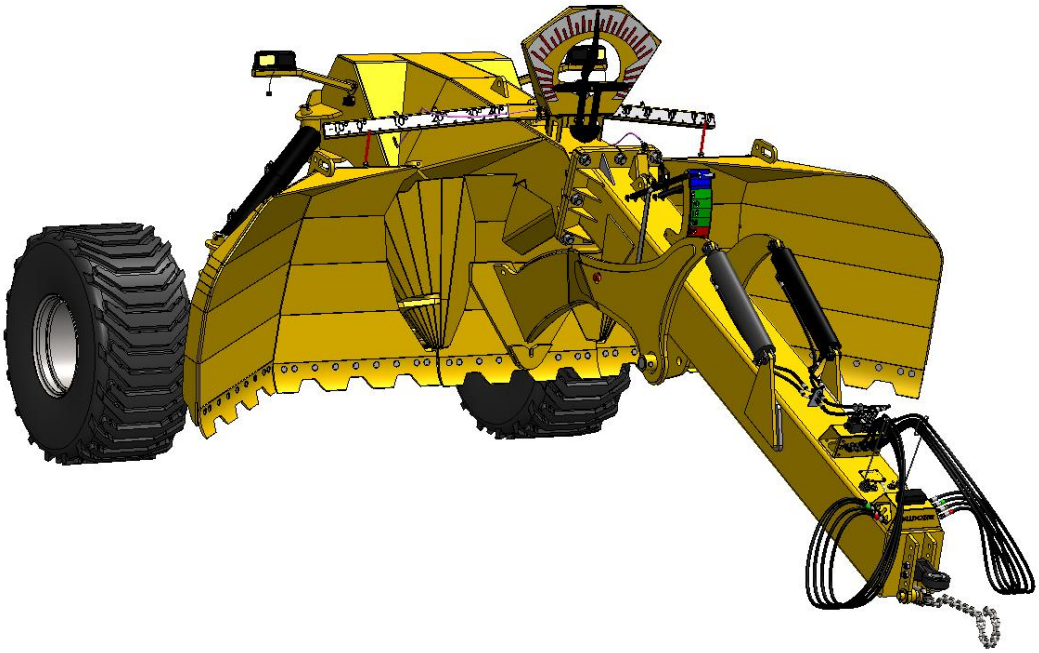
BRIDGEVIEW MFG. INC.



PULLDOZER TRANSFORMER

1870 1870XL

Operator & Parts Manual

Last Updated: September 2, 2026

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Your Authorized Dealer
Your Serial Number

The serial number is located on the back of the middle blade on the left side of the machine.

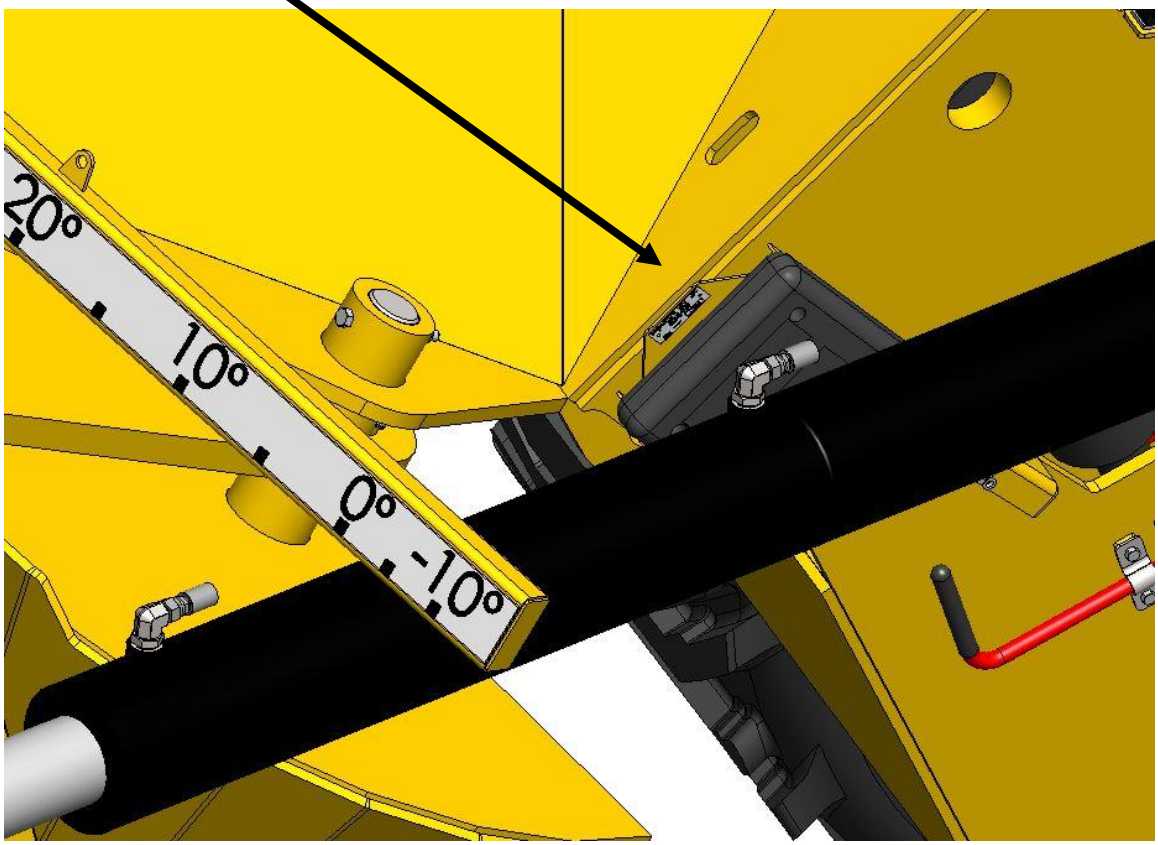


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INTRODUCTION

Thank you for purchasing a Pulldozer Transformer from Bridgeview Manufacturing. With the proper operation and service as outlined in this manual, the Pulldozer Transformer will provide you with years of trouble-free operation.

This is a complete safety, operation and parts manual for the Pulldozer Transformer. The manual covers in detail how to safely and effectively use your new machine. The procedures outlined in this manual should be followed to ensure safe operation and longevity of your machine. The parts and assembly manual covers all parts you may need to order in case of accident or breakdown and how to install them. Please read completely through this manual before beginning operation of your new machine.

Safety Precautions



The following safety precautions MUST be followed to ensure the safe operation of the Pulldozer Transformer.

- **Tow at speeds not exceeding 31 miles/hour** (50 km/h) **when unloaded**. Slow down for hills, curves, rough area, and in advance of braking to prevent loss of control and possible injury or death.
- Read and follow the **Highway Transport** section before towing on public roads.
- **Always** turn off tractor, ensure parking brake is applied before leaving the operating platform, and remove key when working on machine
- **Always** leave cutting edge on the ground when not operating.
- **Always** leave hydraulic cylinders, when not operating, in the de-stroked position.
- **Stand clear** of the Pulldozer Transformer while in operation.
- **Beware** of pinch points at all articulating joints.
- **Support Raised Equipment** when working on machine
- **Do Not** over load Pulldozer Transformer and tractor design limits

Power Requirements

The Pulldozer Transformer is designed to utilize the pulling power of a large four-wheel-drive tractor. The following table shows the recommended drawbar horsepower required to pull a Pulldozer Transformer. Pulling with too large a tractor risks damaging the machine, while too small a tractor risks overloading and damaging the tractor.

	Horsepower	Maximum Tractor Weight
18 Foot	250 - 400 HP	60,000 lbs.

Call Before You Dig:

Every time you dig in the ground, wherever it may be, **THERE IS DANGER BELOW!** You run the risk of loss of life or damage to property if you hit any of the many buried cables, conduits, gas or oil pipelines and/or other underground facilities that serve our cities, towns, and rural areas.



Contact the nearest **ONECALL (Call Before You Dig)** services for optimal diligence towards preventing damage to underground infrastructure.

Canada		
Province	**Number**	**Website**
British Columbia	1.800.474.6886	http://www.bconecall.bc.ca/
Alberta	1.800.242.3447	http://www.alberta1call.com/
Saskatchewan	1.866.828.4888	http://www.sask1stcall.com/
Manitoba	1.800.827.5094	www.callb4udig.mb.ca/
Ontario	1.800.400.2255	http://www.on1call.com/
Quebec	1.800.663.9228	http://www.info-ex.com/
United States		
All states	811	http://www.call811.com/
TransCanada Pipelines		
Canada	1.888.982.7222	
United States	1.800.447.8066	

Transportation

Check with local authorities regarding transport on public roads. Follow all applicable laws and regulations.

Note the transportation dimensions shown below:

	1870	**1870XL**
Total Weight	21,000 lb.	25,000 lb.
Hitch Weight	6,300 lb.	7,900 lb.
Axle Weight	14,700 lb.	16,300 lb.
Transport Height	11'-5"	
Flat Height Blade to Top	8'-9"	
Transport Blade Clearance	3'-0"	
Transport Width (Blade)	10'	
Transport Width (Tires)	10'	
Transport Length	28'-4"	

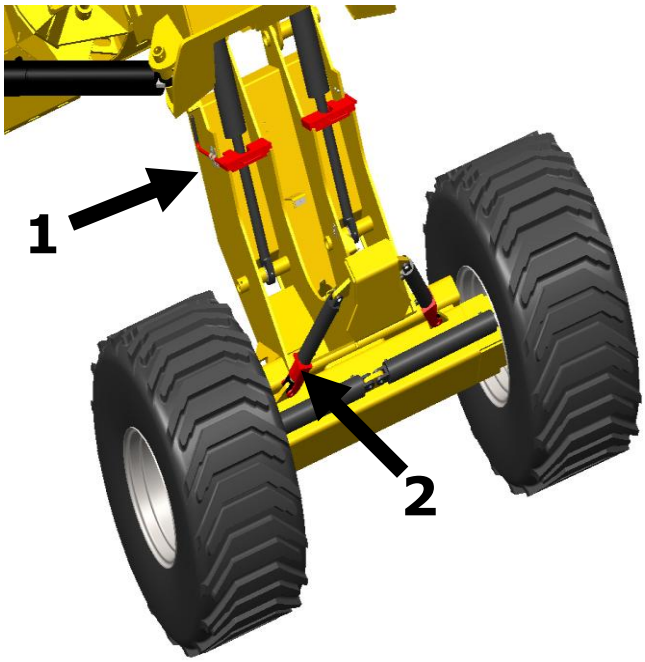
When transporting the Pulldozer Transformer on public roads, the following precautions should be taken:

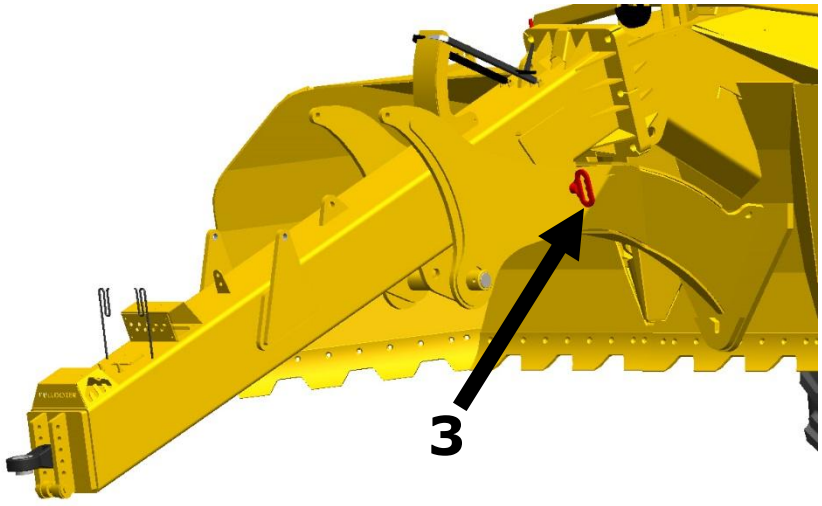
- Avoid transporting at night whenever possible
- Always ensure that the flashers and tail lights are clean and operational
- Always ensure that the Slow-Moving Vehicle (SMV) sign is visible
- NEVER exceed speeds of 25 mph (40 km/h)
- DO NOT tow with a vehicle that cannot handle the massive weight of the Pulldozer
- Check for the oversize or overload permit with the authorities for transportation on public highways.
- Ensure that blade is fully lifted, level, and not in contact with the road (maintain a safe level from the ground).
- Ensure that the trencher attachment (if installed) is fully retracted.
- Ensure that all safety locks are in place
- Ensure that the hydraulic hoses are properly secured (not dragging on the ground)

Transportation Locks:

Ensure that all the safety locks and pins are ON in the right position while transporting. This will prevent the blade from accidentally falling during transport.

1. Blade lift lock (both sides) - swing up and over cylinder shaft
2. Tilt lock (both sides) - swing over cylinder shaft
3. Trencher lock - insert pin through hole





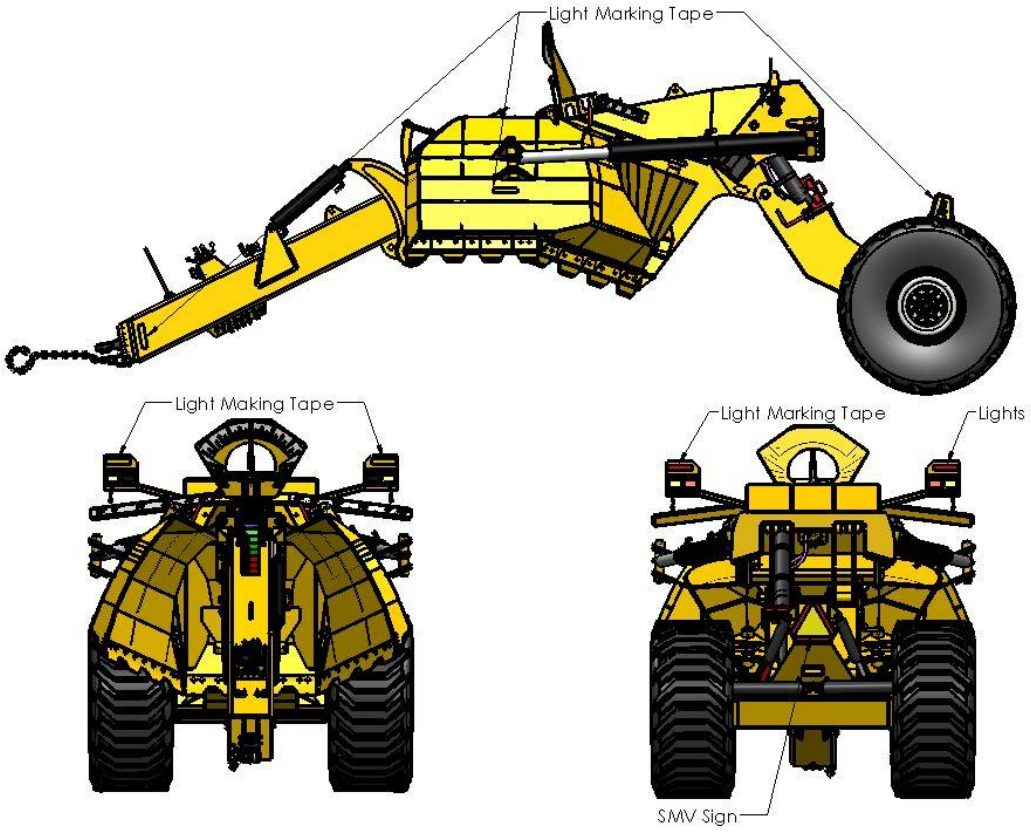
Storage

When storing the 1870 Pulldozer Transformer make sure and apply the tilt cylinder safety locks, (2) in figure 1, and trencher safety lock (if equipped), (3) in figure 1. Put wood blocks underneath the blades so it doesn't sit in the ground and rust the blades. Apply grease to the wing hydraulic cylinder (6" x 32" x 4") shafts to prevent shafts from rusting when not in use for a long period of time.

Lights and Marking

The Pulldozer Transformer comes standard with a light kit for better visibility. The lights can be plugged into the standard 7-pin round trailer plug on a tractor. The lights function as flashing amber lights, with solid red tail lights. Ensure that they are functioning properly before towing.

Ensure that the SMV (Slow Moving Vehicle) sign is in place and visible



Field to Transport Position

1. Position machine on level ground. Stop tractor and engage parking brake. Make sure wings are in the flat position, zero degrees on indicator decal.



2. Engage lift cylinder remote and lower machine onto ground. Ensure the lift cylinders are fully retracted, telescopic tubes are free to retract, and tires are off the ground.



3. Retract tires to transport position



4. Raise the machine extending lifting cylinders



5. Operate the wing lift hydraulics to raise the wings fully into transport position.

Use transport safety chain to lock the wings in transport position. Apply transportation locks (figure 1.1).



FEATURES AND OPERATION

The Pulldozer Transformer land shaper operates as a dozer, scraper, grader, and V-ditcher (XL series) all in one complete, efficient, and virtually indestructible package.

The Pulldozer Transformer is capable of reclaiming unproductive land to allow for more seeded acreage. It can also drag dirt to elevate sloughs and potholes, level land, back-slope, clean and contour existing ditches and drains to improve draining and allow for sooner access by seeding equipment.

When mated with a GPS leveling system, the Pulldozer Transformer is excellent at making perfectly contoured fields for maximum drainage, or water retention.

Operators have reported 1 acre per hour of land reclamation, leaving it seed bed ready.

The Pulldozer Transformer allows for up to 18 cubic yards of dirt movement over short distances for the 18-foot unit.

The retractable trencher allows for trenches up to 36" wide by 24" deep, while leaving no windrow ridges to interfere with draining. This allows most farm equipment to easily drive right over the trench on an angle.

Enjoy operating your new Pulldozer Transformer.

Hydraulic Systems

Hydraulic systems store considerable energy. They are used to:

- lift and change the position of attachments
- operate hydraulic motors
- assist in steering and braking

Leaks from hydraulic systems are a serious hazard because of the high pressure and temperature of the fluid contained in the system. Even fine jets of hydraulic fluid can burn or pierce skin and tissue. Workers should:

- Never inspect hydraulic hoses with bare hands;
- Wear long sleeves, heavy gloves and safety glasses when checking for leaks;
- Follow the instructions (blade to be on the ground and no pressure in hydraulic lines during maintenance) because the specific procedures for servicing these systems are very important for one's safety.

Where appropriate, a properly qualified and certified mechanic should perform repairs and maintenance.

Work should not be performed under raised hydraulic equipment.

There are five sets (1870) and six sets (1870XL) of hydraulic hoses to connect to the tractor. Each hose has a colored marker to identify its function. They should be connected at best convenience for the tractor's controls.

An optional diverter kit **(28642)** is available to allow the Pulldozer Transformer 1870 to run using only four sets of hoses. The function is then determined by a control box, mounted in the cab of the tractor.

An optional diverter kit **(28643)** is available to allow the Pulldozer Transformer 1870XL to run using only four sets of hoses. The function is then determined by a control box, mounted in the cab of the tractor.

Always set the tractor's hydraulic flow at a lower rate and adjust it upward until the desired speed is reached. Excessive oil flow may damage the flow diverter cartridge.

Note: the hoses are paired by color and the following table show the operation when pushing oil into the corresponding hoses.

Table 2.1.2 – Pulldozer Transformer Hose Marking

Machine		Marker	Function
Pulldozer Transformer 1870XL**	**Pulldozer Transformer 1870***	Long Red	Lift cylinder (lowers machine)
		Short Red	Lift cylinder (raises machine)
		Long Yellow	Left wing cylinder (opens wing-field)
		Short Yellow	Left wing cylinder (closes wing-transport)
		Long Green	Right cylinder (opens wing-field)
		Short Green	Right hand cylinder (closes wing-transport)
		Long Blue	Tilt cylinder
		Short Blue	Tilt cylinder
		Long Orange	Telescope cylinder (extends wheel width)
		Short Orange	Telescope cylinder (retracts wheel width)
		Long Purple	Trencher cylinder (lowers trencher)
		Short Purple	Trencher cylinder (raises trencher)
Pulldozer Transformer 1870 4 Remote Kit (optional)		Long Red	Lift cylinder (lowers machine)
		Short Red	Lift cylinder (raises machine)
		Long Yellow	Left wing cylinder (opens wing-field)
		Short Yellow	Left wing cylinder (closes wing-transport)
		Long Green	Right cylinder (opens wing-field)
		Short Green	Right hand cylinder (closes wing-transport)
		Long Blue	Tilt cylinder & Telescope cylinder (extends wheel width)
		Short Blue	Tilt cylinder & Telescope cylinder (retracts wheel width)
Pulldozer Transformer 1870XL 4 Remote Kit (optional)		Long Red	Lift cylinder (lowers machine)
		Short Red	Lift cylinder (raises machine)
		Long Yellow	Left wing cylinder (opens wing-field)
		Short Yellow	Left wing cylinder (closes wing-transport)
		Long Green	Right cylinder (opens wing-field)
		Short Green	Right hand cylinder (closes wing-transport)
		Long Blue	Tilt cylinder & Telescope cylinder (extends wheel width) & Trencher cylinder (lowers trencher)
		Short Blue	Tilt cylinder & Telescope cylinder (retracts wheel width) & Trencher cylinder (raises trencher)

*** Pulldozer Transformer 1870 comes standard with 5 hydraulic remotes**

**** Pulldozer Transformer 1870XL comes standard with 6 hydraulic remotes**

Hitch Options

Your Pulldozer Transformer comes with a choice of two different articulating implement hitches. Category 4 has draw pin sizes of 1-1/2 and 2" (interchangeable) and Category 5 has a standard draw pin size of 2-3/4".

Draw Pin Size (inches)	Hitch Required	Part NO
1.50	Flanged Bushing	27373
2.00	Category 4 * with 2" bushing installed, 2 Hole Pattern	27371
2.00	Category 4 * with 2" bushing installed, 3 Hole Pattern	27372
2.75	Category 5, 3 Hole Pattern	30128

The articulating joint reduces drawbar and draw pin wear thereby increasing the life of drawbar. This hitch allows more control, especially with GPS navigation.

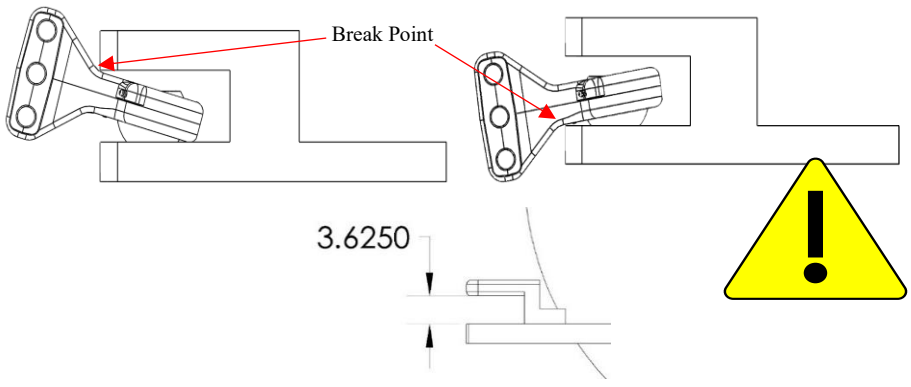
Also important is the hitch height. For maximum articulation, the hitch must be set to the correct height based on your tractor's drawbar height as follows.

Holes Used	Drawbar Height (inches)
1,2	20.50
2,3*	18.25
3,4	16.00
4,5	13.75

**** Factory setting***

For maximum articulation, a 3-5/8" clearance between the drawbar and hammer strap is also recommended. This will allow for 35 degrees front to back and 40 degrees side to side. This translates into a 10% grade (or 17-degree slope).

- NOTE: Exceeding this articulation range may damage or break the hitch – Breakage due to exceeding articulation range will no be covered by warranty!



Tires

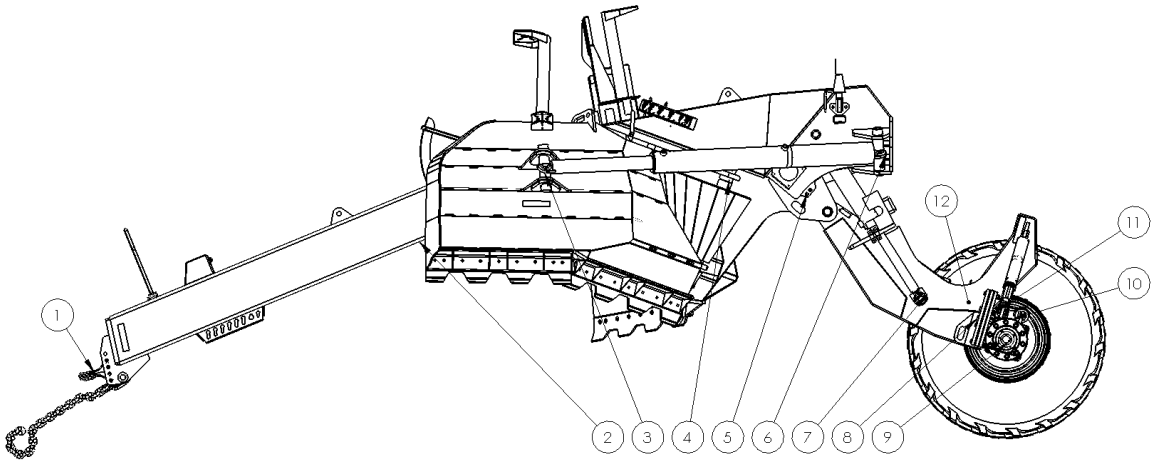
MuckMaster tread tires provide excellent flotation characteristics and minimal soil disturbance on packing and hauling applications. The speed and pressure on these tires should not exceed 25 mph (40 km/h)) and 58 psi (400 kPa).

Check tire pressure and wheel torque on a regular basis.

Specifications	**1870**
Tire Size	750/60R26
Tire Type	Goodyear Muck Master
Rim Size	26
Tire Pressure	**24 psi**
Wheel Nut Torque	**280 ft-lb**

Lubrication

There are several pivot points on your Pulldozer Transformer that require lubrication for continuing performance. They are located in the following areas:



	Location	Qty	Interval
1	Hitch	2	20 hours
2	Trencher Pivot (Optional)	2	10 hours
3	Wing Cylinder (Shaft End)	2	
4	Wing Pivot	8	
5	Lift Pivot / Lift Cylinder (Barrel End)	4	10 hours / 20 hours
6	Wing Cylinder (Barrel End)	2	10 hours
7	Lift Cylinder (Shaft End)	2	20 hours
8	Pivot Abrasion Plates (Front)	2	10 hours
9	Wheel Hub (Remove Dust Cap and Pack with Grease)	2	100 hours or seasonally
10	Telescoping Axle	8	20 hours
11	Pivot Abrasion Plates (Rear)	2	10 hours
12	Axle Pivot	1	

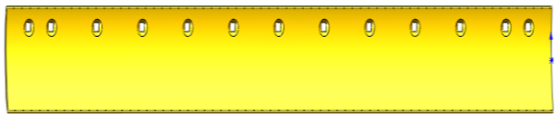
Grease using Mobil UNIREX EP2 GC-LB or equivalent.

Cutting Edge Options

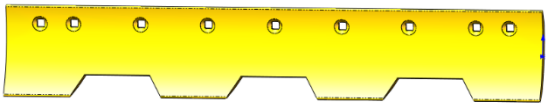
Efficient machine applications require the proper dozer attachments for the job at hand. Dozers are used in a wide variety of construction and maintenance applications for which a number of cutting edge types have been developed. Soil characteristics, moisture content, compaction, ambient temperatures and terrain are just some of the variables that will influence proper cutting edge selection for optimal dozing productivity.

Using the right cutting edge for the job will result in fuel savings, higher productivity, less wear tear on the tractor and a better finished product. Some dozer cutting edges are designed for a specific application, while others have a broader range of uses and are more often employed. The Pulldozer comes with a choice of two cutting edges.

1. Regular Cutting Edge: General purpose operation. It has a penetration force of 1000 lb/ft. This is the factory standard.



2. Notched Cutting Edge: More suitable for higher penetration requirements. It can withstand penetration force up to 2000 lb/ft. Operators have noted that this cutting edge leaves the field in better condition for immediate seeding.

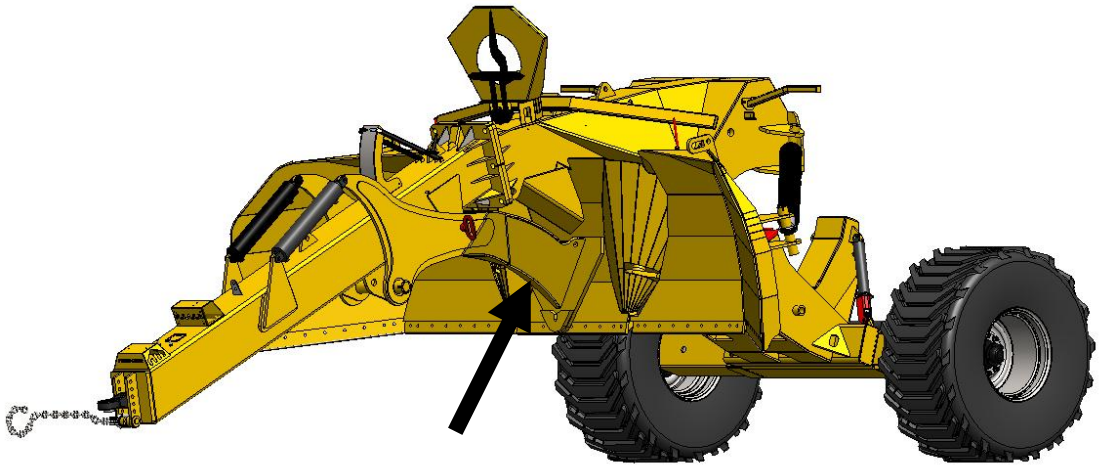


NOTE: These cutting edges wear over time. Contact your nearest Pulldozer Transformer representative to order any additional cutting edges.

Trencher Option

Trenching will drain your land fast; simply set the Pulldozer Transformer at ground level and lower the trencher unit to the required depth and go.

As the trench is cut the dirt flows to the sides and is drawn outward by the Pulldozer Transformer. There are no windrow ridges of dirt left on the sides of the trench. As a result, your land will drain faster and with no side ridges you'll be able to work through the trench with most farm equipment.



Use the dirt from the trench to elevate low areas. When the Pulldozer is full simply raise the blade to dump and level the dirt. The Trencher can keep cutting while the Pulldozer Transformer is dumping and leveling.

The Trencher uses the full weight of the Pulldozer Transformer to keep it in the ground and works when the ground is wet or dry. Hardened cutting edges ensure long life.

In retracted position the Trencher does not interfere with normal operation. The trencher adds approximately 4,000 lbs of weight to the Pulldozer Transformer.

NOTE: On standard machines, regular trenching can be done by tilting the blade to one side and lowering the tip into the ground.



Depth Penetration:

The trencher comes with a depth indicator showing the position of the trencher tip relative to the blade tip. This allows the operator to set the required trenching depth.

	Clean Depth	Max Depth	Width
18 Foot	Up to 22"	Up to 35"	36" wide

Table: Depth Penetration for 1870 Pulldozer Transformer

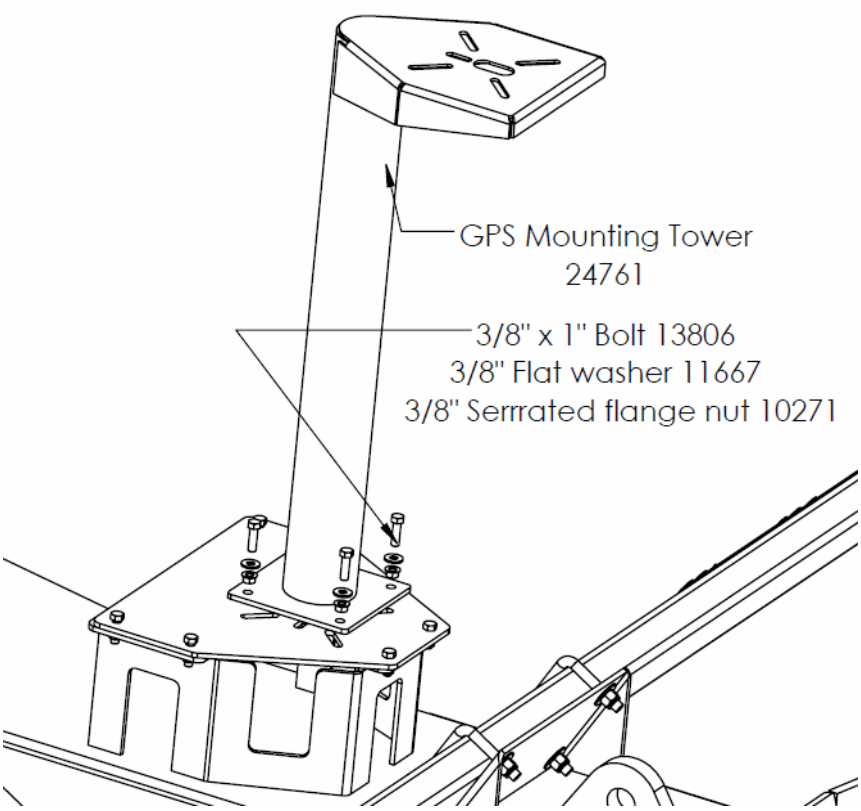
The maximum penetration of the trencher causes back filling of the trench if the blade is in contact with the ground. Lift the blade up for the regular trenching technique. For clean trenching, use in the "green" range of the depth indicator.



GPS Option

This GPS mounting tower kit **(24763)** is designed to be installed on any Pulldozer where GPS functionality is desired. On machines three mounting location are provided: in the center of the blade behind the angle indicator and on both wings.

Before installing the mounting bracket, install the GPS antenna to the top (hardware is not supplied). Use the nuts and bolts to hold the tower in place.

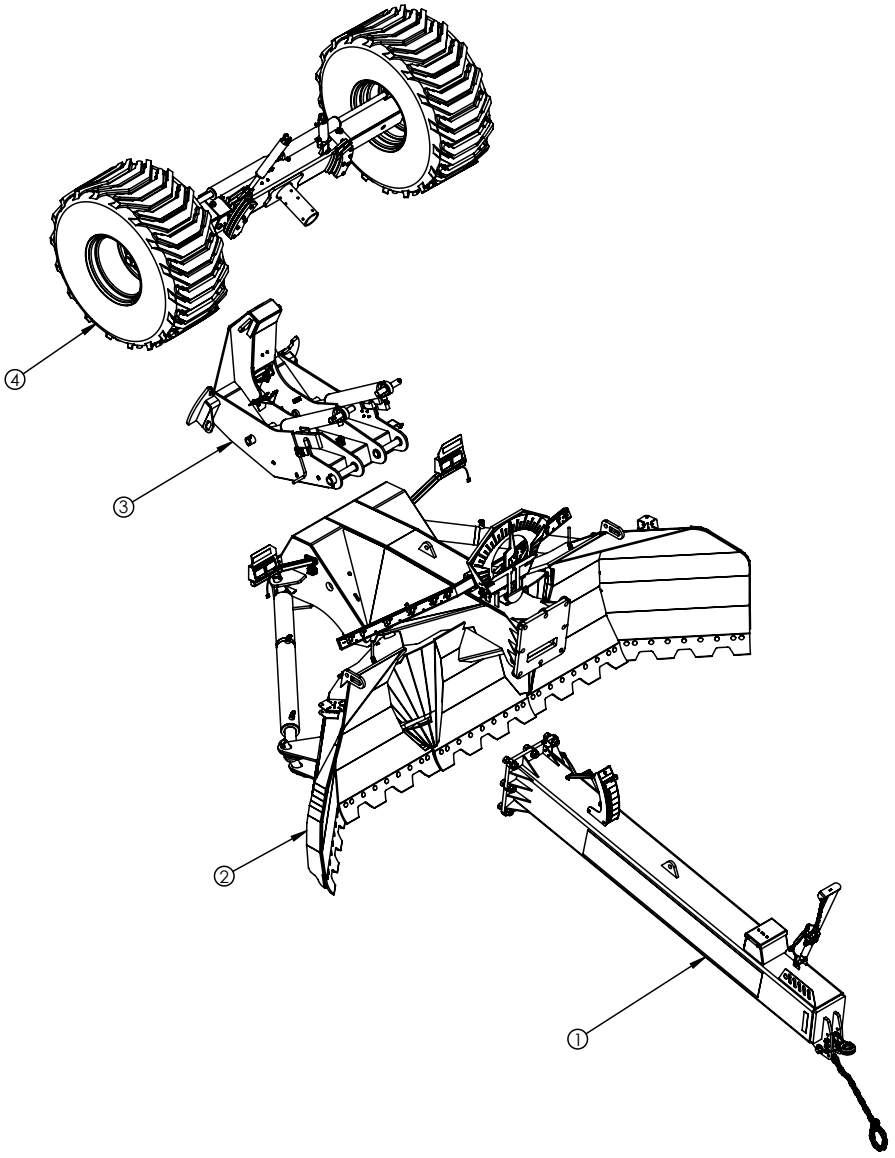


Route the electrical wires to the tractor cab.

PARTS MANUAL

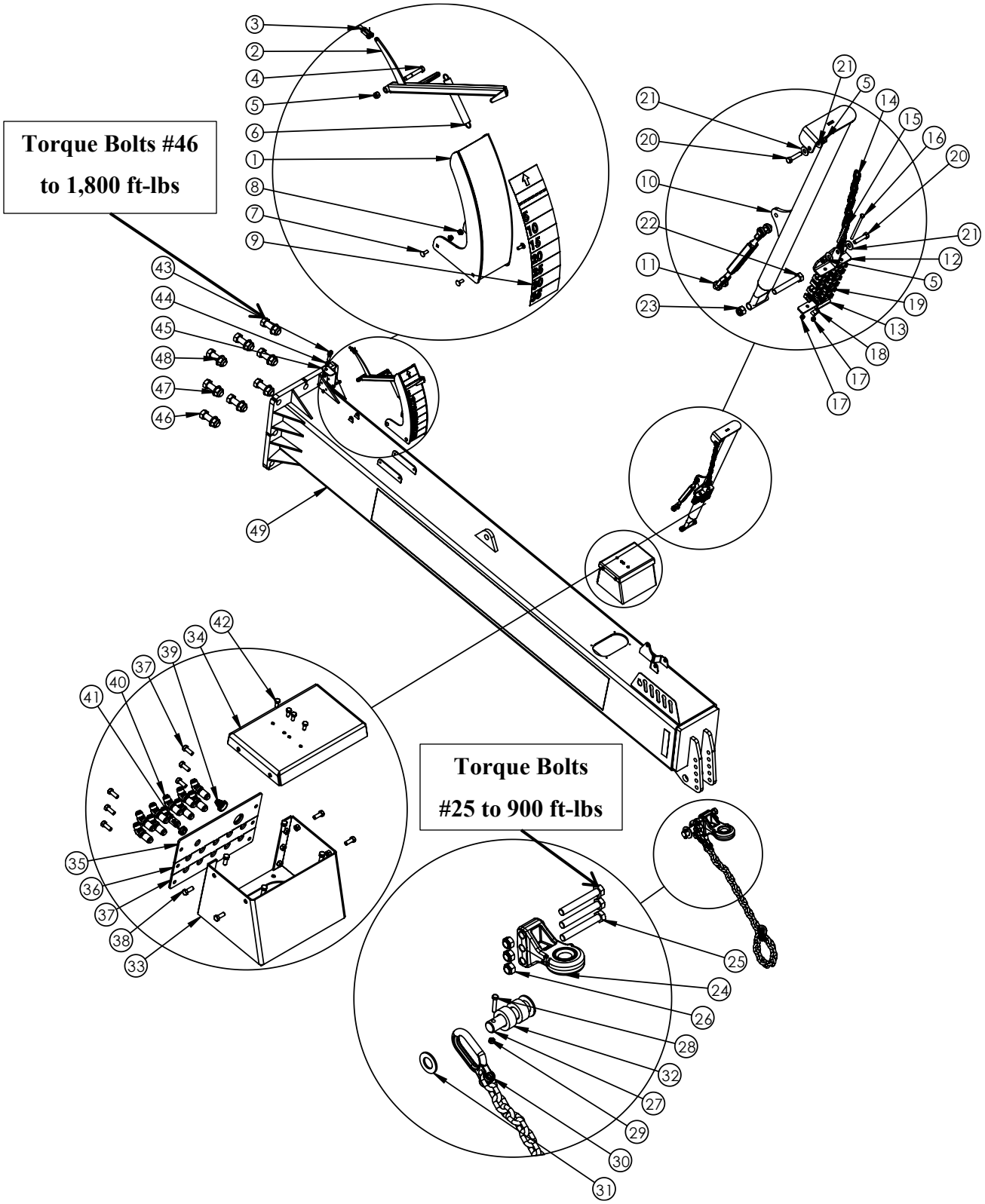
NOTE: *Parts may not be exactly as shown*

Machine Overview



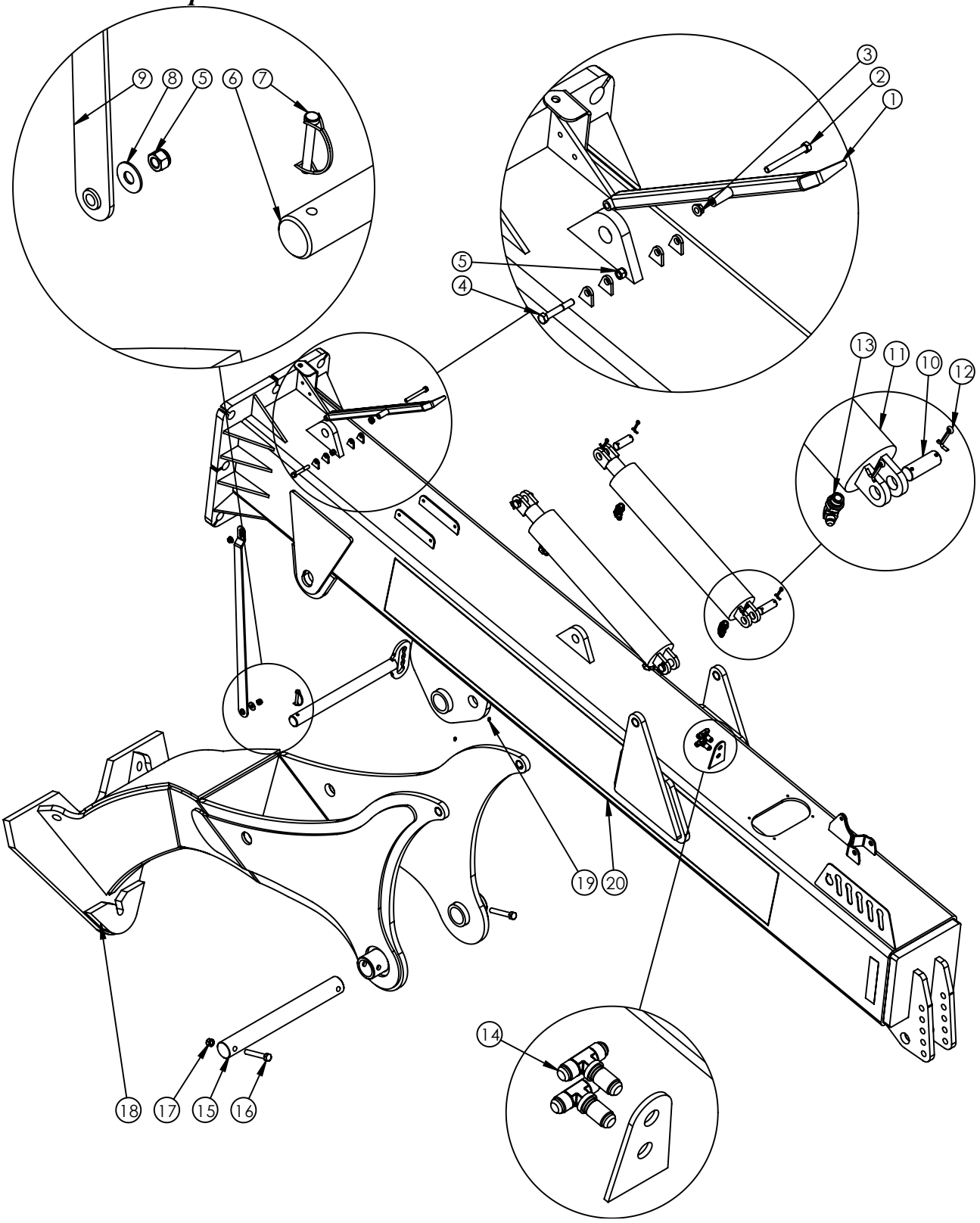
#	DESCRIPTION	PART #	QTY
1	Hitch Section	-	**1**
2	Blade Section	-	**1**
3	Frame Section	-	**1**
4	Axle Section	-	**1**

Hitch Section



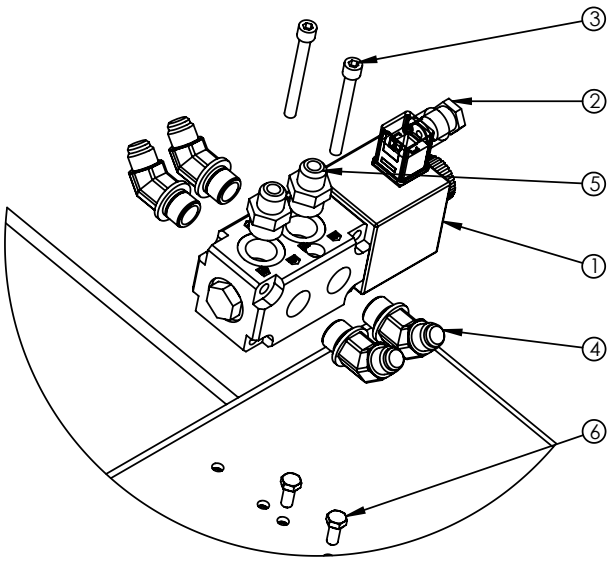
#	DESCRIPTION	PART #	QTY
1	Depth Indicator Bracket	23340	**1**
2	Height Indicator Arm	27228	**1**
3	Clevis, Pin, Cotter (Comes as kit)	22957	**1**
4	Bolt, 1/2" x 3-1/4"	11782	**1**
5	Nut, 1/2" Nylon Lock	11815	**3**
6	Spring, 1" x 8-1/2" Closed	11787	**1**
7	Bolt, 3/8" x 1" Carriage	15718	**4**
8	Nut, 3/8" Serrated Flange	10271	**4**
9	Depth Indicator Decal	22209	**1**
10	Hydraulic Hose Hanger	34493	**1**
11	Turnbuckle	14276	**1**
12	Hose Holder Top Clamp	34507	**1**
13	Bottom Hose Holder Plate	34520	**1**
14	5/16" Gr.30 Chain @ 13 links	32168	**1**
15	Bolt, 5/16" x 4"	31837	**1**
16	Bolt, 5/16" x 5-1/2"	31109	**1**
17	Nylon Lock Nut, 5/16"	11815	**2**
18	Cable Clamp	13629	**1**
19	Hose Clamp, 1/2" Plastic	21561	**10**
20	Bolt, 1/2" x 1-1/2"	10174	**2**
21	Flat washer, 1/2"	11668	**4**
22	Bolt 3/4” x 5”	10803	**1**
23	Nut, 3/4" Stover Lock	11823	**1**
24a	Hitch, CAT 4 – 1.5” Sleeve	27373	**1**
24b	Hitch, CAT 4 – 2.0” 3-Hole	27372	**1**
24c	Hitch, CAT 5 – 2.75” 3-Hole	30128	**1**
25	Bolt, 1" x 7-1/2" Gr.8 NF	21103	**3**
26	Nut, 1" Stover NF	21104	**3**
27	Safety Chain Pin	27224	**1**
28	Bolt, 1/2" x 2-1/2"	10804	**1**
29	Nut, 1/2" Stover Lock	14393	**1**
30	Safety Chain	29545	**1**
31	Safety Chain Washer	27244	**1**
32	Safety Chain Pin Bushing	27245	**2**
33	Hydraulic Hose Holder Bracket	36668	**1**
34	Hydraulic Hose Holder Lid	36671	**1**
35	Hydraulic Hose Jigsaw Weldment	36673	**1**
36	Bulkhead Jigsaw A	36676	**1**
37	Bulkhead Jigsaw B	36675	**1**
38	Bolt, 3/8" x 1"	13806	**14**
39	Stepped Grommet {Essentra 462041}	30036	**1**
40	Fitting 8MJBH – 8MJ45	-	**10**
41	Grommet, 7/16" x 1/4"	21428	**1**
42	Bolt, 3/8" x 3/4"	11816	**4**
43	Ball Joint End, 5/8"	22955	**1**
44	Nut, 5/8" Hex NF	10275	**2**
45	Height Indicator Bracket	26720	**1**
46	Bolt, 1-1/2" x 5" Gr.8 NF	20653	**8**
47	Nut, 1-1/2" Hex NF	20654	**8**
48	Washer, 1-1/2" Flat GR.8	20434	**8**
49	Hitch Section	27228	**1**

Trencher Option

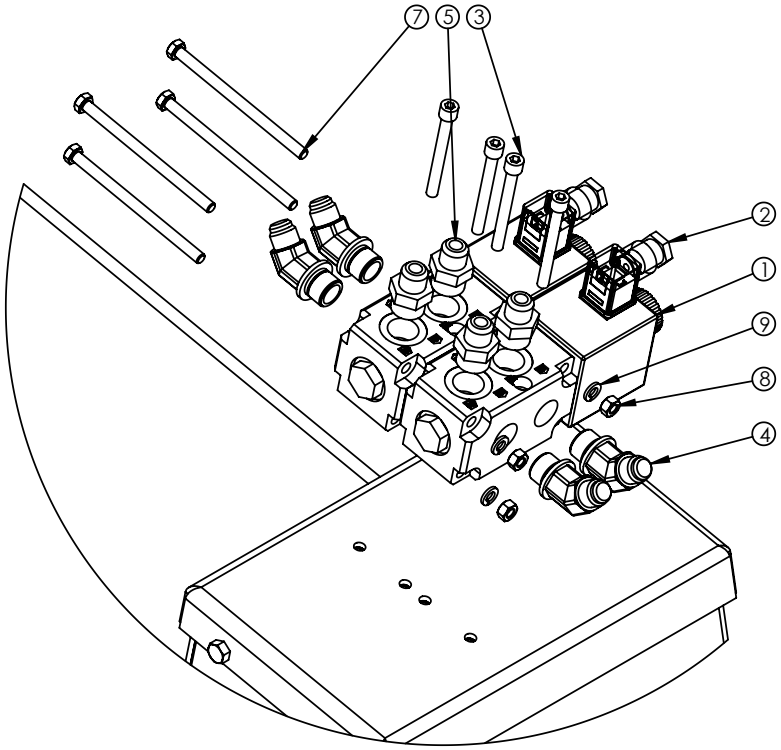


#	DESCRIPTION	PART #	QTY
1	Trench Depth Indicator Arm	22137	**1**
2	Bolt, 1/2" x 4-1/2"	15574	**1**
3	Nut, 1/2" Serrated Flange Nut	10273	**2**
4	Bolt, 1/2" x 3-1/4"	11782	**1**
5	Nut, 1/2" Nylon Lock	11815	**1**
6	Trencher Safety Pin	22136	**1**
7	Lock Pin	12050	**1**
8	Flat washer, 1/2"	11668	**1**
9	Trench Depth Indicator Linkage	23341	**1**
10	Cylinder Pin, 1-1/4" x 3-3/8"	20688	**4**
11	5 x 24 x 2-1/2" Hyd. Cylinder	20431	**2**
12	Cotter Pin, 3/16" x 2"	11670	**8**
13	Fitting 12MB – 8MJ90	-	**4**
14	Fitting 8MJBH – 8MJT	-	**2**
15	Leg Pivot Pin	22099	**1**
16	Bolt, 3/4" x 5"	10803	**2**
17	Nut, 3/4" Stover Lock	11823	**2**
18	18 Foot Trencher	23337	**1**
19	Grease Zerk, 1/4"-28 Self-Tapping	16364	**2**
20	XL Hitch Section	27378	**1**

4-Remote Option



NON-XL



XL

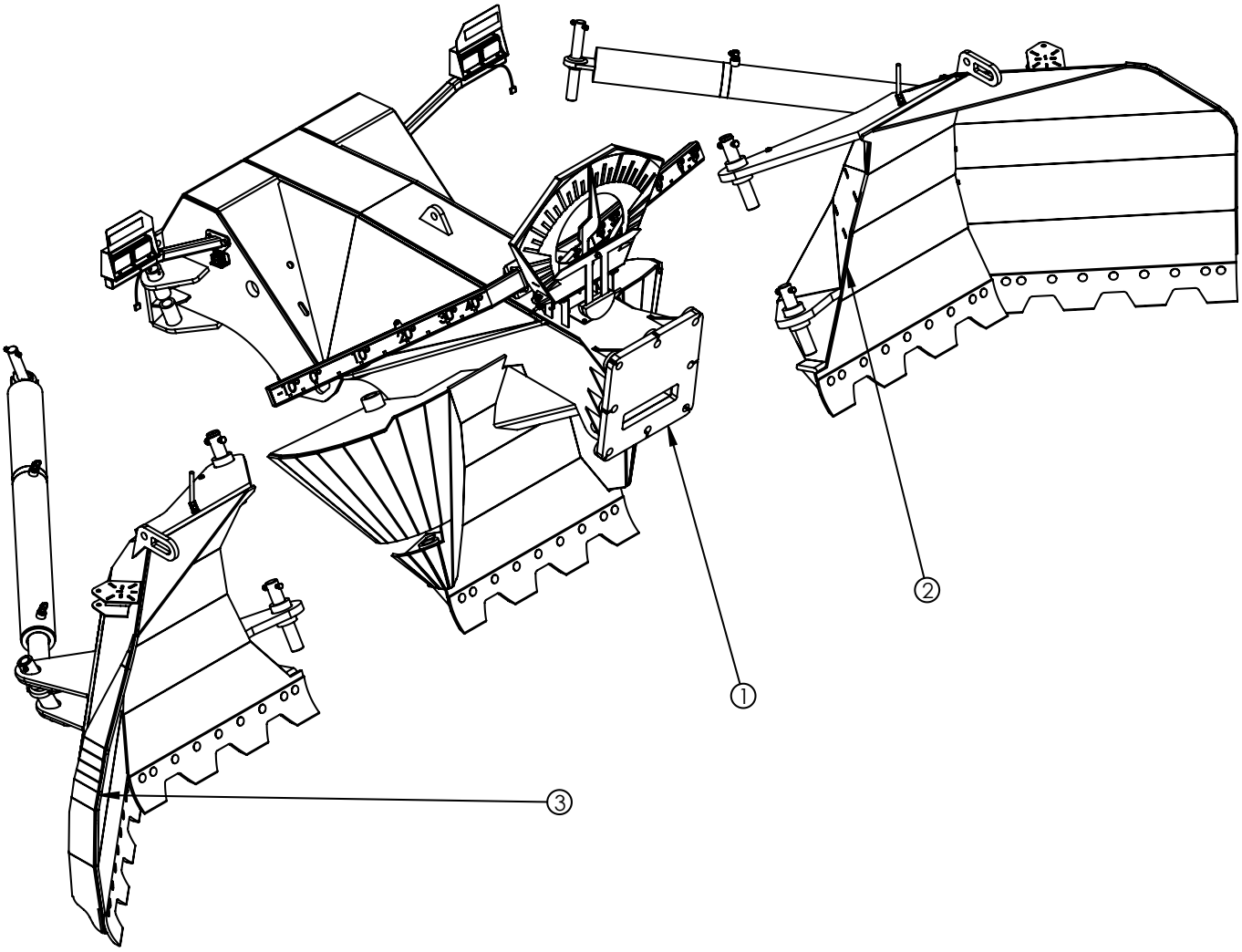
Non-XL:

#	DESCRIPTION	PART #	QTY
1	Diverter Valve	11743	**1**
2	Diverter Valve Plug	13657	**1**
3	Socket Head Bolt, 5/16" x 3"	11783	**2**
4	Fitting 10MB – 8MJ45	23844	**4**
5	Fitting 10MB – 8MJ	-	**2**
6	Bolt, 5/16" x 3/4"	20903	**2**

XL:

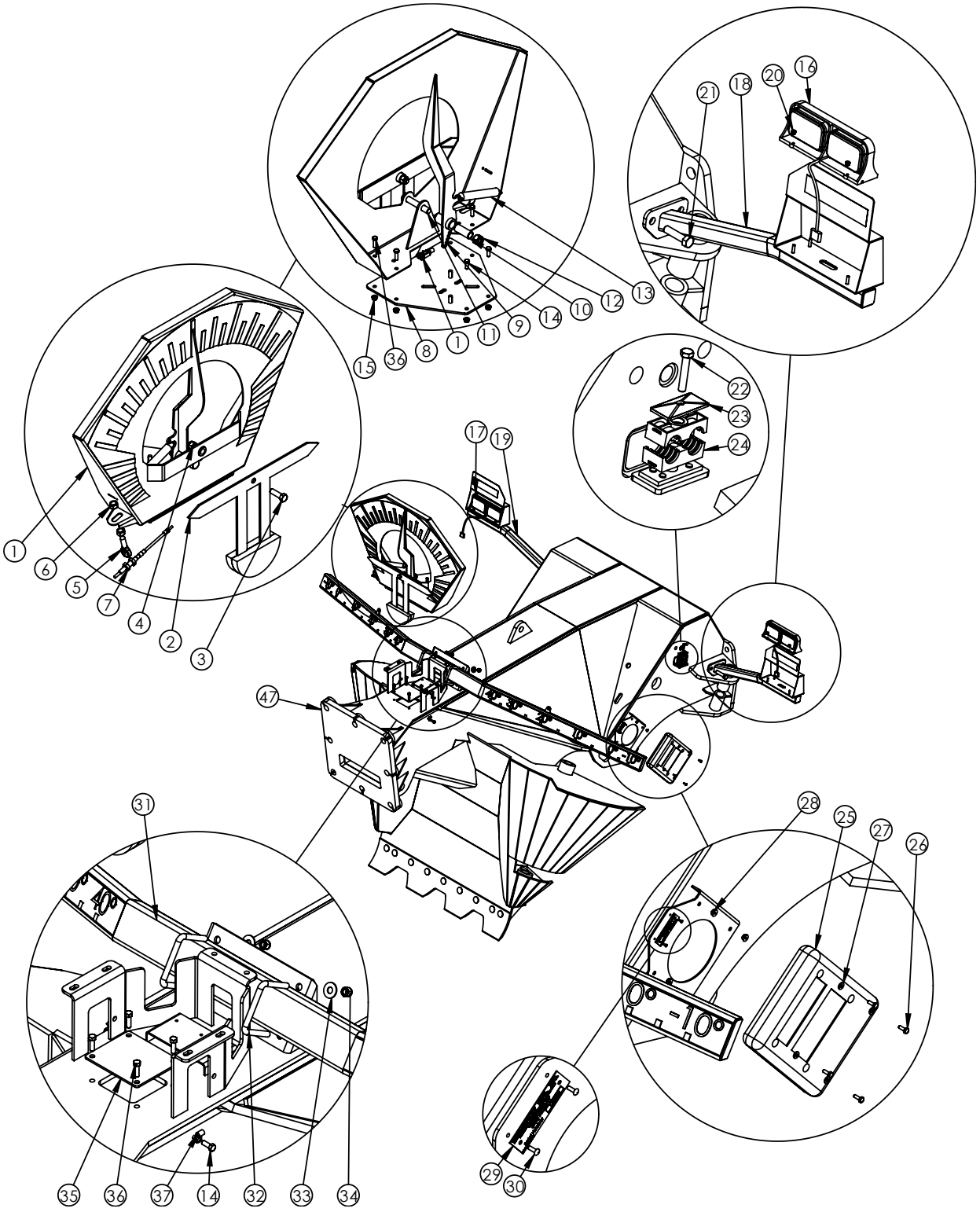
#	DESCRIPTION	PART #	QTY
1	Diverter Valve	11743	**2**
2	Diverter Valve Plug	13657	**2**
3	Socket Head Bolt, 5/16" x 3"	11783	**4**
4	Fitting 10MB – 8MJ45	23844	**4**
5	Fitting 10MB – 8MJ	-	**2**
6	Bolt, 5/16" x 3/4"	20903	**0**
7	Bolt, 5/16” x 5”	-	**4**
8	Hex Nut, 3/8"	23526	**4**
9	Washer, 5/16” Lock	-	**4**

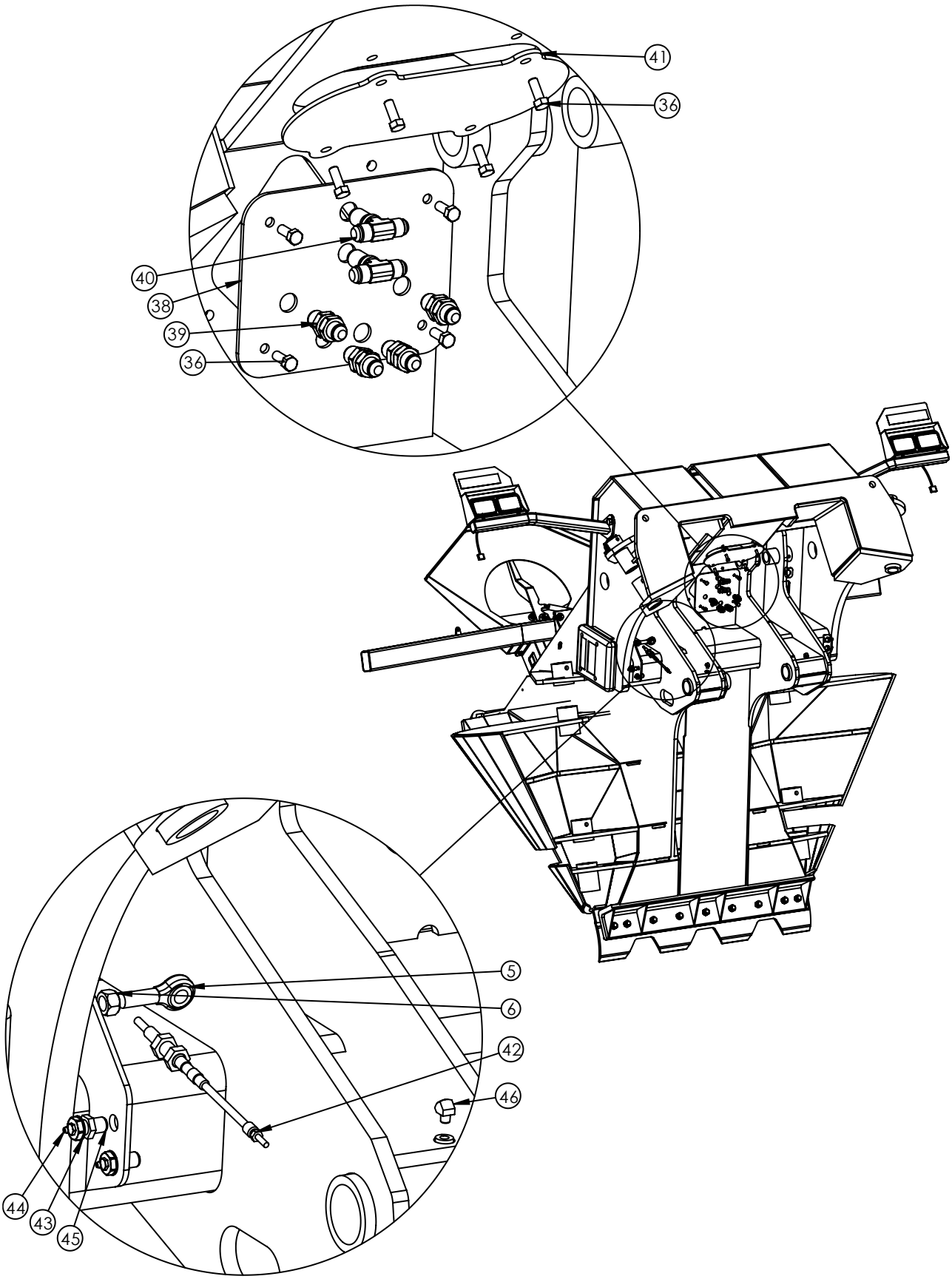
Blade Section



#	DESCRIPTION	PART #	QTY
1	Middle Blade	-	**1**
2	Left Wing	-	**1**
3	Right Wing	-	**1**

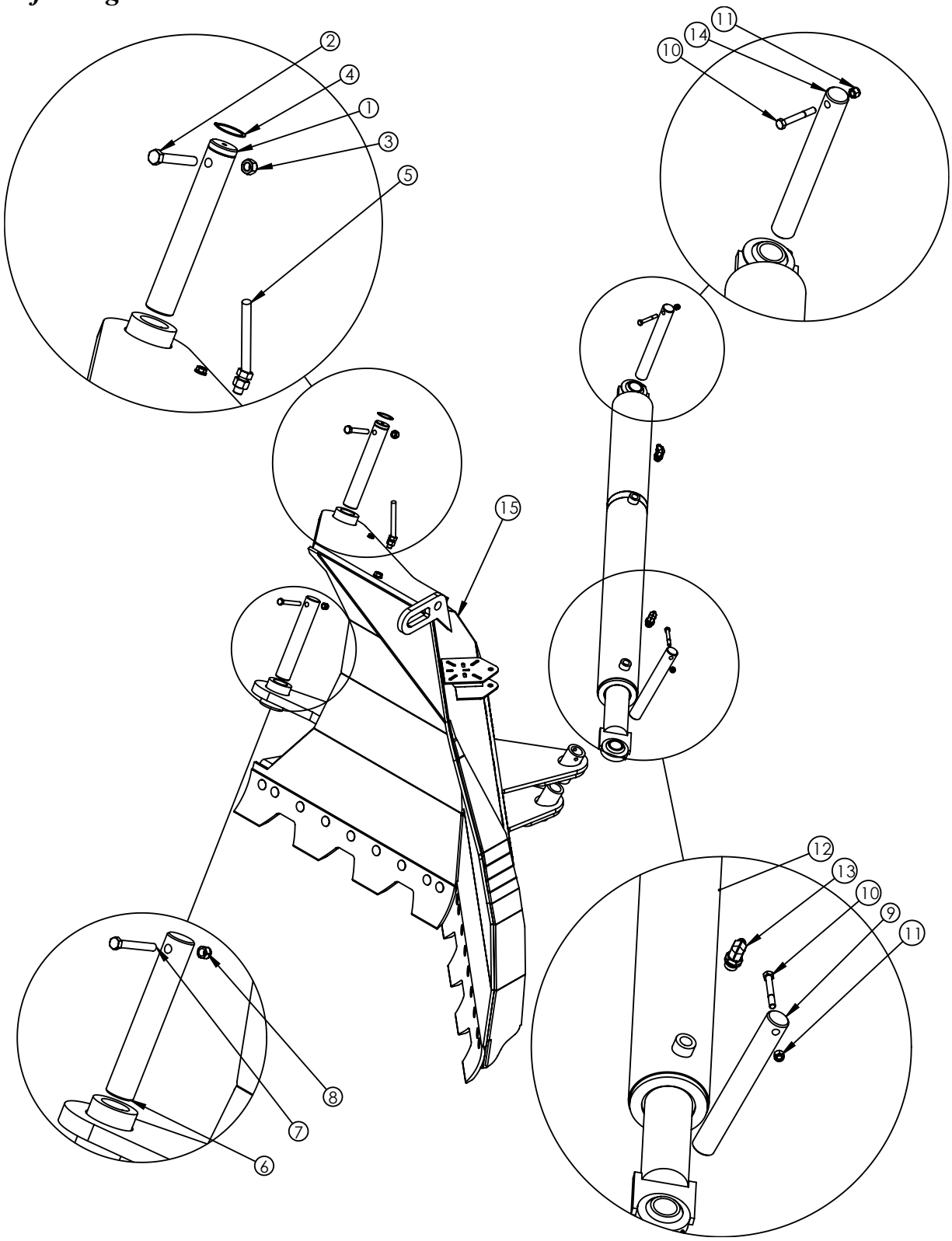
Middle Blade




41
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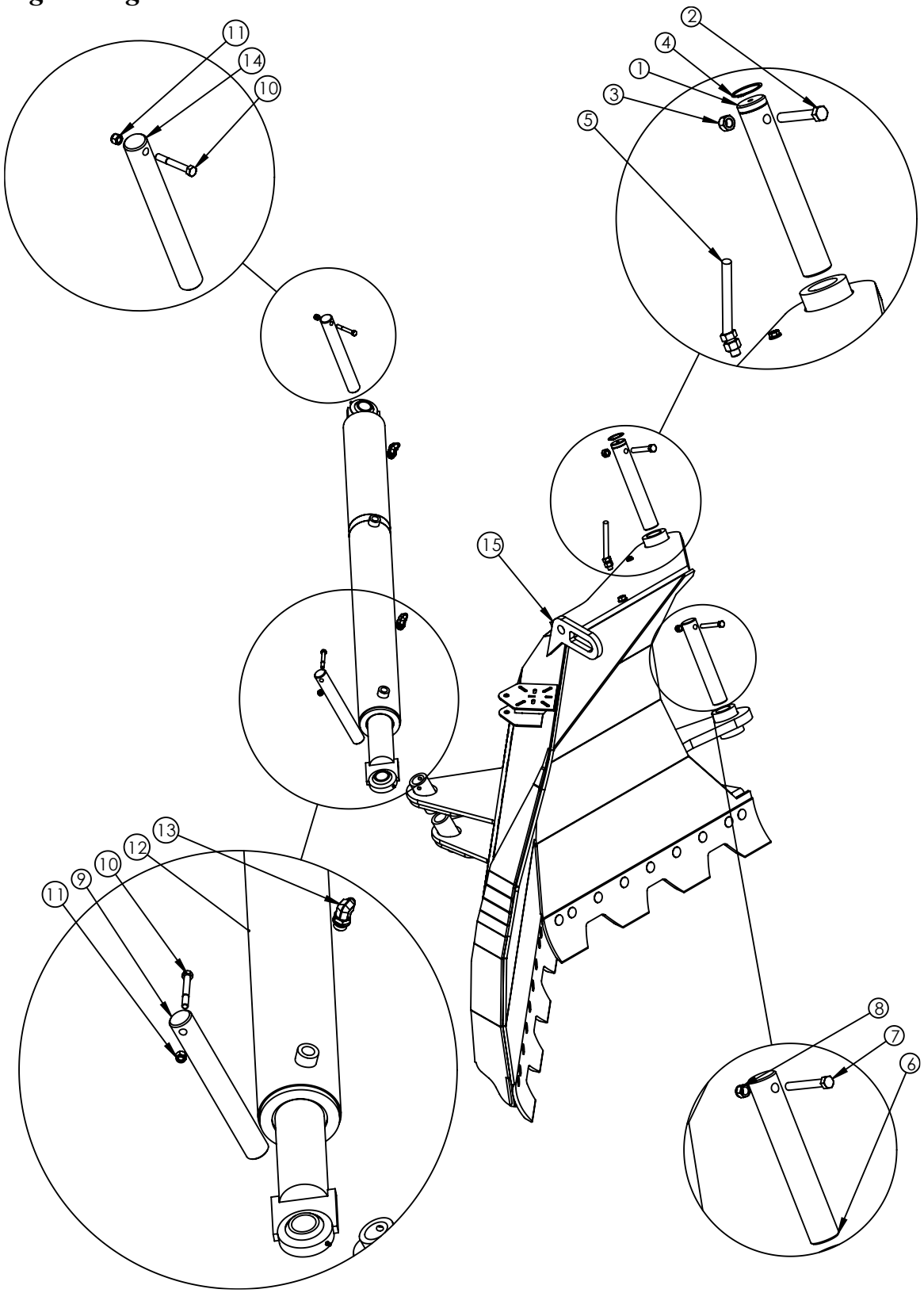
#	DESCRIPTION	PART #	QTY
1	Angle Indicator Bracket	27201	**1**
2	Level to Ground Indicator Concept 2	27202	**1**
3	Bolt, 5/8" x 2"	26607	**1**
4	Nylon Lock Nut, 5/8"	10364	**1**
5	Ball Joint End, 5/8"	22955	**2**
6	Nut, 5/8" Hex NF	10275	**4**
7	PTO Cable, 15 ft, Bulkhead Ends	22958	**1**
8	Top Center Laser Mount	23714	**1**
9	Angle Indicator Needle	27203	**1**
10	Brass Flail Bushing	10005	**1**
11	Bolt, 3/4" x 4"	15578	**1**
12	Nut, 3/4" Nylon Lock	10007	**1**
13	Spring, 1" x 8-1/2" Closed	11787	**1**
14	Bolt, 3/8" x 1"	13806	**7**
15	Nut, 3/8" Serrated Flange	10271	**6**
16	Dual Light, Left	31087	**1**
17	Dual Light, Right	31088	**1**
18	Left Light Bar	28788	**1**
19	Right Light Bar	27206	**1**
20	Nylon Lock Nut, 1/4"	11664	**8**
21	Bolt, 3/4" x 3"	14470	**4**
22	Bolt, 5/16" x 1-3/4"	21726	**2**
23	Plastic Cap Stauff Twin Hose Clamp 1/2" Hose 322/22PA	21561	**4**
24	Cover Plate	21725	**2**
25	Manual Holder Box	22409	**1**
26	Bolt, 1/4" x 3/4"	11809	**4**
27	Washer, 1/4" Flat	11666	**4**
28	Nut, 1/4" Serrated Flange	11812	**4**
29	Serial Number Plate	-	**1**
30	Pop Rivet, 1/8"	-	**2**
31	Wing Angle Indicator Tube	27205	**1**
32	U-Bolt, 1/2" x 4-1/16" x 3-1/4"	26608	**2**
33	Flat Washer, 1/2"	11668	**4**
34	Nylon Lock Nut, 1/2"	10241	**4**
35	MB Cover Plate	36536	**1**
36	Bolt, 3/8" x 1-1/4"	10253	**16**
37	Cable Clamp	13629	**5**
38	Rear Bulkhead Plate	28796	**1**
39	Fitting 8MJ – 8MJ	-	**4**
40	Fitting 8MJBH – 8MJT	-	**2**
41	Wing Hose Acess Plate	26717	**1**
42	PTO Cable, 10 ft, Bulkhead Ends	26900	**1**
43	Grease Bulkhead Fitting	16830	**4**
44	Grease Zerk, 1/8" NPT Straight	10270	**4**
45	Grease Tube, 22" Long	16829	**4**
46	1/8" NPT Street Elbow (45)	31252	**2**
47	Middle Blade	27230	**1**

Left Wing



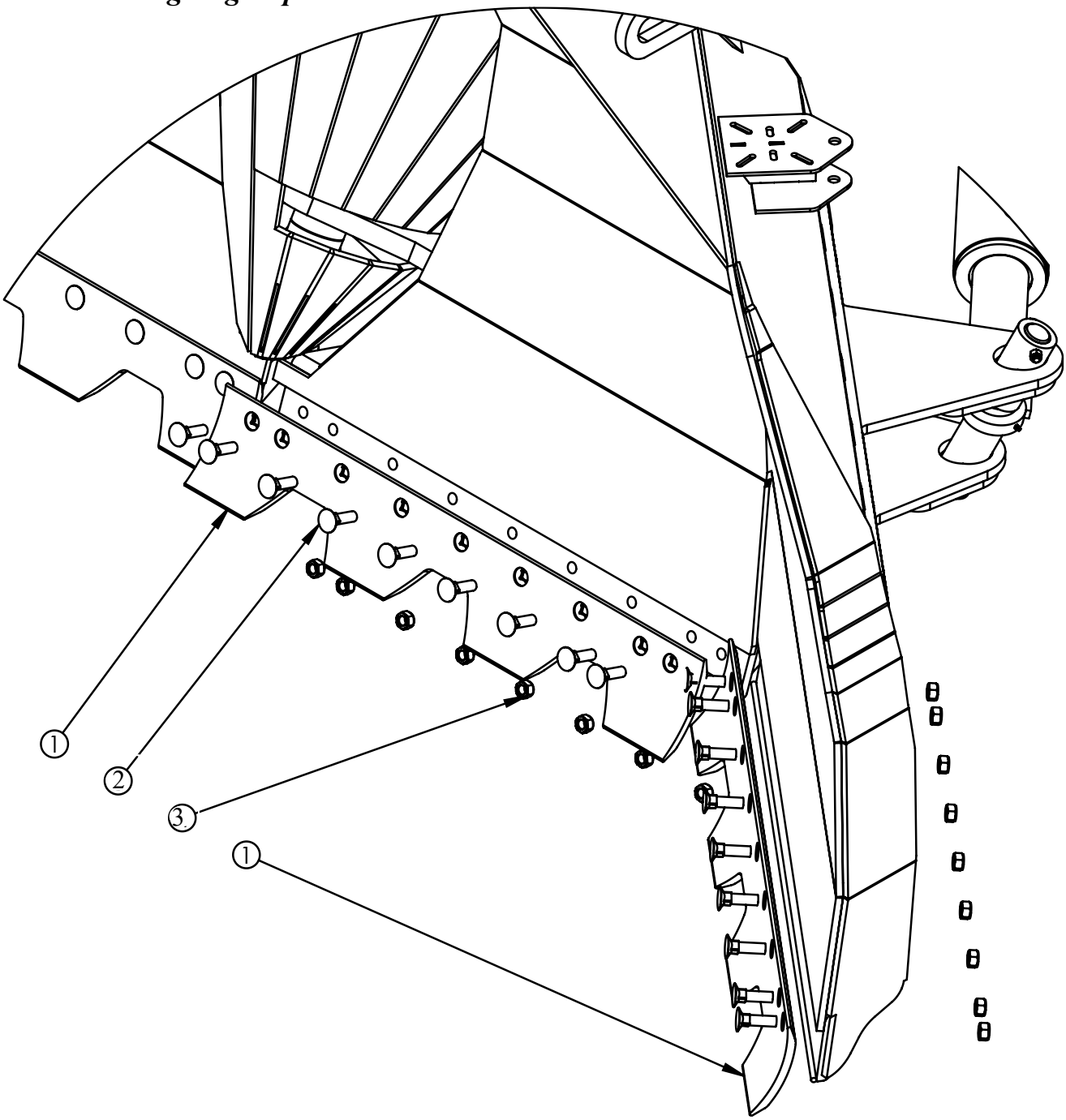
#	DESCRIPTION	PART #	QTY
1	Wing Sensor Pin	36504	**1**
2	Bolt, 3/4" x 5"	10803	**1**
3	Nut, 3/4" Stover Lock	11823	**1**
4	Snap ring, 2-7/16"	36505	**1**
5	Grade Indicator Needle	35050	**1**
6	Wing Pivot Pin	26702	**1**
7	Bolt, 5/8" x 5" Gr. 8	13966	**1**
8	Nylon Lock Nut, 5/8"	10364	**1**
9	Machine Pin 1-63/64"	26902	**1**
10	Bolt, 1/2" x 3-3/4"	15397	**1**
11	Nut, 1/2" Nylon Lock	10241	**1**
12	6 x 32 x 4 Hydraulic Cylinder	26579	**1**
13	Fitting 12MB – 8MJ90	-	**3**
14	Wing Cylinder Pin	26576	**1**
15	Left Hand Wing	26884	**1**

Right Wing



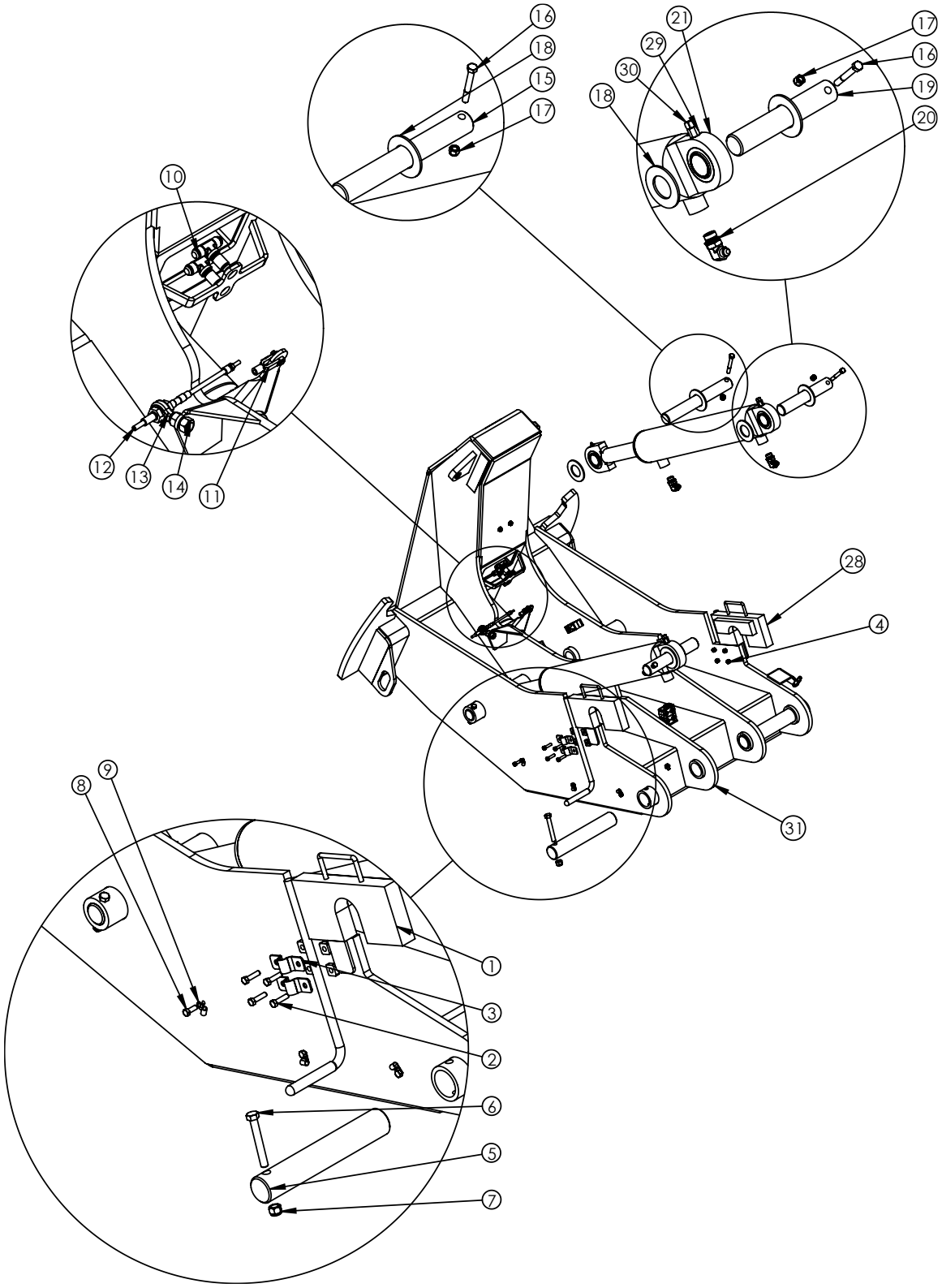
#	DESCRIPTION	PART #	QTY
1	Wing Sensor Pin	36504	**1**
2	Bolt, 3/4" x 5"	10803	**1**
3	Nut, 3/4" Stover Lock	11823	**1**
4	Snap ring, 2-7/16"	36505	**1**
5	Grade Indicator Needle	35050	**1**
6	Wing Pivot Pin	26702	**1**
7	Bolt, 5/8" x 5" Gr. 8	13966	**1**
8	Nylon Lock Nut, 5/8"	10364	**1**
9	Machine Pin 1-63/64"	26902	**1**
10	Bolt, 1/2" x 3-3/4"	15397	**1**
11	Nut, 1/2" Nylon Lock	10241	**1**
12	6 x 32 x 4 Hydraulic Cylinder	26579	**1**
13	Fitting 12MB – 8MJ90	-	**3**
14	Wing Cylinder Pin	26576	**1**
15	Right Hand Wing	26885	**1**

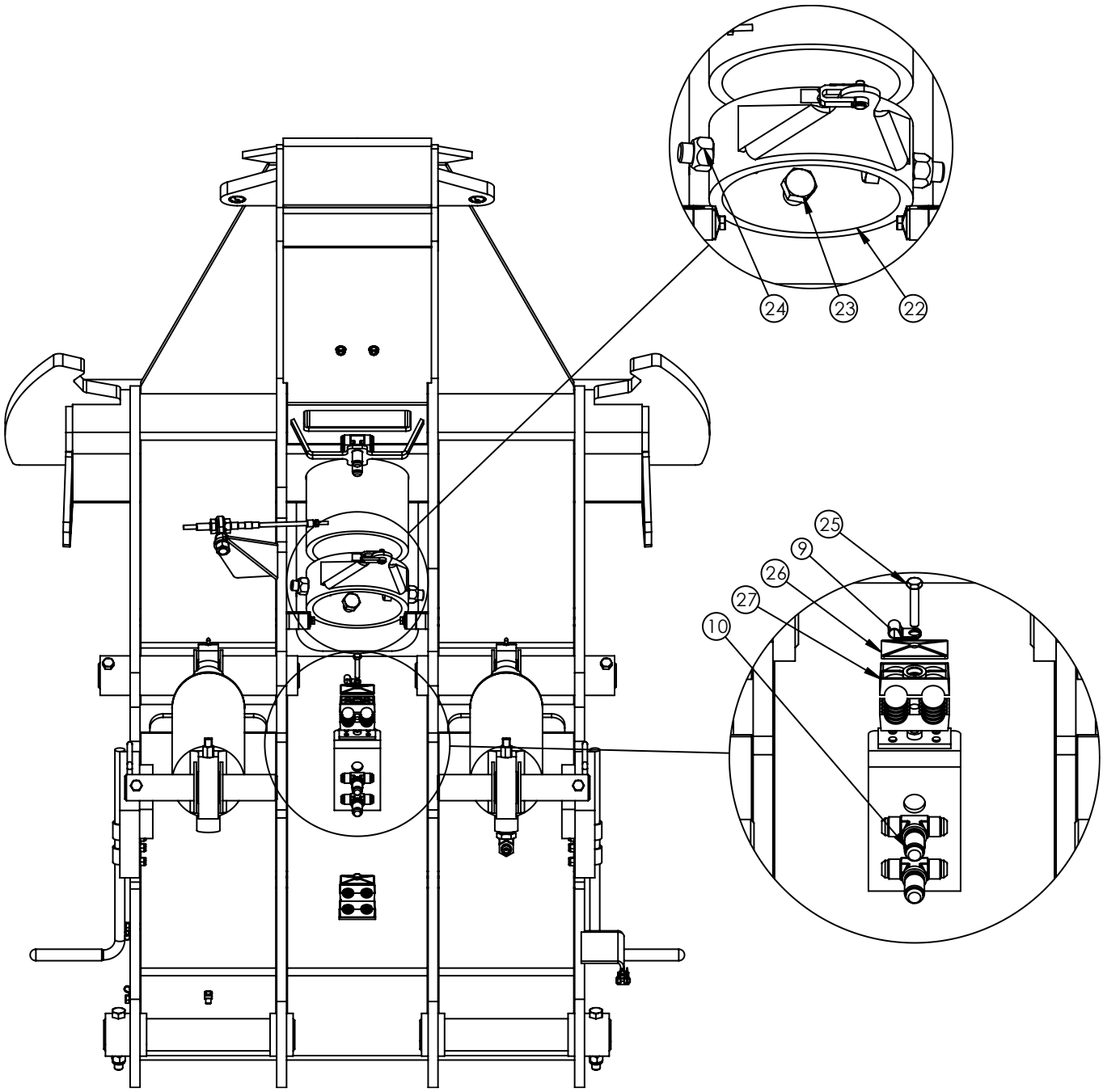
Cutting Edge Options



#	DESCRIPTION	PART #	QTY
1a	Serrated Cutting Edge 4 ft	26574	**5**
1b	Straight Cutting Edge 4 ft	20428	**5**
2	Bolt, 3/4" x 2-3/4" Plough	20488	**45**
3	Nut, 3/4" Hex	20606	**45**

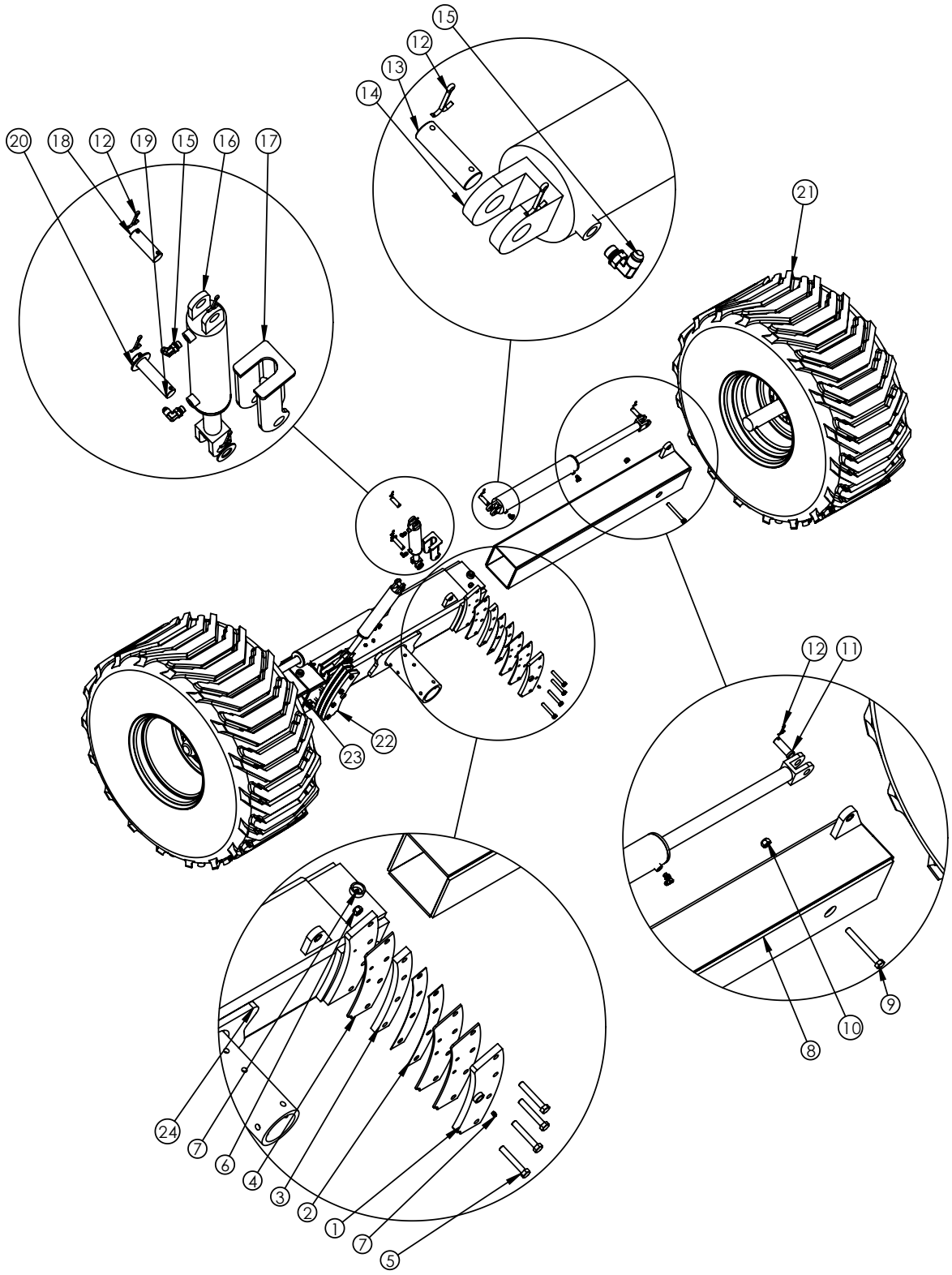
Frame Section




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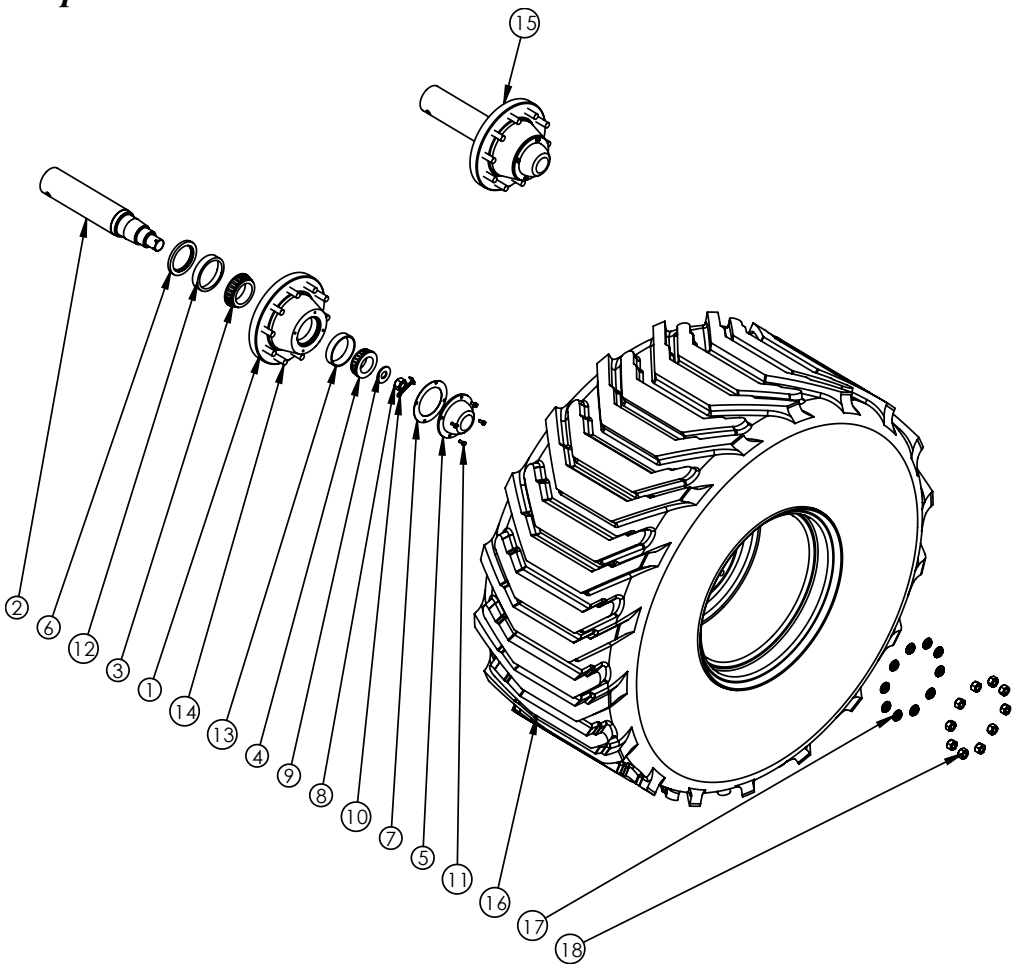
#	DESCRIPTION	PART #	QTY
1	RH Lift Cylinder Safety Lock	27208	**1**
2	Bolt, 3/8" x 1-1/2"	11660	**8**
3	Heavy Duty Steel Clamp	26612	**4**
4	Nylon Lock Nut, 3/8"	10806	**8**
5	Wing Pivot Pin	26702	**2**
6	Bolt, 5/8" x 4-1/2" Gr. 8	14255	**2**
7	Nylon Lock Nut, 5/8"	10364	**2**
8	Bolt, 3/8" x 1"	13806	**3**
9	Cable Clamp	13629	**4**
10	Fitting 8MJBH – 8MJT	-	**4**
11	Clevis, Pin, Cotter (Comes as kit)	22957	**2**
12	PTO Cable, 15 ft, Bulkhead Ends	22958	**1**
13	Ball Joint End, 5/8"	22955	**1**
14	Nut, 5/8" Hex NF	10275	**2**
15	Machine Pin Bottom	26902	**2**
16	Bolt, 1/2" x 3-3/4"	10231	**4**
17	Nut, 1/2" Nylon Lock	10241	**4**
18	Flat Washer, 2"	23304	**8**
19	Machine Pin Top	22913	**2**
20	Fitting 12MB – 8MJ90	-	**4**
21	5 x 24 x 2-1/2" Hyd. Cylinder	20431	**2**
22	Angle Indicator Axle Pivot	22905	**1**
23	Bolt, 3/4" x 2-1/2"	20432	**4**
24	Stover Lock Nut, 3/4"	11823	**4**
25	Bolt, 5/16" x 1-3/4"	21726	**4**
26	Cover Plate	21725	**4**
27	Hose Clamp, 1/2" Plastic	21561	**10**
28	LH Lift Cylinder Safety Lock	27207	**1**
29	Pipe Adapter	32476	**2**
30	1/8" NPT Street Elbow (90)	26610	**2**
31	Main Frame	31811	**1**

Axle Section



#	DESCRIPTION	PART #	QTY
1	Left Hand Tilt Ring Cover	31819	**1**
2	Tilt Ring Spacer	31830	**2**
3	Tilt Ring	31828	**4**
4	Rear Tilt Abrasion Plate	31825	**6**
5	Bolt, 3/4" x 4-3/4" Gr. 8	30007	**6**
6	Stover Lock Nut Gr. 8, 3/4"	30008	**6**
7	Grease Zerk, 1/8" NPT Straight	10270	**10**
8	Left Hand Telescoping Tube	29588	**1**
9	Bolt, 3/4" x 6-1/2"	20787	**2**
10	Nut, 3/4" Stover Lock	11823	**2**
11	Cylinder Pin, 1" x 2-1/2"	22787	**2**
12	Cotter Pin, 3/16" x 2"	11670	**14**
13	Cylinder Pin, 1" x 3-1/8"	10339	**2**
14	4 x 24 x 2 Hydraulic Cylinder	27163	**2**
15	Fitting 6MB – 6MJ90	-	**8**
16	3 x 12 x 1-1/2 Hydraulic Cylinder	26577	**2**
17	Tilt Cylinder Safety Lock	27209	**2**
18	Cylinder Pin, 1" x 2-7/8"	10339	**2**
19	Cylinder Pin, 1" x 4-1/2"	21791	**2**
20	Flat Washer, 1"	14472	**4**
21	Tire & Spindle	-	**2**
22	Right Hand Tilt Ring Cover	31823	**1**
23	Right Hand Telescope Tube	29589	**1**
24	Back Axle	31806	**1**

Tire & Spindle

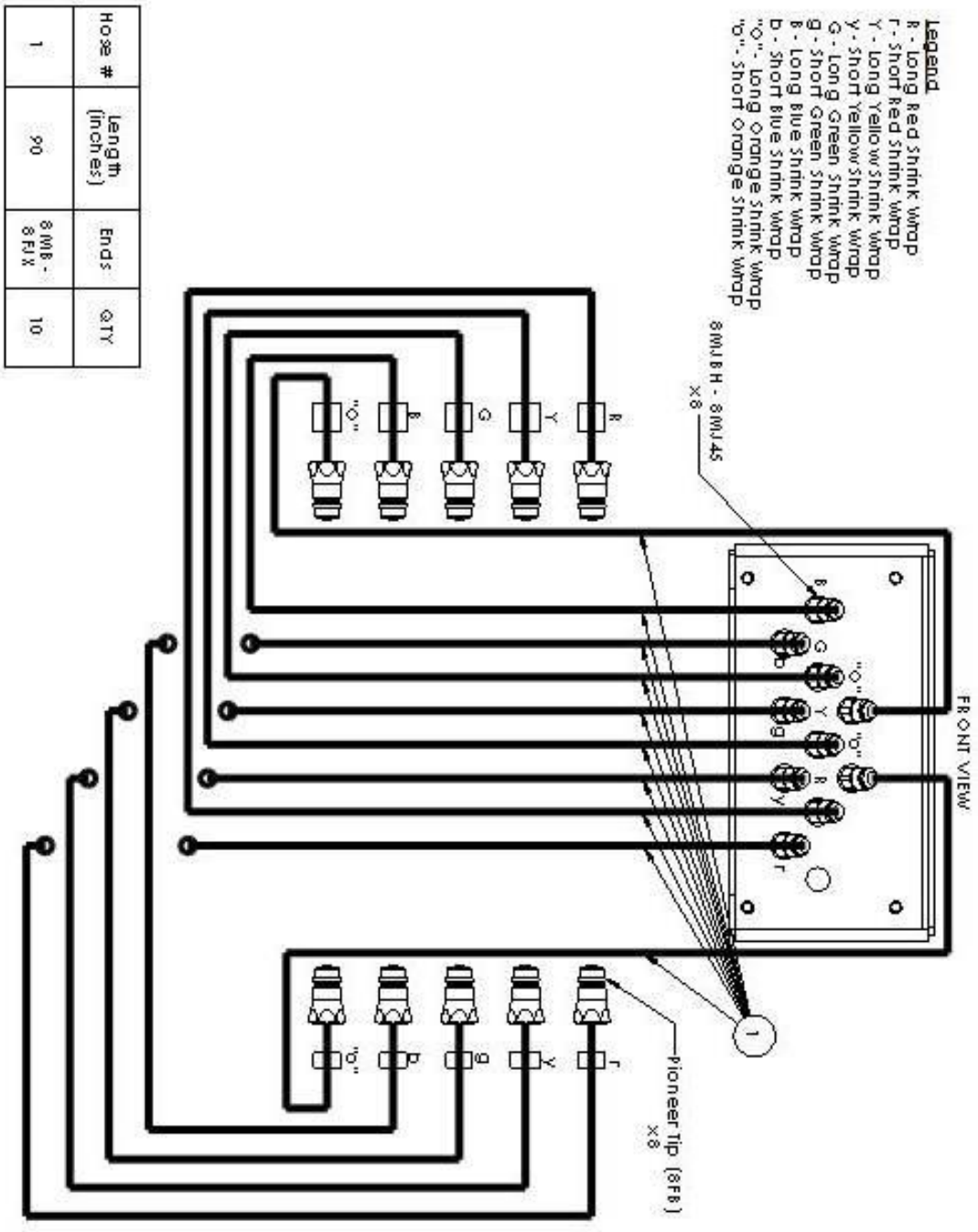


#	DESCRIPTION	PART #	QTY
1	16000lb Wheel Hub	20739	**1**
2	16000lb Spindle	20677	**1**
3	Wheel Bearing Inner (47867)	20775	**1**
4	Wheel Bearing Outer (K39585)	20776	**1**
5	Dust Cap	20777	**1**
6	Hub Seal (CR38370)	20778	**1**
7	Dust Cap Gasket	20779	**1**
8	Spindle Castle Nut (1-3/4”-12 NF)	20780	**1**
9	Spindle Washer	20781	**1**
10	5/16” x 3-1/2” Cotter Pin	20782	**1**
11	5/16” x 3/4” Bolt (YZ)	20903	**4**
12	Cup Inner Bearing (47620)	21480	**1**
13	Cup Outer Bearing (39520)	21481	**1**
14	Stud	22408	**10**
15	Complete Hub	23727	**1**
16	Tire & Rim	24290	**1**
17	Spherical Washer	21151	**10**
18	Lug Nut	20783	**10**

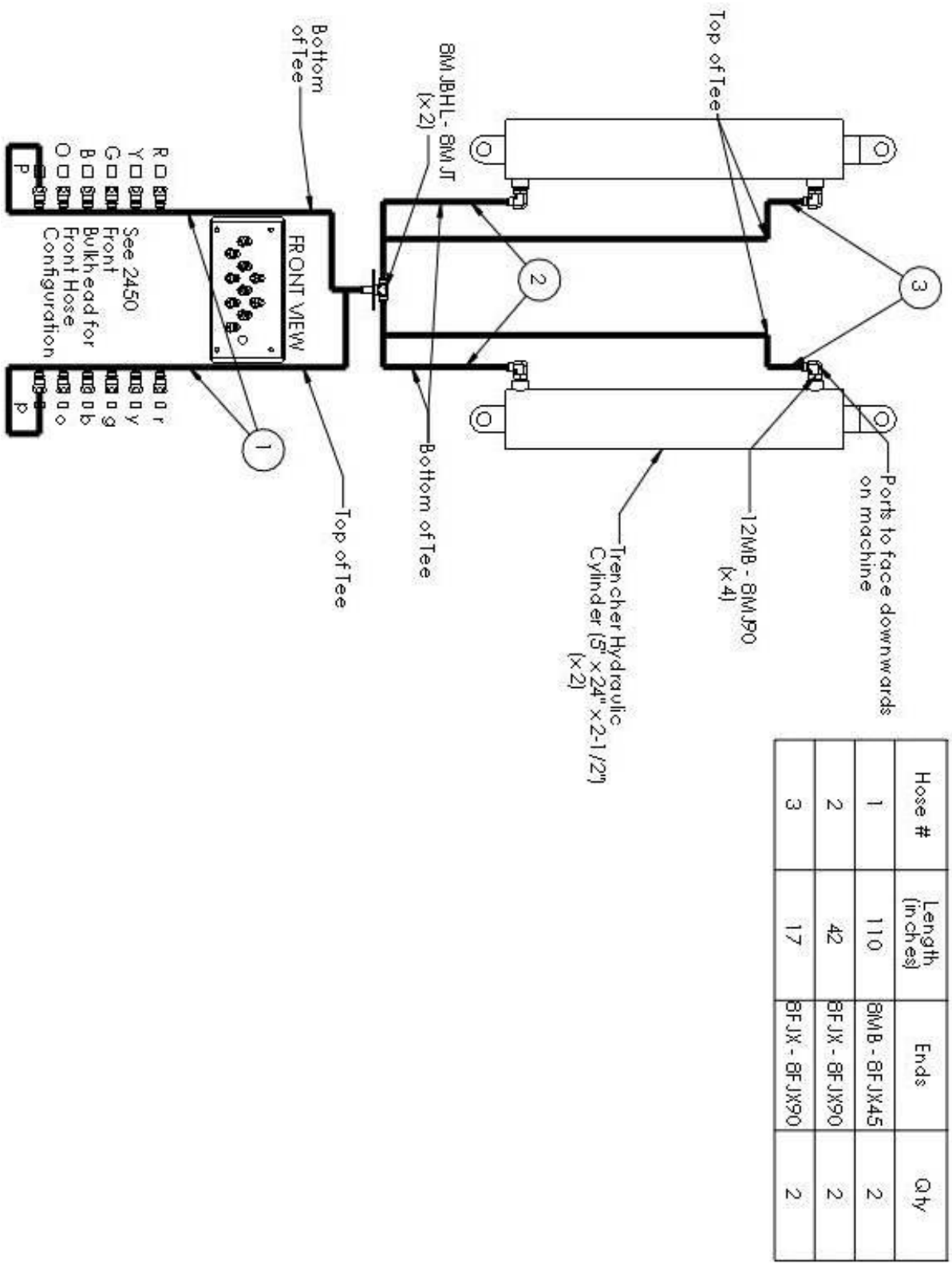
Hydraulics

Note: All hoses are OAL Double Braided

Front Bulkhead

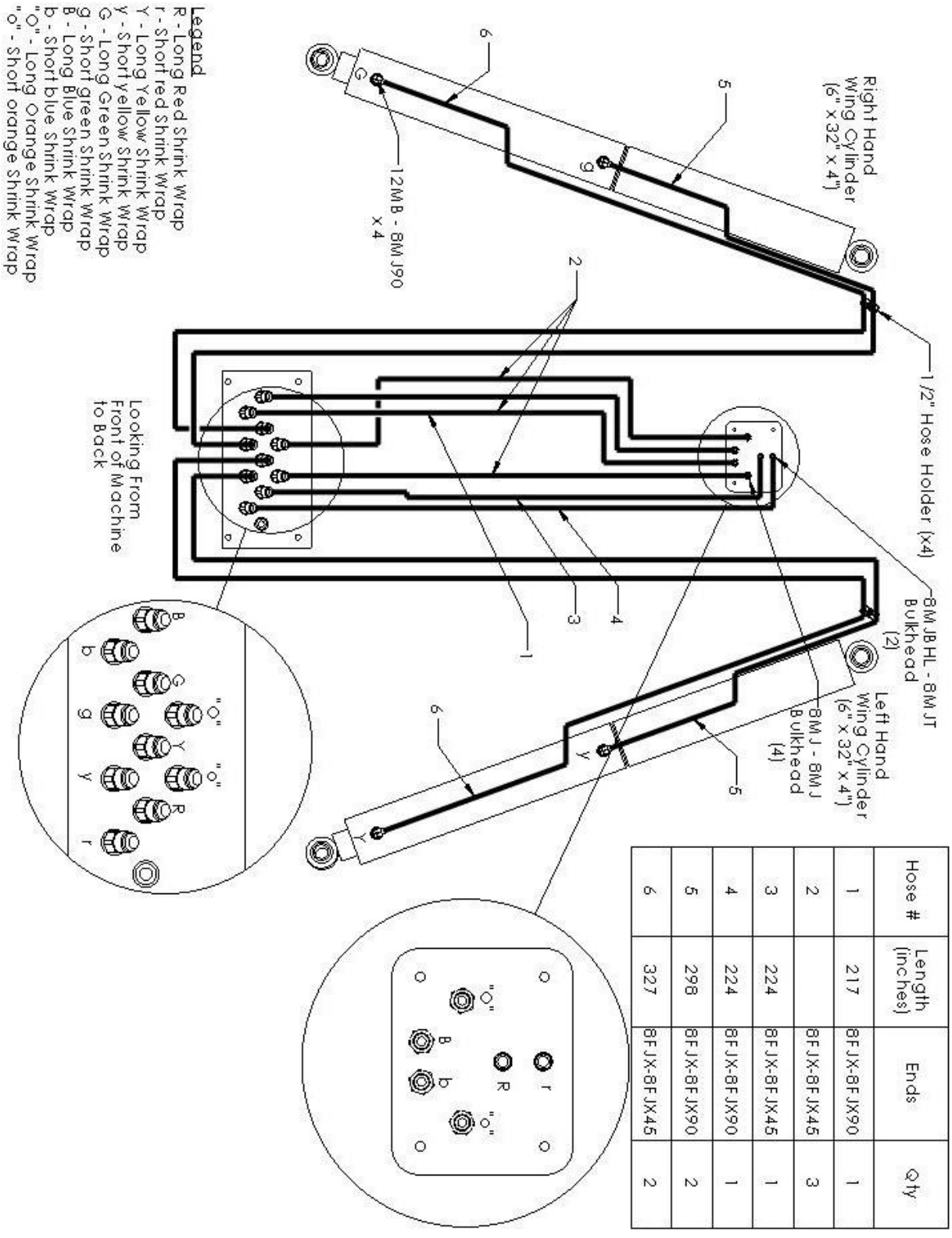


XL Front Bulkhead



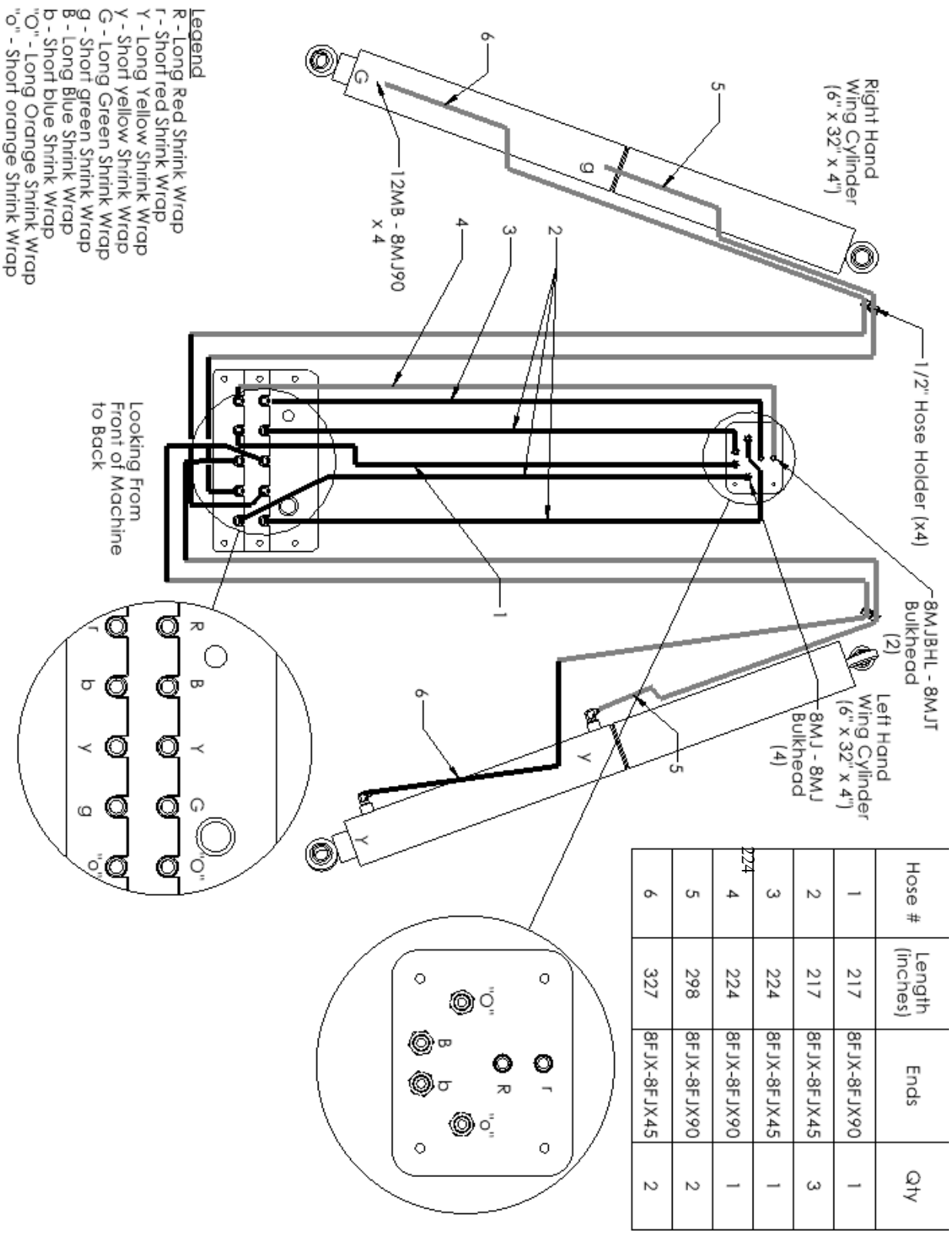
Hose #	Length (inches)	Ends	Qty
1	110	8MB - 8FJX45	2
2	42	8FJX - 8FJX90	2
3	17	8FJX - 8FJX90	2

Wing Cylinders (Non Jig-Saw Cover Plates)



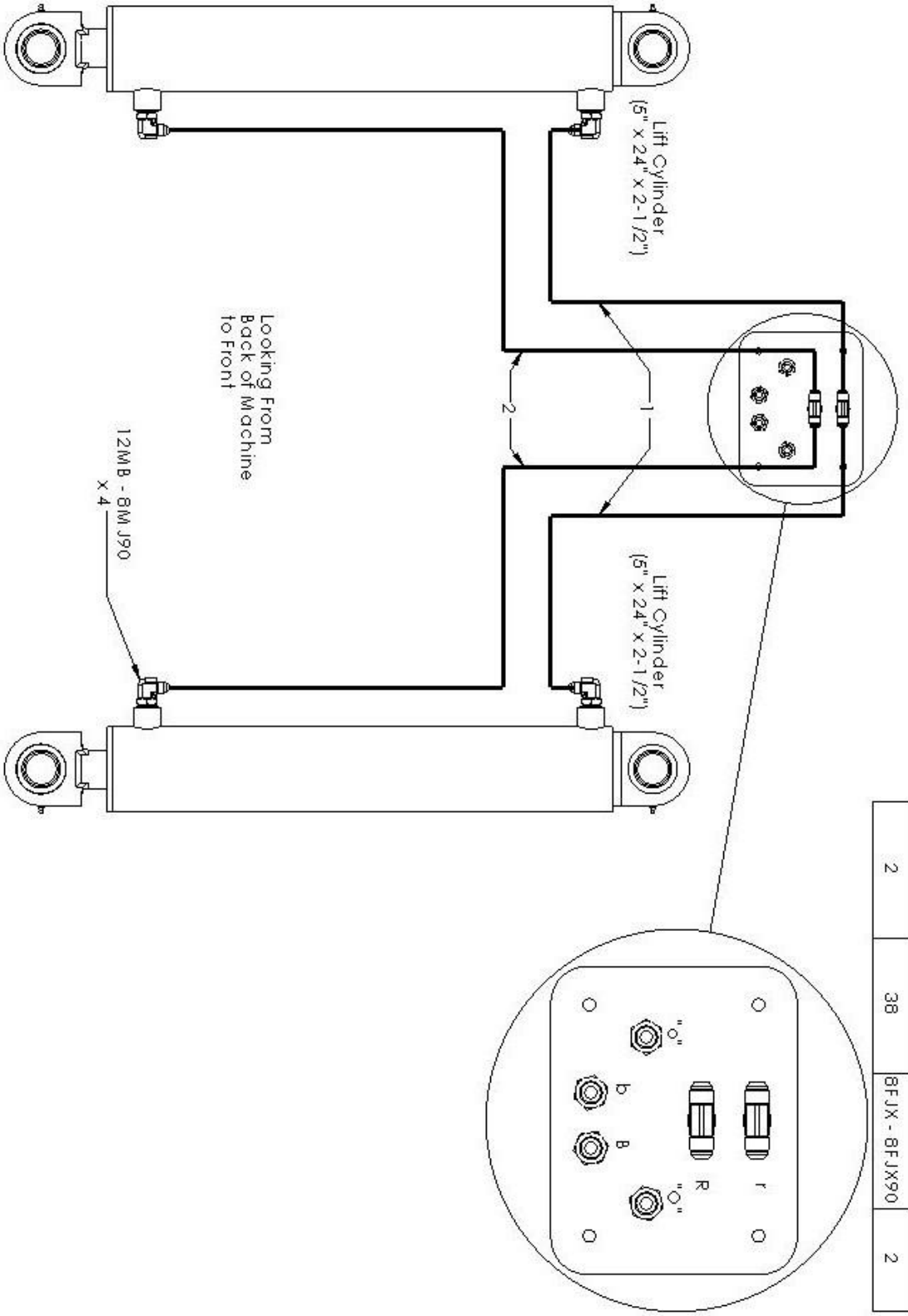
Hose #	Length (inches)	Ends	Qty
1	217	8FJX-8FJX90	1
2		8FJX-8FJX45	3
3	224	8FJX-8FJX45	1
4	224	8FJX-8FJX90	1
5	298	8FJX-8FJX90	2
6	327	8FJX-8FJX45	2

Wing Cylinders (Wing Jig-Saw Cover Plates)



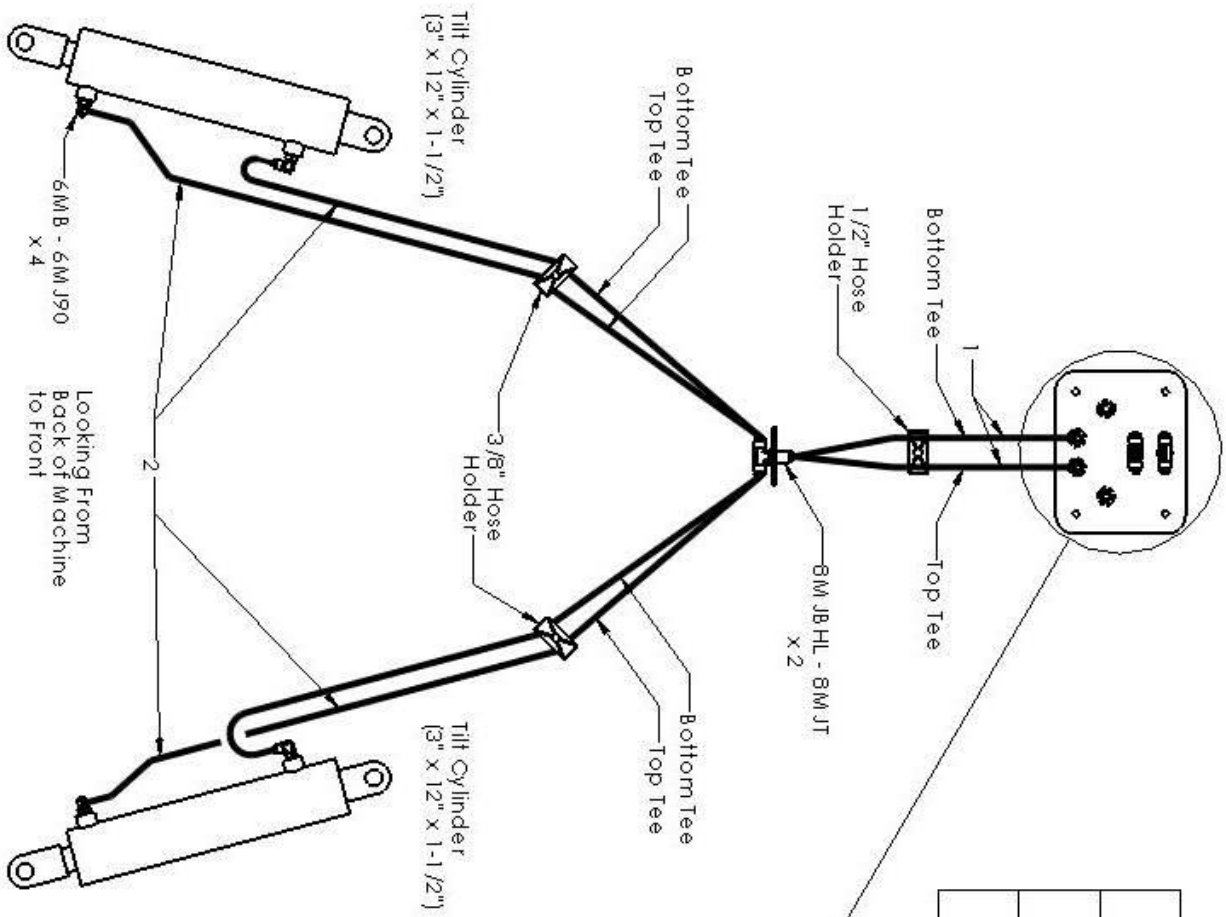
Hose #	Length (inches)	Ends	Qty
1	217	8FJX-8FJX90	1
2	217	8FJX-8FJX45	3
3	224	8FJX-8FJX45	1
4	224	8FJX-8FJX90	1
5	298	8FJX-8FJX90	2
6	327	8FJX-8FJX45	2

Lift Cylinders



Hose #	Length (inches)	Ends	Qty
1	36	8FJX - 8FJX90	2
2	38	8FJX - 8FJX90	2

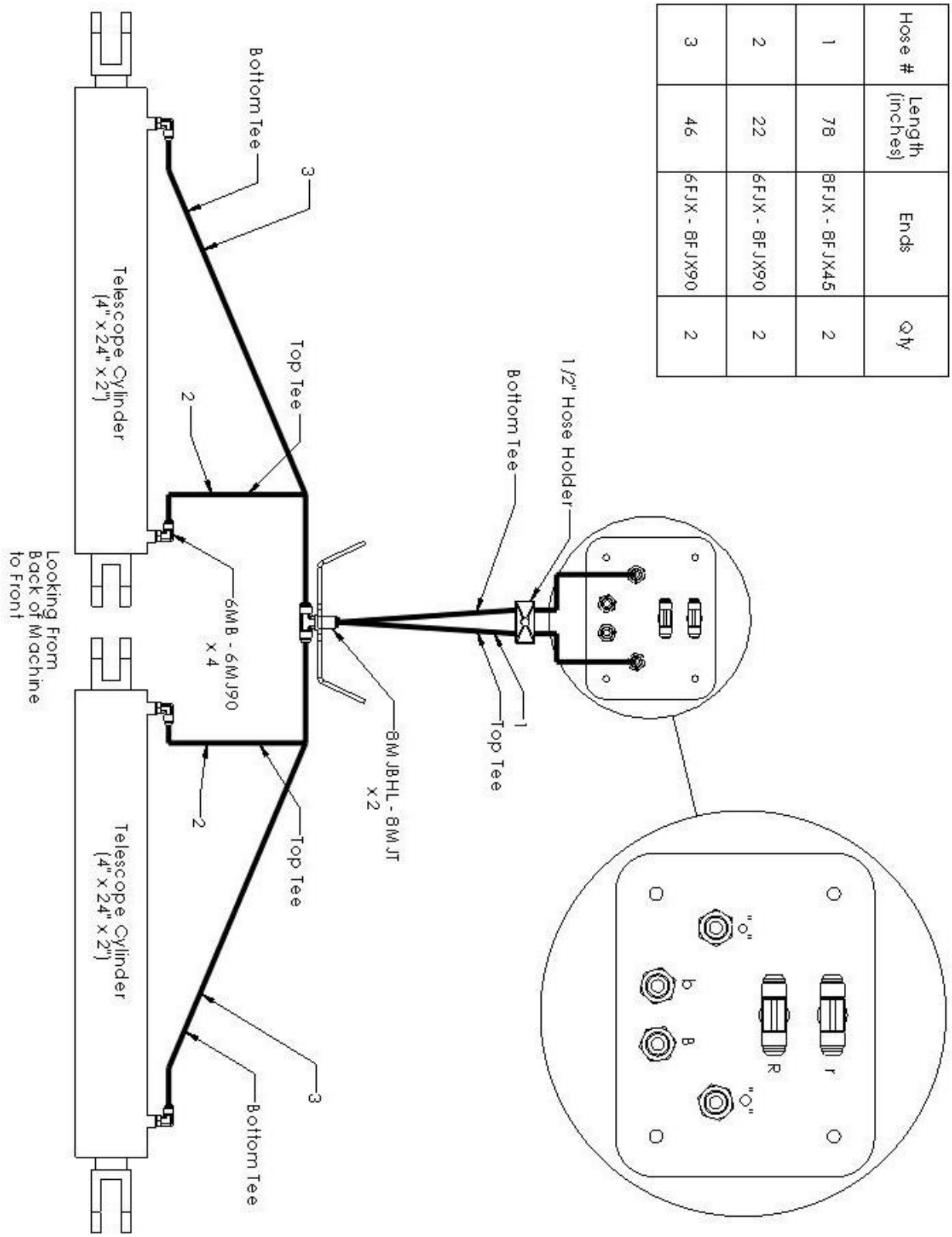
Tilt Cylinders



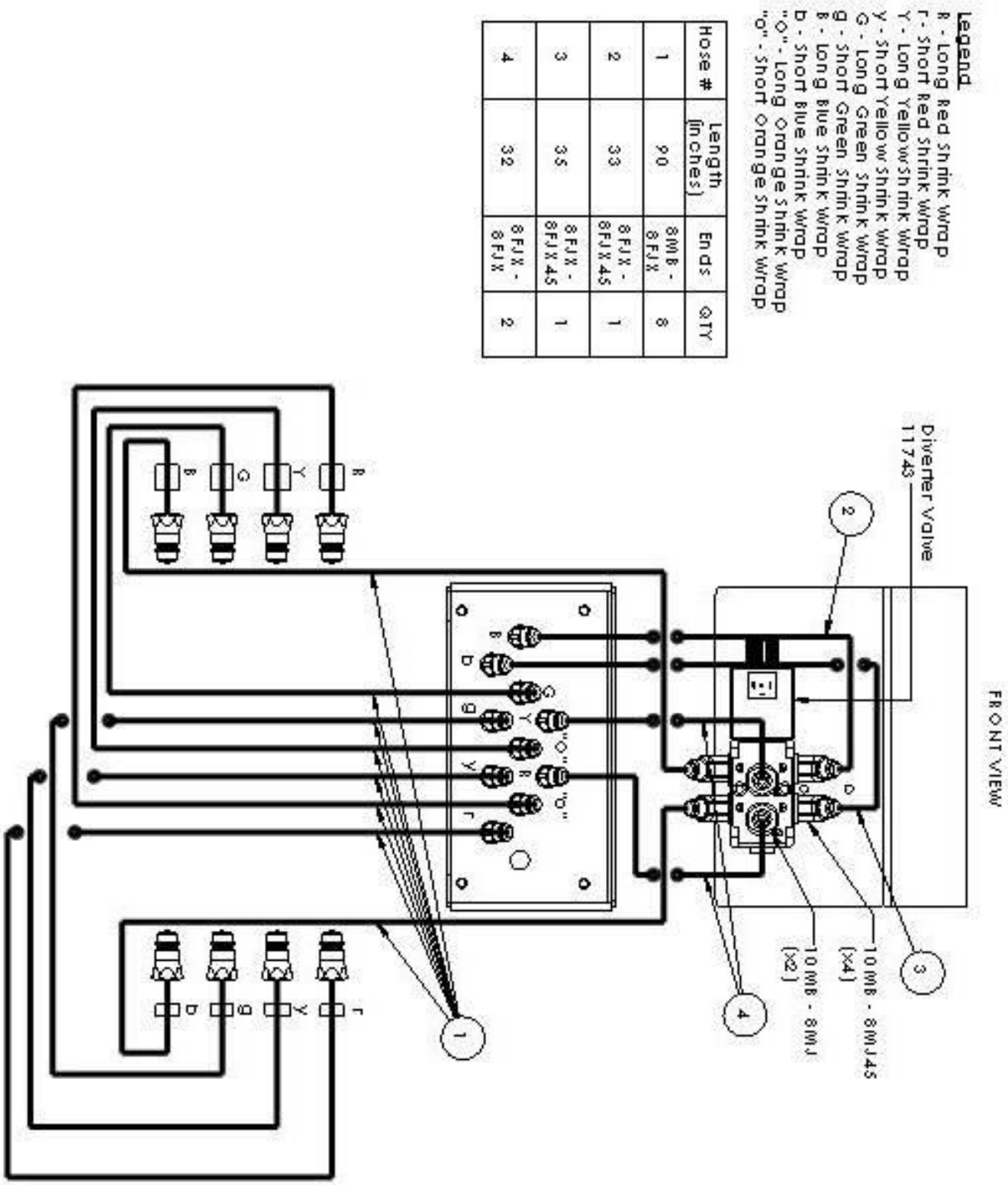
Hose #	Length (inches)	Ends	Qty
1	53	8FJX - 8FJX	2
2	45	6FJX - 8FJX90	4

Telescoping Cylinders

Hose #	Length (inches)	Ends	Qty
1	78	8FJX - 8FJX45	2
2	22	6FJX - 8FJX90	2
3	46	6FJX - 8FJX90	2

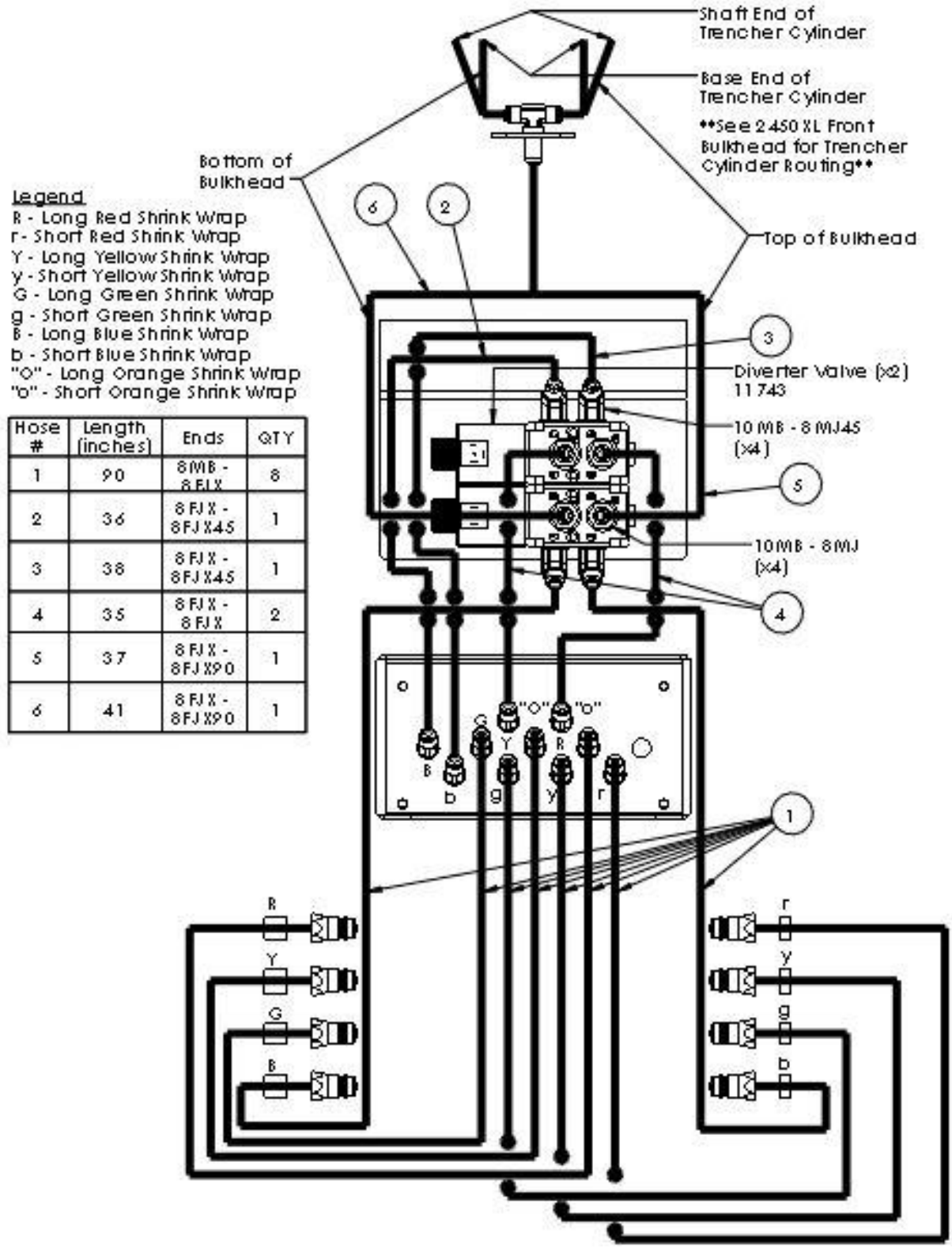


4-Remote Option (Non-XL)



Hose #	Length (inches)	Ends	QTY
1	90	8MB - 8FJX	8
2	33	8FJX - 8FJX 45	1
3	35	8FJX - 8FJX 45	1
4	32	8FJX - 8FJX	2

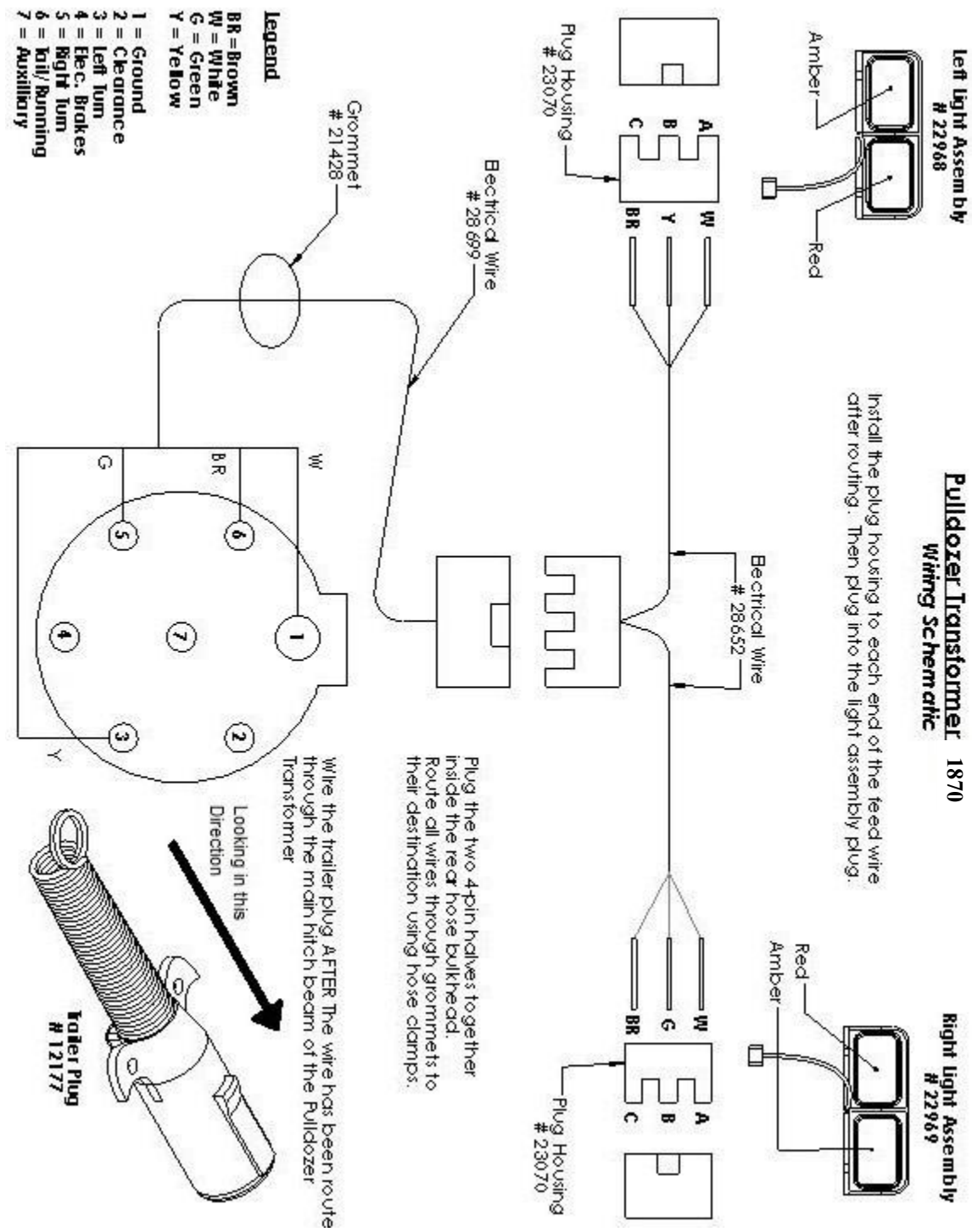
4-Remote Option (XL)



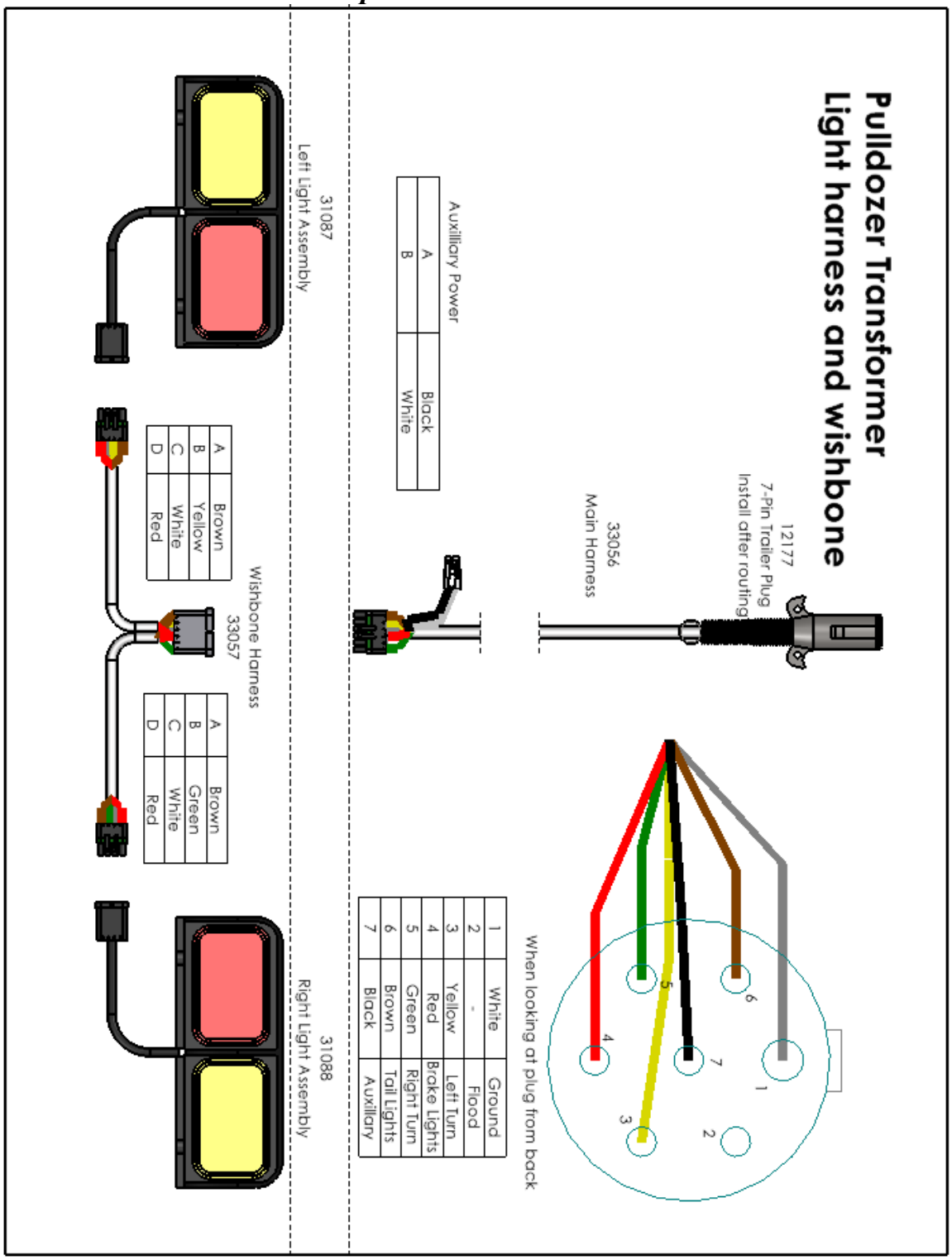
Hose #	Length (inches)	Ends	QTY
1	90	8MB - 8FJX	8
2	36	8FJX - 8FJX45	1
3	38	8FJX - 8FJX45	1
4	35	8FJX - 8FJX	2
5	37	8FJX - 8FJX90	1
6	41	8FJX - 8FJX90	1

Electrical

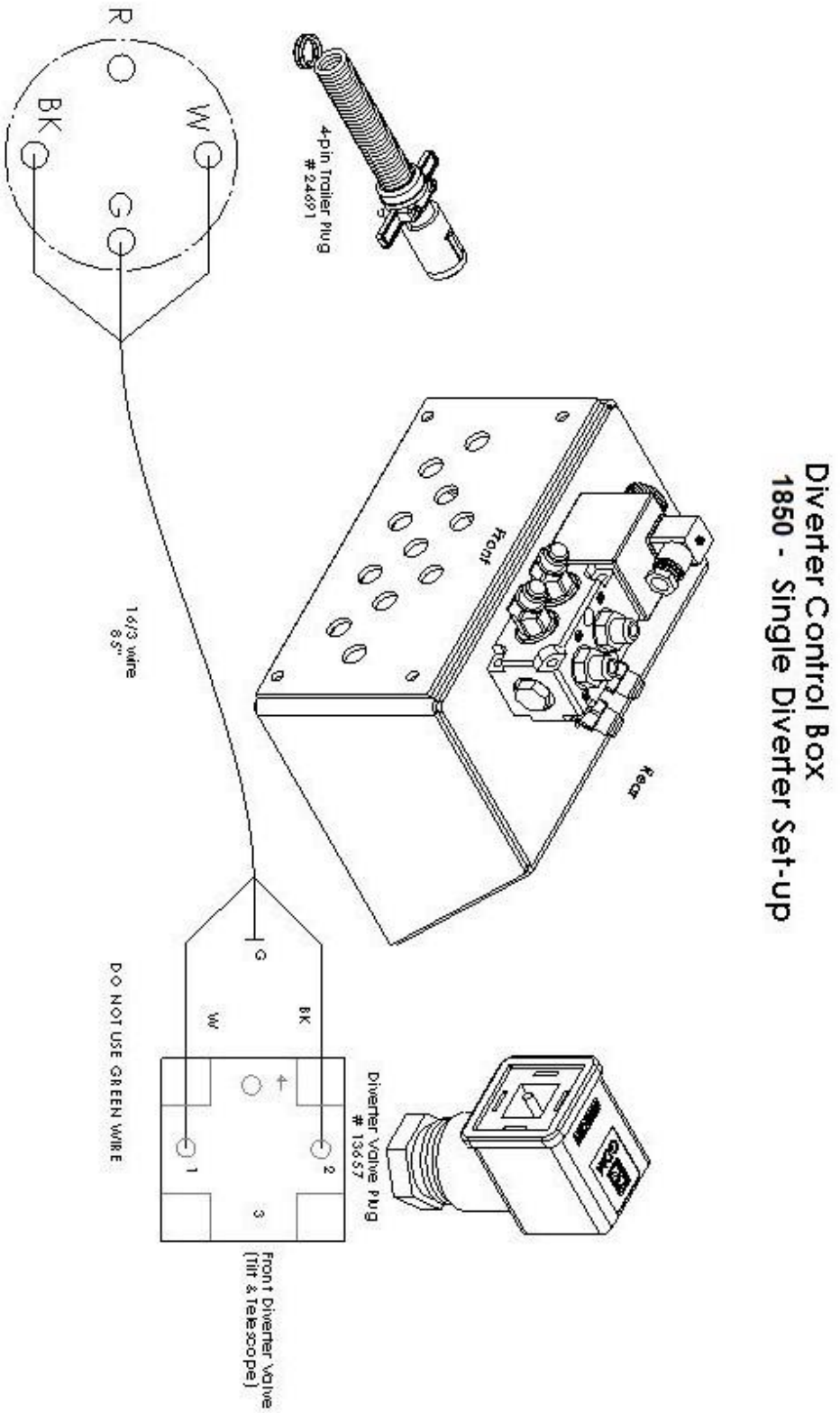
Serial Number PD1316 & Up



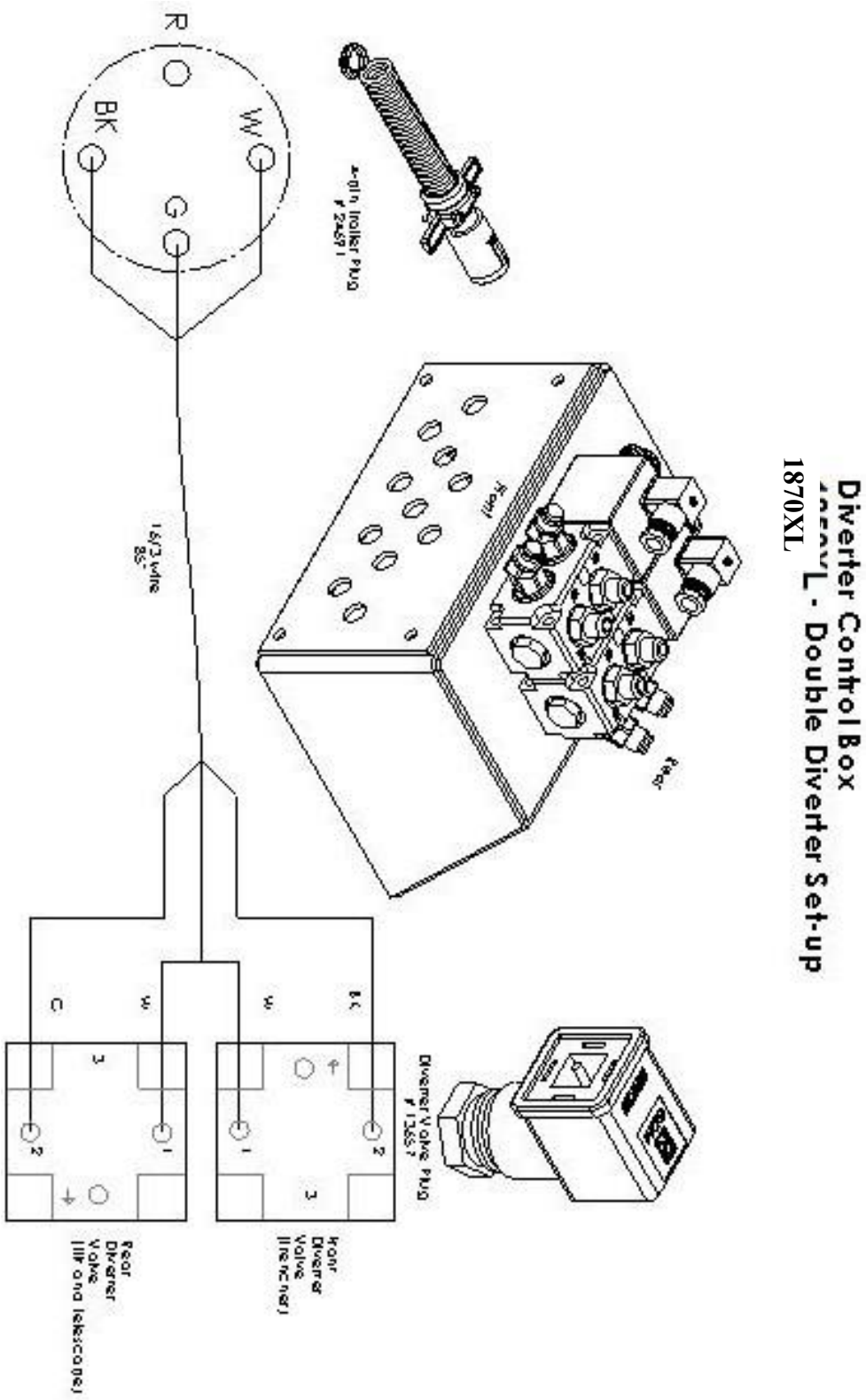
Serial Number PD1316 & Up



4-Remote Option (Non-XL)



4-Remote Option (XL)



Decals

DECAL LIST:

Pulldozer Transformer:

12228	Slow Moving Vehicle Sign	1
26649	Angle Indicator Decal	1
28383	Red Reflective Decal (2" x 9")	2
28384	Yellow Reflective Decal	8
26907	RH Wing Position Indicator Decal	1
26906	LH Wing Position Indicator Decal	1
26908	Depth Indicator Decal	1
30063	Transformer Safety Lock Decal	1
33149	Transformer Hydraulic Hose Decal	1

"4 Remote Kit"

33148	Transformer Hydraulic Hose Decal (4 remote kit only replaces 33149)

"Red Option"

20940	WHEAT FIST LEFT	"FIST ///"	RED
20941	WHEAT FIST RIGHT	"FIST ///"	RED

Model-Specific:

"1870"

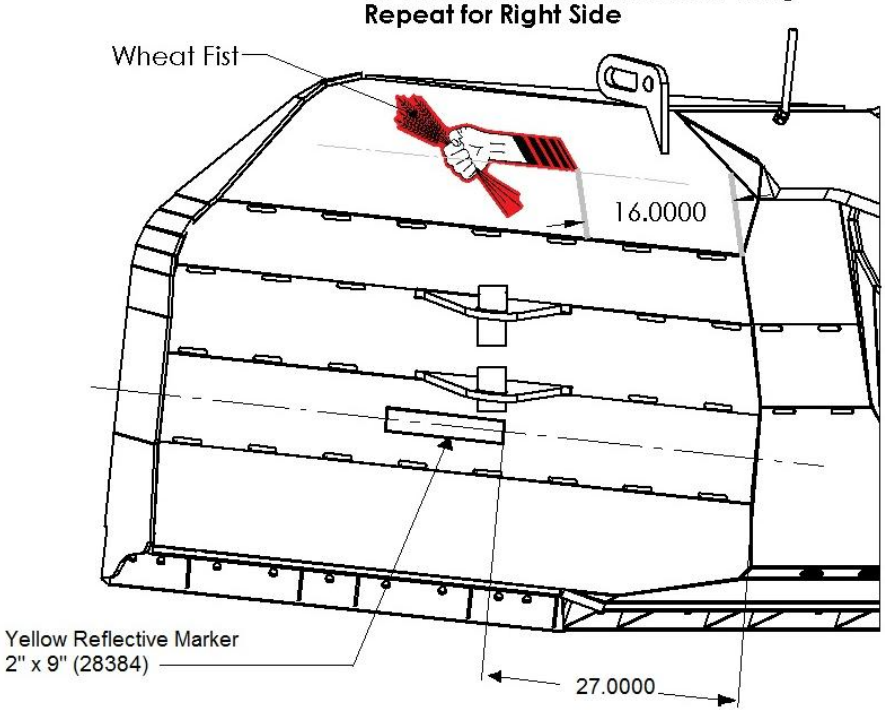
31954	REAR AXLE 1870	"//// PULLDOZER 1870 ////"	RED
31952	RIGHT HITCH, 1870	"FIST PULLDOZER 1870 \\\\"	RED
31953	LEFT HITCH, 1870	"//// PULLDOZER 1870 FIST"	RED

"1870XL"

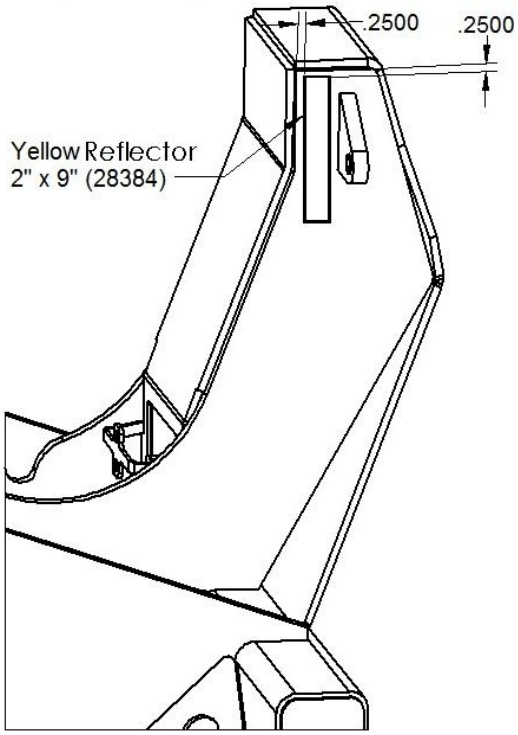
TBA	REAR AXLE 1870XL	"//// PULLDOZER 1870XL ////"	RED
TBA	RIGHT HITCH, 1870XL	"FIST PULLDOZER 1870XL \\\\"	RED
TBA	LEFT HITCH, 1870XL	"//// PULLDOZER 1870XL FIST"	RED

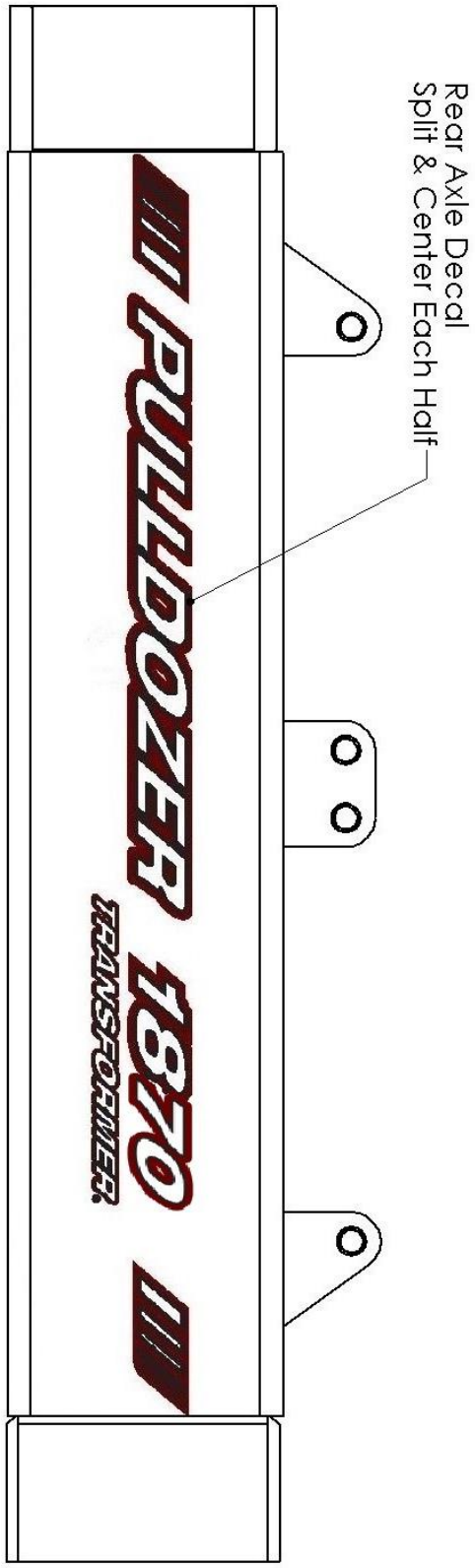
INSTALLATION

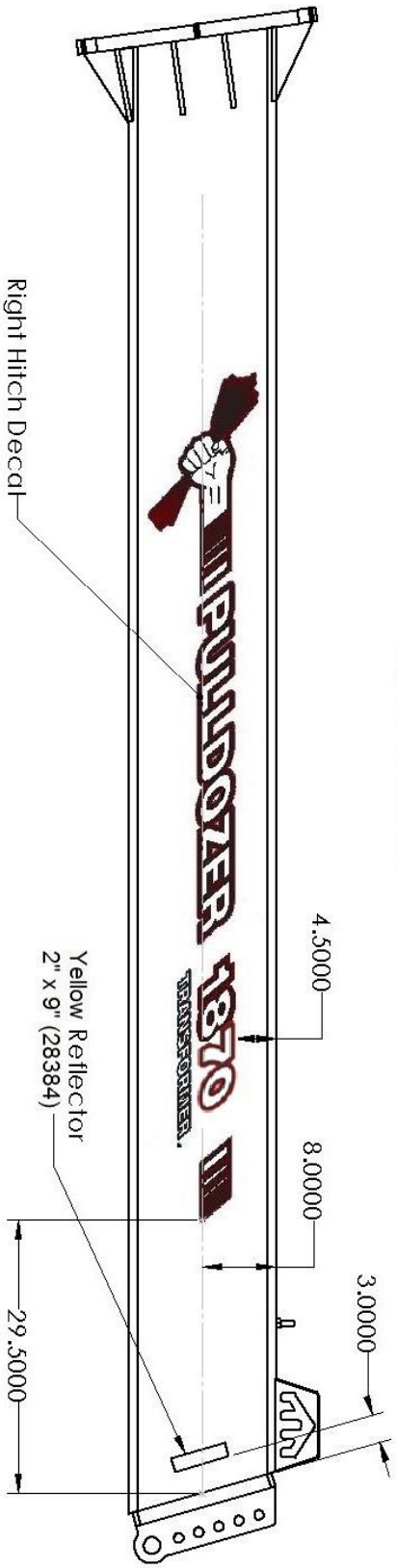
18 Foot Pulldozer Transformer Wing
Repeat for Right Side



Pulldozer Transformer Main Frame
Repeat for Right Sides

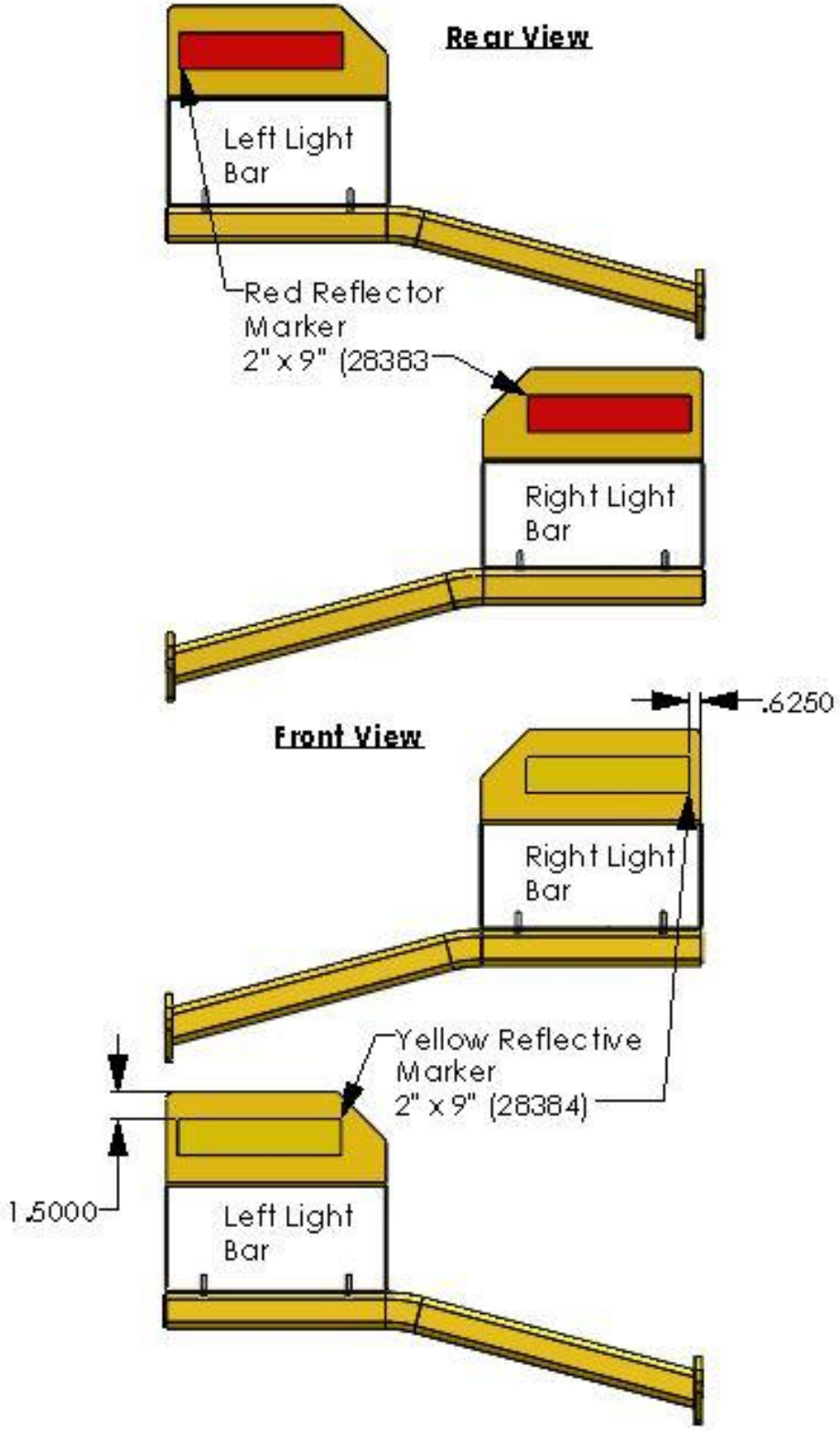




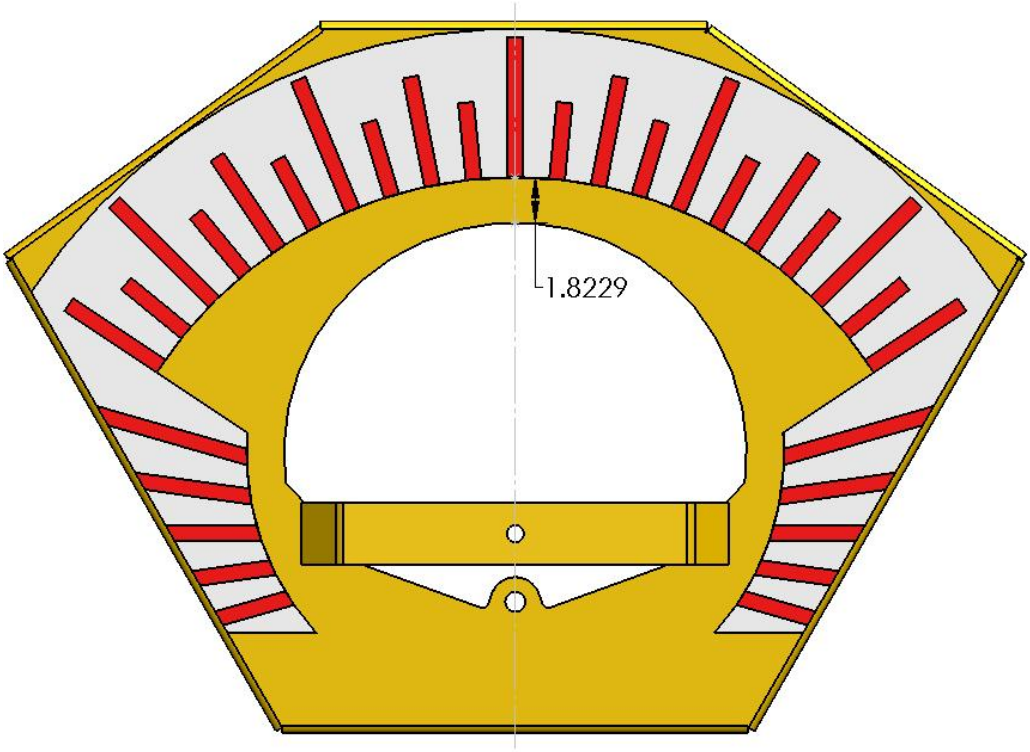


Pulldozer Transformer Hitch
Repeat for Left Side

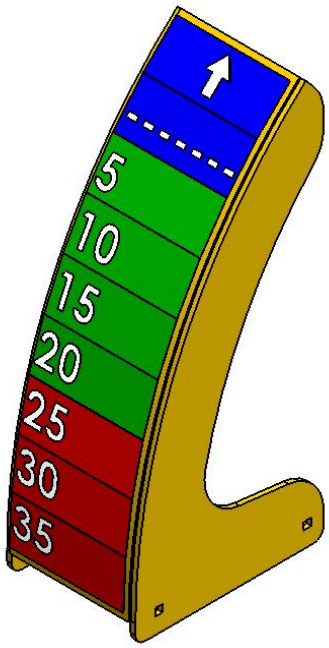
Pulldozer Transformer Light Bar



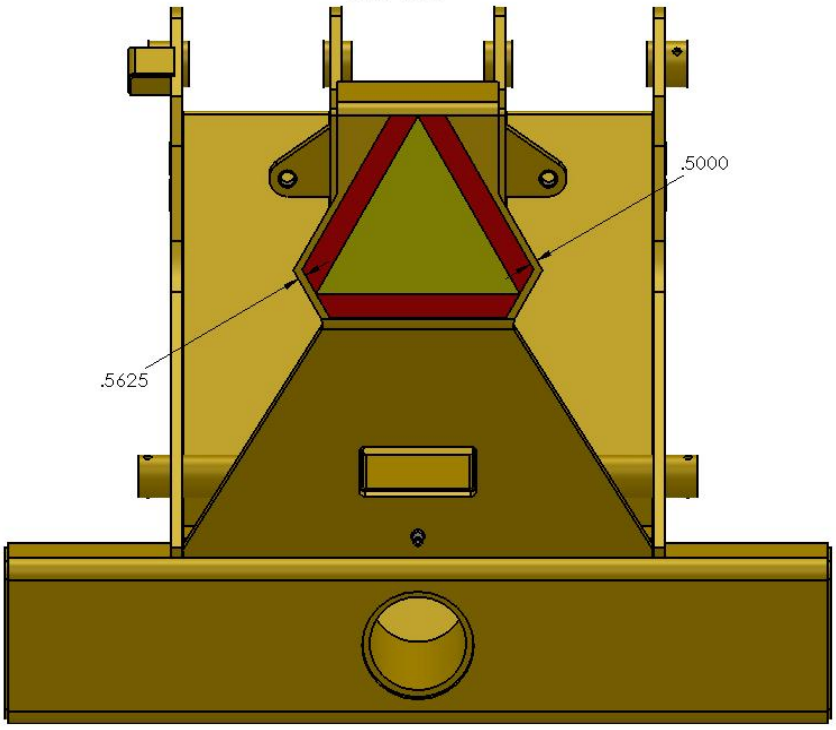
PULLDOZER TRANSFORMER
ANGLE INDICATOR



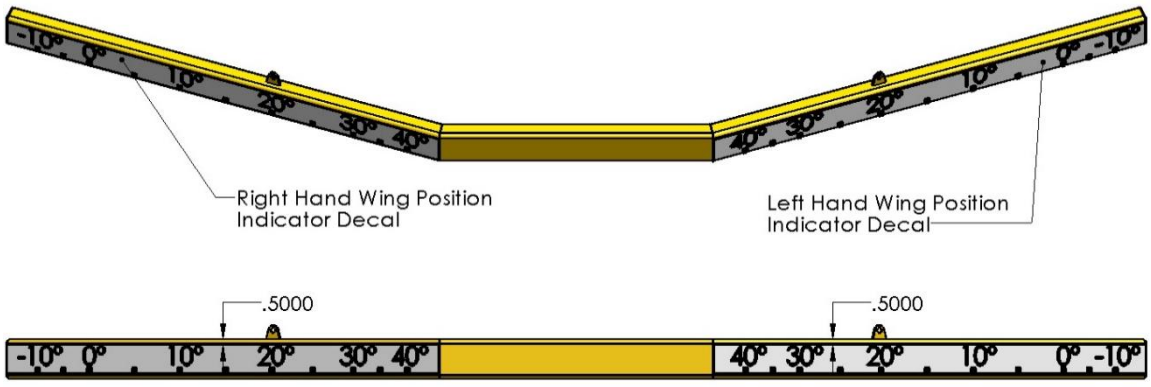
PULLDOZER TRANSFORMER
HEIGHT/TRENCHER DEPTH INDICATOR



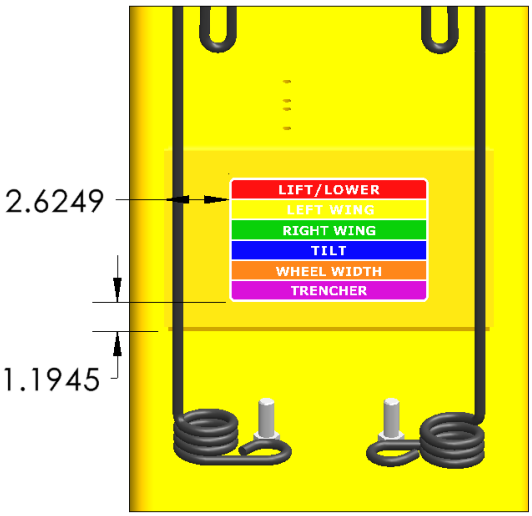
PULLDOZER TRANSFORMER
SMV SIGN



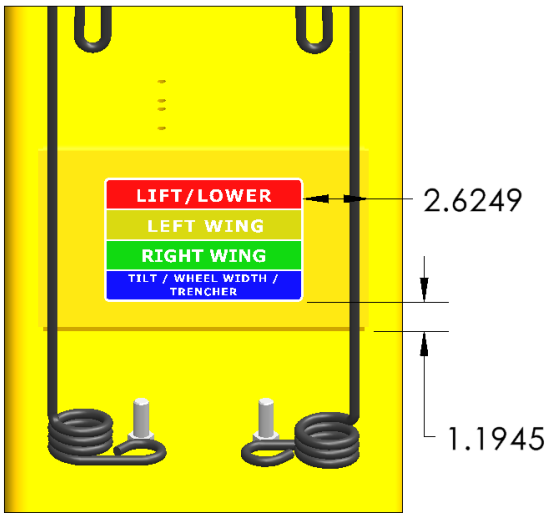
PULLDOZER TRANSFORMER
WING POSITION INDICATOR DECAL



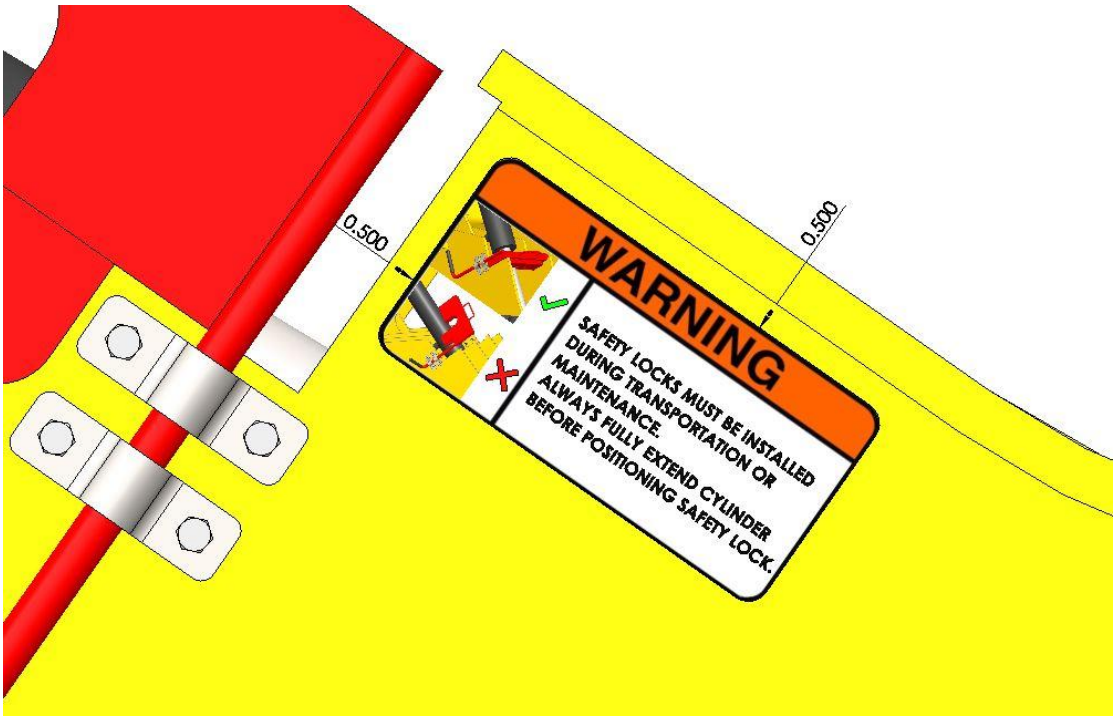
Pulldozer Transformer Hydraulic Hose Decal 5-6 Remotes (33149)



Pulldozer Transformer Hydraulic Hose Decal 4 Remotes (33148)



Pulldozer Transformer Lift Cylinder Safety Decal



Fastener Torque Charts

FASTENER TORQUE CHARTS





BOLT CLAMP LOADS

Suggested Assembly Torque Values



DIAMETER & THREADS PER INCH	USS/SAE GRADE 5					USS/SAE GRADE 8				
	TENSILE STRENGTH MIN. PSI	PROOF LOAD LB	CLAMP LOAD LB	TORQUE DRY FT LB	LUBRICATED FT LB	TENSILE STRENGTH MIN. PSI	PROOF LOAD LB	CLAMP LOAD LB	TORQUE DRY FT LB	LUBRICATED FT LB
1/4-20	120,000	2,700	2,020	8	6.3	150,000	3,800	2,850	12	9
28	120,000	3,100	2,320	10	7.2	150,000	4,350	3,250	14	10
5/16-18	120,000	4,450	3,340	17	13	150,000	6,300	4,700	24	18
24	120,000	4,900	3,700	19	14	150,000	6,950	5,200	27	20
3/8-16	120,000	6,600	4,950	30	23	150,000	9,300	6,980	45	35
24	120,000	7,450	5,600	35	25	150,000	10,500	7,900	50	35
7/16-14	120,000	9,050	6,780	50	35	150,000	12,800	9,550	70	50
20	120,000	10,100	7,570	55	40	150,000	14,200	10,650	80	60
1/2-13	120,000	12,100	9,050	75	55	150,000	17,000	12,750	110	80
20	120,000	13,600	10,200	85	65	150,000	19,200	14,400	120	90
9/16-12	120,000	15,500	11,600	110	80	150,000	21,800	16,350	150	110
18	120,000	17,300	12,950	120	90	150,000	24,400	18,250	170	130
5/8-11	120,000	19,200	14,400	150	110	150,000	27,100	20,350	210	160
18	120,000	21,800	16,350	170	130	150,000	30,700	23,000	240	180
3/4-10	120,000	28,400	21,300	260	200	150,000	40,100	30,100	380	280
16	120,000	31,700	23,780	300	220	150,000	44,800	33,500	420	310
7/8-9	120,000	39,300	29,450	430	320	150,000	55,400	41,600	600	450
14	120,000	43,300	32,450	470	350	150,000	61,100	45,800	670	500
1-8	120,000	51,500	38,600	640	480	150,000	72,700	54,500	910	680
14	120,000	57,700	43,300	720	540	150,000	81,500	61,100	1,020	760

When using anti-seize, reduce the lubed chart reading by 20% to properly torque. Always lubricate and use lubed torque values.

NOTES:

The above recommended assembly torques are offered as a guide only. Torque specifications, especially for critical joints, should be determined under actual assembly conditions due to the many variables involved which are difficult to predict and do affect the torque-tension relationship.

The above recommended clamp loads are based on 75% of the minimum specified proof loads for each grade and size.

Torques for Grades 5 and 8 were calculated based on the following relationship:

T = R D P

Where: T = Torque (ft lb)

D = Nominal Diameter (in)

P = Clamp Load (lb)

R = Tightening Coefficient

The value of R is assumed to be equal to .20 for dry, unplated conditions and equal to .15 for lubricated, including plated, conditions. Actual values of R can vary between .05 and .35 for commonly encountered conditions.

STRENGTH GRADE	APPLICABLE SIZES	PROOF LOAD STRESS (PSI)	YIELD STRENGTH MIN. STRESS (PSI)	TENSILE STRESS MIN. (PSI)
SAE Gr. 5	1/4 to 1" diameter	85,000	92,000	120,000
	over 1" diameter to 1-1/2 diameter	74,000	81,000	105,000
SAE Gr. 8	1/4 to 1" diameter	120,000	130,000	150,000

Pounds to Inch Pound Conversion

lb x 12 = inch lb

Example: 9 lb x 12 = 108 inch lb

FRACTIONAL MEASUREMENT		
BOLT DIAMETER	CAP SCREW WRENCH SIZE	NUT WRENCH SIZE
1/4	7/16	7/16
5/16	1/2	1/2
3/8	9/16	9/16
7/16	5/8	11/16
1/2	3/4	3/4
9/16	13/16	7/8
5/8	15/16	15/16
3/4	1-1/8	1-1/8
7/8	1-5/16	1-5/16
1"	1-1/2	1-1/2
1-1/8	1-11/16	1-11/16
1-1/4	1-7/8	1-7/8
1-3/8	2-1/16	2-1/16
1-1/2	2-1/4	2-1/4
1-3/4	2-5/8	2-5/8
2"	3"	3"
2-1/4	3-3/8	3-3/8
2-1/2	3-3/4	3-3/4
2-3/4	4-1/8	4-1/8
3"	4-1/2	4-1/2

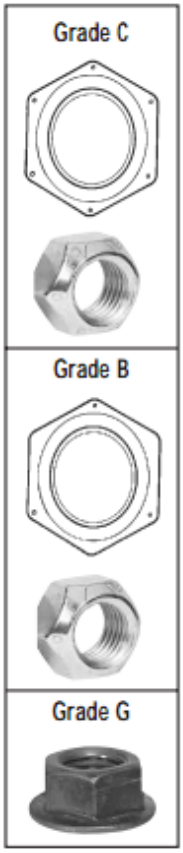
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FASTENER TORQUE CHARTS

GUIDE FOR PREVAILING-TORQUE LOCK NUT ASSEMBLY TORQUES (CAD AND WAX, GRADE B, C, AND GRADE G FLANGE NUTS) LOCK NUT STANDARDS FROM IFI-100 REQUIREMENTS

Torque-Tension Requirements

Size Threads Per Inch	GRADE B Clamp Load (lb)	GRADE B Assembly Torque Max.	GRADE B Assembly Torque Min.	GRADE C Clamp Load (lb)	GRADE C Assembly Torque Max.	GRADE C Assembly Torque Min.	GRADE G Clamp Load (lb)	GRADE G Assembly Torque Max.	GRADE G Assembly Torque Min.
1/4–20	2,000	85**	60**	2,850	125**	85**	2,850	150**	100**
1/4–28	2,300	90**	65**	3,250	125**	85**	3,250	160**	105**
5/16–18	3,350	150**	110**	4,700	190**	130**	4,700	240**	155**
5/16–24	3,700	160**	120**	5,200	200**	140**	5,200	230**	155**
3/8–16	4,950	20	14.5	6,950	28	20	6,950	32	21
3/8–24	5,600	22	16	7,900	29	21	7,900	33	22
7/16–14	6,800	32	23	9,600	43	31	9,600	51	34
7/16–20	7,550	34	24	10,700	43	31	10,700	60	40
1/2–13	9,050	50	37	12,800	62.5	45	12,800	85	55
1/2–20	10,200	52.5	37.5	14,440	70	50	14,440	89	59
9/16–12	11,600	70	50	16,400	95	70	16,400	120	80
9/16–18	13,000	77.5	57.5	18,300	95	70	18,300	132	88
5/8–11	14,500	95	70	20,300	122.5	90	20,300	143	95
5/8–18	16,300	97.5	72.5	23,000	125	90	23,000	175	115
3/4–10	21,300	165	125	30,100	210	155	30,100	240	160
3/4–16	23,800	165	120	33,600	210	155	33,600	270	170
7/8–9	29,500	250	185	41,600	312.5	225	41,600	360	260
7/8–14	32,400	270	200	45,800	312.5	225	45,800	402	247
1–8	38,700	375	275	54,600	462.5	360	54,600	530	410
1–12	42,300	395	290	59,750	490	360	59,750	—	—
1–14	43,000	400	300	61,100	500	362.5	61,100	645	398
1-1/8–7	42,100	404	294	69,000	585	454	69,000	—	—
1-1/8–12	47,500	437	327	76,800	622	453	76,800	—	—
1-1/4–7	53,500	513	375	87,000	736	573	87,000	—	—
1-1/4–12	59,700	549	412	96,600	782	570	96,600	—	—
1-3/8–6	63,800	612	445	104,000	880	685	104,000	—	—
1-3/8–12	72,900	670	503	118,000	955	696	118,000	—	—
1-1/2–6	77,600	745	545	127,000	1,075	837	127,000	—	—
1-1/2–12	87,700	807	605	142,000	1,150	837	142,000	—	—

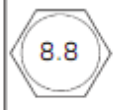


- Clamp loads for the Grade B lock nuts equal 75% of the bolt proof loads specified for SAE J-429 Grade 5, and ASTM A-449 bolts.
  Clamp loads for Grade C lock nuts equal 75% of the bolt proof loads specified for SAE J-429 Grade 8, and ASTM A-354 Grade BD bolts.
- IFI-100 does not govern lock nuts above 1". The values shown in the chart are to be used as a mid-range guideline.

** Torque values for 1/4" and 5/16" sizes are in inch lb. All other torque values are in foot lb.

METRIC TORQUE CHART FOR HEX HEAD CAP SCREWS

Size	Class	Newton Meters Zinc Plated	Newton Meters Unplated	Foot Pounds (approx.) Zinc Plated	Foot Pounds (approx.) Unplated	Class
M4 x .70 Pitch	8.8	3.1	2.2	2.30	1.65	
M5 x .80 Pitch	8.8	6.1	5.5	4.58	4.13	
M6 x 1.00 Pitch	8.8	10.4	9.5	7.80	7.13	
M7 x 1.00 Pitch	8.8	17.0	15.5	12.75	11.63	
M8 x 1.25 Pitch	8.8	25.0	23.0	18.75	17.25	
M8 x 1.00 Pitch	8.8	27.0	24.5	20.25	18.38	
M10 x 1.50 Pitch	8.8	51.0	46.0	38.25	34.50	
M10 x 1.00 Pitch	8.8	57.0	52.0	42.75	39.00	
M10 x 1.25 Pitch	8.8	54.0	49.0	40.50	36.75	
M12 x 1.75 Pitch	8.8	87.0	79.0	65.25	59.25	
M12 x 1.25 Pitch	8.8	96.0	87.0	72.00	65.25	
M12 x 1.50 Pitch	8.8	92.0	83.0	69.00	62.25	
M14 x 2.00 Pitch	8.8	140.0	125.0	105.00	93.75	
M14 x 1.50 Pitch	8.8	150.0	135.0	112.50	101.25	
M16 x 2.00 Pitch	8.8	215.0	195.0	161.25	146.25	
M18 x 2.50 Pitch	8.8	300.0	280.0	225.00	210.00	
M20 x 2.50 Pitch	8.8	430.0	390.0	322.50	292.50	
M22 x 2.50 Pitch	8.8	580.0	530.0	435.00	397.50	
M24 x 3.00 Pitch	8.8	740.0	670.0	555.00	502.50	
M6 x 1.00 Pitch	10.9	15.5	14.0	11.63	10.50	
M8 x 1.25 Pitch	10.9	37.0	34.0	27.75	25.50	
M10 x 1.50 Pitch	10.9	75.0	68.0	56.25	51.00	
M12 x 1.75 Pitch	10.9	160.0	117.0	97.50	87.75	
M14 x 2.00 Pitch	10.9	205.0	185.0	153.75	138.75	
M16 x 2.00 Pitch	10.9	310.0	280.0	232.50	210.00	





TORQUE CHART FOR STAINLESS STEEL CAP SCREWS

Size	316 inch-lb	18/8 inch-lb
6-32	10.1	9.6
6-40	12.7	12.1
8-32	20.7	19.8
8-36	23.0	22.0
10-24	23.8	22.8
10-32	33.1	31.7
1/4-20	78.8	75.2
1/4-28	99.0	94.0
5/16-18	138.0	132.0
5/16-24	147.0	142.0
3/8-16	247.0	236.0
3/8-24	271.0	259.0
7/16-14	393.0	376.0
7/16-20	418.0	400.0
1/2-13	542.0	517.0
1/2-20	565.0	541.0
9/16-12	713.0	682.0
9/16-18	787.0	752.0
5/8-11	1,160.0	1,110.0
5/8-18	1,301.0	1,244.0
3/4-10	1,582.0	1,530.0
3/4-16	1,558.0	1,490.0
7/8-9	2,430.0	2,328.0
7/8-14	2,420.0	2,318.0
1"-8	3,595.0	3,440.0
1"-14	3,250.0	3,110.0

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NOTES