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Operation and Parts Manual

Mow-Master Harrow MH19-036, MH19-048, MH19-060



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INTRODUCTION

Your New COOMBS Mow-Master Harrow was designed for years of productive use provided that the set-up, operation, and maintenance procedures are performed correctly. The Mow-Master Harrow with optional flexible floating cutterbar can mow stubble or grass and work the residue in one pass.

This manual covers the MH19-036, MH19-048, and MH19-060 models and optional equipment. In this manual the point of reference for left hand and right hand components is from the rear of the implement looking forward.

Read and understand this manual *before* operation.

Record the model and serial numbers of the equipment. This will aid your dealer when ordering parts and or service. Return the white copy of the "Delivery Record & Warranty Registration" sheet to Coombs Manufacturing Company to activate your warranty.



SAFETY & SIGNAL WORDS



THE SAFETY ALERT SYMBOL USED THROUGHOUT THIS MANUAL MEANS **ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!** CAREFULLY READ, UNDERSTAND, AND FOLLOW THE INSTRUCTIONS THAT FOLLOWS THIS SYMBOL.

SIGNAL WORDS

Note the use of safety colors and the signal words DANGER, WARNING and CAUTION with the safety messages. These colors and words indicate the likely consequences in terms of degree of severity or the probability of severity.



!DANGER! (RED) - Immediate hazards which **WILL** result in severe personal injury or death.



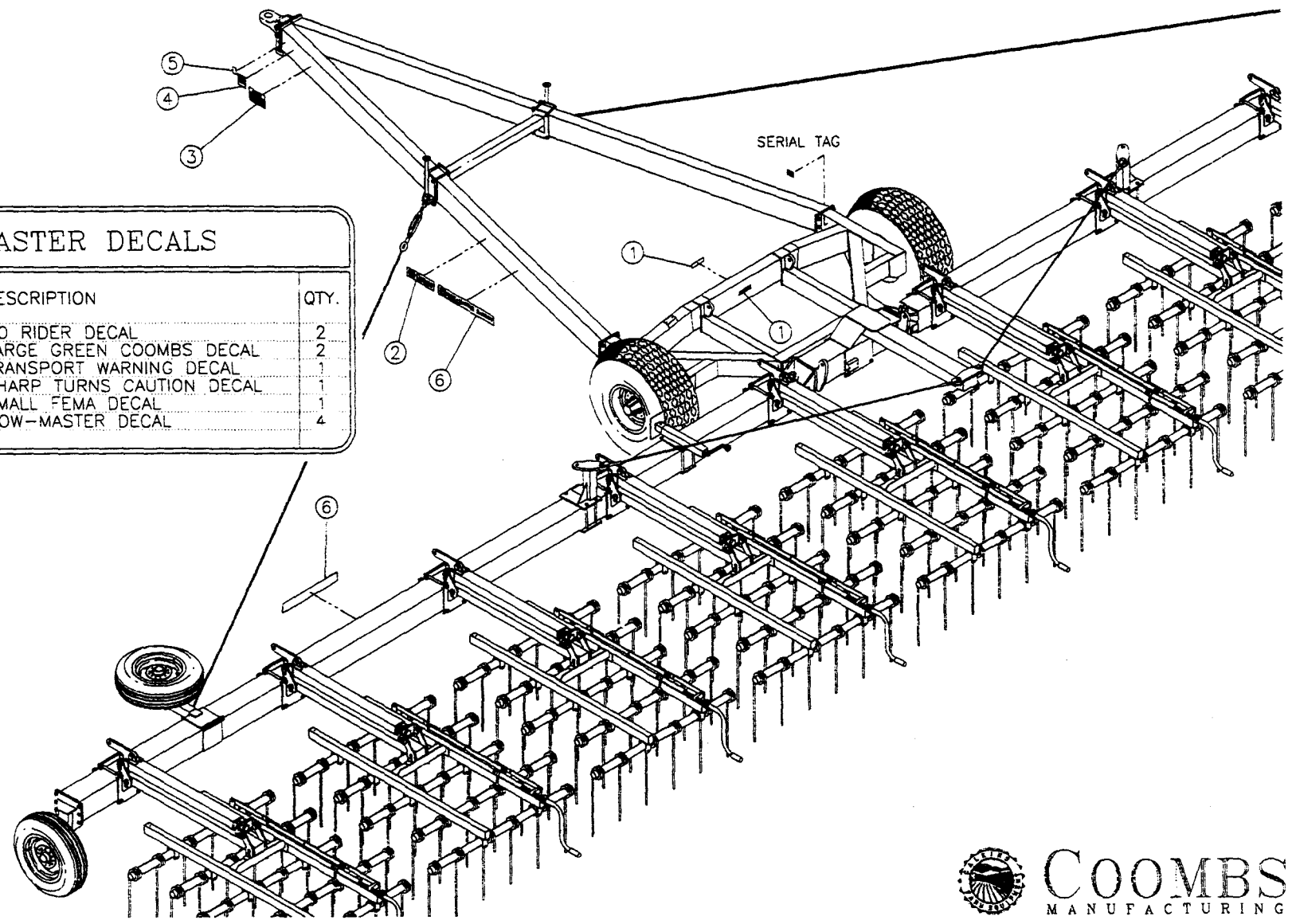
!WARNING! (ORANGE) - Hazards or unsafe practices which **COULD** result in severe personal injury or death.



!CAUTION! (YELLOW) - Hazards or unsafe practices which **COULD** result in minor personal injury or product or property damage.

MOW-MASTER DECALS

REF. No.	PART NUMBER	DESCRIPTION	QTY.
1	5-359-411	NO RIDER DECAL	2
2	5-359-415	LARGE GREEN COOMBS DECAL	2
3	5-359-423	TRANSPORT WARNING DECAL	1
4	5-359-438	SHARP TURNS CAUTION DECAL	1
5	5-359-444	SMALL FEMA DECAL	1
6	5-359-449	MOW-MASTER DECAL	4



EQUIPMENT SAFETY GUIDELINES

Every year many accidents occur which could have been avoided by a few seconds of thought and a more careful approach to handling equipment. You, the operator, can avoid many accidents by observing the following precautions in this section. To avoid personal injury, study the following precautions and insist those working with you, or for you, follow them.

In order to provide a better view, certain photographs or illustrations in this manual may show an assembly with a safety shield removed. However, equipment should never be operated in this condition. Keep all shields in place. If shield removal becomes necessary for repairs, replace the shield prior to use.

This equipment may be dangerous to persons unfamiliar to its operation. The operator should be a responsible adult familiar with farm machinery and trained in this equipment's operations. **Do not allow persons to operate or maintain this unit until they have read this manual and have developed a thorough understanding of the safety precautions and of how it works.**

LIGHTING AND MARKING

Comply with state and local laws governing highway safety and movement of farm machinery on public roads.

TIRE SAFETY

- Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion which may result in serious injury or death.
- Do not attempt to mount a tire unless you have the proper equipment and experience to do the job.
- Inflating or servicing tires can be dangerous. Whenever possible, trained personnel should be called to service and/or mount tires.
- Always order and install tires and wheels that meet original equipment specifications.

BEFORE OPERATION

- Carefully study and understand this manual.
- Completely familiarize yourself and other operators with the equipment and its proper operation before using.
- Do not wear loose fitting clothing which may catch in moving parts.
- The operator may come in contact with certain materials which may require specific safety equipment relative to the handling of such materials.
- Assure that wheel lug nuts or bolts are tightened to specified torque.
- Assure that tires are inflated to specified pressures.
- Give the unit a visual inspection for any loose or worn bolts or components and make necessary repairs. Follow the maintenance instructions included in this manual.
- Be sure that there are no tools lying on or in the equipment.
- Do not use the unit until you are sure that the area is clear.
- Do not allow anyone to stand between the tongue or hitch and the towing vehicle when backing up to the equipment.
- Assure that the equipment is securely attached to the towing vehicle.

HIGHWAY AND TRANSPORT OPERATIONS

- Do not allow anyone to stand between the tongue or hitch and the towing vehicle when backing up to the equipment.
- Assure that the equipment is securely attached to the towing vehicle.
- Keep the brake pedals latched together at all times. Never use independent braking with a machine in tow as loss of control and/or overturning of unit can result.
- Drive at a safe speed. Maximum speed for implements is indicated on the tires.
- Comply with state and local laws governing highway safety and movement of farm machinery on public roads.
- Make allowances for increased length, width, height, and weight of the equipment when making turns, stopping the unit, etc..
- Excessively sharp turns can cause damage to tool.

DURING OPERATION

- **NO RIDERS.** Do not carry passengers anywhere on, or in, the tractor or equipment except as required for operation.
- Keep hands and clothing clear of moving parts.
- Do not clean, maintain or adjust the equipment while it is moving.
- Pick the most level possible route when transporting across fields. Avoid the edges of ditches or gullies and steep hillsides.
- Be extra careful when working on inclines.
- Maneuver the tractor or towing vehicle at safe speeds.
- Avoid loose fill, rocks and holes; they can be dangerous for equipment operation or movement.
- Do not walk or work under raised components or attachments unless securely positioned and blocked.
- Operate the towing vehicle from the operator's seat only.
- Never leave running equipment or attachments running unattended.

FOLLOWING OPERATION

- Make sure all parked machines are on a hard level surface and engage all safety devices.
- Wheel chocks may be needed to prevent unit from rolling.
- Shut off hydraulic supply and relieve all hydraulic pressure prior to disconnecting hydraulic lines.
- Do not permit children to play on or around the stored unit.

PERFORMING MAINTENANCE

Routine maintenance of your equipment will help to prevent accidents and prolong the useful life of the implement.

- Before working on this machine, shut off towing vehicle, set the brakes, disengage PTO and all power drives.
- Be certain all moving parts have come to a complete stop before attempting to perform maintenance.
- Always use a safety support and block the wheels. Never use a jack to support the machine.
- Use the proper tools or equipment for the task at hand.
- Never use your hands to locate a hydraulic leak. Use a piece of cardboard or wood. Hydraulic fluid escaping under pressure can penetrate the skin.
- Before servicing hydraulic components, shut off hydraulic supply and relieve hydraulic pressure.
- Inspect the entire machine for loose or worn fasteners and components and replace as necessary.
- Where replacement parts are necessary, genuine factory parts must be used to restore your equipment to original specifications.
- Replace all shields and guards after servicing and before moving.
- Do not re-use lock nuts that have been removed.
- Follow the torque chart in this manual when tightening bolts and nuts.
- After servicing, be sure that there are no tools lying on or in the equipment.
- Do not allow grease or oil to build up on any step or platform.

NOTE: The most common causes of running gear troubles are insufficient or improper grease on the bearings and improper tightening and maintenance of wheel nuts or bolts. After initial installation of wheel, check bolt torque. Check again after approximately 500 revolutions, then periodically thereafter.

SPECIFICATIONS

Working width:	36'	48'	60'
Transport length:	36'-8"	42'-8"	48'-8"
Transport height:	11'-7"	11'-7"	11'-7"
Harrow Weight:	8,850 lb.	10,350 lb.	11,850 lb.
Cutterbar Weight:	1,860 lb.	2,020 lb.	2,180 lb.

Horsepower requirements:

Three to Five horsepower per foot.

Hydraulic requirements:

Harrow: Two circuits, main lift and harrow down pressure.

Cutterbar: Two circuits, cutterbar lift which can be combined via the hydraulic selector valve and two drive motors that require a total of eighteen gallons per minute.

Tire pressures:

Inflate to the pressure as indicated on the tires.


Torque for lug nuts and lug bolts:

1/2"-2075-85 ft.-lb.

9/16"-18 80-90 ft.-lb.


TORQUE VALUES FOR GR. 5 PLATED BOLTS					
SIZE	FT. LBS.	SIZE	FT. LBS.	SIZE	FT. LBS.
1/4"	8	1/2"	75	1"	644
5/16"	17	9/16"	109	1-1/8"	912
3/8"	31	5/8"	150	1-1/4"	1,287
7/16"	49	3/4"	266	1-1/2"	2,240

CHANGING FROM TRANSPORT TO FIELD POSITION

 **CAUTION: Failure to follow these procedures may result in damage to the equipment and or personal injury.**

- Attach hitch so that the implement frame is level front to rear.
- Clean off any dirt that has accumulated on the hydraulic couplers and plug them securely into the tractor. If the Mow-Master is equipped with a hydraulic selector valve, push the knob down.
- Raise the Jack and remove wheel chocks.
- Locate relatively level ground and allow room to back up as far as is required to spread the wings into field position.
- Back up slowly until the wings are over centered to the front. **DO NOT** back the main frame tires into the wings.
- Attach all cables with pins installed from the front.
- Remove the transport safety pin and stow on the frame.
- Engage the main lift circuit (color coded red) to fully extend the 4 x 20 cylinders which rotate the wings into field position.
- Engage the harrow circuit (color coded yellow) to extend the 2 x 4 cylinders approximately two inches.
- Pull forward ten feet and check wing alignment. Adjusting the turnbuckles on the wing pull cables will move the wings forward or aft as required.
- If equipped with the cutterbar option and a hydraulic selector valve, pull the knob up.
- Engage the cutterbar circuit (color coded green) to fully retract the 2 x 4 cylinders which lowers the cutterbar into working position.

CHANGING FROM FIELD TO TRANSPORT POSITION

 **CAUTION: Failure to follow these procedures may result in damage to the equipment and or personal injury.**

- If equipped with the cutterbar option, engage the cutterbar circuit (color coded green) to fully extend the 2 x 4 cylinders which raise the cutterbar into transport position.
- Engage the harrow circuit (color coded yellow) to fully retract the 2 x 4 cylinders which raise the harrow into transport position.

- If equipped with a hydraulic selector valve, push the knob down.
- Engage the main lift circuit (color coded red) to fully retract the 4 x 20 cylinders which rotate the wings into transport position.
- Install transport safety pin.
- Detach all cables and stow on frame.
- Pull forward until wings are in trailing position and confirm the implement is road ready.

In transport the wings will trail the center cart at a slight angle outward. This serves two functions, one is to keep the airborne field tires from colliding during turns and to facilitate spreading the wings while backing up to get into field position. There should be approximately fourteen inches clearance between the two field tires in this position. This distance is set with the toe-in adjustment at the swivel spindles on the transport wheel legs.

To spread the wings apart, loosen the stop bolt at the rear of the swivel spindle one half turn. Then take up the gap with the stop bolt at the front of the swivel spindle adjusting the toe-out. Pull the implement straight for twenty feet and check the wing alignment. Repeat if necessary. Tighten all fasteners. If this joint is not kept tight the wing will “wag” in transport.

To move the wings closer, loosen the stop bolt at the front of the swivel spindle one half turn. Then take up the gap with the stop bolt at the rear of the swivel spindle adjusting the toe-in. Pull the implement straight for twenty feet and check the wing alignment. Repeat if necessary. Tighten all fasteners. If this joint is not kept tight the wing will “wag” in transport.

GENERAL OPERATION

The Mow-Master Harrow with optional cutterbar can be used to cut and harrow residue at the same time or harrow alone. These operations can be performed anytime of the year that field conditions permit.

For best results, the harrow should run with the rear two or three ranks full of residue. Harrowing alone should be done at an angle to the crop rows between six and ten miles per hour. Cutting and harrowing should be done at an angle to the crop rows at a speed between five and seven miles per hour.

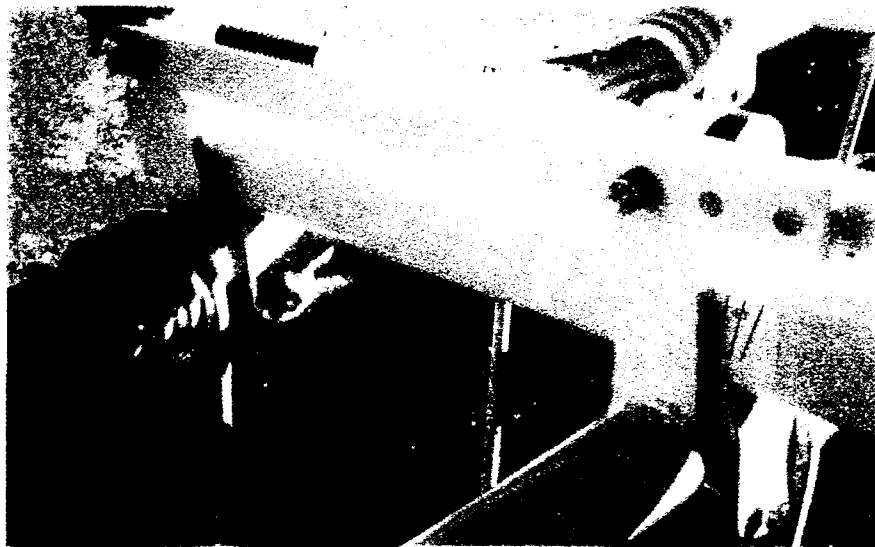
In tall or heavy residue it is recommended that the standing stubble be cut approximately in half. For example; if the stubble is twenty inches tall, set the cutterbar to leave ten or twelve inches attached. If shorter stubble is desired a second pass may be necessary.

Subsequent passes should be done in alternating directions whether cutting and harrowing or harrowing alone. This will allow the cutterbar and harrow to work the remaining residue more thoroughly

HARROW OPERATION

The harrow sections are six feet wide to better match the ground contour and provide support for the optional cutterbar. All sections act independent of each other and can be fine tuned to be more aggressive in tire tracks or to be less aggressive along an edge with loose soil.

The front and rear tine angles can be adjusted independently of the middle three ranks of tine by bolting through different holes in the adjustment straps. Using the forward holes will decrease the tine angle, while using the rear holes will increase the tine angle. Changing the harrow tine trailing angle also changes how far off the ground the H-frame rides which changes the cutterbar working height if so equipped.




- Adjust nitrogen pressure in the accumulator between 0 PSI and 2000 PSI for desired hydraulic down pressure.
- Engage the harrow circuit (color coded yellow) to extend the 2 x 4 cylinders approximately two inches.
- Adjust the harrow tine angle between 0 degrees and 45 degrees by turning the handle on the back of the harrow sections. Turning counter clockwise increases the harrow tine trailing angle and makes it less aggressive. Turning clockwise decreases the harrow tine trailing angle and makes it more aggressive. When making angle changes of more than five degrees in may be necessary to rotate the wings up enough to relieve pressure on the tines.

Large tine angle changes may alter how level the harrow section rides. If the harrow is not relatively level to the ground, the down pressure will not be evenly distributed on the tines and the residue will not flow well. This will cause the harrow to plug and or let residue roll out in clumps behind the harrow.

Ground speed, crop, and weather conditions will all effect the operation of the harrow. Experiment with ground speed, hydraulic down pressure, and harrow tine angle until desired results are achieved.

NOTE: Harrow operates best when the back two or three ranks are full.

CUTTERBAR OPERATION

 **CAUTION: Sickle sections are extremely sharp and can cut through leather even when not in motion.**

Before you start:

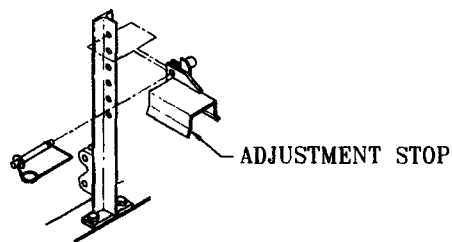
- Grease drives as shown in the Pro-Drive service and warranty manual.
- Check for loose or damaged sickle sections and components.
- Check drive rotation at low speed to insure clockwise rotation as viewed from the top.

NOTE: Always start and stop hydraulic motors at a low speed.

The flexible floating cutterbar will flex to match most terrain changes and float over some obstacles. However, keep a watchful eye for rocks and other obstacles that could damage the sickle sections or break the cutterbar.

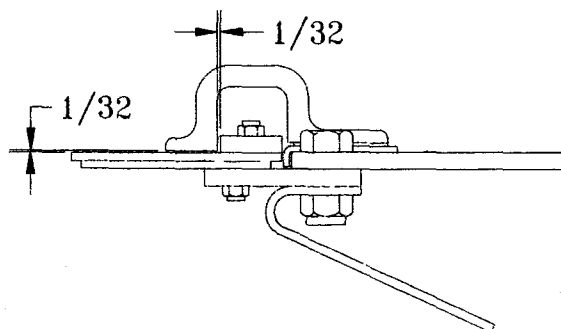
The cutterbar is carried on the harrow H-frames by the adjustable height control stops. Although the cutterbar can be raised hydraulically “on the fly” prolonged use while off the height control stops is not recommended.

Adjusting the cutting height is a simple task. With the harrow in field position and the motors shut off, engage the cutterbar circuit (color coded green) to fully retract the 2 x 4 cylinders which lowers the cutterbar into working position and check the height. If an adjustment is necessary, hydraulically lift the cutterbar into transport position. Remove the snap lock hitch pin, relocate the height adjustment stop to another hole and reinstall pin. The cutterbar will not ride level nor cut evenly if all sections are not adjusted the same.




NOTE: Moving the adjustment stop up will lower the cutterbar in two inch increments and moving the adjustment stop down will raise the cutterbar in two inch increments.

A properly adjusted cutterbar will move freely by hand even with the drive attached. For best results, maintain the hold down clip clearances shown below.



REAR CABLE KIT

The rear cable kit limits the forward movement of the wings in field position. The amount of travel is controlled by the wing cable mount placement. The farther out on the wings the mounts are located, the less forward travel the wings will have. The closer in on the wings the mounts are located, the more forward travel the wings will have. The recommended amount of forward travel for the wings in field position with the rear cables attached is two feet. Any less than that will not allow the wings to dip over the crest of a hill. Much more than that will allow the wing to whip and put undue stress on the cables and brackets.

 **CAUTION: Disconnect cables and stow on frame after rotating wings up and prior to pulling forward into transport position.**

MAINTENANCE

When performing maintenance, inspect the entire machine for loose or worn fasteners and components and replace as necessary. The following charts indicate minimum intervals. Operating conditions may necessitate more frequent attention.

LUBRICATION	
HUBS	EVERY 50 HRS.
HINGE U-JOINTS	EVERY 10 HRS.
SWIVEL SPINDLES	START OF SEASON
HARROW ARMS	EVERY 20 HOURS
HARROW ADJUSTMENT RODS	EVERY 20 HOURS
DRIVES	SEE DRIVE MANUAL

RUST INHIBITOR	
HARROW ADJUSTMENT RODS	END OF SEASON
SICKLE BARS	END OF SEASON
CABLES	END OF SEASON

NOTE: The most common causes of running gear troubles are insufficient or improper grease on the bearings and improper tightening and maintenance of wheel nuts or bolts. After initial installation of wheel, check bolt torque. Check again after approximately 500 revolutions, then periodically thereafter. Completely fill the hubs with grease at the beginning and end of each season to prevent moisture damage to the bearings and races.

For more information or assistance contact your local authorized dealer.

TROUBLESHOOTING FRAME

PROBLEM:

Wings are too close or too far apart in transport.

Wings will not rotate into field position.

Wings are not level front to rear in field position.

Wings are not in alignment in the field.

Wings overtake center frame on a down hill.

Excessive wing bounce in field.

Wings will not rotate into transport position.

CAUSE:

Toe-in needs adjusted.

4 x 20 cylinders not getting oil.

or

Transport pin is in place.

4 x 20 cylinders not fully extended.

Wing pull cables are not adjusted evenly.

Rear cables have too much slack.

Wing tires are too hard for hard ground.

4 x 20 cylinders not getting oil.

or

Not enough hydraulic pressure to start retracting 4 x 20 cylinders.

SOLUTION:

Adjust swivel spindle on transport wheel legs.

Check coupler connections at tractor.

or

If equipped with a hydraulic selector valve, push knob down.

Remove transport pin.

Fully extend 4 x 20 cylinders.

Adjust turnbuckles on wing pull cables.

Adjust wing cable mounts to remove *some* slack from rear cables.

Decrease air pressure in wing tires.

Check coupler connections at tractor.

or

If equipped with a hydraulic selector valve, push knob down.

Extend 2 x 4 harrow cylinders half way. Once wings are rotated up, retract 2 x 4 cylinders prior to pulling the implement forward.

TROUBLESHOOTING HARROW

PROBLEM:

2 x 4 cylinders will not extend or retract.

Harrow sections are not level front to rear.

Can not adjust tine angle.

Harrow is overly aggressive and or carrying to much residue.

Harrow is not aggressive enough and or is not carrying enough residue.

Residue is rolling out in clumps behind the harrow.

CAUSE:

2 x 4 cylinders not getting oil.

Upper arm assembly needs adjustment.

To much pressure on tines.

or

Adjustment straps are to tight to tine mounts.

or

Adjustment rod is rusty.

To much down pressure.

or

Harrow tine is to straight.

or

To much residue being cut.

Not enough down pressure.

or

Harrow tine is to slanted.

or

Not enough residue being cut.

Not enough down pressure.

or

Harrow tine is to slanted.

or

Field conditions may be to wet.

SOLUTION:

Check coupler connections at tractor.

Adjust tap bolt in upper harrow arm assembly.

Rotate wings up enough to relieve pressure.

Loosen bolts ¼ turn.

Lubricate acme threads.

Decrease down pressure.

Increase harrow tine trailing angle.

Raise cutting height.

Increase hydraulic down pressure.

Decrease harrow tine trailing angle.

Lower cutting height.

Increase hydraulic down pressure.

Decrease harrow tine trailing angle.

Allow field to dry.

TROUBLESHOOTING CUTTERBAR

PROBLEM:

2 x 4 cylinders will not extend or retract.

Height control stops will not contact H-frames.

Hydraulic motors will not turn.

Hydraulic motors will not turn at speed.

Hydraulic motors turn at different speeds.

Hydraulic motor case seals leak.

Hydraulic oil temperature is too hot.

Drive bearing seized or failed.

Nylon ring for knifehead failed.

CAUSE:

2 x 4 cylinders not getting oil.

2 x 4 cylinders are holding cutterbar up.

Motors are not getting oil.

or
Cutterbar is jammed.

Hydraulic oil is flowing wrong way.

or
Tractor is not supplying 18 gallons per minute.

Case drain has hydraulic pressure from tractor.

Case drain has hydraulic pressure from tractor.

Tractor is not cooling 18 gallons per minute.

Lack of grease or loose bearing bolt.

Seized bearing or loose knifehead bolt.

SOLUTION:

Check coupler connections at tractor.

or
If equipped with a hydraulic selector valve, pull knob up.

Retract cutterbar 2 x 4 cylinders completely.

Check coupler connections at tractor.

Check for obstructions in cutterbar.

Reverse coupler connections at tractor.

Increase hydraulic oil supply.

Plumb case drain into non pressurized port.

Plumb case drain into non pressurized port.

Increase cooling capacity.


Provide routine maintenance.

Provide routine maintenance.

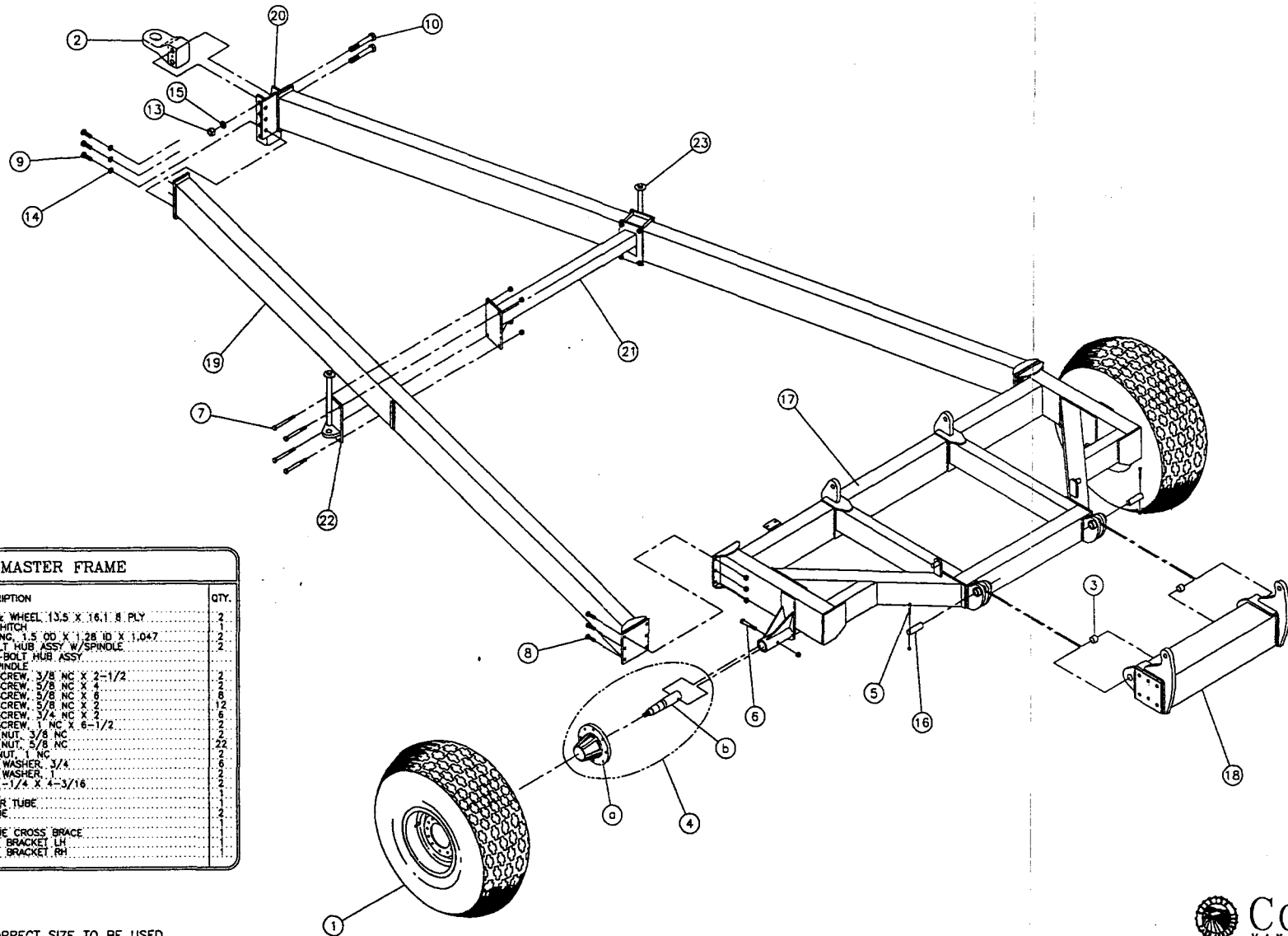
TROUBLESHOOTING CUTTERBAR (CONTINUED)

<u>PROBLEM:</u>	<u>CAUSE:</u>	<u>SOLUTION:</u>
Sickle is broken.	Sickle section bolts are loose. <i>or</i> Sickle hold down clips are out of adjustment. <i>or</i> Sickle has hit an obstruction in the field.	Tighten section bolts. Adjust hold down clips. Avoid obstructions.
Excessive sickle wear.	Sickle hold down clips are out of adjustment. <i>or</i> Dried mud is plugging sickle.	Adjust hold down clips. Remove debris from sickle.
Sickle will not cut.	Crop can not get to cutterbar.	Harrow is carrying too much residue. (see harrow troubleshooting)
Sickle speed is too slow relative to ground speed.	Hydraulic motors not at full speed. <i>or</i> Ground speed too high.	Increase hydraulic flow to motors. Decrease ground speed.
Sickle sections have excessive wear.	Sections need replaced.	Replace worn sickle sections.

NOTE: Ground speed, crop, and weather conditions will all affect the operation of the harrow and cutterbar. Experiment with different speeds and settings until desired results are achieved.

 **CAUTION: Never use your hands to locate a hydraulic leak! Hydraulic fluid escaping under pressure can penetrate the skin.**

NOTES:



MOW-MASTER FRAME

REF. No.	PART NUMBER	DESCRIPTION	QTY.
1	5-639-050	TIRE & WHEEL 13.5" X 16.1" 8 PLY	2
2	5-929-010	BASE HITCH	1
3	6-136-624	BUSHING 1.5 OD X 1.28 ID X 1.047	2
4	6-619-024	B-BOLT HUB ASSY W/SPINDLE	2
5	5-619-025	B-BOLT HUB ASSY	2
6	6-628-017	SPINDLE	2
7	7-112-066	CAP SCREW 3/8 NC X 2-1/2	2
8	7-114-040	CAP SCREW 5/8 NC X 2	2
9	7-114-060	CAP SCREW 5/8 NC X 2	8
10	7-114-109	CAP SCREW 5/8 NC X 2	12
11	7-115-020	CAP SCREW 3/4 NC X 2	6
12	7-116-085	CAP SCREW 1 NC X 6-1/2	2
13	7-722-110	LOCK NUT 3/8 NC	2
14	7-724-120	LOCK NUT 5/8 NC	22
15	7-728-005	HEX NUT 1 NC	2
16	7-845-020	LOCK WASHER 3/4	2
17	7-846-020	LOCK WASHER 1	2
18	8-036-015	PIN 1-1/4 X 4-3/16	3
19	MH9-001	FRAME	1
20	MH9-002	CENTER TUBE	1
21	MH9-002	TONGUE	2
22	MH9-003	HITCH	1
23	MH9-004	TONGUE CROSS BRACE	1
	MH9-005	CABLE BRACKET LH	1
	MH9-006	CABLE BRACKET RH	1

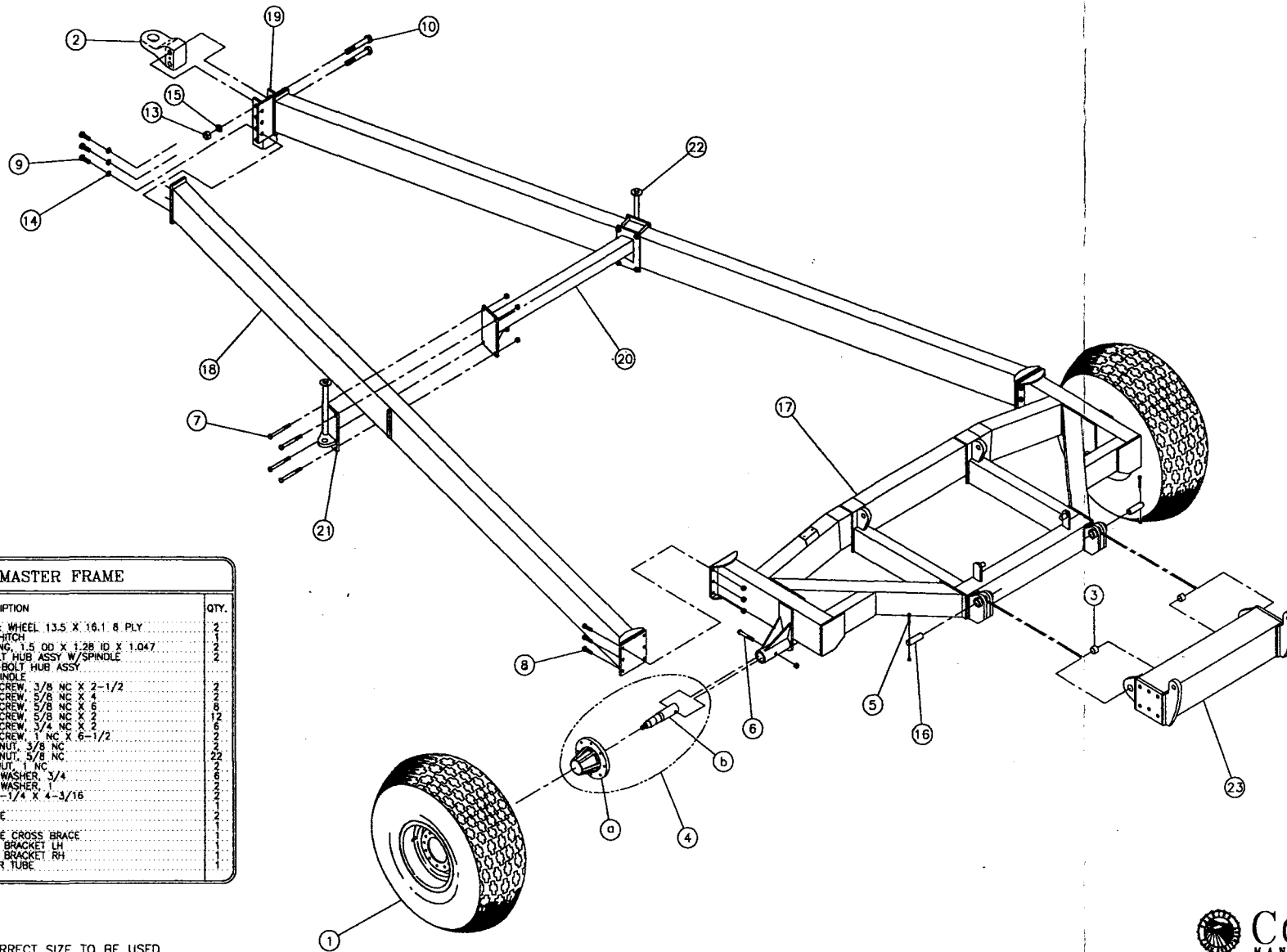
NOTE:

ONE LOCK NUT OF CORRECT SIZE TO BE USED WITH EACH CAP SCREW UNLESS OTHERWISE NOTED.

MOW-MASTER FRAME			
REF. No.	PART NUMBER	DESCRIPTION	QTY.
1	5-639-05D	TIRE & WHEEL 13.5 X 16.1 8 PLY	2
2	7-928-010	BASE HITCH	1
3	6-136-624	BUSHING 1.5 OD X 1.28 ID X 1.047	2
4	6-619-024	8-BOLT HUB ASSY W/SPINDLE	2
5	6-619-025	8-BOLT HUB ASSY	2
6	6-628-017	SPINDLE	2
7	7-114-040	CAP SCREW 3/8 NC X 2-1/2	2
8	7-114-060	CAP SCREW 5/8 NC X 4	8
9	7-114-109	CAP SCREW 5/8 NC X 6	12
10	7-116-020	CAP SCREW 3/4 NC X 2 1/2	6
11	7-116-065	CAP SCREW 1 NC X 6-1/2	2
12	7-727-110	LOCK NUT 3/8 NC	2
13	7-727-120	LOCK NUT 5/8 NC	22
14	7-726-005	HEX NUT 1 NC	2
15	7-845-020	LOCK WASHER 3/4	2
16	7-845-020	LOCK WASHER 1	2
17	6-038-015	MIN. 1-1/4 X 4-3/16	1
18	MH9-001	FRAME	1
19	MH9-002	TONGUE	1
20	MH9-003	HITCH	1
21	MH9-004	TONGUE CROSS BRACE	1
22	MH9-005	CABLE BRACKET LH	1
23	MH9-006	CABLE BRACKET RH	1
	MH9-007	CENTER TUBE	1

NOTE:

ONE LOCK NUT OF CORRECT SIZE TO BE USED WITH EACH CAP SCREW UNLESS OTHERWISE NOTED.



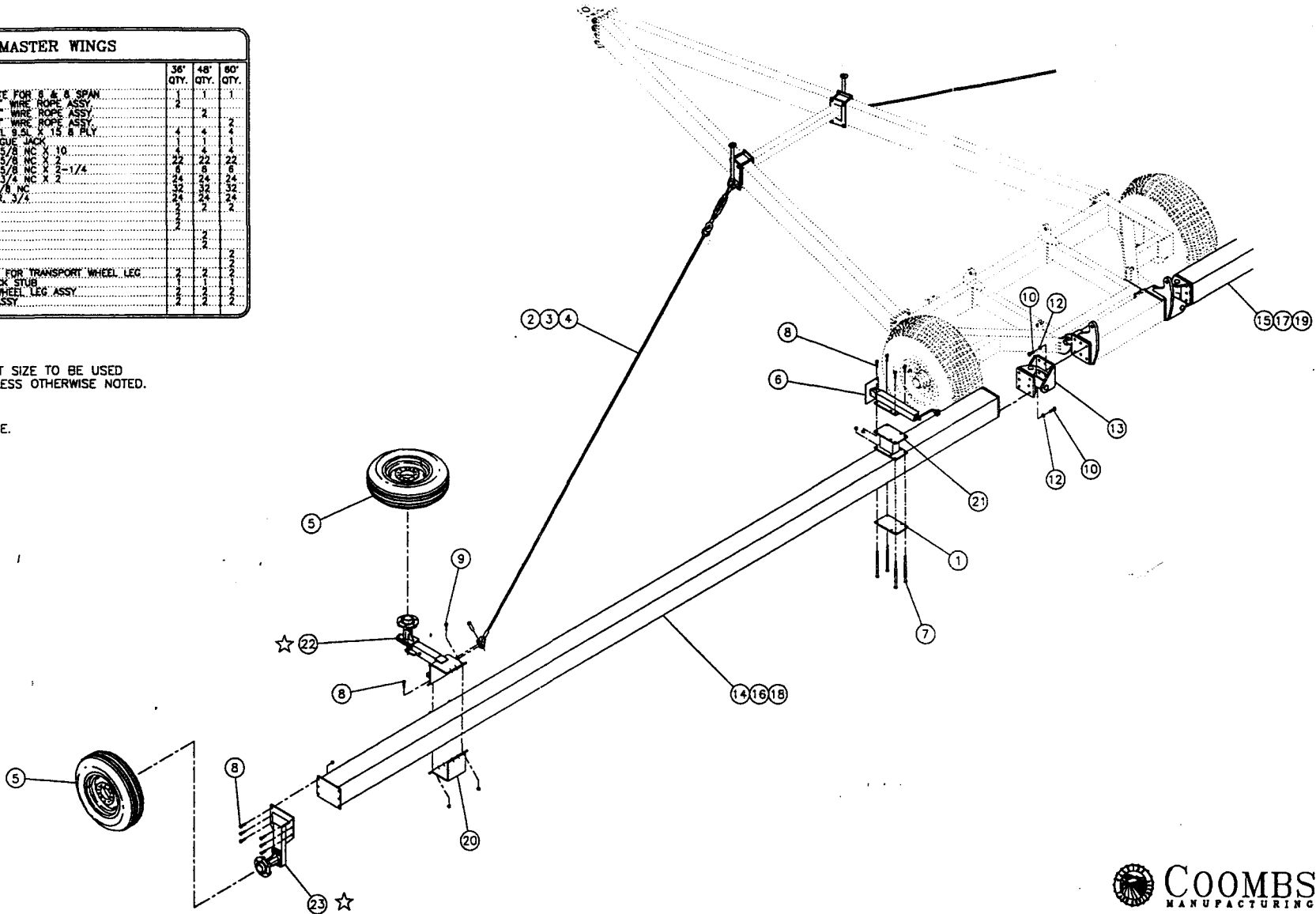
MOW-MASTER WINGS

REF. No.	PART NUMBER	DESCRIPTION	36' QTY.	48' QTY.	60' QTY.
1	400-088	BACKING PLATE FOR 3/4" & SPAN	1	1	1
2	050-187	5/8" X 16' 0" WIRE ROPE ASSY	2	2	2
3	050-237	5/8" X 20' 0" WIRE ROPE ASSY	2	2	2
4	050-296	5/8" X 25' 0" WIRE ROPE ASSY	2	2	2
5	338-364	TIRE & WHEEL 9.5" X 15.5" PLY	4	4	4
6	339-055	TOWING TONGUE JACK	4	4	4
7	114-100	CAP SCREW 5/8" NC X 10	4	4	4
8	114-108	CAP SCREW 5/8" NC X 12	22	22	22
9	114-110	CAP SCREW 5/8" NC X 17/4	6	6	6
10	115-020	CAP SCREW 3/4" NC X 12	24	24	24
11	724-120	LOCK NUT 5/8" NC	32	32	32
12	845-020	LOCK WASHER 3/4"	24	24	24
13	MHR-008	V-JOINT	2	2	2
14	MHR-010	18" WING LH	2	2	2
15	MHR-011	18" WING RH	2	2	2
16	MHR-012	36" WING LH	2	2	2
17	MHR-013	36" WING RH	2	2	2
18	MHR-014	60" WING LH	2	2	2
19	MHR-015	60" WING RH	2	2	2
20	MHR-016	CLAMP PLATE FOR TRANSPORT WHEEL LEG	2	2	2
21	MHR-057	BOLT-ON JACK STUB	2	2	2
22	MHR-550	TRANSPORT WHEEL LEG ASSY	2	2	2
23	MHR-551	WHEEL LEG ASSY	2	2	2

NOTE:

ONE LOCK NUT OF CORRECT SIZE TO BE USED WITH EACH CAP SCREW UNLESS OTHERWISE NOTED.

☆ SEE DETAIL ON NEXT PAGE.



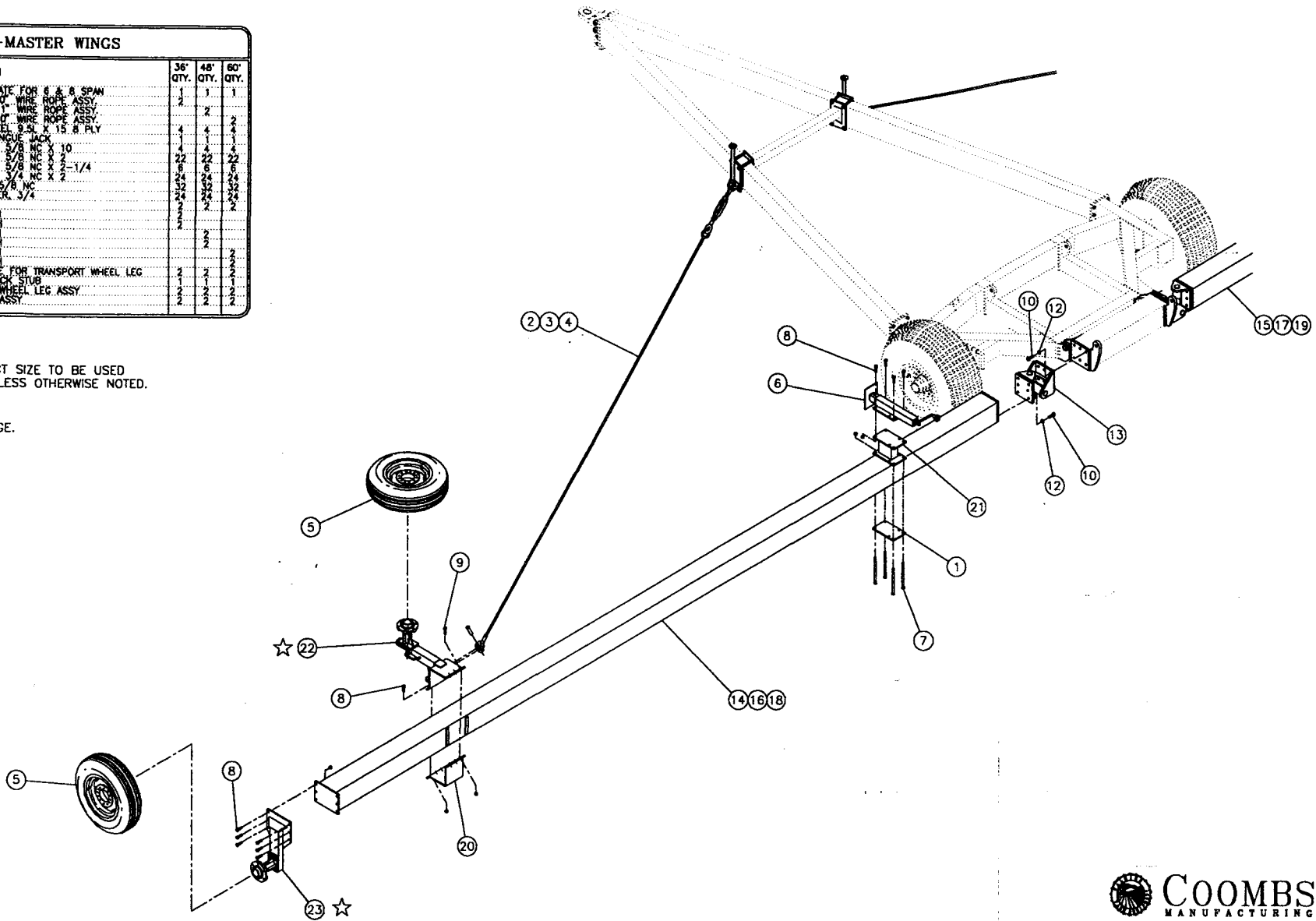
MOW-MASTER WINGS

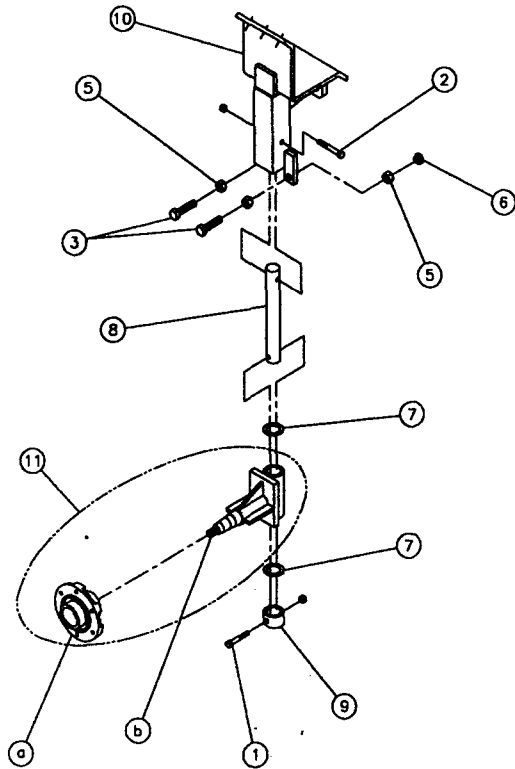
REF. No.	PART NUMBER	DESCRIPTION	36' QTY.	48' QTY.	60' QTY.
1	400-088	BACKING PLATE FOR 8 & 8 SPAN	1	1	1
2	1-050-187	5/8 X 16 0' WIRE ROPE ASSY.	2	2	2
3	1-050-187	5/8 X 20 0' WIRE ROPE ASSY.	2	2	2
4	1-050-187	5/8 X 20 0' WIRE ROPE ASSY.	2	2	2
5	1-050-187	5/8 X 20 0' WIRE ROPE ASSY.	2	2	2
6	1-050-187	5/8 X 20 0' WIRE ROPE ASSY.	2	2	2
7	1-050-187	5/8 X 20 0' WIRE ROPE ASSY.	2	2	2
8	1-050-187	5/8 X 20 0' WIRE ROPE ASSY.	2	2	2
9	1-050-187	5/8 X 20 0' WIRE ROPE ASSY.	2	2	2
10	1-050-187	5/8 X 20 0' WIRE ROPE ASSY.	2	2	2
11	1-050-187	5/8 X 20 0' WIRE ROPE ASSY.	2	2	2
12	1-050-187	5/8 X 20 0' WIRE ROPE ASSY.	2	2	2
13	1-050-187	5/8 X 20 0' WIRE ROPE ASSY.	2	2	2
14	1-050-187	5/8 X 20 0' WIRE ROPE ASSY.	2	2	2
15	1-050-187	5/8 X 20 0' WIRE ROPE ASSY.	2	2	2
16	1-050-187	5/8 X 20 0' WIRE ROPE ASSY.	2	2	2
17	1-050-187	5/8 X 20 0' WIRE ROPE ASSY.	2	2	2
18	1-050-187	5/8 X 20 0' WIRE ROPE ASSY.	2	2	2
19	1-050-187	5/8 X 20 0' WIRE ROPE ASSY.	2	2	2
20	1-050-187	5/8 X 20 0' WIRE ROPE ASSY.	2	2	2
21	1-050-187	5/8 X 20 0' WIRE ROPE ASSY.	2	2	2
22	1-050-187	5/8 X 20 0' WIRE ROPE ASSY.	2	2	2
23	1-050-187	5/8 X 20 0' WIRE ROPE ASSY.	2	2	2

NOTE:

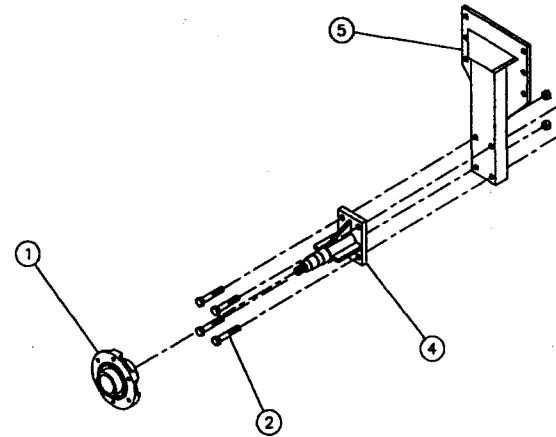
ONE LOCK NUT OF CORRECT SIZE TO BE USED WITH EACH CAP SCREW UNLESS OTHERWISE NOTED.

SEE DETAIL ON NEXT PAGE.





MH9-550 TRANSPORT WHEEL LEG ASSY			
REF. No.	PART NUMBER	DESCRIPTION	QTY.
1	7-115-115	CAP SCREW 1/2 NC X 3	1
2	7-115-121	CAP SCREW 5/8 NC X 4	1
3	7-115-029	TAP BOLT 1/2 NC X 3 FULL THREAD	1
4	7-725-016	LOCK NUT 1/2 NC	1
5	7-725-016	LOCK NUT 1/2 NC	1
6	7-725-105	JAM NUT 1/2 NC	1
7	7-897-015	MACHINERY BUSHING 1-5/8 IDCA NR	1
8	098-036	SHAFT 1-5/8 X 12-7/8	1
9	098-036	SHAFT 1-5/8 X 12-7/8	1
10	MH9-017	TRANSPORT WHEEL LEG	1
11	MH9-022	SWIVE SPINDLE ASSY	1
	7-619-021	6-BOLT HUB ASSY	1
	MH9-018	SWIVE SPINDLE	1



MH9-551 WHEEL LEG ASSY			
REF. No.	PART NUMBER	DESCRIPTION	QTY.
1	7-115-115	CAP SCREW 1/2 NC X 3	1
2	7-115-121	CAP SCREW 5/8 NC X 4	1
3	7-725-016	LOCK NUT 1/2 NC	1
4	7-725-105	JAM NUT 1/2 NC	1
5	MH9-018	SWIVE SPINDLE	1

NOTE:

ONE LOCK NUT OF CORRECT SIZE TO BE USED WITH EACH CAP SCREW UNLESS OTHERWISE NOTED.

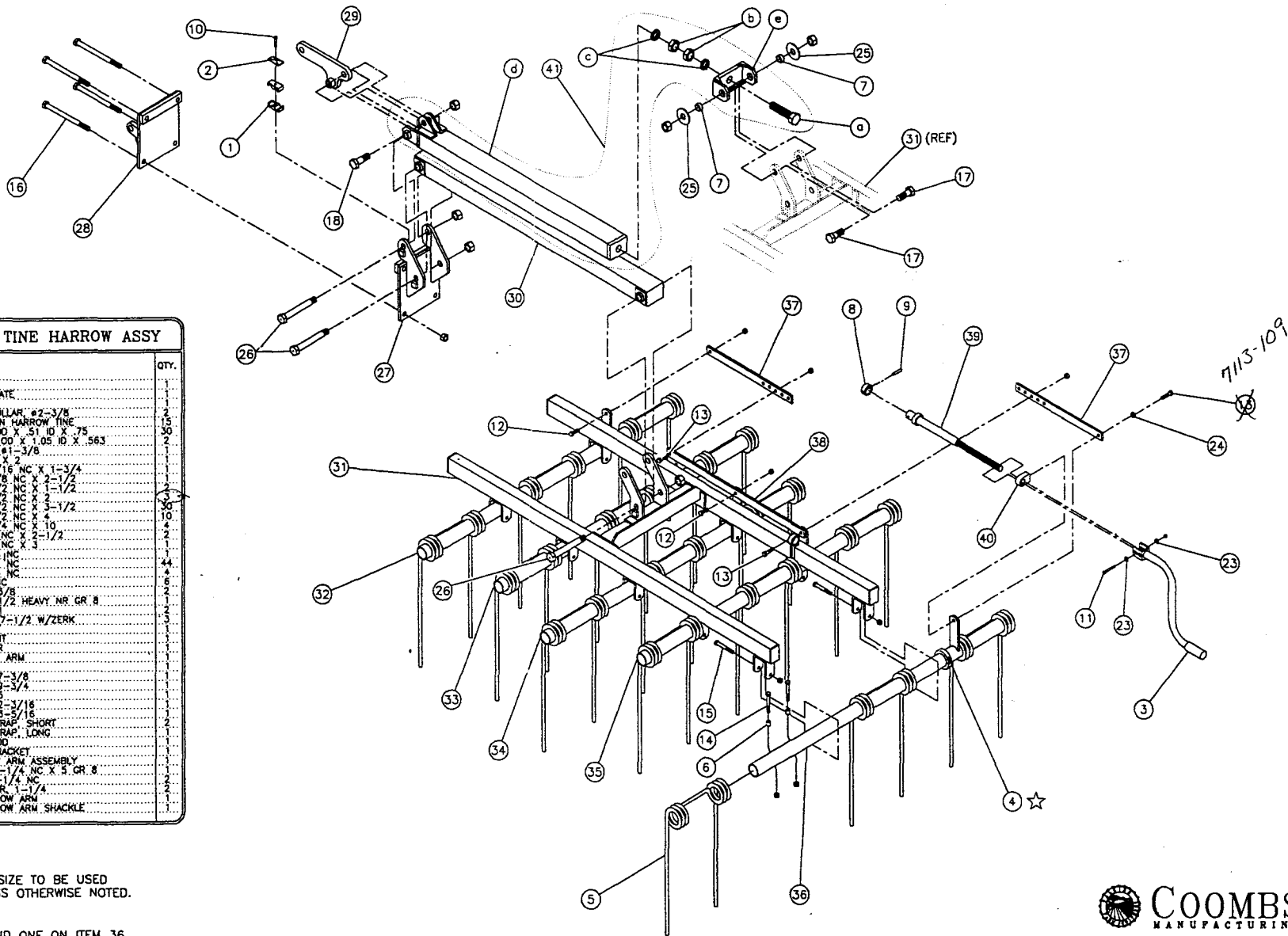
MH9-555 6' 5-BAR TINE HARROW ASSY

REF. No.	PART NUMBER	DESCRIPTION	QTY.
1	228-036	TWIN CLAMP	2
2	228-037	TWIN COVER PLATE	2
3	329-053	JACK HANDLE	2
4	486-238	SPLIT SHAFT COLLAR #2-3/8	2
5	486-238	DOUBLE TORSION HARROW TINE	50
6	133-030	BUSHING .75 OD X .51 ID X .75	50
7	136-035	BUSHING 1.32 OD X 1.05 ID X .563	2
8	487-005	SHAFT COLLAR #1-3/8	2
9	7-022-005	ROLL PIN 3/8 X 2	2
10	7-111-024	CAP SCREW 5/16 NC X 1-3/4	2
11	7-111-066	CAP SCREW 3/8 NC X 2-1/2	2
12	7-111-102	CAP SCREW 7/8 NC X 2-1/2	2
13	7-111-120	CAP SCREW 1 1/8 NC X 3-1/2	2
14	7-111-120	CAP SCREW 1 1/8 NC X 3-1/2	10
15	7-111-093	CAP SCREW 1 1/8 NC X 3-1/2	10
16	7-111-024	CAP SCREW 5/16 NC X 1-3/4	2
17	7-111-024	CAP SCREW 5/16 NC X 1-3/4	2
18	7-726-030	LOCK NUT 3/8 NC	2
19	7-726-030	LOCK NUT 3/8 NC	2
20	7-726-010	LOCK NUT 1/2 NC	2
21	7-726-016	LOCK NUT 1/2 NC	2
22	7-726-012	LOCK NUT 1/2 NC	4
23	7-814-010	FLAT WASHER 3/8	2
24	7-814-016	FLAT WASHER 1/2 HEAVY NR GR #	2
25	7-816-020	FLAT WASHER 1/2	2
26	7-116-073	BOLT 1 NC X 7-1/2 W/ZEERK	3
27	MH9-025	HARROW MOUNT	2
28	MH9-026	CYLINDER MOUNT	2
29	MH9-027	CYLINDER LEVER	2
30	MH9-028	LOWER HARROW ARM	2
31	MH9-030	H FRAME	2
32	MH9-031	TINE MOUNT 17-3/8	2
33	MH9-032	TINE MOUNT 19-3/4	2
34	MH9-033	TINE MOUNT 15	2
35	MH9-034	TINE MOUNT 22-1/8	2
36	MH9-035	TINE MOUNT 13-3/8	2
37	MH9-036	ADJUSTMENT STRAP, SHORT	2
38	MH9-037	ADJUSTMENT STRAP, LONG	2
39	MH9-038	ADJUSTMENT ROD	2
40	MH9-039	ADJUSTMENT BRACKET	2
41	MH9-555	UPPER HARROW ARM ASSEMBLY	2
42	7-118-050	TAP BOLT 1-1/4 NC X 5 GR #	2
43	7-118-246	TAM NUT 1-1/4 NC	2
44	7-846-030	LOCK WASHER 1-1/4	2
45	MH9-028	UPPER HARROW ARM	2
46	MH9-058	UPPER HARROW ARM SHACKLE	2

NOTE:

ONE LOCK NUT OF CORRECT SIZE TO BE USED WITH EACH CAP SCREW UNLESS OTHERWISE NOTED.

★ ONE MOUNTED ON ITEM 33 AND ONE ON ITEM 36.



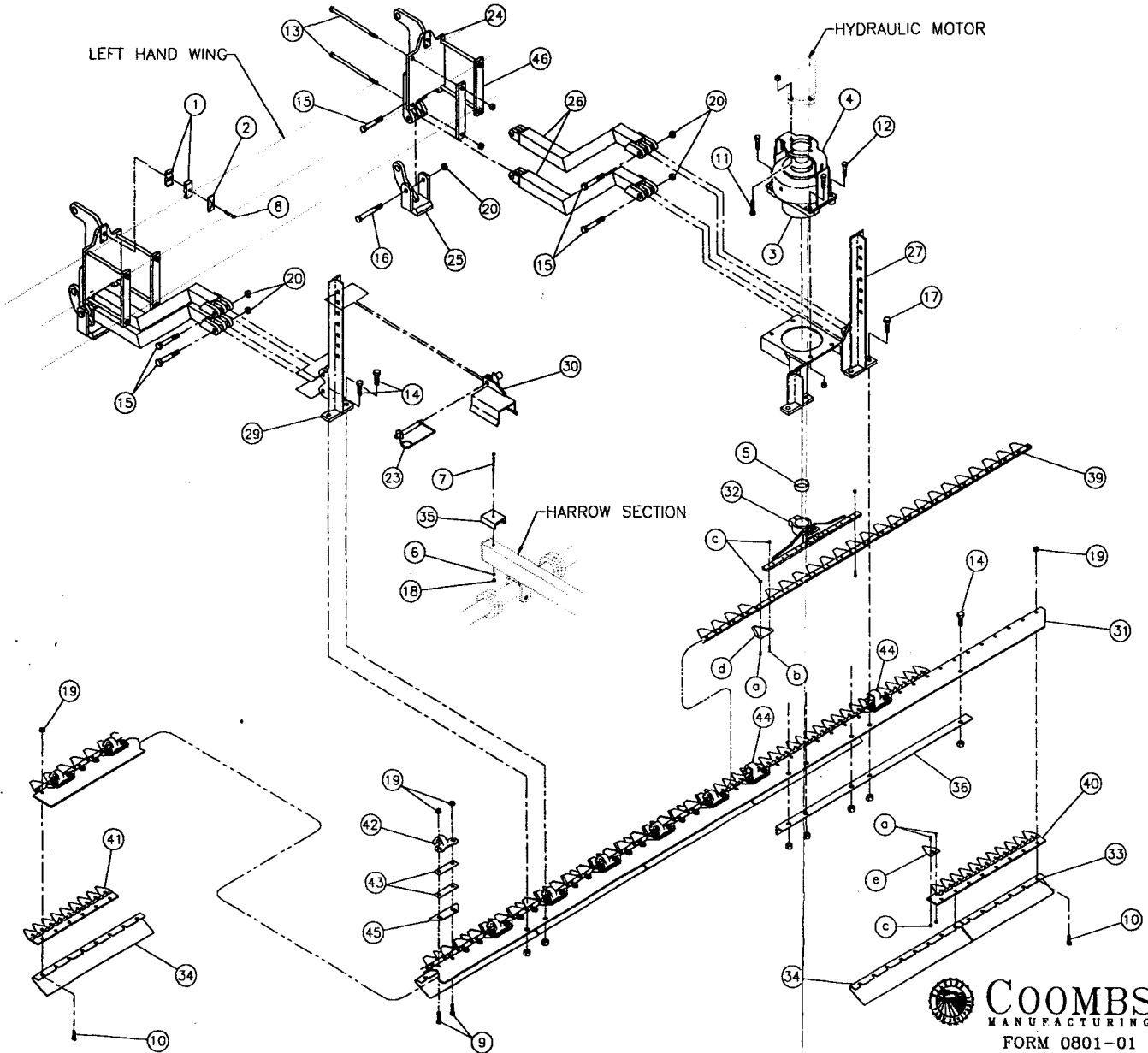
MOW-MASTER CUTTER BAR

REF. No.	PART NUMBER	DESCRIPTION	36" QTY.	48" QTY.	60" QTY.
1	5-226-036	TWIN CLAMP	11	13	15
2	5-226-037	TWIN COVER PLATE	11	13	15
3	5-588-001	CUTTER BAR KNIFE DRIVE	2	2	2
4	5-588-002	HYDRAULIC MOTOR BRACKET	2	2	2
5	5-588-004	NYLON RING FOR KNIFEHEAD	2	2	2
6	7-041-010	LOCK WASHER, 1/4	6	8	10
7	7-111-015	CAP SCREW, 1/4 NC X 3-1/2	6	8	10
8	7-111-024	CAP SCREW, 5/16 NC X 1-5/8	6	8	10
9	7-12-013	CAP SCREW, 7/16 NC X 1-1/2	80	84	108
10	7-12-015	CAP SCREW, 7/16 NC X 1-1/4	80	104	128
11	7-15-110	CAP SCREW, 1/2 NC X 2	8	8	8
12	7-113-111	CAP SCREW, 1/2 NC X 2-1/4	8	8	8
13	7-13-50	CAP SCREW, 1/2 NC X 10	24	32	40
14	7-14-008	CAP SCREW, 5/8 NC X 1-3/4	6	10	14
15	7-14-040	CAP SCREW, 5/8 NC X 4	18	24	30
16	7-14-050	CAP SCREW, 5/8 NC X 5	6	8	10
17	7-14-09	CAP SCREW, 5/8 NC X 2	13	13	13
18	7-22-004	HEX NUT, 1/4 NC	6	8	10
19	7-22-020	HEX FLANGE NUT, 7/16 NC (SERRATED)	140	188	256
20	7-23-118	LOCK NUT, 5/8 NC HALF HEIGHT	24	32	40
21	7-23-216	LOCK NUT, 1/8 NC	40	48	56
22	7-24-140	SNAP LOCK HITCH PIN	24	23	43
23	7-920-030	CYLINDER MOUNT	6	8	10
24	CB9-001	ACTUATOR	6	8	10
25	CB9-002	ACTUATOR ARM	12	16	20
26	CB9-004	DRIVE MOUNT/HEIGHT CONTROL LH	1	1	1
27	CB9-005	DRIVE MOUNT/HEIGHT CONTROL RH<not shown>	1	1	1
28	CB9-006	HEIGHT CONTROL BRACKET	4	6	8
29	CB9-007	HEIGHT CONTROL STOP	6	8	10
30	CB9-008	18" BARBACK LH	1	1	1
31	CB9-009	18" BARBACK RH	1	1	1
32	CB9-010	24" BARBACK LH	1	1	1
33	CB9-011	24" BARBACK RH	1	1	1
34	CB9-012	30" BARBACK LH	1	1	1
35	CB9-013	30" BARBACK RH	1	1	1
36	CB9-014	DRIVE HEAD	2	2	2
37	CB9-015	SKID PLATE, 18	2	2	2
38	CB9-016	SKID PLATE, 24	16	22	28
39	CB9-017	UHMW WEAR PAD	6	8	10
40	CB9-018	BARBACK SUPPORT, 42 LH	1	1	1
41	CB9-019	BARBACK SUPPORT, 42 RH<not shown>	1	1	1
42	CB9-020	BARBACK SUPPORT, 28<not shown>	1	1	1
43	CB9-021	BARBACK SUPPORT, 28<not shown>	2	2	2
44	CB9-022	17-1/4" SICKLE	2	2	2
45	CB9-023	23-1/4" SICKLE	2	2	2
46	CB9-024	28-1/4" SICKLE	2	2	2
47	7-500-063	SOCKET SCREW, #12 X 5/8	16	22	28
48	7-500-100	SOCKET SCREW, #12 X 1	2	2	2
49	7-723-056	LOCK NUT, #12	16	22	28
50	L192DC	SICKLE SECTION	30	42	54
51	LB1002	BASE PLATE ASSY, 24	4	4	4
52	LB1106	BASE PLATE ASSY, 18	2	2	2
53	7-500-053	SOCKET SCREW, #12 X 5/8	4	4	4
54	7-723-050	LOCK NUT, #12	4	4	4
55	L195	SICKLE SECTION	30	42	54
56	L221A	HOLD DOWN CLIP	4	4	4
57	L221B	SHIM	4	4	4
58	L222	HOLD DOWN CLIP, HIGH	4	4	4
59	L260	WEAR PLATE	30	42	54
60	MH9-021	BACKING PLATE	12	16	20

NOTE:

USE LOCK NUT OF CORRECT SIZE TO BE USED WITH EACH CAP SCREW UNLESS OTHERWISE NOTED.

LEFT HAND SIDE SHOWN.

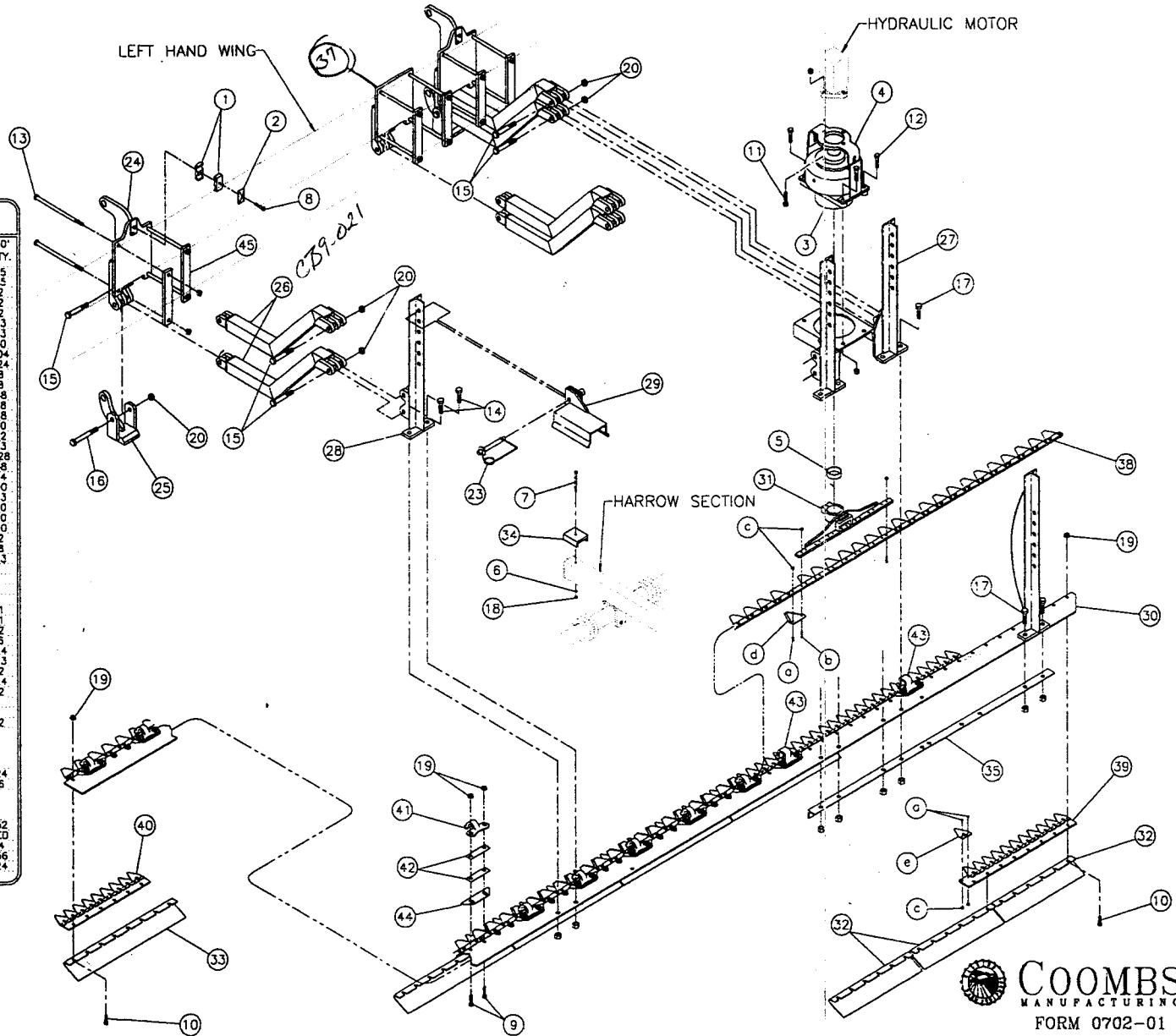


MOW-MASTER CUTTER BAR			36"	48"	60"
REF. No.	PART NUMBER	DESCRIPTION	QTY.	QTY.	QTY.
1	5-228-036	TWIN CLAMP	11	13	15
2	5-228-037	TWIN COVER PLATE DRIVE	11	13	15
3	5-588-001	CUTTER BAR KNIFE DRIVE	2	2	2
4	5-588-002	HYDRAULIC MOTOR BRACKET	2	2	2
5	5-588-004	NYLON RING FOR KNIFEHEAD	2	2	2
6	7-041-010	LOCK WASHER 1/4	9	11	13
7	7-111-015	CAP SCREW 7/16 NC X 3-1/2	11	13	15
8	7-111-024	CAP SCREW 3/16 NC X 1-3/4	6	8	10
9	7-112-013	CAP SCREW 7/16 NC X 1-1/2	56	80	104
10	7-112-016	CAP SCREW 7/16 NC X 1-1/4	76	100	124
11	7-113-110	CAP SCREW 1/2 NC X 2	8	8	8
12	7-113-111	CAP SCREW 1/2 NC X 2-1/4	8	8	8
13	7-113-150	CAP SCREW 1/2 NC X 10	32	40	48
14	7-114-006	CAP SCREW 5/8 NC X 1-3/4	10	14	18
15	7-114-040	CAP SCREW 5/8 NC X 4	26	32	38
16	7-114-050	CAP SCREW 5/8 NC X 5	6	8	10
17	7-114-109	CAP SCREW 5/8 NC X 2	12	12	12
18	7-721-004	HEX NUT 1/4 NC	9	11	13
19	7-722-020	HEX FLANGE NUT 7/16 NC (SERRATED)	132	180	228
20	7-723-119	LOCK NUT 5/8 NC HALF HEIGHT	32	40	48
21	7-723-216	LOCK NUT 1/2 NC	48	56	64
22	7-724-140	LOCK NUT 5/8 NC	22	26	30
23	7-920-030	SNAP LOCK HITCH PIN	9	11	13
24	CB9-001	CYLINDER MOUNT	6	8	10
25	CB9-002	ACTUATOR	6	8	10
26	CB9-003	ACTUATOR ARM	12	16	20
27	CB9-004	DRIVE MOUNT/HEIGHT CONTROL	2	2	2
28	CB9-006	HEIGHT CONTROL BRACKET	4	6	8
29	CB9-007	HEIGHT CONTROL STOP	9	11	13
30	CB9-008	18" BARBACK LH	1		
	CB9-009	18" BARBACK RH			
	CB9-010	24" BARBACK LH	1		
	CB9-011	24" BARBACK RH	1		
	CB9-012	30" BARBACK LH			1
	CB9-013	30" BARBACK RH			
31	CB9-014	DRIVE HEAD	2	2	2
32	CB9-015	SKID PLATE 18	6	6	6
33	CB9-016	SKID PLATE 24	12	16	24
34	CB9-017	UJAW WEAR PAD	9	11	13
35	CB9-018	BARBACK SUPPORT	2	2	2
36	CB9-021	ACTUATOR ARM	16	20	24
37	CB9-024	ACTUATOR ARM MOUNT	2	2	2
	CB816-1/4C	16-1/4" SICKLE	2		
38	CB822-1/4C	22-1/4" SICKLE			2
	CB828-1/4C	28-1/4" SICKLE			
a	7-500-063	SOCKET SCREW #12 X 5/8			
b	7-500-100	SOCKET SCREW #12 X 1			
c	7-723-050	LOCK NUT #12			
d	L192DC	SICKLE SECTION	12	18	24
e	L81002	BASE PLATE ASSY. 24	6	6	6
f	L81106	BASE PLATE ASSY. 18			
g	7-500-063	SOCKET SCREW #12 X 5/8			
h	7-723-050	LOCK NUT #12			
i	L195	SICKLE SECTION	28	40	52
j	L221A	HOLD DOWN CLIP	AS REQUIRED		
k	L221S	SHIM	4	4	4
l	L222	HOLD DOWN CLIP, HIGH	4	4	4
m	L260	WEAR PLATE	32	44	56
n	WH9-021	BACKING PLATE	18	20	24

NOTE:

ONE LOCK NUT OF CORRECT SIZE TO BE USED WITH EACH CAP SCREW UNLESS OTHERWISE NOTED.

SEE NEXT PAGE FOR ROLLER & CHAIN PARTS.



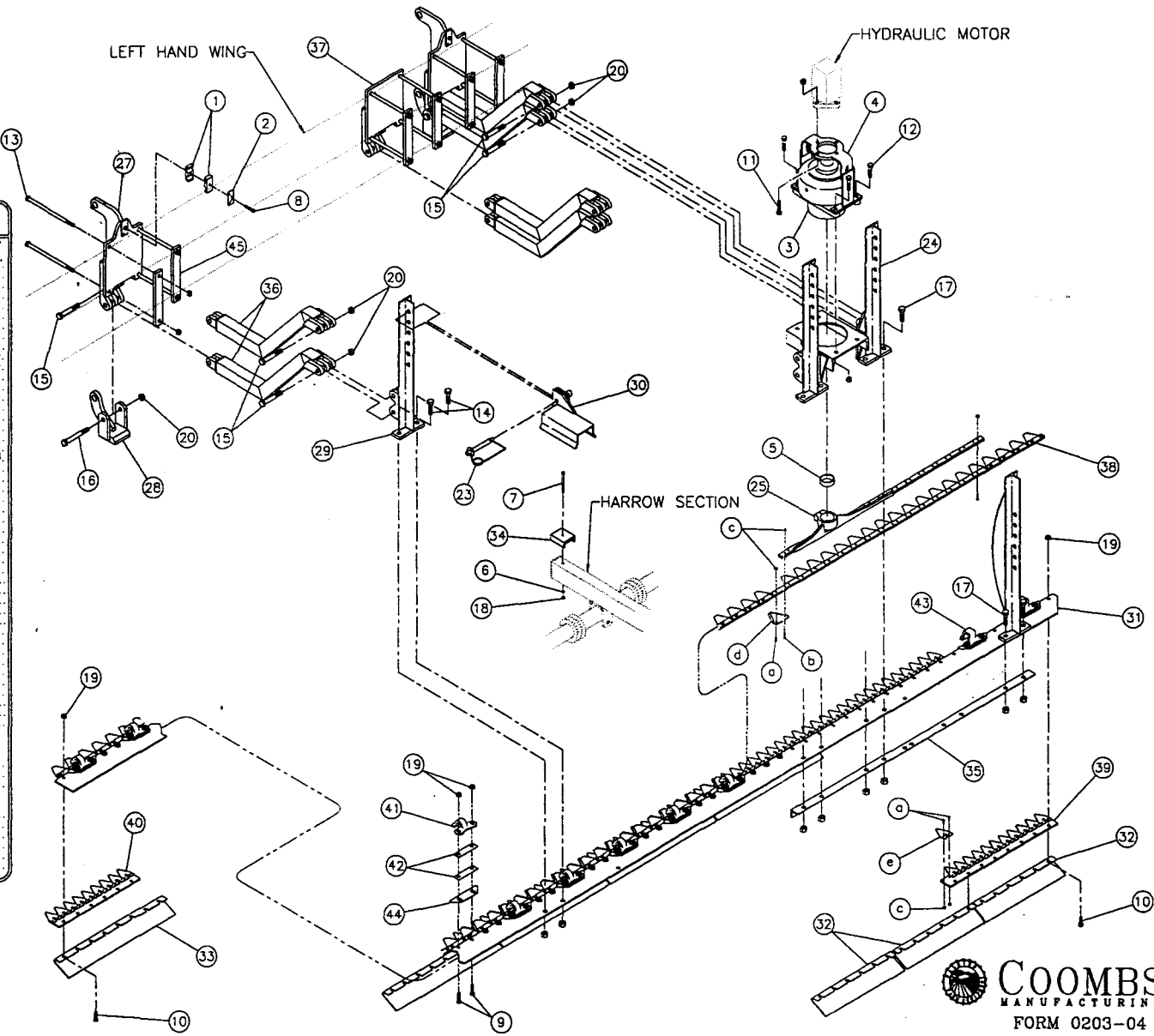
MOW-MASTER CUTTER BAR

REF. No.	PART NUMBER	DESCRIPTION	36" QTY.	48" QTY.	60" QTY.
1	5-226-036	TWIN CLAMP	11	13	15
2	5-226-037	TWIN COVER PLATE	11	13	15
3	5-588-001	CUTTER BAR KNIFE DRIVE	2	2	2
4	5-588-002	HYDRAULIC MOTOR BRACKET	2	2	2
5	5-588-004	NYLON RING FOR KNIFEHEAD	2	2	2
6	7-04-010	LOCK WASHER	9	9	9
7	7-111-015	CAP SCREW 1/8" NC X 3-1/2"	9	9	9
8	7-111-013	CAP SCREW 3/16" NC X 1-1/2"	56	80	104
9	7-111-016	CAP SCREW 7/16" NC X 1-1/2"	76	100	124
10	7-111-110	CAP SCREW 1/2" NC X 2-1/4"	8	8	8
11	7-111-150	CAP SCREW 1/2" NC X 2-1/4"	32	40	48
12	7-111-008	CAP SCREW 3/8" NC X 1-3/4"	10	14	18
13	7-111-040	CAP SCREW 3/8" NC X 1-3/4"	26	32	38
14	7-111-050	CAP SCREW 3/8" NC X 1-3/4"	6	6	6
15	7-114-109	CAP SCREW 3/8" NC X 1-3/4"	12	12	12
16	7-72-004	HEX NUT 1/4" NC	9	9	9
17	7-72-020	HEX FLANGE NUT 7/16" NC (SERRATED)	132	180	228
18	7-72-119	LOCK NUT 5/8" NC HALF HEIGHT	32	40	48
19	7-72-216	LOCK NUT 1/2" NC	48	56	64
20	7-72-140	LOCK NUT 5/8" NC	22	26	30
21	7-920-030	SNAP LOCK HITCH PIN	9	9	9
22	CB9-001	DRIVE MOUNT/HEIGHT CONTROL	2	2	2
23	CB9-002	DRIVE HEAD LH	1	1	1
24	CB9-003	DRIVE HEAD RH (NOT SHOWN)	1	1	1
25	CB9-001	CYLINDER MOUNT	6	6	6
26	CB9-002	ACTUATOR	4	4	4
27	CB9-006	HEIGHT CONTROL BRACKET	9	9	9
28	CB9-007	HEIGHT CONTROL STOP	9	11	13
29	CB9-008	18" BARBACK LH	1	1	1
30	CB9-009	18" BARBACK RH	1	1	1
31	CB9-010	24" BARBACK LH	1	1	1
32	CB9-011	24" BARBACK RH	1	1	1
33	CB9-012	30" BARBACK LH	1	1	1
34	CB9-013	30" BARBACK RH	1	1	1
35	CB9-015	SKID PLATE 18"	6	6	6
36	CB9-016	SKID PLATE 24"	12	18	24
37	CB9-017	UHMW WEAR PAD	2	2	2
38	CB9-018	BARBACK SUPPORT	16	20	24
39	CB9-021	ACTUATOR ARM	2	2	2
40	CB9-024	ACTUATOR ARM MOUNT	2	2	2
41	CB915-1/4C	15-1/4" SICKLE	2	2	2
42	CB915-1/4C	15-1/4" SICKLE	2	2	2
43	CB928-1/4C	28-1/4" SICKLE	2	2	2
44	7-500-063	SOCKET SCREW #12 X 5/8	12	18	24
45	7-500-100	SOCKET SCREW #12 X 1"	6	6	6
46	7-723-050	LOCK NUT #12	12	18	24
47	L192DC	SICKLE SECTION	28	40	48
48	L192DC	BASE PLATE ASSY 24"	AS REQUIRED	AS REQUIRED	AS REQUIRED
49	L192DC	BASE PLATE ASSY 18"	4	4	4
50	7-500-063	SOCKET SCREW #12 X 5/8	32	44	54
51	7-723-050	LOCK NUT #12	16	20	24
52	L195	SICKLE SECTION	28	40	48
53	L221S	HOLD DOWN CLIP	AS REQUIRED	AS REQUIRED	AS REQUIRED
54	L222	HOLD DOWN CLIP, HIGH	4	4	4
55	L260	WEAR PLATE	32	44	54
56	MFR-021	BACKING PLATE	16	20	24

NOTE:

ONE LOCK NUT OF CORRECT SIZE TO BE USED WITH EACH CAP SCREW UNLESS OTHERWISE NOTED.

SEE NEXT PAGE FOR ROLLER & CHAIN PARTS.

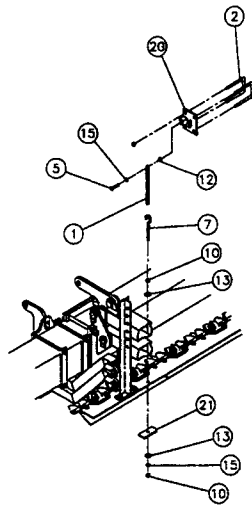


CHAIN & ROLLER PARTS

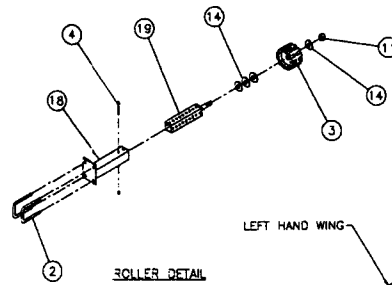
REF. No.	PART NUMBER	DESCRIPTION	36' QTY.	48' QTY.	60' QTY.
1	7-038-124	CHAIN 1/4 PROOF COIL X 8	8	8	10
2	8-219-004	U-BOLT 1/2 X 3 X 5-1/8	18	22	26
3	7-112-067	CAP SCREW 1/2 NC X 2-3/4	8	8	10
4	7-113-101	CAP SCREW 1/2 NC X 1-1/4	8	8	10
5	7-113-127	CAP SCREW 1/2 NC X 3	8	8	10
6	7-212-005	EYE BOLT 1/2 NC X 6	8	8	10
7	7-225-216	LOCK NUT 1/2 NC	20	48	56
8	7-725-190	LOCK NUT 1/2 NC	12	16	20
9	7-725-190	LOCK NUT 1/2 NC	3	3	3
10	7-725-190	LOCK NUT 1/2 NC	12	16	20
11	7-813-015	HEX NUT 1/2 SAE	12	16	20
12	7-813-017	FLAT WASHER 1/2 HEAVY NR GR 8	12	16	20
13	7-813-020	FLAT WASHER 1/2 SAE	12	16	20
14	7-815-025	FLAT WASHER 1/2	12	12	12
15	7-813-015	HEX NUT 1/2 SAE	12	16	20
16	CB9-022	H-FRAME EXTENSION	2	2	2
17	CB9-025	HEIGHT CONTROL BRACKET FOR ROLLER	3	3	3
18	CB9-026	ROLLER BASE TUBE	1	1	1
19	CB9-027	ROLLER EXTENSION TUBE	1	1	1
20	CB9-028	CHAIN BRACKET	8	8	10
21	CB9-029	BACKING PLATE	4	6	8

NOTE:

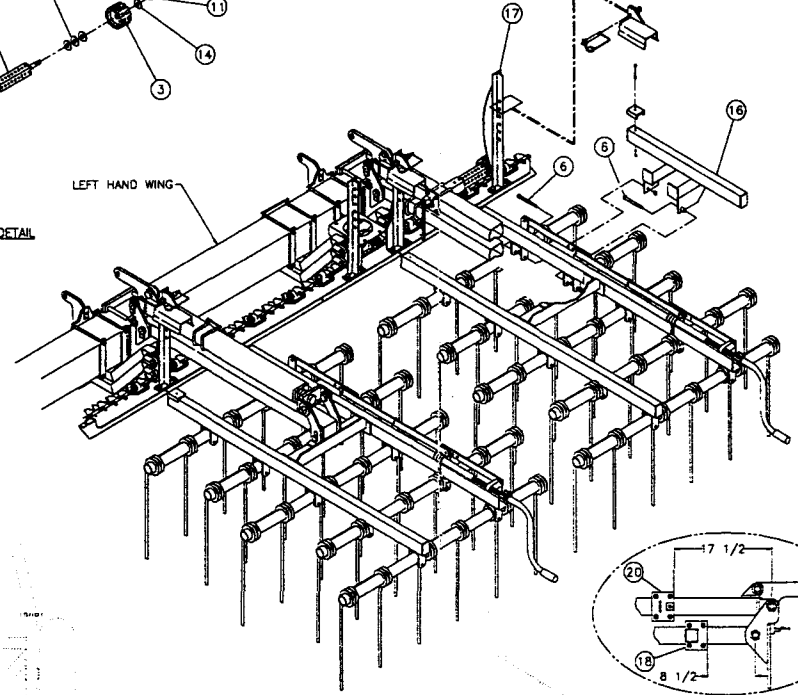
ONE LOCK NUT OF CORRECT SIZE TO BE USED WITH EACH CAP SCREW UNLESS OTHERWISE NOTED.



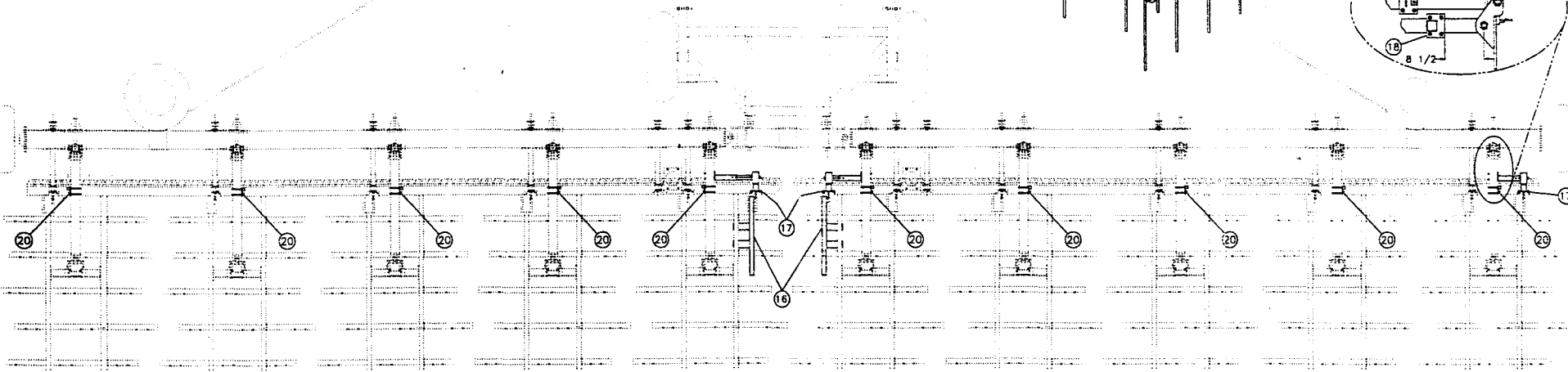
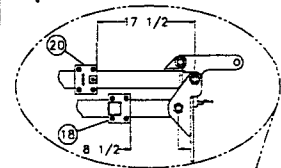
CHAIN CARRIER DETAIL



ROLLER DETAIL



LEFT HAND WING

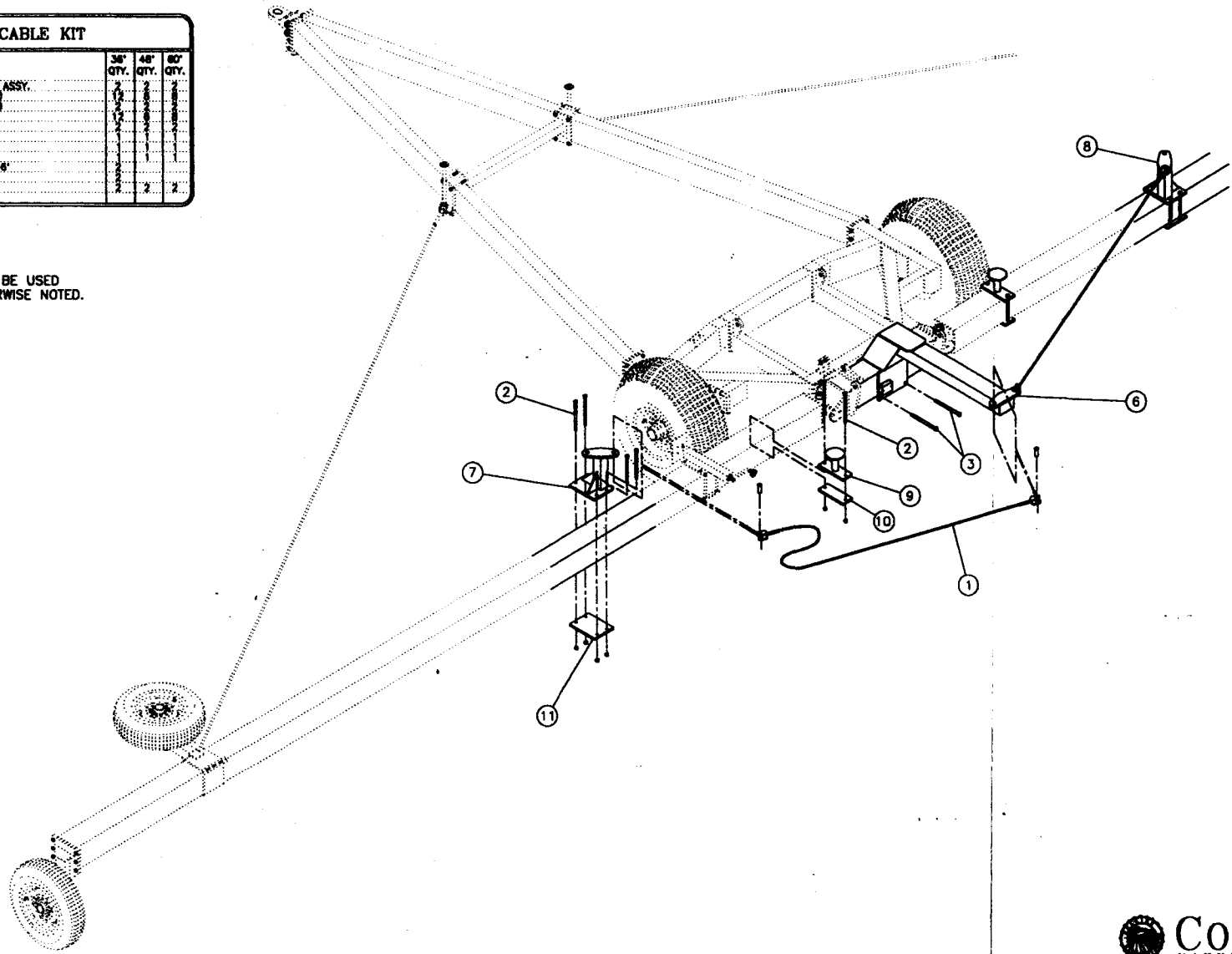


MH29-100 REAR CABLE KIT

REF. NO.	PART NUMBER	DESCRIPTION	36" QTY.	48" QTY.	60" QTY.
1	100-100-1	1/2" DIA. WIRE ROPE ASSY.	1	1	1
2	100-100-2	1/2" DIA. WIRE ROPE	2	2	2
3	100-100-3	1/2" DIA. WIRE ROPE	2	2	2
4	100-100-4	1/2" DIA. WIRE ROPE	2	2	2
5	100-100-5	1/2" DIA. WIRE ROPE	2	2	2
6	100-100-6	1/2" DIA. WIRE ROPE	2	2	2
7	100-100-7	1/2" DIA. WIRE ROPE	2	2	2
8	100-100-8	1/2" DIA. WIRE ROPE	2	2	2
9	100-100-9	1/2" DIA. WIRE ROPE	2	2	2
10	100-100-10	1/2" DIA. WIRE ROPE	2	2	2
11	100-100-11	1/2" DIA. WIRE ROPE	2	2	2
12	100-100-12	1/2" DIA. WIRE ROPE	2	2	2
13	100-100-13	1/2" DIA. WIRE ROPE	2	2	2
14	100-100-14	1/2" DIA. WIRE ROPE	2	2	2
15	100-100-15	1/2" DIA. WIRE ROPE	2	2	2
16	100-100-16	1/2" DIA. WIRE ROPE	2	2	2
17	100-100-17	1/2" DIA. WIRE ROPE	2	2	2
18	100-100-18	1/2" DIA. WIRE ROPE	2	2	2
19	100-100-19	1/2" DIA. WIRE ROPE	2	2	2
20	100-100-20	1/2" DIA. WIRE ROPE	2	2	2
21	100-100-21	1/2" DIA. WIRE ROPE	2	2	2
22	100-100-22	1/2" DIA. WIRE ROPE	2	2	2
23	100-100-23	1/2" DIA. WIRE ROPE	2	2	2
24	100-100-24	1/2" DIA. WIRE ROPE	2	2	2
25	100-100-25	1/2" DIA. WIRE ROPE	2	2	2
26	100-100-26	1/2" DIA. WIRE ROPE	2	2	2
27	100-100-27	1/2" DIA. WIRE ROPE	2	2	2
28	100-100-28	1/2" DIA. WIRE ROPE	2	2	2
29	100-100-29	1/2" DIA. WIRE ROPE	2	2	2
30	100-100-30	1/2" DIA. WIRE ROPE	2	2	2
31	100-100-31	1/2" DIA. WIRE ROPE	2	2	2
32	100-100-32	1/2" DIA. WIRE ROPE	2	2	2
33	100-100-33	1/2" DIA. WIRE ROPE	2	2	2
34	100-100-34	1/2" DIA. WIRE ROPE	2	2	2
35	100-100-35	1/2" DIA. WIRE ROPE	2	2	2
36	100-100-36	1/2" DIA. WIRE ROPE	2	2	2
37	100-100-37	1/2" DIA. WIRE ROPE	2	2	2
38	100-100-38	1/2" DIA. WIRE ROPE	2	2	2
39	100-100-39	1/2" DIA. WIRE ROPE	2	2	2
40	100-100-40	1/2" DIA. WIRE ROPE	2	2	2
41	100-100-41	1/2" DIA. WIRE ROPE	2	2	2
42	100-100-42	1/2" DIA. WIRE ROPE	2	2	2
43	100-100-43	1/2" DIA. WIRE ROPE	2	2	2
44	100-100-44	1/2" DIA. WIRE ROPE	2	2	2
45	100-100-45	1/2" DIA. WIRE ROPE	2	2	2
46	100-100-46	1/2" DIA. WIRE ROPE	2	2	2
47	100-100-47	1/2" DIA. WIRE ROPE	2	2	2
48	100-100-48	1/2" DIA. WIRE ROPE	2	2	2
49	100-100-49	1/2" DIA. WIRE ROPE	2	2	2
50	100-100-50	1/2" DIA. WIRE ROPE	2	2	2
51	100-100-51	1/2" DIA. WIRE ROPE	2	2	2
52	100-100-52	1/2" DIA. WIRE ROPE	2	2	2
53	100-100-53	1/2" DIA. WIRE ROPE	2	2	2
54	100-100-54	1/2" DIA. WIRE ROPE	2	2	2
55	100-100-55	1/2" DIA. WIRE ROPE	2	2	2
56	100-100-56	1/2" DIA. WIRE ROPE	2	2	2
57	100-100-57	1/2" DIA. WIRE ROPE	2	2	2
58	100-100-58	1/2" DIA. WIRE ROPE	2	2	2
59	100-100-59	1/2" DIA. WIRE ROPE	2	2	2
60	100-100-60	1/2" DIA. WIRE ROPE	2	2	2
61	100-100-61	1/2" DIA. WIRE ROPE	2	2	2
62	100-100-62	1/2" DIA. WIRE ROPE	2	2	2
63	100-100-63	1/2" DIA. WIRE ROPE	2	2	2
64	100-100-64	1/2" DIA. WIRE ROPE	2	2	2
65	100-100-65	1/2" DIA. WIRE ROPE	2	2	2
66	100-100-66	1/2" DIA. WIRE ROPE	2	2	2
67	100-100-67	1/2" DIA. WIRE ROPE	2	2	2
68	100-100-68	1/2" DIA. WIRE ROPE	2	2	2
69	100-100-69	1/2" DIA. WIRE ROPE	2	2	2
70	100-100-70	1/2" DIA. WIRE ROPE	2	2	2
71	100-100-71	1/2" DIA. WIRE ROPE	2	2	2
72	100-100-72	1/2" DIA. WIRE ROPE	2	2	2
73	100-100-73	1/2" DIA. WIRE ROPE	2	2	2
74	100-100-74	1/2" DIA. WIRE ROPE	2	2	2
75	100-100-75	1/2" DIA. WIRE ROPE	2	2	2
76	100-100-76	1/2" DIA. WIRE ROPE	2	2	2
77	100-100-77	1/2" DIA. WIRE ROPE	2	2	2
78	100-100-78	1/2" DIA. WIRE ROPE	2	2	2
79	100-100-79	1/2" DIA. WIRE ROPE	2	2	2
80	100-100-80	1/2" DIA. WIRE ROPE	2	2	2
81	100-100-81	1/2" DIA. WIRE ROPE	2	2	2
82	100-100-82	1/2" DIA. WIRE ROPE	2	2	2
83	100-100-83	1/2" DIA. WIRE ROPE	2	2	2
84	100-100-84	1/2" DIA. WIRE ROPE	2	2	2
85	100-100-85	1/2" DIA. WIRE ROPE	2	2	2
86	100-100-86	1/2" DIA. WIRE ROPE	2	2	2
87	100-100-87	1/2" DIA. WIRE ROPE	2	2	2
88	100-100-88	1/2" DIA. WIRE ROPE	2	2	2
89	100-100-89	1/2" DIA. WIRE ROPE	2	2	2
90	100-100-90	1/2" DIA. WIRE ROPE	2	2	2
91	100-100-91	1/2" DIA. WIRE ROPE	2	2	2
92	100-100-92	1/2" DIA. WIRE ROPE	2	2	2
93	100-100-93	1/2" DIA. WIRE ROPE	2	2	2
94	100-100-94	1/2" DIA. WIRE ROPE	2	2	2
95	100-100-95	1/2" DIA. WIRE ROPE	2	2	2
96	100-100-96	1/2" DIA. WIRE ROPE	2	2	2
97	100-100-97	1/2" DIA. WIRE ROPE	2	2	2
98	100-100-98	1/2" DIA. WIRE ROPE	2	2	2
99	100-100-99	1/2" DIA. WIRE ROPE	2	2	2
100	100-100-100	1/2" DIA. WIRE ROPE	2	2	2

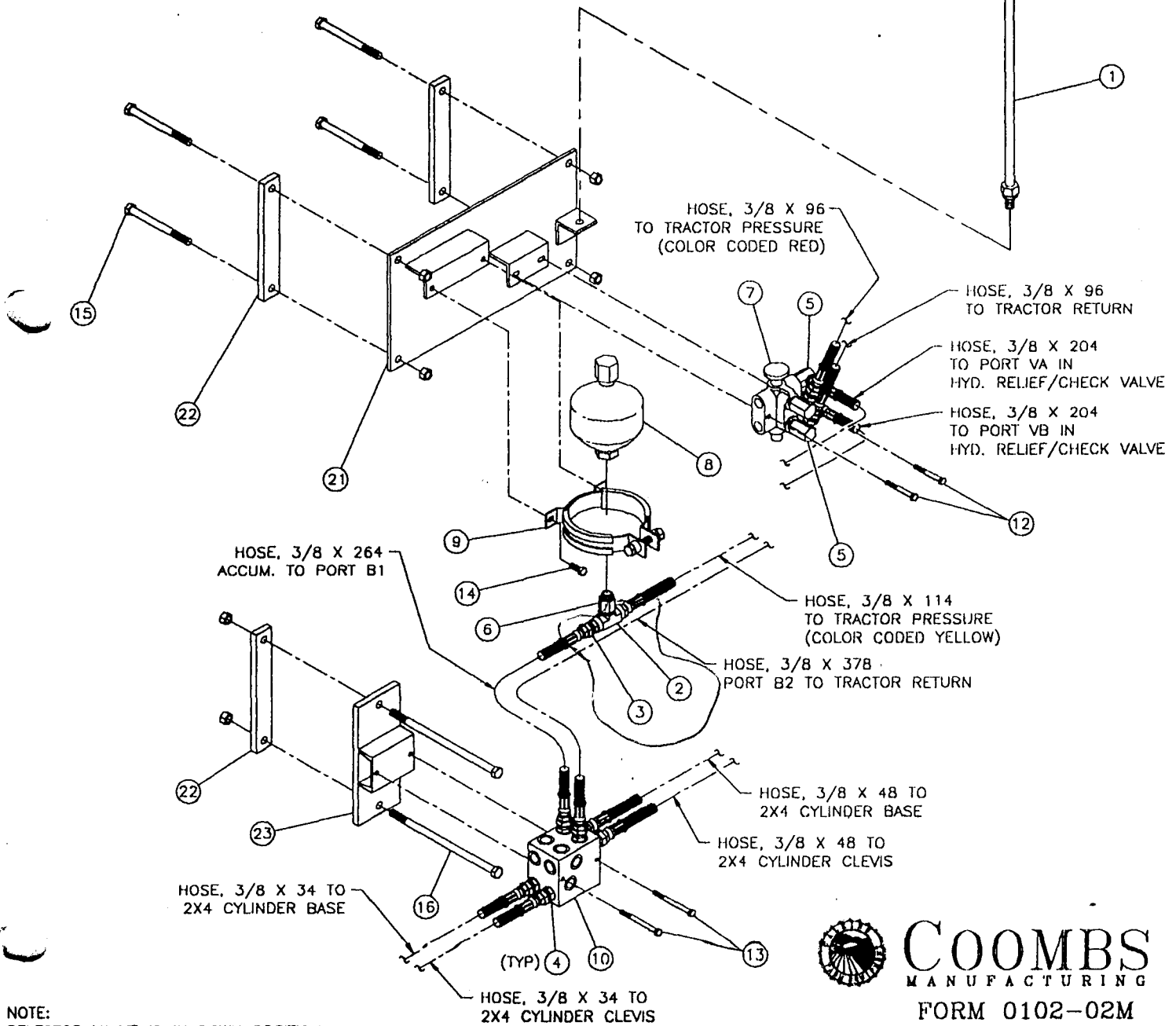
NOTE:

ONE LOCK NUT OF CORRECT SIZE TO BE USED WITH EACH CAP SCREW UNLESS OTHERWISE NOTED.



MOW-MASTER HYDRAULICS

REF. No.	PART NUMBER	DESCRIPTION	QTY.
1	101-037	HYDRAULIC HOSE MAST ASSY.	1
2	5-B43-215	1/2 MALE BRANCH TEE	1
3	5-B43-400	1/2 SWIVEL UNION	1
4	5-B43-402	1/2 O-RING SWIVEL UNION	6
5	5-B43-460	1/2 90 DEGREE SWIVEL UNION	4
6	5-846-091	1/2 O-RING ADAPTER	1
7	5-853-104	1/2 DOUBLE SELECTOR VALVE	1
8	5-B59-060	HYDRAULIC ACCUMULATOR	1
9	5-859-061	ACCUMULATOR MOUNT	1
10	5-B59-115	HYDRAULIC MANIFOLD, 12 PORT	1
11	7-041-015	LOCK WASHER, 5/16	4
12	7-111-027	CAP SCREW, 5/16 NC X 2-1/2	2
13	7-111-040	CAP SCREW, 5/16 NC X 4	2
14	7-112-050	CAP SCREW, 3/8 NC X 1	2
15	7-113-129	CAP SCREW, 1/2 NC X 5-1/2	4
16	7-113-150	CAP SCREW, 1/2 NC X 10	2
17	7-721-005	HEX NUT, 5/16 NC	4
18	7-722-010	HEX NUT, 3/8 NC	2
19	7-723-216	LOCK NUT, 1/2 NC	6
20	7-B42-010	LOCK WASHER, 3/8	2
21	MH9-020	VALVE MOUNT	1
22	MH9-021	BACKING PLATE	3
23	MH9-023	MANIFOLD BRACKET	1



NOTE:
SELECTOR VALVE IS IN DOWN POSITION



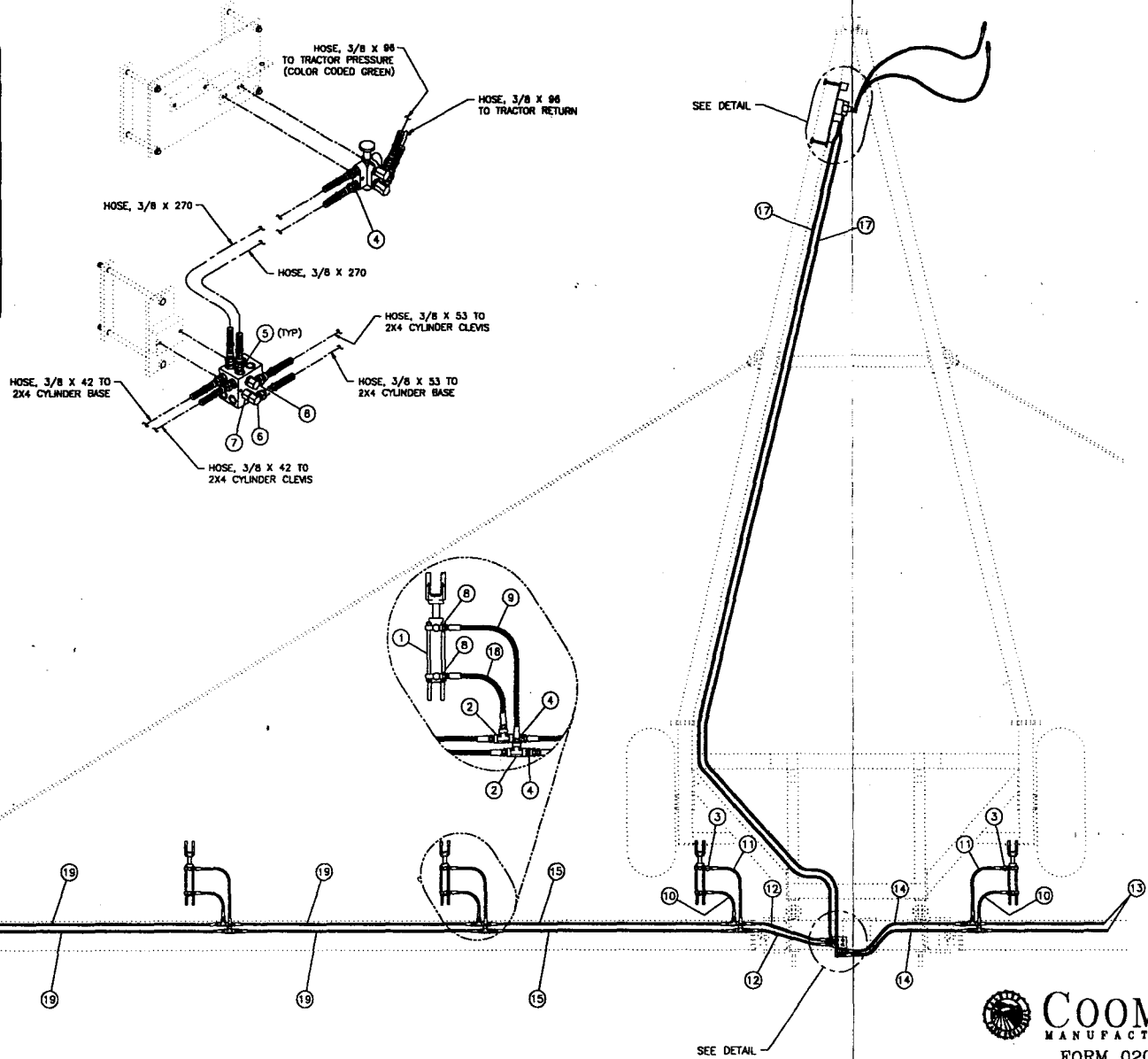
COOMBS
MANUFACTURING
FORM 0102-02M

CUTTER BAR HYDRAULICS

REF. No.	PART NUMBER	DESCRIPTION	36" QTY.	48" QTY.	60" QTY.
1	818-820	CYLINDER, 2 X 4 S&K	8	8	10
2	843-101	1/2" TEE	8	12	16
3	842-802	LINE THROTTLE VALVE	8	12	16
4	843-400	SWIVEL UNION	10	14	18
5	843-402	D-RING SWIVEL UNION	1	1	1
6	843-460	90 DEGREE SWIVEL UNION	1	1	1
7	849-091	O-RING ADAPTER	1	1	1
8	849-095	90 DEGREE D-RING SWIVEL UNION	13	17	21
9	822-220	HOSE, 3/8 X 20	1	1	1
10	822-230	HOSE, 3/8 X 30	1	1	1
11	822-236	HOSE, 3/8 X 36	1	1	1
12	822-242	HOSE, 3/8 X 42	1	1	1
13	822-244	HOSE, 3/8 X 44	1	1	1
14	822-253	HOSE, 3/8 X 53	1	1	1
15	822-264	HOSE, 3/8 X 64	1	1	1
16	822-283	HOSE, 3/8 X 102	1	1	1
17	822-450	HOSE, 3/8 X 270 (22'-6")	1	1	1
18	822-016	HOSE, 3/8 X 18	1	1	1
19	822-069	HOSE, 3/8 X 69	1	1	1

NOTE:

SEE HARROW HYDRAULICS FOR BRACKET & VALVE INFORMATION.
SELECTOR VALVE IS IN UP POSITION.



MOTOR HYDRAULICS			
REF. No.	PART NUMBER	DESCRIPTION	QTY.
1	226-036	TWIN CLAMP	2
2	226-037	TWIN CLAMP PLATE	2
3	226-101	TEE	2
4	226-222	1/2 TO 1/4 REDUCER	2
5	226-223	1/4 TO 1/8 REDUCER	2
6	226-235	1/2 MALE QUICK COUPLER	2
7	226-236	1/2 FEMALE QUICK COUPLER	2
8	226-100	1/2 SWIVEL UNION	2
9	226-810	3/4 O-RING SWIVEL UNION	2
10	226-815	3/4 45 DEGREE O-RING SWIVEL UNION	2
11	226-820	3/4 90 DEGREE O-RING SWIVEL UNION	2
12	226-130	HYDRAULIC MOTOR ADAPTER	2
13	226-005	O-RING 1 ID X 1-1/4 OD	2
14	226-008	SOCKET HEAD CAP SCREW M10 X 60MM	2
15	226-140	HYDRAULIC MANIFOLD 4 PORT	2
16	226-150	HYDRAULIC FLOW CONTROL VALVE	2
17	226-010	HYDRAULIC MOTOR	2
18	226-220	3/4 HYDRAULIC TUBE TOP	2
19	226-220	3/4 HYDRAULIC TUBE BOTTOM	2
20	226-278	HOSE 3/8 X 84	2
21	226-301	HOSE 3/8 X 114	2
22	226-378	HOSE 3/8 X 378 (31'-6")	2
23	226-378	HOSE 3/8 X 36	2
24	226-072	HOSE 3/4 X 72	2
25	226-084	HOSE 3/4 X 84	2
26	226-084	HOSE 3/4 X 84	2
27	226-086	HOSE 3/4 X 86	2
28	226-114	HOSE 3/4 X 114	2
29	041-015	LOCK WASHER 5/16	2
30	111-024	CAP SCREW 5/16 NC X 1-3/4	2
31	111-024	CAP SCREW 5/16 NC X 1-3/4	2
32	111-024	CAP SCREW 5/16 NC X 1-3/4	2
33	023	HYDRAULIC HOSE MAST	2

NOTE:

CORRECT ROUTING OF THE HOSES IS NECESSARY TO ENSURE BOTH MOTORS RUN CLOCKWISE.

