

**Degelman**

**BRAKE ASSIST SYSTEM  
INSERT SHEET**

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***manure spreader***

**M28**

**M34**



**246779 v1.1**

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**M28 & M34 MANURE SPREADER  
OPTIONAL BRAKE ASSIST SYSTEM**



# Operation

## HOOK-UP / OPERATION

Choose a tractor of sufficient power and weight to adequately handle the machine. It is recommended that the tractor have at least **180 PTO** horsepower for normal operating conditions, a hydraulic "Tractor Case Drain", and preferably a "Brake Port" for load assist.

1. Connect the specific hydraulic "return" line hose to the Tractor's Case Drain port. This is important in order to provide and speed up pressure relief after brakes are released. Ensure the proper "relief" hose is used here, not to be confused with the other "pressure" supply hose.
2. Connect the "pressure" hose to the tractor's "Brake Port" (if available). This allows the preferred operation of the manure spreader's Brake Assist system which should automatically be activated when the tractor's brakes are applied.

If a "Brake Port" is not available, an auxiliary hydraulic port may be used. Braking, with this alternate configuration, will involve engaging the respective hydraulic lever in order to "activate" the manure spreader's Brake Assist system in addition to the tractor's brakes. When releasing brakes, the hydraulic lever must then be returned back into float position.

## SETTING PRESSURE VALVE/BRAKE DISTANCE

**⚠ WARNING:** *Stop tractor engine, place all controls in neutral, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.*

The pressure valve range is typically set around 900 to 1000 PSI. This may need to be adjusted to ensure a proper braking balance between the Tractor's braking and the Manure Spreader Brake Assist System.

The following is a suggested procedure for adjusting this balance:

### 1. Test Tractor's Original Braking Distance

With an empty load in the spreader and driving on a smooth flat road, apply the *only* the tractor's brakes and take note of the distance required to come to a complete stop.

### 2. Set Pressure Valve and Connect Brake Assist

With an initial valve pressure setting between 900 and 1000 psi, connect the Brake Assist System as described in the previous section.

### 3. Test Loaded Trailer Braking Distance

With a loaded spreader trailer, test the braking distance again using *both* the Tractor Brakes and Brake Assist System. Compare this second distance to the original distance measured in Step 1.

### 4. Adjusting Pressure Valve Setting

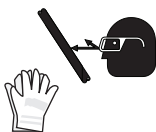
If the braking is too fast, it may be applying pressure too quickly to the brake assist system and could result in premature wear on its components. You may wish to reduce the valve pressure until a comfortable balance is achieved.

If the braking is too slow, it may be relying too much on the tractor's brakes and you may wish to increase the valve pressure until an acceptable balance is achieved.

# Service & Maintenance

## ⚠ MAINTENANCE SAFETY

- Review the Operator's Manual and all safety items before working with, maintaining or operating the Manure Spreader.
- Stop the tractor engine, place all controls in neutral, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
- Keep hands, feet, clothing and hair away from all moving and/or rotating parts.
- Clear the area of bystanders, especially children, when carrying out any maintenance and repairs or making adjustments.
- Place safety stands or large blocks under the frame before removing tires or working beneath the machine.
- Be careful when working around or maintaining a high-pressure hydraulic system. Wear proper eye and hand protection when searching for a high-pressure hydraulic leak. Use a piece of wood or cardboard as a backstop when searching for a pin hole leak in a hose or a fitting.
- Always relieve pressure before disconnecting or working on hydraulic system.
- When a guard is opened or removed for servicing, be sure to install or close it before starting.



## ⚠ HYDRAULIC SAFETY

1. Always place all tractor hydraulic controls in neutral before dismounting.
  2. Make sure that all components in the hydraulic system are kept in good condition and are clean.
  3. Replace any worn, cut, abraded, flattened or crimped hoses and metal lines.
  4. Do not attempt any makeshift repairs to the hydraulic lines, fittings or hoses by using tape, clamps or cements. The hydraulic system operates under extremely high-pressure. Such repairs will fail suddenly and create a hazardous and unsafe condition.
  5. Wear proper hand and eye protection when searching for a high-pressure hydraulic leak. Use a piece of wood or cardboard as a backstop instead of hands to isolate and identify a leak.
  6. If injured by a concentrated high-pressure stream of hydraulic fluid, seek medical attention immediately. Serious infection or toxic reaction can develop from hydraulic fluid piercing the skin surface.
  7. Before applying pressure to the system, make sure all components are tight and that lines, hoses and couplings are not damaged.
- Think SAFETY! Work SAFELY



# Service & Maintenance

## TORQUE SPECIFICATIONS

### CHECKING BOLT TORQUE

The tables shown below give correct torque values for various bolts and capscrews. Tighten all bolts to the torques specified in chart unless otherwise noted. Check tightness of bolts periodically, using bolt torque chart as a guide. Replace hardware with the same strength (Grade/Class) bolt.

#### IMPERIAL TORQUE SPECIFICATIONS

(based on "Zinc Plated" values)

Size	Grade 8	
	Grade 5	Grade 8
	lb.ft (N.m)	lb.ft (N.m)
1/4"	7 (10)	10 (14)
5/16"	15 (20)	20 (28)
3/8"	25 (35)	35 (50)
7/16"	40 (55)	60 (80)
1/2"	65 (90)	90 (120)
9/16"	90 (125)	130 (175)
5/8"	130 (175)	180 (245)
3/4"	230 (310)	320 (435)
7/8"	365 (495)	515 (700)
1"	550 (745)	770 (1050)
1-1/8"	675 (915)	1095 (1485)
1-1/4"	950 (1290)	1545 (2095)
1-3/8"	1250 (1695)	2025 (2745)
1-1/2"	1650 (2245)	2690 (3645)

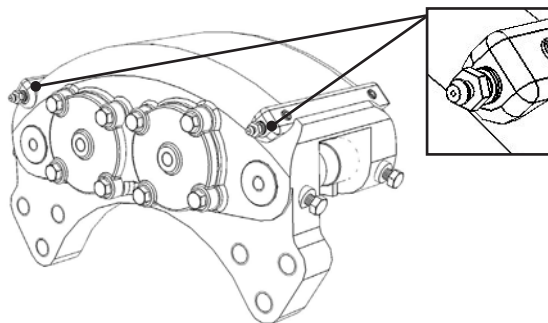
#### METRIC TORQUE SPECIFICATIONS

(based on "Zinc Plated" values)

Size	Class 8.8		Class 10.9	
	Class 8.8	Class 10.9	Class 8.8	Class 10.9
	lb.ft (N.m)	lb.ft (N.m)	lb.ft (N.m)	lb.ft (N.m)
M6	7 (10)	10 (14)	7 (10)	10 (14)
M8	16 (22)	23 (31)	16 (22)	23 (31)
M10	30 (42)	45 (60)	30 (42)	45 (60)
M12	55 (75)	80 (108)	55 (75)	80 (108)
M14	90 (120)	125 (170)	90 (120)	125 (170)
M16	135 (185)	195 (265)	135 (185)	195 (265)
M18	190 (255)	270 (365)	190 (255)	270 (365)
M20	265 (360)	380 (515)	265 (360)	380 (515)
M22	365 (495)	520 (705)	365 (495)	520 (705)
M24	460 (625)	660 (895)	460 (625)	660 (895)
M27	675 (915)	970 (1315)	675 (915)	970 (1315)
M30	915 (1240)	1310 (1780)	915 (1240)	1310 (1780)
M33	1250 (1695)	1785 (2420)	1250 (1695)	1785 (2420)
M36	1600 (2175)	2290 (3110)	1600 (2175)	2290 (3110)

## BLEEDING HYDRAULICS

It is important to bleed any air out of the hydraulic braking system before operation. This will need to be completed on both Air Bleed Vents on each of the 4 brake caliper assemblies.

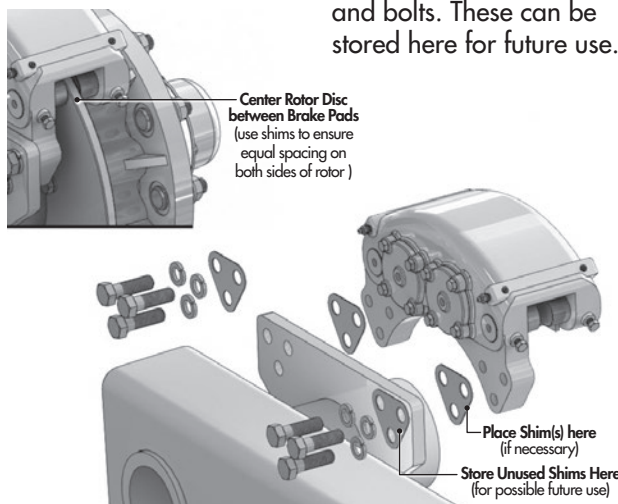


1. Loosen/remove one of the Air Bleed Vent fittings.
2. Slowly, apply pressure to hydraulic system to purge air from line until a steady stream flows. Reinstall vent fitting.
3. Repeat procedure on remaining Air Bleed Vent fittings (8 locations total).

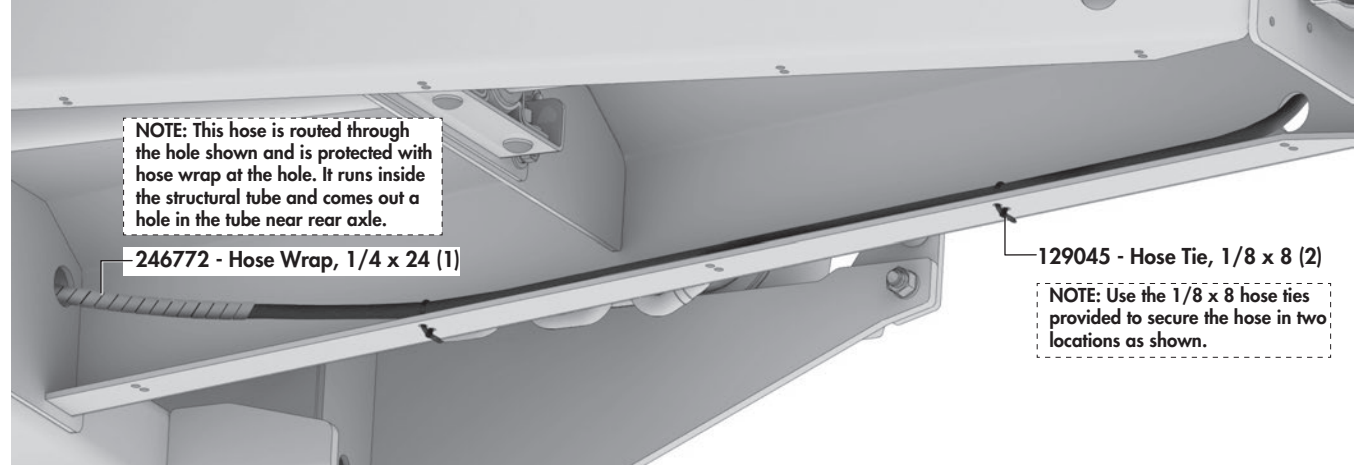
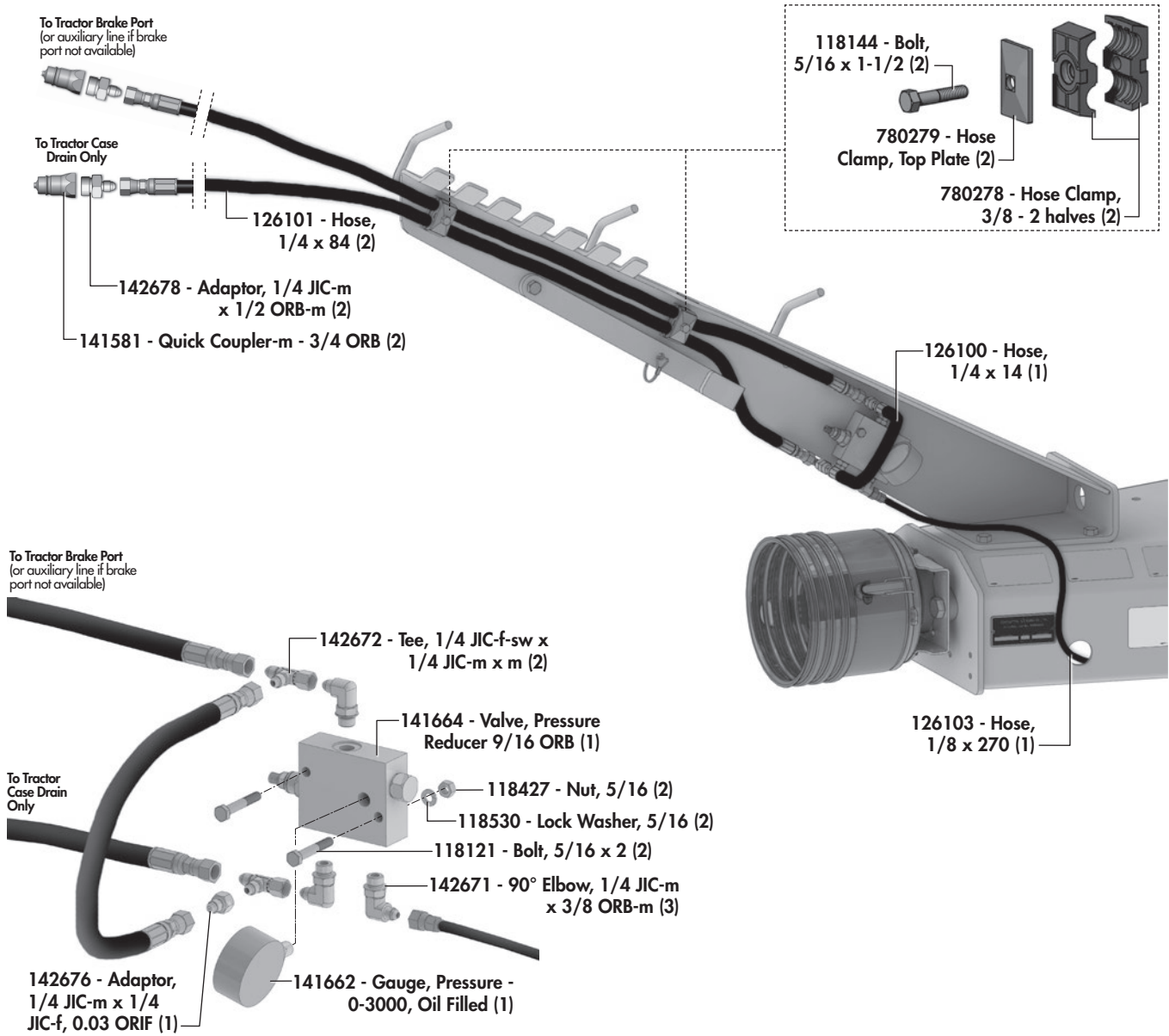
## CENTERING ROTOR ON BRAKE ASSEMBLY

When installing the Brake Assembly, it is important to use the shims provided in order to properly center the rotor disc is between the brake pads.

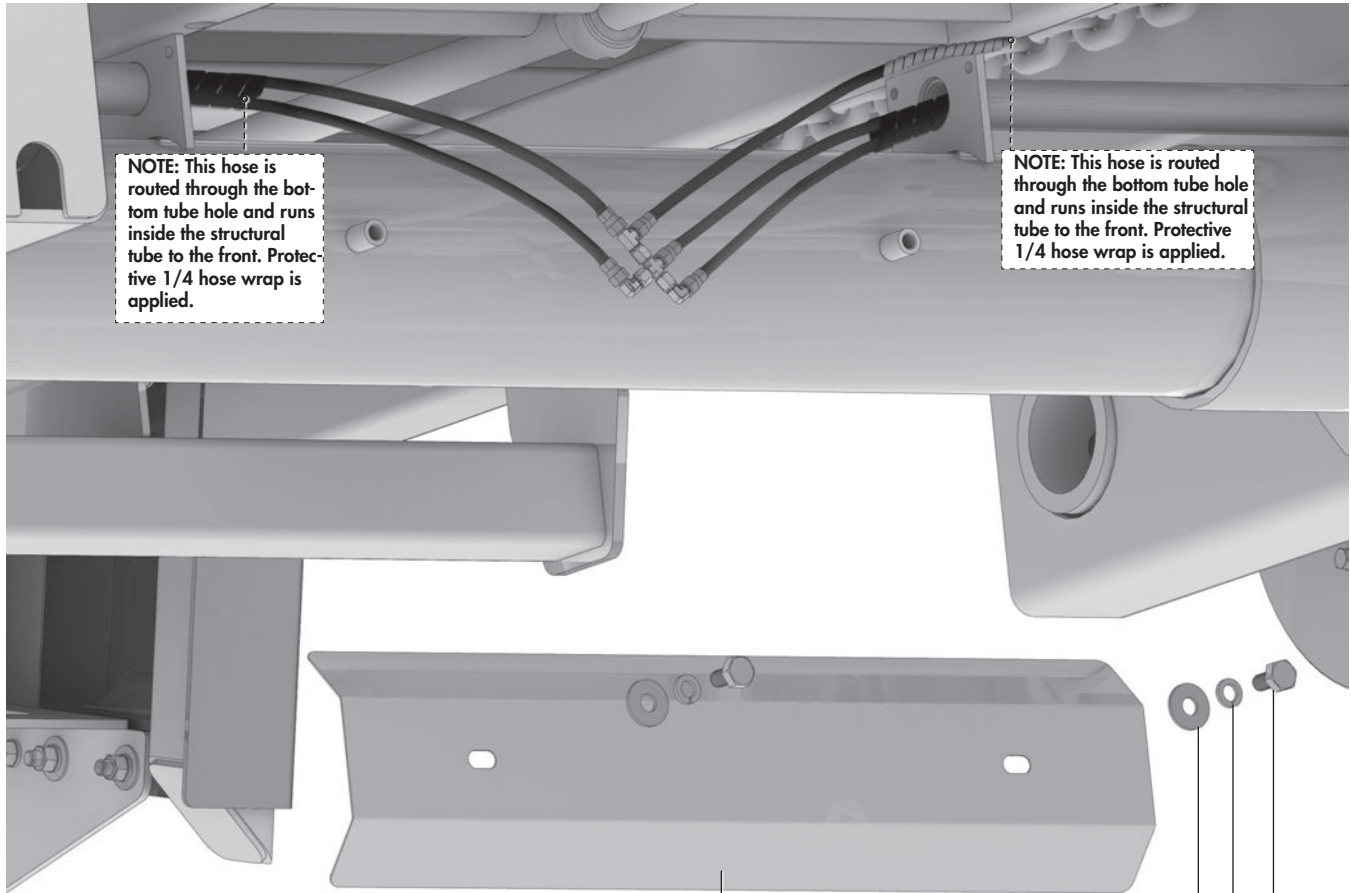
1. Position the brake assembly into place and temporarily fasten with a couple of bolts.
2. Check the positioning of the Rotor Disc in relation to the brake pads. If it is "off center" try reinstalling using shims to properly position rotor evenly between the brake pads.
3. Before final installation, place any unused shims on out side of frame before installing washers and bolts. These can be stored here for future use.



# Hydraulic Routing - Front Connections



# Hydraulic Routing - Rear Connection

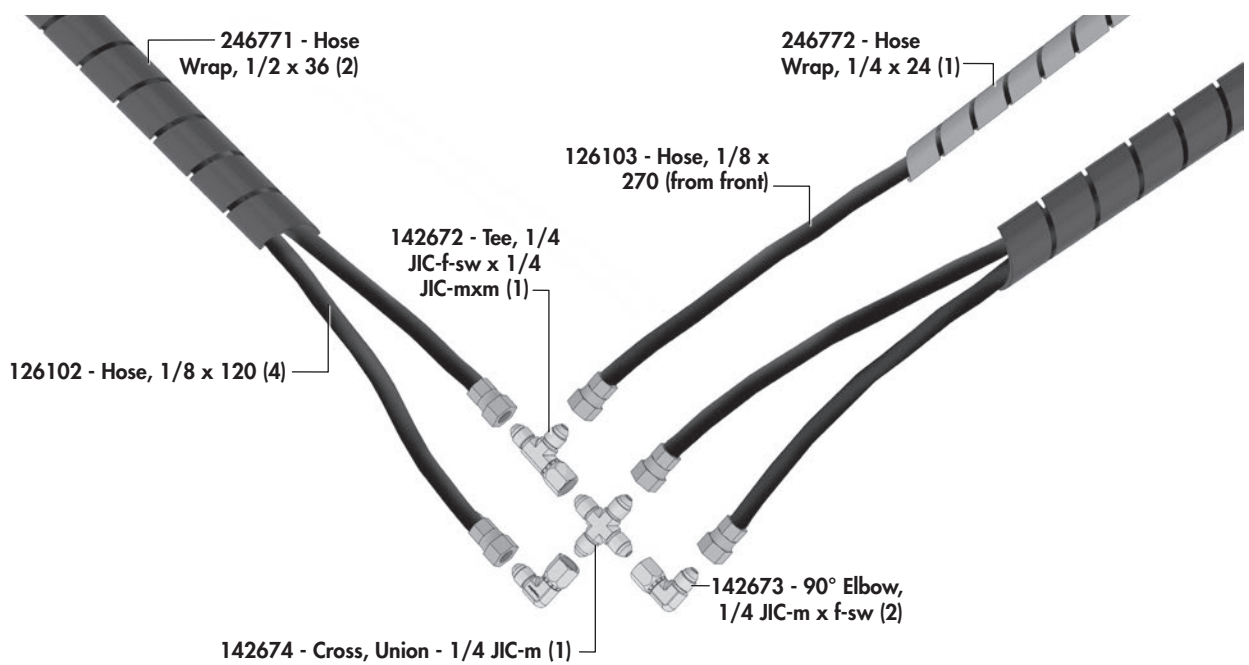


NOTE: This hose is routed through the bottom tube hole and runs inside the structural tube to the front. Protective 1/4 hose wrap is applied.

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246773 - Brake Line Shield, w/ gasket (1)

118514 - Flat Washer, 5/8 (2)  
 118508 - Lock Washer, 5/8 (2)  
 118645 - Bolt, 5/8 x 1-1/4 (2)



246771 - Hose Wrap, 1/2 x 36 (2)

246772 - Hose Wrap, 1/4 x 24 (1)

126103 - Hose, 1/8 x 270 (from front)

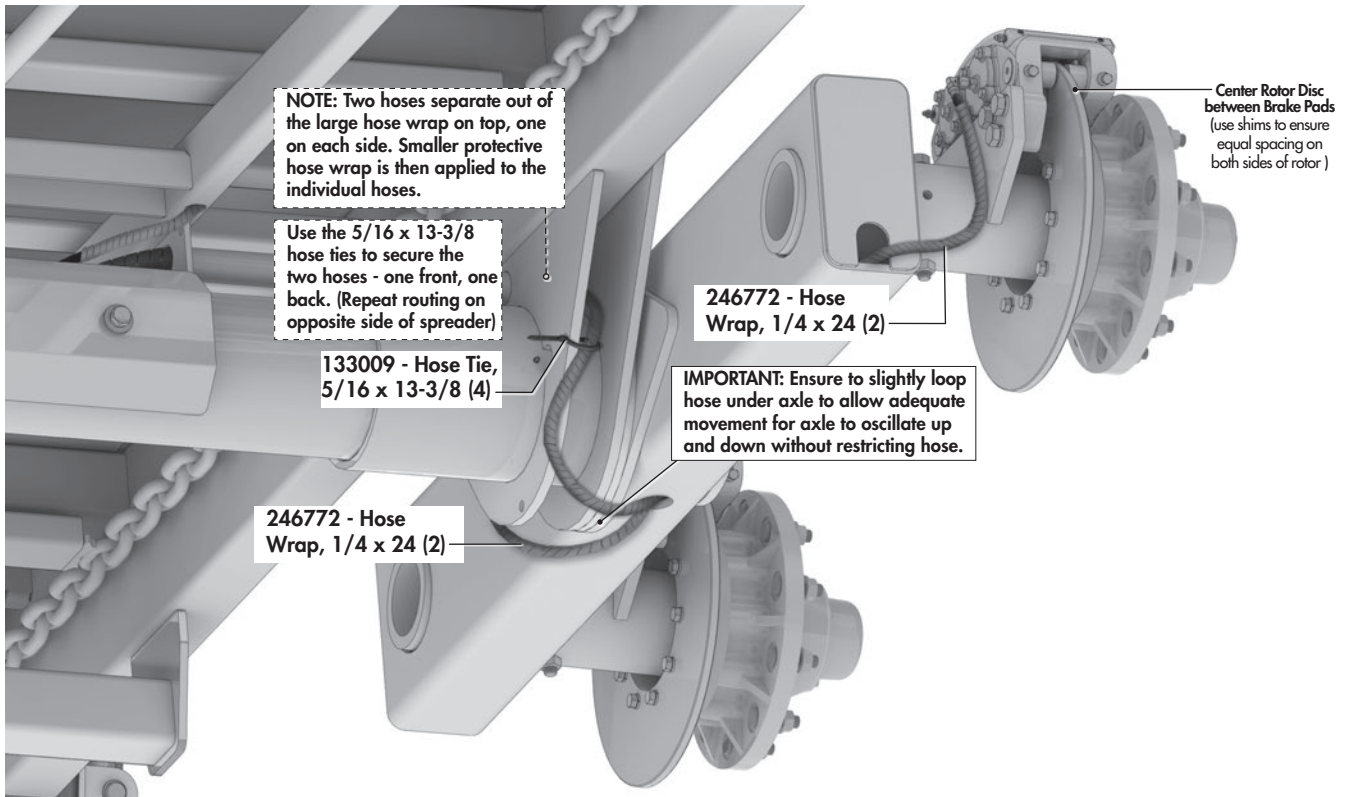
142672 - Tee, 1/4 JIC-f-sw x 1/4 JIC-mxm (1)

126102 - Hose, 1/8 x 120 (4)

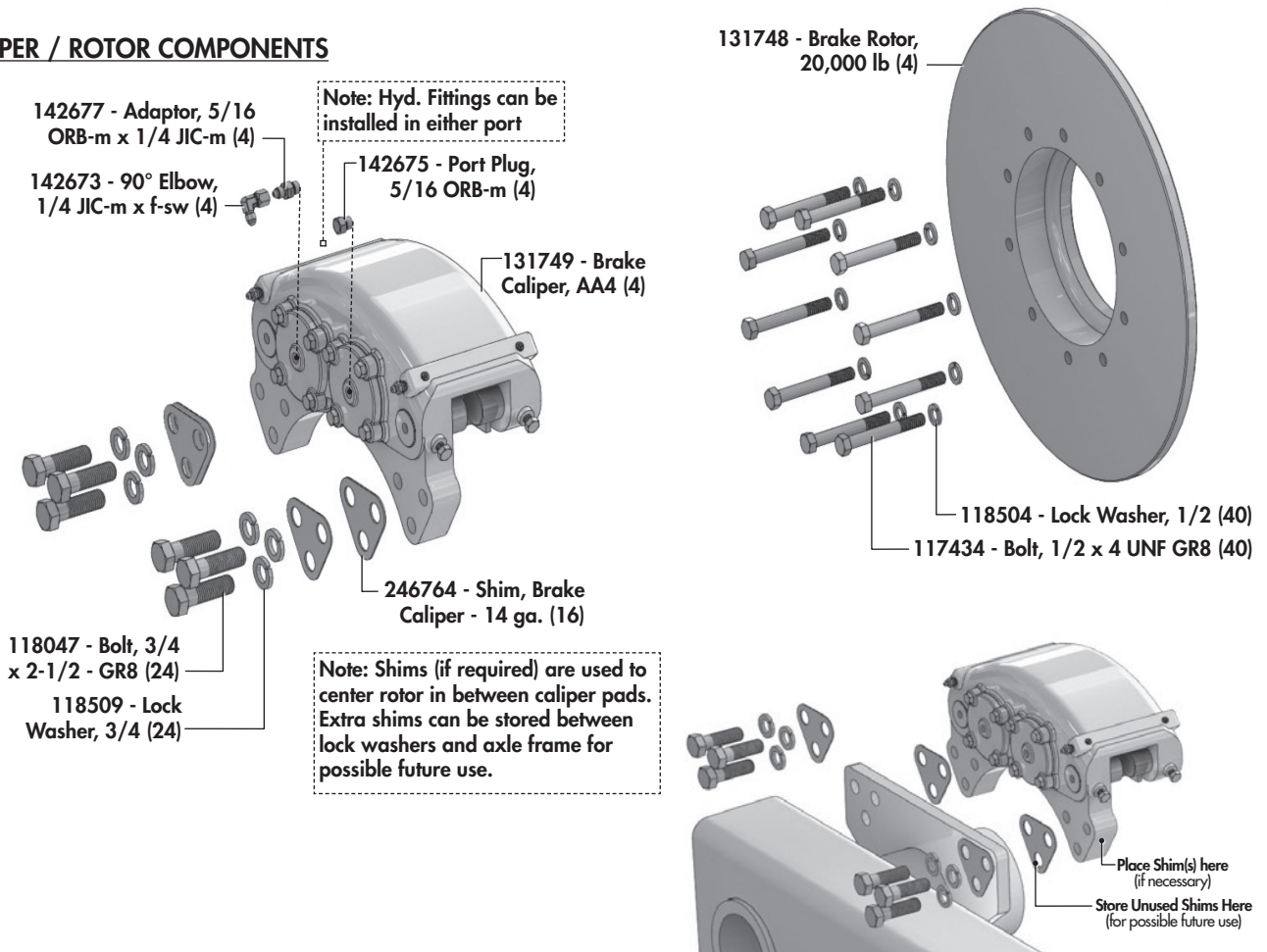
142674 - Cross, Union - 1/4 JIC-m (1)

142673 - 90° Elbow, 1/4 JIC-m x f-sw (2)

# Hydraulic Routing / Brake Components

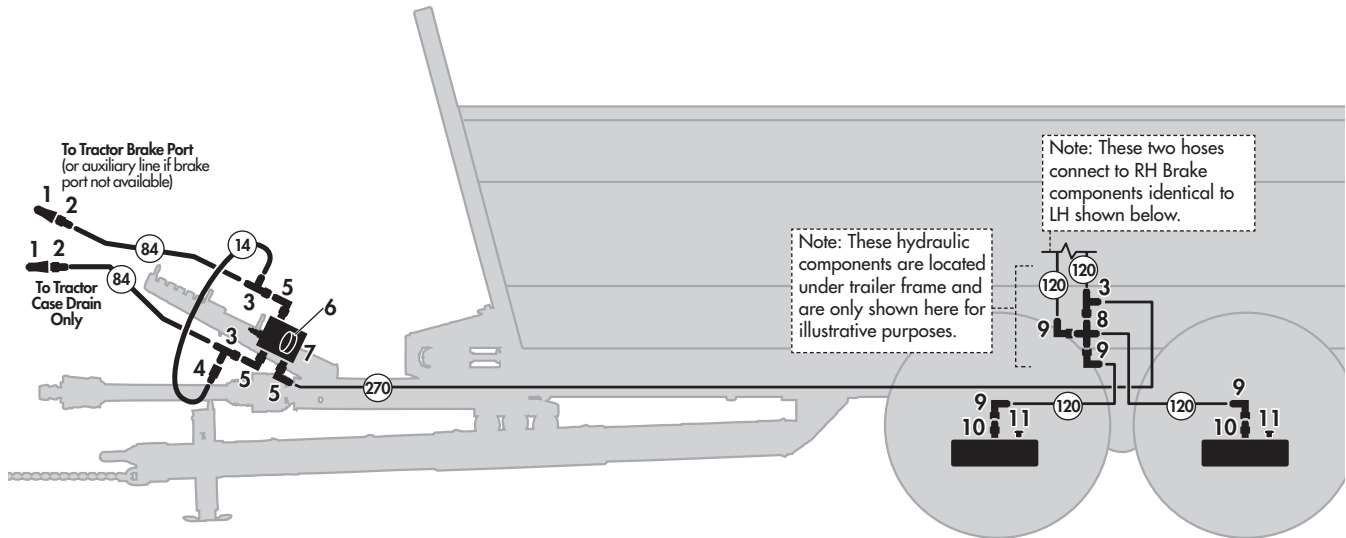


## CALIPER / ROTOR COMPONENTS





# Hydraulic Routing - Hoses & Fittings Overview



## Hydraulic Fittings Required

1		141581 - Quick Coupler-m - 3/4 ORB	(2)
2		142678 - Adaptor, 1/4 JIC-m x 1/2 ORB-m	(2)
3		142672 - Tee, 1/4 JIC-f-sw x 1/4 JIC-m x m	(3)
4		142676 - Adaptor, 1/4 JIC-m x f -0.03 ORIF	(1)
5		142671 - 90° Elbow, 1/4 JIC-m x 3/8 ORB-m	(3)
6		141662 - Gauge, Pressure - 0-3000, Oil Filled	(1)
7		141664 - Valve, Pressure Reducer 9/16 ORB	(1)
8		142674 - Cross, Union - 1/4 JIC-m	(1)
9		142673 - 90° Elbow, 1/4 JIC-m x 1/4 JIC-f-sw	(6)
10		142677 - Adaptor, 5/16 ORB-m x 1/4 JIC-m	(4)
11		142675 - Plug, Port - Hex 5/16 ORB-m	(4)

## Required Hoses for Brake Assist System

84	126101- Hose, 1/4 x 84	(2)
14	126100- Hose, 1/4 x 14	(1)
270	126103- Hose, 1/8 x 270	(1)
120	126102- Hose, 1/8 x 120	(4)

# Warranty

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## **2 Year** **Limited Warranty - Agricultural Products**

Degelman Industries Ltd. ("Degelman") warrants to the original purchaser of any new Degelman equipment, purchased from an authorized Degelman dealer, that the equipment will be free from defects in material and workmanship for a period of two (2) years from the date of delivery, for non-commercial use (including farm, institutional, government, and municipality) and (1) year from the date of delivery for commercial use. The obligation of Degelman to the purchaser under this warranty is limited to the repair or replacement of defective parts in the first year and to the provision, but not the installation of replacement parts in the second year. Degelman reserves the right to inspect any equipment or parts which are claimed to have been defective in material or workmanship.

This warranty limits its replacement or repair coverage to what is consistent with the warranty of Degelman's suppliers of purchased components.

Replacement or repair parts installed in the equipment covered by this limited warranty are warranted for ninety (90) days from the date of delivery of such part or the expiration of the applicable new equipment warranty period, whichever occurs later. Warranted parts shall be provided at no cost to the user at an authorized Degelman dealer during regular working hours. Warranted replacement parts will either be replaced or rebuilt at Degelman's discretion.

### ***Disclaimer of implied warranties & consequential damages***

This warranty shall not be interpreted to render Degelman Industries Ltd. liable for injury, death, property damage or damages of any kind, whether direct, consequential, or contingent to property. Without limiting the generality of the foregoing, Degelman shall not be liable for damages resulting from any cause beyond its reasonable control, including, without limitation, loss of crops, any expense or loss of labour, supplies, rental machinery or loss of use.

No other warranty of any kind whatsoever, express or implied is made with respect to this sale; and all implied warranties of merchantability and fitness for a particular purpose which exceed the obligations set forth in this written warranty are hereby disclaimed and excluded from this sale. This exclusion shall not apply in any jurisdiction where it is not permitted by law.

### ***This limited warranty shall not apply:***

1. If, in the sole opinion of Degelman, the unit has been subjected to misapplication, abuse, misuse, negligence accident or incorrect off-site machine set-up.
2. To any goods that have sustained damage or deterioration attributable to a lack of routine maintenance (eg. Check and Re-torque of fastening hardware, Hydraulic fluid purities, drive train alignments, and clutch operation)
3. If parts not made or supplied by Degelman have been used in the connection with the unit, if, in the sole judgement of Degelman such use affects its performance, safety, stability or reliability.
4. If the unit has been altered or repaired outside of an authorized Degelman dealership in a manner which, in the sole judgement of Degelman, affects its performance, safety, stability or reliability.
5. To expendable or wear items such as (eg. Harrow tines, Rock Picker and Rock Rake wear teeth and replaceable bushings and pins.) and any other items that in the company's sole judgement are a wear item.

No employee or representative of Degelman Industries Ltd. is authorized to change this limited warranty in any way or grant any other warranty unless such change is made in writing and signed by the Degelman Service Manager.

This limited warranty is subject to any future availability of supply, which may directly affect Degelman's ability to obtain materials or manufacture replacement parts.

Degelman reserves the right to make improvements in design or changes in specifications at any time, without incurring obligations to owners of equipment previously delivered.

This limited warranty is subject to compliance by the customer to the enclosed *Retail Customer's Responsibility Under Degelman Warranty*.

# Warranty

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## ***Retail Customer's Responsibility Under Degelman Warranty.***

It is the retail customer and/or Operator's responsibility to read the Operator's Manual, to operate, lubricate, maintain and store the equipment in accordance with all instructions and safety procedures. Failure of the operator to read the operators manual is a misuse of this equipment.

It is the retail customer and/or operators responsibility to inspect the product and to have any part(s) repaired or replaced when continued operation would cause damage or excessive wear to other parts or cause safety hazard.

It is the retail customer's responsibility to deliver the product to the authorized Degelman dealer, from whom he purchased it, for service or replacement of defective parts, which are covered by warranty. Repairs to be submitted for warranty consideration must be made within forty-five days of failure.

It is the Retail Customer's responsibility for any cost incurred by the dealer for hauling of the product for the purpose of performing a warranty obligation or inspection.

## **WARRANTY INFORMATION**

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**Make certain the warranty registration card has been forwarded to:**

**Degelman Industries Ltd.  
Box 830 -272 Industrial Dr.  
Regina, SK, Canada  
S4P 3B1**

Always give your dealer the serial number of your Degelman product when ordering parts or requesting service or other information.

The serial number is located on the machine as shown in the diagram below. In the space provided record the model number, the serial number and the date of purchase to assist your dealer in providing you with prompt and efficient service.

SERIAL NUMBER: \_\_\_\_\_

MODEL NUMBER: \_\_\_\_\_

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

