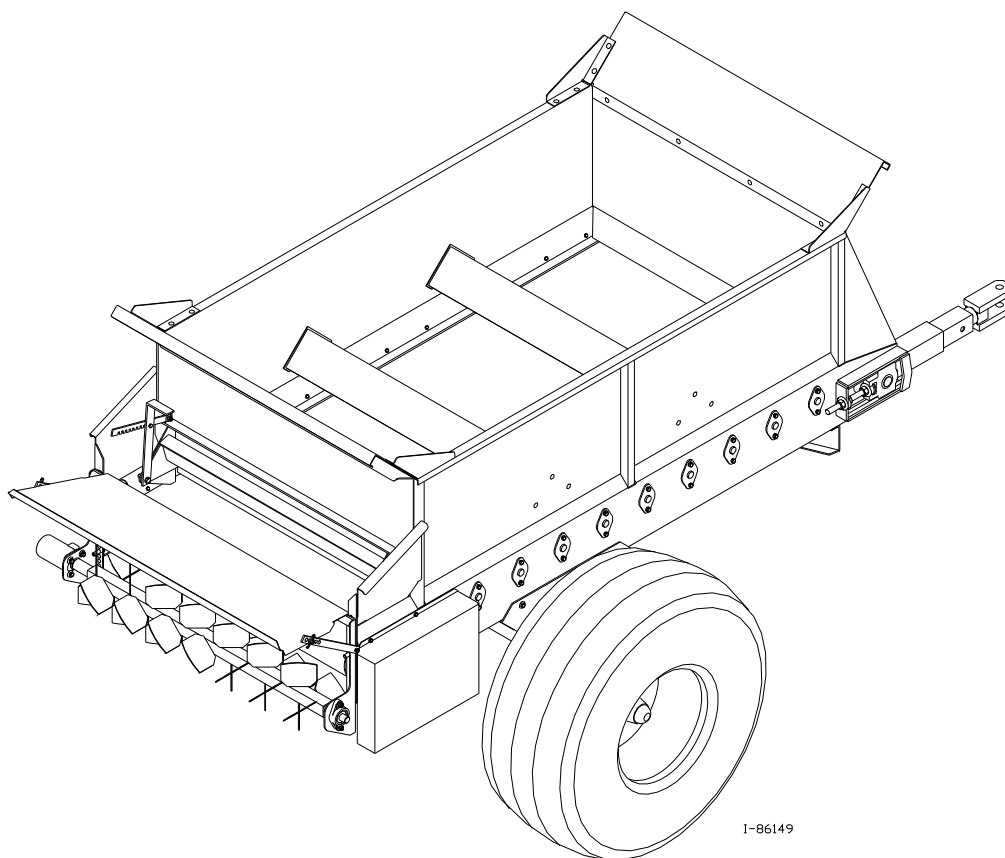


OPERATOR'S MANUAL

**MILLCREEK MODEL:
4300 TURF TIGER® SPREADER**



PUBLICATION DATE: 1/14/09, Rev. 2

MILLCREEK PART # 43826

Millcreek Manufacturing Company
34 Zimmerman Road
Leola, PA 17540

Phone: 1-800-311-1323 / Fax: 717-656-0952
www.millcreekmfg.com



WARNING: DO NOT assemble, operate, or maintain this equipment without first reading and understanding the information provided in this manual and the ADMA Safety Manual for Agricultural Implement Drivelines. Failure to follow all safety precautions as stated in these manuals may result in serious personal injury or death.

WARRANTY INFORMATION

Millcreek Manufacturing Company (hereinafter called the Company) warrants to the original Purchaser, the Equipment, manufactured by the Company, to be free from defects in material and workmanship under normal use and service. The Company obligation under this Warranty shall be limited to replacement or repair of any parts thereof, free of charge, to the original Purchaser provided, however, that the part(s) to be replaced or repaired, shall, within two years after delivery to the original Purchaser, be demonstrated to be defective; which determination shall be made by the Company. The said components or parts must be returned through the Selling Dealer or Distributor directly to the Company with all transportation charges prepaid. Notice of defect shall be furnished in writing to the Seller and to the agent through whom the machinery was purchased, disclosing in full all known defects and failure in operation and use. Reasonable time shall be given to the Seller to remedy any such defects and failures.

This Warranty does not cover, under any circumstances, any parts, components, or materials which, in the opinion of the Seller and the Company, have been subjected to neglect, misuse, alteration, accident, or repaired with parts other than those manufactured by and obtained from Millcreek Manufacturing Company.

This Warranty does not cover components which are already covered by a separate warranty provided by the supplier of said parts or components.

This Warranty is made in lieu of all other warranties, expressed or implied, including any warranty of merchantability and fitness for use and purpose and of all other obligations or liabilities on the Company part and any implied warranty. The Company neither assumes nor authorizes any other person to assume for it, any other liability in connection with the sale of this equipment. This Warranty shall not apply to this equipment or to any part thereof which has been subjected to accident, negligence, alteration, abuse, or misuse.

The Company makes no warranty whatsoever in respect to accessories or parts not supplied by the Company. The term "original Purchaser," as used in this Warranty, shall be deemed to mean that person for whom the equipment is originally supplied. This Warranty shall apply only within the boundaries of the continental United States.

Under this Warranty, the Company cannot guarantee that conditions existing beyond its control will not affect the Company's ability to obtain materials or manufacture necessary replacement parts.

The Company reserves the right to make design changes, or changes in specifications at any time, without any contingent obligation on the part of the Company to purchasers of machines and parts previously sold.

The Company warrants the construction of the equipment sold herein and will replace at the Company's expense for a period of two years from the date hereof, any parts which prove defective as determined under the terms of this Limited Warranty.

TRADEMARKS

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SECTION 1: INTRODUCTION

Guide to this Manual

This manual contains all the information necessary to safely operate and maintain the Millcreek Model 4300 TURF TIGER® Spreader. Consult the Table of Contents for a detailed list of topics covered. You'll find this manual's step-by-step procedures easy to follow and understand. Should questions arise, please contact your Millcreek dealer before starting any of the procedures in this manual.

Regarding the information presented in this manual:

- All safety, operating, and servicing information reflects current production models at the time of publication of this manual.
- References made to left, right, front, and rear are those directions viewed when facing the unit from the rear.

Please read all sections in the manual carefully--including the important safety information found in this section--before beginning any assembly/operation procedures; doing so allows you to use your Millcreek Spreader safely with optimal performance.

For Your Safety...

For your safety, Millcreek documentation contains the following types of safety statements (listed here in order of increasing intensity):

- **NOTE:** A clarification of previous information or additional pertinent information.
- **ATTENTION:** A safety statement indicating that potential equipment damage may occur if instructions are not followed.



CAUTION: A safety statement that reminds of safety practices or directs attention to unsafe practices which could result in personal injury if proper precautions are not taken.



WARNING: A *strong* safety statement indicating that a hazard exists which can result in injury or death if proper precautions are not taken.



DANGER! *The utmost levels of safety must be observed;* an extreme hazard exists which would result in high probability of death or irreparable serious personal injury if proper precautions are not taken.

The best operator is a careful operator. By using common sense, observing general safety rules, and adhering to the precautions specific to the spreader, you, the operator, can promote safe equipment operation.

For Your Safety... (continued)

In addition to observing the specific precautions listed throughout the manual, **the following general precautions apply and *must be heeded* for proper, safe operation.**



WARNING: Keep hands and feet from under the spreader at all times. Ensure that you are safely distanced from any other persons before operating the spreader.



WARNING: DO NOT attempt to operate the spreader in areas with steep inclines, ditches, large rocks, stumps, or holes which may endanger the operator by upsetting the tractor or cause damage to the spreader.



WARNING: To prevent serious personal injury and to promote safe spreader operation, keep all shields in place during operation. Ensure that all mounting hardware is properly tightened.



WARNING: Never clean, adjust, or repair the spreader while the tractor is running.



WARNING: Never get off the tractor while it is in motion, while the spreader is in operation, and/or while the PTO is engaged.



WARNING: Never wear loose clothing when operating the spreader as it may become caught in the moving parts of the machine.



WARNING: Never allow children or anyone else to ride on the spreader.

ATTENTION: For proper and safe operation of the spreader, periodically inspect all parts for excessive wear. Replace worn components with factory-authorized parts.

Safety Labels

Following are the locations and descriptions of all labels on your TURF TIGER spreader. Figure 1A shows the location of ALL labels on your spreader. Please note that some labels denote model number, model description, etc. while others contain important safety messages.

Each **Safety Label** contains an important safety message starting with a key word as discussed earlier in this section (e.g. ATTENTION, CAUTION, WARNING, DANGER). For your safety and the safe operation of your spreader, review all labels and heed all safety messages as printed on the labels.

Be sure to keep the safety labels clean and readable. If the labels ever become damaged or illegible, contact your Millcreek dealer for replacements.

Safety Labels (continued)

TURF TIGER Spreader Safety Labels

<u>Label Part #</u>	<u>Description</u>
42792	DANGER - NO riders
42710	WARNING - Flying Debris
42756	WARNING - Entanglement, Do NOT operate without shields
42772	WARNING - Spreader combination safety label - moving parts, read manual
42794	SMV (Slow Moving Vehicle) Sign
42767	Hose Connections Label
42773	Speed Adjustment Label
42778	Millcreek Logo Label
42770	TURF TIGER Spreader Logo Label
42793	Millcreek Serial Number Label
42459	Patented Label
42791	Model 4300 Label
42768	Attention Label (maximum payload)

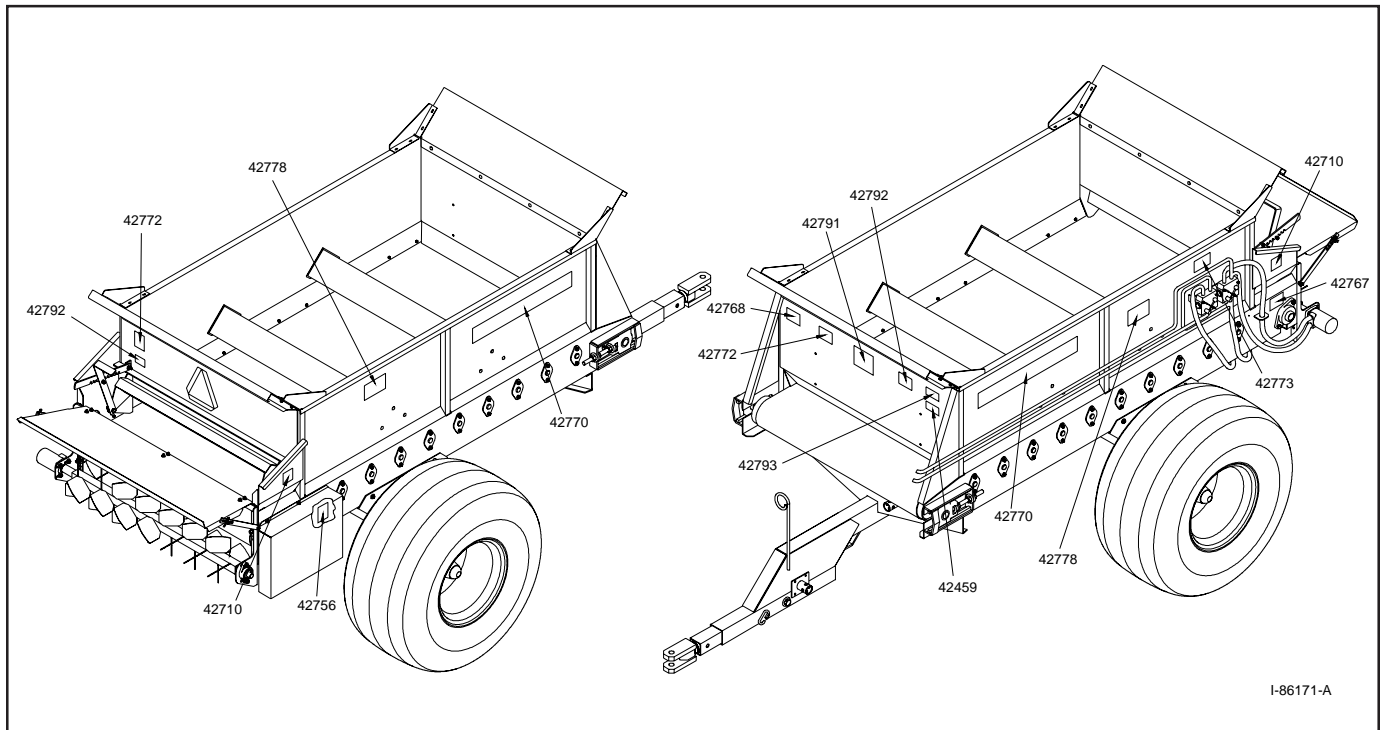


Figure 1A - Safety Label Locations

For your safety, be sure to locate all safety labels and review their content before proceeding with operating the spreader!

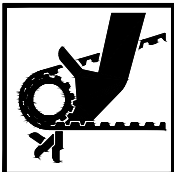
Safety Labels (continued)

 **DANGER NO RIDERS**

42792

 **WARNING**

Entanglement Hazards



Moving parts can crush or cut.

STAY CLEAR of machine while engine is running and/or machine is operating. Keep hands, feet, clothing, and hair away from operating parts.



Never adjust, lubricate, or clean machine while engine is running and/or machine is operating.

Never operate machine without safety shields in place.

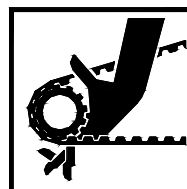


Read and understand operator's manual and safety labels before operating or servicing the machine.

Failure to follow these warnings may result in serious injury or death.

42772

 **WARNING**



Entanglement Hazard.

DO NOT OPERATE without safety shield in place. Moving parts can crush and cut.

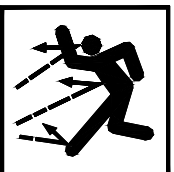
42756

 **WARNING**

Entanglement / Flying Debris Hazards.



DO NOT STAND in back of machine while engine is running and/or machine is operating. Rotating beaters and/or flying debris can cause serious personal injury or death.



Approach the rear of the machine **ONLY** when all power sources are shut OFF and all moving parts have stopped.

42710

ATTENTION

**DO NOT EXCEED
7500 lbs (3400 kg)
PAYLOAD**

42769

Inspection and Warranty Registration

The TURF TIGER™ Spreader is shipped from your Millcreek Dealer completely assembled and ready for operation. Inspect your new spreader thoroughly upon receipt to ensure that it has been shipped to you in a satisfactory manner. Immediately notify the freight company and your Millcreek dealer in case of shipping damage, shortage(s), and/or errors.

Standard/Optional Components

The TURF TIGER Spreader is supplied completely assembled with the following operating features/components (standard):

- Adjustable Metering Gate
- Tractor Driven Hydraulics
- Dual Flow Control Valves
- Apron Belt Scraper
- 6-ply 41-18LL-16.1 Turf Tires

Attachments and Options for the TURF TIGER Spreader:

- Saber Tooth™ Beater Attachment
- Dual Spinner Attachment
- Brush Attachment
- Horizontal Conveyor
- Self-Cleaning Roll (*for extremely fine materials; sold as service part only*)
- PTO Hydraulics with Pump
- 12 VDC Remote Apron Control
- 10-ply 16.5 x 16.1 Rib Tires
- 9.50 R x 16.5 LT Truck Tires

Warranty Registration

Following inspection of your new spreader, locate the Millcreek Warranty Card in the literature packet shipped with your spreader. For proper warranty registration, Millcreek requires that you fill out the warranty registration card and return it *within 30 days* to:

MILLCREEK WARRANTY REGISTRATION
Millcreek Manufacturing Company
34 Zimmerman Road
Leola, PA 17540

SECTION 2: ATTACHING THE SPREADER TO THE TRACTOR

Connecting the Spreader Hitch to the Tractor Drawbar



WARNING: For safe operation of the TURF TIGER Spreader, connect the spreader directly to the tractor drawbar; DO NOT connect the spreader to a three-point hitch.

The TURF TIGER spreader hitch is designed to work with a standardized tractor drawbar. To connect the spreader hitch to the tractor drawbar, refer to Figure 2A and adhere to the following guidelines:

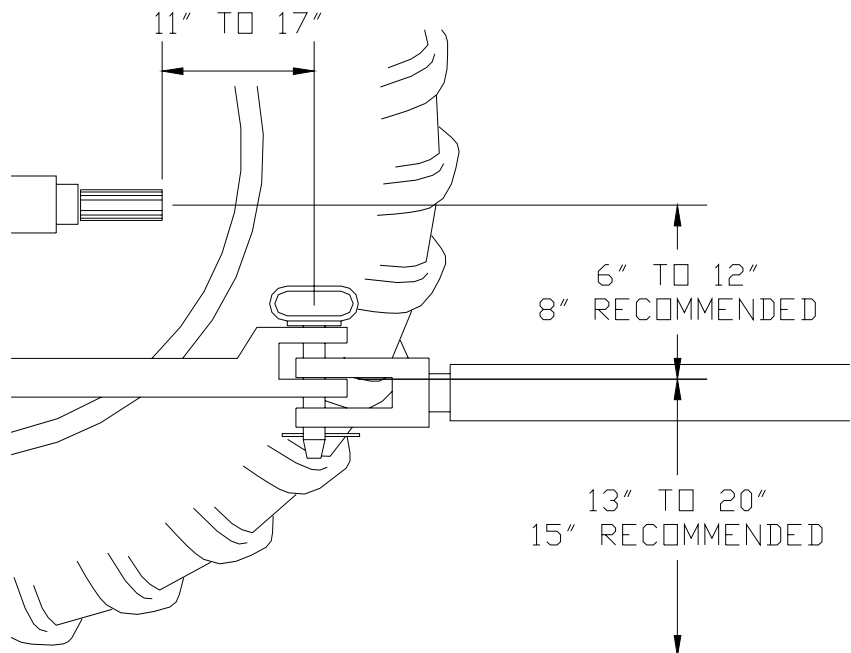
- Extend or shorten the tractor drawbar to obtain the horizontal distance from the end of the tractor power take-off (PTO) shaft to the center of the hitch pin hole (as shown in Figure 2A).
- Locate the jack, which is stored under the front of the spreader box. Use the jack to adjust the height of the spreader hitch so it matches the height of the tractor drawbar.
- Back the tractor into the hitch until the holes line up.
- Fasten the spreader hitch to the drawbar with a hitch pin that fits securely (i.e. so that it will not come out during spreader operation).
- Remove the weight from the jack by lowering the spreader hitch on the drawbar.
- Return the jack to its storage bracket underneath the front of the spreader box.

ATTENTION: DO NOT store the jack by swinging it alongside the hitch; doing so allows the handle to hang down and drag on the ground, which may hinder safe and proper operation.



WARNING: Damage to the spreader or other vehicle, as well as injury to the operator, may occur if a properly-sized (1" diameter) hitch pin is not installed as recommended. Secure the hitch pin with the clip as shown.

ATTENTION: An improperly located hitch point may cause damage to the universal joints of the PTO. The recommended length of the PTO shaft should range from 35.83 to 51.42 inches center to center of the "U" joints.



I-86046

Figure 2A - Specifications for Connecting the Spreader to the Tractor Drawbar

Attaching the Spreader to the Tractor PTO (For Optional PTO Hydraulic Models ONLY)

1. Pull back the slide collar on the PTO yoke, and slide the spreader PTO assembly onto the tractor PTO shaft. Be sure the slide collar snaps forward to indicate that the PTO shaft is properly secured.
ATTENTION: DO NOT transport the PTO hydraulic TURF TIGER spreader without having the PTO shaft secured.
2. Fasten the PTO safety chain to the link on the spreader pump mount to prevent rotation of the safety shield during operation.



WARNING: *Failure to secure the PTO safety chain will allow the safety shield to rotate.*

Operating the spreader without the safety shield in proper position may result in serious personal injury or death.

Assembling the Safety Tow Chain

NOTE: *The safety tow chain may be ordered as an optional component for the TURF TIGER spreader and must be used if the spreader is to be moved any time on a public roadway.* Be sure to adhere to all local/state transportation codes for travel on public roadways with this type of equipment.



WARNING: DO NOT tow the TURF TIGER spreader (loaded for operation) at highway speeds; doing so may cause the tires to overheat and/or loss of control.

1. Refer to Figure 2B for an illustration of the hook-up of the safety chains (one on each side).
2. Unscrew the quick link nuts (one on each side).
3. Insert the chain link into the quick link as shown (one on each side) and retighten the quick link nuts to keep the chains from slipping out.
4. Hook the other ends of the chains to the appropriate anchor holes on the vehicle hitch.



WARNING: For the safety chains to be effective, the installation of the chains should not allow more slack than is necessary for movement during spreader operation. Inspect the safety chains regularly to check the condition of the links and locking/hooks mechanisms; replace the chains as soon as weakness/breakage is noted.

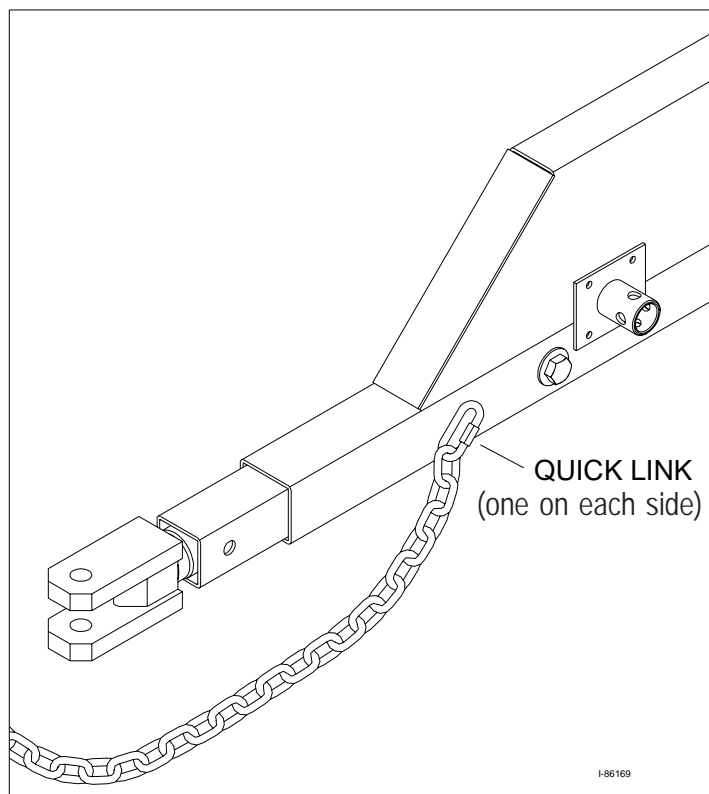


Figure 2B - Attaching the Safety Chains

SECTION 3: OPERATION & ADJUSTMENT

Understanding TURF TIGER® Spreader Operation

Proper and safe operation of the Millcreek TURF TIGER Spreader requires: (1) understanding how the spreader works, (2) being familiar with the spreader's operating components, and (3) heeding all safety precautions as stated in this manual.

TURF TIGER™ spreader **Tractor Driven Hydraulic models** draw their power directly from the tractor hydraulic system. *For optimal operating performance, the hydraulic oil flow of 7 gallons per minute (GPM) must be maintained.* At 6 GPM, the spreader will still operate but at a slower speed. At flows greater than 8 GPM, oil will be returned to the tractor reservoir by the spreader flow control valve.

The **Optional PTO Hydraulic models** include a hydraulic pump which draws power from the PTO drive line to run the spreader hydraulic motors. The PTO hydraulic pump is designed to provide 7 GPM with a PTO speed of 540 RPM.

TURF TIGER Spreader Operating Components

TURF TIGER spreader operation is controlled, in combination, by four variables:

- (1) tractor ground speed (mph)
- (2) endgate opening (up to 7 inches)
- (3) apron belt speed (0 to 48 feet per minute)
- (4) attachment speed

NOTE: The first three variables determine the **application rate**. The fourth variable affects the **spreading pattern**.

The **Dual Hydraulic Control Valves**, located on the left rear side of the spreader, provide separate control of belt and attachment speeds for maximum control and flexibility.

- The **Front Control Valve** controls the speed of the floor apron belt.
- The **Rear Control Valve** controls the speed of the spreading attachment.

Refer to Figure 3A on the following page for the locations of these components on the TURF TIGER spreader.

Understanding TURF TIGER Spreader Operation (continued)

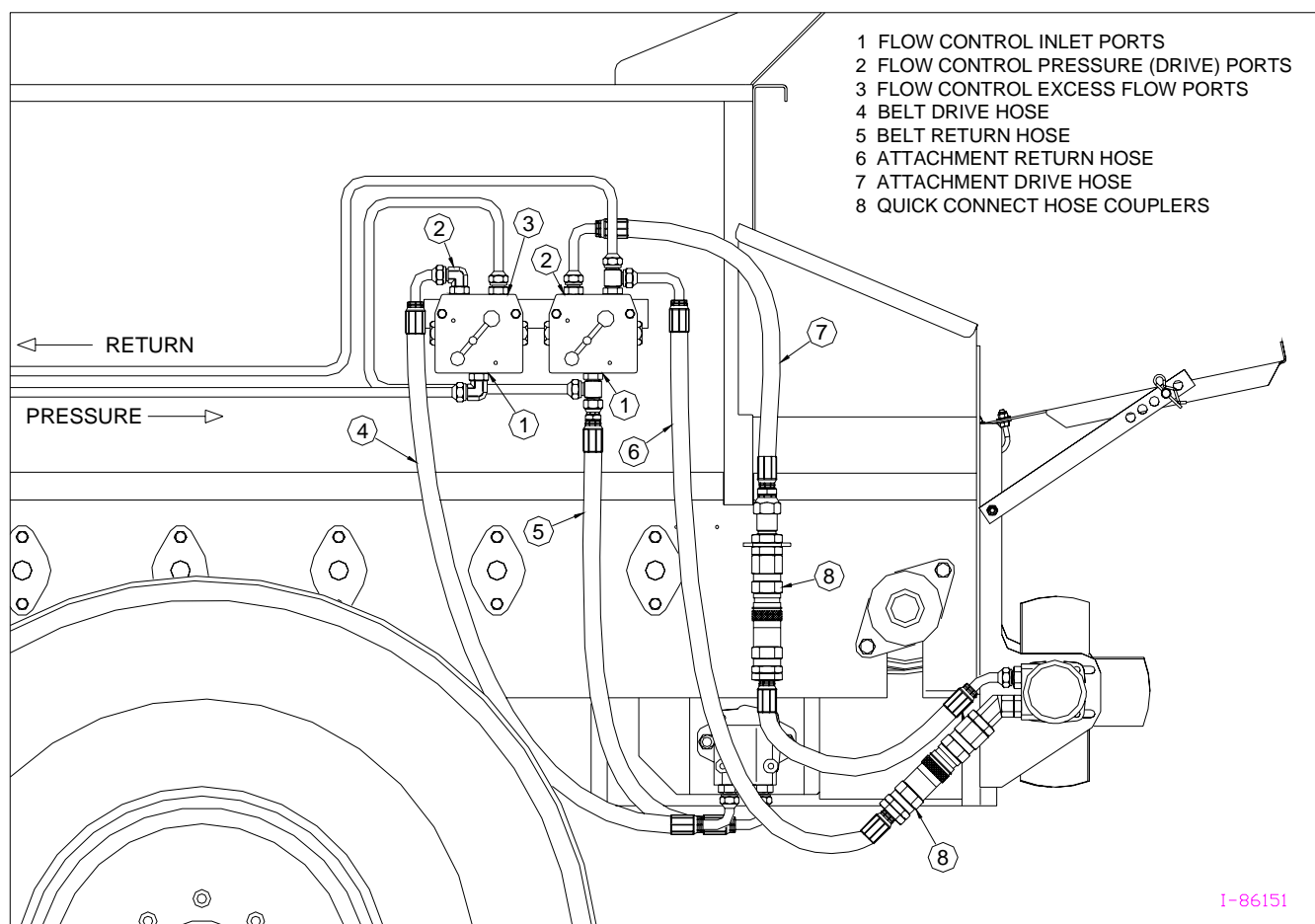


Figure 3A - Detail of Control Components / Connections on the TURF TIGER Spreader

TURF TIGER Spreader Attachments

TURF TIGER spreaders are designed to be operated with any one of four spreading attachments available from Millcreek, providing maximum versatility for spreading or topdressing applications.

- The **Saber Tooth™ beater attachment** is designed for maximum versatility and power, whether applying wet or dry, light or heavy material. Its spreading pattern ranges from 4 to 12 feet, depending on the material and the attachment speed (RPM).
- The **Dual Spinners** are ideal for light applications of material and provide a broad spreading pattern of up to 35 feet.
- The 42-inch **Brush** attachment provides precision drop-spreading capabilities.
- The **Horizontal Conveyor** attachment allows for side discharge, directed drop applications (e.g. filling sand traps, filling other vehicles with mulch material, etc.).

Understanding TURF TIGER Spreader Operation (continued)

Guidelines for Installing Optional Attachments

- For the safe handling of TURF TIGER spreader attachments, **wear heavy work gloves**.
- Millcreek recommends that at least **two people** work together to remove/install attachments; this will facilitate the lifting, positioning, and bolting of the attachments.
- Each attachment is bolted onto the rear of the spreader, **two bolts on each side***. Refer to the related parts assembly drawings in the Appendixes at the back of the manual.
***NOTE:** The TURF TIGER spreader has three (3) sets of mounting holes (i.e. three holes on each side at the rear of the unit) for the attachments:
 - The **SaberTooth™** beater, the **Dual Spinners**, and the **Horizontal Conveyor** all use the **middle and bottom sets** of mounting holes, which have fixed studs for ease of assembly.
 - The **Brush** attachment mounts differently from the other three and uses the **top and bottom sets** of mounting holes. Note that the top hole does NOT have a fixed stud and therefore requires an additional 1/2" bolt (supplied).
- When installing an optional attachment, lift the attachment into position, being careful to align the bolts on the spreader with the corresponding holes on the attachment.

Guidelines for Loading the TURF TIGER Spreader for Operation

- **Maximum TURF TIGER spreader payload is 7500 pounds.**
- **ATTENTION:** NEVER store material in the spreader between unloading times during critical cold weather months when a frozen load could result in severe equipment damage (i.e. torn floor apron belt). DO NOT store wet material in the spreader (or keep the spreader outdoors with material in it)--doing so will accelerate rusting of the steel. Be aware that storing material in the spreader also makes the material difficult to unload (i.e. it may solidify/harden).

Operating the TURF TIGER Spreader

WARNING! Before proceeding with operation of the spreader, review all safety statements as provided in Section 1 of this manual.

NOTE: By definition, the left and right sides of the spreader are determined while sitting on the tractor seat.

For additional operating information on the optional **12VDC Remote Apron Control**, also refer to Appendix B at the back of this manual.

1. Load the TURF TIGER spreader according to the guidelines provided in this section.
2. Determine the desired opening of the adjustable metering endgate (up to 7 inches) according to your spreading application. Please refer to the **Recommended Settings** charts provided at the end of this section.
3. With the tractor at idle, activate the tractor PTO lever.
4. For best results, run the tractor throttle at the 540 rpm PTO shaft speed.

(procedure continued on next page)

Operating the TURF TIGER Spreader (continued)

5. Observe the spreading application and determine if adjustments are required. If adjustments are desired, please refer to the applicable procedure(s) in this section. ***Keep in mind that three variables affect the application rate: tractor ground speed, metering gate opening, and apron belt speed. Attachment speed affects the spreading pattern.***
6. When the spreader box is empty, shut off the control (for tractor hydraulic units) OR stop the PTO by disengaging the lever/switch on the tractor (for PTO hydraulic units).
7. Refer to Section 4 in this manual for maintenance to be performed following operation.

Adjusting the TURF TIGER Spreader for Optimal Operation

Adjusting Tractor Ground Speed

Using the tachometer on the tractor, select the tractor gear that will give you the desired ground speed (mph) with the engine speed delivering 540 RPM (PTO speed), which is required for all TURF TIGER spreader models. Ground speed can range from 2 to 8 mph, depending on the desired application rate.

Adjusting the Metering Endgate

The maximum opening for the metering endgate is 7 inches. Recommended endgate settings for each spreading attachment are provided in the following chart:

<u>TURF TIGER Spreading Attachment</u>	<u>Metering Endgate Opening (inches)</u>
Saber Tooth™ Beater	3 to 6
Dual Spinners	1 to 2
Brush	1 to 2
Horizontal Conveyor	1 to 4

To adjust the opening of the metering endgate:

- Lift up on the spring-loaded lever and HOLD.
- Use the handle on the metering gate to rotate the gate to the desired opening.
- Release the spring-loaded lever to lock the metering gate in the desired position.

Adjusting the Apron Belt Speed

The infinite range of speed for the floor apron belt is 0 to 48 feet per minute (FPM). This speed is controlled by the **Front Control Valve** located on the left rear side of the unit. When the valve is in the twelve-o'clock position (notch #1), the apron belt speed is 0 mph; the three-o'clock position (notch #10) provides the maximum apron belt speed of 48 FPM. Turning the control *clockwise* **increases the speed**; turning the control *counterclockwise* **decreases the speed**.

To adjust the apron belt speed:

- Start the floor apron belt speed by turning the control valve to the one-thirty position (notch #5 - halfway between twelve- and three-o'clock positions).
- Set the tractor ground speed and the metering endgate opening for the desired application rate.
- Fine tune the application rate by decreasing or increasing the floor apron belt speed setting.

Adjusting the Saber Tooth™ Beater Attachment

The Saber Tooth Beater Attachment provides an application depth greater than 1/8-inch and a 4 to 12 foot spreading width, depending on density of the material and attachment speed.

The **rotation speed (RPM) of the beater** is determined by the setting of the **Rear Control Valve** located on the left rear side of the unit.

- For maximum spreading width (and most aggressive beater action/speed), set the control valve to the three-o'clock position.
- When a less aggressive or more narrow spreading pattern is desired, reduce the RPM of the beater by turning the control valve *counterclockwise*.

The **spreading width** of the beater can also be fine-tuned by adjusting its height with respect to the apron belt. The beater is factory-mounted in the middle holes in the beater bracket; this position is recommended for most applications. If the beater action needs to be adjusted for your application, adhere to the following guidelines:

- Moving the beater to a higher position in the beater bracket will increase the spreading width.
- Moving the beater to a lower position in the beater bracket will decrease the spreading width.
- When you adjust the vertical position of the beater, you must also adjust the horizontal position to provide adequate belt clearance.
- To adjust the horizontal position, slide the hydraulic motor and the bearing in the slots on the beater brackets. The recommended horizontal position of the beater is 5/16" +/- 1/16" between the beater paddles and the apron belt.

NOTE: Please be aware that when the beater is moved into a higher position, material may fall between the beater and the belt and may not be distributed out by the beater.

ATTENTION: To prevent damage to the spreader, a minimum clearance of 1/4-inch must be maintained between the apron belt and the beater paddles.

Adjusting the Dual Spinner Attachment

The Dual Spinner Attachment provides wide spreading patterns from 25 to 30 feet with light application depth (less than 1/8-inch).

Spinner adjustment is critical to producing the desired spreading pattern results. **From the factory, the spinner attachment "deck" is installed in the second and fifth holes from the rear; this position provides the most uniform 30-foot wide spreading pattern.** If you need to make adjustments to this positioning, adhere to the following guidelines (see Figure 3B):

- Moving the "deck" forward to the third and sixth holes will result in more of the material being directed to the outside of the spreading pattern.
- Moving the "deck" backward to the first and fourth holes will result in more of the material being directed to the center of the spreading pattern.
- Tilting the "deck" will direct the material upwards. (This is accomplished by loosening the front bolts and rotating the "deck" around the rear bolts.)
NOTE: Tilting the "deck" upwards is recommended for light, wide spreading applications with the spinners at maximum RPM.
- Tilting the "deck" horizontally may be helpful for heavier applications.

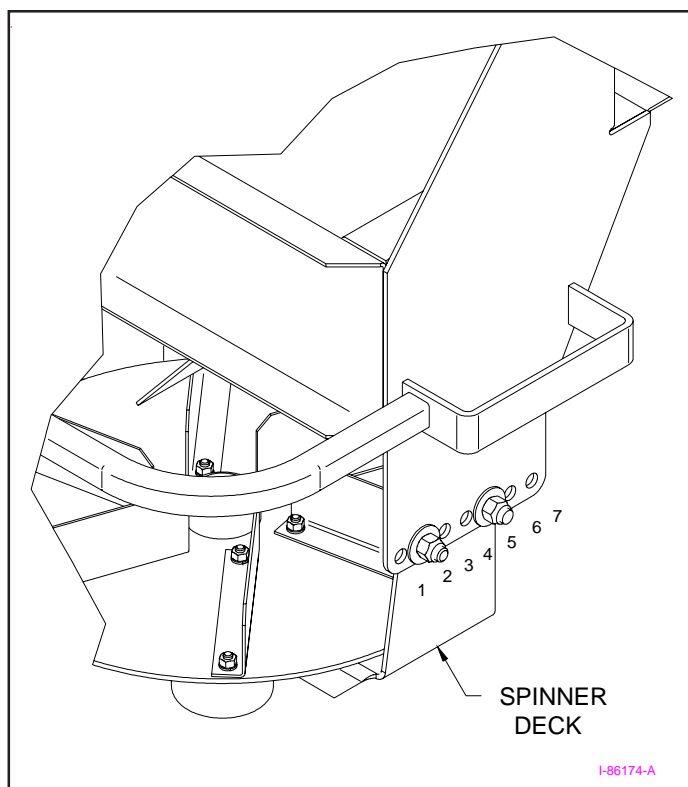


Figure 3B - Adjusting the Dual Spinner Positioning

Adjusting the Brush Attachment

The Brush Attachment, with a 10-inch diameter brush, is designed specifically for narrow width applications of 4 feet. ***The attachment should be mounted so that the bristles lightly brush against the apron belt.*** If the brush becomes worn from extended use, it can be adjusted vertically and horizontally to make up for the diminished length of the bristles.

ATTENTION: If the brush attachment bristles are rubbing against the apron belt, they will wear down/ damage the belt. Care should be taken that the brush is adjusted properly so that the bristles just lightly brush against the apron belt.

Adjusting the Horizontal Conveyor

The Conveyor Attachment consists of a 12-inch wide conveyor belt that strictly discharges material to the left of the machine. There is no variation in the mounting of the conveyor. The *speed* of the conveyor, however, can be adjusted with the Rear Flow Control Valve. Increasing the setting of this control will result in material being thrown farther to the left of the machine.

Recommended Settings for TURF TIGER Spreader Operation



CAUTION: For safe operation of the Turf Tiger spreader, DO NOT exceed the load capacities for the materials listed in the following charts/specifications. ***THE MAXIMUM PAYLOAD IS 7500 lbs.***

Material Weights (Range Per Cubic Yard)

Model	Material	Material Consistency		Max. Weight
		Dry	Wet	Max. Yds. (Wet)
Standard Turf Tiger with Loading Flares hauling 2-3 cubic yards	Sand	2000 lbs./cu. yd.	2700 lbs./cu. yd.	2.7 cu. yd.
	Topdress Mix (80% sand + 20% peat)	1600 lbs./cu. yd.	2200 lbs./cu. yd.	3.4 cu. yd.
Turf Tiger with Optional Extension Sides hauling 4-5 cubic yards	Compost	900 lbs./cu. yd.	1800 lbs./cu. yd.	4.1 cu. yd.
	Mulch	600 lbs./cu. yd.	1400 lbs./cu. yd.	5.3 cu. yd.

Material Volume Estimation

Conversion Factors: One cubic yard = 27 cubic feet
One square yard = 9 square feet

Estimation Formula: Cubic yards of material required to cover a specified area

$$\begin{array}{ccccc} \text{Area to cover} & \times & \text{Material} & \times & 0.0031 \\ \text{(square feet)} & & \text{(depth in inches)} & & \\ & & & & \text{= Cubic Yards of Material Needed} \end{array}$$

Depth of Material	Quantity Needed to Cover	
	1,000 Square Feet	One Acre
1/8"	0.375 cubic yds.	17 cubic yds.
1/4"	0.75 cubic yds.	34 cubic yds.
1/2"	1.5 cubic yds.	67 cubic yds.
1"	3.0 cubic yds.	134 cubic yds.
2"	6.0 cubic yds.	269 cubic yds.
3"	9.0 cubic yds.	402 cubic yds.

Example: Determine the amount of material needed to cover 5,000 square feet with a 1/2" depth.

$$(5,000) \times (0.5 \text{ inches}) \times 0.0031 = 7.75 \text{ cubic yards}$$

Recommended Settings for TURF TIGER Spreader Operation (continued)

Initial Adjustments for the TURF TIGER Spreader (Sample Settings)

Sample Application: Sand with Saber Tooth™ Beater (approx. 12 ft. wide, variable depth) OR
Sand with Dual Spinners (approx. 30 ft. wide, 1/8" depth - fixed)

Turf Tiger Adjustment	Dual Spinners (30 ft. wide)	Saber Tooth Beater (12 ft. wide)		
	1/8" depth	1/8" depth	1/4" depth	1/2" depth
Ground Speed (Approx. mph) (Approx. tractor gear)	4 mph (low range) (med. gear)	5 mph (high range) (low gear)	4 mph (low range) (med. gear)	3 mph (low range) (low gear)
Metering Gate Opening	2"	3.5"	5"	7"
Floor Belt Speed (Notches #1-10 on front control valve)	#6	#4	#5	#6
Attachment Speed (Notches #1-10 on rear control valve)	#10	#10	#10	#10
Hydraulic Flow	7 gpm	7 gpm	7 gpm	7 gpm
Tractor PTO (Engine approx. 2000-2200 rpm)	540 rpm	540 rpm	540 rpm	540 rpm

NOTE: The settings provided in this chart will change with different flow rates. Fine tuning operation is best accomplished by varying the ground speed and selection of gears. Be aware that the gear selection may vary with different tractors.

SECTION 4: MAINTENANCE

Guidelines for Regular Maintenance



WARNING: All shields must be replaced after maintenance or adjustment procedures are performed. Failure to do so could result in serious personal injury or death.

General Maintenance

Performing regular maintenance on the TURF TIGER spreader will help ensure optimal performance. Please follow these guidelines for maintaining your spreader:

- Clean the spreader after each use.
- Check the spreader each time it is used for loose, bent, broken or missing parts.
ATTENTION: During operation, listen for abnormal sounds which might indicate loose parts or other equipment damage. Correct any parts problems immediately; expanded parts views of all spreader assemblies are provided in the Appendixes at the back of this manual.
- **ATTENTION:** NEVER store material in the spreader between unloading times during critical cold weather months when a frozen load could result in severe equipment damage (i.e. torn floor apron belt). Storing wet material in the spreader (or keeping the spreader outdoors with material in it) will accelerate rusting of the steel. Be aware that storing material in the spreader also makes the material difficult to unload (i.e. it may solidify/harden).
- **For PTO Hydraulic Models:** Inspect the PTO safety shield and chain regularly to check the condition of the links; replace the shield and chain as soon as weakness/breakage is noted.
- Inspect the transportation safety chains to check the condition of the links; replace the chains as soon as weakness/breakage is noted.
- **For Saber Tooth™ Beater and Brush Attachments:** Lightly grease the lube fitting on each attachment every 100 hours. (These fittings are located at the non-drive ends).
ATTENTION: All lube fittings are SAE standard. ***Worn grease fittings that will not hold the gun and/or fittings with a stuck check ball must be replaced.***
- **For PTO Hydraulic Models:** Lube the hydraulic PTO shaft universal joints once a year or every 100 hours.

NOTE: The main bearings on the spreader are sealed and DO NOT require greasing.


Guidelines for Regular Maintenance (continued)

Wheel/Tire Maintenance

- Once a month, check the wheel lug bolt torque. The recommended torque is 120 ft. lbs.
- Check the tires and maintain proper tire pressure:
 - 28-30 PSI for Ag Rib Tires
 - 64-66 PSI for Truck Tires
 - 12-15 PSI for Turf Tires

ATTENTION: When storing the spreader for a period of time, block up the spreader to remove weight from the tires. Doing so helps to prevent any possible damage to the tires.

Wheel Bearing Maintenance

- Adjust the wheel hub bearings after 100 loads and once each season thereafter.
 - Use a jack to raise the spreader to remove weight from the wheel.
-  **CAUTION:** Be sure to block up the spreader to prevent personal injury while working on the wheels.
- Rotate the wheel and torque the wheel hub bearings to 25 ft. lbs.
 - Back off the nut one flat, plus enough to install the cotter pin (1/6 turn min., 1/3 turn max.)

Hydraulic System Maintenance

- Periodically check the condition of the hydraulic hoses for flexibility and any signs of rubbing/weakness on the outer surface. Replace the hose(s) as soon as any weakness or cracking is noted.
- **Proper oil maintenance for Tractor Driven Hydraulic Units:** The Tractor Hydraulic unit is shipped with Universal Tractor Hydraulic Fluid (UTF) in the lines. To protect your tractor, make sure the UTF supplied with the spreader is compatible with the oil in your tractor.
- **Proper oil maintenance for PTO Hydraulic Units:** The PTO Hydraulic unit is supplied with an ISO Grade 46 hydraulic oil in the reservoir. (Specifications for the oil are shown below.)

<u>Hydraulic Oil Specifications</u>	
ISO Grade	46
Former Grade	(10)
Viscosity @ 40° C cSt	45.3
Viscosity @ 100° C cSt	6.6
Viscosity @ 100° F, SUS	215
Viscosity @ 210° F, SUS	48
Viscosity Index	103
Flash Point, °C (°F)	215 (420)
Pour Point, °C (°F)	-26 (-15)

-Replace the oil filter after the first 10 hours of operation. After that initial period, replace the filter every 100 hours (in dusty conditions) or every year.

-Periodically check the oil level, which can be viewed through the sight gauge mounted on the front of the oil reservoir. NEVER allow the oil to run below the level visible through the sight gauge.

Hydraulic System Maintenance (continued)

ATTENTION: If a PTO Hydraulic unit is converted to a Tractor Hydraulic unit, be sure to check if the hydraulic oil is compatible with the oil in the tractor. If it is not, the hydraulic system must be flushed out with new oil to ensure proper functioning and to prevent equipment damage.

Drive System (Floor Apron Belt) Maintenance

- Periodically check the floor apron belt for proper tension and tracking (refer to **Figure 4A** and the **TURF TIGER Spreader Drive Assembly Parts Detail** drawing in Appendix A at the back of this manual).

Procedure for checking/adjusting the floor apron belt tension and tracking:

NOTE: To perform this procedure, the tractor should be in a stationary mode and idling. As needed, adjust the setting of the Front Control Valve to run the belt.

- Adjust each end of the front roller until the floor belt sags approximately 3/4-inch. At this position, the belt should not touch the cross-members on the chassis.
- Refer to Figure 4A and adjust the belt tension according to the following guidelines:
To tighten the belt: loosen nut (1) and tighten nut (2), pushing the bearing forward.
To loosen the belt: loosen nut (2) and tighten nut (1), moving the bearing rearward.
- Run the belt at a SLOW speed and observe the tracking. If the alignment is not correct, the belt will begin to track to one side, and the "V" groove of the belt will not align with the "V" groove of the roller, resulting in a bulge at the center of the belt.
- To correct any misalignment, tighten the side to which the belt is tracking and loosen the opposite side. Perform this adjustment in small increments and observe the running of the belt until it tracks correctly and there is no bulge in the center of the belt.
- Run the belt for five minutes and observe the tracking to ensure proper positioning and operation.
- When correct belt tension/alignment has been verified, tighten the adjustment nuts--(1) and (2) together--to lock the roller in place. **DO NOT** overtighten these nuts; doing so will strip the threads.

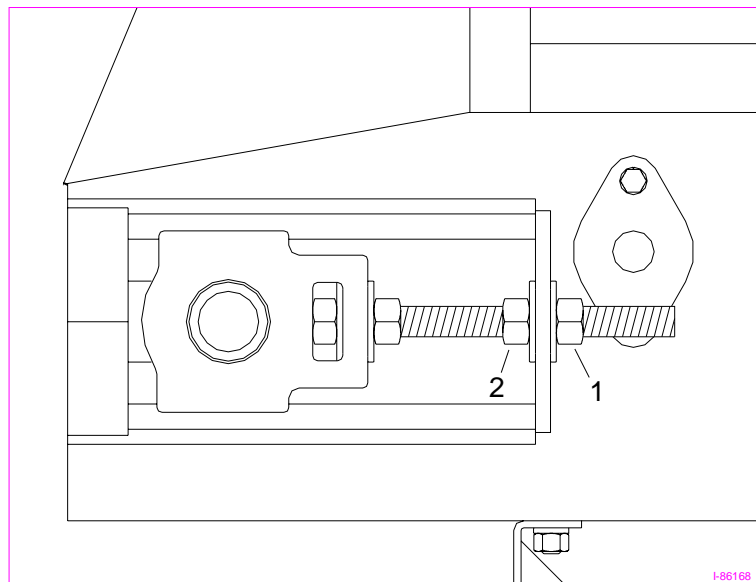


Figure 4A - Adjusting the Floor Apron Belt

APPENDIX A: SPREADER COMPONENT PARTS REFERENCE

The following information is provided for your reference in understanding how the TURF TIGER spreader is assembled and how spare parts can be identified and ordered properly.

General TURF TIGER Spreader Specifications (Model 4300)

Capacity (cubic yds.)	2.5 (1.91 cubic meters) and more, depending on material		
Capacity with Extension Sides (cubic yards)	5.0 (3.82 cubic meters) and more, depending on material		
Max. Payload	7500 lbs. (3375 kg)		
Overall Width	93" (233 cm)		
Overall Length	152" (380 cm)		
Loading Height	65" (163 cm)		
Bucket Loading Width	98" (249 cm)		
Weight	2180 lbs. (981 kg) - with Saber Tooth™ Beater Attachment		
Construction	11-gauge steel body on heavy steel chassis		
Material Delivery Belt	45.5" wide (113.75 cm)		
Tires	41-18LL-16.1 16.5 x 16.1 9.50 R x 16.5 LT	6-ply turf 10-ply rib truck tire	14 psi <i>ground pressure*</i> 29 psi <i>ground pressure*</i>
Hubs	8 bolt		
Standard Tractor Hydraulic Drive	7 GPM (26.50 l/min), 1500 psi (10335kPa) recommended requirement		
Optional PTO Driven Hydraulics	Standard 540 RPM		
Color	Red		
Min. Tractor HP Required	35 HP (<i>tractor weight must be at least 50% of gross loaded weight</i>)		

**Ground Compaction at 7500 lb. load*

Component Parts Ordering Information

When ordering replacement parts, please provide the following information to your local Millcreek dealer:

- Model and Serial Number of the unit (located on the front left corner of the spreader)
- Part Number and Description as it appears on the following drawings/parts lists

TURF TIGER Spreader Box Assembly

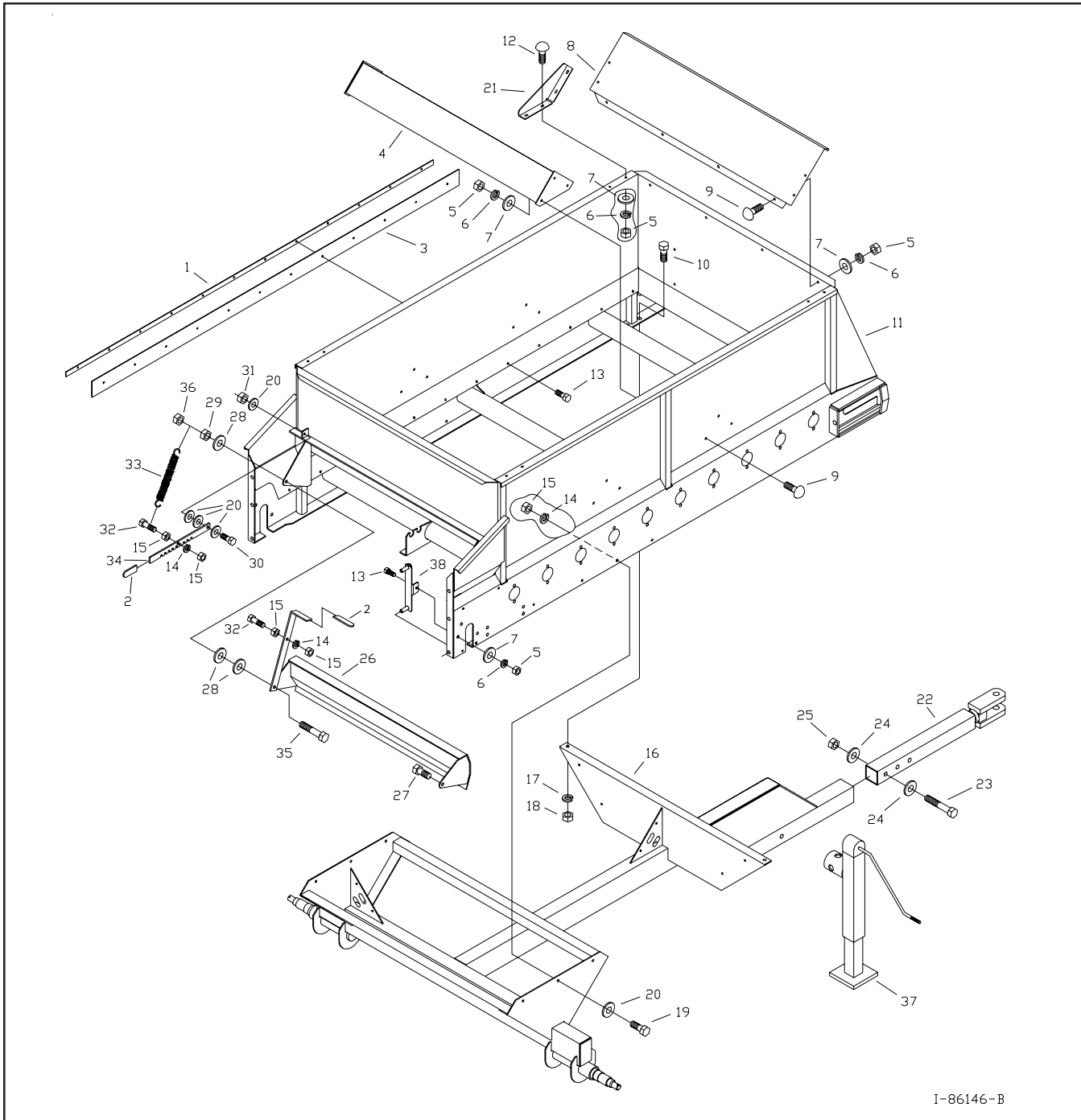


Figure A1 - Spreader Box Assembly Parts Detail

Spreader Box Assembly (continued)

<u>Item #</u>	<u>MC Part #</u>	<u>Qty.</u>	<u>Component Description</u>
1	268181	2	Seal Support
2	220157	2	Rubber Grip
3	220160	2	Rubber Seal
4	268147	2	Load Baffle
5	34020	38	5/16 Nut
6	34203	38	5/16 Lock Washer
7	34057	38	5/16 Washer
8	268140	2	End Flare
9	34275	20	5/16 x 1 Carriage Bolt
10	34239	2	1/2 x 1 Bolt
11	268045	1	Box
12	34274	16	5/16 x 3/4 Carriage Bolt
13	34221	28	5/16 x 1 Bolt
14	34141	8	3/8 Lock Washer
15	34087	10	3/8 Nut
16	268072	1	Chassis
17	34035	2	1/2 Lock Washer
18	34034	2	1/2 Nut
19	34199	6	3/8 x 1 Bolt
20	34018	10	3/8 Washer
21	268149	4	End Flare Brace
22	260788	1	Extension Hitch
23	34253	1	3/4 x 5 Bolt
24	34201	2	3/4 Washer
25	34265	1	3/4 Nylon Stop Nut
26	268113	1	Metering Gate
27	34226	1	1/2 x 1-1/2 Bolt
28	34094	7	1/2 Washer
29	34211	2	1/2 Nylon Stop Nut
30	34255	1	3/8 x 1-1/2 Bolt
31	34220	1	3/8 Nylon Stop Nut
32	34252	2	3/8 x 1-3/4 Bolt
33	220105	1	Spring
34	268148	1	Metering Gate Positioner
35	34271	1	1/2 x 2-1/2 Bolt
36	34198	1	1/2 Thin Nylon Stop Nut
37	215187	1	Jack
38	268247	2	Attachment Mount

TURF TIGER Spreader Wheel/Hub Assembly

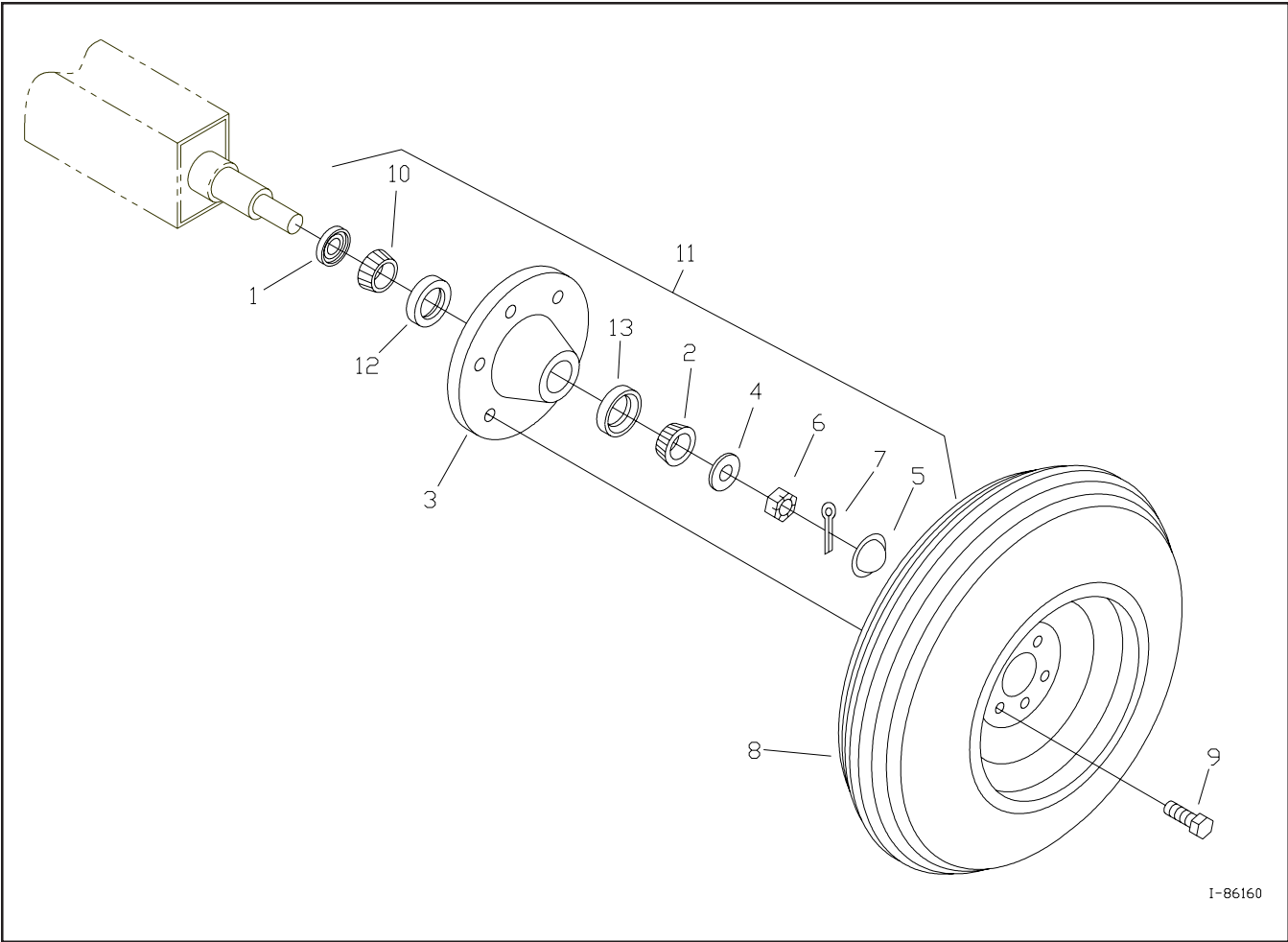


Figure A2 - Wheel/Hub Assembly Parts Detail

Wheel/Hub Assembly (continued)

<u>Item #</u>	<u>MC Part #</u>	<u>Qty.</u>	<u>Component Description</u>
1	215166	2	Grease Seal
2	215303	2	Outer Bearing Cone
3	215170	2	Hub
4	34216	2	Spindle Washer
5	215169	2	Dust Cap
6	215168	2	Spindle Nut
7	34347	2	Cotter Pin
8	215295	2	Ribbed Tire on Rim (<i>shown</i>)
	215292	2	14 x 16.1 Rim for Ribbed Tire
	215275	2	Ribbed Tire
	215276	2	Turf Tire on Rim (<i>optional</i>)
	215272	2	16 x 16.1 Rim for Turf Tire
	215274	2	Turf Tire
	215342	2	Truck Tire (<i>optional</i>)
9	215289	16	Lug Bolt
10	215167	2	Inner Bearing Cone
11	215111	2	Complete Hub
12	215300	2	Inner Bearing Cup
13	215302	2	Outer Bearing Cup

TURF TIGER Spreader Drive Assembly

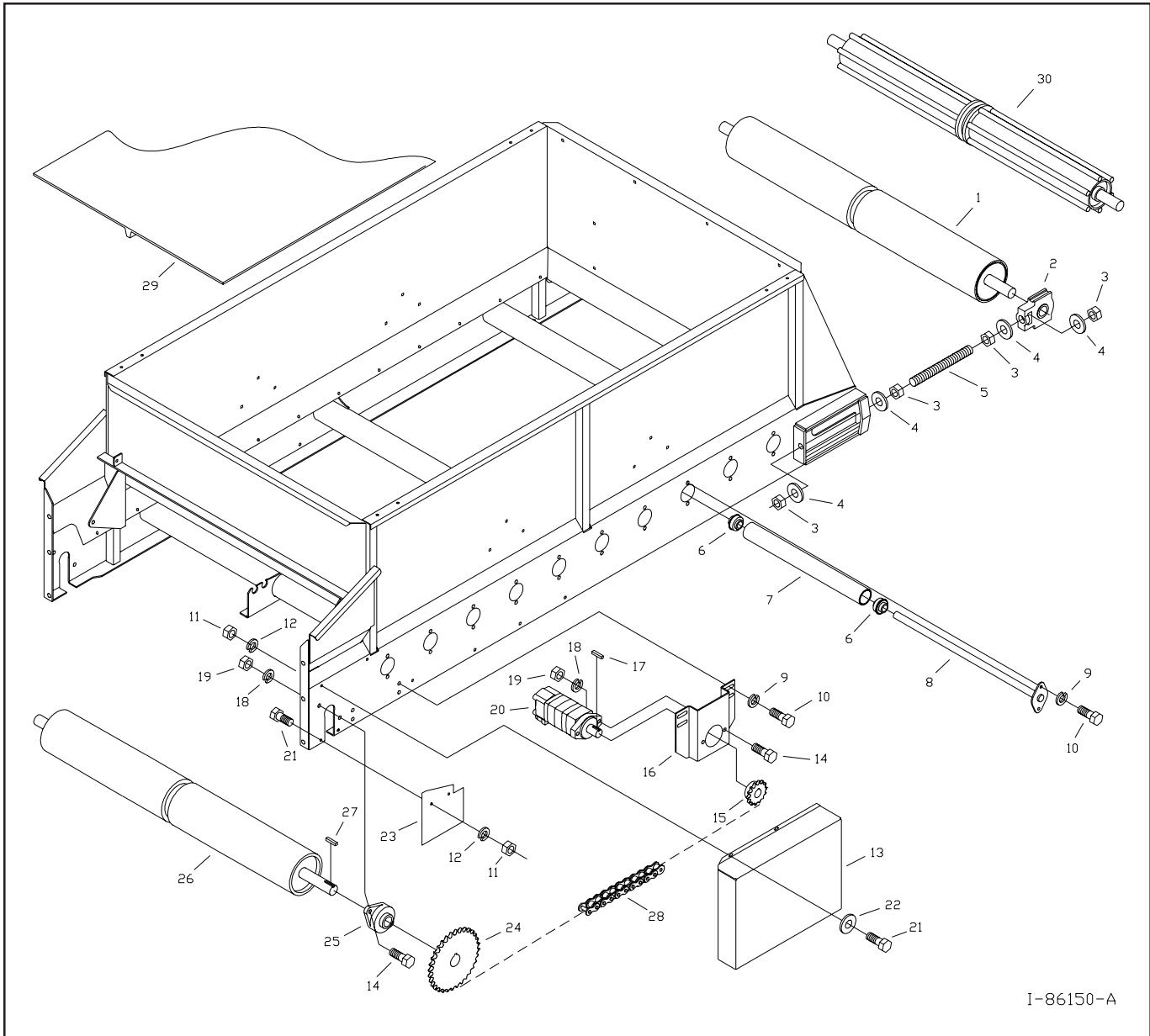


Figure A3 - Drive Assembly Parts Detail

Drive Assembly (continued)

<u>Item #</u>	<u>MC Part #</u>	<u>Qty.</u>	<u>Component Description</u>
1	215293	1	Front Roller
2	210331	2	Front Bearing
3	34143	8	3/4 Nut
4	34201	8	3/4 Washer
5	268126	2	3/4 x 9 Thread Rod
6	210329	40	Insert Bearing
7	268005	20	Floor Roller
8	268043	20	Roller Shaft
9	34141	44	3/8 Lock Washer
10	34199	44	3/8 x 1 Bolt
11	34020	5	5/16 Nut
12	34203	5	5/16 Lock Washer
13	268122	1	Outer Shield
14	34226	6	1/2 x 1-1/2 Bolt
15	210333	1	14 Tooth Sprocket
16	268081	1	Motor Mount Bracket
17	210344	1	5/16 Key
18	34035	6	1/2 Lock Washer
19	34034	6	1/2 Nut
20	240140	1	Motor
21	34200	5	5/16 x 3/4 Bolt
22	34057	2	5/16 Washer
23	268130	1	Inside Shield
24	210332	1	32 Tooth Sprocket
25	210330	2	Rear Bearing
26	215294	1	Rear Roller
27	210224	1	3/8 Key
28	210231	1	#60 Roller Chain (56 links)
29	215257	1	Floor Belt
30	215341	1	Front Clean-out Roller (<i>Service Part</i>)

TURF TIGER Spreader Belt Scraper Assembly

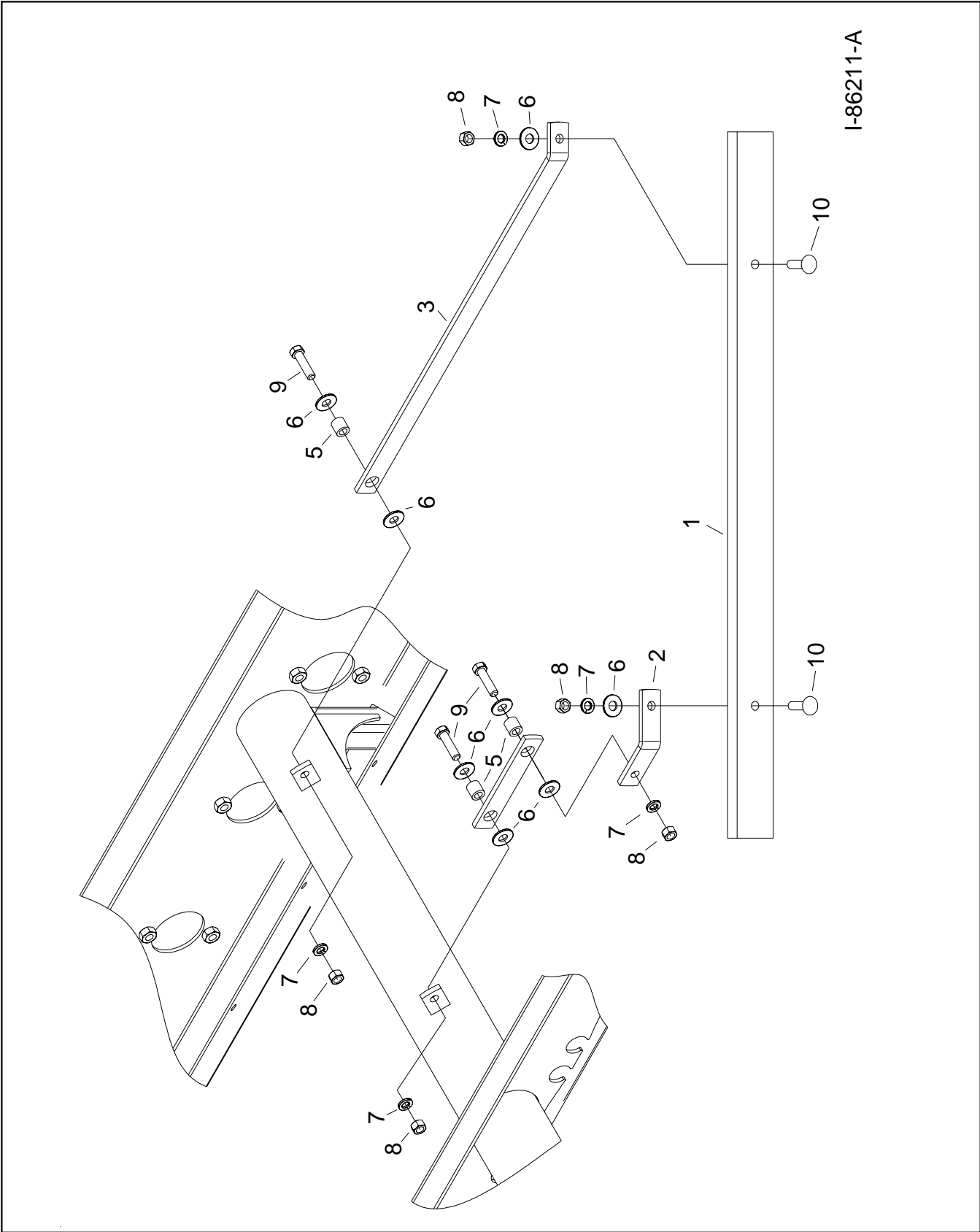


Figure A4 - Belt Scraper Assembly Parts Detail

Belt Scraper Assembly (continued)

<u>Item #</u>	<u>MC Part #</u>	<u>Qty.**</u>	<u>Component Description</u>
1	268158	1	Belt Scraper
2	268157	1	Belt Scraper Bracket
3	268159	1	Belt Scraper Long Link
4	268161	1	Belt Scraper Short Link
5	280262	3	Spacer
6	34018	8	3/8 Flat Washer
7	34141	5	3/8 Lock Washer
8	34087	5	3/8 Nut
9	34255	3	3/8 x 1½ Bolt
10	34218	2	3/8 x 1½ Bolt

****NOTE:** The drawing and parts list for the belt scraper assembly show one side/one set only; this assembly is installed (duplicated) on BOTH sides of the spreader. Be sure to order parts accordingly.

TURF TIGER Spreader Hydraulics Assembly

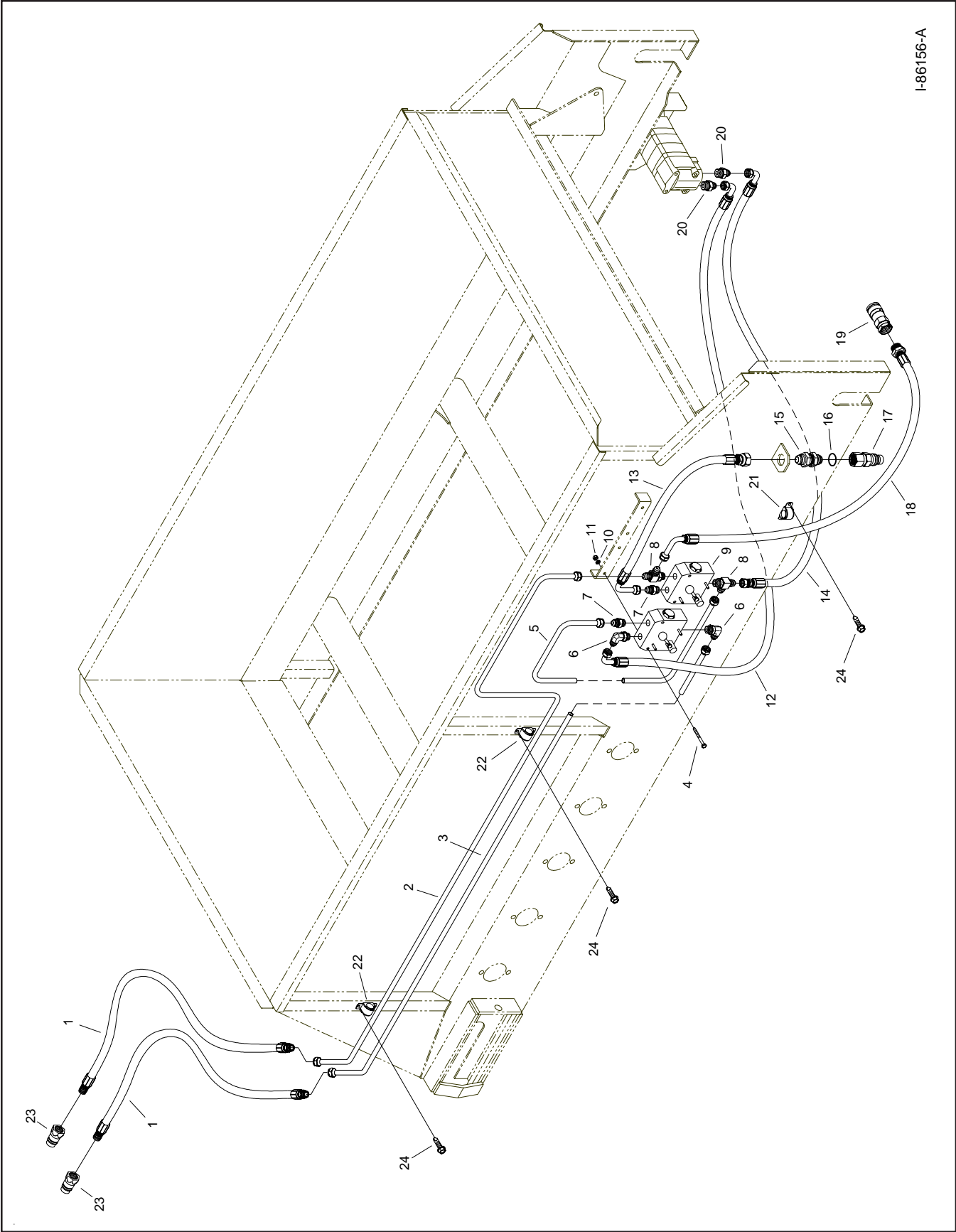


Figure A5 - Hydraulics Assembly Parts Detail

Hydraulics Assembly (continued)

<u>Item #</u>	<u>MC Part #</u>	<u>Qty.</u>	<u>Component Description</u>
1	243105	2	Hoses to Tractor
2	240253	1	Return Tube
3	240204	1	Pressure Tube
4	34301	4	1/4 x 2-1/2 Bolt
5	240252	1	Flow Control Connect Tube
6	240150	2	Adapter Fitting 8MB-8MJ90
7	240151	2	Adapter Fitting 8MJ-8MB
8	240149	2	Adapter Fitting 8MJ-8MB-8MJ
9	240256	2	Flow Control Valve
10	34235	4	1/4 Lock Washer
11	34003	4	1/4 Nut
12	243106	1	Drive Pressure Hose
13	243171	1	Attachment Pressure Hose
14	243107	1	Drive Return Hose
15	240247	1	Adapter Fitting 8MJ-8BKHD
16	240244	1	O-Ring 8MB
17	240255	1	Male Quick Coupler
18	243172	1	Attachment Return Hose
19	240254	1	Female Quick Coupler
20	240146	2	Adapter Fitting 8MJ-10MB
21	240181	1	7/8" Clamp
22	240179	4	1/2" Clamp
23	240233	2	Quick Coupler to Tractor
24	34395	8	#12-24 x 7/8" Self-Drill Screw

APPENDIX B: ATTACHMENTS & OPTIONS PARTS REFERENCE

The following attachments/options are available for the TURF TIGER Spreader. Please refer to the appropriate parts/assembly drawings provided in this Appendix. Some options come pre-assembled on the spreader from the factory; others may require assembly/installation. Please contact Millcreek for additional instructions as needed if the appropriate instructions have not been included with your shipment.

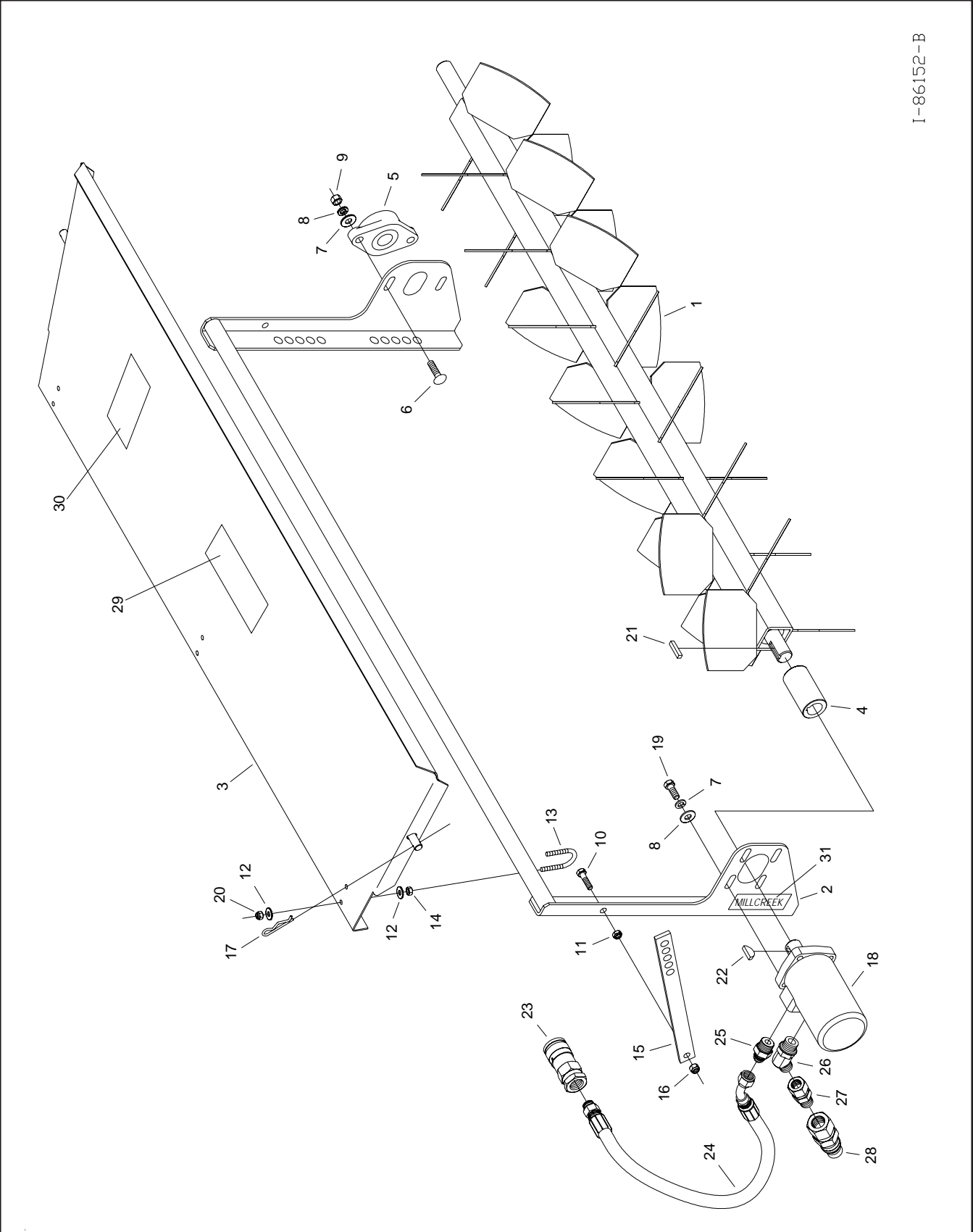
TURF TIGER Spreader Attachments & Options

- Saber Tooth™ Beater Attachment
- Brush Attachment
- Dual Spinners Attachment
- Horizontal Conveyor Attachment

- PTO Hydraulics
- Extension Sides
- 12 VDC Remote Apron Control**

***Instructions for field assembly included.*

Saber Tooth™ Beater Attachment






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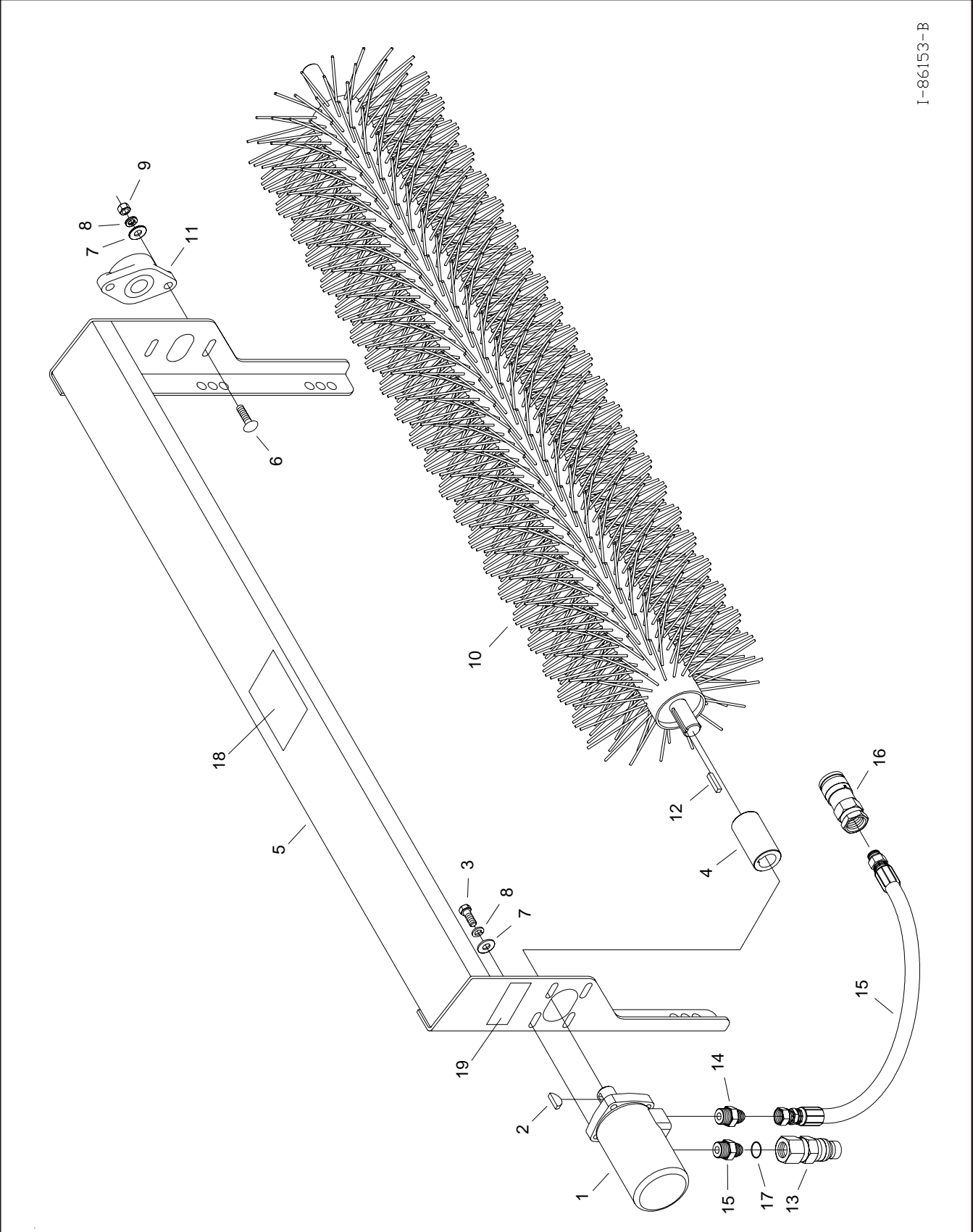
Figure B1 - Saber Tooth Beater Attachment Parts Detail

Saber Tooth™ Beater Attachment (continued)

Item #	MC Part #	Qty.	Component Description
1	268132	1	Beater
2	268116	1	Beater Frame
3	268111	1	Shield
4	220161	1	1" Shaft Coupler
5	210219	1	Cast Bearing
6	34218	2	3/8 x 1-1/2 Carriage Bolt
7	34018	6	3/8 Washer
8	34141	6	3/8 Lock Washer
9	34087	2	3/8 Nut
10	34222	2	5/16 x 1-1/4 Bolt
11	34217	2	5/16 Thin Nylon Stop Nut
12	34052	12	1/4 Washer
13	220119	3	1/4 U-bolt
14	34003	6	1/4 Nut
15	268154	2	Shield Adjuster Bar
16	34223	2	5/16 Nylon Stop Nut
17	220143	2	#11 Clip Hitch Pin
18	240135	1	Hydraulic Motor
19	34199	4	3/8 x 1 Bolt
20	34124	6	1/4 Nylon Stop Nut
21	210130	1	1/4 x 1 Key
22	210345	1	1/4 Woodruff Key
23	240254	1	Female Quick Coupler
24	243170	1	Beater Hose
25	240146	1	Adapter Fitting 8MJ-10MB
26	240251	1	Adapter Fitting 10MB-8MJ45
27	240250	1	Adapter Fitting 8MB-8FJX
28	240255	1	Male Quick Coupler
29	42700	1	Millcreek Logo Label
30	42710	1	WARNING Label - Flying Debris
31	42797	1	Serial Number Label - Attachment

 WARNING	
 	<p>Entanglement / Flying Debris Hazards.</p> <p>DO NOT STAND in back of machine while engine is running and/or machine is operating. Rotating beaters and/or flying debris can cause serious personal injury or death.</p> <p>Approach the rear of the machine ONLY when all power sources are shut OFF and all moving parts have stopped.</p> <p style="text-align: right;">42710</p>

Brush Attachment



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Figure B2 - Brush Attachment Parts Detail

Brush Attachment (continued)

<u>Item #</u>	<u>MC Part #</u>	<u>Qty.</u>	<u>Component Description</u>
1	240225	1	Hydraulic Motor
2	210345	1	1/4 Woodruff Key
3	34199	4	3/8 x 1 Bolt
4	220161	1	1" Shaft Coupler
5	268100	1	Brush Frame
6	34218	2	3/8 x 1-1/2 Carriage Bolt
7	34018	6	3/8 Washer
8	34141	6	3/8 Lock Washer
9	34087	2	3/8 Nut
10	268101	1	Brush
11	210219	1	Cast Bearing
12	210130	1	1/4 x 1 Key
13	240255	1	Male Quick Coupler
14	240146	2	Adapter Fitting 10MB-8MJ
15	243173	1	Brush Hose
16	240254	1	Female Quick Coupler
17	240244	1	#8 O-Ring
18	42709	1	Millcreek Logo Label
19	42797	1	Serial Number Label - Attachment

Dual Spinners Attachment

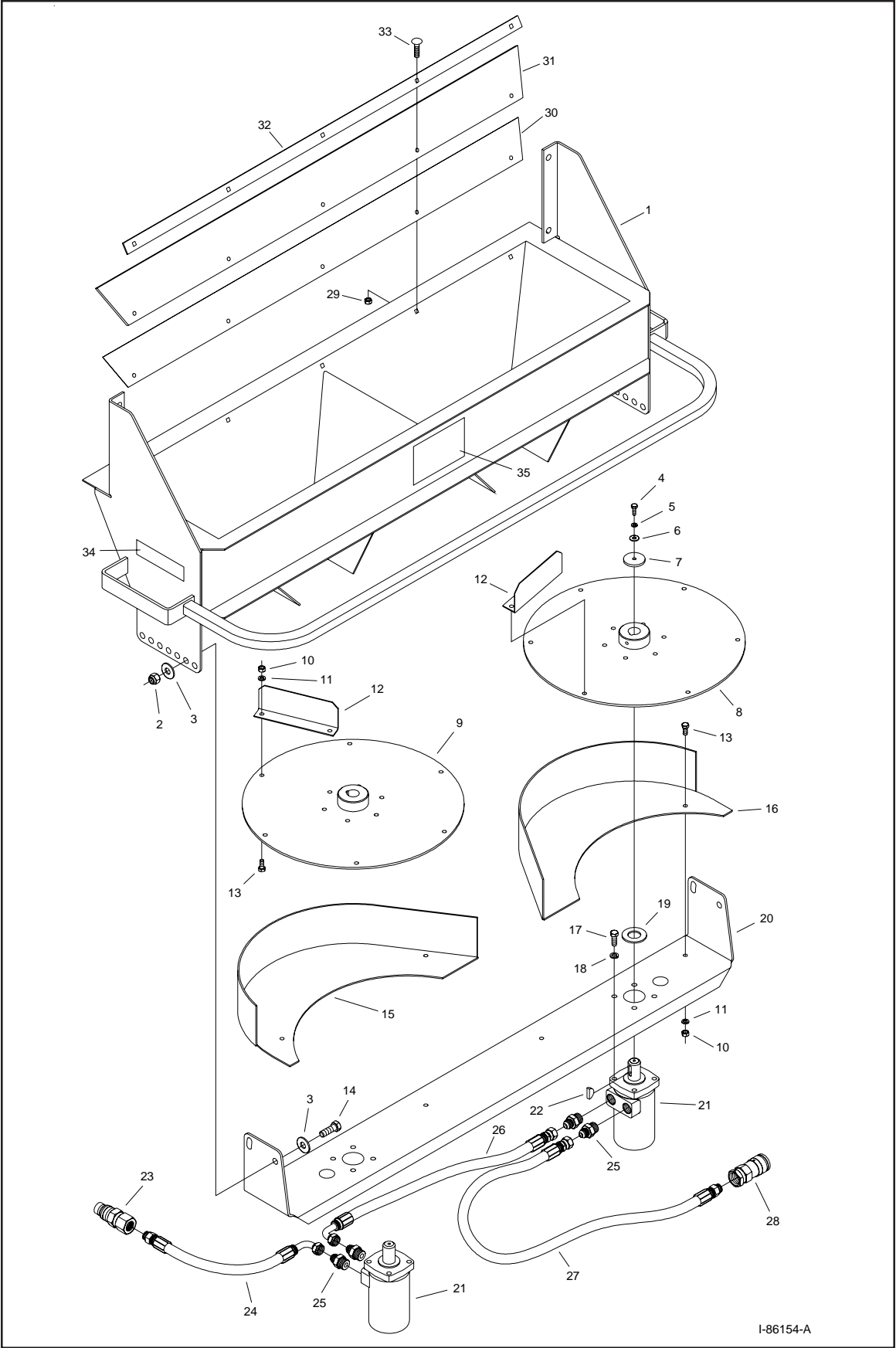
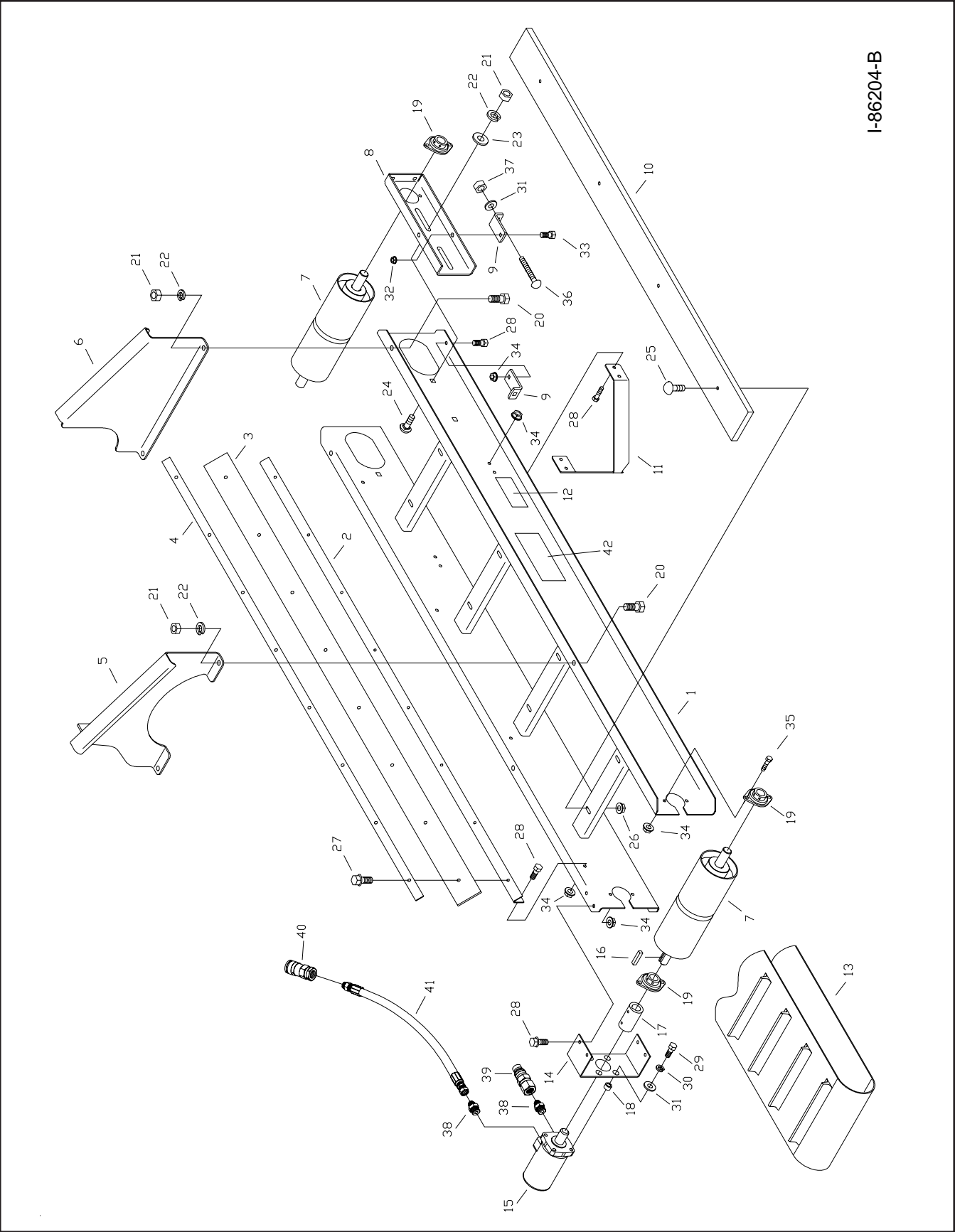


Figure B3 - Dual Spinners Attachment Parts Detail

Dual Spinners Attachment (continued)

<u>Item #</u>	<u>MC Part #</u>	<u>Qty.</u>	<u>Component Description</u>
1	268074	1	Hopper
2	34211	4	1/2 Nylon Stop Nut
3	34094	8	1/2 Washer
4	34234	2	1/4 x 3/4 Bolt
5	34235	2	1/4 Lock Washer
6	34052	2	1/4 Washer
7	268056	2	Retaining Washer
8	268167	1	Right Spinner Disc
9	268166	1	Left Spinner Disc
10	34020	28	5/16 Nut
11	34203	28	5/16 Lock Washer
12	268066	12	Paddle
13	34200	28	5/16 x 3/4 Bolt
14	34226	4	1/2 x 1-1/2 Bolt
15	268164	1	Left Shield
16	268165	1	Right Shield
17	34199	8	3/8 x 1 Bolt
18	34141	8	3/8 Lock Washer
19	268169	4	Spacer
20	268055	1	Spinner Deck
21	240135	2	Hydraulic Motor
22	210345	2	1/4 Woodruff Key
23	240255	1	Male Quick Coupler
24	243174	1	Spinner Return Hose
25	240146	4	Adapter Fitting 8MJ-10MB
26	243144	1	Spinner Connect Hose
27	243175	1	Spinner Pressure Hose
28	240254	1	Female Quick Coupler
29	34099	5	5/16 Flange Nut
30	268180	1	Seal Back Support
31	220180	1	Seal
32	268176	1	Seal Hold Down
33	34275	5	5/16 x 1 Carriage Bolt
34	42797	1	Serial Number Label - Attachment
35	42700	1	Millcreek Logo Label

Horizontal Conveyor Attachment



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Figure B4 - Horizontal Conveyor Attachment Parts Detail

Horizontal Conveyor Attachment (continued)

<u>Item #</u>	<u>MC Part #</u>	<u>Qty.</u>	<u>Component Description</u>
1	268238	1	Conveyor Frame WA
2	268244	2	Seal Holder
3	215337	2	Rubber Conveyor Seal
4	268243	2	Seal Hold-Down
5	268194	1	Conveyor Bracket Left WA
6	268196	1	Conveyor bracket Right WA
7	215338	2	4 1/2 Conveyor Roller
8	270216	2	Belt Tensioner Beam
9	270323	4	Conveyor Bracket
10	268241	2	Poly Board
11	268229	1	Belt Scraper
12	42797	1	Serial Number Label - Attachment
13	215336	1	Conveyor Belt
14	268215	1	Motor Mount
15	240225	1	Hydraulic Motor 4.5 cu-in/rev
16	210130	1	1/4 x 1 Key
17	220161	1	1" Shaft Coupler
18	260998	4	Spacer
19	210144	4	Spherical Bearing 1"
20	34239	4	1/2 x 1 Bolt
21	34034	8	1/2 Nut
22	34035	8	1/2 Lock Washer
23	34094	4	1/2 Flat Washer
24	34246	4	1/2 x 1-1/2 Carriage Bolt
25	34282	8	5/16 x 1-1/2 Carriage Bolt
26	34367	8	5/16 Wide Flange Nut
27	34118	16	5/16 x 3/4 Self Tap Screw
28	34328	18	5/16 x 3/4 Flange Bolt
29	34224	4	3/8 x 1-1/4 Bolt
30	34141	4	3/8 Lock Washer
31	34018	6	3/8 Flat Washer
32	34009	2	3/8 Flange Nut
33	34330	2	3/8 x 3/4 Flange Bolt
34	34099	26	5/16 Flange Nut
35	34250	8	5/16 x 1 Carriage Bolt
36	34213	2	3/8 x 5 Carriage Bolt
37	34220	2	3/8 Lock Nut
38	240146	2	Adapter Fitting 8MJ-10MB
39	240255	1	1/2" Male Quick Coupler
40	240254	1	1/2" Female Quick Coupler
41	243176	1	1/2" Hose 8MB-8FJX
42	42700	1	Millcreek Logo Label

PTO Hydraulics Assembly (continued)

<u>Item #</u>	<u>MC Part #</u>	<u>Qty.</u>	<u>Component Description</u>
1	268151	2	Mounting Bracket
2	270535	1	PTO Shield
3	268104	1	Pump Mount
4	240147	1	Adapter Fitting 20HS-20MB90
5	240207	1	Pump
6	240165	1	Adapter Fitting 16MB-8MJ
7	243138	1	Pump Outlet Hose
8	240123	1	Adapter Fitting 20HS-20MP90
9	240245	2	Adapter Fitting 12MB-8MJ
10	240248	1	Relief Valve
11	243139	1	Pressure Hose
12	240249	1	Adapter Fitting 12MB-12MP
13	240219	1	Adapter Fitting 12FP-12FP90
14	240218	1	Adapter Fitting 12MP-12MP
15	240130	1	Filter Head
16	240217	1	Adapter Fitting 12MP-8MJ
17	243140	1	Return Hose
18	240131	1	Filter
19	268145	1	Reservoir
20	240178	1	Oil Level Gauge
21	240184	1	6" Clean Out Door
	240263	1	Seal for 6" Door
22	240138	2	1-3/4" T-Bolt Clamp
23	243145	1	Suction Hose
24	32241	1	3/4" NPT Plug
25	240188	1	Fill Cap
26	210336	1	PTO Shaft
27	34293	4	1/2 x 5 Bolt
28	34226	2	1/2 x 1-1/2 Bolt
29	34035	6	1/2 Lock Washer
30	34034	6	1/2 Nut
31	34200	2	5/16 x 3/4 Bolt
32	34203	6	5/16 Lock Washer
33	34020	6	5/16 Nut
34	34250	4	5/16 x 1 Carriage Bolt
35	42719	1	DANGER Label - Rotating PTO Driveline



Extension Sides

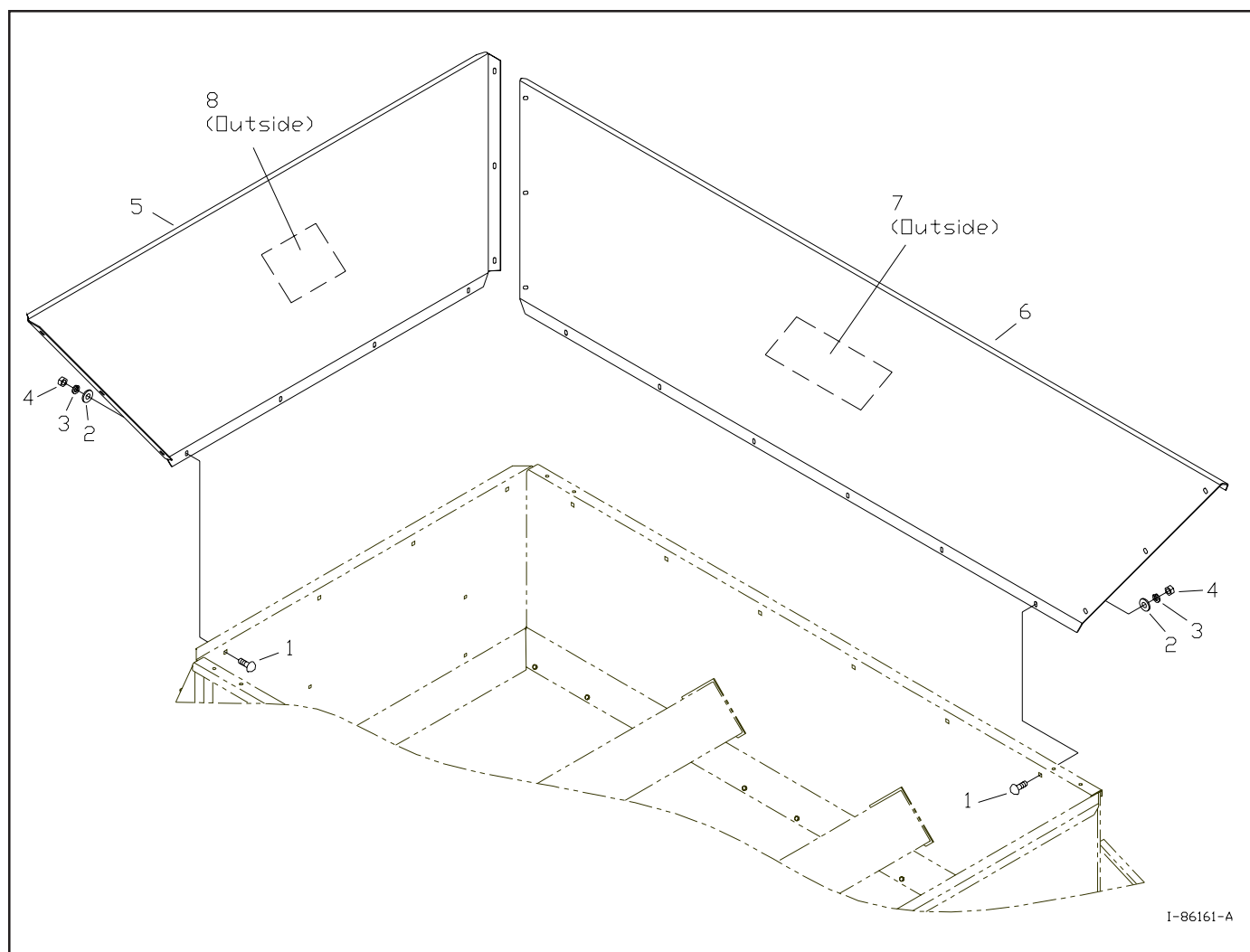


Figure B6 - Extension Sides Parts Detail

<u>Item #</u>	<u>MC Part #</u>	<u>Qty.</u>	<u>Component Description</u>
1	34275	32	5/16 x 1 Carriage Bolt
2	34057	32	5/16 Washer
3	34203	32	5/16 Lock Washer
4	34020	32	5/16 Nut
5	268170	2	Front and Back Extension
6	268171	2	Extension Side
7	42778	2	Millcreek Logo Label
8	42768	2	Load Limit Label

ATTENTION

**DO NOT EXCEED
7500 lbs (3400 kg)
PAYLOAD**

12 VDC Remote Apron Control

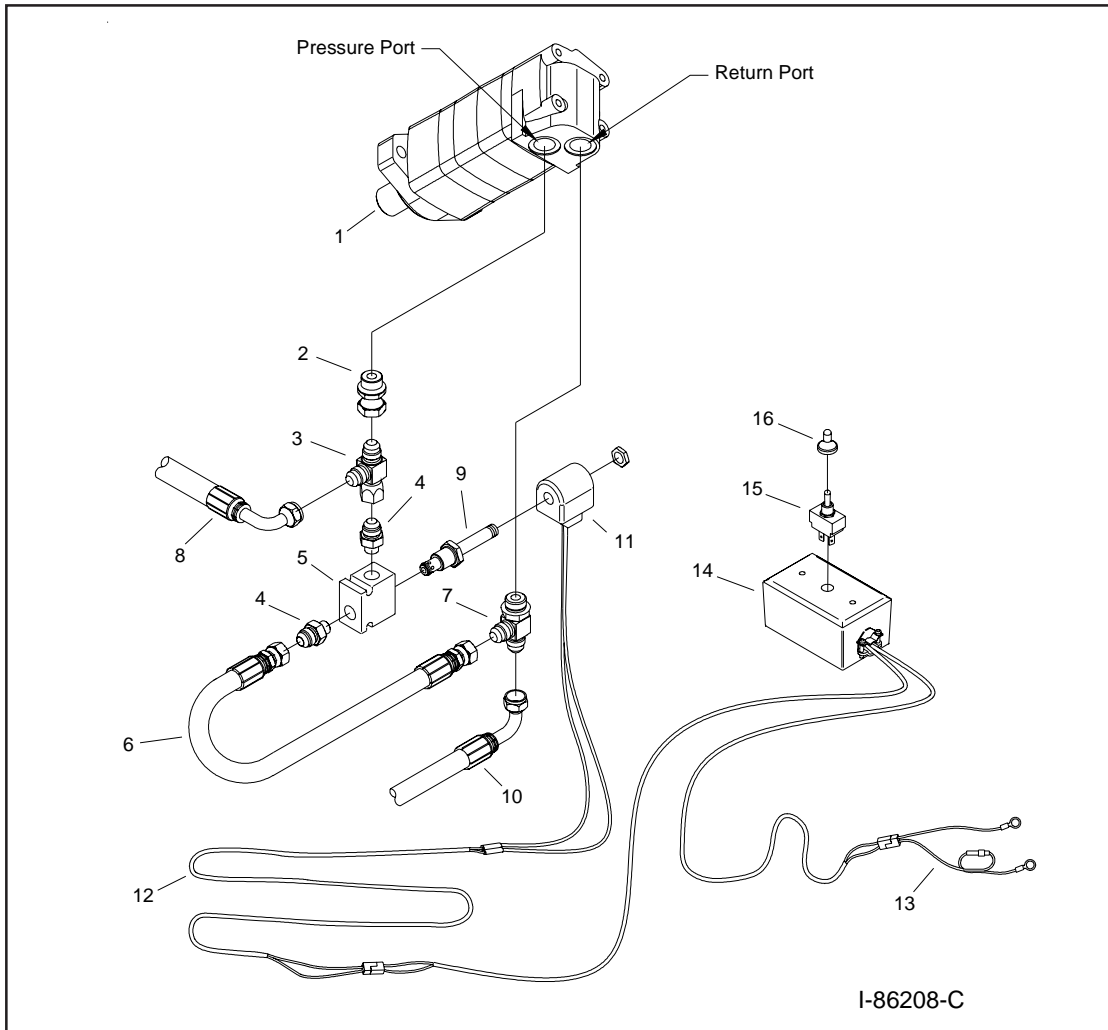


Figure B7 - 12 VDC Remote Apron Control Parts Detail

<u>Item #</u>	<u>MC Part #</u>	<u>Qty.</u>	<u>Component Description</u>
1	240140	1	Motor
2	240239	1	Adapter 10MB-8FJX
3	240240	1	Tee 8MJ-8FJX-8MJ
4	240241	2	Adapter 8MJ-6MB
5	240235	1	Aluminum Valve Housing
6	243169	1	Hose 1/2 x 24.5 Assembly
7	240238	1	Tee 8MJ-10MB-8MJ
8	243169	1	Drive Pressure Hose
9	240236	1	Cartridge Valve
10	243107	1	Drive Return Hose
11	240237	1	12 V DC Coil
12	268179	1	Extension Wire
13	261073	1	Battery Wire and SFE-20 Fuse
14	268178	1	Switch Box Assembly (includes items 15, 16)
15	33237	1	Switch SPST
16	33406	1	Switch Boot

12 VDC Remote Apron Control

The 12 VDC Remote Apron Control provides precise spot application control for multiple "stop and go" drops with a single load. A real time saver, the remote apron control is easy to operate and prevents unwanted dumping or spillage, which often occur at spreader startup.

Field Service Procedure: Installing the Remote Apron Control



CAUTION: Before installing the 12 VDC Remote Apron Control, move the spreader to a level surface and block the wheels to prevent movement; failure to do so may result in serious personal injury.

1. If applicable, ensure that the tractor is turned OFF and all moving parts have stopped. Detach the spreader from the tractor.
2. Lower the spreader jack as far as possible. This will raise the rear of the machine and provide more work space.
3. Refer to Figure B7, which shows the component parts detail of the Remote Apron Control.
4. Locate the apron motor under the rear of the spreader, and note the location of the Pressure Port and Return Port as shown in the drawing. (Parts #8 and #10 represent the hydraulic hoses connected to the Pressure Port and Return Port, respectively.)
5. Position a bucket underneath the hoses (to catch any oil collected in the lines), and disconnect the fittings/hoses from the apron motor.
NOTE: As shown in Figure B7, these hoses will eventually be re-connected to the Remote Apron Control Fittings; for proper functioning of the new control, it is extremely important that the proper hoses be connected to the corresponding new fittings as shown.
6. Clearances for the installation of the new fittings will be tight, therefore the ***ORDER of installation is extremely important***. Please follow these instructions specifically:
 - The Remote Apron Control fittings are pre-assembled. For proper installation, you will need to disassemble fittings (#7) and (#2) from the other components, so they can be installed individually.
 - Install the tee fitting (#7) ***by itself*** into the Return Port. Tighten and ensure that the branch of the tee is facing the left of the machine.
 - Install the swivel adapter (#2) ***by itself*** into the Pressure Port.
 - Assemble the remaining fittings as shown in Figure B7.
7. Connect the Pressure hose (#8) to the branch of tee fitting (#3).
8. Connect the Return hose (#10) to the straight of the tee fitting (#7).
9. Check all fittings/connections to ensure all are tightened.
10. Connect the wires coming from the coil (#11) to the wire leading to the switch box (#14).
11. Run the wire (going to the switch box) along the hydraulic hoses all the way up to the tractor. Secure the wire with wire ties wherever needed.
12. Mount the switch box on the tractor wherever desired (i.e. within easy reach of the tractor operator).
13. Connect the battery wires from the switch box to the battery on the tractor. Make sure that the wire with the fuse is attached to the positive terminal on the battery.
14. Start the tractor; the Remote Apron Control switch should be in the OFF position.
NOTE: With the switch in the OFF position the spreader apron should operate normally.
15. With the spreader running, check all hydraulic fittings/hoses for leaks.
16. Switch the Remote Apron Control to the ON position. The apron should stop.

Field Service Procedure: Installing the Remote Apron Control (continued)

17. Flip the Remote Apron Control switch OFF.
ATTENTION: Whenever the tractor is turned OFF, the Remote Apron Control switch must also be turned OFF. Leaving the control switch in the ON position with the tractor not running will drain the tractor battery.
18. Before proceeding with regular spreader operation, re-check for any hydraulic leaks.

Operating the Remote Apron Control

1. Start the tractor; the Remote Apron Control switch should be in the OFF position (the apron operates normally).
2. When you want the apron movement to stop, switch the Remote Apron Control to the ON position.
3. When you want to restart the apron, flip the Remote Apron Control switch OFF.

ATTENTION: When you are finished operating the spreader, ensure that the Remote Apron Control switch is turned OFF. Leaving the control switch in the ON position with the tractor not running will drain the tractor battery.

