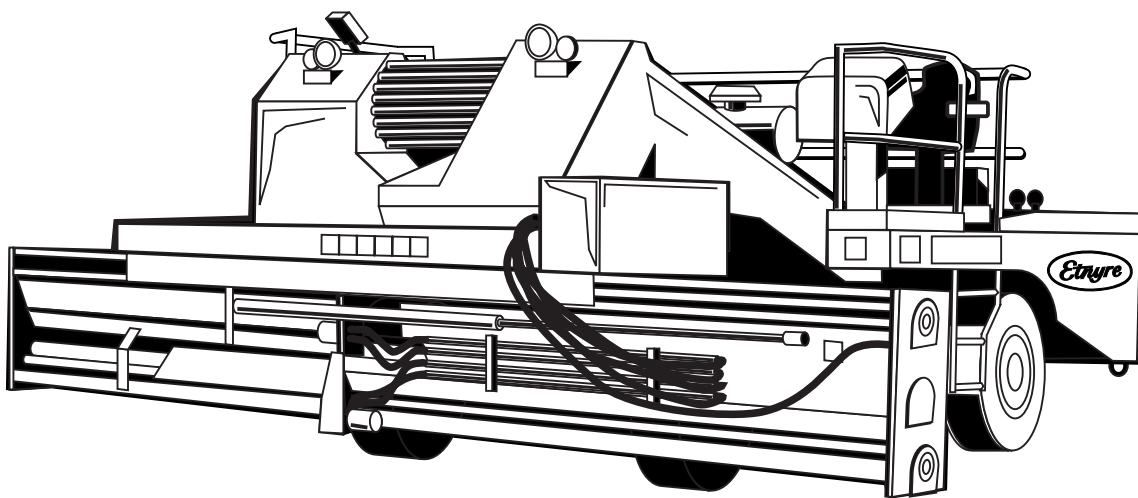


M-233-06
Units 2000 and up



Standard Hopper & Variable Width Spread Hopper ChipSpreader

Updates & Service Material



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Phone: 815/732-2116 or 800/995-2116 • Fax: 800-521-1107 • www.etnyre.com

Updates & Service Material

Standard Hopper & Variable Width Spread Hopper ChipSpreader

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Quick Reference Guide for Computerized ChipSpreaders

How To Set Memory

- 1) Adjust application rate.
- 2) Adjust aggregate.
- 3) Adjust speed.
- 4) Press (**Save**)
- 5) Select location 1, 2, 3, 4, or 5.

Gate Calibration

(Standard Fixed Hopper Uses Only Left Side Cal. For This Procedure)

Calibrate Aggregate not memory.

- 1) Cal. Sw. up or down

0.0%	0.0%	Higher ↑ Cal. % Less ↓ Aggregate
lb./yd ²	Right Cal.	Lower ↓ Cal. % More ↑ Aggregate

- 2) Adjust lb./yds with Cal. Sw. up or down.

- 3) Press (**Save**) to save right side calibration.

- 4) Press scroll down for left calibration.

0.0%	0.0%	Higher ↑ Cal. % Less ↓ Aggregate
lb./yd ²	Left Cal.	Lower ↓ Cal. % More ↑ Aggregate

- 5) Adjust with Cal. Sw. up or down.

- 6) Press (Save) to save left side calibration.

- 7) To Exit: Push scroll Sw. up twice to return to main screen.

Quick Reference Guide for Set-Up Screens / Service Screens

Set-Up Screens:

To Enter: Hold Cal. Switch down.
Turn on Ignition Switch.
Release Cal. Switch.

Use Scroll Switch to change screens.
Use Cal. switch to make changes.

To Exit: Scroll thru to last screen Set-up: Save and Exit.
Press (Save).

Service Screens:

To Enter: Hold Scroll switch down.
Turn on Ignition Switch.
Release Scroll switch.

Use Scroll switch to change screens.

To Exit: Turn off Ignition switch.

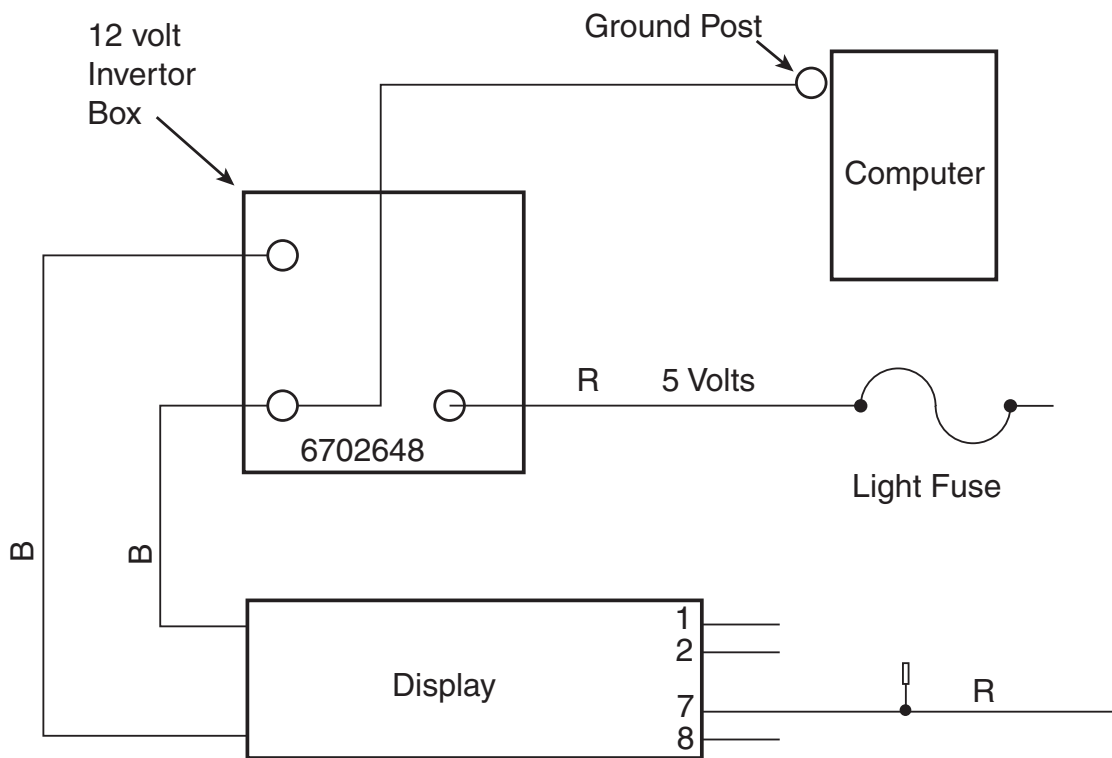
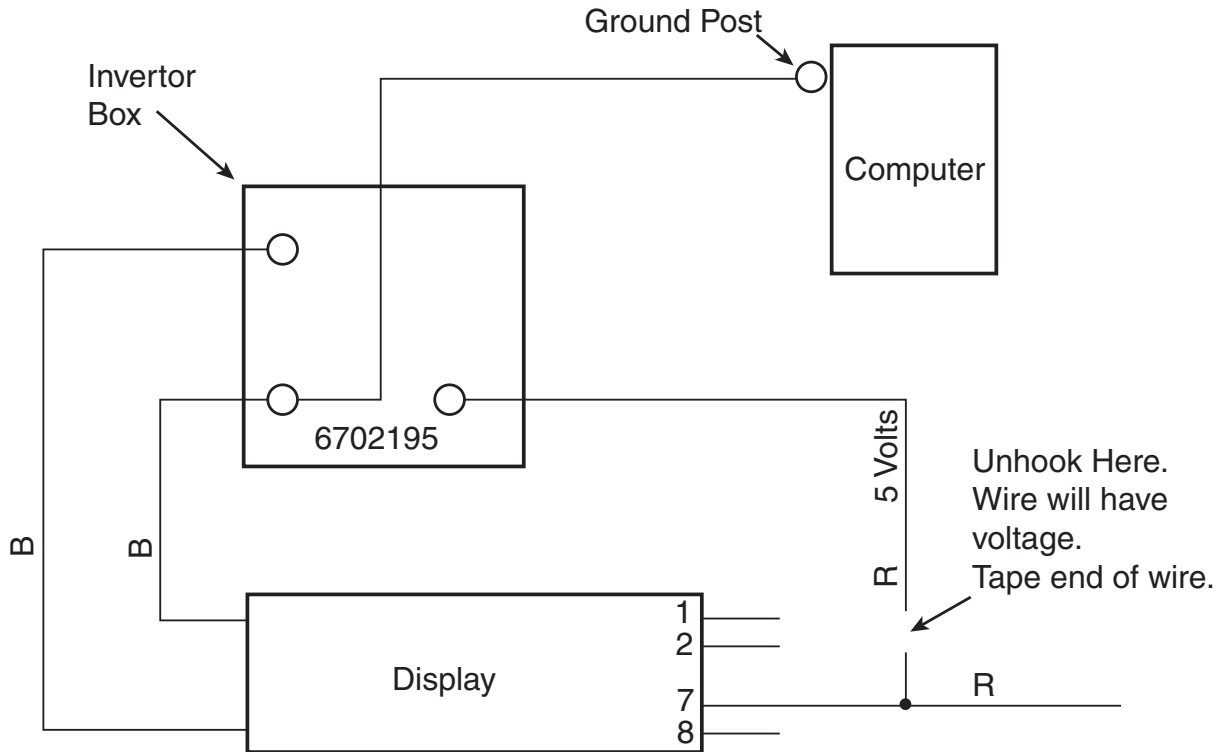
Dip Switch Settings for Driver Boards

IEE, the manufacturer of our display driver board has updated the design of this product and changed the product designation from a -04 to a -06. The display driver boards are totally interchangeable with the new able to replace the old. There is difference in that the old driver board used jumpers in certain positions and the new one has dip switches which must be properly set in order to work with our software. The old and new style positions are as shown below. They must be properly set on any that are sent out as a parts order, or a copy of the proper settings should be included with the part.

Sundstrand Computers				Rexroth Computers	
S29745-04 Old Style		829745-06 Current Style Board		S29745-06 Current Style Board	
Jumper	Position	Dip Switch	Position	Dip Switch	Position
1	Out	1	A	1	A
2	Out	2	A	2	A
3	Out	3	B	3	B
4	In	4	A	4	B
5	In	5	B	5	B
6	Out	6	B	6	B
7	In	7	NotUsed		
8	Out	8	Not Used		

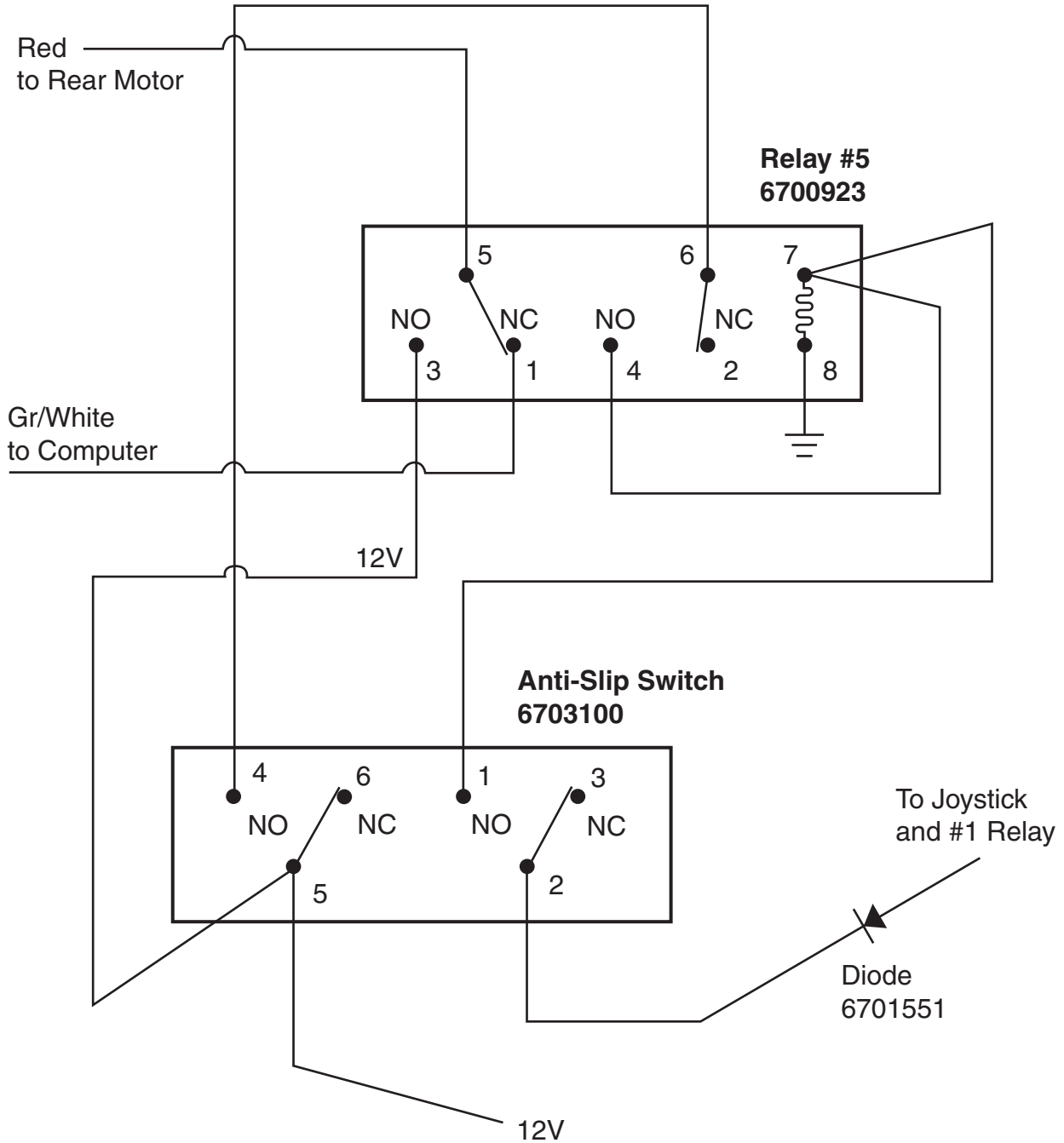
Change 5 volt Inverter Box to 12 volt

ChipSpreader



Anti-Slip Wiring

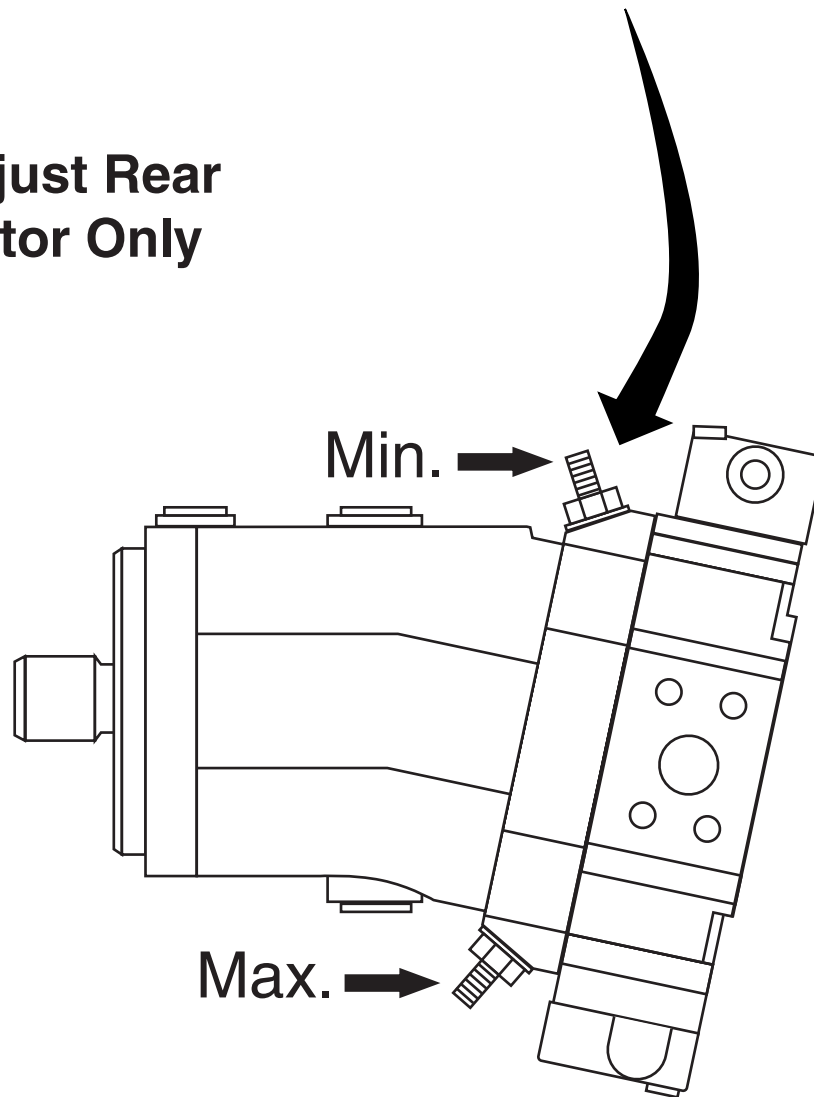
ChipSpreader



After adding Anti-Slip Switch Relay and Wiring

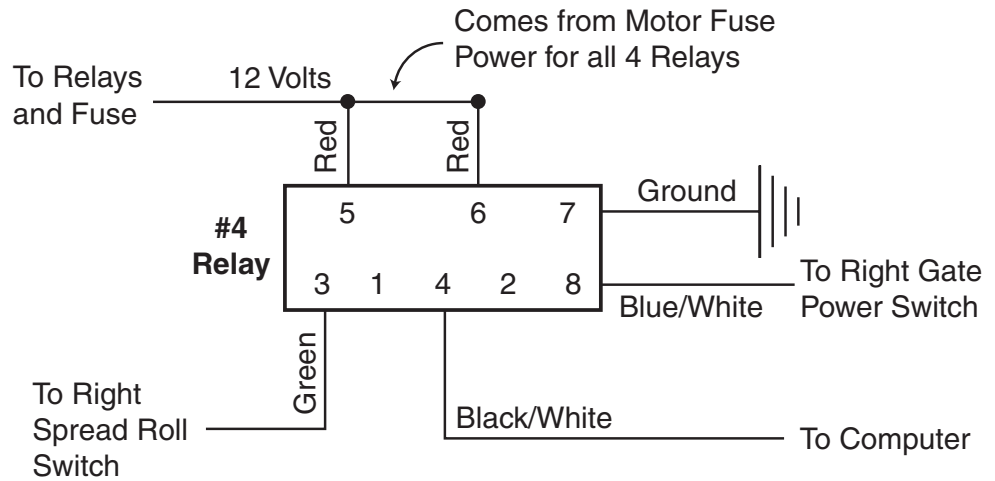
Turn adjusting screw (Min.) all the way out, then turn back in 1-1/2 turns (then check travel speed).

**Adjust Rear
Motor Only**



ChipSpreader Time Delay Relay

With No Time Delay



With Time Delay

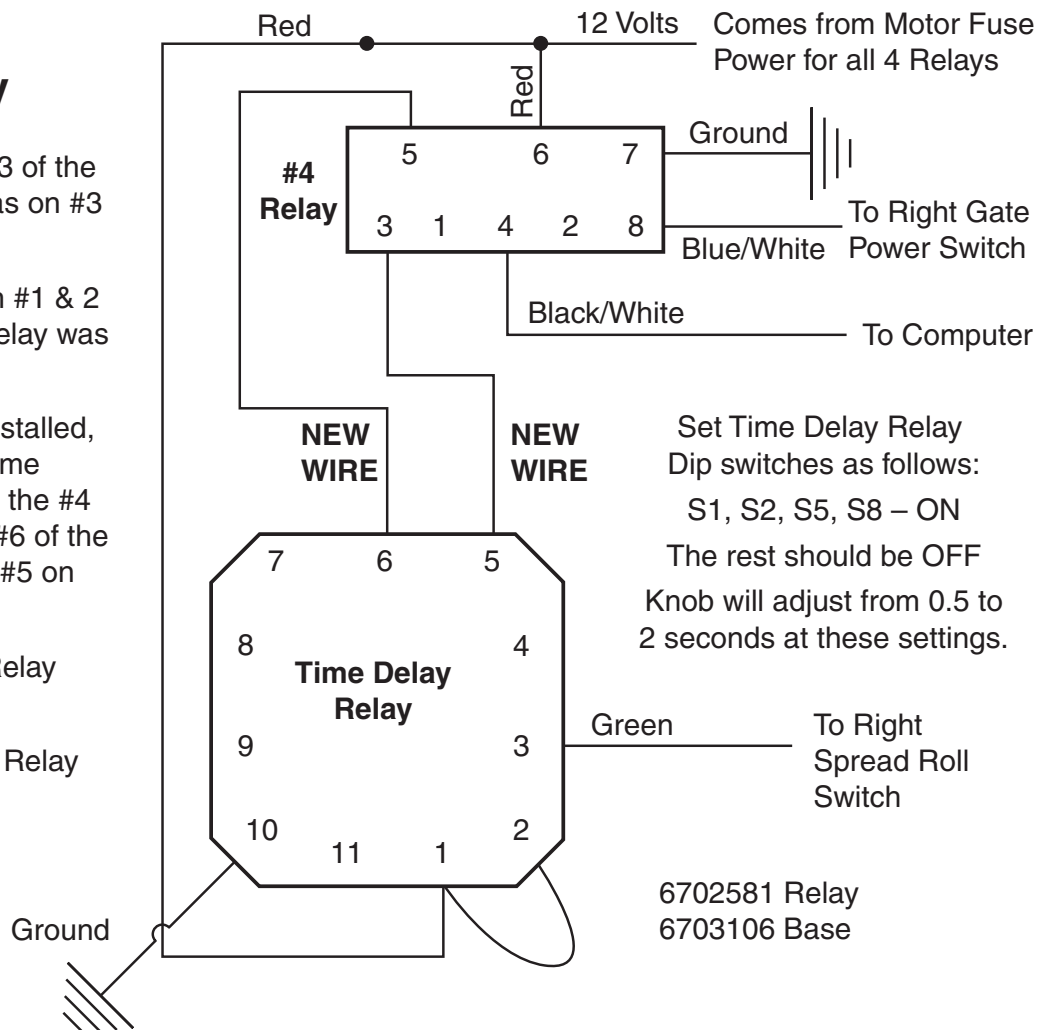
The Green wire on #3 of the Time Delay Relay was on #3 off #4 Relay.

The Red 12V wire on #1 & 2 on the Time Delay Relay was on #5 of #4 Relay.

Two new wires are installed, one from #5 of the Time Delay Relay to #3 on the #4 Relay and one from #6 of the Time Delay Relay to #5 on the #4 Relay.

#10 on Time Delay Relay goes to Ground.

All other wires on #4 Relay stay the same.



Set Time Delay Relay Dip switches as follows:

S1, S2, S5, S8 – ON

The rest should be OFF

Knob will adjust from 0.5 to 2 seconds at these settings.

Checking Gate Potentiometer Settings

Rexroth Computers

Fixed Hopper and Variable Hopper

1. Make sure that gate is fully closed.

NOTE: OHMS increase as the gate opens, this adjustment is critical, and also effects computer accuracy.

2. Using multimeter set to OHMS:
3. Check OHMS across the orange wire and the green wire terminals at the connector attached to the potentiometer.
4. Reading should be between 250 - 270 OHMS.
5. Make adjustment if not within these parameters.
6. Re-calibrate (null/scale) gate calibrations in computer set-up if adjustment is made.

Modifications for Service Brakes on ChipSpreader

To enhance the performance of the secondary brakes (foot pedal brake) it has been decided to incorporate the brake into the computer control. The foot pedal will be modified to incorporate a switch, which will send a 12-volt signal to the computer when the brake is applied. When the computer senses this, it will initialize a rapid deceleration (faster than standard) regardless of joystick position. This deceleration parameter should be adjustable using the host program. This generalization with the following logic will describe the revised function of the secondary braking system.

Scenario I: Foot pedal depressed until machine comes to complete stop.

1. If machine comes to stop with the joystick returned to neutral position, resume normal operation once stick is removed from neutral. No change of speed set point.
2. If machine comes to stop with joystick out of neutral (forward or reverse), operator must return the stick to neutral before hydrostatic drive can be re-engaged. The parking brake will not set until the joystick is returned to neutral. No change of speed set point.

Scenario II: Foot pedal is depressed and then released before machine comes to stop.

1. If the joystick is in neutral or returned to the neutral position during rapid decel, the instant the foot pedal is released the ChipSpreader will switch from rapid decel to normal decel and continue to slow down until stopped. If in normal decel and the stick is then moved from neutral, normal operation resumes. No change of speed set point.
2. If the joystick is left somewhere out of neutral in the direction of travel during rapid decel, when the foot pedal is released, the ChipSpreader will continue motion but at a new speed set point equal to the rate of motion when the foot pedal was released. This will be a temporary speed set point. If the joystick is brought to neutral while at this new speed set point, the original speed set point will be reinstalled. If the new speed set point is changed manually by scrolling the speed switch or activating a memory preset, any change will be the new speed set point.
3. If the joystick is out of neutral in the opposite direction of travel during rapid decel, when the foot pedal is released the ChipSpreader will switch from rapid decel to normal decel and continue to slow down until stopped. The joystick must be placed into neutral before the hydrostatic drive is re-engaged. Parking brake will not set until joystick is placed in neutral. If the joystick is pushed back through neutral and into the direction of travel during normal decel, normal operation resumes.

Other Notes:

Once the foot pedal brake is depressed, the computer will decelerate the machine at the programmed rate regardless of stick position as long as the foot pedal is held engaged.

The computer will ignore the brake signal at speeds of 50 FPM or less.

Modular Multiple Disc Brake Service Instructions

Modular

MULTIPLE DISC BRAKE (SAE D size)

Etnyre ChipSpreader uses #13-552-008

SERVICE INSTRUCTIONS



TABLE 1

Model Number	Lining Kit	O-ring Kit	Bearing Kit	Spring Kit	Red Springs	Blue Springs
13-552-002	12-501-306	12-501-249	12-501-250	12-501-251	6	4
13-552-008	12-501-306	12-501-249	12-501-250	12-501-251	6	4
13-552-008	12-501-306	12-501-249	12-501-250	12-501-251	10	0
13-552-010	12-501-306	12-501-249	12-501-250	12-501-251	12	2
13-552-012	12-501-306	12-501-249	12-501-250	12-501-251	2	4
13-552-018	12-501-306	12-501-249	12-501-250	12-501-251	10	0
13-552-018	12-501-306	12-501-249	12-501-250	12-501-251	6	2
13-552-020	12-501-338	12-501-337	None	12-501-336	10	2
13-552-022	12-501-306	12-501-292	12-501-250	12-501-251	16	0
13-552-028	12-501-306	12-501-249	12-501-250	12-501-251	6	4
13-552-032	12-501-306	12-501-292	12-501-250	12-501-251	10	0
13-552-033	12-501-306	12-501-249	12-501-250	12-501-251	4	4
13-552-034	12-501-306	12-501-249	12-501-250	12-501-251	6	4
13-552-036	12-501-306	12-501-249	12-501-250	12-501-251	4	4
13-552-038	12-501-306	12-501-249	12-501-250	12-501-251	4	4
13-552-040	12-501-306	12-501-249	12-501-250	12-501-251	6	2
13-552-042	12-501-306	12-501-249	12-501-250	12-501-251	6	2
13-552-044	12-501-306	12-501-249	12-501-250	12-501-251	4	4
13-552-050	12-501-338	12-501-337	None	12-501-336	6	4
13-552-052	12-501-306	12-501-249	12-501-250	12-501-251	4	0
13-552-056	12-501-306	12-501-249	12-501-250	12-501-251	6	2
13-552-060	12-501-306	12-501-249	12-501-250	12-501-251	12	2
13-552-062	12-501-306	12-501-328	12-501-329	12-501-251	10	0
13-552-064	12-501-306	12-501-348	12-501-345	12-501-251	16	0
13-552-066	12-501-306	12-501-368	12-501-250	12-501-251	16	0
13-552-068	12-501-306	12-501-249	12-501-333	12-501-251	12	2
13-552-070	12-501-306	12-501-249	12-501-250	12-501-251	16	0
13-552-072	12-501-306	12-501-249	12-501-383	12-501-251	6	4
13-552-074	12-501-306	12-501-249	12-501-250	12-501-251	12	2
13-552-076	12-501-306	12-501-249	12-501-333	12-501-251	16	0
13-552-078	12-501-306	12-501-249	12-501-250	12-501-251	6	4
13-552-080	12-501-306	12-501-249	12-501-250	12-501-251	16	0
13-552-084	12-501-306	12-501-249	12-501-250	12-501-251	10	0
13-552-086	12-501-306	12-501-249	12-501-250	12-501-251	16	0
13-552-088	12-501-306	12-501-249	12-501-250	12-501-251	12	2

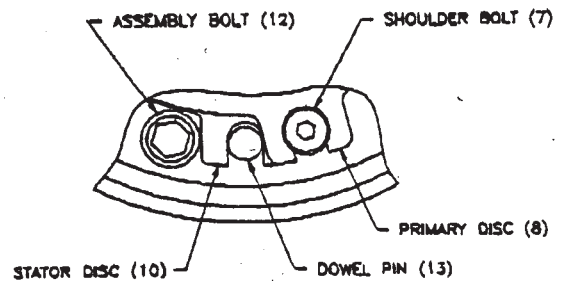
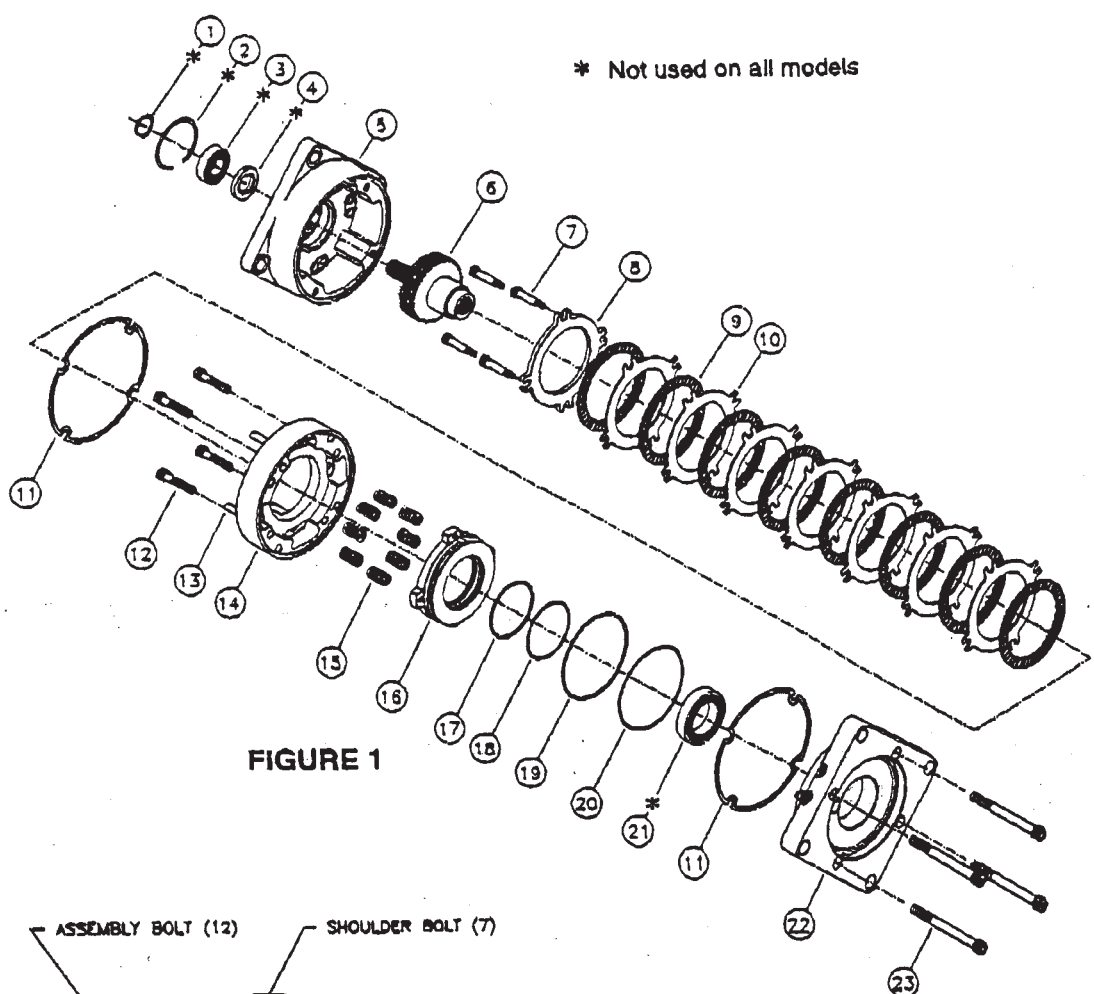
TABLE 2 (Items included in kits)

Lining Kit	O-ring Kit	Bearing Kit	Spring Kit
Primary Disc (8) Rotor Disc (9) Stator Disc (10) Case Seals (11)	Oil Seal (4*) Case Seals (11) Back-up Rings (17 & 19) O-rings (18 & 20)	Bearings (3" & 21") Oil Seal (4*) Case Seals (11)	Case Seals (11) Red Springs (15) Blue Springs (15*)

* Not used on all models

NOTE

All repair kits include mounting face gaskets and o-rings. Some motors and gearboxes allow for the use of o-rings to seal the mounting faces on either side to the brake. Do not use the o-ring and face gasket together to seal a mounting face.



VIEW A-A
STACK ASSEMBLY
DETAIL

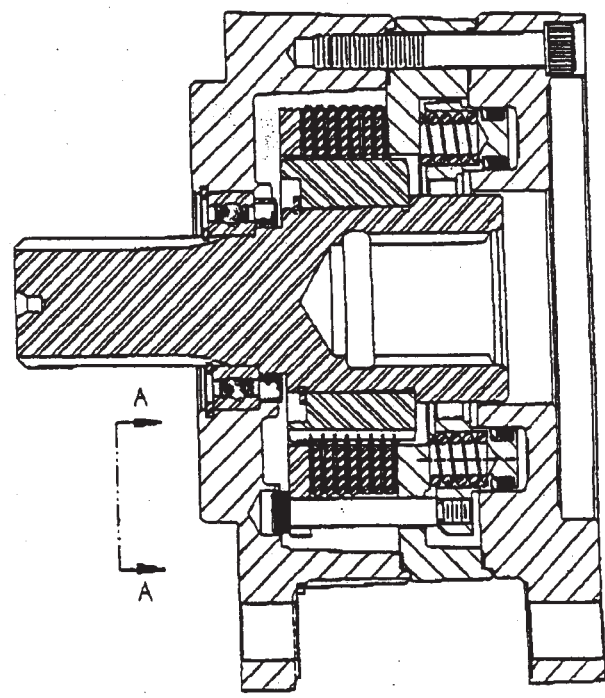


FIGURE 2
 (13-552-008 Shown)

NOTE

This literature services various models in this brake series. The components shown in Figures 1 & 2 may appear different than what is found in your brake. See Table 2 for items included in kits.

DISASSEMBLY

(Refer to Figures 1 & 2)

1. Remove four socket head assembly screws (23). A suitable holding fixture is useful to keep brake in position.
2. Tap female end of spline shaft assembly (8) and spring plate (14) with soft mallet to separate cover. If sections will not separate, use a screwdriver to carefully pry sections apart.
3. Remove retaining ring (1) from spline shaft assembly (6). **NOTE: Not all models use retaining ring (1).**
4. Remove spline shaft assembly (6) from cover plate (5) by tapping male end of spline shaft assembly with soft mallet.
5. Remove retaining ring (2) from cover plate (5) and press out oil seal (4) and bearing (3). **NOTE: Not all models use retaining ring (2), oil seal (4) or bearing (3).**
6. Remove four socket head shoulder bolts (7). A suitable holding fixture is useful to hold the brake in position.

CAUTION

Do not remove shoulder bolts without pressurization of brake, approximately 20.7 bar (300 psi), or damage may result.

7. Remove primary disc (8), rotor discs (9) and stator discs (10). **NOTE: Primary disc (8) is positioned by shoulder bolts (7) and stator discs (10) are positioned on dowel pins (13).**
8. Release pressure to brake before removing four socket head cap screws (12).
9. Remove spring plate (14).
10. Remove case gasket (11) from spring plate (14).
11. Before removing springs (15), record the pattern and color for reassembly purposes.
12. Remove piston (16) by carefully applying hydraulic pressure to the brake release port in pressure plate (22).
13. Remove o-rings (18 & 20) and back-up rings (17 & 19) from piston (16). **NOTE: Be careful not to scratch or mar piston.**
14. Remove case gasket (11) from pressure plate (22).

ASSEMBLY

(Refer to Figures 1 & 2)

LUBRICATE ALL RUBBER COMPONENTS FROM REPAIR KIT WITH CLEAN TYPE FLUID USED IN THE SYSTEM.

1. Clean all parts thoroughly before assembling.
2. Press oil seal (4) into cover plate (5) until it is flush with bearing shoulder. **NOTE: Not all models use oil seal (4).**

DRY DESIGN BRAKE

Oil seal (4) must be installed with open side facing pilot end of cover (5).

LIQUID COOLED BRAKE

Oil seal (4) must be installed with closed side facing pilot end of cover (5).

3. Press bearing (3) into position until it bottoms out on oil seal borestep. **NOTE: Not all models use bearing (3).**

4. Install retaining ring (2) into cover plate (5). **NOTE: Not all models use retaining ring (2).**
5. Press spline shaft assembly (6) into bearing (3) until shaft bottoms on shaft shoulder. Bearing inner race must be supported during this operation.
6. Install retaining ring (1) on spline shaft assembly (6). **NOTE: Not all models use retaining ring (1).**
7. Install back-up rings (17 & 19) on piston (16) toward spring pockets.
8. Install o-rings (18 & 20) on piston (16). Be sure o-rings are flat and all twists removed. **NOTE: Be careful not to scratch or mar piston.**
9. Lubricate piston (16) with clean type fluid used in the system. Carefully press piston into pressure plate (22). Be sure piston is positioned so threaded holes in piston are in alignment with thru holes in spring plate (14) when installed.
10. Install springs (15) according to pattern and color recorded during disassembly.
11. Affix case gaskets (11) to pressure plate (22) and spring plate (14).
12. Place unit on a press. Using a fixture, depress and install four socket head assembly bolts (12). **NOTE: Apply two drops of Loctite #242 to threads. Torque bolts 74.6-81.4 N-m (55-60 lb-ft). A suitable holding fixture is useful to hold brake in position.**
13. Install stator discs (10) and rotor discs (9). Begin with a rotor disc (9) and alternate with stator discs (10). **NOTE: Slots in stator discs (10) are positioned on dowel pins (13) in spring plate (14). Refer to view A-A for proper stack assembly detail.**
14. Install primary disc (8). Align tabs on primary disc (8) with thru holes in spring plate (14) and partially screw in four socket head shoulder bolts (7). **NOTE: Apply two drops of Loctite #242 to threads. Inspect for free movement of stack. Pressurize brake release port, approximately 27.6 bar (400 psi) to release discs. Torque shoulder bolts 20.3-24.4 N-m (15-18 lb-ft) and release pressure. A suitable holding fixture is useful to hold brake in position.**
15. Install cover plate (5) using four socket head assembly bolts (23). **NOTE: Apply two drops of Loctite #242 to threads. Torque cap screws 74.6-81.4 N-m (55-60 lb-ft).**

Special Notes for Oil Cooled ("Z Option") Brakes

COOLING OIL RECOMMENDATIONS:

Oil type: Mineral base hydraulic oil such as Mobil DTE 24, Citgo A/W 32 or equivalent

Flow thru capacity: 3.8-26.5 L/min (1.0-7.0 gpm)

Maximum case pressure: 1.03 bar (15 psi)

Sump cooling fluid volume:

Horizontal: 148 mL (5 oz)

Vertical: Contact MICO, Inc.

BLEEDING

1. Install brake in system and connect pressure lines.
2. Bleed pressure release section of brake by pressurizing side

inlet port and allowing air to escape from top port. Pressure should not exceed 6.9 bar (100 psi) during bleeding.

3. Apply sufficient pressure to release brake and check for proper operation in system.

SERVICE DIAGNOSIS

PROBLEM	CAUSE	EXPLANATION	ACTION
Brake slips	A. Excessive pressure in hydraulic system	If there is back pressure in the actuation line of the brake, holding torque will be reduced.	Check filters, hose size, restrictions in other hydraulic components.
	B. Oil in brake if designed for dry use	Wet linings generate 67% of the dry torque rating. If the brake has oil in it, check the type of oil hydraulic or gearbox. 1. Gearbox oil 2. Hydraulic oil	Replace oil seal in brake. Check motor seal. Check piston seals. Note: Internal components will need to be inspected, cleaned and replaced as required.
	C. Disc plates worn	The thickness of the disc stack sets the torque level. A thin stack reduces torque.	Check disc thickness.
	D. Springs broken or have taken a permanent set	Broken or set springs can cause reduced torque - a rare occurrence.	Check release pressure.
Brake drags or runs hot	A. Low actuation pressure	The brake should be pressurized to minimum of 1.38 bar (20 psi) over the full release pressure under normal operating conditions. Lower pressures will cause the brake to drag thus generating heat.	Place pressure gauge in bleed port & check pressure with system on.
	B. Bearing failure	If the bearing should fail, a large amount of drag can be generated.	Replace bearing.
	C. Oil in brake	Excess fill of oil in sump condition thru wet brakes can cause the unit to run hot. Also excessive rpm in sump condition.	Drain oil and refill as specified for brakes. Switch to flow thru cooling.
Brake will not release	A. Stuck valve or clogged	Brakes are designed to come on when system pressure drops below stated release pressure. If pressure cannot get to brake, the brake will not release.	Place pressure gauge in bleed port - check for adequate pressure. Replace defective line or component.
	B. Bad o-rings	If release piston will not hold pressure, brake will not release.	Replace o-rings.
	C. Discs frozen	These brakes are designed for only limited dynamic braking. A severe emergency stop or prolonged reduced release pressure operation may result in this type of damage.	Replace disc stack.

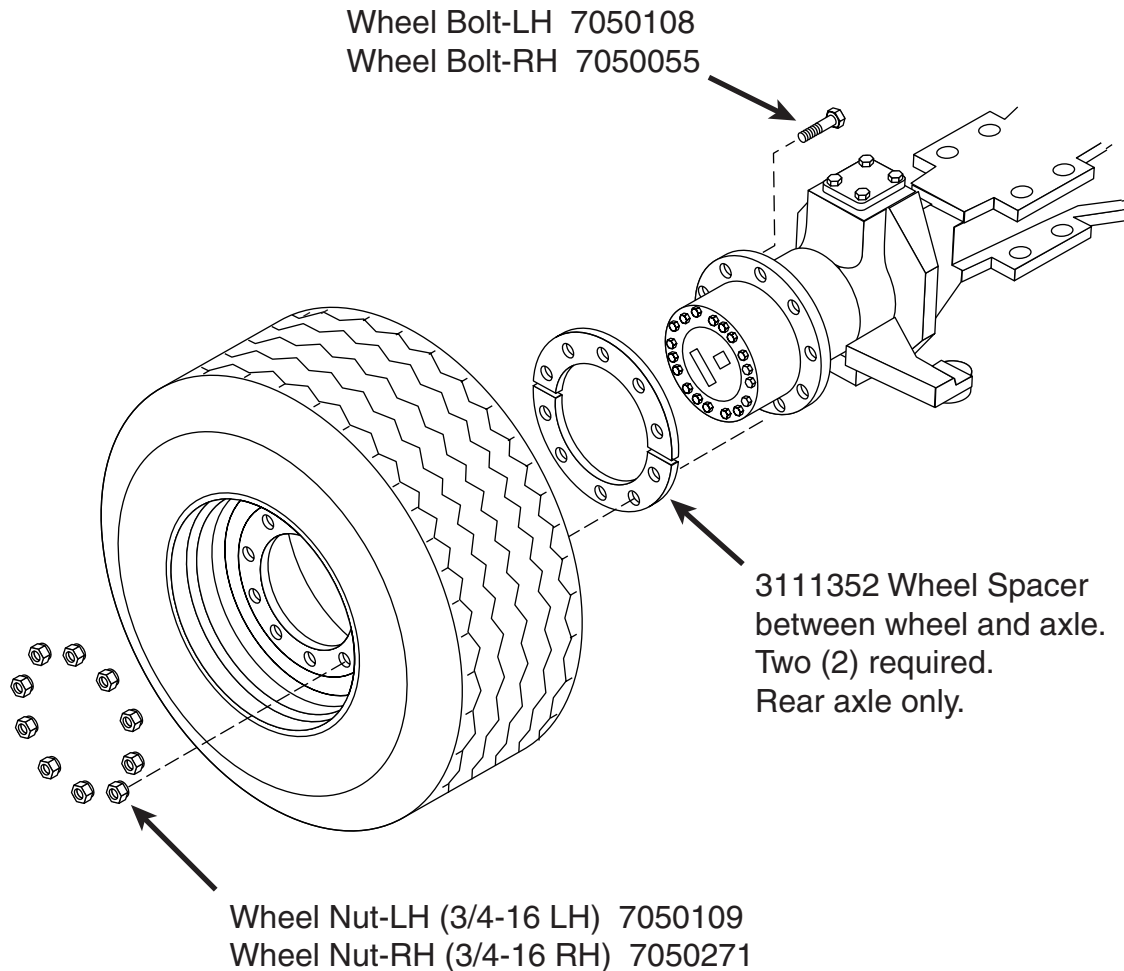
MICO could not possibly know of and give advice with respect to all conceivable applications in which this product may be used and the possible hazards and/or results of each application. MICO has not undertaken any such wide evaluation. Therefore, anyone who uses an application which is not recommended by the manufacturer, first must completely satisfy himself that a danger will not be created by the application selected, or by the particular model of our product that is selected for the application.

MICO has made every attempt to present accurate information in catalogs, brochures and other printed material. MICO can accept no responsibility for errors from unintentional oversights that may exist. Due to a continuous program of product improvement, materials, specifications, and product documentation are subject to change without notice or obligation.

Drive Wheel Spacer Installation

4 Wheel Drive

Rear Wheels Only



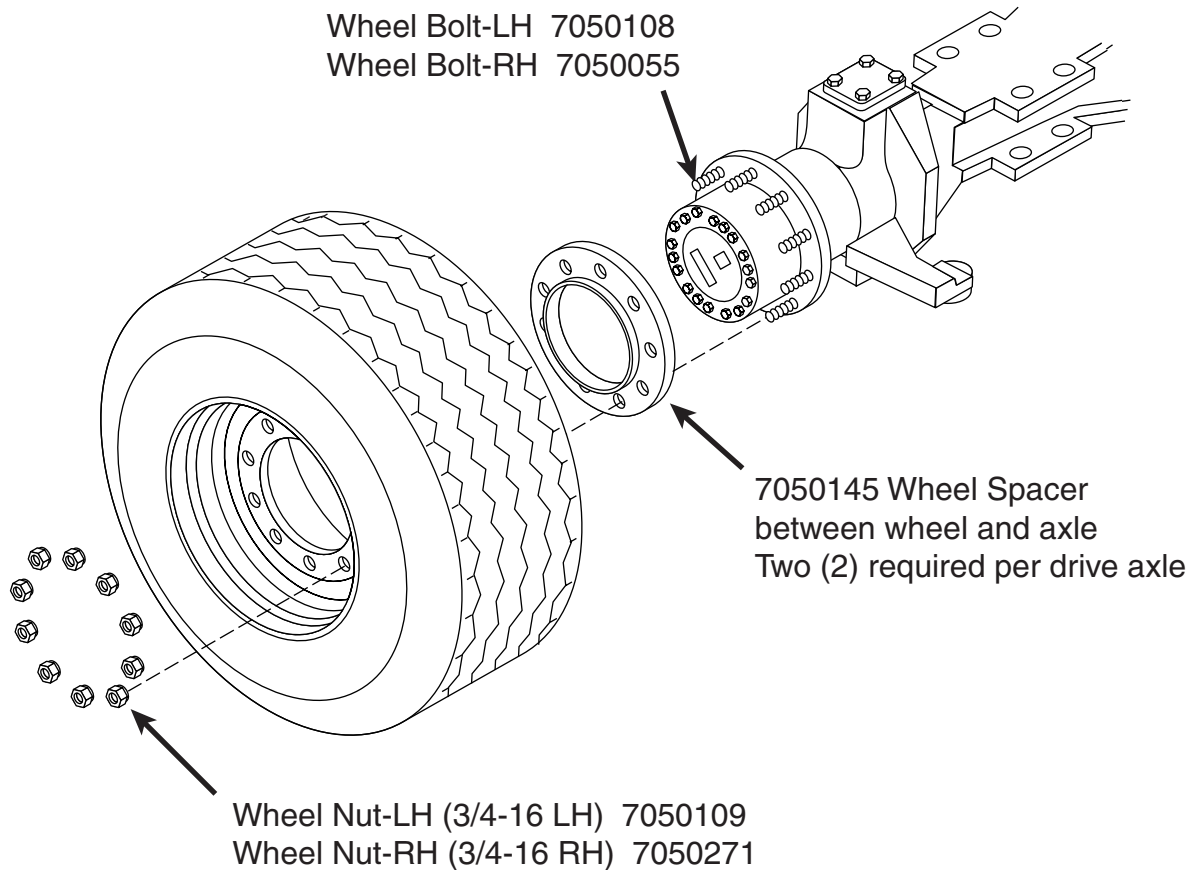
Lug Nut Torque : 450 - 500 ft. lbs.

Left Wheel Shown

4 Wheel Drive Units Only – install on Rear Wheels.

Drive Wheel Spacer Installation 2 Wheel Drive and 4 Wheel Drive

Front (Drive) Wheels Only



Lug Nut Torque : 450 - 500 ft. lbs.

Left Front Wheel Shown

2 Wheel Drive units – install on Front Wheels Only.
4 Wheel Drive units – install on All Four Wheels.

Chipsreader Pressure Checklist

Standard Hopper

Units built after 3/1/2002

Checkpoint/Function	Pressure	(Min/Max)	OK/ADJ
Charge Pressure (At Idle)	400	(390/410)	
Fwd High Pressure Relief	7000		
Rev High Pressure Relief	7000		
Pressure Override (Por)	6500		
Standby Pressure Pump #2	450	(445/455))	
Max. High Pressure Pump #2	3000	(2950/3050)	
Secondary Steering Relief	2150	(2100/2200)	
Steering Relief Pressure (MP)	2000	(1950/2050)	
Hitch Pilot Pressure (PP)	250	(220/280)	
Gate Cylinder Relief Valve	1500	(1400/1600)	
<hr/>			
Conveyor Speed Check	High/Low	Adjustable Flow	
Spreadroll Speed	100		

Chipsreader Pressure Checklist

Variable Hopper

Units built after 3/1/2002

CHECKPOINT/FUNCTION	PRESSURE	(MIN/MAX)	OK/ADJ
Charge Pressure (At Idle)	400	(390/410)	
Fwd High Pressure Relief	7000		
Rev High Pressure Relief	7000		
Pressure Override (Por)	6500		
Standby Pressure Pump #2	475	(470/480)	
Max. High Pressure Pump #2	3100	(3050/3150)	
Standby Pressure Pump #3	400	(390/410)	
Max. High Pressure Pump #3	2900	(2850/2950)	
Secondary Steering Relief	2150	(2100/2200)	
Steering Relief Pressure (MP)	2000	(1950/2050)	
Hitch Pilot Pressure (PP)	250	(220/280)	
Left Gate Cylinder Relief Valve	1500	(1400/1600)	
Right Gate Cylinder Relief Valve	1500	(1400/1600)	
<hr/>			
Conveyor Speed Check	High/Low	Adjustable Flow	
Auger Speed Check	High/Low	Adjustable Flow	
Left Spreadroll Speed		100 Rpm	
Right Spreadroll Speed		100 Rpm	

ChipSpreader Pressure Checklist Fixed Hopper

Serial Number: _____

Date: _____

Checkpoint/Function	Min/Max Pressure (PSI)	Measured/Set Pressure	Initials
Charge Pressure (At Idle)	390/410 (400)		
Forward High Pressure Relief	7000		
Reverse High Pressure Relief	7000		
Pressure Over-Ride (P.O.R.)	6500		
Standby Pressure Pump 2	290/310 (300)		
Max Pressure Pump 2	2900/3000 (3000)		
Steering Relief Pressure (MP)	1 800/2000 (2000)		
Hitch Pilot Pressure (PP)	220/280 (250)		
Hitch Reduced Pressure (RP)	115/170 (115)		
Gate Cylinder ReliefValve	1150/1250 (1200)		

Conveyor Speeds Checked (2/3 Max) Yes _____

Spreadroll Speed Set (113 RPM) Yes _____

Hyd lines Bled For Air Yes _____

ChipSpreader Pressure Checklist Variable Hopper

Serial Number: _____

Date: _____

Checkpoint/Function	Min/Max Pressure (PSI)	Measured/Set Pressure	Initials
Charge Pressure (At Idle)	390/410 (400)		
Forward High Pressure Relief	7000		
Reverse High Pressure Relief	7000		
Pressure Over-Ride (P.O.R.)	6500		
Standby Pressure Pump 2	290/310 (300)		
Max Pressure Pump 2	2900/3000 (3000)		
Standby Pressure Pump 3	290/310 (300)		
Max Pressure Pump 3	2900/3000 (3000)		
Steering Relief Pressure (MP)	1800/2000 (2000)		
Hitch Pilot Pressure (PP)	220/280 (250)		
Hitch Reduced Pressure (RP)	115/170 (115)		
Hopper Cylinder Relief Valve	1950/2050 (2000)		
Left Gate Cylinder Relief Valve	1200		
Right Gate Cylinder Relief Valve	1300		

Conveyor Speeds Checked (2/3 Max) Yes _____

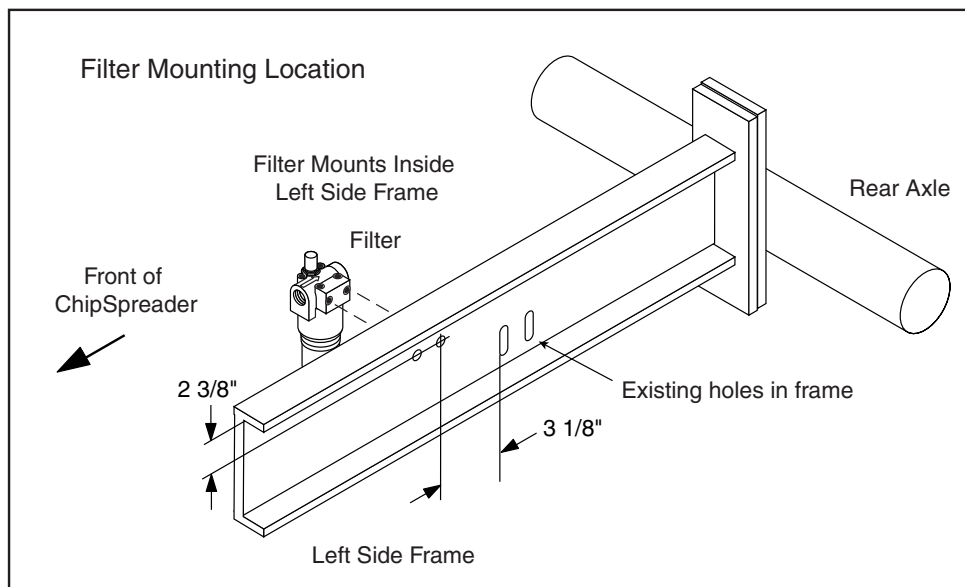
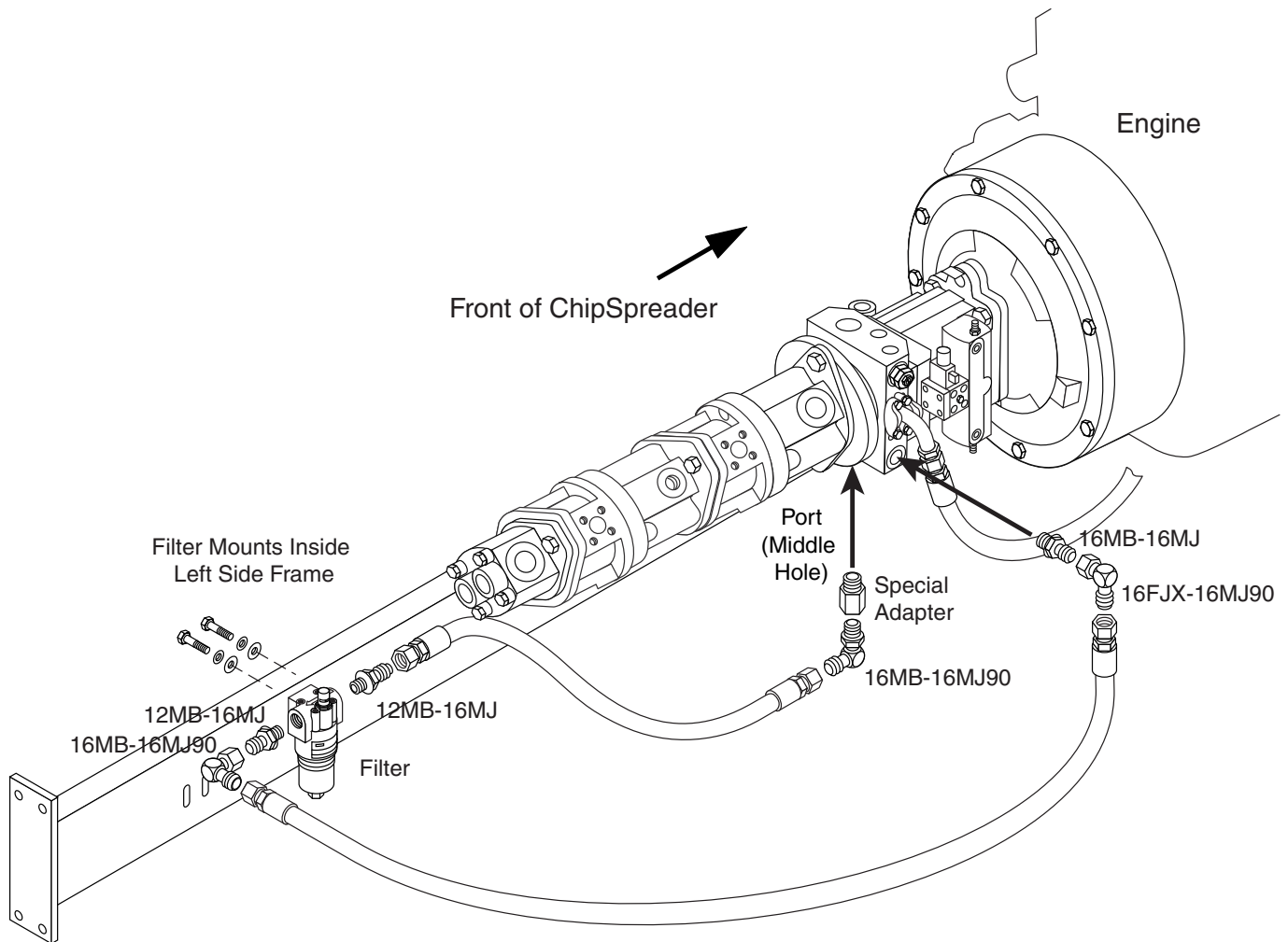
Auger Speeds Checked (2/3 Max) Yes _____

Left Spreadroll Speed Set (96 RPM) Yes _____

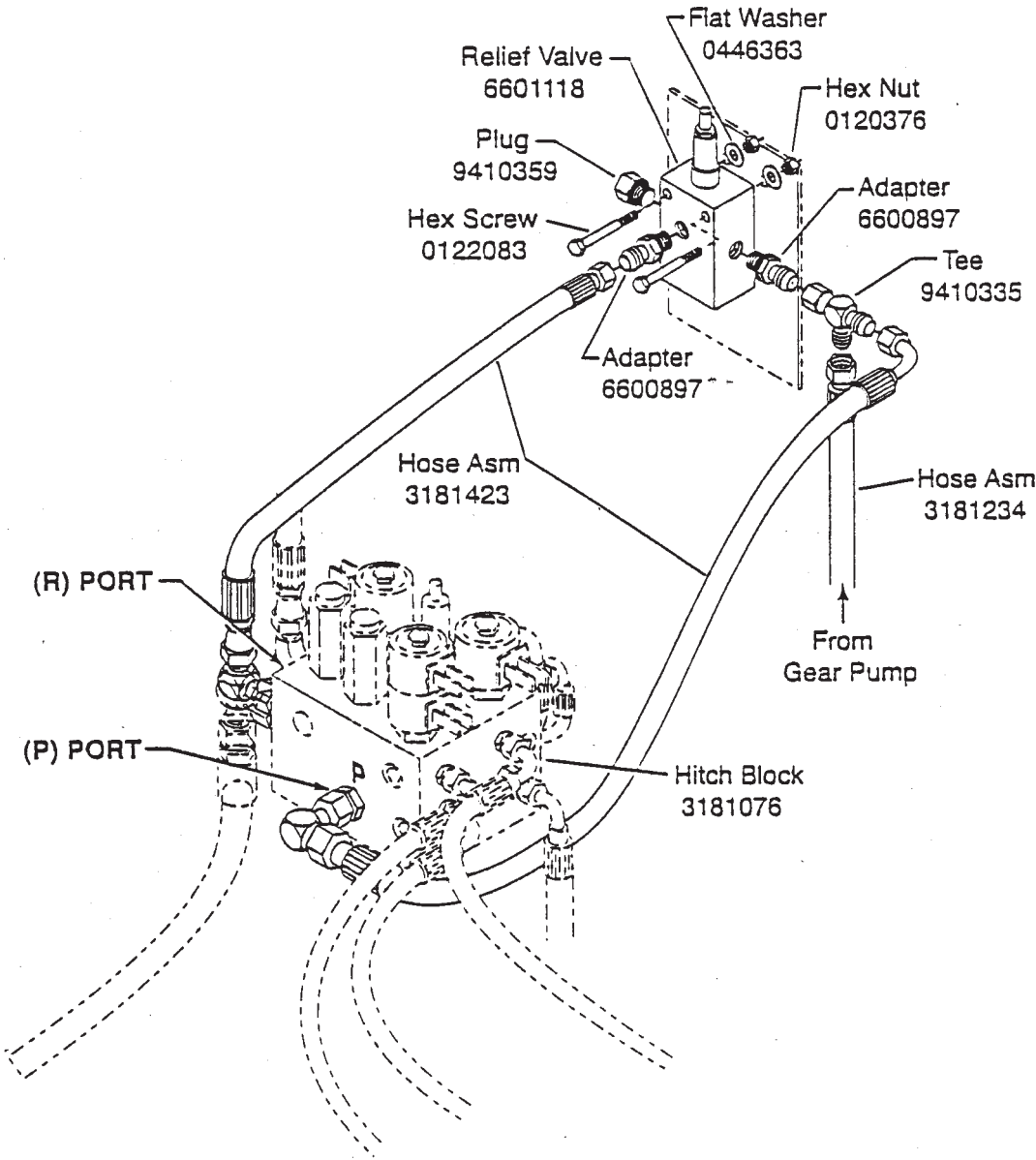
Right Spreadroll Speed Set (96 RPM) Yes _____

Hydraulic Lines Bled For Air Yes _____

Auxilliary Charge Pump Filter Assembly



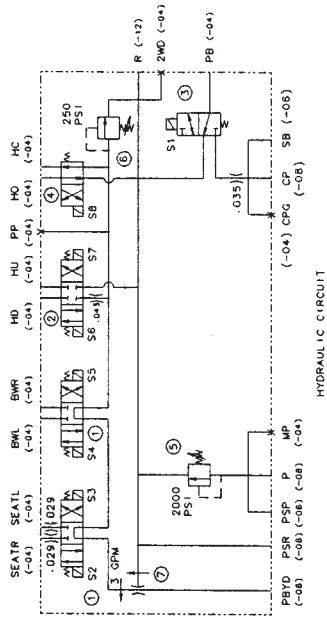
Relief Valve for Steering



Manifold - Hitch/Steer with Batwing

3181422

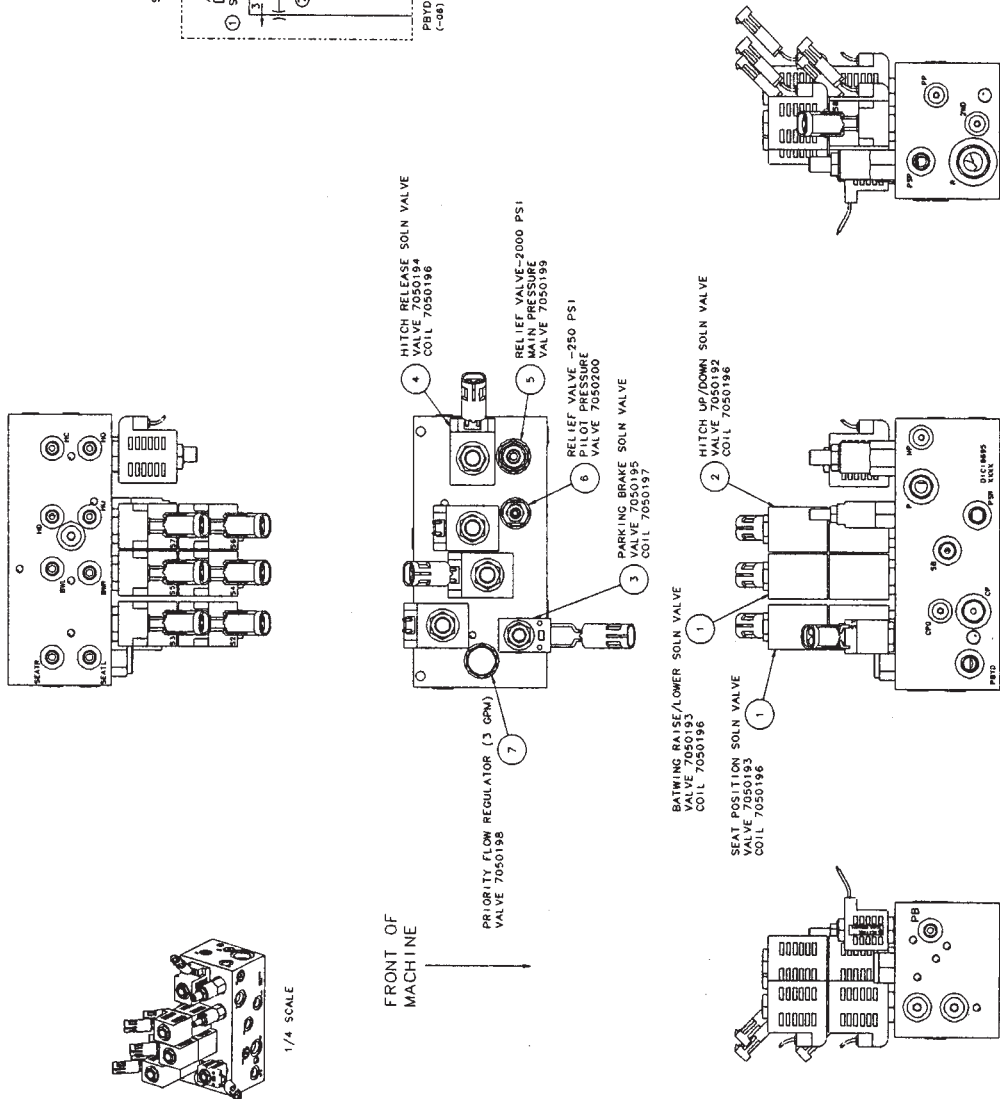
REV	DESCRIPTION	DATE	APPROVED
A	UPDATED DESCRIPTIONS (MG)	7/12/01	



- P MAIN PRESSURE PORT
- PP STEERING PRESSURE
- PSR STEERING RETURN
- PBYD POWER BEYOND VALVE
- HU HITCH UP PRESSURE
- HD HITCH DOWN PRESSURE
- RP MAIN RETURN PORT
- HC HITCH CLOSE PRESSURE
- HO HITCH OPEN PRESSURE
- CB PARKING BRAKE PRESSURE
- CP CHARGE PRESSURE
- CPC CHARGE PRESSURE GAUGE PORT
- BWL BATTING LEFT
- BWR BATTING RIGHT
- SEATL SEAT LEFT
- SEATR SEAT RIGHT

DELTRON P/N: 10198-95

GENERAL NOTES	DWG. NO.	DATE	APPROVED
ALL DIMENSIONS IN INCHES. DO NOT SCALE DIM.	3181422	7/12/01	
MANUFACTURING TITLE	MANIFOLD-HITCH/STEER W/BATWING	DWG. NO.	3181422
SCALE	1/2"	DATE	8/18/01
SHEET	1	TOTAL SHEETS	1



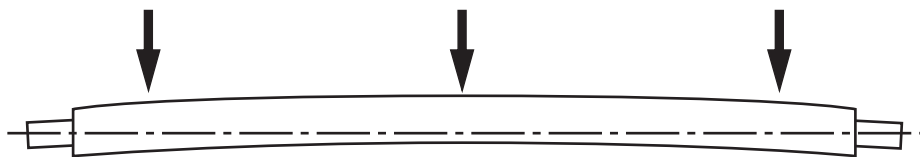
ChipSpreader Front Hopper Spread Roll Straightening Procedure

The most common cause of the spread roll becoming bent is the careless handling of the hopper.

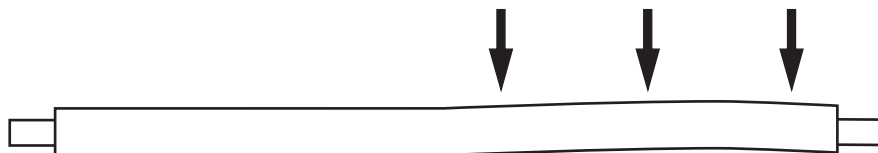
The following procedures can be used in most cases to straighten the spread roll but on some units it might be necessary to replace the spread roll if the straightening procedures fail.

1. Loosen the bearing shaft set screws on both ends of the spread roll.
2. Determine the high place on the spread roll at three places, 2 feet in from each end and at the middle. This can be done by spinning the spread roll and marking with any suitable marker. 1/8" total is the maximum allowable movement for the spread roll.
3. Then by using an acetelene-ox torch with a small tip (or equivalent heating device) heat the spread roll on the **high** side at the 3 places that are marked. Starting with the center, heat to cherry red about 3/4" diameter, then heat the ends in the same manner as the center.
4. Let the spread roll cool.
5. Re-Check the straightness as in item 2 and if still not straight within 1/8" repeat item 3 and 4. Do not heat in the same place, move approximately 2 inches to the side. Do not heat spread roll more than 3/4" diameter spot, it will warp the roll beyond repair, take your time when heating so that the heat moves in an even path around your heat spot.

When letting the spread roll cool, let it do it naturally. Do not force the cooling by using water or any other coolant.



Spread Roll Out in Center as Described Above

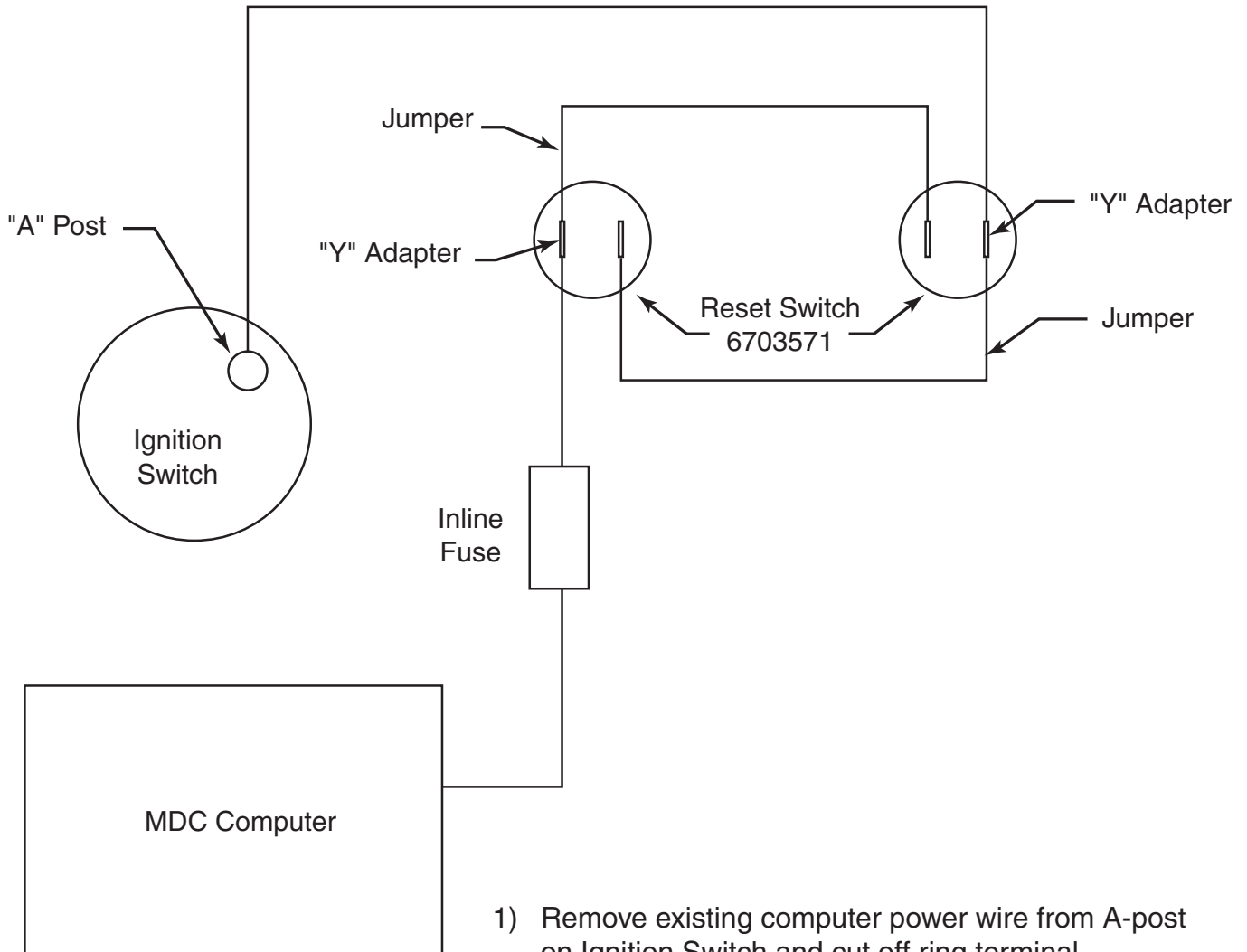


Spread Roll Out on End

Heat with only a 1/2" spot at these three marks, let cool, then check.

Wiring Schematic - Computer Reset Switches

9303620

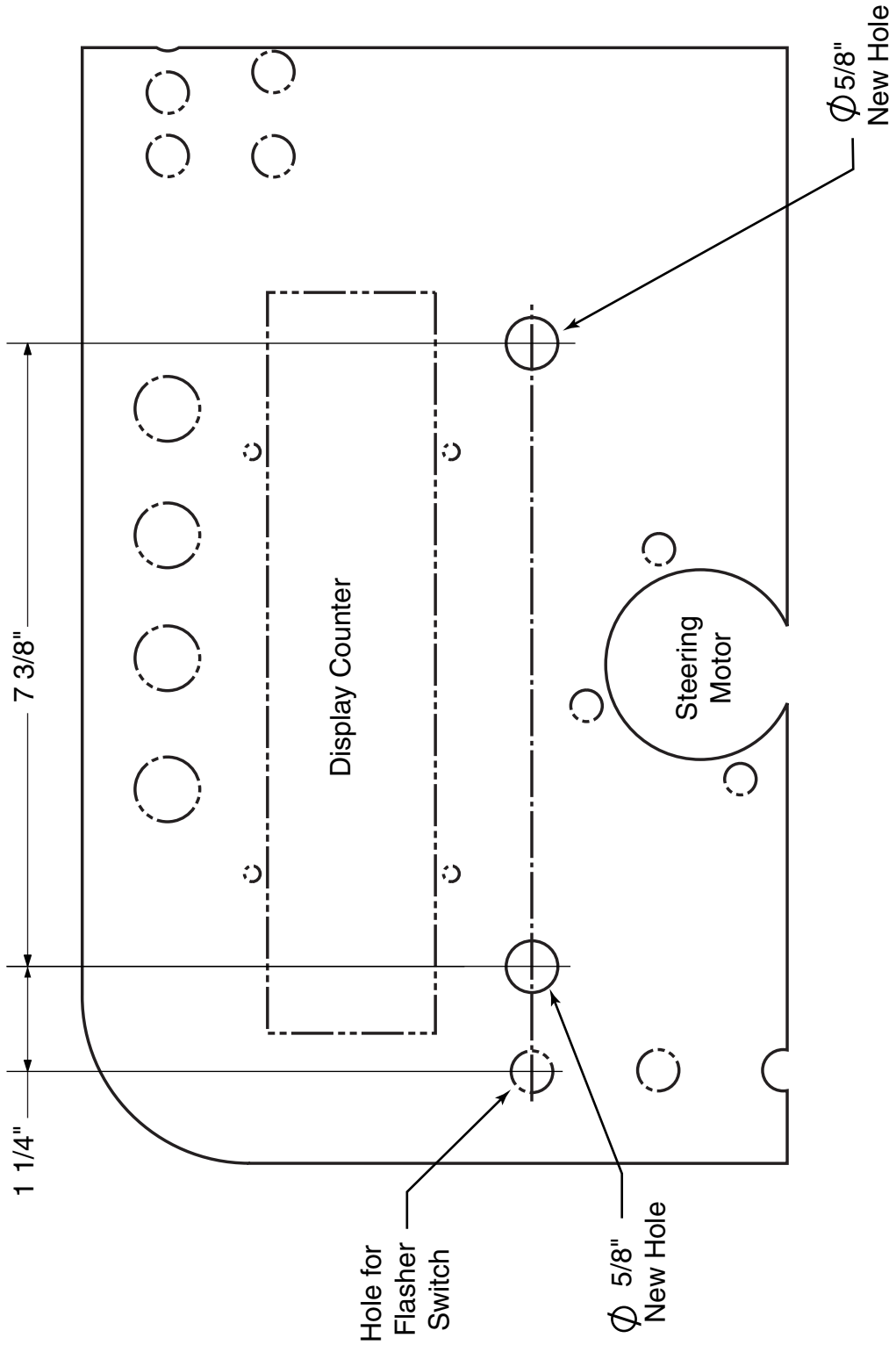


- 1) Remove existing computer power wire from A-post on Ignition Switch and cut off ring terminal.
- 2) Crimp 1/4" spade connector on Computer Power Wire and install on Reset Switch as shown.
- 3) Install remaining power wires and jumpers as shown.

E. D. ETNYRE & CO.
Oregon, Illinois 61061
8/10/2005

Hole Location - Computer Reset Switches

7050481



Drill (2) $\Phi 5/8$ " Holes to mount Reset Switches

Wiring Diagram - Vibrators

9303706

