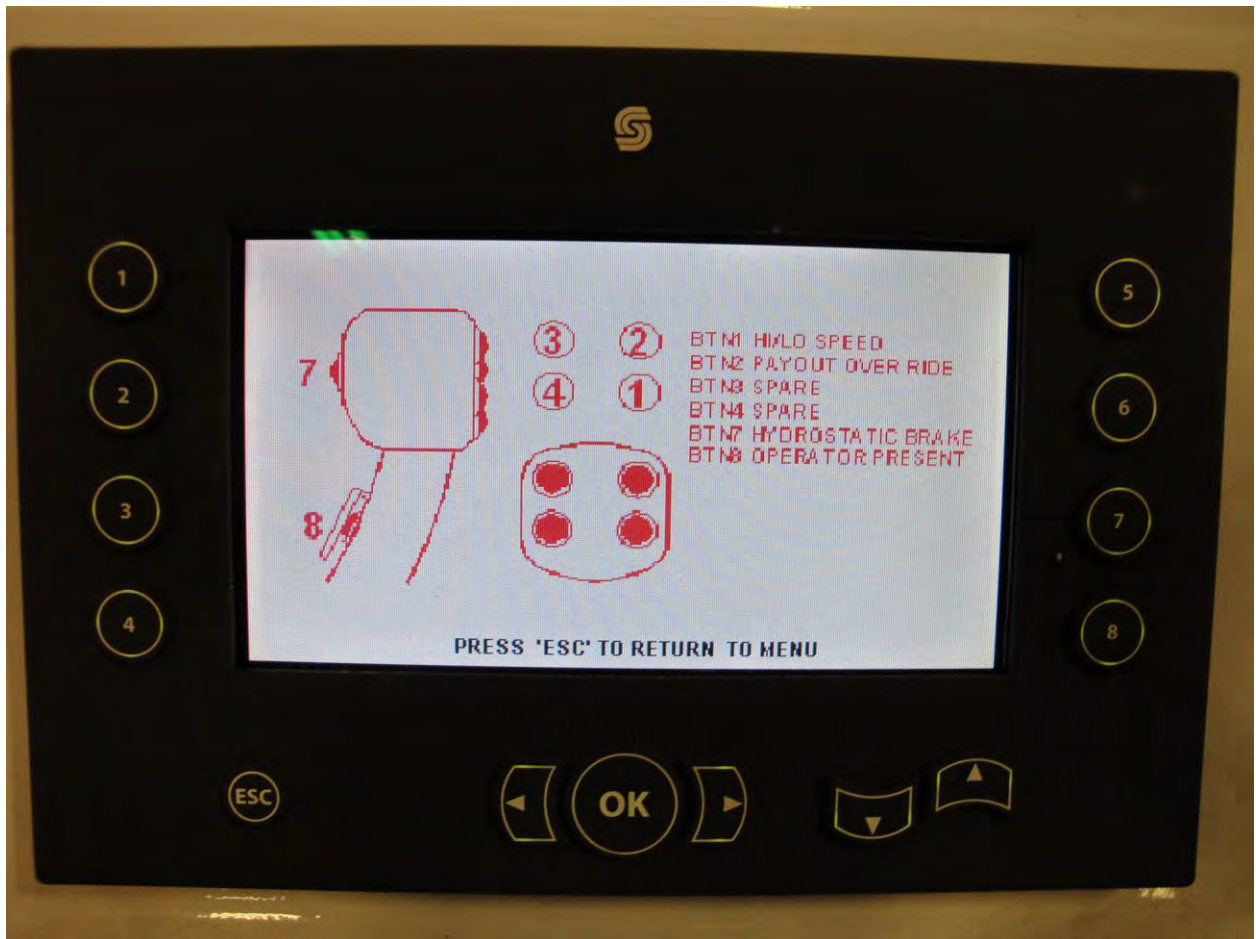
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# **ODP 200 PPS 20,000 Lb Drum Puller**

## **Joystick**

This screen gives a graphic display of the Joystick and its functions.



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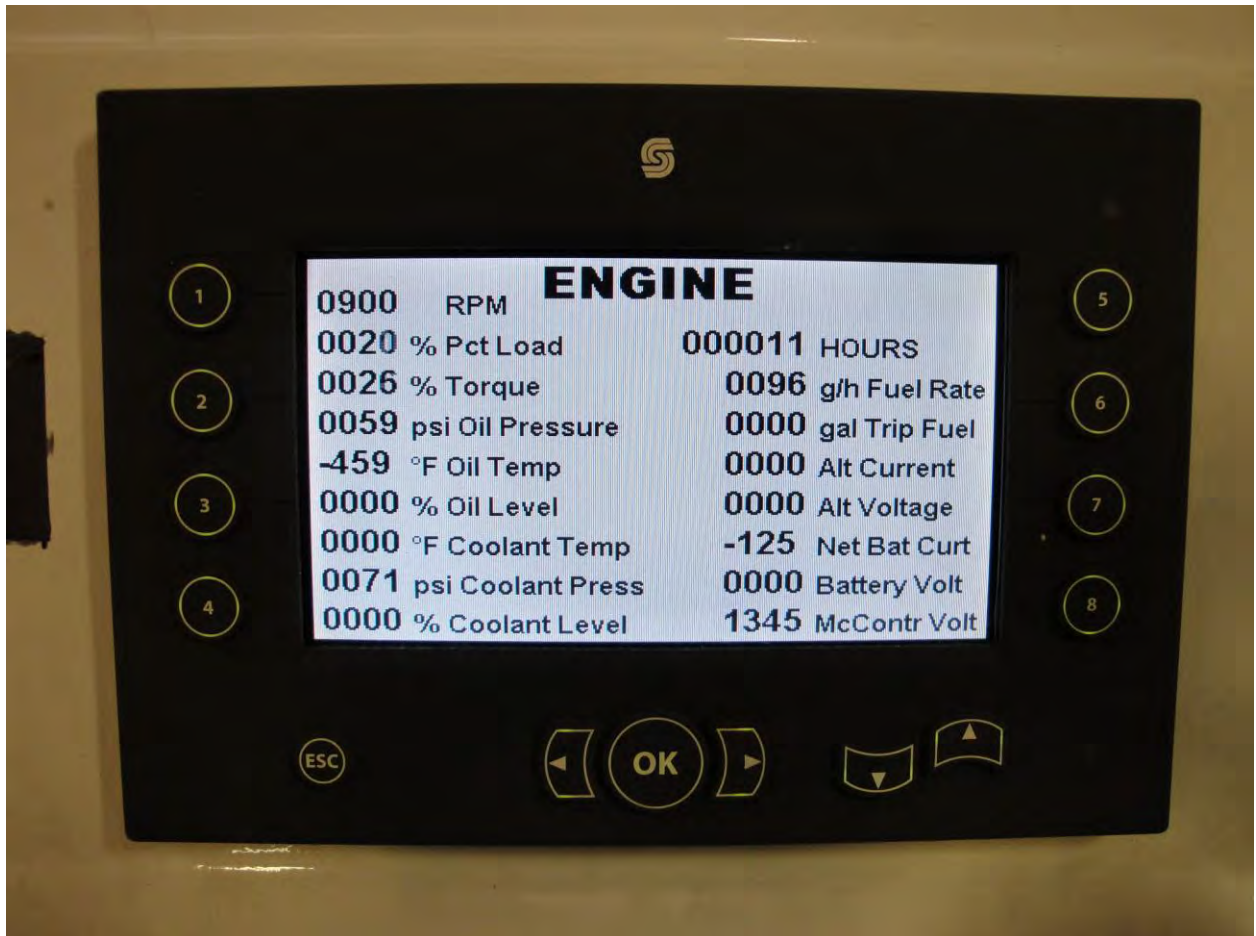




# **ODP 200 PPS 20,000 Lb Drum Puller**

## **Engine**

This screen displays all current information regarding the engine on the puller.



**\*\*\*These instructions assume that the operator has set the proper drive dog(s) for the reel to be pulled in.**



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# **ODP 200 PPS 20,000 Lb Drum Puller**

## **Pulling Control**

The Following instructions explain how to properly set up the unit.

1. Release the hydraulic over spin brake.
2. Set Job Pull Settings on the Pull Computer.
3. Return computer to Main Screen.
4. Increase Throttle to 1500 RPM or desired setting.
5. Squeeze trigger and move Joystick to take up.
6. Adjust line speed with joystick.
7. Return joystick to neutral to stop pull and set holding brake.

## **System Brakes**

The internal braking system is spring applied / hydraulic release on the drive motors. When the joystick is in neutral, the brakes are automatically applied.

## **Level wind**

This unit is equipped with post style four way level wind. Please ensure that it is properly greased at all times. The Level wind must be stowed in the cradle during transport

Lubrication of the level wind and its components is critical. Please grease all zerks as well as covering the shafts.



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# **ODP 200 PPS 20,000 Lb Drum Puller**

## **LUBRICATION AND MAINTENANCE**

This unit has no set PM schedule beyond that of the engine manufacturers suggested maintenance schedule. This unit should be visually inspected prior to each use while repairing any and all discrepancies prior to use.

### **Items to be inspected prior to use are:**

- Drive Chains and sprockets for wear and slack
- All welds and seams
- Loose or missing fasteners (bolts, nuts, set screws)
- Loose or leaking hydraulic hoses
- Damaged or worn hydraulic hoses
- Brake calipers (loose fittings, hoses, worn linings)
- Brake Pads (over spin brake)
- Brake rotors
- Tires and brakes
- Engine and hydraulic system fluid levels.
- Set screws (see set screw section)

### **Lubrication Schedule**

- Drive chain and sprockets ( daily )
- Reel Shaft Bearings (as needed)
- Reel Bearings (as needed)
- Engine oil as per manufacturers recommendation
- Idler sprocket ( daily )
- Axle Bearings (as needed)
- Level wind grease fittings (as needed)



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# ***ODP 200 PPS 20,000 Lb Drum Puller***

## **Set Screws**

Due to the rugged nature of this machine, all set screws on the shafts, reels and bearings have a thread locker and may be double set screwed. Please do not assume that screws are tight when performing maintenance. When checking or tightening these set screws, remove the first and then tighten the first.



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# **ODP 200 PPS 20,000 Lb Drum Puller**

## **15-15 Warranty**

Hogg and Davis, Inc. warrants its trailers against defects in material or workmanship for period of 15 months from the date of shipment from Hogg and Davis, Inc. (see General Conditions & Exceptions). Hogg and Davis, Inc. will replace, free of charge, F.O.B. Hogg and Davis, Inc. factory, such parts or parts thereof, that in their judgement have proven defective. Additionally, Hogg and Davis, Inc. will pay reasonable and customary labor charges when defective part is replaced, installed or repaired by a fully authorized Hogg and Davis, Inc. trailer dealer at his facility.

Warranty credit will be issued only upon receipt and inspection of defective parts of at the Hogg and Davis, Inc. factory.

Hogg and Davis, Inc. warrants its trailer main frame assemblies (except pintle eyes or other towing attachments, spindles and axles) against defects in material or workmanship for a period of **15 years** from the date of shipment from Hogg and Davis, Inc. (see General Conditions & Exceptions). Hogg and Davis, Inc. shall replace or repair, in a manner as it shall determine, free of charge, F.O.B. factory, any parts or parts thereof, that in its judgement have proven defective. Additionally, Hogg and Davis, Inc. will pay reasonable and customary labor charges when defective part is replaced, installed or repaired by a fully authorized Hogg and Davis, Inc. trailer dealer at his facility

### **General Conditions & Exceptions**

All warranties, options and representations made herein shall apply only provide such equipment shall not have been subject to misuse, negligence or accident and has been operated in accordance with factory approved procedures. This warranty does not obligate Hogg and Davis, Inc. or its authorized dealers to bear the cost of parts obtained from or labor performed by unauthorized sources. Nor does it obligate Hogg and Davis, Inc. **or its** authorized dealers to bear the cost of transportation of parts or equipment for repair or **replacement purposes**. This warranty is in lieu of any other warranty, expressed **or implied**, or any other obligation or liability on the part of Hogg and Davis, Inc and no persons or entity is authorized to make any representation beyond those stated herein.

Hogg and Davis, Inc. shall not be held liable for consequential damage of any kind. Hogg and Davis, Inc. also reserves the right to make changes and improvements in its products without incurring any obligation to install any such changes or improvements upon its products previously manufactured.

The above warranty shall not be misconstrued to mean warranty of tires, clutch, transmission assemblies or customer requested accessory equipment other than the warranty extended by their respective manufacturers to Hogg and Davis, Inc. In addition, friction, drive rollers are warranted only to extent of bonding failure. All warranties, options and representations made herein are applicable to the original end-user of the product and are not sellable or transferable in any manner.

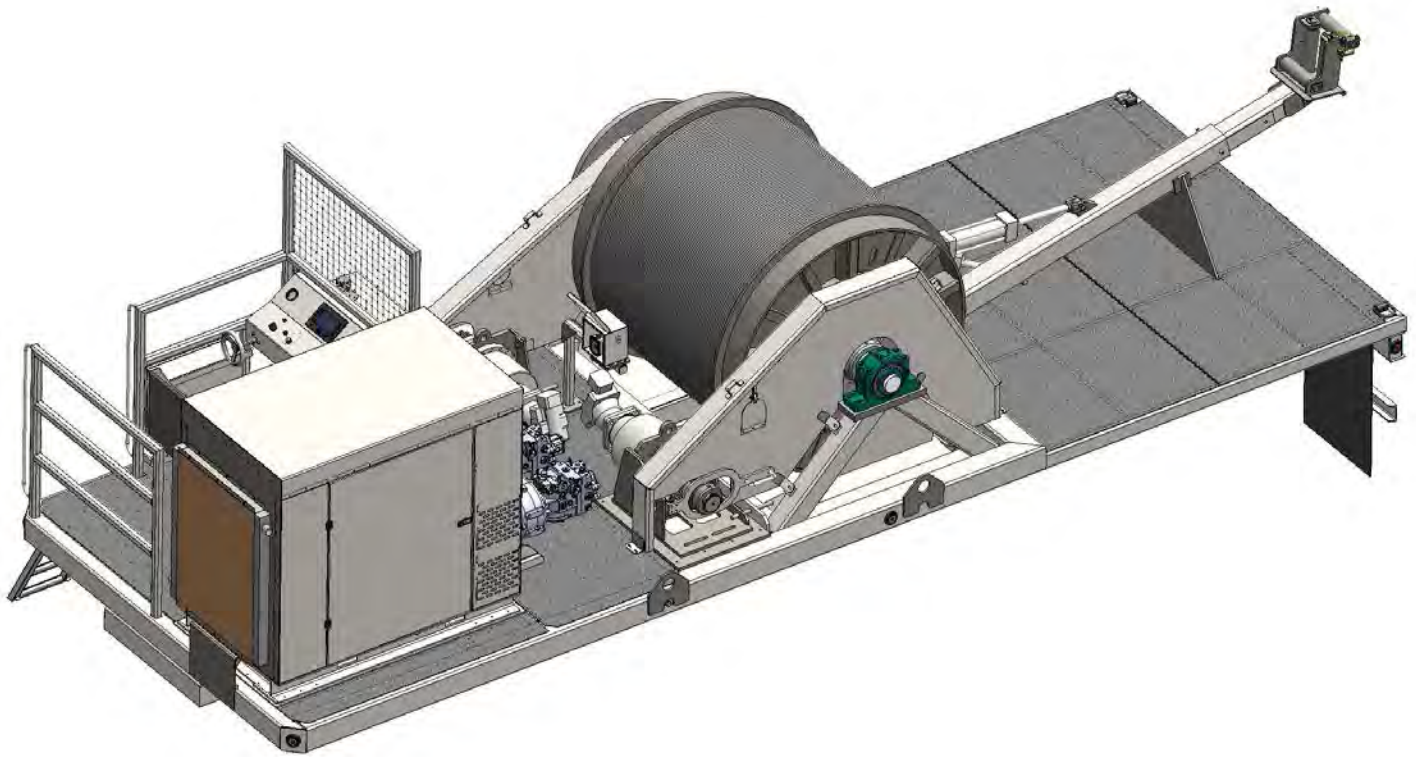


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# **ODP200 PPST**



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The information, specifications, and illustrations in this manual are on the basis of information available at the time it was written. The specifications, torque values, pressures of operation, measurements, adjustments, illustrations, and other items can change at any time. These changes can affect the service of the given product.

For the complete and most current information, contact:

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P.O. Box 405 / 3800 Eagle Loop  
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541-354-1001  
541-354-1080 Fax

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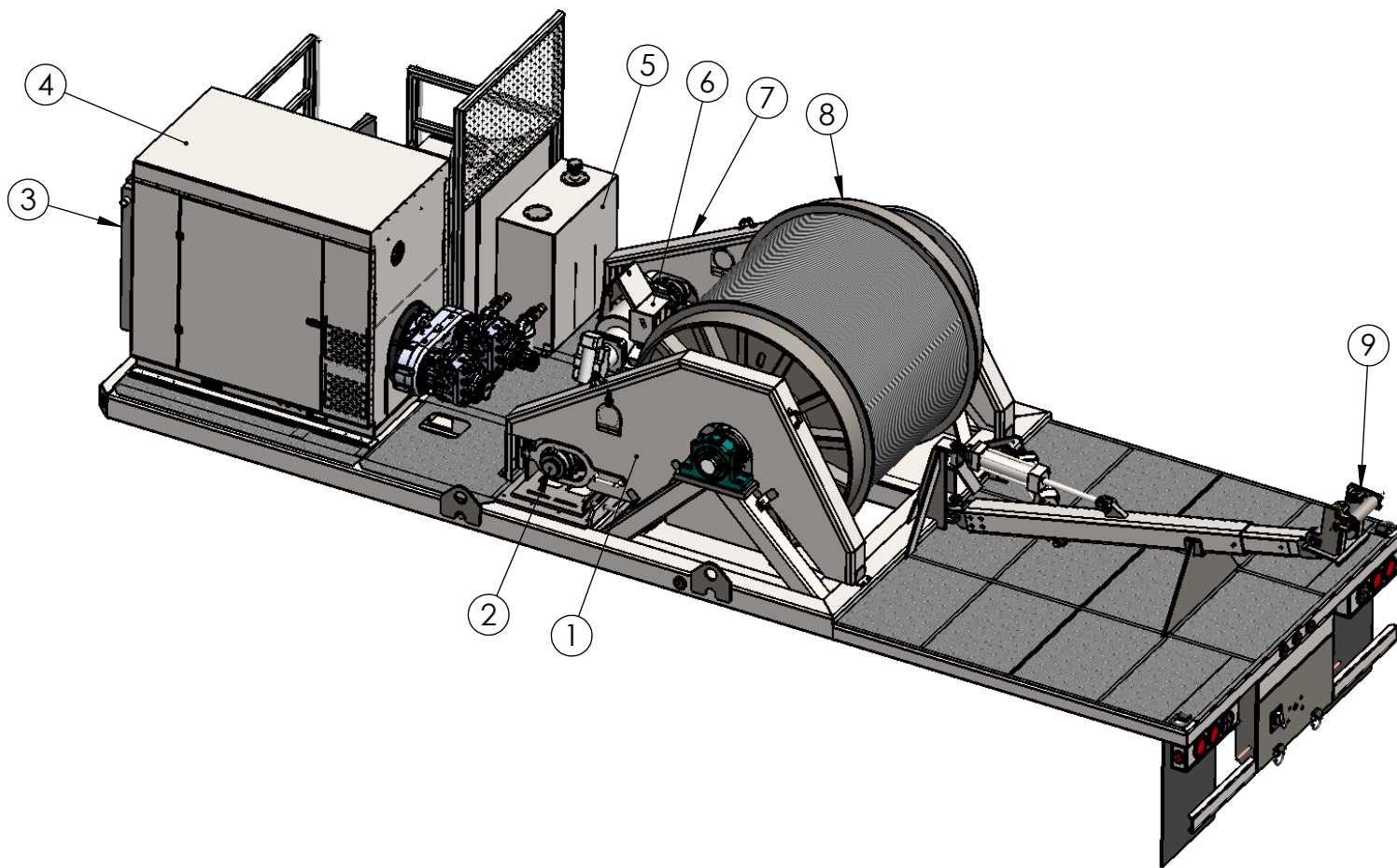


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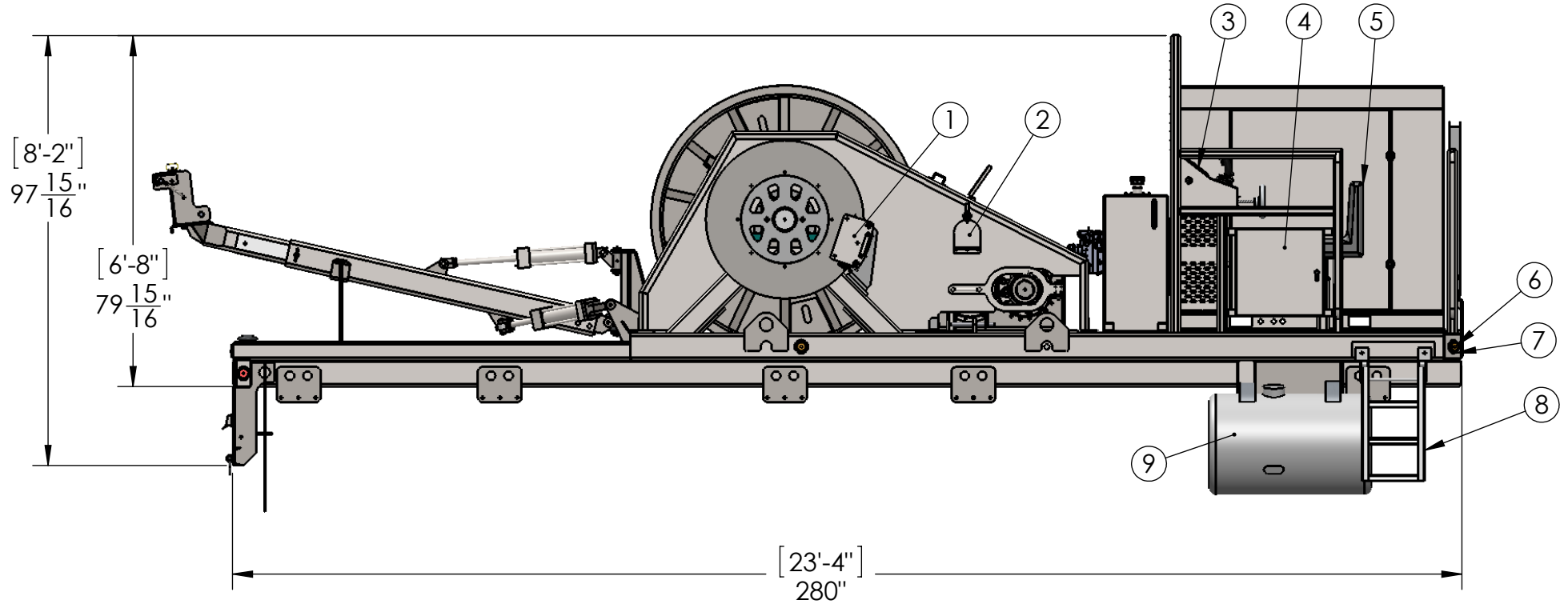
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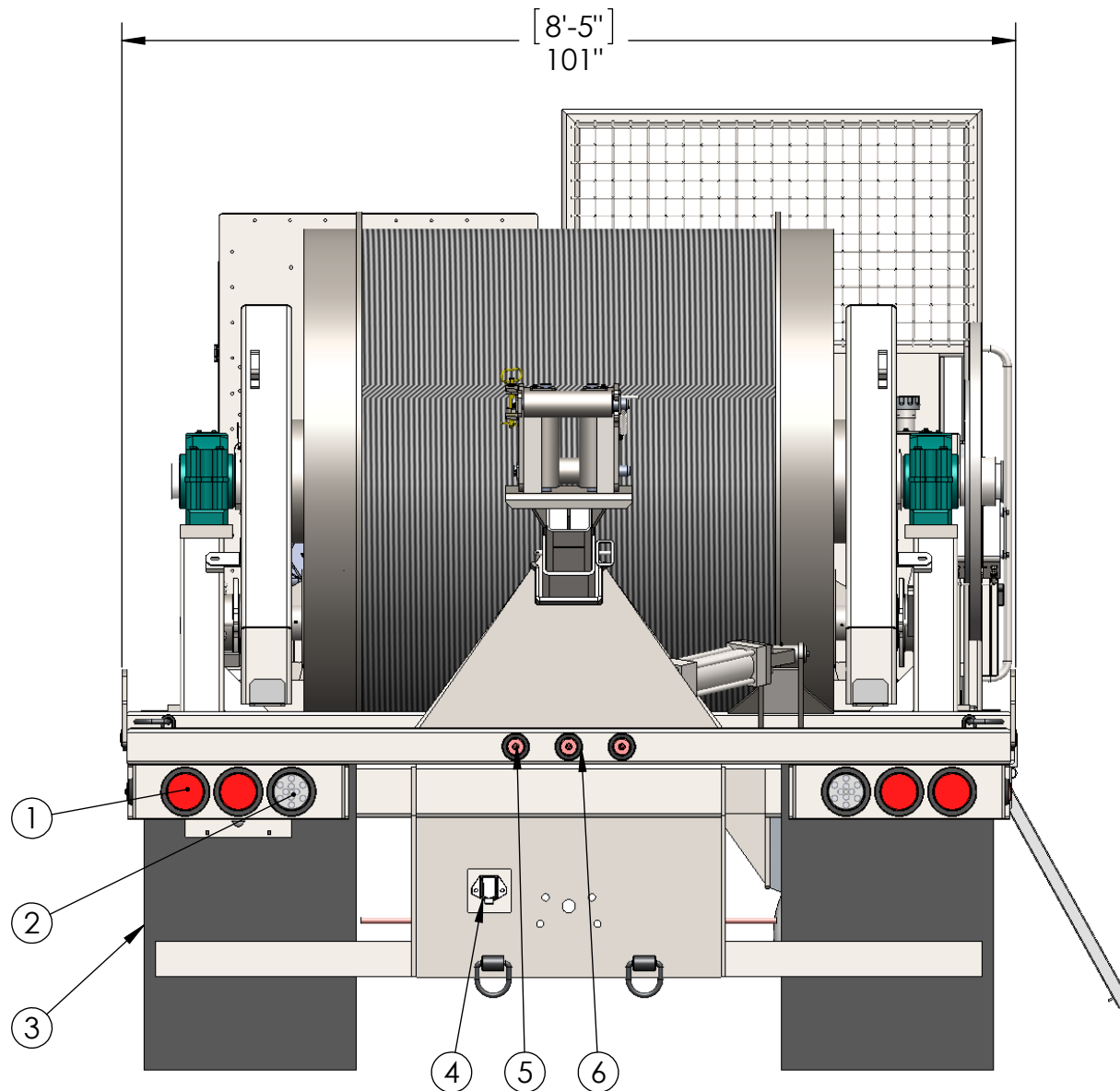




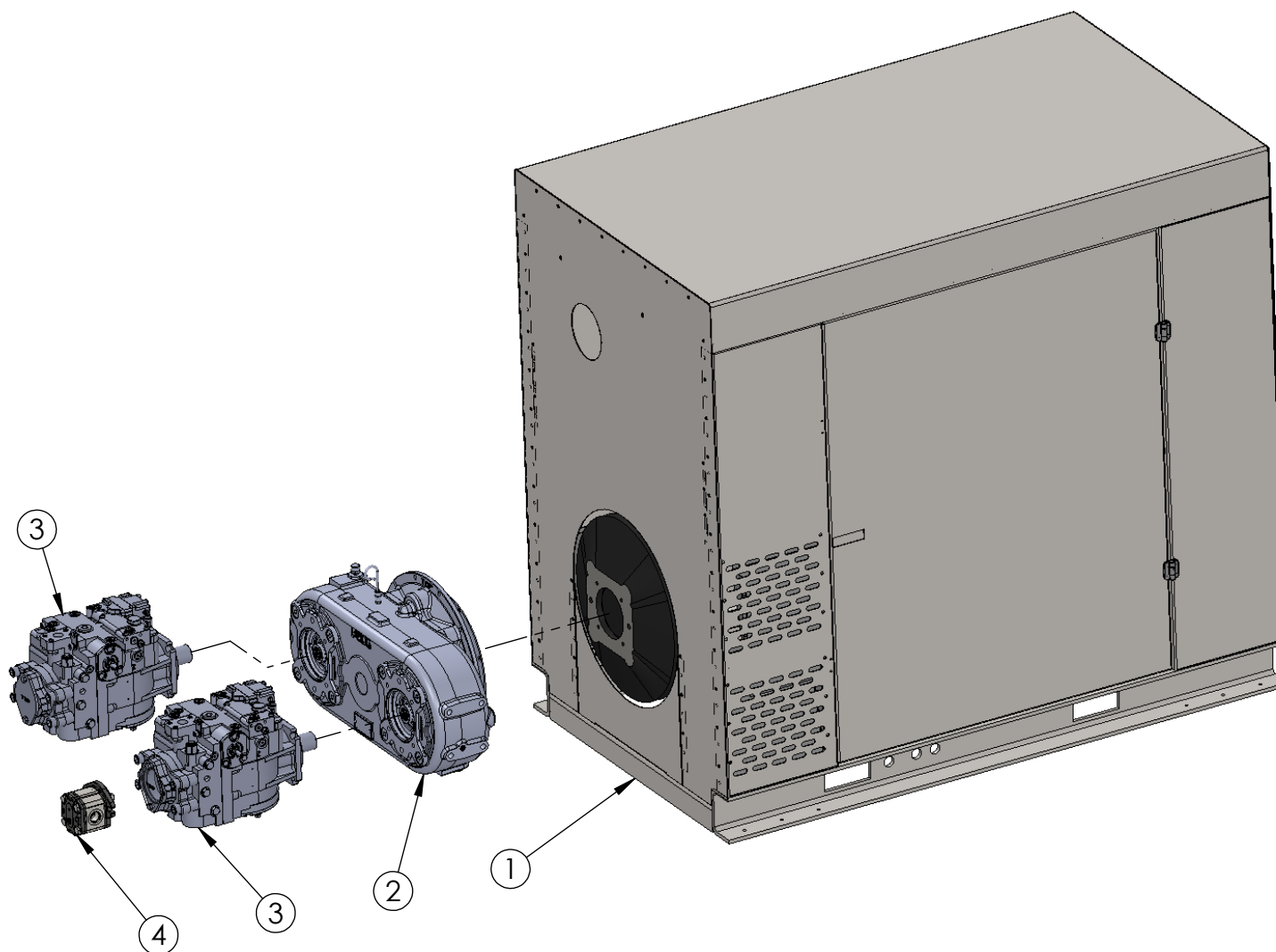
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	G09218	Guard, Chain Streetside	1
2	Planetary	See Planetary Sheet	1
3	C35120	MA-120 oil cooler	1
4	Engine Assembly	See Engine/Pump Sheet	1
5	Hydraulic Tank	See Hydraulic Tank Sheet	1
6	Sensor Enclosure	See Sensor Enclosure Sheet	1
7	G09219	Guard, Chain Curbside	1
8	Reel Assembly	See Reel Assembly Sheet	1
9	Boom Levelwind	See Levelwind Sheet	1



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	C04030A	10" HD Brake Caliper w/ spacer	1
2	C29083	Cover, Driveshaft Capstan	2
3	Control Assembly	See Controls Sheet	1
4	B13104	20x20 HOFF Box	1
5	Seat Assembly	See Seat Assembly SHEET	1
6	L04311	Light Amber 2" LED	4
7	G08005	Grommet 2" Light	9
8	S33010	Step Ladder	1
9	T01055	Tank, 60gal	1

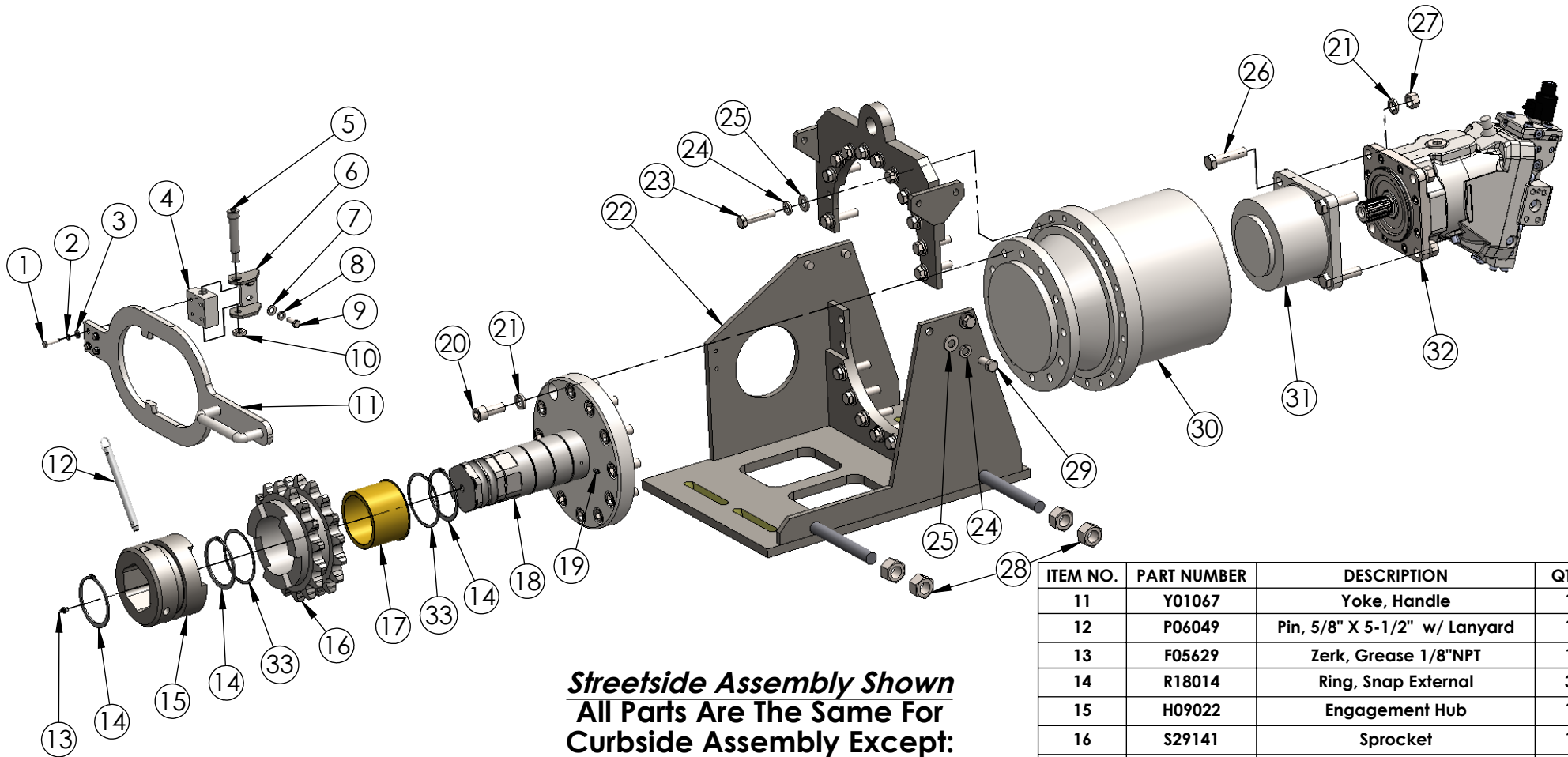


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	L04032	Light, 4" Tail/Stop/Turn Kit LED	4
2	L04011	Light, 4" Clear Kit LED	2
3	F10005	Flap Mud 24x30	2
4	S21035	Socket 7-wire Pollak	1
5	L04310	Light Red 2" LED	5
6	G08005	Grommet 2" Light	9



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	E02276	Engine with Enclosure	1
2	A02975	Adaptor, Pump	1
3	P20050	Pump, Hydraulic	2
4	P20107	Pump, 10 gal, Left Hand rotation	1



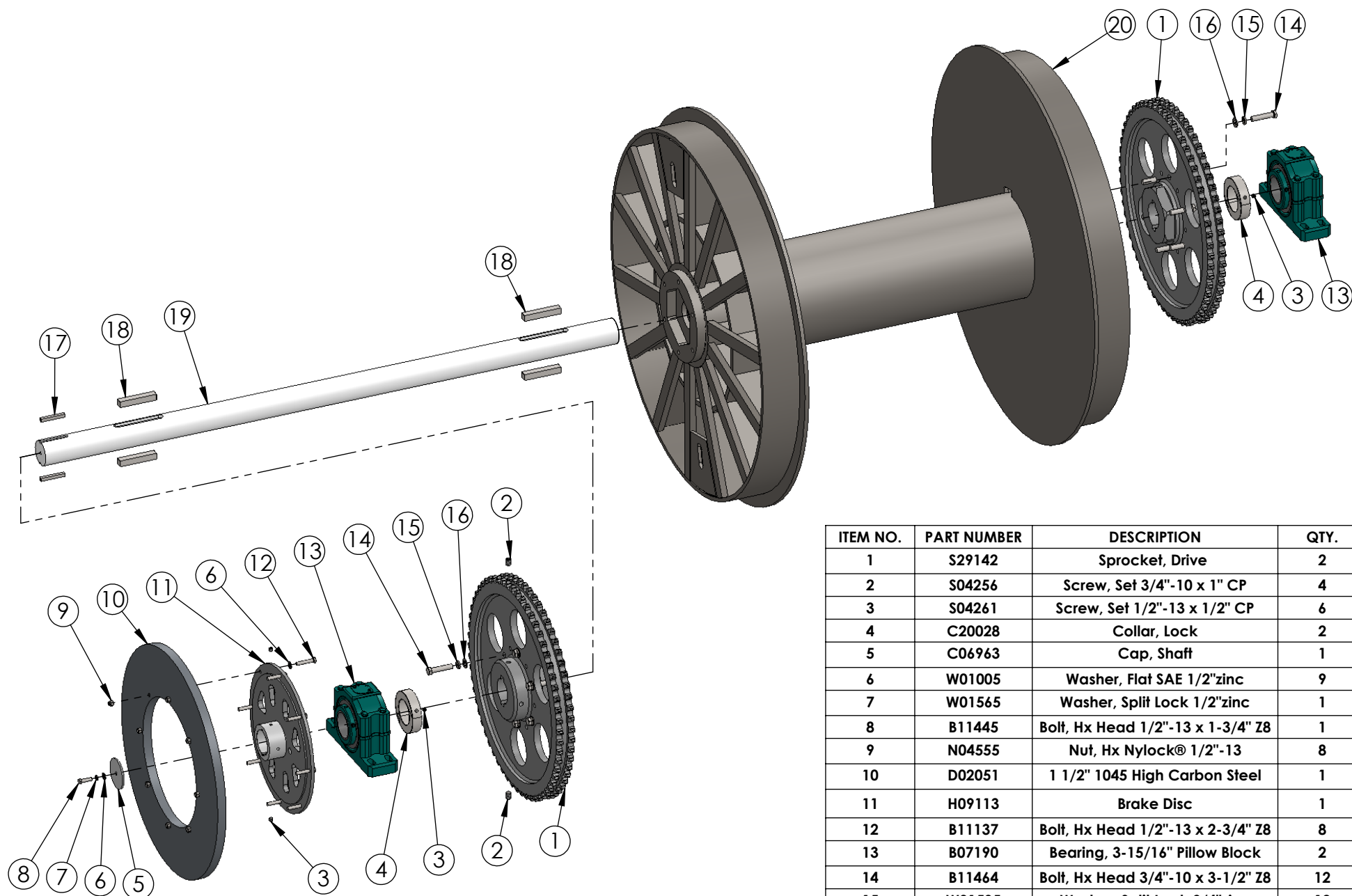


***Streetside Assembly Shown***  
**All Parts Are The Same For**  
**Curbside Assembly Except:**  
**Item (22) M09021**  
**Curbside Use M09020**  
**&**  
**Item (6) B15089**  
**Curbside Use B15080**

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	B11325	Bolt, Hx Head 1/4"-20 x 1-1/4"	4
2	W01525	Washer, Split Lock 1/4"	4
3	W01205	Washer, Flat SAE 1/4"	4
4	B15100	Block, Pivot	1
5	B11180	Bolt, shoulder 3/4" x 3"	1
6	B15089	Yoke Pivot - Street Side	1
7	W01002	Washer, Flat SAE 3/8"	2
8	W01545	Washer, Split Lock 3/8"	2
9	B11342	Bolt, Hx Head 3/8"-16 x 1"	2
10	N04474	Nut, Hex Jam 5/8"-11	1

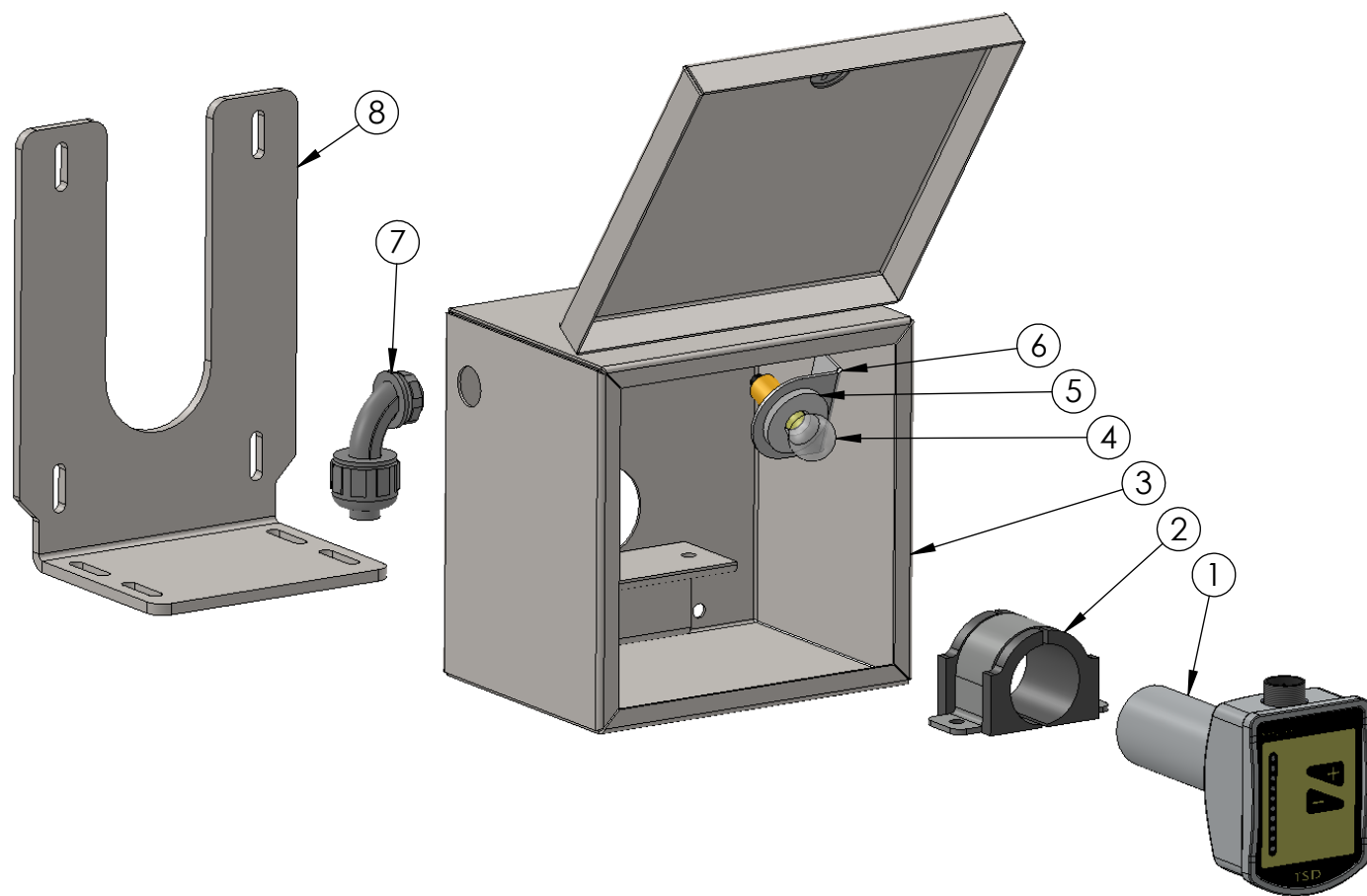
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
11	Y01067	Yoke, Handle	1
12	P06049	Pin, 5/8" X 5-1/2" w/ Lanyard	1
13	F05629	Zerk, Grease 1/8"NPT	1
14	R18014	Ring, Snap External	3
15	H09022	Engagement Hub	1
16	S29141	Sprocket	1
17	B21022	Bushing, bronze, 4" x 4.75" x 3.5"	1
18	S43032	Shaft, Hex Drive	1
19	F05630	Zerk, Grease 1/4"-28	2
20	S04245	Screw, SHCS 3/4"-16 x 1-3/4"	12
21	W01585	Washer, Split Lock 3/4"	16
22	M09021	Mount, Planetary, Street Side	1
23	B11477	Bolt, Hx Head 5/8"-11 x 2-3/4" Z8	20
24	W01040	Washer, Split Lock 5/8"	24
25	W01053	Washer, Flat 5/8"	24
26	B11465	Bolt, Hx head 3/4"-10 x 3" Z8	4
27	N04284	Nut, Hex 3/4"-10	4
28	N04267	Nut, 1"-8 Z8	4
29	B11380	Bolt, Hx Head 5/8"-11 x 1-1/4"	4
30	G12004	Planetary	1
31	B16200	Brake, planetary	1
32	M08200	Motor, Hydraulic	1
33	W01014	Washer, Thrust	2



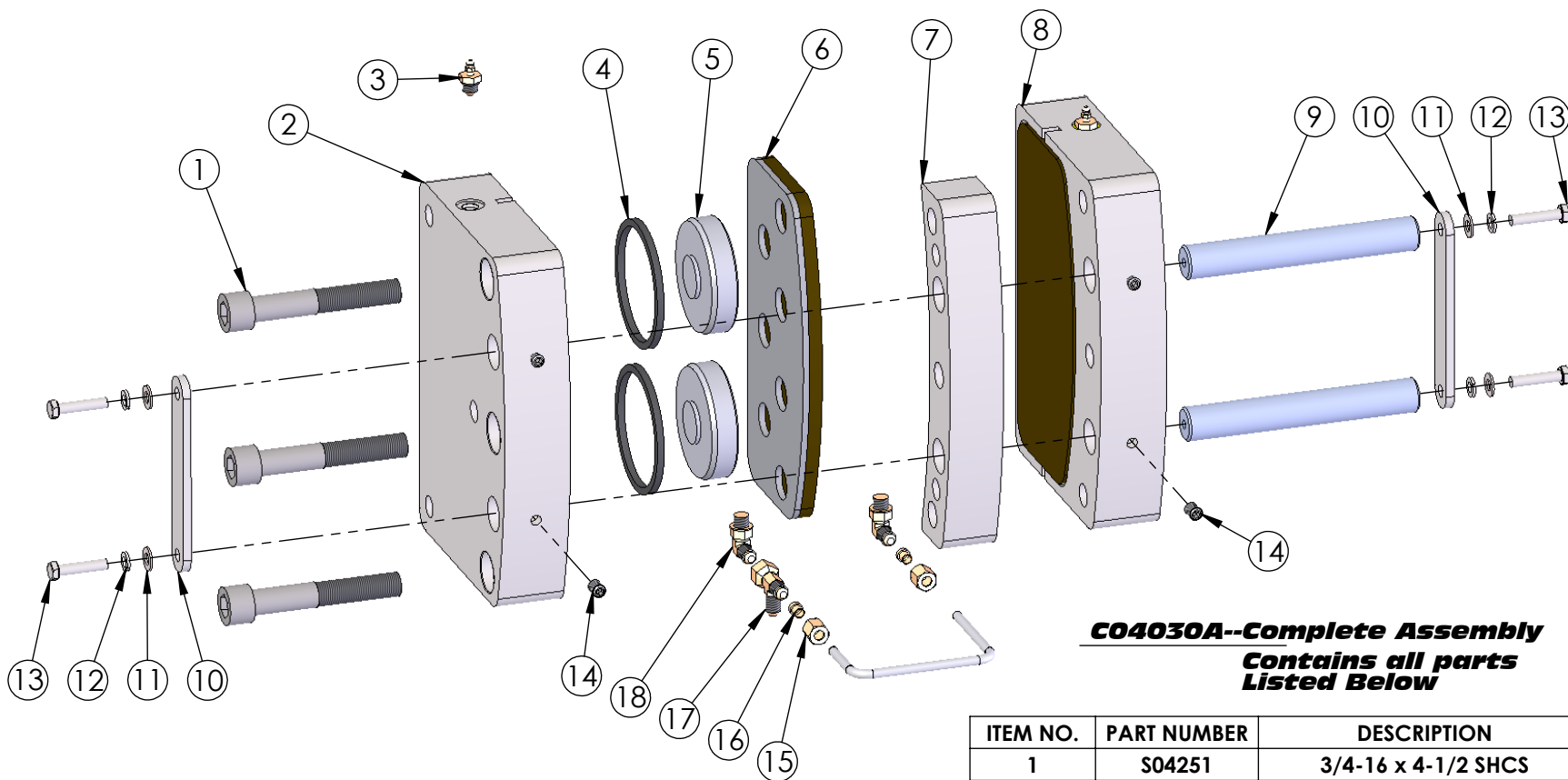


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	S29142	Sprocket, Drive	2
2	S04256	Screw, Set 3/4"-10 x 1" CP	4
3	S04261	Screw, Set 1/2"-13 x 1/2" CP	6
4	C20028	Collar, Lock	2
5	C06963	Cap, Shaft	1
6	W01005	Washer, Flat SAE 1/2"zinc	9
7	W01565	Washer, Split Lock 1/2"zinc	1
8	B11445	Bolt, Hx Head 1/2"-13 x 1-3/4" Z8	1
9	N04555	Nut, Hx Nylock® 1/2"-13	8
10	D02051	1 1/2" 1045 High Carbon Steel	1
11	H09113	Brake Disc	1
12	B11137	Bolt, Hx Head 1/2"-13 x 2-3/4" Z8	8
13	B07190	Bearing, 3-15/16" Pillow Block	2
14	B11464	Bolt, Hx Head 3/4"-10 x 3-1/2" Z8	12
15	W01585	Washer, Split Lock 3/4"zinc	12
16	W01287	Washer, Flat SAE 3/4"zinc Z8	12
17	K01021	Keystock, 1/2" x 4"	2
18	K01024	Keystock, Sqr 1" x 6"	4
19	S43046	Shaft, 3-15/16 stress-proof	1
20	R07022	Reel	1

**Page 6** D02051: min. thickness - 1.1875"

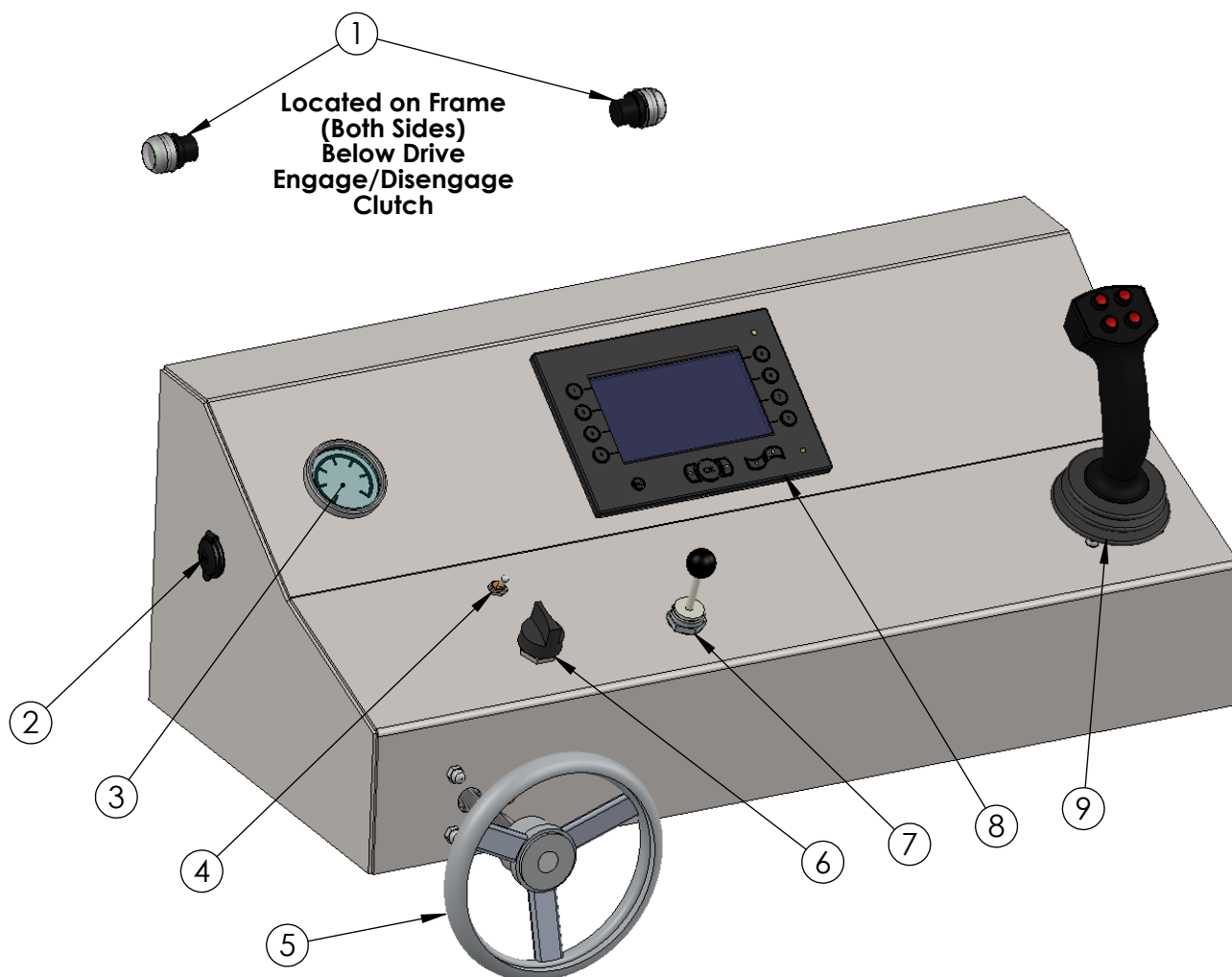


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	S06020	Sensor, Ultrasonic	1
2	C14036	Clamp, Sensor Mount	1
3	B13105	Box, Sonic Sensor	1
4	L04021	Light, bulb 1157	1
5	S21021	Light, socket 1157	1
6	B15272	Bracket, heat lamp	1
7	C26165	Liquidtight 90°	1
8	M09036	Mount, Sensor Box	1

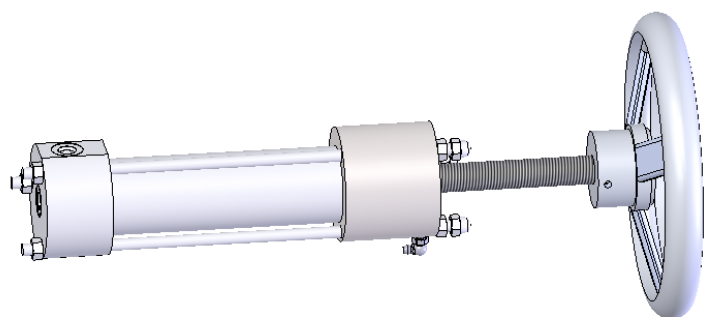
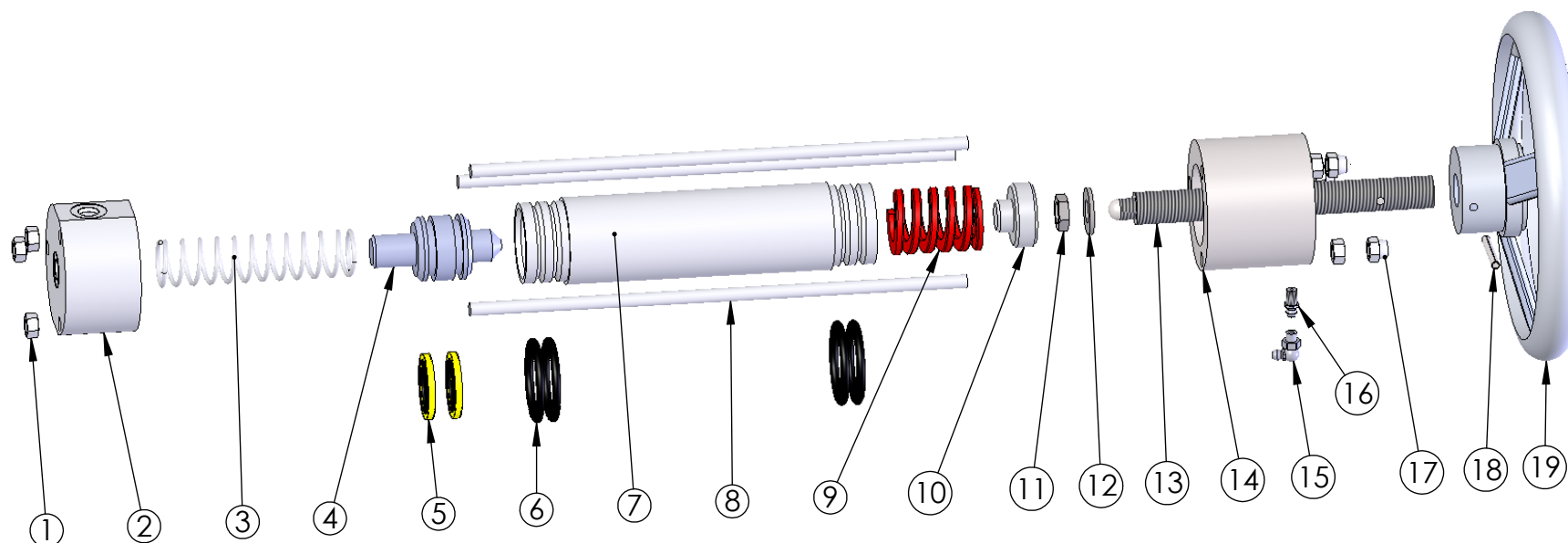


***C04030A--Complete Assembly  
Contains all parts  
Listed Below***

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	S04251	3/4-16 x 4-1/2 SHCS	3
2	C04035	Caliper Half, Countersink	1
3	B18005	Bleeder, -4 o-ring	2
4	O01225	O-Ring, Piston	4
5	P08004	3-3/8" Piston	4
6	P01011	10" HD Brake Pad	2
7	S24017	Spacer, 10" Hd caliper	1
8	C04036	Caliper Half, Threaded	1
9	P06057	Pin, Caliper	2
10	L07050	Link, Caliper Pin	2
11	W01235	Washer, Flat SAE 5/16"	4
12	W01048	Washer, Split Lock 5/16"	4
13	B11332	Bolt Hx Head 5/16"-18 x 1-1/2"	4
14	S04037	Screw, Set 3/8"-24x 1/2" CP	4
15	F05300	Fitting, -4 nut	2
16	F05113	Fitting, Sleeve -4	2
17	F05067	-4 Swivel Nut Run T	1
18	F05725	4 JIC to -4 SAE	2

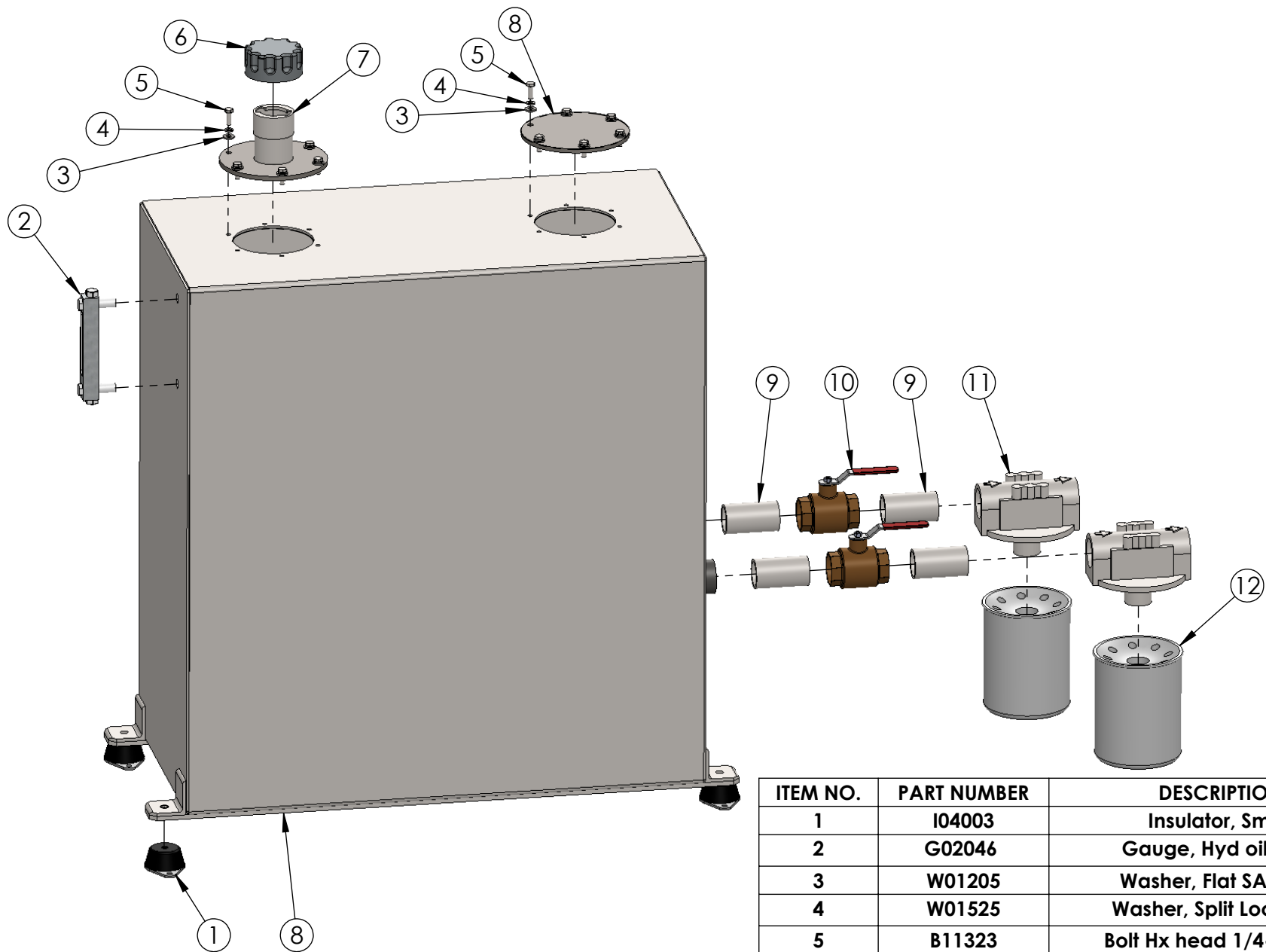


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	S40169	Switch, Drive Bump	2
2	S21020	12v Socket	1
3	G02008	3" 600PSI GAUGE	1
4	S40035	Switch, SP/ST Toggle	1
5	C32004	Brake Cylinder	1
6	S40070	Switch, Key Cole Hersee	1
7	C34042	Controller, Levelwind Joystick	1
8	D09020	Display, Color DP600 TFT	1
9	C34033	Controller Joystick JS6000	1

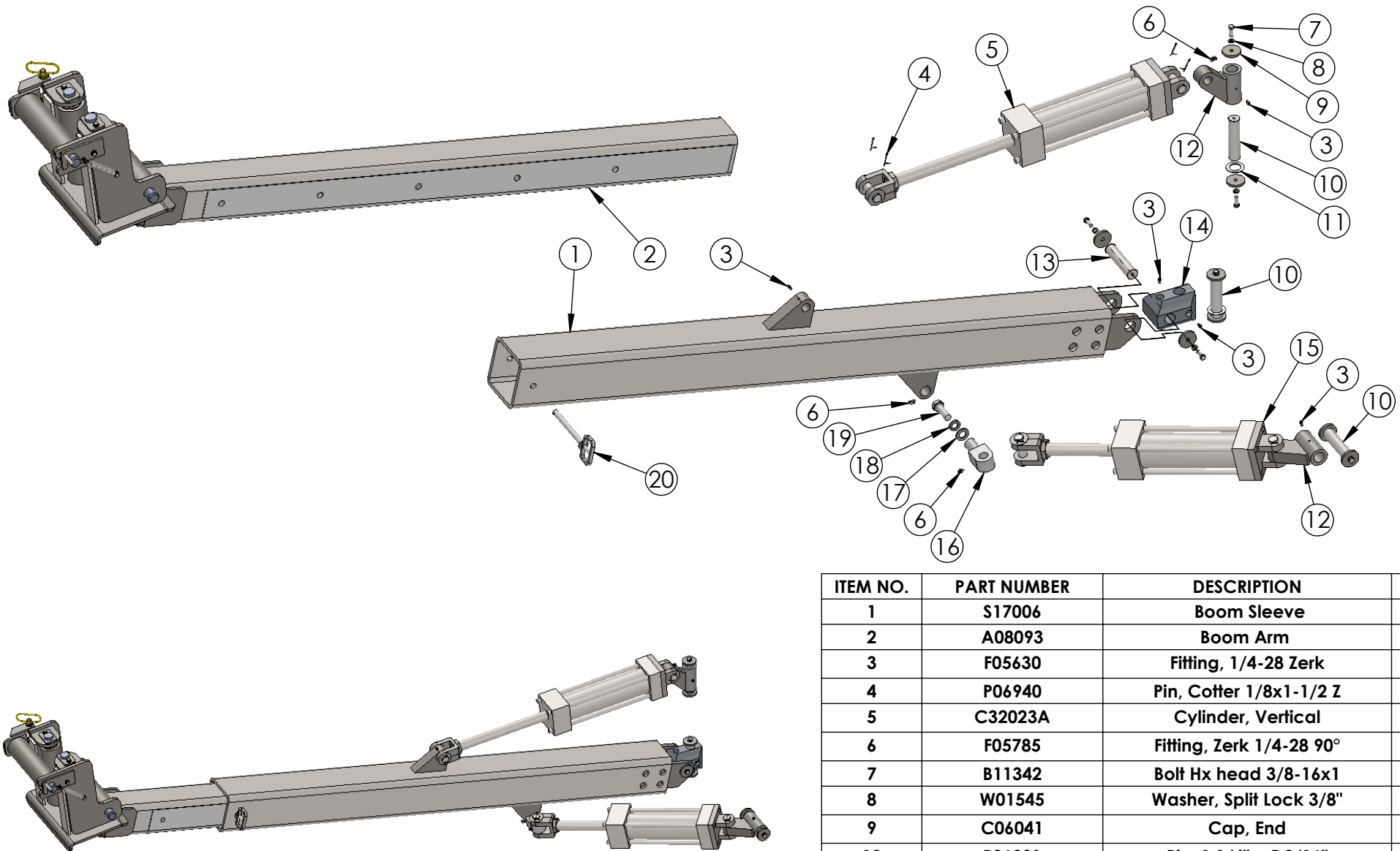


Depending on installation: use either 15 or 16

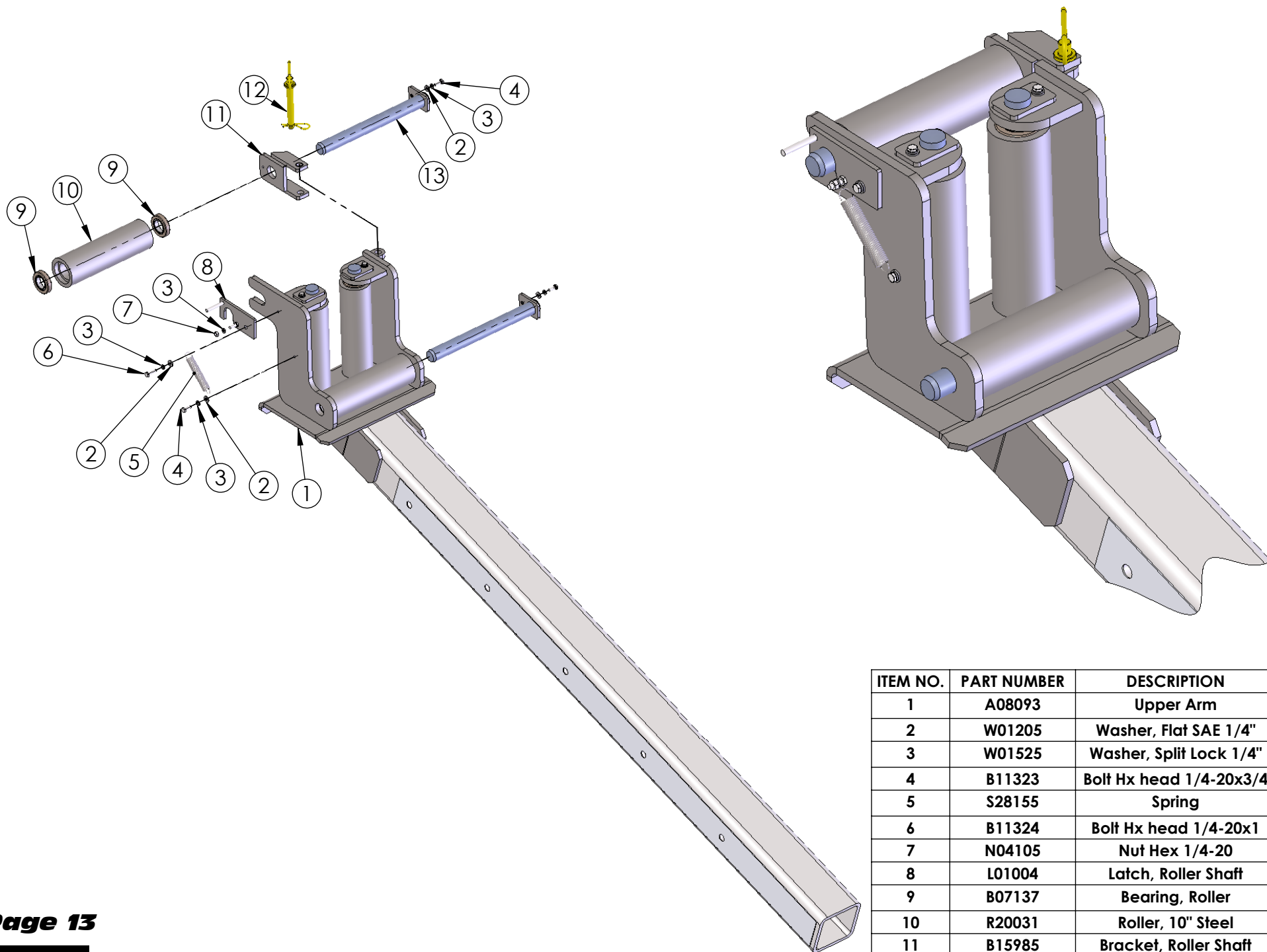
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	N04107	Nut, Hex 5/16"-18	6
2	C06009	Bar round 3" 1018	1
3	S28022	Return Spring	1
4	P08017	ALUM PISTON two groove	1
5	O01061	1 1/2" X 1 1/4" SEAL	2
6	O01060	1 7/8 X 1 5/8 O-RING	4
7	H08003	1.500" I.D. honed tube	1
8	R19007	Bar round 5/16" 1018	3
9	S28021	1080 lb/in Red Spring	1
10	P08016	2" Aluminum RB	1
11	N04039	Nut Hex Jam 1/2-20	1
12	W01005	Washer, Flat SAE 1/2"	1
13	S04006	Bar 3/4-8 acme thread	1
14	C06012	Bar round 3" 1018	1
15	F05785	Fitting, Zerk 1/4-28 90°	1
16	F05630	Fitting, 1/4-28 Zerk	1
17	N04103	Nut Hex 5/16-18 Acorn	3
18	P06189	Pin, Roll 3/16 x 1-1/2 Spring	1
19	H02060	Handle, 8" Dia	1



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	I04003	Insulator, Small	4
2	G02046	Gauge, Hyd oil level	1
3	W01205	Washer, Flat SAE 1/4"	12
4	W01525	Washer, Split Lock 1/4"	12
5	B11323	Bolt Hx head 1/4-20x3/4	12
6	C06155A	Cap, Hydraulic	1
7	N07002	Neck, Hydraulic fill	1
8	T01957	Tank, Hyd 60 gal, 20k	1
9	N02001	Nipple, 1-1/4" x 3"LG	4
10	V02001	Valve, Ball 1-1/4" NPT	2
11	F04021	Filter Head	2
12	F04020	Filter 10 micron	2

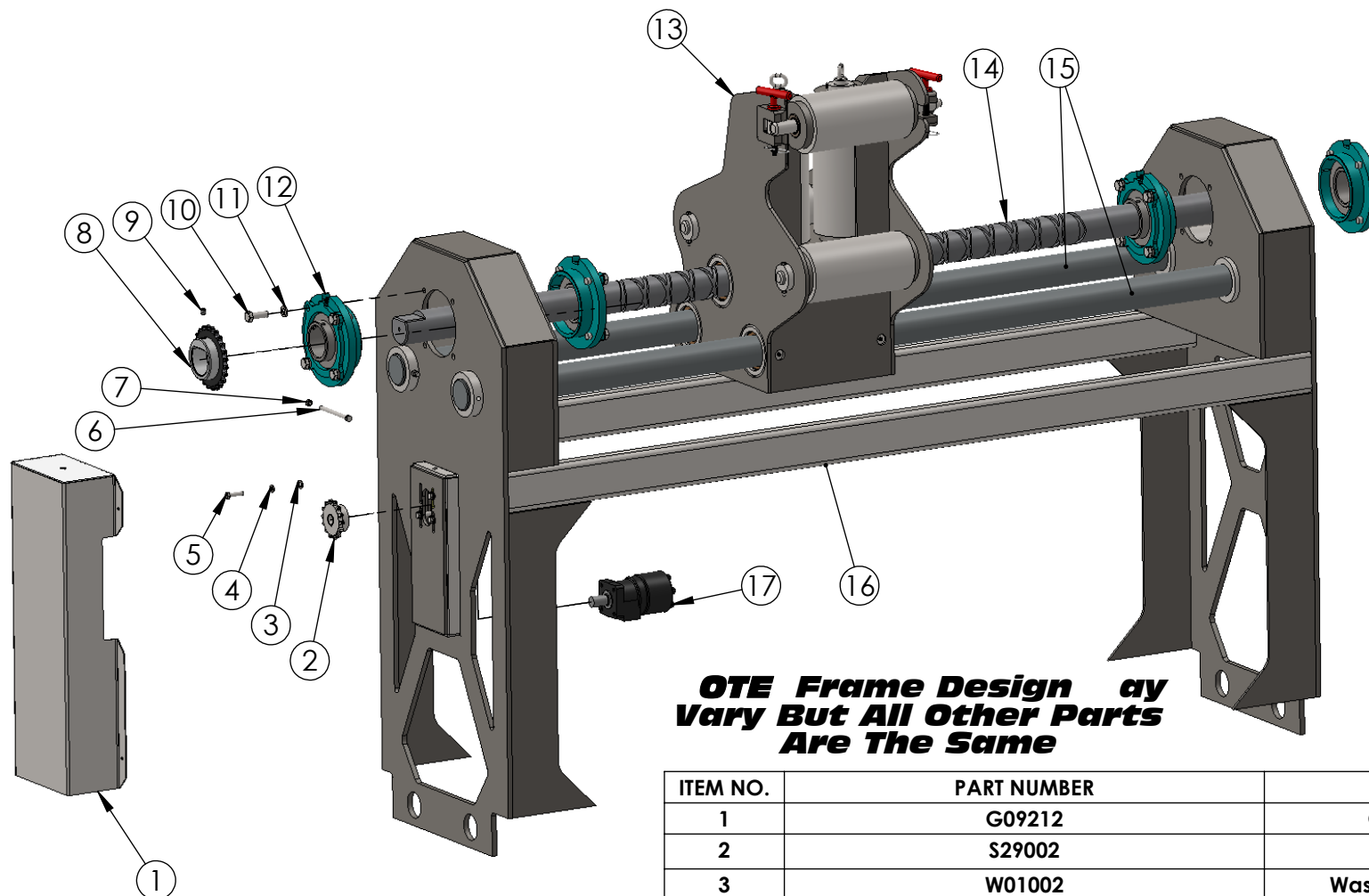


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	S17006	Boom Sleeve	1
2	A08093	Boom Arm	1
3	F05630	Fitting, 1/4-28 Zerk	5
4	P06940	Pin, Cotter 1/8x1-1/2 Z	8
5	C32023A	Cylinder, Vertical	1
6	F05785	Fitting, Zerk 1/4-28 90°	4
7	B11342	Bolt Hx head 3/8-16x1	8
8	W01545	Washer, Split Lock 3/8"	8
9	C06041	Cap, End	8
10	P06081	Pin, 1 1/4" x 5 3/16"	3
11	W01594	Washer, Thrust Brass	2
12	P25007	Pivot, Cylinder	2
13	P06082	Pin, 1 1/4" x 5 3/8"	1
14	P25004	Pivot Joint	1
15	C32022A	Cylinder, Horizontal	1
16	P25005	Pivot, Shaft	1
17	W01286	Washer Flat SAE 3/4 plain	1
18	W01585	Washer Split Lock 3/4	1
19	B11075	Bolt Hx head 3/4-10x2-1/4 Z8	1
20	P06076	Pin, Adjusting	1



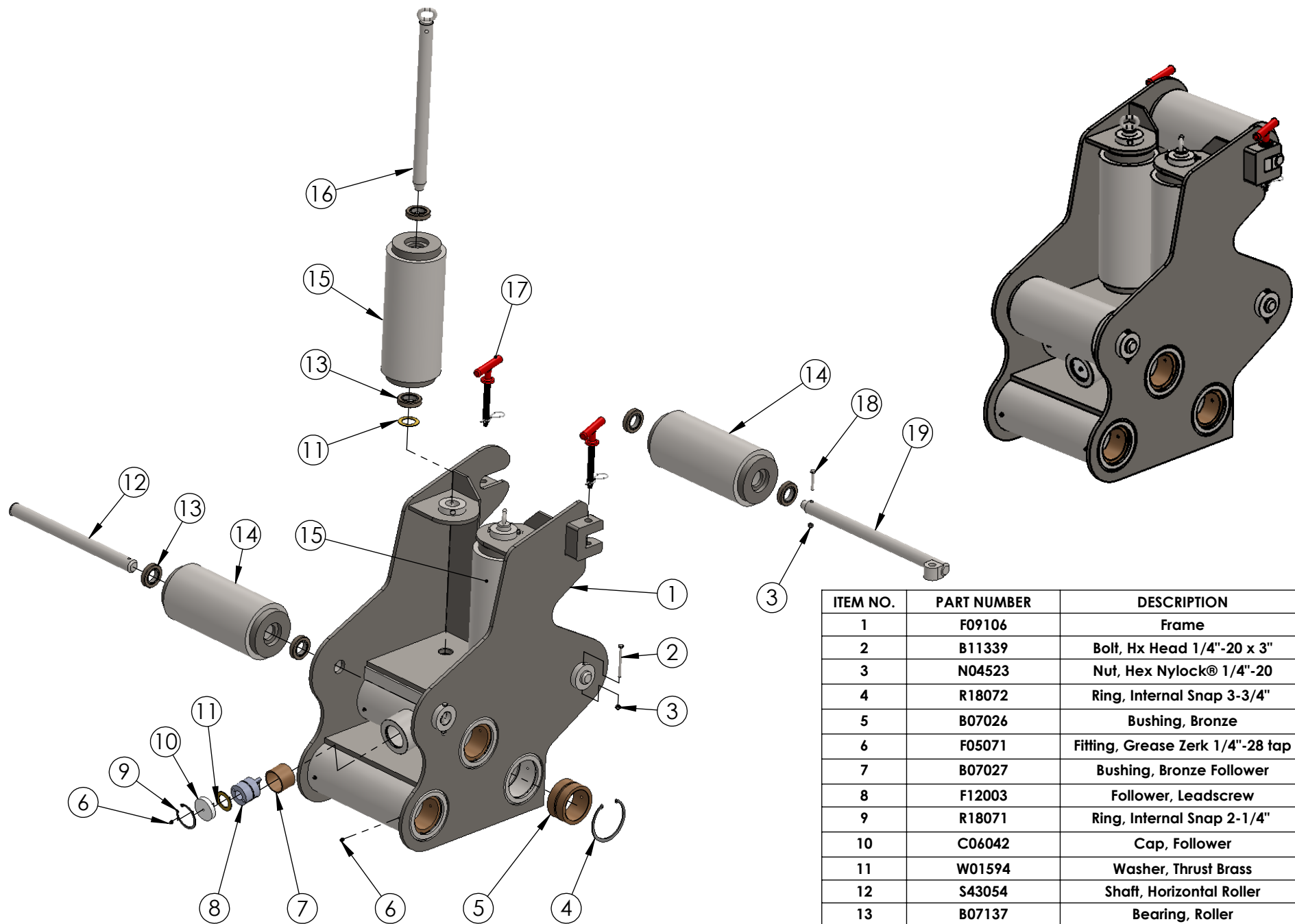
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	A08093	Upper Arm	1
2	W01205	Washer, Flat SAE 1/4"	6
3	W01525	Washer, Split Lock 1/4"	7
4	B11323	Bolt Hx head 1/4-20x3/4	5
5	S28155	Spring	1
6	B11324	Bolt Hx head 1/4-20x1	1
7	N04105	Nut Hex 1/4-20	1
8	L01004	Latch, Roller Shaft	1
9	B07137	Bearing, Roller	8
10	R20031	Roller, 10" Steel	4
11	B15985	Bracket, Roller Shaft	1
12	P06074	Pin, 5/8 x 6"	1
13	S43073	Shaft, Roller	4



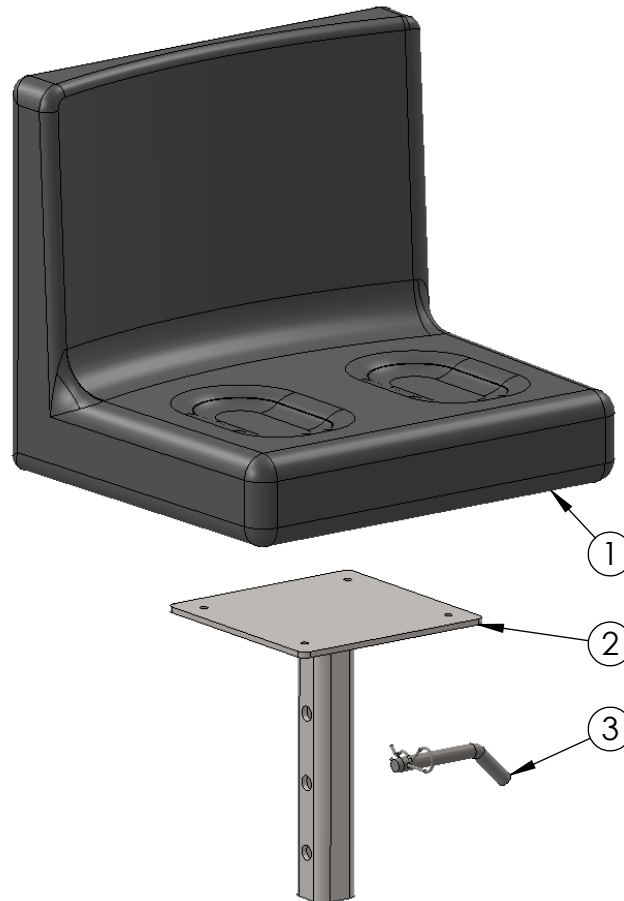


**OTE Frame Design may Vary But All Other Parts Are The Same**

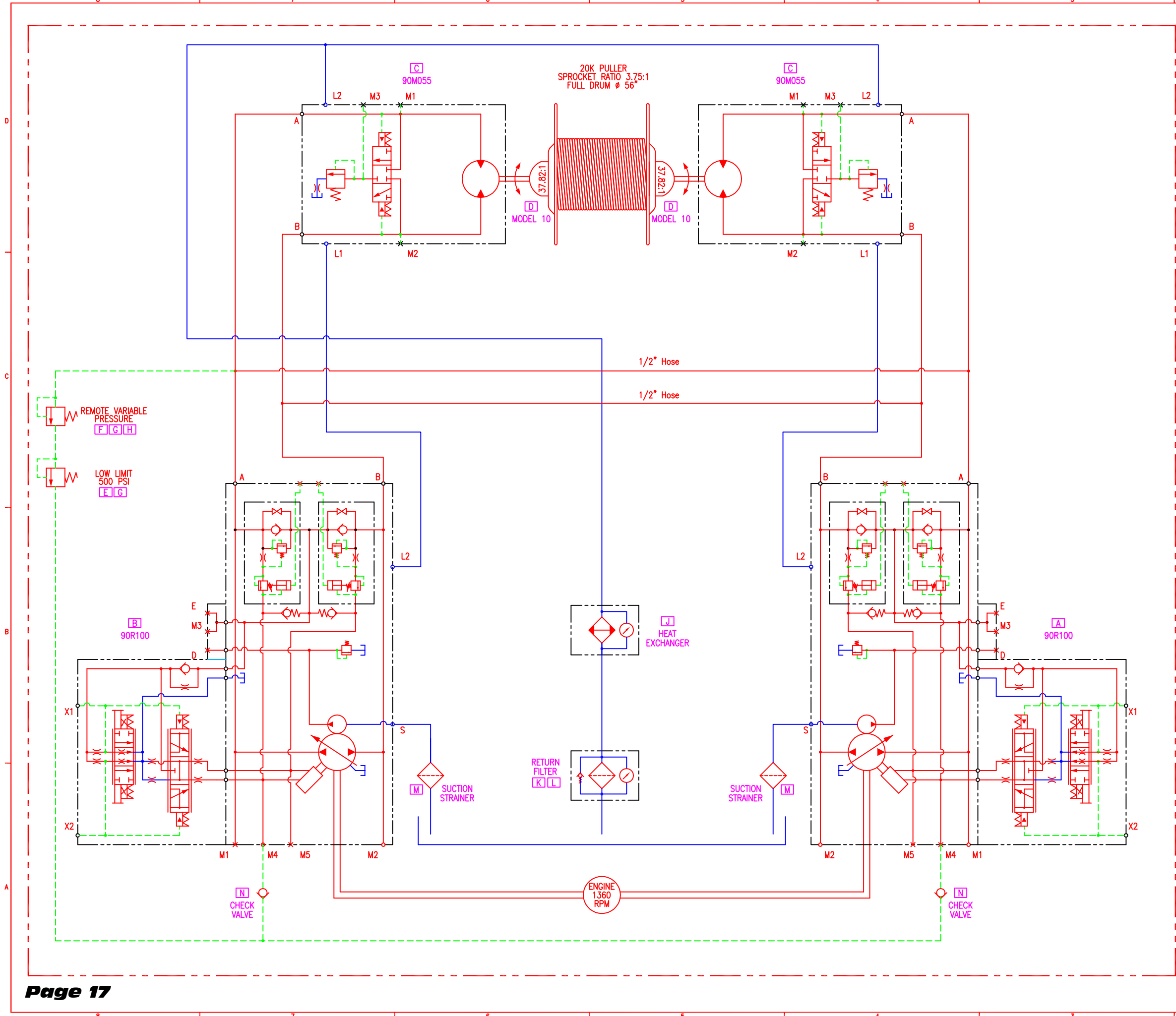
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	G09212	Guard, Chain	1
2	S29002	Sprocket	1
3	W01002	Washer, Flat SAE 3/8"	4
4	W01545	Washer, Split Lock 3/8"	4
5	B11344	Bolt, Hx Head 3/8"-16 x 1-1/2"	4
6	B11017	Bolt, Hx Head 3/8"-16 x 5"	2
7	N04553	Nut Hex Nylock 3/8-24	2
8	S29120	Sprocket	1
9	S04032	Screw, Set 1/2-13x1/2	1
10	B11375	Bolt Hx Head 5/8"-11 x 1-3/4"	16
11	W01040	Washer, Split Lock 5/8"	16
12	B07006	Bearing, Flange 3"	4
13	20k Levelwind Head	See Levelwind Head Sheet	1
14	S43047	Leadscrew	1
15	S43048	Shaft, Chrome 3"	2
16	F09032	Levelwind Frame	1
17	M08050	Motor, Hydraulic Drive	1



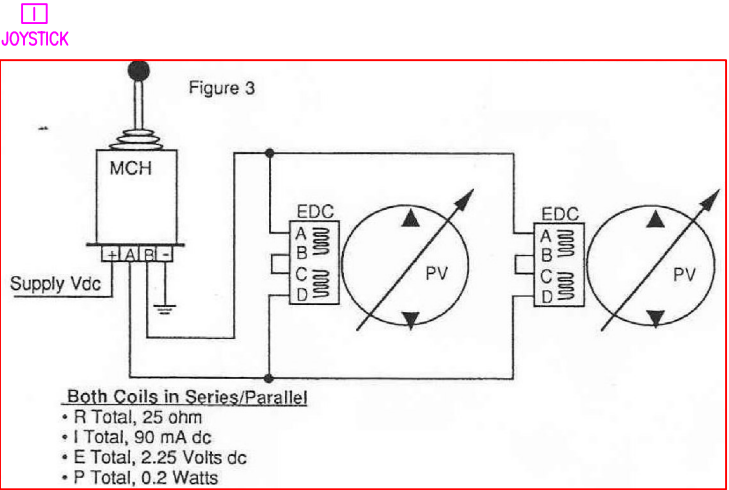
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	F09106	Frame	1
2	B11339	Bolt, Hx Head 1/4"-20 x 3"	4
3	N04523	Nut, Hex Nylock® 1/4"-20	5
4	R18072	Ring, Internal Snap 3-3/4"	6
5	B07026	Bushing, Bronze	6
6	F05071	Fitting, Grease Zerk 1/4"-28 tap	7
7	B07027	Bushing, Bronze Follower	1
8	F12003	Follower, Leadscrew	1
9	R18071	Ring, Internal Snap 2-1/4"	1
10	C06042	Cap, Follower	1
11	W01594	Washer, Thrust Brass	3
12	S43054	Shaft, Horizontal Roller	2
13	B07137	Bearing, Roller	10
14	R20030	Roller, Horizontal	3
15	R20027	Roller, Vertical	2
16	S43056	Shaft, Vertical Roller	2
17	P06026	Pin, Roller Lock	2
18	B11326	Bolt, Hx Head 1/4"-20 x 1-3/4"	1
19	S43067	Shaft, Upper Horizontal Roller	1



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	S03040	Seat, Operator JD	1
2	P14051	Post, Seat Mount	1
3	P06999	Pin, 5/8" X 3-1/4"	1




REVISIONS		
DESCRIPTION	DATE	REV
X	X	X



## For Trucks 1-6

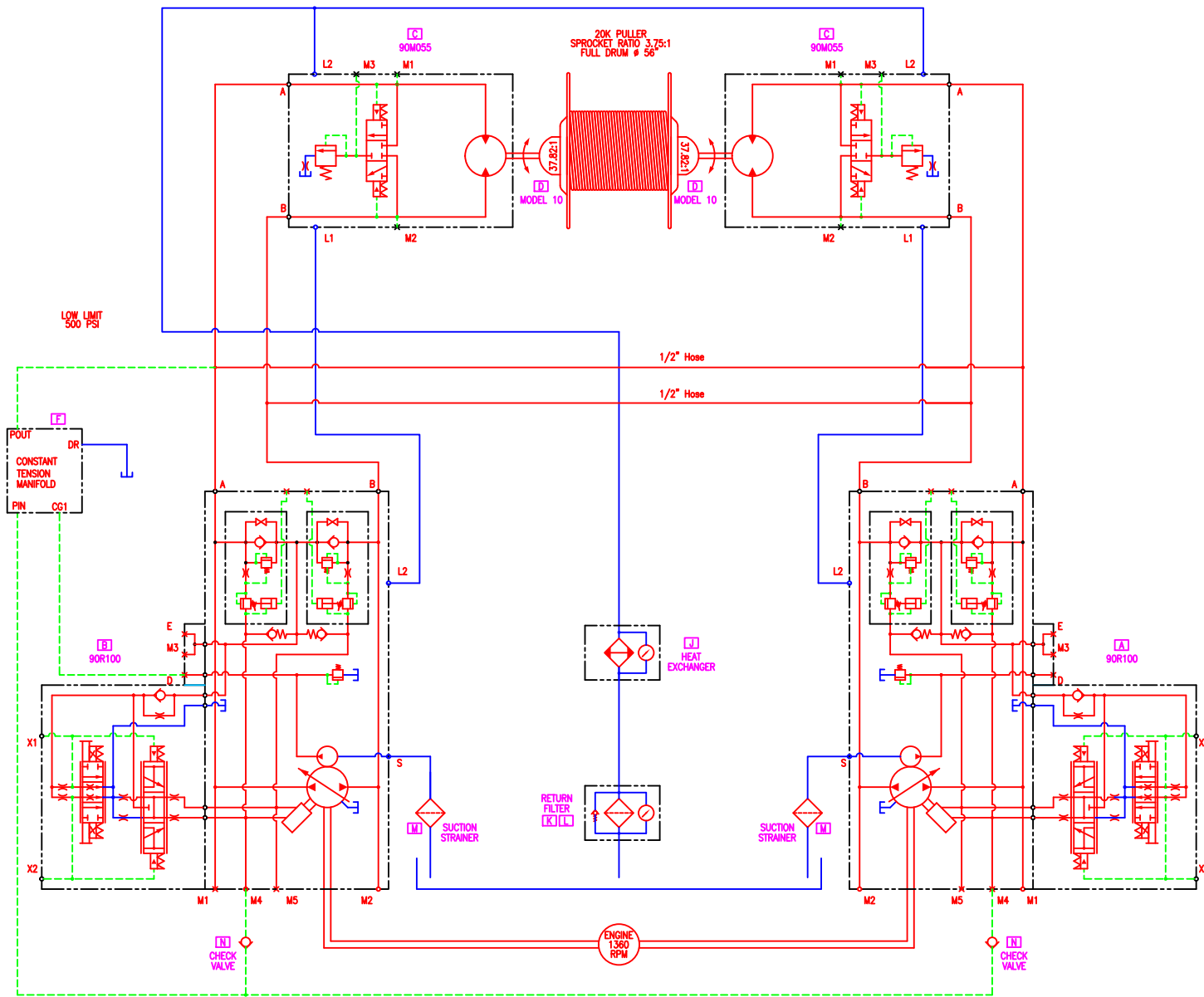
[N]	2	X	CHECK VALVE
[M]	1	X	X
[L]	1	X	X
[K]	1	X	X
[J]	2	MA120	HEAT EXCHANGER
[I]	1	MCH22AB1032	JOYSTICK
[H]	1	21743	KNOB
[G]	2	Q2-175100	STEEL LINE BODY
[F]	1	RV5-10-S-0-50	HIGH PRESSURE LIMITER
[E]	1	RV5-10-S-0-20	LOW PRESSURE LIMITER
[D]	2	OS3C1437F1A1T	PLANETARY W/BRAKE & SPINDLE
[C]	2	90M055NCOC8COS1W00NNN000024	HYDROSTATIC MOTOR
[B]	1	90R100KP1AB60S4S1E03GBA292924	REAR HYDROSTATIC PUMP
[A]	1	90R100KP1CD60S4F1E03GBA292924	FRONT HYDROSTATIC PUMP

ITEM		QTY	P/N		DESCRIPTION	
LOC		REV	DESCRIPTION		CHK'D	INT 9-05-07
 <i>Berendsen Fluid Power</i>					SHEET	1 OF 1
					DRAWN BY: LUTZ	
					FILE NAME: N/A	
					CHECKED: N/A	

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TITLE: HOGG & DAVIS  
20K PULLER

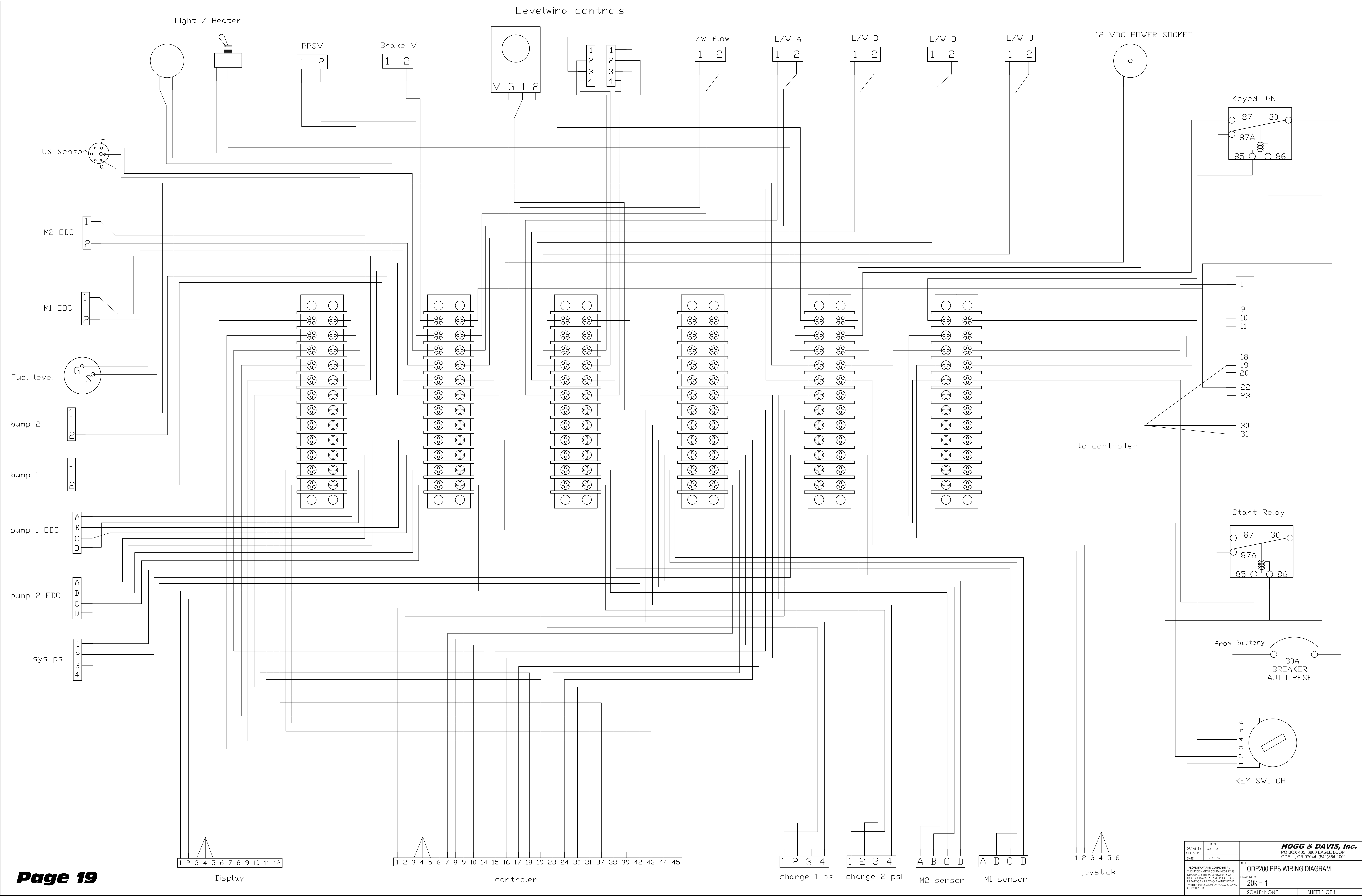
DATE:	9-05-07	TOLERANCE UNLESS NOTED	DRAWING NUMBER:	REV
SCALE:	N/A	SIZE: D	20K	P1
		INCH FRACTIONS: ±1/32 2 PLACE (.00) ±.010 3 PLACE (.000) ±.005	METRIC 0 PLACES ±1mm 1 PLACE ±.25mm 2 PLACE ±.12mm	ACAD

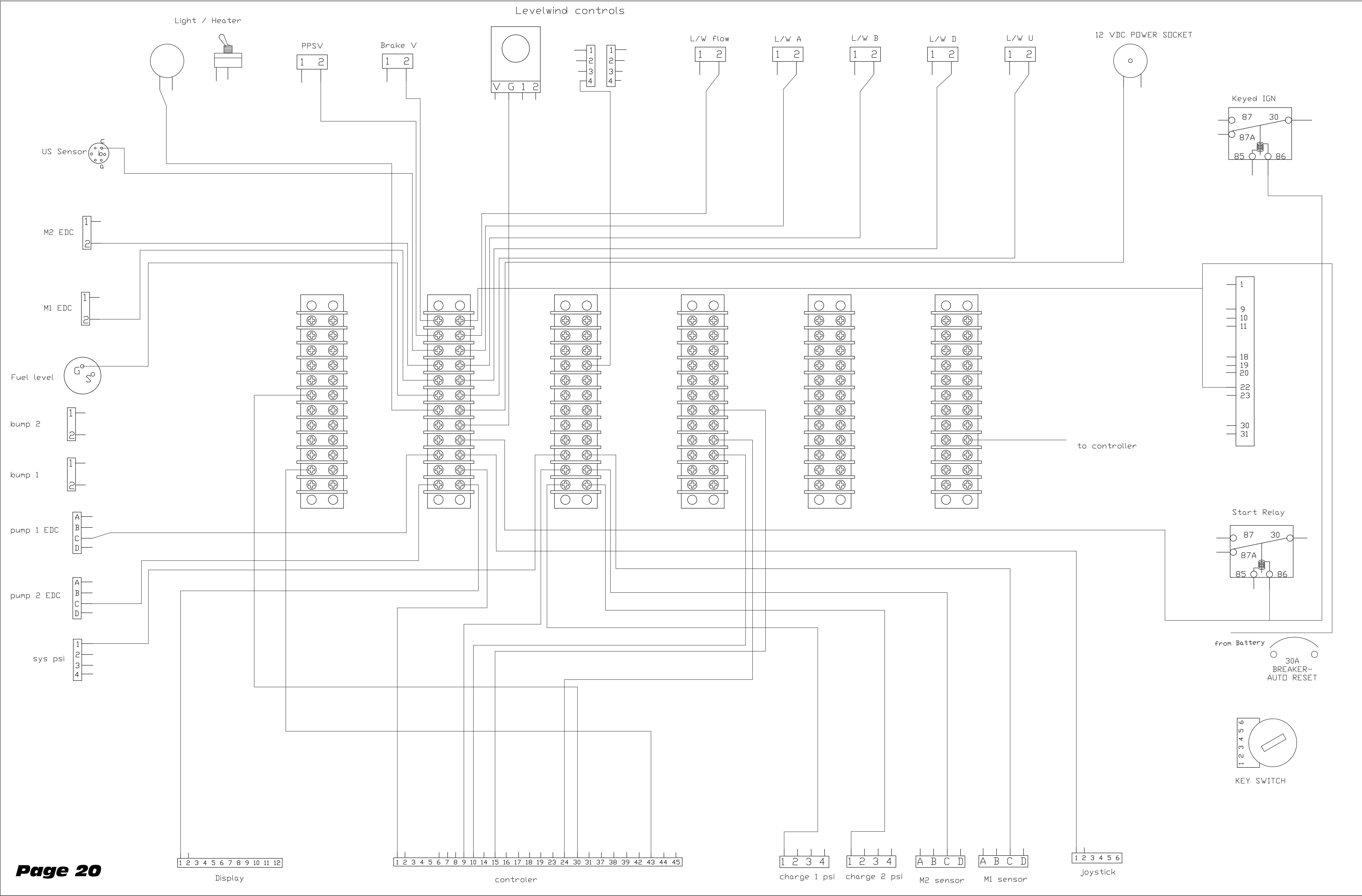


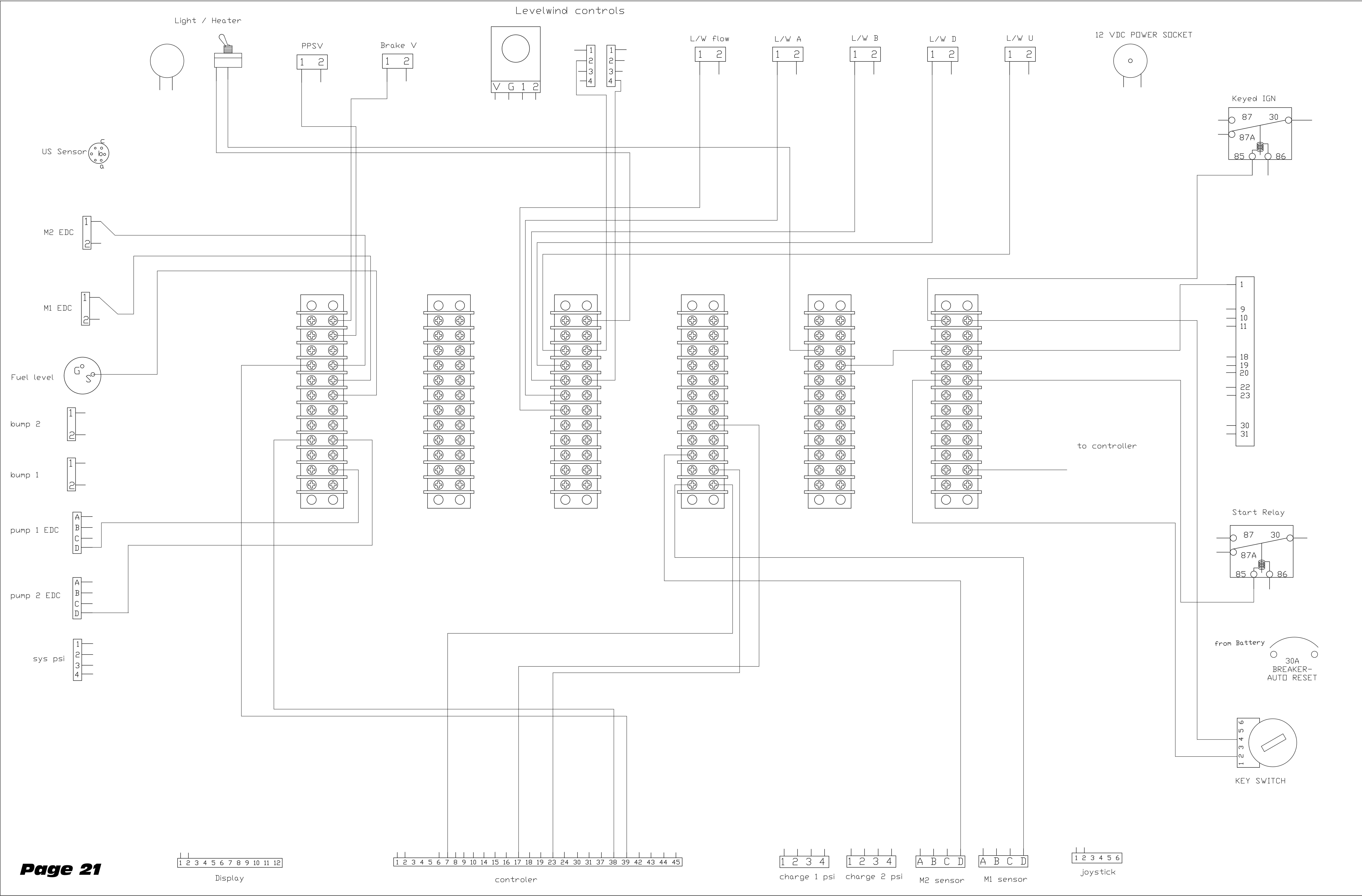
REVISIONS		
DESCRIPTION	DATE	REV
X	X	X

**For Trucks 7 on**

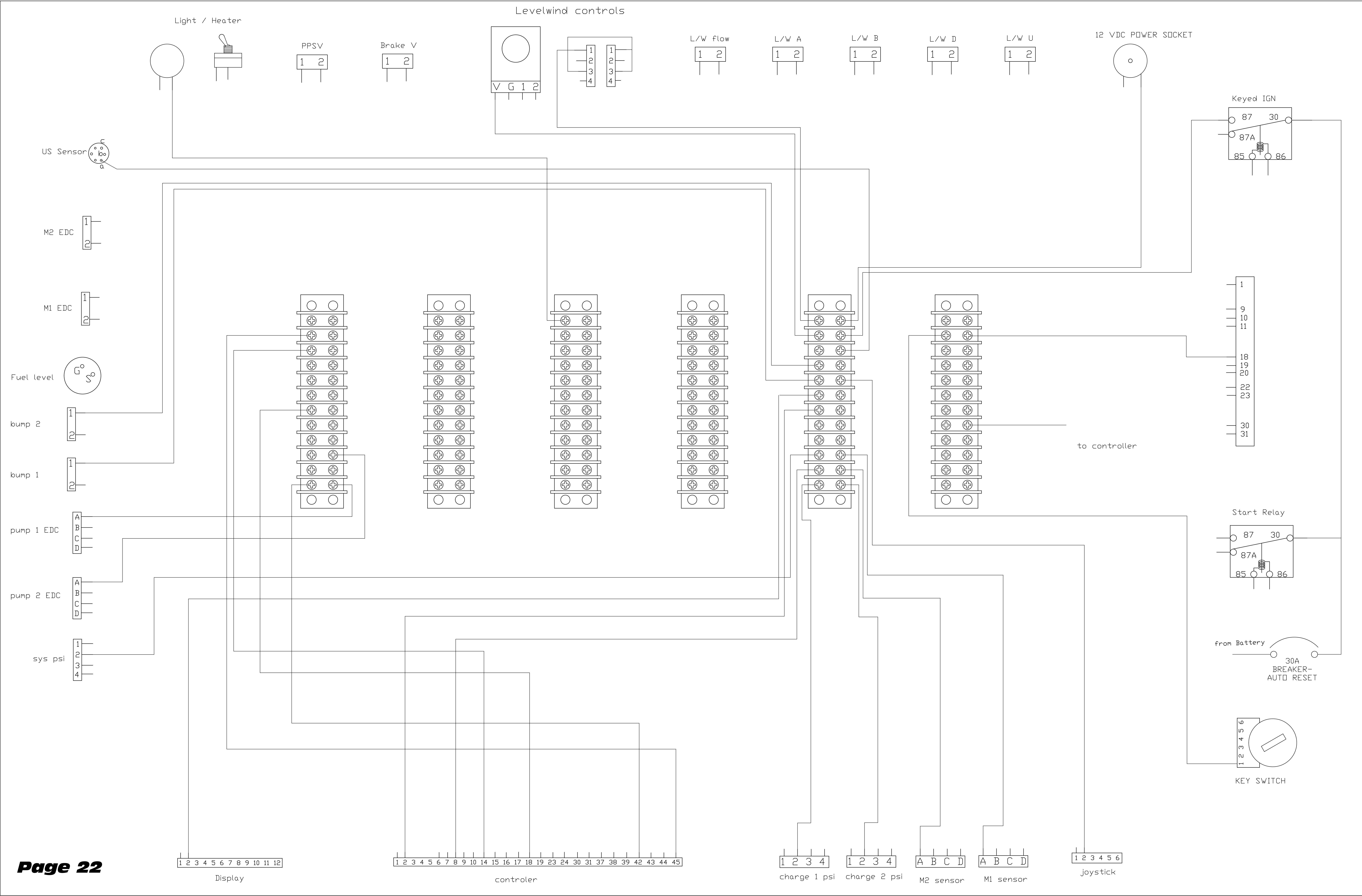
IN	2	X	CHECK VALVE
LM	1	X	
IL	1	X	
IK	1	X	
IL	1		HEAT EXCHANGER
IL	1		JOYSTICK
IL	2		
IL	1		
IL	1		CONSTANT TENSION MANIFOLD
IL	1		
IL	2		PLANETARY W/BRAKE & SPINDLE
IL	2		HYDROSTATIC MOTOR
IL	1		REAR HYDROSTATIC PUMP
IL	1		FRONT HYDROSTATIC PUMP
ITEM	QTY	P/N	DESCRIPTION
LOC	REV	DESCRIPTION	CHK'D INT 19-05-07
			SHEET 1 OF 1
			DRAWN BY: LUTZ
			FILE NAME: N/A
			CHECKED: N/A
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TITLE: HOGG & DAVIS 20K PULLER			
DATE: 9-05-07	TOLERANCE UNLESS NOTED: .001	DRAWING NUMBER: 20K	REV: P1
SCALE: N/A	SIZE: D		
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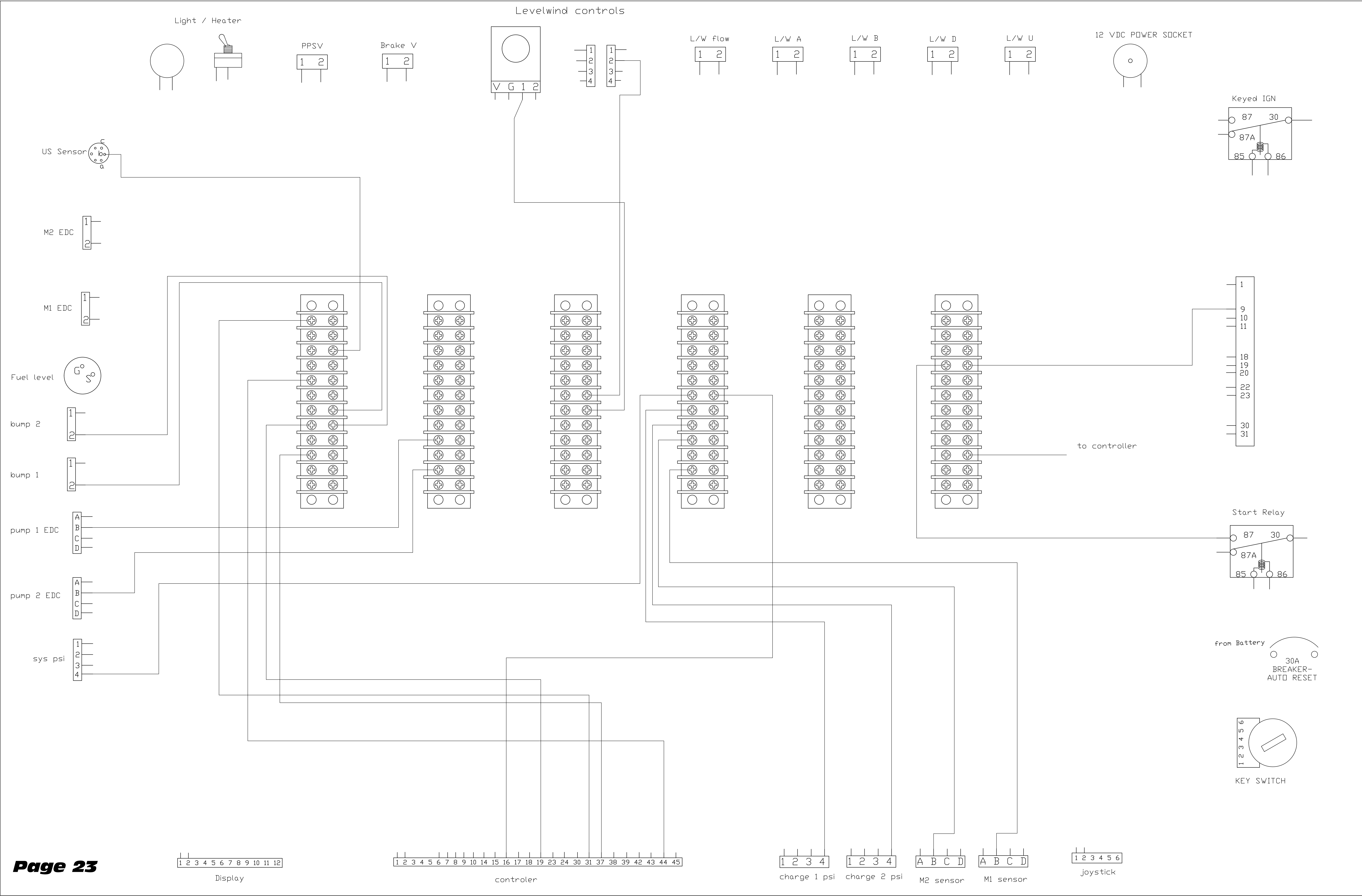




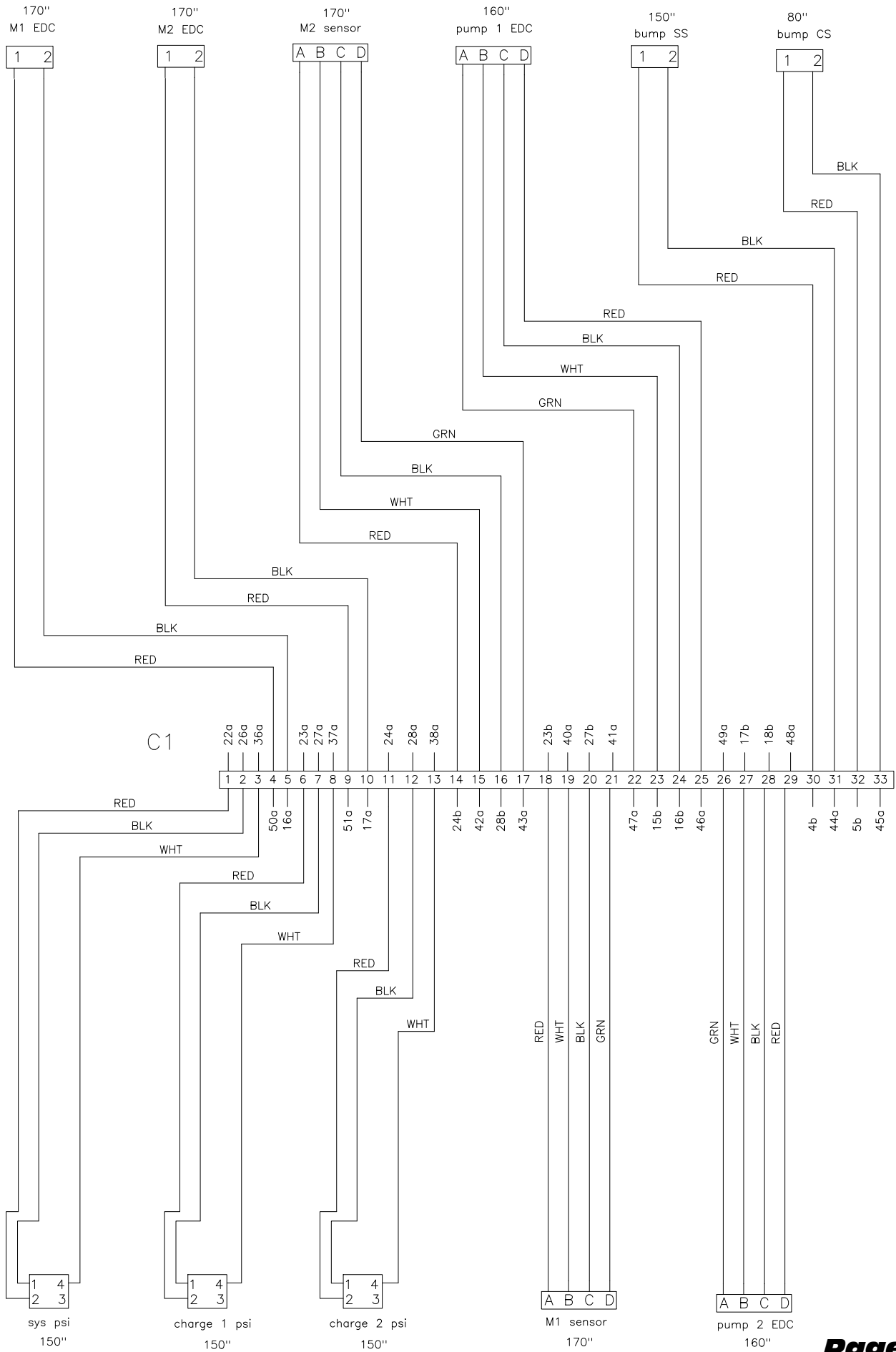




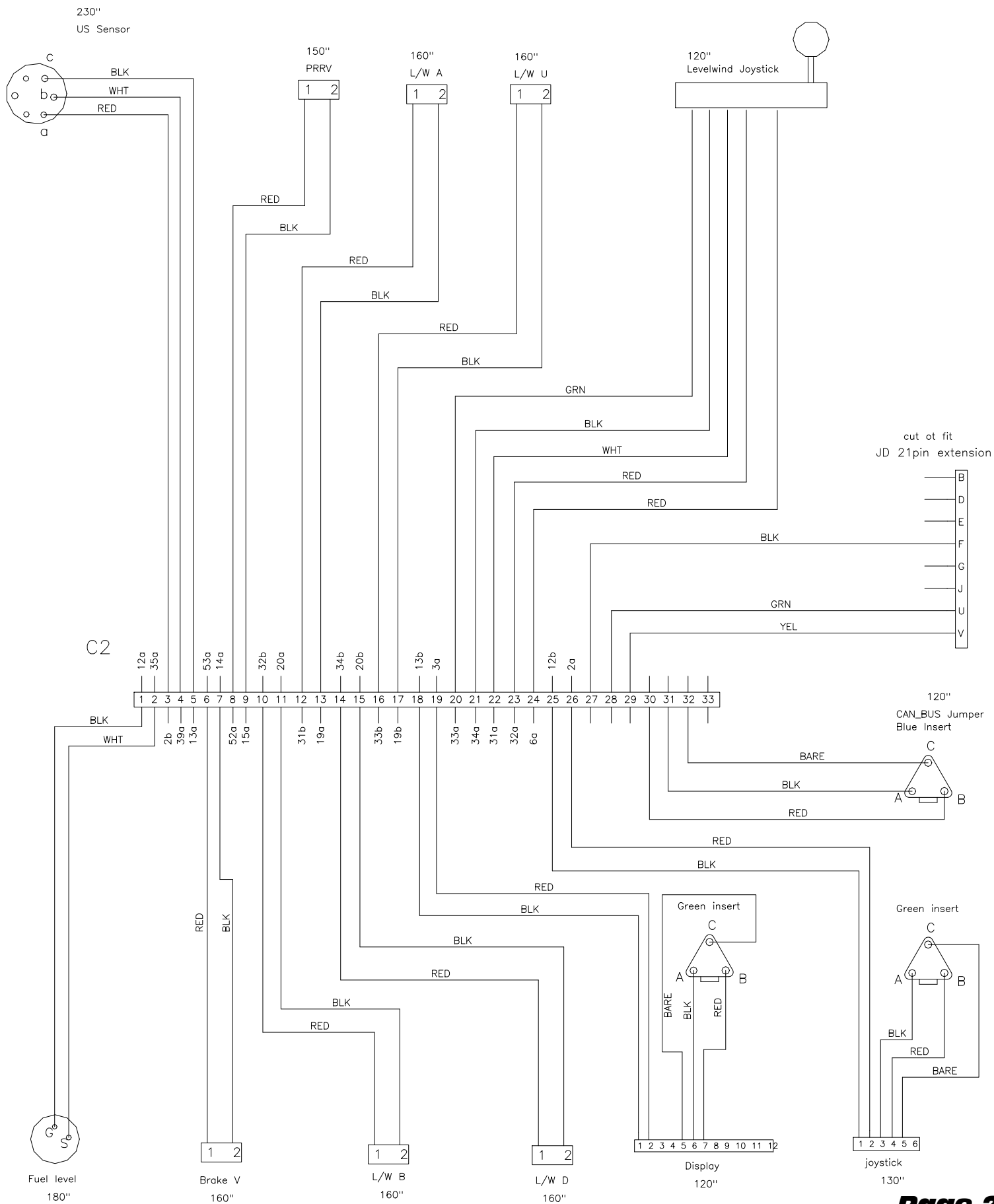




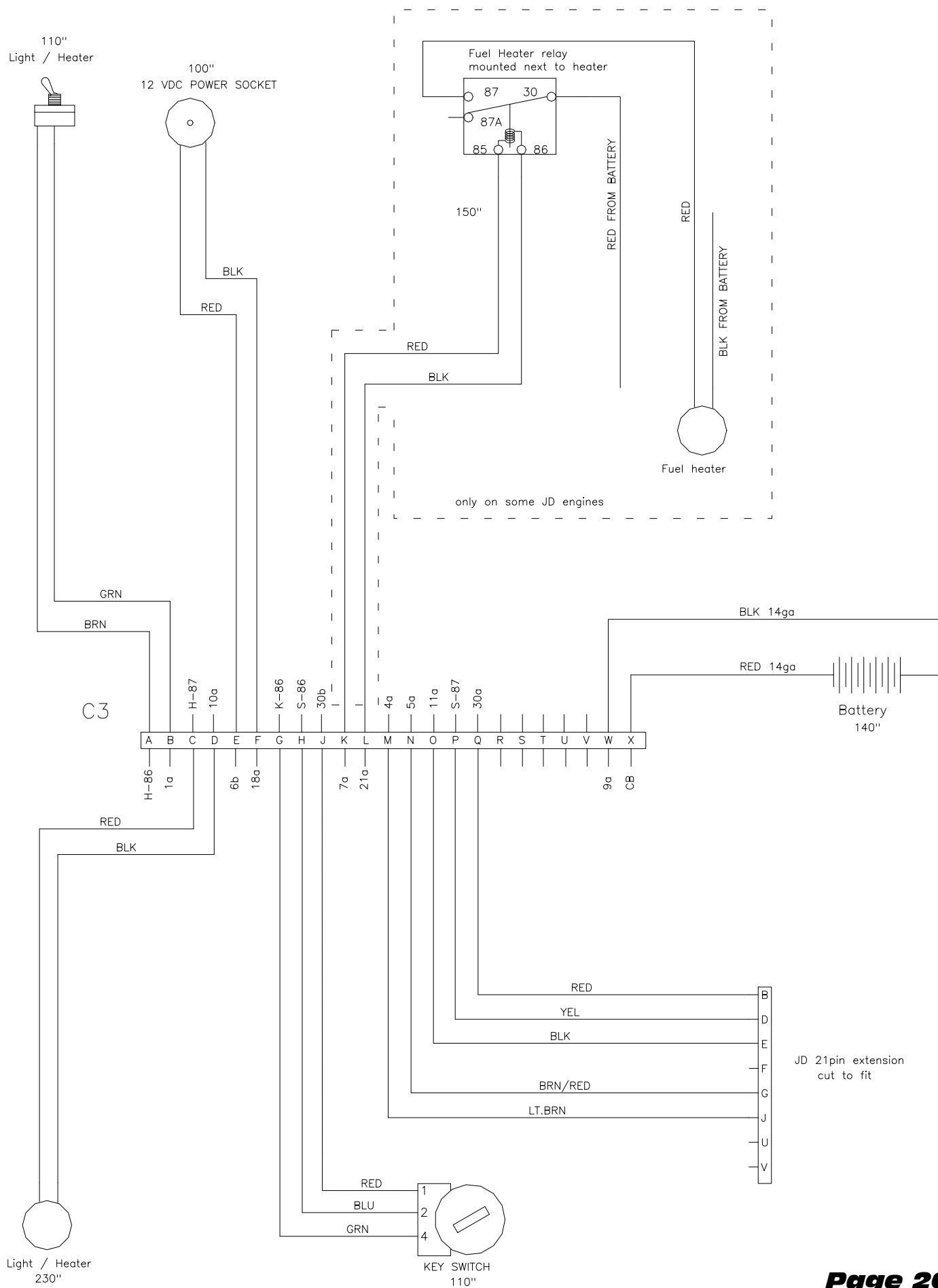
# Connector 1 (18ga wire)



Connector 2 (18ga wire)



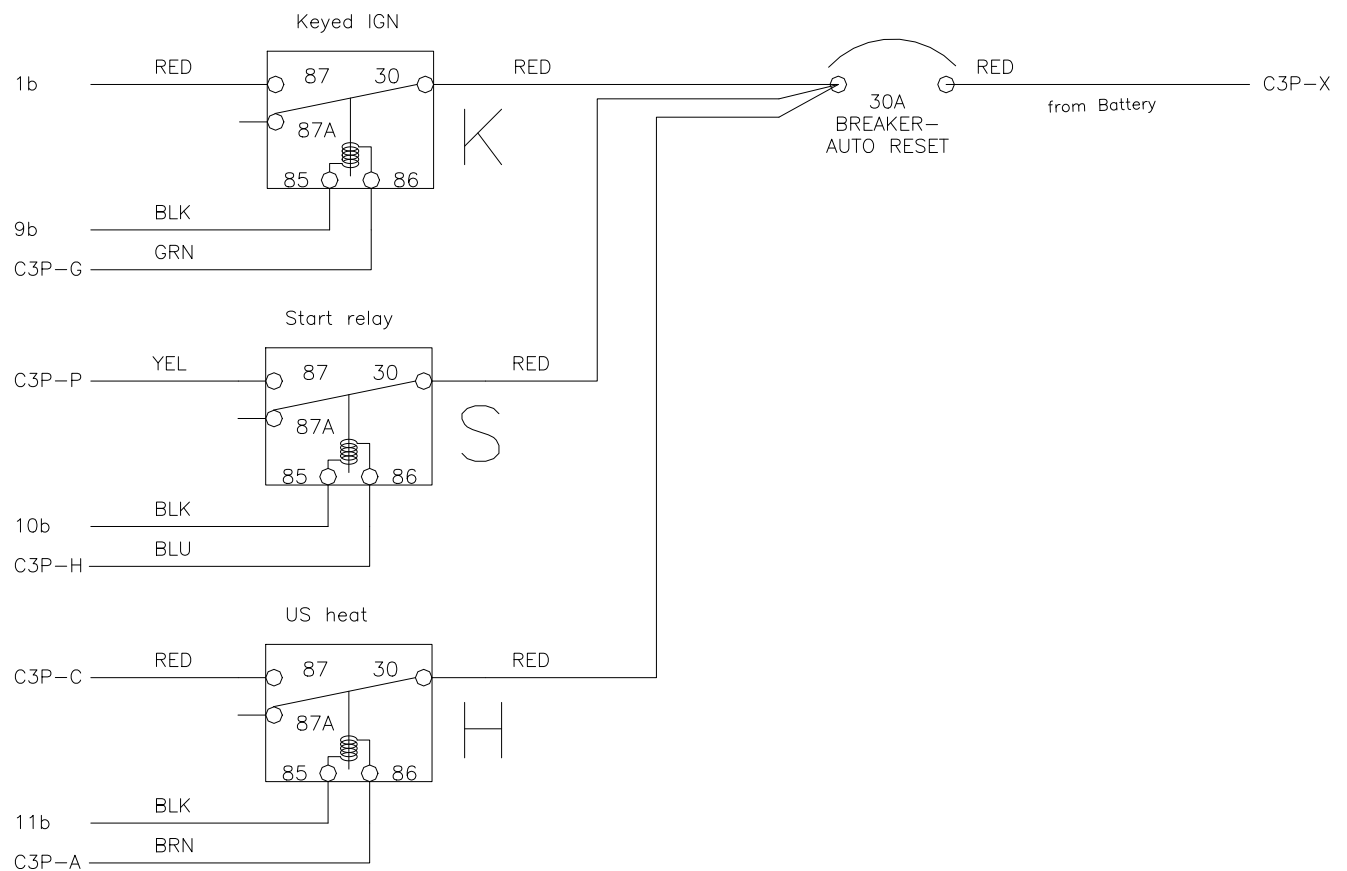
# Connector 3 (16-14ga wire)



# Terminal Box page 1

			a		b			
C3P-B	US heat switch	GRN			1			RED from keyed relay pg 2
C2P26	joystick 12v+	RED			2			RED US sensor C2P3
C2P19	display	RED			3			RED ECU P2
C3P-M	JD engine	RED			4			RED bump R C1P30
C3P-N	JD engine	RED			5			RED bump L C1P32
C2P24	LW joystick	RED			6			RED 12V socket C3P-E
C3P-K	fuel heat relay	RED			7			
					8			
C3P-W	battery	BLK			9			BLK keyed relay pg 2
C3P-D	US heat	BLK			10			BLK start relay pg 2
C3P-O	JD engine	BLK			11			BLK US heat relay pg 2
C2P1	fuel level	BLK			12			BLK joystick C2P25
C2P5	US Sensor	BLK			13			BLK display C2P18
C2P7	brake valve	BLK			14			BLK controller P1
C2P9	PRV	BLK			15			BLK pump 1 EDC B C1P23
C1P5	M1 EDC	BLK			16			BLK pump 1 EDC C C1P24
C1P10	M2 EDC	BLK			17			BLK pump 2 EDC B C1P27
C3P-F	12C socket	BLK			18			BLK pump 2 EDC C C1P28
C2P13	LW A -	BLK			19			BLK LW U - C2P17
C2P11	LW B -	BLK			20			BLK LW D - C2P15
C3P-L	fuel heat relay	BLK			21			
C1P1	sys psi	RED			22			RED from ECU P8
C1P6	chrg 1	RED			23			RED M1 sensor C1P18
C1P11	chrg 2	RED			24			RED M2 sensor C1P14
					25			
C1P2	sys psi	BLK			26			BLK from ECU P9
C1P7	chrg 1	BLK			27			BLK M1 sensor C1P20
C1P12	chrg 2	BLK			28			BLK M2 sensor C1P16
					29			
C3P-Q	battery from JD engine	RED			30			RED battery to keyswitch C3P-J
C2P22	LW JS D	WHT			31			RED LW V D C2P14
C2P23	LW JS U	RED			32			RED LW V U C2P16
C2P20	LW JS L	GRN			33			RED LW V L C2P10
C2P21	LW JS R	BLK			34			RED LW V R C2P12
C2P2	FEUL LEVEL	WHT			35			WHT ECU P30
C1P3	SYS	WHT			36			WHT ECU P16
C1P8	CHRG 1	WHT			37			WHT ECU P15
C1P13	CHRG 2	WHT			38			WHT ECU P17
C2P4	US S	WHT			39			WHT ECU P14
C1P19	M1 B	WHT			40			WHT ECU P23
C1P21	M1 D	GRN			41			GRN ECU P7
C1P15	M2 B	WHT			42			WHT ECU P24
C1P17	M2 D	GRN			43			GRN ECU P10
C1P31	BUMP R	BLK			44			BLK ECU P18
C1P33	BUMP L	BLK			45			BLK ECU P19
C1P25	P1 D	RED			46			RED ECU P42
C1P22	P1 A	GRN			47			GRN ECU P43
C1P29	P2 D	RED			48			RED ECU P37
C1P26	P2 A	GRN			49			GRN ECU P38
C1P4	M1 EDC	RED			50			RED ECU P44
C1P9	M2 EDC	RED			51			RED ECU P39
C2P8	PRV	RED			52			RED ECU P45
C2P6	BRAKE V	RED			53			RED ECU P31
					54			
					55			

# Terminal Box page 2



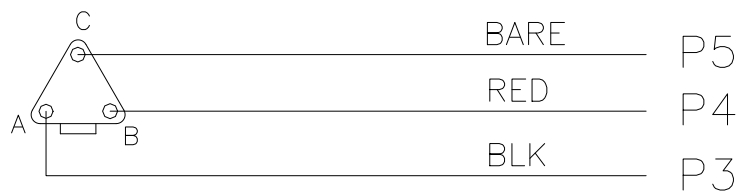
CAN FROM  
ENGINE  
green insert



CAN FROM  
CONTROL P  
blue insert

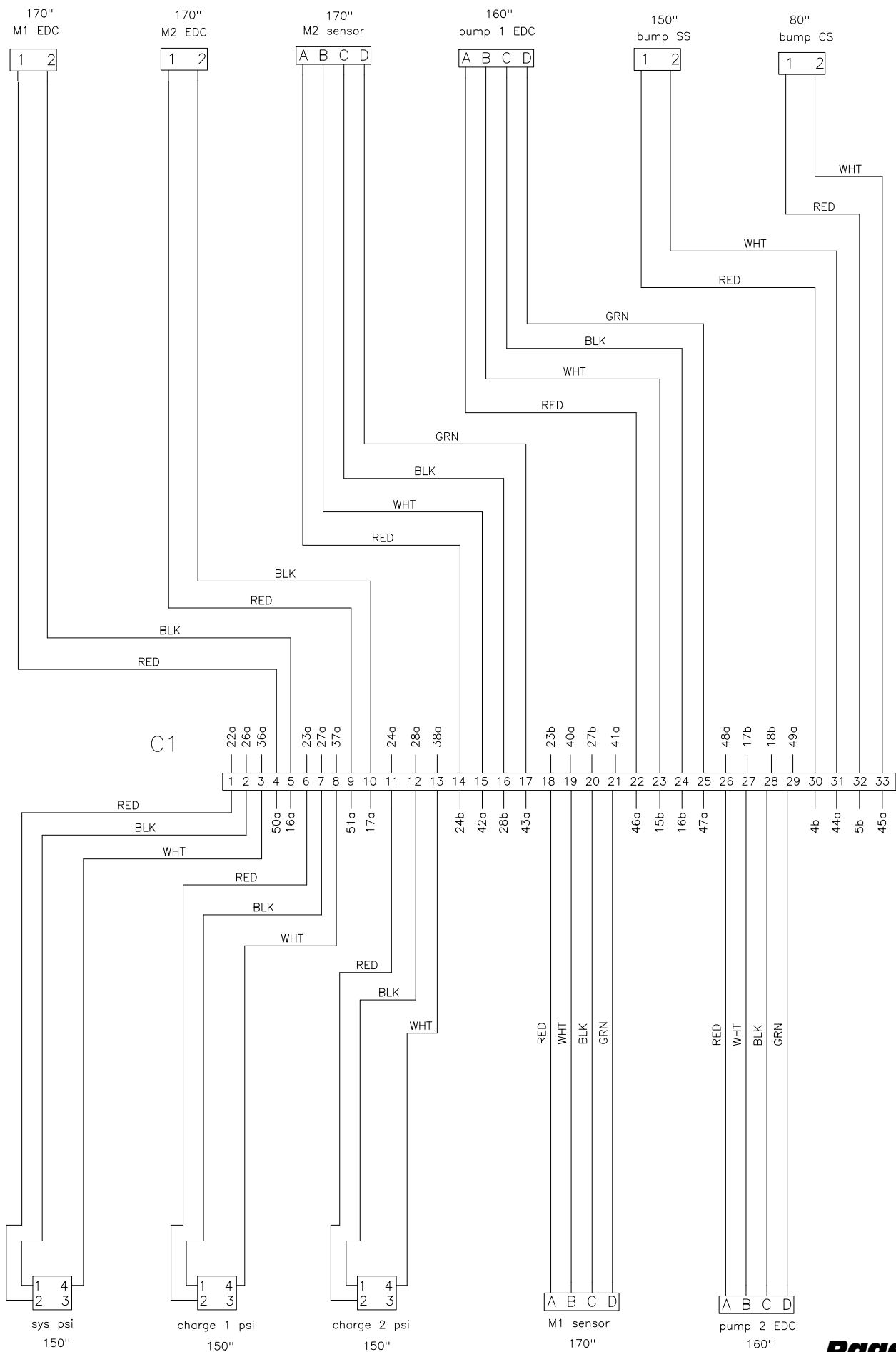


CAN FROM  
ECU  
green insert



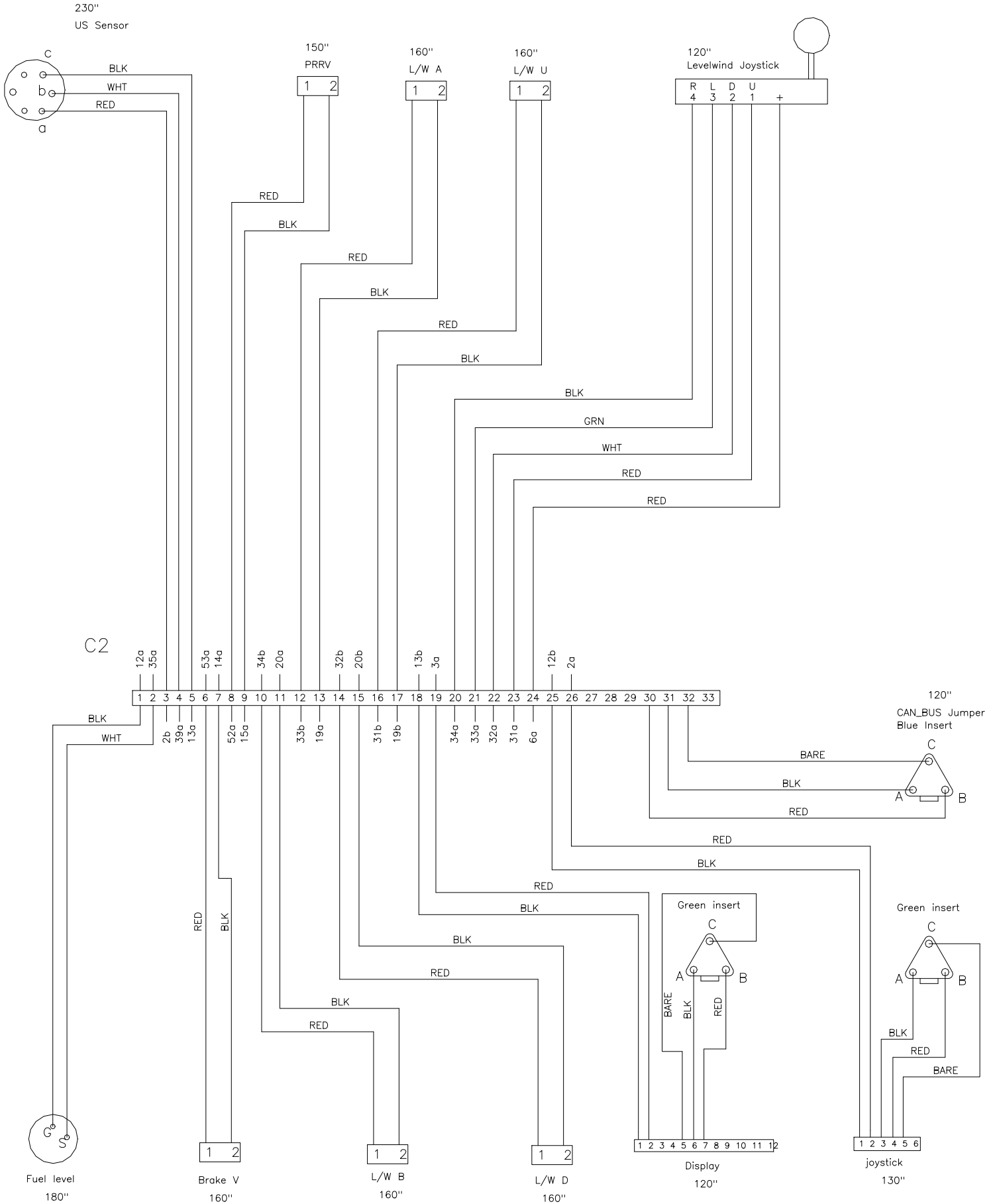
a is CAN HI+  
b is CAN LO-  
c is CAN SHIELD

# Connector 1 (18ga wire)





# Connector 2 (18ga wire)



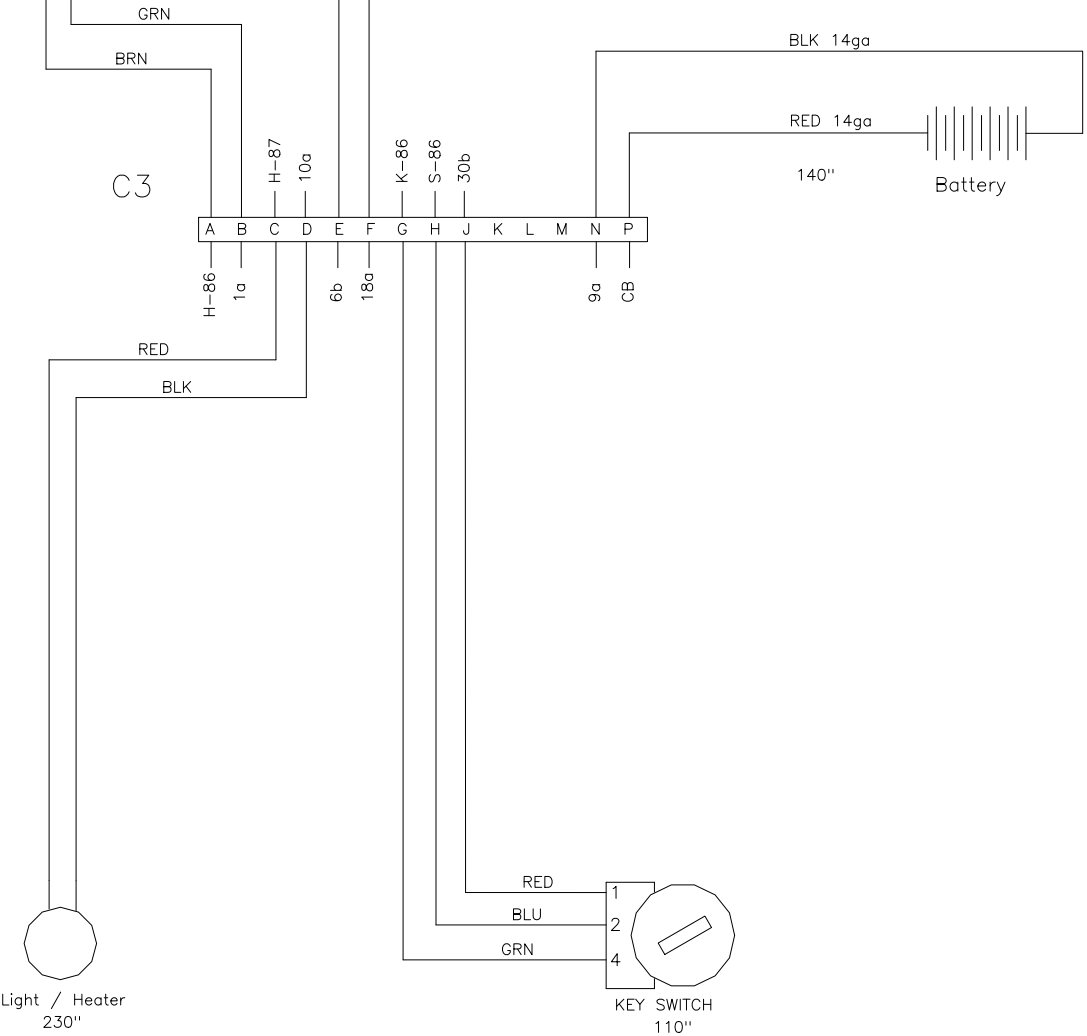
Connector 3 (16-14ga wire)

110"  
Light / Heater

100"  
12 VDC POWER SOCKET

Cummins OEM Connector 4  
Cummins factory plug

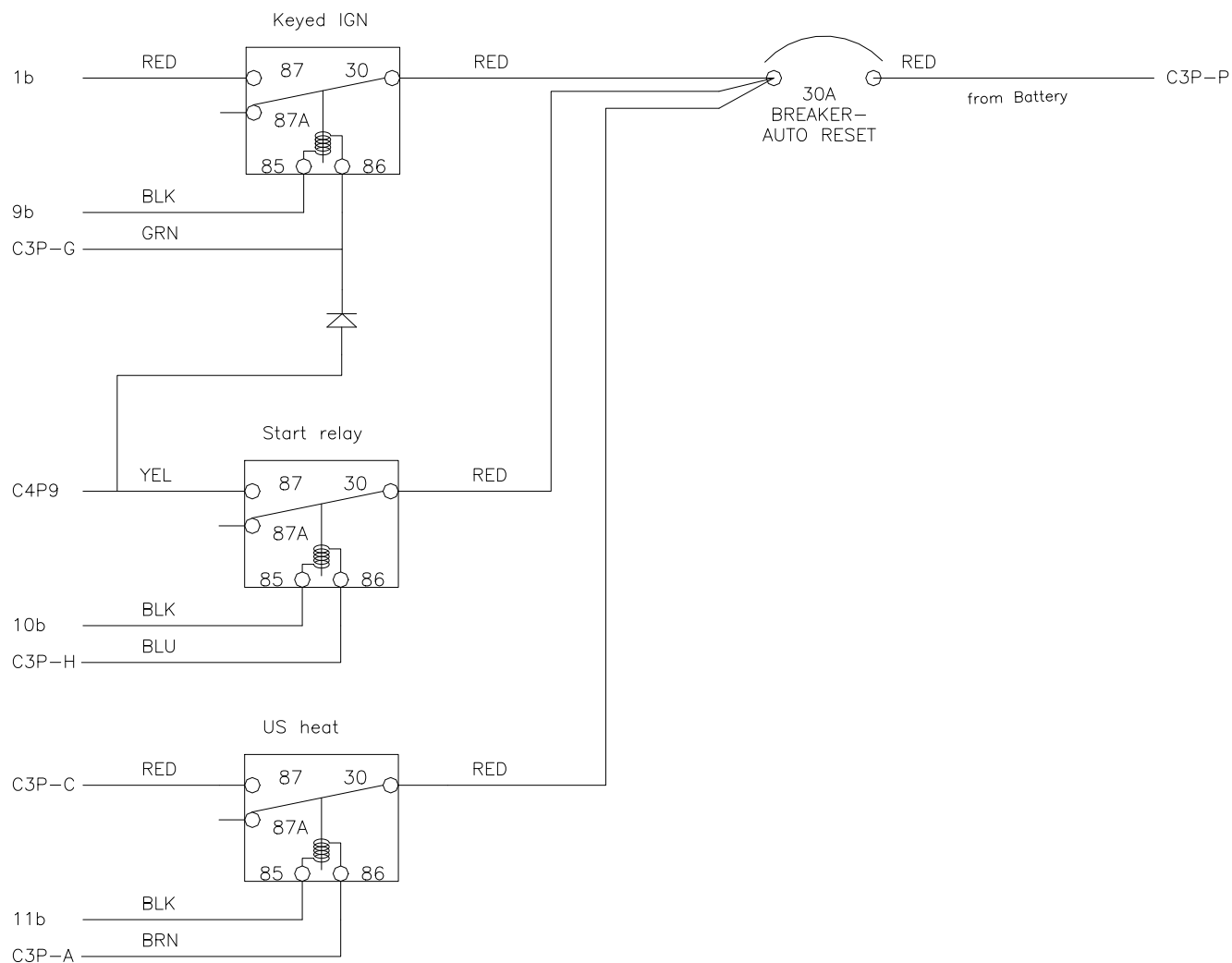
PURPLE	1	CUMMINS HARNESS
GREEN	9	
RED	10	
YELLOW	11	
RED	18	
CAN SHIELD	19	
BLACK	20	
WHITE	22	
BLUE	23	
CAN HI+	30	
CAN LO-	31	



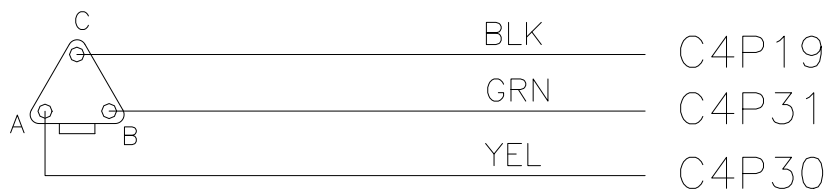
# Terminal Box page 1

			a		b				
C3P-B	US heat switch	GRN	○	□	1	○	RED	from keyed relay	K-87 pg 2
C2P26	joystick 12v+	RED	○	□	2	○	RED	US sensor	C2P3
C2P19	display	RED	○	□	3	○	RED	ECU	P2
C4P1	Engine	RED	○	□	4	○	RED	bump R	C1P30
			○	□	5	○	RED	bump L	C1P32
C2P24	LW joystick	RED	○	□	6	○	RED	12V socket	C3P-E
C3P-K	fuel heat relay	RED	○	□	7	○			
			○	□	8	○			
C3P-N	battery	BLK	○	□	9	○	BLK	keyed relay	K-85 pg 2
C3P-D	US heat	BLK	○	□	10	○	BLK	start relay	S-85 pg 2
C4P20	Engine	BLK	○	□	11	○	BLK	US heat relay	H-85 pg 2
C2P1	fuel level	BLK	○	□	12	○	BLK	joystick	C2P25
C2P5	US Sensor	BLK	○	□	13	○	BLK	display	C2P18
C2P7	brake valve	BLK	○	□	14	○	BLK	ECU	P1
C2P9	PRV	BLK	○	□	15	○	WHT	pump 1 EDC B	C1P23
C1P5	M1 EDC	BLK	○	□	16	○	BLK	pump 1 EDC C	C1P24
C1P10	M2 EDC	BLK	○	□	17	○	WHT	pump 2 EDC B	C1P27
C3P-F	12C socket	BLK	○	□	18	○	BLK	pump 2 EDC C	C1P28
C2P13	LW A -	BLK	○	□	19	○	BLK	LW U -	C2P17
C2P11	LW B -	BLK	○	□	20	○	BLK	LW D -	C2P15
C3P-L	fuel heat relay	BLK	○	□	21	○			
C1P1	sys psi	RED	○	□	22	○	RED	from ECU	P8
C1P6	chrg 1	RED	○	□	23	○	RED	M1 sensor	C1P18
C1P11	chrg 2	RED	○	□	24	○	RED	M2 sensor	C1P14
			○	□	25	○			
C1P2	sys psi	BLK	○	□	26	○	BLK	from ECU	P9
C1P7	chrg 1	BLK	○	□	27	○	BLK	M1 sensor	C1P20
C1P12	chrg 2	BLK	○	□	28	○	BLK	M2 sensor	C1P16
			○	□	29	○			
C4P18	battery from JD engine	RED	○	□	30	○	RED	battery to keyswitch	C3P-J
C2P23	LW JS U	RED	○	□	31	○	RED	LW V U	C2P16
C2P22	LW JS D	WHT	○	□	32	○	RED	LW V D	C2P14
C2P21	LW JS L	GRN	○	□	33	○	RED	LW V A	C2P12
C2P20	LW JS R	BLK	○	□	34	○	RED	LW V B	C2P10
C2P2	FEUL LEVEL	WHT	○	□	35	○	WHT	ECU	P30
C1P3	SYS	WHT	○	□	36	○	WHT	ECU	P16
C1P8	CHRG 1	WHT	○	□	37	○	WHT	ECU	P15
C1P13	CHRG 2	WHT	○	□	38	○	WHT	ECU	P17
C2P4	US S	WHT	○	□	39	○	WHT	ECU	P14
C1P19	M1 B	WHT	○	□	40	○	WHT	ECU	P23
C1P21	M1 D	GRN	○	□	41	○	GRN	ECU	P7
C1P15	M2 B	WHT	○	□	42	○	WHT	ECU	P24
C1P17	M2 D	GRN	○	□	43	○	GRN	ECU	P10
C1P31	BUMP R	WHT	○	□	44	○	BLK	ECU	P18
C1P33	BUMP L	WHT	○	□	45	○	BLK	ECU	P19
C1P22	P1 A	RED	○	□	46	○	RED	ECU	P42
C1P25	P1 D	GRN	○	□	47	○	GRN	ECU	P43
C1P26	P2 A	RED	○	□	48	○	RED	ECU	P37
C1P29	P2 D	GRN	○	□	49	○	GRN	ECU	P38
C1P4	M1 EDC	RED	○	□	50	○	RED	ECU	P44
C1P9	M2 EDC	RED	○	□	51	○	RED	ECU	P39
C2P8	PRV	RED	○	□	52	○	RED	ECU	P45
C2P6	BRAKE V	RED	○	□	53	○	RED	ECU	P31
C4P10	Stop Engine	RED	○	□	54	○	RED	ECU	P11
C4P11	Check Engine	YEL	○	□	55	○	YEL	ECU	P12
C4P22	Wait to Start	WHT	○	□	56	○	WHT	ECU	P13
C4P23	Water in Fuel	BLU	○	□	57	○	BLU	ECU	P25
			○	□	58	○			
			○	□	59	○			

# Terminal Box page 2



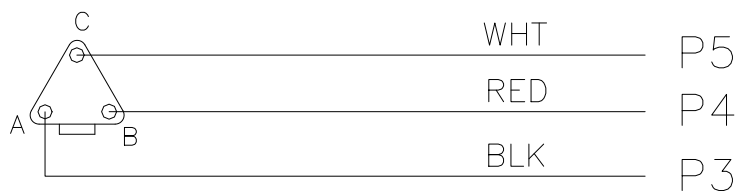
CAN FROM  
ENGINE  
green insert



CAN FROM  
CONTROL P  
blue insert

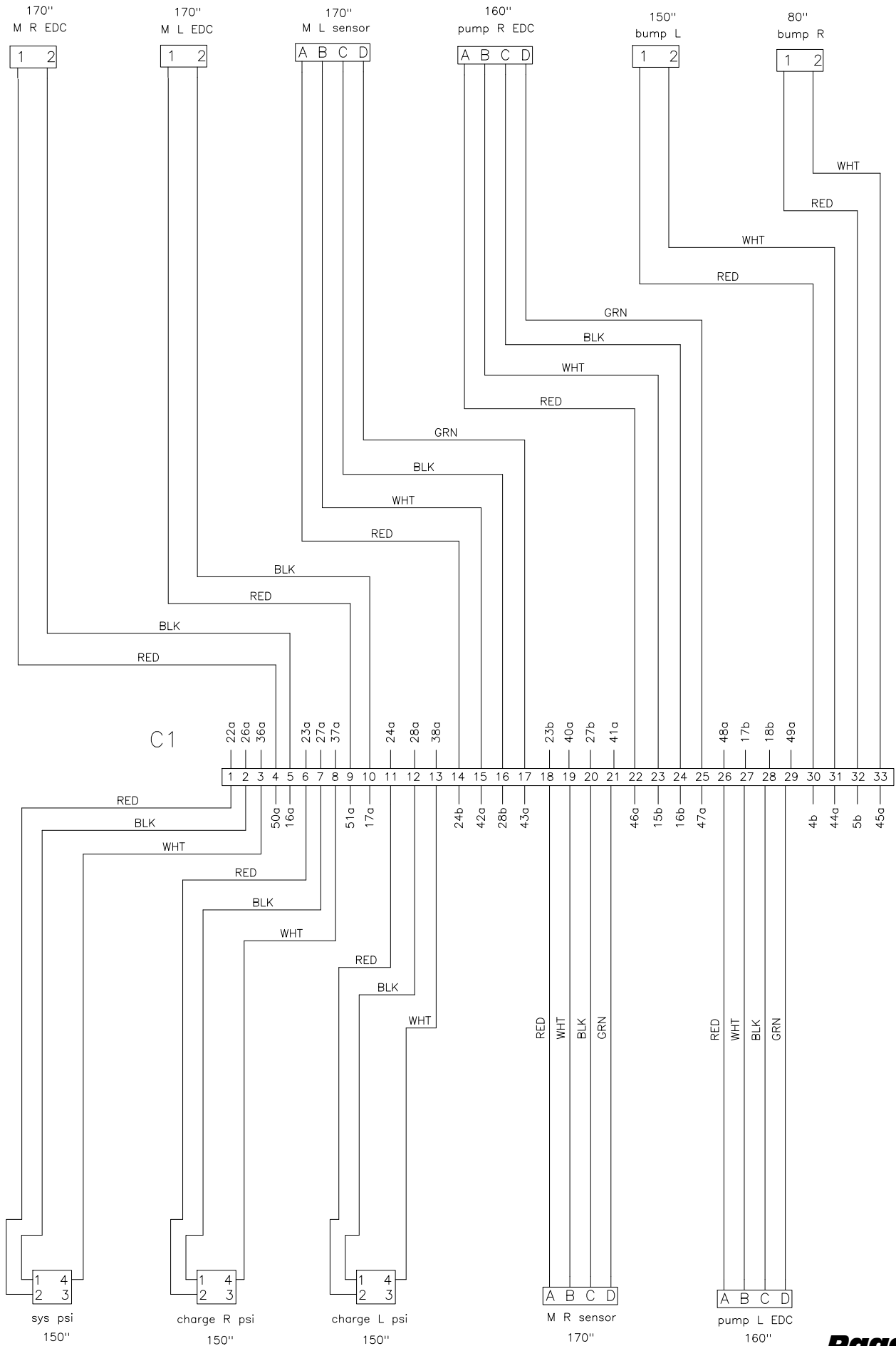


CAN FROM  
ECU  
green insert

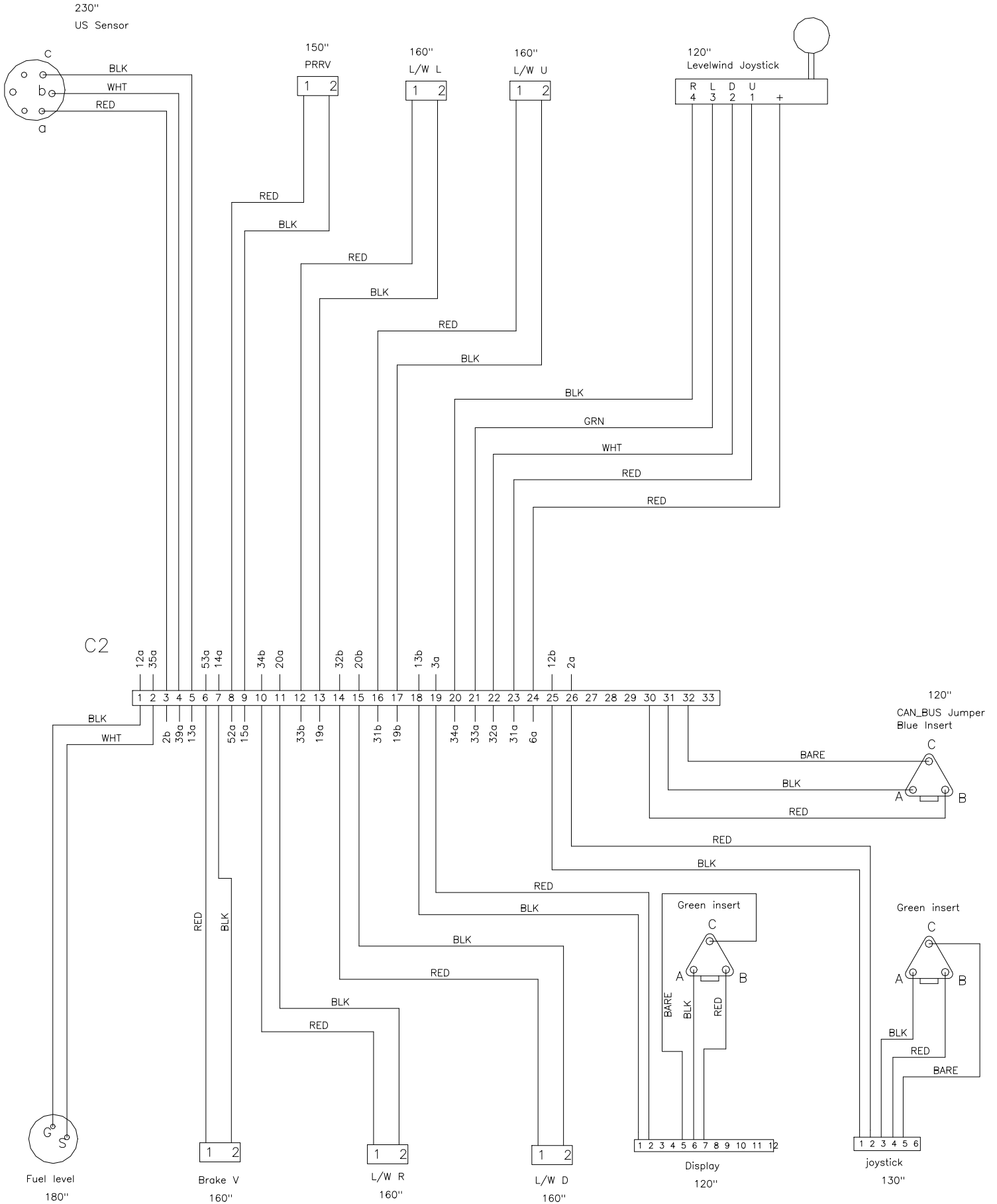


a is CAN HI+  
b is CAN LO-  
c is CAN SHIELD

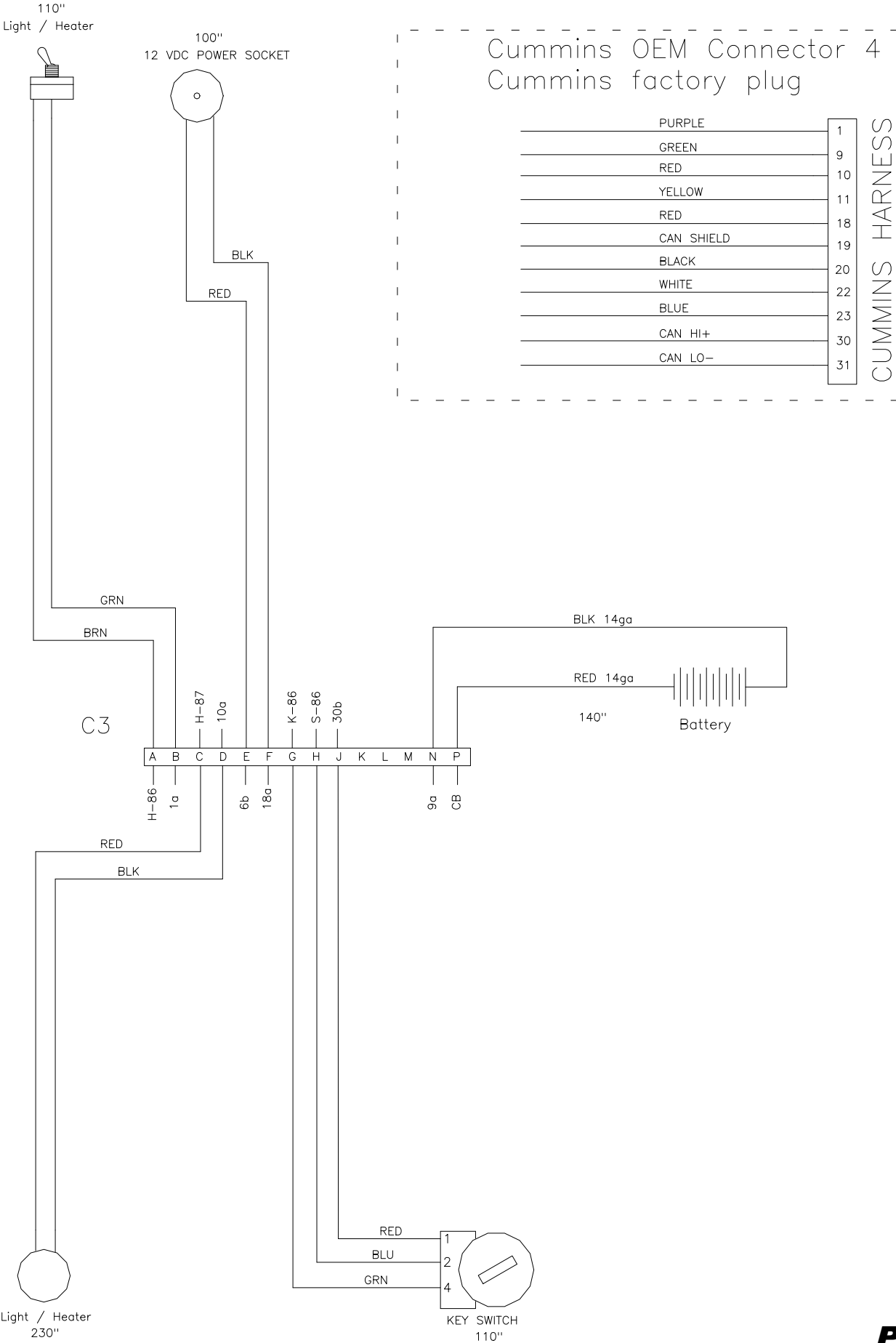
# Connector 1 (18ga wire)



# Connector 2 (18ga wire)



# Connector 3 (16-14ga wire)

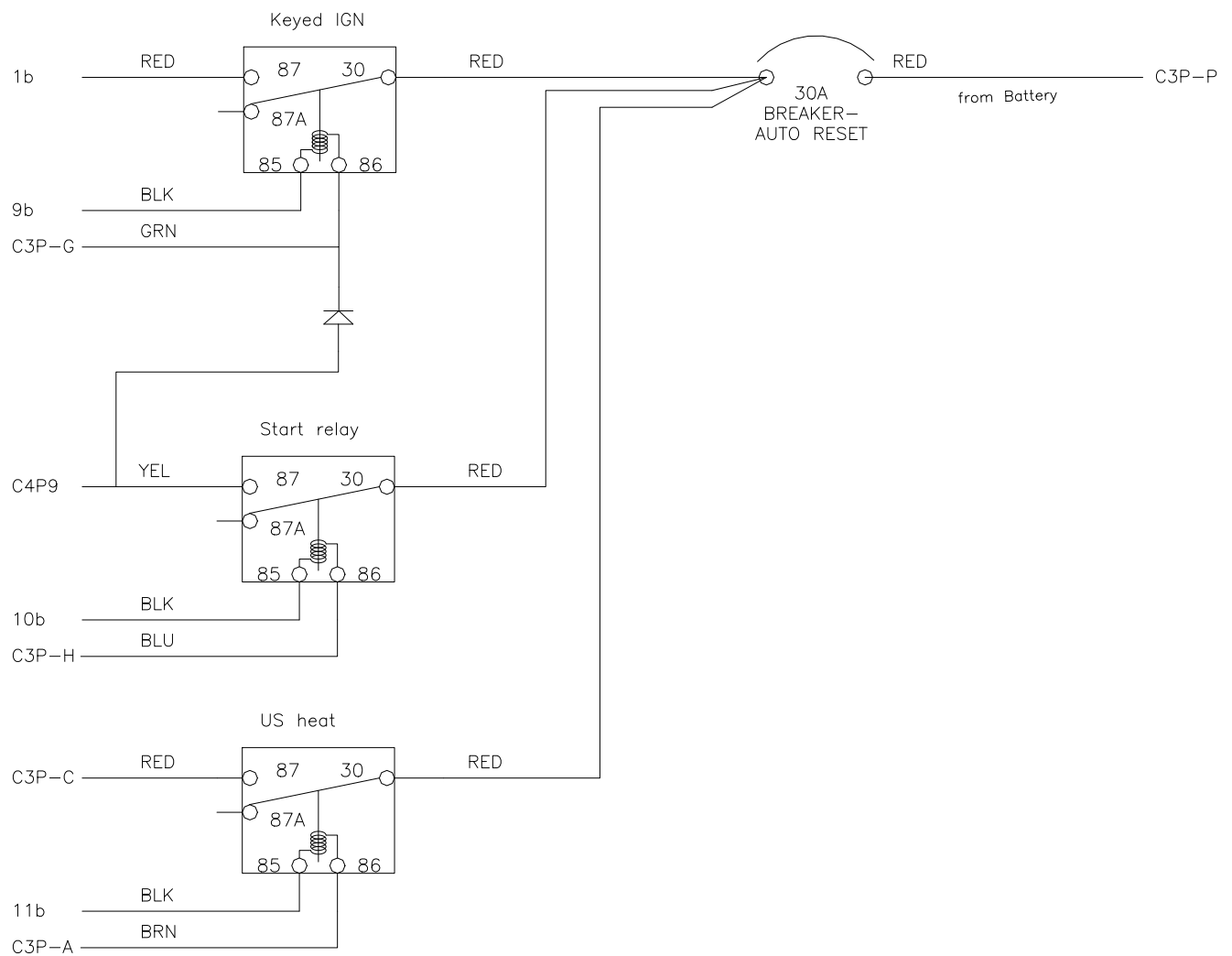




# Terminal Box page 1

			a	b			
C3P-B	US heat switch	GRN			1	RED	from keyed relay K-87 pg 2
C2P26	joystick 12v+	RED			2	RED	US sensor C2P3
C2P19	display	RED			3	RED	ECU P2
C4P1	Engine	RED			4	RED	bump R C1P30
					5	RED	bump L C1P32
C2P24	LW joystick	RED			6	RED	12V socket C3P-E
C3P-K	fuel heat relay	RED			7		
					8		
C3P-N	battery	BLK			9	BLK	keyed relay K-85 pg 2
C3P-D	US heat	BLK			10	BLK	start relay S-85 pg 2
C4P20	Engine	BLK			11	BLK	US heat relay H-85 pg 2
C2P1	fuel level	BLK			12	BLK	joystick C2P25
C2P5	US Sensor	BLK			13	BLK	display C2P18
C2P7	brake valve	BLK			14	BLK	ECU P1
C2P9	PRV	BLK			15	WHT	pump 1 EDC B C1P23
C1P5	M1 EDC	BLK			16	BLK	pump 1 EDC C C1P24
C1P10	M2 EDC	BLK			17	WHT	pump 2 EDC B C1P27
C3P-F	12C socket	BLK			18	BLK	pump 2 EDC C C1P28
C2P13	LW A -	BLK			19	BLK	LW U - C2P17
C2P11	LW B -	BLK			20	BLK	LW D - C2P15
C3P-L	fuel heat relay	BLK			21		
C1P1	sys psi	RED			22	RED	from ECU P8
C1P6	chrg 1	RED			23	RED	M1 sensor C1P18
C1P11	chrg 2	RED			24	RED	M2 sensor C1P14
					25		
C1P2	sys psi	BLK			26	BLK	from ECU P9
C1P7	chrg 1	BLK			27	BLK	M1 sensor C1P20
C1P12	chrg 2	BLK			28	BLK	M2 sensor C1P16
					29		
C4P18	battery from JD engine	RED			30	RED	battery to keyswitch C3P-J
C2P23	LW JS U	RED			31	RED	LW V U C2P16
C2P22	LW JS D	WHT			32	RED	LW V D C2P14
C2P21	LW JS L	GRN			33	RED	LW V A C2P12
C2P20	LW JS R	BLK			34	RED	LW V B C2P10
C2P2	FEUL LEVEL	WHT			35	WHT	ECU P30
C1P3	SYS	WHT			36	WHT	ECU P16
C1P8	CHRG 1	WHT			37	WHT	ECU P15
C1P13	CHRG 2	WHT			38	WHT	ECU P17
C2P4	US S	WHT			39	WHT	ECU P14
C1P19	M1 B	WHT			40	WHT	ECU P23
C1P21	M1 D	GRN			41	GRN	ECU P7
C1P15	M2 B	WHT			42	WHT	ECU P24
C1P17	M2 D	GRN			43	GRN	ECU P10
C1P31	BUMP R	WHT			44	BLK	ECU P18
C1P33	BUMP L	WHT			45	BLK	ECU P19
C1P22	P1 A	RED			46	RED	ECU P42
C1P25	P1 D	GRN			47	GRN	ECU P43
C1P26	P2 A	RED			48	RED	ECU P37
C1P29	P2 D	GRN			49	GRN	ECU P38
C1P4	M1 EDC	RED			50	RED	ECU P44
C1P9	M2 EDC	RED			51	RED	ECU P39
C2P8	PRV	RED			52	RED	ECU P45
C2P6	BRAKE V	RED			53	RED	ECU P31
C4P10	Stop Engine	RED			54	RED	ECU P11
C4P11	Check Engine	YEL			55	YEL	ECU P12
C4P22	Wait to Start	WHT			56	WHT	ECU P13
C4P23	Water in Fuel	BLU			57	BLU	ECU P25
					58		
					59		

# Terminal Box page 2



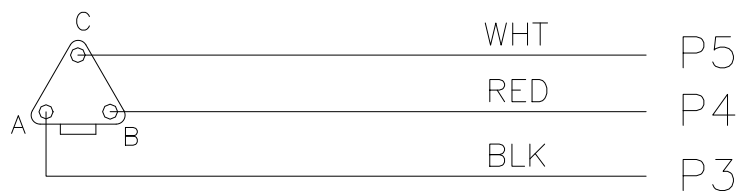
CAN FROM  
ENGINE  
green insert



CAN FROM  
CONTROL P  
blue insert



CAN FROM  
ECU  
green insert



a is CAN HI+  
b is CAN LO-  
c is CAN SHIELD

Step 4: crack fitting to let any trapped air out

Step 3: crack bleeder and pump oil through system until no more air comes out of caliper

C28072 male quick connect fitting

Step 5: pump system up to @ 300psi and look for leaks. When finished, let the pressure in the system reach zero, then disconnect oil supply.

Step 2: attach pressurized hydraulic oil source to connector

Step 1: back handle all the way out, turn in 2-1/2 turns.

Units with intergal pumps, skip step 2 and 5