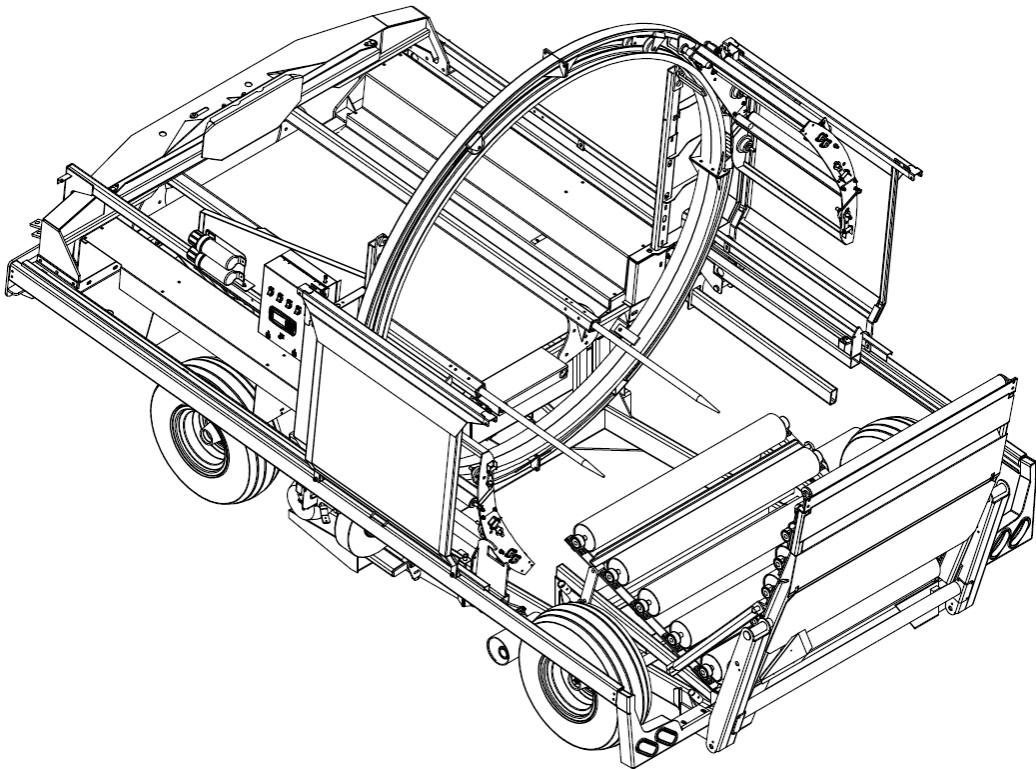


# Tube-Line Bale Wrapper TL 6500ECV

Operator's Manual



**TUBE-LINE**<sup>TM</sup>  
MANUFACTURING LTD

36210 (06/20/14)

# Serial # Decal

## SERIAL NUMBER

The implement serial number is located on the front of the frame. This number helps us to track changes and improvements and must be mentioned when ordering parts or requesting service. For your convenience, a space has been provided inside the front cover of this manual to record the serial number, model number, purchase date, and dealer name.

Model # : \_\_\_\_\_

Serial # : \_\_\_\_\_

Date Purchased : \_\_\_\_\_

Dealer Name : \_\_\_\_\_

Dealer Phone / Address : \_\_\_\_\_

Revision # : \_\_\_\_\_

# Operator's Manual

Thank you for choosing the Tube-line TL 6500ECV Bale Wrapper. Our hope is that it will give you many years of productive service. This machine is designed to wrap a continuous line of round bales in a film of plastic.

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 materials 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 Ltd.

# Safety

**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.

- **Failure to follow these instructions can result in injury or death!**



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 in 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 Ltd.

6455 Reid Woods Drive,  
R. R. #4 Elmira  
Ontario, Canada  
N3B 2Z3

Tel : (519)-669-9488  
Fax : (519)-669-5808  
e-mail : [sales@tubeline.ca](mailto:sales@tubeline.ca)



## Safety - It's In Your Interest



### Safety Guidelines

Safety of the operator is one of our main concerns, however we do hear of some accidents that could have been avoided if some precautions had been taken.

To avoid personal injury study the following precautions and insist those working with you or for you, follow them.

In most cases the pictures will have the shielding in place, in some they may be removed, only to show a view behind the shield.

Keep all the shields, safety doors in place. If it they become faulty and fail to work replace them. They are for your safety, do not operate the equipment with them removed.

Replace any decals that may be missing or that is not readable. Location of the decals is indicated in this manual.

Do not operate this machine while under the influence of drugs or alcohol.

Review the safety instructions with all users annually.

This equipment should not be operated by children, or with those unfamiliar with the operation of the machine. **Do not allow persons to operate this machine until they have read this manual and/or were instructed by a qualified person.**

Do not paint over, remove or deface any safety signs or warning decals on your equipment. Observe all safety signs and practice the instructions on them.

If the bale seems to be larger then the hoop do not try to force the material through as the film spools my touch the bale and break the plastic. If it stalls halfway through you can't back up, you will have to pull the bale apart by hand.



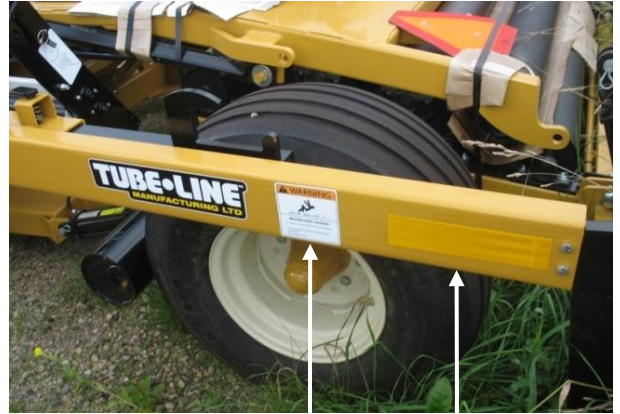
### Lighting and marking

This machine is equipped with lights and reflectors as required by the most stringent government and ASAE specifications. They should work with the tractor plug. You may have to make an adaptor when towing behind a truck.

# Safety – Decal Location



**G**



**A**

**G**



**I**

**C**

**E**



**F**



ITEM – A  
PART # - DE23846



ITEM – B  
PART # - DE23978



ITEM – C  
PART # - DE23941



ITEM – D  
PART # - DE23845



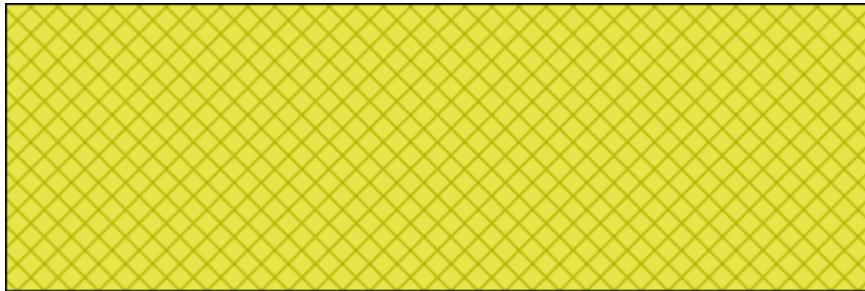
ITEM – E  
PART # - DECANADA



**ITEM - F (Both Sides of the Machine)**  
**PART # - DERED**



**ITEM - G (Both Sides of the Machine)**  
**PART # - DEAMBER**



**ITEM - H**  
**PART # - DE23942**



### **⚠ WARNING**

Do not exceed this implement's maximum transport speed of 32km/h (20mph)

Exceeding this speed may result in loss of control during transport or braking and serious injury or death.

Transport only with a properly ballasted tractor and a properly attached safety tow chain. Do not transport with a motor vehicle.

Reduce speed and use additional caution when on inclines, towing under adverse surface conditions, and turning.

#DE23942

**ITEM - I**  
**PART # - DE23847**



### **⚠ WARNING**

**High-Pressure hydraulic oil leaks can penetrate skin resulting in serious injury, gangrene, or death.**

- Check for leaks with cardboard; never use hand.
- Before loosening fittings: lower load, release pressure, and be sure oil is cool.
- Consult a physician immediately if skin penetration occurs.



- Keep safety signs clean and legible at all times
- Replace safety signs that are missing or illegible
- Decals are available through your dealer





## Remember

Your best assurance against accidents or damage to the machine is to know how it operates. If you do not understand a portion of the manual or a function of the wrapper, please contact your dealer or an experienced operator.



## Before Operation

- Carefully study and understand the manual or be trained by an experienced operator.
- Do not wear loose clothing that may get caught in moving parts. Visually inspect the machine to make sure no parts are loose or missing. Be sure that no tools are left on the machine.
- Make sure no hay is lying on the engine and that the cooling fins are not clogged with dust and hay (**this could cause a fire**)
- Do not hurry the learning process. Be familiar with one part before trying the next part.
- Practice by running the machine through its paces, first in manual mode with no bales in the machine until you are comfortable and familiar with the operation. After you become familiar with the operation, switch the machine to Auto mode. Use a stick and push the table switch down to start the cycle. Do not reach in and push the switch paddle down by hand.

# Operating the Model TL 6500ECV

## Tube-line Bale Wrapper

### Big Bale Silage

The objective of big bale silage is to provide high quality forage using a minimum of equipment. To do this, crop must be cut at the correct stage of maturity, wilted, baled tightly and wrapped air tight, using a good quality stretch wrap.

The Tube-line wrapper makes timely harvest possible by reducing the dependence on the weather. It is much easier to get to wilt silage than to make dry hay. This also extends the working day, as the correct moisture to bale extend earlier and later in the day.

### Bales

Well-shaped firm bales are necessary for successful wrapping, using a hard-core baler. Bales are best wrapped as soon as possible after baling. If bales are left unwrapped they will sag and loose shape. Heating will start soon after baling and protein quality will be lost. It is desirable to wrap within four hours. In an emergency such as rain, the bales can be left 12 to 16 hours.

### Moisture

Successful silage can be made over a wide moisture range. In general, 40 to 50% moisture is satisfactory for dairy cows. Some beef farmers prefer 60 to 70% moisture as it limits intake. A good rule of thumb is to dry "Half-way to Hay".

#### Drier silage gives you

1. Lighter bales to handle.
2. More desirable fermentation with fewer odors
3. Less freezing in the winter
4. Higher dry matter intake

### Wrapping Site

Select a site that will allow room to make an adequate bale row length.

The TL 6500ECV is a very fast wrapper, but requires time to set up and move to a new line. There should be space for at least 50 bales in a row.

Select a site that is accessible in winter conditions and does not flood in the spring.

A firm surface is necessary for the successful operation of the Tube-line wrapper. Avoid soft ground, as the wrapper will not move forward smoothly if it is sinking into the ground. Wrap on level ground or a slight uphill grade.

A site that is free from grass and debris will be less likely to attract rodents that can damage the plastic.

## Bale Size

**Round Bales** - The TL 6500ECV will wrap bales up to 5' x 6 ½'  
It will wrap all sizes smaller than this dimensions as well.

Remember when making big bale silage the bales will be heavier than 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 TL 6500ECV 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 is also the maximum length advisable to handle big square bales of silage.

Bales, which are approximately 4' wide and 2' high can be stacked two high for wrapping, **however there is 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' x 3', do not stack well. These may be wrapped in a single tier of bales.



### Recommended Operating Procedure

We suggest the following method of operating the TL 6500ECV Tube-line Wrapper

- . Park the wrapper where you want the end of the row to be, facing in the appropriate direction with wrapper in up position.
- . Apply parking brake and fold in the first section of the tongue and fasten the bracket into the hydraulic steering slider with the pin that held the tongue.



### 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 joystick on the control panel.



## 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.

## Installation of Plastic

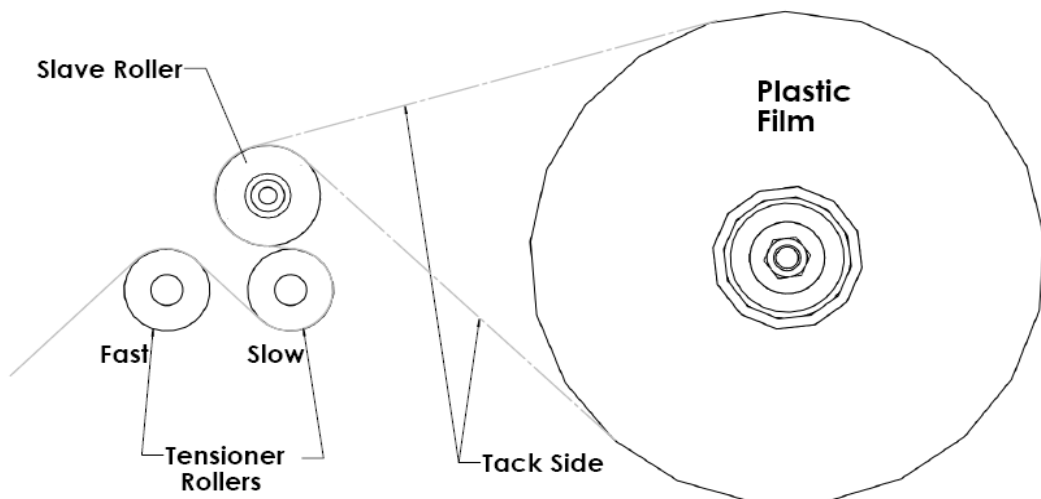


### **Danger!! Stop Engine ! Before attempting to install plastic.**

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 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.



## 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. It may be that the bearings have too much end pressure, in this case re-tighten the bearings and loosen the locking collar on the roller shaft this will allow the shaft to slide in the bearing; re-tighten 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 build 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.

Rolls of plastic may catch on the bottom of the bale. If bales are misshaped 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 manual mode the safety switches and the film sensor **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.

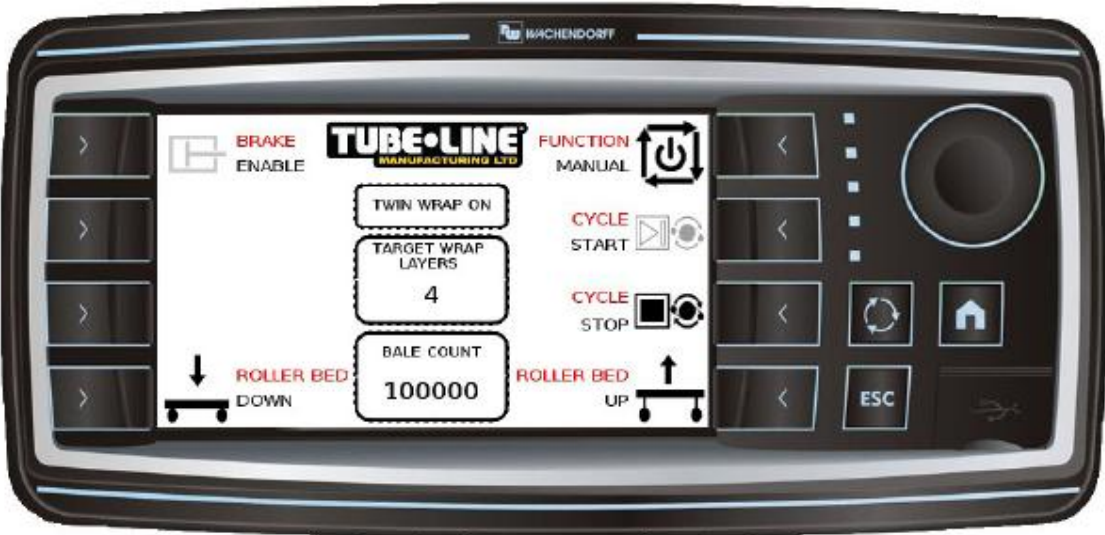
**Caution!** Round bale are heavy and silage bales are even heavier. Use only bale-handling equipment. Keep bales low when turning loader.

# Control Screen Operation

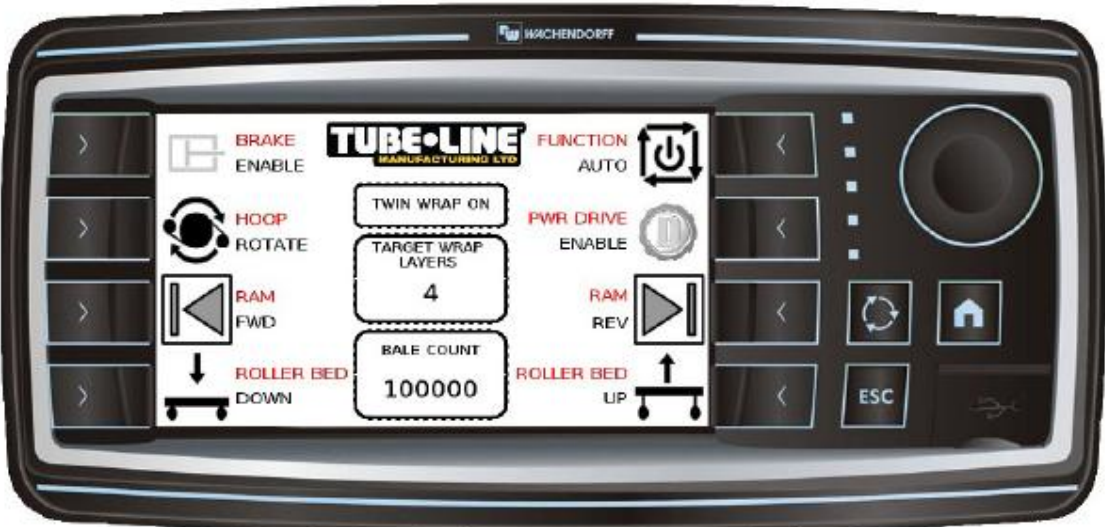
After the machine is started and the control panel is on you should see either a manual or automatic screen. The following screens show the different functions of the TL6500ECV.

*Please note that the functionality will vary on which options are installed on the machine.*

## Auto Home Screen



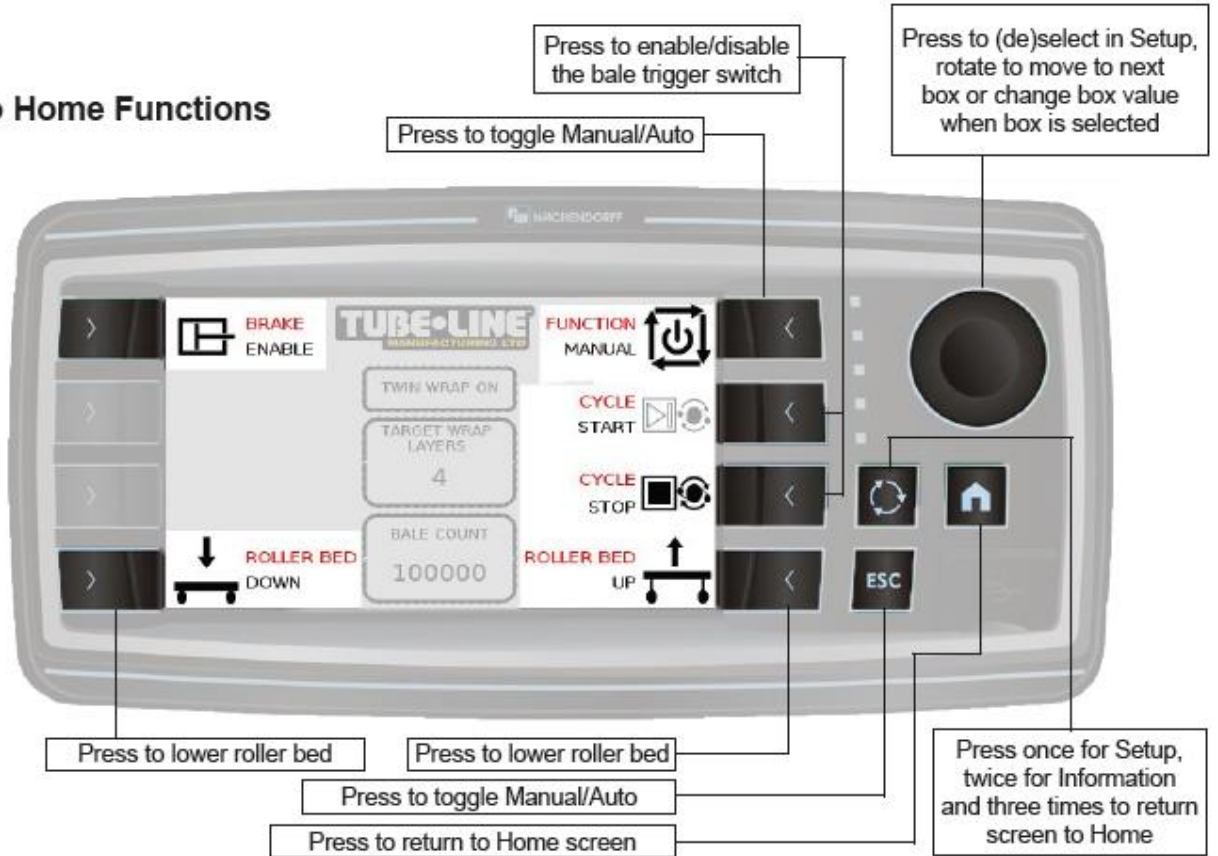
## Manual Home Screen



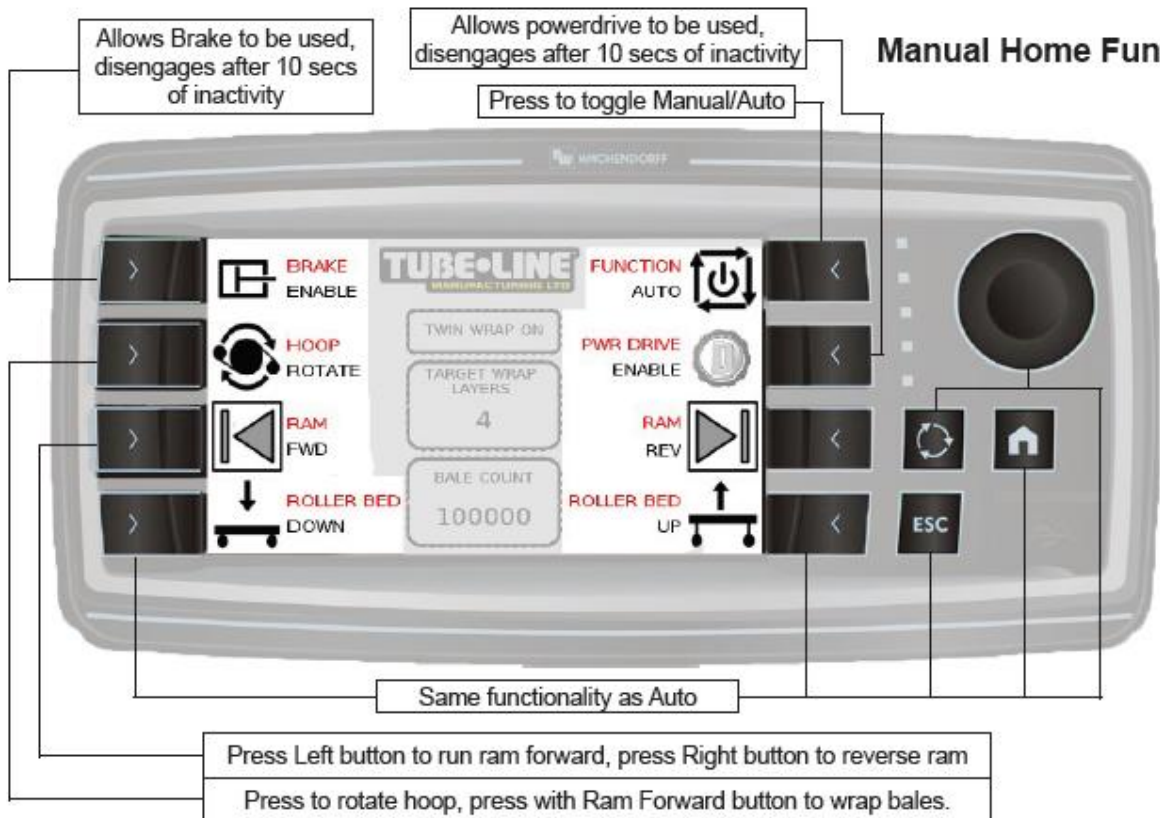
Error Message : If, while operating, you see one of these errors where the Tubeline decal is, stop the machine and check that the doors are fully closed and that the film has not ripped or is empty.



## Auto Home Functions



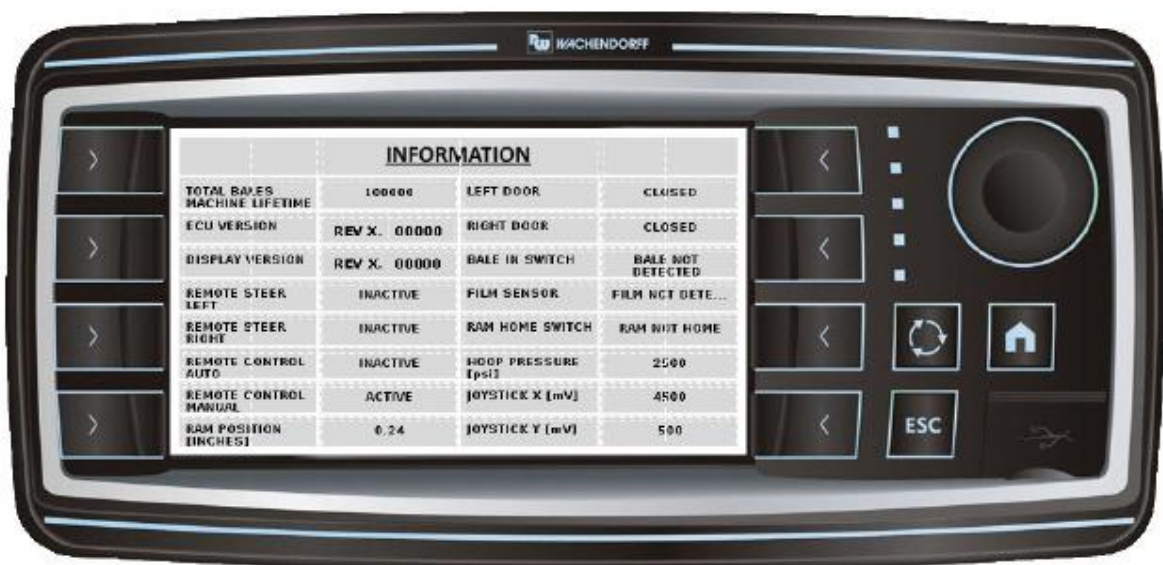
## Manual Home Functions



## Setup Screen



## Information Screen



In the setup screen you may change settings to customize the wrapping operation.

- Switch Twin Wrap box to "YES" if you have installed this option (4 rolls instead of normal 2)
- Target Wrap Layers : Change amount from 2-20 layers per bale
- Disable the film sensor as needed
- Add more time before power drive auto disengages
- Change to different preset bale widths (36", 48", 60")
- Change to different complete ram travel length (default is 42")
- Change to different length the ram will travel before the hoop starts rotating (default is 6")
- Set Bale Count Adjust to zero at start of new job

# TL 6500ECV Control Panel





## 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 5' diameter. For larger bales use the wide setting.

**Caution!** It is important that the bale sit firmly on the deck, 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.

## To Wrap Bales with TL6500ECV

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 4 ft of plastic through each stretcher and tie it under the twine on the bale, or tie it in the slots on the hoop brace (both sides)
  - With the control panel screen set to “Manual” press the “Ram Forward” button 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.
  - With the display set to “Manual” the buttons will have to be pushed and held, when you let them go the function will stop.
  - Pressing the “Ram Reverse” button will retract the ram and allow the bale pusher to accommodate the next bale.
  - Wrap the 1<sup>st</sup> few bales in “Manual” until the first bale overhangs at rear of machine by 6 inches. Lower machine to the ground and **disengage brake. If equipped with a power drive, disengage lever.**
- Note!** You may want to leave some weight on the wheels until the wrapper starts moving to avoid bales from sliding on the ground.
- After you have wrapped a few bales in this way, switch “Auto/Manual” button to “Auto” and place a bale on the bale table. As the bale depresses the table trigger the ram will start automatically.



### Warning!!

**To stop the cycle:** After the cycle has started in the automatic mode, turn “**Auto/Manual**” switch to “Manual” (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 “Manual” mode and then return to “Auto” mode. (If you press the start button on the hand unit it will start the ram forward again, except if the ram has 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 “Manual” these switches can be bypassed.

## 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 turn 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/Manual” switch is on “Auto” the bale can be placed on the table without the cycle starting. After the bales has been placed on the table and you want the cycle to start, press the “Start” 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 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.

## Brake

The brake is operated by pressing the “Brake” button on your display. Moving the joystick to the left applies oil pressure to the brakes on the rear wheel. Increase pressure to the point where the bales are firmly packed together. Close the brake valve to maintain positive pressure on the wheels and **FULLY RELEASE BRAKES** when the row is finished and prior to transporting the wrapper.



## Pushing off Bales from the Wrapper

The display will have to be switched to “Manual” position for pushing the bale off.



**Danger!!**

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

### **To finish your bale row follow these instructions :**

Before placing the last bale onto the wrapper table cap the end that will go through the hoop **LAST**.

- Push the bale through the wrapper by using the forward button and wrap button with the automatic machine.
- Continue pushing the bale through the wrap chamber until you have reached the end of the stroke.
- Retract the ram and pull the handle underneath it, locking it into the opposite side
- Push the bale the remainder of the way through the hoop and retract the ram again.
- Open the safety doors, pull out the last pushoff hooks to their longest length.
- Remove 2 x 3 tube from the Hydraulic tank side of the wrapper and lay it across the sockets of the Pushoff brackets
- Extend the ram one last time to fully push the bales off the tail.
- Return the 2 x 3 tube and the pushoff arms to their respective storage positions.
- Bring the ram to its home position and swing the handle to its original position.

**(NOTICE!** The last pushoff brackets are lower then the hill rollers. **BE SURE** the tube is behind the rollers before pushing the last bale off the tail.)

### **Transportation**

- Undo steering, unfold tongue and insert lock pin.
- Raise the tail and secure it with the transport lock bar.
- 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 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.

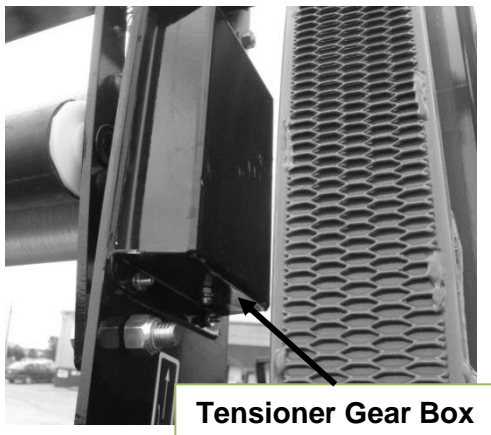
**Do Not Tow The Bale Wrapper at Speeds Over 35 KPH**





## Daily Maintenance

Lubricate all grease points



## Specifications

Slider Tube : Lightly Grease Once a Week

Hoop Axle : Twice a Day, All 8 Bolts

Ram Axle : Once a Week

Gear Box : 1 or 2 Times Every 2 Months

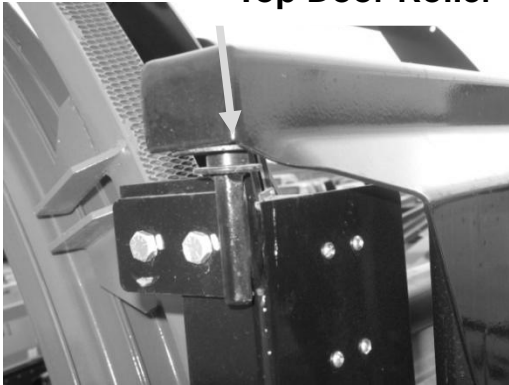
**DO NOT OVER GREASE**

# Oil Points

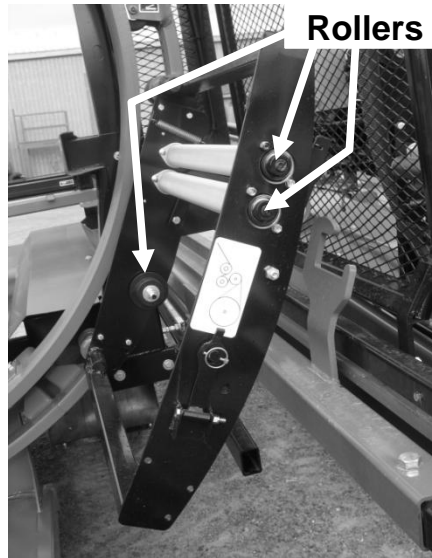
Oil these points occasionally to keep the parts moving freely



**Bottom Door  
Rollers**



**Top Door Roller**



**Rollers**



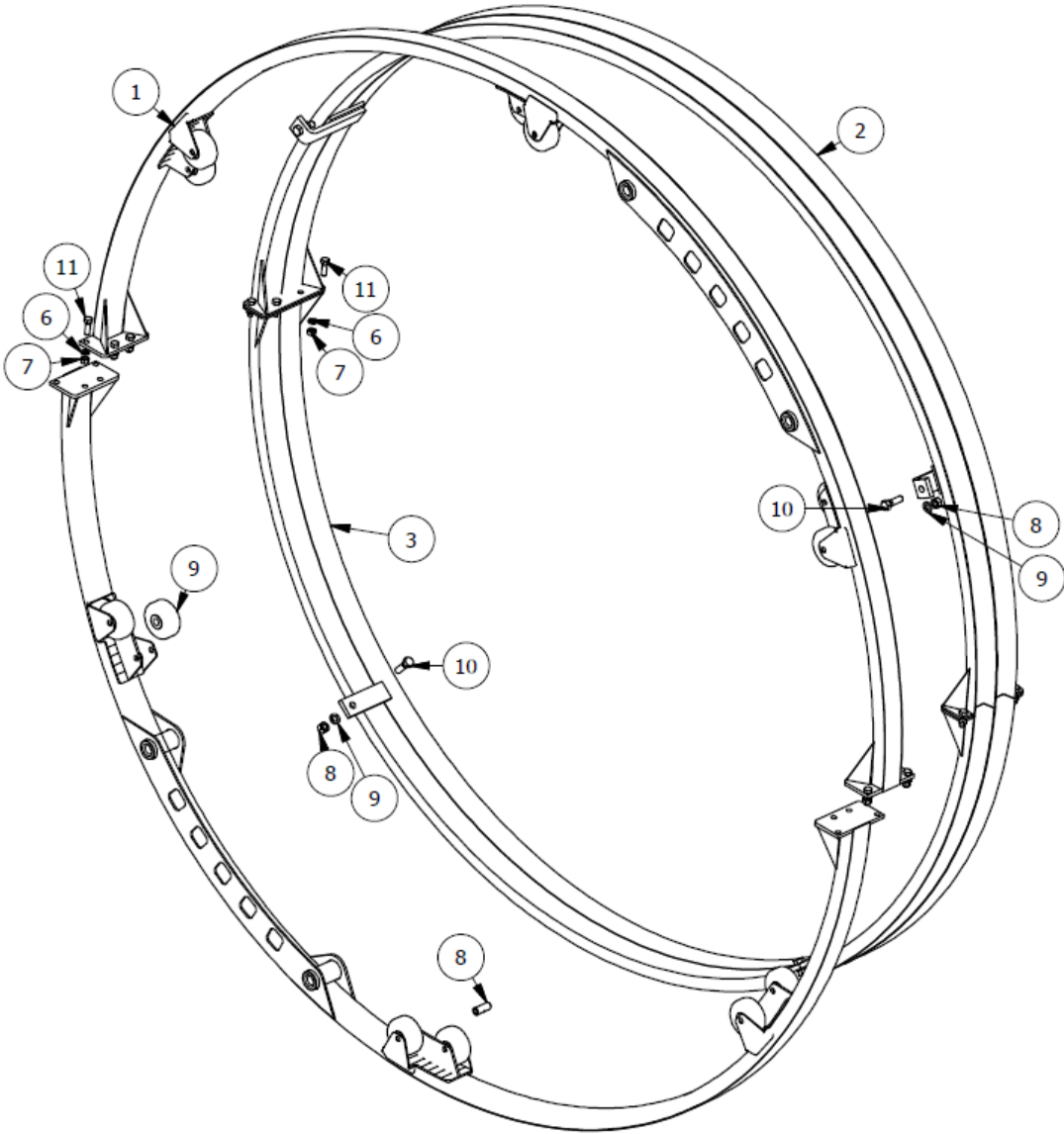
**Throttle Shaft**



**Bearings on Last 2  
Rollers**

## **Part Breakdowns & Lists**

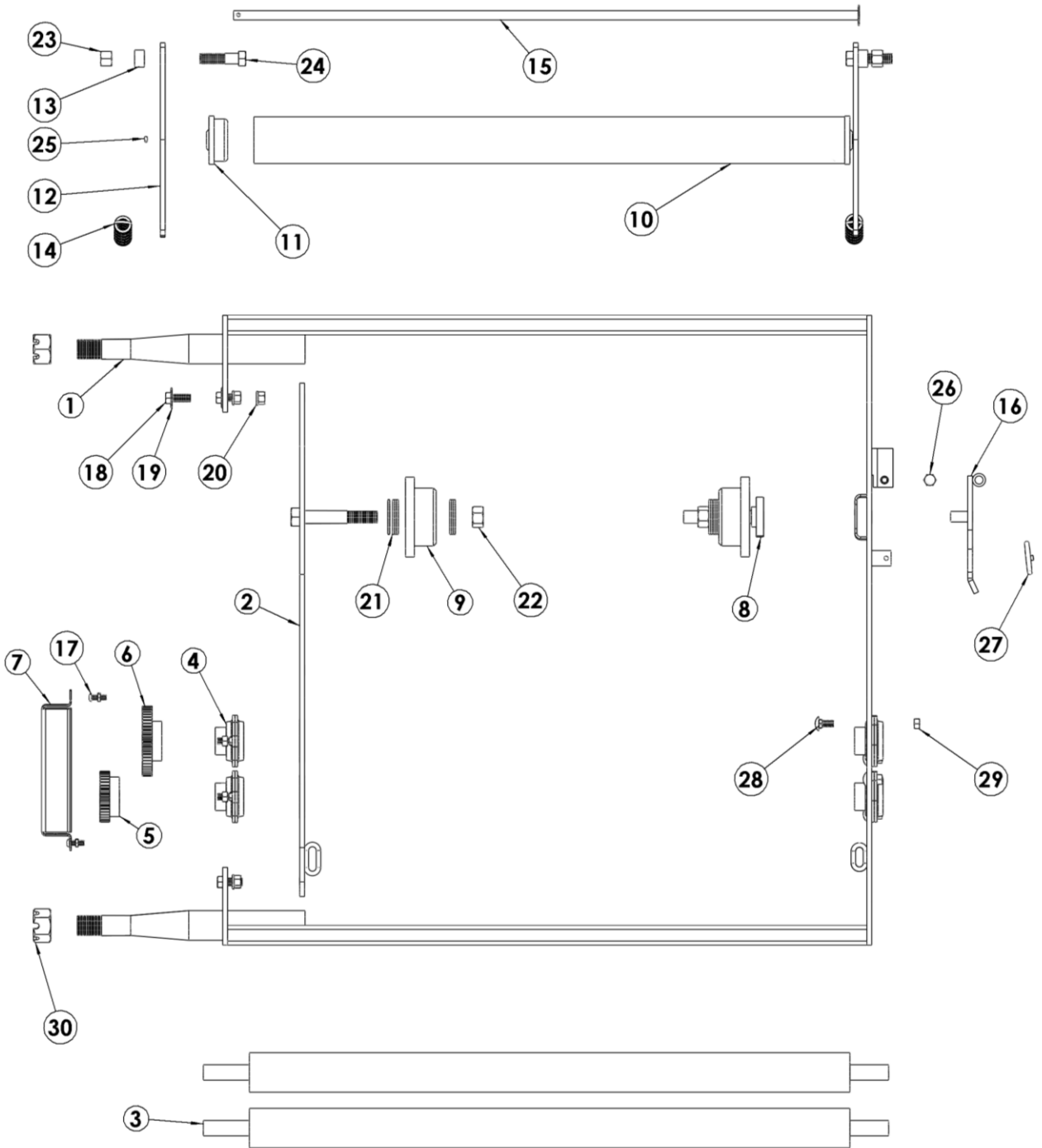
# TL 6500ECV Hoop Assembly



## TL 6500ECV Hoop Assembly

<b>Item</b>	<b>Qty</b>	<b>Part #</b>	<b>Description</b>
1	1	TL6X2-100-003	Outer Hoop
2	1	TL6X2-100-002	Upper Inner Ring
3	1	TL6X2-100-001	Lower Inner Ring
4	1	TLWHEEL01	Hoop Wheel
5	1	TL500-200-116	Axle Spanner
6	16	LW 1/2	Lock Washer
7	16	HN 1/2	Hex Nut
8	4	HN 5/8	Hex Nut
9	4	LW 5/8	Lock Washer
10	4	HB 5/8 X 2	Hex Bolt
11	4	HB 1/2 X 1.5	Hex Bolt

# TL 6500ECV Plastic Wrap Carrier



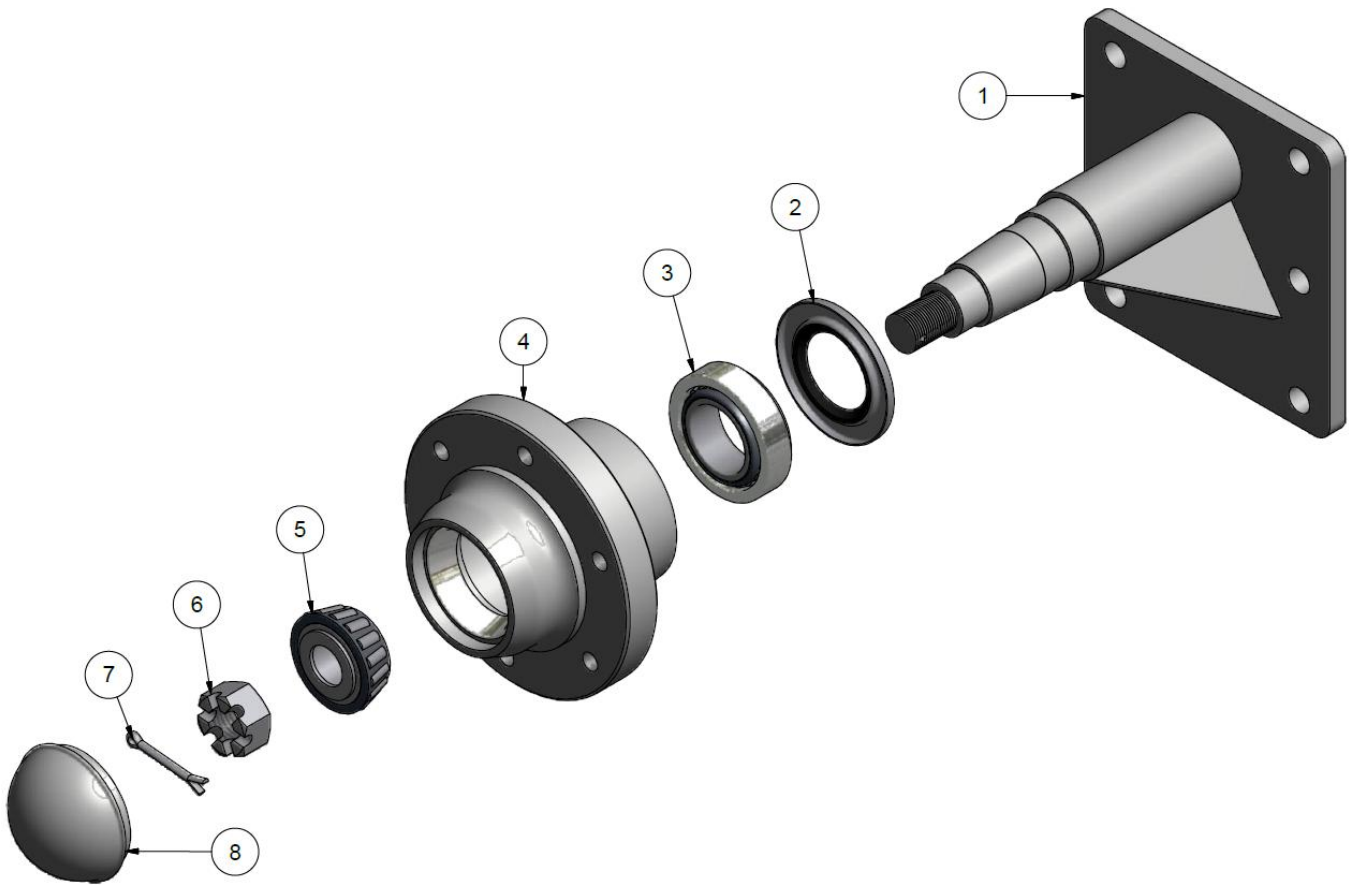


# TL 6500ECV

## Plastic Wrap Carrier

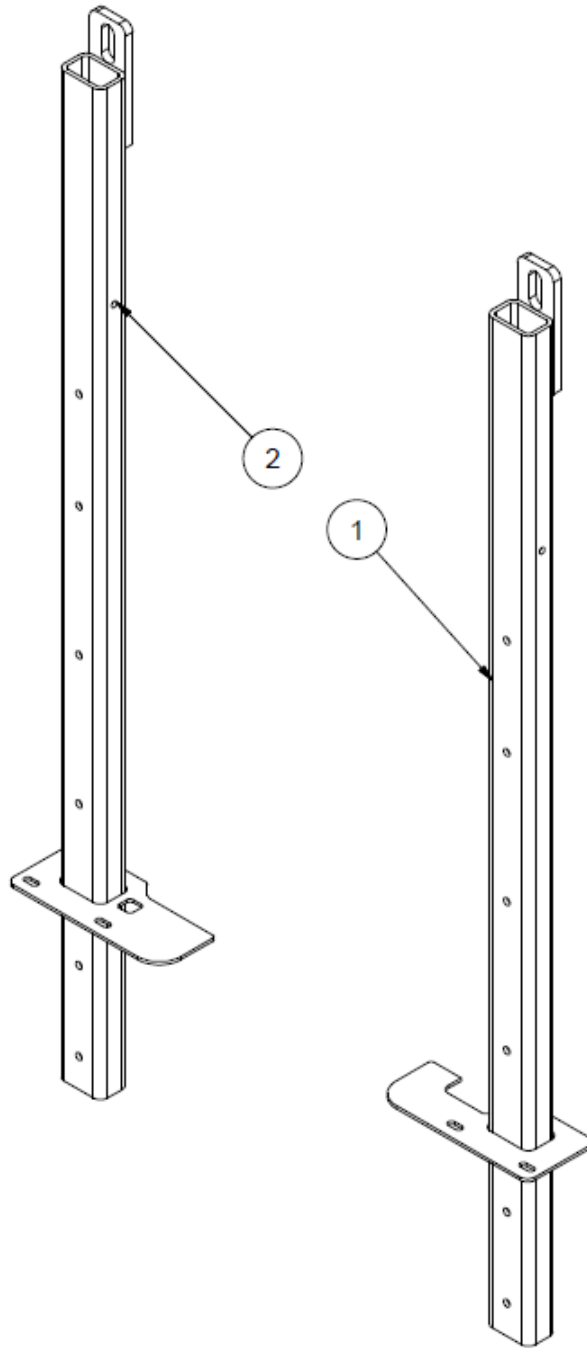
Item	Qty	Part #	Description
1A	2	TL550-100-072	Complete Wrap Carrier
1	2	TL550-100-089	Main Wrap Bracket
2	2	TL550-200-090	Main Wrap Side Insert
3	4	TL550-100-006	Tensioner Rollers
4	4	TL550-100-007	¾ Bearing c/w Flange
5	2	TL550-100-008	Small Gear
6	2	TL550-100-009	Large Gear
7	2	TL550-100-010	Gear Cover
8A		TL5X2-500-103	Spool Holder c/w Parts (Ref # 8,9,21,22)
8	2	TL550-200-115	Spool Holder
9	4	TL550-200-012	Plastic Wrap Spool
10A	2	TL5X2-500-104	Slave Roller c/w End cap (Ref # 10,11)
10	2	TL550-100-022	ABS Pipe
11	4	TL500-100-021	HMWPVC Plastic End Cap
12	4	TL550-100-016	Slave Roller Mount Bracket
13	4	TL550-100-017	Spacer
14	4	TL500-100-135	Tensioner Spring
15	2	TL550-100-018	Slave Roller Axle Shaft
16	2	TL550-200-103	Spool Latch
17	8	Obtain Locally	10-24 x 3/4 Bolt c/w nut & Lockwasher
18	8	Obtain Locally	3/8-16 x 1 Bolt Gr.5
19	8	Obtain Locally	3/8 Flatwasher
20	10	Obtain Locally	3/8-16 Locknut
21	20	Obtain Locally	5/8 Flatwasher
22	4	Obtain Locally	5/8-11 Locknut
23	4	Obtain Locally	1/2-13 Locknut
24	4	Obtain Locally	1/2-13 x 2 Bolt Gr.5
25	2	Obtain Locally	1/8 Cotter Pin
26	2	Obtain Locally	3/8-16 x 2 1/2 Bolt Gr.5
27	2	Obtain Locally	3/16 Linch Pin
28	16	Obtain Locally	5/16-18 x 3/4 Carr Bolt
29	16	Obtain Locally	5/16-18 Locknut
30	4	Obtain Locally	1"-14 UNF Slotted Nut

# TL 650ECV Axle / Spindle / Hub



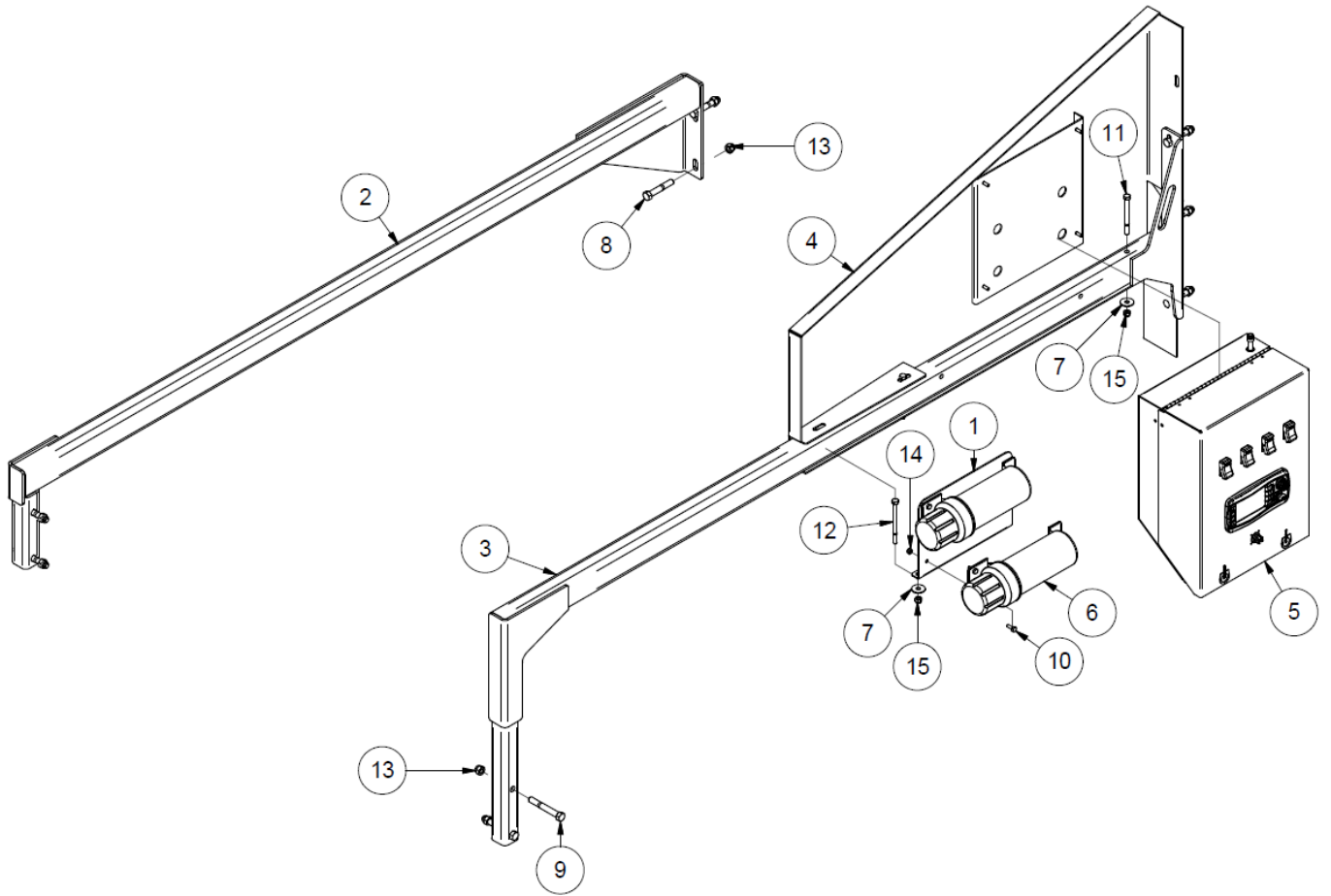
Item	Part #	Description
1	TL650-200-001	Spindle
2	TL650-100-063	Inner Seal
3	TL650-100-064	Inner Bearing
4	TL650-100-066	Hub
5	TL650-100-068	Outer Bearing
6	TL650-100-070	Castellated Nut
7	Obtain Locally	CP 3/16 X 2 Cotter Pin
8	TL650-100-066	Dust Cap

# TL 650ECV Hoop Post



Item	Qty	Part #	Description
1	1	33064	Left Hoop Post
2	1	33065	Right Hoop Post

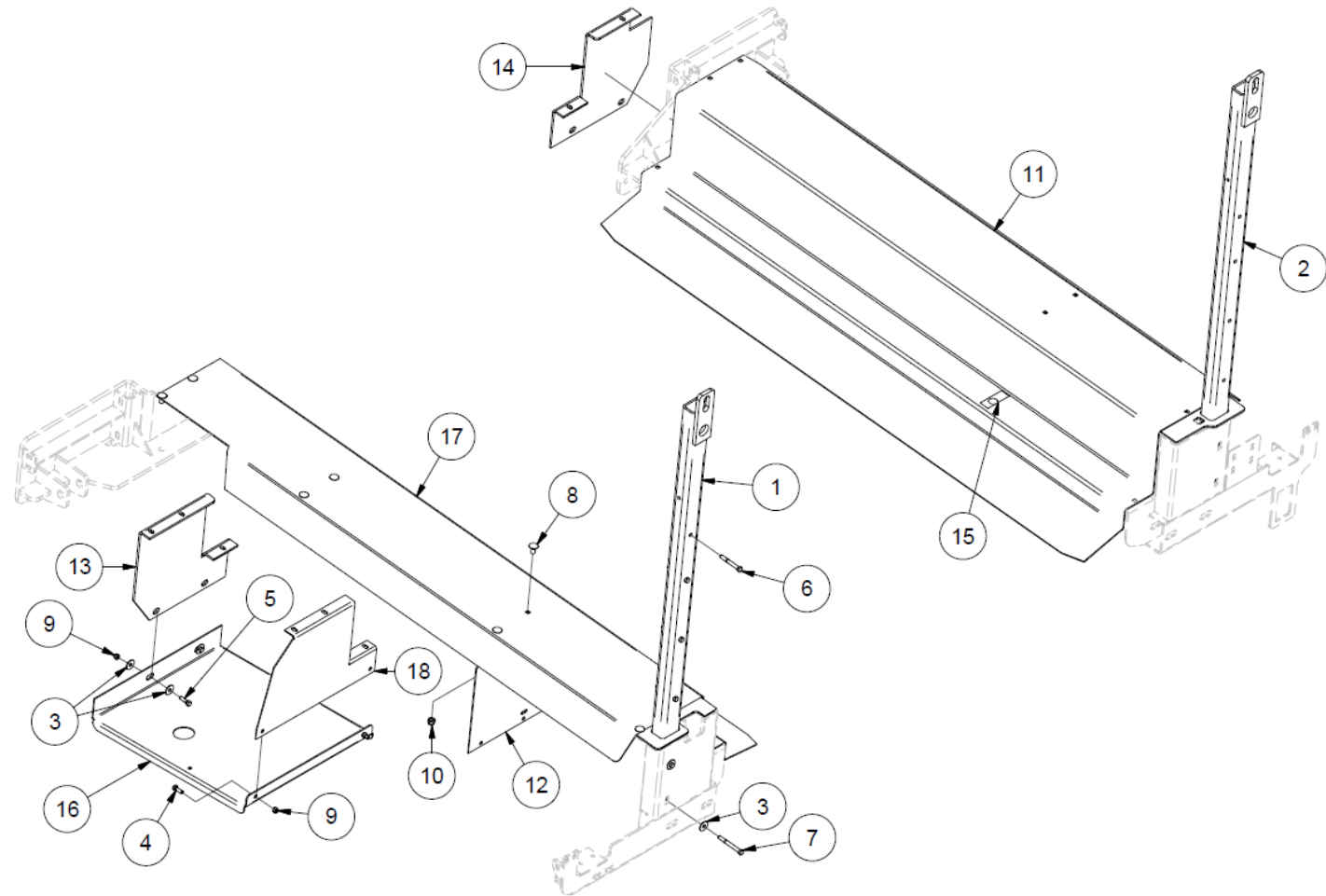
# TL 6500ECV Hoop Brace



# TL 6500ECV Hoop Brace

<b>Item</b>	<b>Qty</b>	<b>Part #</b>	<b>Description</b>
1	1	32813	Operator's Manual Mount
2	1	33068	Right Hoop Brace
3	1	33069	Left Hoop Brace
4	1	33379	Control Panel Guard
5	1	36043	Complete Control Panel
6	2	TL5X2-201-111	Manual Holder
7	3	Obtain Locally	FW 3/8 Flatwasher
8	3	Obtain Locally	HB 1/2 X 3 Hex Bolt
9	3	Obtain Locally	HB 1/2 x 3 3/4 Hex Bolt
10	3	Obtain Locally	HB 1/4 x 3/4 Hex Bolt
11	1	Obtain Locally	HB 3/8 x 4 Hex Bolt
12	2	Obtain Locally	HB 3/8 x 4 1/2 Hex Bolt
13	9	Obtain Locally	LN 1/2 Lock Nut
14	6	Obtain Locally	LN 1/4 Lock Nut
15	3	Obtain Locally	LN 3/8 Lock Nut

# TL 6500ECV Fenders



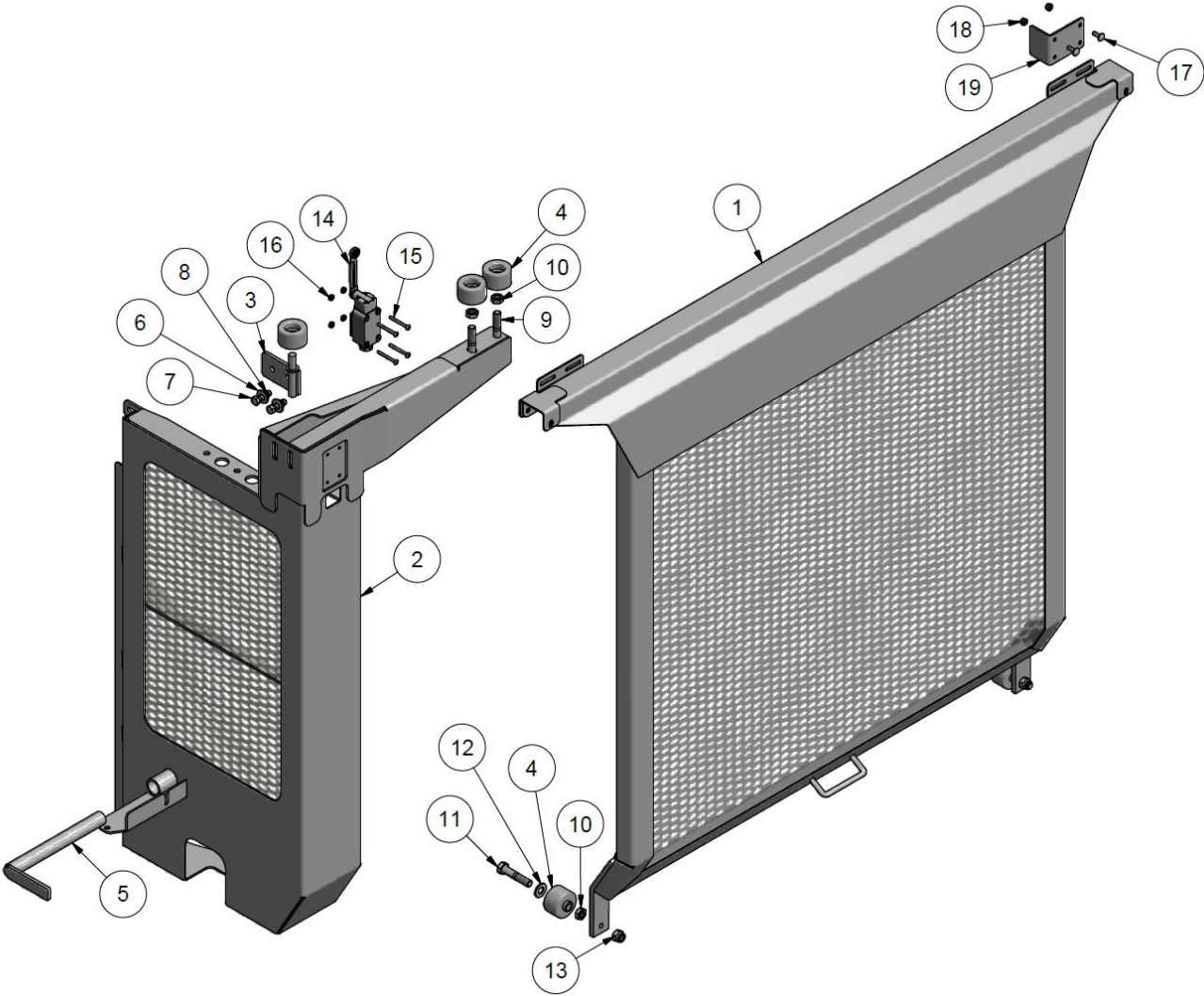
# TL 6500ECV Fenders

<b>Item</b>	<b>Qty</b>	<b>Part #</b>	<b>Description</b>
1	1	33064	Left Hoop Post
2	1	33065	Right Hoop Post
3		Obtain Locally	FW .438 Flatwasher
4		Obtain Locally	HB .375 x 1 Hex Bolt
5		Obtain Locally	HB .375 x 1.25 Hex Bolt
6		Obtain Locally	HB .375 x 3 Hex Bolt
7		Obtain Locally	HB .375 x 3.5 Hex Bolt
8		Obtain Locally	CB .5 x 1 Carriage Bolt
9		Obtain Locally	LN .375 Lock Nut
10		Obtain Locally	LN .5 Lock Nut
11	1	T6502432	Right Fender
12	1	T65024322	Left Mud Flap Mount
13	1	T65024323	L Front Fender Mount
14	1	T65024324	R Front Fender Mount
15	1	T65024325	R Mud Flap Mount
16	1	T65024326	Frame to Front Axle
17	1	T65024327	Left Fender
18	1	T65024328	Gas Tank Mount



# TL 6500ECV Safety Guard

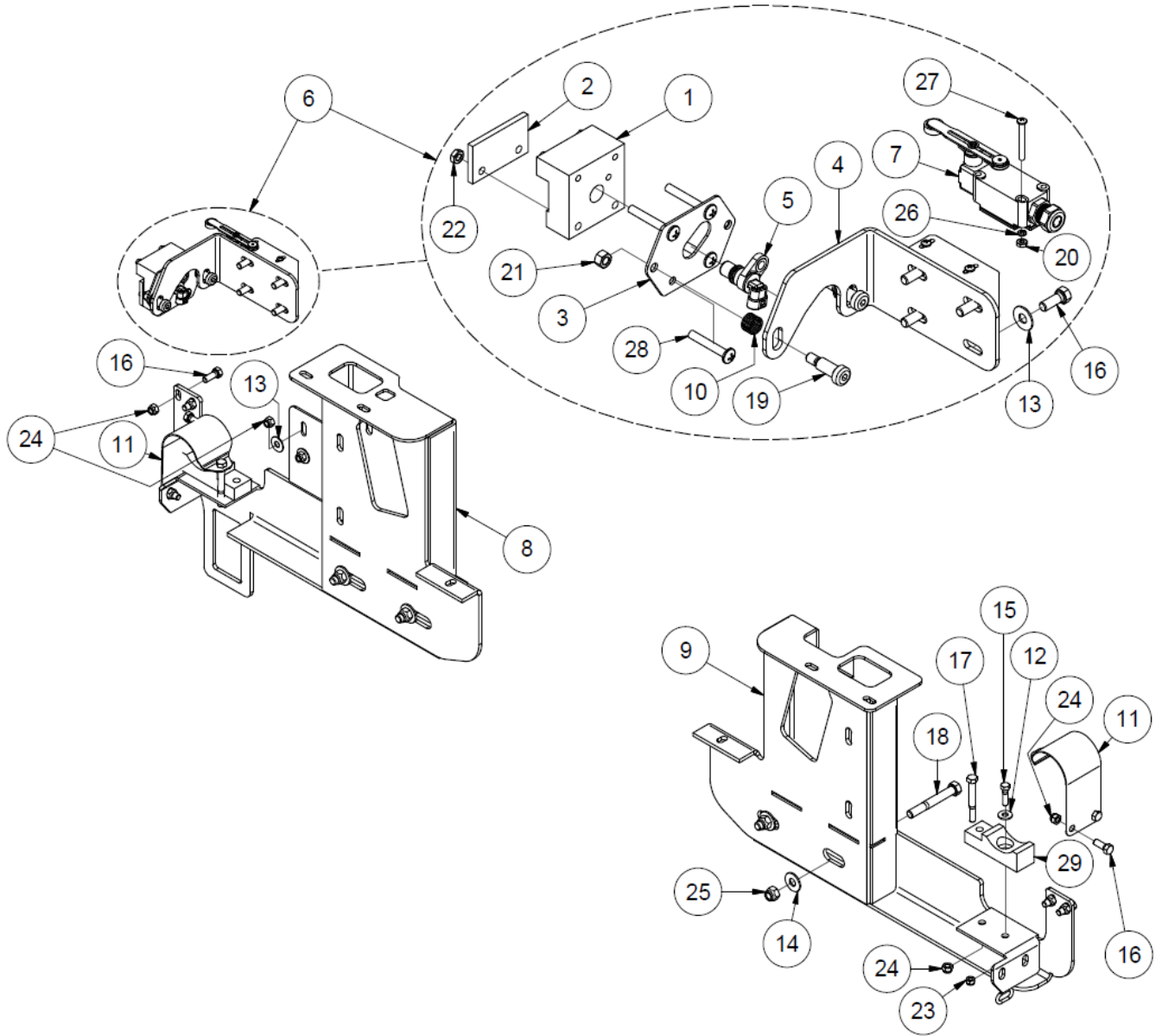
*Left side shown, right side same except Hoop Lock Pin*



# TL 6500ECV Safety Guard

<b>Item</b>	<b>Qty</b>	<b>Part #</b>	<b>Description</b>
1	1	24111	Door
2	1	28550	Left Door Mount
	1	28550M	Right Door Mount
3	1	TL5X2-301-120	Left Door Roller Bracket
	1	TL5X2-301-103	Right Door Roller Bracket
4	5	TL559906	Door Roller
5	1	25667	Hoop Lock Pin
6	2	Obtain Locally	FW 3/8 Flatwasher
7	2	Obtain Locally	HB 3/8 X 1 1/4 Hex Bolt
8	2	Obtain Locally	LN 3/8 Lock Nut
9	2	Obtain Locally	HB 1/2 X 4 Hex Bolt
10	2	Obtain Locally	HJN 1/2 Hex Jam Nut
11	1	Obtain Locally	HB 1/2 X 2 1/2 Hex Bolt
12	1	Obtain Locally	FW 1/2 Flatwasher
13	1	Obtain Locally	LN 1/2 Lock Nut
14	1	TL550-100-060	Limit Switch
15	4	Obtain Locally	10-24 Hex Nut
16	4	Obtain Locally	10-24 X 1 3/4 Bolt Gr. 5
17	1	Obtain Locally	1/4 X 3/4 Carriage Bolt
18	1	Obtain Locally	LN 1/4 Lock Nut
19	2	25062	Door Switch Tab

# TL 6500ECV Ram Cylinder Support

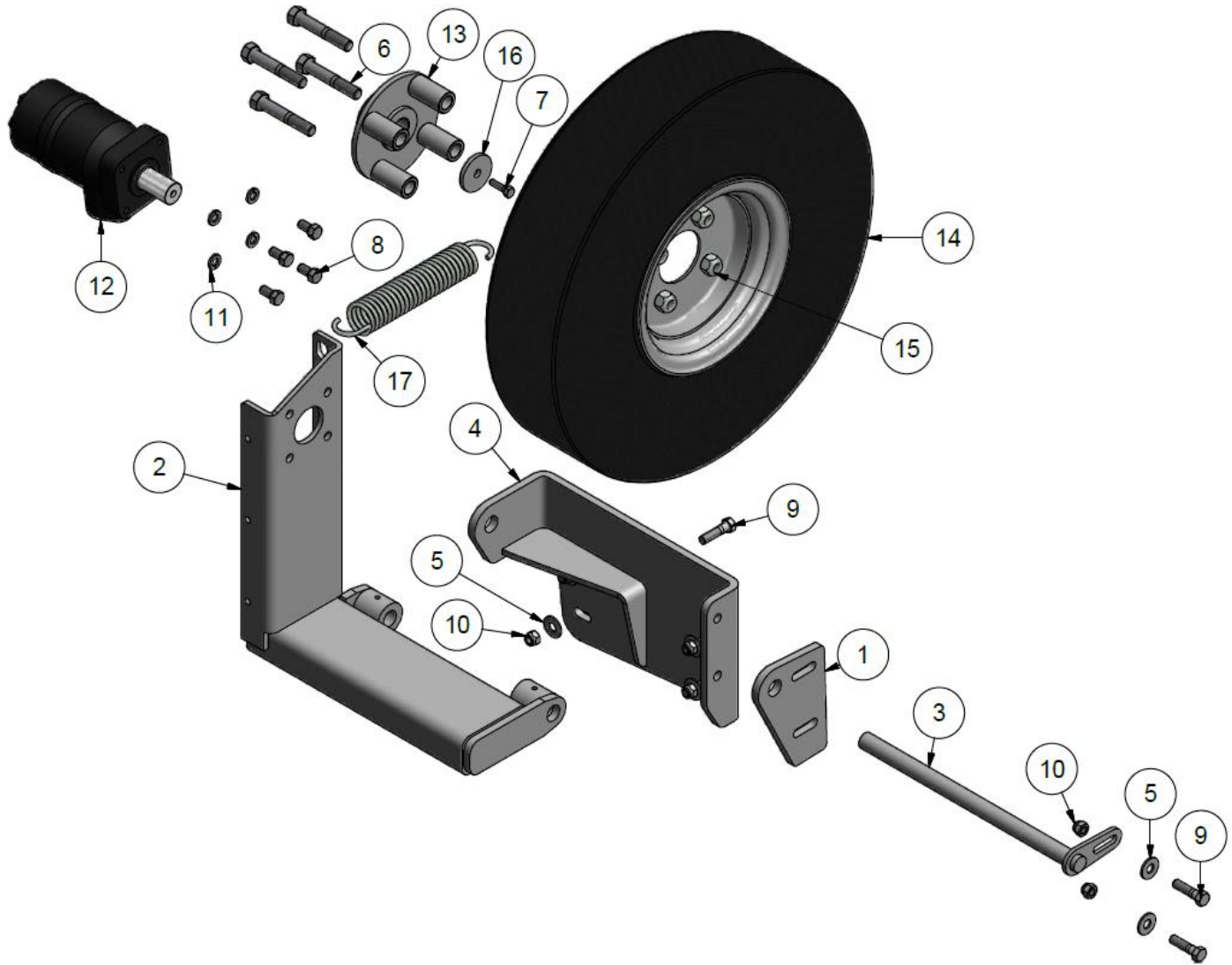


# TL 6500ECV

## Ram Cylinder Support

Item	Qty	Part #	Description
1	1	31712	Sensor Guide Block
2	1	31713	Sensor Guide Strip
3	1	31714	Speed Sensor Spacer
4	1	31977	Ram Sensor Mount
5	1	32632	Ram Speed Sensor
6	1	32506	Ram Sensor Kit
7	1	32633	Switch
8	1	33066	Right Socket Post
9	1	33067	Left Socket Post
10	1	36034	Spring
11	2	36207	Cylinder Clamp
12	2	Obtain Locally	FW 5/16 Flatwasher
13	8	Obtain Locally	FW 3/8 Flatwasher
14	8	Obtain Locally	FW 1/2 Flatwasher
15	2	Obtain Locally	HB 5/16 x 1 1/4 Hex Bolt
16	12	Obtain Locally	HB 3/8 x 1 Hex Bolt
17	2	Obtain Locally	HB 3/8 x 3 Hex Bolt
18	4	Obtain Locally	HB 1/2 x 3 3/4 Hex Bolt
19	2	Obtain Locally	HB 1/2 x 1 SS Shoulder Screw
20	4	Obtain Locally	HN 10-24 Hex Nut
21	2	Obtain Locally	HN 3/8 Hex Nut
22	4	Obtain Locally	HJN 5/16 Hex Jam Nut
23	2	Obtain Locally	LN 5/16 Lock Nut
24	14	Obtain Locally	LN 3/8 Lock Nut
25	4	Obtain Locally	LN 1/2 Lock Nut
26	4	Obtain Locally	LW 10-24 Lock Washer
27	4	Obtain Locally	MS 10-24 x 1 3/4 Machine Screw
28	4	Obtain Locally	MS 5/16 x 2 Machine Screw
29	2	TL550-200-109	Cylinder Mount

# TL 6500ECV Hoop Drive

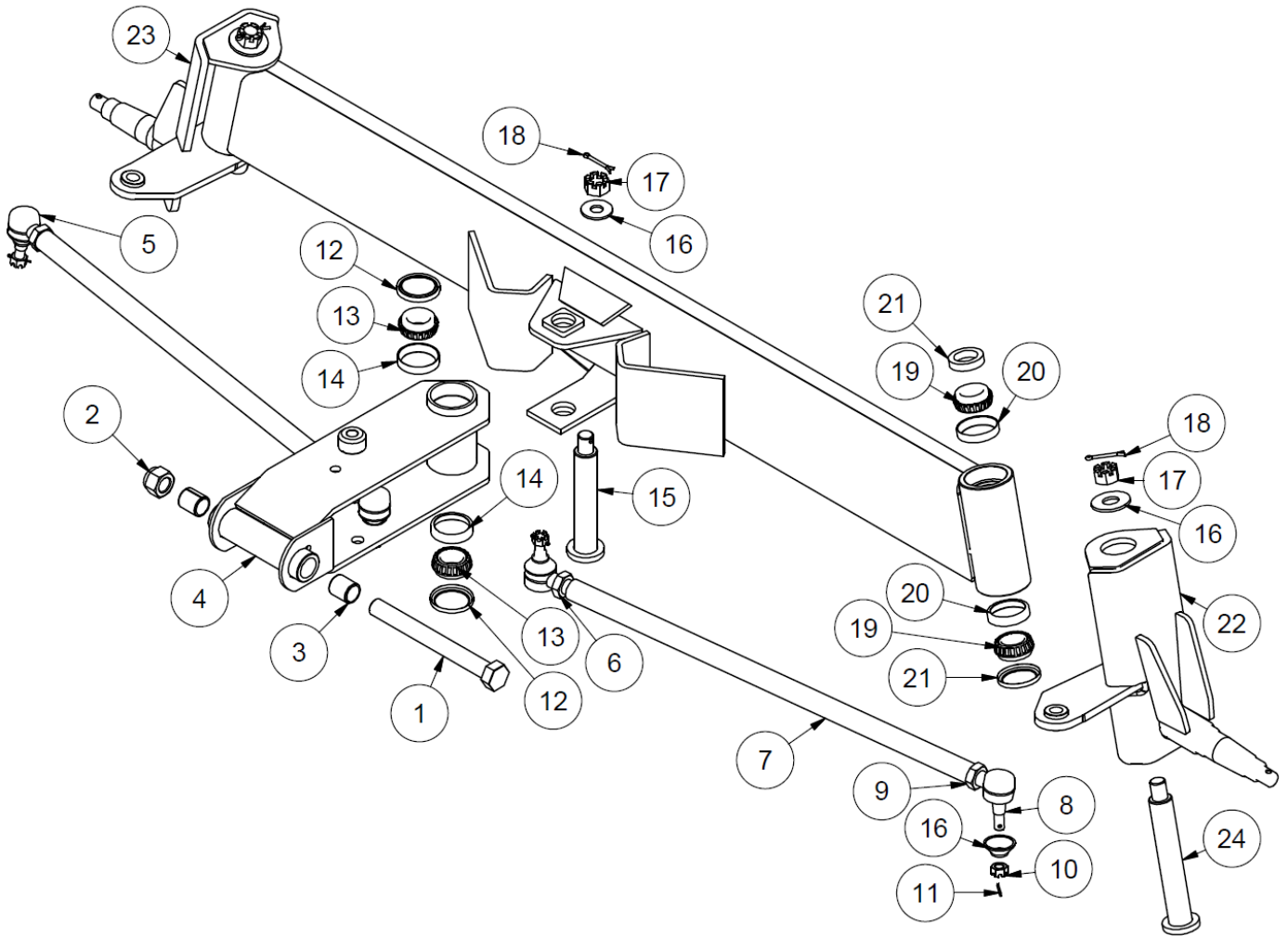


# TL 6500ECV Hoop Drive

<b>Item</b>	<b>Qty</b>	<b>Part #</b>	<b>Description</b>
1	1	28561	Hoop Drive Adjuster
2	1	28589	Hoop Wheel Mount
3	1	28610	Hoop Drive Pin
4	1	28622	Drive Base Mount
5	1	Obtain Locally	FW 3/8 Flatwasher
6	1	Obtain Locally	HB 1/2 X 3 Hex Bolt
7	4	Obtain Locally	HB 1/4 X 1 Hex Bolt
8	4	Obtain Locally	HB 3/8 X 3/4 Hex Bolt
9	4	Obtain Locally	HB 3/8 X 1 1/2 Hex Bolt
10	1	Obtain Locally	LN 3/8 Lock Nut
11	1	Obtain Locally	LW 3/8 Lockwasher
12	1	TL5X2-200-050	Hydraulic Motor
13	4	TL500-100-051	Hoop Drive Wheel Hub
14	1	TL550-100-052	Drive Wheel
15	4	TL500-100-054	Wheel Nut
16	6	TL500-100-060	Large Washer
17	1	TL500-101-231	Hoop Wheel Tensioner Spring



# TL 6500ECV Axle / Spindle / Hub

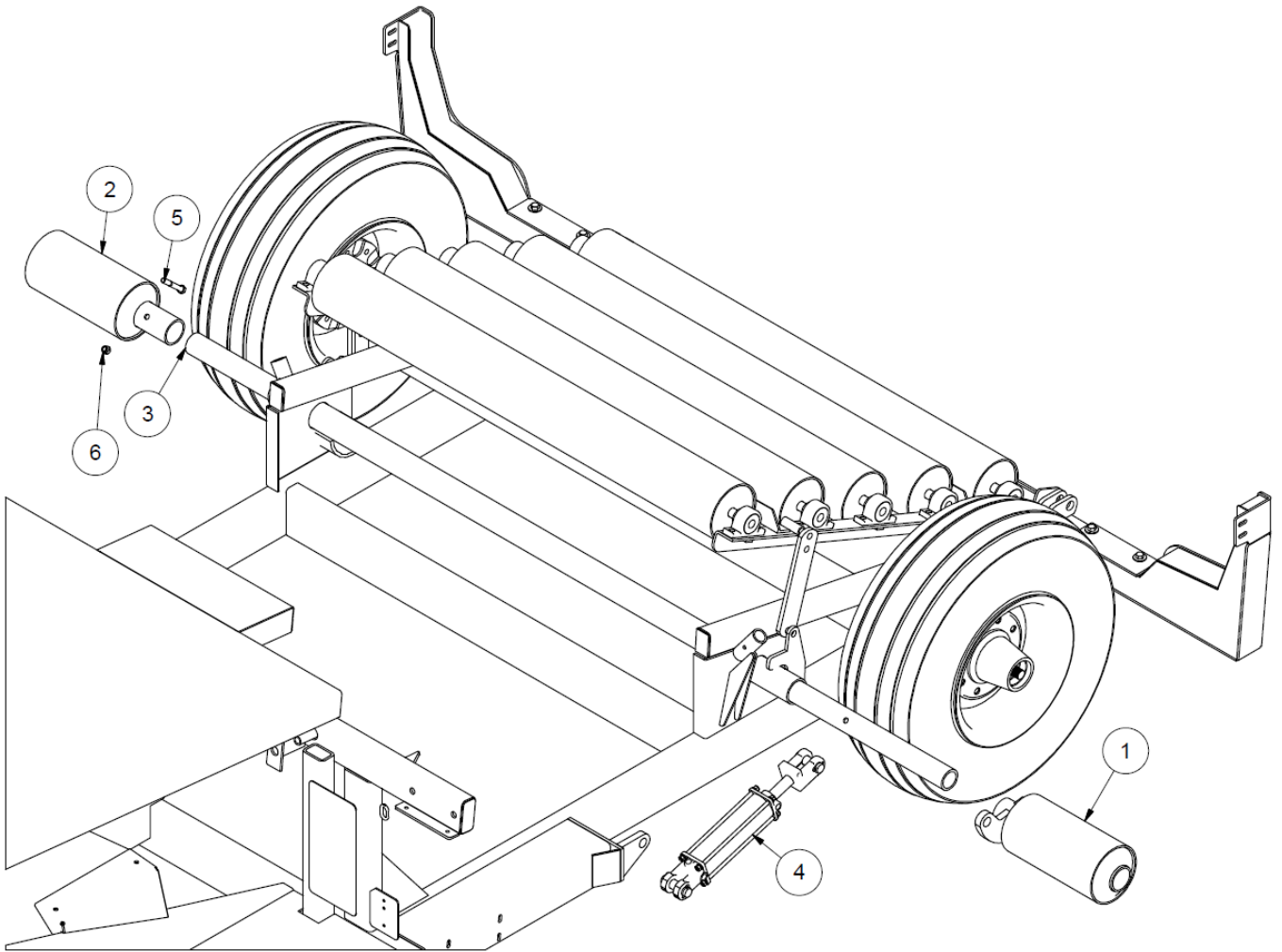


# TL 6500ECV

## Axle / Spindle / Hub

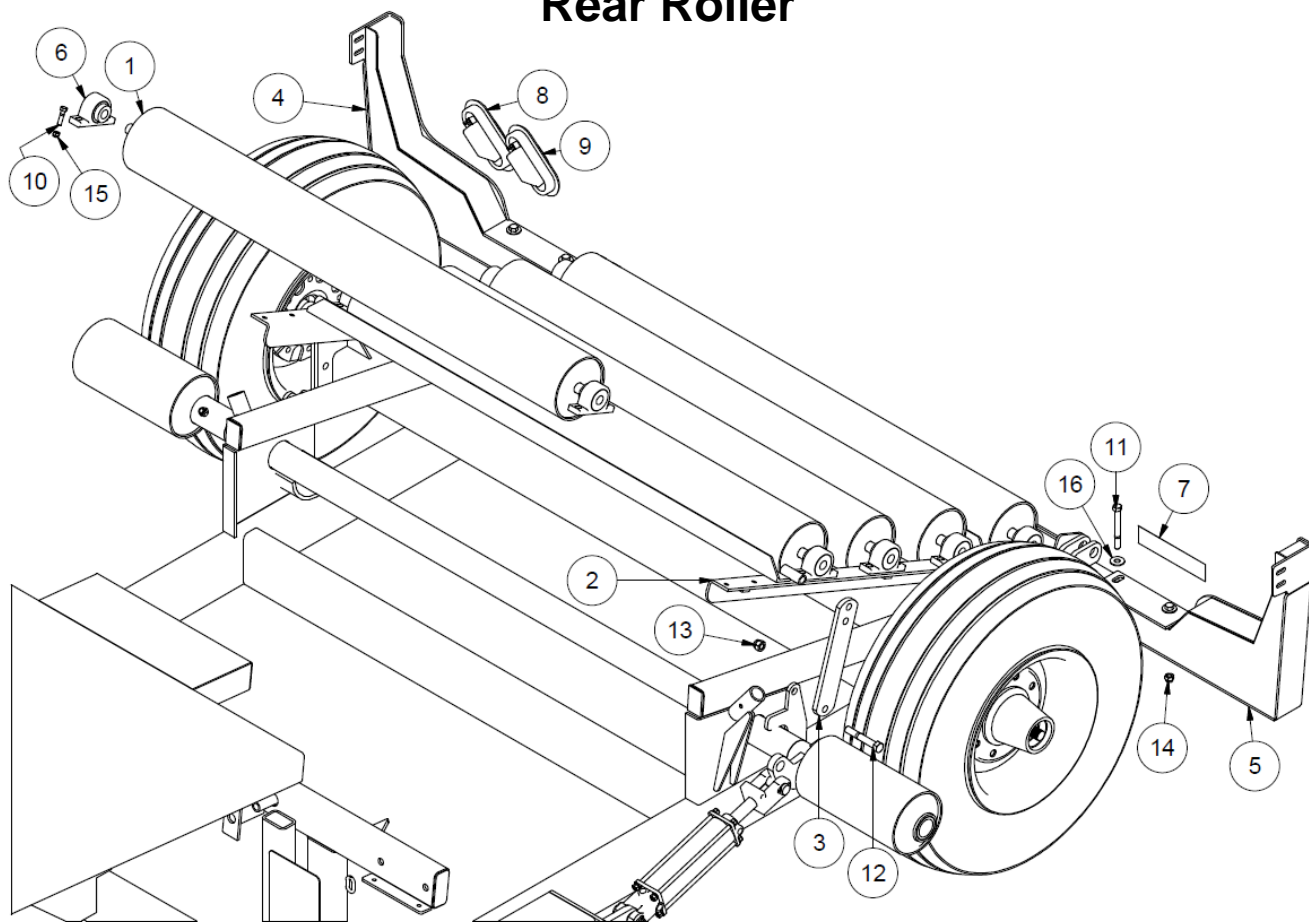
Item	Qty	Part #	Description
1	1	Obtain Locally	HB 1/8 X 10 Hex Bolt
2	1	Obtain Locally	LN 1 1/8 Lock Nut
3	3	TL650-111-064	Tongue Bracket Bushing
4	1	TL650-221-083	Tongue Bracket
5	1	TL550-111-006	Tie Rod End (Threaded Right)
6	2	Obtain Locally	HN 3/4 UNF RH Hex Jam Nut
7	2	TL650-221-082	Tie Rod
8	1	TL550-111-007	Tie Rod End (Threaded Left)
9	2	Obtain Locally	HN 3/4 UNF LH Hex Jam Nut
10	4	TL550-111-004	9/16 NF Slotted Hex Nut
11	4	Obtain Locally	CP 1/8 Cotter Pin
12	2	TL550-111-011	Tongue Bracket Seal
13	2	TL550-111-010	Tongue Bracket Timkin Bearing
14	2	TL550-111-009	Tongue Bracket Timkin Cup
15	1	TL650-221-055	Tongue Bracket Pin
16	3	Obtain Locally	13/16 Flatwasher
17	3	TL550-111-015	1" Castellated Nut
18	3	Obtain Locally	CP 3/16 X 2 Cotter Pin
19	2	TL550-200-080	Spindle Bearing Timkin Cone
20	2	TL550-200-081	Spindle Bearing Timkin Cup
21	2	TL550-200-082	Spindle Bearing Seal
22	1	TL650-100-083	Left Side Spindle
23	1	TL650-100-084	Right Side Spindle
24	2	TL650-100-085	Spindle Pin

# TL 650ECV Brake



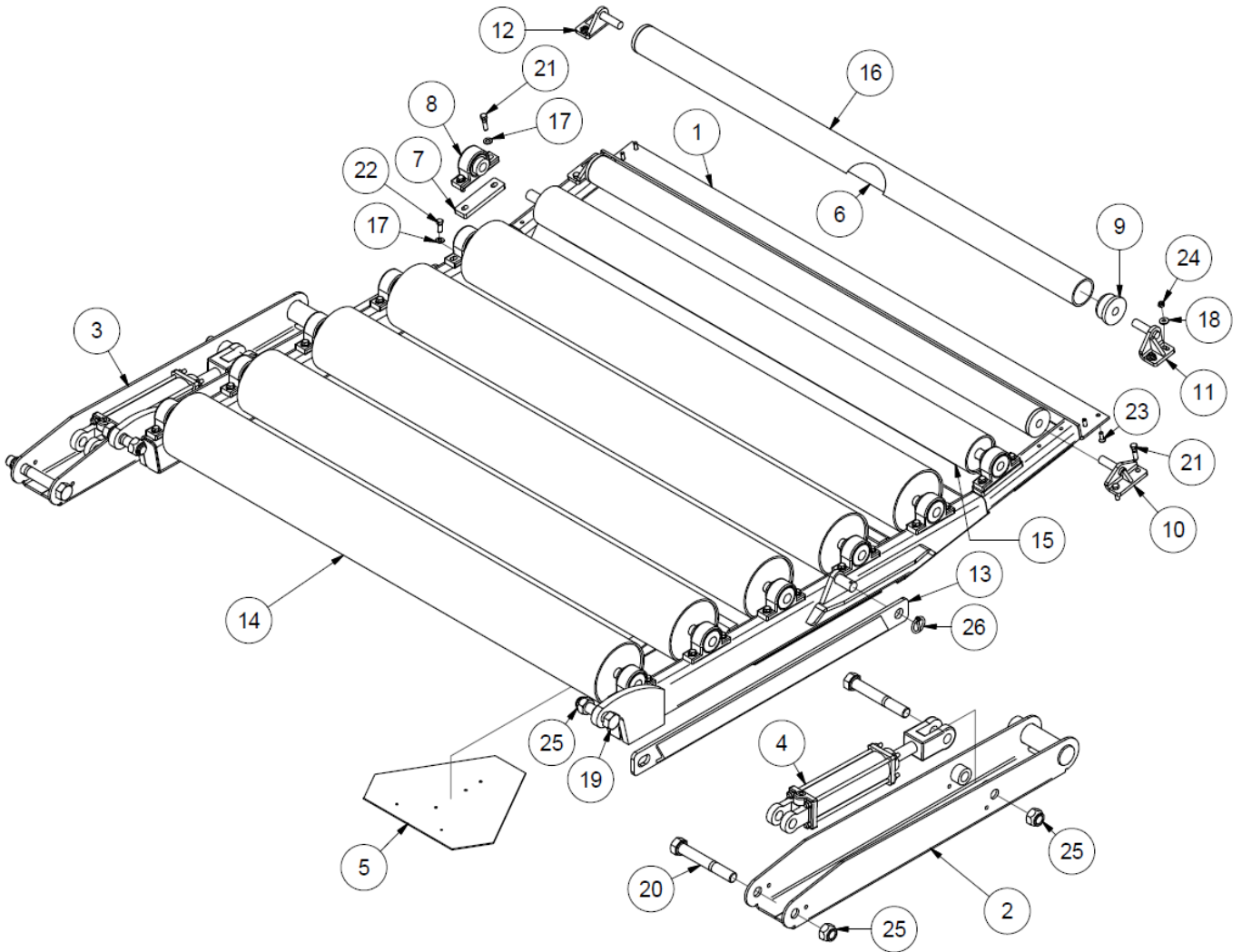
Item	Part #	Description
1	TL650-100-029	Left Brake Eccentric
2	TL650-100-030	Right Brake Eccentric
3	TL650-100-028	Rocker Tube
4	TL500-100-082	Hydraulic Cylinder
5	Obtain Locally	HB 1/2 X 3 1/2
6	Obtain Locally	LN 1/2

# TL 650ECV Rear Roller



Item	Qty	Part #	Description
1	5	TL650-100-086	Large Roller
2	1	TL6X2-100-007	Riser Frame
3	1	TL6X2-100-008	Riser Link
4	1	28650	Right Light Bracket
5	1	28650M	Left Light Bracket
6	10	TL550-100-030	1" Bearing
7	2	DEREDSTRIP	Red Reflector
8	2	TL550-200-122	Amber Light
9	2	TL550-200-121	Red Light
10	20	Obtain Locally	HB 3/8 X 1 1/2 Hex Bolt
11	4	Obtain Locally	HB 1/2 X 4 Hex Bolt
12	1	Obtain Locally	HB 5/8 X 4 Hex Bolt
13	1	Obtain Locally	LN 5/8 Lock Nut
14	4	Obtain Locally	LN 1/2 Lock Nut
15	20	Obtain Locally	LN 3/8 Lock Nut
16	4	Obtain Locally	LW 3/8 Flat Washer

# TL 6500ECV Tail

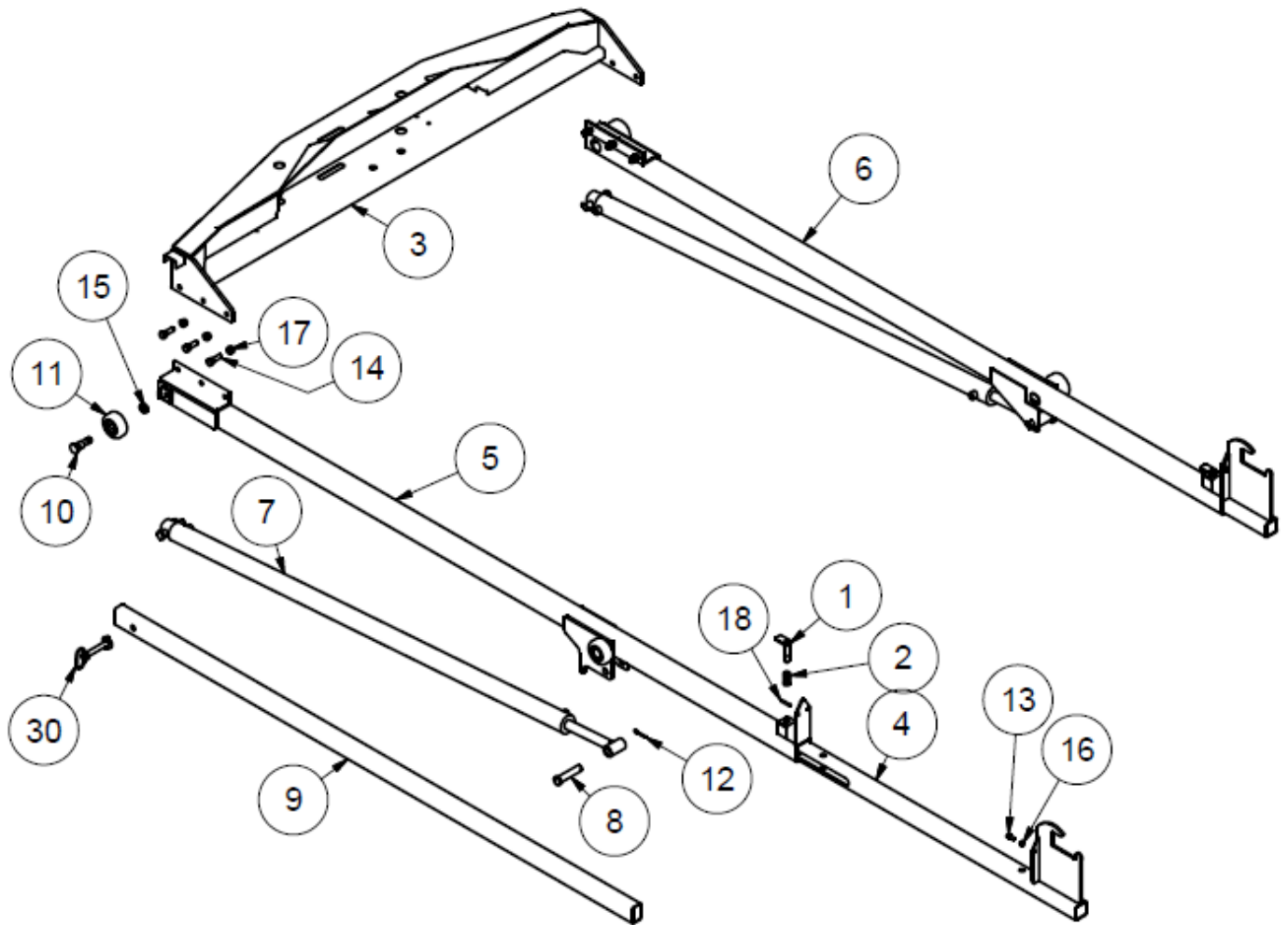


# TL 6500ECV Tail

Item	Qty	Part #	Description
1	1	31679	Tail Base
2	1	33376	Left Tail Lift
3	1	33377	Right Tail Lift
4	2	CYL 2.5 x 8	Hydraulic Cylinder
5	1	DESMV	Slow Moving Vehicle Sign
6	2	T65021081	Small Roller Insert
7	2	TL551311	Roller Spacer
8	12	TL550-100-030	1" Bearing
9	4	TL550-100-092	Small Roller Bearing
10	2	TL550-200-003	Small Roller Bracket
11	1	TL550-200-004	Right Last Roller
12	1	TL550-200-005	Left Last Roller
13	1	TL599-100-035	Tail Tie Bar
14	1	TL650-100-086	Large Roller
15	1	TL650-100-099	4" Roller
16	2	TL650-100-100	2 7/8" Roller
17	24	Obtain Locally	FW 3/8 Flatwasher
18	4	Obtain Locally	FW 5/16 Flatwasher
19	2	Obtain Locally	HB 1 x 4 Hex Bolt
20	4	Obtain Locally	HB 1 x 7 Hex Bolt
21	8	Obtain Locally	HB 3/8 x 1 1/2 Hex Bolt
22	20	Obtain Locally	HB 3/8 x 1 Hex Bolt
23	4	Obtain Locally	HB 5/16 X 1 1/2 Flathead Bolt
24	4	Obtain Locally	LN 5/16 Lock Nut
25	6	Obtain Locally	LN 1 Lock Nut
26	2	Obtain Locally	LP 3/16



# TL 6500ECV Ram

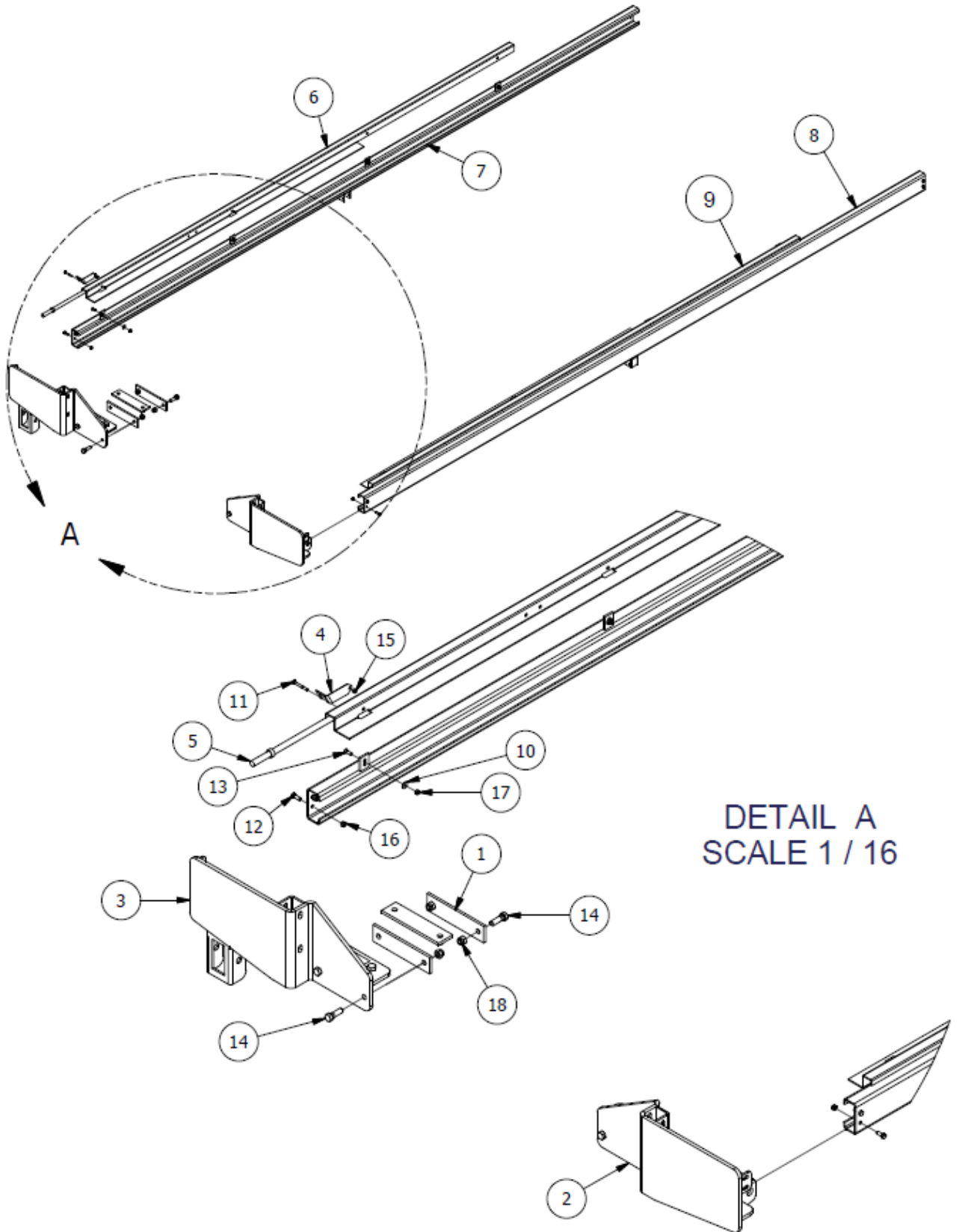


# TL 6500ECV

## Ram

<b>Item</b>	<b>Qty</b>	<b>Part #</b>	<b>Description</b>
1	2	27230	Pushoff Latch Pin
2	2	27566	Last Pushoff Spring Pin
3	1	30899	Ram
4	2	31397	Rear Extension
5	1	31398	Left Side Ram Tube
6	1	31399	Right Side Ram Tube
7	2	TL550-100-043	Ram Cylinder
8	4	TL550-100-042	Ram Cylinder Pin
9	1	TL500-301-048	Pushoff Tube
10	4	TL5X2-301-156	Ram Wheel Axle
11	4	TLWHEEL0205	Ram Rail Wheel
12	4	Obtain Locally	CP .188 x 2 Cotter Pin
13	4	Obtain Locally	HB 3/8 x 1 Hex Bolt
14	6	Obtain Locally	HB 5/8 x 2 Hex Bolt
15	4	Obtain Locally	HN 3/4 Hex Jam Nut
16	4	Obtain Locally	LN 3/8
17	6	Obtain Locally	LN 5/8
18	2	Obtain Locally	RP 1/4 x 2 Roll Pin
	2	TLSPK25	Ram Cylinder Seal Kit

# TL 6500ECV Side Rail

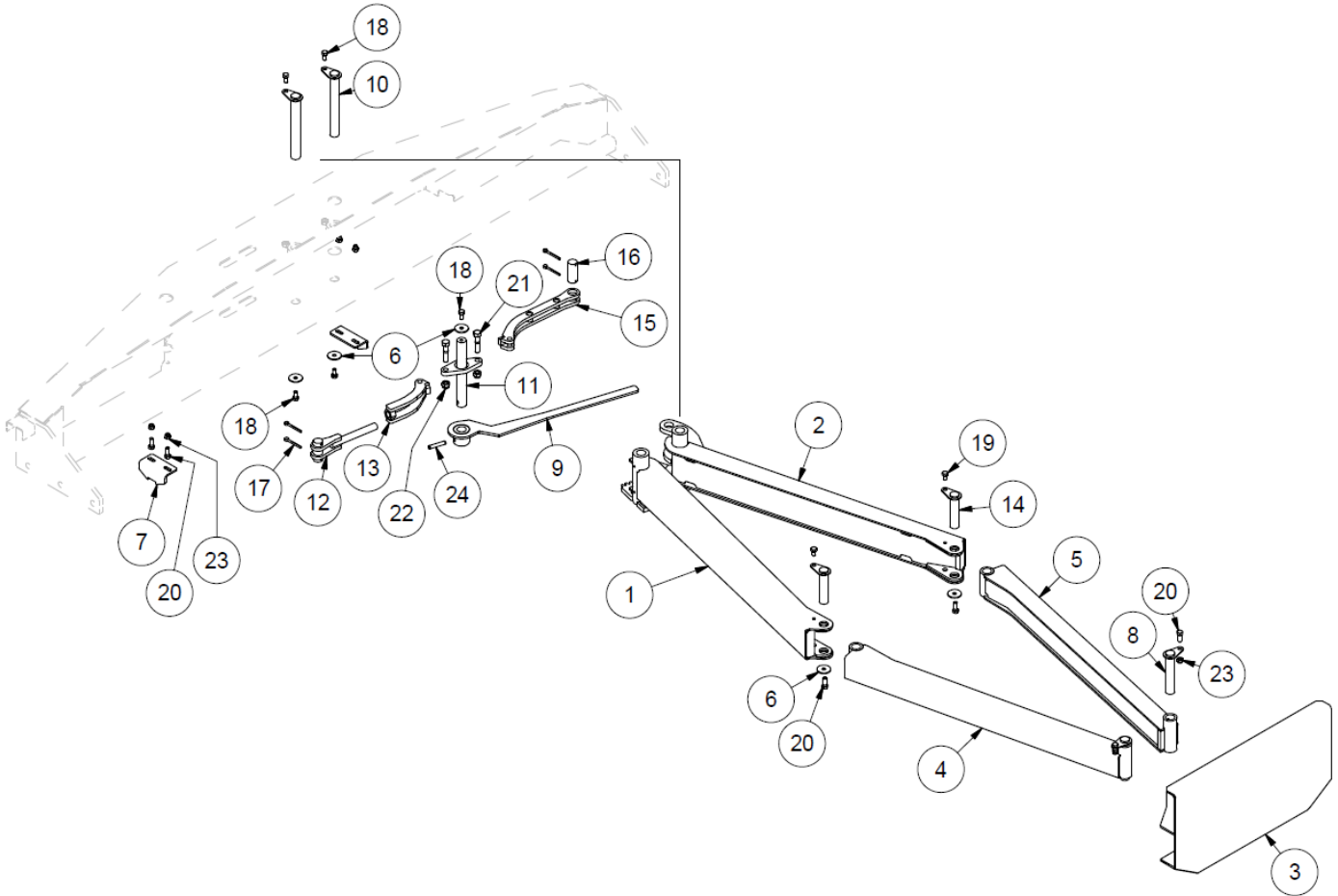


# TL 6500ECV Side Rail

Item	Qty	Part #	Description
1	6	28606	Tie Plate
2	1	32823	Left Front Corner
3	1	32824	Right Front Corner
4	1	T6502445	Riser Handle Latch
5	1	TL109-100-361	Riser Handle
6	1	TL109-100-362	Right Guard
7	1	TL5X2-301-170	Right Side Rail
8	1	TL5X2-301-171	Left Side Rail
9	1	TL5X2-301-176	Left Guard Track
10	8	Obtain Locally	FW 5/16 Flatwasher
11	1	Obtain Locally	HB 1/4 x 2 1/4 Hex Bolt
12	6	Obtain Locally	HB 3/8 x 1 Hex Bolt
13	8	Obtain Locally	HB 5/16 x 1 Flathead Bolt
14	12	Obtain Locally	HB 5/8 x 2 Hex Bolt
15	1	Obtain Locally	LN 1/4 Lock Nut
16	4	Obtain Locally	LN 3/8 Lock Nut
17	8	Obtain Locally	LN 5/16 Lock Nut
18	6	Obtain Locally	LN 5/8 Lock Nut

# TL 6500ECV Front Pushoff

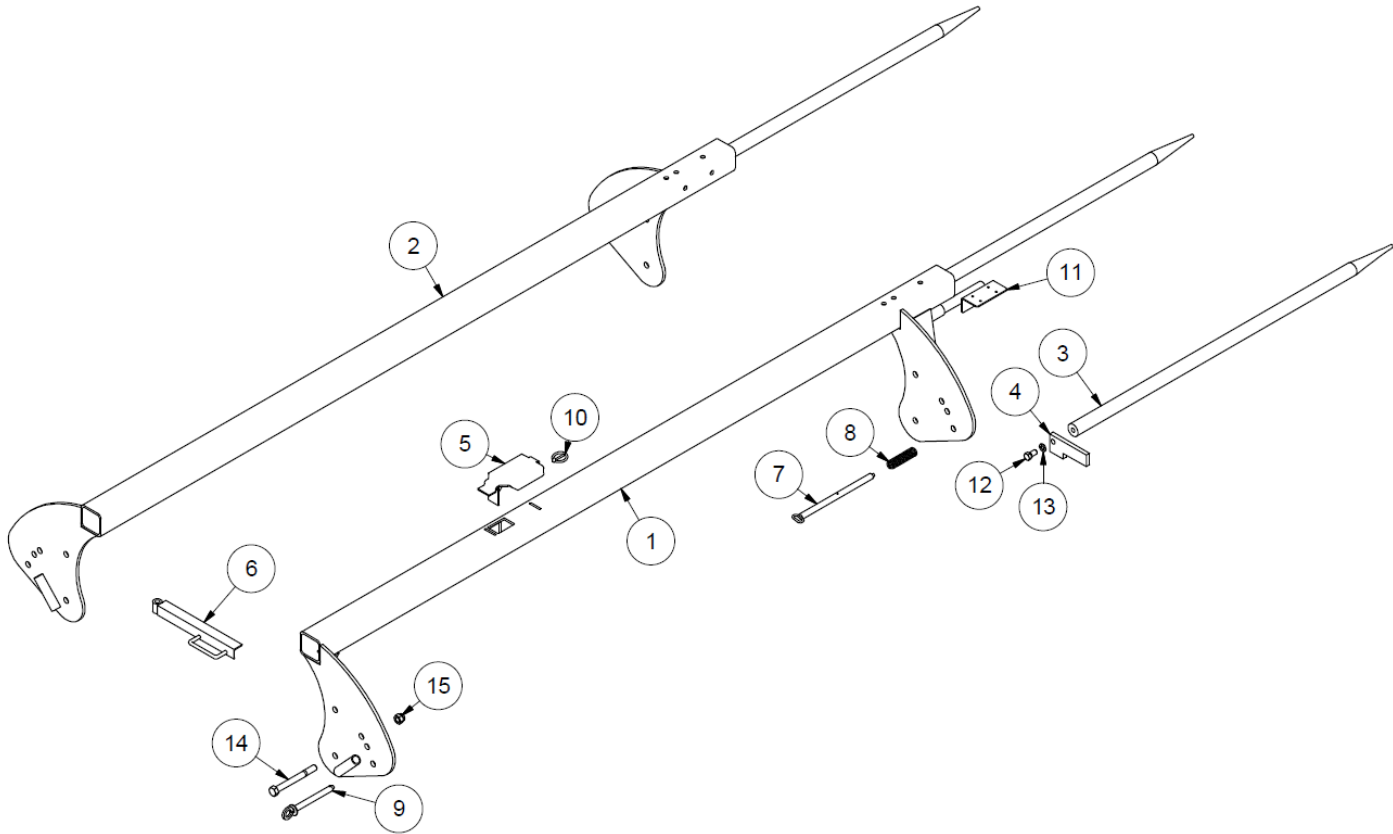
For wrappers with a serial # **from 1355001 to current**



# TL 6500ECV Front Pushoff

Item	Qty	Part #	Description
1	1	30455	Left Large Arm
2	1	30456	Right Large Arm
3	1	30459	Push Plate
4	1	30457	Left Small Arm
5	1	30462	Right Small Arm
6	5	30924	Pin Washer
7	2	30958	Handle Holder
8	2	30980	Last Pushoff Plate Pin
9	1	30981	Last Pushoff Handle
10	2	30982	Pushoff Middle Pin
11	1	30983	Linkage Pivot
12	1	30985	Linkage Adjuster
13	1	30986	Pivot Adjuster
14	2	30988	Arm Joint Pin
15	1	30989	Solid Pivot Arm
16	2	30993	Ram Linkage Mount Pin
17	4	Obtain Locally	CP .188 X 2 Cotter Pin
18	5	Obtain Locally	HB .375 X .75 Hex Bolt
19	2	Obtain Locally	HB .375 X .5 Hex Bolt
20	8	Obtain Locally	HB .375 X 1 Hex Bolt
21	2	Obtain Locally	HB .5 X 2.25 Hex Bolt
22	2	Obtain Locally	LN .5 Lock Nut
23	6	Obtain Locally	LN .375 Lock Nut
24	1	Obtain Locally	RP .375 X 2 Roll Pin

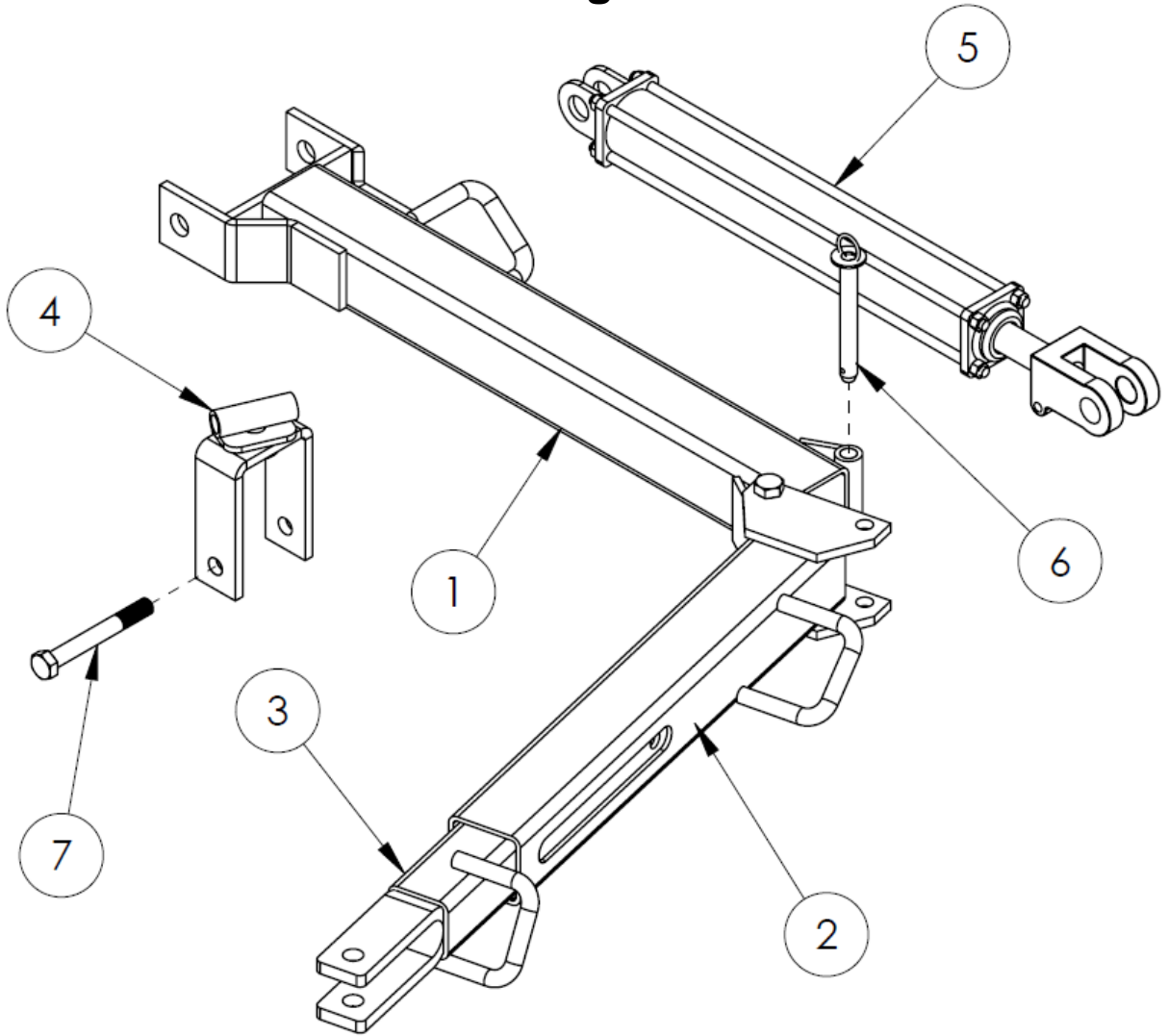
# TL 6500ECV Bale Saddle



Item	Qty	Part #	Description
1	1	TL6X2-101-140	Left Bale Guide
2	1	TL6X2-101-141	Right Bale Guide
3	2	TL6X2-101-144	Center Bale Spear
4	2	TL6X2-101-145	Center Spear Handle
5	1	TL6X2-101-142	Trigger Plate
6	2	TL6X2-101-146	Cable Handle
7	2	TL6X2-101-147	Rear Guide Pin
8	2	TL6X2-101-148	Rear Guide Pin Spring
9	2	TL550-200-104	Front Guide Pin
10	1	Obtain Locally	3/16 Lynch Pin
11	1	TLFSB2007	Film Sensor Mount
12	2	Obtain Locally	HB 1/2 X 1 Hex Bolt
13	2	Obtain Locally	LW 1/2 Lockwasher
14	2	Obtain Locally	HB 5/8 X 6 Hex Bolt
15	2	Obtain Locally	LN 5/8 Lock Nut

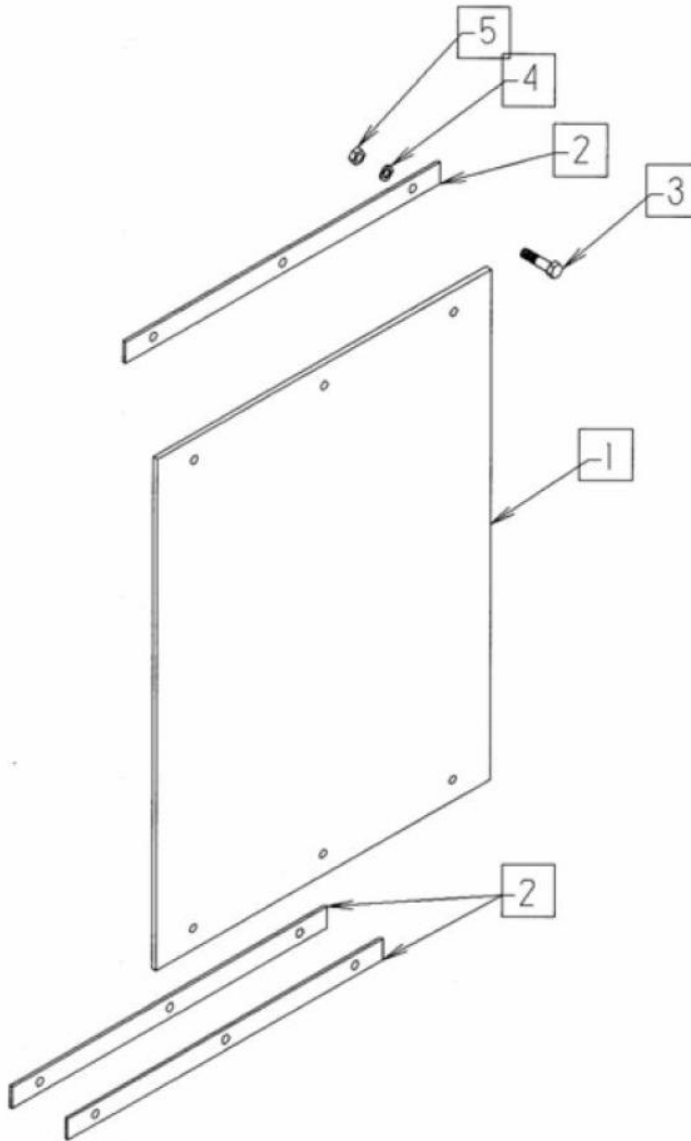


# TL 650ECV Tongue



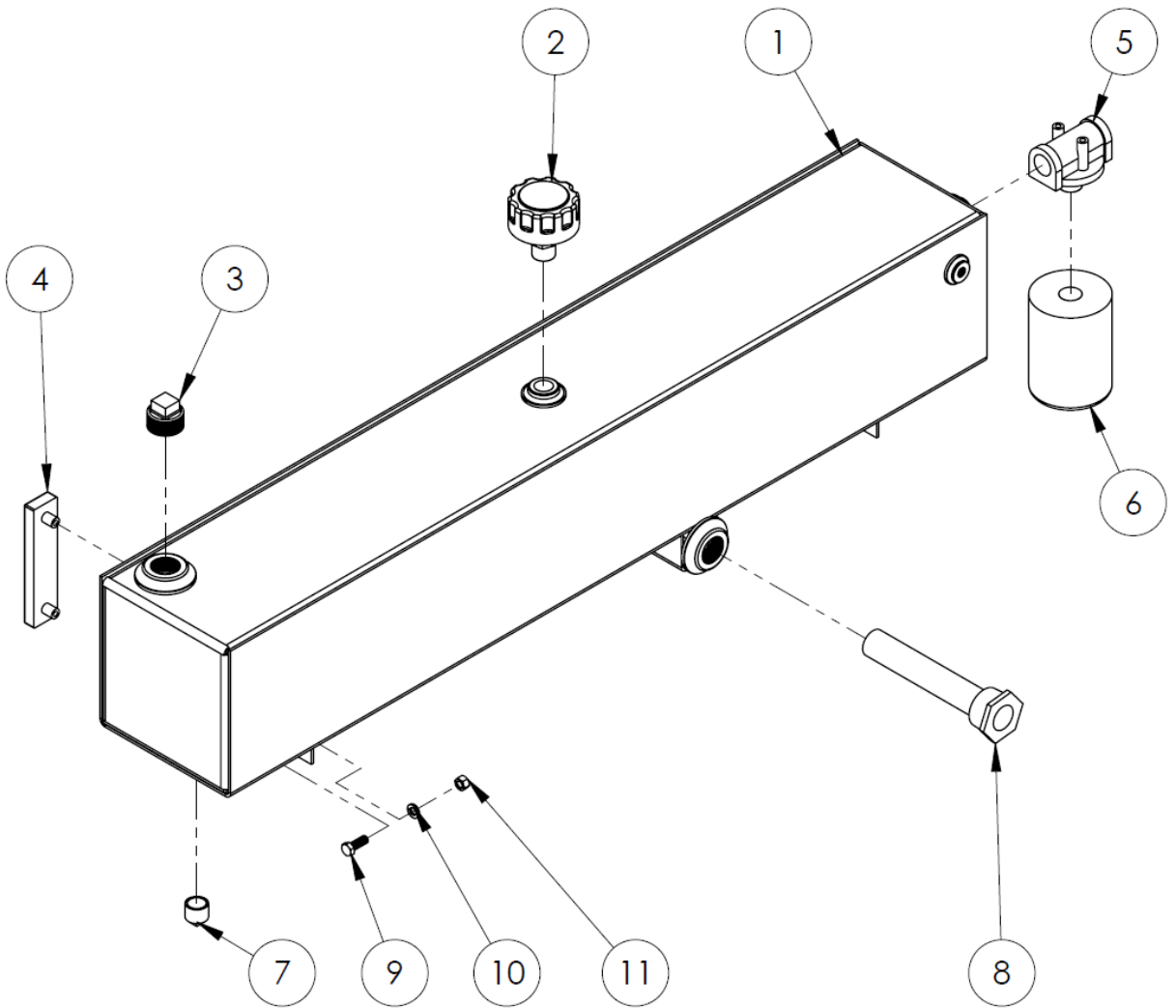
Item	Qty	Part #	Description
1	1	TL6X2-101-051	Main Tongue
2	1	TL6X2-101-052	Swinging Tongue
3	1	TL650-100-053	Sliding Tongue
4	1	TL650-100-160	Tongue Holder
5	1	TL500-100-103	Hydraulic Cylinder
6	1	25522	Tongue Pin
7	1	Obtain Locally	HB 5/8 X 5 Hex Bolt & Lock Nut

# TL 6500ECV Mud Flap



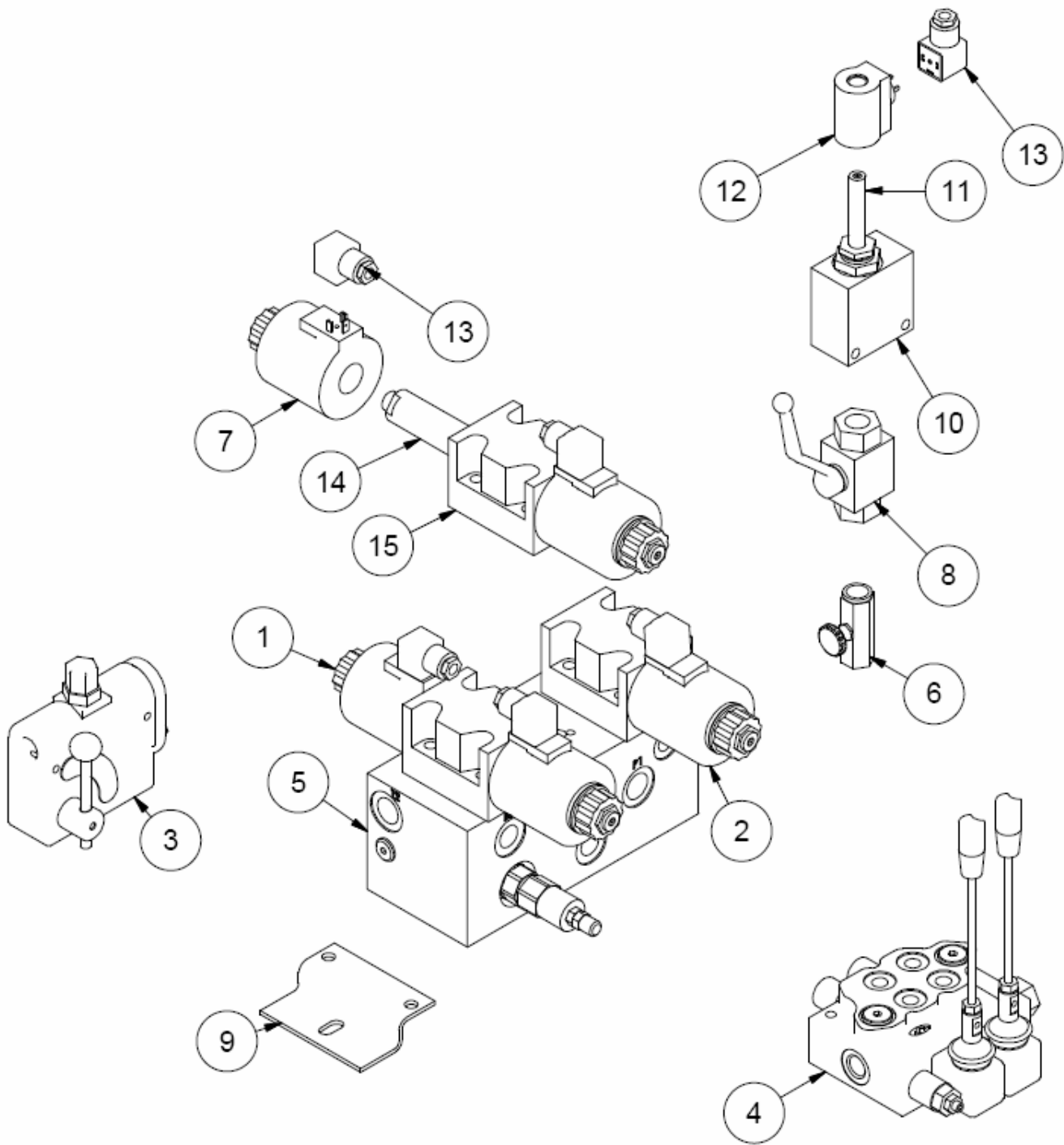
Item	Qty	Part #	Description
1	2	TL550-100-054	Mud Flap
2	3	TL550-100-164	Metal Strip
3	12	Obtain Locally	HB 5/16 X 1 Hex Bolt
4	12	Obtain Locally	LW 5/16 Lockwasher
5	12	Obtain Locally	HN 5/16 Hex Nut
		3/16 x 1" Chain Obtain Locally	Mud Flap Chain (Left Side: 4 Links) (Right Side: 13 Links)

# TL 6500ECV Hydraulic Tank



Item	Qty	Part #	Description
1	1	TL5X2-100-190	Hydraulic Tank
2	1	TL500-100-169	Breather Cap
3	1	TL500-100-170	Filer Plug
4	1	TL500-100-171	Sight Gauge
5	1	TL500-100-172	Filter Base
6	1	TL500-100-173	10 Micron Filter
7	1	TL500-100-174	3/4 Magnetic Plug
8	1	TL500-100-175	Suction Strainer
9	1	Obtain Locally	HB 3/8 X 1 Hex Bolt
10	1	Obtain Locally	LW 3/8 Lockwasher
11	1	Obtain Locally	HN 3/8 Hex Nut

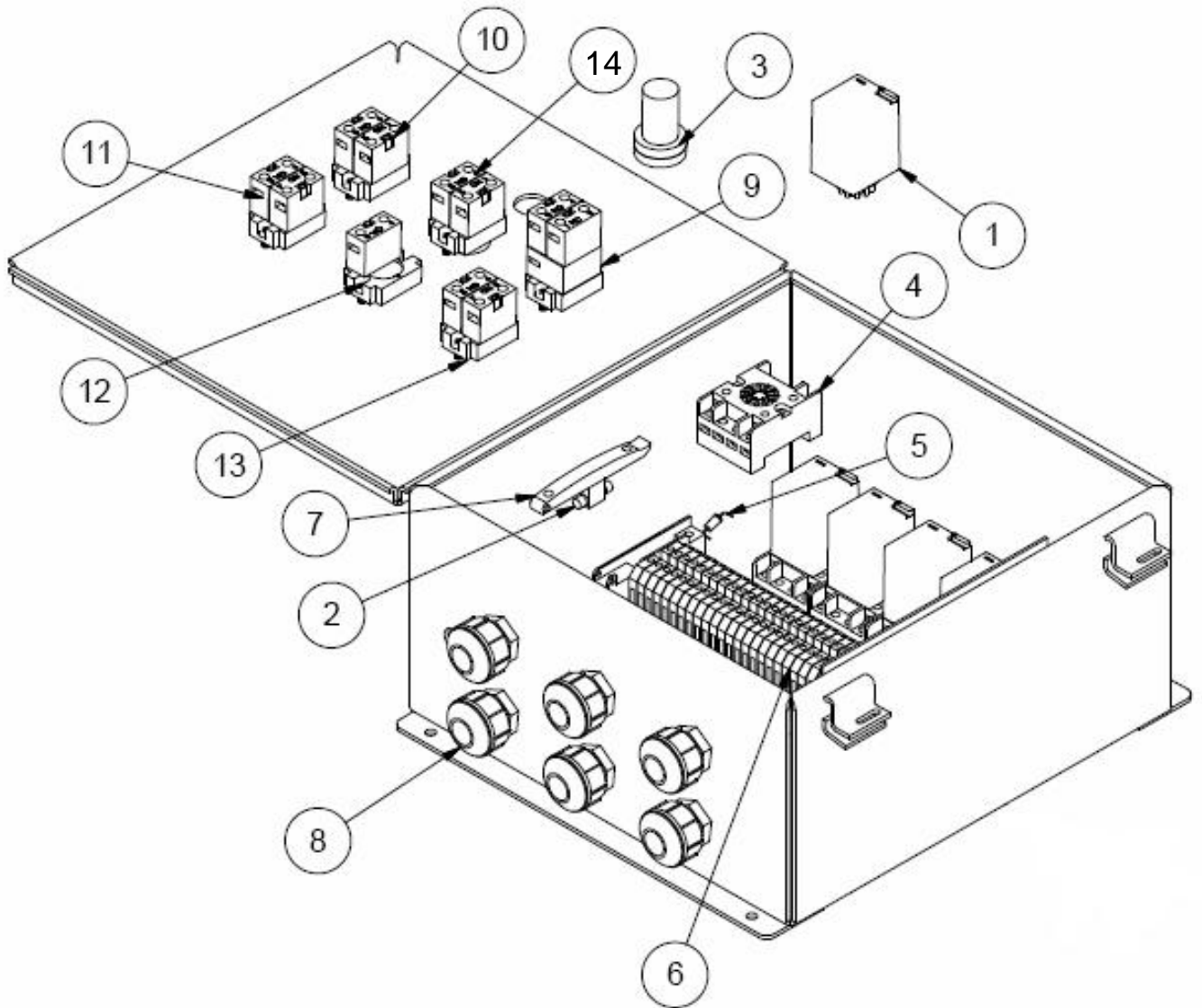
# TL 6500ECV Hydraulic Valve



# TL 6500ECV Hydraulic Valve

<b>Item</b>	<b>Qty</b>	<b>Part #</b>	<b>Description</b>
1	2	TL5X2-201-200	Tandem Center 12 Volt DC Valve
2	1	TL5X2-201-201	Single 12 Volt DC Valve
3	1	TL500-100-193	Flow Control
4	1	TL5X2-201-055	2 Spool Mono-Block Valve
5	1	TL550-100-056	3 Station Custom Manifold
6	1	TL550-200-006	Steering Speed Control
7		TL5X2-201-007	Valve Coil
8	1	TL550-200-112	Ball Valve
9	1	TL550-200-113	Manifold Mount
10	1	TL850-301-109	Dump Valve Body
11	1	TL850-301-110	Valve Cartridge
12	1	TL850-301-111	12 Volt Coil
13	5	28534	DIN Connector
14	5	VAL25288	Tube Assembly
15	3	VAL25285	Valve Body

# TL 6500ECV Control Panel

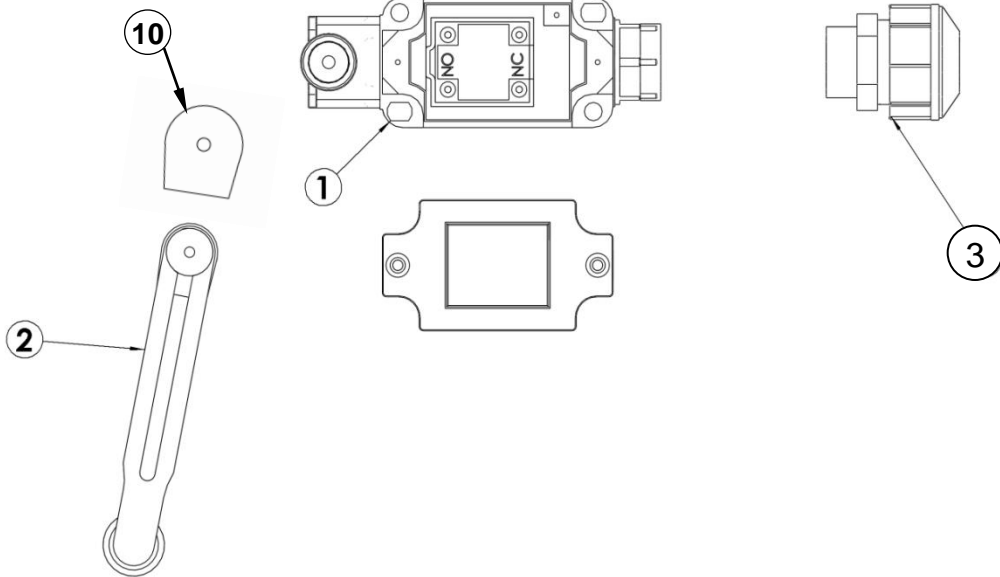


## TL 6500ECV Control Panel

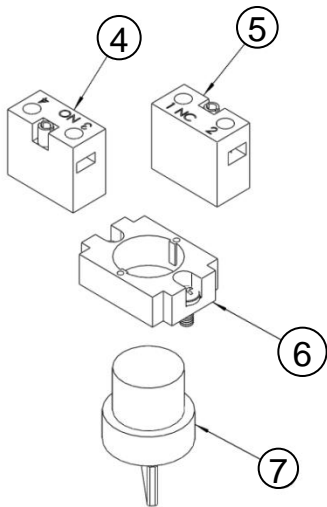
<b>Item</b>	<b>Qty</b>	<b>Part</b>	<b>Description</b>
	1	TL550-200-061	Complete Control Panel
1	5	TL500-100-221	Control Relay
2	1	TL550-100-079	15 AMP Fuse
3	1	TL27299	LED Light
4	5	TL5X2-500-158	11 Pin Relay Base
5	1	TL550-150-085	Diode 1N5406 3amp 600V
6	26	TL550-150-084	DIN Rail Terminal Block
7	1	TL550-150-083	DIN Rail Fuse Holder
8	6	TL550-100-086	PVC Wire Holder
9	1	TL25762	On/Off Switch
10	1	TL550-100-076	Man/Auto Switch
11	1	TL550-100-077	Steering Switch
12	1	TL550-100-075	Rotate Switch
13	1	TL550-100-077	Forward/ Reverse Switch
14	1	TL27298	Emergency Stop Button



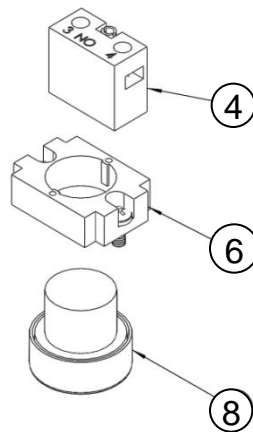
# TL 6500ECV Limit Switch



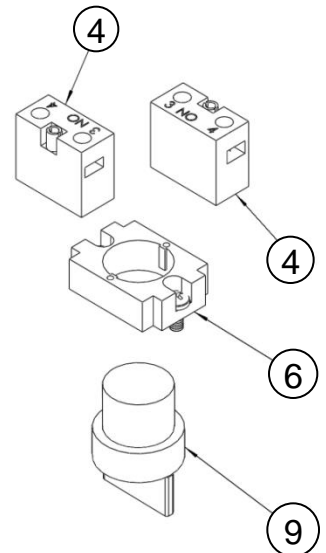
## On/Off - Man/Auto Switch



## Rotate Switch



## Ram - Steering Switch

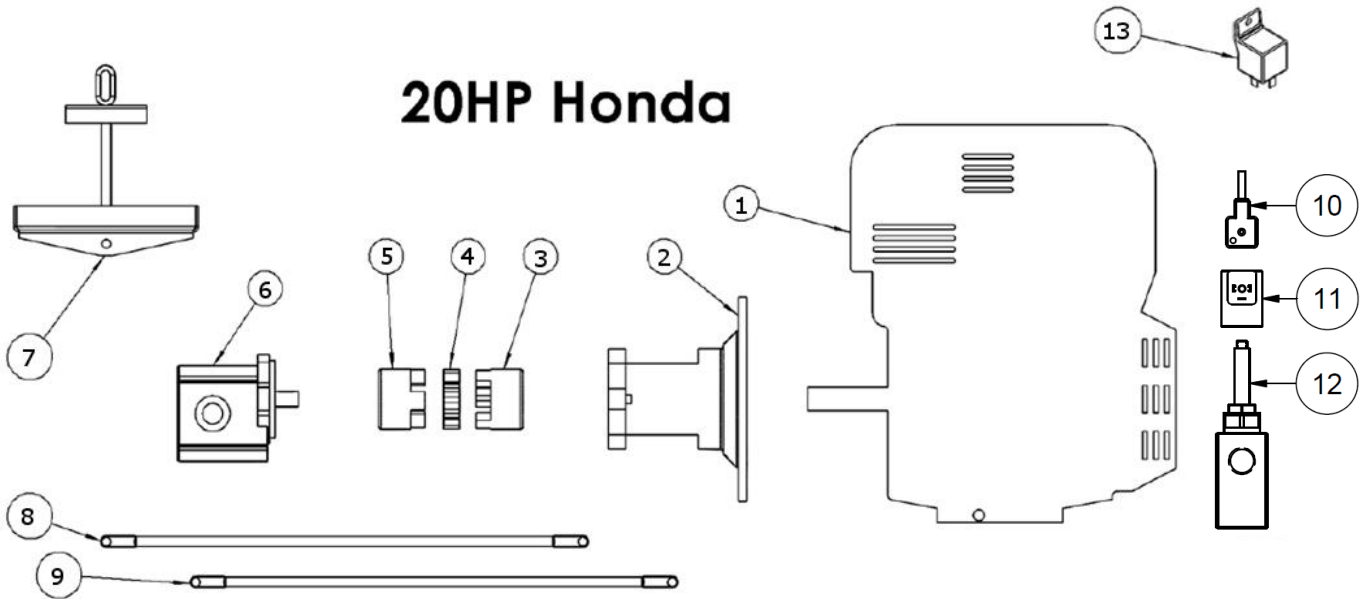


## TL 6500ECV Limit Switch

<b>Item</b>	<b>Qty</b>	<b>Part #</b>	<b>Description</b>
1	5	TL550-100-060	Complete Limit Switch (Ref # 1, 2, & 4)
2	5	TL550-100-059	Limit Switch Arm
3	1	TL550-100-086	PVC Box Connector
4	7	TLRB2BE101	Contact Block Normally Open ( NO )
5	2	TLRB2BE102	Contact Block Normally Closed ( NC )
6	5	TLRB2B	Switch Mount Collar
7	1	TLRB2BD2	Selector Switch – 2 Position
8	1	TLRB2BA2	Push Button
9	1	TLRB2BDR3	Selector Switch – 3 Position Spring Return
	2	TL550-100-076	On/Off – Man/Auto Switch (Complete)
	1	TL550-100-075	Rotate Switch (Complete)
	2	TL550-100-077	Ram/Steering Switch (Complete)
10	1	TL550-100-082	Wire Clamp

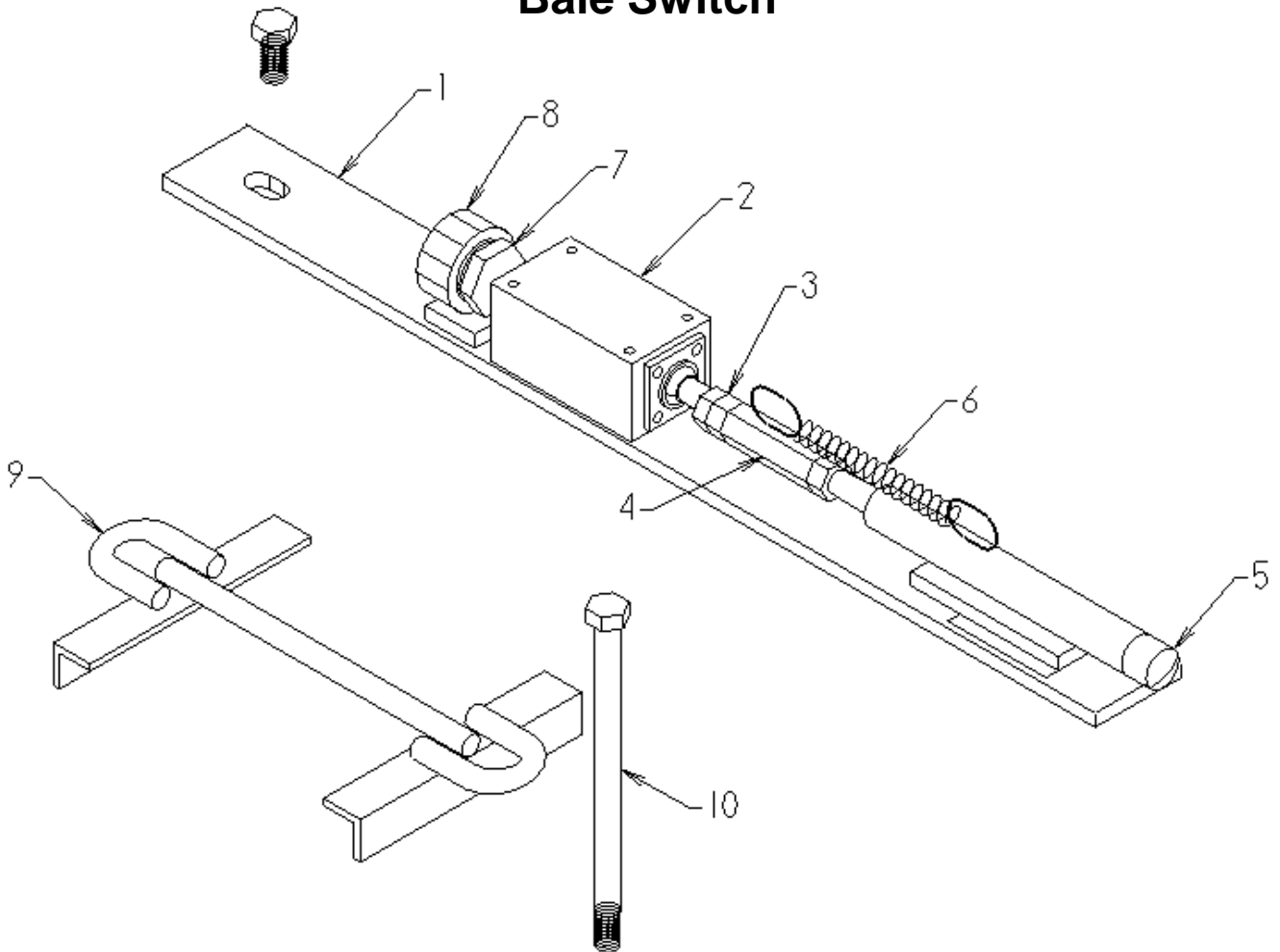
# TL 6500ECV Pump / Motor

## 20HP Honda



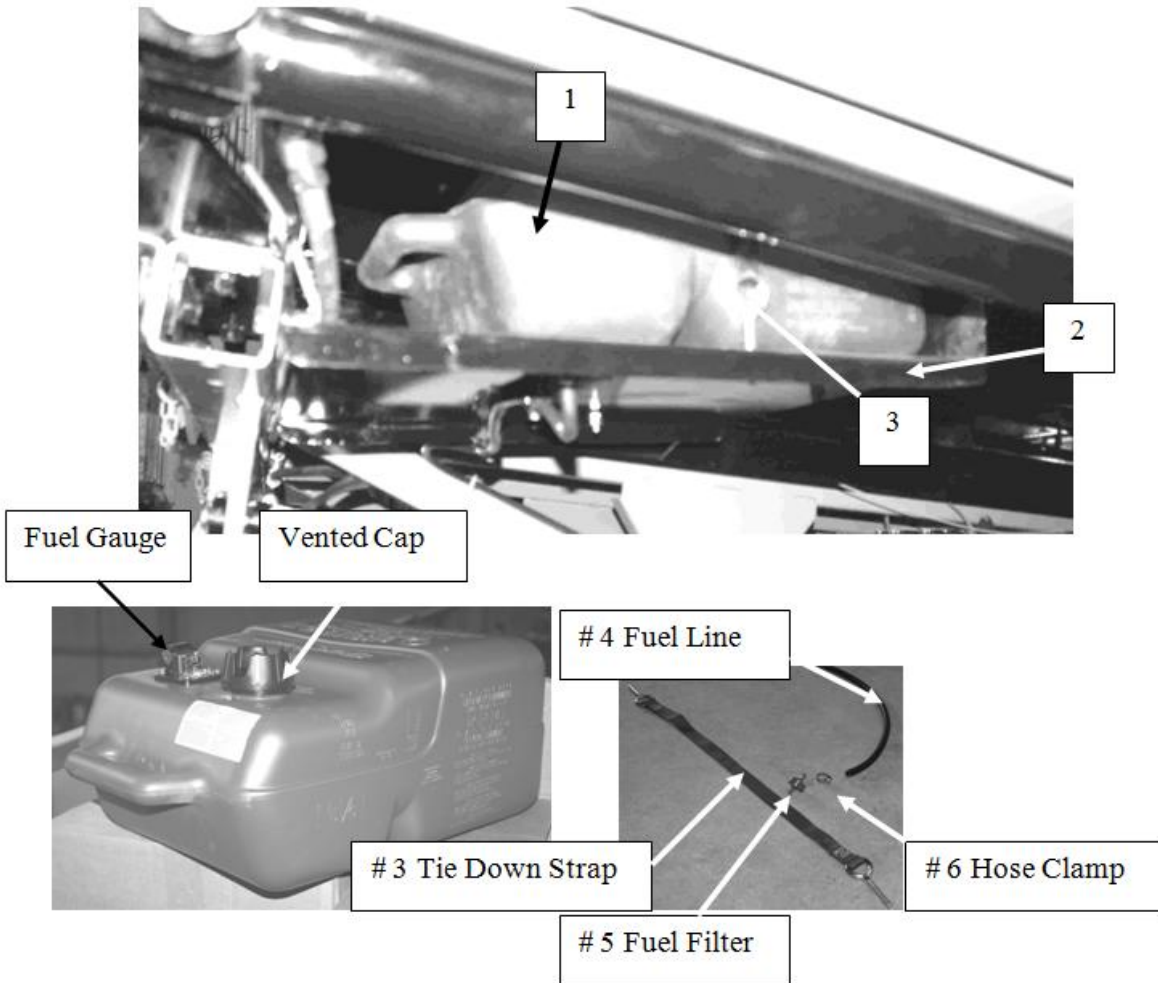
Item	Qty	Part #	Description
1		TL6X2100200	20 HP Honda Engine Electric Start
2	1	TL500100182	Engine – Pump Adapter
3	1	TL500100183	Love Joy Coupling Engine Side
4	1	TL500100184	Coupling Spacer
5	1	TL500100185	Love Joy Coupling Pump Side
6	1	TL5X2101181	Hydraulic Pump Casappa # PLP20-14
7	1	TL500301221	Battery Hold Down
8	1	TL5X2500159	Red Battery Cable
9	1	TL5X2500160	Black Battery Cable
10	1	TL6X2102204	Dump Valve Wire Harness
11A	1	TL6X2102204	Dump Valve Solenoid (Up to Serial # 12615)
11B	1	31546	Dump Valve Solenoid (Serial 136501-current)
12A	1	TL6X2102202	Dump Valve Base (Up to Serial # 12615)
12B	1	31545	Dump Valve Base (Serial 136501-current)
13	1	TL500100220	35 amp Relay

# TL 6500ECV Bale Switch



Item	Qty	Part #	Description
1	1	TL5X2-100-220	Switch Base
2	1	TL5X2-100-221	Switch
3	3	Obtain Locally	HB 3/8 X 1 Hex Bolt
4	1	TL5X2-100-222	3/8 Coupling Nut
5	1	TL5X2-100-223	Push Rod
6	1	TL500-100-062	Spring
7	1	TL550-200-086	Metric to Inch Adaptor
8	1	TL550-100-086	PVC Box Connector
9	1	TL500-301-221	Battery Hold Down
10	2	Obtain Locally	HB 5/16 X 6,7 Hex Bolts

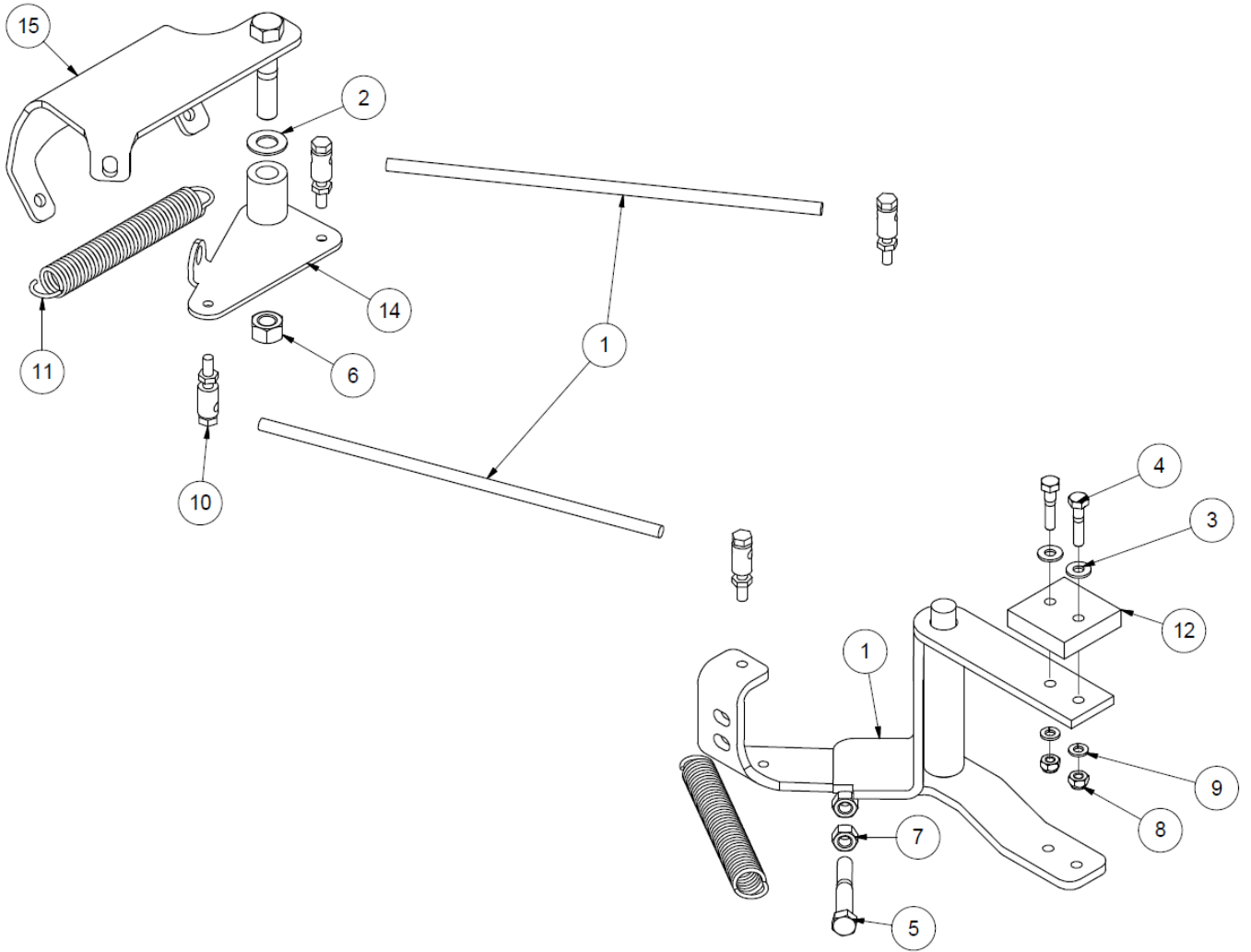
# TL 6500ECV Fuel Tank / Mount



Item	Part #	Description
1	TL550-204-100	Fuel Tank
2	TL6X2-100-240	Fuel Tank Bracket
3	TL550-204-110	Tie Down Strap
4	TL204-107	Fuel Line
5	TL550-200-111	Fuel Filter
6	TL550-204-109	Hose Clamp

*Intentionally Blank*

# TL 650ECV Throttle Linkage

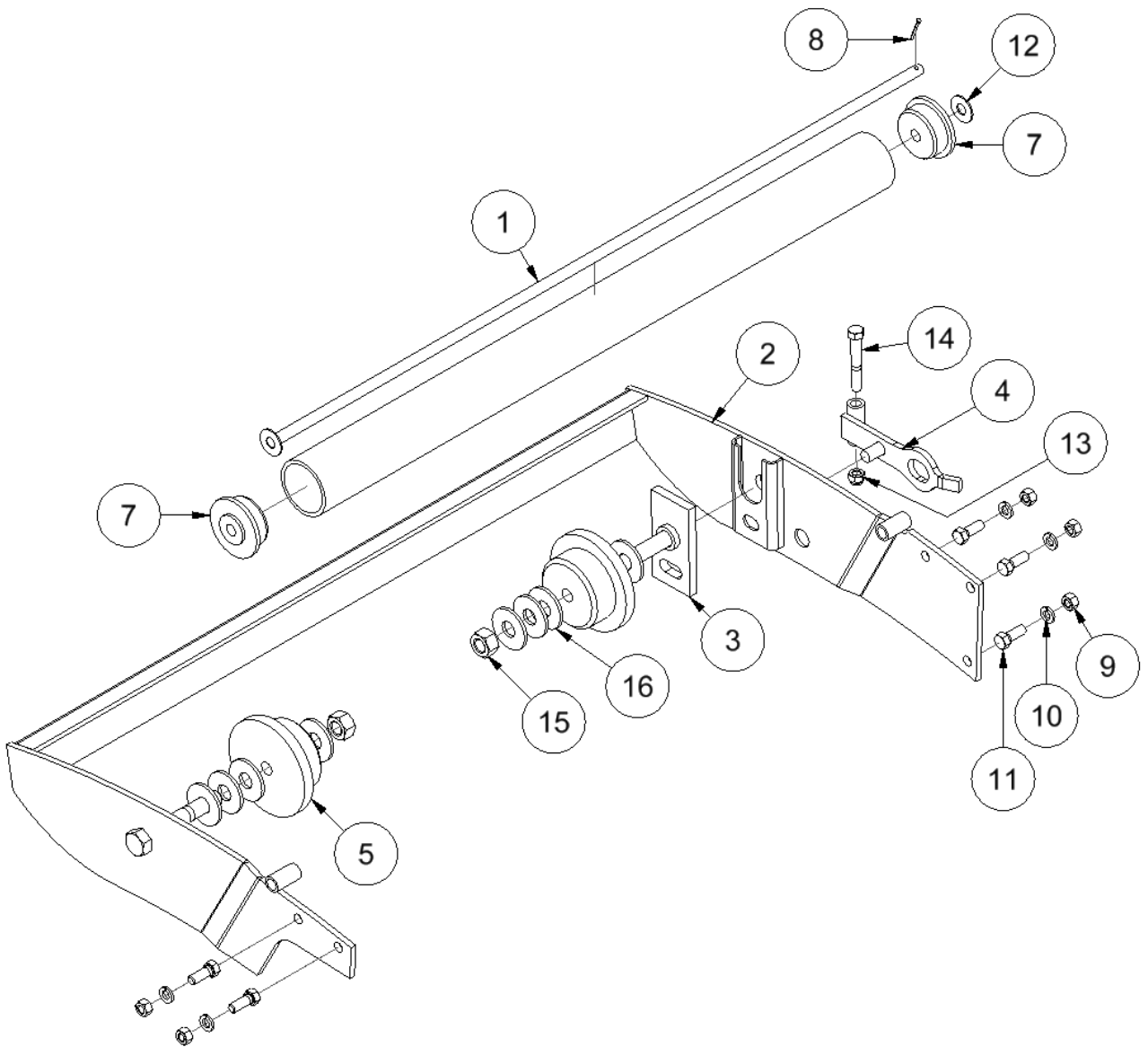


# TL 6500ECV Throttle Linkage

<b>Item</b>	<b>Qty</b>	<b>Part #</b>	<b>Description</b>
1	2	25715	20 HP Rod
2	1	Obtain Locally	FW 1/2 Flatwasher
3	2	Obtain Locally	FW 1/4 Flatwasher
4	2	Obtain Locally	HB 1/4 X 1 1/4 Hex Bolt
5	1	Obtain Locally	HB 3/8 X 2 1/2 Hex Bolt
6	1	Obtain Locally	HN 1/2 Hex Nut
7	1	Obtain Locally	HN 3/8 Hex Nut
8	2	Obtain Locally	LN 1/4 Lock Nut
9	2	Obtain Locally	LW 1/4 Lock Washer
10	4	TL550-100-067	Linkage Pivot
11	2	TL550-100-069	Throttle Spring
12	1	TL5X2-100-232	Striker Block
13	1	TL5X2-500-154	Main Link
14	1	TL5X2-500-156	20 HP Swing Link
15	1	TL6X2-120-001	20 HP Engine Throttle Base



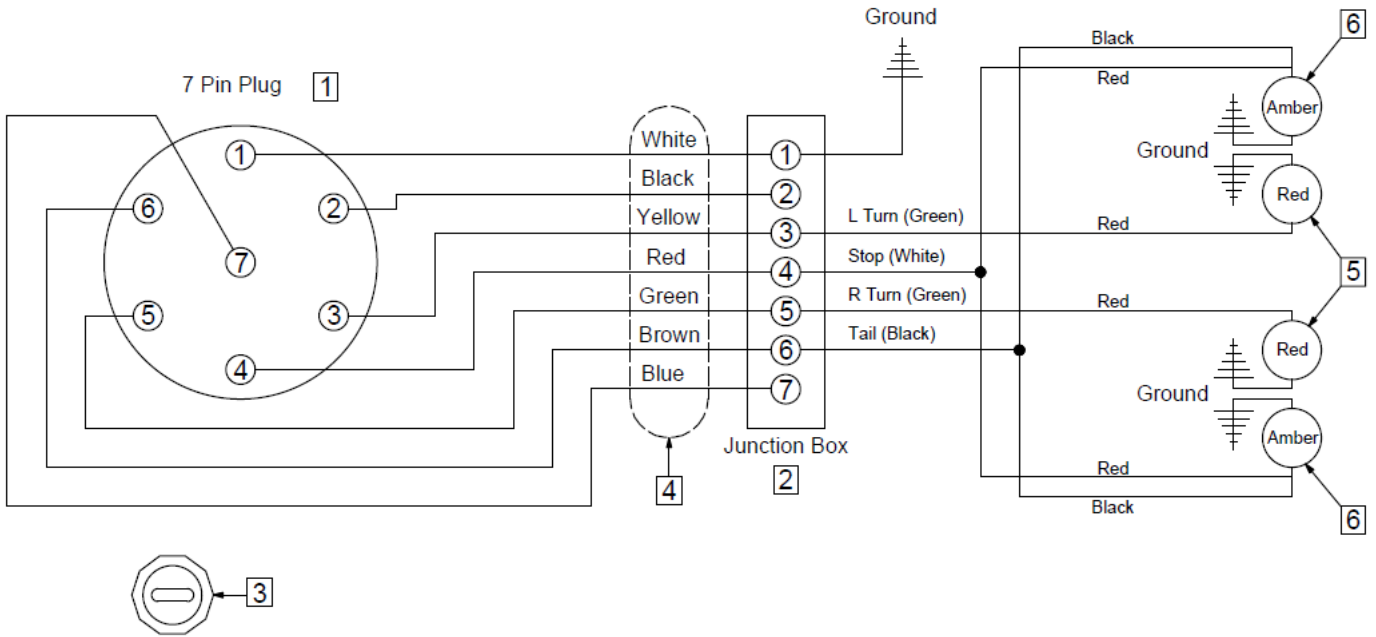
# TL 6500ECV Twin Wrap Kit



# TL 6500ECV Twin Wrap Kit

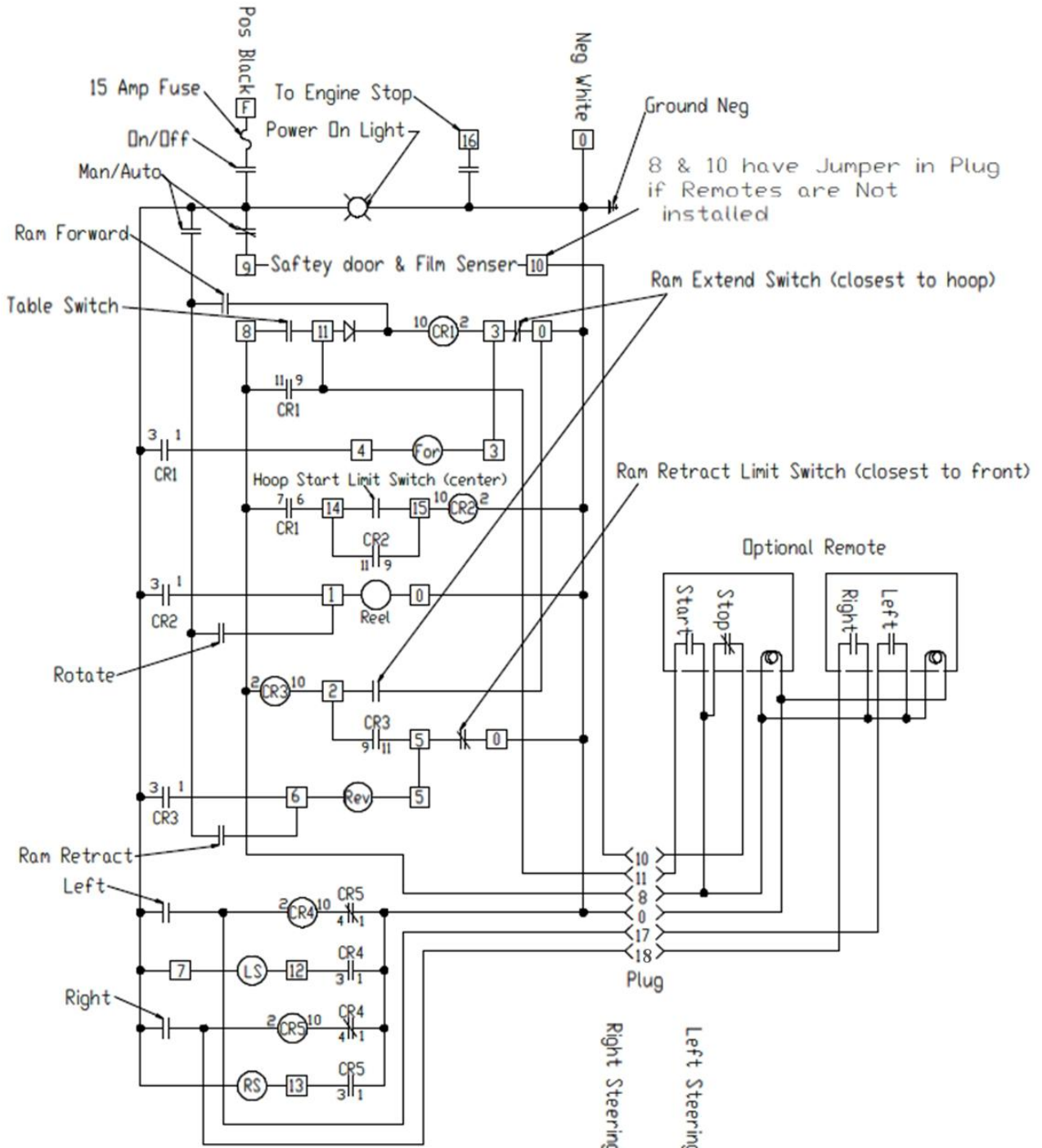
<b>Item</b>	<b>Qty</b>	<b>Part #</b>	<b>Description</b>
		TL TWK	Twin Wrap Kit
1	1	TL TWROD	Idler Axle
2	1	TL550-200-139	Twin Wrap Frame
3	1	TL550-200-115	Spool Holder Bracket
4	1	TL550-200-103	Spool Holder Latch
5	2	TL550-200-012	Wrap Spool Holder
6	1	TL550-100-022	Plastic Idler
7	2	TL 16P40D	Idler End Caps
8	1	Obtain Locally	1/8" Cotter Pin
9	5	Obtain Locally	HN 3/8" Hex Nut
10	5	Obtain Locally	LW 3/8" Lockwasher
11	5	Obtain Locally	HB 3/8" X 1" Hex Bolt
12	2	Obtain Locally	FW 7/16" Flatwasher
13	1	Obtain Locally	LN 3/8" Lock Nut UNC
14	1	Obtain Locally	HB 3/8" X 2 1/2" Hex Bolt
15	2	Obtain Locally	HN 5/8" Hex Nut UNC
16	8	Obtain Locally	FW 5/8" Flatwasher

# TL 6500ECV Running Lights



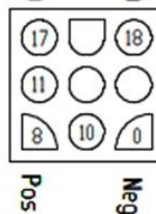
Item	Part #	Description
1	550-200-117	7 Pin Plug
2	550-200-118	Junction Box
3	550-200-119	Strain Relief
4	550-200-120	7 Wire Conductor
5	550-200-121	Red Lamp
6	550-200-122	Amber Lamp

# TL 6500ECV 20 HP Package



Numbers inside box - terminal strip number  
 Numbers not in a box - relay base numbers

8 - 11 Auto Start  
 8 - 10 Cycle Stop

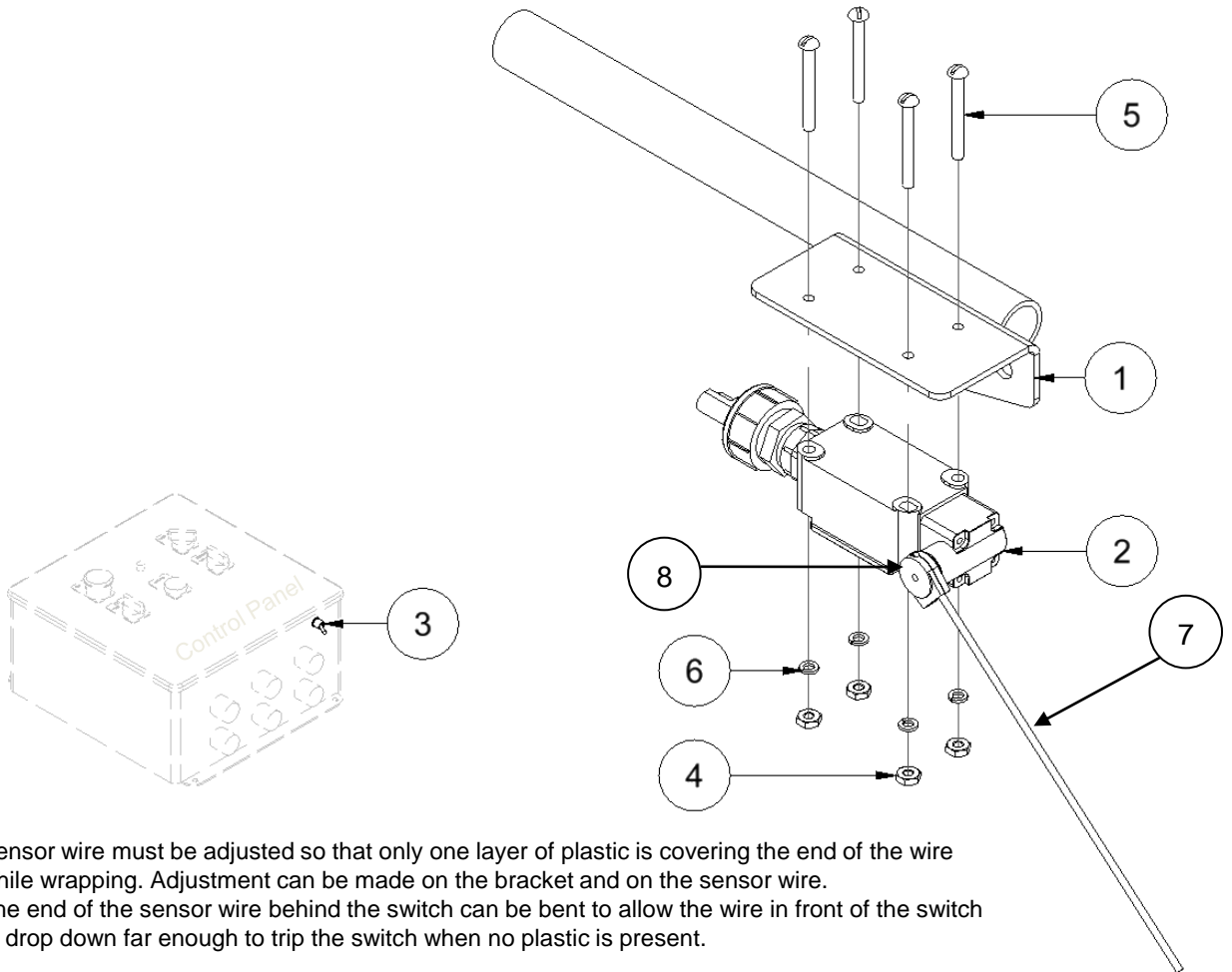


## **AVAILABLE OPTIONS**

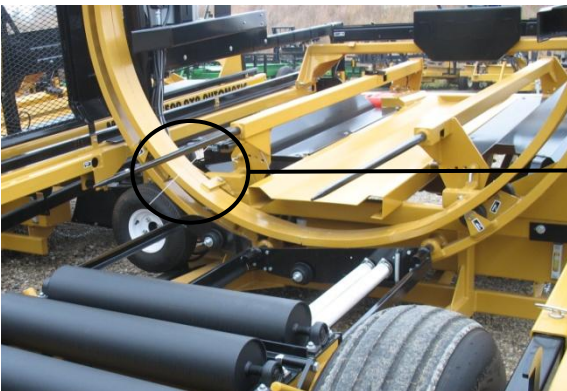
- FILM SENSOR
- DUAL POWER DRIVE
  - LIGHT KIT
- GUIDE ROLLER KIT
- QUICK START POWER JACK

*Intentionally Blank*

# TL6500ECV Film Sensor



Sensor wire must be adjusted so that only one layer of plastic is covering the end of the wire while wrapping. Adjustment can be made on the bracket and on the sensor wire. The end of the sensor wire behind the switch can be bent to allow the wire in front of the switch to drop down far enough to trip the switch when no plastic is present.



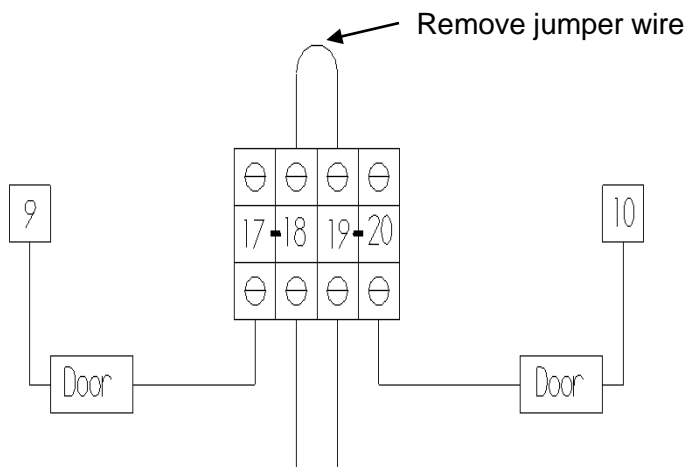
Film sensor location

# TL6500ECV Film Sensor

Item	Qty	Part #	Description
	1	TLFSSK	Complete Kit
1	1	TLFSB2007	Film Sensor Bracket
2	1	TL109-100-348	Film Sensor Limit Switch (Complete)
3	1	TL550-200-235	Toggle Switch
4	4	Obtain Locally	10-24 Hex Nut
5	4	Obtain Locally	10-24 x 1.75 Machine Screw
6	4	Obtain Locally	#10 Lock Washer
	2	Obtain Locally	12" Wire (Terminal 18 & 19)
7	1	TL550-100-049	Wire Arm
8	1	TL550-100-082	Wire Clamp

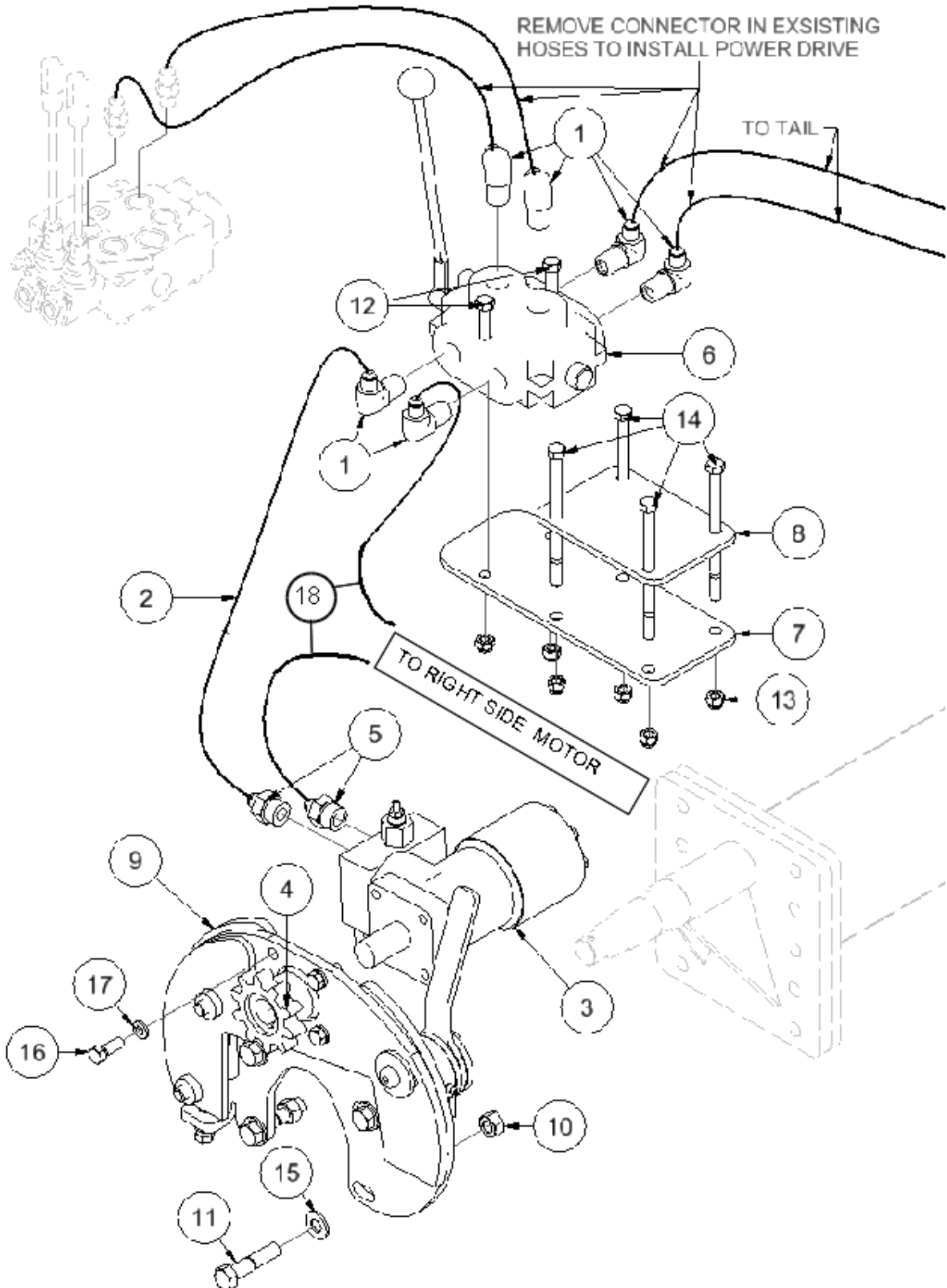
## Installation

- Install and adjust film sensor bracket
- Locate the wire labeled film sensor (pre-wired machine)
- Remove the plug and connect to film sensor switch
- Install toggle switch in the control panel
- Remove the jumper wire between terminal 18 & 19
- Connect wires from toggle switch to terminal 18 & 19





# TL 6500ECV Optional Dual Power Drive



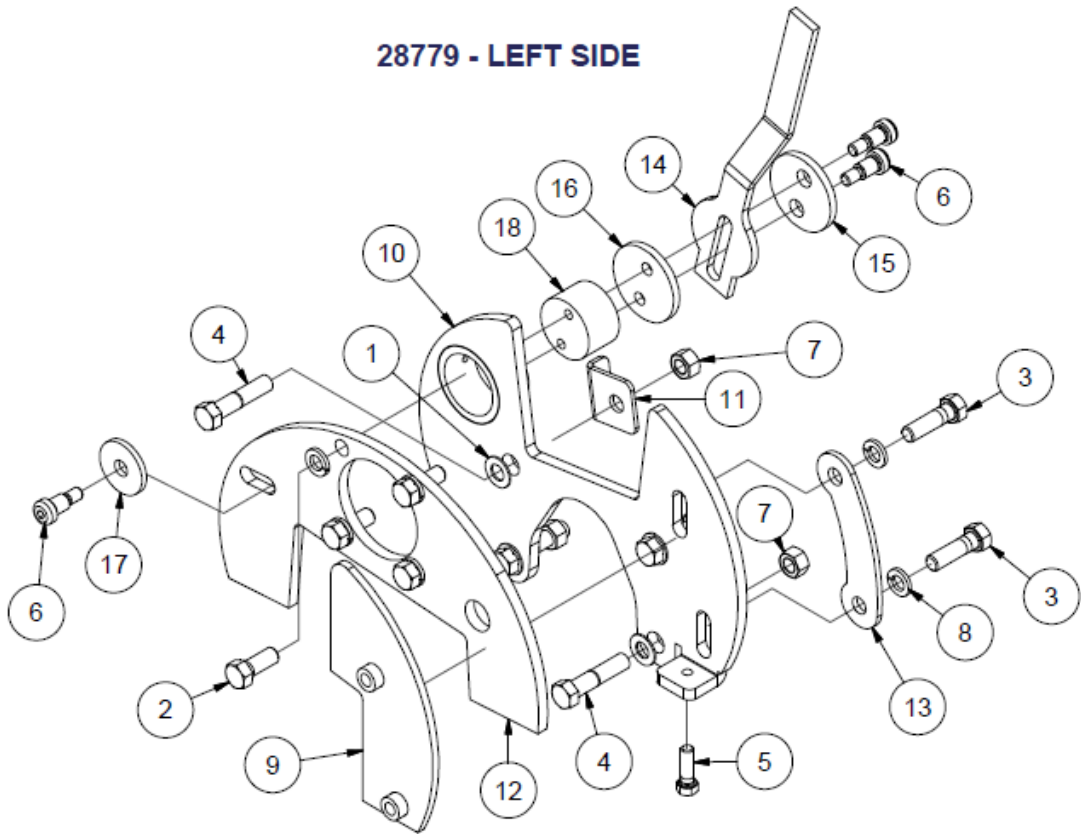
# TL 6500ECV

## Optional Dual Power Drive

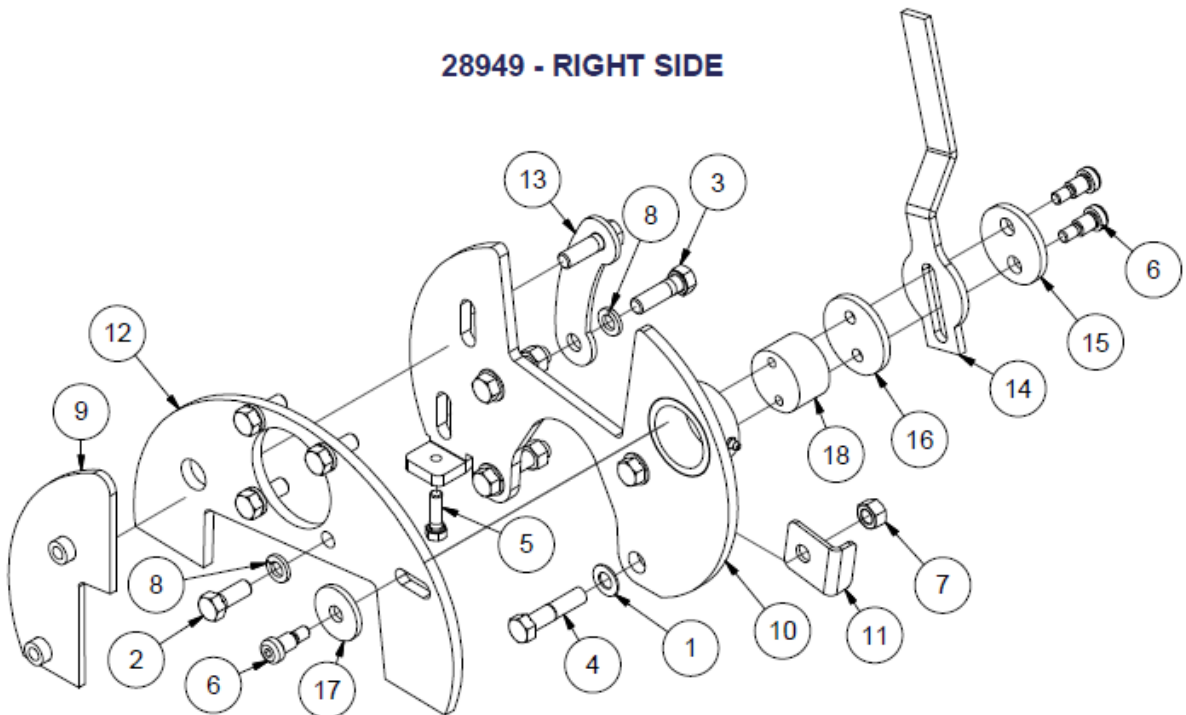
Item	Qty	Part #	Description
1	6	HF2501-6-8	Hydraulic Fitting
2	1	25113	HH14 - 6AT1(6FJX)
3	2	VAL MLHSY400	Hydraulic Motor
4	2	25662 (Serial # Prior to 12605) 28942 (Serial # After 12606)	Drive Sprocket
5	4	HF6400-6-10	Hydraulic Fitting
6	1	VAL DS1A1E	Selector Valve
7	1	TLWHEEL13	Selector Valve Mount
8	1	TLWHEEL13A	Selector Valve Mount
9	2	28779	Power Drive Assembly
10	8	Obtain Locally	HN 5/8 Hex Nut UNF
11	8	Obtain Locally	HB 5/8 X 2 1/2 Hex Bolt UNF
12	2	Obtain Locally	HB 3/8 X 3 Hex Bolt
13	6	Obtain Locally	LN 3/8 Lock Nut
14	4	Obtain Locally	HB 3/8 X 5 1/2 Hex Bolt
15	8	Obtain Locally	FW 5/8" Flat washer
16	8	Obtain Locally	HB 3/8 X 1 Hex Bolt
17	8	Obtain Locally	LW 3/8" Lockwasher
18	2	24114	HH64 - 6AT1(6FJ,6FJX)HCL 64

# TL 6500ECV Power Drive Bracket

## 28779 - LEFT SIDE



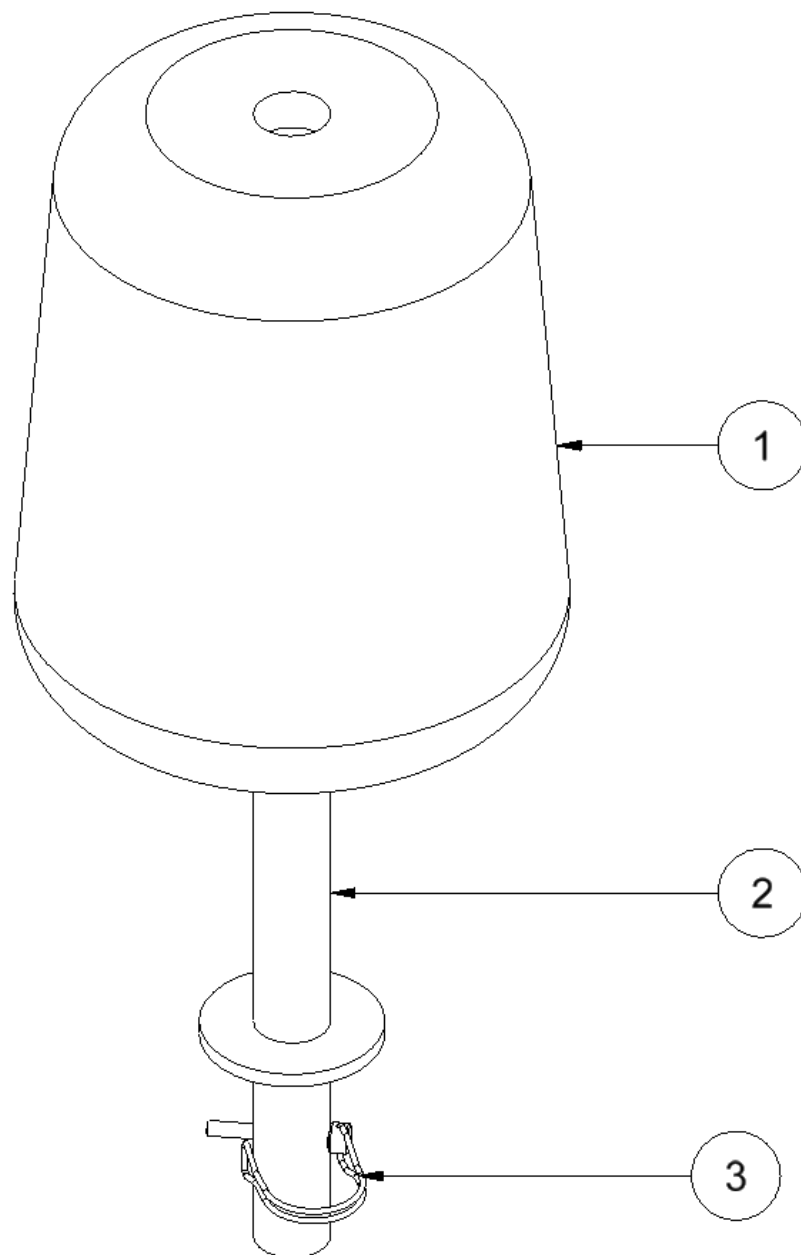
## 28949 - RIGHT SIDE



# TL 6500ECV Power Drive Bracket

Item	Qty	Part #	Description
1	4	Obtain Locally	FW .5 Flatwasher
2	4	Obtain Locally	HB .5 x 1.25 Hex Bolt
3	2	Obtain Locally	HB .5 x 1.75 Hex Bolt
4	4	Obtain Locally	HB .5 x 2.25 UNF Hex Bolt
5	1	Obtain Locally	HB .375 x 1.25 Hex Bolt
6	3	HB .5 x 1 SS	Hex Socket Shoulder Screw
7	4	Obtain Locally	HN .5 Hex Nut
8	6	Obtain Locally	LN .5 Lock Nut
9	1	TLWHEEL30LEFT / TLWHEEL30	Left / Right Powerdrive Pivot
10	1	TLWHEEL3109 / TLWHEEL3108	Left / Right Powerdrive Bracket
11	1	TLWHEEL101	Powerdrive Handle Lock
12	1	TLWHEEL1108	Powerdrive Motor Mount
13	1	TLWHEEL14	Powerdrive Pivot Washer
14	1	TLWHEEL2011	Powerdrive Handle
15	1	TLWHEEL2012	Outside Handle Washer
16	1	TLWHEEL21021	Inside Handle Washer
17	1	TLWHEEL2013	Inside Cam Washer
18	1	TLWHEEL9	Powerdrive Eccentric

# TL 6500ECV Optional Guide Roller



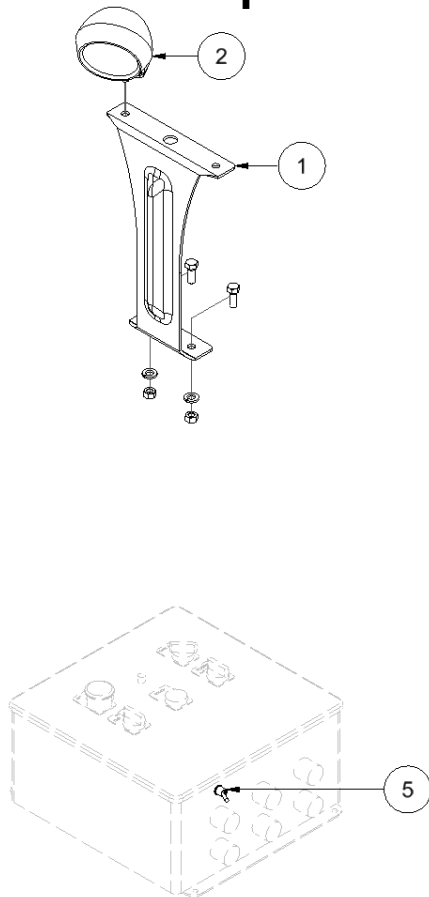
# TL 650ECV Optional Guide Roller

Item	Qty	Part #	Description
		TLGR	Guide Roller Kit
1	2	TL550-301-238	Roller
2	2	TL550-301-239	Spindle
3	2	TL550-301-233	Lock Pin

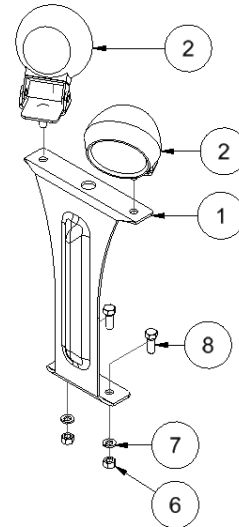
Guide Roller Location



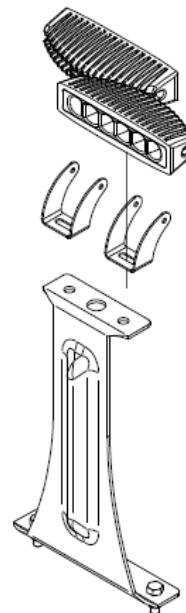
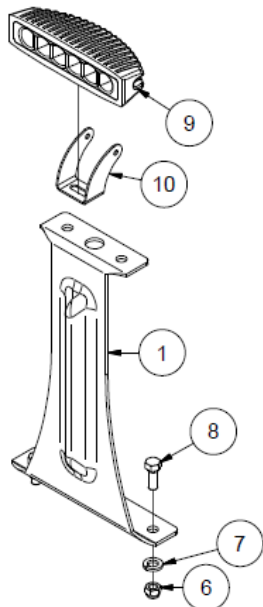
# Optional Light Kits



TLNWLK (Halogen)



TLNWLKLED (LED)



## Optional Light Kit

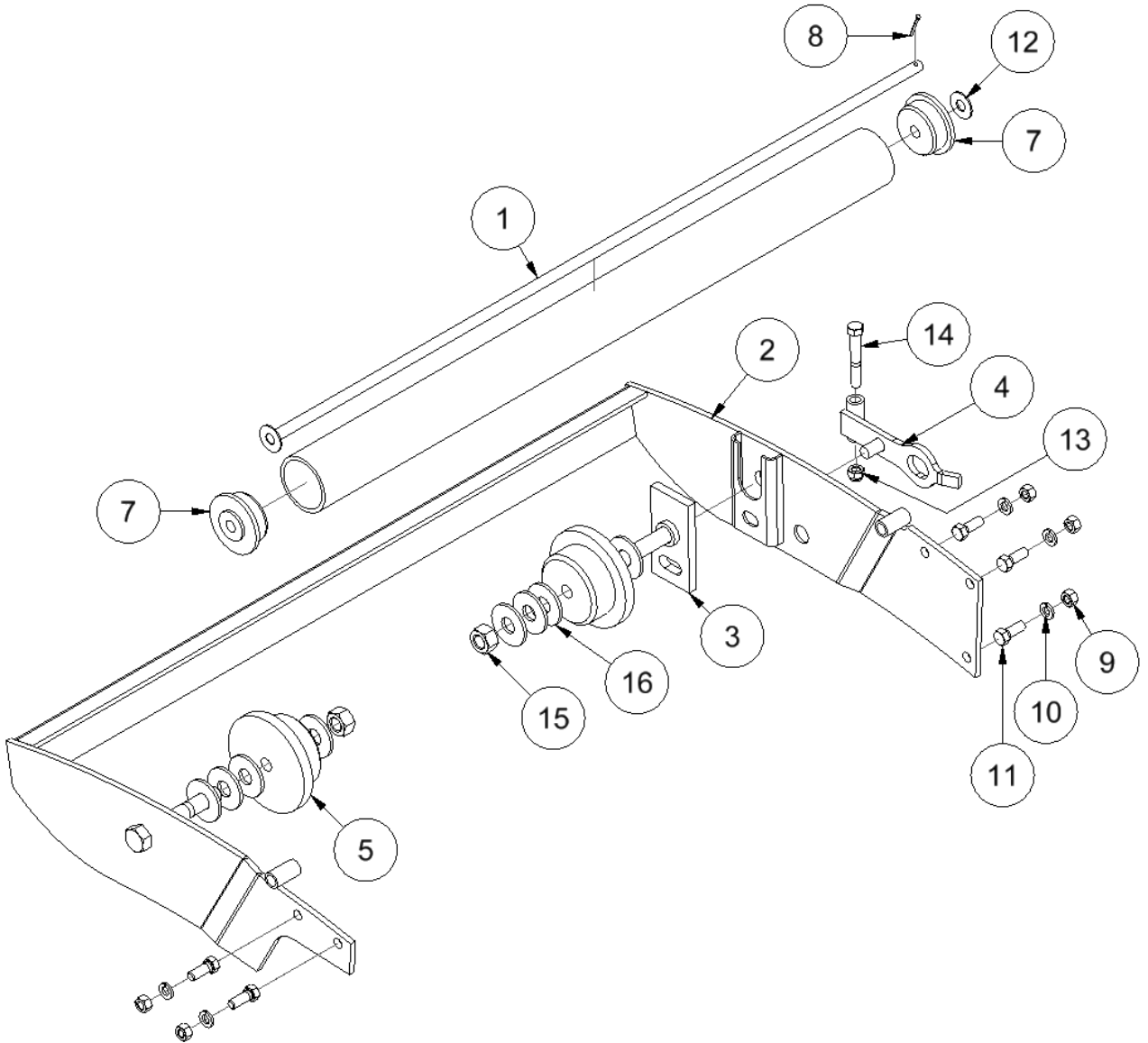
Item	Qty	Part #	Description
		TLNWLK	Complete Halogen Kit
		TLNWKLED	Complete LED Kit
1	2	TL5X2-100-201	Light Bracket
2	3	TL64931B	Light
3	1	Obtain Locally	15 AMP Fuse
4	1	Obtain Locally	Fuse Holder
5	1	Obtain Locally	Toggle Switch
6	4	Obtain Locally	HN 3/8" (Hex Nut)
7	2	Obtain Locally	LW 3/8" (Lock Washer)
8	4	Obtain Locally	HB 3/8" X 1" (Hex Bolt)
9	3	33237	LED Light
10	3	33223	LED Light Bracket

### Installation

- Mounting location is at the top of the hoop guards
- Drill a 1/2" hole in the bottom of the control panel for the toggle switch
- Install the switch, locate the 2 wires labeled lights inside the control panel and connect them to the one terminal on the toggle switch
- Connect the inline fuse from the toggle switch to the bottom of the fuse block (fuse block is located at the left side of the terminal strip)



# TL6500ECV Optional Twin Wrap Kit



## TL6500ECV Optional Twin Wrap Kit

Item	Qty	Part #	Description
		TL TWK	Twin Wrap Kit
1	1	TL TWROD	Idler Axle
2	1	TL550-200-139	Twin Wrap Frame
3	1	TL550-200-115	Spool Holder Bracket
4	1	TL550-200-103	Spool Holder Latch
5	2	TL550-200-012	Wrap Spool Holder
6	1	TL550-100-022	Plastic Idler
7	2	TL 16P40D	Idler End Caps
8	1	Obtain Locally	1/8" Cotter Pin
9	5	Obtain Locally	HN 3/8" Hex Nut
10	5	Obtain Locally	LW 3/8" Lockwasher
11	5	Obtain Locally	HB 3/8" X 1" Hex Bolt
12	2	Obtain Locally	FW 7/16" Flatwasher
13	1	Obtain Locally	LN 3/8" Lock Nut UNC
14	1	Obtain Locally	HB 3/8" X 2 1/2" Hex Bolt
15	2	Obtain Locally	HN 5/8" Hex Nut UNC
16	8	Obtain Locally	FW 5/8" Flatwasher

# TL 6500ECV

## Wheel Motor Hydraulics

Remove wheel from Rear left hub, and unbolt the spindle assy.  
Mount the hydraulic motor on the outside of spindle bracket with the longer 1/2 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 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 1/4 x 4 1/4 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 1/4 in. line x 64 from port F on selector valve to Bottom port on Tail Cylinder.

Install 1/4 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 Lightly with grease before installing**

*Intentionally Blank*

## UNIFIED INCH BOLT AND CAP SCREW TORQUE VALUES

SAE Grade and Head Markings	1 or 2 <sup>b</sup>		5	5.1	5.2	8	8.2
	NO MARK						
SAE Grade and Nut Markings	2		5		8		
	NO MARK						

T81162 -19-04MAG109

Size	Grade 1				Grade 2 <sup>b</sup>				Grade 5, 5.1, or 5.2				Grade 8 or 8.2			
	Lubricated <sup>a</sup>		Dry <sup>a</sup>		Lubricated <sup>a</sup>		Dry <sup>a</sup>		Lubricated <sup>a</sup>		Dry <sup>a</sup>		Lubricated <sup>a</sup>		Dry <sup>a</sup>	
	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft
1/4	3.7	2.8	4.7	3.5	6	4.5	7.5	5.5	9.5	7	12	9	13.5	10	17	12.5
5/16	7.7	5.5	10	7	12	9	15	11	20	15	25	18	28	21	35	26
3/8	14	10	17	13	22	16	27	20	35	26	44	33	50	36	63	46
7/16	22	16	28	20	35	26	44	32	55	41	70	52	80	58	100	75
1/2	33	25	42	31	53	39	67	50	85	63	110	80	120	90	150	115
9/16	48	36	60	45	75	56	95	70	125	90	155	115	175	130	225	160
5/8	67	50	85	62	105	78	135	100	170	125	215	160	240	175	300	225
3/4	120	87	150	110	190	140	240	175	300	225	375	280	425	310	550	400
7/8	190	140	240	175	190	140	240	175	490	360	625	450	700	500	875	650
1	290	210	360	270	290	210	360	270	725	540	925	675	1050	750	1300	975
1-1/8	400	300	510	375	400	300	510	375	900	675	1150	850	1450	1075	1850	1350
1-1/4	570	425	725	530	570	425	725	530	1300	950	1650	1200	2050	1500	2600	1950
1-3/8	750	550	950	700	750	550	950	700	1700	1250	2150	1550	2700	2000	3400	2550
1-1/2	1000	725	1250	925	990	725	1250	930	2250	1650	2850	2100	3600	2650	4550	3350

DO NOT use these values if a different torque value or tightening procedure is given for a specific application. Torque values listed are for general use only. Check tightness of fasteners periodically.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical grade.

<sup>a</sup> "Lubricated" means coated with a lubricant such as engine oil, or fasteners with phosphate and oil coatings. "Dry" means plain or zinc plated without any lubrication.

<sup>b</sup> Grade 2 applies for hex cap screws (not hex bolts) up to 152 mm (6-in.) long. Grade 1 applies for hex cap screws over 152 mm (6-in.) long, and for all other types of bolts and screws of any length.

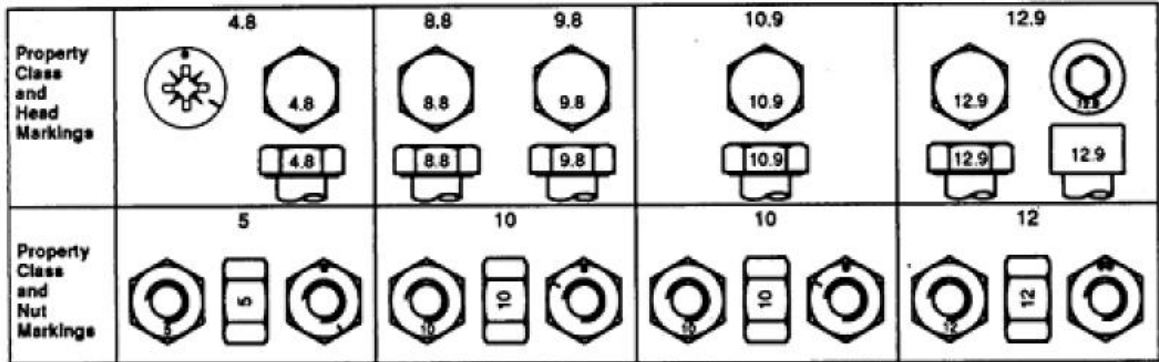
Fasteners should be replaced with the same or higher grade. If higher grade fasteners are used, these should only be tightened to the strength of the original.

Make sure fasteners threads are clean and that you properly start thread engagement. This will prevent them from failing when tightening.

Tighten plastic insert or crimped steel-type lock nuts to approximately 50 percent of the dry torque shown in the chart, applied to the nut, not to the bolt head. Tighten toothed or serrated-type lock nuts to the full torque value.

DX.TORQ1 -19-20JUL94

## METRIC BOLT AND CAP SCREW TORQUE VALUES



Size	Class 4.8				Class 8.8 or 9.8				Class 10.9				Class 12.9			
	Lubricated <sup>a</sup>		Dry <sup>a</sup>		Lubricated <sup>a</sup>		Dry <sup>a</sup>		Lubricated <sup>a</sup>		Dry <sup>a</sup>		Lubricated <sup>a</sup>		Dry <sup>a</sup>	
	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft
M6	4.8	3.5	6	4.5	9	6.5	11	8.5	13	9.5	17	12	15	11.5	19	14.5
M8	12	8.5	15	11	22	16	28	20	32	24	40	30	37	28	47	35
M10	23	17	29	21	43	32	55	40	63	47	80	60	75	55	95	70
M12	40	29	50	37	75	55	95	70	110	80	140	105	130	95	165	120
M14	63	47	80	60	120	88	150	110	175	130	225	165	205	150	260	190
M16	100	73	125	92	190	140	240	175	275	200	350	255	320	240	400	300
M18	135	100	175	125	260	195	330	250	375	275	475	350	440	325	560	410
M20	190	140	240	180	375	275	475	350	530	400	675	500	625	460	800	580
M22	260	190	330	250	510	375	650	475	725	540	925	675	850	625	1075	800
M24	330	250	425	310	650	475	825	600	925	675	1150	850	1075	800	1350	1000
M27	490	360	625	450	950	700	1200	875	1350	1000	1700	1250	1600	1150	2000	1500
M30	675	490	850	625	1300	950	1650	1200	1850	1350	2300	1700	2150	1600	2700	2000
M33	900	675	1150	850	1750	1300	2200	1650	2500	1850	3150	2350	2900	2150	3700	2750
M36	1150	850	1450	1075	2250	1650	2850	2100	3200	2350	4050	3000	3750	2750	4750	3500

DO NOT use these values if a different torque value or tightening procedure is given for a specific application. Torque values listed are for general use only. Check tightness of fasteners periodically.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical property class.

Fasteners should be replaced with the same or higher property class. If higher property class fasteners are used, these should only be tightened to the strength of the original.

<sup>a</sup> "Lubricated" means coated with a lubricant such as engine oil, or fasteners with phosphate and oil coatings. "Dry" means plain or zinc plated without any lubrication.

Make sure fasteners threads are clean and that you properly start thread engagement. This will prevent them from failing when tightening.

Tighten plastic insert or crimped steel-type lock nuts to approximately 50 percent of the dry torque shown in the chart, applied to the nut, not to the bolt head. Tighten toothed or serrated-type lock nuts to the full torque value.

**TUBE•LINE™**  
**MANUFACTURING LTD**