



## Pull Type Grader



## Parts & Service Manual



# ICON Farm

## *Product Warranty*

ICON Industries Inc. 1600 W. 8<sup>th</sup> St. Beloit KS 67420  
(referred to as ICON in this document)

ICON *shall Warrant workmanship and materials on the* **ICON Farm Products** *for a period of 270 calendar days from the date of original purchase, lease, or rental, from the original Dealer, and in accordance with the following terms and conditions.*

*Should any part or component fail within the Warranty period, and under normal use conditions, ICON shall supply a new part or component for replacement through the original Dealer. Cost of normal ground freight, for that part or component to the Dealer, shall be paid by ICON. Repair and replacement labor cost, from the original Dealer, shall be paid by ICON at a rate negotiated by ICON.*

*No further expense shall be paid by ICON, including but not limited to, loss of time or income.*

*ICON shall not provide Warranty on any part or component that has failed due to abuse, misuse, alteration, improper maintenance, or normal wear. Failure occurring while being pulled by a tractor in excess of engine horsepower, as described in the owners manual and/or posted on the machine, is considered abuse and misuse and shall not receive Warranty. Warranty applies only to normal, intermittent agricultural use, and not commercial or industrial use.*

*In regard to some components manufactured by other companies and sold by ICON, including but not limited to tires, said Warranty shall be provided solely by that manufacturing company.*

*This Warranty applies to products sold in the United States and Canada, and is made expressly in place of all other warranties.*

# Introduction

This manual is compiled as a guide for owners and operators of the Pull Type Grader. Read it carefully so as to be able to follow the suggestions made. Please take time to understand the proper maintenance schedule and SAFE operation of your equipment.

In the event that a new and inexperienced operator is placed in charge of running the equipment, they should read and understand, that part of the manual for proper maintenance and SAFE operation, and to be trained in regard by an experienced operator.

Be certain the enclosed Warranty Registration Card is completed and mailed to ICON, (envelope enclosed), within 10 days of purchase or lease, in order to be on file at ICON and eligible for Warranty.

Take time to read and understand the Warranty for this product. That Warranty is printed in the Owner's Manual, and a separate copy enclosed in the packet.

ICON/Landoll reserves the right to make changes and/or add improvements to it's products at any time without obligation to previously manufactured equipment.

ICON/Landoll recommends a maximum horsepower of the pulling tractor for your grader to be 300 hp. Additional power may shorten the life of your grader and will alter the Warranty.

Please take time to complete the following information for your personal reference, should you need to contact your Dealer with questions or parts needs.

MODEL \_\_\_\_\_

SERIAL # \_\_\_\_\_

DATE OF PURCHASE \_\_\_\_\_

DEALER NAME \_\_\_\_\_

We at ICON/Landoll wish to thank you for purchasing our product. We have spent considerable time and effort to research, design, test and develop this machine and are confident it will serve you in the use for which it was designed.

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### **Product Warranty**

### **General Specs.**

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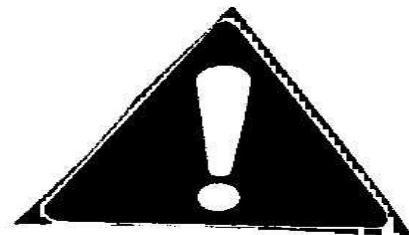


## Section 01

### Safety

The safety-alert symbol shown here, is used in potentially dangerous areas. when you see this symbol on the machine or in this manual, be aware that precautions should be taken to avoid personal injury, to yourself or others.

Follow all safe operating procedures.



### Signal Words

Signal words are used along with the safety alert symbols to keep people aware that a serious injury risk is present.

**DANGER** marks the most serious.



**WARNING** and **CAUTION** signs are normally used for general safety precautions.

Take time to understand and identify the signal words.

### Pinching or Crushing Danger

Moving parts that are operated by hydraulic pressure can cause serious injury or death.

Use extreme caution when working around any moving part

Do not allow any person to be on or near the machine while it is in motion.



## **Section 01**

### **Safety**

#### **Moving Parts**

**Be aware of all moving parts of the machine.**

**Do not allow anyone to be near, or on the machine while operating any moving part.**

#### **Danger**

Read and understand the operator's manual before using the machine.

Allow no person to operate the machine before reading the manual and being instructed on proper operation.

#### **Caution**

**This machine is designed for off road use only.**

## Section 01

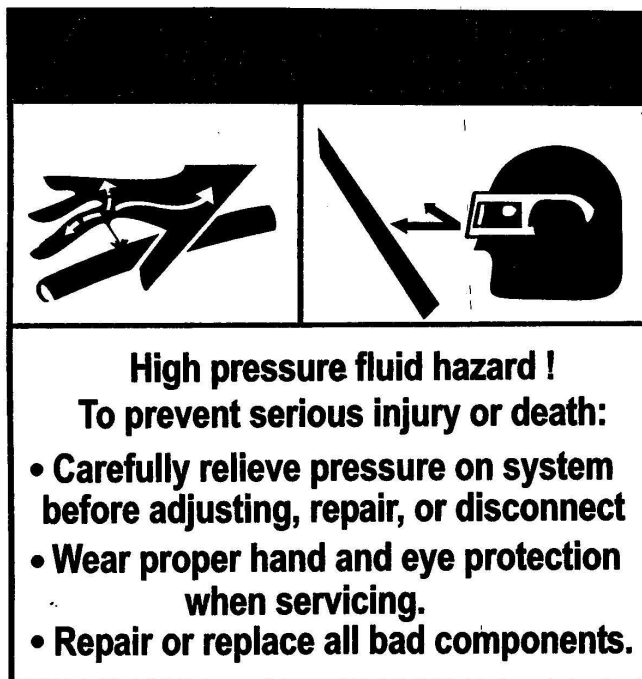
### Safety

High pressure fluid can cause serious damage to hands and eyes.

Carefully relieve pressure before attempting any adjustments.

Tighten all fittings before applying pressure.

If fluid is sprayed into eyes or injected into skin  
**See a Doctor Immediately !**



### Horsepower Limits

Each machine is rated for it's horsepower limits.

If the posted limits are exceeded, damage to the machine may occur, and the Warranty will void.

**NOTE:** 300 maximum engine h.p. is only applicable if the grader is equipped with the 2nd cylinder.

***This machine is designed to be pulled by a rubber track or tire power unit with a maximum engine h.p. Of.....***

**300**

***Proper operation, horsepower, and maintenance, will combine to create maximum productivity!***



## **Section 01**

### **Safety**

Lubrication information is placed near each zerk

### **GREASE DAILY**

Proper maintenance should be followed to assure the working life of the machine.

### **Contact the proper authorities before you dig.**

When digging in a populated area, it is recommended that a call be made to area utilities to establish the local of any buried pipes, lines, or structures. When digging in open areas, research and know the local of any underground structures and objects.

Striking the blades or bits against buried objects can cause damage to the machine, and is considered as abuse to the scraper.

### **Replace all missing or damaged safety signs/decals**

**A list of the signs/decals and their placement, is located in the back of this manual.**

### **CAUTION**

**Be certain to remove the cylinder stops before using the grader. The stops are to be pinned in the holder, located on the rear frame.**

**Failure to remove the stops will result in damage to the stop or cylinder.**

## Section 02

### Hookup and Operation



The utilizes three hydraulic valves on the tractor, allowing it to function in three different directions. The Grader has the ability to raise to a clearance from bit to ground of 30 inches while lowering to a negative cut. It can tilt from side to side approximately 15 degrees to accomplish slope cuts and ditching. The third action is the swing of the blade approximately 45 degrees, left or right. All three of these functions can be done on the go, or while the grader is stopped.

Color coded tie straps and markers are attached at the tip end of the hoses to identify the three pairs of hydraulic lines to the grader. Black tie is the raise and lower of the blade. White tie is the swing of the blade. Yellow is the tilt of the blade. The following decal is located on the tongue of the machine.

Hookup of the hydraulic hoses to the remote can be done in any way to suit individual needs. The following method is suggested: Raise/Lower of the blade to #1 valve. Swing of the blade to #2, and tilt to #3.

Hook up so push of the valve is lower and pull of the valve is to raise the blade.

**Hydraulic Line Color Code: Black tie, raise/lower—Yellow tie, tilt - White tie, blade angle—One tie, hydraulics out—Two ties—Hydraulics in**

**WARNING! Before angling the blade, make sure the grader is taken out of transport position. And be certain that the cylinder stops are removed before use.**

Be patient for the first few hours of learning to operate the grader. Time and experience will produce expert results. Any type of blade machine has the tendency to create a “washboard” effect if grading is done with too much speed. Slow down and do the job right. The second tendency of any blade machine is to side draft if the blade is cutting deep and enough power is applied. Practice centering the cut on the blade to balance the draft. Operating the **grader** at a higher speed may not get the job done quicker, and may provide less than quality results. It is also recommended that the weight box be filled prior to use. This will also aid in preventing side draft, and bounce.

The grader is designed to be pulled with a maximum of 300hp . Additional horsepower will shorten the life of the grader and will alter the Warranty. Responsible operation and proper maintenance will provide many hours of expert results and a durable machine.

***When digging in a populated area, it is recommended that a call be made to area utilities to establish the local of any buried pipes, lines or structures. When digging in open areas, research and know the local of any underground structures and objects.***

***Striking the blade and bit against surface or buried objects can cause damage to the grader and is considered as abuse to the machine.***

**Operator abuse will not be a warranty item.**

### Caution

**This machine is not intended for highway use, it should be used off road only.**

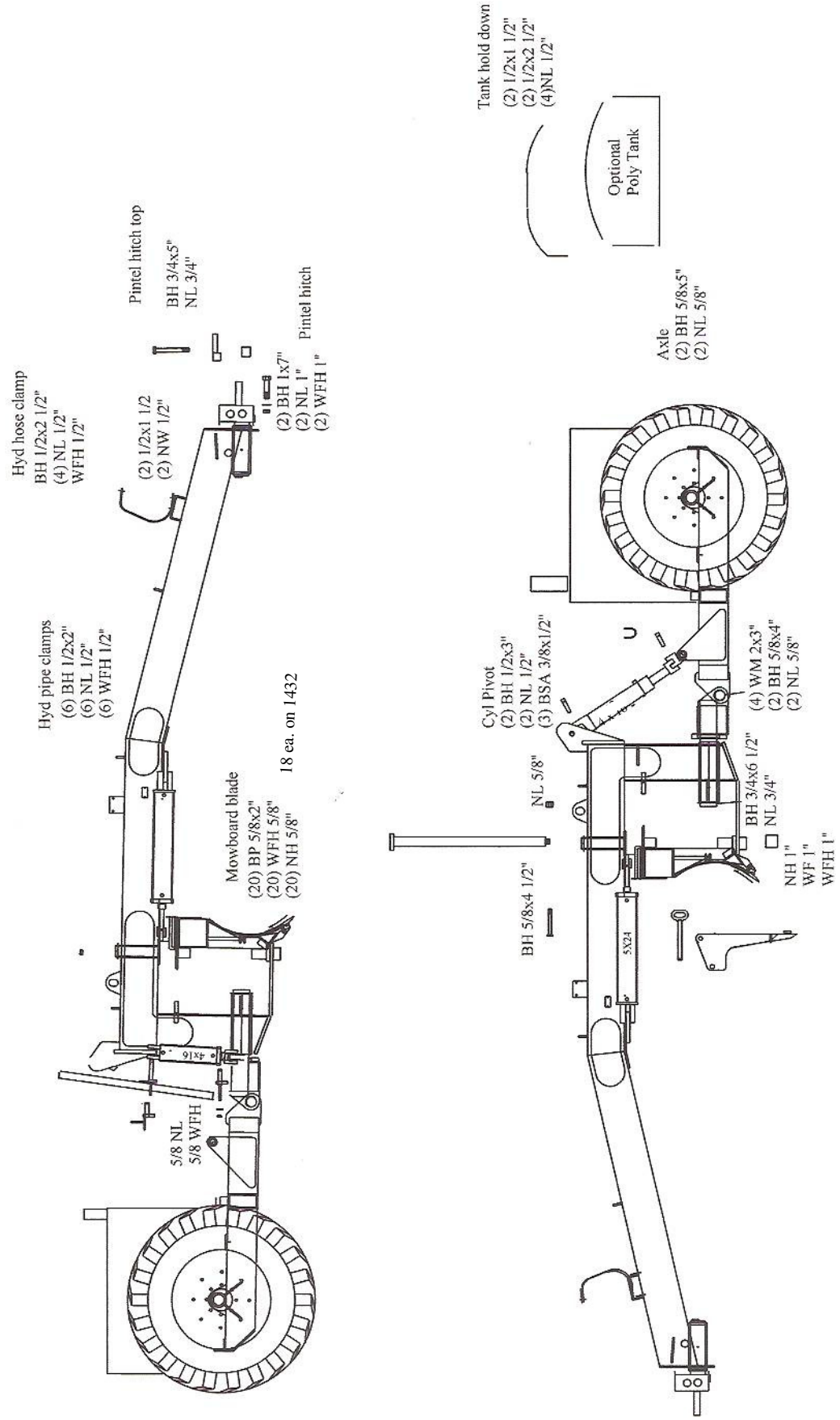
**If public roadway travel is necessary, be certain of regulations concerning width, lighting, and safety chain requirements.**

# Bolt Listing For Pull Type Grader

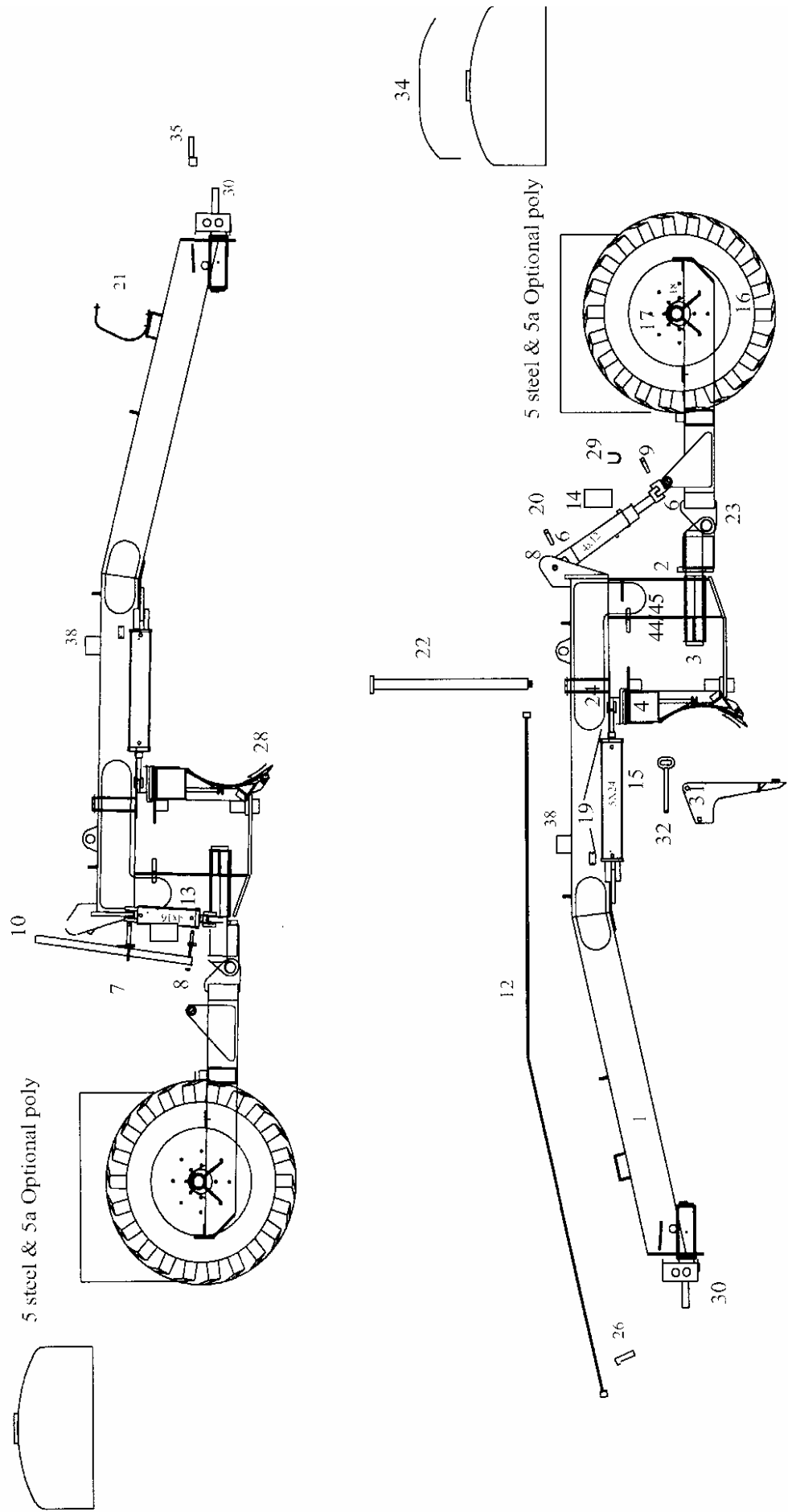
Component	Description	Qty
NL	Nut, Nyloc 5/8"	1
WFH	Washer, Flat, Hard 5/8"	1
BH	Bolt, Hex 1/2 x 1 1/2" gr. 5	2
BH	Bolt, Hex 1/2 x 2 1/2" gr. 5	2
NL	Nut, Nyloc 1/2" gr. 2	4
BH	Bolt, Hex 3/4 x 6 1/2" gr. 8	1
NL	Nut, Nyloc 3/4" gr. 5	1
BH	Bolt, Hex 5/8 x 4 1/2" gr.8	1
NL	Nut, Hex 1" gr. 8	1
WFH	Washer, Flat, Hard 1"	1
WF	Washer, Flat 1"ID 2 1/2" OD	1
WM	Washer, Machine 2 x 3 OD	4
BH	Bolt, Hex 5/8 x 4" gr. 8	2
NL	Nut, Nyloc 5/8" gr. 5	2
BH	Bolt, Hex 1 x 7" gr. 8	2
NL	Nut, Nyloc 1" gr. 5	2
WFH	Washer, Flat, Hard 1"	2
BH	Bolt, Hex 3/4 x 5" gr. 8	1
NL	Nut, Nyloc 3/4" gr. 5	1
BH	Bolt, Hex 1/2 x 2 1/2" gr. 5	1
NL	Nut, Nyloc 1/2" gr. 2	4
WFH	Washer, Flat, Hard 1/2"	1
BH	Bolt, Hex 1/2 x 1 1/2" gr. 5	2
NW	Nut, Whiz 1/2"	2
BH	Bolt, Hex 5/8 x 5" gr. 8	2
NL	Nut, Nyloc 5/8" gr. 5	2
4000067	Zerk, Straight 1/8"	8
4000150	Bushing, 125100100	6
4000096	Bushing, 150125100	4
PR	Pin, Roll 5/16 x 2"	6
BP	Pin, Bridge 1/8"	1
CLP	Pin, Clevis 3/8 x 4"	1
BP	Bolt, Plow 5/8 x 2" gr. 8	20 (18 - 1432)
WFH	Washer, Flat, Hard 5/8"	20 (18 - 1432)
NH	Nut, Hex 5/8" gr. 8	20 (18 - 1432)
BH	Bolt, Hex 9/16 x 6" gr.5	3
NLC	Nut, Center LOC 9/16"	3
BH	Bolt, Hex 1/2 x 3" gr. 5	2
NL	Nut, Nyloc 1/2" gr. 2	2
BSA	Screw-Allen Head Set 3/8 x 1/2"	3
BH	Bolt, Hex 1/2 x 2" gr. 5	6
NL	Nut, Nyloc 1/2" gr. 2	6
WFH	Washer, Flat, Hard 1/2"	6
4001442	Pin, Safety 3/4" x 3"	1
BP211	Spring Clip	1
WFH	Washer, Flat, Hard 3/4"	1



# Bolt Location On Pull Type Grader



# ICON 1632 Pull Type Grader



## Parts Listing For Pull Type Grader

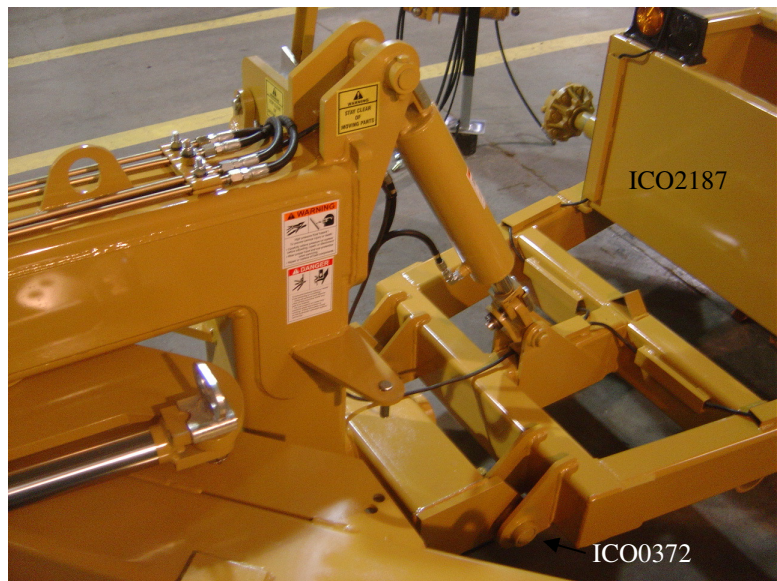
Part #	Item #	Description	Qty
ICO2183	1	Grader Tongue	1
ICO1051	2	1632 Pivot Frame	1
ICO1069	3	Center Pivot Retainer	1
ICO2182	4	1632 Mowboard (16')	1
ICO2205	4a	1432 Mowboard (14')	1
ICO2187	5	Weight Box	1
4001498	5a	Poly Tank (early model option)	1
ICO1075	6	1632 Cylinder Pivot	2
ICO1076	7	Cylinder Pin w/depth gauge mount (top)	1
ICO1077	8	Cylinder Pin w/depth gauge mount (bottom)	1
ICO1078	9	Cylinder Pivot Pin	2
ICO1079	10	1632 Depth Gauge	1
ICO1082	11	1632 Depth Gauge Spacer	1
5000893	12	Hyd. Tube 8FJ-124" -8FJ.049W	4
4000857	13	Hyd. Cyl (4x12 - 22 1/4") (tilt)	1
4000858	14	Hyd. Cyl (4x16 - 26 1/4") (lift)	1
4000859	15	Hyd. Cyl (5x24 - 36 1/4") (angle)	2
4001244	16	Tire, 19x16.1	2
4001245	17	Rim, 16x16.1	2
ICO0361	18	Hub & Axle Assembly	2
ICO0477	19	Cylinder Pin 1"	2
GRA1599	20	Cylinder Pin 1 1/4"	2
ICO0004	21	Hose Stand	1
GRA2044	22	Center Blade Pin	1
ICO0372	23	Rear Axle Support Pin	2
ICO1097	24	Mowboard Cylinder Pivot	1
ICO1074	25	Mowboard Bushing 1.5OD19/32ID	3
ICO0223	26	Side Pipe Clamp	6
ICO0226	27	Rear Side Pipe Clamp	2
4000127	28	Cutting Edge 8' (1632)	2
4000126	28a	Cutting Edge 7' (1432)	2
ICO1080	29	Cylinder Stop 16"	1
4001501	30	Cast Hitch Pintle	1
ICO2153	31	1632 Box End (right)	1
ICO2154	""	Box End (left)	1
ICO1096	32	Box End Pin	2
4000419	33	Manual Holder	1
ICO1161	34	Plastic Tank Strap	2
4001503	35	Bolt on Top Strap (pintle hitch)	1
ICO2186	36	Rear Axle Support	1
4000001	37	Jack 5000#	1
5000855	38	Hyd. Cushion Valve DRV1HHEE	1
2000602	39	Kit, Decal 1632	1
2000616	40	Kit, Bolt	1
5001147	41	Kit, Hyd. Hose	1
5001148	42	Kit, Hyd. Fittings	1
2000620	43	Kit, Lights	1
4001442	44	Safety Pin 3/4 x 3"	1
BP211	45	Spring Clip	1
4000150	46	Bushing 125100100	6
4000096	47	Bushing 150125100	4
ICO2189	48	Transport Strap	1



## Components of the pull type grader

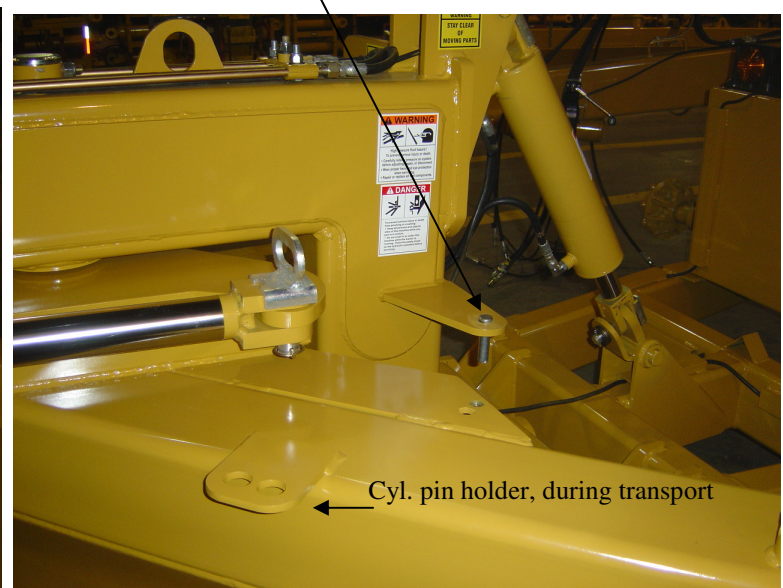


ICO1069 Center Pivot Retainer  
3/4 x 6 1/2" Hex Bolt - Nyloc Nut



ICO1075 Cylinder Pivot  
Located at each end of lift cylinder.

Pin for use while in transport position. 4001442



Cyl. pin holder, during transport







The Medium Duty Cast Pintle Hitch (#4001501) is standard on the grader. It is rated at 68,800 lbs. of pull.

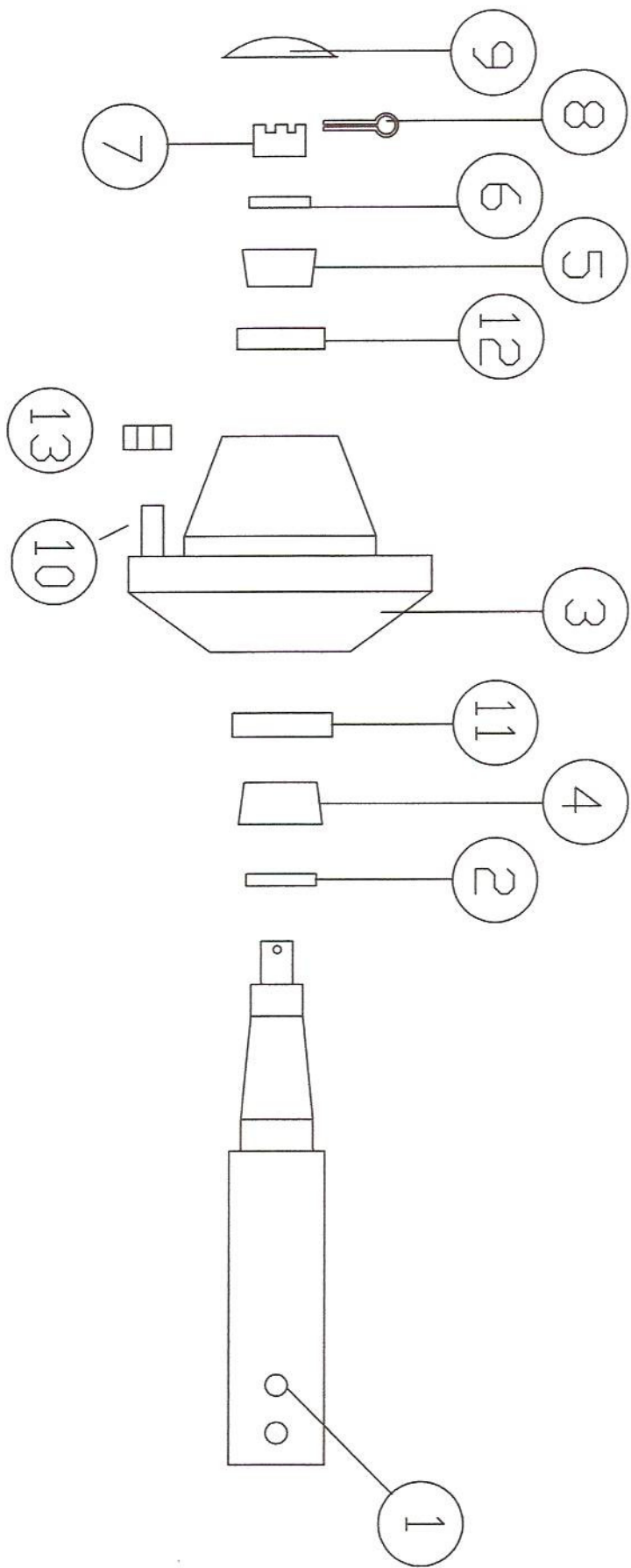


Shown is the bolt on top strap #4001503 This feature allows the hook up to a drawbar that does not accept the pintle style hitch.



**Axle Assembly  
Complete ICO0361**

1	ICO0360	Model 1632 Axle
2	2001062	Hub Seal
3	4001057	Hub Assembly
4	4001061	Inner Bearing
5	4000582	Outer Bearing
6	WF	Washer, Flat 1" ID-2 1/2"OD
7	NS	Nut, Slotted 1" Fine
8	PC	Pin, Cotter 5/32 x 2"
9	4000585	Dust Cap
10	4001060	Wheel Stud Bolts 5/8 - 18
11	4001059	Inner Race
12	4000580	Outer Race
13	4001517	Wheel Nuts







Hub & Axle Assembly  
ICO0361



Standard Light Package 2000620

ICO2187

Rear Wiring Harness LT0056



## Box Ends





## Safety Stop

Shown is the safety stop installed for transport, or service.

**WARNING:** Be certain to install the safety stop before any service or repair is attempted.

**CAUTION:** Remove the safety stop before attempting to lower the machine, or damage to the cylinder, safety stop, or both could occur.

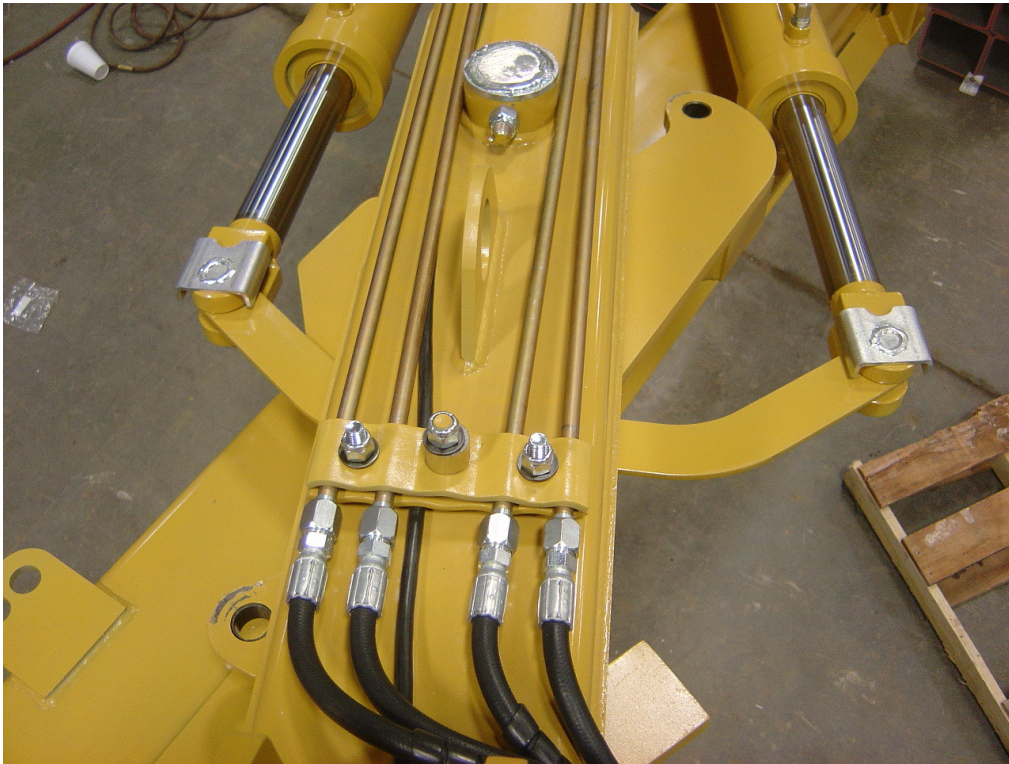




### Safety Lock Bar

Shown is the safety lock bar, pinned in transport position. This bar is factory installed and used in shipping/transporting the machine.

**CAUTION:** Be certain to remove the safety lock bar and pin the cylinders in the appropriate location before use, or damage to the cylinder/safety bar could occur.



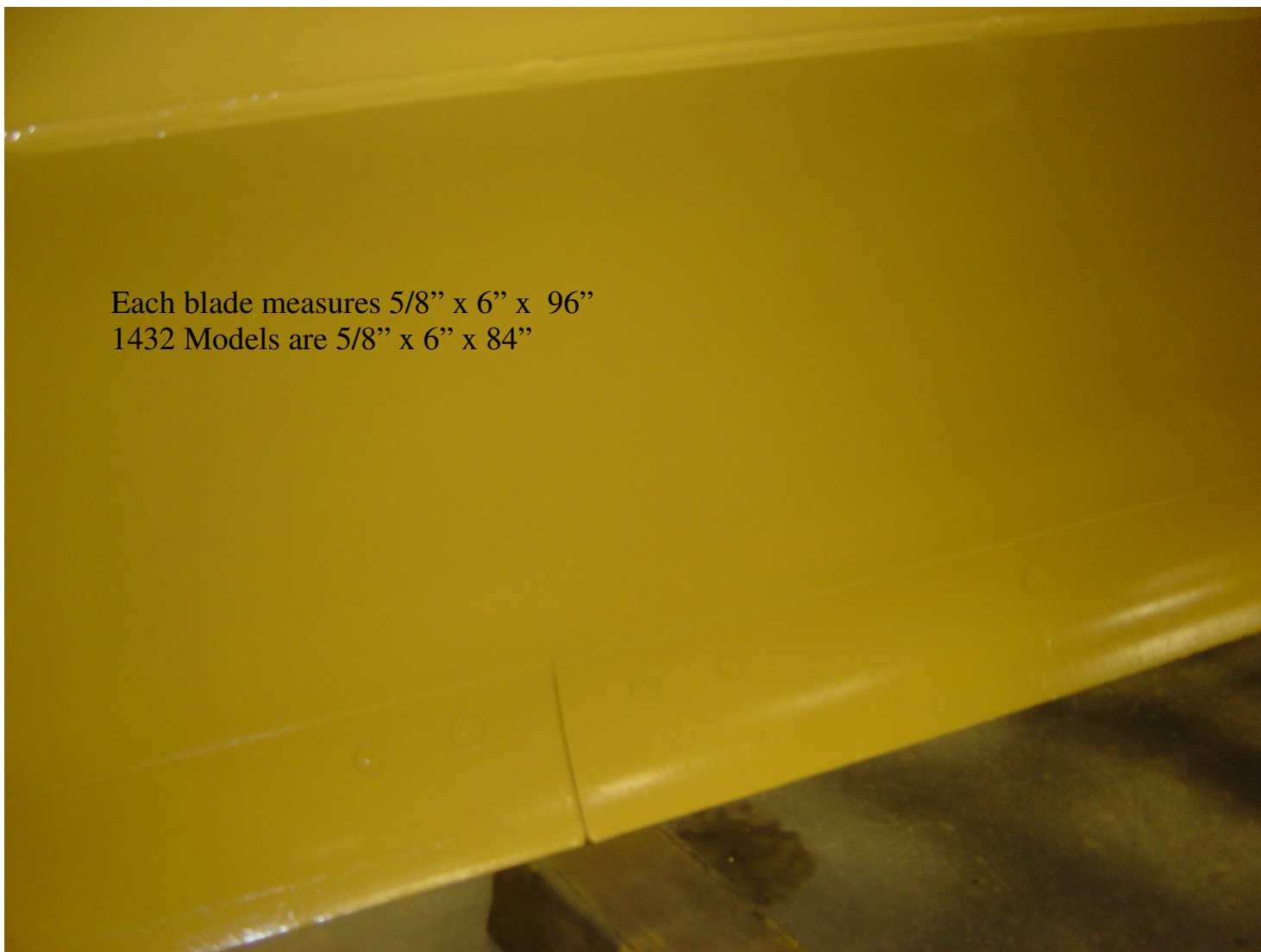


**Section 06**  
**Cutting Edges**

Shown below are the (2) piece cutting edges #4000127 8'  
The 1432 Model uses (2) #4000126 7'

5/8 x 2"gr 8 plow bolts are used  
There are 10 per blade - 9 on the 7' cutting edges

Each blade measures 5/8" x 6" x 96"  
1432 Models are 5/8" x 6" x 84"



Hole spacing is 12"

**Section 07**  
**Hydraulics    Double Cylinder**

**Hose Kit**

<b>Part#</b>	<b>Description</b>	<b>Qty</b>
5000889	Hose, 8FJX-6M3K x 42-8MJ	4
5000979	Hose, 10MB-6M3K x 92-8MJ	4
5001150	Hose, 8MB-6M3K x 158-8FJX	2
5000858	Hose, 8FJX-6M3K x 22" - 8FJX	2
5000859	Hose, 8FJX-6M3K x 30" - 8FJX	2
5000893	Hyd. Tubes 8FJ-124"-8FJ .049W	4

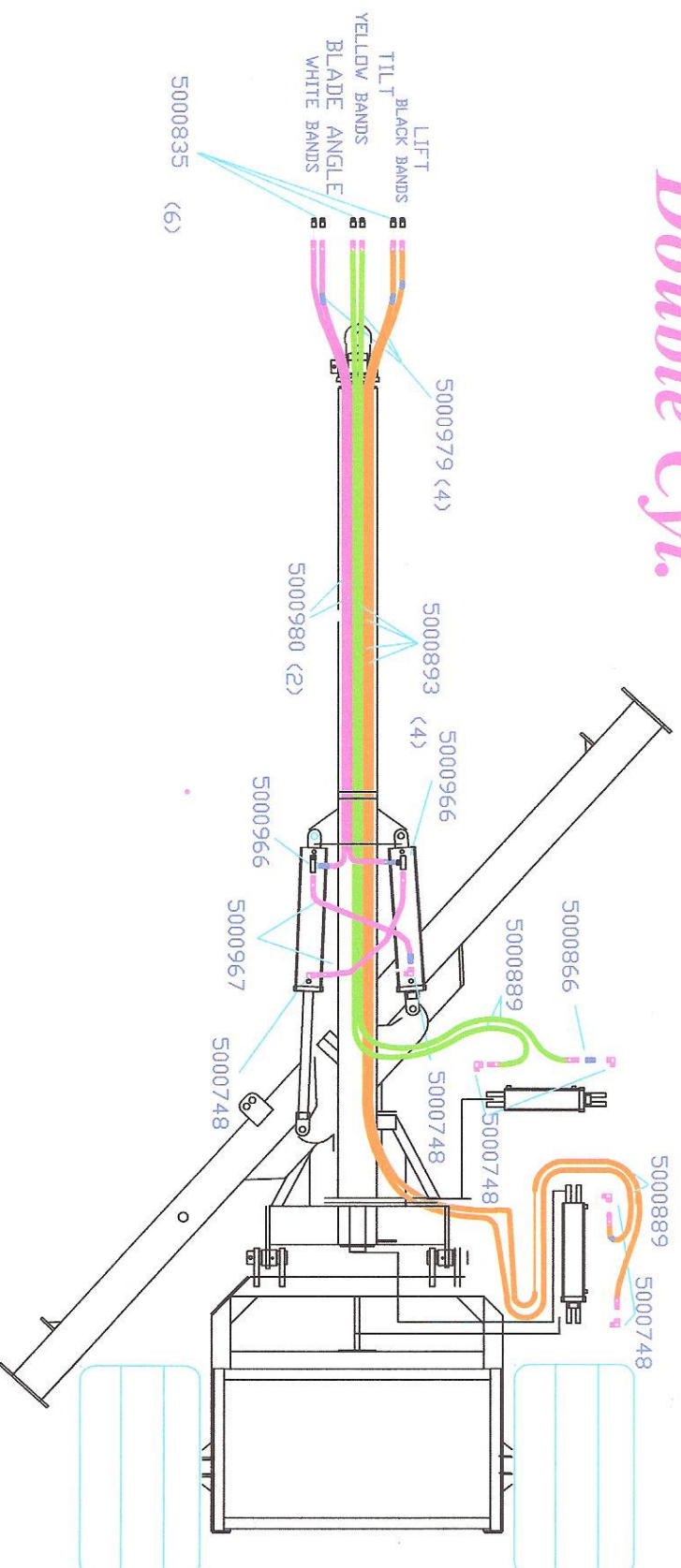
**Fittings Kit**

5000835	Hyd-Pioneer 7/8M end 8010-16P	6
5000748	Hyd. El. JIC 8MB-8MJ90	8
5000866	Hyd.-Bushing 8FB-8MBR .05DI	1
5000966	Hyf, TEE, 8MJ-8MJ-8FJXT	2

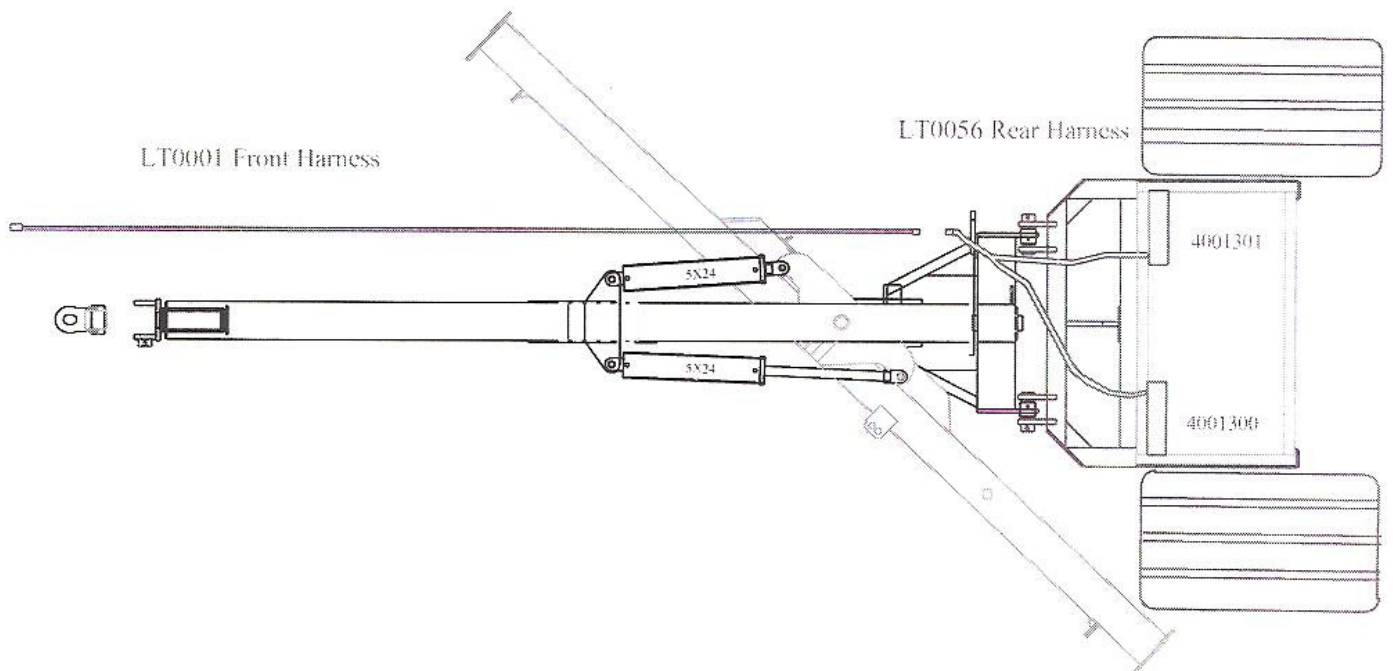
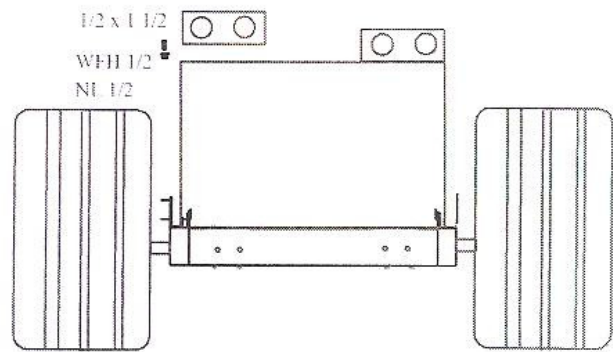


# Pull Type Grader Hydraulics

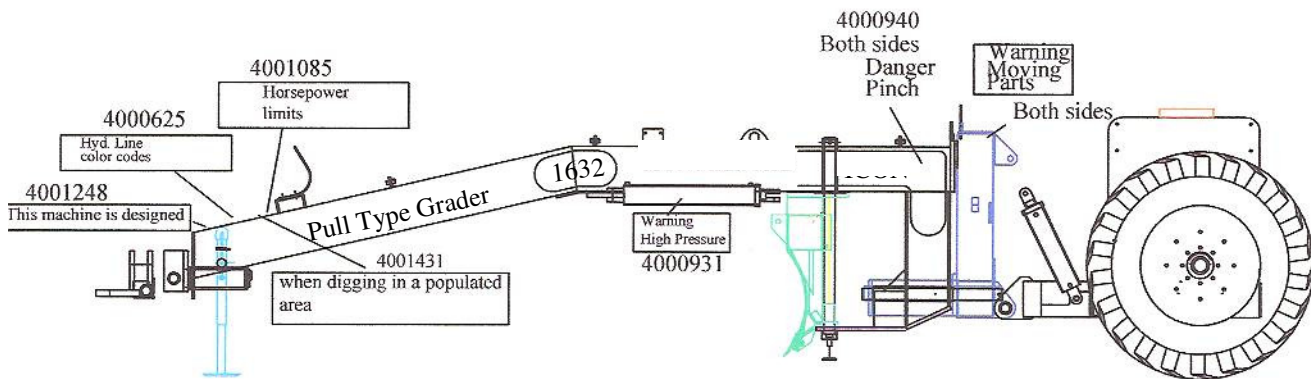
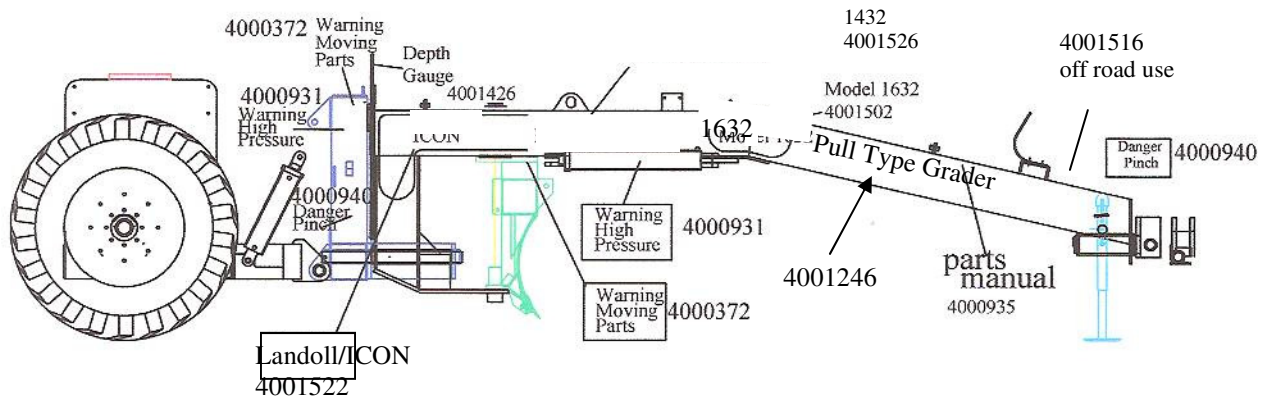
## Double Cyl.



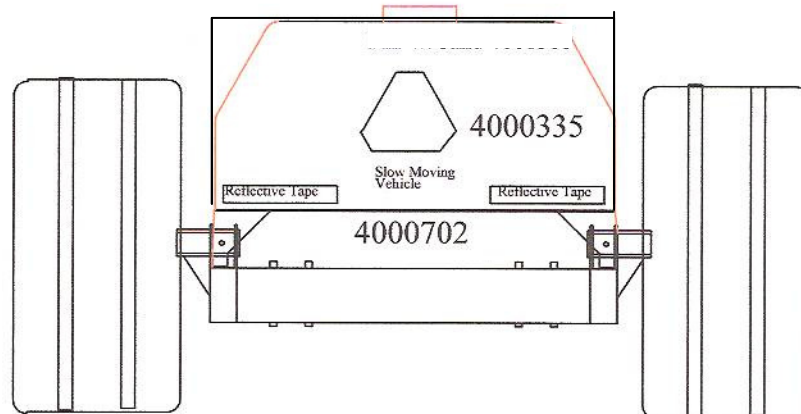
# Wiring Kit



# Decal location



Grease Daily  
4000938  
ea zerk (7)



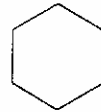
### Decal Listing For ICON 1632

2	Warning Moving Parts	4000372
2	Danger Pinch	4000940
5	Warning High Pressure	4000931
1	Parts Manual enclosed	4000935
2	Landoll/ICON (black)	4001522
2	Pull Type Grader (black)	4001246
2	Model 1632 (black)	4001502
2	Model 1432 (black)	4001526
1	Horsepower Limits (300)	4001285
1	Hyd. Color Codes/Do not allow	4000625
1	Designed to be pulled	4001248
1	Slow Moving Vehicle	4000335
4	18" Reflective Tape	4000702
7	Grease Daily	4000938
1	When digging in populated area	4001431
1	Depth Gauge	4001426
1	Off Road Use Only	4001516
1	Safety Stop	4001445
1	Remove Safety Stop	4001446

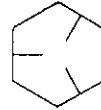
# TORQUE VALUES CHART - PLATED HARDWARE

Bolt Diameter	Grade 2		Grade 5		Grade 8	
	Course	Fine	Course	Fine	Course	Fine
1/4"	50 In. Lbs.	56 In. Lbs.	76 In. Lbs.	87 In. Lbs.	9 Ft. Lbs.	10 Ft. Lbs.
5/16"	8 Ft. Lbs.	9 Ft. Lbs.	13 Ft. Lbs.	14 Ft. Lbs.	18 Ft. Lbs.	20 Ft. Lbs.
3/8"	15 Ft. Lbs.	17 Ft. Lbs.	23 Ft. Lbs.	26 Ft. Lbs.	33 Ft. Lbs.	37 Ft. Lbs.
7/16"	25 Ft. Lbs.	27 Ft. Lbs.	37 Ft. Lbs.	41 Ft. Lbs.	52 Ft. Lbs.	58 Ft. Lbs.
1/2"	35 Ft. Lbs.	40 Ft. Lbs.	57 Ft. Lbs.	64 Ft. Lbs.	80 Ft. Lbs.	90 Ft. Lbs.
9/16"	50 Ft. Lbs.	60 Ft. Lbs.	80 Ft. Lbs.	90 Ft. Lbs.	115 Ft. Lbs.	130 Ft. Lbs.
5/8"	70 Ft. Lbs.	80 Ft. Lbs.	110 Ft. Lbs.	125 Ft. Lbs.	160 Ft. Lbs.	180 Ft. Lbs.
3/4"	130 Ft. Lbs.	145 Ft. Lbs.	200 Ft. Lbs.	220 Ft. Lbs.	280 Ft. Lbs.	315 Ft. Lbs.
7/8"	125 Ft. Lbs.	140 Ft. Lbs.	320 Ft. Lbs.	350 Ft. Lbs.	450 Ft. Lbs.	500 Ft. Lbs.
1"	190 Ft. Lbs.	205 Ft. Lbs.	480 Ft. Lbs.	530 Ft. Lbs.	675 Ft. Lbs.	750 Ft. Lbs.
1 1/8"	265 Ft. Lbs.	300 Ft. Lbs.	600 Ft. Lbs.	670 Ft. Lbs.	960 Ft. Lbs.	1075 Ft. Lbs.
1 1/4"	375 Ft. Lbs.	415 Ft. Lbs.	840 Ft. Lbs.	930 Ft. Lbs.	1360 Ft. Lbs.	1500 Ft. Lbs.
1 3/8"	490 Ft. Lbs.	560 Ft. Lbs.	1100 Ft. Lbs.	1250 Ft. Lbs.	1780 Ft. Lbs.	2030 Ft. Lbs.
1 1/2"	650 Ft. Lbs.	730 Ft. Lbs.	1450 Ft. Lbs.	1650 Ft. Lbs.	2307 Ft. Lbs.	2670 Ft. Lbs.

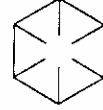
NOTE: Unplated bolts should be torqued approximately 1/3 higher than the above values. Bolts having lock nuts should be tightened to approximately 50% of amounts shown in chart. Bolts lubricated prior to installation should be torqued to 70% of value shown on chart.



Grade 2  
No Marks



Grade 5  
3 Marks



Grade 8  
6 Marks

Model 1632/1432 Grader  
Assembly, Lube, and Check List

- \_\_\_\_\_ Install and pin pivot frame to tongue frame.
- \_\_\_\_\_ Pin rear frame to center pivot frame
- \_\_\_\_\_ Attach grader hitch and assure proper movement.
- \_\_\_\_\_ Install pivot pins, and insert all retaining clips.
- \_\_\_\_\_ Install lift/tilt pivot cylinders. Install all cylinder pins and retaining clips.
- \_\_\_\_\_ Install axle and wheel components. Torque all retaining bolts. Inflate tires to recommended manufacturer psi.
- \_\_\_\_\_ Route hydraulic lines and tighten to proper specs.
- \_\_\_\_\_ Install safety lighting components, route wiring, and install plug retainer. Cycle and check lighting system with 12 volt system tester.
- \_\_\_\_\_ Lubricate all moving components with high temp grease.
- \_\_\_\_\_ Fill hydraulic systems with Mobil 424 hydraulic oil using hydraulic pump, activate all moving parts and bleed air from the system. Hold 3000 psi. hydraulic pressure against all cylinders, fittings, and hoses for a period of 4 minutes. Check hydraulic components for leaks.
- \_\_\_\_\_ Recheck that all retainers are installed and tightened to specs.
- \_\_\_\_\_ Clean and touch up paint the machine.
- \_\_\_\_\_ Attach operators manual and container.
- \_\_\_\_\_ Apply the serial tag, safety, operations, and lube and identification decals. Attach plastic envelope with warranty return card, and this check list, at the front of the hose holder.
- \_\_\_\_\_ For ease of transporting, assure that the blade is level, and in the transport position before leaving shop.

All of the above listed assembly and check functions have been completed per my rigid standards.

Supervisor Signature\_\_\_\_\_

Serial Number\_\_\_\_\_Date\_\_\_\_\_

Customer's Copy