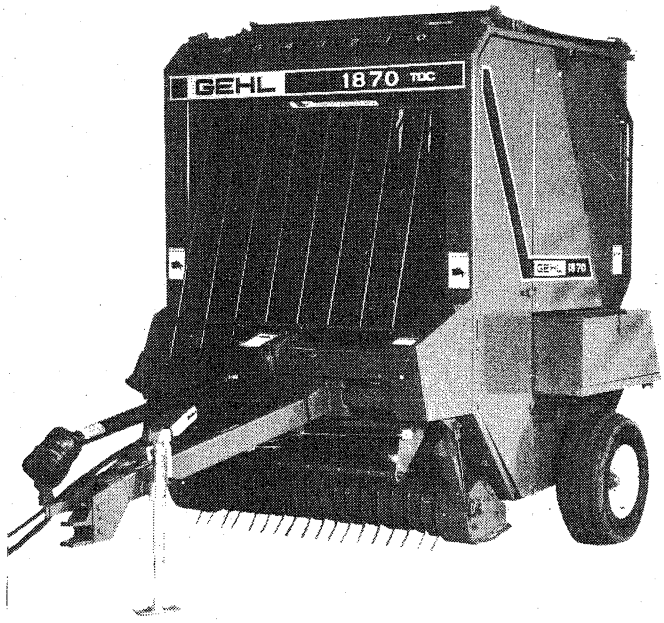
Form No.
904578

# 1470/1870

# Variable Chamber Round Balers





# OPERATOR'S MANUAL

GEHL® COMPANY

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## HOW BALER FUNCTIONS (Refer to Component Identification Drawings)

Crop material is picked off the ground by the 4-Tinebar, Closed-style Pickup and delivered to the throat of the unit where it is pressed by the Packing Roller against the Lower Roller. The Rollers then carry the crop to the back of the unit where the crop meets the Upper Belts which are traveling toward the front of the unit. The Upper Belts carry the crop forward and over the top of the lower incoming mat of material until it comes in contact with the Bale Starter Fingers. The Fingers deflect material down into the incoming mat of material to form a roll of crop material or bale core.

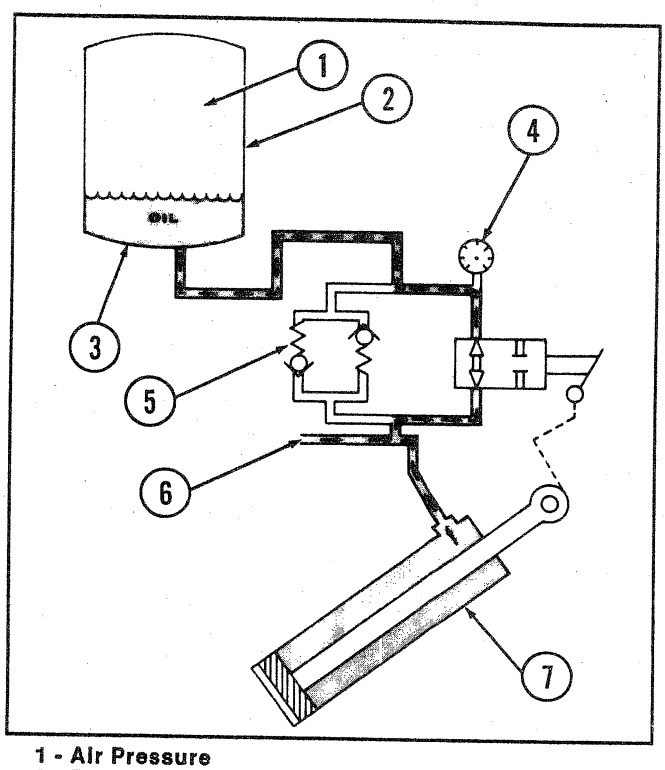
As the round core of material gets larger in size, the Bale Starter is lifted from the area to avoid contact with the bale. As the bale increases in size, the additional Upper Belting, required to wrap the bale, is released by the Belt Shuttle as it moves toward the rear of the Baler. Upper Belt tension and bale density control is governed by the Total Density Control (TDC) system. The windrow and driving pattern of the Baler operator determines how well the material is distributed across the bale.

When the Bale Size Indicator is near the "5" (for RB1470) or near the "6" (for RB1870), the bale is full-sized and Twine can be wrapped around the bale. Once tied, the bale is ejected by opening the Gate and the process of forming another bale can be restarted.

## HOW TDC SYSTEM FUNCTIONS (Figs. 6-1, 6-2 & 6-3)

The Upper Belt Tension and subsequent bale density is controlled by the Total Density Control (TDC) system. The major components of this system include a Reservoir, two Density Cylinders, an adjustable Pressure Relief Valve, a Trip Mechanism & Manifold assembly, and a Trip Arm & Trip Spacer assembly. This unique TDC system is self-contained and is completely independent of the tractor hydraulic system. The TDC system supplies a tensioning force to the Upper Belts which, in turn, exerts a compressive force on the forming bale.

During the initial bale forming stage, the force exerted by the Density Cylinders onto the Upper Belts is directly related to the air pressure in the Reservoir. As the bale increases in size, the additional Upper Belting, required to wrap the bale, is released by the Belt Shuttle as it moves toward the rear of the Baler. This rearward travel of the Belt Shuttle extends the Density Cylinders and forces hydraulic fluid out of the Cylinders, through a Manifold and into the Reservoir. This additional fluid further compresses the air in the Reservoir and causes an increase of pressure as well as Upper Belt tension.

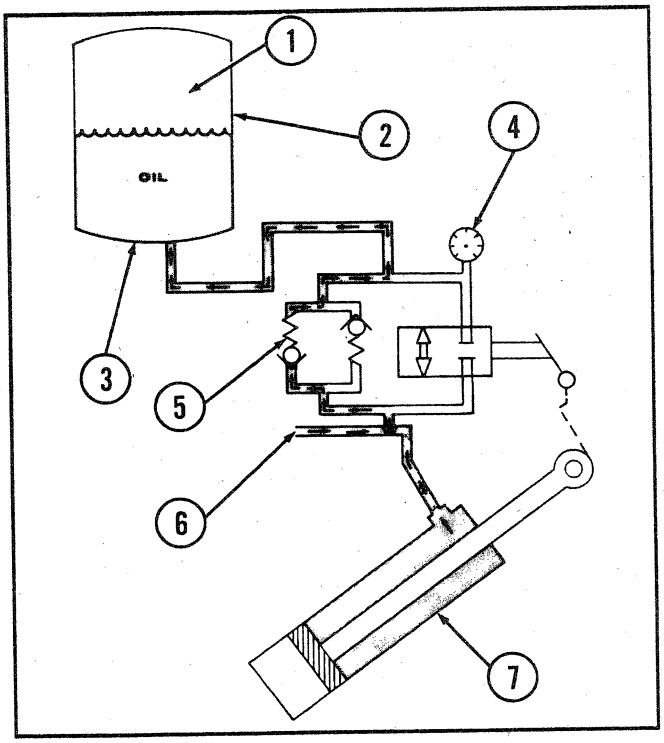



1 - Air Pressure
2 - Pressurized Reservoir
3 - Oil
4 - Pressure Reading of 110 PSIG (770 kPa)
5 - Adjustable Relief Valve Setting 75 to 475 PSIG (525 to 3,325 kPa)
6 - To Left Cylinder
7 - Shuttle Cylinder

**Fig. 6-1: Core Formation Detail**

As the Cylinders continue to extend, the Valve Trip Mechanism is contacted by the Trip Spacer on the Trip Arm on the right Density Cylinder Clevis. As the Valve Trip Mechanism is triggered, the free flow path through the Manifold is blocked-off and the hydraulic fluid is redirected through the adjustable Pressure Relief Valve on its way to the Reservoir. The Relief Valve works to create a pressure differential between the Density Cylinders and the Reservoir. This means that the fluid pressure in the Density Cylinders has to reach a preset value above the pressure in the Reservoir before the Relief Valve will relieve and allow the fluid to pass through to the Reservoir.

As the bale continues to grow and the Cylinders continue to extend, the TDC system continues to function in the manner previously described. When the bale is ejected from the Baler, the pressure in the line from the Density Cylinders to the Relief Valve drops below the pressure in the Reservoir. This causes a reverse flow of hydraulic fluid from the Reservoir back into the Density Cylinders. The Cylinders are retracted which in turn restores the Shuttle, the Upper Belts and the Valve Trip Mechanism to their original positions. The TDC system is once again ready to start forming another bale.

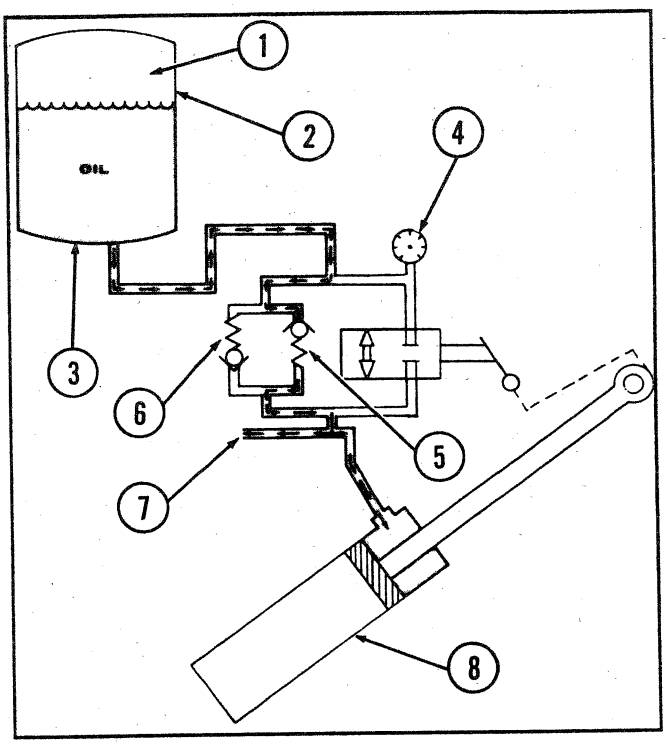



1 - Air Pressure
2 - Pressurized Reservoir
3 - Oil
4 - Pressure Reading Between 110 and 175 PSIG (770 and 1,225 kPa) *
5 - Adjustable Relief Valve Setting 75 to 475 PSIG (525 to 3,325 kPa)
6 - To Left Cylinder
7 - Shuttle Cylinder
* Depending on Relief Valve Setting

**Fig. 6-2: Bale Wrapping (Beyond Core Formation) Detail**

## BALE FORMATION & STORAGE TIPS

The following information provides guidelines for using the Round Baler to get the most out of your crop and investment.




1 - Air Pressure
2 - Pressurized Reservoir
3 - Oil
4 - Pressure Reading of 175 PSIG (1,225 kPa)
5 - 15 PSI (105 kPa)
6 - Adjustable Relief Valve Setting 75 to 475 PSIG (525 to 3,325 kPa)
7 - To Left Cylinder
8 - Shuttle Cylinder

**Fig. 6-3: Bale Ejecting & Shuttle Return Detail**

## Optimum Conditions & Bale Density (Fig. 6-4)

Optimum haying conditions are a combination of crop maturity and moisture content. Because of changing weather conditions, NOT all hay can be baled under ideal circumstances. The TDC system enables the Baler to adapt to these less than ideal conditions. In particular, the density of the bales can be adjusted to be more compatible with baling conditions.

**RB1470**

**Table of Approximate Core Formation (Diameter Ranges In Inches) for Various Trip Arm and Manifold Settings**

| RB1470 Trip Arm Position | Manifold Position | |
|---|---|---|
| | Low | High |
| 1 (Top) | 8 | 12 |
| 2 | 13 | 18 |
| 3 | 17 | 23 |
| 4 | 22 | 28 |
| 5 (Bottom) | 27 | 33 |

**RB1870**

**Table of Approximate Core Formation (Diameter Ranges In Inches) for Various Trip Arm and Manifold Settings**

| RB1870 Trip Arm Position | Manifold Position | | |
|---|---|---|---|
| | Low | High | High |
| 1 (Top) | 8 | 12 | 21 |
| 2 | 12 | 17 | 25 |
| 3 | 18 | 23 | 31 |
| 4 | 22 | 27 | 35 |
| 5 (Bottom) | 27 | 33 | 41 |

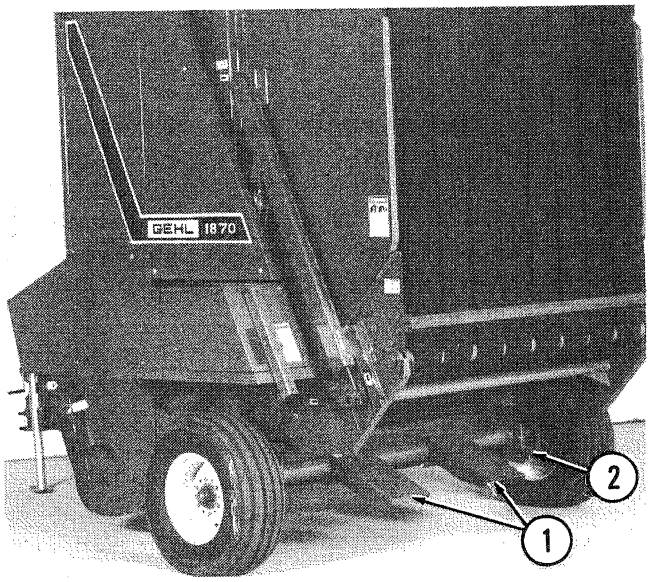
# CHAPTER 7
# ADJUSTMENTS

## ⚠ CAUTION

**BEFORE proceeding to perform any adjustments on the Baler, exercise the MANDATORY SAFETY SHUTDOWN PROCEDURE (page 8).**

## AXLE HEIGHT (Fig. 7-1)

The Baler Axle height can be adjusted to four different levels by repositioning or rotating the Spindle assemblies. The factory set height shown is appropriate for most normal field conditions. By rotating the Spindle assemblies 180°, the Baler can be lowered approximately 3-3/4" (95 mm). This setting may be useful when using a tractor with a high drawbar ground clearance.




**1 - Two Bale Discharge Ramps**
**2 - Wheel Spindle Assembly**

**Fig. 7-1**

## BALE DISCHARGE RAMPS (Fig. 7-1)

Bale Discharge Ramps are mounted to the back of the Baler Axle and provided to facilitate ejecting a formed and tied bale. To accommodate different crop and field conditions, the Ramps can be mounted in either of four locations, using the holes provided. When baling certain wet crops, it may also be necessary to remove the Ramps to facilitate ejecting the bale.

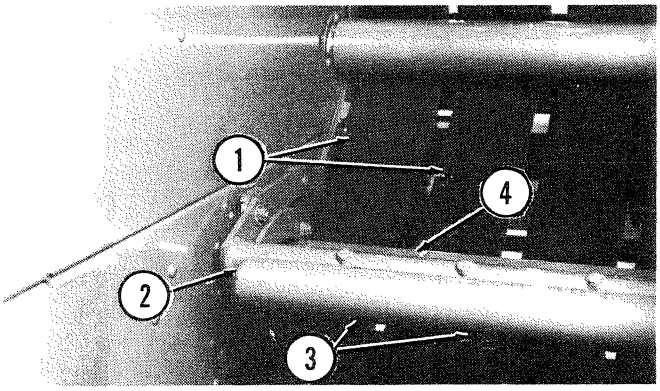
## ⚠ WARNING

**Bales, made with the Round Baler, are LARGE, CYLINDRICAL and HEAVY! When ejected on a flat surface, the momentum of the bale, coming off the Bale Discharge Ramps, could carry the bale as far as 10 feet (3 m) behind the Baler. On a hill or incline, this distance could be much farther. Serious personal injury or property damage could result if the bale is ejected toward a declining surface and allowed to roll-away uncontrolled!**

## BALE STARTER (Fig. 7-2)

The Bale Starter device is a set of Fingers that are located between the Upper Belts and behind the Packing Roller. They deflect material and keep it from coming out over the top of and wrapping on the Packing Roller, when starting a bale. The Fingers are part of a movable assembly which is held by Pivoting Links and positioned by a Roller. Springs on each side of the movable assembly return the assembly to a starting position after each bale is ejected. The Roller rides on the Upper Belts and is positioned by the bale.

**NOTE:** *Before starting to form each new bale, look back at the Baler to make sure that the Bale Starter Springs have returned the Starter to its starting position. It is possible that material which is wedged in the Links and worn Pivot Bushings or bent linkages can cause the Starter to hang up.*




**1 - Upper Belts**
**2 - Bale Starter Assembly (Toward Front of Baler)**
**3 - Bale Starter Fingers**
**4 - Scraper**

**Fig. 7-2**

Form No.
908006
Replaces
904577

# 1470

# Variable Chamber Round Baler


## PARTS MANUAL

GEHL® AGRICULTURE

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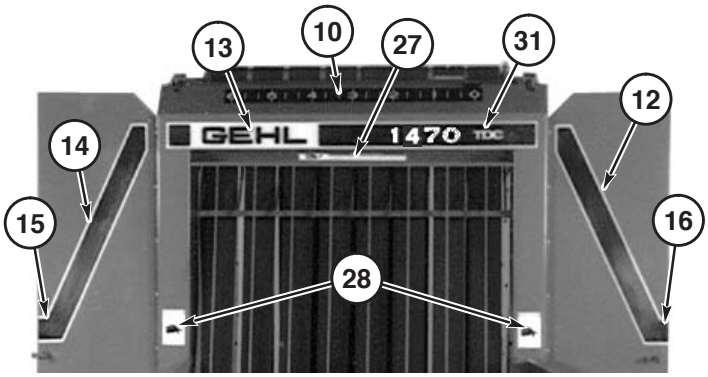
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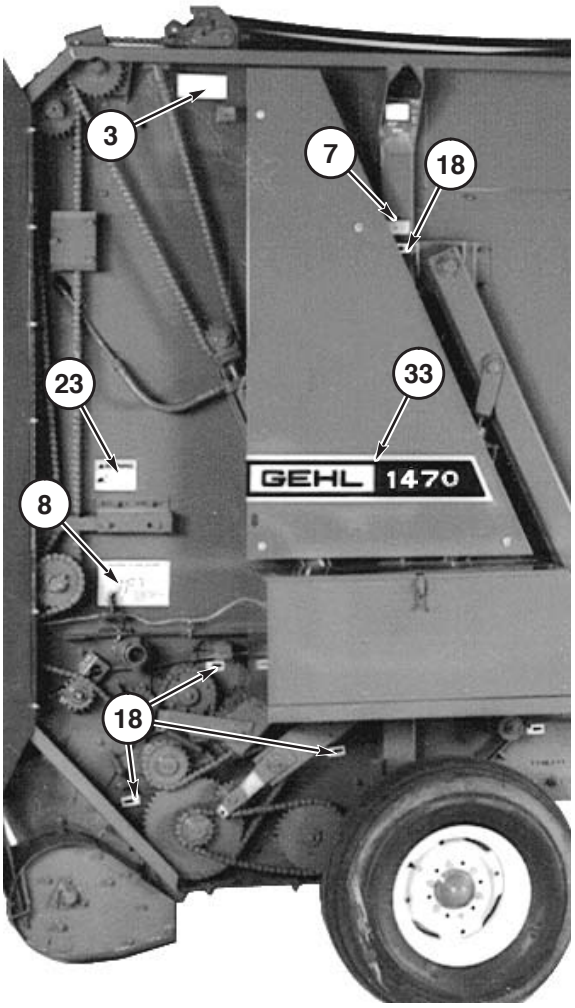
GEHL
1470
TDC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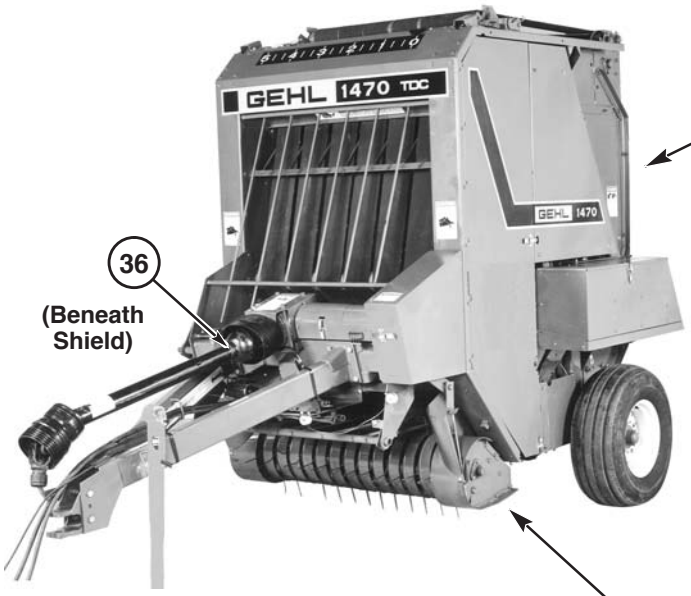
18
GEHL
1470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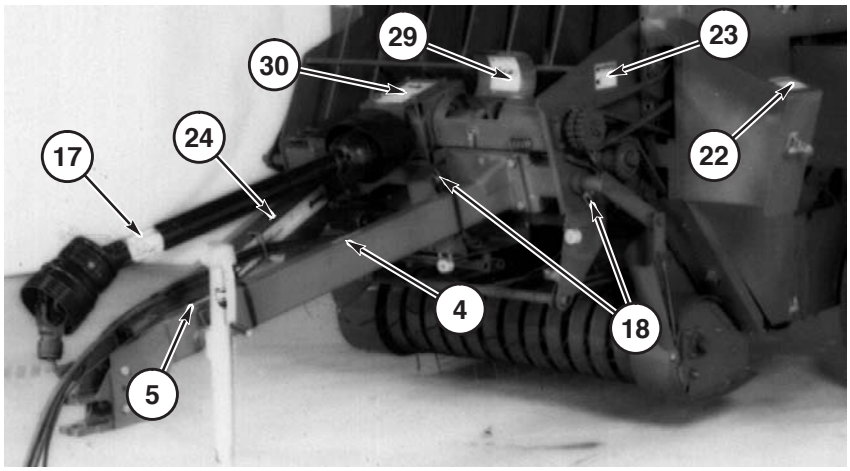
TDC
36
(Beneath
Shield)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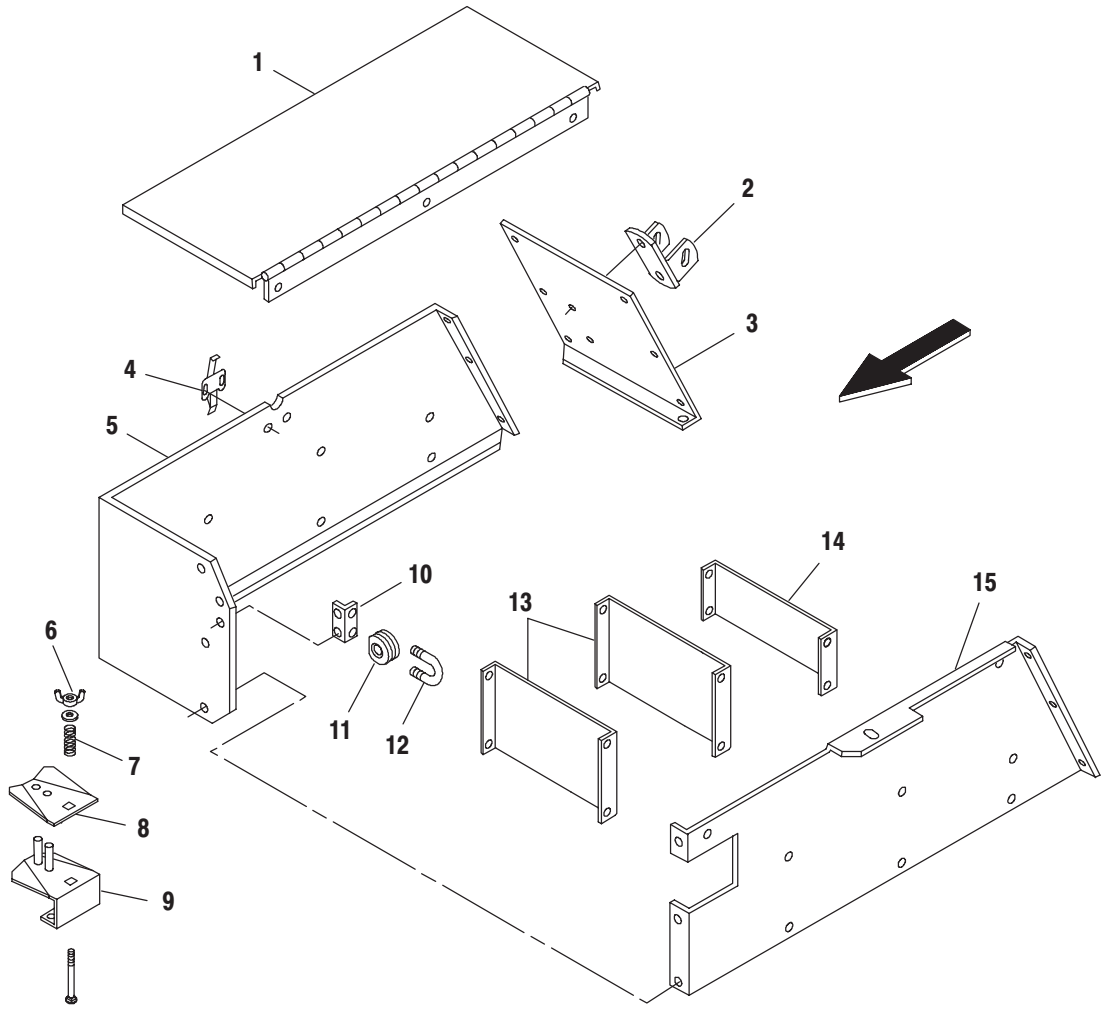


| Ref. No. | Part No. | Description | Qty. Req. |
|---|---|---|---|
| 01 | 087599 | COVER/TWINE BOX ASSY RT | 1 |
| | 650486 | CS 5/16X3/4 (HN, LW) | 3 |
| 02 | 077849 | BASE/CYL BRACKET ASSY | 1 |
| 03 | 077845 | BACK/TWINE BOX | 1 |
| | 650486 | CS 5/16X3/4 (HN, LW) | 1 |
| | 650949 | THMS 5/16X3/4 (HN, LW) | 6 |
| 04 | 079878 | LATCH | 1 |
| | 650812 | RHMS #12-24X1/2 (HN, LW) | 2 |
| 05 | 077843 | SIDE/TWINE BOX | 1 |
| | 650486 | CS 5/16X3/4 (HN, LW) | 4 |
| | 650949 | THMS 5/16X3/4 (HN, LW) | 6 |
| 06 | 210-20454 | NUT/WING | 1 |
| 07 | 380-13297 | SPRING | 1 |
| | 651095 | CB 1/4X2-3/4 (FW) | 1 |
| 08 | 160-32472 | PLATE TWINE TENSIONER | 1 |
| 09 | 098850 | PLATE/TWINE TENSION ASSY | 1 |
| | 651095 | CB 1/4X2-3/4 (FW) | 1 |
| 10 | 077848 | MOUNT/GUIDE | 1 |
| | 650949 | THMS 5/16X3/4 (HN, LW) | 2 |
| 11 | 059721 | GUIDE/ROPE | 1 |
| 12 | B11069 | U-BOLT/ECCENTRIC SHAFT (2) 5/16 LN | 1 |
| 13 | 077846 | DIVIDER | 2 |
| | 650949 | THMS 5/16X3/4 | 8 |
| 14 | 077847 | DIVIDER | 1 |
| | 650949 | THMS 5/16X3/4 | 4 |
| 15 | 077844 | SIDE/INNER TWINE BOX | 1 |
| | 650948 | THMS 5/16X5/8 (HN, LW) | 2 |
| | 650949 | THMS 5/16X3/4 (HN, LW) | 3 |