

Magnum II

Specifications 4

650 lb. Spring Cushion Trip

	CP-709	CP-712	CP-719	CP-725	CP-731	CP-740	CP-745	CP-750
Working Widths Basic Machine	9'	12'	19'	25'	31'	40'	45'	50'
No. Sections	1	1	2	3	3	3	5	5
Shank Spacing	12"	12"	12"	12"	12"	12"	12"	12"
Weight	1,873 lbs.	2,759 lbs.	4,996 lbs.	7,022 lbs.	8,462 lbs.	11,179 lbs.	13,698 lbs.	14,885 lbs.
Tire Size - Main Frame	Automotive	(2) 7.60 x 15 4 Ply Rating	(2) 9.5L x 15 8 Ply Rating	(2) 9 x 15 LT 8 Ply	(4) 9 x 15 LT 8 Ply	(4) 9 x 15 LT 8 Ply	(4) 9 x 15 LT 8 Ply	(4) 11 x 15 LT 8 Ply
- Wing Frame	N/A	N/A	(1) 9.5L x 15 6 Ply Rating	(2) 9.5L x 15 6 Ply Rating	(2) 9.5L x 15 6 Ply Rating	(4) 9.5L x 15 6 Ply Rating	(2) 9.5L x 15 6 Ply Rating	(2) 9.5L x 15 6 Ply Rating
- Outer Wing Frame	N/A	N/A	N/A	N/A	N/A	N/A	(2) 9.5L x 15 6 Ply Rating	(2) 9.5L x 15 6 Ply Rating
No. Wheels - Basic Machine	2	2	3	4	6	8	10	10
Overall Length	6' 3"	12' 3"	17' 10"	18' 9"	18' 9"	23' 10"	21' 9"	23' 10"
Transport Width	9' 5"	13' 6"	15' 5"	19' 10"	19' 10"	21' 2"	19' 10"	22' 10"
Transport Height	4' 2"	4' 7"	10' 3"	10' 3"	12' 11"	15' 11"	15' 9"	15' 9"
Rigid Shank	Optional	Optional	Optional	Optional	Optional	N/A	N/A	N/A
Extra Heavy Duty Trip	Optional	Optional	Optional	Optional	Optional	N/A	N/A	N/A
Sweep To Frame Clearance	27"	27"	27"	27"	27"	27"	27"	27"
Wing Lift Cylinder - Inner Wing	N/A	N/A	3" x 24"	3" x 24"	3 1/2" x 24"	4" x 24"	4 1/2" x 24"	4 1/2" x 30"
- Outer Wing	N/A	N/A	N/A	N/A	N/A	N/A	3" x 24"	3" x 24"
Depth Control Cylinder - Size	N/A	3 1/2" x 12"	3 1/2" x 12"	3 1/2" x 12"	3 1/2" x 12"	4" x 12"	3 1/2" x 12"	3 1/2" x 12"
Flow Divider	N/A	N/A	N/A	N/A	N/A	N/A	Standard	Standard
Gauge Wheels	N/A	N/A	N/A	N/A	N/A	Optional	Standard	Standard
Tripping Height Clearance	9"	9"	9"	9"	9"	9"	9"	9"
Spacing Between Rows	32"	32"	32"	32"	32"	32"	32"	32"
Frame Depth - Main Frame	68"	68"	100"	100"	100"	100"	100"	100"
- Wing Frame	N/A	N/A	68"	68"	68"	68"	68"	68"
Frame Width - Main Frame	9'	12'	13'	13'	13'	16'	13'	16'
- Inner Wing	N/A	N/A	6'	6'	9'	12'	9'	9'
- Outer Wing	N/A	N/A	N/A	N/A	N/A	N/A	7'	8'
Extension Kits Optional	2'	2' & 4'	2'	2' & 4'	2', 4' & 6'	2'	N/A	N/A
Shank Size - 1 1/4" x 2" x 26"	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Sweeps - 16" 50°	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Hitch Poles - 4" x 6" Heavy Wall Tubing	N/A	N/A	Standard	Standard	Standard	N/A	Standard	N/A
Hitch Poles - 4" x 8" Heavy Wall Tubing	N/A	N/A	N/A	N/A	N/A	Standard	N/A	Standard
Tripping Force Spring Cushion	650 lbs.	650 lbs.	650 lbs.	650 lbs.	650 lbs.	650 lbs.	650 lbs.	650 lbs.
Safety Chain	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard

The policy of MORRIS is one of continuing improvements. The company therefore reserves the right to change any specifications without notice.

Specifications

750 lb. Automatic Trip

	CP-709	CP-712	CP-719	CP-725	CP-731	CP-740	CP-745	CP-750
Working Widths Basic Machine	9'	12'	19'	25'	31'	40'	45'	50'
No. Sections	1	1	2	3	3	3	5	5
Shank Spacing	12"	12"	12"	12"	12"	12"	12"	12"
Weight	1,795 lbs.	2,655 lbs.	4,831 lbs.	6,805 lbs.	8,193 lbs.	10,832 lbs.	13,307 lbs.	14,451 lbs.
Tire Size - Main Frame	Automotive	(2) 7.60 x 15 4 Ply Rating	(2) 9.5L x 15 8 Ply Rating	(2) 9 x 15 LT 8 Ply	(4) 9 x 15 LT 8 Ply	(4) 9 x 15 LT 8 Ply	(4) 9 x 15 LT 8 Ply	(4) 11 x 15 LT 8 Ply
- Wing Frame	N/A	N/A	(1) 9.5L x 15 6 Ply Rating	(2) 9.5L x 15 6 Ply Rating	(2) 9.5L x 15 6 Ply Rating	(4) 9.5L x 15 6 Ply Rating	(2) 9.5L x 15 6 Ply Rating	(2) 9.5L x 15 6 Ply Rating
- Outer Wing Frame	N/A	N/A	N/A	N/A	N/A	N/A	(2) 9.5L x 15 6 Ply Rating	(2) 9.5L x 15 6 Ply Rating
No. Wheels - Basic Machine	2	2	3	4	6	8	10	10
Overall Length	6' 3"	12' 3"	17' 10"	18' 9"	18' 9"	23' 10"	21' 9"	23' 10"
Transport Width	9' 5"	13' 6"	15' 5"	19' 10"	19' 10"	21' 2"	19' 10"	22' 10"
Transport Height	4' 2"	4' 7"	10' 3"	10' 3"	12' 11"	15' 11"	15' 9"	15' 9"
Rigid Shank	Optional	Optional	Optional	Optional	Optional	N/A	N/A	N/A
Extra Heavy Duty Trip	Optional	Optional	Optional	Optional	Optional	N/A	N/A	N/A
Sweep To Frame Clearance	27"	27"	27"	27"	27"	27"	27"	27"
Wing Lift Cylinder - Inner Wing	N/A	N/A	3" x 24"	3" x 24"	3½" x 24"	4" x 24"	4½" x 24"	4½" x 30"
- Outer Wing	N/A	N/A	N/A	N/A	N/A	N/A	3" x 24"	3" x 24"
Depth Control Cylinder - Size	N/A	3½" x 12"	3½" x 12"	3½" x 12"	3½" x 12"	4" x 12"	3½" x 12"	3½" x 12"
Flow Divider	N/A	N/A	N/A	N/A	N/A	N/A	Standard	Standard
Gauge Wheels	N/A	N/A	N/A	N/A	N/A	Optional	Standard	Standard
Tripping Height Clearance	10"	10"	10"	10"	10"	10"	10"	10"
Spacing Between Rows	32"	32"	32"	32"	32"	32"	32"	32"
Frame Depth - Main Frame	68"	68"	100"	100"	100"	100"	100"	100"
- Wing Frame	N/A	N/A	68"	68"	68"	68"	68"	68"
Frame Width - Main Frame	9'	12'	13'	13'	13'	16'	13'	16'
- Inner Wing	N/A	N/A	6'	6'	9'	12'	9'	9'
- Outer Wing	N/A	N/A	N/A	N/A	N/A	N/A	7'	8'
Extension Kits Optional	2'	2' & 4'	2'	2' & 4'	2', 4' & 6'	2'	N/A	N/A
Shank Size - 1¼" x 2" x 26"	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Sweeps - 16" 50°	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Hitch Poles - 4" x 6" Heavy Wall Tubing	N/A	N/A	Standard	Standard	Standard	N/A	Standard	N/A
Hitch Poles - 4" x 8" Heavy Wall Tubing	N/A	N/A	N/A	N/A	N/A	Standard	N/A	Standard
Tripping Force - Regular Trip	750 lbs.	750 lbs.	750 lbs.	750 lbs.	750 lbs.	750 lbs.	750 lbs.	750 lbs.
Tripping Force - Heavy Duty Trip	1,250 lbs.	1,250 lbs.	1,250 lbs.	1,250 lbs.	1,250 lbs.	1,250 lbs.	N/A	N/A
Safety Chain	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard

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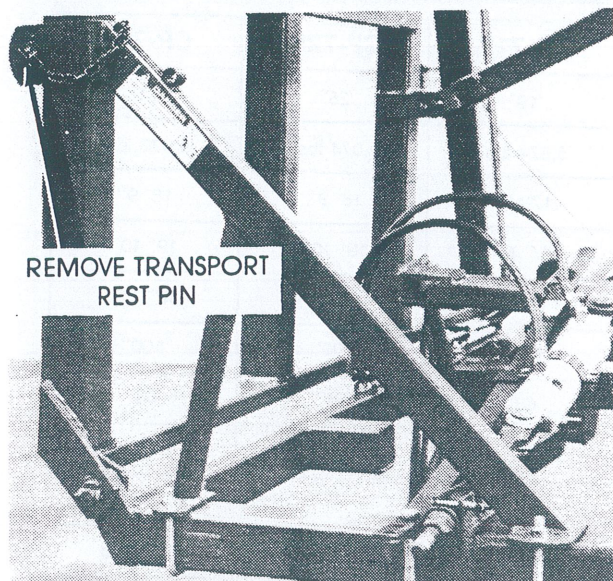
Specifications

800 lb. - 1,250 lb. Automatic Trip

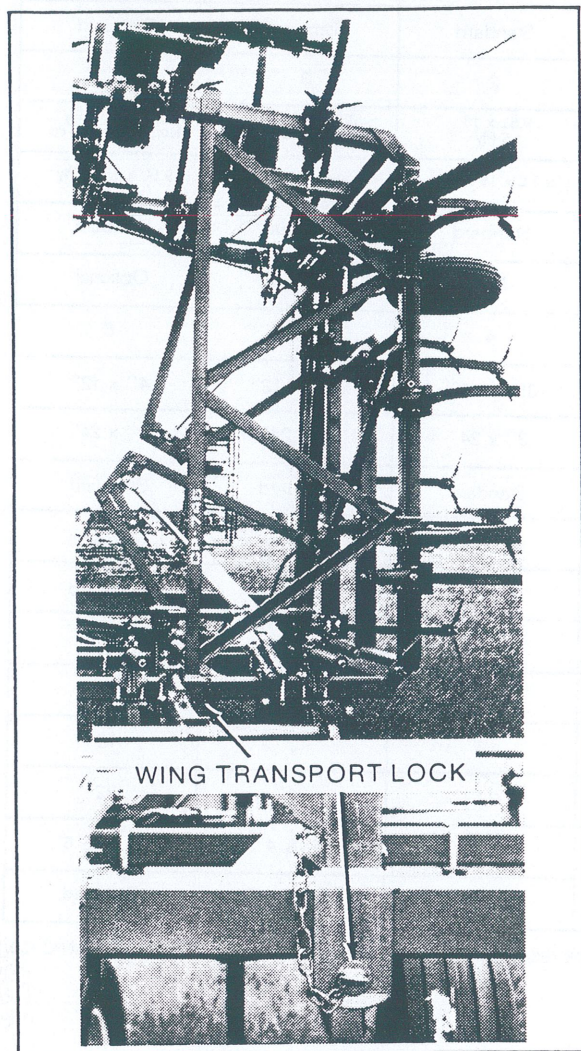
	CP-709	CP-712	CP-719	CP-725	CP-731
Working Widths - Basic Machine	9'	12'	19'	25'	31'
Weight - Basic Machine	1,750 lbs.	2,990 lbs.	5,674 lbs.	8,074 lbs.	8,939 lbs.
Overall Length	6' 3"	12' 3"	17' 10"	18' 9"	18' 9"
Transport Width	9' 5"	13' 6"	15' 5"	19' 10"	19' 10"
Transport Height	4' 2"	4' 7"	10' 3"	10' 3"	12' 11"
Frame Depth - Main Frame	68"	68"	100"	100"	100"
- Wing Frame	N/A	N/A	68"	68"	68"
Frame Width - Main Frame	9"	12"	13"	13"	13"
- Wing Frame	N/A	N/A	6'	6'	6'
Hitch Poles - 4" x 6" - Heavy Wall Tubing	N/A	N/A	Standard	Standard	Standard
Frame Reinforcement	Standard	Standard	Standard	Standard	Standard
Hitch Reinforcement	N/A	Standard	Standard	Standard	Standard
No. of Sections	1	1	2	3	3
Tire Size - Main Frame	Automotive	7.60 x 15" 4 Ply	9.5L x 15" 6 Ply	9 x 15LT 8 Ply Heavy Service Tire	9 x 15LT 8 Ply Heavy Service Tire
- Wing Frame	N/A	N/A	9.5 L x 15" 6 Ply	9.5L x 15" 6 Ply	9.5L x 15" 6 Ply
Dual Axle - Main Frame	N/A	N/A	Standard	Standard	Standard
- Wing Frame	N/A	N/A	N/A	N/A	Optional
No. of Wheels	2	2	4	6	6
Depth Control Cylinder - Size	N/A	3½" x 12"	3½" x 12"	3½" x 12"	4" x 12"
Wing Lift Cylinder - Size	N/A	N/A	3" x 24"	3" x 24"	3" x 24"
Automatic Trip Device - Dual Spring	Standard	Standard	Standard	Standard	Standard
Shank Size - 1¼" x 2" x 26"	Standard	Standard	Standard	Standard	Standard
Sweeps - 16 - 50°	Standard	Standard	Standard	Standard	Standard
Sweep To Frame Clearance	27"	27"	27"	27"	27"
Tripping Height	10"	10"	10"	10"	10"
Trip Spacing	12"	12"	12"	12"	12"
Spacing Between Rows	32"	32"	32"	32"	32"
Extension Kits	2'	2' & 4'	2'	2' & 4'	2', 4' & 6'
Safety Chain	Standard	Standard	Standard	Standard	Standard

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Operation



CP-719, CP-725, CP-731 & CP-740



CP-745 & CP-750

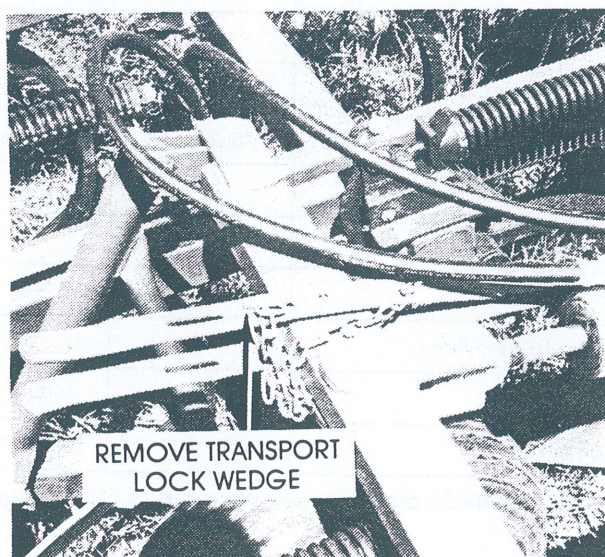
From Transport To Field Working Position

- As a precaution, check surrounding area to be sure it is safe to lower wings.
- Remove Wing Transport Lock Pins. Do Not walk under the wings when removing pins.
- Operate hydraulics until wings are lowered and the cylinder shafts are completely contracted to allow wings to float when working in uneven land.
- Extend depth control cylinders fully, holding hydraulic Lever for several seconds to phase the system.
- Remove two transport lock wedges.

CAUTION - Lock up devices provided must be installed when wings are in elevated position, to ensure operator safety.

CAUTION - Transport Locks are provided on the Depth Control Cylinders for use when transporting machine to reduce strain on Cylinders and control Rods.

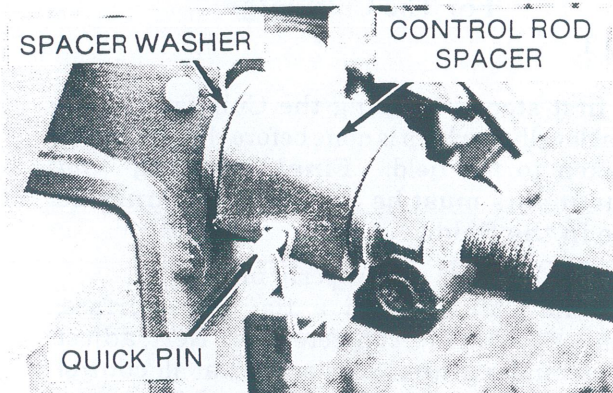
MORRIS INDUSTRIES LTD. WILL NOT BE RESPONSIBLE FOR ANY DAMAGE OR OPERATOR INJURY RESULTING FROM NON USE OR IMPROPER USE OF TRANSPORT LOCKS



Operation

From Transport To Field Working Position - Continued

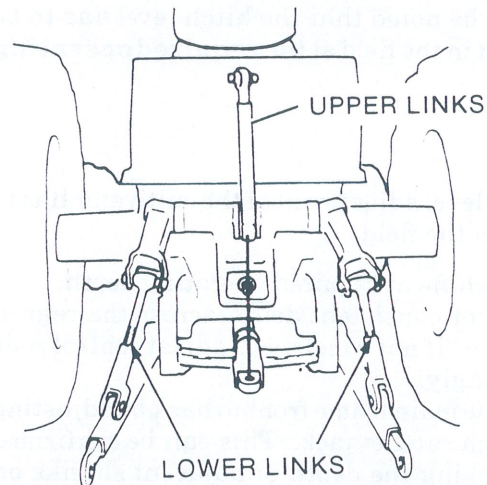
- Remove Transport Spacer Blocks by lowering machine until spacers are loose on control rods.
- Place Transport Spacer Blocks on Control Rod in front of the Control Rod Retaining Bracket.



OPTIONAL TRANSPORT SPACER BLOCKS
- Side View -

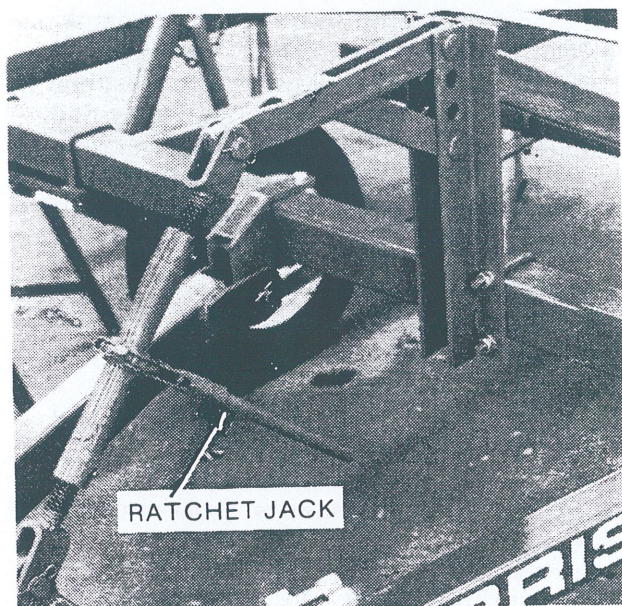
3 Point Hitch Adjustment CP-709 & CP-712

- To correct front to rear level of the machine, adjust the upper three Point Link on tractor.
- To correct side to side level, adjust the lower link on tractor.



CP-712 Pull-Type Hitch Adjustment

- The Pull-Type Hitch can easily be adjusted by shortening or lengthening the ratchet jack to ensure front and rear sweeps of chisel Plow are working at same depth. Hitch should be run as level as possible - use alternate holes in hitch bridle for extreme adjustments.
- Check the level every time you change the working depth.



Operation

Levelling Adjustment For The Cultivator

Step 1

The first step is levelling the Cultivator is an initial levelling which is done before the Cultivator is taken to the field. **Final levelling and adjustments must be done and can only be done in the field.**

- Check that tires are properly inflated.
- Set the Cultivator on a flat level surface, similar to that of a concrete floor. Next, adjust the cylinder control rods such that all control rods are just snug, when tires and Cultivator Sweeps are on the floor.
- Next, adjust the hitch such that at this point the hitch and frame are level.

It should be noted that the hitch level has to be finally set in the field at the **required operating depth.**

Step 2.

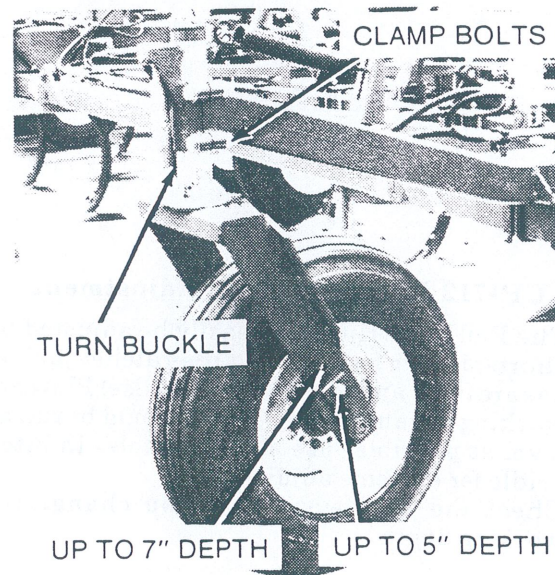
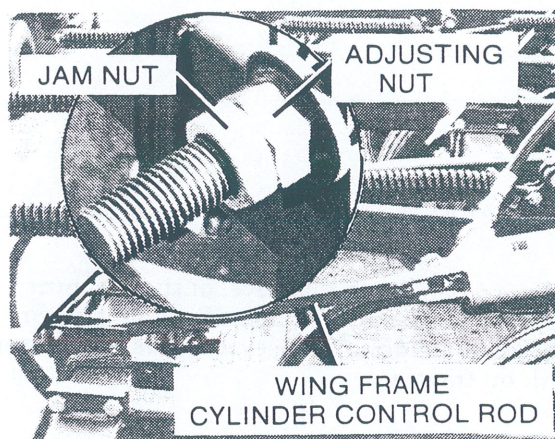
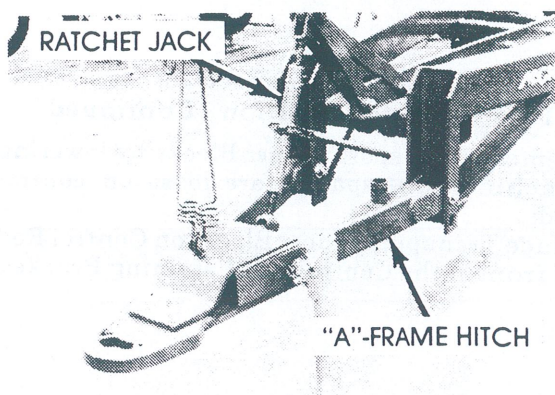
The final level adjustment of the cultivator has to be done in the field.

- Set machine at required operating depth.
- Check for consistent depth across the rear of machine. If not consistent, adjust control rods accordingly.
- Level the main frame front to back by adjusting the hitch ratchet jack. This can be confirmed by checking the depth of adjacent shanks on the main frame of the cultivator, one on the front row and one on the rear row, ensuring that they are both running at the same depth.
- Pull the machine for a short distance and check the depth of two adjacent shanks, one front, one rear row. Adjust if necessary and re-check depth of adjacent shanks, one front, one rear row and adjust if necessary.
- Pull machine a short distance and check whole machine for even depth.
- If equipped with gauge wheels, similar procedure as above should be followed for the wing frames.

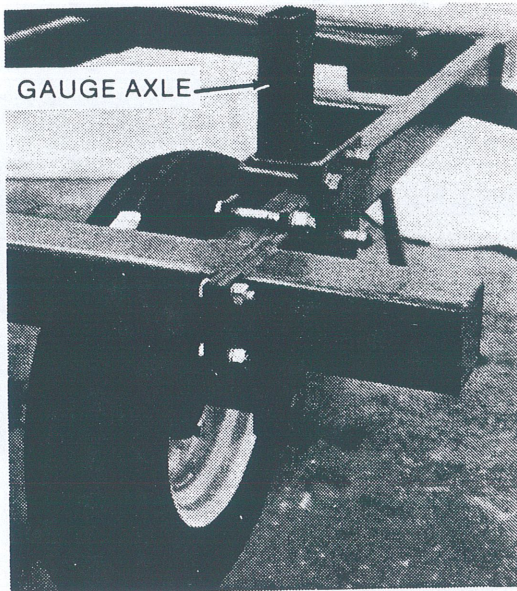
Gauge Wheel Adjustments

The Gauge wheels on the wings must be adjusted for every change in depth of the Chisel Plow.

- **Gauge Wheel Adjustments.** Loosen clamp bolts and adjust turn buckle to desired position. Tighten clamp bolts. See step 2.
- When working deeper than 5" move axle assembly to the upper hole as shown.



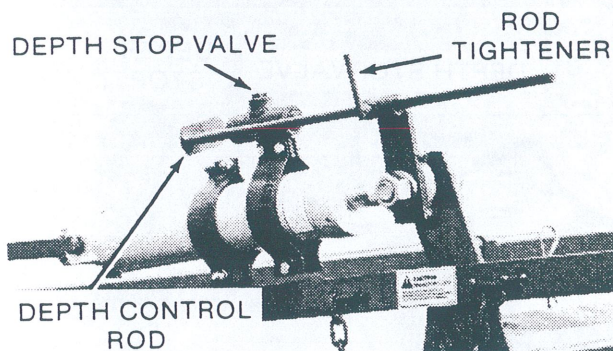
Operation



CP-709 Depth Stop Adjustment

Depth Stop Adjustment CP-709

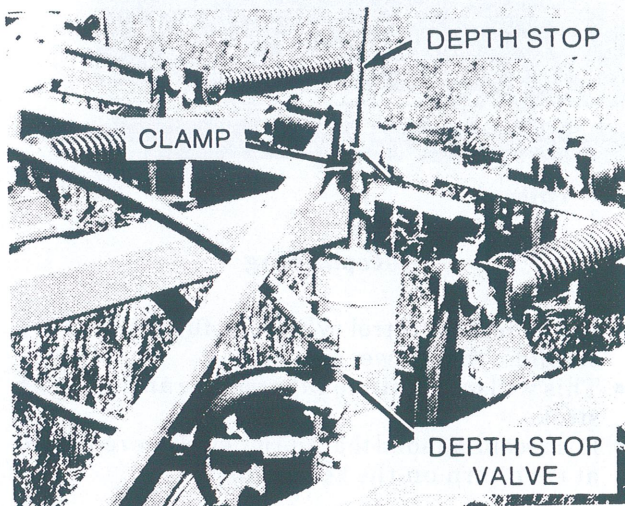
- Adjust Gauge Axle as necessary to obtain required working depth.



CP-712 Depth Stop Adjustment

Depth Stop Adjustment CP-712

- To increase or decrease the working depth, move the depth control rod as desired so that the depth stop plunger will be depressed when the desired working depth is acquired.
- **DO NOT OVERTIGHTEN SHAFT CLAMP.** - the depth valve operates hydraulically and very little pressure is required on the poppet to stop oil flow.



CP-719, CP-725 AND CP-731

Depth Stop Adjustment CP-719, CP-725 & CP-731

- To increase or decrease the working depth, move the depth stop as desired so that the depth stop valve plunger will be depressed when the desired working depth is acquired.
- **DO NOT OVERTIGHTEN Depth Stop Clamp.** - the depth valve operates hydraulically and very little pressure is required on the poppet to stop oil flow.

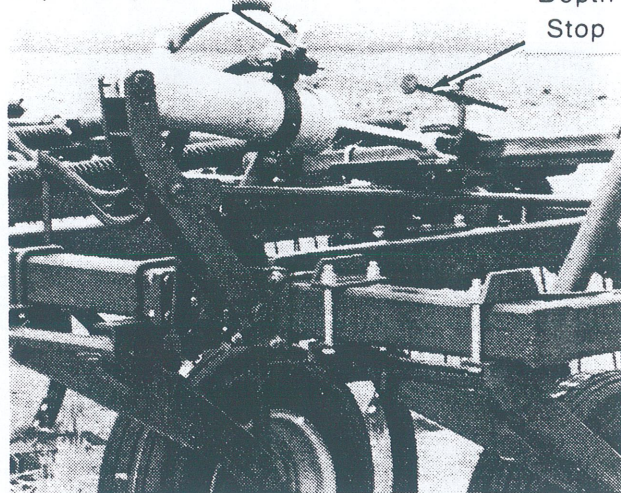
Operation

Depth Stop Adjustment

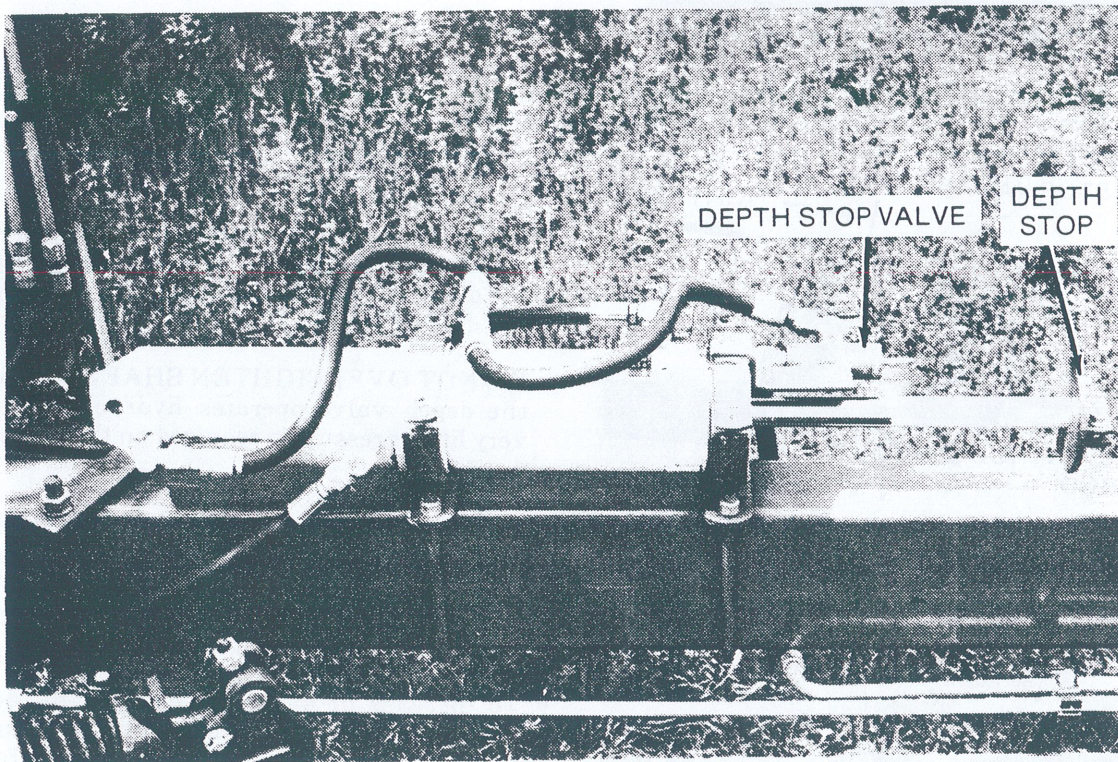
- To increase or decrease the working depth, move the depth stop as desired so that the depth stop valve plunger will be depressed when the desired working depth is acquired.
- DO NOT OVERTIGHTEN Depth Stop Clamp - the depth valve operated hydraulically and very little pressure is required on the poppet to stop oil flow.

Depth Stop Valve

Depth Stop



CP-731D AND CP-740



CP-745 AND CP-750

Oil Level

The hydraulic system draws its' oil supply from the tractor reservoir.

- Check the oil level after the Cultivator system has been filled.

Rephasing

- Raise depth control cylinders, fully hold 3 to 4 seconds, then lower machine.
- This will maintain equal pressure and cylinder stroke.
- It is recommended that the machine be rephased at each turn on the headland.

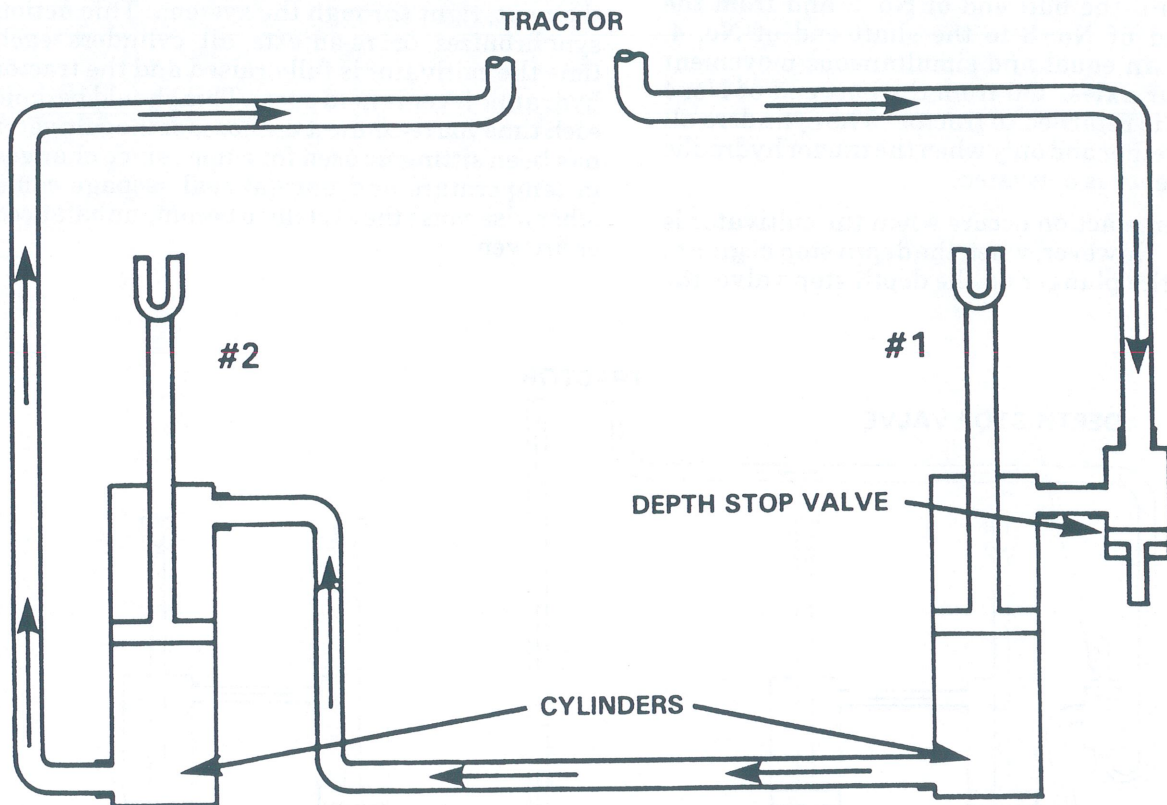
Operation

CP-712 HYDRAULIC DEPTH CONTROL SYSTEM

The hydraulic depth control system is a series system, in both the 3 point hitch and pull type machines, except that in the case of the 3 point hitch machine the wheels act as gauge wheels to control the depth of the machine. To understand its operation, suppose enough oil is forced into #1 cylinder to retract it 2". This will pivot the axle down and raise the machine at that point. Simultaneously, oil is forced from the butt end of #1 cylinder to the shaft end of #2 cylinder. It in turn retracts, an equal distance pivoting the axle and lifts that section of the machine. The reaction is immediate and synchronized. The reverse happens when the machine is lowered. However, when the depth stop begins to depress the plunger on the depth stop valve,

the oil flow seats the poppet to its shut off position. This closes the system so that no cylinder can move and sets the maximum depth the cultivator can go.

The system is self-levelling because when the machine is fully raised and the hydraulic lever is held in the open position, a bypass in all the cylinders allows oil to pass from one cylinder to the next, right through the system. The action synchronizes or re-adjusts all cylinders each time the Chisel Plow is fully raised and the tractor hydraulic lever is held open. This should be done each time you re-connect the hoses or the cultivator has been sitting for some time, since changes in temperature and normal seal seepage could otherwise cause the system to become unbalanced or uneven.



Oil Level

The hydraulic system draws its oil supply from the tractor reservoir.

- Check the oil level after the Chisel Plow system has been filled.

Rephasing

- Raise depth control cylinders, fully hold 3 to 4 seconds then lower.
- This will maintain equal pressure and cylinder stroke.

Operation

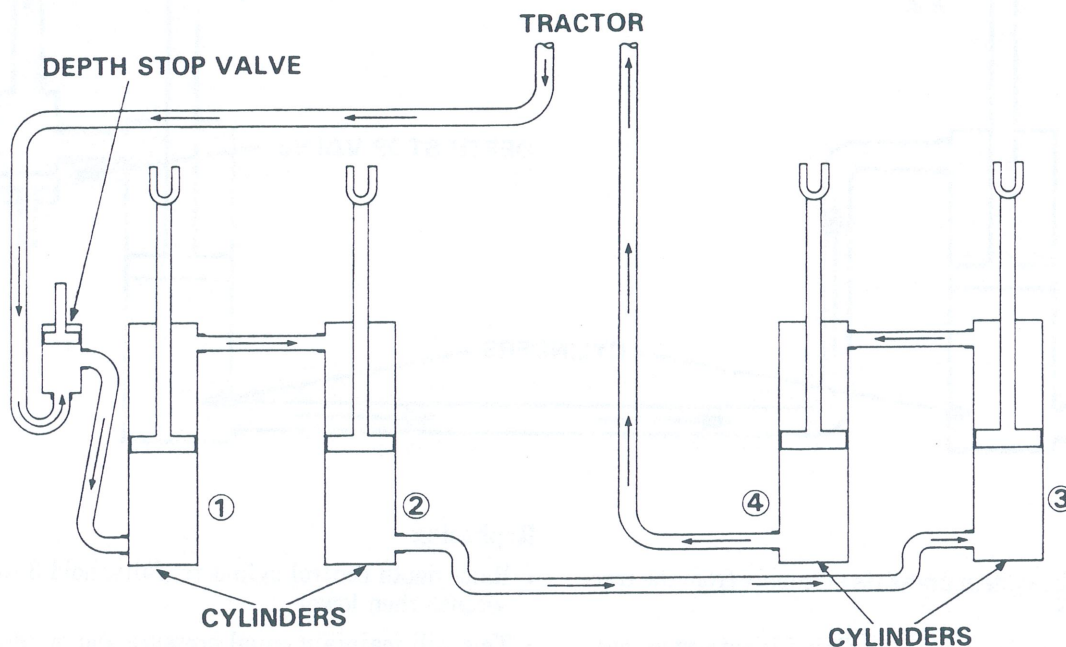
HYDRAULIC DEPTH CONTROL SYSTEM CP-719, CP-725, CP-731 AND CP-740

The hydraulic depth control is a series system. To understand its operation, suppose that enough oil is forced into the butt end of No. 1 cylinder to extend it 2". This will pivot the axle down to raise the frame. 2" of oil from the gland or top end of No. 1 cylinder is forced out due to the movement of the piston and flows into the shaft end of No. 2 cylinder. This causes No. 2 cylinder to retract exactly the same amount as No. 1 was extended, in this case 2". This will pivot the axle down to raise the frame the same distance as at No. 1 cylinder. Oil from the butt end of No. 2 cylinder is forced into the butt end of No. 3 and from the shaft end of No. 3 to the shaft end of No. 4, creating an equal and simultaneous movement of all four axles. Oil from the butt end of No. 4 cylinder is returned to tractor. The cylinders all move together and only when the tractor hydraulic control lever is activated.

The reverse action occurs when the cultivator is lowered. However, when the depth stop begins to depress the plunger on the depth stop valve, the

poppet enters the path of the oil flow and is pulled by the oil flow down to its seated, or shut off position, thus closing the system so that no cylinder can move, and sets the maximum depth the cultivator will go. When the hydraulic is operated to raise the cultivator, the pressure will immediately unseat the poppet allowing full oil flow.

The system is self levelling because when the machine is fully raised and the tractor hydraulic lever is held in open position, a by-pass in all the cylinders allows oil to pass from one cylinder to the next, right through the system. This action synchronizes or re-adjusts all cylinders each time the cultivator is fully raised and the tractor hydraulic lever is held open. This should be done each time you re-connect the hoses or the cultivator has been sitting unused for some, since changes in temperature and normal seal seepage could otherwise cause the system to become unbalanced or uneven.



CAUTION

EXTREME CARE MUST BE USED AROUND HYDRAULIC OIL UNDER PRESSURE, PROTECT EYES & SKIN WHEN MAKING REPAIRS AND MAKE SURE HYDRAULIC SYSTEMS ARE LOCKED UP WITH SAFETY DEVICES.

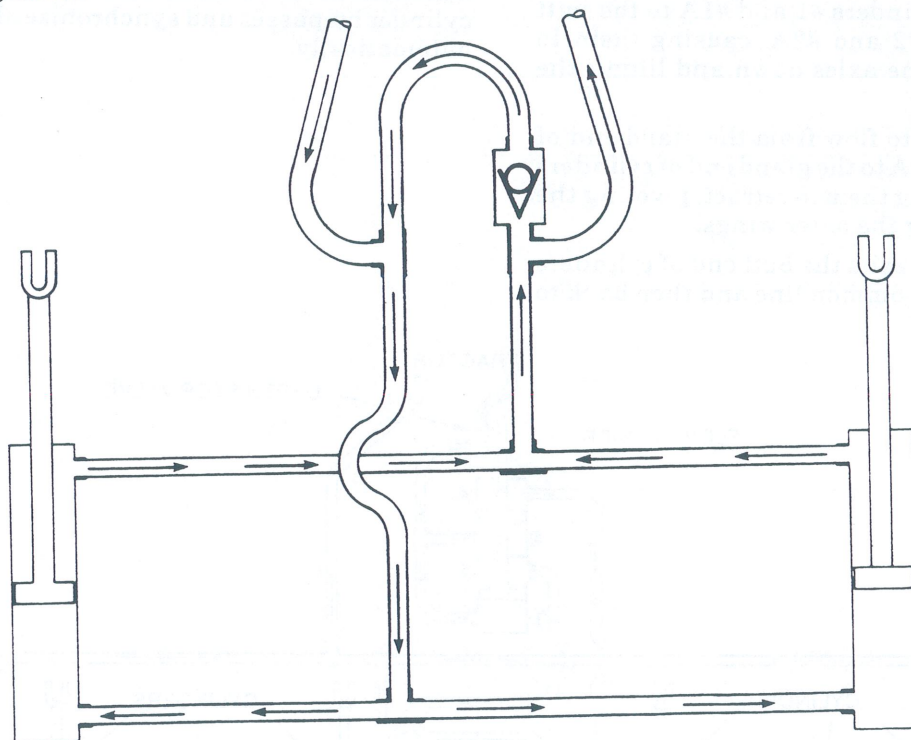
Operation

HYDRAULIC WING LIFT SYSTEM CP-719, CP-725, CP-731 AND CP-740

The wing lift hydraulic system is a parallel system. In this type of system oil flows from the tractor to a common line, which connects to the bottom ends of all cylinders used on the machine wing lift. A common line also connects the top or gland end of all these cylinders and this returns

oil to the tractor. Pressure flows to both cylinders at once. The cylinders with the least amount of weight lifts first. A check valve in the line protects the wing lift system if lock-up pins are left in when lowering wings.

NOTE: The CP-719 only has one cylinder.



IMPORTANT:

The following safety procedure must be followed to eliminate possible damage to the machine when initially **FILLING** wing lift cylinders.

OPERATE HYDRAULIC ON TRACTOR UNTIL WINGS "JUST START TO LIFT." THEN REVERSE HYDRAULIC ON TRACTOR TO FILL OPPOSITE END OF CYLINDERS AND REMOVE AIR FROM THE HYDRAULIC SYSTEM

(NOTE — THIS APPLIES TO WING LIFT CYLINDERS ONLY)

Operation

CP-745 AND CP-750 DEPTH HYDRAULICS

This Hydraulic Depth Control system is a Series system, and when the tractor hydraulics are activated, all the cylinders react simultaneously.

To lift the Cultivator, hydraulic fluid is forced through the Depth Stop Valve into the first and third chambers of the Flow Divider. This causes the oil from the second and fourth chambers of the Flow Divider to flow through the pilot operated Check Valves to the gland end of cylinders #1 and #1A causing them to retract, pivoting the axles down and lifting the main frame.

Simultaneously, hydraulic fluid is forced from the butt end of cylinders #1 and #1A to the butt end of cylinders #2 and #2A, causing them to extend, pivoting the axles down and lifting the inner wings.

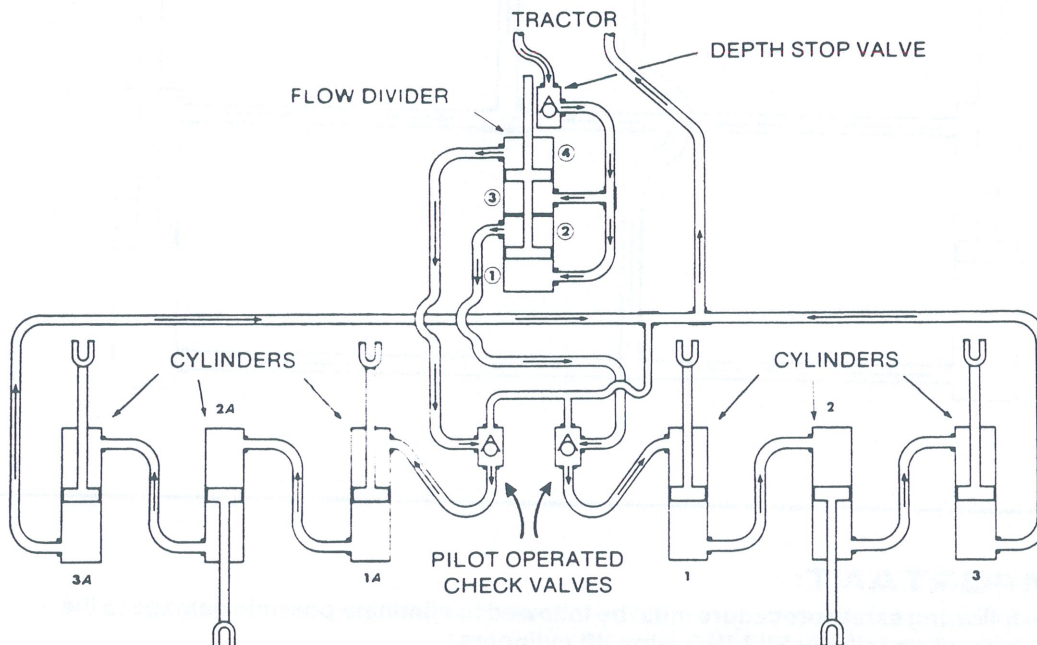
Fluid continues to flow from the gland end of cylinders #2 and #2A to the gland end of cylinders #3 and #3A, causing them to retract, pivoting the axles down raising the outer wings.

Finally the fluid exits the butt end of cylinders #3 and #3A into a common line and then back to the tractor.

To lower the Cultivator, hydraulic fluid flows through the cylinders in the reverse direction to that described above, until the depth stop plate depresses the plunger on the depth stop valve. This causes the poppet to seat and stop the flow of oil from the tractor.

When the poppet seats, flow is stopped, the depth stop valve hold the cylinders at this working depth until the tractor hydraulic controls are activated to lift the machine.

If the machine has been sitting unused for some time, lift the machine fully and hold tractor hydraulic lever to allow oil to flow through the cylinder by-passes and synchronize all cylinders automatically.



CAUTION

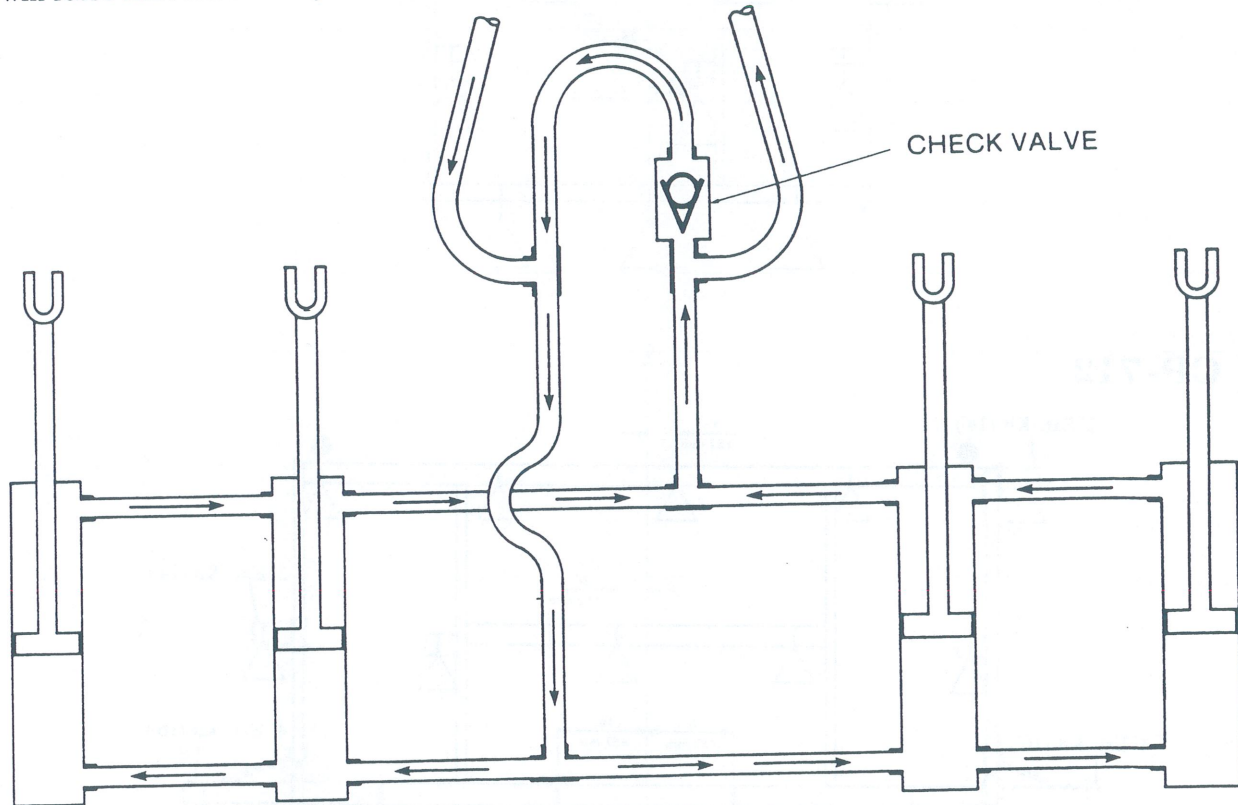
EXTREME CARE MUST BE USED AROUND HYDRAULIC OIL UNDER PRESSURE. PROTECT EYES & SKIN WHEN MAKING REPAIRS AND MAKE SURE HYDRAULIC SYSTEMS ARE LOCKED UP WITH SAFETY DEVICES.

Operation

CP-745 AND CP-750 Wing Lift Hydraulics

The wing lift hydraulic system is a parallel system. In this type of system oil flows from the tractor to a common line, which connects to the bottom ends of all cylinders used on the machine wing lift. A common line also connects to top or gland end of all these cylinders and this line returns oil to the tractor.

Oil flows to all wing lift cylinders simultaneously. The frame requiring the least amount of pressure will raise first followed by the raising of subsequent frames according to the required pressure.



CAUTION

EXTREME CARE MUST BE USED AROUND HYDRAULIC OIL UNDER PRESSURE. PROTECT EYES & SKIN WHEN MAKING REPAIRS AND MAKE SURE HYDRAULIC SYSTEMS ARE LOCKED UP WITH SAFETY DEVICES.



IMPORTANT:

The following safety procedure must be followed to eliminate possible damage to the machine when initially **FILLING** wing lift cylinders.

OPERATE HYDRAULIC ON TRACTOR UNTIL WINGS "JUST START TO LIFT." THEN REVERSE HYDRAULIC ON TRACTOR TO FILL OPPOSITE END OF CYLINDERS AND REMOVE AIR FROM THE HYDRAULIC SYSTEM.

(NOTE: THIS APPLIES TO WING LIFT CYLINDERS ONLY)

Operation

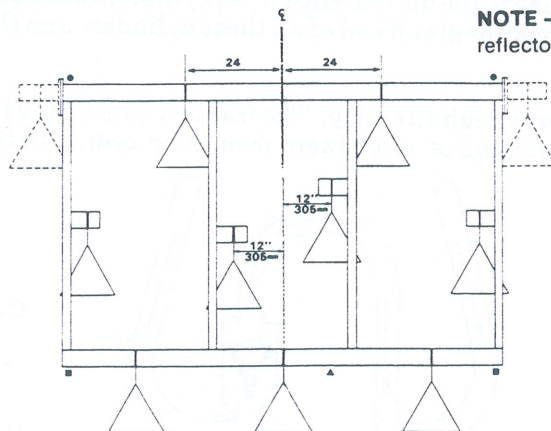
SHANK AND REFLECTOR LOCATIONS

NOTE: All Shank Assemblies Are Spaced at 36" Except Where Specified

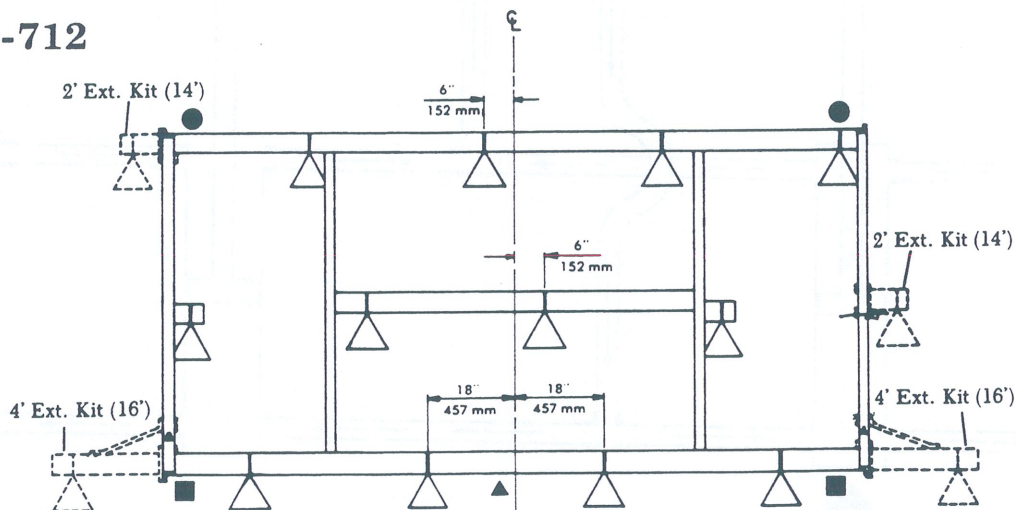
- C12602 AMBER REFLECTOR
- C12603 RED REFLECTOR
- ▲ SMV EMBLEM

NOTE — Always replace missing or damaged reflectors

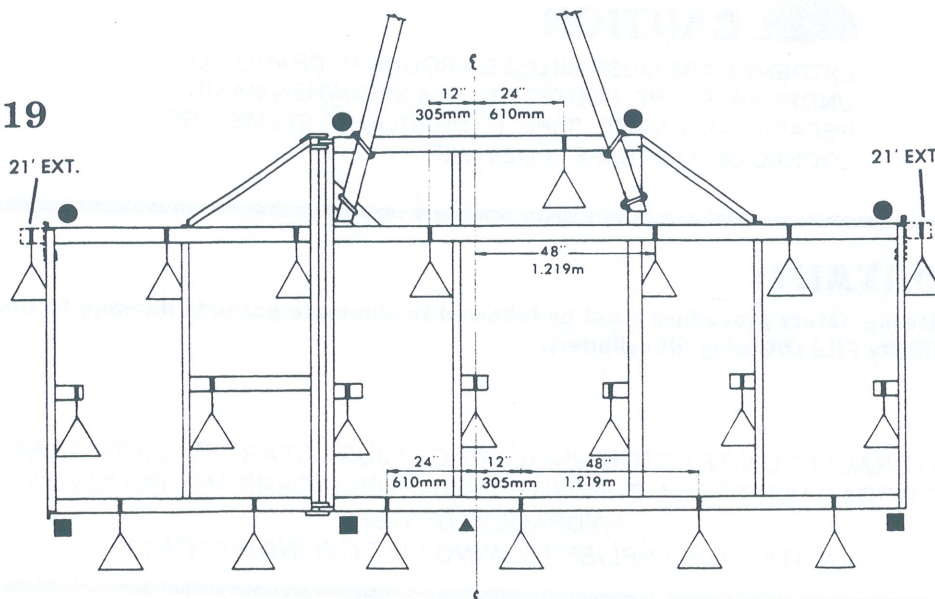
CP-709



CP-712



CP-719



Operation

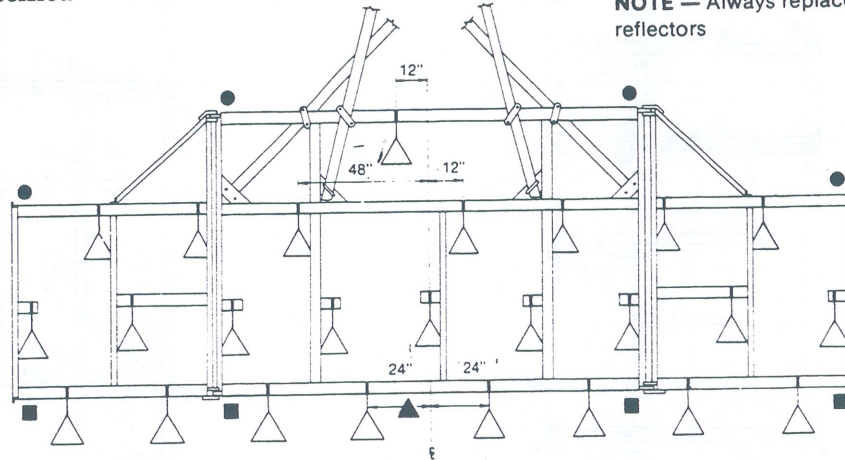
SHANK AND REFLECTOR LOCATIONS

NOTE: All Shank Assemblies Are Spaced at 36" Except Where Specified

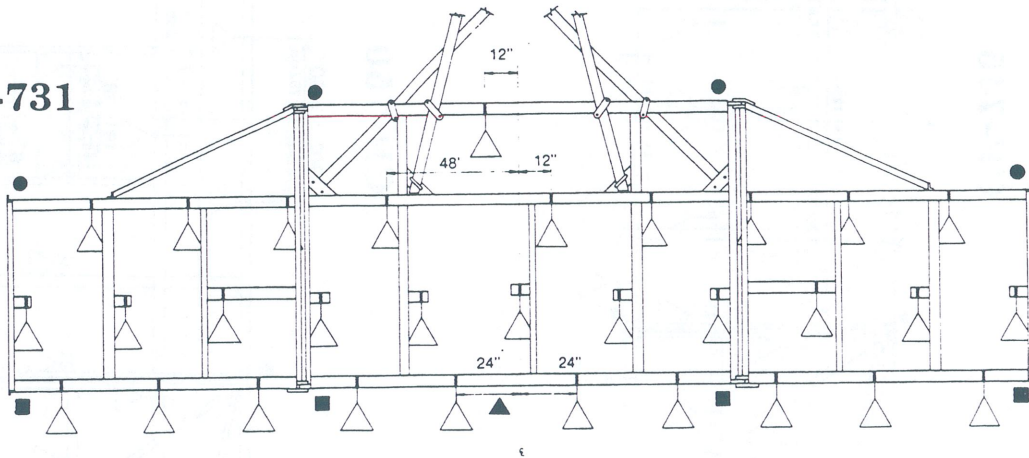
- C12602 AMBER REFLECTOR
- C12603 RED REFLECTOR
- ▲ SMV EMBLEM

NOTE — Always replace missing or damaged reflectors

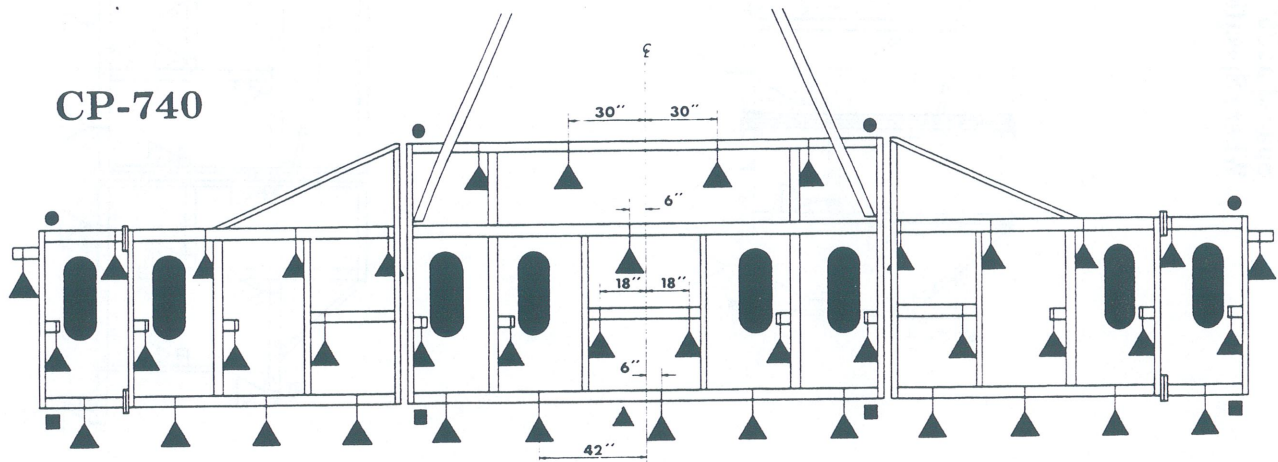
CP-725



CP-731



CP-740



Operation

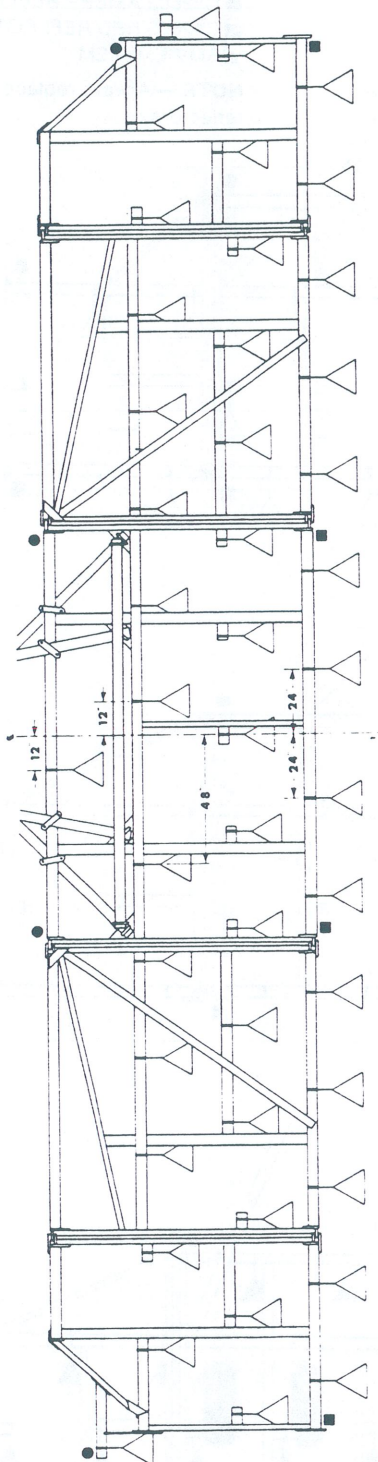
SHANK AND REFLECTOR LOCATIONS

- C12602 AMBER REFLECTOR
- C12603 RED REFLECTOR
- ▲ SMV EMBLEM

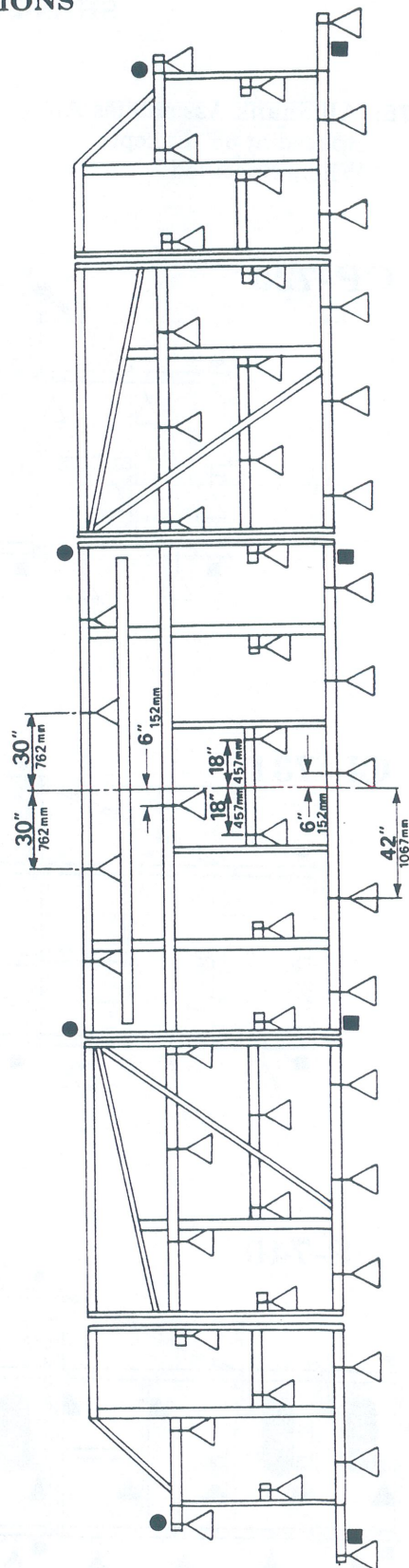
NOTE — Always replace missing or damaged reflectors

NOTE: All Shank Assemblies Are Spaced at 36" Except Where Specified

CP-745



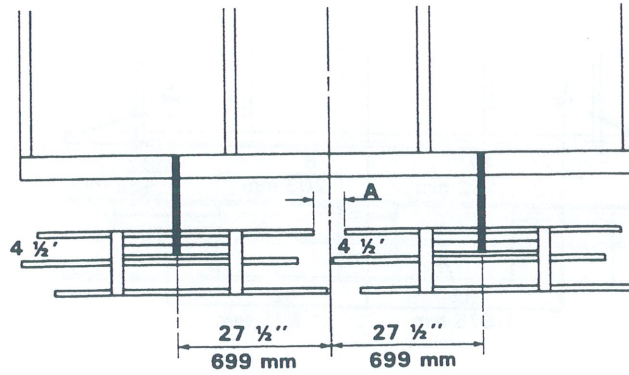
CP-750



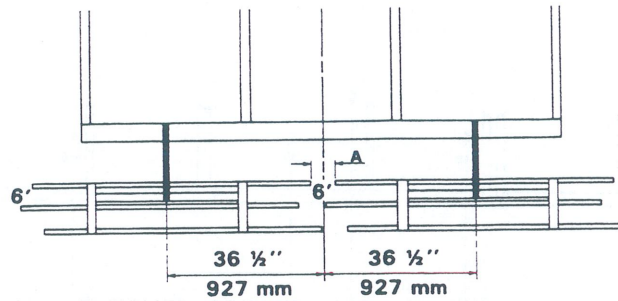
Operation

HARROW LOCATIONS

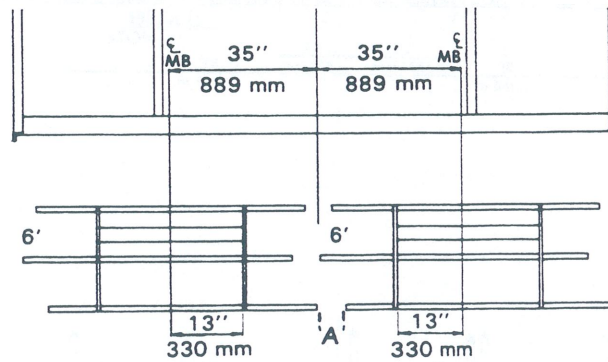
9'



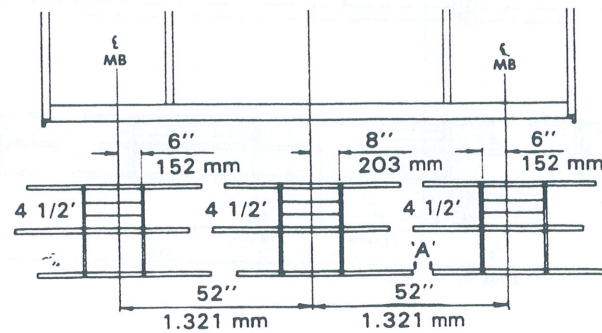
11'



12'



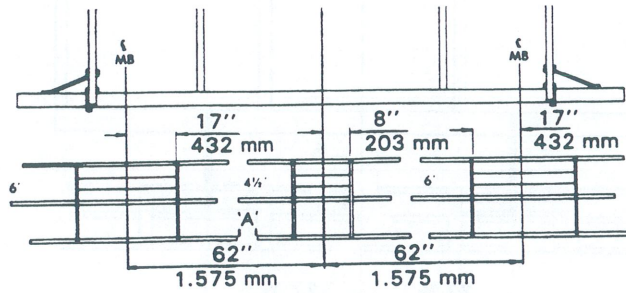
14'



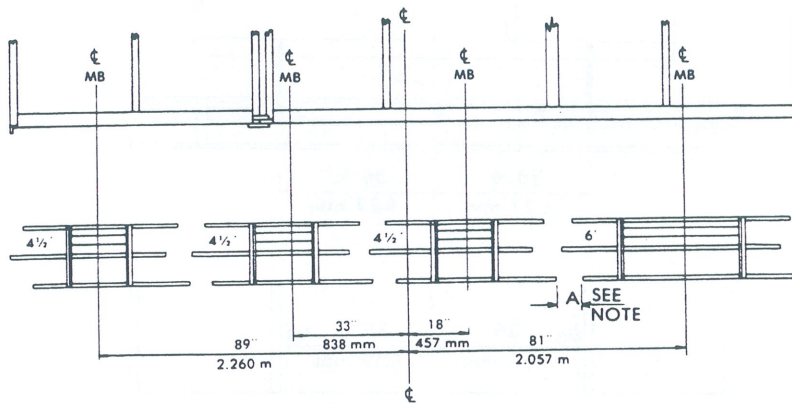
Operation

HARROW LOCATIONS

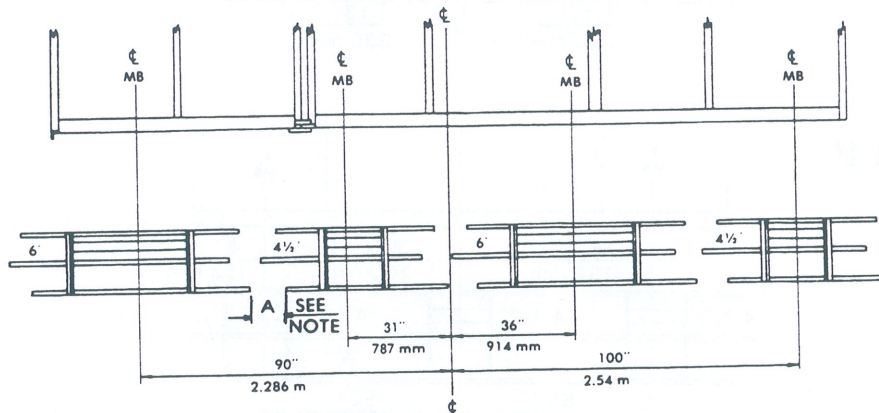
16'



19'

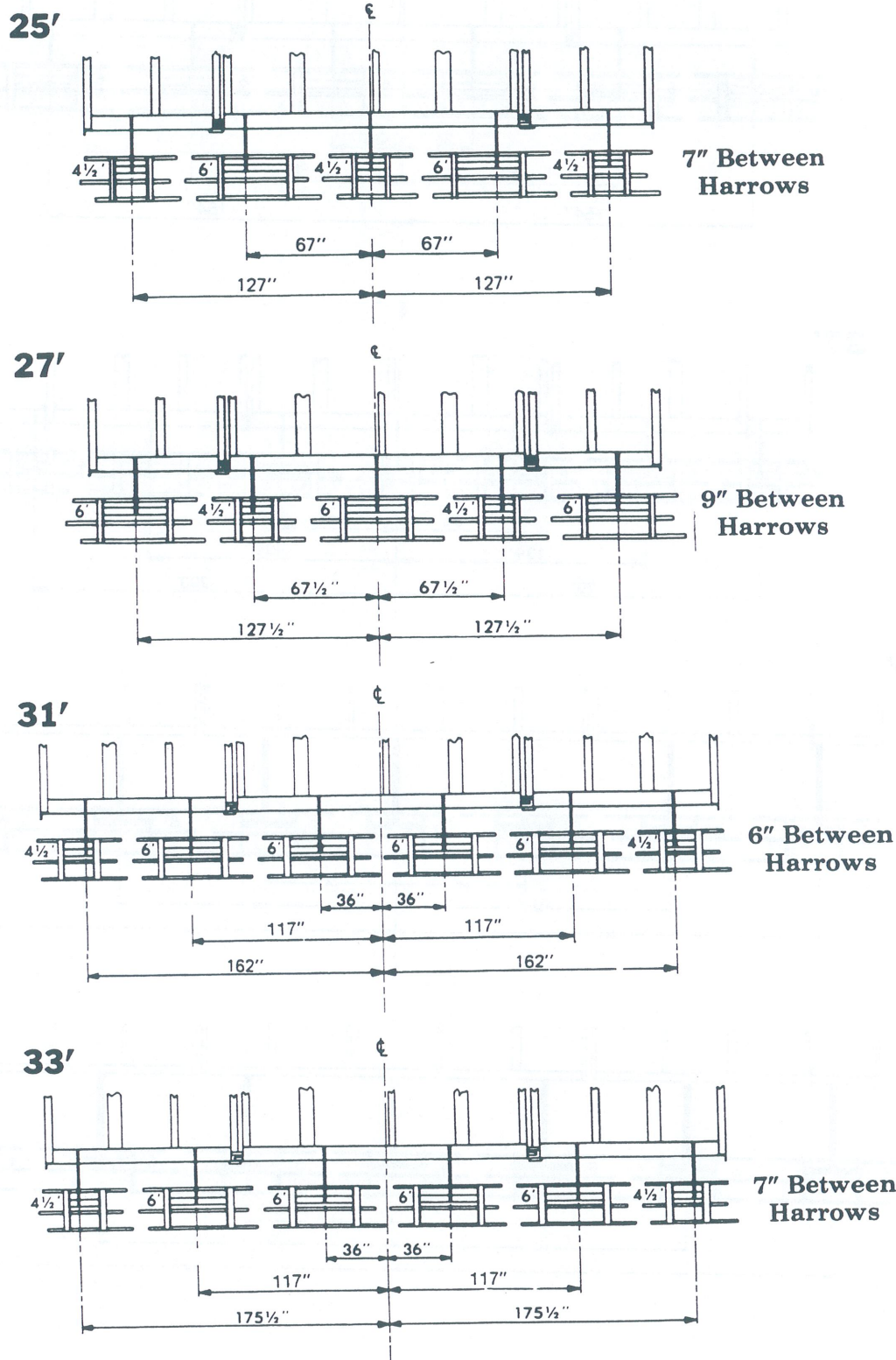


21'

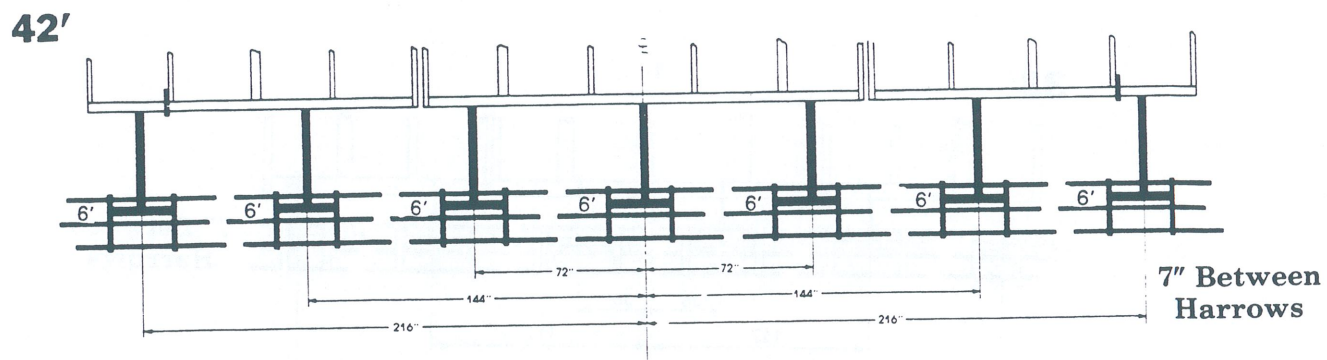
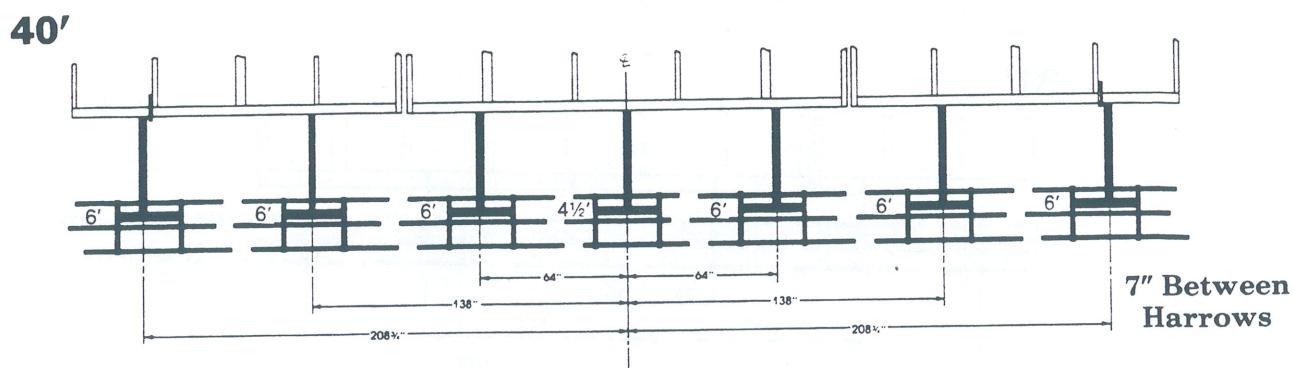
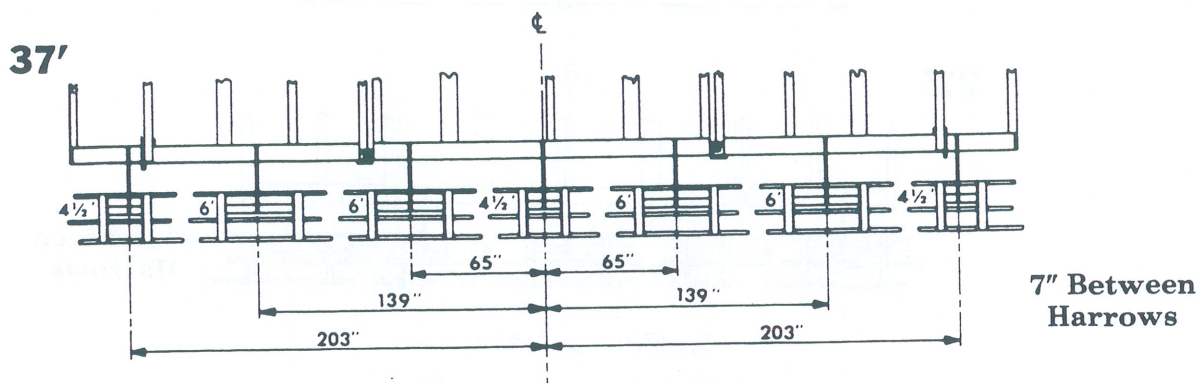
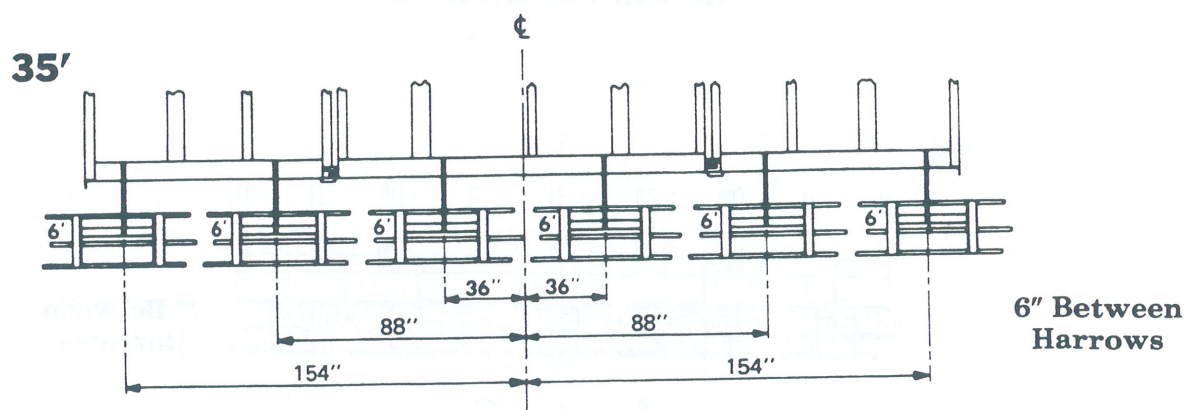


Operation

HARROW LOCATIONS



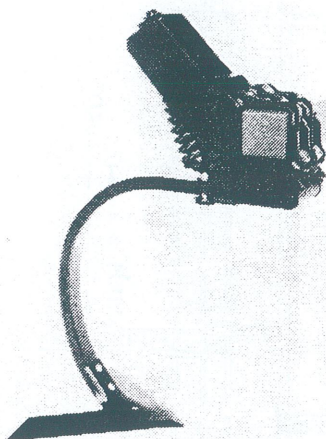
Operation



—

Operation

650 lb. Spring Cushion Trip



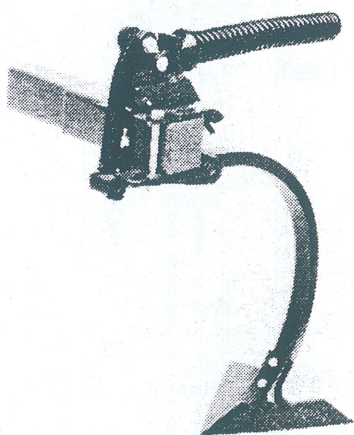
650 lb. Spring Cushion Trip

MORRIS Cultivators have always been designed for superior tillage. The 650 lb. spring cushion trip assembly combines the advantage of both the automatic trip and standard spring cushion assemblies. The unit is maintenance free and trip force only increases to a maximum of 850 lbs. over full tripping height. As a result, there is less furrow bottom ridging and less stress on frame members and longer life of the trip components.

NOTE:

The **MORRIS** 650 lb. spring cushion shank stem requires tillage tools with a 2¼" spacing for ½" bolts @ 50° stem angle.

Automatic Trip Release



750 lb. Automatic Trip Release

MORRIS Cultivators have always been designed for superior tillage, with sweeps that run level, cutting soil instead of pushing it. The patented **MORRIS** Automatic Trip makes it possible. Unlike conventional spring cushion assemblies, which start to give at much lower forces, the **MORRIS** trip holds the sweep firmly in place up to 750 lbs. force until an obstacle is encountered. Then the trip releases, the sweep passes over the obstacle and returns to a level working position. As a result, there's less furrow bottom ridging, reduced sweep wear, less stress on frame members, and longer shank life.

NOTE:

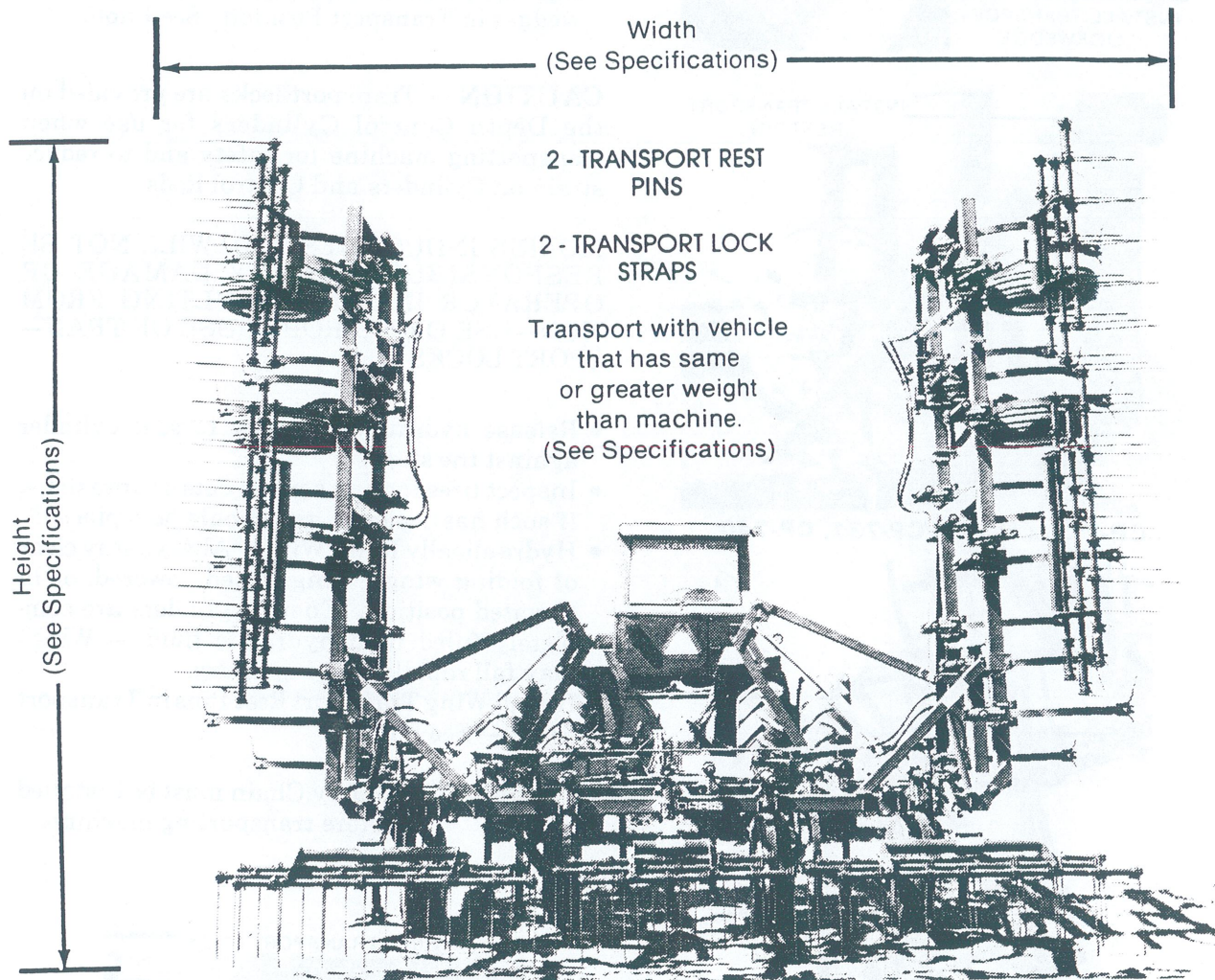
The **MORRIS** 750 lb. shank stem requires tillage tools with a 2¼" spacing for ½" bolts @ 50° stem angle.

Operation

Transport



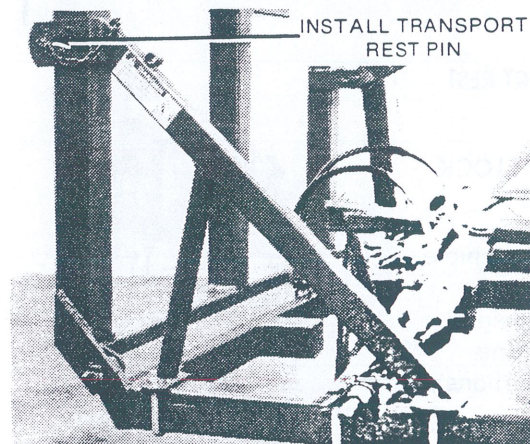
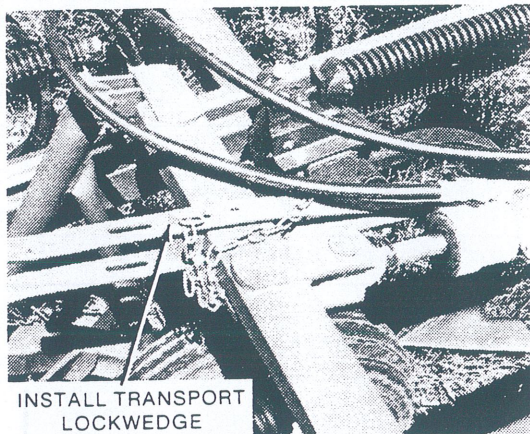
BE AWARE OF OBSTACLES
AND OVERHEAD ELECTRICAL LINES



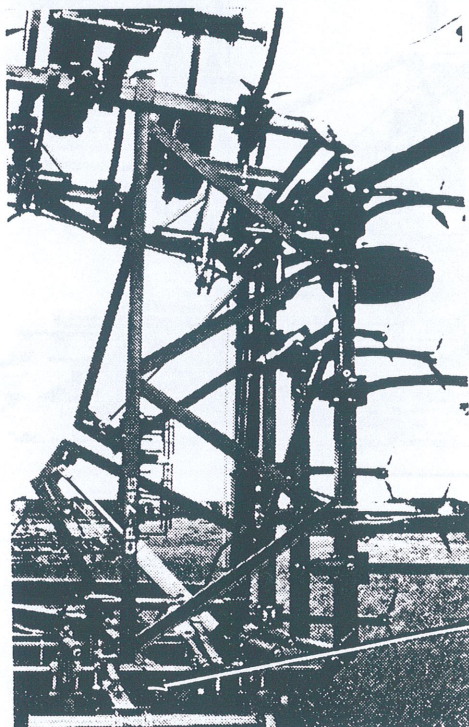
ROAD TRANSPORT

Secure Upright Wings together with a safety
chain for an extra safety precaution.

Operation



CP-719, CP-725, CP-731, CP-740



CP-745 & CP-750

From field Working To Transport Position

Observe all applicable safety precautions under transport heading in general safety, Section 3.

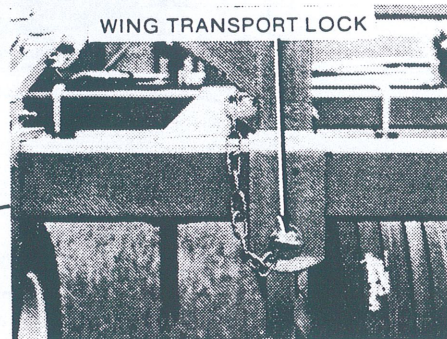
- Refer to specifications, Section 4, for weight, transport height and width.
- Transport with tractor only.
- Raise Hydraulic Depth Control Cylinders to highest position and place Transport Lock wedges in Transport Position - See Photo.

CAUTION — Transport locks are provided on the Depth Control Cylinders for use when transporting machine for safety and to reduce strain on Cylinders and Control Rods.

MORRIS INDUSTRIES LTD. WILL NOT BE RESPONSIBLE FOR ANY DAMAGE OR OPERATOR INJURY RESULTING FROM NON—USE OR IMPROPER USE OF TRANSPORT LOCKS

- Release hydraulics slightly to seat cylinder against the stops.
- Inspect tires for any serious cuts or abrasions. If such has occurred, tire should be replaced.
- Hydraulically Raise Wings. Always stay clear of folding wings being raised, lowered, or in elevated position. Ensure cylinders are completely filled with hydraulic fluid — Wings may fall rapidly causing injury.
- Install Wing Transport Rest Pins in Transport Rests — See Photo.

IMPORTANT: Safety Chain must be installed before transporting machine.

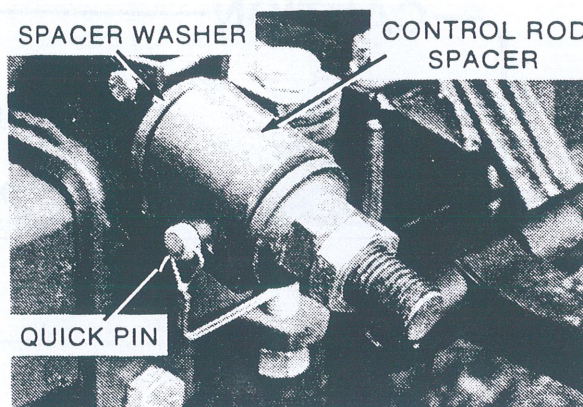


Operation

For Additional Ground Clearance

When using Deep banding knives or spikes, the rear row may contact the crown of the road. To gain additional ground clearance, place the optional transport space blocks on the Depth Control Rods of the main frame.

- Lower machine fully, raising wheels off the ground.
- Install transport spacer blocks on the Depth Control Rods of the main frame.



OPTIONAL TRANSPORT SPACER BLOCKS
- Side View -

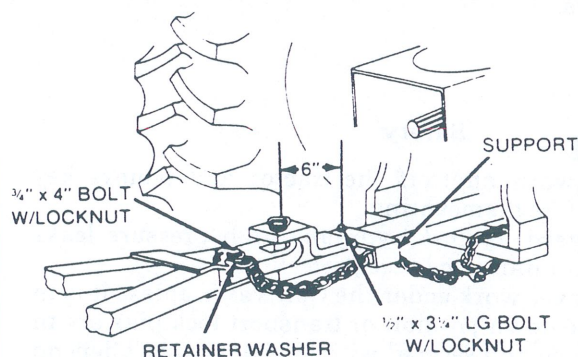


IMPORTANT:

Safety Chain must be installed before transporting machine.



IMPORTANT: SAFETY CHAIN INSTALLATION



Speed

- **Do Not Exceed 20 M.P.H.**
- Implement tire manufactured recommended maximum safe speed on a loaded implement tire is 20 M.P.H. (32 km/h).

Lights

- Ensure proper reflectors are in place on the Cultivator.
- Reflector location, refer to page 20-24.
- Be familiar with and adhere to local laws.

**TAKE SAFETY SERIOUSLY.
DON'T TAKE NEEDLESS CHANCES!**

Maintenance 6

CAUTION



BE ALERT

SAFETY FIRST

**REFER TO SECTION 3 AND REVIEW
ALL SAFETY RECOMMENDATIONS**

General

This section deals with two goals, maximum life and dependable operation. Adopt a regular maintenance and lubrication program. Care and sufficient lubrication is the best insurance against costly delays.





Safety

- Always shut off the tractor and remove key before dismounting.
- Guard against hydraulic high pressure leaks with hand and face protection.
- Never work under the Cultivator unless it is in the down position or transport lock pins are in place and secured with hair pins. Don't depend on the hydraulic system to support the frame.

Tighten Bolts

- Before operating the Cultivator.
- After the first two hours of operation.
- Use Torque Chart below for correct values on various bolts.
- Note dashes on hex heads to determine correct Grade.

Bolt Torque Instructions

 GRADE 5 (3 marks)		BOLT SIZE	 GRADE 8 (6 marks)	
Nm	lb. ft.		lb. ft.	Nm
11	8	1/4	12	16
23	17	5/16	24	33
41	30	3/8	45	61
68	50	7/16	70	95
102	75	1/2	105	142
149	110	9/16	155	210
203	150	5/8	210	285
366	270	3/4	375	508
536	395	7/8	610	827
800	590	1	910	1234

Tire Pressure

- 9.5L x 15 6 ply - 32 PSI
- 9.5 L x 15 8 ply - 44 PSI
- 9.5 x 15 Lt 8 ply Hwy Service - 60 PSI.
- 11 x 15 Lt 8 ply Hwy Service - 60 PSI
- Correct tire pressure is important. Unequal pressure could cause uneven cultivation.
- Check daily when tires are cold.

(Coarse and Fine Threads)

(Figures above are for fine threads subtract 10% from readings for coarse threads)

Maintenance

Lubrication

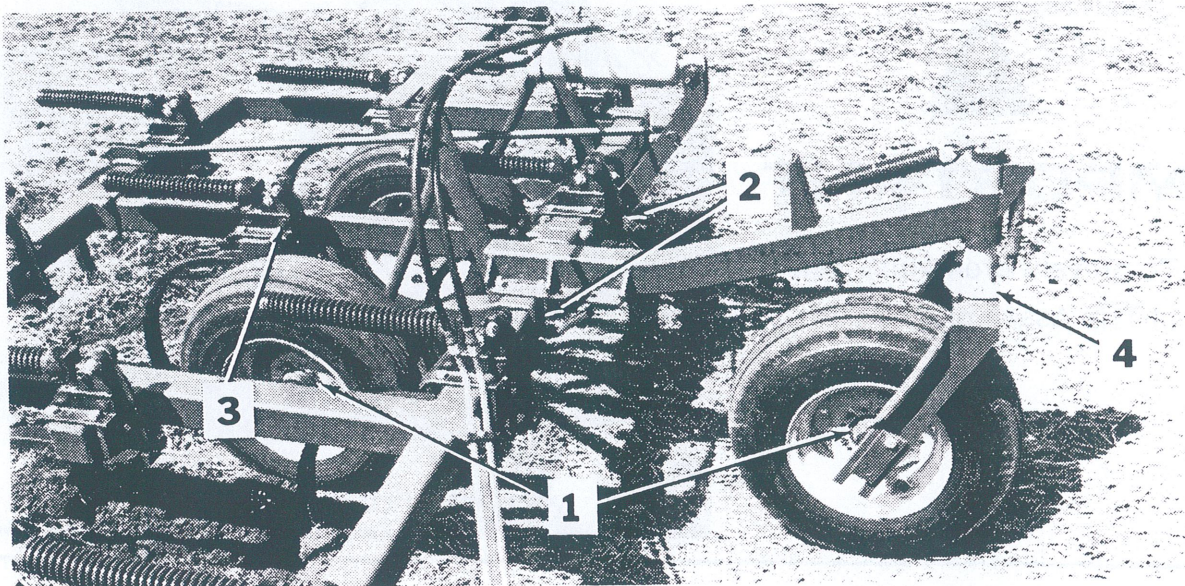
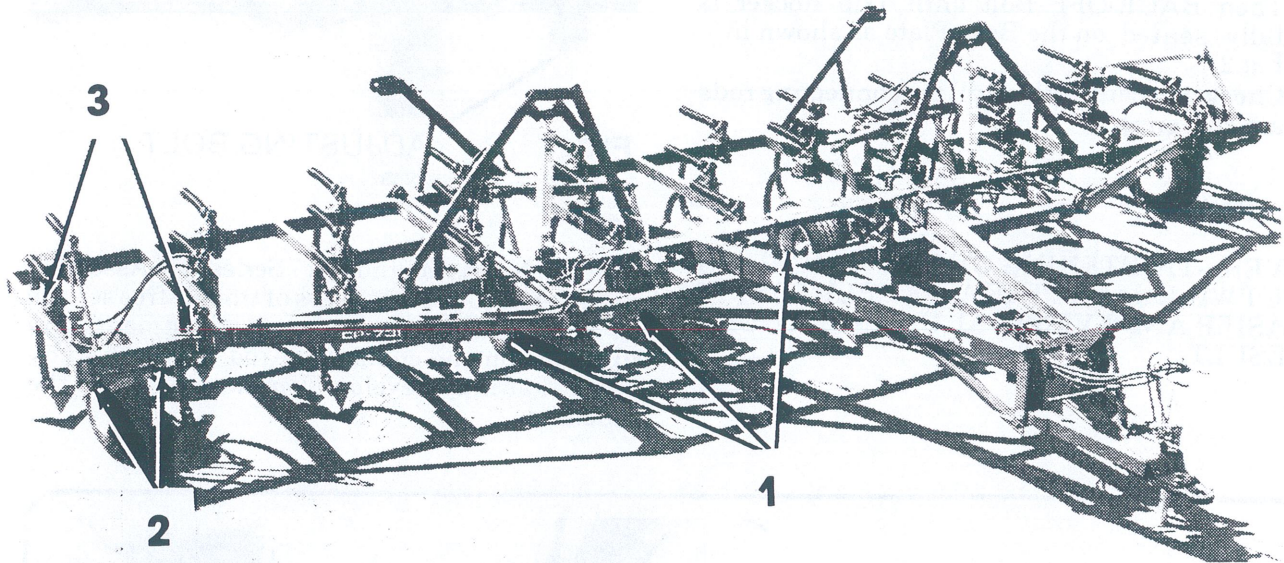
Greasing pivot points prevents wear and helps restrict dirt from entering. However, once dirt does enter a bearing, it combines with the lubricant and becomes an abrasive grinding paste, more destructive than grit alone.

- Apply new lubricant frequently during operation to flush out old contaminated lubricant.
- Use a good grade of grease and machine oil.
- Clean grease fittings and lubricator gun before applying lubricant.

Grease Locations

Refer to the photo below for grease locations.

1. Hubs
 - Repack with a good quality grease every 500 hours.
2. Axle Pivot Bearings
 - Every 10 hours.
3. Lower Trip Rocker Pin (Automatic Trip Only)
 - Grease every 50 hours. (1 per shank)
 - The Spring Cushion Trip requires no lubrication.
4. Gauge Wheel Pivot
 - Every 100 hours.



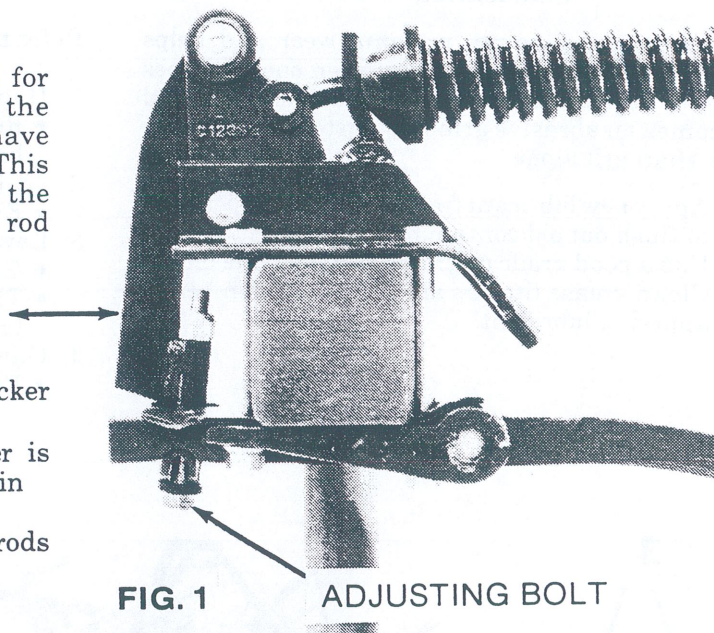
Maintenance

Automatic Trip Adjustment

After a new machine has been in the field for approximately 40 hours, check that all the connecting rods are still snug. The rods will have "set" in place and some slack may develop. This can be checked by either pulling back on the shank or by trying to move the connecting rod itself as shown in Fig 1.

Adjusting Procedure

- Tighten the Adjusting Bolt until Trip Rocker lifts the Base Plate.
- Then BACK-OFF Bolt until Trip Rocker is fully seated on the Base Plate as shown in Fig 2.
- Check periodically that all the connecting rods are still snug.



WARNING:

OVER-TIGHTENING OF THE ADJUSTING NUT WILL CAUSE THE ASSEMBLY TO TRIP EASIER AND EVENTUAL DAMAGE COULD RESULT.

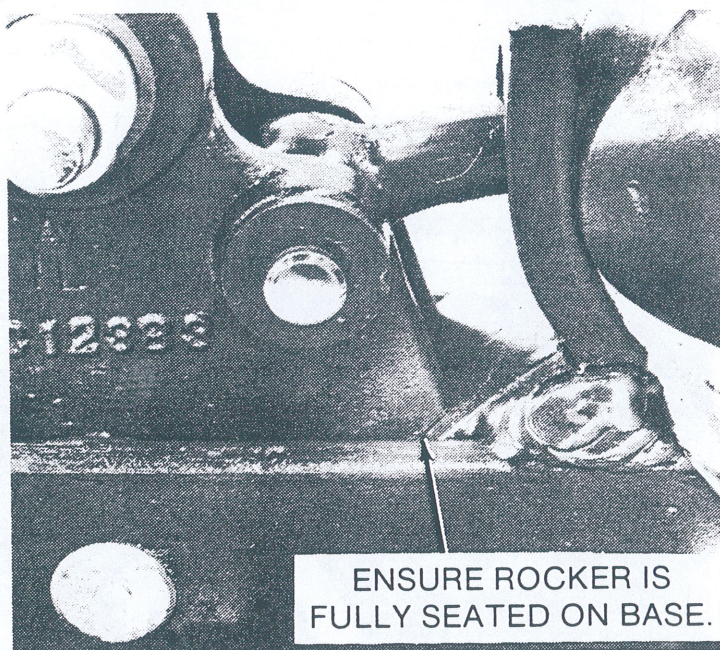
The new Morris Magnum II 7 Series Trip Assembly is designed to provide years of trouble free service in the field, and the above adjustments are provided on the connecting rod to take up any slack that may develop from normal use of the machine.



IMPORTANT:

To prevent premature wear of Trip Assembly.

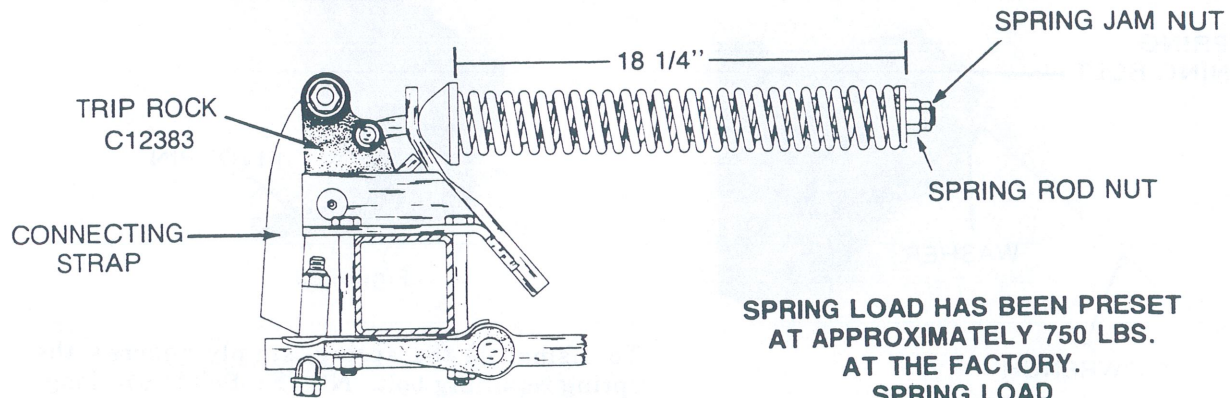
FIG.2



Maintenance

Automatic Trip Release: Spring Setting

Regular Duty Trip (750 lbs.)



SPRING LOAD HAS BEEN PRESET
AT APPROXIMATELY 750 LBS.
AT THE FACTORY.
SPRING LOAD
MUST NOT BE INCREASED.

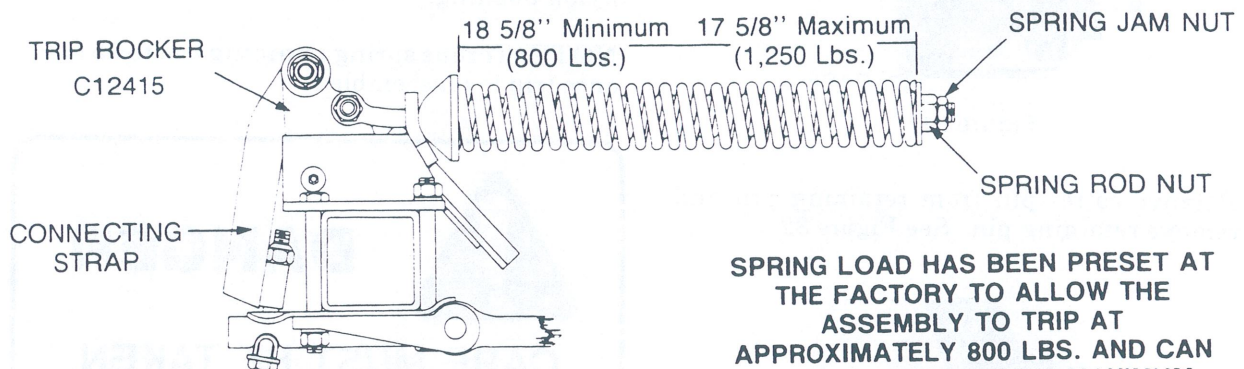
IMPORTANT:

RECOMMENDED MEASUREMENTS **MUST** BE ADHERED TO OR WARRANTY WILL BE VOID.



IMPORTANT: Under no circumstances should the machine be operated with the Spring Jam Nut removed.

Heavy Duty Trip (800 - 1,250 lbs.)



SPRING LOAD HAS BEEN PRESET AT
THE FACTORY TO ALLOW THE
ASSEMBLY TO TRIP AT
APPROXIMATELY 800 LBS. AND CAN
BE ADJUSTED UP TO A MAXIMUM
OF 1,250 LBS.

IMPORTANT:

RECOMMENDED MEASUREMENTS **MUST** BE ADHERED TO OR WARRANTY WILL BE VOID.

NOTE: After a few hours of operation, check the trip mounting bolts to ensure they are tight. - TORQUE TO 125 ft. lbs. (169.5N-m).

Maintenance

Pivot Pin Main Bushing Replacement

In the event the Pivot Pin Bushings need replacing, the following procedure can be used:

- (a) Loosen spring retaining bolt.
- (b) Slide a 1 1/4" wrench between the Trip top and the washer on the Bolt. See Figure 30.

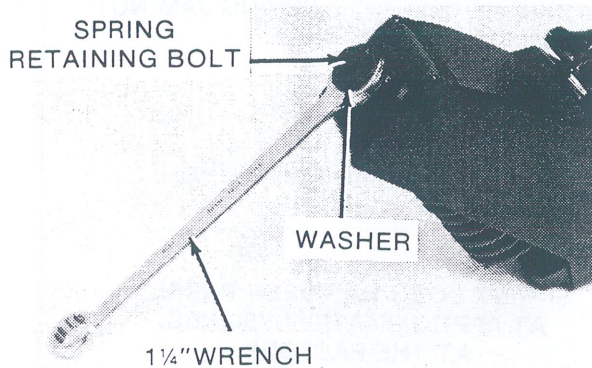


Figure 30

- (c) Tighten bolt, this will lift the casting off the base taking the pressure off the Pivot Pin. See Figure 31.

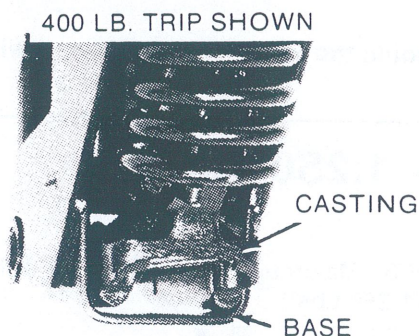


Figure 31

- (d) Remove cotter pin from retaining pin and remove retaining pin. See Figure 32.

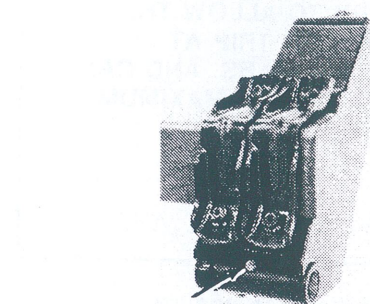


Figure 32

- (e) Remove pivot pin from casting. See Figure 33.

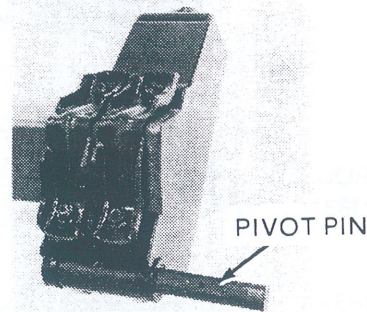


Figure 33

To dismantle the spring, simply unscrew the spring retaining bolt. **NOTE:** Bolt is 8 1/4" long.

- (f) Push casting down by lifting up on shank or by using a prybar.
- (g) Remove the old bushings by pushing out towards the inside of the trip.
- (h) Install the new bushings.

Reverse the above procedure to reassemble trip.

NOTE: Care must be taken when reassembling the pivot pin not to shear the shoulder off the nylon bushing.

NOTE: Torque spring retaining bolt to 75 ft. lbs. once trip is reassembled.



DANGER

**CARE MUST BE TAKEN
WHEN REPLACING ANY
TRIP COMPONENTS AS
THE SPRING IS
UNDER PRESSURE**

Maintenance 6

Spring Rod Pivot Pin Bushing Replacement

A simple check can be preformed to see if the bushings need replacing.

The bushing is visible when looking at the spring rod pivot pin from the L.H.S. for the 650 lb. Trip. See figure 34.

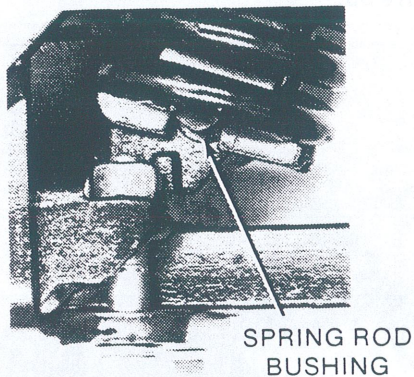


Figure 34

In the event the bushing needs replacing, the following procedure can be used:

- (a) Loosen spring retaining bolt.
- (b) Slide two wrenches with a combined thickness of at least 1" under the spring rod bolt and washer. See Figure 35.

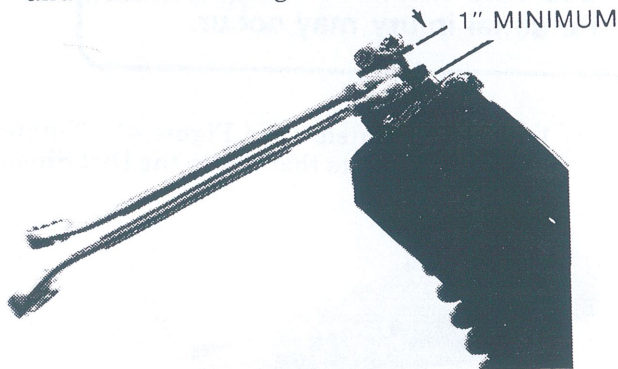


Figure 35

- (c) Tighten bolt fully, this will lift the casting off the base.

- (d) Pry the casting away from the spring rod pin.

The casting will drop down and the bushing can be easily accessed.

- (e) Replace the bushing

- (f) Reverse the above procedure to reassemble.

NOTE: The head of the spring rod pin must be orientated correctly with the slot in the Spring Rod for correct assembly - square shoulder enters the square ended slot. See Figure 36.

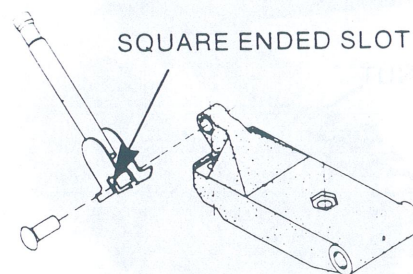


Figure 36

- (g) Torque spring rod bolt to 75 ft. lbs. See Figure 37.

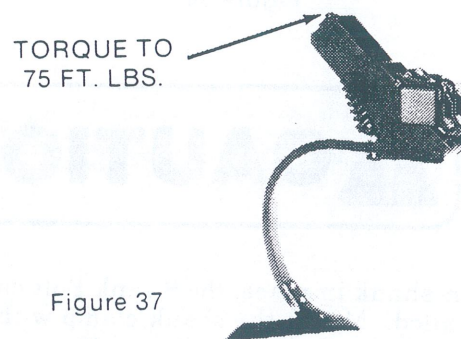


Figure 37



DANGER

**CARE MUST BE TAKEN
WHEN REPLACING ANY
TRIP COMPONENTS AS
THE SPRING IS
UNDER PRESSURE**

Maintenance

650 lb. Spring Cushion Trip — Continued

Shank Replacement

The Dirt Shield must be removed to install a new shank. This allows access to the shank bolt nut.

- (1) Loosen the two Jam Nuts that retain the Dirt Shield. See Figure 38.

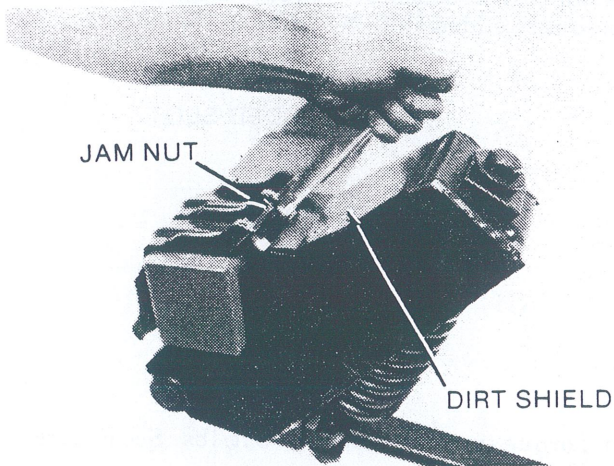


Figure 38

- (2) Use a screwdriver to remove Dirt Shield. See Figure 39.

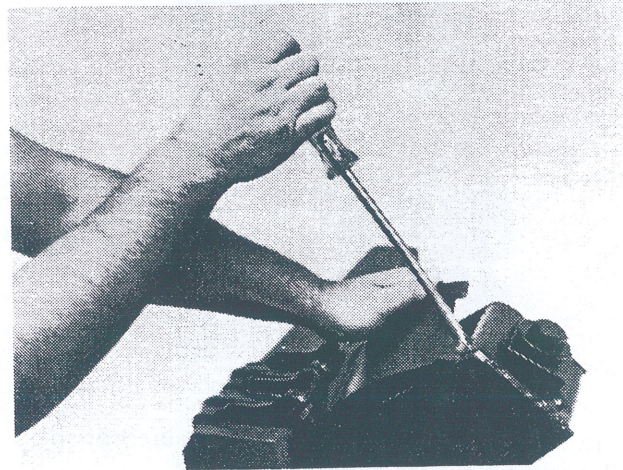


Figure 39



CAUTION:

Use care when removing shield,
Personal injury may occur.

- (3) With shank in place, the Shank Bolt can be installed. Mount the shank clamp with two Clamp Strap Bolts. See Figure 40.

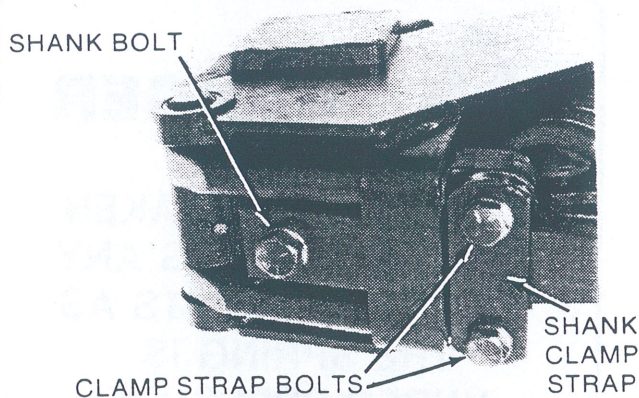


Figure 40

- (4) Install Dirt Shield. See Figure 41. Tighten the two Jam Nuts that retain the Dirt Shield.



Figure 41

Maintenance

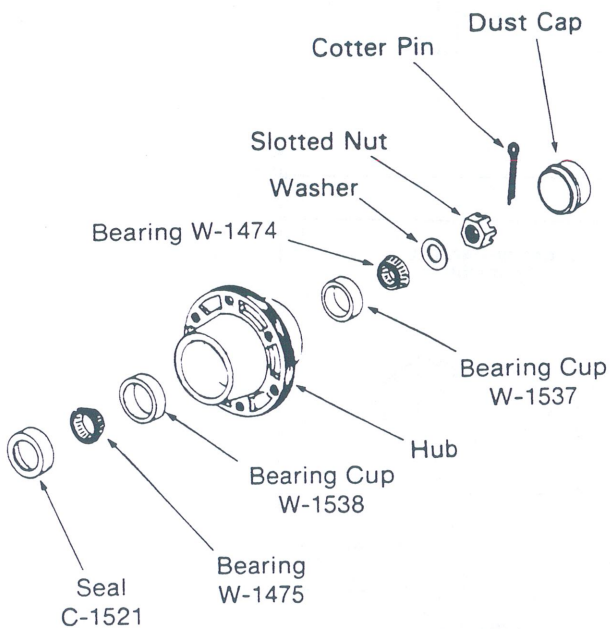


Tire replacement requires trained personnel and proper equipment.

Wheels

- Inspect wheel for tread wear and sidewall abrasions, replace if necessary.
- Tighten wheel bolts - refer to the Bolt Torque Chart.
- Check tire pressure.

Bearings

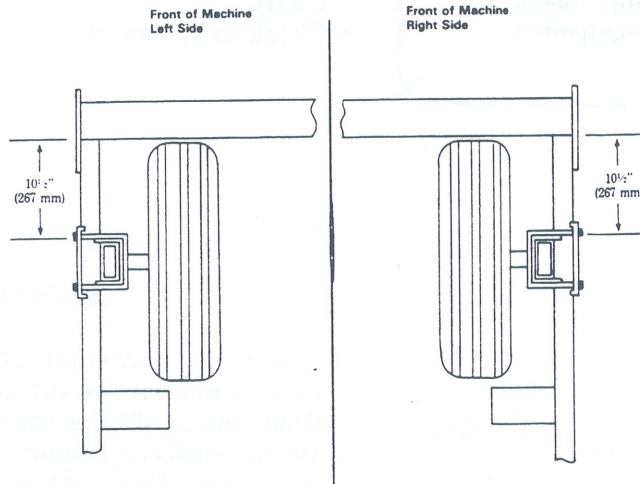


- Lower the cultivator and raise the wheels enough to clear the surface.
- Shut tractor off and remove key.
- Block wheels on tractor.
- Remove the Dustcap Cotter Pin and slotted nut and washer.
- Be careful when pulling the hub off as not to drop the outer bearing.
- Clean spindle and bearing components with solvent.
- Inspect for wear on bearings, spindle and cups, replace if required.
- Do not reuse old seals. Use only new seals when reassembling.
- Pack inner hub with bearing grease.
- Be sure bearing and cup are dry and your hands are clean.
- Place grease in the palm of your hand and work grease into the bearing rollers, rotating the bearing as you go.
- Install inner bearing and cup first, then press new seals in place.
- Place hub on spindle.
- Install outer bearing, washer and slotted nut.
- Tighten Nut while turning the wheel until a slight drag is felt.
- Back nut off one slot and install a cotter pin, then bend up around Nut.
- Pack grease inside the dust cap and tap into position.

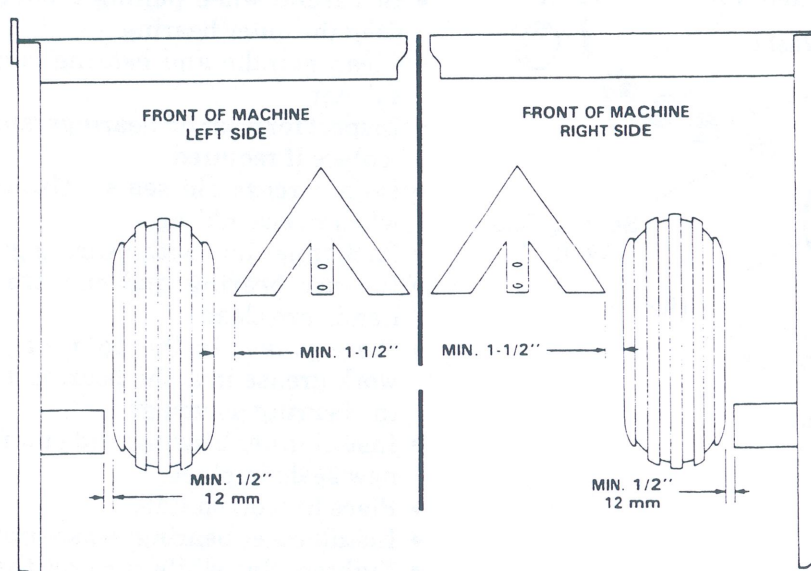
Maintenance

Axle Placement Clearance (All Axles)

CP-709



All Other Magnum II



Right and left is determined by standing behind the machine and facing forward in the direction of travel.

**NOTE: Tires Damaged Due To Improper Set-Up
Are Not Covered By The Morris Warranty**

Troubleshooting 7

Problem	Cause	Correction
Machine not operating straight.	Not Level.	Adjust 3 Point Hitch Links. Adjust cylinder control rods. Use optional spacer washers part No.C-4339 if required. Refer to Operation Section. Rephase cylinders. Adjust Gauge Wheels.
Lack of penetration	Not levelled Sweeps worn Sweep angle.	Check tire pressure Refer to Maintenance Section. Refer to Operation Section for levelling procedure. Replacement necessary. Morris Sweeps are at 50°.
Sweeps wearing unevenly	Frame not levelled front to rear. Tire tracks. Front row always wears more than the others.	Adjust ratchet jack or move "A"-Frame to alternate hole on bridle up or down as required. Alternate sweeps from one side to the other
Depth Control not working	Cylinder not phased. Leaks. Low oil level Hydraulics clogged. (Check valve leaking (745 & 750 only)	Raise machine fully, hold 3-4 seconds then lower. Use hand and eye protection - check for external leaks. Fill tractor reservoir. Replace filter. Clean or replace.
Wing lifting too slowly.	Tractor hydraulic pressure. Hydraulic breakaways. Hose restriction. Check valve C-957.	Repair pump. Pressure relief valve needs resetting. Foreign material or sticking. Check compatibility. Cylinder linkage binding. Clean. Make sure arrow points in direction of flow when lowering wings. Clean or replace.
One wing will lift, other will not.	Binding Assembly. Restriction in line.	Hinge joints. Hoses reversed at cylinder. See set up instruction. Clean.

Troubleshooting

Problem	Cause	Correction
Depth Control Not working	Internal leaks Depth Control valve not seated properly.	Raise the machine and level off. Run the machine at operating depth for 50 feet. Stop machine in ground and mark cylinder shafts with felt marker. Run at operating depth, observing the cylinder movement and direction. The leaking cylinder will normally be the first in the series that is moving. If only one cylinder does not hold, check that cylinder piston O-ring and barrel are not damaged. Replace all seals in leaking cylinder. Remove poppet valve and check for damage. Shaft could be bent. Check that the cylinder shaft lever pushes directly on depth valve poppet.
Trips not tripping freely	Adjustment Lack of lubrication	See Maintenance Section for spring settings. Oil all pivot points. Grease lower pivot pin every 50 hours.
Trips tripping too freely	Adjusting bolt on the connecting rod over-tightened	See Maintenance Section for proper procedure.
Tire damage	Sweeps too close to tires	Check shank spacing. Readjust axles to provide adequate clearance. Refer to Maintenance Section for correct axle placement diagram.
Oil accumulation	Crack in pipes Twisted hose caused a leak Loose fittings	Check for leaks using cardboard. See Safety Section. Always use one wrench to keep the hose from twisting and another wrench to tighten. Apply thread sealer to NPT connections. Do not over-tighten.
Oil accumulation on hydraulic cylinder	Side pressure Damaged seal Loose fittings Scored cylinder shaft will damage shaft seal Normal	Align linkage. Replace all seals. Tighten hose and pipe connections. Replace. Slight seepage from seal is normal.