



9 SERIES TRAINING

Module 2 : 2016 Assembly & Tech Updates

PURPOSE

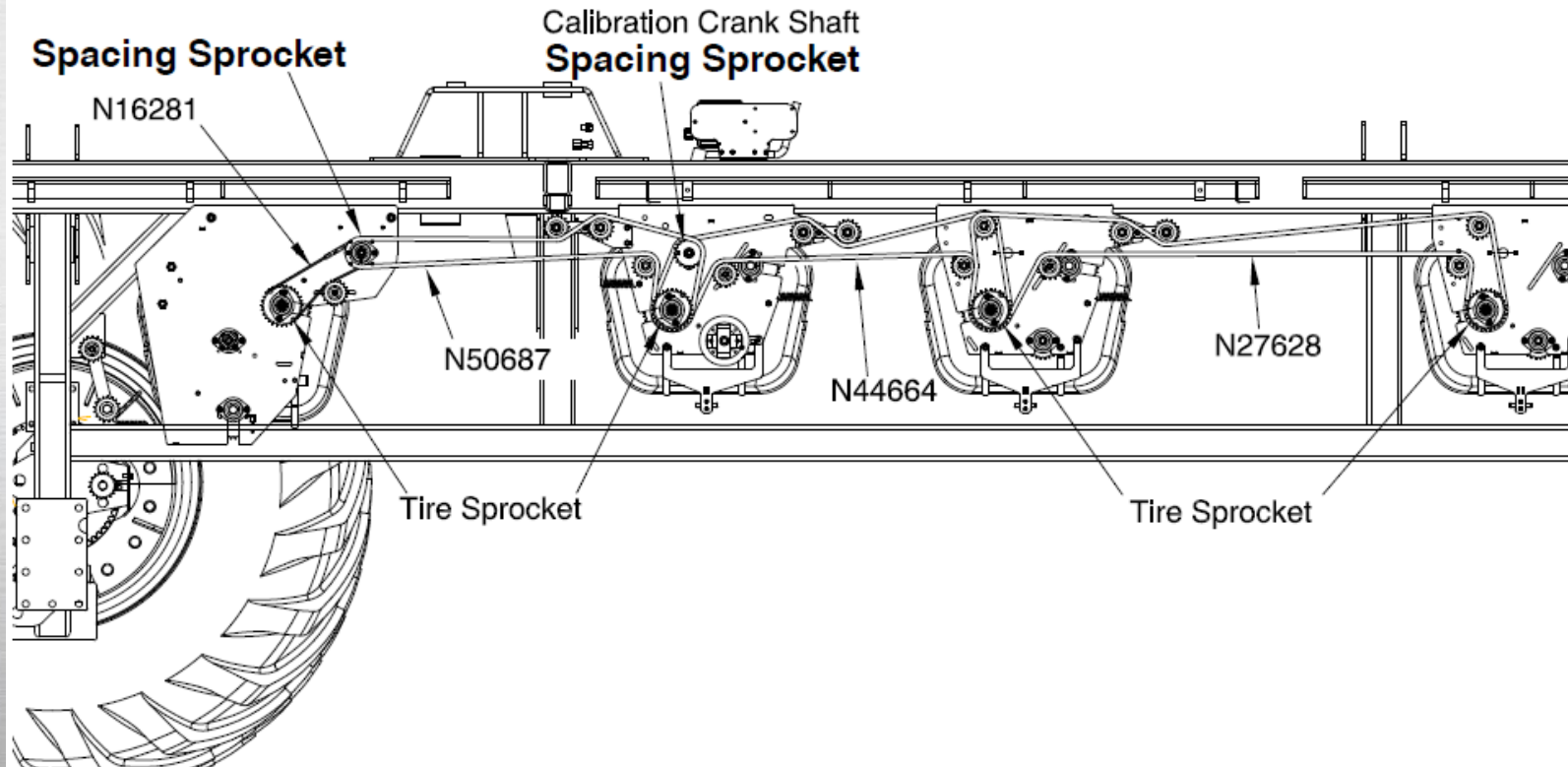
- This module is meant to provide a brief overview of assembly and technical support bulletins that have been released during the past year.
- Always refer to those bulletins for exact information regarding their contents if something is unclear.
- All bulletins are accessible through Morris's online dealer portal.
- Highlight things we have identified in the past year and cover issues that continue to arise from season to season.

TECH 381 – SPACING SPROCKET

- It is imperative the correct Spacing Sprocket be installed on the Air Cart for accurate metering. (See Chart Below)
- On the following 9 Series Air Carts there are **TWO** locations to install Spacing Sprockets:
 - Tow Between 9365 and 9450
 - Tow Behind 9365, 9450 and 9535
 - Tow Behind 9445, 9550 and 9650
- The Spacing Sprockets are located on the Clutch Shaft and on the Calibration Crank Shaft.

TECH 381 – SPACING SPROCKET

9650 Tow Behind Shown



Spacing Sprocket	
Opener Spacing	Spacing Sprocket
7.2" (183 mm)	12 teeth
7.5" (191 mm)	12 teeth
8" (203 mm)	13 teeth
9" (229 mm)	15 teeth
10" (254 mm)	17 teeth
12" (305 mm)	20 teeth
15" (381 mm)	24 teeth

ASSEMBLY 255 – TIRE SPROCKET SIZE

- Morris has introduced new tire sizes for the 9800 and 91000 carts which require different tire spacing sprockets as indicated in the following chart:

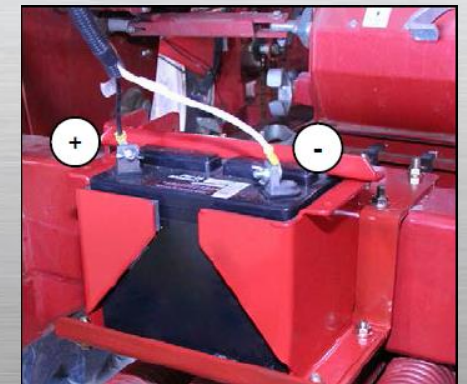
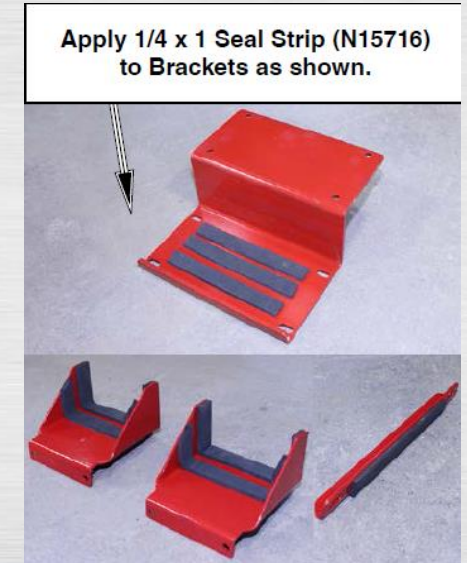
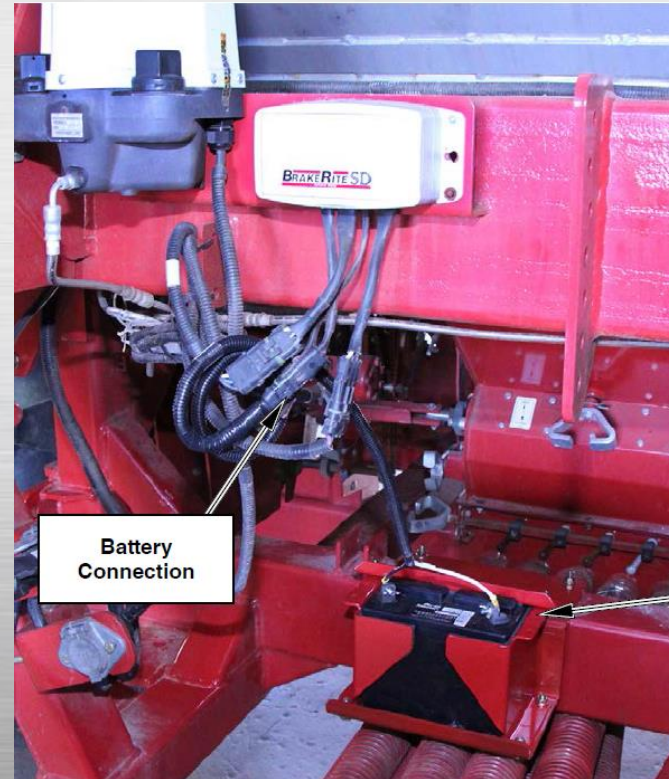
TIRE SPROCKET			
TIRE SIZE	TIRE STYLE	RATING	TIRE SPROCKET
30.5 x 32	AWT (Implement)	12 ply	28 teeth
30.5 x 32	Lug (Dyna Torque II)	14 ply	28 teeth
800/65 R32	Radial (Dyna Torque)	L1 172	28 teeth
800/65 R32 Dual Wheels	Radial (Dyna Torque)	L1 172	28 teeth
800/70R38 Dual Wheels	Radial (Dyna Torque)	L1 172	24 teeth
850/80R38 Dual Wheels	Radial (Dyna Torque)	L1 172	22 teeth
900/60 R32	Radial (Dyna Torque)	176 A8	26 teeth
520/85 R38 Dual Wheels	Radial (Ultra Torque)	155 A8	28 teeth

ASSEMBLY 256 – 9800 BRAKE SYSTEM

- MORRIS Industries is offering a Battery Kit to be installed on the 9800 Air Carts as back-up power supply for the brake system. The Kits available are as follows:
 - N57391 - Kit: 9800 Auxiliary Brake with Battery - Domestic Market (Canada Only)
 - N57392 - Kit: 9800 Auxiliary Brake without Battery - Export Markets
- The battery installation has been recommended by the Brake System supplier to act as an auxiliary power supply at the rear of Air Cart near the brake actuator. This power supply acts as a back-up system to provide extra power to the actuator to develop a maximum pressure in the brake system to provide optimum braking performance.
- In addition the battery provides power supply to the brake actuator if the 'break-away' feature of the brake system is installed and utilized.

ASSEMBLY 256 – 9800 BRAKE SYSTEM

- The brake controller already has a specific lead to plug the battery harness into.
 - **Note:** The battery 'must be' connected as illustrated [Positive (+) to Positive (+) and Negative (-) or Ground to Negative (-)] for it to provide the correct power supply to the brake controller.
- Also note that the brake controller has a built in charger so that it will keep this battery fully charged as the unit is used in the field. The controller draws power from the tractor battery system and in turn charges this auxiliary battery.



ASSEMBLY 253 – BRAKE ADJUSTMENTS

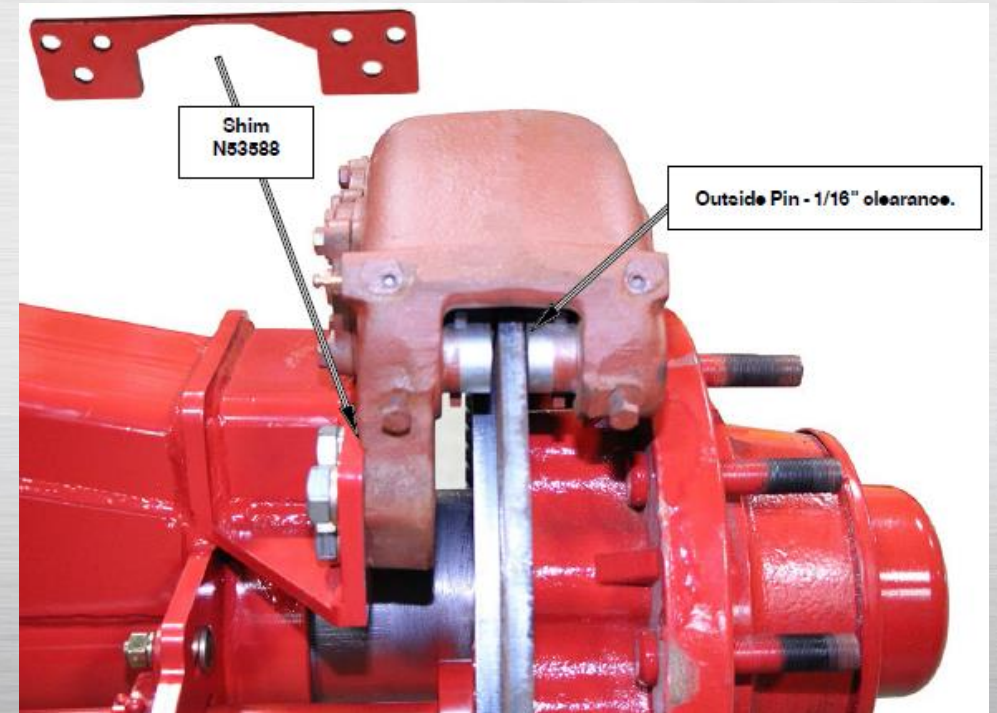
Caliper Clearance

Before beginning this procedure ensure 4 shims have been supplied with Cart, if not Shims are available, order part number N53588 through the shortage claim process. Also, check the Air Cart and Seeding Implements wire harness to ensure the RED wire is installed in the harness as outlined in Assembly Bulletin 234.

In order to check the caliper clearance the rear wheels must be removed.

Check caliper pin clearance by rotating hub to find high spot in the rotor. Clearance at the high spot should be between 0 - 1/16" (0 - 2 mm) clearance on outside pins. If not add Shims as required.

Note: Gap on inside pins should be greater than that of the outside pins. The axle and hub assembly will deflect slightly causing the caliper to be positioned closer to the inside pins when Cart is loaded.

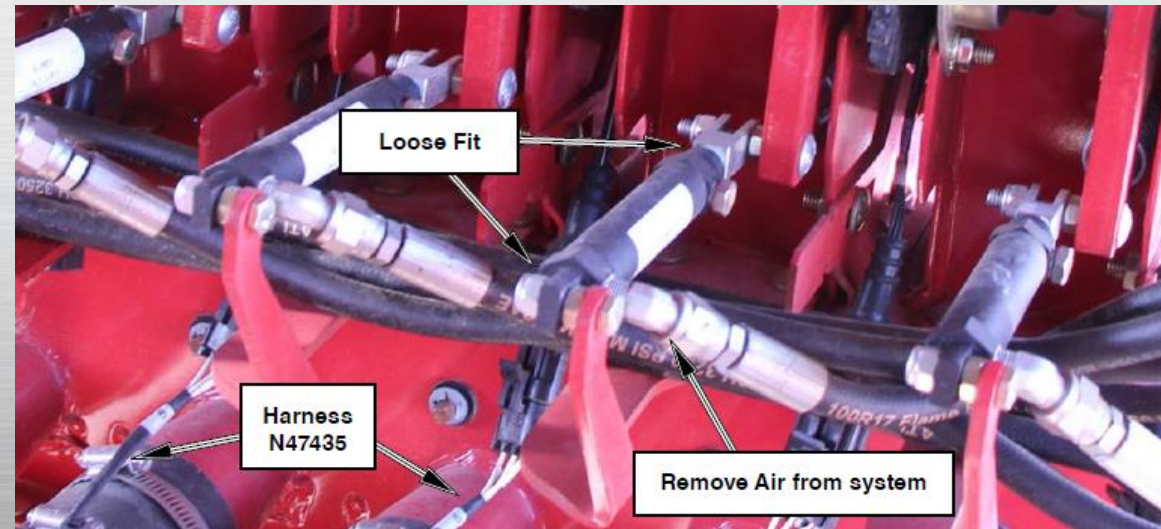
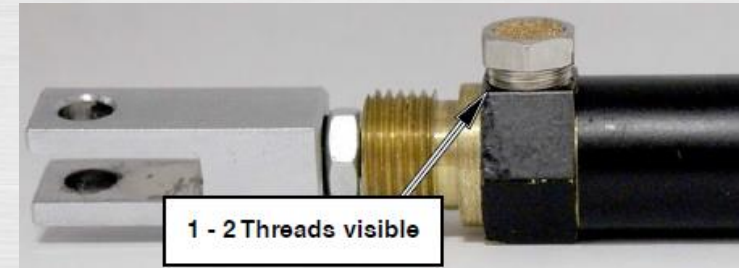


TECH 400- ICT START-UP CHECK

On initial start-up of an ICT system the following areas require special attention to ensure proper operation.

1. Check breather caps on ICT cylinders, there should be 1 to 2 threads visible, if not loosen cap. If too tight it will hinder cylinder shaft movement.
2. Check locknuts retaining ICT cylinders in place, ends of cylinder should be loosely fit for free movement.
3. If cylinders are not engaging and sluggish, bleed air out of cylinders, gears should mesh positively when cycled. (Refer to N55799 ICT Manual Section 1)
4. Check gap setting of sensors in between the metering bodies. (Refer to N55799 ICT Manual Section 4)
5. Check direction of meter shaft rotation, it should rotate counter clockwise when viewed from transmission side. If not hydraulic lines are reversed at drive motor.

TECH 400- ICT START-UP CHECK

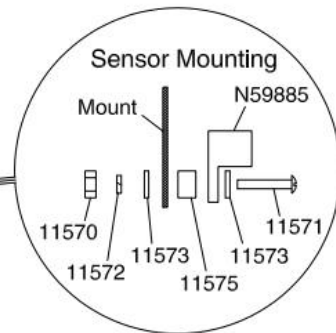


ASSEMBLY 261 – LADDER DOWN LIGHT

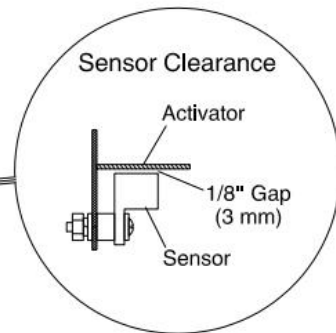
Morris has a running change to the Stairs Down Warning Kit which will be seen on units shipped in December 2015. This new system incorporates a magnetic sensor which provides easier mounting and adjusting of the stairs down warning.

See attached diagrams for details.

Ladder Up Position



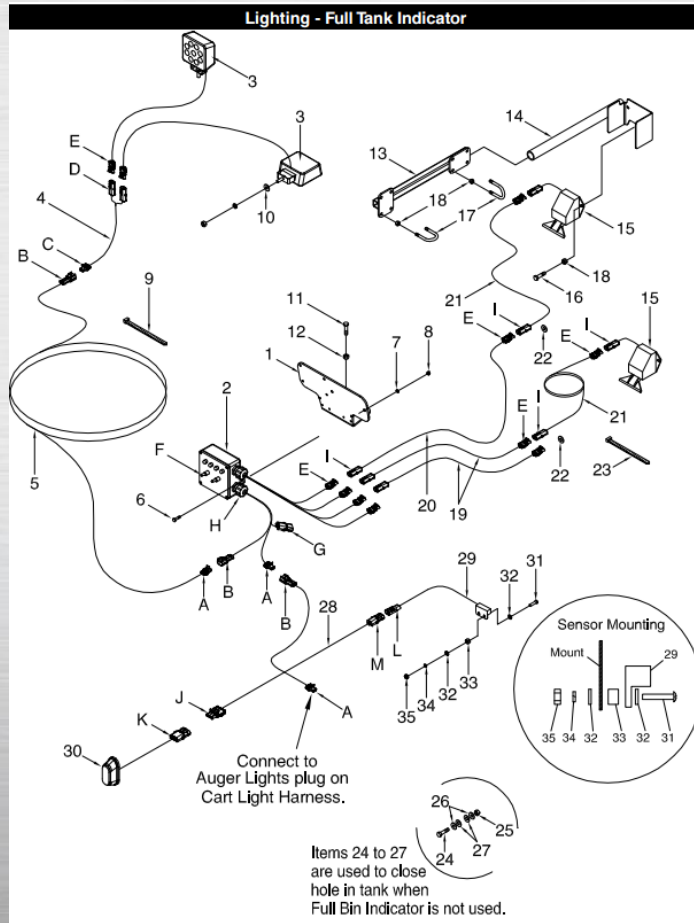
Ladder Down Position



Route Wire along stairway mount.



ASSEMBLY 261 - LADDER DOWN LIGHT



Lighting - Full Tank Indicator			
Item	Part No.	Description	Qty
1	N55833	Mount Plate - Bolt-On	1
2	N40540	Switch Box	1
3	N53228	Work Light LED	2
4	N34682	Cable - Two Light Adapter	1
5	N34681	Cable - Auger Light	1
6	W-1552	Hex Bolt - 1/4 x 1	2
7	W-521	Lockwasher - 1/4	2
8	W-512	Hex Nut - 1/4	2
9	D-4951	Tie Strap - 7 1/2 Lg	30
9A	D-4838	Tie Strap - 14 1/2 Lg	5
10	N53231	Backing Washer - 11/32 ID x 1 1/8 OD x .1345 Thick	2
11	W-475	Hex Bolt - 3/8 x 1 Lg	2
12	D-5279	Lock Nut - 3/8 Serrated Flange	2
Following Item Quantities are listed per Tank			
13	N42143	Bracket - Ladder Mount	1
14	N42145	Switch Bracket	1
15	N42090	Level Sensor	1
16	N15112	Hex Bolt - 5/16 x 3/4	2
17	N42091	U-Bolt - 5/16 x 2 1/4	4
18	N42098	Locknut - 5/16 stainless	10
19	N37014	Cable - 5 ft (Used in Tank 2 and Tank 3)	1
20	N37016	Cable - 10 ft (Used in Tank 1 and Tank 4)	1
21	N42089	Cable - 11 ft (Used in each Tank)	1
22	*****	Grommet includes - N56748, N56749, N56750	1
23	N34715	Tie Strap - 5.6 Lg	10
24	N36597	Hex Bolt - 1/4 X 3/4 HEX UNC SS304	1
25	N36143	Nut - Nylon - 1/4 Flange	1
26	S-4747	Washer - 0.281 ID x 1.75OD x 14GA	2
27	N42198	Seal - Full Bin Hole Washer	2
Following Items Stair Down Warning Light			
28	N59884	Harness - Stair Down Warning Light	1
29	N59885	Sensor - Ferrous Proximity	1
30	N53886	Strobe Light	1
31	11571	Machine Screw #12 - 24 x 1 Lg - Brass	2
32	11573	Flat Washer #12 - 0.25 ID x 0.562 OD - Brass	4
33	11575	Nylon Spacer - 1/4 ID x 1/2 OD x 1/4Lg	2
34	11572	Lockwasher #12 - 0.216 ID - Brass	2
35	11570	Hex Nut #12 - Brass	2

ASSEMBLY BULLETIN No 261

Remove the Strobe Light Cover & use Items 4 & 5 to attach the Strobe light base to the Mounting Plate.

Item	Part No.	Description	Qty
1	N50654	Sprocket Mount - Ground Drive only	1
2	N53881	Bracket - Warning Light	1
3	N53886	Strobe Light	1
4	N53887	Machine Screw - #4-40 Slotted Screw	2
5	N53888	Hex Nut w/ Tooth Washer - #4-40 Machine Screw	2
6	W-475	Hex Bolt - 3/8 x 1 Lg	2
7	W-514	Hex Nut - 3/8	2
8	W-523	Lockwasher - 3/8	2

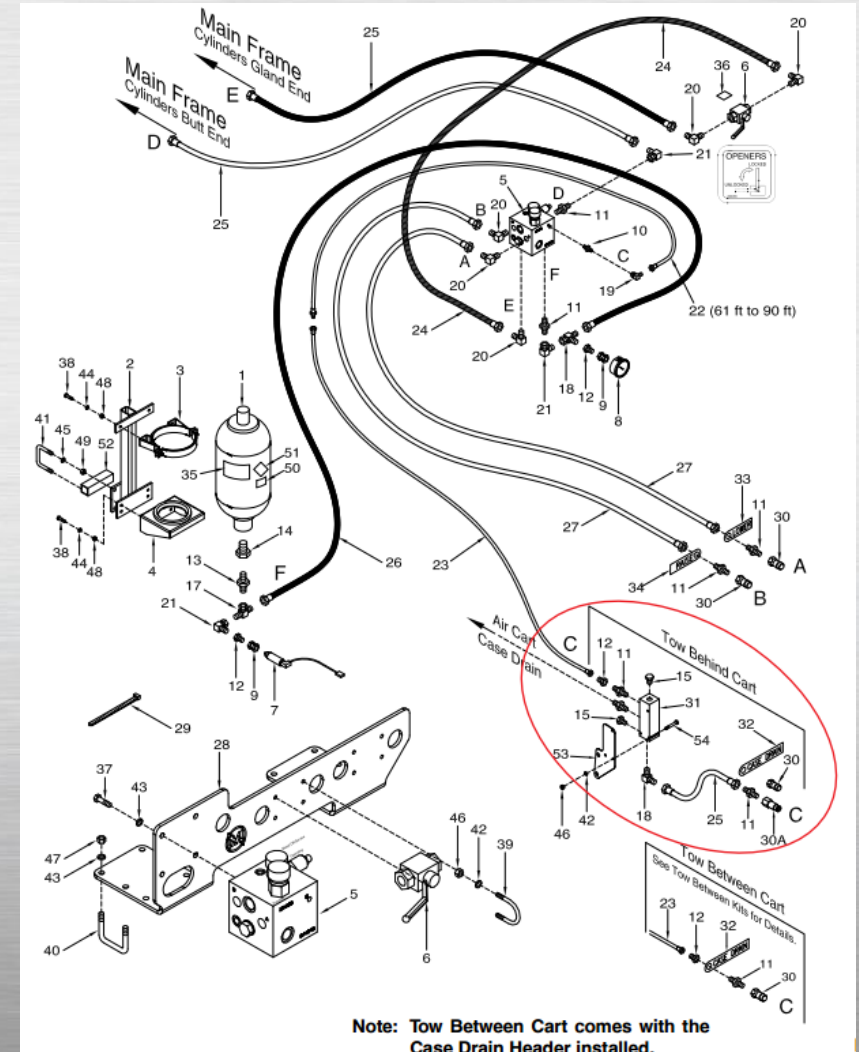
ASSEMBLY 259 – CASE DRAIN

Morris has introduced a new Case Drain Block for 2016 production year.

The Case Drain Block combines all of the Air Cart's and Drill's case drains into one single line to the tractor as illustrated beside.

See bulletin for parts list.

Note: The length of the case drain hose item 23 changes between Tow Behind and Tow Between Carts



TECH 411- PRIORITY VRT FLOW VALVE

Morris is offering a Priority Flow Valve Kit for VRT hydraulics: (Refer to Parts Bulletin 105 for pricing.)

- Tow Behind Kit is N57045
- Tow Between Kit is N58976.

The kit is an asset on dual fan VRT carts by maintaining constant hydraulic flow to VRT hydraulic valve block while running lower fan speeds.

Morris' Parts Department will have kits available for shipping February 1, 2016.

Follow the procedures below to install Priority Flow Valve Kit: (Tow Behind Kit is illustrated)

VRT Manifold Changes

Remove Flow Regulator for the supply of the VRT Block (N29325 - Position B on Block) and replace with N58317 - #10 ORB Plug



TECH 411- PRIORITY VRT FLOW VALVE

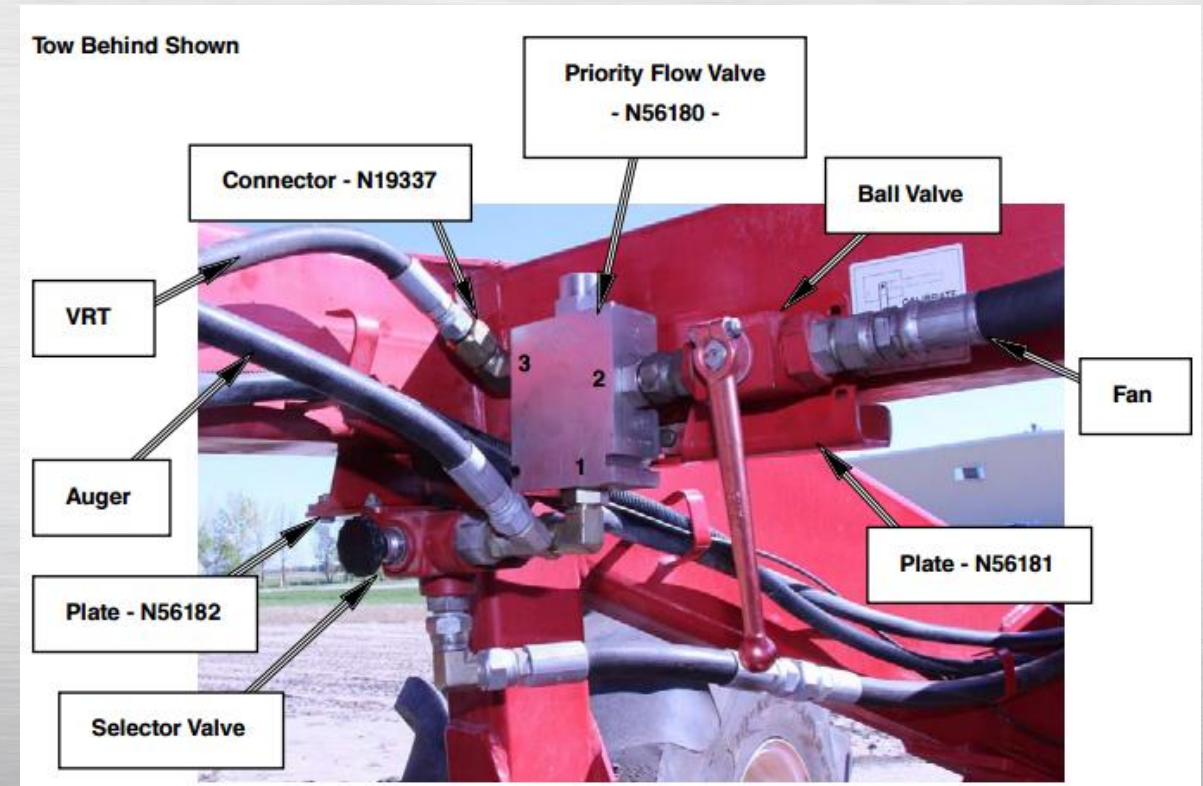
Priority Flow Valve Installation - see page 2 - 6 for details
Replace Plate N37847 with N56181.

Re-use existing hardware to mount the Ball Valve (N37845) in the new location.

Remove Slector Valve N34506 from mounting position on frame.

Install Plate N56182 with the slotted end on the Frame. Use S33420 - Carriage Bolt, W-522 - Lock Washer and W-513 - Hex Nut.

Mount Slector Valve N34506 to Plate N56182 using the original hardware.



TECH 411- PRIORITY VRT FLOW VALVE

Hydraulic Changes

- Use a pail or a catch basin when disconnecting the Hydraulic Lines to reduce mess from Hydraulic Oil in the System.
- Disconnect N15990 Connector - 1 1/16-12 MJIC x 1 1/16-12 MORB from the Selector Valve and install N37849 Connector - 1 1/16-12 MORB x 1 1/16-12 FJIC in it's place.
- Attach N16359 - 90 Degree Elbow - 1 1/16-12 MJIC x 1 1/16-12 MORB into Ports 1 and 3.
- The Fitting in Port 1 is oriented towards Port 3 and the Fitting in Port 3 is oriented towards the lettering on the Block.
- Ensure that the Fitting in Port 3 is angled approx 45 Deg towards the top of the Block (Away from Port 1) as shown in picture below.
- Install N15990 Connector - 1 1/16-12 MJIC x 1 1/16-12 MORB into Port 2
- Connect N16359 at Port 3 to N37849 on the Selector Valve.
- Attach the Fitting on the Ball Valve to Port 2.
- Attach N19337 Connector - 7/8-14 MJIC x 1 1/16-12 FJIC to the 90 Deg Elbow at Port 3 and then attach the Hydraulic Hose that runs to the VRT Block.
- Tighten all of the Hydraulic Fittings and Hardware.
- Once all of these changes have been completed the hydraulics can be engaged. Check for any oil leaks and tighten Fittings as required.

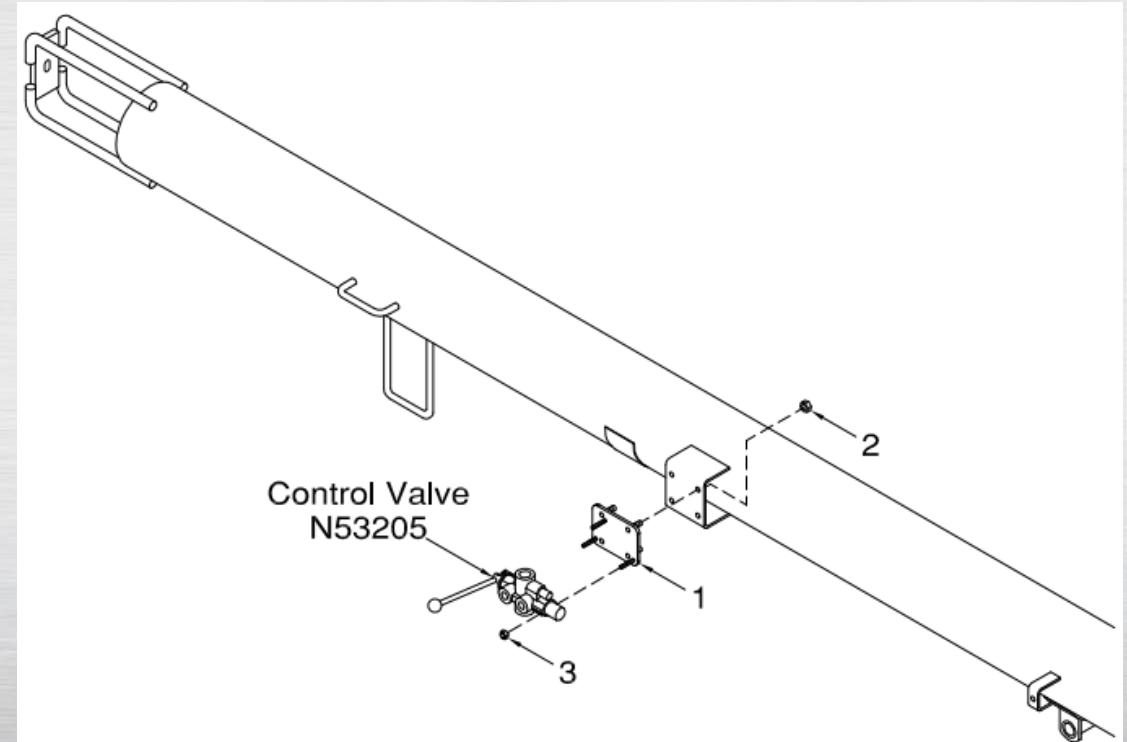
TECH 412- AUGER CONTROL VALVE

Auger Control Valves N15024 and N34495 are no longer available. Customers requiring a replacement valve will have to purchase valve N53205 and will require Kit N60305 for the adaptor plate to attach the new valve onto the Auger.

Control Valve N15024 effects the Genesis II, 6000 Series and 7000 Series.

Control Valve N34495 effects the 8 Series and 8XL Series Air Carts.

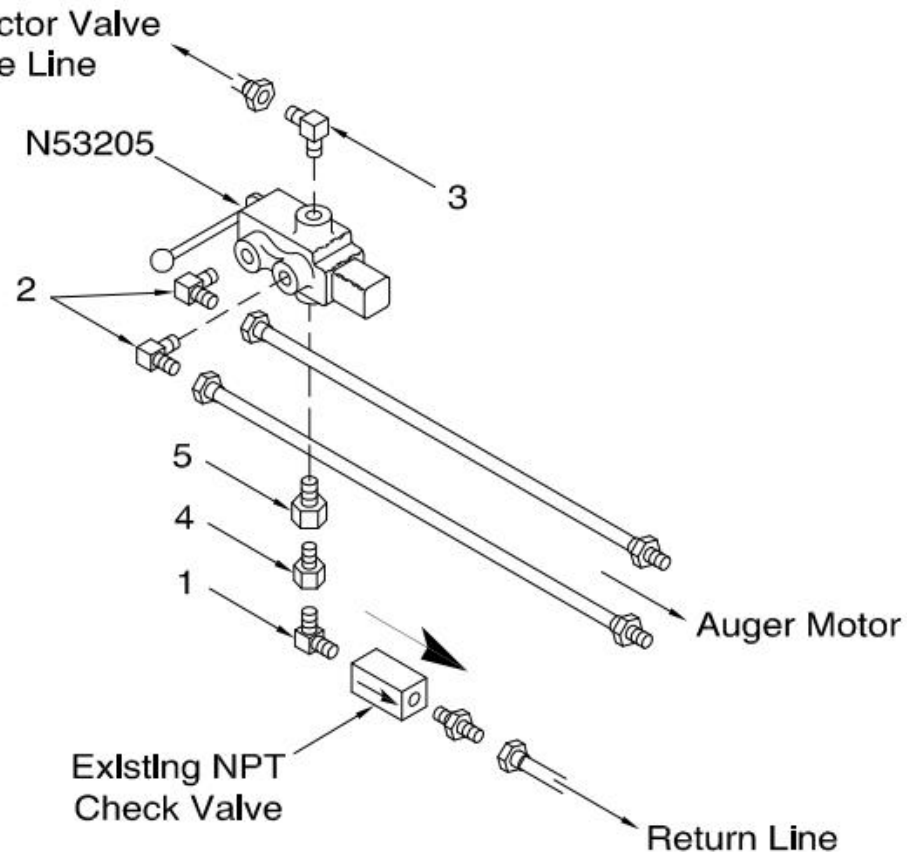
Note: Converting from N15024 to N53205 requires adapting NPT fittings to ORB fittings.



Item	Part No.	Description	Qty
1	N60309	Plate - Valve Adaptor	1
2	S27987	Locknut - 3/8 Flanged Center Lock.....	4
3	N22778	Locknut - 1/4	3
	N60305	Kit - Valve Adaptor (Includes above items)	

TECH 412- AUGER CONTROL VALVE

Hydraulic fittings required to convert N15024 to N53205



Item	Part No.	Description	Qty
Hydraulic fittings required to convert N15024 to N53205			
1	C-4400	90 Elbow - 7/8-14 MJIC x 1/2 MNPT.....	1
2	C15318	90 Elbow - 7/8-14 MJIC x 7/8-14 MORB	2
3	N34646	90 Elbow - 7/8-14 MJIC x 1 1/16-12 MORB	1
4	N34620	Connector - 7/8-14 FJIC x 7/8-14 MORB.....	1
5	N34499	Connector - 7/8-14 (#10) FORB x 1 1/16-12 (#12) MORB	1

TECH 396 – CONVEYOR ADJUSTMENTS

Adjust tension of 2" cleated belt in conveyor tube to 23 ft-lbs torque on idler roller adjustment bolts. Adjust both sides evenly.

Adjust tension of crescent belt in hopper to 50 inch-lbs torque on idler roller adjustment bolts or until center of belt rises off the support underneath it. Adjust both sides evenly. Check/adjust belt tracking alignment on idler rollers.

1. **Rollers must be square with the housing and parallel to each other to insure proper belt tracking.**
2. Belt Tension must be great enough to prevent slippage. Check tension of the belts before running the conveyor.
3. Run the conveyor. Check to see that the belt runs centered on the drive roller. Turn off the conveyor. Adjust drive roller to be square with the housing if necessary. **Normally, once the drive roller is tracked at the factory it rarely needs adjustment.**



TECH 396 – CONVEYOR ADJUSTMENTS

4. To adjust drive roller, loosen the four nuts on the bearing holder plate, and the jam nut on the threaded adjuster. Retighten after adjusting is complete.
5. Run the conveyor for two minutes.
6. Turn the conveyor off and open the Tail End Cleanout Door to view the idler roller. Check to see that the belt is running centered on the idler roller. **There should be approximately 1/2" gap between the housing and the belt on both sides. Rubbing on the side of the housing can cause severe damage to the belt and/or affect filling capacity.**
7. If adjustment is necessary, **TIGHTEN the roller on the side of the housing that the belt is closest to, or rubbing on.** Adjust bolt in 2-3 turn increments. Run the conveyor after each adjustment to see the result.
8. Once the belt is centered, run the conveyor for at least two more minutes to insure the belt remains in position.
9. Lock adjustment bolt jam-nuts and reinstall the clean out door.



TECH 396 – CONVEYOR ADJUSTMENTS

It is **extremely** important that wheel nuts be checked after the first fifteen minutes of field operation and then every 1/2 hour **until torque is maintained**. Then check every 5 hours, 25 hours, 50 hours and annually thereafter. Repeat this procedure if a wheel is removed and re-installed.

For torque specs please refer to the Maintenance section of the Air Cart Operators manual or decal N55695.

Note that once torque is maintained a marker can be used to mark the nut/rim position so that a visual check can be done periodically.

IMPORTANT

ENSURE THAT ALL WHEEL NUTS ARE TORQUED TO THE FOLLOWING:

- 5/8" Tapered Wheel Nut - 150 ft-lbs
- 3/4" Flanged Wheel Nut - GR.8 - 400 ft-lbs
- 7/8" Flanged Wheel Nut - GR.8 - 525 ft-lbs
- 22mm Flanged Wheel Nut - GR.10.9 - 500 ft-lbs

N55695

NEW 9S CARTS



