Tube - Line 5500 *X*2

Owner's Manual

2006

Manufactured By:

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Introducing Tubeline T5500 *X*2
Tubeline Owner

Thank you for choosing the Tubeline Bale Wrapper. Our hope is that it will give you many years of productive service. This machine is designed to wrap a film of plastic in a continuous line of round or square bales.

Please read and understand this manual and the machine before operation.

Warranty and Limitation Of Liability

All Equipment is sold subject to mutual agreement that it is warranted by the company to be free from defects of material and workmanship. But the company shall not be liable for special, indirect or consequential, damages of any kind under this contract or otherwise. The company's liability shall be limited exclusively to replacing or repairing without charge, at its factory or elsewhere, at its discretion. Any material, or workmanship defects which become apparent within one year from the date on which the equipment was purchased, and the company shall have no liability for damages of any kind. The buyer by the acceptance of the equipment will assume all liability for any damages, which may result from the use or misuse by his employees or others.

Warranty coverage is null and void unless Warranty Registration form has been completely filled in and is on file at Tube-Line Manufacturing Inc.

Take note! This safety alert symbol is found throughout this manual to call your attention to instructions involving yourself and others working around the machine.

Safety

- **Failure to follow these instructions can result in <u>injury or death!</u>**

This symbol means

-Attention!
-Become Alert!
-Your Safety is involved!

Signal Words are used in this book.

Caution: Indicates a potentially hazardous situation that may result in injury.

Warning: Indicates a potentially hazardous situation that could result is serious injury or death.

Danger: Indicates a hazardous situation that needs to be avoided. It is you the operator that needs to be aware of these dangers.

If you have any questions not answered in this manual, please contact your dealer or

Tubeline Manufacturing Inc
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Bale Size

Round Bales The Model TL5500 *X*2 will wrap bales up to 5 ½' wide and up to 5' high.
It will wrap all sizes smaller then these dimensions as well.

Remember when making big bale silage the bales will be heaver them dry hay. This puts extra strain on loading and transporting equipment. Also, bales will be heavier when feeding out and may have to be moved on wet ground or snow. As a result most operators reduce silage bale diameter to 4-4 ½', even though the wrapper will handle larger size.

Square Bales
The Model TL5500 *X*2 will wrap most sizes of square bales. The length should be reduced to 5'. This is to allow the bales to be placed on the bale receiver. This may also be the maximum length advisable to handle big bale square bales of silage.

Bales, which are approximately 4' wide and 2' high can be stacked two high for wrapping, **one drawback**, the ends of the bales tend to be rounded somewhat and will form an air tunnel the full length of the row.

Bales, which are approximately 3' wide and 3' high, do not stack well. These may be wrapped in a single tier of bales

Recommended Operating Procedure

We suggest the following method or operating the TL5500 *X*2 Tube-Line Wrapper.

- Park the wrapper where you want the end of the row to be, facing in the appropriate direction.
- Fold in the first section of the tongue and fasten the bracket into the hydraulic steering slider with the pin that held the tongue.
- Undo the tail Tiebar hairpin and lay the bar over the rear axle and put the hairpin back into place to prevent loss.

Danger: To prevent injury!

Prior to lowering the tail section, be sure to check that all bystanders are standing clear!!

- Lower the tail section using the manual operating valve.

Caution!! Be Safe

- Never ride on the machine while being used or transported
- **Never** climb on the table or inside the wrap chamber **with the Engine running**

- Turn control panel to “man” or stop the engine when changing plastic rolls. Never leave it in “auto” as your helper may set a new bale on the table or press the start button on the remote.

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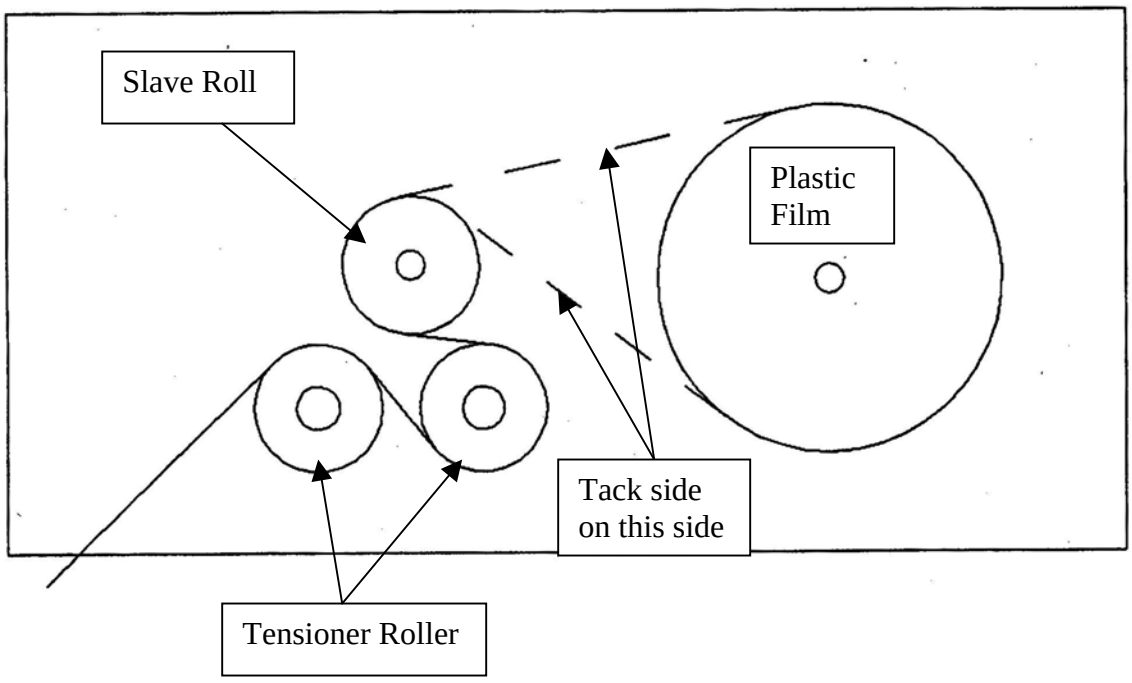
Installation of Plastic

Danger!! <u>Stop Engine!</u> <u>Before attempting to install plastic.</u>

Plastic from the factory has a natural *tack* on the inside. In the event of the plastic being stored for an extended period of time the *tack* may migrate to the opposite side. To test for *tacky* side fold plastic inside to inside and pull apart. Fold opposite way (top to top) to determine tackier side.
The roll of plastic should be installed with the *tack* on the inside of the plastic film next to the bale of silage. The plastic then passes over the slave roller and is threaded through the two metal rollers on the Tensioner as shown in the diagram.
The two metal stretcher rolls rotate at different speeds. This causes the plastic to be stretched. It is very important that the plastic goes over the slow roller first and the faster roll second.
If there is any question, which is the faster roller:

1. Turn one roller by hand and watch the speed of the other roller, this should help you determine which is the fast and slow roller.

When the plastic is installed correctly, it should stretch tight on the bale to form a smooth tube.



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Trouble Shooting Plastic Installation

1. Wrinkles in the plastic with seams between layers easily visible
   Check to determine if the plastic is properly routed through the Tensioner rollers.
2. Plastic tears between the Tensioner and the bale

   Film spool holders: not turning freely. Lubricate and turn by hand until free.

   Slave roller not turning freely. Lubricate and turn by hand until free.

   Tensioner rolls not turning freely: Loosen the bolts holding the bearing and check if this makes a difference. I may be that the bearings have too much end pressure, in this case retighten the bearings and loosen the locking collar on the roller shaft this will allow the shaft to slide in the bearing; retighten the bearing collar. The gears can also be meshed too tight; this can be fixed by slightly loosening one set of bearing bolts and using a hammer and punch lightly tap the bearing away from the other roller.
   Caution Do not use a hammer on the aluminum stretcher rolls.

   Poor quality plastic: Use a brand with good tear resistance.

   Tack built up on the rollers: Particularly in hot weather. Clean the Tensioner with warm soapy water.

Plastic roll is too hot: In very hot weather the plastic can become soft if left in the sun for long periods of time. In these conditions, the spare rolls should be kept in the shade. After the rolls have been installed on the machine one can be parked on the bottom and a cover can be placed on the top one.

Roll of plastic may catch on the bottom of the bale. If the bales are misshapen the roll of plastic may drag on the bottom of the bale, causing the plastic to break.

If wrapper is equipped with electric automation

Switch the control to “Man”

Danger!! When the machine is in manual mode the safety door switches and the film sensor (if so equipped) Do Not Function.
-Test the hydraulics by rotating the hoop and moving the ram back and forth
-Install the roll of plastic according to the Plastic Installation diagram.

Caution! Close safety doors after installing plastic to avoid injury.

Caution! Round bale are heavy and silage bales are even heaver. Use only approved bale- handling equipment. Keep bales low when turning loader.

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Bale Guide Bars/ Riser

The bale guide bars are designed to align the round bales as the bales are set on the wrapper. These bars should be adjusted to the narrow setting to wrap round bales up to 5ft diameter. For bale larger than this use the wide setting.

> **Caution!** It is important that the bale sit firmly on the bars, as the bale spears should deflect the hay somewhat. Failure to do this may cause the plastic to stick to the spears and tear the plastic inside the bale.
> When wrapping square bales use the narrow setting and change the switch plate to the top.

To Wrap Bales with Model TL5500 *X*2 A (Automatic)

Open the bale pusher and place the first bale on the table. Push this bale and two other bales through the hoop. This gives a stable end for the line of bales. These bales can be picked up and placed on the wrapper later after the line has formed.
Before the first bale that will stay on the line is placed on the wrapper, place an end cap on the bale. Check with your plastic supplier for suggestions.

- Pull about 4ft of plastic through each stretcher and tie it under the twine on the bale.

Or tie it to the bracket at the control panel, (see picture on page ???)

- With the control panel switch “auto/man” set to “man” turn “forward switch to advance the bale without the plastic stretcher applying plastic.
- As the bale is pushed through the hoop, start the hoop rotating to apply plastic by pushing in the “Rotate” button.
- When the ram hits the switch at the end of the stroke the forward motion on the cylinder will stop. (This switch can be moved on the slider arm to accommodate your needs). More about this later.
- With the switch set to “man” the switch buttons will have to be turned and/or pushed and held, when you let them go the function will stop.
- Turning the reverse switch will retract the ram and open the bale pusher to accommodate the next bale.
- After you have wrapped a few bales in this way, switch “auto/man” switch to “auto” and place bale on the bale table. As the bale depresses the table trigger the ram will start automatically. Adjust the second slider switch to start the wrap cycle at the same time that the bale makes contact with the bales on the machine.

Warning!!

<u>To stop the cycle</u>: after the cycle has started in the automatic mode, turn **“auto/man”** switch to “man” (or if you have the optional remote kit, push the “stop” button on the hand unit to stop the cycle. After the problem is rectified, finish the rest of the cycle in the “man” mode and then return to “auto” mode. (If you press start button on the hand unit it will also start the ram forward again except if the ram had passed the hoop start switch the hoop will not start with the ram).

For safety reasons, safety switches are installed in the doors. In “auto” mode the safety doors must be closed for the machine to work. In “man” these switches are bypassed.

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Steering

This wrapper is equipped with hydraulic steering. The purpose of this is to keep the wrapper operating in a straight line or to direct the wrapper around obstacles. If the ground is uneven or the wrapper is operated on the side of a hill, then it can drift out of line. The loader operator is usually able to detect if the wrapper is not moving in the desired direction. When steering around obstacles in the wrapping path do not make sharp turns as this prevents the bales from being tightly packed together. The steering speed can be adjusted with the needle valve at the manifold block.

- When starting a row, align the wrapper in the desired direction for the row and ensure the steering is in the center position.

Optional - Remote Control

With the remote control the machine can be controlled with a hand held unit. The table trigger switch should be unplugged. When the control panel "auto/man" switch is on "auto" the bale can be placed on the table without the cycle starting. After the bale has been placed on the table and you want the cycle to start, press the star button on the hand unit. The machine will now go through the complete wrap cycle and stop at the end of the cycle. Two of the remote buttons are used to control right and left steering. The fourth button is the remote cycle stop.

Notice – the "on/off" switch on the control panel will turn **off all the electric** current to the **Control Panel and also Engine Stop.** The Honda engine does not have an electric ignition therefore the key can be left "on" without the battery draining. The 20hp engine has an electric fuel valve and the key needs to be **"off"** when the engine is not running, as the valve will drain the battery.

Slider Switch

Adjust the second slider switch to start the rotate motor when the bales have made contact. By adjusting the slider switch at the rear of the slider bar, which will stop the ram and the wrap motor, and reverse the ram cylinders. –***TIP-*** Adjust the rear switch so that the junctions of the 2 bales are in the middle of the wrap chamber. It is possible to adjust the second switch so that the wrap will start just before the bales start moving through the wrap chamber, thereby putting extra plastic on the joint of the bale. The front slider switch is set to stop the ram retract stroke after the engine has throttled down and before the cylinder bottoms out.

Brake

The brake is operated, by using the brake hydraulic valve. Moving the hydraulic lever will oil pressure to apply brakes on the rear wheel. Increase pressure to the point where the bales are packed firmly together. Close brake ball valve to maintain positive pressure on the wheels. Open the ball valve and **RELEASE BRAKES** when the row is finished and prior to transporting the wrapper.

Open the bale pusher and place the first bale on the table. Push this bale and two other bales through the hoop. This gives a stable end for the line of bales. These bales can be picked up and placed on the wrapper later after the line has formed.
Before the first bale that will stay on the line is placed on the wrapper, place an end cap on the bale. Check with your plastic supplier for suggestions.

- Pull about 4ft of plastic through each stretcher and tie it under the twine on the bale.

Or tie it to the bracket at the control panel, (***see picture on page ???)***

- Set the selector valve to "bale only". This will allow the bale to be moved without the plastic stretcher applying plastic.
- Place this bale on the table. Push it to the hoop.
- As the bale is pushed through the hoop, start the hoop rotating by operating the "wrap" valve
- The bale should be advanced 4" for each rotation of the plastic dispenser. This will apply 4 to 5 layers of plastic.
- When you are familiar with the machine, set the selector valve to "both" and adjust the flowcontrol valve so that the correct amount of plastic is applied.
- If there is a space between the bale just loaded and the previous bale.
    - Set the selector valve to "Cylinder Only"
    - Advance the bale until it contacts the previous bale
    - Move the selector valve to "Both"
- If the bales do not line up then put on extra wrap at the junction of the bales to ensure a good seal.

This also pertains to automatic wrapping

- Careful application of an adequate amount of plastic is critical to give a good quality product.
- Careless application of plastic will result in losses.
- Continually watch the row for dark "windows" indicating that not enough plastic has been applied.

Steering

Similar to the automatic but uses manual valve. (see previous page)

Brakes

Same as automatic: (see previous page)

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Pushing off Bales from the Wrapper

- The automatic wrapper will have to be switched to "man" position for pushing the bale off.

Danger!!

The use of automatic setting when pushing off bales can cause severe injury or death.

- To push off the bales

Open the bale pusher

- Remove the lynch pin from the front push plate arms
- Unfold the arms to extend the push plate
- Remove the lynch pin from the top of the arms and swing the X bars onto the pins, replace the lynch pin to secure the X bar

1. Push the bale through the wrapper by using the forward button and the wrap button with the automatic machine or with the manual machine with the lever in "both" mode until you have enough plastic on the bale. Continue pushing the bale through the wrap chamber until you have reached the end of the stroke.
2. Retract the bale pusher
3. Refold the push plate arms and secure with lynch pins at the front arms
4. Open the safety doors, remove 2 x 3 tube from the Hydraulic tank side of the wrapper and lay it across the top of the Pushoff brackets
5. Close the pusher a second time to push the bales further off the wrapper
6. Flip the folded arms open at the rear of the ram tubes
7. Open the pusher and move the 2 x 3 tube to the socket at the rear end of the arms. (Insert the pegs on the arms into the holes in the tube. This will keep the tube from sliding on the arms). Close the pusher to finish pushing off the bales from the tail
8. Open the bale pusher, store the 2 x 3 tube in bracket secure with lock pin
9. Fold the arms at the rear of the ram tubes back into the original position with the tip sticking into the retainer
10. Fold up the tail end of the roller table using the "tail" valve and secure with the tie bar
11. Undo steering, unfold tongue and insert lock pin
12. Make sure the brakes are released before driving away

Caution

Before moving the wrapper any distance close the fuel valve at the engine! As the machine is towed it will bounce up and shake, as it does this the carburetor float will let too much fuel into the system. Raw fuel can get into the engine cylinder and wash the cylinder walls down and end up in the engine oil.

Do Not Tow the Bale Wrapper at Speeds Over 35 KPH

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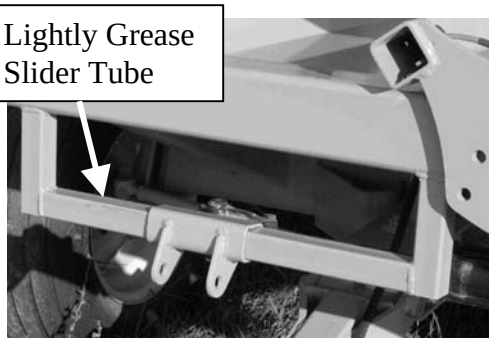
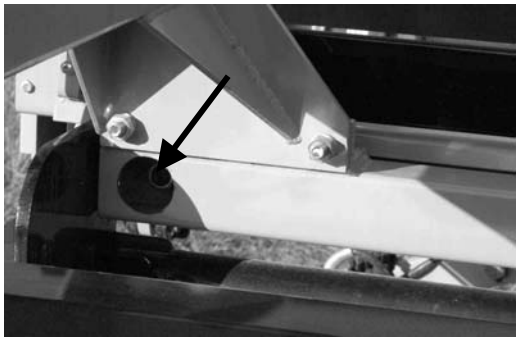
Daily Maintenance

Lubricate all grease points

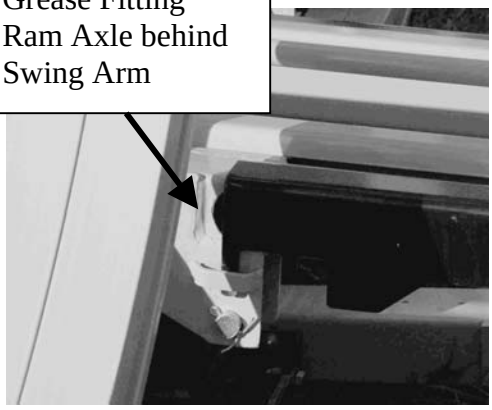
Grease Fitting Ram Axle

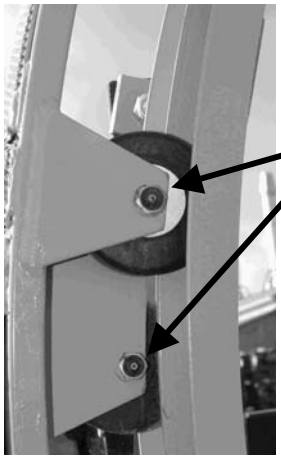
Lightly Grease Slider Tube





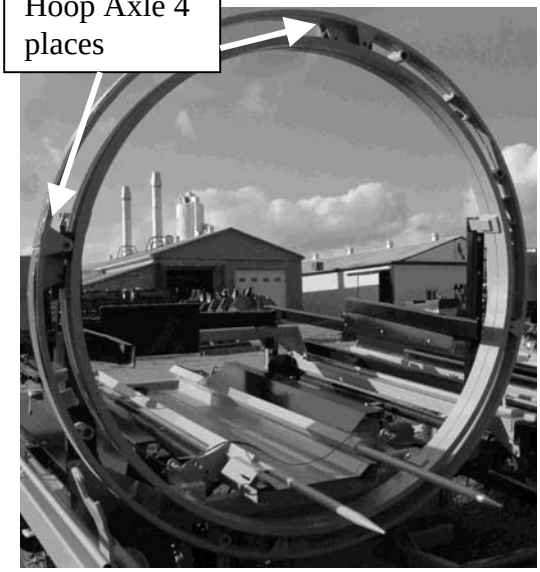
Grease Fitting Ram Axle behind Swing Arm



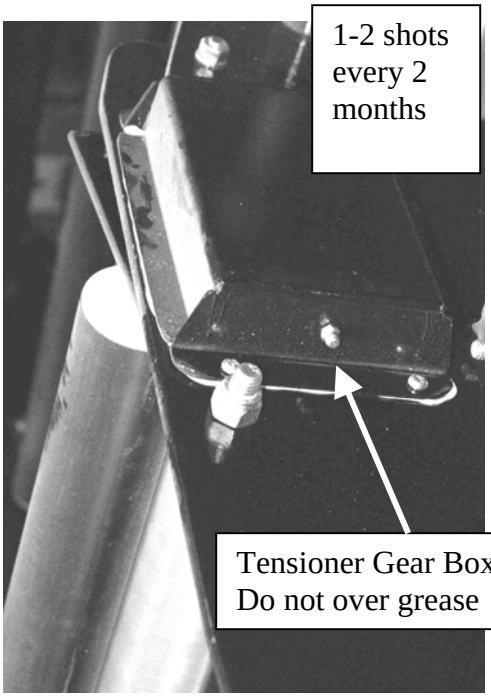


Hoop Axle

Hoop Axle 4 places



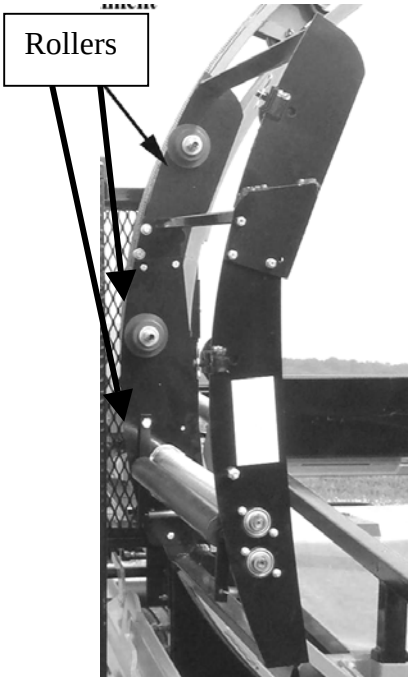
1-2 shots every 2 months

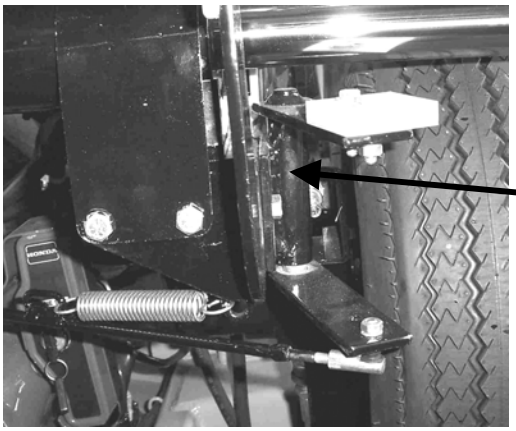


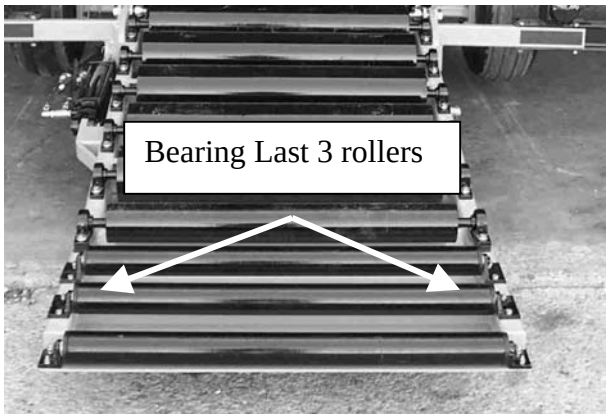
Tensioner Gear Box
Do not over grease

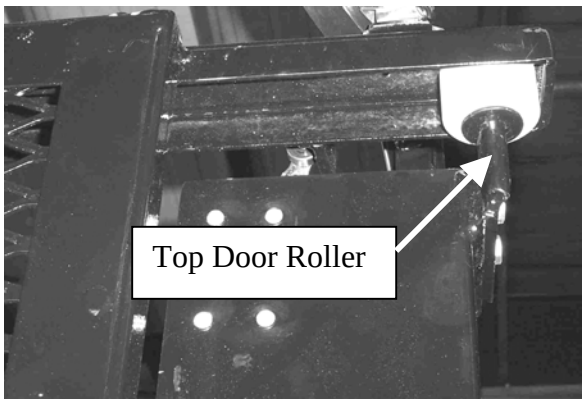
Points to be oiled

Oil these points occasionally to keep the parts moving freely


Rollers


Throttle Shaft


Bearing Last 3 rollers


Top Door Roller

Bottom Door Roller

Check Hydraulic Level Daily With Ram Retracted and Tail Up Oil Level at Full Mark

Fill with SAE #10 Hydraulic Oil

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When wrapping in hot weather there can be a build-up of adhesive on the stretcher rollers. This can cause the plastic to break. Remove the adhesive with soap and water.

Wrapping Straw
The TL5500 *X*2 wrapper can be used to weather - protect straw.
Only two layers of plastic are necessary.
If the straw is dry, it may be wrapped continually without spaces. Straw that has some moisture is best wrapped with spaces in the plastic.

After Wrapping
After wrapping, inspect the rows of silage regularly to ensure there is no damage occurring from birds, rodents or livestock.

Feeding out

With the TL5500 *X*2, a loader can pick bales without cutting the plastic. The plastic breaks away between bales and can be removed from the side of the bales before dropping the bales in the feeder.

Tube-Line wrapped bales do not spoil as the line is fed. Unlike long bags of bales, the stretch wrap prevents air from moving past the bales and causing the bales at the far end to heat and spoil. As the next bale is undisturbed it will not spoil for one to two days in the warm weather and for at least a week in cooler weather.

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Disposal of Plastic

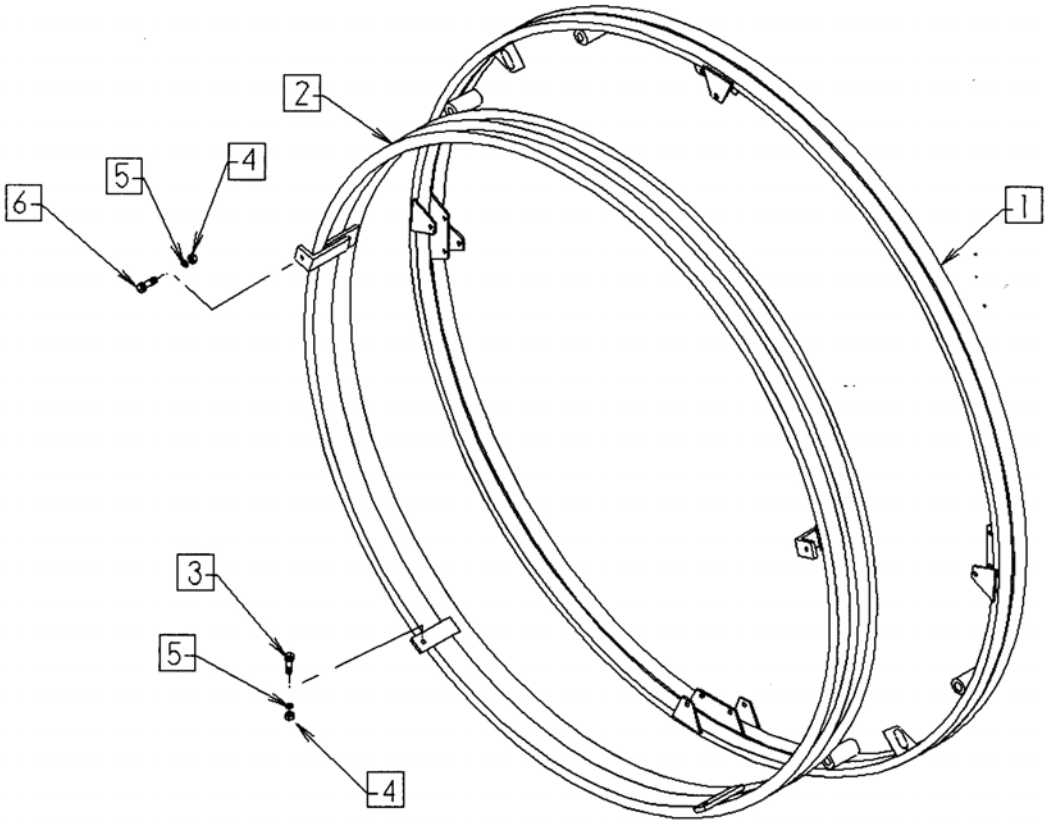
Users of bale wrappers are encouraged to collect all plastic to prevent it from becoming an environmental problem. If there is a high temperature incinerator in your area, the plastic can be incinerated subject to your area bylaws.
Plastic, although bulky, is inert in a landfill and will not pollute the ground water.
Manufactures are making serious efforts to economically recycle silage plastic. Use a recycling service when available. Collect and dispose all plastic. Unsightly used silage film will encourage complaints.

The design of the Tube-Line Bale Wrappers is protected under Canadian Patent 1285862 and USA Patent 4793124

Edited 11/15/2005 for model year 2006

Tube Line 5500

Hoop



Item #	Description
1	Outer Ring
2	Inner Ring
3	5/8 x 2 Bolt
4	5/8 Nut
5	5/8 Lockwasher
6	5/8 x 3 ½ Bolt

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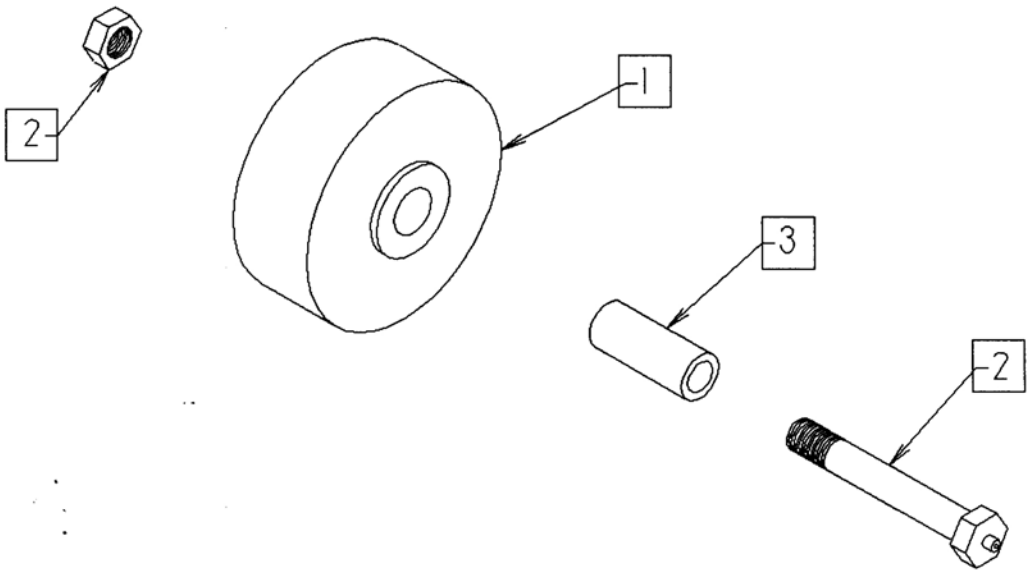
To Hoop Part Number

Tube Line 5500
Hoop Wheels



Item #	Description
1	4 inch Wheel
2	Axle Bolt / Locknut
3	Spanner

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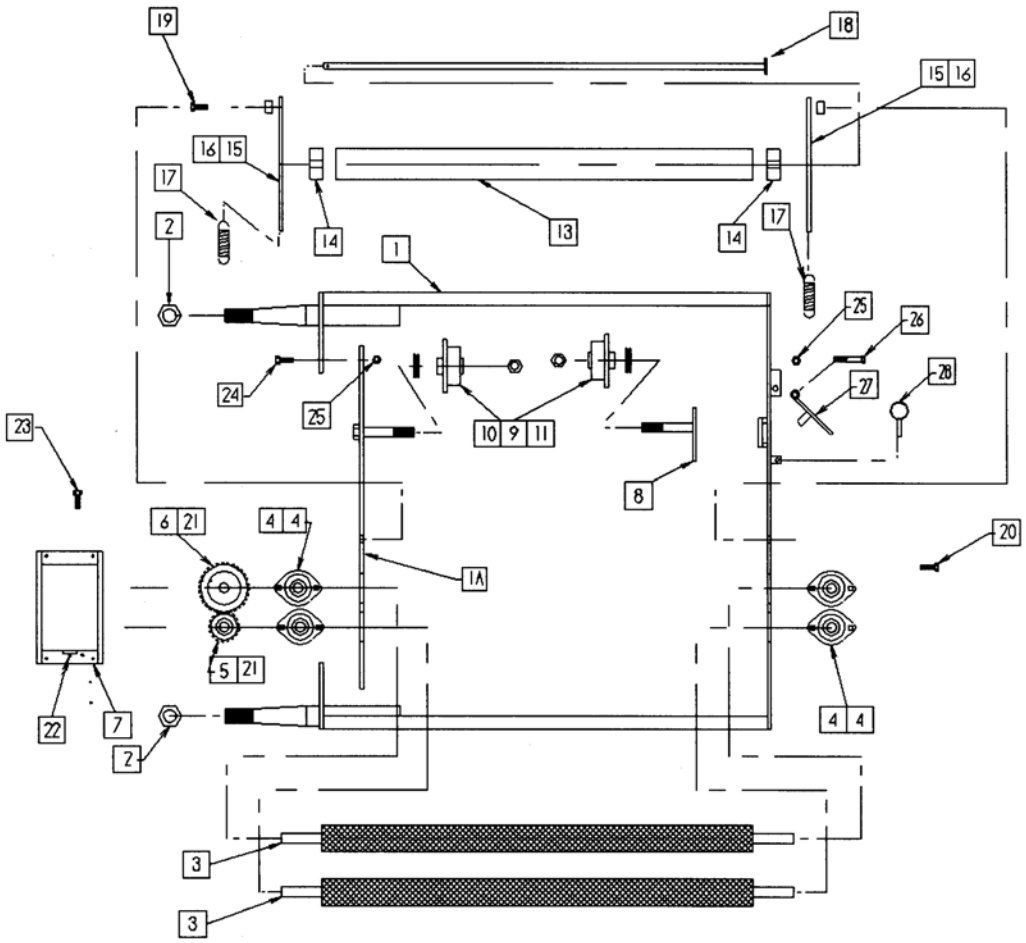
To hoop wheels part number

Tube Line 5500
Plastic Wrap Carrier



Item #	Description	Item #	Description
1	Main Wrap Bracket	15	ABS Bracket
1A	Main Wrap Side Insert	16	Spacer
2	1-14 UNF Casselnut	17	Spring
3	Tensioner Roller	18	Axle Shaft
4	¾ inch Bearing	19	½ x 2 Bolt
5	Small Gear	20	5/16 Carriage Bolt
6	Large Gear	21	3/16 Keystock
7	Gear Cover	22	Grease Fitting
8	Spool Holder	23	10-24 x ¾ Bolt
9	Plastic Wrap Spool	24	3/8 x 1 #5 Bolt
10	5/8 Flat Washer	25	3/8 Locknut
11	5/8 Nylocknut	26	3/8 x 2 ½ Bolt
13	ABS Pipe	27	Latch
14	HMWPVC Bearing	28	3/16 Linch Pin

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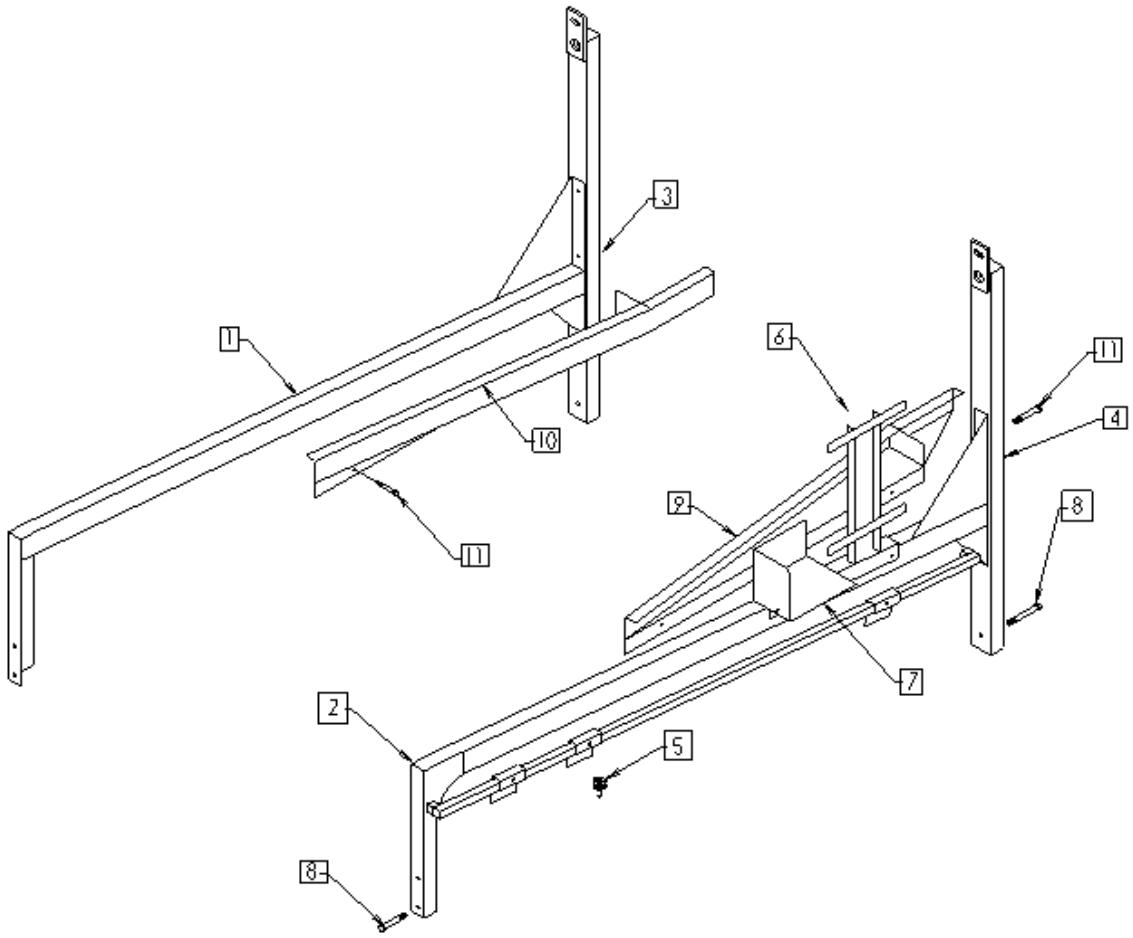
To Plastic Wrap Carrier Part Numbers

Tube-Line 5500 *X*2

Hoop Brace Assembly



Item #	Description	Item #	Description
1	Right Brace	7	Manual Control Mount
2	Left Brace	8	½ x 3 bolt
3	Right Hoop Post	9	Left Bale Deflector
4	Left Hoop Brace	10	Right Bale Deflector
5	Switch Adjuster Screw	11	3/8x 3 Bolt
6	Automatic Control Panel Mount		

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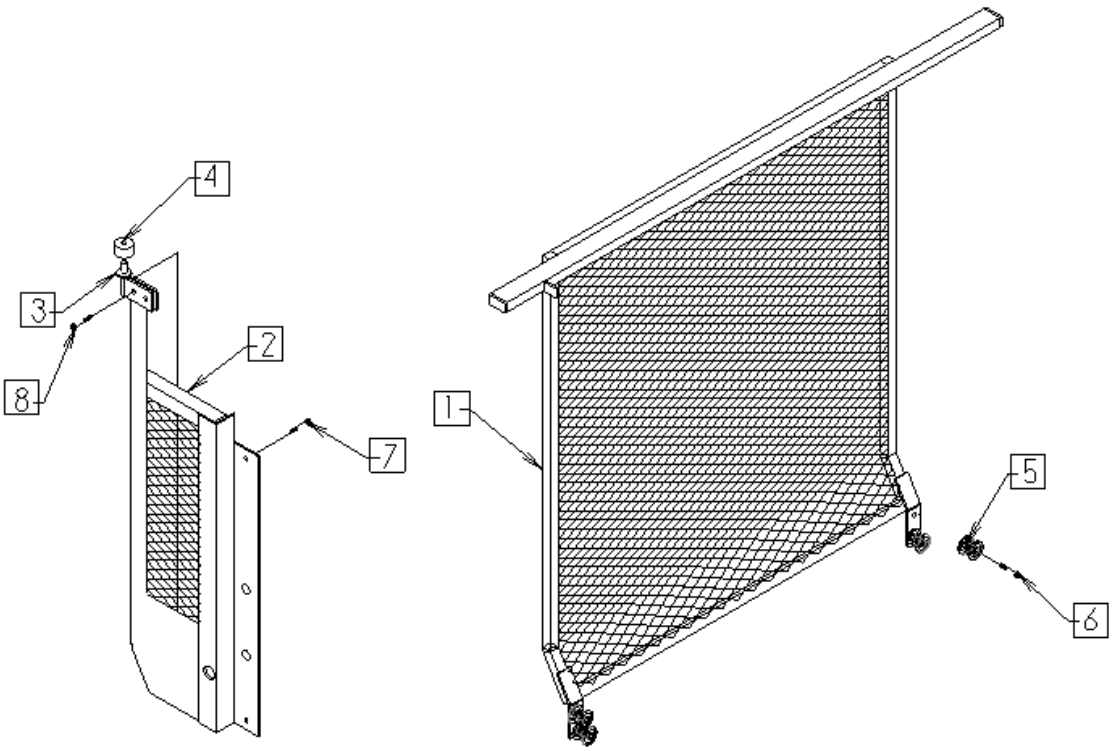
To Hoop Brace

Tube – Line 5500 *X* 2

Right Safety Guard

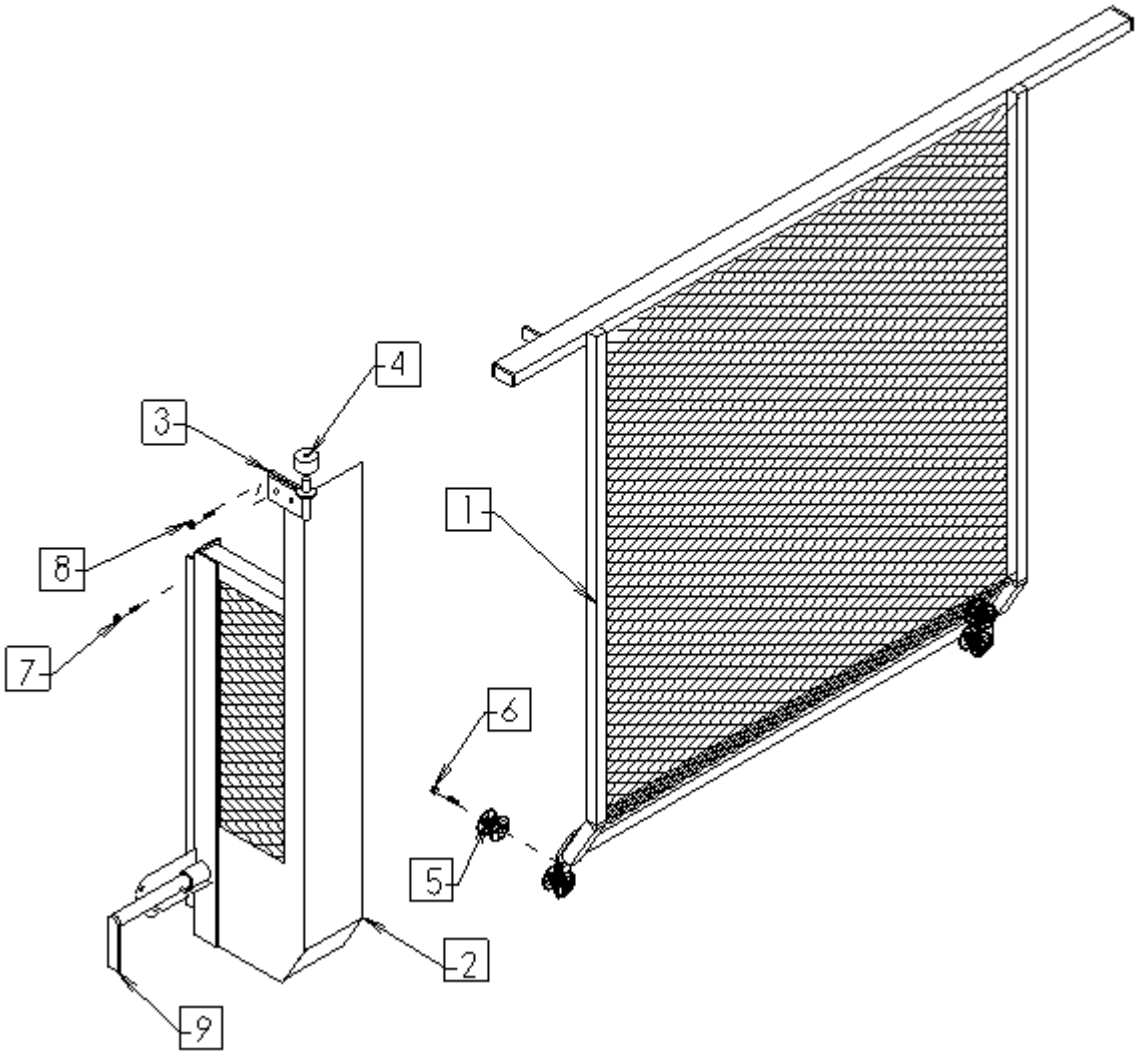


Item #	Description
1	Safety Door
2	Safety Guard Bracket
3	Top Roller Bracket
4	Top Roller
5	Bottom Roller
6	½ x 3 Bolt
7	3/8 x 3 Bolt
8	3/8 x 1 ½ Bolt

Table of Contents
To Right Guard Part Number

Tube – Line 5500 *X* 2

Left Safety Guard

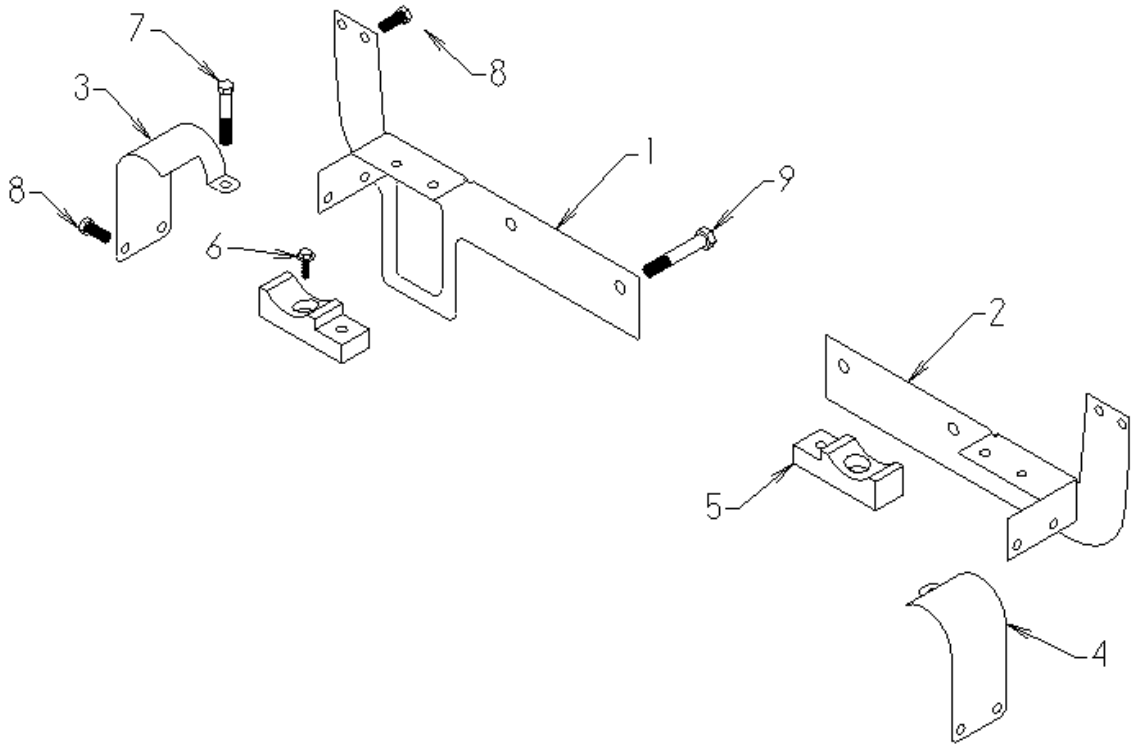


Item #	Description
1	Safety Door
2	Safety Guard Bracket
3	Top Roller Bracket
4	Top Roller
5	Bottom Roller
6	½ x 3 Bolt
7	3/8 x 3 Bolt
8	3/8 x 1 ½ Bolt
9	Hoop Lock

Table of Contents
To Left Guard Part Numbers

Tube – Line 5500 *X* 2

Ram Cylinder Support

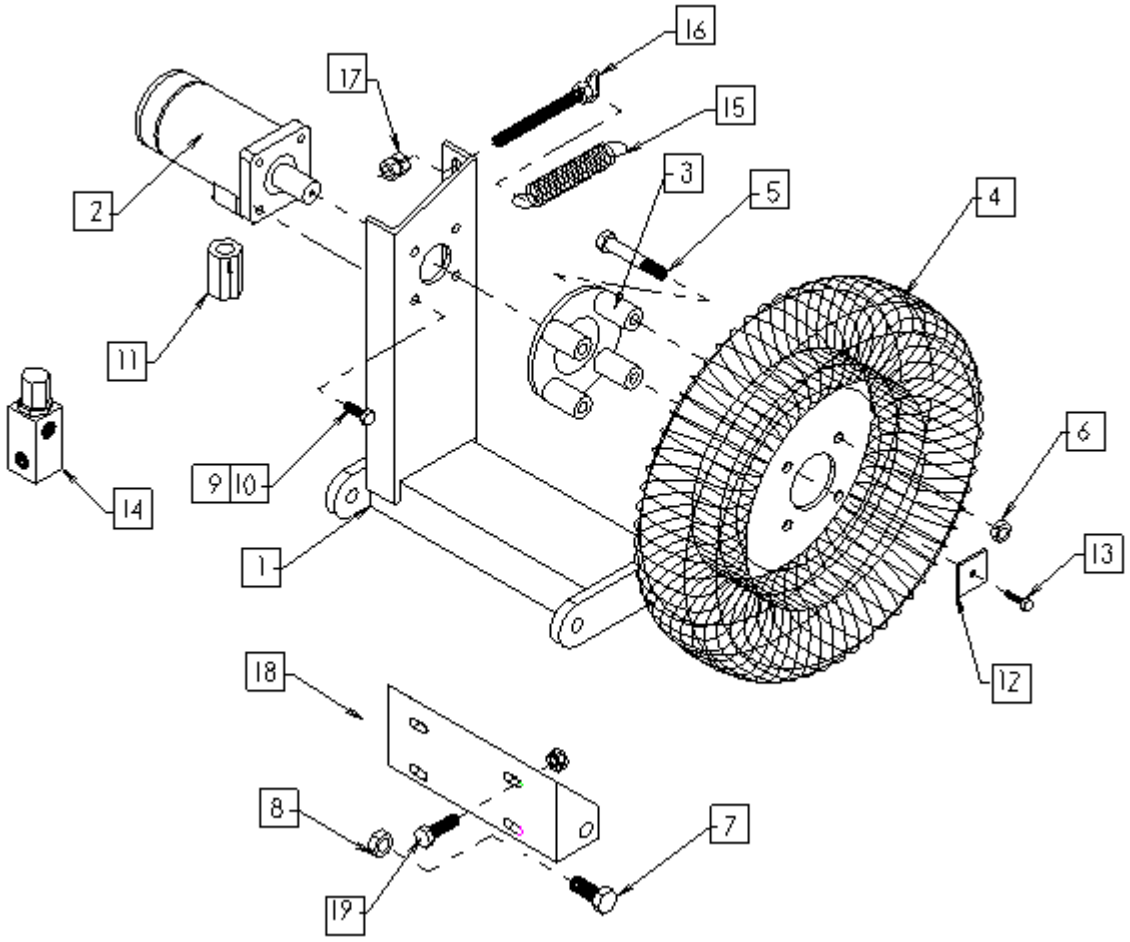


Item #	Description
1	Right Support Bracket
2	Left Support Bracket
3	Right Cylinder Clamp
4	Left Cylinder Clamp
5	Cylinder Support
6	5/16 x 1 ¼ Bolt
7	3/8 x 3 Bolt
8	3/8 x 1 Bolt
9	½ x 3 Bolt

Table of Contents
To Cylinder Support Part Numbers

Tube – Line 5500 *X* 2

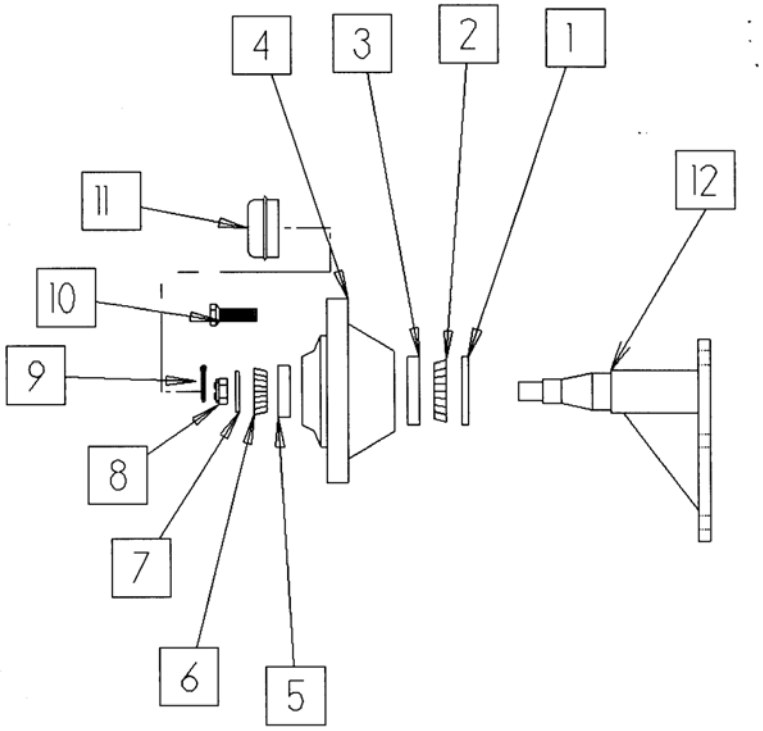
Hoop Drive



Item #	Description	Item #	Description
1	Drive Base	11	Check Valve (manual only)
2	Hydraulic Motor	12	Wheel Washer
3	Wheel Hub	13	¼ x 1 Bolt c/w Lockwasher
4	Drive Wheel	14	Relief Valve (manual only)
5	½ x 3 UNF Bolt	15	Wheel Tensioner Spring
6	½ Wheel Nut	16	Spring Tensioner Bolt
7	5/8 x 1 ½ Bolt	17	½ Nuts
8	5/8 Locknut	18	Drive Base Mount
9	3/8 x ¾ Bolt	19	3/8 x 1 ½ Bolt
10	3/8 Lockwasher		

Table of Contents
To Hoop Drive Part Numbers

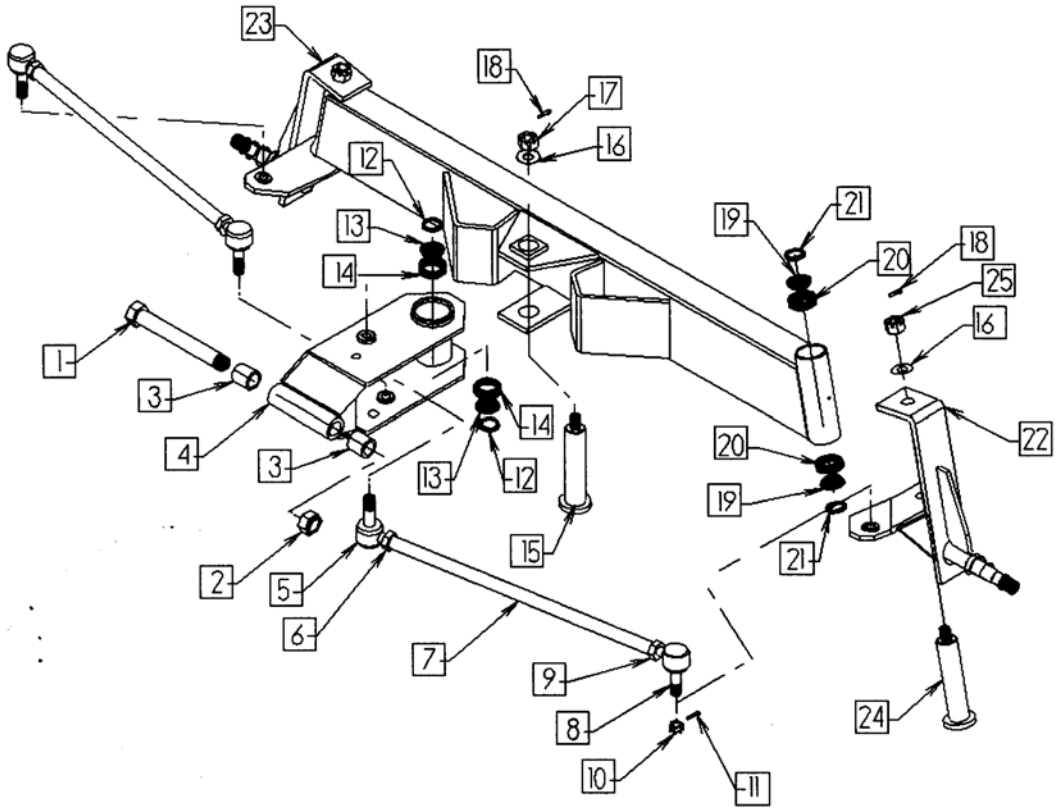
Tube Line 5500 *X* 2
Axle / Spindle / Hub



Item #	Description
1	Seal
2	Inner Bearing
3	Inner Bearing Race
4	Hub
5	Outer Bearing Race
6	Outer Bearing
7	Flat Washer
8	Wheel Nut
9	Cotter Pin
10	Wheel Stud
11	Dust Cap
12	Spindle

Table of Contents
To Axle Spindle Part Numbers

Tube Line 5500 *X* 2
Front Steering

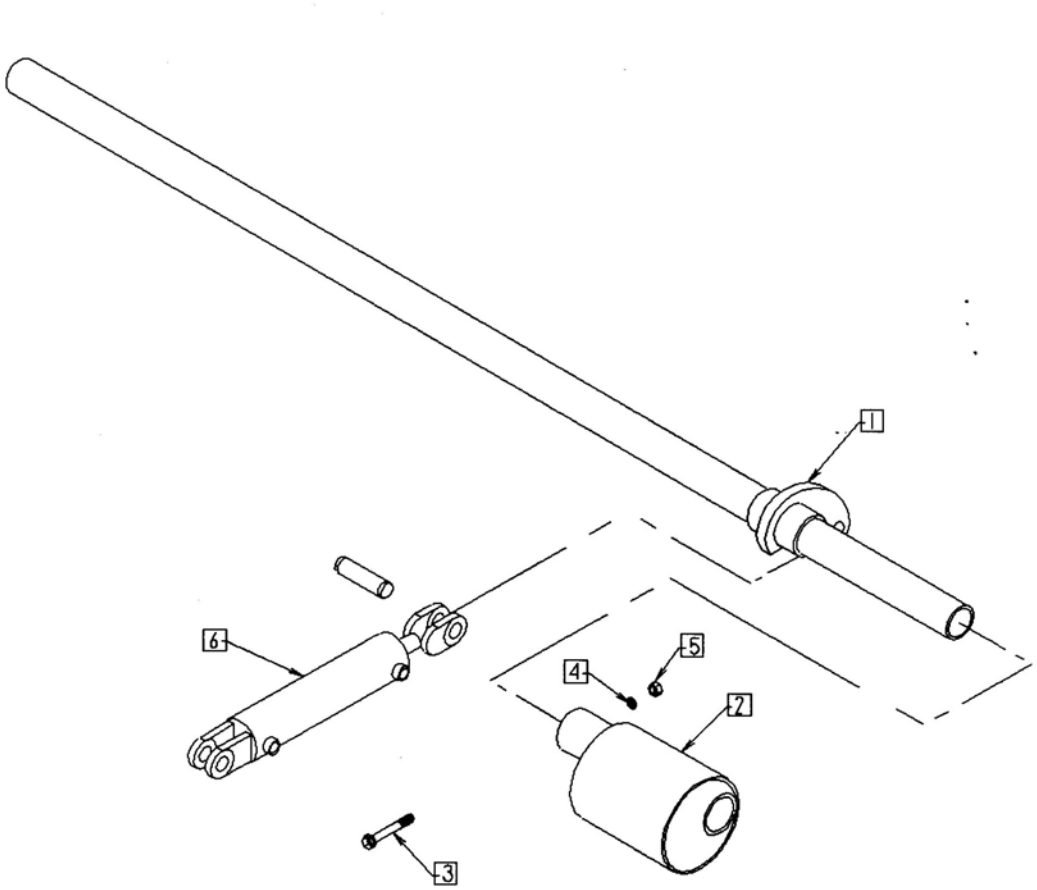


Item #	Description	Item #	Description
1	7/8 x 8 Bolt	13	Tongue Bracket Timkin Bearing
2	7/8 Locknut	14	Tongue Bracket Timkin Cup
3	Tongue Bracket Bushing	15	Tongue Bracket Pin
4	Tongue Bracket Assy	16	13/16 Flatwasher
5	Tie Rod End Right Thread	17	Tongue Bracket Nut
6	¾ Jam Nut (NF RH)	18	3/16 x 2 Cotter Pin
7	Tie Rod	19	Spindle Bearing Timkin Cone
8	Tie Rod End Left Thread	20	Spindle Bearing Timkin Cup
9	¾ Jam Nut (NF LH)	21	Spindle Bearing Seal
10	9/16 NF Slotted Hex Nut	22	Left Side Spindle Assy
11	1/8 Cotter Pin	23	Right Side Spindle Assy
12	Tongue Bracket Seal	24	Spindle Pin

Table of Contents
To Front Steering Part Numbers

Tube Line 5500 *X* 2

Brakes

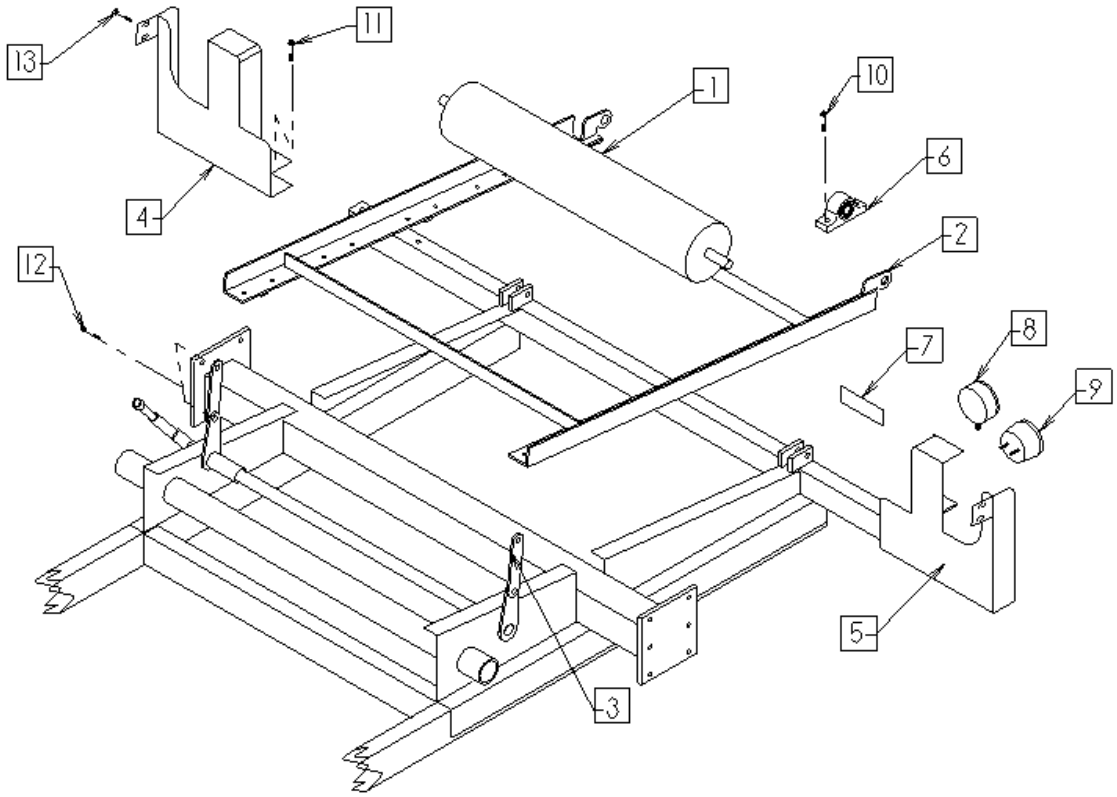


Item #	Description
1	Rocker Tube
2	Brake Eccentric
3	½ x3 ½ Bolt
4	Lockwasher
5	½ Nut
6	2 ½ x 8 Hydraulic Cylinder

Table of Contents
To Brake Part Numbers

Tube – Line 5500 *X* 2

Rear Roller

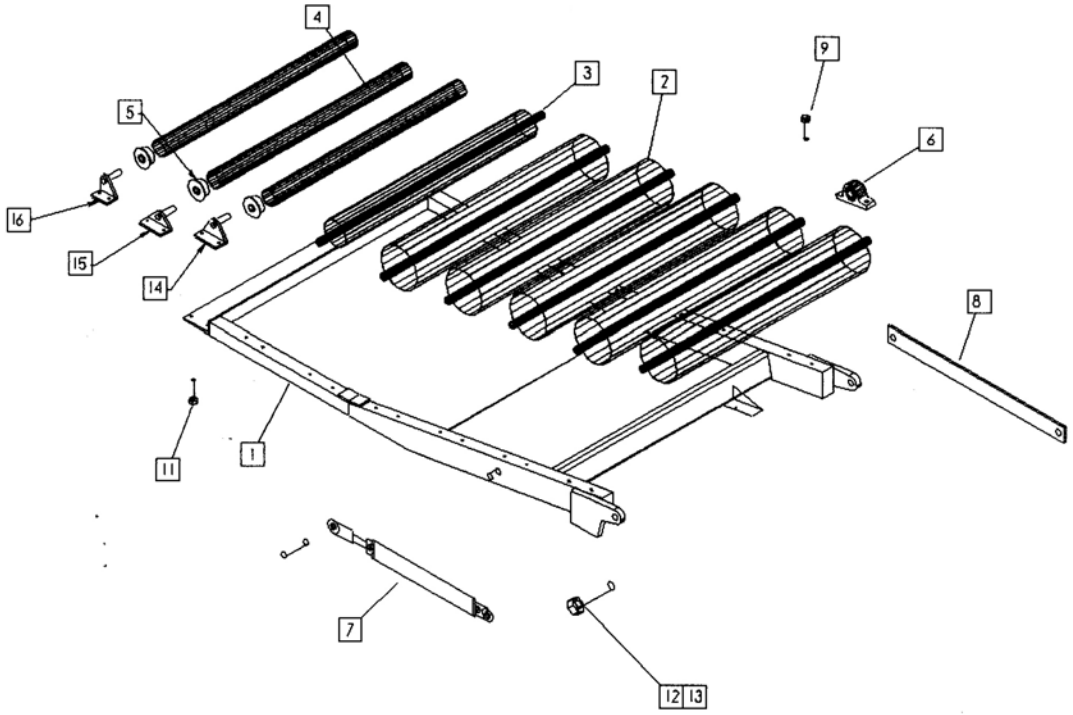


Item #	Description	Item #	Description
1	Large Roller	8	Amber Light
2	Riser Frame	9	Red Light
3	Riser Link	10	3/8 x 1 ½ Bolt
4	Right Light Bracket	11	3/8 x 4 Bolt
5	Left Light Bracket	12	5/8 x 2 Bolt
6	Bearing	13	3/8 x 1 ½ Bolt
7	Red Reflector		

Table of Contents
To Rear Roller Part Numbers

Tube Line 5500 *X* 2

Tail

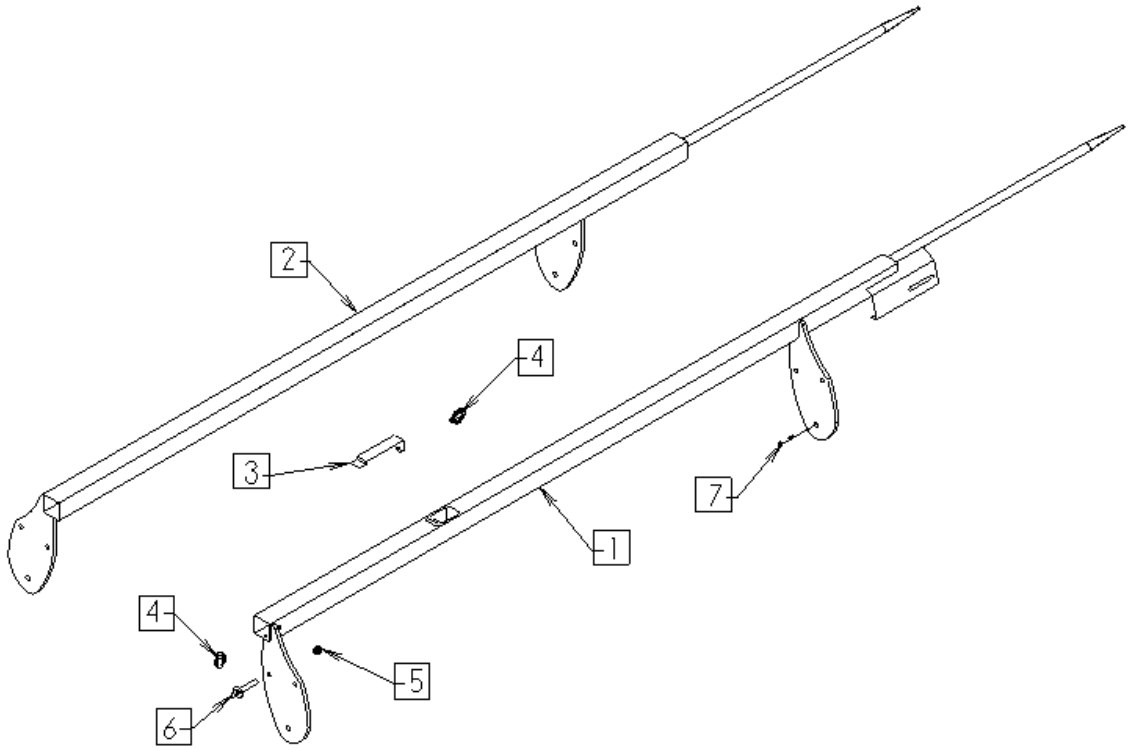


Item #	Description
1	Tail Base
2	Large Roller
3	4” Roller
4	Small Roller
5	¾” Bearing
6	1” Bearing
7	3 x 12 Hydraulic Cylinder
8	Tail Tie Bar
9	3/8 x 1 ½ Bolt
11	5/16 x 1 ½ Bolt
12	1 x 4 Bolt
13	1” Nylocknut
14	1st Small Roller Bracket
15	2nd Small Roller Bracket
16	3rd Small Roller Bracket Right
17	3rd Small Roller Bracket Left

Table of Contents
To Tail Part Numbers

Tube – Line 5500 *X* 2

Bale Saddle

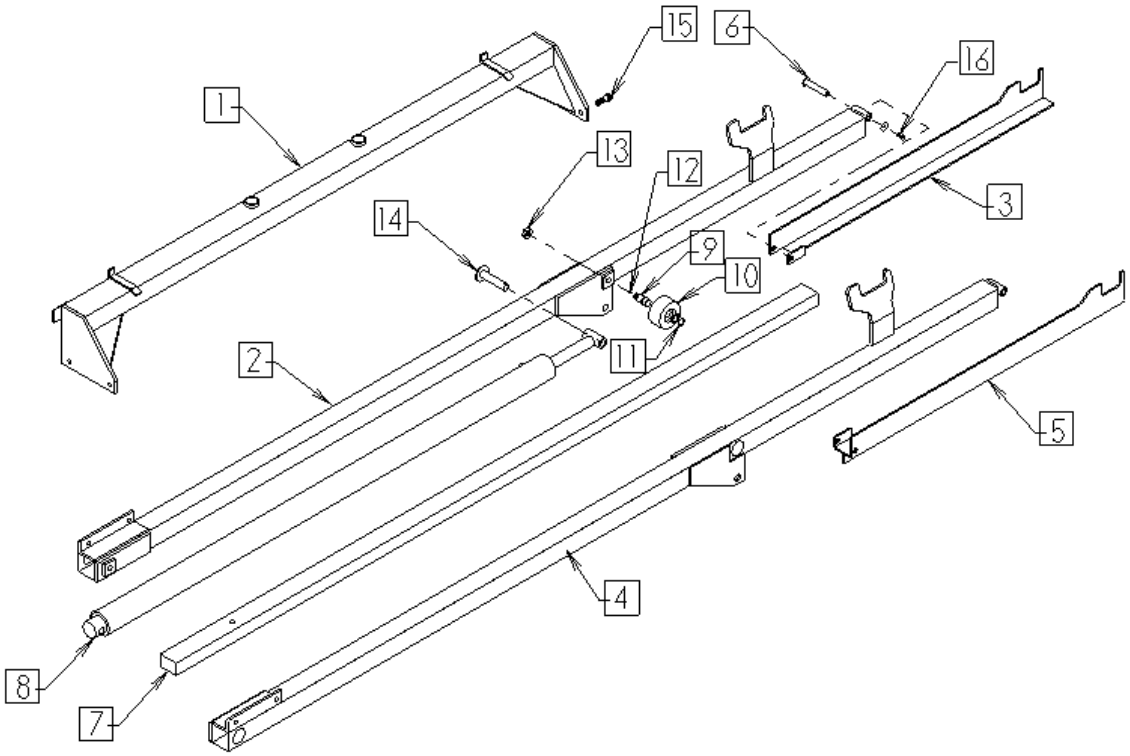


Item #	Description
1	Left Bale Guide
2	Right Bale Guide
3	Bale Trigger Plate
4	Lynch Pin
5	Grommet
6	½ Pin
7	½ x 2 Bolt

Table of Contents
To Bale Saddle Part Numbers

Tube – Line 5500 *X* 2

Bale Ram

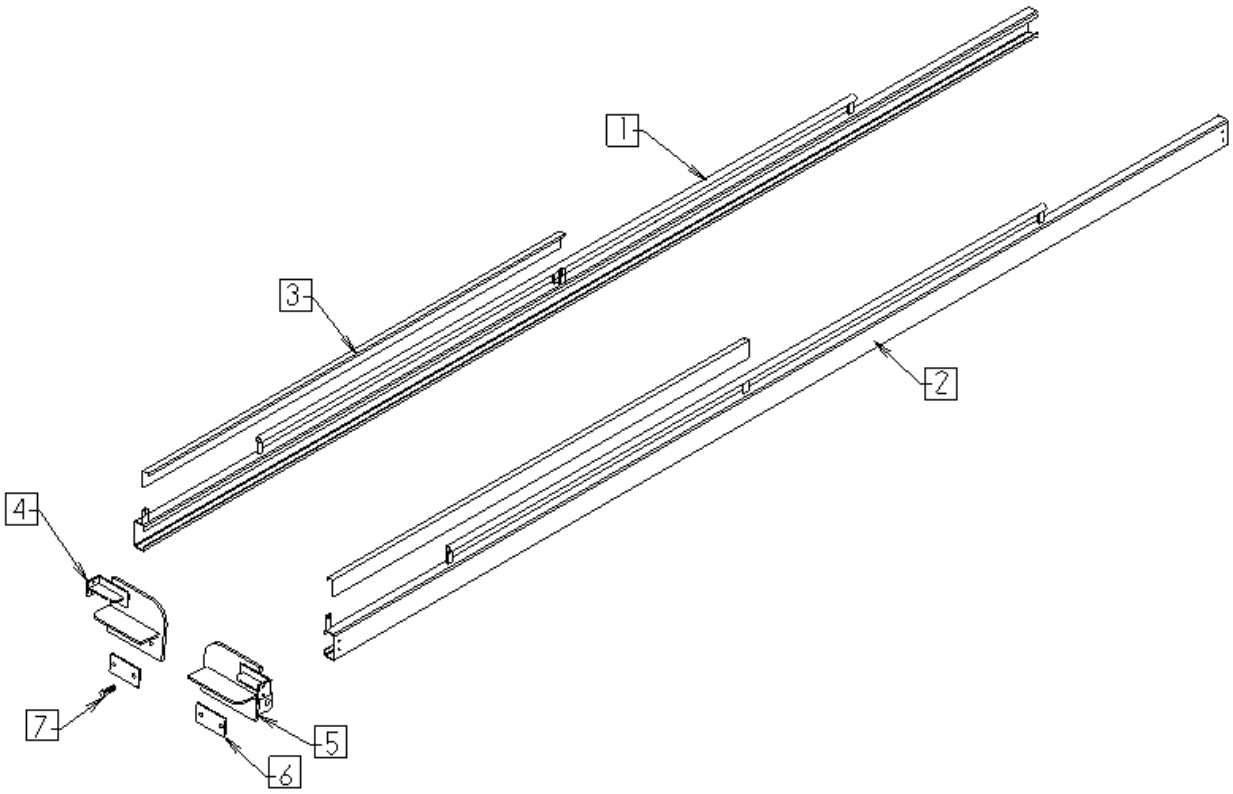


Item #	Description	Item #	Description
1	Front Ram Member	9	Ram Axle
2	Right Ram Tube	10	Ram Roller
3	Right Push-off Arm	11	Snap Ring
4	Left Ram Tube	12	Grease Fitting
5	Left Push-off Arm	13	¾ UNF Nut
6	Push-off Arm Pivot Pin	14	Cylinder Pin
7	Push-off Cross Tube	15	5/8 x 1 ½ #5 Bolt
8	Ram Cylinder	16	3/8 x ¾ Bolt

Table of Contents
To Bale Ram Part Numbers

Tube – Line 5500 *X* 2

Side Rail

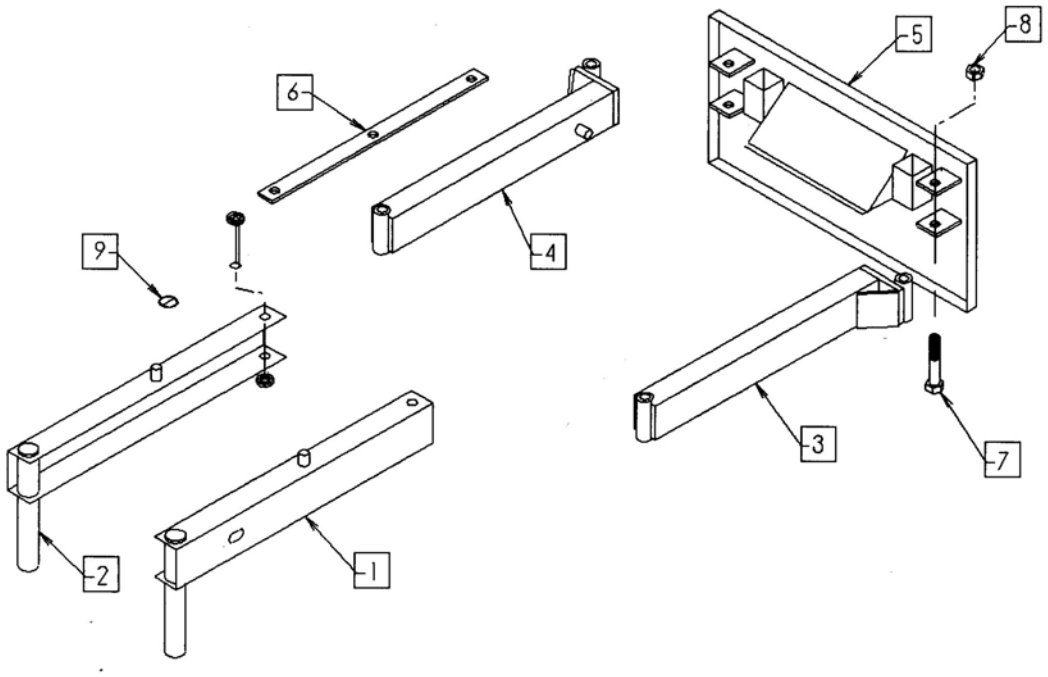


Item #	Description
1	Right Side Rail
2	Left Side Rail
3	Guard
4	Right Front Cylinder Mount
5	Left Front Cylinder Mount
6	Reinforcing Plate
7	5/8 x 1 ½ UNF Bolt

Table of Contents
To Side Rail Part Numbers

Tube Line 5500 *X* 2

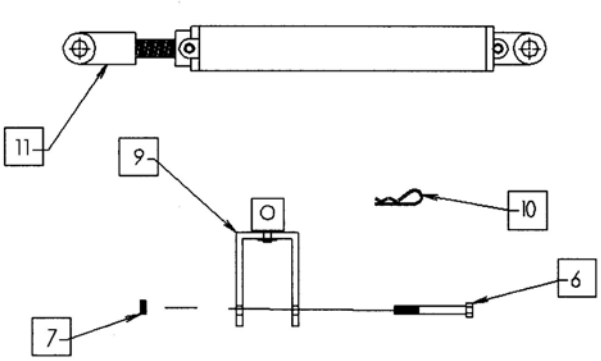
Push Off

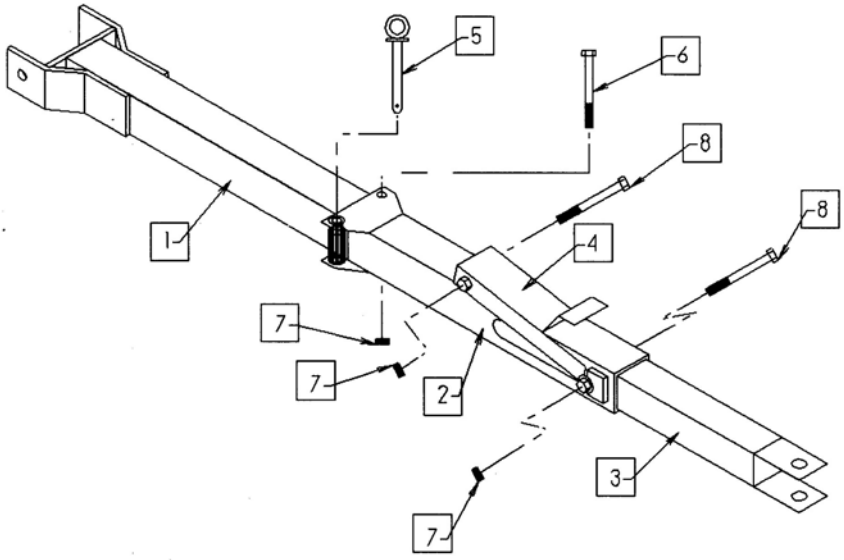


Item #	Description
1	Left Front Arm
2	Right Front Arm
3	Left Rear Arm
4	Right Rear Arm
5	Push Plate
6	X Bar
7	¾ x 5 Bolt
8	¾ Locknut
9	3/16 Linch Pin

Table of Contents
To Push Off PartNumbers

Tube – Line 5500 *X* 2
Tongue





Item #	Description	Item #	Description
1	Main Tongue	7	5/8 Locknut
2	Swinging Tongue	8	5/8 x 4 ½ Bolt
3	Sliding Tongue	9	Tongue Holder
4	Tongue Latch	10	Hair Pin
5	Tongue Pin	11	2 x 16 Hydraulic Cylinder
6	5/8 x 5 Bolt		

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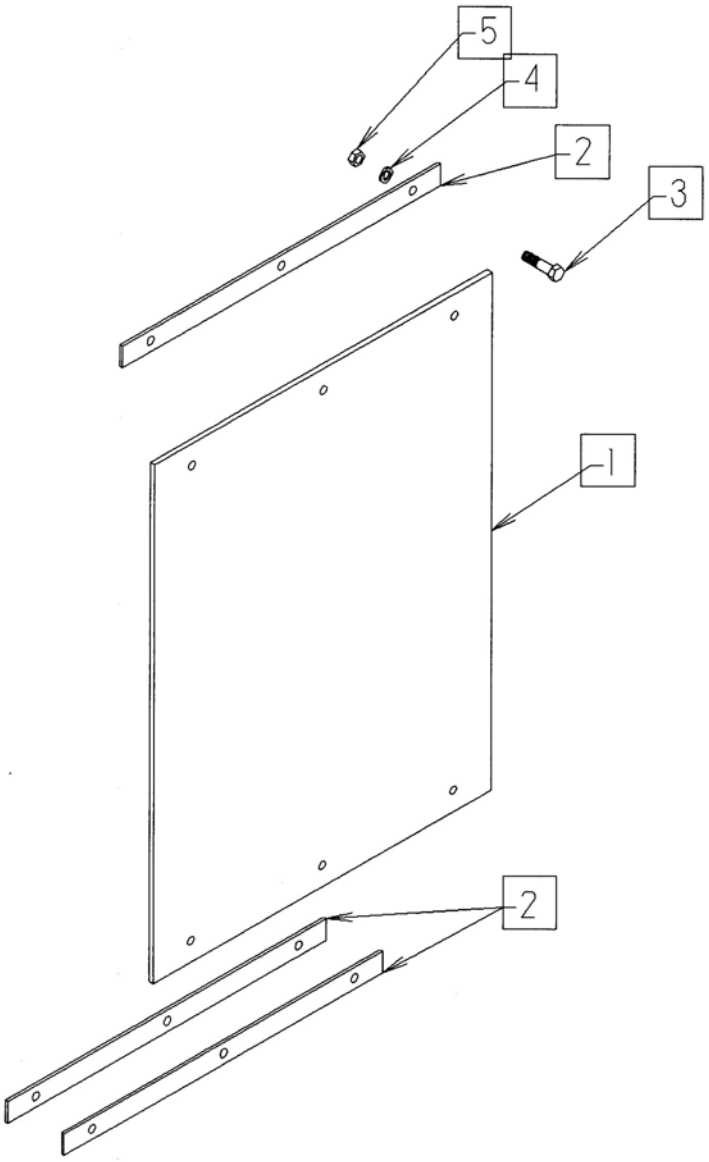
To Tongue Part Numbers

Tube Line 5500 *X* 2

Mud Flap

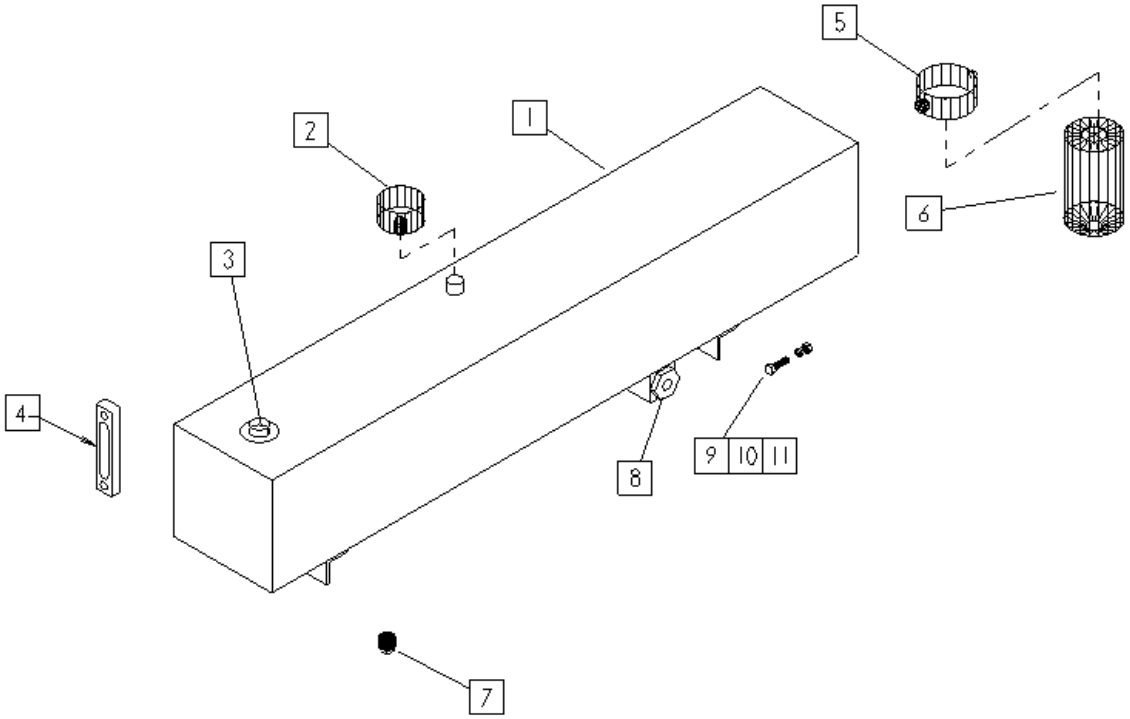


Item #	Description
1	Mud Flap
2	Metal Strip
3	Bolt
4	Lockwasher
5	Nut

Table of Contents
To Mud Flap Part Numbers

Tube – Line 5500 *X* 2

Hydraulic Tank



Item #	Description		Filter	Cross Ref
1	Hydraulic Tank		Stauf	SF6520
2	Breather Cap		Gresen	F22001
3	Filler Plug (1 1/4 pipe)		Fram	P1653-A
4	Sight Gauge		Fleetguard	HF6510
5	Filter Base		Cross	1A9021
6	10 micron Filter			
7	Magnetic Plug			
8	Suction Strainer			
9	3/8 x 1 Bolt			
10	3/8 Lockwasher			
11	3/8 Nut			

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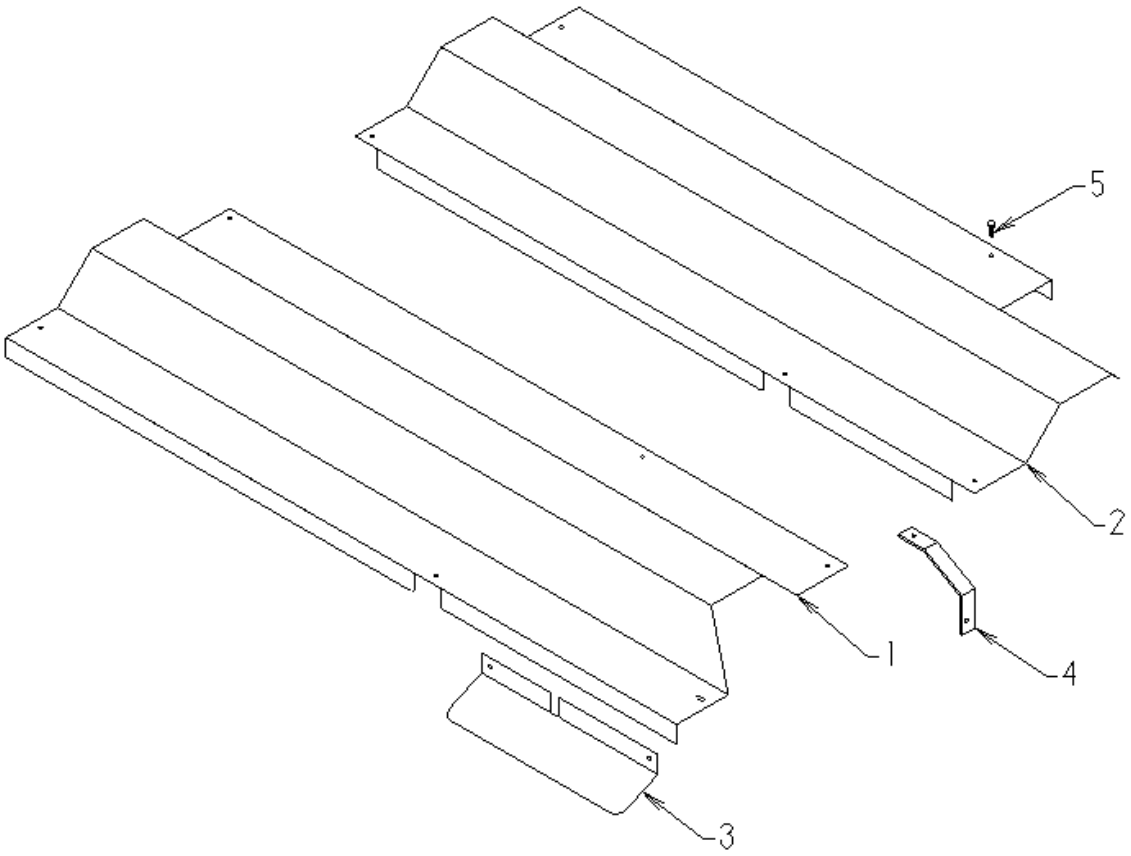
To Hydraulic Tank Part Numbers

Tube – Line 5500 *X* 2

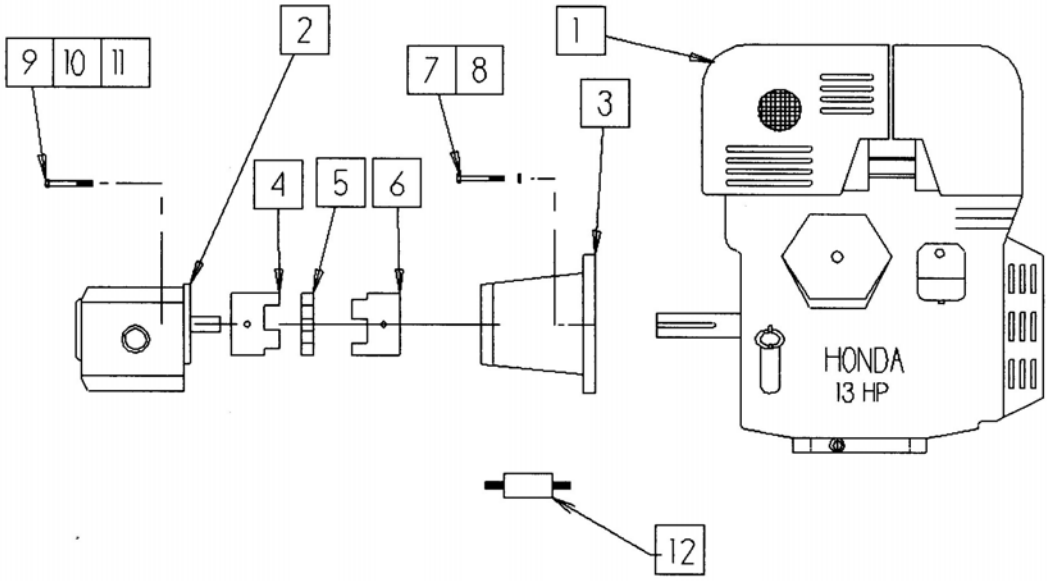
Fender



Item #	Description
1	Left Fender
2	Right Fender
3	Engine Shield
4	Rear Bracket
5	3/8 x 1 Bolt

Table of Contents
To Fender Part Numbers

Tube Line 5500 *X*2
Pump / Motor



Item #	Description	Item #	Description
1	13 HP Honda Engine	7	3/8 x 1 Bolt
2	Hydraulic Pump	8	3/8 Lockwasher
3	Engine – Pump Adaptor	9	3/8 x 1 ¼ Bolt
4	Love Joy Coupling (pump)	10	3/8 Lockwasher
5	Coupling Spacer	11	3/8 Flatwasher
6	Love Joy Coupling (engine)	12	Fuel Filter

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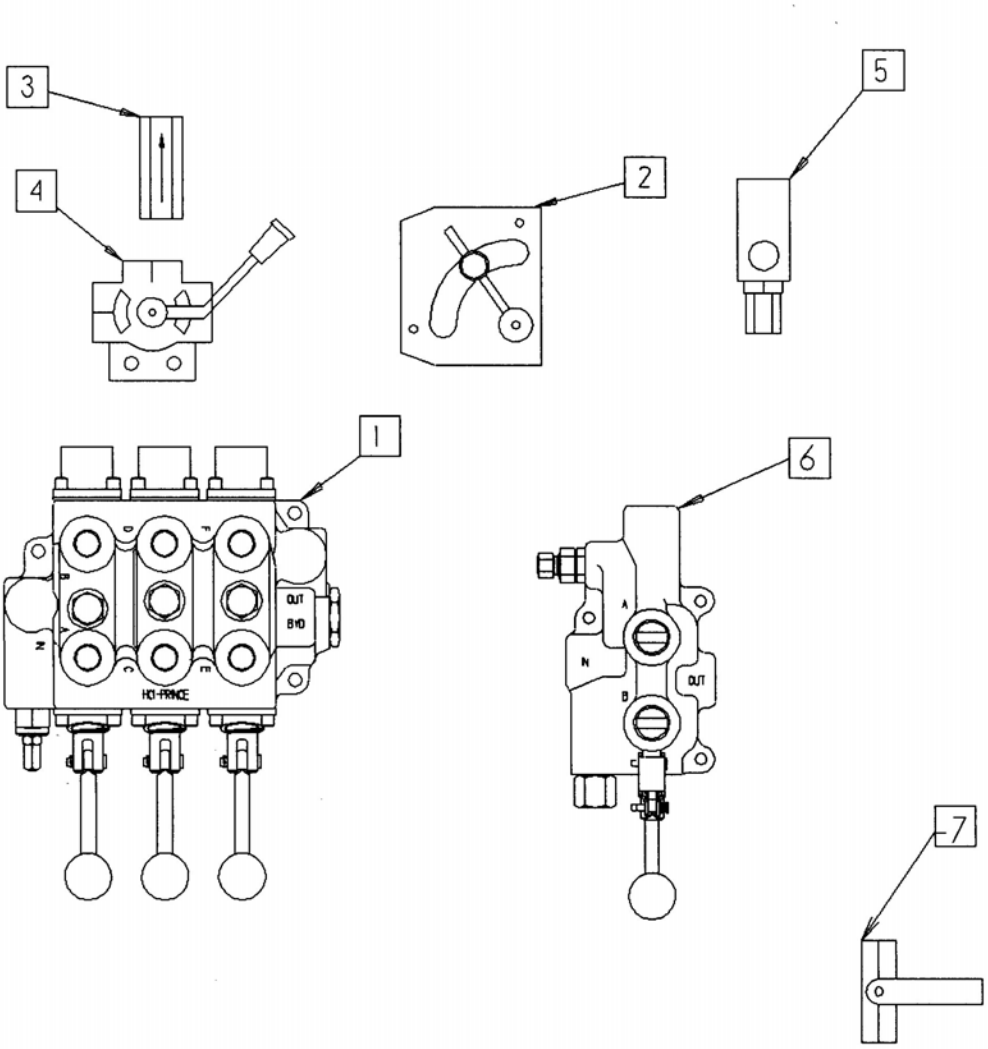
To Pump Engine

Tube Line 5500 *X* 2
Manual Valve Bank



Item #	Description
1	RD5300 Valve
2	RD- 150 –08 Flow Control
3	1/2 “ Check Valve
4	Selector Valve
5	Relief Valve
6	LS3010-1 Valve
7	Ball Valve

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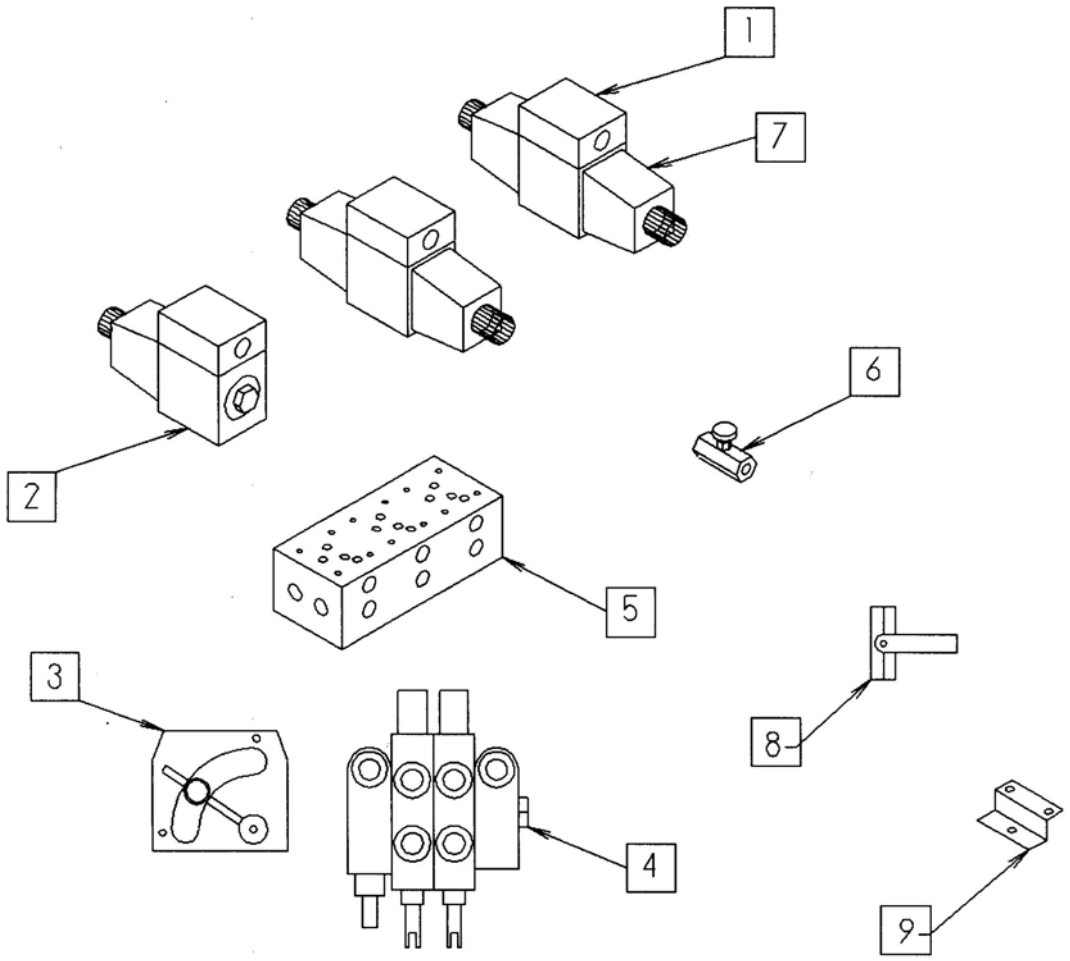
To Manual Valve

Tube Line 5500 *X* 2
Automatic Valve Bank



Item #	Description
1	Tandem Center 12 volt DC Valve
2	Single 12 volt DC Valve
3	RD-150- 08 Flow Control
4	2 Spool Mono Block Valve
5	3 Station Manifold
6	Steering Speed Control Valve
7	Valve Coil
8	Ball Valve
9	Manifold Mount

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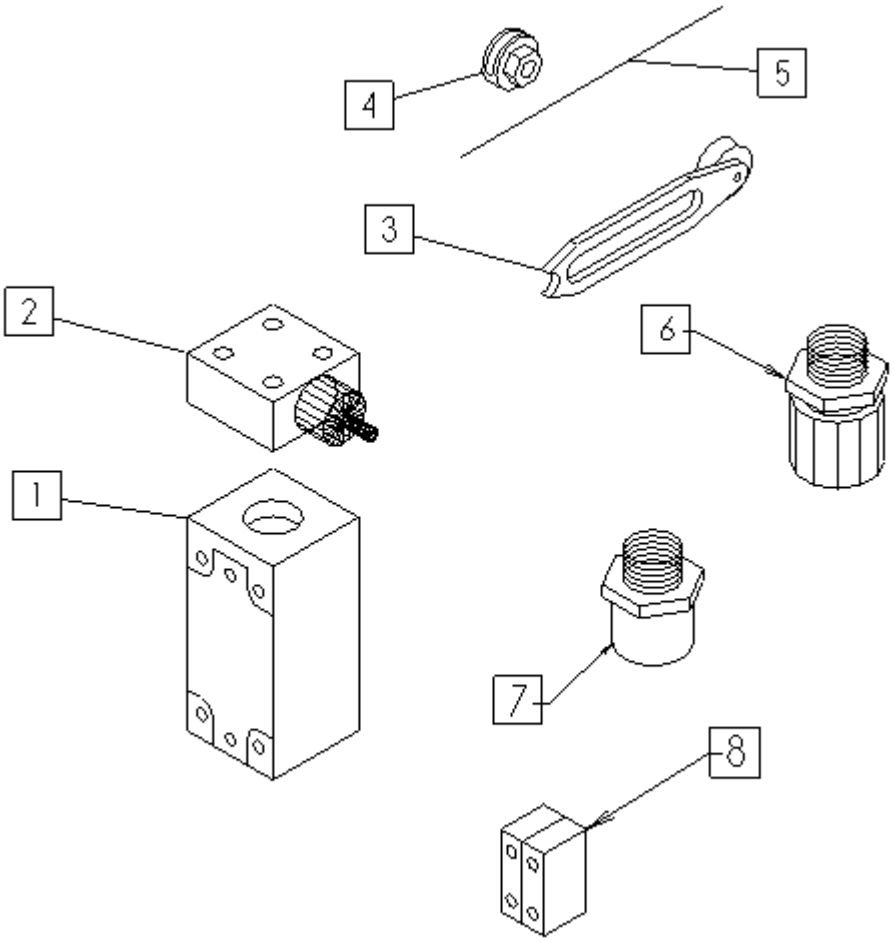
To Automatic Valve Part Numbers

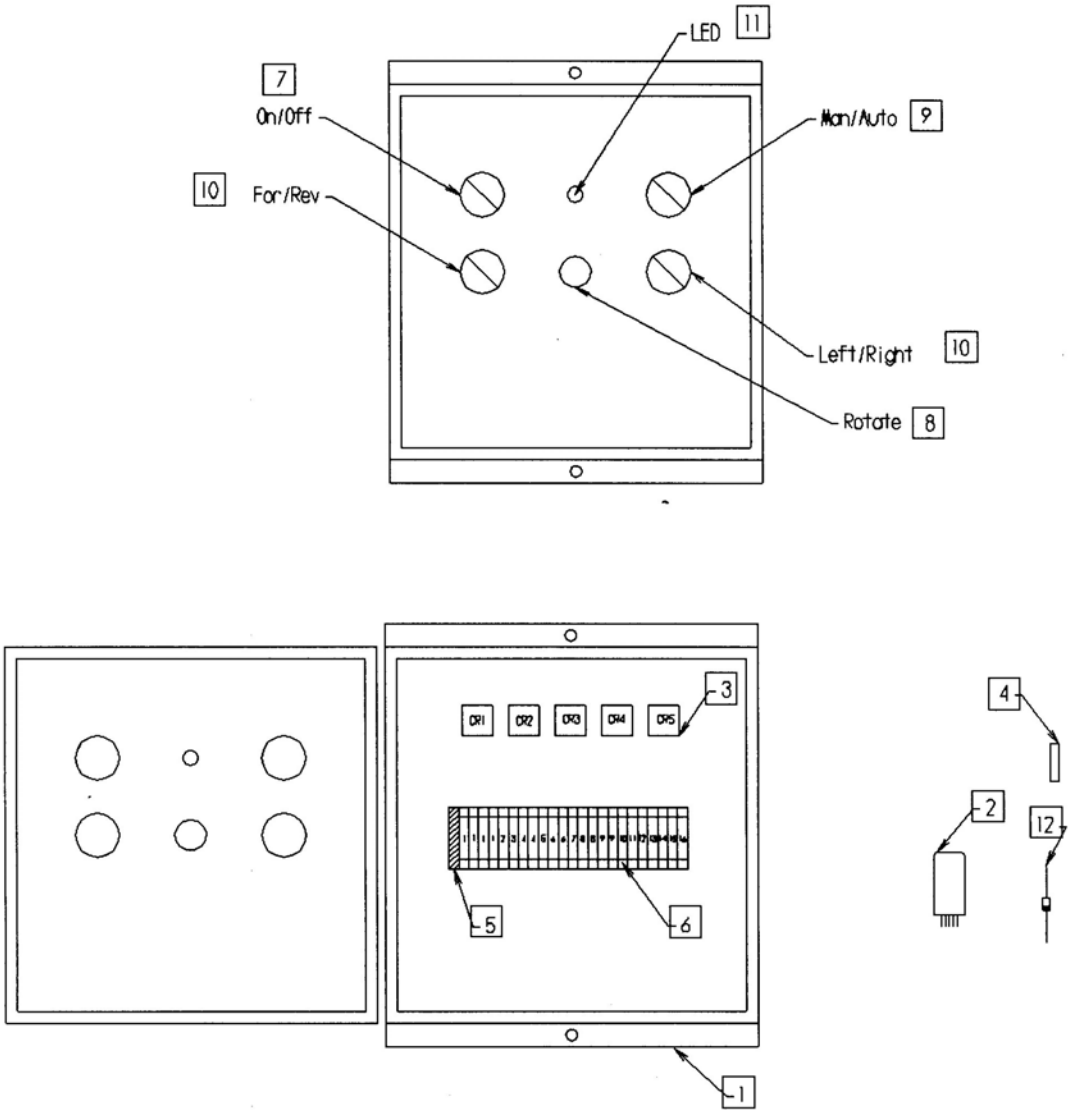
Tube Line 5500 *X* 2
Limit Switch



Item #	Description
1	Body
2	Actuator
3	Arm
4	Wire Clamp
5	Wire Arm
6	PVC Box Connector
7	Metric to pipe Adaptor
8	Contact Block

Table of Contents
To Limit Switch Part Numbers

Tube Line 5500 *X* 2
Control Panel

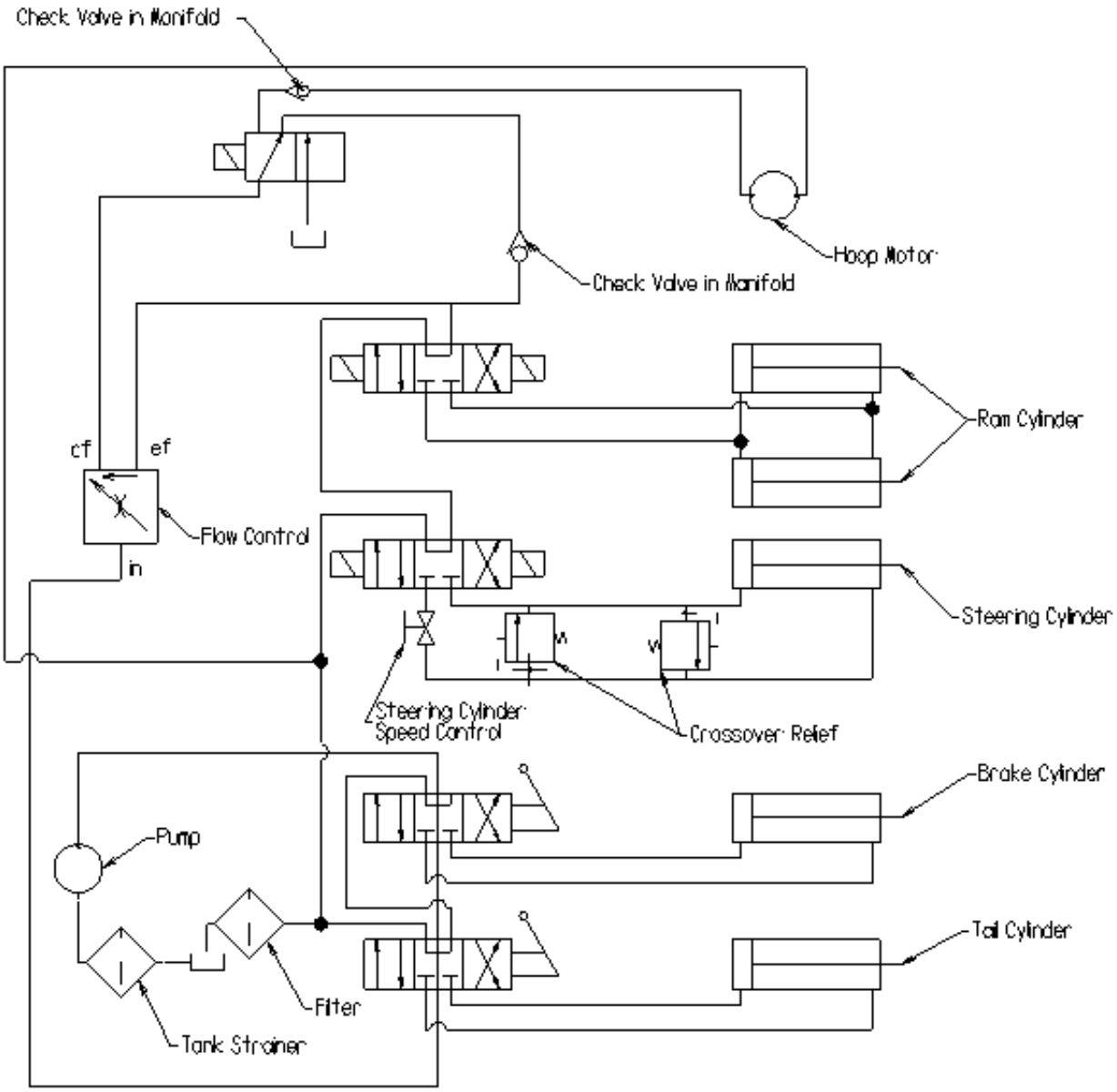


On / Off switch is also the **Engine STOP**

Item #	Description	Item #	Description
1	Control Panel Assy	7	On /Off Switch
2	Control Relay	8	Rotate Switch (push button)
3	11 Pin Base	9	Man/Auto Switch (dial type)
4	15 Amp Fuse	10	Ram & Steering (dial type)
5	DIN Rail Fuse Holder	11	LED
6	DIN Rail Terminal Block	12	Diode

Table of Contents
To Control Panel Part Numbers

Tube Line 5500 *X* 2
Electric Hydraulic Schematic



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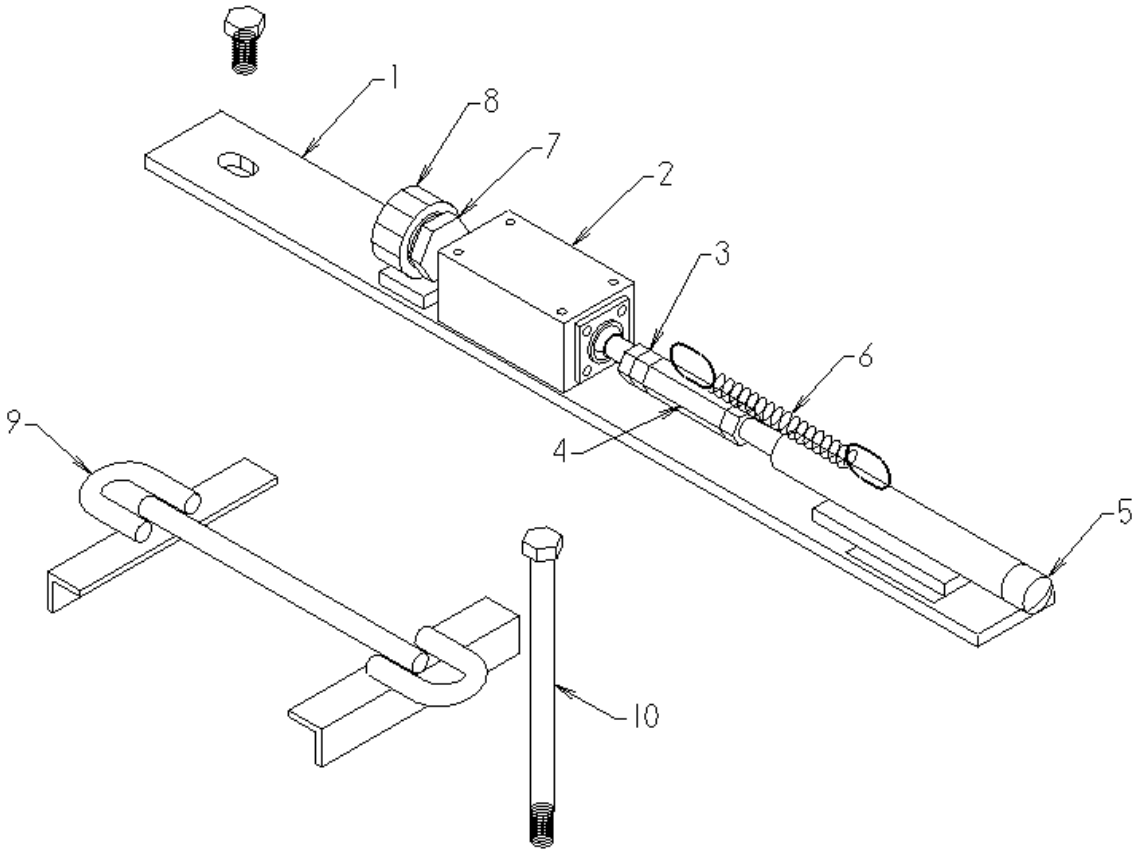
Tube – Line 5500 *X* 2

Bale Switch

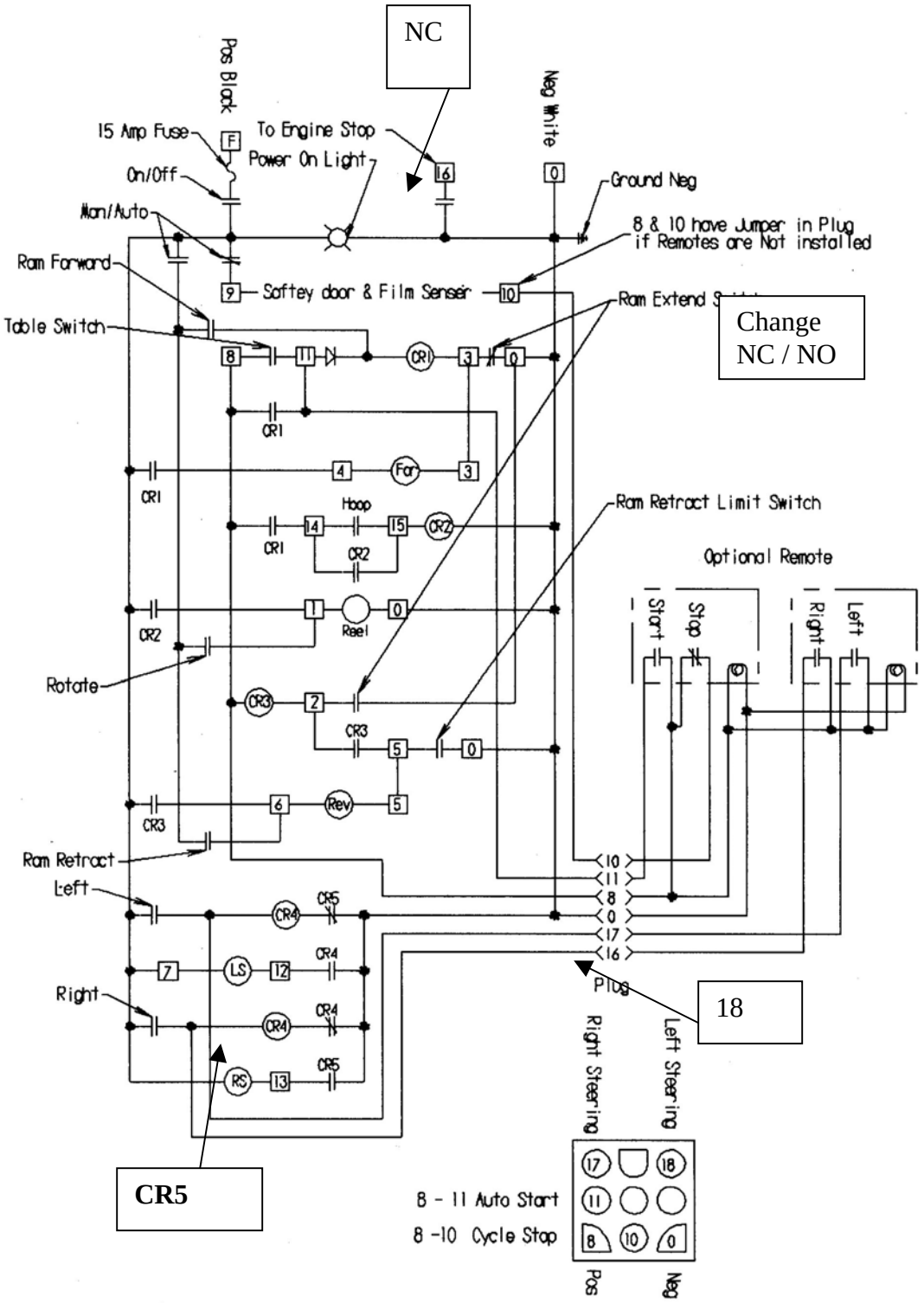


Item #	Description
1	Switch Base
2	Switch
3	3/8 x 1 Bolt
4	3/8 Coupling Nut
5	Push Rod
6	Spring
7	Adaptor metric to inch
8	Wire Clamp
9	Battery Hold – Down
10	Battery Bolts

Table of Contents
To Bale Switch

Tube Line 5500

Electric Control Panel Schematic



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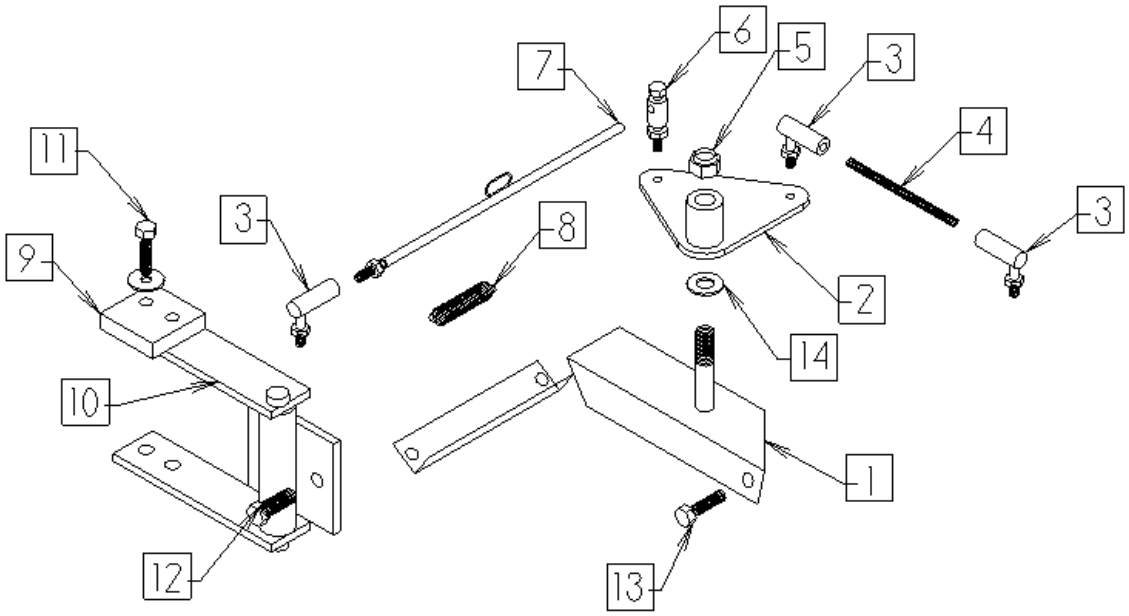
Tube – Line 5500 *X* 2

Throttle



Item #	Description	Item #	Description
1	Engine Bracket	8	Spring
2	Swing Link	9	Striker Block
3	Ball Joint	10	Main Link
4	¼ UNF Rod	11	5/16 x 1 ½ Bolt
5	½ Locknut	12	3/8 x 1 ½ Bolt
6	Linkage Pivot	13	5/16 x 1 Bolt
7	Control Rod	14	½ SAE Washer

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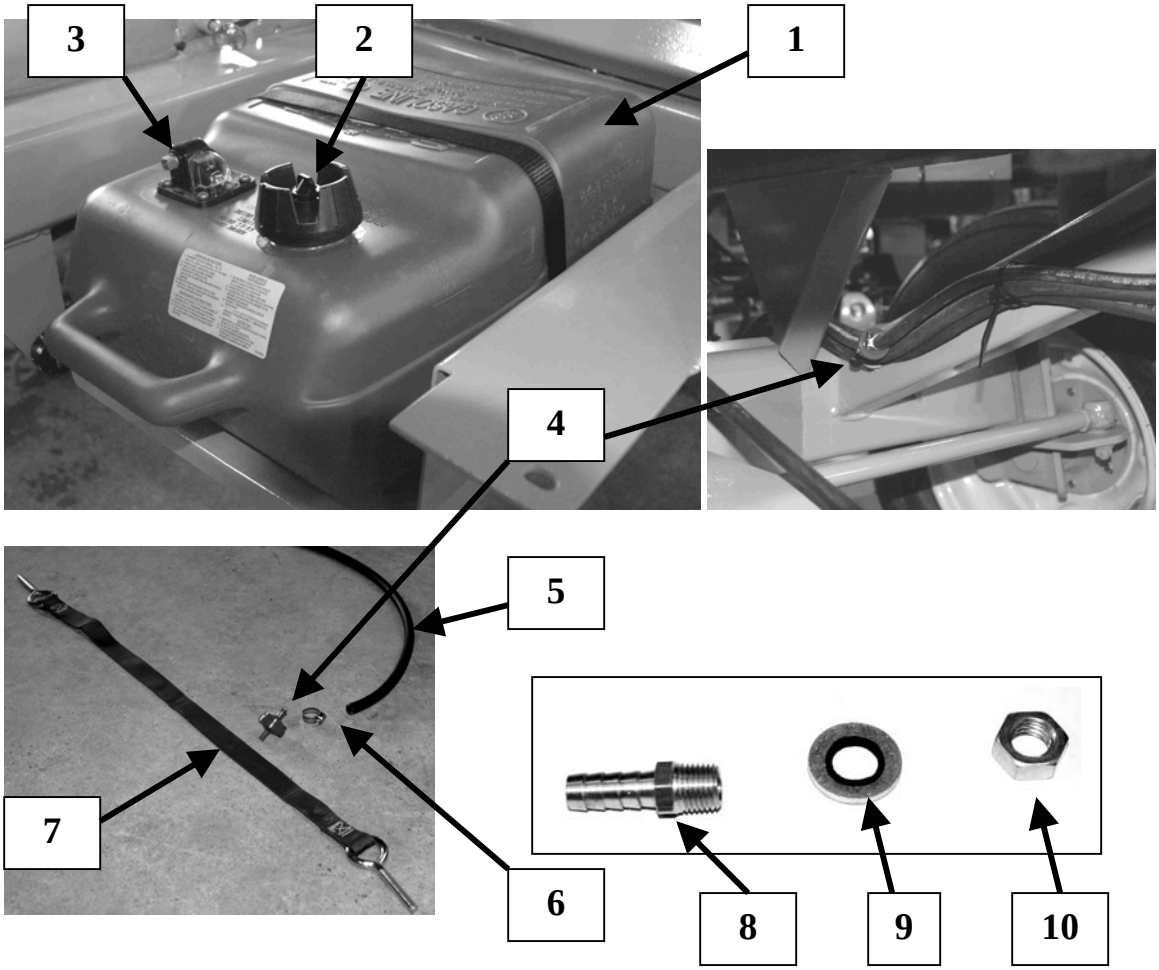
To Throttle Part Numbers

Tube Line 5500 *X*2

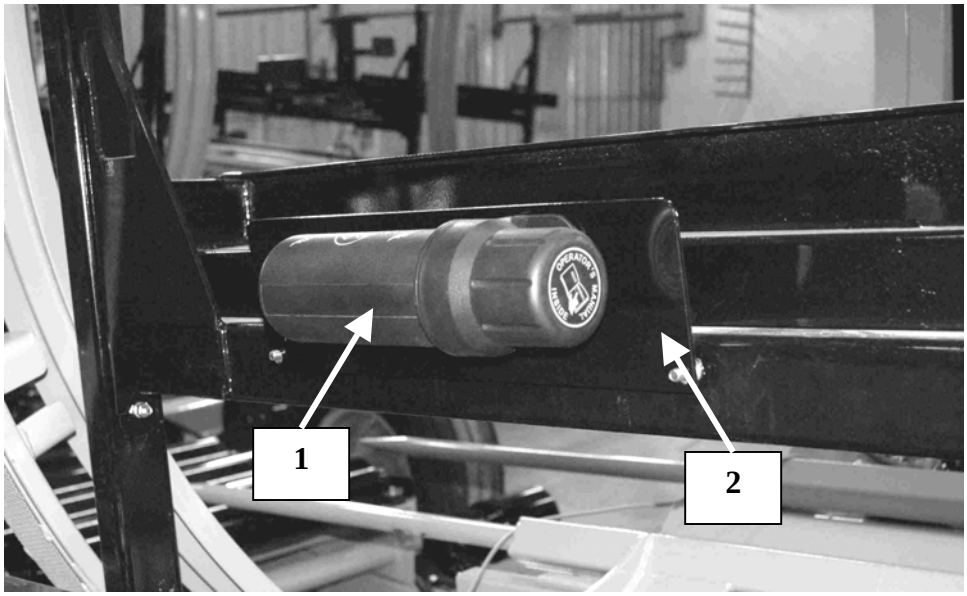
Fuel Tank



Item #	Description
1	Fuel Tank
2	Vented Cap
3	Fuel Gauge Assy
4	Fuel Filter
5	Fuel Line
6	Hose Clamp
7	Tie Down Strap
8	Hose Adaptor
9	Sealing Washer
10	Adaptor Nut

Table of Contents
To Fuel Tank Part Numbers

Tube Line 5500 *X* 2
Operator's Manual Holder



Item #	Description
1	Manual Holder
2	**Mounting Bracket**

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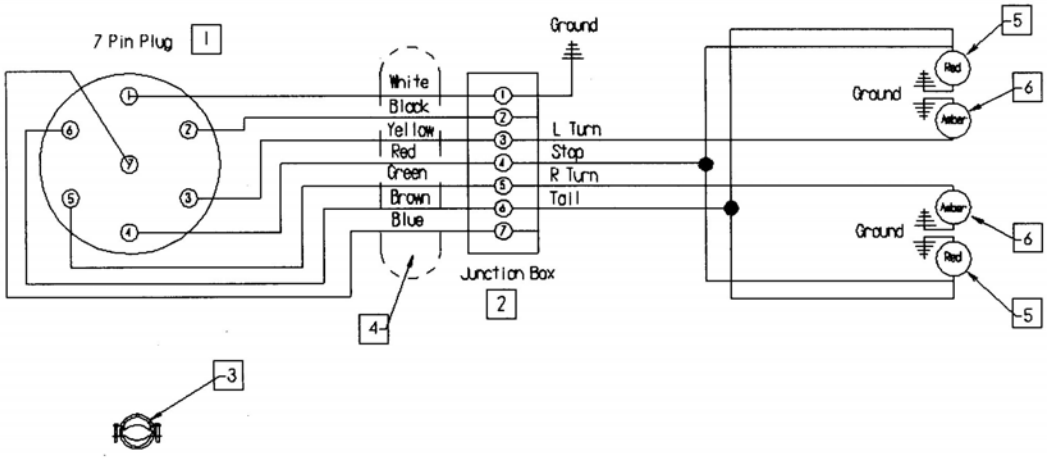
To Manual Holder Part Numbers

Tube Line 5500 *X* 2
Running Lights



Item #	Description
1	7 Pin Plug
2	Junction Box
3	Strain Relief
4	7 Wire Conductor
5	Red Lamp
6	Amber Lamp

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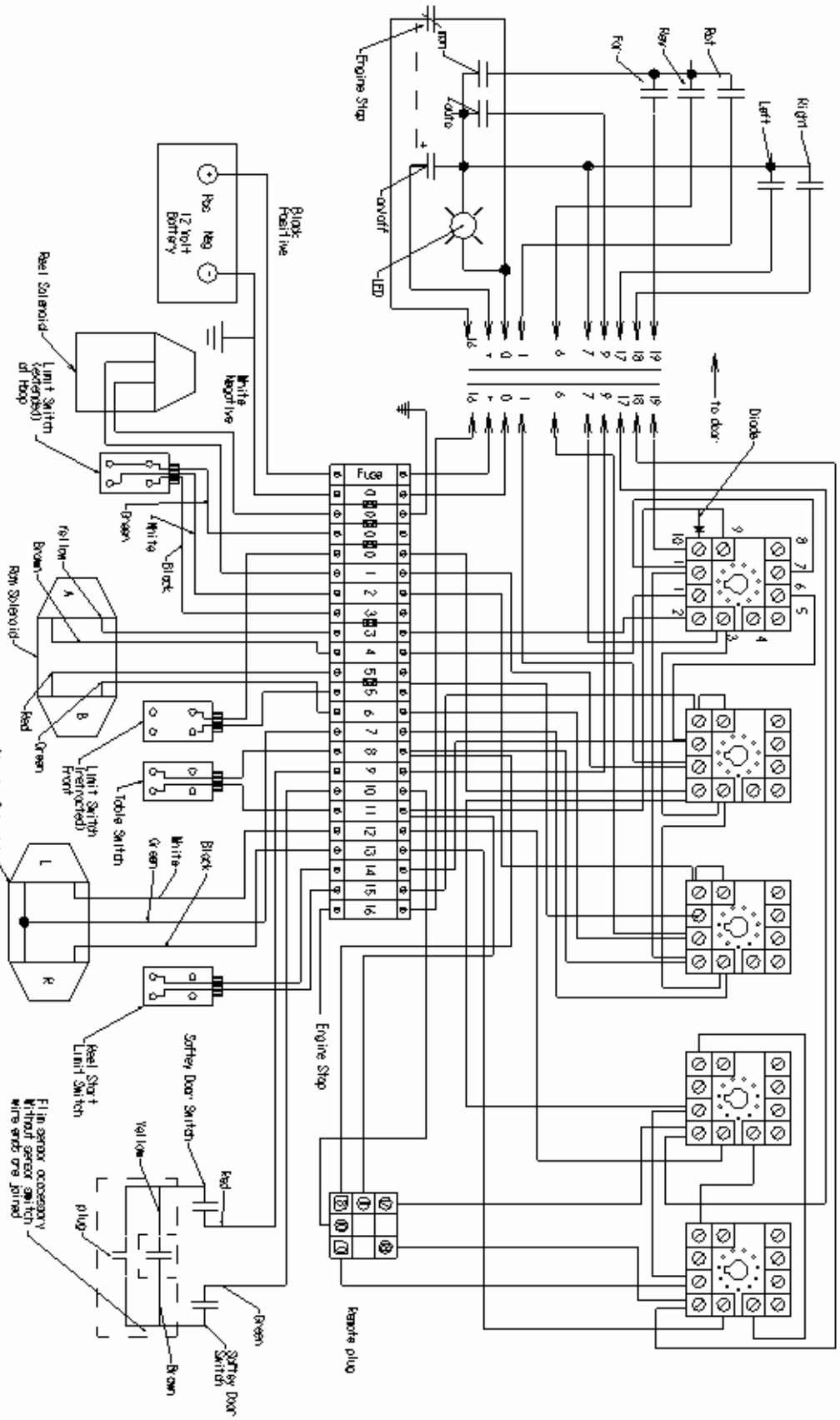
Tubeline 55 X2 Wiring



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Tube-Line 5500

Manual Hydraulic
Sequence of Operation

1 With valves in neutral position, engine running hydraulic fluid is pumped through valve bank and returned to reservoir.

2 Brakes, tail and steering are standard hydraulic cylinder operation.

3 Wrap cycle – push wrap valve in, detent will hold valve in position, fluid flows from valve through flowcontrol and is split into 2 circuits, one circuit will go to ram cylinders and the other will go to hydraulic motor. These circuits are proportioned with the lever on flowcontrol valve. With the selector valve handle in “Both” position flow will go to cylinder and motor. By changing flowcontrol handle, the cylinders will speed up or slow down accordingly. At the same time motor will change speed inversely to cylinder ie. when cylinder slows down motor will speed up.

4 Selector valve is used to bleed either cylinder or motor flow back to tank, or block both circuits causing both cylinder and motor to operate. ie. With handle in wrap only position the fluid that would normally go to the cylinder will flow back to tank. With handle in ram only position motor fluid will go to tank.

5 Wrap cycle – pull wrap valve out, detent will hold valve in position, fluid will flow from valve port causing cylinder to retract. Fluid from other end of cylinder will return through check valve, at flowcontrol back through valve stack and to tank.

6 Check valve at motor lets motor freewheel in one direction without cavitating. Relief valve at motor return acts as a restrictor valve to keep motor from turning when ram cylinder is retracting.

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Tube-Line 5500

Electric Hydraulic
Sequence of operation

1 With valves in neutral position, control panel on/off switch in off position, engine running fluid is pumped through valve stack and returned to reservoir.

2 Brakes and tail are standard hydraulic cylinder operation.

3 Wrap cycle fluid flows from power beyond port on 2 spool valve to flowcontrol, and is split into 2 circuits one circuit goes to double solenoid valve for ram cylinder, the other circuit goes to single solenoid valve for hydraulic motor. By moving flowcontrol handle more or less fluid will flow to cylinder or motor ie. as more fluid flows to cylinder less fluid will flow to motor and vise-versa.

4 Electric control panel- “Man-Auto” switch turned to “Man”. Turn “On/Off” switch to On, then red LED will light up indicating 12V power is at control circuits, with engine running. Turn "Forward" switch in to energize solenoid A on double solenoid valve. Ram cylinder will extend. Turn "Reverse" switch to energize solenoid B on same valve. Ram cylinder will retract. Push Rotate button in and hydraulic motor will turn. "For/Rev and Push" buttons have to be held to operate, by releasing them action will stop. Engine throttle has linkage to slow engine down when ram is all the way to the front. Spring on linkage will speed engine up as soon as Ram cylinder starts to extend.

5 When “Man/Auto” switch is turned to Auto, "For/Rev and Rotate" switches no longer function. Depress trigger switch located on bale table, Ram hydraulic valve is energized. The ram cylinder will extend and engine will speed up. When ram extends to front slider switch, this switch will energize the single solenoid valve and turning the wrap motor. When ram is extended to the limit switch at the end of stroke, single solenoid valve and double solenoid valve "A" will turn off. Solenoid B will energize causing ram cylinder to retract until it trips limit switch at the front end of bale table, solenoid "B" will turn off, the ram cylinder will stop and engine will idle down.

Steering is done by steering switch, right/left activating steering double solenoid valve A or B. This valve will work in either manual or automatic mode.

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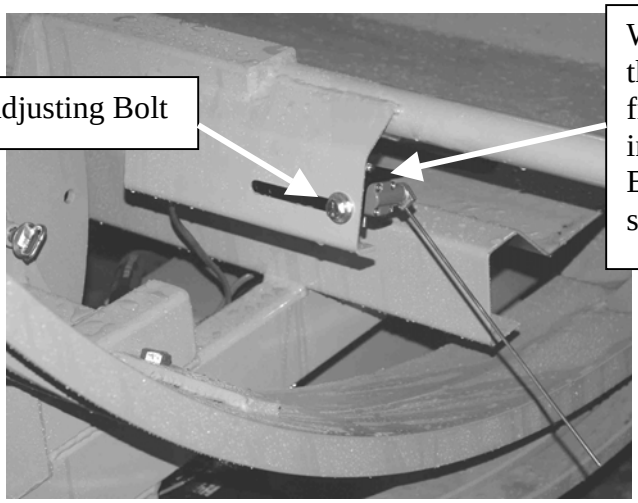
To Manual Holder Part Numbers

Tube - Line 5500 *X* 2
Film Sensor



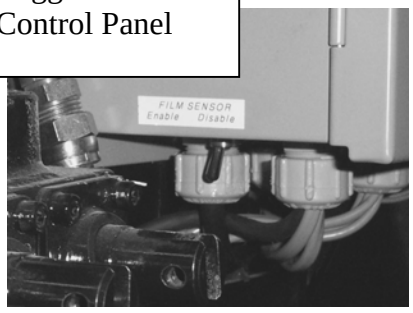
Installation

This machine is pre-wired for a film switch. To install, locate 2-wire plug on the end of a wire that is located close to the rear left pivot on the Bale Saddle.
Remove the plug and plug film switch onto it.
Install toggle switch into the bottom of the control panel as shown. Remove JUMPER wire and wire toggle switch in where the jumper was. The wires are not polarity sensitive. With this switch the sensor can be disabled in the "auto" position.

Notice: in "man" the sensor and the safety doors **Do not** work.

Adjust the wire arm with no plastic in the machine. Make sure the wire does not interfere with the plastic roll assy. When plastic is in the machine it will hold the wire up, causing the switch to close. Make the switch closes with the wire parallel with the bale spears. Wire can be shortened to suit your needs. The switch bracket can be adjusted back and forth so only one layer of plastic holds the wire up, if more then one layer contacts the wire then the unbroken roll of plastic will hold the switch up and defeating the sensor.

Toggle Switch in Control Panel



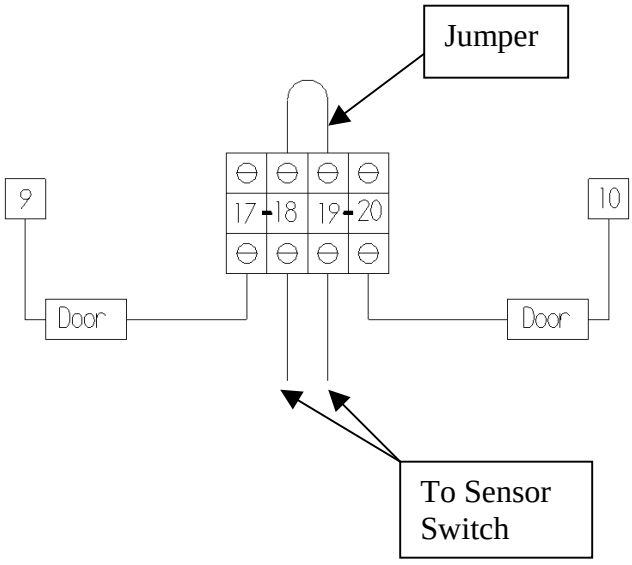
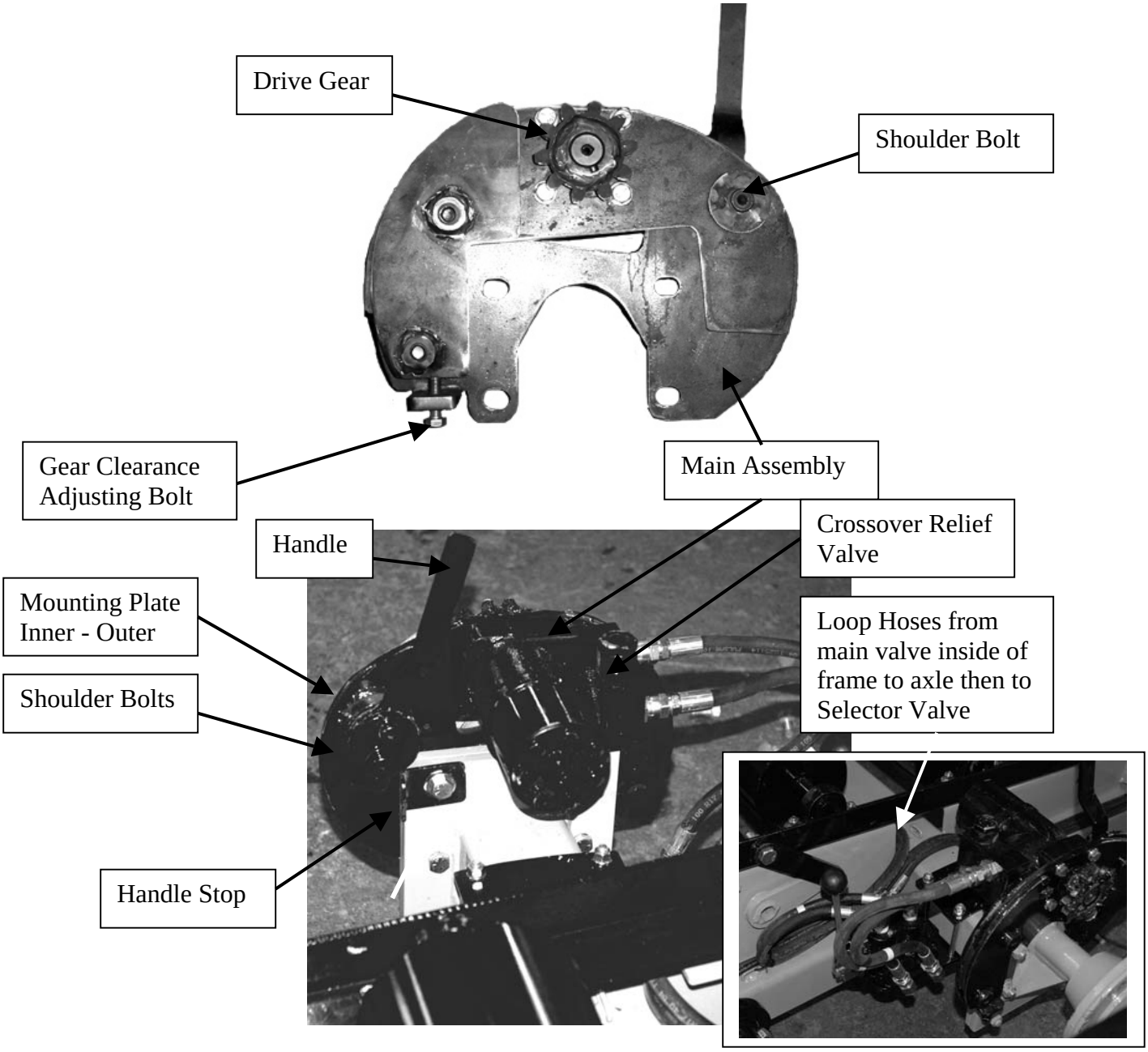


Table of Contents
To Film Sensor Part Numbers

TubeLine 5500 *X* 2
Wheel Drive



Handle Update kit	Item #	Description	Part #
#550-203-242	1	Rim with Gear (not shown)	550-200-134
Consists of	2	Main Assembly	550-200-135
2 pc c/w SAE Washer	3	Shoulder Bolt	550-200-136
	4	Gear	550-203-237
	5	Motor	550-200-138
1 pc	6	Handle	550-203-240
1 pc	7	Inner Plate	550-203-238
1 pc	8	Outer Plate	550-203-239
1 pc	9	Handle Stop	500-203-241

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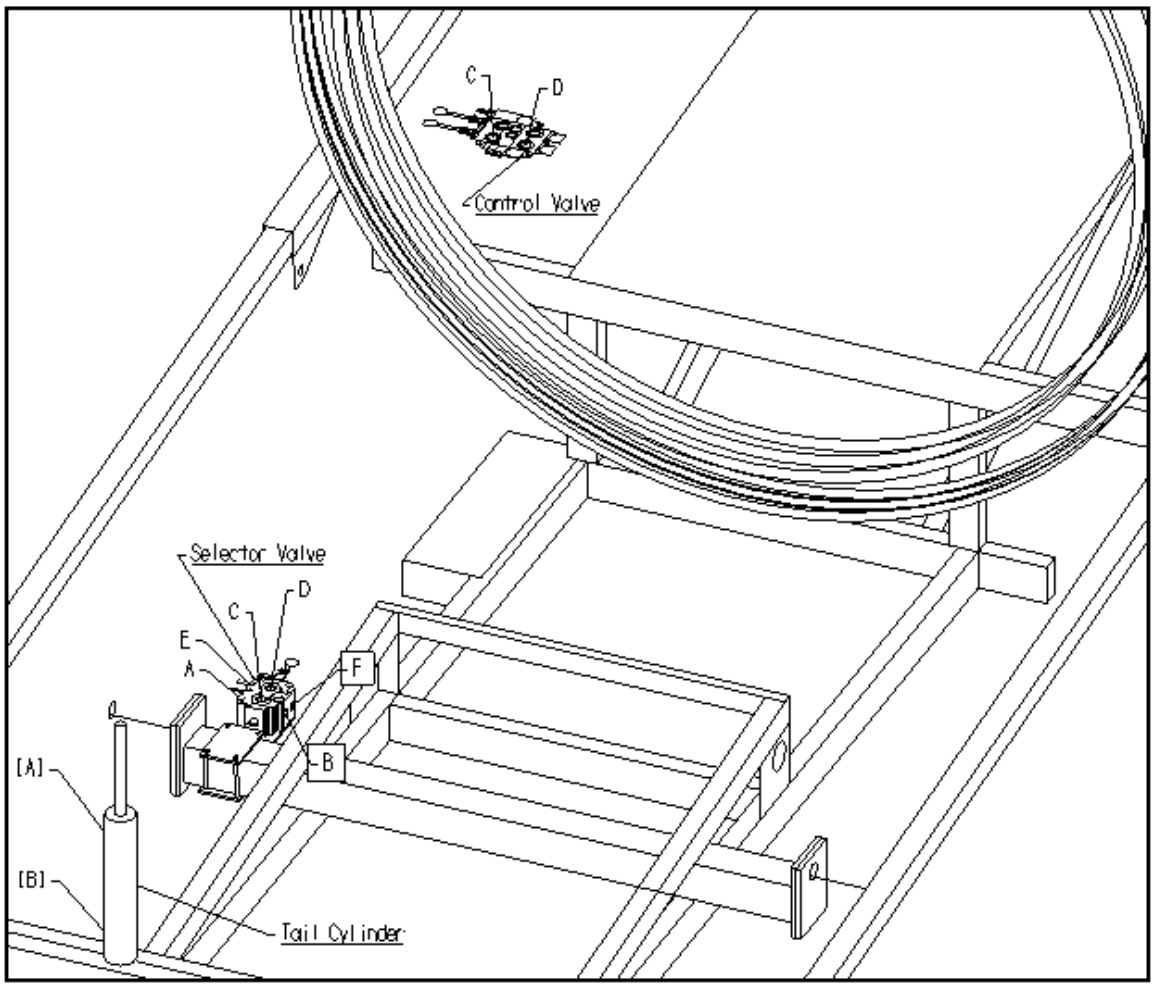
To Wheel Drive Part Numbers

TubeLine 5500 *X* 2

Wheel Drive

Hydraulic Valve Locations



Item #	Description
2	Selector Valve
3	Selector Valve Mount
4	Mount Clamp

Table of Contents

Wheel Motor Hydraulics

Remove wheel from Rear left hub, and unbolt the spindle assy.
Mount the hydraulic motor assy on the outside of spindle bracket with the longer1/2 bolts.
Install the new rim with gear welded on the inside.

After rim is installed adjust gear so that the backlash is at a minimum but allowing the gear to turn freely.
To do this engage handle to top, loosen bolts **A** and move plate up or down by adjusting height bolt and retighten bolts.
After adjustment is OK, lock height adjustor bolt with jam nut.

Mount selector valve on ¼ x 4 ¼ plate with 2 pc 3/8 bolts.
Fasten selector valve bracket on bottom of axle beam with smaller plate on top of axle and bolt with long 3/8 bolts through plates. Clamping assy. on to axle.

Remove Hydraulic lines from port C and D on control valve.
Install 3/8 in. line x 164 from port D on control valve to port D on Selector Valve
Install 3/8 in. line x 164 from port C on control valve to port. C on selector Valve
Install 3/8 in. line x 14 from port E on selector vale to Bottom port on Motor.
Install 3/8 in. line x 14 from port A on selector valve to Top port on Motor.
Install ¼ in. line x 64 from port F on selector valve to Bottom port on Tail Cylinder.
Install ¼ in. line x 64 from port B on selector valve to Top port on Tail Cylinder.

To Use The Wheel
-The control valve that is used to raise and lower the tail will now also be used to drive the wheel through the selector valve. By shifting the selector valve you can select between the wheel motor and tail cylinder.

-To engage the wheel motor, swing the handle beside the motor all the way up to the top position until the handle slides down behind handle stop.

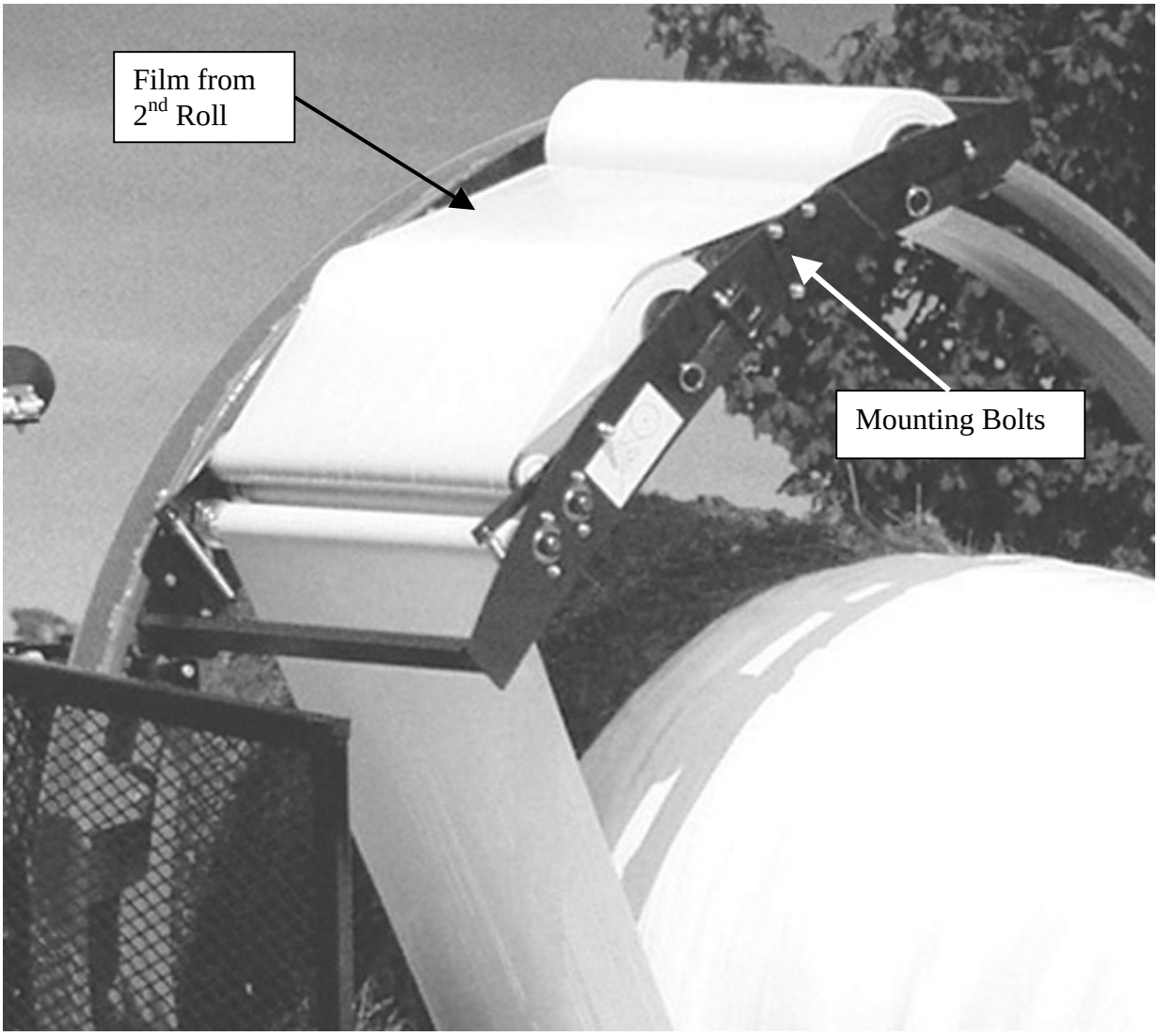
Notice: Do not force the handle. If the gears do not mesh, try to turn the small gear a little bit with the hydraulic valve and try again.

-To disengage pull handle Up then and swing handle all the way down.

Coat Motor Gear <u>Lightly</u> with grease before installing

Table of Contents

TubeLine 5500 *X* 2
Twin Wrap Kit



Note

The film from the 2nd roll goes over top of the first roll and through the tension rolls together with the first film from the first roll**.**

Item #	**Description**
1	Twin Wrap Frame
2	Plastic Wrap Spool
3	3/8 x 1 Bolts, nut lockwasher
4	Spool Holder

Table of Contents
To Twin Wrap Kit Part Numbers

TubeLine

Model TL5500 *X*2 & TL6500 *X2* Remote

Re: Mounting Accessories (year 2003)

Remote Package consists of Pause –Cycle stop, Start – start wrap cycle,
Steering – Right/Left

1: Installing Remote Package

Bolt receiver assembly to inside rear right of control box with connector plug at bottom Remove the jumper between term #8 and #10. Plug the connector together at the bottom of the panel.

Notice

Antenna wire stays inside the control box

2: To frequency has been preset at the factory. If in the event that another machine would be in close proximity to this machine, there is a slight chance that the frequencies will interfere with each other. The frequencies can be changed by removing the receiver from the control panel and changing the DIP switches on the channels. The hand unit will also have to have the switches set the same as the receiver.

3: When using the remote start of ram, unplug the wire from the switch at the table trigger to disable the switch. Secure the end of wire somewhere so it does not get tangled in the steering of the wrapper, make sure the plug will not short out to the frame.

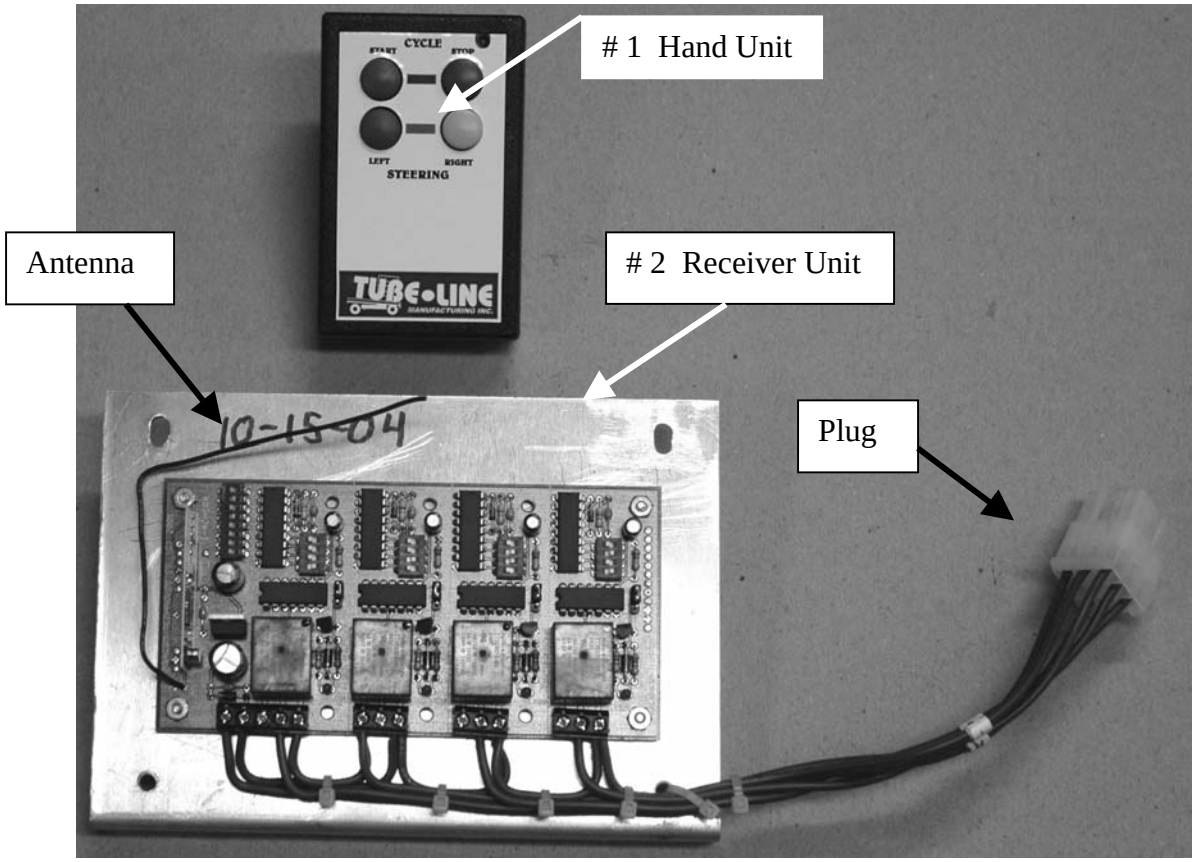
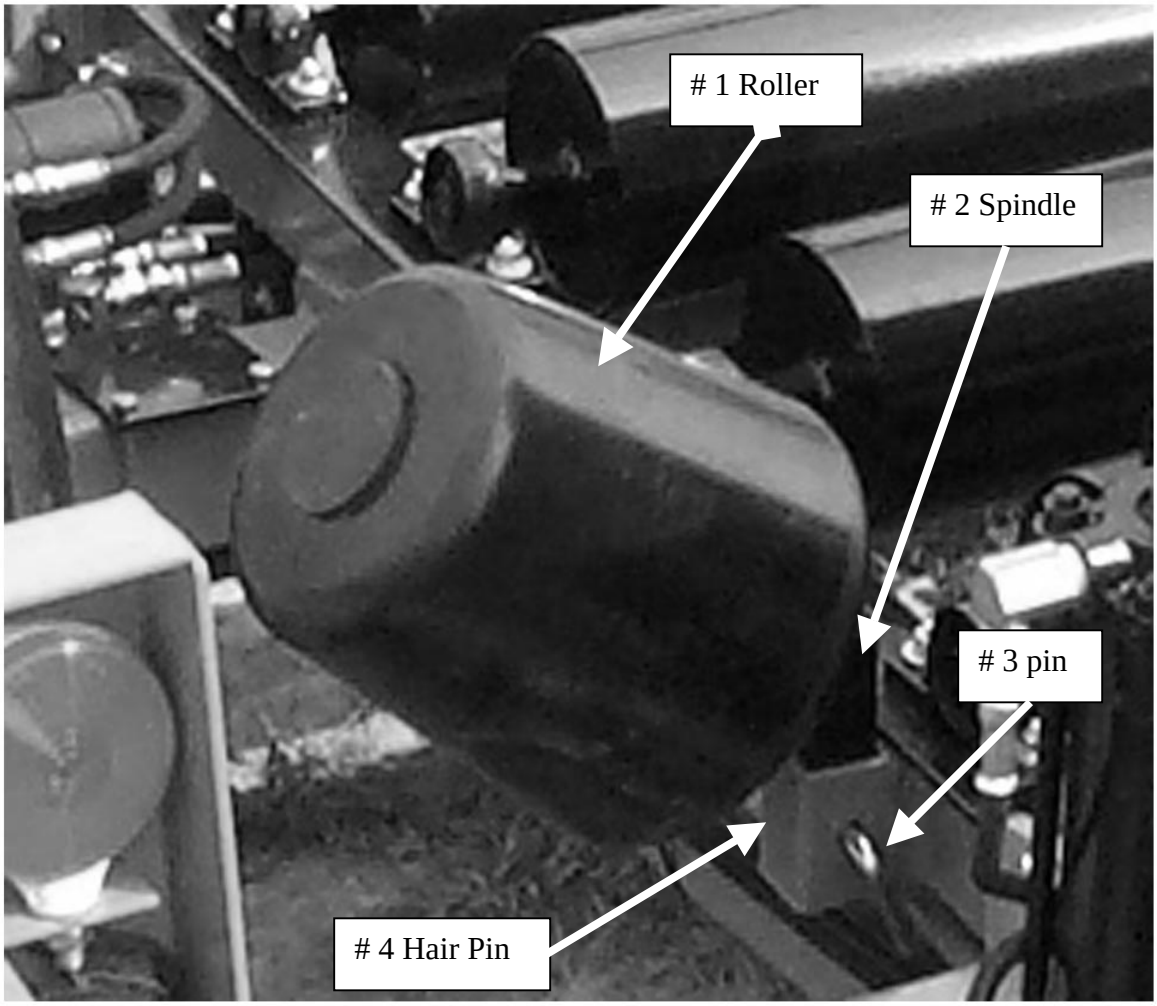


Table of Contents
To Remote Part Numbers

TubeLine 5500 *X* 2
Guide Roller Kit

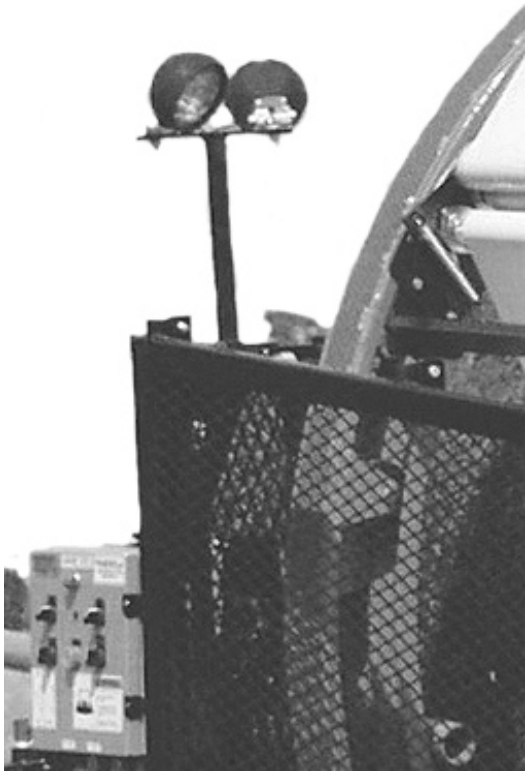
Kit consists of two rollers that are used on the lower side to keep the bales from rolling off to one side.



Item #	Description
1	Roller
2	Spindle
3	Pin
4	Hair Pin

Table of Contents
To Guide Roller Part Numbers

Tube Line 5500 *X* 2
Lights

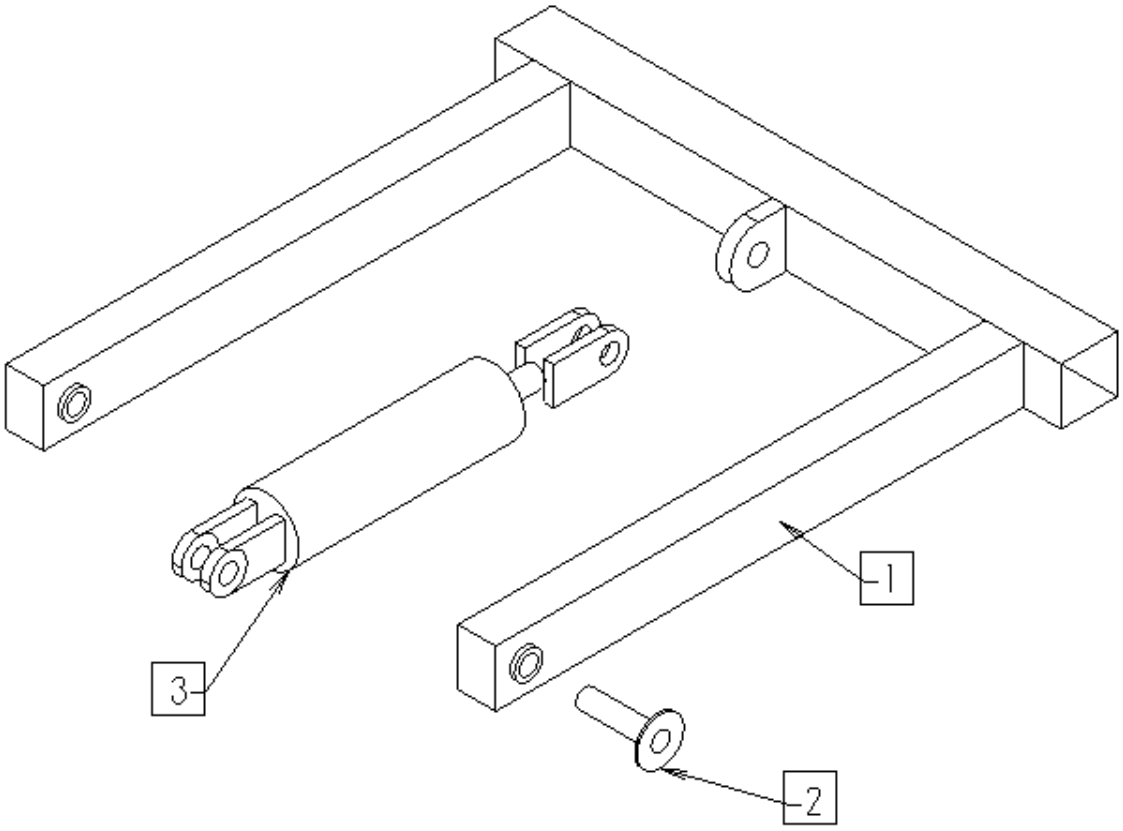


The light brackets can be mounted on top of side guards as shown.
Light package consists of 3 lights and one on/off toggle switch.
Usually the lights are mounted with 2 lights facing to the rear and 1 facing to the front.
The toggle switch can be mounted by drilling a ½" hole into the side or the bottom, (preferred) of the control panel, be careful that you don't damage wires on the inside. Install the switch, inline fuse and wire it into the **bottom** of fuse block. This way lights are fused separate from the wrapper controls.
The engine has an 18 Amp charging system and should keep the battery charged.
Note: the engine only charges 18 amp when running at high speed; at an idle it charges very little. With the lights on and the engine not revved up, over a period of time the battery will slowly discharge.

Table of Contents
To Operating Lights part Numbers

Tube – Line 5500 *X* 2

Leveler



Item #	Description
1	Main Stand
2	Pivot Pin
3	3 ½ x 8 Cylinder

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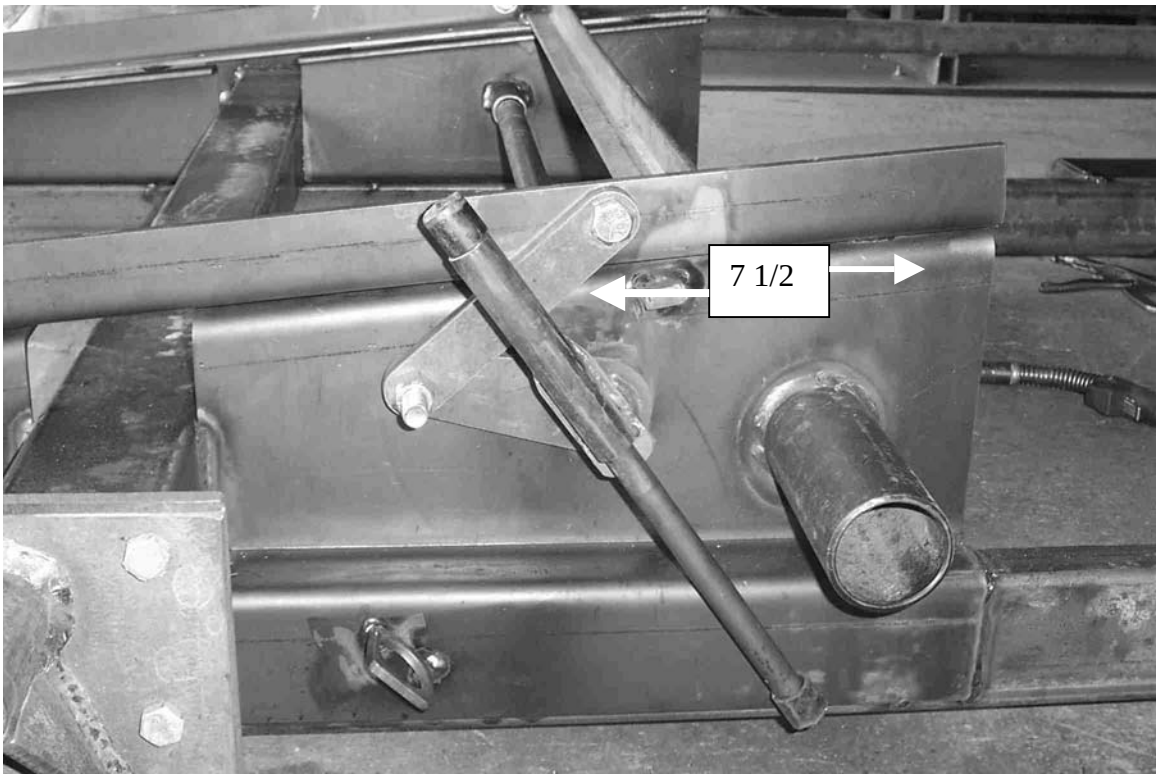
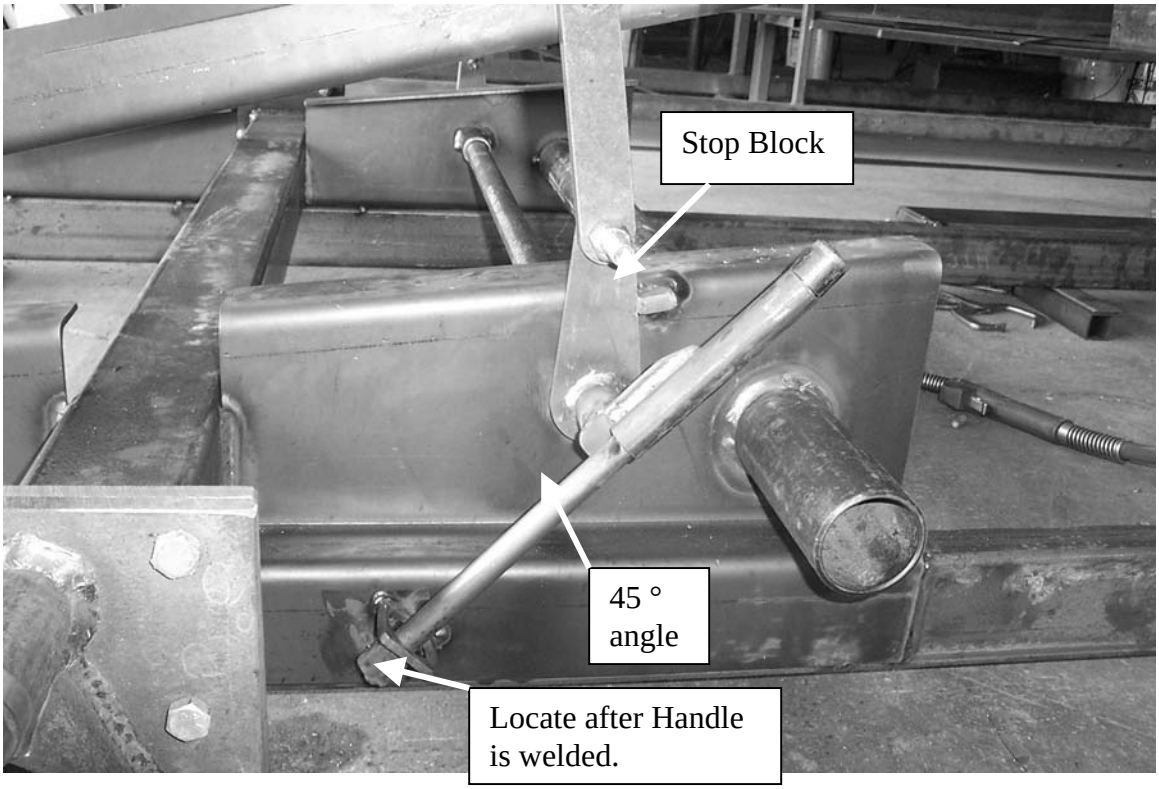
To Quick Start Jack Part Numbers

Riser Location





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TUBE-LINE 5500 *X* 2
PART NUMBERS

Hoop To Hoop

Page #	Ref #	Part #	Qty	Description
25	1	550-100-001	1	Hoop Outer Ring
25	2	550-100-002	1	Hoop Inner Ring
25	3	550-200-116	2	Mounting Bolt 5/8 x 2
25	4	599-100-004	2	5/8 Nut
25	5	599-100-005	2	5/8 Lockwasher
25	6	599-100-003	2	Mounting Bolt 5/8 x 3 1/2

Hoop Wheels **To Hoop Wheels**

26	1	500-200-014	8	4" Wheel
26	2	500-100-015	8	Axle Bolt \ Locknut
26	3	550-200-016	8	Spanner

Plastic Wrap **To Plastic Wrap Carrier**

27		550-100-072		Complete Main Wrap Assembly
27	1	550-100-089	2	Main Wrap Bracket
27	1A	550-200-090	2	Main Wrap Side Insert
27	2	550-100-005	4	1-14 UNF Castellated nut
27	3	550-100-006	4	Tensioner Roller
27	4	550-100-007	8	3/4 Flange Bearing
27	5	550-100-008	2	Small Gear
27	6	550-100-009	2	Large Gear
27	7	550-100-010	2	Gear Cover
27	8	550-200-115	2	Spool Holder
27	9	550-200-012	4	Wrap Spool
27	10	550-100-013	8	5/8 Flatwasher
27	11	550-100-014	4	5/8 Nylocknut
27	13	500-100-022	2	Plastic Pipe
27	14	500-100-021	4	Plastic Bearing
27	15	550-100-016	4	Bracket
27	16	550-100-017	4	Spacer
27	17	500-100-135	4	Spring
27	18	550-100-018	2	Axle Plastic Roller
27	19	550-100-003	2	1/2 x 2 Bolt c/w Locknut

27	20	550-100-019	16	5/16 Carriage Bolt
27	21	550-100-020	4	3/16 Keystock
27	22	550-100-021	2	Grease Fitting
27	23	599-100-006	8	10-24 x 3/4 Machine Bolt
27	24	550-200-100	8	3/8 x 1 #5 bolt
27	25	550-200-101	8	3/8 locknut
27	26	550-200-102	2	3/8 x 2 1/2 bolt
27	27	550-200-103	2	Latch
27	28	550-200-104	2	3/16 lynch pin

Hoop Brace

To Hoop Brace Assy

28	1	5X2-100-100	1	Right Hoop Brace
28	2	5X2-100-101	1	Left Hoop Brace
28	3	5X2-100-102	1	Right Hoop Post
28	4	5X2-100-103	1	Left Hoop Post
28	5	599-100-104	2	Switch Adjuster Screw
28	6	5X2-100-105	1	Automatic Control Panel Mount
28	7	5X2-100-106	1	Manual Control Mount
28	8	599-100-110	4	1/2 x 4 1/2 Bolt
28	9	5X2-100-110	1	Left Bale Deflector
28	10	5X2-100-111	1	Right Bale Deflector
28	11	599-100-111	14	3/8 x 3 Bolts

Page	Ref	Part	Qty	Description

Right Guard

To Right Safety Guard

29	1	5X2-100-022 R	1	Right Safety Door
29	2	5X2-100-024 R	1	Right Side Safety Door Bracket
29	3	5X2-100-120	1	Top Roller Bracket
29	4	5X2-100-121	1	Top Roller
29	5	5X2-100-122	4	Bottom Roller
29	6	500-100-083	2	1/2 x 3 Bolts
29	7	599-100-111	2	3/8 x 3 Bolts
29	8	599-100-031	2	3/8 x 1 1/2 Bolts

Left Guard

To Left Safety Guard

30	1	5X2-100-023 L	1	Left Safety Door
30	2	5X2-100-025 L	1	Left Side Safety Door Bracket
30	3	5X2-100-120	1	Top Roller Bracket
30	4	5X2-100-121	1	Top Roller
30	5	5X2-100-122	4	Bottom Roller
30	6	500-100-083	2	1/2 x 3 Bolts
30	7	599-100-111	2	3/8 x 3 Bolts

30	8	599-100-031	2	3/8 x 1 1/2 Bolts
30	9	550-200-050	1	Hoop Lock Pin

Cylinder Suppt

To Ram Cylinder Support

31	1	5X2-100-130	1	Right Cylinder Supporit Bracket
31	2	5X2-100-131	1	Left Cylinder Support Bracket
31	3	5X2-100-132	1	Right Cylinder Clamp
31	4	5X2-100-133	1	Left Cylinder Clamp
31	5	550-200-109	2	Cylinder Support Block
31	6	5X2-100-134	2	5/16 x 1 1/4 Bolt
31	7	599-100-111	2	3/8 x 3 Bolt
31	8	500-100-046	4	3/8 x 1 Bolt
31	9	500-100-083	4	1/2 x 3 Bolt

Hoop Drive

To Hoop Drive

32	1	5X2-100-049	1	Drive Wheel Base
32	2	5X2-100-050	1	Hydraulic Motor **Char Lynn** 101-1005
32	3	500-100-051	1	Motor Hub
32	4	500-100-052	1	Drive Wheel
32	5	500-100-053	4	1/2 x 3 UNF Bolt
32	6	500-100-054	4	1/2 Wheel Nut
32	7	500-100-055	2	5/8 x 1 1/2 Bolt
32	8	500-100-056	2	5/8 Locknut
32	9	500-100-057	4	3/8 x 3/4 Bolt
32	10	500-100-038	4	3/8 Lockwasher
32	11	500-100-059	1	Check Valve (maual model only)
32	12	500-100-060	1	Wheel Washer
32	13	500-100-061	1	1/4 x 1 Bolt & Lockwasher
32	14	500-101-222	1	Relief Valve (manual model only)
32	15	500-101-231	1	Wheel Tensioner Spring
32	16	500-101-232	1	Spring Tensioner Bolt
32	17	500-100-076	2	1/2 Nut
32	18	5X2-100-090	1	Base Bracket
32	19	599-100-031	4	3/8 x 1 1/2 Bolt

Page	**Ref**	**Part**	**Qty**	**Description**

Axle Spindle

To Axle/Spindle /Hub

33	1	500-100-063	4	Inner Seal
33	2	500-100-064	4	Inner Bearing
33	3	500-100-065	4	Inner Bearing Race
33	4	500-100-066	4	Hub

33	5	500-100-067	4	Outer Bearing Race
33	6	500-100-068	4	Outer Bearing
33	7	500-100-069	4	Flatwasher
33	8	500-100-070	4	Castellated Nut
33	9	500-100-071	4	Cotter Pin
33	10	500-100-072	20	Wheel Stud
33	11	500-100-073	4	Dust Cap
33	12	550-200-001	4	Rear Spindle Assy

Front Steering

To Front Steering

34	1	500-100-152	1	7/8 x 8 Bolt
34	2	500-100-153	1	7/8 Locknut
34	3	550-111-012	2	Bushing (1-1/8 x 7/8 x 1-1/2)
34	4	550-221-008	1	Tongue Bracket
34	5	550-111-006	2	Rod End R Thread
34	6	550-111-003	2	3/4 Jam Nut (NF RH)
34	7	550-221-001	2	Tie Rod
34	8	550-111-007	2	Rod End L Thread
34	9	550-111-002	2	3/4 Jam Nut (NF LH)
34	10	550-111-004	4	9/16 NF Slotted Hex Nut
34	11	550-111-005	4	1/8 x 1 Cotter Pin
34	12	550-111-011	2	Tongue Bracket Seal CR20952
34	13	550-111-010	2	Bearing Cone (13686)
34	14	550-111-009	2	Bearing Cup (13620)
34	15	550-221-013	1	Tongue Timkin Pin
34	16	550-111-014	3	13/16 Flat Washer
34	17	550-111-015	3	3/4 Slotted Hex Nut
34	18	550-111-016	3	3/16 x 2 Cotter Pin
34	19	550-200-080	4	Spindle Bearing Cone L44643
34	20	550-200-081	4	Spindle Bearing Cup L44610
34	21	550-200-082	4	Spindle Bearing Seal CR523696
34	22	550-100-083	1	Left Spindle
34	23	550-100-084	1	Right Spindle
34	24	550-100-085	2	Spindle Timkin Bolt

Brakes

To Brakes

35	1	5X2-100-028	1	Brake Rocker Tube
35	2	550-100-029	2	Brake Eccentric
35	3	500-100-113	2	1/2 x 3 1/2 Bolt
35	4	500-100-075	2	1/2 Lockwasher
35	5	500-100-076	2	1/2 Nut
35	6	500-100-082	1	2 1/2 x 8 Hydraulic Cylinder

Page	Ref	Part	Qty	Description
		Rear Roller		To Rear Roller
36	1	500-100-086	5	Large Roller
36	2	5X2-100-007	1	Riser Frame
36	3	5X2-100-030	2	Riser Link
36	4	5X2-100-031	1	Right Light Bracket
36	5	5X2-100-032	1	Left Light Bracket
36	6	500-100-030	10	1" Bearing
36	7	5X2-100-033	2	Red Reflector
36	8	5X2-100-034	2	Amber Light
36	9	5X2-100-035	2	Red Light
36	10	599-100-031	20	3/8 x 1 1/2 Bolt
36	11	5X2-100-036	4	3/8 x 4 Bolt
36	12	550-200-116	4	5/8 x 2 Bolt
36	13	500-100-119	4	3/8 x 1 1/4 Bolt
		Tail		To Tail
37	1	550-100-033	1	Tail Base
37	2	500-100-086	5	Large Roller
37	3	500-100-099	1	4" Roller
37	4	550-200-106	3	2 7/8" Roller
37	5	550-100-092	6	3/4" Tube End Nylatron Bearing
37	6	550-100-030	12	1" Bearing
37	7	599-100-107	1	3 x 12 Hydraulic Cylinder
37	8	599-100-035	1	Tail Tiebar
37	9	599-100-031	28	3/8 x 1 1/2 Bolt
37	11	550-100-037	4	5/16 x 1 1/2 Flathead Bolt
37	12	599-100-008	2	1 x 4 Bolt
37	13	599-100-009	2	1" Nylocknut
37	14	550-200-002	2	First Small Roller Bracket
37	15	550-200-003	2	2nd Small Roller Bracket
37	16	550-200-004	1	Last Right Roller Bracket
37	17	550-200-005	1	Last Left Roller Bracket
		Bale Saddle		To Bale Saddle
38	1	5X2-100-140	1	Left Bale Guide
38	2	5X2-100-141	1	Right Bale Guide
38	3	5X2-100-142	1	Bale Trigger Plate
38	4	550-200-108	1	3/16 Lynch Pin

38	5	5X2-100-143	1	Grommet
38	6	550-200-104	4	1/2" Pin
38	7	500-100-008	4	1/2 x 2 Bolt

Bale Ram

To Bale Ram

39	1	5X2-100-150	1	Front Ram Member
39	2	5X2-100-151	1	Right Ram Tube
39	3	5X2-100-152	1	Right Push-off Arm
39	4	5X2-100-153	1	Left Ram Tube
39	5	5X2-100-154	1	Left Push-off Arm
39	6	5X2-100-155	2	Push-off Arm Pivor Pin
39	7	500-100-048	1	Push-off Tube
39	8	550-100-043	2	Hydraulic Ram Cylinder
39	9	5X2-100-156	4	Ram Axle
39	10	5X2-100-157	4	Ram Roller
39	11	5X2-100-158	4	Snap Ring
39	12	5X2-100-159	4	Grease Fitting 1/4-28
39	13	5X2-100-160	4	3/4" UNF Nut
39	14	550-100-042	4	Cylinder Pin
39	15	5X2-100-161	4	5/8 x 1 1/2 UNF Bolt #5
39	16	500-100-087	2	3/8 x 3/4 Bolt

Page	Ref	Part	Qty	Description

Side Rail

To Side Rail

40	1	5X2-100-170	1	Right SideRail
40	2	5X2-100-171	1	Left Side Rail
40	3	5X2-100-172	2	Guard
40	4	5X2-100-173	1	Right Front CylinderMount
40	5	5X2-100-174	1	Left Front CylinderMount
40	6	5X2-100-175	2	Reinforcing Plate
40	7	5X2-100-161	4	5/8 x 1 1/2 UNF Bolt #5

Push Off

To Push Off

41	1	5X2-100-180	1	Push Off Left Front Arm
41	2	5X2-100-181	1	Push Off Right Front Arm
41	3	5X2-100-182	1	Push Off Left Rear Arm
41	4	5X2-100-183	1	Push Off right Rear Arm
41	5	5X2-100-016	1	Push Plate
41	6	599-100-017	2	X Bar
41	7	599-100-018	4	3/4 x 5 Hinge Bolt
41	8	599-100-019	4	3/4 Nylocknut
41	9	550-200-104	4	3/16 Linch Pin

		Tongue		**To Tongue**
42	1	550-100-051	1	Main Tongue
42	2	550-100-052	1	Swinging Tongue
42	3	550-100-053	1	Sliding Tongue
42	4	500-100-151	1	Tongue Latch
42	5	500-100-154	1	Tongue Pin
42	6	500-100-155	2	5/8 x 5 Bolt
42	7	500-100-056	4	5/8 Locknut
42	8	500-100-157	2	5/8 x 4 1/2 Bolt
42	9	500-100-160	1	Tongue Holder
42	10	500-100-112	1	Hair Pin
42	11	500-100-103	1	2 x 16 Hydraulic Cylinder
		Mud Flap		**To Mud Flap**
43	1	550-100-054	2	Mud Flap
43	2	500-100-164	4	Metal Strip
43	3	500-100-165	12	5/16 x 1 Bolt
43	4	500-100-092	12	5/16 Lockwasher
43	5	500-100-093	12	5/16 Nut
		Hyd Tank		**To Hydraulic Tank**
44	1	5X2-100-190	1	Hydraulic Tank
44	2	500-100-169	1	Breather Cap
44	3	500-100-170	1	Filler Plug 1 1/4 Pipe
44	4	500-100-171	1	Sight Gauge
44	5	500-100-172	1	Filter Base
44	6	500-100-173	1	10 Micron Filter
44	7	500-100-174	1	Magnetic Drain Plug
44	8	500-100-175	1	Suction Filter
44	9	500-100-176	4	3/8 x 1 Bolt
44	10	500-100-038	4	3/8 Lockwasher
44	11	500-100-039	4	3/8 Nut

Page	**Ref**	**Part**	**Qty**	**Description**
		Fenders		**To Fenders**
45	1	5X2-201-100	1	Left Fender
45	2	5X2-201-101	2	Right Fender
45	3	5X2-2015-102	3	Engine Shield

45	4	5X2-101-103	2	Rear Bracket
45	5	500-100-176	14	3/8 x 1 Bolt

Pump/Engine

To Pump Engine

46	1	500-100-179	1	13 HP Honda Engine (rope start QA)
46	1	5X2-100-200	1	13 HP Honda Engine (electric start QNR)
46	2	500-100-181	1	Hydraulic Pump Casappa #PLP20-11.2
46	3	500-100-182	1	Engine - Pump Adapter
46	4	500-100-183	1	Love Joy Coupling (Pump Side)
46	5	500-100-184	1	Coupling Spacer
46	6	500-100-185	1	Love Joy Coupling (Engine Side)
46	7	500-100-176	4	3/8 x 1 Bolt
46	8	500-100-038	4	3/8 Lockwasher
46	9	500-100-188	2	3/8 x 1 1/4 Bolt
46	10	500-100-038	2	3/8 Lockwasher
46	11	500-100-190	2	3/8 Flatwasher

Manual Valve

To Manaul Valve Bank

47	1	500-200-192	1	Prince RD532CCCAAA5A4B1
47	2	500-100-193	1	Flow Control Prince RD-150-08
47	3	500-100-194	1	1/2" Check Valve
47	4	500-100-195	1	Selector Valve
47	5	500-101-222	1	Relief Valve Prince RD18375
47	6	500-200-193	1	Prince # LS3010-1
47	7	550-200-112	1	Ball Valve

Automatic Valve

To Automatic Valve Bank

48	1	5X2-201-200	2	Hystar Tanden Center 12 volt DSG-3C60-03 ET
48	2	5X2-201-201	1	Hystar Single Center 12 volt DSG-2B2-03
48	3	500-100-193	1	Flow Control Prince RD-150-08
48	4	5X2-201-055	1	Walvoll 2-spool monoblock SD 5/2 - P
48	5	550-100-056	1	Triple Manifold Block
48	6	550-200-006	1	Steering Speed Control (needle valve)
48	7	5X2-201-007	5	12 VDC 37W Valve Coil
48	8	550-200-112	1	Ball Valve
48	9	550-200-113	2	Manifold mount

Limit Switch

To Limit Switch

49		550-100-060	3	Limit Switch Assembly
49	1	550-100-057	1	Limit Switch Body
49	2	550-100-058	1	Limit Switch Actuator

49	3	550-100-059	2	Limit Switch Arm
49	4	550-100-082	2	Wire Clamp
49	5	599-100-049	2	Wire Arm
49	6	550-100-086	12	PVC Box Connector
49	7	550-200-086		Metric to Pipe Adaptor
49	8	550-200-087	3	NO/NC Contact

Page	Ref	Part	Qty	Description
		Control Panel		To Control Panel
50	1	550-200-061	1	Control Panel
50	2	500-100-221	5	Control Relay
50	3	500-100-223	5	11 pin Relay Base
50	4	550-100-079	1	15 amp Fuse
50	5	550-150-083	1	Din rail Fuse Holder
50	6	550-150-084	20	Din rail Terminal Block
50	8	550-100-075	1	Panel Rotate Push Button
50	9	550-100-076	2	Panel on/off Hand/Auto Dial Switch
50	10	550-100-077	2	Panel Ram and Steering Dial Switch
50	11	550-100-078	1	LED (light emitting diode)
50	12	550-150-085	1	Diode 1N5406 3 amp 600 V (100 V will work)
		Trigger Battery Holdown		To Bale (trigger) Switch/Battery Holdown
51	1	5X2-100-220	1	Bale Switch Base
51	2	5X2-100-221	1	Switch
51	3	500-100-046	1	3/8 x 1 Bolt
51	4	5X2-100-222	1	3/8 Coupling Nut
51	5	5X2-100-223	1	Push Rod
51	6	500-100-062	1	Spring
51	7	550-200-086	1	Metric to Pipe Adaptor
51	8	550-100-082	1	Wire Clamp
51	9	500-100-221	1	Batery Holddown
51	10	500-100-212	1	5/16 x 7 Bolt
		Throttle		**To Throttle**
52	1	599-100-067	1	Engine Throttle Bracket
52	2	5X2-100-230	1	Swing Link
52	3	550-100-065	3	Ball Joint
52	4	599-100-069	1	1/4 x 4 UNF Rod
52	5	500-100-114	1	1/2 Locknut
52	6	550-100-067	1	Link Pivot

52	7	5X2-100-231	1	Control Rod
52	8	550-100-069	1	Throttle Spring
52	9	5X2-100-232	1	Striker Block
52	10	5X2-100-233	1	Main Link
52	11	599-100-070	2	5/16 x 1 1/2 Bolt
52	12	599-100-031	2	3/8 x 1 1/2 Bolt
52	13	500-100-165	3	5/16 x 1 Bolt
52	14	5X2-100-234	1	1/2" SAE Washer

Fuel Tank — **To Fuel Tank**

53	1	550-204-100	1	Fuel Tank
53	2	550-204-101	1	Vented Fuel Cap
53	3	550-204-103	1	Fuel Guage
53	4	550-200-111	1	Fuel Filter
53	5	5X2-201-107	1	1/4 Fuel Line
53	6	550-204-109	8	Hose Clamp
53	7	550-204-110	1	Tie Down Strap
53	8	5X2-201-108	1	Hose Adaptor
53	9	5X2-201-109	1	Sealing Washer
53	10	5X2-201-110	1	Adaptor Nut

Holder — **To Manual Holder**

54	1	5X2-201-111	1	Manual Holder
54	2	5X2-201-112	1	Manual Holder Mount

Page #	Ref #	Part #	Qty	Description

Lights — **To Runing Lights**

55	1	550-200-117	1	7 Pin Plug
55	2	550-200-118	1	Junction Box
55	3	550-200-119	1	Strain Relief
55	4	550-200-120	1	7 Wire Conductor
55	5	550-200-121	2	Red Lamp
55	6	550-200-122	2	Amber Lamps

Accessories

Film Sensor — **To Switch Bracket (film sensor)**

62	1	550-200-234	1	Switch Bracket
62	1	550-100-060	1	Limit Switch (check page 49)
62	1	550-200-235	1	Toggle Switch

		Wheel Drive		**To Power Drive**
63	1	550-203-242	1	Rim with Gear (not shown)
63	2	550-200-135	1	Main Assembly
63	3	550-200-136	3	Shoulder Bolt
63	4	550-203-237	1	Gear
63	5	550-200-138	1	Hydraulic Motor
63		550-203-240	1	Lock Handle
63		550-203-238	1	Inner Plate
63		550-203-239	1	Outer Plate
63		550-203-241	1	Handle Stop
64	1	550-200-120	1	Crossover Relief Valve
64	2	550-200-121	1	Selector Valve
64	3	550-200-122	1	Selector Valve Mount
64	4	550-200-123	1	Mount Clamp
		Twin Wrap		**To Twin Wrap**
66	1	550-200-139	2	Twin Wrap Frame
66	2	550-200-140	4	Plastic Wrap Spool
66	3	550-200-141	10	3/8 x 1 Bolt c/w Nut lockwasher
66	4	550-200-115	4	Spool Holder
		Remote		**To Remote**
67	1	5X2-201-113	1	Hand Unit (Transmitter)
67	1	5X2-201-114	1	Receiver Unit (Receiver)
		Guide Roller		**Guide Roller**
68	1	550-200-238	2	Roller
68	2	550-200-239	2	Spindle
68	3	550-200-233	2	Pin
68	4	500-100-112	2	Hair Pin
		Operating		**To Operating Light**
69	1	5X2-100-201	2	Light Bracket
69	1	550-200-235	1	Toggle Switch

Quick Start

To Quick Start Jack

63	1	5X2-100-205	1	Main Stand
63	2	5X2-100-206	2	Pivot Pin
63	3	5X2-100-207	1	3 1/2 x 8 Hydraulic Cylinder