

Table of contents

Soft Hose Caddy	2
Warranty Policy	3
When Applying Liquid Manure	4
Safety Precautions	5
Safety Decals	6
Changing Tongue Positions of Your Caddy	8
Unloading Your Hose Caddy	10
Temporary Hose Repair	14
Loading Your Hose Caddy	15
Parts Section	17
Required Maintenance	58
Technical Specifications	61
Useful Information	62



Soft Hose Caddy

We would like to thank you for purchasing your new **Cadman Soft Hose Caddy**. You have purchased a product of superior quality that will serve your needs for a long time as long as you follow this manual and safety procedures.



Figure 1 - Cadman 6010 Soft Hose Caddy

img-01198

<u>BEFORE</u> operating your new Cadman Soft Hose Caddy, inspect the machine for any damage or parts that may have come loose during shipping. REPORT ANY DAMAGETO CADMAN POWER EQUIPMENT LIMITED OR YOUR LOCAL DEALER IMMEDIATELY



Warranty Policy

CADMAN POWER EQUIPMENT LIMITED warrants that each machine it manufactures shall be free from defects in materials and workmanship. The terms of this warranty are as follows:

- All components manufactured by **CADMAN POWER EQUIPMENT LIMITED** shall be warranted for a period of one (1) year from the date of delivery, except the frame and hose drum structures which shall be warranted for a period of three (3) years.
- CADMAN POWER EQUIPMENT LIMITED makes no warranty whatsoever in regard to tires, engines, and other trade accessories used on its equipment. The customer shall rely solely on the warranties offered (if any) by the respective manufacturer of these trade accessories.

The sole obligation to **CADMAN POWER EQUIPMENT LIMITED** under this warranty is limited to the repair or replacement of any part it manufactured, which, in the judgment of **CADMAN POWER EQUIPMENT LIMITED**, failed under normal and proper use and maintenance due to defective materials or workmanship. All freight charges incurred shall be the sole responsibility of the customer.

CADMAN POWER EQUIPMENT LIMITED and its dealers (who are neither authorized nor qualified to undertake any obligations on behalf of CADMAN POWER EQUIPMENT LIMITED) DO NOT, under any circumstances, accept any responsibility for any losses or costs incurred due to parts failure and/or delays during the parts replacement process.

This warranty will be considered void if any alterations or modifications have been made to the machine without the express written consent of **CADMAN POWER EQUIPMENT LIMITED** outlining the nature and the extent of such modifications. **CADMAN POWER EQUIPMENT LIMITED** will not provide any warranty express or implied to any overdue accounts.

CADMAN POWER EQUIPMENT LIMITED, whose policy is one of continuous improvement, reserves the right to change specifications and designs without notice or incurring obligation.

The warranties expressed herein are non-transferable and replace any other warranties, either written or verbal, which may have been given or implied.



When Applying Liquid Manure

Environmental concerns seem to be driving legislative agendas in many agricultural areas across the continent. Current and pending laws in many agricultural regions of North America are changing the ways in which the agricultural community is expected to manage their liquid animal waste products.

The changes in legislation typically target two main issues; run-off prevention during and after application and soil nutrient loading.

Run-off seems to be the largest concern with nutrient application. Run-off may result from several different factors, most of which are controllable. These factors include; exceeding the soil intake rate; nutrient application on steep grades; high application amounts; leaking mainline fittings and seals; sudden rainfall during or immediately after application; ground frost; etc. Constant watch must be kept and immediate action taken when necessary to prevent run-off from occurring.

Soil nutrient loading depends on many variables. Some of these variables (but certainly not all) are soil type, type of crop being grown in the irrigated area, application timing, nutrient value of the material being applied (nutrient value should be assessed at the time of application as it can change throughout the year), etc.

Soil type will determine the intake rate at which liquid may be applied. Cultivation of the field just prior to application can improve the intake rate of some soils.

Great potential benefit lies in using the nutritional value of the manure being applied to replace some or all of the traditional chemical fertilizer used. Application timing and amount are important considerations. Soil analysis taken prior to planting and during the growth periods of the crop will help determine if there is room for further application amounts to be added prior to crop maturity. A total management plan should include provisions to end the crop season without surplus nutrients left as residual. These excess nutrients typically end up in the ground water supply. Local colleges, universities and agricultural extension services are usually a good source of information. They can usually help you determine an application program that prevents soil nutrient overload due to excess application.

Cadman Power Equipment Limited cannot possibly provide up-to-date recommendations with regard to the legal obligations you must deal with in your particular area. However, as a manufacturer of equipment used in nutrient application (liquid manure, milk house run-off, etc.), we feel it necessary to make you aware that the municipal, regional and state governing bodies in your area may have recently enacted new legislation or revised existing legislation with regard to nutrient handling practices and procedures.

It is your responsibility to make yourself aware of and abide by the current legislation in your area. Please take the time to contact your local agricultural representative to obtain the latest information regarding legal handling and application of manure.



Safety Precautions

Please take the time to read and understand this manual to avoid errors and unnecessary risks. If you have any questions or concerns, please contact **CADMAN POWER EQUIPMENT LIMITED** or your local dealer/distributor.

FAILURE TO FOLLOW ALL SAFETY INSTRUCTIONS CAN RESULT IN DEATH OR SERIOUS INJURY FOR YOU AND/OR ANY SPECTATORS.

- **DO NOT** move or operate this machine until you have read and understand these instructions in this manual.
- **NEVER** allow untrained persons to operate this machine.
- **DO NOT** attempt to service this machine while it is in operation.
- MAKE CERTAIN all mechanical and hydraulic tension has been released before attempting any service on the machine.
- CHECK all fasteners (nuts and bolts) regularly for tightness.
- **PERFORM REQUIRED MAINTENANCE** as prescribed or as necessary to keep this machine in safe operating condition.
- KEEP ALL SPECTATORS at a safe distance.
- STAY CLEAR of high pressure supply lines, especially when first pressurizing the system.
- DO NOT remove or alter any shielding on this machine.
- **BE CERTAIN** that the machine is securely anchored (using a tractor) before unwinding the hose.
- KEEP CLEAR of all moving parts.
- NEVER tow this machine at speeds greater than 10 mph [16 km/h] and be certain the tow vehicle has adequate braking capacity to maintain safe control at all times.
- NEVER tow this machine with the hose loaded with fluid.
- **BE AWARE** of any obstacles (i.e. mail boxes, fence posts, and other equipment) that you may encounter when transporting the machine.
- REGULAR INSPECTION of your pipe/hose couplings, tubing and gaskets should be a part of your regular set-up routine. Any defective parts MUST be replaced or repaired before the machine is put into service.



This symbol, the <u>safety-alert symbol</u>, indicates a hazard. When you come across the safety-alert symbol in this manual, make sure you fully understand and abide by the given instructions or warnings.



Safety Decals

Cadman Power Equipment Limited has determined the potential hazards on your Continuous Manure Applicator and has labeled the machine accordingly. The safety decals on this machine are there to warn operators of potential hazards. Each safety decal on this machine contains a Signal Word Panel which shows the degree of hazard. Definitions of the Signal Words are as noted below.



Figure 2 - Danger Decal

img-00340-A

DANGER - an immediate, hazardous situation that if not avoided, <u>WILL</u>
 RESULT IN DEATH OR SERIOUS INJURY.



Figure 3 - Warning Decal

img-00340-B

• **WARNING** - a potentially hazardous situation that if not avoided could result in death or serious injury. This includes hazards that are exposed when guards are removed.



Figure 4 - Caution Decal

img-00340-C

• **CAUTION** - a potentially hazardous situation that if not avoided may result in minor or moderate injury.

Page 6 of 62



- All safety decals must be clean, clear, and easy to read
- Replace any decal that is not in good condition
- Replace any missing decals, it is important to double check that all labels are on your machine, especially if you have modified your machine or have had your machine serviced

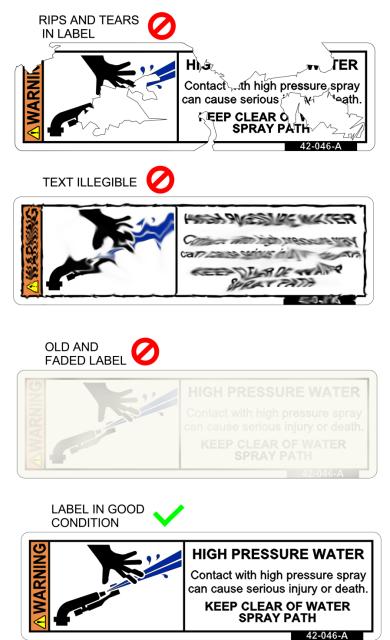


Figure 5 - Replace Decals

img-00131-B



Changing Tongue Positions of Your Caddy



Prior to changing the Soft Hose Caddy tongue postion the machine must be shut down and in a non-loaded condition. This means that all mechanical and hydraulic tension has been released from the hydraulic hose system.

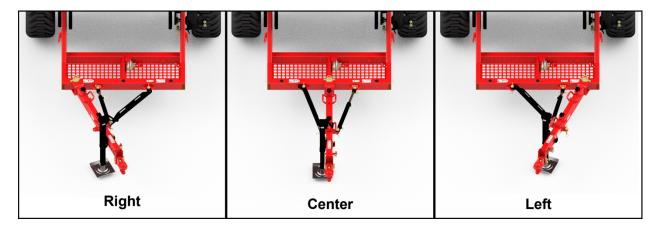


Figure 6 - Tongue Position

img-01196

With the Cadman Hose Caddy you have a choice of tongue positions. This allows for better field set-up. Choose the desired configuration.

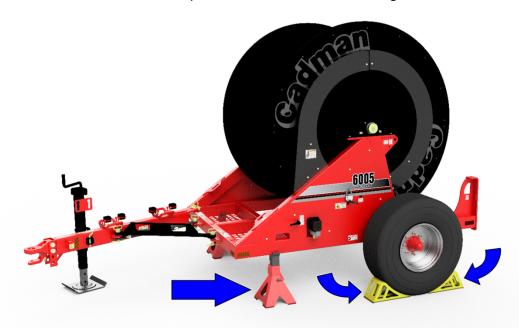


Figure 7 - Wheel Chocks and Jack Stands

img-01199





Before attempting the tongue postion change you must use wheel chocks to prevent the caddy from rolling/moving. Once you have chocked the caddy set-up the jack stands to help when moving the tongue position.

Step 1

Once on the jack stands raise the tongue jack to allow it to move without ground contact. Remove the cylinder and tongue lock from the tongue.

Step 2

Remove main tongue pin and reposition the tongue to the chosen position.



The trailer tongue weights approximately 410lbs (185 kg). Do not move the Trailer Tongue if you are not physically fit, and do not move the Trailer Tongue without assistance.

Step 3

Replace the main tongue pin.

Step 4

Re-install the cylinder and lock bar as shown below.

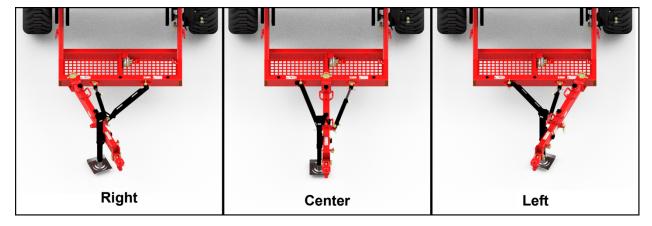


Figure 8 - Tongue Position

img-01196



Unloading Your Hose Caddy

Complete the following instructions to unload your Soft Hose Caddy...

Step 1

Connect the hydraulic motor hoses to the primary hydraulic port (if available). Connect the third hydraulic motor hose (Case Drain) from the hydraulic motor to a hydraulic motor return circuit (leak-off line port). Each tractor manufacturer may locate the hydraulic return circuit port in a different location based on each unique model. Review your tractors operator's manual or contact your tractor dealer for the location of this port. Connect the remaining cylinder hose pair.



It is important to ensure that the case drain hose is connected to a restriction free drain port on the tractor. This port MUST not exceed a working pressure of 100 psi [6.9 bar]. Connecting the case drain line to a pressurized port WILL result in motor and/or machine damage.

Step 2

Engage the drum brake and lock prior to moving your **Cadman Soft Hose Caddy**. (Located on the drive side)



Figure 9 - Engage Drum Brake and Lock Prior to Transport

img-01200



It is important to verify that the drum brake and lock are engaged prior to moving your Cadman Soft Hose Caddy. Failure to do so can result in equipment damage.



Step 3

Ensure the tongue brace is in the locked position.



Figure 10 - Tongue Brace in Locked Position

img-00434-A

Step 4

Once at the required site, disengage the drum lock and release the drum brake. Leave enough brake tension to control drum freewheel.



Figure 11 - Disengage Drum Lock and Release Brake

img-01201



Step 5

Engage the tractor hydraulics so the drum rotates away from the rear of the tractor. This will allow the soft hose to unreel. To put the drum into neutral (free wheel) shift the tractors hydraulic controls into the float position

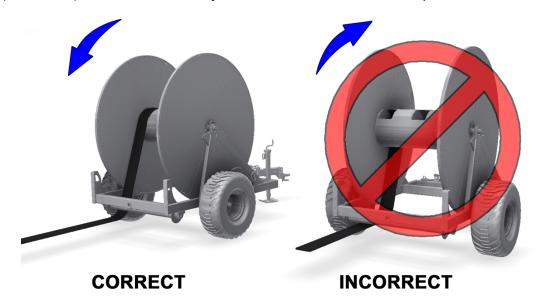


Figure 12 - Reel Direction

img-00441-A

As you unreel soft hose, drive the tractor and hose caddy (at a low rate of speed) along the required hose path.

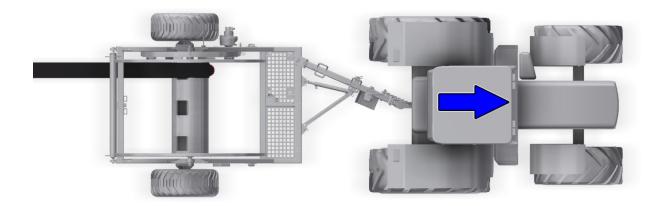


Figure 13 - Unreel Hose Slowly

img-00188-B



Step 7

When the soft hose is nearing the last wrap stop the tractor and disengage the hydraulics. Slowly rotate the drum so that the hose end fitting can be easily removed manually.

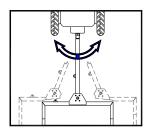


Failure to remove the hose end manually from the Soft Hose Caddy will result in hose, coupler or drum damage.

Operator Note



Where field conditions permit, always attempt to pull the hose either up or down sloping terrain instead of operating across a side hill.



The Cadman Soft Hose Caddy allows the operator to offset the tracking of the unit. This allows the hose caddy to be towed to either side of center while unloading the hose. You MUST disengage the tongue brace prior to attempting offset tracking.



Temporary Hose Repair

In some cases your hose may become punctured during regular usage in the field. If this occurs complete the following steps to temporarily repair your hose.

Step 1

Stop pumping fluid through the hose. Wait until all line pressure has dissipated. Or use a pair of hose pinchers to isolate the damaged hose



A hose with a puncture may burst. Stay clear of a hose that is under pressure. Failure to stay clear may result in serious injury.

Step 2

Clean the area with water.

Step 3

Slide the temporary repair sleeve (equipped on every Cadman Supply Hose) to the damaged area of hose.



Figure 14 - Pull Repair Sleeve

img-00444

Step 4

Pressurize the line.

Step 5

Once you have completed pumping, repair the hose using a hose mender. See page for hose mending parts.



Loading Your Hose Caddy



Prior to loading the Soft Hose Caddy, Cadman Power Equipment Limited requires that you clean the hoses with a proper clean-out procedure (i.e. clean-out ball launcher or water flushing). Failure to do so WILL result in gas build up in the hoses creating a great deal of pressure. This can cause equipment failure which could result in serious injury and/or death.

Complete the following instructions to load your Soft Hose Caddy...

Step 1

Position the Soft Hose Caddy relatively straight to the hose end. Disconnect a section of the soft hose by uncoupling the clamp.



Never pull more than two (2) empty hoses at one time or your Hose Caddy WILL be damaged.

Step 2 (if equipped)

Position the Soft Hose Caddy with the tractor so that one end of the soft hose can be looped under the roller (*if equipped*) and inserted into the opening in the hose drum.



Figure 15 - Insert Hose into Reel Opening

img-00436-A



Step 3

With one end of the hose inserted into the drum, remove the tongue brace and engage the tractor hydraulics so that the drum rotates towards the tractor. The soft hose should always be reeled in on the topside of the drum.

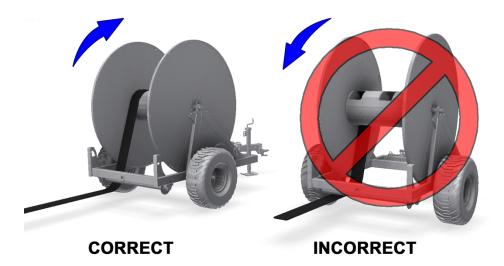


Figure 16 - Reel Direction

img-00446-A

Step 4

Guide the hose so that it is evenly distributed over the entire reel. Use the cylinder control to index the Soft Hose Caddy left and right to aid in the distribution of the hose.

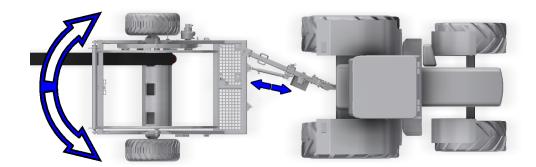


Figure 17 - Index Hose Caddy

img-00186-A



Do not index Soft Hose Caddy with rapid motion. Use small movements to adjust hose distribution. Keep spectators at a safe distance to prevent injury.

Step 5

When the first hose has been retrieved, return to Step 1 for the remaining hoses.

Page 16 of 62



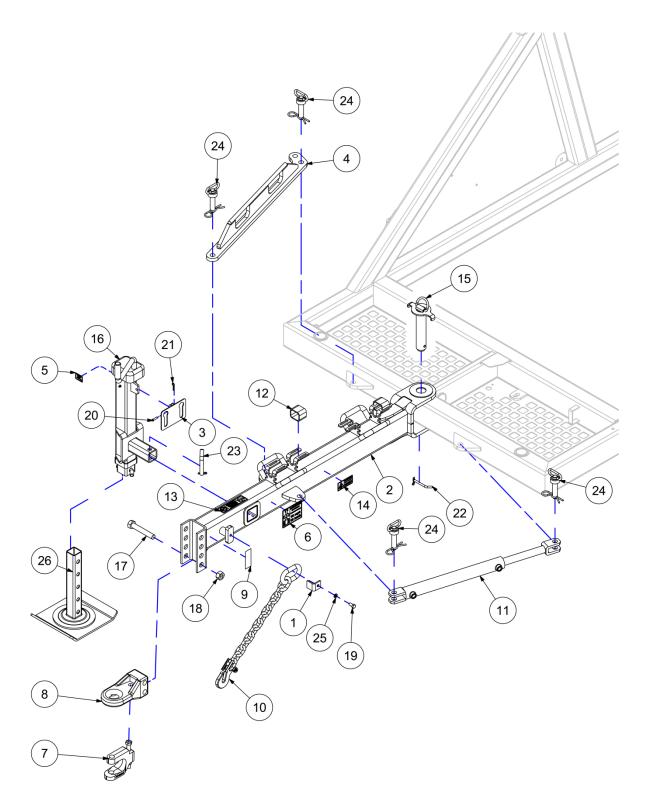
Parts Section

From Serial Number 2241701HC6010P

Tongue Assembly	18
Frame Assembly	20
Spindle Assembly	22
Drum Assembly	24
Drum Assembly	25
Drive Assembly (Hydraulic) 1 of 2	26
Drive Assembly (Hydraulic) 2 of 2	28
Drive Assembly (PTO) 1 of 4	30
Drive Assembly (PTO) 2 of 4	32
Drive Assembly (PTO) 3 of 4	34
Drive Assembly (PTO) 4 of 4	36
Shield / Drum Lock Assembly	38
Hydraulic Assembly	40
Decal Assembly	42
Hose Divider Option – Single	44
Hose Divider Option – Multiple	45
Hose Roller Option	46
Hose Roll Bar Option	47
Hose Roll Bar / Roller Option	50
Light Option	52
Turn Signal Housing	53
Hose Coupler Options	56



Tongue Assembly



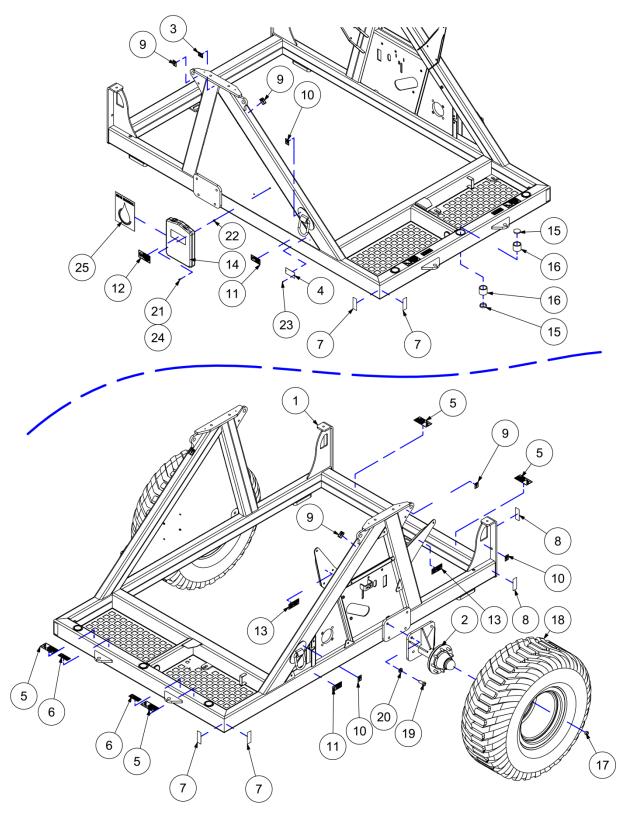


Tongue Assembly

ITEM	DESCRIPTION	PART NUMBER	QTY
1	SAFETY CHAIN RETAINER	17-213	1
2	TONGUE WELDMENT - HOSE CADDY	31-216-A	1
3	HOSE HOLDER WELDMENT	31-255	1
4	TONGUE LOCK BAR WELDMENT	31-903-A	1
5	LABEL - GREASE POINT	40-041-A	1
6	LABEL - MAX TOW SPEED	40-291-A	1
7	CLEVIS KIT - C/W BOLT & NUT	40-403	1
8	HITCH - CATEGORY 2 HITCH	40-591	1
9	DECAL - AMBER REFLECTIVE	40-598	2
10	SAFETY CHAIN - 20 000 #	40-622	1
11	PAINTED CYLINDER - 2.50 X 18.00	40-HYD-CYL001FLATBLK	1
12	STRAP - 2" X 12" VELCRO	42-517	2
13	LABEL - CONNECT CASE DRAIN	42-LBL-013	1
14	LABEL - HEAVY LIFTING	42-LBL-038	2
15	TONGUE PIN - Ø2" X 9 3/4"	64-600-B	1
16	TONGUE JACK WELDMENT	64-604-A	1
17	BOLT GR.8 - 1-8UNC X 6.00	89-BLT-10008X600	2
18	NUT STOVER GR.8 - 1-08UNC	89-NUT-LOC100-08STOVER	2
19	BOLT - 1/2-13 X 1.00	90-BLT-05013X100	1
20	CLEVIS PIN - 5/16 X 1.25 LG	90-PIN-CL031X125	1
21	HAIR PIN - 1/8 X 1 3/4	90-PIN-HP013X175	1
22	HITCH PIN - 3/8 X 3.00	90-PIN-HT038X300	1
23	HITCH PIN - 3/4 X 3 1/2 w/COTTER	90-PIN-HT075X350	1
24	HITCH PIN - 1.00 X 3 1/2" USE	90-PIN-HTC100X350	4
25	WASHER LOCK - 1/2	90-WSR-LOC050	1
26	JACK FOOT - WELDMENT	C3-641	1



Frame Assembly



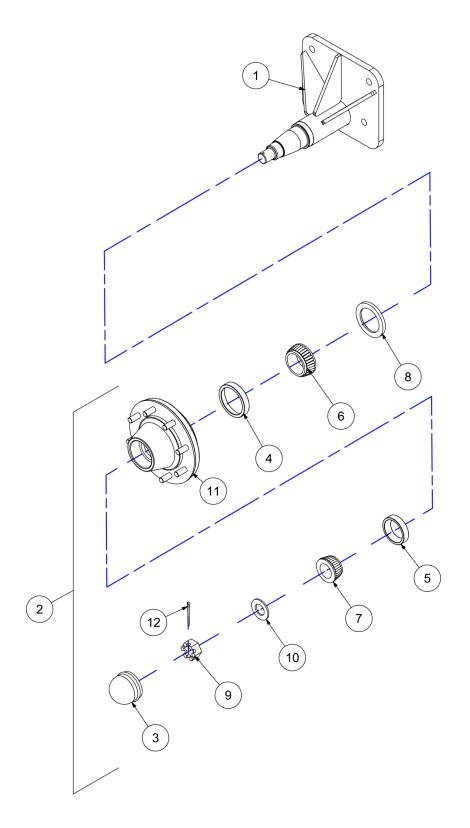


Frame Assembly

ITEM	DESCRIPTION	PART NUMBER	QTY
1	MAIN FRAME WELDMENT	31-400-J	1
2	SPINDLE WELDMENT	31-600-A	2
3	LABEL - GREASE POINT	40-041-A	1
4	CADMAN SERIAL NUMBER TAG	40-238-B	1
5	LABEL - ROTATING DRUM	40-287-B	4
6	LABEL - PINCH POINT	40-289-A	2
7	DECAL - AMBER REFLECTIVE	40-598	4
8	DECAL - RED REFLECTIVE	40-599	4
9	LABEL - LIFT POINT	40-933	4
10	LABEL - TIE DOWN POINT	40-947	4
11	LABEL - TORQUE WHEELS	42-035	2
12	LABEL - OPERATOR MANUAL	42-050-A	1
13	LABEL - GUARD REMOVED	42-052-A	3
14	MANUAL PAK - LARGE	42-071	1
15	PLUG - 2" PANEL	42-283	6
16	BEARING - POLYLUBE	42-450	6
17	NUT LUG - 5/8-18	55-147	16
18	WHEEL ASSEMBLY - 44X18X20	55-161	2
	WHEEL ASSEMBLY - 385/65R22.5	55-140	OPT
19	BOLT GR.8 - 3/4-16 X 1 3/4	89-BLT-07516X175	8
20	WASHER SAE GR.8 - 3/4 HEAVY DUTY	89-WSR-SAE075HD	8
21	BOLT - 1/4-20 X 3/4	90-BLT-02520X075	4
22	THREADED INSERT - 1/4-20 SHORT	90-NUT-HTR02520S	2
23	RIVET - 3/16 X 5/16 LG.	90-RIV-019X031	2
24	WASHER SAE - 1/4	90-WSR-SAE025	4
25	MANUAL - 6010	TR-MAN-6010	1



Spindle Assembly



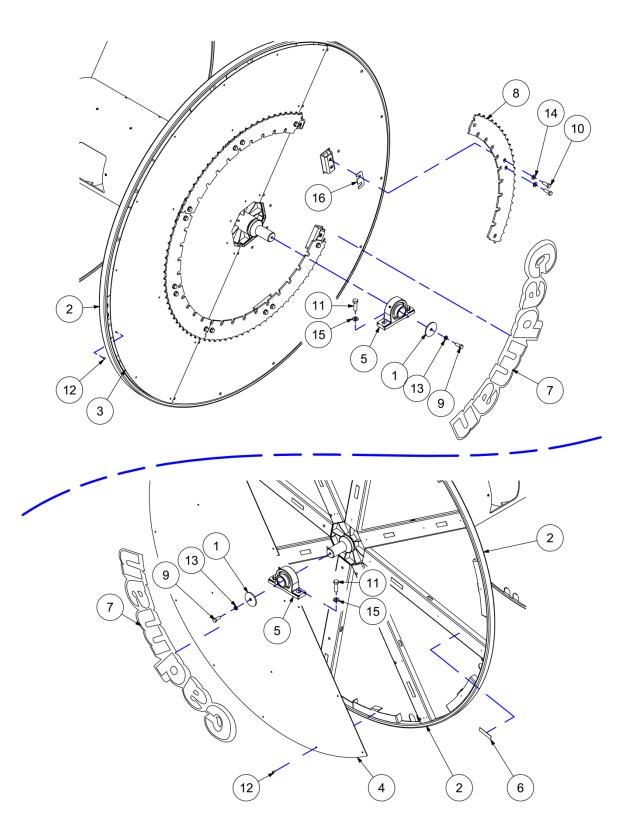


Spindle Assembly

ITEM	DESCRIPTION	PART NUMBER	QTY
1	SPINDLE WELDMENT	31-600-A	1
2	10000 SERIES HUB ASSY - 8 BOLT	55-099	1
3	DUST CAP	55-109	1
4	INNER CONE	55-129	1
5	OUTER CONE	55-130	1
6	ROLLER BEARING INNER	55-131	1
7	ROLLER BEARING OUTER	55-132	1
8	GREASE SEAL	55-133	1
9	CASTLE NUT	55-134	1
10	RETAINING WASHER	55-135	1
11	HUB	55-136	1
12	COTTER PIN - 3/16 X 2.50 LG	90-PIN-CT019X250	1



Drum Assembly





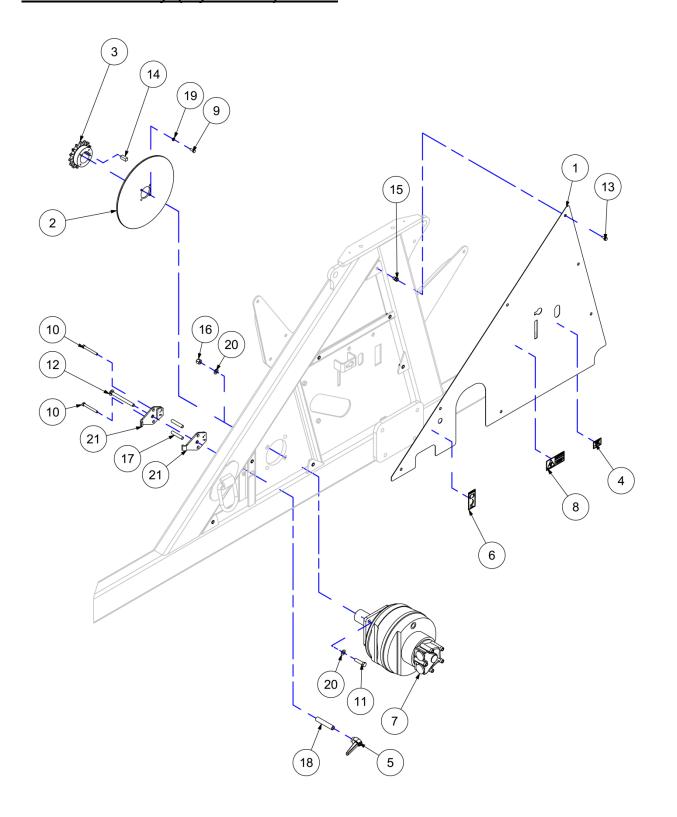


Drum Assembly

ITEM	DESCRIPTION	PART NUMBER	QTY
1	RETAINING PLATE - BEARING	05-622	2
2	DRUM WELDMENT - 6010	31-500-A	1
	DRUM WELDMENT - 8008	31-510-A	1
3	DRUM SKIN - DRIVE SIDE	31-602-A	2
4	DRUM SKIN - NON-DRIVE SIDE	31-606	2
5	PILLOW BLOCK - 2 1/2 BLACK	40-602-BLACK	2
6	VINYL FOAM TAPE - 1"	42-297	32
7	DECAL - DRUM R36"	42-DCL-001	4
8	DRIVE SPROCKET -192 TEETH	64-699-A	4
9	BOLT - 5/8-11 X 1 1/2	90-BLT-06311X150	2
10	BOLT - 5/8-11 X 1 3/4	90-BLT-06311X175	16
11	BOLT - 3/4-10 X 2 1/2	90-BLT-07510X250	4
12	RIVET - 3/16 X 7/16 BLACK	90-RIV-019X045BLK	76
13	WASHER LOCK - 5/8	90-WSR-LOC063	2
14	WASHER SAE - 5/8	90-WSR-SAE063	16
15	WASHER SAE - 3/4	90-WSR-SAE075	4
16	SHIM - DRIVE RING	C3-677	8



Drive Assembly (Hydraulic) 1 of 2



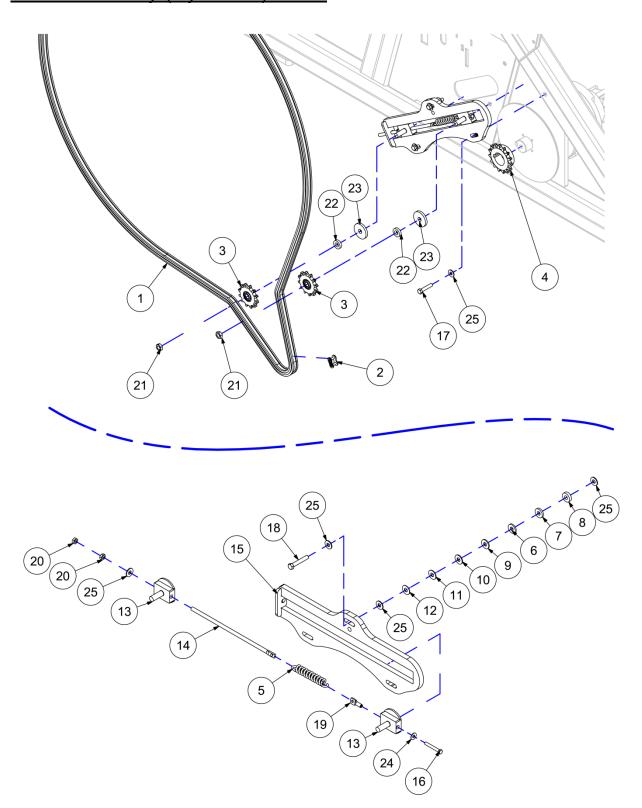


Drive Assembly (Hydraulic) 1 of 2

ITEM	DESCRIPTION	PART NUMBER	QTY
1	LEFT SIDE COVER	31-610-F	1
2	BRAKE DISK - MACHINED	31-620-B	1
3	SPROCKET - 80B15X225 MACH.	31-621-A	1
4	LABEL - GREASE POINT	40-041-A	1
5	BRAKE HANDLE	40-179	1
6	LABEL - BRAKE ADJUST	40-188-A	1
7	HOSE CADDY MOTOR - BLACK	40-HYD-M380CC-BLACK	1
8	LABEL - BRAKE HANDLE	42-LBL-040	1
9	BOLT - 5/16-18 X 3/4	90-BLT-03118X075	4
10	BOLT - 3/8-16 X 3 1/4	90-BLT-03816X325	2
11	BOLT - 1/2-13 X 2.00	90-BLT-05013X200	4
12	BOLT CRG 1/2-13 X 5 1/2 LG	90-BLT-CG05013X550	1
13	BOLT FLANGE - 5/16-18UNC X 3/4	90-BLT-F03118X075	7
14	KEY - 1/2 SQ. X 1 1/4 LG.	90-KEY-SQ050X125	1
15	THREADED INSERT - 5/16-18 LG	90-NUT-HTR03118L	7
16	NUT LOCK - 1/2-13	90-NUT-LOC050-13	4
17	SPACER - 1/2 X 1 3/4 LG	90-SPR-050X049X263	2
18	SPACER - 3/4" X 120 WALL X 4.00	90-SPR-075X120X400	1
19	WASHER LOCK - 5/16	90-WSR-LOC031	4
20	WASHER SAE - 1/2	90-WSR-SAE050	8
21	BRAKE CALIPER HALF	C3-653	2
22	EDGE TRIM - BLACK	40-030	12



Drive Assembly (Hydraulic) 2 of 2



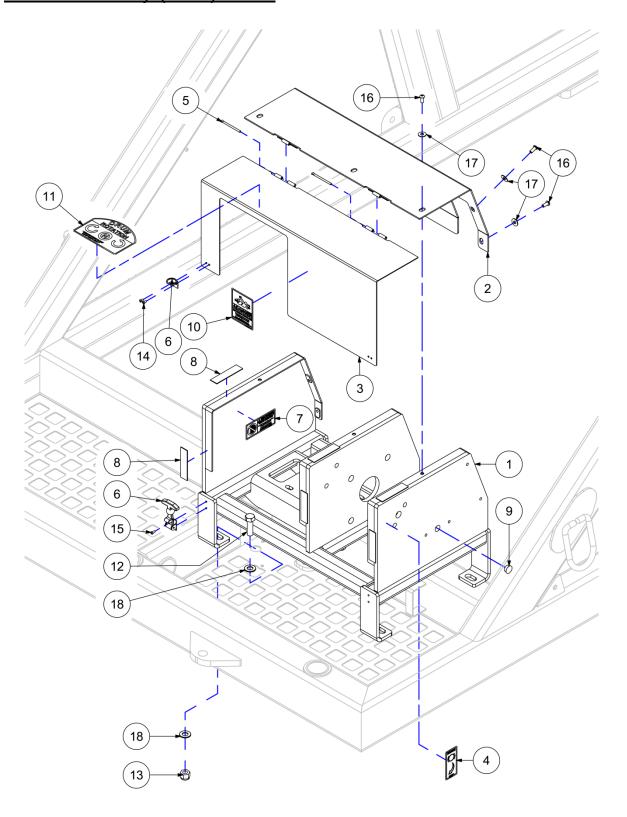


Drive Assembly (Hydraulic) 2 of 2

ITEM	DESCRIPTION	PART NUMBER	QTY
1	80 RIVETED ROLLER CHAIN/ LINK	10-CHN-80-1RIV	214
2	LINK - 80 CONNECTING	10-LNK-80CONN	1
3	SPROCKET - 80-12 X 3/4 IDLER	10-SPT-80-12IDLER-KN	2
4	SPROCKET - 80B15X225 MACHINED	31-621-A	1
5	SPRING - 1 3/4 X 5 EXT. (IDLER)	40-056-B	1
6	SHIM - 1 3/8 OD X 9/16 ID X 3/16	45-902-019	3
7	SHIM - 1 3/8 OD X 9/16 ID X 1/4	45-902-025	3
8	SHIM - 1 3/8 OD X 9/16 ID X 3/8	45-902-038	3
9	SHIM - 1 3/8 OD X 9/16 ID X 10G	45-902-10G	3
10	SHIM - 1 3/8 OD X 9/16 ID X 12G	45-902-12G	3
11	SHIM - 1 3/8 OD X 9/16 ID X 14G	45-902-14G	3
12	SHIM - 1 3/8 OD X 9/16 ID X 16G	45-902-16G	3
13	IDLER CHAIN GUIDE W HOLE PLATED	64-314-B	2
14	SPRING ADJ. ROD - 9 IN. PLATED	64-315-A	1
15	CHAIN IDLER WELDMENT	64-656-B	1
16	BOLT - 3/8-16 X 2 3/4	90-BLT-03816X275	1
17	BOLT - 1/2-13 X 2 1/2	90-BLT-05013X250	1
18	BOLT - 1/2-13 X 3.00	90-BLT-05013X300	2
19	NUT EYE - 3/8-16UNC	90-NUT-EYE038-16	1
20	NUT JAM - 1/2-13	90-NUT-JAM050-13	2
21	NUT JAM - 3/4-10	90-NUT-JAM075-10	2
22	SPACER - 3/4" I.D. X 1 1/2" O.D. X 3/8" LG.	90-SPR-075X150X038	2
23	SPACER - 3/4" I.D. X 2 3/4" O.D. X 3/8" LG.	90-SPR-075X275X038	2
24	WASHER FLAT - 3/8	90-WSR-FLT038	1
25	WASHER FLAT - 1/2	90-WSR-FLT050	9



Drive Assembly (PTO) 1 of 4



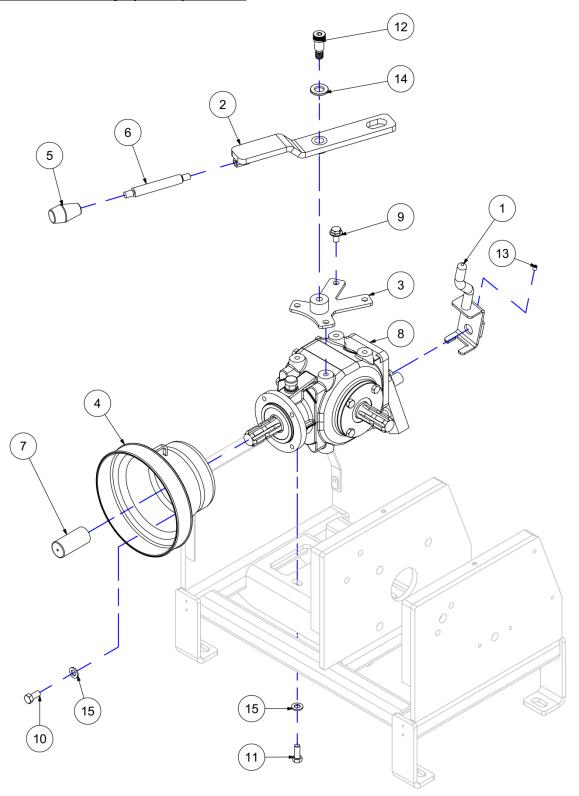


Drive Assembly (PTO) 1 of 4

ITEM	DESCRIPTION	PART NUMBER	QTY
1	MOUNT - PTO DRIVE	31-850-000-C	1
2	SHIELD - PTO DRIVE FIXED	31-851-000-C	1
3	SHIELD - PTO DRIVE REMOVABLE	31-852-000-C	1
4	LABEL - BRAKE ADJUST	40-188-A	1
5	3/16 X 3 IN. BRASS HINGE PIN	40-200-C	2
6	RUBBER LATCH KIT	40-217	2
7	LABEL - GUARD REMOVED	42-052-A	1
8	VINYL FOAM TAPE - 1"	42-297	6
9	PLUG - 3/4" PANEL	42-739	1
10	LABEL - ROTATING DRIVE VERT/SM	42-LBL-067	1
11	LABEL - DRUM ROTATION	42-LBL-081	1
12	BOLT - 5/8-11 X 2.00	90-BLT-06311X200	4
13	NUT LOCK - 5/8-11	90-NUT-LOC063-11	4
14	RIVET - 3/16 X 5/16 LG.	90-RIV-019X031	4
15	RIVET - 3/16 X 3/8 IN	90-RIV-019X038	4
16	SCREW BUTTON - 5/16-18 X 3/4	90-SCR-BH03118X075	9
17	WASHER FLAT - 5/16	90-WSR-FLT031	9
18	WASHER SAE - 5/8	90-WSR-SAE063	8



Drive Assembly (PTO) 2 of 4



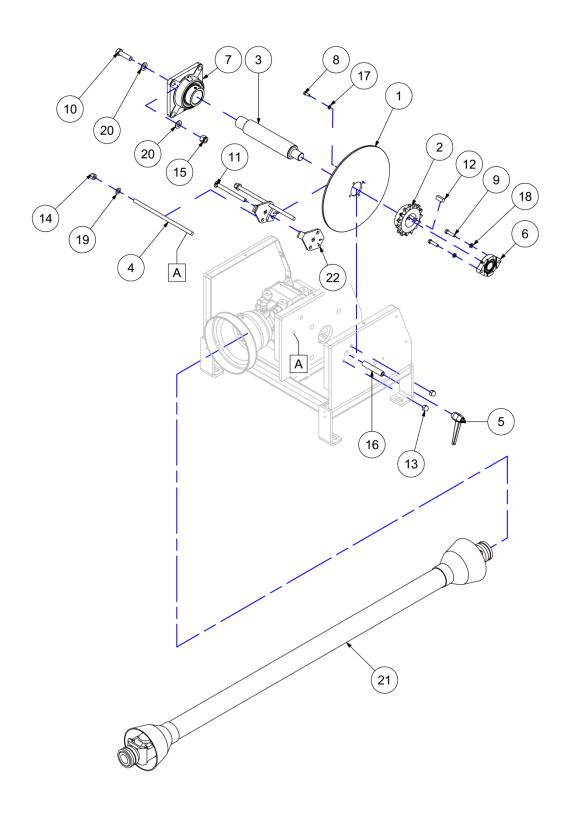


Drive Assembly (PTO) 2 of 4

ITEM	DESCRIPTION	PART NUMBER	QTY
1	SHIFTER HANDLE WELDMENT	31-859-000-B	1
2	ACTUATOR WELDMENT - GEARBOX	31-862-000-A	1
3	ACTUATOR MOUNT WELDMENT	31-863-000	1
4	PTO GUARD - MACHINED 6010	31-864-000	1
5	HANDLE KNOB	40-182	1
6	SCREW IN SHIFT HANDLE	40-222	1
7	CAP VINYL - 1 3/8 X 3.00 LG.	40-231	1
8	GEARBOX	42-715	1
9	BOLT FLANGE - M12X1.75 X 20mm	90-BLT-FM12175X020	4
10	BOLT - M12-1.75 X 25MM	90-BLT-M12175X025	4
11	BOLT - M12-1.75 X 30MM	90-BLT-M12175X030	4
12	BOLT SHOULDER - 5/8-11 X 1.00	90-BLT-SH06311X100	1
13	SET SCREW - 5/16 - 18 X 3/8 LG	90-SCR-ST03118X038	1
14	WASHER SAE - 3/4	90-WSR-SAE075	1
15	WASHER SAE - M12	90-WSR-SAEM12	8



Drive Assembly (PTO) 3 of 4



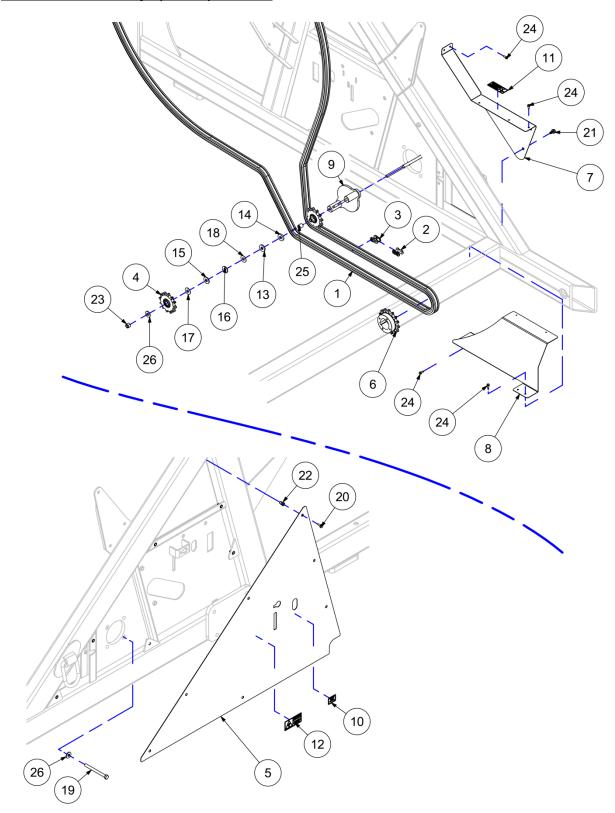


Drive Assembly (PTO) 3 of 4

ITEM	DESCRIPTION	PART NUMBER	QTY
1	SHIFTER HANDLE WELDMENT	31-859-000-B	1
2	ACTUATOR WELDMENT - GEARBOX	31-862-000-A	1
3	ACTUATOR MOUNT WELDMENT	31-863-000	1
4	PTO GUARD - MACHINED 6010	31-864-000	1
5	HANDLE KNOB	40-182	1
6	SCREW IN SHIFT HANDLE	40-222	1
7	CAP VINYL - 1 3/8 X 3.00 LG.	40-231	1
8	GEARBOX	42-715	1
9	BOLT FLANGE - M12X1.75 X 20mm	90-BLT-FM12175X020	4
10	BOLT - M12-1.75 X 25MM	90-BLT-M12175X025	4
11	BOLT - M12-1.75 X 30MM	90-BLT-M12175X030	4
12	BOLT SHOULDER - 5/8-11 X 1.00	90-BLT-SH06311X100	1
13	SET SCREW - 5/16 - 18 X 3/8 LG	90-SCR-ST03118X038	1
14	WASHER SAE - 3/4	90-WSR-SAE075	1
15	WASHER SAE - M12	90-WSR-SAEM12	8



Drive Assembly (PTO) 4 of 4



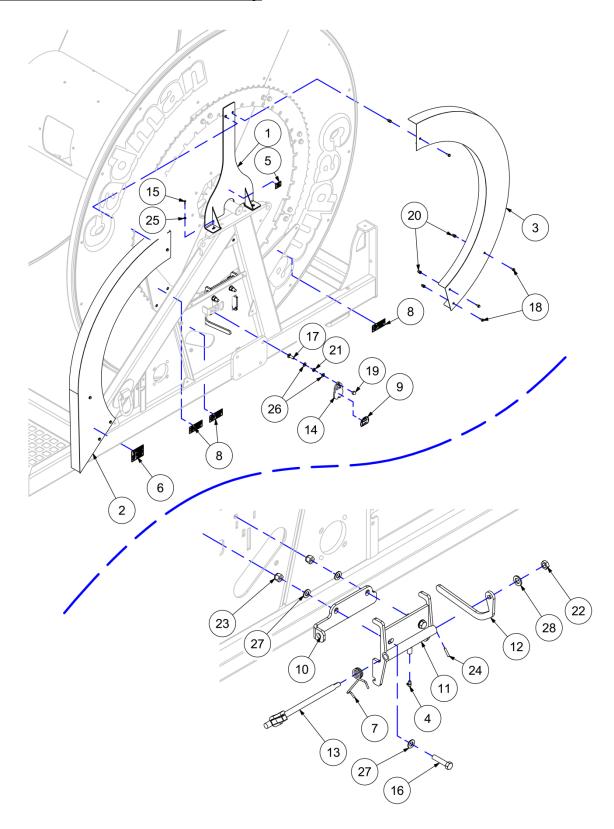


Drive Assembly (PTO) 4 of 4

ITEM	DESCRIPTION	PART NUMBER	QTY	
1	ROLLER CHAIN - 80 RIVETED BY LINK	10-CHN-80-1RIV	283	
2	LINK - 80 CONNECTING	10-LNK-80CONN	1	
3	LINK - 80 OFFSET	10-LNK-80OFFSET	1	
4	SPROCKET - 80-12 X 3/4 IDLER	10-SPT-80-12IDLER-KN	2	
5	LEFT SIDE COVER - PTO DRIVE	31-619	1	
6	SPROCKET - 80B15X225 MACHINED	31-621-A	1	
7	SHIELD - PTO CHAIN DRIVE	31-856-000-C	1	
8	SHIELD - DRIVE CHAIN	31-856-100	1	
9	IDLER SPACER WELDMENT	31-858-000	1	
10	LABEL - GREASE POINT	40-041-A	1	
11	LABEL - ENTANGLEMENT	40-051-A	1	
12	LABEL - BRAKE HANDLE	42-LBL-040	1	
13	SHIM - 1 3/8 OD X 9/16 ID X 3/16	45-902-019	2	
14	SHIM - 1 3/8 OD X 9/16 ID X 1/4	45-902-025	2	
15	SHIM - 1 3/8 OD X 9/16 ID X 10G	45-902-10G	2	
16	SHIM - 1 3/8 OD X 9/16 ID X 12G	45-902-12G	2	
17	SHIM - 1 3/8 OD X 9/16 ID X 14G	45-902-14G	2	
18	SHIM - 1 3/8 OD X 9/16 ID X 16G	45-902-16G	2	
19	BOLT - 1/2-13 X 5 1/2	90-BLT-05013X550	2	
20	BOLT FLANGE - 5/16-18UNC X 3/4	90-BLT-F03118X075	7	
21	BOLT FLANGE - 3/8-16UNC X 3/4	90-BLT-F03816X075	2	
22	THREADED INSERT - 5/16-18 LONG	90-NUT-HTR03118L	7	
23	NUT LOCK - 1/2-13	90-NUT-LOC050-13	2	
24	SCREW TEK - 1/4 X 3/4	90-SCR-TEK025X075	10	
25	SPACER - 33/64 X 47/64 X 3/4	90-SPR-051X072X075	2	
26	WASHER FLAT - 1/2	90-WSR-FLT050	4	



Shield / Drum Lock Assembly



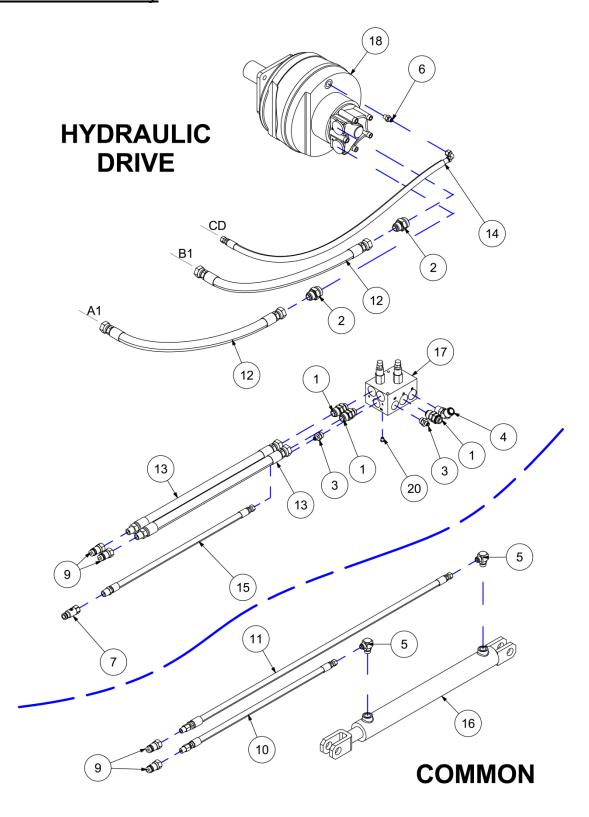


Shield / Drum Lock Assembly

ITEM	DESCRIPTION	PART NUMBER	QTY	
1	CHAIN GUARD	31-612-A	1	
2	SPROCKET GUARD WELDMENT - L.H.	31-614-C	1	
3	SPROCKET GUARD WELDMENT - R.H.	31-615-C	1	
4	GREASE FITTING - 1/8 NPT 90°	40-001-90	1	
5	LABEL - GREASE POINT	40-041-A	1	
6	LABEL - MOVING PARTS HAZARD	40-290-A	1	
7	SPRING	42-006	1	
8	LABEL - GUARD REMOVED	42-052-A	3	
9	LABEL - DRUM LOCK	42-LBL-022	1	
10	SUPPORT - DRUM LOCK	64-613	1	
11	DRUM LOCK BODY WELDMENT	64-662	1	
12	HANDLE - DRUM LOCK	64-663-A	1	
13	DRUM LOCK WELDMENT	64-664-B	1	
14	LOCKOUT BRACKET - DRUM LOCK	64-665-A	1	
15	BOLT - 1/4-20 X 3/4	90-BLT-02520X075	2	
16	BOLT - 5/8-11 X 2 3/4	90-BLT-06311X275	2	
17	BOLT CARRIAGE - 1/2-13 X 1 1/2	90-BLT-CG05013X150	1	
18	BOLT FLANGE - 5/16-18UNC X 3/4	90-BLT-F03118X075	8	
19	NUT ACORN - 1/2"-13 ZINC	90-NUT-ACN050-13	1	
20	THREADED INSERT - 5/16-18 LONG	90-NUT-HTR03118L	9	
21	NUT JAM - 1/2-13	90-NUT-JAM050-13	1	
22	NUT JAM - 3/4-10	90-NUT-JAM075-10	1	
23	NUT LOCK - 5/8-11	90-NUT-LOC063-11	2	
24	PIN ROLL - 1/4 X 1 1/4	90-PIN-RL025X125	1	
25	WASHER SAE - 1/4	90-WSR-SAE025	2	
26	WASHER SAE - 1/2	90-WSR-SAE050	2	
27	WASHER SAE - 5/8	90-WSR-SAE063	4	
28	WASHER SAE - 3/4	90-WSR-SAE075	1	



Hydraulic Assembly



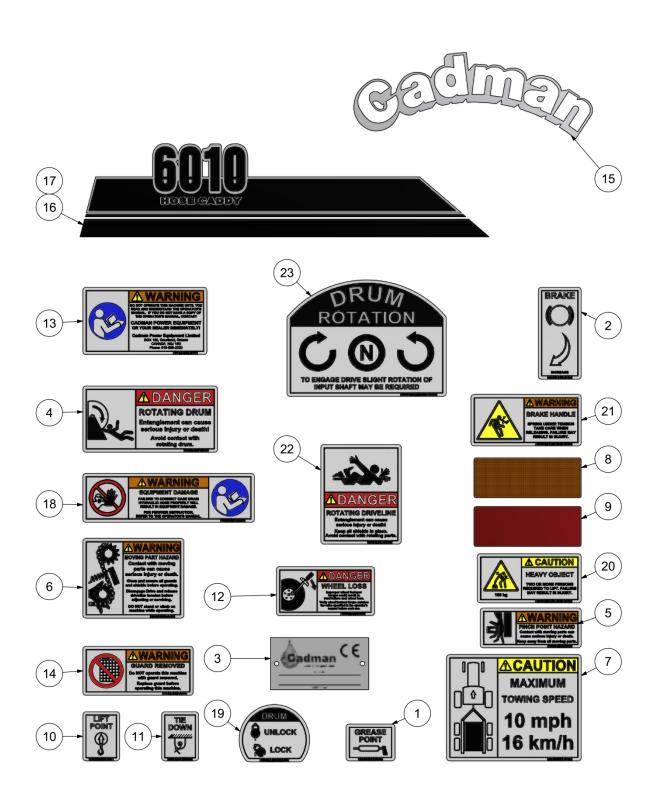


Hydraulic Assembly

ITEM	DESCRIPTION	PART NUMBER		
1	ADAPTER - #12 JIC-M X #10 SAE-M	25-WHD-5315X12X10	3	
2	ADAPTER - #12 JIC-M X #16 SAE-M	25-WHD-5315X12X16	2	
3	ADAPTER - #6 JIC-M X #8 SAE-M	25-WHD-5315X6X8	2	
4	ADAPTER - #12-JIC X #10-SAE X 45	25-WHD-5365X12X10	1	
5	ELBOW - 8JICMX8SAEX90°1/16 ORF	25-WHD-6050-5	2	
6	ADAPTER - #6 JIC-M X #8 BPS	25-WHD-9002X06X04	1	
7	HYDRAULIC COUPLER TIP - FLAT FACE	25-WHD-FF491-3	1	
8	CABLE TIE - 8 1/2" BLACK	40-470	10	
9	HYDRAULIC COUPLER TIP	40-563	4	
10	HYDRAULIC HOSE - 3/8 X 108	40-HHZ-0186	1	
11	HYDRAULIC HOSE - 3/8 X 125	40-HHZ-0187	1	
12	HYDRAULIC HOSE - 3/4 X 54	40-HHZ-0188	2	
13	HYDRAULIC HOSE - 3/4 X 150	40-HHZ-0189	2	
14	HYDRAULIC HOSE - 3/8 X 55	40-HHZ-0190	1	
15	HYDRAULIC HOSE - 3/8 X 156	40-HHZ-0192	1	
16	PAINTED CYLINDER - 2.50 X 18.00	40-HYD- CYL001FLATBLK	1	
17	MANIFOLD - HOSE CADDY	40-HYD-LDN20091101	1	
18	HOSE CADDY MOTOR - BLACK	40-HYD-M380CC- BLACK	1	
19	HOSE WRAP - 3" ANTI ABRASION	42-266-A	38	
20	MUFFLER	42-349	1	



Decal Assembly



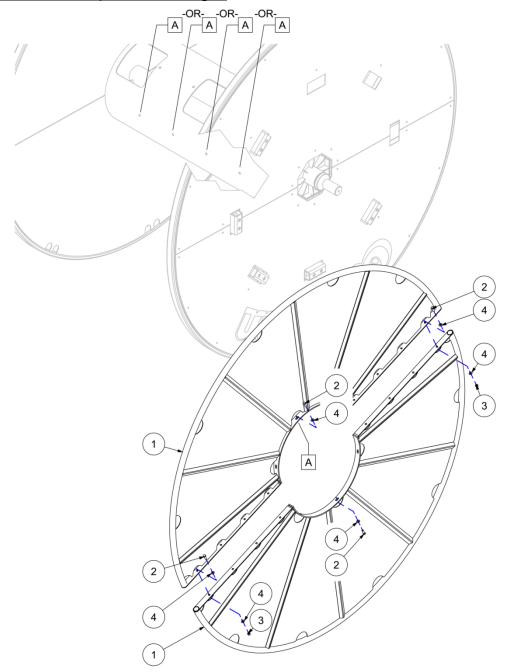


Decal Assembly

ITEM	DESCRIPTION	PART NUMBER	QTY
1	LABEL - GREASE POINT	40-041-A	4
2	LABEL - BRAKE ADJUST	40-188-A	1
3	CADMAN SERIAL NUMBER TAG	40-238-B	1
4	LABEL - ROTATING DRUM	40-287-B	4
5	LABEL - PINCH POINT	40-289-A	2
6	LABEL - MOVING PARTS HAZARD	40-290-A	1
7	LABEL - MAX TOW SPEED	40-291-A	1
8	DECAL - AMBER REFLECTIVE	40-598	6
9	DECAL - RED REFLECTIVE	40-599	4
10	LABEL - LIFT POINT	40-933	4
11	LABEL - TIE DOWN POINT	40-947	4
12	LABEL - TORQUE WHEELS	42-035	2
13	LABEL - OPERATOR MANUAL	42-050-A	1
14	LABEL - GUARD REMOVED	42-052-A	3
15	DRUM DECAL - LARGE	42-DCL-001	4
16	SIDE FRAME DECAL - 6010 L.H.	42-DCL-6010L	1
17	SIDE FRAME DECAL - 6010 R.H.	42-DCL-6010R	1
18	LABEL - CONNECT CASE DRAIN	42-LBL-013	1
19	LABEL - DRUM LOCK	42-LBL-022	1
20	LABEL - HEAVY LIFTING	42-LBL-038	2
21	LABEL - BRAKE HANDLE	42-LBL-040	1
22	LABEL - ROTATING DRIVE VERT/SM	42-LBL-067	1
23	LABEL - DRUM ROTATION	42-LBL-081	1



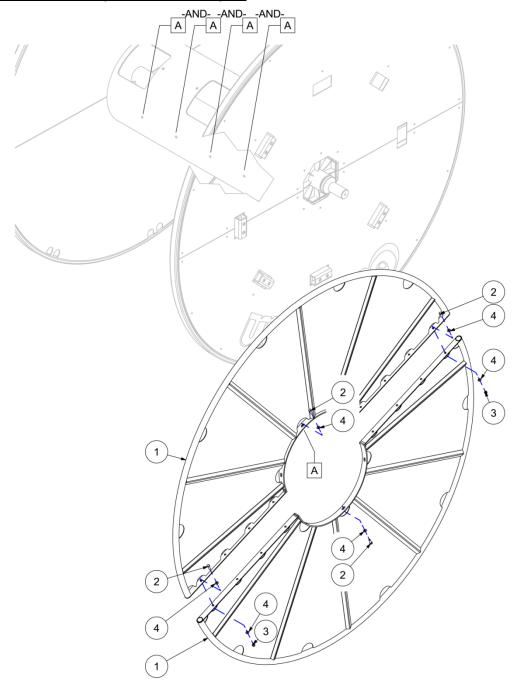
Hose Divider Option - Single



ITEM	DESCRIPTION	PART NUMBER	QTY
1	HOSE DIVIDER WELDMENT	31-529-B	2
2	BOLT - 3/8-16 X 1 1/4	90-BLT-03816X125	14
3	NUT LOCK - 3/8-16	90-NUT-LOC038-16	8
4	WASHER SAE - 3/8	90-WSR-SAE038	22



Hose Divider Option - Multiple

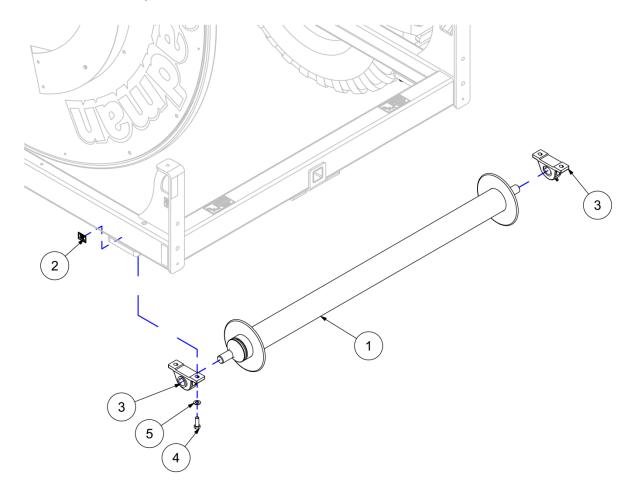


ITEM	DESCRIPTION	PART NUMBER	QTY
1	HOSE DIVIDER WELDMENT	31-529-B	8
2	BOLT - 3/8-16 X 1 1/4	90-BLT-03816X125	56
3	NUT LOCK - 3/8-16	90-NUT-LOC038-16	32
4	WASHER SAE - 3/8	90-WSR-SAE038	88

Page 45 of 62

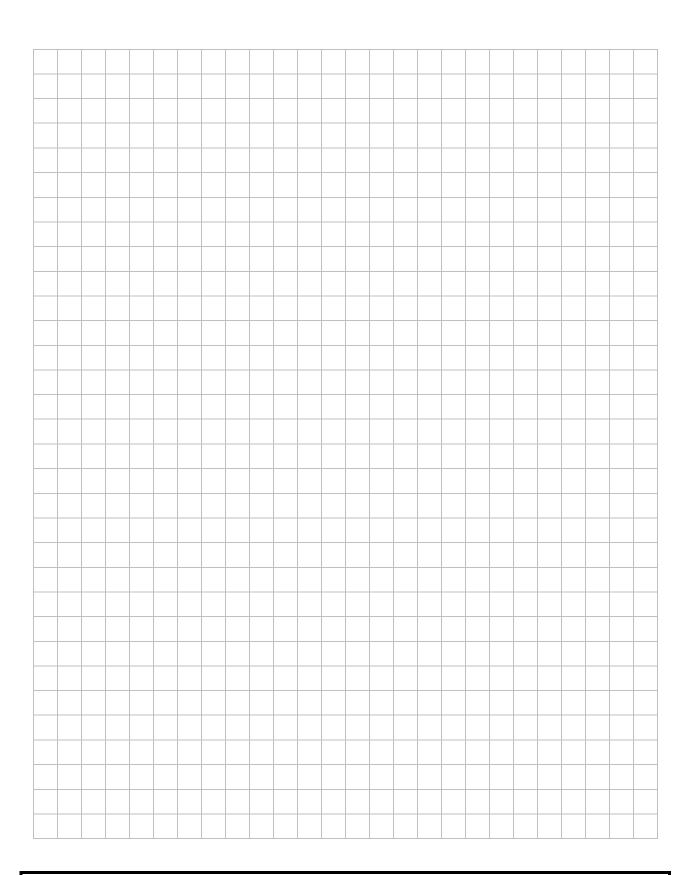


Hose Roller Option



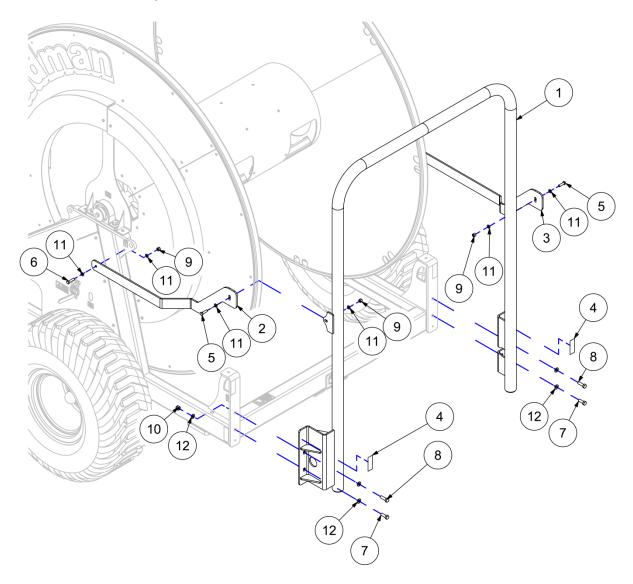
ITEM	DESCRIPTION	PART NUMBER	QTY	
1	HOSE ROLLER	31-601-C	1	
2	LABEL - GREASE POINT	40-041-A	2	
3	PILLOW BLOCK BEARING - 1 1/2"	42-255	2	
4	BOLT - 5/8-11 X 1 3/4	90-BLT-06311X175	4	
5	WASHER SAE - 5/8	90-WSR-SAE063	4	







Hose Roll Bar Option



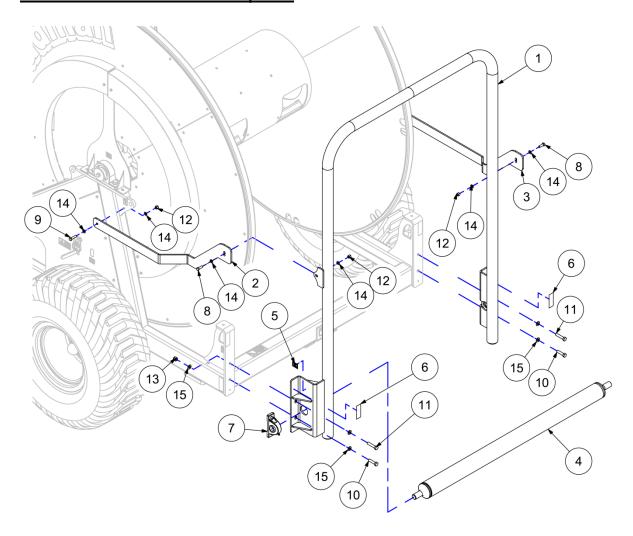


Hose Roll Bar Option

ITEM	DESCRIPTION	PART NUMBER	QTY
1	HOSE GUIDE BAR WELDMENT	31-617-E	1
2	LEFT BRACE	31-739-B	1
3	RIGHT BRACE	31-742-B	1
4	DECAL - RED REFLECTIVE	40-599	2
5	BOLT - 1/2-13 X 1 3/4	90-BLT-05013X175	2
6	BOLT - 1/2-13 X 2.00	90-BLT-05013X200	2
7	BOLT - 5/8-11 X 1 3/4	90-BLT-06311X175	2
8	BOLT - 5/8-11 X 2.00	90-BLT-06311X200	2
9	NUT LOCK - 1/2-13	90-NUT-LOC050-13	4
10	NUT LOCK - 5/8-11	90-NUT-LOC063-11	2
11	WASHER SAE - 1/2	90-WSR-SAE050	8
12	WASHER SAE - 5/8	90-WSR-SAE063	6



Hose Roll Bar / Roller Option



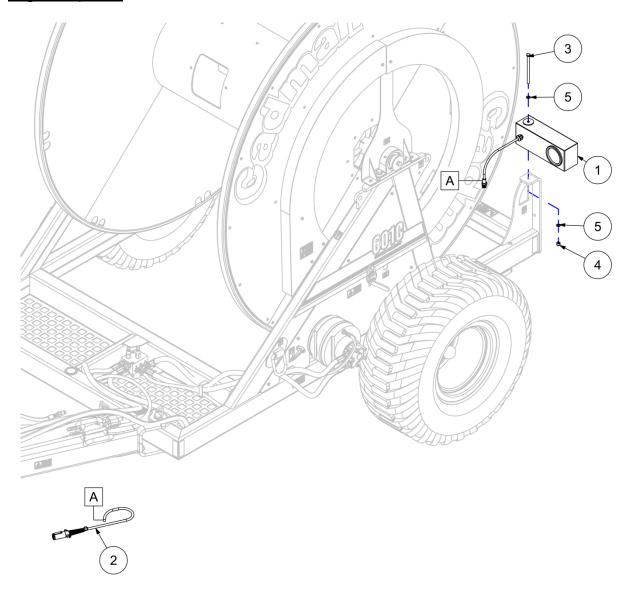


Hose Roll Bar / Roller Option

ITEM	DESCRIPTION	PART NUMBER	QTY
1	HOSE GUIDE BAR WELDMENT	31-617-E	1
2	LEFT BRACE	31-739-B	1
3	RIGHT BRACE	31-742-B	1
4	HOSE ROLLER - ROLL BAR OPTION	31-901	1
5	LABEL - GREASE POINT	40-041-A	2
6	DECAL - RED REFLECTIVE	40-599	2
7	PILLOW BLOCK BEARING - 1 1/2"	42-255	2
8	BOLT - 1/2-13 X 1 1/2	90-BLT-05013X150	2
9	BOLT - 1/2-13 X 2.00	90-BLT-05013X200	2
10	BOLT - 5/8-11 X 2 1/2	90-BLT-06311X250	2
11	BOLT - 5/8-11 X 3.00	90-BLT-06311X300	2
12	NUT LOCK - 1/2-13	90-NUT-LOC050-13	4
13	NUT LOCK - 5/8-11	90-NUT-LOC063-11	2
14	WASHER SAE - 1/2	90-WSR-SAE050	8
15	WASHER SAE - 5/8	90-WSR-SAE063	6

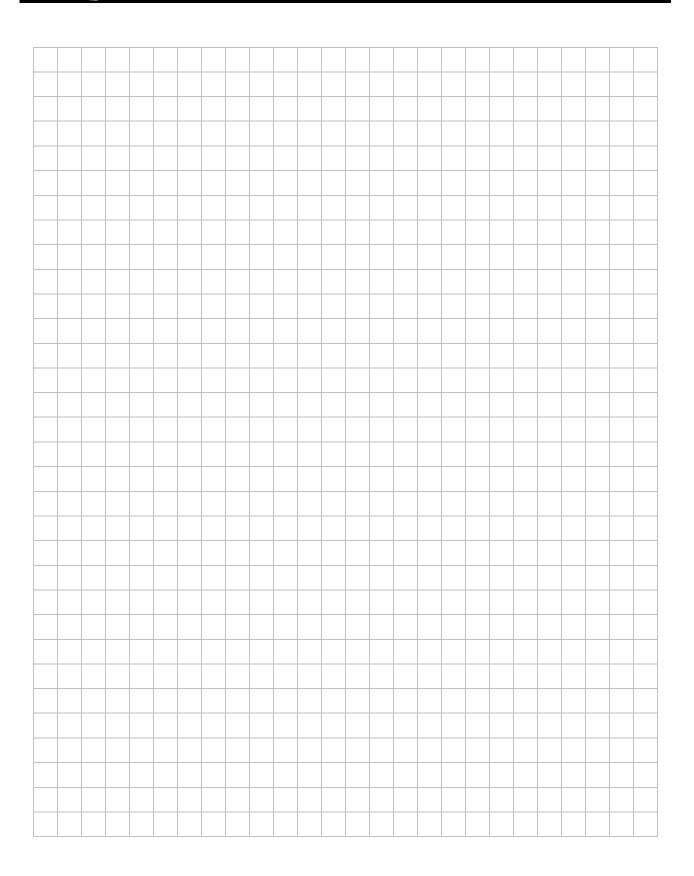


Light Option



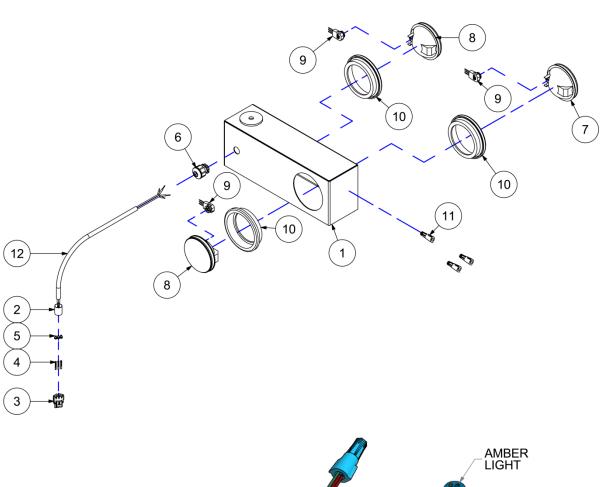
ITEM	DESCRIPTION	PART NUMBER	QTY
1	TURN SIGNAL HOUSING ASSEMBLY	22-645	2
2	WIRING HARNESS - LIGHTS	31-630	1
3	BOLT - 1/2-13 X 8.00	90-BLT-05013X800	2
4	NUT LOCK - 1/2-13	90-NUT-LOC050-13	2
5	WASHER SAE - 1/2	90-WSR-SAE050	4

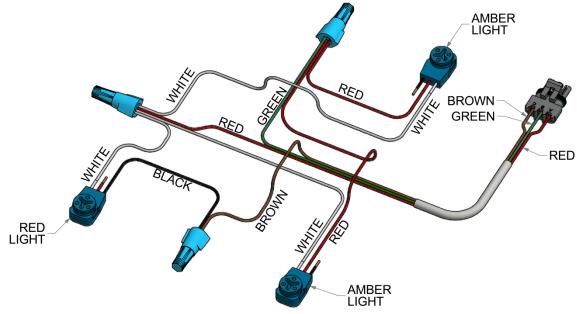






Turn Signal Housing





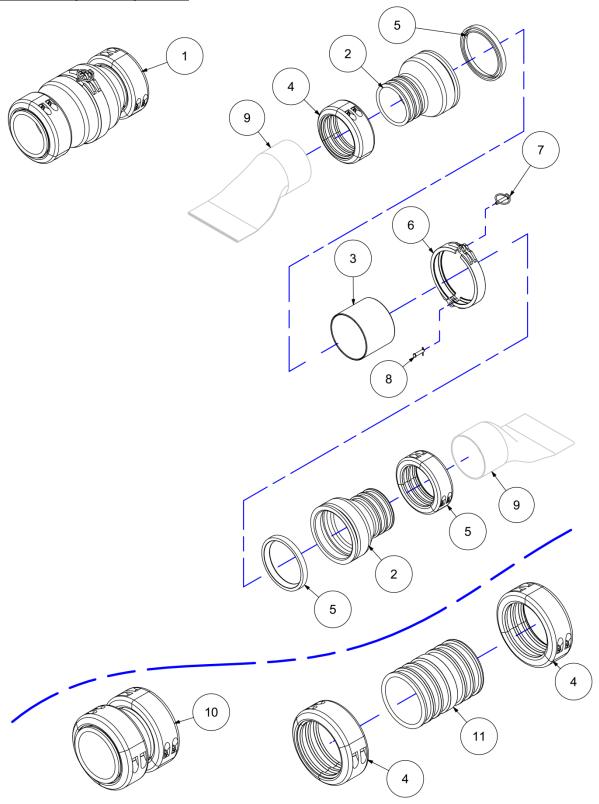


Turn Signal Housing

ITEM	DESCRIPTION	PART NUMBER	QTY
1	TURN SIGNAL HOUSING	22-613-A	1
2	HEAT SHRINK TUBING 3/4"	40-234	1
3	MALE CONNECTOR - 3-WAY	40-366	1
4	FEMALE TERMINAL - 14 GA.	40-368	3
5	WIRE SEAL GREY - 16-14 GA.	40-369	3
6	STRAIN RELIEF CONNECTOR 1/2 IN.	40-533	1
7	TAIL LAMP - 4 IN RED	40-699	1
8	TAIL LAMP - 4 IN YELLOW	40-700	2
9	PLUG PIG TAIL - 3 WIRE 90 DEG	40-701	3
10	TAIL LAMP GROMMET	40-702	3
11	SMART SEAL CONNECTOR	40-796	3
12	CABLE - 4-CONNDUCTOR	40-798	2



Hose Coupler Options





Hose Coupler Options

Item	Description	4.5 IN	5 IN
1	CADLOCK COUPLER	IR-CPL-CL45	IR-CPL-CL5
2	BARB - CADLOCK COUPLER	15-166	15-168
3	SLEEVE - CADLOCK COUPLER	15-141-A	15-141-A
4	HOSE CLAMP - CADLOCK COUPLER	IR-MIS-20068	IR-MIS-20067
5	GASKET - CADLOCK COUPLER	IR-GKT-IPS5	IR-GKT-IPS5
6	BARB CLAMP - CADLOCK COUPLER	IR-FCL-HD6	IR-FCL-HD6
7	LYNCH PIN	90-PIN-LYNCH031	90-PIN-LYNCH031
8	CLEVIS PIN	90-PIN-CL031X125	90-PIN-CL031X125
9	HOSE - CADMAN DRAG PRO	IR-HOZ-450CDL	IR-HOZ-500CDL
	HOSE - CADMAN PREMIUM	N/A	IR-HOZ-HP5
	HOSE - CADMAN STANDARD	N/A	N/A
10	HOSE MENDER	IR-DLS-45	IR-DLS-50
11	BARB - HOSE MENDER	15-174	15-173

Item	Description	6 IN	8 IN
1	CADLOCK COUPLER	IR-CPL-CL6DBL	IR-CPL-CL8
2	BARB - CADLOCK COUPLER	15-195	15-150
3	SLEEVE - CADLOCK COUPLER	15-141-A	15-146
4	HOSE CLAMP - CADLOCK COUPLER	IR-MIS-20065DBL	IR-MIS-20066
5	GASKET - CADLOCK COUPLER	IR-GKT-IPS5	IR-GKT-RW8
6	BARB CLAMP - CADLOCK COUPLER	IR-FCL-HD6	IR-FCL-HD8
7	LYNCH PIN	90-PIN-LYNCH031	90-PIN-LYNCH031
8	CLEVIS PIN	90-PIN-CL031X125	90-PIN-CL031X125
9	HOSE - CADMAN DRAG PRO	IR-HOZ-600CDL	N/A
	HOSE - CADMAN PREMIUM	IR-HOZ-600CPSL	IR-HOZ-800CPSL
	HOSE - CADMAN STANDARD	IR-HOZ-600CSSL	N/A
10	HOSE MENDER	IR-SLS-6	IR-SLS-8
11	BARB - HOSE MENDER	15-140-A	15-153

For other hose options please contact Cadman Power Equipment or your Local Dealer.

Page 57 of 62



Required Maintenance

Prevention of mechanical failure is the goal of any good maintenance schedule. The secret to preventing unwanted down time is to adhere to a maintenance schedule suited to the way you use the equipment. Your maintenance schedule should include the following minimum requirements:



Maintenance must be done ONLY when the machine is shut down and is in a non-loaded condition. This means that all mechanical and hydraulic tension has been released from the hose rewind system.

Each Use

Maintenance Item	Figure	Procedure
Visually inspect equipment		Walk around the unit and inspect for loose, missing
	(")	or damaged items. Check the condition of tongue pivot pin, chain and connecting links. Replace
		missing or damaged items and tighten loosened
Maintain the tire pressure at		items. Using a tire pressure gauge, check the pressure of
Standard 14L-16.1 SL Tire	1. 1	each tire and add or remove air to achieve the desired pressure.
44psi [303 kPa] COLD		DO NOT LOWER TIRE PRESSURE BELOW THE RECOMMENDED LEVEL.
	******	A lower pressure than the
		recommended pressure will result in the tire separating from the rim.
		DO NOT OVER INFLATE TIRE.
		Pressure higher than recommended will result in wheel failure which could
		result in serious injury and/or death.
Tighten all wheel bolts	8 1 5	Before moving the unit, verify that the wheel bolts are tight. When tightening the lug nuts use the star
	4 · 3 · 3 · 6 · 7	pattern with your torque wrench set at 150 ft/lbs [203 N.m].
	img-00132	
Adjust, if necessary, the	Figure 18	The drive chain (around the drum) is properly
alignment and tension of the drive chains		tensioned when it has no visible slack and is setting properly onto the drive sprocket when the
		drum rotates. Remove the side frame skin.
		Adjustments are made by loosening jam nut (2) with a 3/4" wrench on the spring adjustment rod.
		Tighten jam nut (1) until the required adjustment is
		achieved. Then tighten jam nut (2) against jam nut (1). Replace all guarding
Lubricate all grease fittings	Figure 19	Using a grease gun, lubricate all grease fitting with
	-	an appropriate amount of acceptable grease. (See Lubricants)

Table 1 - Required Maintenance - Each Use



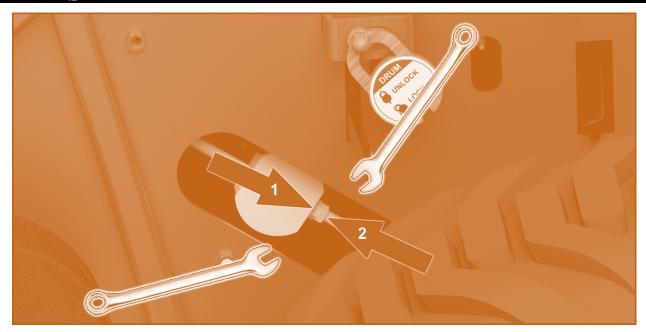


Figure 18 - Drive Chain Adjuster (left side inside frame)

img-00443-A

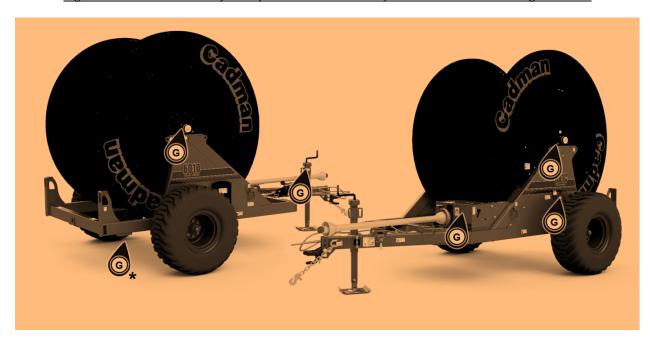


Figure 19 - Grease Points (* if equipped)

img-00437-A



Before Storing



Prior to storing the Soft Hose Caddy, Cadman Power Equipment Limited requires that you clean the hoses with a proper clean-out procedure (i.e. clean-out ball launcher or water flushing). Failure to do so WILL result in gas build up in the hoses creating a great deal of pressure. This can cause equipment failure which could result in serious injury and/or death.

Maintenance Item	Figure	Procedure
Drain and clean out the hose.	N / A	Use a clean-out ball (sold separately) following the instructions provided with the unit.
		OR
		Flush with water (minimum of 2000 gallons
		[7600 liters]) to completely purge the hose.
Clean, inspect and repack	N/A	See Spindle Assembly on page .
the main chassis wheel		Replace the seals as required
bearing.		
Lubricate all grease points.	Figure 19	Using a grease gun, lubricate all grease fitting with
		an appropriate amount of acceptable grease. (See
		Lubricants)
Lubricate all chains	N/A	Brush each chain with acceptable grease.
		(see "Lubricants")

Table 2 – Required Maintenance - Before Storing

Before Start Up (After long term storage)

Maintenance Item	Figure	Procedure
Review Operator's manual		Review this manual to refresh your memory regarding the proper operation of this machine. This will reduce the potential for equipment damage and user injury.
Complete each use maintenance	Table 1	Complete all the maintenance procedures as prescribed in the Each Use maintenance table.

Table 3 – Required Maintenance - After Long Term Storage

Lubricants

Grease:

Any good grade multi-purpose, waterproof grease is compatible with the greasing requirements of your **Cadman Soft Hose Caddy**



Technical Specifications

Approximate Soft Hose Caddy Dimensions

IMPORTANT: The dimensions shown on the following pages are only approximate. Many varying factors affect these dimensions, for example tire option, hose type, tire inflation etc.

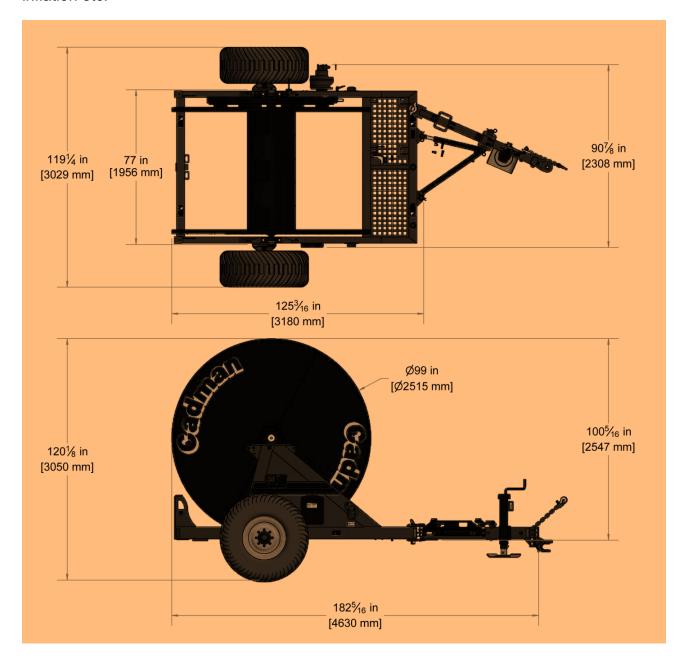


Figure 20 - Overall Dimensions

img-00428-A

The approximate weight for an empty Cadman 6010 Hose Caddy is 4211 lbs [1910 kg].



Useful Information

LENGTH

1 FOOT	= 12 = 0.3048	Inches Meter	1 METER	= 39.37 = 3.2808	Inches Feet
1 ROD	= 198 = 16.5 = 5.5 = 5.029	Inches Feet Yards Meters	1 MILE	= 5280 = 1760 = 320 = 1609	Feet Yards Rods Meters

AREA

1 SQUARE FOOT	= 144 = 0.0929	Square Inches Square Meters
1 SQUARE YARD	= 1296 = 0.8361	Square Inches Square Meters
1 SQUARE METER	= 1550 = 10.764	Square Inches Square Feet
1 ACRE	= 43560 = 4047 = 0.4047	Square Feet Square Meters Hectare
1 HECTARE	= 107639 = 10000 = 2.47105	Square Feet Square Meters Acres
1 SQUARE MILE	= 640 = 259	Acres Hectares

VOLUME

1 GALLON (US)	= 0.8327 = 231 = 0.1337 = 8.345	Imperial Gallons Cubic Inches Cubic Feet Pounds
1 CUBIC FOOT	= 1728 = 7.48 = 62.4 = 28.32	Cubic Inches Gallons (US) Pounds Liters
1 ACRE INCH	= 27154 = 254	Gallons (US) Cubic Meters / Hectare
AREA OF A CIRCLE		= Diameter x Diameter x 0.7854
CYLINDER VOLUME (US GAL.)		= Diameter (ft.) x Diameter (ft.) x Length (ft.) x

5.8752