3000 / 3250 / 3500
WIDE BODY SERIES
CADMAN TRAVELLER

OPERATOR'S PARTS and MAINTENANCE MANUAL
2007 EDITION

Cadman
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Limited
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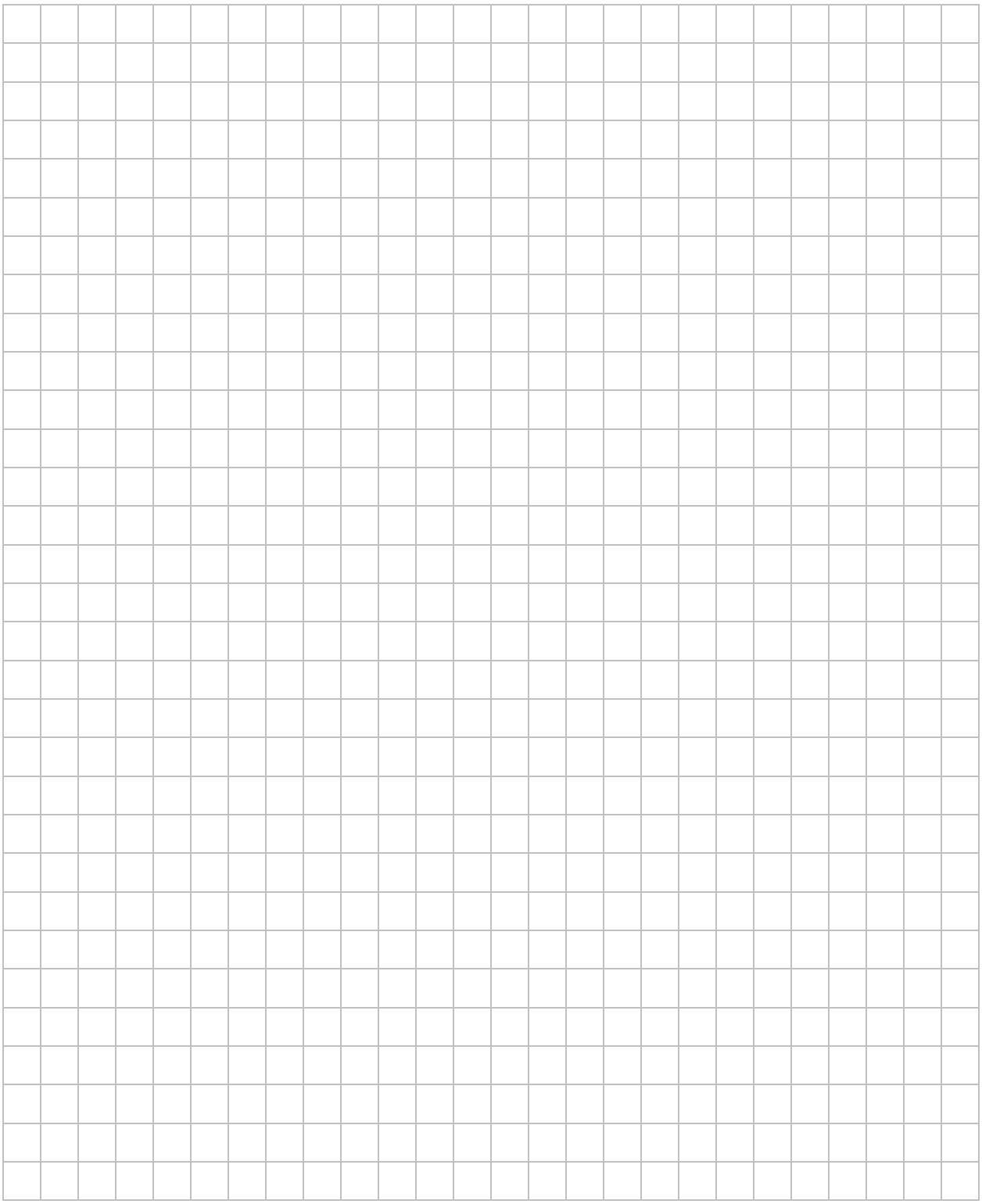
TR-MAN-3000

Table of Contents



Wide Body Series Traveller

We would like to thank you for purchasing your new **Cadman Wide Body Series Traveller**. You have purchased a product of superior quality that will serve your needs for a long time provided you follow this manual and safety procedures.

Figure 1 – 3500 Wide Body Traveller

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BEFORE operating your new **Wide Body Series Traveller**, inspect the machine for any damage or parts which may have come loose during shipping. **REPORT ANY DAMAGE TO 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.

- The polyethylene hose used on **CADMAN HARD HOSE DRAG REELS** will be warranted for a period of five (5) years from the date of delivery, on a pro-rata basis. The schedule for the polyethylene hose warranty is as follows:

  1st to **10th** month from the date of delivery is **100%**

  11th to **60th** month from the date of delivery, the warranty shall diminish from **100%** to **0%** at a rate of **2%** per month.

- **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, 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 nutrient 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 nutrient.

Safety Precautions

Please take the time to read and **understand** this manual so that unnecessary errors and risks are avoided. If you have any questions or concerns, please contact **Cadman Power Equipment Ltd.** or your local dealer/distributor.

- **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.

OPERATOR NOTE

Safety is just a word until put into practice.

Safety must be the first thing on your mind when operating any piece of machinery.

Failure to follow all safety instructions can result in serious injury or death to you or any spectators.

Remember…

SAFETY FIRST!

- **KEEP ALL SPECTATORS** at a safe distance.
- **STAY CLEAR of high pressure supply lines, especially when first pressurizing the system.**
- **STAY CLEAR** of power lines, contact with power lines with irrigation water **WILL** result in the machine being a conductor of electricity.
- **DO NOT** remove or alter any shielding on this machine.
- **BE CERTAIN** that the machine is securely anchored (using stabilizer legs) 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.
- **REGULAR INSPECTION** of your pipe 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 safety-alert symbol, indicates a hazard. When you come across this safety-alert symbol in this manual, make certain you fully understand and abide by the given instructions or warnings.

Safety Decals

The safety decals on this machine are intended to warn the operator of potential hazards. It is important that these decals are properly maintained.

- keep all safety decals legible (remove dirt or debris)
- replace any damaged or illegible decals
- replace any missing decals
- if applicable, include the current safety decal specified by **Cadman Power Equipment Limited** on any components installed during repair

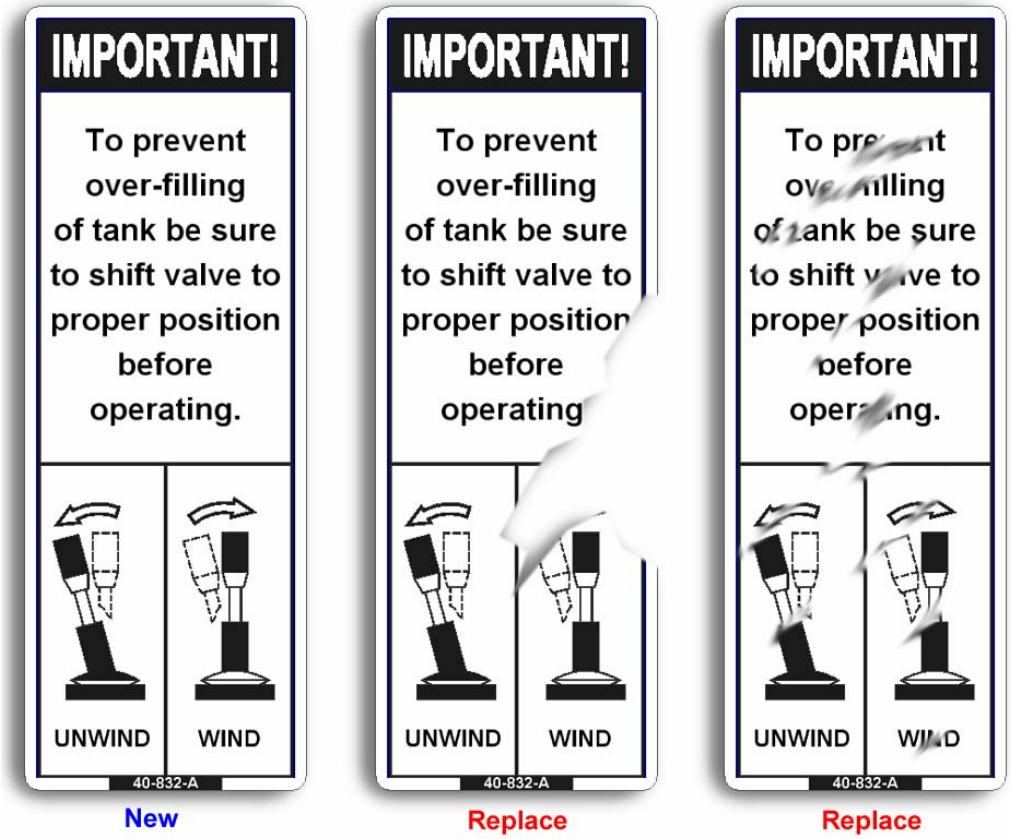

Figure 2 - Replace Decal

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To obtain the required replacement safety decals contact **Cadman Power Equipment Limited**. Re-install all decals in the proper location on the machine. For part numbers and locations please refer to the Assembly drawings of this manual.

Planning Your Application

You will benefit from having an accurate plan to follow before you set-up or operate your equipment. When creating your plan, remember that a properly planned field layout will cover the most area with the least amount of set-up time.

Field Preparation:

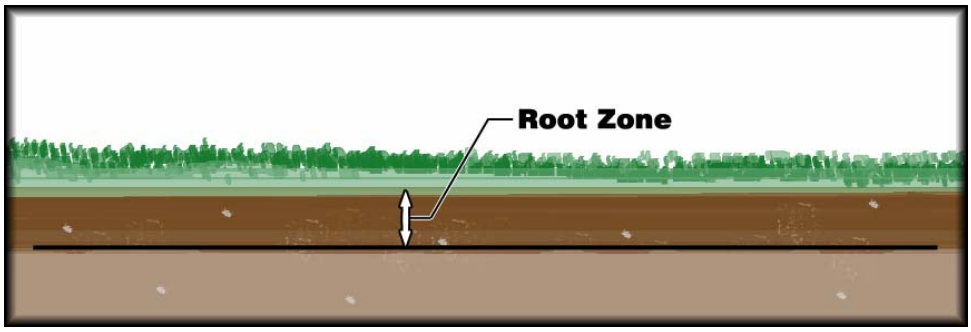
1. **Determine the depth of application in inches.**
   - Irrigating deeper than the root zone is considered over watering. This will result in lost productivity and adds to the overall cost of irrigation.
   - 

Figure 3 - Root Zone - Depth of Application

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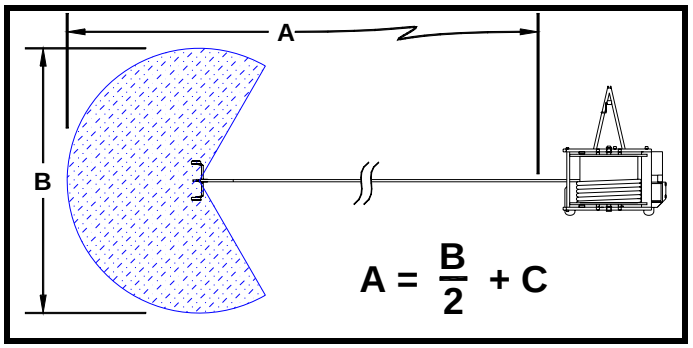
2. **Divide your field into the least number of sections to obtain complete coverage.**
   - First determine the area you plan to irrigate. If your field width is greater than what can be achieved with one (1) pull you will be required to divide the field into the least number of sections to reduce setup time. Use the performance data tables (see Table 1 on page 13) of your sprinkler gun to determine the coverage of your Traveller.



C Hose Length

3000WB = 1075ft (327m)
3250WB = 975ft (297m)
3500WB = 925ft (281m)

A = Total Irrigated Length / B = Sprinkler Diameter of Throw / C= Length of Hose (maximum)

Figure 4 - Reel Coverage

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You MUST leave as a MINIMUM one (1) coil of hose on the drum at all times. Failure to do so WILL result in hose damage.

- Several nozzle sizes are supplied with the sprinkler gun. The "best" nozzle choice for application may take some experimentation to determine. Typically, two nozzle sizes will perform well for each model. See the chart below for nozzles to try.

MODEL	NOZZLE SIZE
3000WB	0.97" or 1.08"
3250WB	1.08" or 1.18"
3500WB	1.18" or 1.24"

- Customize your application by choosing the right nozzle and pressure combination to accommodate the area to be irrigated. Changing the nozzle size and adjusting the pressure setting can improve your irrigation plan.
- Avoid quarter circle (partial pattern) operations while irrigating. During quarter circle operation, gun thrust tends to steer the gun cart in the direction of the water being thrown. Reduce the size of the gun nozzle and pressure to reduce the diameter of spray. Remember the retrieve rate **WILL** require adjustment to accommodate the reduced flow.

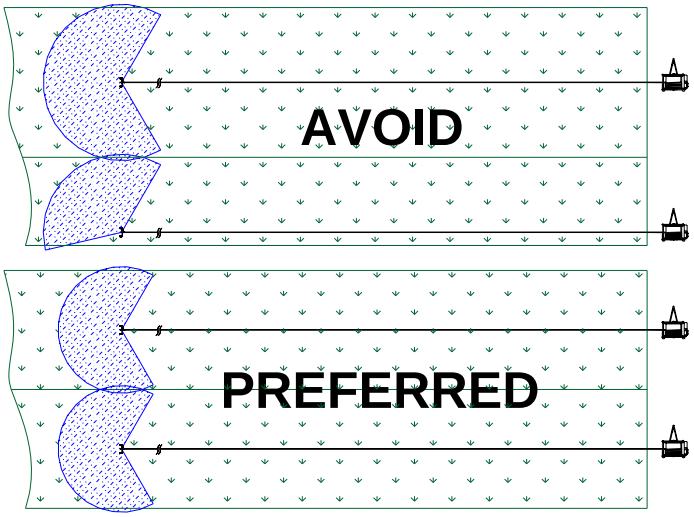

Figure 5 - Avoid Quarter Circle Applications

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OPERATOR NOTE

There are two (2) reasons for this.

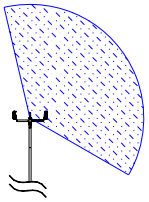
(1)

Even divisions of the field allow maximum versatility to combat rising winds from any direction.

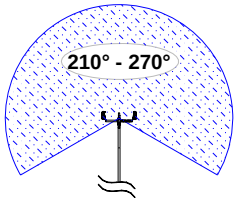
(2)

The gun cart will track straight and be less affected by gun thrust.

Partial Pattern



Full Pattern



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- If conditions dictate that a quarter circle (partial pattern) pass is unavoidable, prepare the travel lane with a shallow trench for the hose to follow. Adding extra weight to the rear of the gun cart is also beneficial. If these preparations are not possible or prove inadequate you must adjust your step up to allow for a full spray pattern.
- During normal operation, (full pattern the gun operates to both sides of the cart) gun thrust will correct this steering action automatically. The side to side movement of the cart should be no more than the width of the cart's rear tube. (where hose and gun cart are connected)

3. If a curved pull is necessary.

- If you are required to curve the hose, pull a minimum of 200 feet (61 m) of hose straight out from the machine prior to beginning a long gradual curve. The arc or curve must not form a ninety degree (90°) bend.

The hose will naturally take the shortest path (a straight line). Without resistance such as a contour, trench or a furrow the hose will tend to straighten. The gun cart will make contact with any obstacle if there is no resistance. Failure to provide a form of resistance will result in serious equipment damamge and could result in you and/or your spectators becoming injured.

4. Plan to leave open travel lanes and ample head lands.

- If you typically hill your row crops and plan to leave open travel lanes, hill and cultivate your travel lanes as well. The absence of grass and weeds will dramatically reduce the amount of towing effort and traction required to pull out the hose. The hills will also help guide the hose and cart through the field. Provide ample head land (lane way) space to allow the machine chassis to be pivoted and setup.

5. Some crops provide a great deal of resistance.

- Crops such as sod, alfalfa, potatoes and peas provide a great deal of resistance to pulling the hose. If you irrigate such a crop, consider uncoupling the feeder hose at the mainline valve and pull out the hose slightly slower. This **WILL** expel a great deal of water from the P.E. (polyethylene) hose, reducing the amount of towing effort required.

Several hundred gallons of water can be expelled. Exercise good judgement to prevent excessive muddying of the area near the chassis of the machine.

6. **Determine the best position for your reel in each section.**
   - The best start position for your reel is at the center of the furthest section away from the source of water. (see Figure 6) By doing this your subsequent setups will not require additional water source changes.

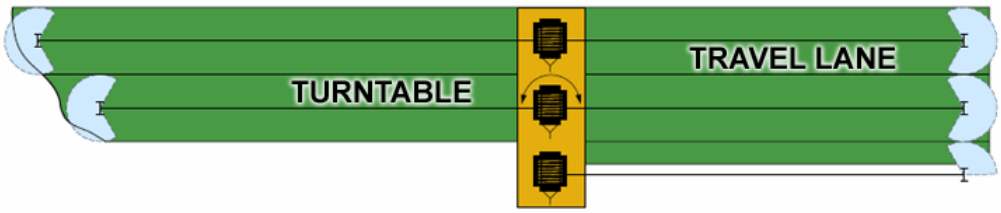

Figure 6 - Multiple Pass Setup

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   - Where field conditions permit, always attempt to pull the hose either up or down sloping terrain instead of operating on the side of a hill. If a side hill condition is unavoidable, provide a hilled trench as a guide for the hose and add extra weight to the gun cart to prevent upset.

The hose will slide down the hill if a trench is not created. The hose will become much heavier once water is introduced. Failure to provide a trench will result in serious equipment damage and could result in you and/or spectators becoming injured.

   - Obstacles will play a big part in the planning process. If an obstacle interferes with the area to be irrigated an adjustment to the plan will be required.

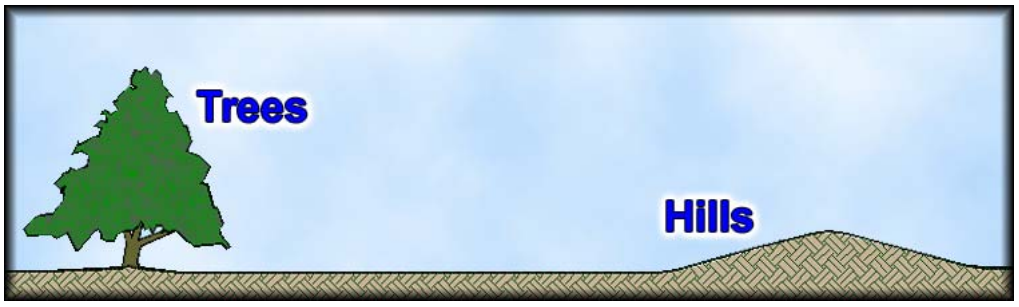

Figure 7 - Obstacles in plan

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7. **Determine the retrieve rate.**
   - With your sprinkler gun data chart, system pressure, field width and desired application depth you can choose the retrieve rate. Follow the example below.

Example of Retrieve Rate Selection

Determine the retrieve rate required to apply 0.75” to a field 250 feet in width.

A 3250 model traveller is fitted with a Nelson SR-150 gun. The gun has a **1.18” ring** nozzle operating at **70 PSI**.

- From the Nelson gun chart (Table 1 and Table 2 found on page 13), find the GPM you are pumping under the nozzle size you have in the gun. The shaded block under the 1.18” ring nozzle column tells you that the gun is flowing 245 GPM.
- From Table 3 on page 14, determine how long it should take to cover one (1) acre, in minutes, by crossing the GPM (from above) by the required application of 0.75”. The shaded block tells you that it should take 81 minutes to cover one (1) acre.
- From Table 4 on page 14, determine the retrieve rate you need to obtain the desired application of 0.75” by crossing the time required to cover one acre (81 minutes) by the lane spacing (250 feet). The shaded block tells you to set the hose retrieve rate at 26 inches per minute as a starting point.
- The gun should be set up so that the 250 foot width is covered plus sufficient overlap (beyond the edge of the crop) to provide adequate watering at the edge of the field.

Keep in mind that the charts are to be used as a guide only. Always check the actual application amount with rain gauges to confirm that the application amount is correct.

Nelson 150 Series Big Gun® 27° Trajectory

NOZZLE	0.86 RING		0.97 RING		1.08 RING		1.18 RING		1.26 RING		1.34 RING		1.41 RING	
PSI	GPM	DIA.	GPM	DIA.	GPM	DIA.	GPM	DIA.	GPM	DIA.	GPM	DIA.	GPM	DIA.
50	100	245	130	265	165	285	205	300	255	320	300	335	350	350
60	110	260	143	280	182	300	225	315	275	335	330	350	385	365
70	120	270	155	290	197	310	245	330	295	350	355	365	415	380
80	128	280	165	300	210	320	260	340	315	360	380	380	445	395
90	135	290	175	310	223	330	275	350	335	370	405	390	475	405
100	143	300	185	320	235	340	290	360	355	380	425	400	500	415
110	150	310	195	330	247	350	305	370	370	390	445	410	525	425
120	157	315	204	335	258	360	320	380	385	400	465	420	545	435

Table 1 - Nelson 150 Series Big Gun® (Ring)

NOZZLE	0.7 TAPER		0.8 TAPER		0.9 TAPER		1.0 TAPER		1.1 TAPER		1.2 TAPER		1.3 TAPER	
PSI	GPM	DIA.	GPM	DIA.	GPM	DIA.	GPM	DIA.	GPM	DIA.	GPM	DIA.	GPM	DIA.
50	100	250	130	270	165	290	205	310	255	330	300	345	350	360
60	110	265	143	285	182	305	225	325	275	345	330	365	385	380
70	120	280	155	300	197	320	245	340	295	360	355	380	415	395
80	128	290	165	310	210	3350	260	355	315	375	380	395	445	410
90	135	300	175	320	223	345	275	365	335	390	405	410	475	425
100	143	310	185	330	235	355	290	375	355	400	425	420	500	440
110	150	320	195	340	247	365	305	385	370	410	445	430	525	450
120	157	330	204	350	258	375	320	395	385	420	465	440	545	460

Table 2 - Nelson 150 Series Big Gun® (Taper)

The diameter of throw is approximately 2% less for the 24® trajectory angle and 5% less for the 21° trajectory angle. The NELSON BIG GUN® performance data has been obtained under ideal test conditions and may be adversely affected by wind, poor hydraulic entrance conditions or other factors. Nelson Irrigation Corporation makes no representation regarding droplet condition, uniformity or application rate.

	PRECIPITATION RATE (ACRE INCHES)								
GPM	0.20"	0.30"	0.40"	0.50"	0.75"	1.00"	1.25"	1.50"	2.00"
150	36	54	72	91	136	181	226	272	***
175	31	47	62	78	116	155	194	233	***
200	27	41	54	68	102	136	170	204	272
225	24	36	48	60	91	121	151	181	241
250	22	33	43	54	81	109	136	163	217
275	20	30	39	49	74	99	123	148	197
300	18	27	36	45	68	91	113	136	181
350	16	23	31	39	58	78	97	116	155
400	***	20	27	34	51	68	85	102	136
450	***	18	24	30	45	60	75	91	121
500	***	16	22	27	41	54	68	81	109
550	***	15	20	25	37	49	62	74	99
600	***	***	18	23	34	45	57	68	91
650	***	***	17	21	31	42	52	63	84

Table 3 - Minutes Required to Water One (1) Acre

MIN. /	LANE SPACING (FEET)								
ACRE	200	225	250	275	300	325	350	375	400
15	***	***	***	127	116	107	100	93	87
20	***	116	105	95	87	80	75	70	65
25	105	93	84	76	70	64	60	56	52
30	87	77	70	63	58	54	50	46	44
35	75	66	60	54	50	46	43	40	37
40	65	58	52	48	44	40	37	35	33
45	58	52	46	42	39	36	33	31	29
50	52	46	42	38	35	32	30	28	26
60	44	39	35	32	29	27	25	23	22
70	37	33	30	27	25	23	21	20	19
80	33	29	26	24	22	20	19	17	16
90	29	26	23	21	19	18	17	15	15
100	26	23	21	19	17	16	15	14	13
125	21	19	17	15	14	13	12	11	10
150	17	15	14	13	12	11	10	***	***
175	15	13	12	11	10	***	***	***	***
200	13	12	10	10	***	***	***	***	***
225	12	10	***	***	***	***	***	***	***
250	10	***	***	***	***	***	***	***	***

Table 4 - Retrieve Rate (Inches per Minute)

Equipment Set-up

Now that you have created a plan you are ready to set up your **Wide Body Series Traveller** in the field. Complete the following instructions to prepare for irrigation.

Step 1

Following your plan, tow the machine to the first section.

It is important to verify that the drive system is engaged and the engine fuel valve is in the OFF position prior to moving your Wide Body Traveller. Failure to do so can result in equipment damage.

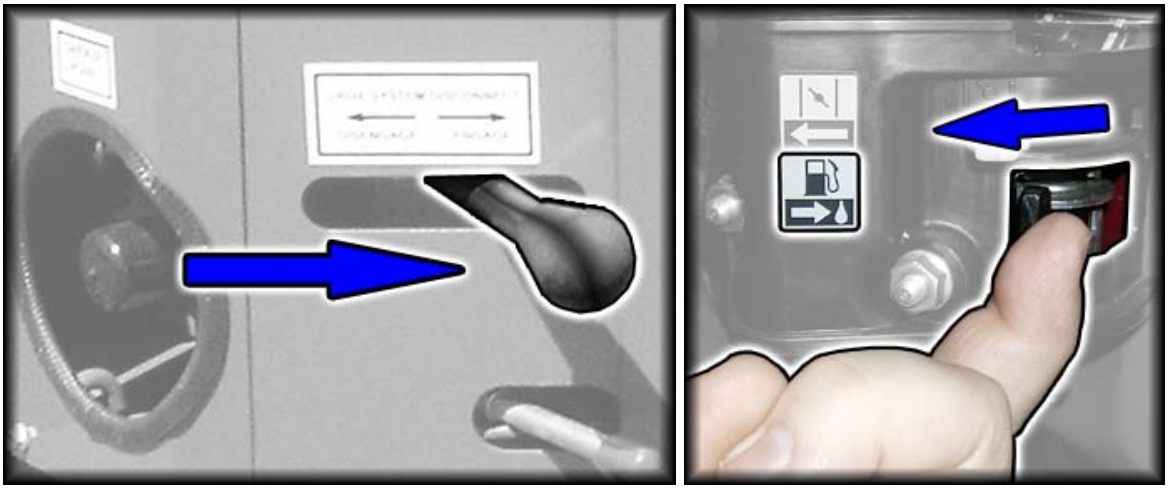

Figure 8 - Engage Drive System Prior to Transport / Shut Fuel Valve

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For the first use of a new machine or a machine which has been drained prior to storage, start in an area which will allow you to pull out the full length of hose (EXCEPT for one full coil). This will allow you to be sure that the hose is properly laid on the base layer and properly indexed.

If you are unable to pull out all of the hose in the area you are working, pull out enough hose to reach the base layer. This will allow you to see if the coils of hose in the base layer are stacked tightly together. If the hose is found to be improperly indexed (the hose tries to climb up on itself or gaps exist between the coils of hose), complete the Indexing System Adjustment found on page 87.

Low pressure operation can cause indexing problems. The hose indexing system of your Cadman Traveller is set up to properly index the polyethylene hose onto the hose drum under most operating conditions. However, when operating at very low inlet pressures (110 PSI or less), the P.E. (polyethylene) hose can flatten slightly causing the indexing system to appear to be either out of adjustment or not functioning properly. This is probably not the case in this circumstance.

It is advisable to increase the inlet pressure at the machine to at least 110 PSI to help prevent further hose indexing problems related to low inlet pressures.

Step 2

Park the traveller on the head land (lane way) at right angles to the row to be irrigated. Keep the machine on firm and level ground. Use the tongue jack to level the frame prior to machine operation.

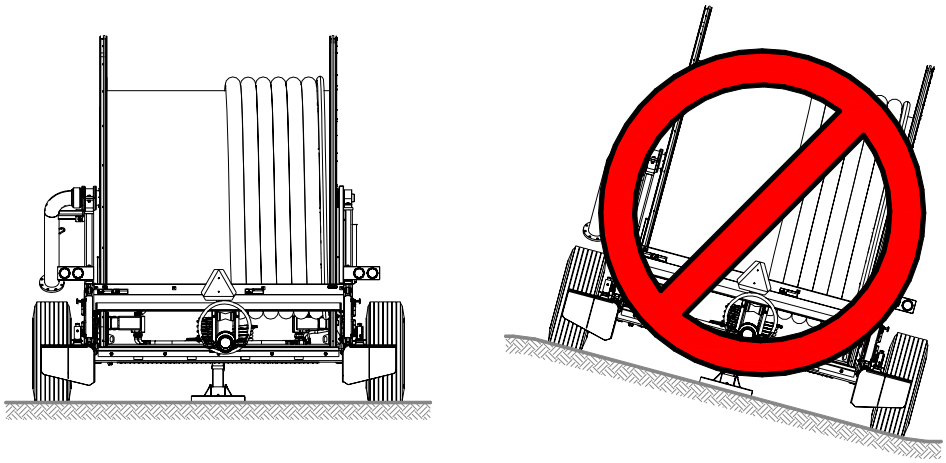

Figure 9 - Work on firm and level ground (image exaggerated)

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Step 3

Release the turntable lock and rotate the upper frame to the desired operation position and re-engage the turntable lock.

Figure 10 – Rotate Upper Frame

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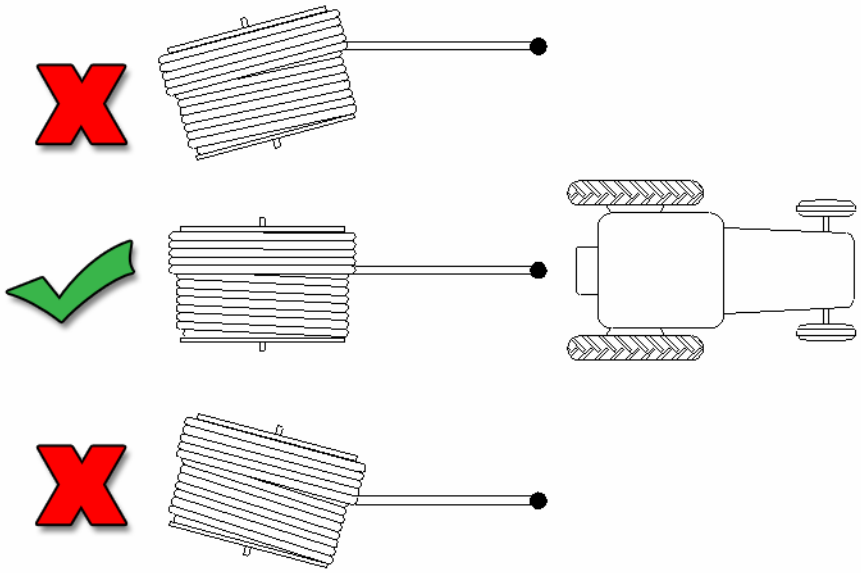

Figure 11 - Correct Upper Frame Position

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The upper frame position MUST allow the hose to be pulled out striaght from the machine. Adjust the upper frame position if necessary to insure proper unreeling of the hose. Failure to have the correct upper frame position will result in equipment damage.

Step 4

Stabilize your machine by fully engaging the stabilizers.

Figure 12 - Engage Stabilizers

img-00241.png

Lower **BOTH** Stabilizer legs. Remove the leg pin **"A"** (see Figure 12 above) allowing the drop leg to extend.

Replace the pin in one of the available holes so that when the stabilizer is extended, the drop leg and extension leg will be approximately equal length. This will balance the side loading of the stabilizer and help to prevent damage caused by over-extending one of the inner jack legs. Repeat these steps for the other stabilizer.

Never operate this machine without <u>BOTH (2)</u> stabilizers engaged. Failure to engage both stabilizers will result in serious equipment damage and potential for injuries to you and/or spectators.

If a rear pull is needed, provisions MUST be made to leave the tractor attached to the tongue of the machine. The tractor must be left in gear and the parking brake engaged. This provides extra anchoring in addition to the stabilizer legs during the retrieve cycle.

Step 5

Shift the transmission lever to the disengaged position.

Figure 13 – Disengage Drive System

img-00242.png

Step 6

Adjust the brake handle position so that a slight amount of brake tension is applied. This tension should be enough to control the hose drum and prevent loosening of the hose on the drum when the tractor stops pulling the hose.

Figure 14 - Adjust Brake Tension

img-00243.png

Step 7

Set the gun cart track width as wide as possible to maximize stability.

With gun flows exceeding 240 gallons per minute, or when operating on uneven terrain, additional weight **MUST** be added to maintain gun cart stability and help prevent gun cart upset.

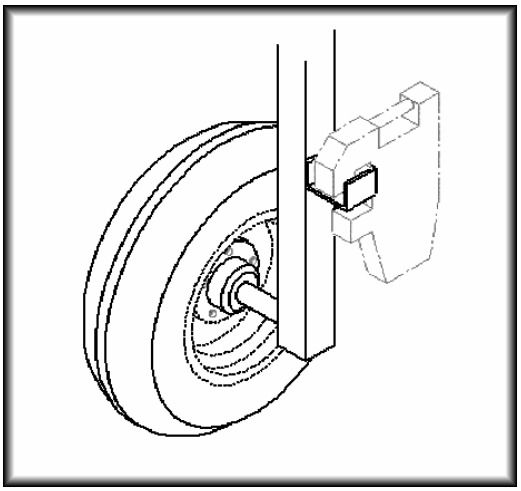


Figure 15 - Gun Cart Weight

img-00258.png

Additional weight may be gained by “loading” the rear gun cart tires and/or using tractor front end weights as required.

Lower the cart to the ground by operating the hand winch on the cart lift assembly. Disconnect the lift chain from the cart.

Step 8

Move the tractor from the front of the machine, position it behind the gun cart and attach the gun cart tow chain to the tractor drawbar.

Step 9

Tow the gun cart to the start point of irrigation. Always leave as a minimum one (1) wrap of hose on the drum. When pulling the hose out keep it straight. (See Figure 16 on page 21)

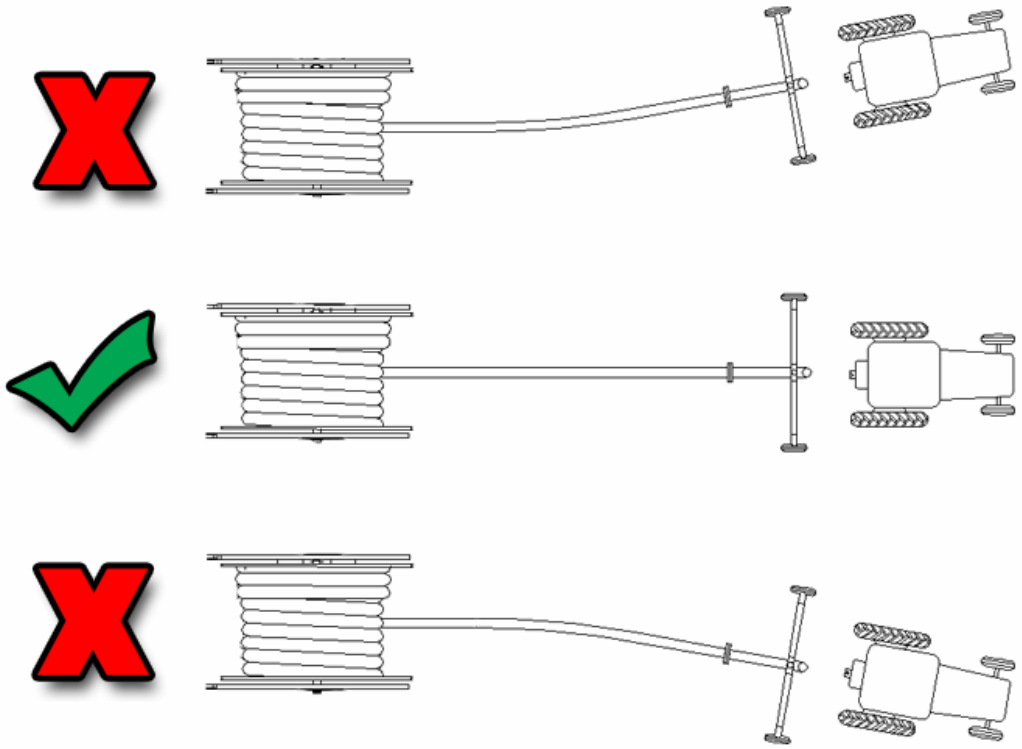


Figure 16 - Pull Out Hose Straight

img-00244.png

DO NOT exceed 3 mph (5 km/h) while pulling out the hose. DO NOT stop suddenly at the end of your travel lane. Slow gradually when nearing the end of the pull. Keep spectators away from the machine while pulling out the hose. Failure to follow these instructions may result in serious equipment damage and potential for injuries to you and/or spectators.

Step 10

Verify the gun set up is correct. Install the correct nozzle and tighten the nozzle cone. Also at this time, set the part circle stops on the gun. The gun should be set behind the cart so that the travel path remains dry until the cart passes.

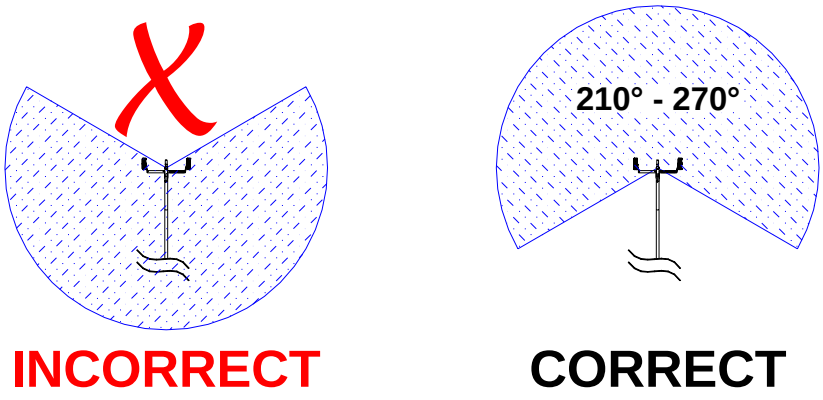


Figure 17 - Correct Spray Setting

img-00201.wmf

If the gun is set so that it rotates forward of the rear wheels of the cart (towards the reel), stop the retrieve cycle no less that 10 Feet (3 m) out from the machine in order to prevent gun damage caused by the gun hitting the cart lift assembly.

Step 11

Remove the tractor from the gun cart and clear the area of operation. Return to the machine and inspect the hose remaining on the drum. The hose should be tightly coiled and not loose. If the hose is loose, tighten the coils so that they form a neatly packed spool. Rotate the drum with the hand crank if necessary.

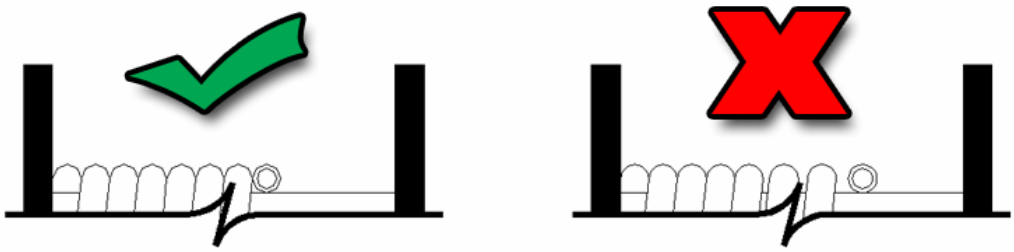


Figure 18 - Spool Condition

img-00245.png

DO NOT leave the hand crank on the drive shaft. REMOVE IT IMMEDIATELY after use. Failure to remove the hand crank may result in injuries to you and/or spectators.

Step 12

Inspect the indexer. The hose should travel in a straight line through the hose guide. If the hose is angled through the indexer refer to the **"Indexing System Adjustment"** found on page 87.

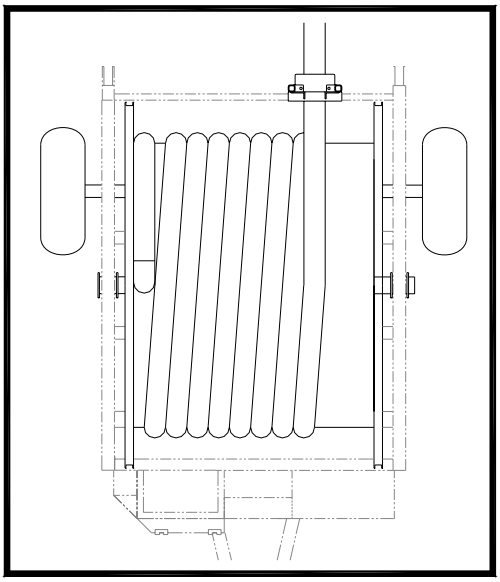


Figure 19 - Indexer/Hose Alignment

img-00238.wmf

Step 13

Adjust the brake handle to the full "**ON**" position after ensuring that the hose is tight.

Figure 20 - Adjust Brake Tension

img-00243.png

Step 14

GRADUAL pressurization of the system may now begin. Keep the pressure low (under 50 PSI) until **ALL** the air is purged from the system and a steady stream is flowing from the gun nozzle. **AFTER** all the air is purged from the system, pressure may be slowly raised to a maximum of **150 PSI** at the inlet of the machine.

Ideally, operating pressures at the inlet will be between 120 PSI and 150 PSI. This will allow gun pressures ranging from approximately 50 PSI to 110 PSI (depending on nozzle size, hose size and length). Assuming proper nozzle selection has been made based on the pressure and flow volume available, proper droplet sizing and proper gun action, an even and uniform watering pattern will result.

The irrigation gun projects a large volume of pressurized water. Contact with the gun's discharge will result in injury. Avoid the area where irrigation is taking place.

Step 15

Check the mainline and inlet elbow connections.

Beginning the Retrieve Cycle

Once you have successfully set up your **Wide Body Series Traveller** you can begin irrigating.

Step 1

Check the engine oil and fuel levels.

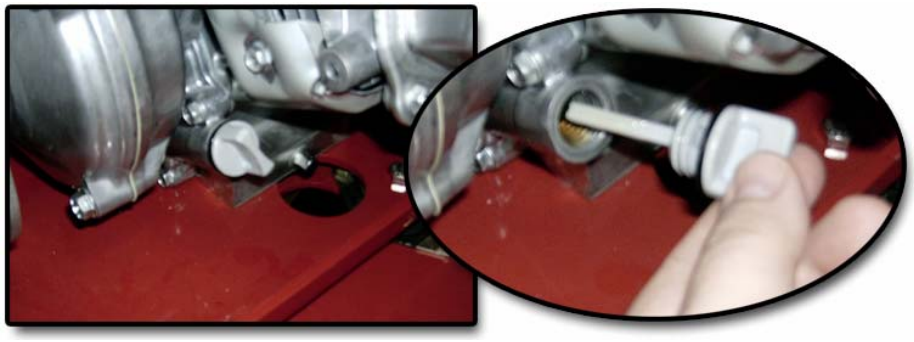


Figure 21 – Check Engine Oil

img-00246.png

Step 2

Open the fuel valve on the engine, Move the **ON/OFF** switch to the "**ON**" position and start the engine.

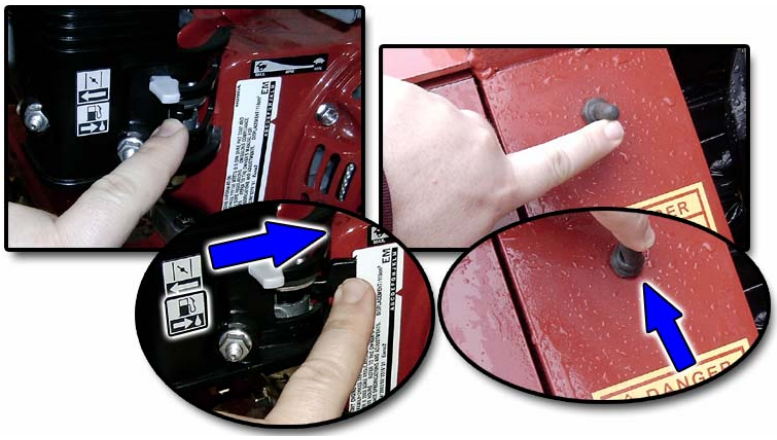


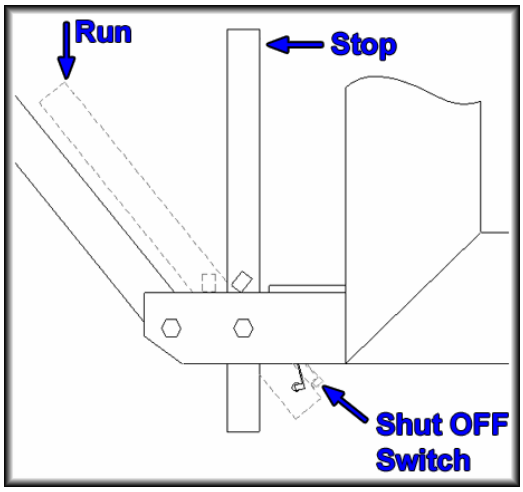
Figure 22 - Fuel Valve / ON/OFF Switch

img-00247.png

If after several attempts, the engine fails to start, check the shut off bar at the opposite end of the machine to insure that BOTH shut off switches are depressed. The engine WILL NOT START if either switch is released.

Step 3

After engine is running smoothly, Check to ensure that all three (3) engine shut off and safety switches are functioning properly.



To check the shut off switches, lift the shut off bar to a vertical position, while manually holding one (1) of the two (2) switches in the depressed position. The engine should shut off as the opposite switch releases. Re-start the engine and repeat the test for the opposite switch.

Figure 23 - Shut OFF Bar - Shut OFF Switches

img-00248.png

Pull the compensator frame away from the hose drum. As the frame clears the outer edge of the drum, the engine should shut off.

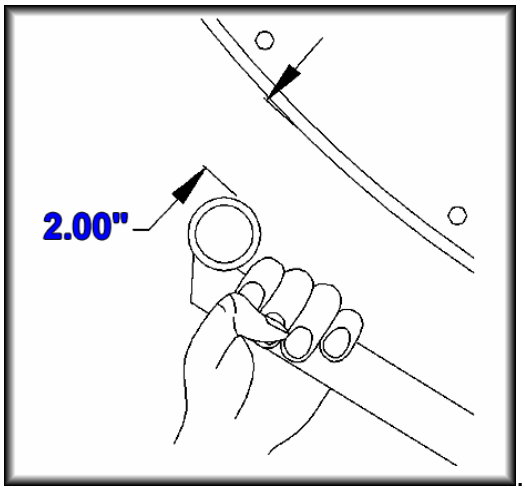
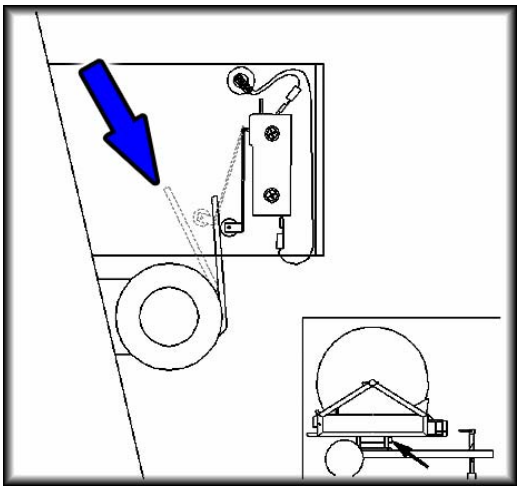


Figure 24 - Compensator - Shut OFF Switches

img-00249.png



If the engine does not shut off at this point, adjust the elevator bolt (arrow) so that the engine will.

Figure 25 - Compensator - Shut OFF Switches

img-00250.png

Step 4

Check the adjustment of the compensator system when the machine is first put into service and periodically during normal use to insure accuracy. The following outlines the set-up routine and operation of the compensator system.

When the engine is first started after pulling out the hose, the pulley cam should rotate, positioning it for the start of the retrieve cycle. The cam rollers should now be near the top of the ramp (see illustration)

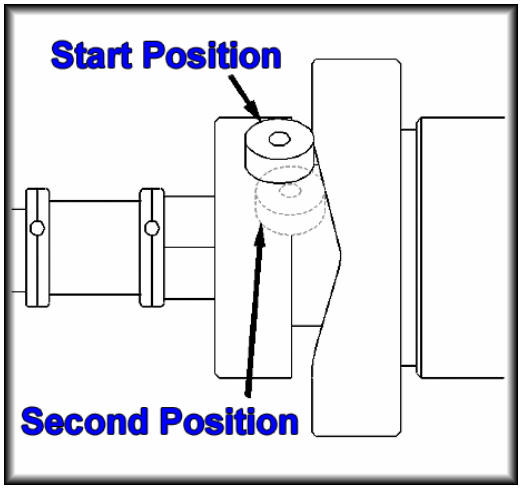
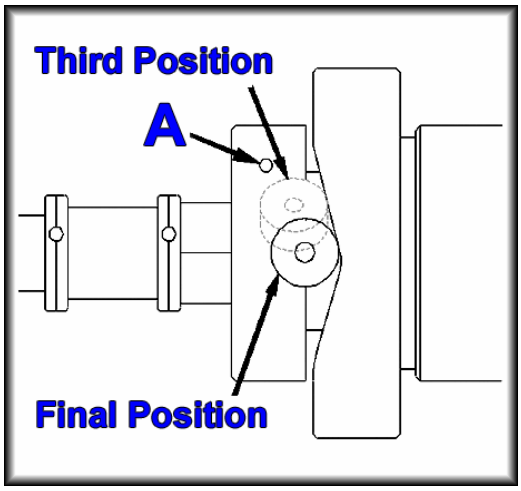


Figure 26 – Compensator Pulley Cam - Start Position

img-00251.png



During the hose retrieve cycle, the compensator frame rests against the hose on the drum. As each layer of hose is rewound, the compensator frame moves outward with the hose. This movement causes the pulley cam to rotate a measured amount, allowing the pulley to open slightly. This changes the diameter of the pulley. The change in pulley diameter changes the overall drive ratio which keeps the hose retrieve rate constant (compensating for the increase in net drum diameter). This process repeats for each layer of hose.

Figure 27 – Compensator Pulley Cam - Final Position

img-00252.png

As the hose is un-spooled to prepare for the next irrigation cycle, the compensator frame will follow the hose level. At this time, the compensator control cable, the cable drive arm, and the pulley cam do not move (the engine pulley cannot close against the drive belt). As soon as the engine is started, the reset spring will cause the pulley cam to return to its “START” position (at the top of the cam ramp). If the cam does not reposition properly it can be adjusted. This is accomplished by changing the length of the push-rod.

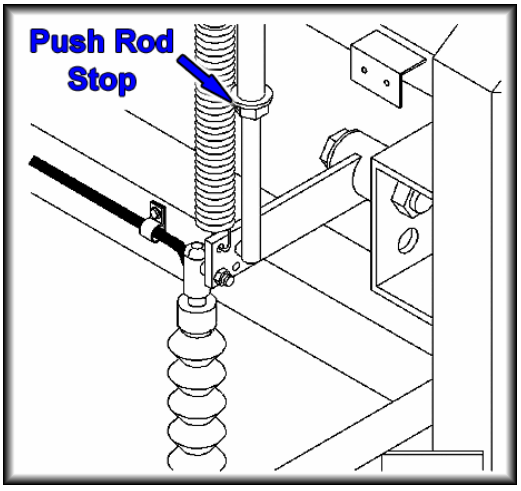


Figure 28 – Push Rod Stop

img-00253.png

Step 5

Select a retrieve rate to achieve the desired application rate. (See Example of Retrieve Rate Selection on page 12).

Step 6

With the engine running adjust the pulley control knob until the speedometer reads the required retrieve rate (from Step 5).

Figure 29 - Control Knob / Speedometer

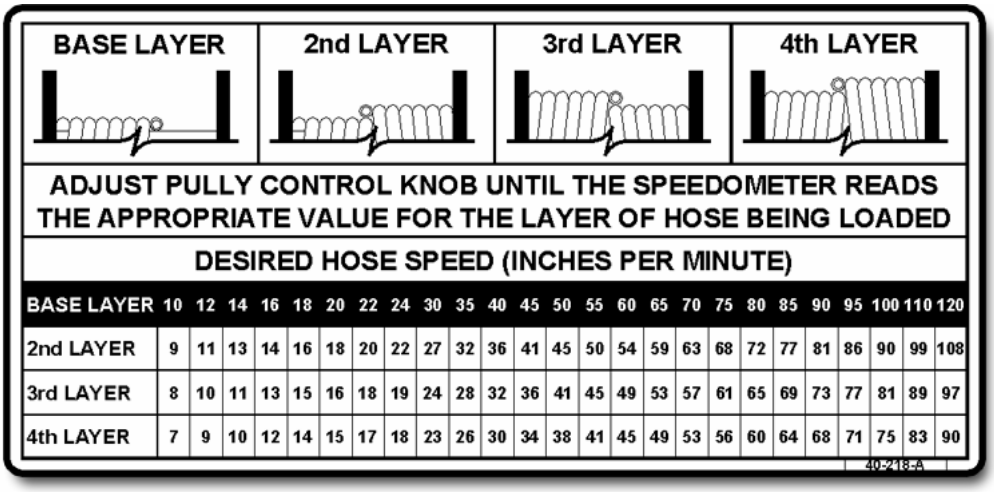
img-00254.png

DO NOT adjust the pulley control knob unless the engine is running. Permanent damage to the pulley may result.

The control knob should maintain its position when released. If the control knob position changes on its own, an increase in drag on the control stem may be gained by tightening the drag adjustment screw. (Arrow “A”, Figure 27 on page 28)

The speedometer reads actual hose speed ONLY on the base (1st) layer of hose.

If the retrieve rate is set or checked on the second, third, or fourth layer, the desired retrieve rate must be set to the “corrected value” for the layer being loaded. This is easily done by referring to the chart decal next to the speedometer. This “corrected value” is read directly from the speedometer.



BASE LAYER	10	12	14	16	18	20	22	24	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	110	120
2nd LAYER	9	11	13	14	16	18	20	22	27	32	36	41	45	50	54	59	63	68	72	77	81	86	90	99	108
3rd LAYER	8	10	11	13	15	16	18	19	24	28	32	36	41	45	49	53	57	61	65	69	73	77	81	89	97
4th LAYER	7	9	10	12	14	15	17	18	23	26	30	34	38	41	45	49	53	56	60	64	68	71	75	83	90

Figure 30 - Speed Conversion Chart Label

img-00255.png

Example

- The desired retrieve rate is 30 inches per minute. The hose is on the second layer when the speed is set. On the **SPEED CONVERSION CHART**, find 30 inches per minute in the line labeled **BASE LAYER**. Read the corrected speed value on the **2ND LAYER** line in the 30 inches per minute column.
- Set the speed so the speedometer reads this corrected value (27).
- The actual hose speed will be 30 inches per minute

If you are unsure of your retrieve rate for any reason, manually check the retrieve rate by measuring the hose movement over a three (3) minute period and average this measurement (divide by 3).

Step 7

Shift the transmission lever to engage the drive system.

Figure 31 - Engage Transmission

img-00257.png

Step 8

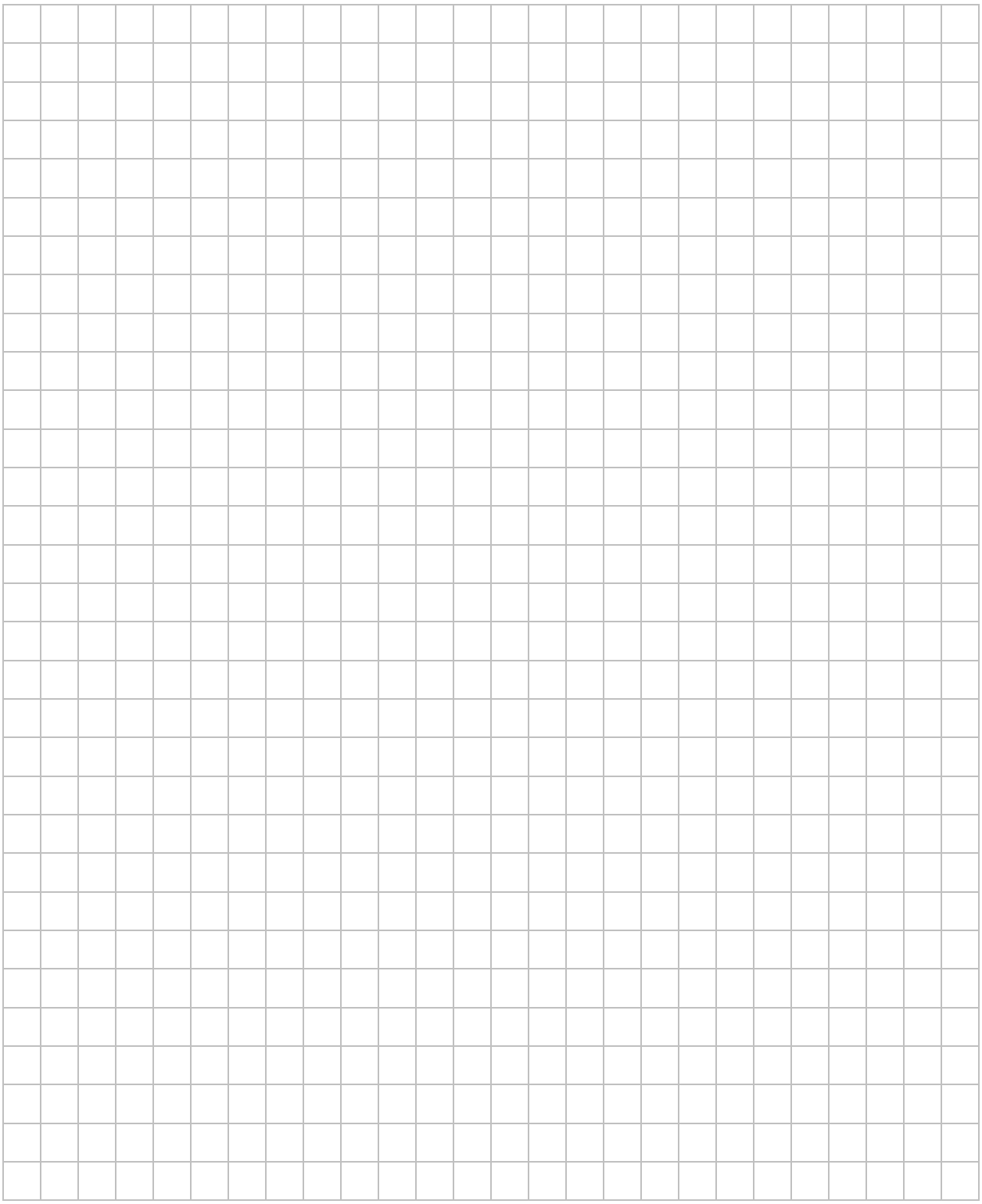
Fully release the brake.

Figure 32 - Release Brake

img-00256.png

Step 9

Make a thorough visual inspection of the of the machine's function to insure proper operation.



Parts Section

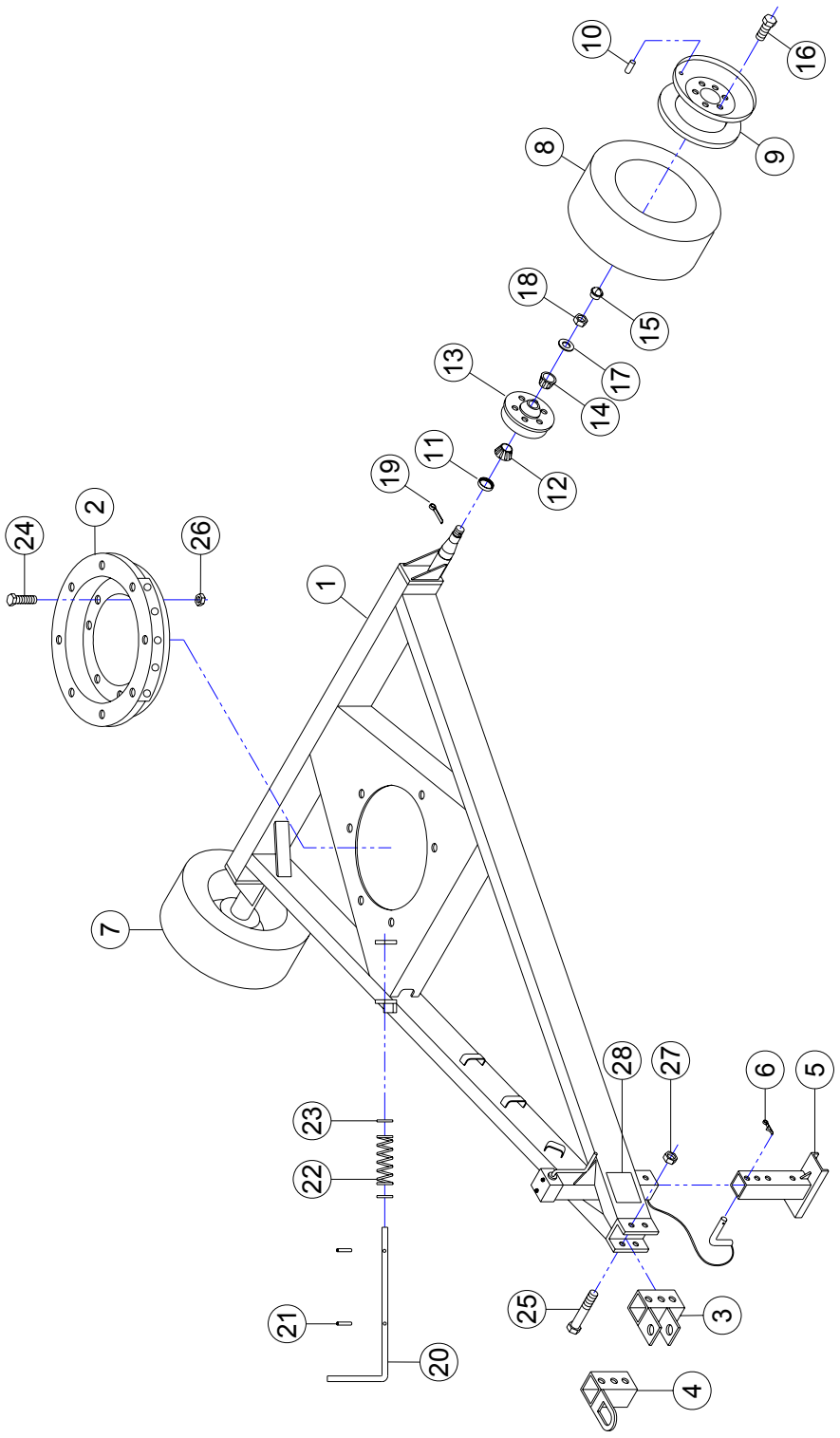
From Serial Number:

0019901_ _ _ _WB - 3000WB / 3250WB / 3500WB

∗ All assemblies marked with an asterisk are optional equipment.

Frame Assembly – Lower

All

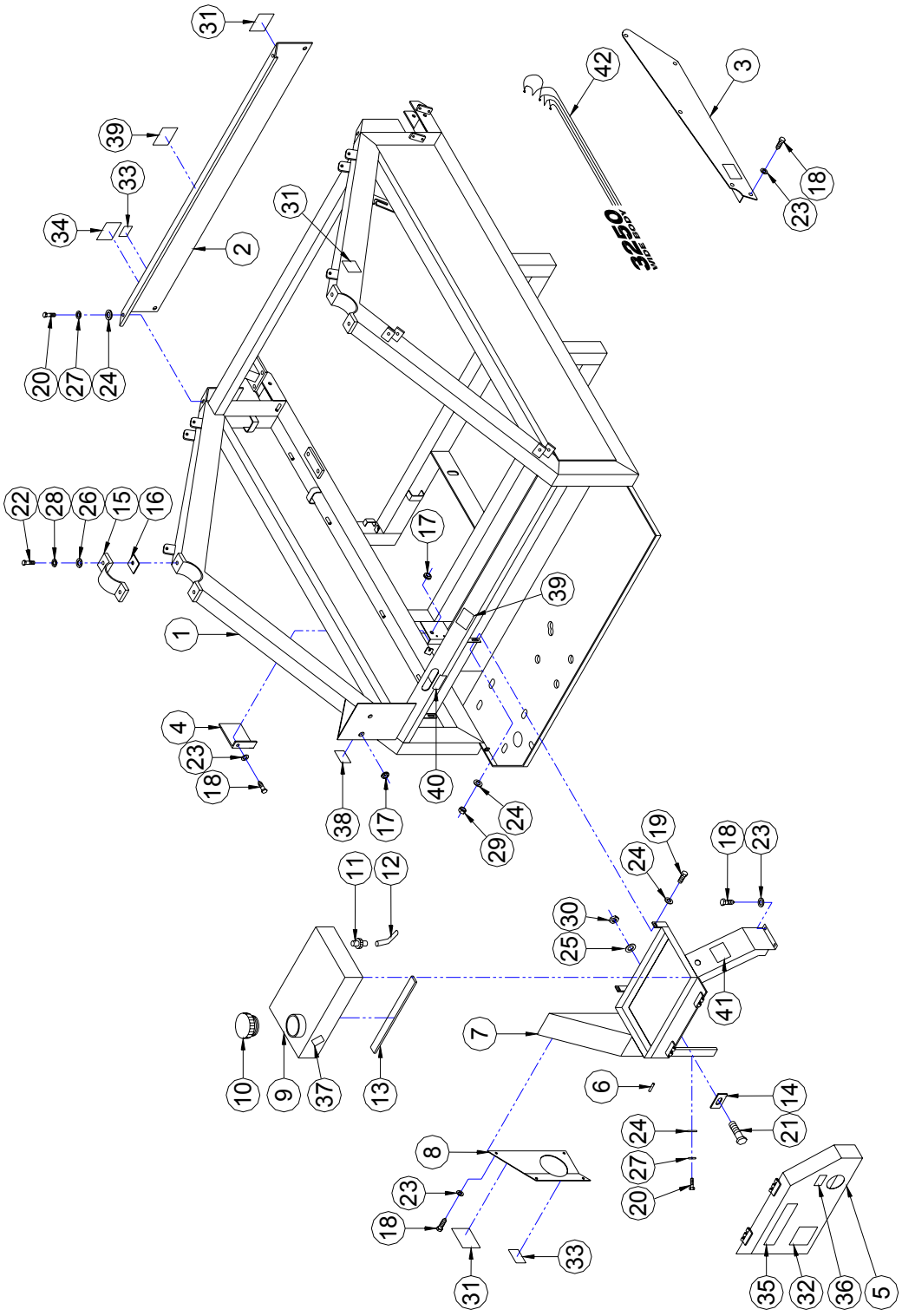


Frame Assembly – Lower *All*

Item	Description	Part Number	Qty
1	LOWER FRAME	07-100-99	1
2	TURNTABLE RING	07-602-A	1
3	CLEVIS HITCH (STANDARD)	01-111-A	1
4	PINTLE HITCH (OPTIONAL)	02-662	1
5	JACK DROP LEG	40-122-A	1
6	HAIR PIN CLIP	90-PIN-HP016X331	1
7	**WHEEL ASSEMBLY CONSISTING OF;**	**55-047**	**2**
8	TIRE, 11L-15 8 PLY. TUBELESS	55-048	1
9	RIM, 15 X 10 X 6 BOLT, H.D.	55-049	1
10	VALVE STEM	55-046	1
	HUB ASSEMBLY CONSISTING OF;	**55-026**	**2**
11	GREASE SEAL	55-033	1
12	BEARING CONE, INNER	55-028	1
-	BEARING CUP, INNER (NOT SHOWN)	55-027	1
13	HUB, 6-BOLT	55-026-A	1
14	BEARING CONE, OUTER	55-030	1
-	BEARING CUP, OUTER (NOT SHOWN)	55-029	1
15	DUST CAP	55-031	1
16	WHEEL BOLT, 9/16"-18	55-032	6
17	SPINDLE WASHER, 1.00"	55-016	2
18	SPINDLE NUT	55-034	2
19	COTTER PIN, 3/16" X 1 3/4" LG.	90-PIN-CT018X175	2
20	LOCK PIN, PLATED	07-601	1
21	ROLL PIN, 3/16" X 1 1/2" LG.	90-PIN-RL018X150	2
22	COMPRESSION SPRING (TURNTABLE)	40-053	1
23	SAE FLAT WASHER, 3/4"	90-WSR-SAE075	2
24	BOLT, 1/2" X 1 1/2" LG.	90-BLT-05013X125	6
25	BOLT, 3/4" X 4 1/2" LG.	90-BLT-07510X450	2
26	LOCKNUT, 1/2"-13	90-NUT-LOC050-13	6
27	LOCKNUT, 3/4"-10	90-NUT-HEX075-10	2
28	LABEL – MAX TOW SPEED	40-291-A	1

Frame Assembly – Upper

All



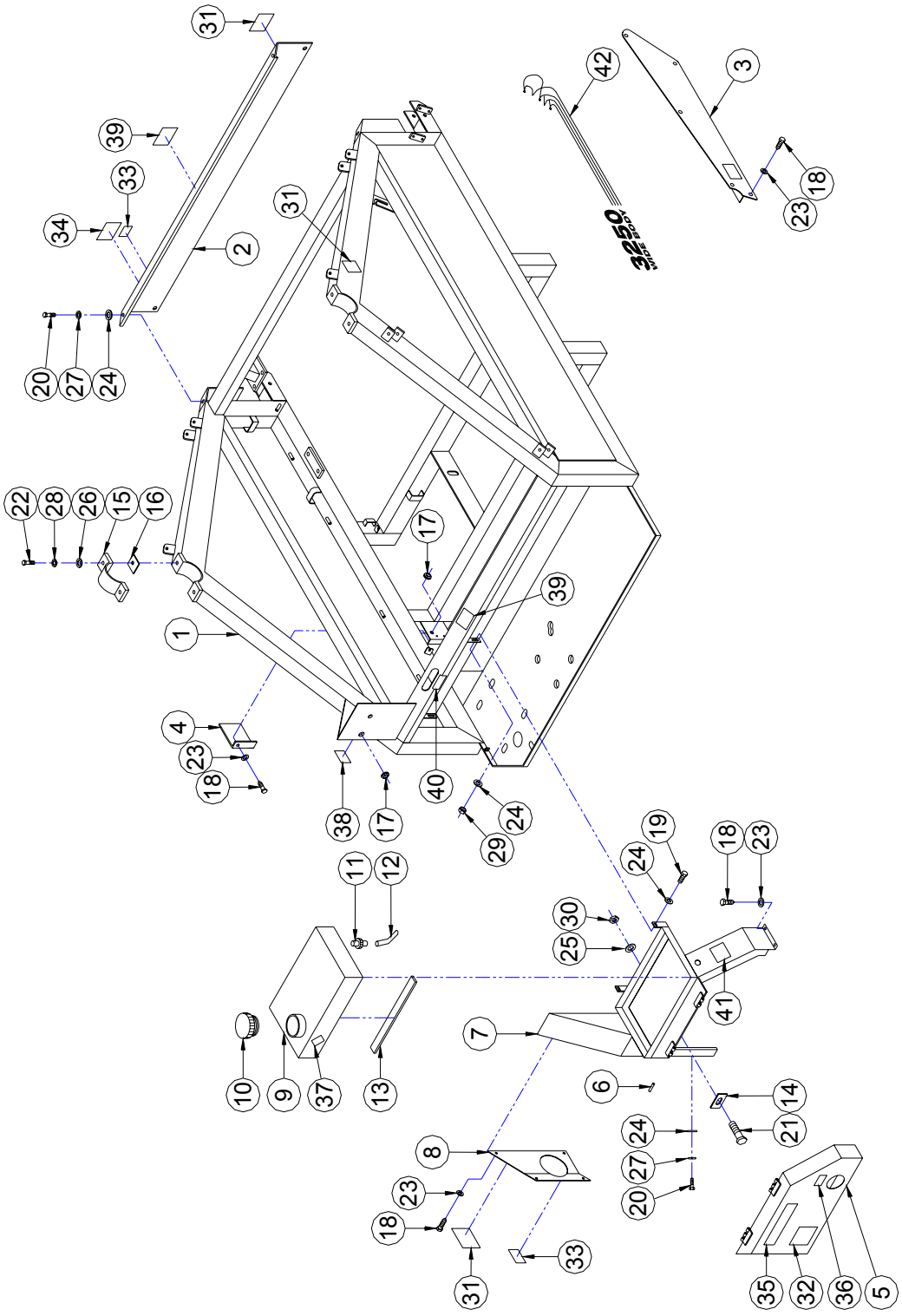
Frame Assembly – Upper *All*

Item	Description	Part Number	Qty
1	UPPER FRAME	07-400-03	1
2	INDEXER SHIELD	07-685-A	1
3	IDLER SHIELD	07-625-B	1
4	SAFETY SWITCH COVER	07-643-A	1
5	DRIVE COVER DOOR	07-677-A	1
6	BRASS HINGE PIN, 3/16" X 3" LONG	40-200-C	2
7	FUEL TANK CRADLE	07-676-C	1
8	END COVER	07-678	1
9	FUEL TANK, 3.0 IMP. GAL.	40-175	1
10	GAS CAP, VENTED	40-017-A	1
-	14mm O-RING (NOT SHOWN)	40-HDA-91353671004	1
11	FUEL LINE STRAINER	40-HDA-16955ZE1000	1
12	NEOPRENE FUEL LINE, 3/16" (10" LG.)	40-066	1
13	TANK CUSHION	40-093-20	2
14	VIBRATION ISOLATOR	40-095	1
15	BEARING CAP	02-631-A	2
16	ANTI-ROTATION PLATE	07-623	2
17	RUBBER GROMMET	40-253	2
18	TEK SCREW, 1/4" X 1" LG.	90-SCR-TEK025X100	12
19	BOLT, 5/16" X 3/4" LG.	90-BLT-03118X075	2
20	BOLT, 5/16" X 1" LG.	90-BLT-03118X100	5
21	BOLT, 3/8" X 1 1/2" LG.	90-BLT-03816X150	1
22	BOLT, 5/8" X 1 3/4" LG.	90-BLT-06311X175	4
23	NYLON FLAT WASHER, 1/4"	90-WSR-FLT025NYLON	12
24	SAE FLAT WASHER, 5/16"	90-WSR-SAE031	9
25	SAE FLAT WASHER, 3/8"	90-WSR-SAE038	1
26	SAE FLAT WASHER, 5/8"	90-WSR-SAE063	4
27	LOCK WASHER, 5/16"	90-WSR-LOC031	5
28	LOCK WASHER, 5/8"	90-WSR-LOC063	4
29	LOCKNUT, 5/16" - 18	90-NUT-LOC031-18	2
30	LOCKNUT, 3/8" - 16	90-NUT-LOC038-16	1

Continued

Frame Assembly – Upper

All

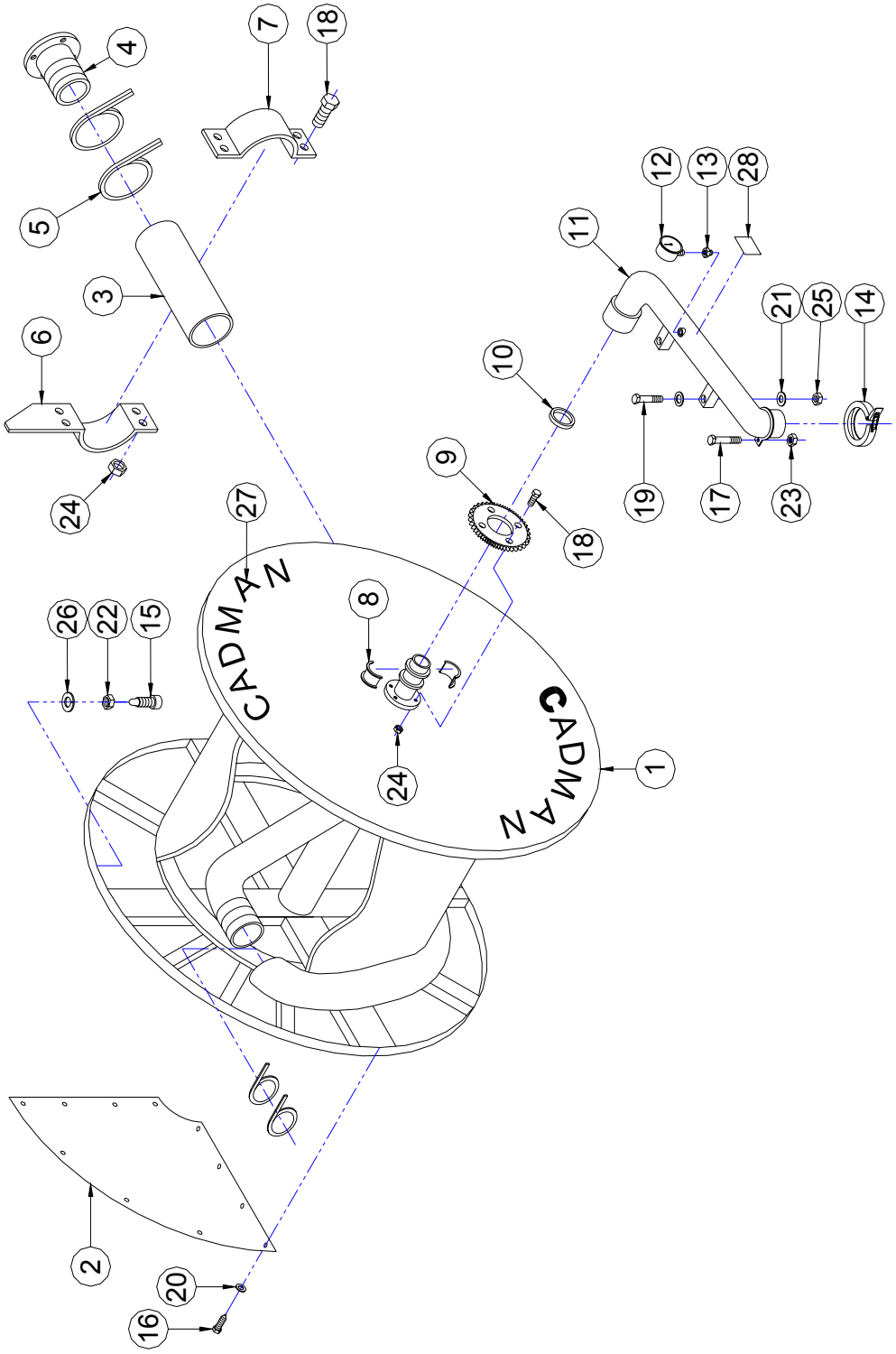


Frame Assembly – Upper *All*

Item	Description	Part Number	Qty
31	LABEL - ENTANGLEMENT	40-051-A	3
32	LABEL – MOVING PARTS HAZARD	40-290-A	2
33	LABEL - GREASE POINT	40-041-A	2
34	LABEL – INDEXER CONDITION	40-115-A	1
35	LABEL – SPEED ADJUST CHART	40-218-A	1
36	LABEL - SPEED CONTROL	40-189-A	1
37	LABEL – GASOLINE	40-039-A	1
38	LABEL - PINCH POINT	40-289-A	1
39	LABEL - ROTATING DRUM	40-287-B	2
40	LABEL – BRAKE CONTROL	40-293-A	1
41	LABEL – BURN HAZARD	40-286-B	1
42	DECAL, 3500 LEFT SIDE PANEL (3500 only)	40-281-3500	AR
-	DECAL, 3250 LEFT SIDE PANEL (3250 only)	40-281-3250	AR
-	DECAL, 3000 LEFT SIDE PANEL (3000 only)	40-281-3000	AR
-	DECAL, 3500 RIGHT SIDE PANEL (3500 only)	40-280-3500	AR
-	DECAL, 3250 RIGHT SIDE PANEL (3250 only)	40-280-3250	AR
-	DECAL, 3000 RIGHT SIDE PANEL (3000 only)	40-280-3000	AR
43	LABEL – DRIVE DISCONNECT (NOT SHOWN)	40-151-A	1

Hose Drum Assembly

All

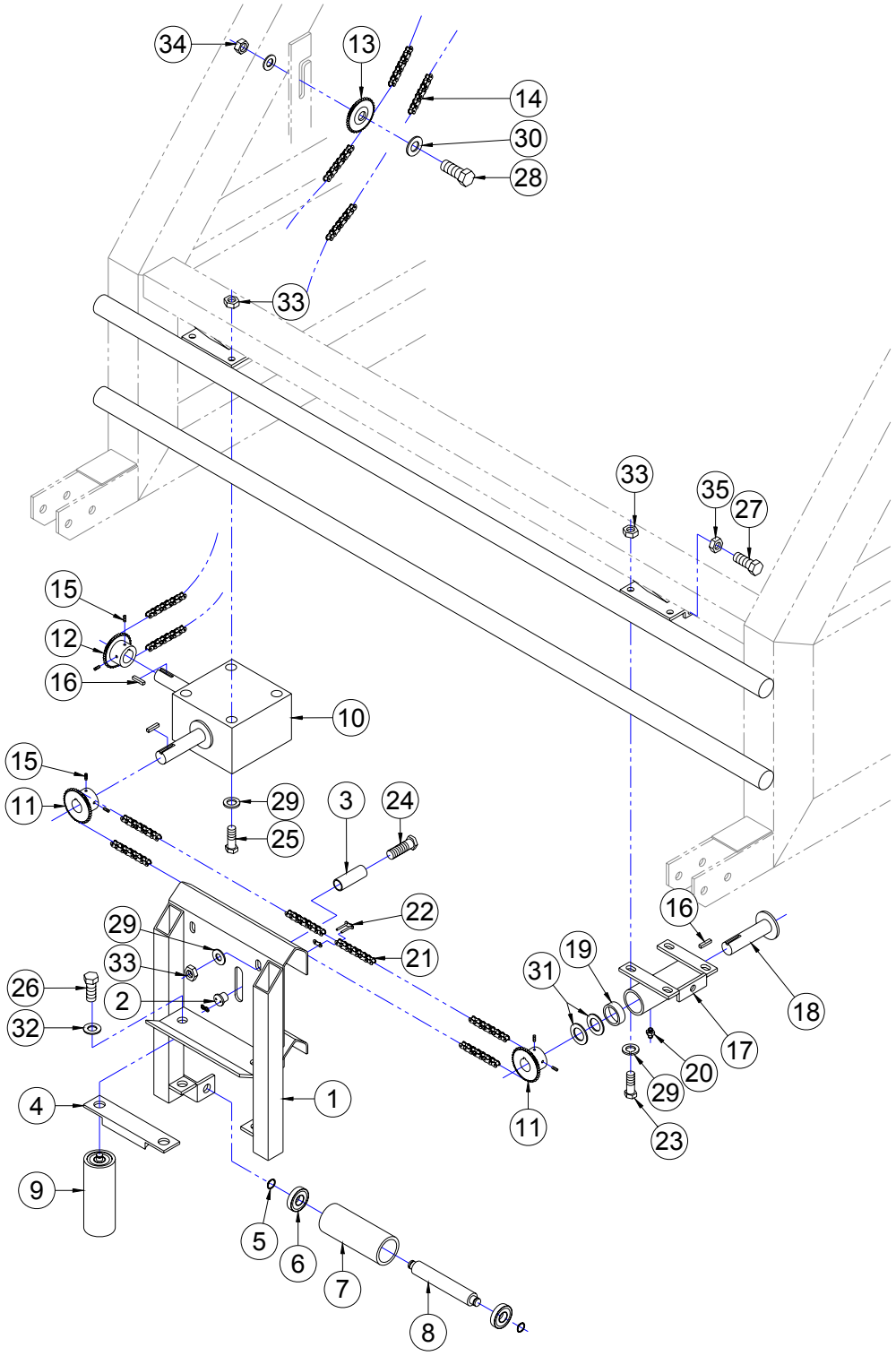


Hose Drum Assembly *All*

Item	Description	Part Number	Qty
1	DRUM	07-500-99	1
2	DRUM ACCESS PANEL	07-513-A	1
3	**PE HOSE**		
-	3" ID X 1075 FT. LG.	50-001-1075	AR
-	3 1/4" ID X 975 FT. LG.	50-002-975	AR
-	3 1/2" ID X 925 FT. LG.	50-064-925	AR
4	**FLANGE HOSE END**		
-	FLANGED HOSE END, 3000	07-619	1
-	FLANGED HOSE END, 3250	07-620	1
-	FLANGED HOSE END, 3500	07-690	1
5	4" BAND-IT® CLAMP	50-017	4
6	MARKER FLAG, 3000 / 3250	02-681-A	1
7	MARKER CLAMP, 3000 / 3250	02-681-B	1
8	DRUM BEARING	40-021	2
9	SPROCKET, 50A43	10-077	1
10	4" INLET ELBOW SEAL	40-014	1
11	INLET ELBOW	07-680-A	1
12	GAUGE, 0-160 PSI, LIQUID-FILLED	45-017	1
13	GALV. REDUCING BUSHING, 3/4"-1/4"	40-NPT-RB075X025	1
14	4" RINGLOCK FITTING CLAMP	IR-FCL-4	1
15	SPOOL DRIVE LUG	15-040-A	16
16	TEK SCREW, 1/4" X 1"	90-SCR-TEK025X100	11
17	BOLT, 1/4" X 2" LG.	90-BLT-02520X200	1
18	BOLT, 3/8" X 1 1/4" LG.	90-BLT-03816X125	8
19	BOLT, 1/2" X 4" LG.	90-BLT-05011X400	2
20	NYLON FLAT WASHER, 1/4"	90-WSR-FLT025NYLON	11
21	SAE FLAT WASHER, 1/2"	90-WSR-SAE050	4
22	JAM NUT, 1/2"	90-NUT-JAM050-13	16
23	LOCKNUT, 1/4" - 20	90-NUT-LOC025-20	1
24	LOCKNUT, 3/8"-16	90-NUT-LOC038-16	8
25	LOCKNUT, 1/2"-13	90-NUT-LOC050-13	2
26	LOCK WASHER, 1/2"	90-WSR-LOC050	16
27	DECAL, "CADMAN"	40-031	4
28	LABEL – HIGH PRESSURE SPRAY	40-049-A	1

Hose Indexing System

All

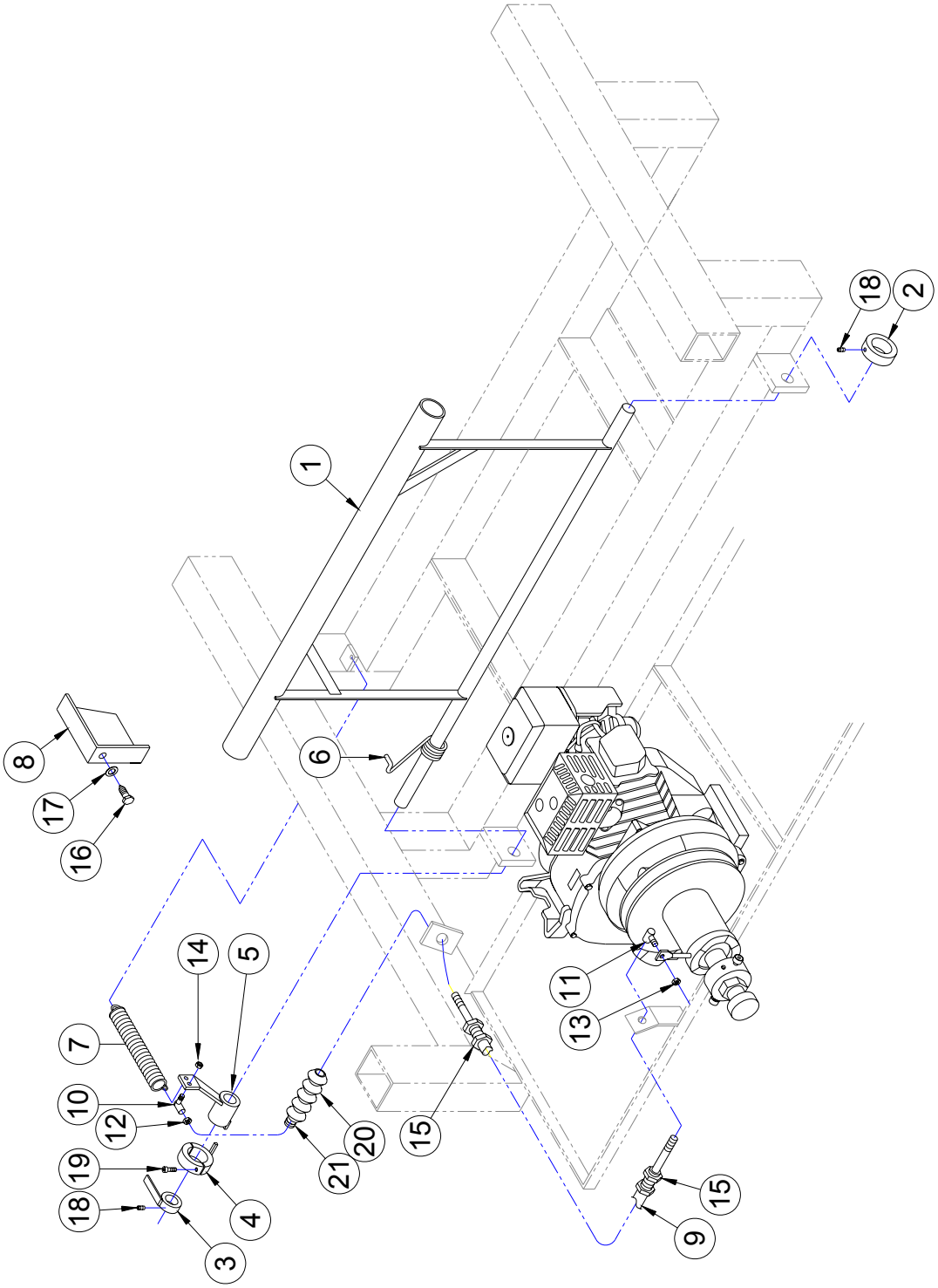


Hose Indexing System *All*

Item	Description	Part Number	Qty
1	HOSE GUIDE	07-689-A	1
2	INDEXER DRIVE BUTTON	15-041	1
3	SPACER, 3/8" X 1 1/2" LG.	40-108	2
4	HOSE RUB BLOCK	07-682	1
-	**4" HOSE GUIDE ROLLER ASS'Y CONSISTING OF:**	15-018	1
5	SNAP RING, 5/8" EXTERNAL	15-018-D	2
6	6203 BEARING	15-018-C	2
7	ROLLER BODY, 4"	15-018-G	1
8	ROLLER SHAFT, 4"	15-018-F	1
9	**6" HOSE GUIDE ROLLER ASS'Y CONSISTING OF:**	15-019	2
-	SNAP RING, 5/8" EXTERNAL	15-018-D	2
-	6203 BEARING	15-018-C	2
-	ROLLER BODY, 6"	15-019-G	1
-	ROLLER SHAFT, 6"	15-019-F	1
10	RIGHT ANGLE GEARBOX	40-084	1
11	SPROCKET, 60B9 X 1" (3000,3250 ONLY)	10-SPT-60B9X100	2
-	SPROCKET, 60B12 X 1" (3500 ONLY)	10-SPT-60B12X100	2
12	SPROCKET, 50B29 X 1" (3000 ONLY)	10-SPT-50B29X100	1
-	SPROCKET, 50B26 X 1" (3250 ONLY)	10-SPT-50B26X100	1
-	SPROCKET, 50B32 X 1" (3500 ONLY)	10-SPT-50B32X100	1
13	IDLER SPROCKET, 50A17 X 5/8"	10-SPT-50-17IDLER	1
-	#50 CONNECTING LINK (NOT SHOWN)	10-LNK-50CONN	1
14	#50 ROLLER CHAIN	10-CHN-50-1RIV	200P
15	SET SCREW, 5/16" - 18 X 1/4" LG.	90-SCR-ST03118X025	6
16	KEY, 1/4" X 1 1/4" LG.	90-KEY-SQ025	3
17	INDEXER IDLER BLOCK	15-016-F	1
18	INDEXER IDLER SHAFT	15-017	1
19	OILITE BUSHING, 1" ID	15-016-B	2
20	GREASE ZERK, 1/8" NPT	40-001	1
21	#60 ROLLER CHAIN	10-CHN-60-1RIV	142P
22	#60-2 CONNECTING LINK	10-LNK-60-2CONN	1
23	BOLT, 3/8" X 1 3/4" LG.	90-BLT-03816X175	4
24	BOLT, 3/8" X 2 1/2" LG.	90-BLT-03816X250	2
25	BOLT, 3/8" X 4 1/2" LG.	90-BLT-03816X450	4
26	BOLT, 1/2" X 1 1/4" LG.	90-BLT-05013X100	6
27	BOLT, 1/2" X 2 1/2" LG., (FULL THREAD)	90-BLT-FT05013X250	1
28	BOLT, 5/8" X 2 1/2" LG.	90-BLT-06311X250	1
29	FLAT WASHER, 3/8"	90-WSR-SAE038	10
30	FLAT WASHER, 5/8"	90-WSR-SAE063	3
31	SAE FLAT WASHER, 1"	90-WSR-SAE100	2
32	LOCK WASHER, 1/2"	90-WSR-LOC050	6
33	LOCK NUT, 3/8"-16	90-NUT-LOC038-16	10
34	LOCK NUT, 5/8"-11	90-NUT-LOC063-11	1
35	JAM NUT, 1/2" – 13	90-NUT-JAM050-13	1

Compensator System

All

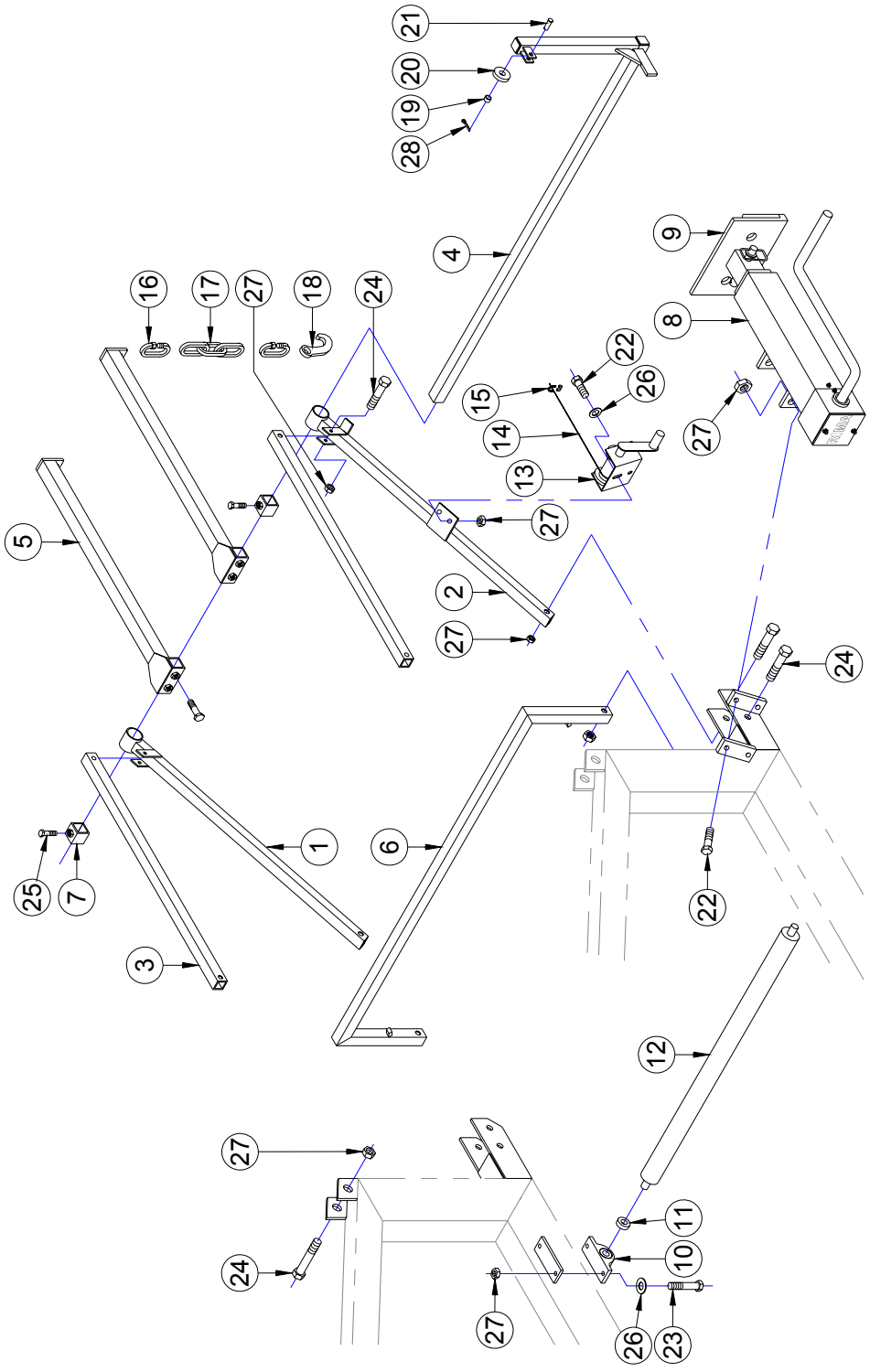


Compensator System *All*

Item	Description	Part Number	Qty
1	COMPENSATOR FRAME	08-631	1
2	1" SET COLLAR	40-144	1
3	SWITCH LEVER	08-648	1
4	ARM DRIVE	07-633-A	1
5	CABLE DRIVE ARM	07-632	1
6	TORSION SPRING	40-279	1
7	EXTENSION SPRING	40-228	1
8	SAFETY SWITCH COVER	07-643-A	1
9	CABLE, 66.50" LG.	40-272	1
10	THROTTLE BALL JOINT, 1/4"-28	40-226	1
11	THROTTLE BALL JOINT, #10-32	40-225	1
12	JAM NUT, 1/4"-28	90-NUT-JAM025-28	1
13	LOCK NUT #10-32	90-NUT-LOC010-32	1
14	LOCK NUT, 1/4"-28	90-NUT-LOC025-28	1
15	JAM NUT, 1/2"-20	90-NUT-JAM050-20	4
16	TEK SCREW, 1/4" X 1"	90-SCR-TEK025X100	1
17	NYLON WASHER, 1/4"	90-WSR-FLT025NYLON	1
18	SET SCREW, 5/16"-24 X 1/4"	90-SCR-STO03124X025	2
19	SHCS, 1/4"-28 X 3/4"	90-SCR-SH02528X075	2
20	CABLE BELLOWS	40-302	1
21	CABLE TIE-4" BLACK	40-391	1

Cart Lift Assembly

All

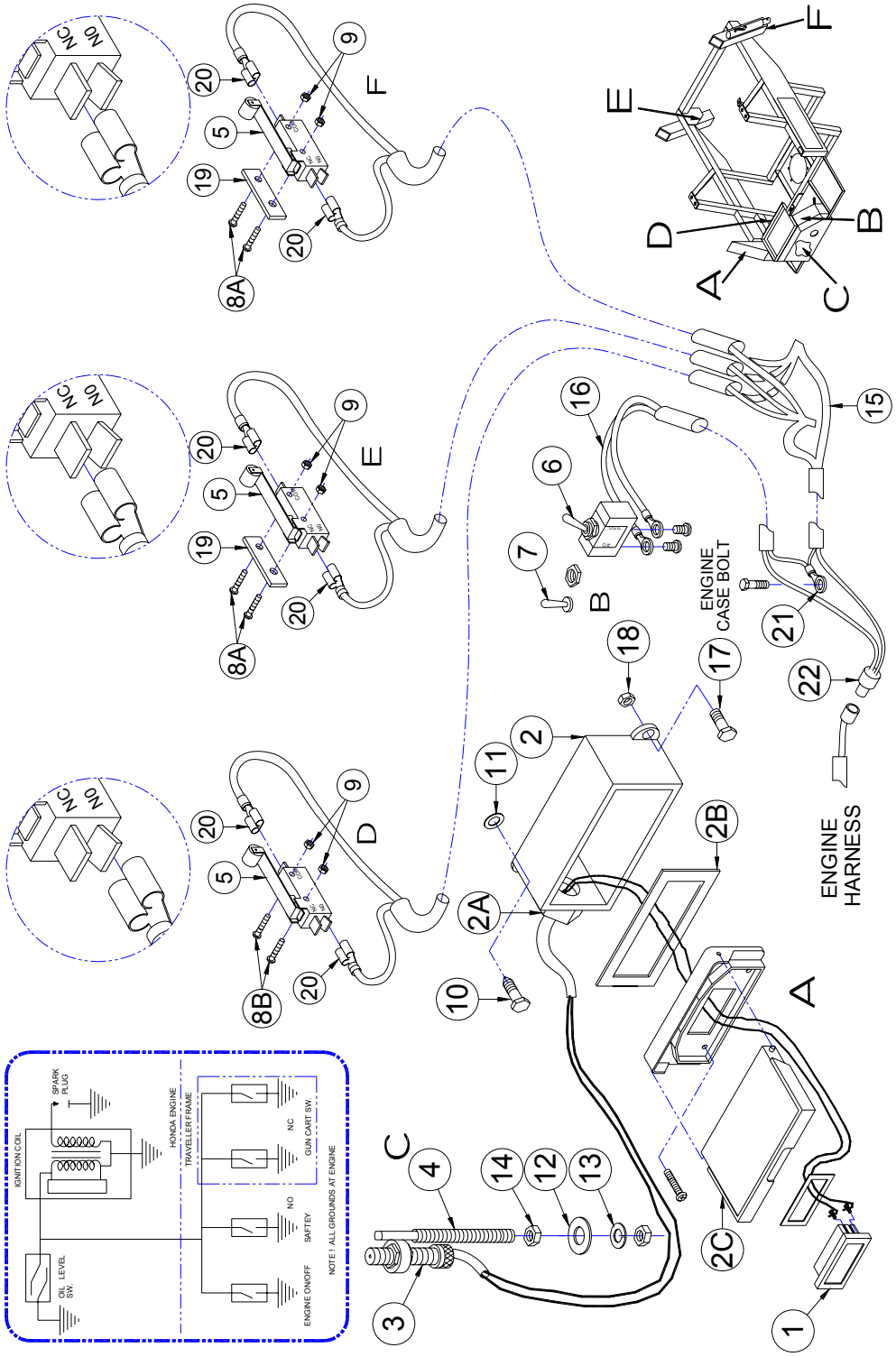


Cart Lift Assembly *All*

Item	Description	Part Number	Qty
1	BOOM ARM, RIGHT	06-617-RA	1
2	BOOM ARM, LEFT	06-617-LB	1
3	BOOM BRACE	06-618	2
4	BOOM	07-687	1
5	LIFT ARM	06-620	2
6	SHUT OFF BAR	07-686	1
7	RETAINING COLLAR	11-454	2
8	STABILIZER JACK BODY	07-628	2
9	STABILIZER JACK DROP LEG	07-624	2
10	PILLOW BLOCK BEARING, 1"	40-143	2
11	BEARING LOCK COLLAR	PART OF ITEM #10	-
12	HOSE ROLLER	07-688	1
13	HAND WINCH, 1000#	40-024-A	1
14	AIRCRAFT CABLE, 3/16" (14FT. LG.)	40-058	1
15	CABLE CLAMP	40-060	2
16	RAPID LINK, 3/8"	40-063	4
17	GALVANIZED CHAIN, 3/8"	40-065	2
18	3/4 TON SAFETY HOOK	40-062	2
19	OILITE BUSHING, 1/2" ID	15-003-B	1
20	CABLE PULLEY ASSEMBLY, 3"	15-003	1
21	CLEVIS PIN, 1/2" X 2" LG.	90-PIN-CL050X200	1
22	BOLT, 3/8" X 1 1/2" LG.	90-BLT-03816X150	10
23	BOLT, 3/8" X 1 3/4" LG.	90-BLT-03816X175	4
24	BOLT, 3/8" X 3 1/4" LG.	90-BLT-03816X325	8
25	BOLT, 1/2" X 1 1/4" LG.	90-BLT-05013X125	8
26	FLAT WASHER, 3/8"	90-WSR-FLT038	5
27	LOCKNUT, 3/8"-16	90-NUT-LOC038-16	22
28	COTTER PIN, 1/8" X 1.25"	- - -	1

Electrical System

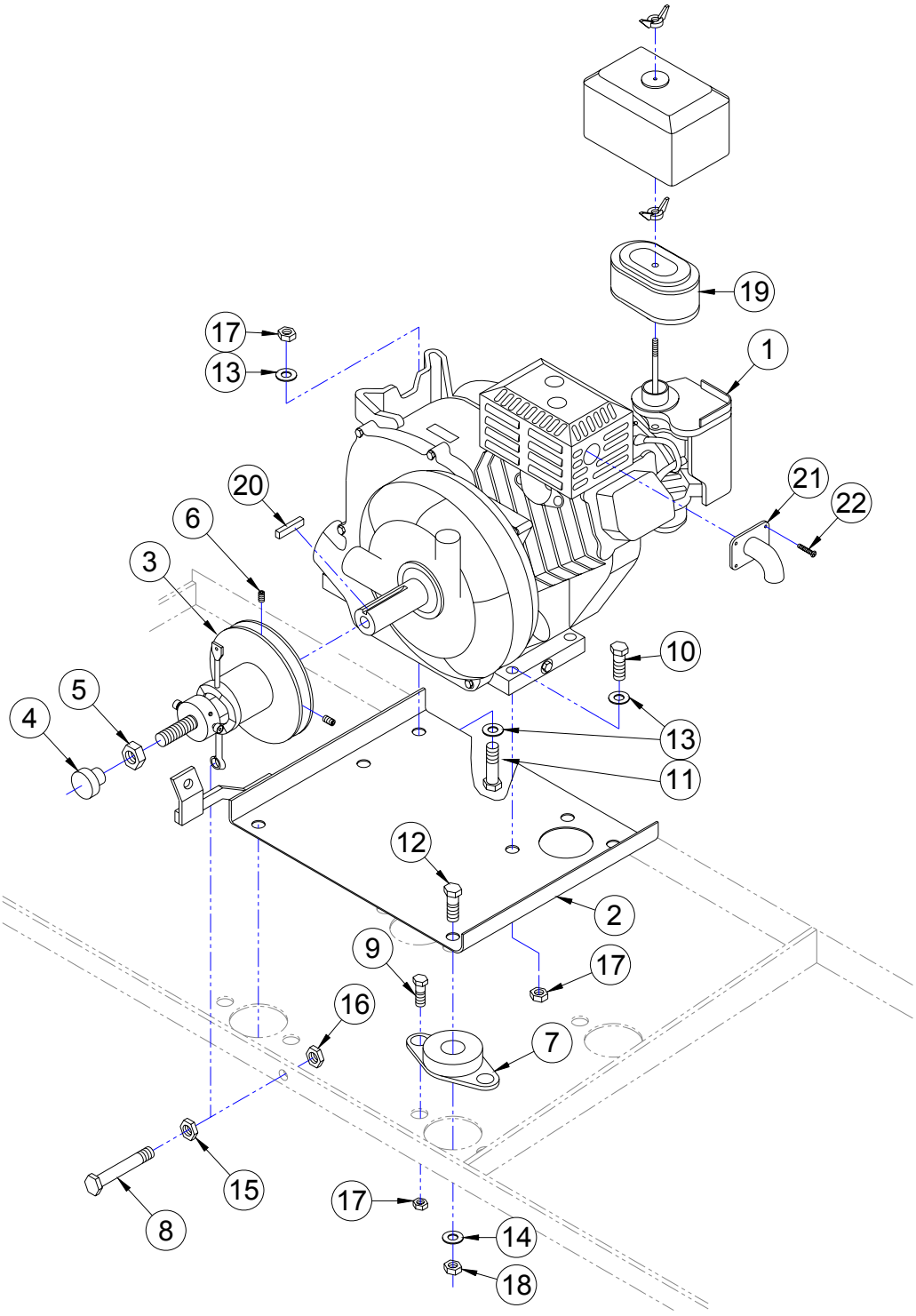
All



Electrical System *All*

Item	Description	Part Number	Qty
1	SPEEDOMETER KIT	40-190-RL	1
2	PVC BOX	40-262	1
2A	STRAIN RELIEF KIT, 3/4"	40-263	1
2B	GASKET	40-264	1
2C	BOX COVER W/LID	40-271	1
3	MAGNETIC PICKUP ASSEMBLY, 5/8" DIA.	40-239-RL	1
4	PICKUP MOUNT	07-645	1
5	SHUT OFF SWITCH	40-020	3
6	ON/OFF TOGGLE SWITCH	40-260	1
7	BOOT FOR TOGGLE SWITCH	40-261	1
8A	MACHINE SCREW, #6-32 X 1 3/4" LG.	90-SCR-RM0632X175	4
8B	MACHINE SCREW, #6-32 X 1" LG.	90-SCR-RM0632X100	2
9	LOCKNUT, #6-32	90-NUT-LOC006-32	6
10	TEK SCREW, 1/4" X 1" LG.	90-SCR-TEK025X100	1
11	FLAT WASHER, 1/4" NYLON	90-WSR-FLT025NYLON	1
12	FLAT WASHER, 1/2" SAE	90-WSR-SAE050	1
13	LOCK WASHER, 1/2"	90-WSR-LOC050	1
14	HEX NUT, 1/2" - 13	90-NUT-HEX050-13	2
15	WIRE HARNESS	40-205	1
16	ON/OFF SWITCH HARNESS	40-277	1
17	BOLT, 1/4" X 3/4"LG.	90-BLT-2520X075	1
18	LOCKNUT, 1/4"	90-NUT-LOC025-20	1
19	SWITCH SPACER BLOCK	04-628	2
20	FEMALE SPADE CONNECTOR, BLUE	40-068	6
21	TERMINAL EYE, #10 BLUE	40-069	1
22	MALE BULLET CONNECTOR, BLUE	40-070	1

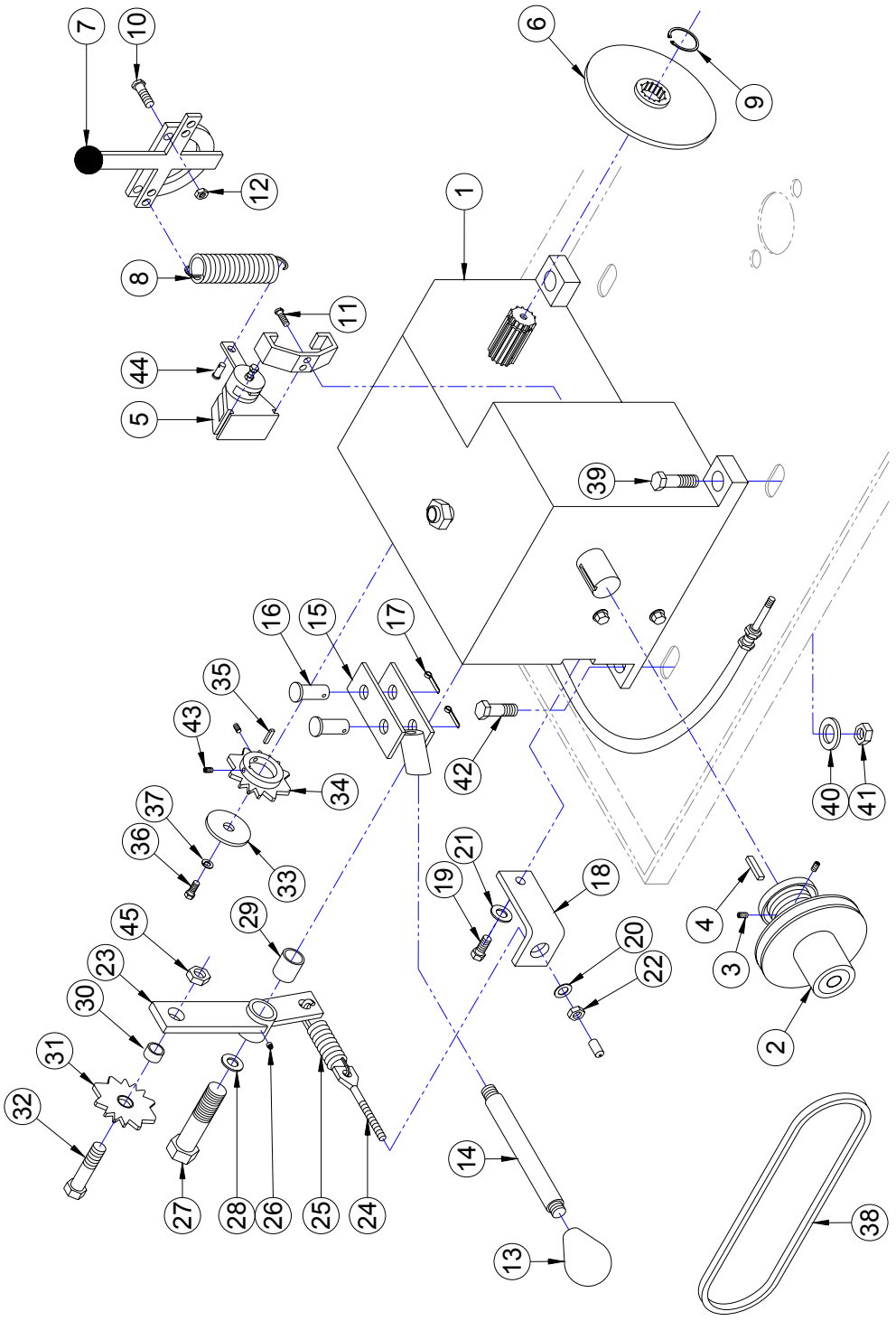
4.0 HP Engine Assembly *All*



4.0 HP Engine Assembly *All*

Item	Description	Part Number	Qty
1	4.0 HP HONDA ENGINE, GX120K1HX	40-159-A	1
2	ENGINE MOUNT PLATE	07-604-C	1
3	6" VARIABLE SPEED PULLEY W/CAM	40-315-A	1
4	HAND WHEEL	40-191-B-407-712	1
5	5/8-18 LEFT-HAND THREAD. JAM NUT	90-NUT-JAM063-18LH	1
6	SET SCREW, 5/16"-24 X 1/4" LG.	90-SCR-ST03124X025	2
7	RUBBER ENGINE MOUNT	40-285	4
8	BOLT, 1/4" X 4" LG.	90-BLT-0250X400	1
9	BOLT, 5/16" X 3/4" LG.	90-BLT-03118X075	8
10	BOLT, 5/16" X 1 1/2" LG.	90-BLT-03118X150	3
11	BOLT, 5/16" X 3" LG.	90-BLT-03118X300	1
12	BOLT, 3/8" X 2" LG.	90-BLT-03816X200	3
13	SAE FLAT WASHER, 5/16"	90-WSR-SAE031	5
14	SAE FLAT WASHER, 3/8"	90-WSR-SAE050	3
15	HEX NUT, 1/4"	90-NUT-HEX025-20	1
16	LOCKNUT, 1/4"	90-NUT-LOC052-20	1
17	LOCKNUT, 5/16"	90-NUT-LOC031-18	11
18	LOCKNUT, 3/8"	90-NUT-LOC038-16	3
19	AIR FILTER	40-HDA-17210ZEO505	1
20	SQ. KEY, 3/16"X 1 1/4" LG.	90-KEY-019X125	1
21	EXHAUST DEFLECTOR	40-HAD-18340ZE1000	1
22	PAN HEAD SCREW	90-SCR-PHM4.70X006	2
	NOT SHOWN: MODIFIES HONDA ENGINE HARNESS		
	HEAT SHRINK TUBE, 1/4" X 2 1/2"	40-210	1
	FEMALE BULLET CONNECTOR, BLUE	40-247	1

4.0 HP Drive System *All*



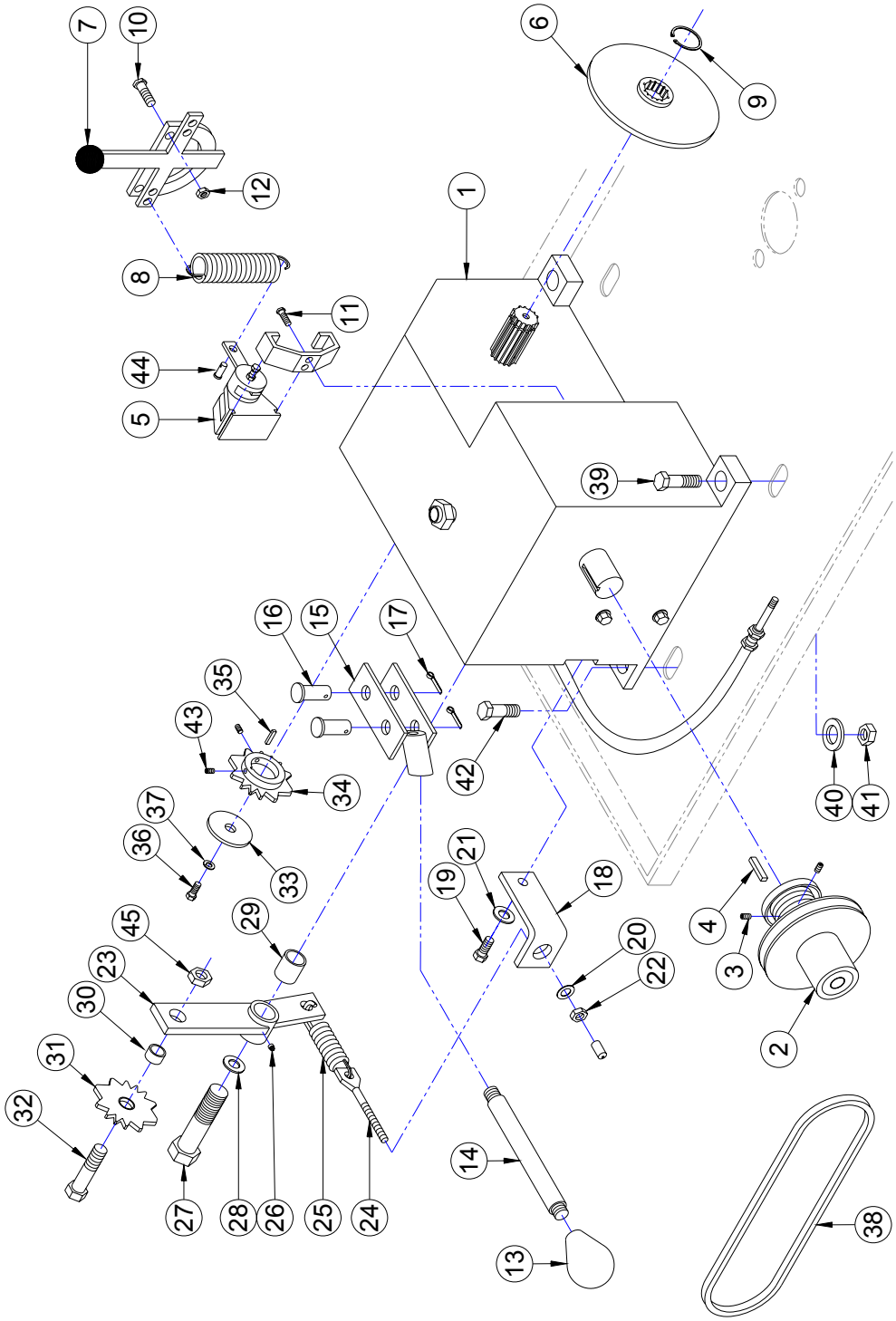
4.0 HP Drive System *All*

Item	Description	Part Number	Qty
1	RIGHT ANGLE TRANSMISSION	40-267	1
2	SPRING-LOADED PULLEY, 6"	40-195	1
3	SET SCREW, 5/16"-24 X 5/32" LG.	90-SCR-ST03124X016	2
4	SQ. KEY, 3/16" X 2.00" LG.	90-KEY-019	2 in.
5	BRAKE CALIPER W/ MT. BRACKET	40-296	1
6	BRAKE DISC	40-169-CM017	1
7	BRAKE HANDLE	40-270	1
8	EXT. SPRING	40-229	1
9	SNAP RING	40-169-106-09	1
10	BOLT, 1/4" X 1/2" LG.	90-BLT02520X050	2
11	BOLT, 1/4" X 3/4" LG.	90-BLT-02520X075	2
12	LOCKNUT, 1/4"	90-NUT-LOC025-20	2
13	SHIFTER KNOB	40-182	1
14	SCREW-IN SHIFTER HANDLE	40-222	1
15	SHIFTER FORK	40-221	1
16	CLEVIS PIN, 3/8"X 1 1/4" LG.	90-PIN-CL038X125	2
17	COTTER PIN, 5/32" X 3/4" LG.	90-PIN-CT016075	2
18	IDLER TENSION BRACKET	08-650	1
19	BOLT, 3/8" X 3/4" LG.	90-BLT-03816X075	1
20	SAE FLAT WASHER, 1/2"	90-WSR-SAE050	1
21	LOCK WASHER, 3/8"	90-WSR-LOC038	1
22	LOCKNUT, 1/2"	90-NUT-LOC050-13	1
23	IDLER ARM	08-656-A	1
24	SPRING ADJUSTING ROD	06-635-B	1
	VINYL CAP, 1/2" X 1" LG.	40-230	1
25	IDLER SPRING	40-056	1
26	GREASE FITTING, 45 DEGREE	40-001-45	1
27	BOLT, 5/8" X 3" LG.	90-BLT-06311X300	1
28	FLAT WASHER, 5/8"	90-WSR-FLT063	1
29	IDLER ARM BUSHING, 1 1/4" X 2" LG.	06-656-A	1
30	SPACER, 3/4" X 1/2" LG.	40-110	1
31	IDLER SPROCKET, 80-12 X 3/4"	10-SPT-80-12IDLER	1
32	BOLT, 3/4" X 2 1/4" LG.	90-BLT-07510X225	1
33	SPROCKET RETAINING PLATE	01-314-B	1
34	SPROCKET, 80B12 X 1 3/4"	10-SPT-80B12X175	1
35	SQ. KEY, 1/2" X 1 5/8" LG.	90-KEY-SQ050X163	1

Continued

4.0 HP Drive System

All

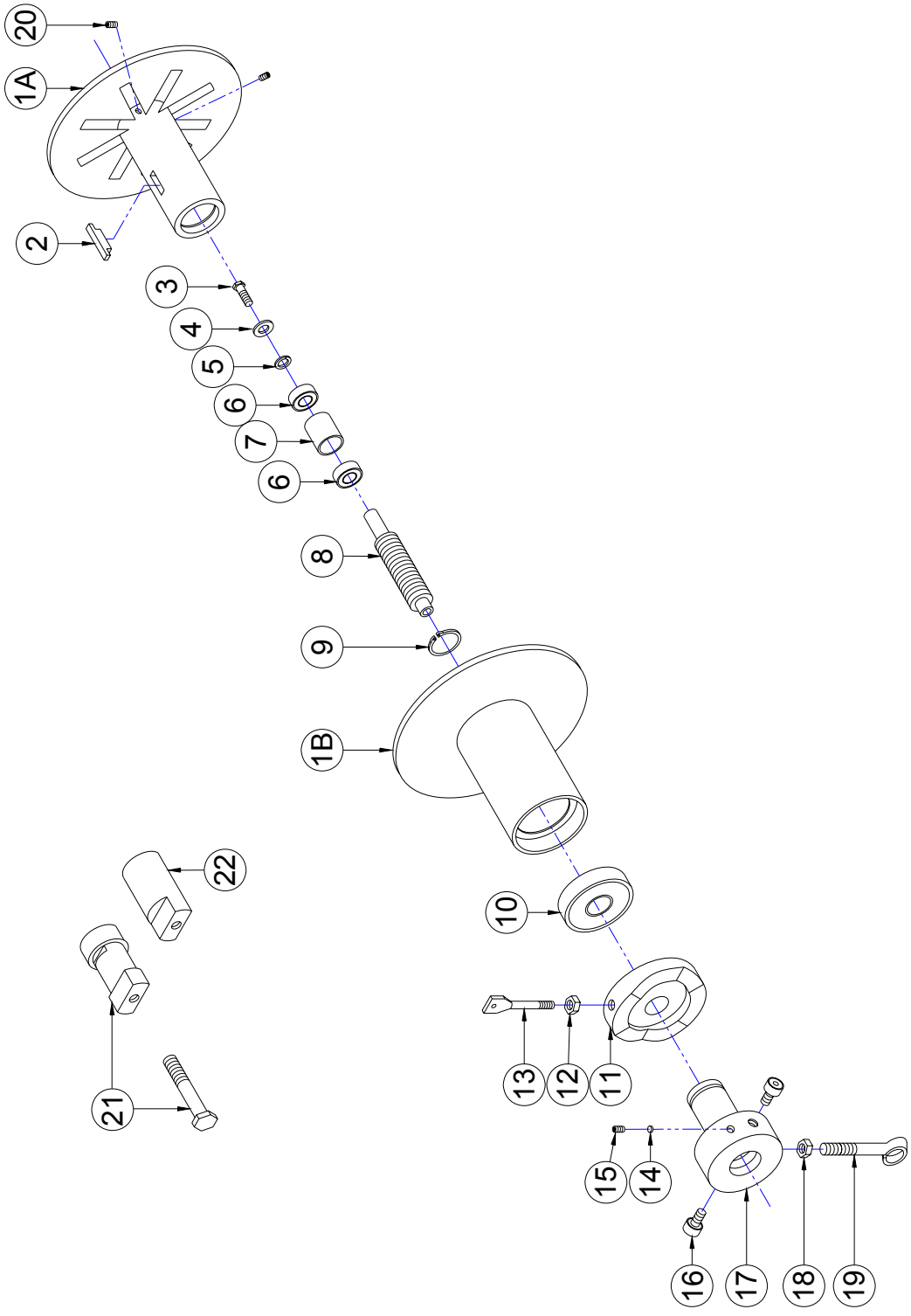


4.0 HP Drive System *All*

Item	Description	Part Number	Qty
36	BOLT, 1/2"-20 X 1 1/4" LG.	90-BLT-05020X125	1
37	LOCK WASHER, 1/2"	90-WSR-LOC050	1
38	V-BELT, A-42 (STANDARD)	40-294	1
	V-BELT, A-41	40-294-A41	1
39	BOLT, 1/2" X 2 1/4" LG.	90-BLT-05013X225	2
40	SAE FLAT WASHER, 1/2"	90-WSR-SAE050	4
41	LOCKNUT, 1/2"	90-NUT-LOC050-13	4
42	BOLT, 1/2" X 2" LG.	90-BLT-05013X200	2
43	SET SCREW, 1/4"-28 X 1/4" LG.	90-SCR-ST02528X025	2
44	CLEVIS PIN, 1/4" X 3/4" LG.	90-PIN-CL025X075	1
45	LOCKNUT, 3/4"-10	90-NUT-LOC075-10	1
	NOT SHOWN		
	HAND CRANK	06-647	1

6” V.S. Pulley w/ Cam Kit

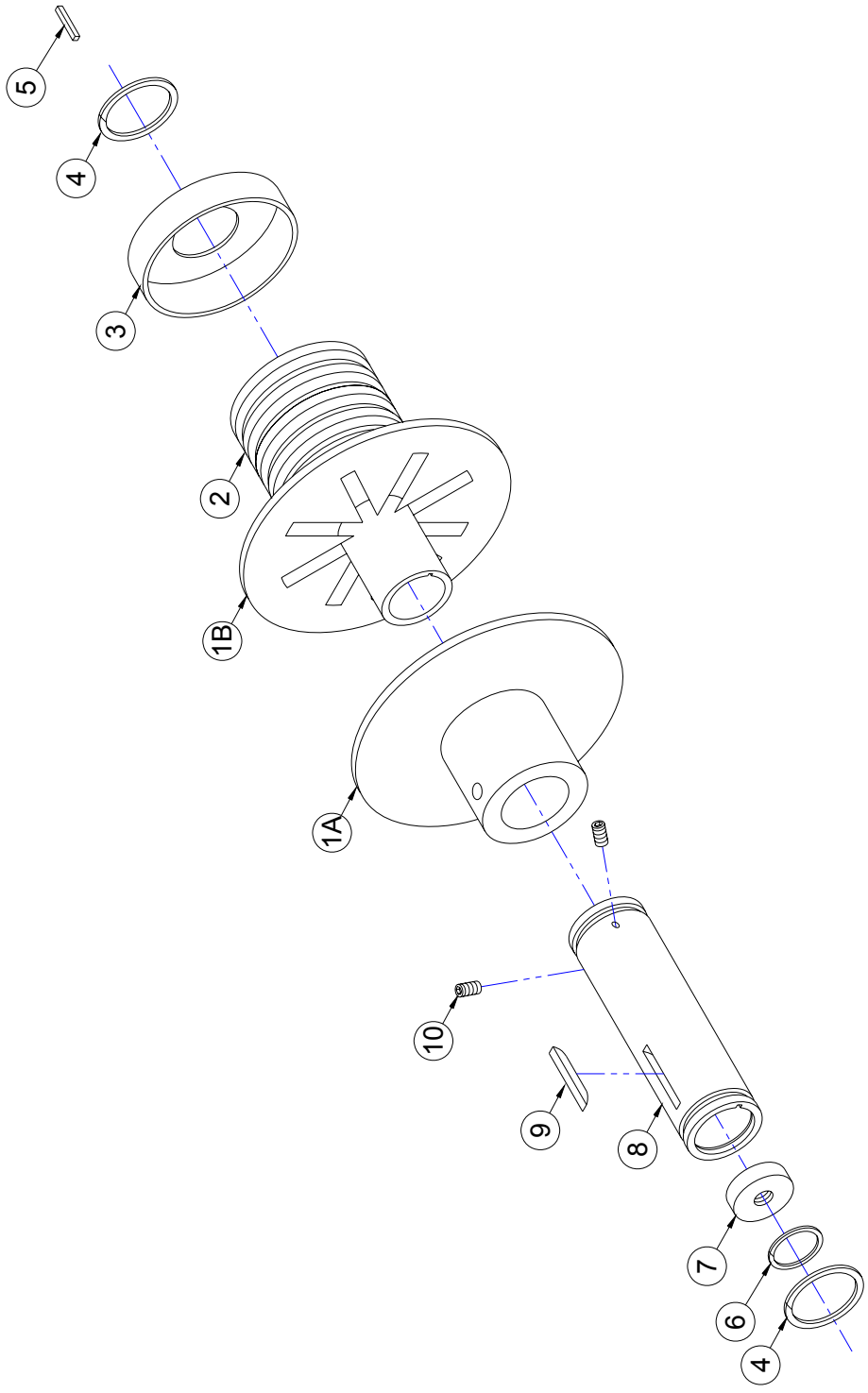
40-315-A



6” V.S. Pulley w/ Cam Kit *40-315-A*

Item	Description	Part Number	Qty
1A	PULLEY FIXED FACE	Not Serviced	-
1B	PULLEY ADJUSTABLE FACE	Not Serviced	-
2	SPECIAL KEY	40-129-2181	1
3	BOLT, #10-32 X 3/8" LG.	40-129-3305	1
4	FLAT WASHER, #10	40-129-3232	1
5	SPRING WASHER	40-129-3231	1
6	CONTROL STEM BEARING	40-129-BRG60002RS	2
7	BEARING SPACER	40-216-B-407-074	1
8	CONTROL STEM	40-223-B-206-091-A	1
9	SNAP RING	40-129-2606	1
10	CAM BEARING	40-216-BRG6205	1
11	CAM	40-243-B-207-025	1
12	JAM NUT, 1/4" - 20	90-NUT-JAM025-20	1
13	CABLE TORQUE ARM	40-216-2588	1
14	NYLON PLUG	40-129-2454	1
15	SET SCREW, 1/4" - 28 X 1/4' LG.	90-SCR-ST02528X025	1
16	CAM ROLLER	40-243-2589	1
17	THRUST NUT	40-243-B-207-147	1
18	JAM NUT, 1/4" - 28	90-NUT-JAM025-28	1
19	TORQUE ARM 4/1/4" LG.	40-821-A	1
20	SET SCREW, 5/16 - 24 X 1/4"	90-SCR-ST03124X025	2
21	CONTROL STEM & BEARING PULLER	88-TOL-SSBRGPULLER	OPT.
22	PULLEY PULLER	88-TOL-SSPULLEYPUL	OPT.

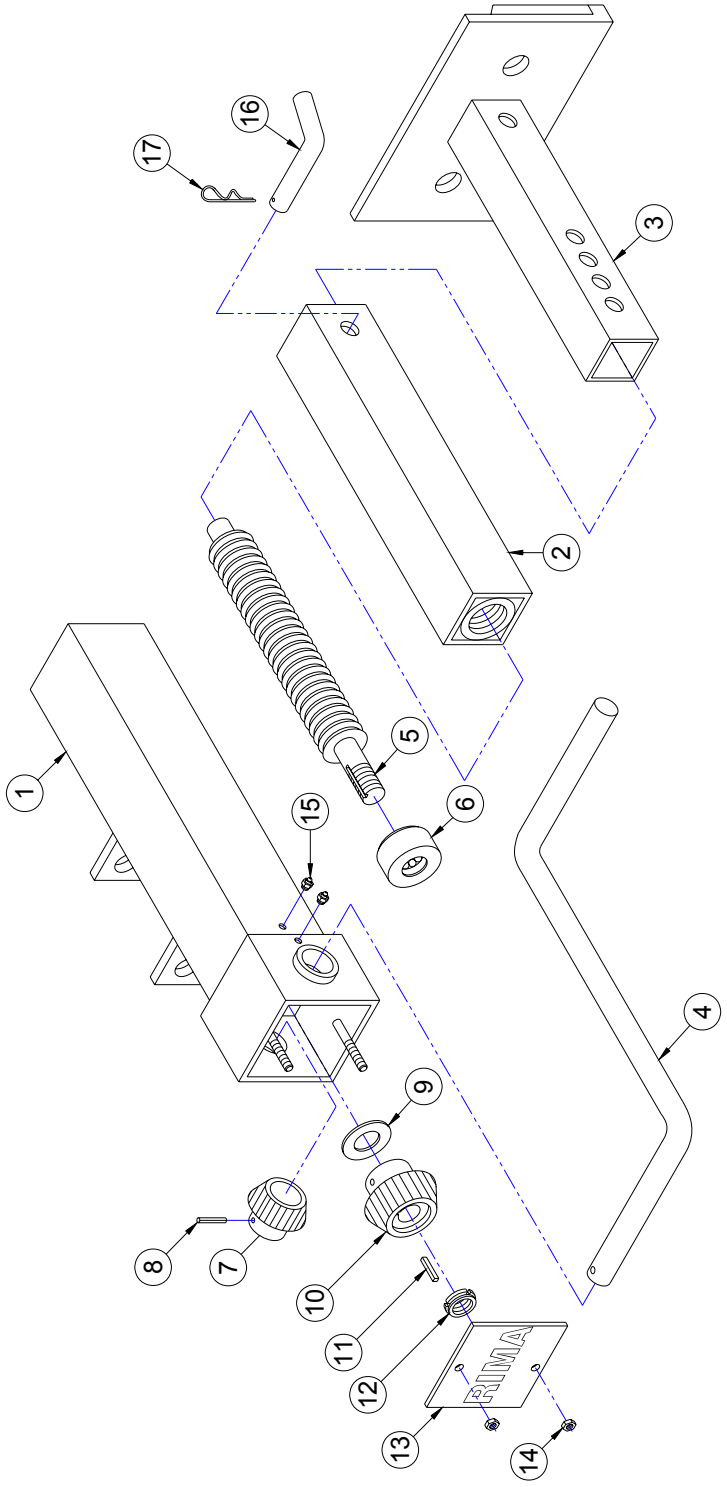
6” V.S. Spring Loaded Pulley *40-313*



6” V.S. Spring Loaded Pulley *40-313*

Item	Description	Part Number	Qty
1A	FIXED PULLEY FACE	Not Serviced	-
1B	ADJUSTABLE PULLEY FACE	Not Serviced	-
2	SPRING	40-195-A-632-1	1
3	SPRING CAP	40-195-A-633-1	1
4	RETAINING RING	40-195-3070	2
5	KEY	40-128-2195	1
6	PLUG RETAINING RING	40-195-2671	1
7	PLUG ADAPTER	40-195-A-625-052	1
8	SHAFT	Not Serviced	-
9	KEY, 3/16" SQ. X 2" LG.	90-KEY-019	1
10	SET SCREW, 5/16"-24 X 5/32 LG.	90-SCR-ST03124X016	2

Stabilizer Jack Assembly

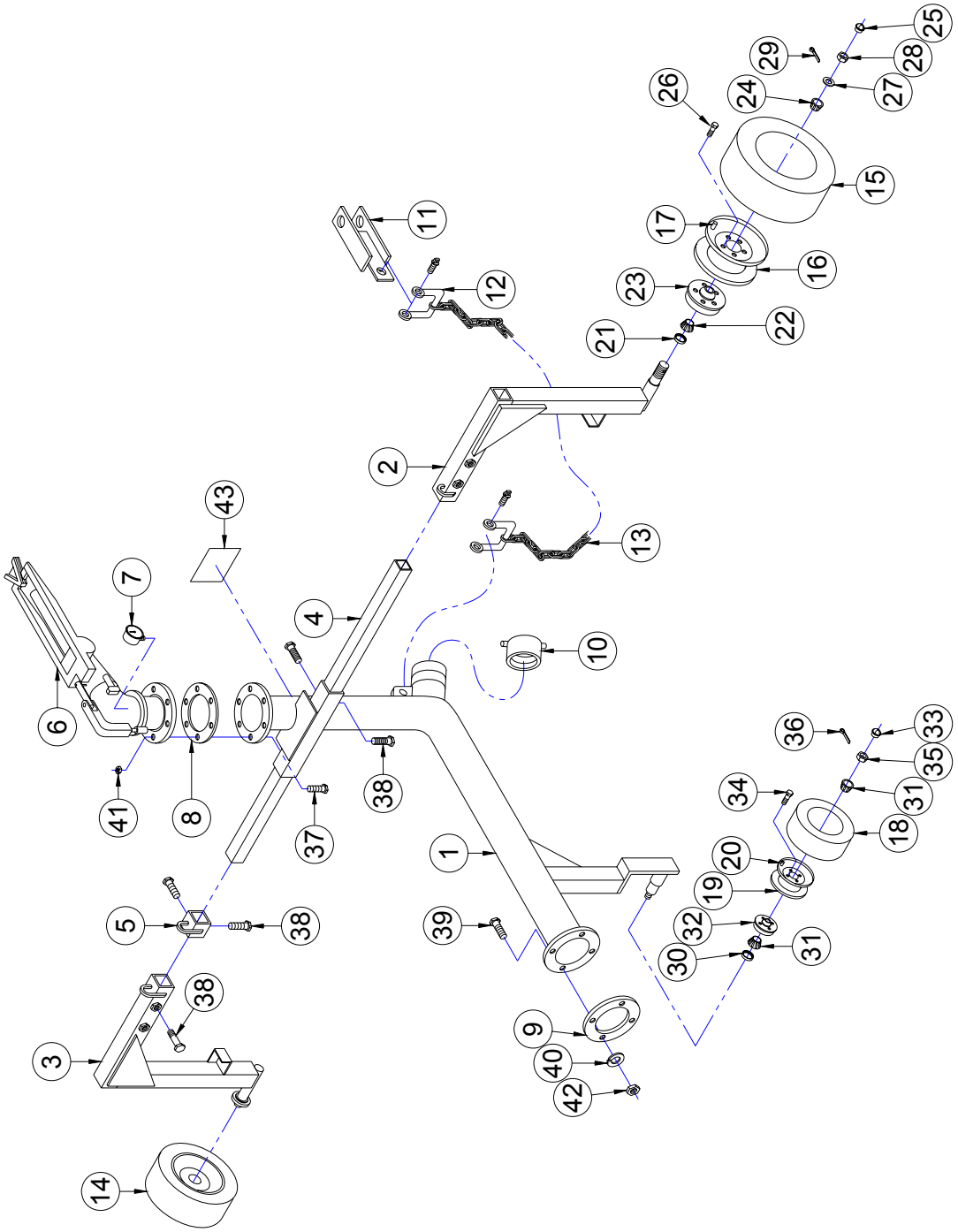


Stabilizer Jack Assembly

Item	Description	Part Number	Qty
1	STABILIZER JACK BODY	40-176-C	
2	MIDDLE LEG TUBE	40-176-B	
3	STABILIZER JACK DROP LEG	07-624	
4	JACK HANDLE	40-176-E	
5	JACK SCREW	40-176-F	
6	THRUST BEARING	40-176-H	
7	BEVEL GEAR, 16T	40-176-K	
8	ROLL PIN, 6MM X 36MM LG.	-	
9	SHIM WASHER	-	
10	BEVEL GEAR, 32T	40-176-J	
11	SQUARE KEY	-	
12	LOCKING NUT	40-176-L	
13	COVER PLATE	40-176-G	
14	LOCKNUT, 8MM - 1.25	-	
15	GREASE FITTING	40-001	
16	LOCK PIN	-	
17	HAIR PIN CLIP	-	

3000 Series Gun Cart Assembly

All



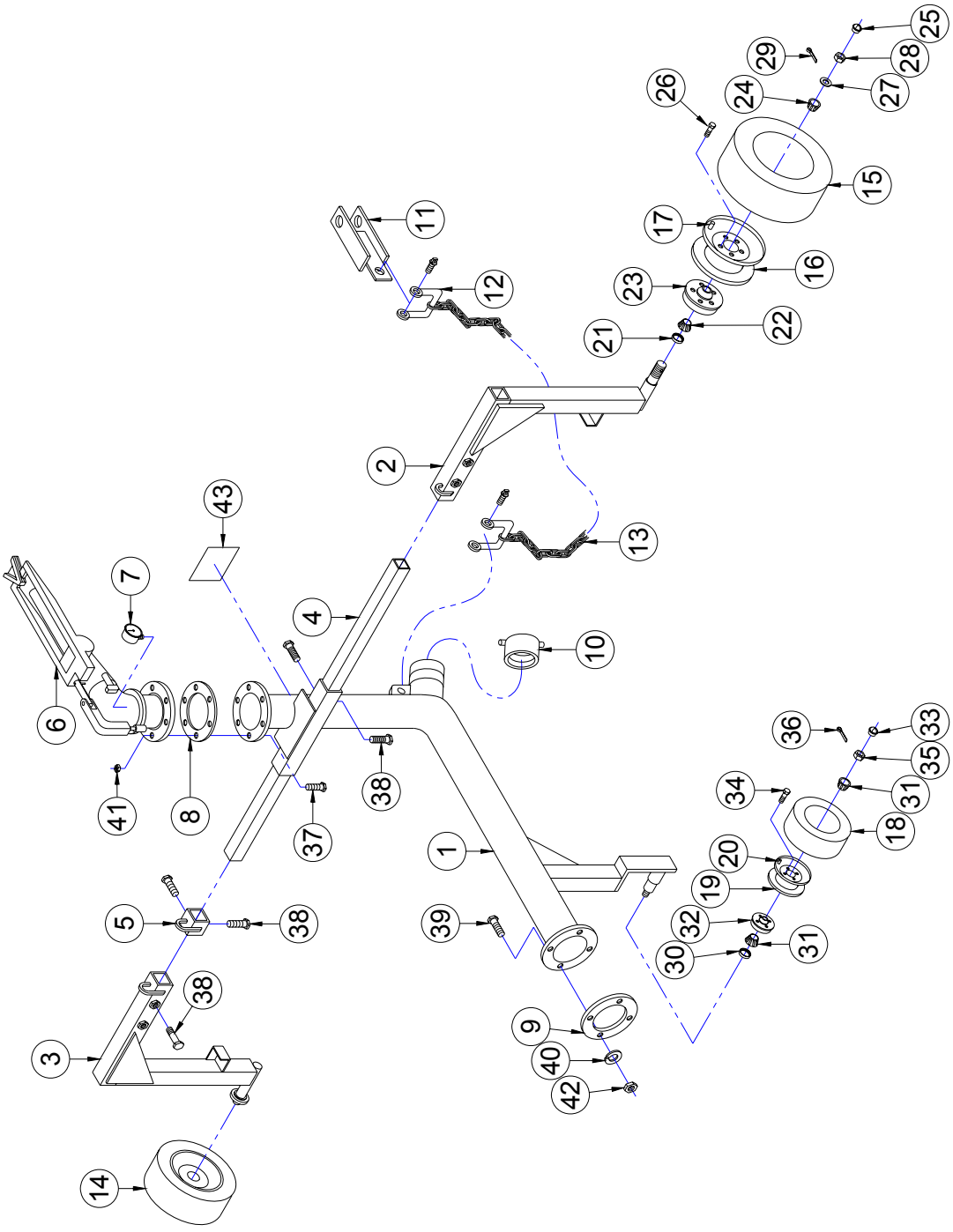
3000 Series Gun Cart Assembly *All*

Item	Description	Part Number	Qty
1	GUN CART BODY, LOW (46" CLEARANCE)	02-247	1
-	GUN CART BODY, HIGH (62" CLEARANCE)	02-249	1
2	GUN CART LEG, LEFT (LOW)	02-241-LA	1
-	GUN CART LEG, LEFT (HIGH)	02-245-LA	1
3	GUN CART LEG, RIGHT (LOW)	04-241-RA	1
-	GUN CART LEG, RIGHT (HIGH)	02-245-RA	1
4	CROSS TUBE	04-831-72	1
5	PICK-UP COLLAR, SHORT	02-234	1
6	NELSON SR-150 GUN KIT	SP-NEL-SP150KIT	1
7	GAUGE, 0-100 PSI WET	45-022	1
-	GAUGE, 0-160 PSI LIQUID	45-017	Opt.
8	GUN FLANGE GASKET	DO-PRT-30-040-A	1
9	HOSE END GASKET	02-216-A	1
10	3" DRAIN CAP	02-223	1
11	GUN CART TOW CLEVIS	02-220	1
12	3/8" GALVANIZED SHACKLE (CLEVIS)	40-064	2
13	3/8" GR.30, REGULAR LINK CHAIN (GALV.)	40-065-72	6 ft.
14	**WHEEL ASSEMBLY CONSISTING OF:**	**55-041**	**2**
15	TIRE, 670-15 RIB IMPLEMENT	55-043	1
16	RIM, 15 X 5 , 5-BOLT	55-042-A	1
17	VALVE STEM	55-046	1
	WHEEL ASSEMBLY CONSISTING OF:	**55-036**	**1**
18	TIRE, 480 - 8, 5 RIB	55-037	1
19	RIM, 8 X 3.75, 4-BOLT	55-038	1
20	VALVE STEM	55-039	1
	HUB ASSEMBLY CONSISTING OF:	**55-018**	**2**
21	GREASE SEAL	55-015	1
22	INNER BEARING CONE	55-020	1
-	INNER BEARING CUP (NOT SHOWN)	55-019	1
23	HUB, 5-BOLT	55-018-A	1
-	OUTER BEARING CUP (NOT SHOWN)	55-021	1
24	OUTER BEARING	55-022	1
25	DUST CAP	55-023	1
26	WHEEL BOLT, 1/2"-20	55-007	5
27	SPINDLE WASHER	55-016	2
28	SPINDLE NUT	55-008	1
29	3/16" X 2" LG. COTTER PIN	90-PIN-CT019X200	1

Continued

3000 Series Gun Cart Assembly

All

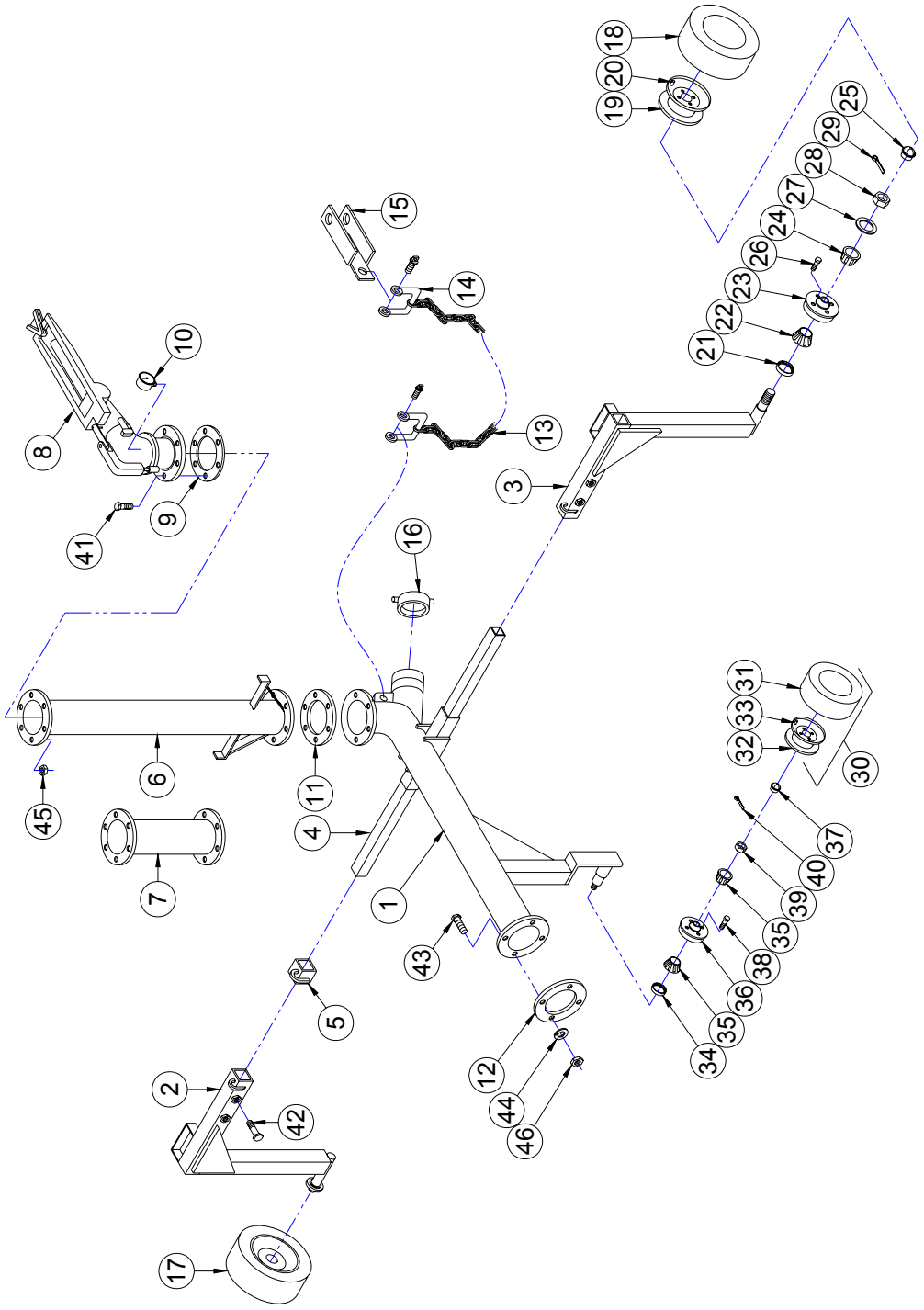


3000 Series Gun Cart Assembly *All*

Item	Description	Part Number	Qty
-	**HUB ASSEMBLY CONSISTING OF:**	**55-002**	**1**
30	GREASE SEAL	55-006	1
31	BEARING CONE	55-004	2
-	BEARING CUP (NOT SHOWN)	55-003	2
32	HUB, 4-BOLT	55-002-A	1
33	DUST CAP	55-005	1
34	WHEEL BOLT, 1/2"-20	55-007	4
35	SPINDLE NUT	55-008	1
36	3/16" X 2" LG. COTTER PIN	90-PIN-CT-019X200	1
37	BOLT, 3/8" X 1 1/2" LG.	90-BLT-03816X150	6
38	BOLT, 1/2" X 1 1/4" LG.	90-BLT-05013X125	10
39	BOLT, 5/8" X 2" LG.	90-BLT-06311X200	4
40	5/8" LOCK WASHER	90-WSR-LOC063	4
41	HEX NUT, 3/8"-16	90-NUT-HEX038-16	6
42	HEX NUT, 5/8"-11	90-NUT-HEX063-11	4
43	LABEL – MAX HOSE PULL	40-288-A	1
	JAM NUT, 1/2"-13	90-NUT-JAM050-13	10

3000 Series 28” Gun Cart Assembly *

All



3000 Series 28” Gun Cart Assembly *

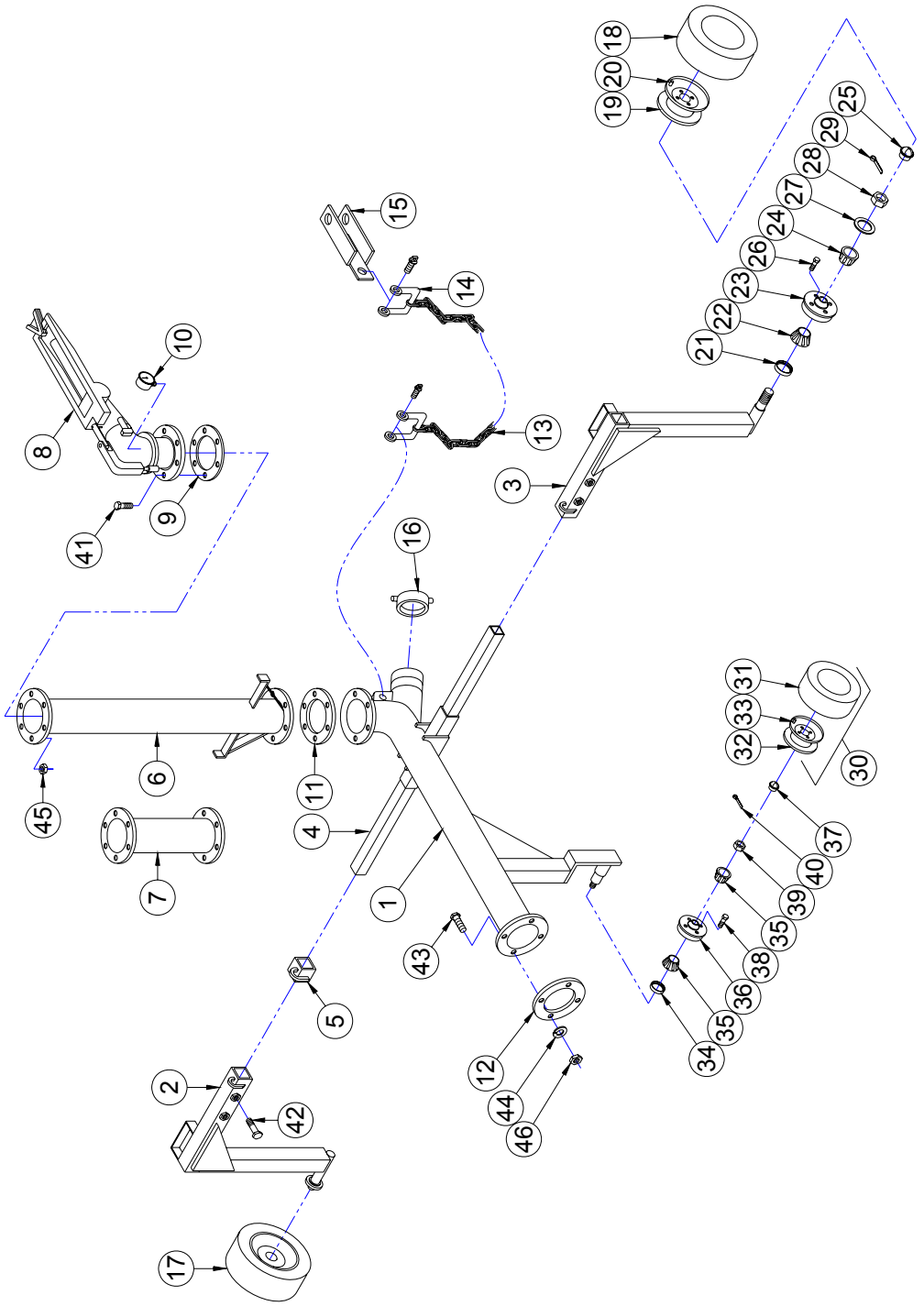
All

Item	Description	Part Number	Qty
1	28" CART BODY	02-235	1
2	GUN CART LEG, RIGHT	02-243-R	1
3	GUN CART LEG, LEFT	04-243-L	1
4	CROSS TUBE	04-831-72	1
5	PICKUP COLLAR, SHORT	02-234	1
6	ORCHARD EXTENSION, 5 FT.	02-226	Opt.
7	EXTENSION, 2 FT.	02-237	Opt.
8	NELSON SR-150 GUN KIT	SP-NEL-SP150KIT	1
9	GUN FLANGE GASKET	DO-PRT-30-040-A	1
10	GAUGE, 0-100 PSI WET	45-022	1
-	GAUGE, 0-160 PSI WET	45-017	Opt.
11	EXTENSION GASKET	DO-PRT-30-040-A	1
12	HOSE FLANGE GASKET	02-216-A	1
13	GALVANIZED CHAIN, 3/8"	40-065	6 ft.
14	GALVANIZED SHACKLE (CLEVIS), 3/8"	40-064	2
15	GUN CART TOW CLEVIS	02-220	1
16	3" DRAIN CAP	02-223	1
17	**WHEEL ASSEMBLY CONSISTING OF:**	**55-041**	**2**
18	TIRE, 670-15 RIB IMPLEMENT	55-043	1
19	RIM, 15 X 5 , 5-BOLT	55-042-A	1
20	VALVE STEM	55-046	1
-	**HUB ASSEMBLY, 5-BOLT CONSISTING OF:**	**55-018**	**2**
21	GREASE SEAL	55-015	1
22	INNER BEARING	55-020	1
-	INNER BEARING RACE (NOT SHOWN)	55-019	1
23	HUB, 5-BOLT	55-018-A	1
-	OUTER BEARING RACE (NOT SHOWN)	55-021	1
24	OUTER BEARING	55-022	1
25	DUST CAP	55-023	1
26	WHEEL BOLT, 1/2"	55-007	5
27	SPINDLE WASHER	55-016	2
28	SPINDLE NUT	55-008	2
29	COTTER PIN, 3/16" X 2" LG.	90-PIN-CT019X200	2
30	**WHEEL ASSEMBLY CONSISTING OF:**	**55-036**	**1**
31	TIRE, 480 X 8, 5 RIB	55-037	1
32	WHEEL RIM, 3.75" X 8", 4 BOLT	55-038	1
33	VALVE STEM	55-039	1

Continued

3000 Series 28” Gun Cart Assembly *

All



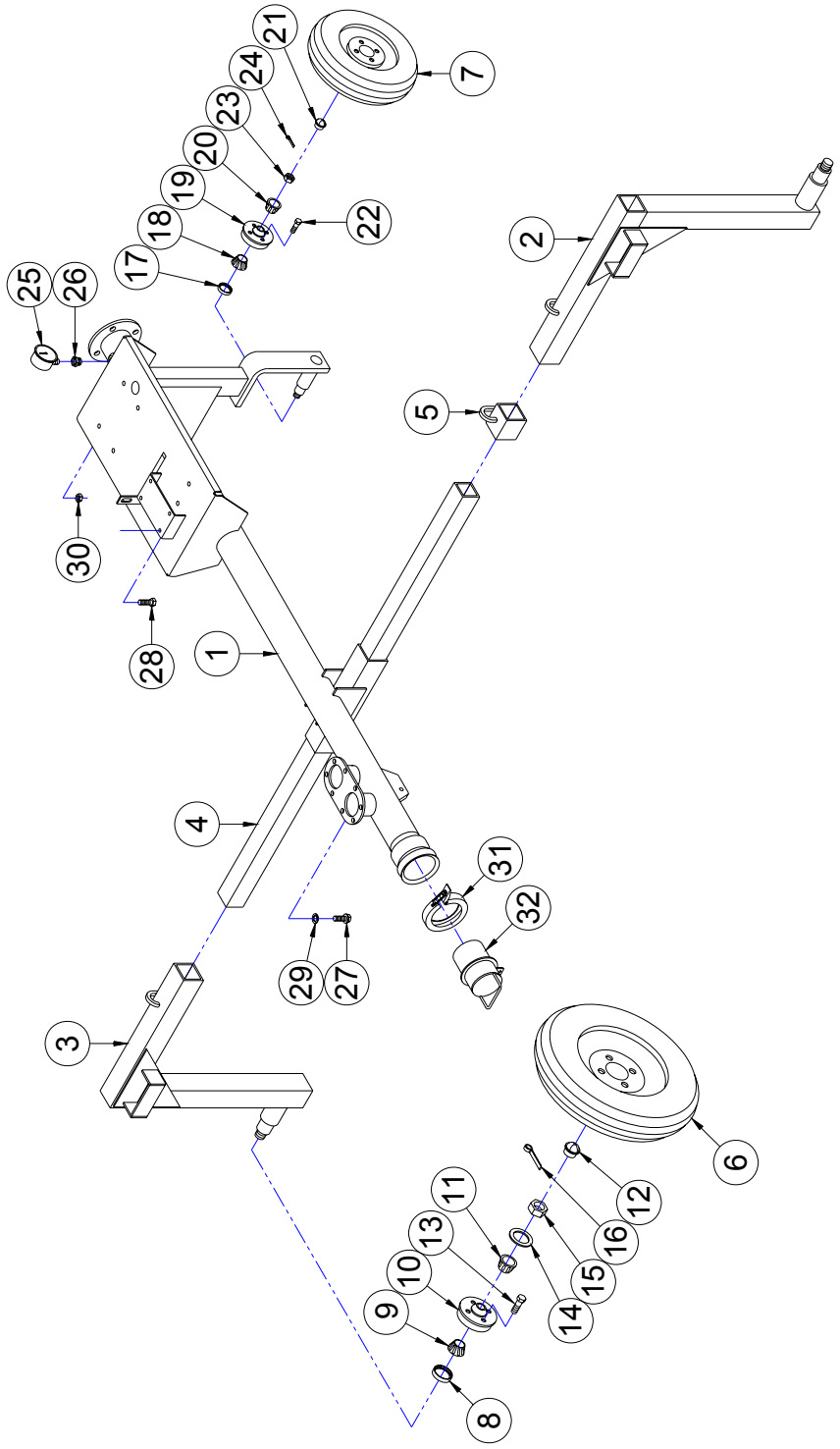
3000 Series 28” Gun Cart Assembly *

All

Item	Description	Part Number	Qty
-	**HUB ASSEMBLY, 4 BOLT CONSISTING OF:**	**55-002**	**1**
34	GREASE SEAL	55-006	1
35	WHEEL BEARING	55-004	2
-	WHEEL BEARING RACE (NOT SHOWN)	55-003	2
36	HUB, 4 BOLT	55-002-A	1
37	DUST CAP	55-005	1
38	WHEEL BOLT, 1/2"	55-007	4
39	SPINDLE NUT	55-008	1
40	COTTER PIN, 3/16" X 2" LG.	90-PIN-CT019X200	1
	JAM NUT, 1/2"	90-NUT-JAM050-13	10
41	BOLT, 3/8" X 1 1/2" LG.	90-BLT-03816X150	6
42	BOLT, 1/2" X 1 1/4" LG.	90-BLT-05013X125	10
43	BOLT, 5/8" X 2" LG.	90-BLT-06311X200	4
44	LOCK WASHER, 5/8"	90-WSR-LOC063	4
45	HEX NUT, 3/8"	90-NUT-HEX038-16	6
46	LOCK NUT, 5/8"	90-NUT-LOC063-11	4
47	LABEL – MAX HOSE PULL (NOT SHOWN)	40-288-A	1

Symmetrical Cart Assembly *

Broadcast Cart



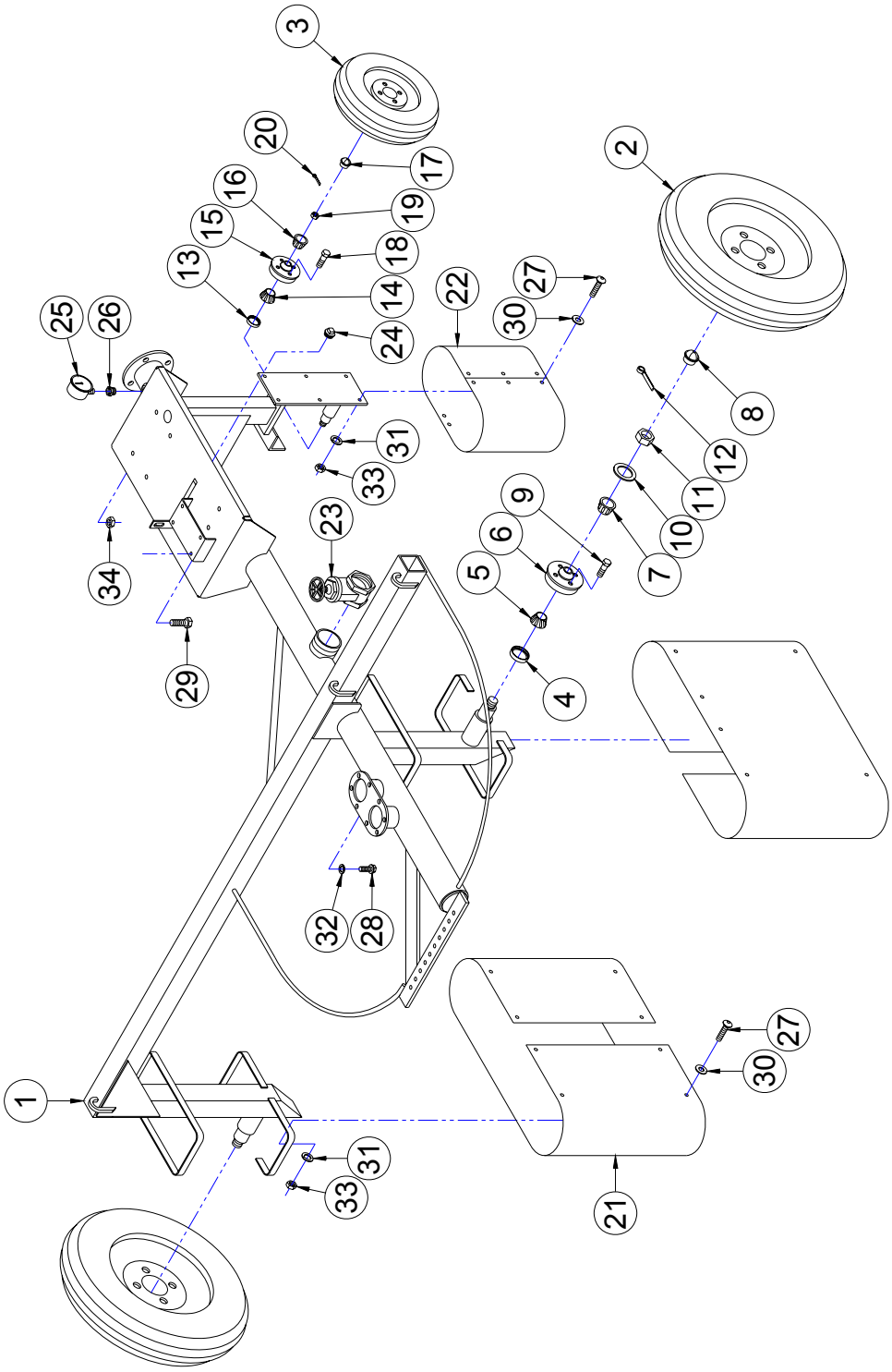
Symmetrical Cart Assembly *

Broadcast Cart

Item	Description	Part Number	Qty
1	CART BODY, SYMMETRICAL	14-114	1
2	28 IN. CART LEG, LEFT	02-243-L	1
3	28 IN. CART LEG, RIGHT	02-243-R	1
4	72 IN. LG. CROSS TUBE	04-831-72	1
5	SHORT PICK UP COLLAR	02-234	1
6	**WHEEL ASSEMBLY CONSISTING OF:**	55-041	2
	TIRE, 670-15 RIBBED IMPLEMENT	55-043	1
	WHEEL RIM, 15" X 5" X 5 BOLT	55-042-A	1
	VALVE STEM	55-046	1
7	**WHEEL ASSEMBLY CONSISTING OF:**	55-036	1
	TIRE, 480 X 8, 5 RIB	55-037	1
	WHEEL RIM, 8" X 3.75" X 4 BOLT	55-038	1
	VALVE STEM	55-039	1
	HUB ASSEMBLY CONSISTING OF:	55-018	2
8	GREASE SEAL	55-015	1
9	BEARING CONE, INNER	55-019	1
-	BEARING CUP, INNER (NOT SHOWN)	55-020	1
10	WHEEL HUB (INCL. BEARING CUPS)	55-018-A	1
-	BEARING CUP, OUTER (NOT SHOWN)	55-021	1
11	BEARING CONE, OUTER	55-022	1
12	DUST CAP	55-023	1
13	WHEEL BOLT, 1/2"-20	55-007	5
14	SPINDLE WASHER	55-016	2
15	SPINDLE NUT	55-034	2
16	COTTER PIN, 3/16" X 2" LG.	90-PIN-CT019X200	2
	HUB ASSEMBLY CONSISTING OF	55-002	1
17	GREASE SEAL	55-006	1
18	BEARING CONE, INNER	55-004	1
-	BEARING CUP, INNER (NOT SHOWN)	55-003	1
19	WHEEL HUB (INCL. BEARING CUPS)	55-002-A	1
-	BEARING CUP, OUTER (NOT SHOWN)	55-021	1
20	BEARING CONE, OUTER	55-022	1
21	DUST CAP	55-005	1
22	WHEEL BOLT, 1/2"-20	55-007	4
23	SPINDLE NUT	55-008	1
24	COTTER PIN, 3/16" X 2" LG.	90-PIN-CT019X200	1
25	PRESSURE GAUGE, 0-160 PSI, WET	45-017	1
26	3/4 - 1/4 REDUCING BUSHING	40-NPT-RB075X025	1
27	BOLT, 3/8" X 1 1/2" LG.	90-BLT-03816X150	8
28	FLANGE HEAD BOLT, M10 X 20MM	90-BLT-FM10150X020	4
29	LOCK WASHER, 3/8"	90-WSR-LOC038	8
30	LOCK NUT, 5/16" – 18	90-NUT-LOC031-18	4
31	RINGLOCK CLAMP, 4IN.	IR-CPL-RL4P	1
32	COUPLING PLUG	14-115	1

Asymmetrical Cart Assembly *

Broadcast Cart



Asymmetrical Cart Assembly *

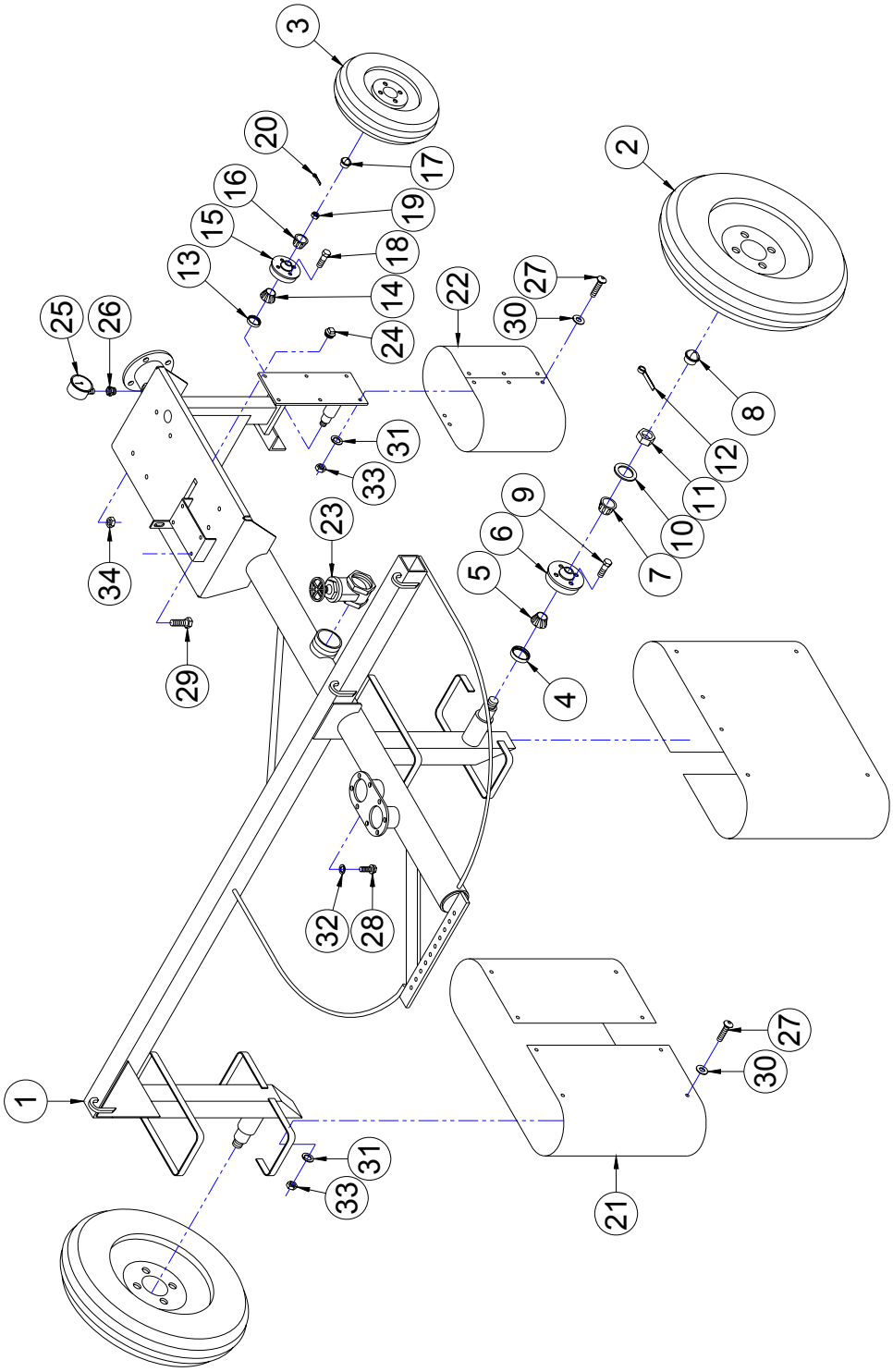
Broadcast Cart

Item	Description	Part Number	Qty
1	CART BODY	14-101	1
2	**WHEEL ASSEMBLY CONSISTING OF:**	**55-041**	**2**
	TIRE, 670-15 RIBBED IMPLEMENT	55-043	1
	WHEEL RIM, 15" X 5" X 5 BOLT	55-042-A	1
	VALVE STEM	55-046	1
3	**WHEEL ASSEMBLY CONSISTING OF:**	**55-036**	**1**
	TIRE, 480 X 8, 5 RIB	55-037	1
	WHEEL RIM, 8" X 3.75" X 4 BOLT	55-038	1
	VALVE STEM	55-039	1
	HUB ASSEMBLY CONSISTING OF:	**55-018**	**2**
4	GREASE SEAL	55-015	1
5	BEARING CONE, INNER	55-019	1
-	BEARING CUP, INNER (NOT SHOWN)	55-020	1
6	WHEEL HUB (INCL. BEARING CUPS)	55-018-A	1
-	BEARING CUP, OUTER (NOT SHOWN)	55-021	1
7	BEARING CONE, OUTER	55-022	1
8	DUST CAP	55-023	1
9	WHEEL BOLT, 1/2"-20	55-007	5
10	SPINDLE WASHER	55-016	2
11	SPINDLE NUT	55-034	2
12	COTTER PIN, 3/16" X 2" LG.	90-PIN-CT019X200	2
	HUB ASSEMBLY CONSISTING OF:	**55-002**	**1**
13	GREASE SEAL	55-006	1
14	BEARING CONE, INNER	55-004	1
-	BEARING CUP, INNER (NOT SHOWN)	55-003	1
15	WHEEL HUB (INCL. BEARING CUPS)	55-002-A	1
-	BEARING CUP, OUTER (NOT SHOWN)	55-021	1
16	BEARING CONE, OUTER	55-022	1
17	DUST CAP	55-005	1
18	WHEEL BOLT, 1/2"-20	55-007	4
19	SPINDLE NUT	55-008	1
20	COTTER PIN, 3/16" X 2" LG.	90-PIN-CT019X200	1

Continued

Asymmetrical Cart Assembly *

Broadcast Cart



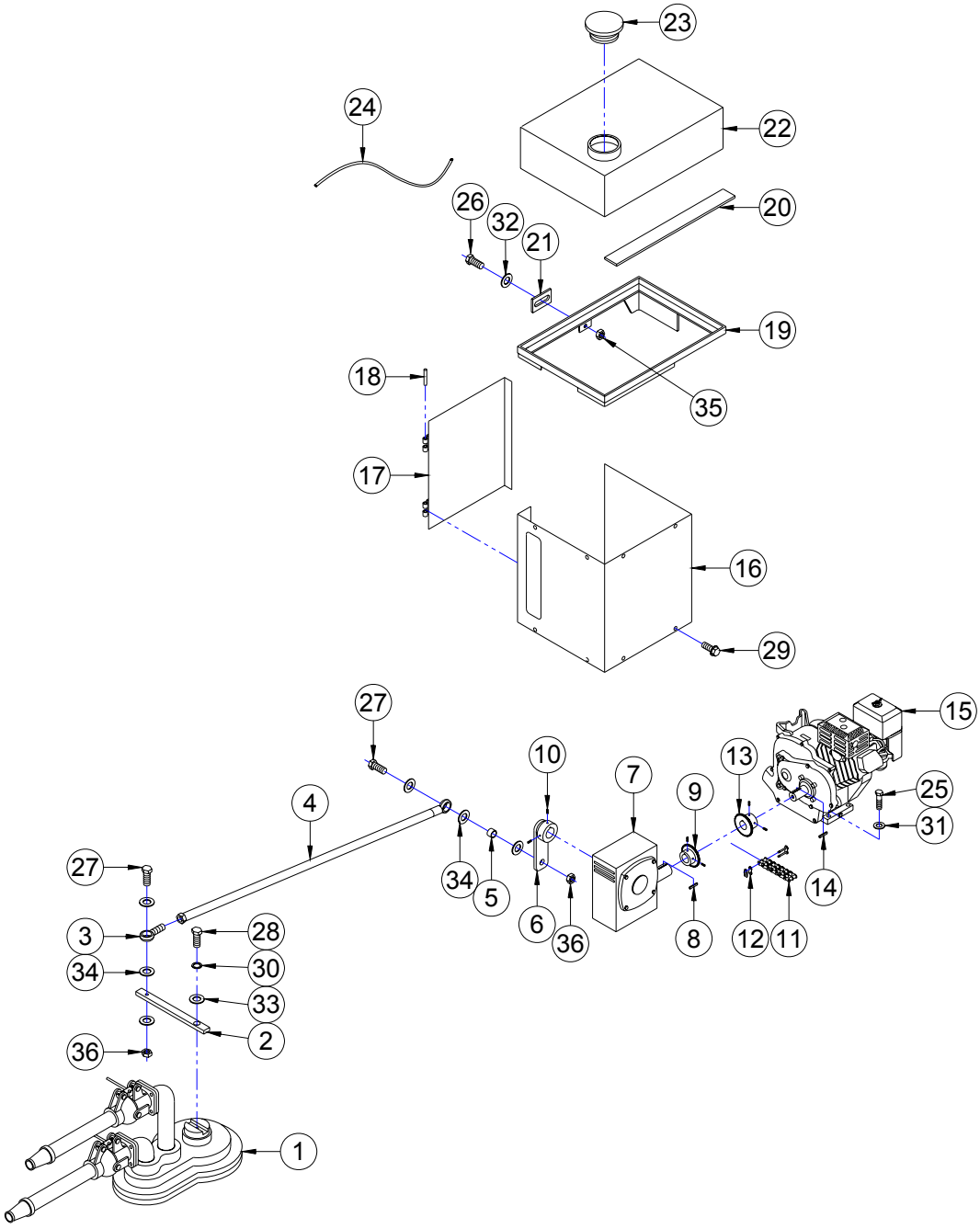
Asymmetrical Cart Assembly *

Broadcast Cart

Item	Description	Part Number	Qty
21	REAR WHEEL COVER	14-235	2
22	FRONT WHEEL COVER	14-236	1
23	3" GATE VALVE	40-NPT-VLV300GATFF	1
24	3/4 NPT PLUG, GALV.	40-NPT-PLG075G	1
25	PRESSURE GAUGE, 0-160 PSI, WET	45-017	1
26	3/4 - 1/4 REDUCING BUSHING	40-NPT-RB075X025	1
27	CARRIAGE BOLT, ¼" X 1" LG.	90-BLT-CG02520-100	36
28	BOLT, 3/8" X 1 1/2" LG.	90-BLT-03816X150	8
29	FLANGE HEAD BOLT, M10 X 20MM	90-BLT-FM10150X020	4
30	FENDER WASHER, 1/4"	90-WSR-FEN025	36
31	LOCK WASHER, 1/4"	90-WSR-LOC025	36
32	LOCK WASHER, 3/8"	90-WSR-LOC038	8
33	HEX NUT, 1/4" – 20	90-NUT-HEX025-20	36
34	LOCK NUT, 5/16" – 18	90-NUT-LOC031-18	4
35	CART TOW CHAIN GROUP (NOT SHOWN)	TR-CRT-TOWCHAIN	1
36	CART LIFT CHAIN (NOT SHOWN)	TR-CHN-25L	2

Drive System and Shielding *

Broadcast Cart



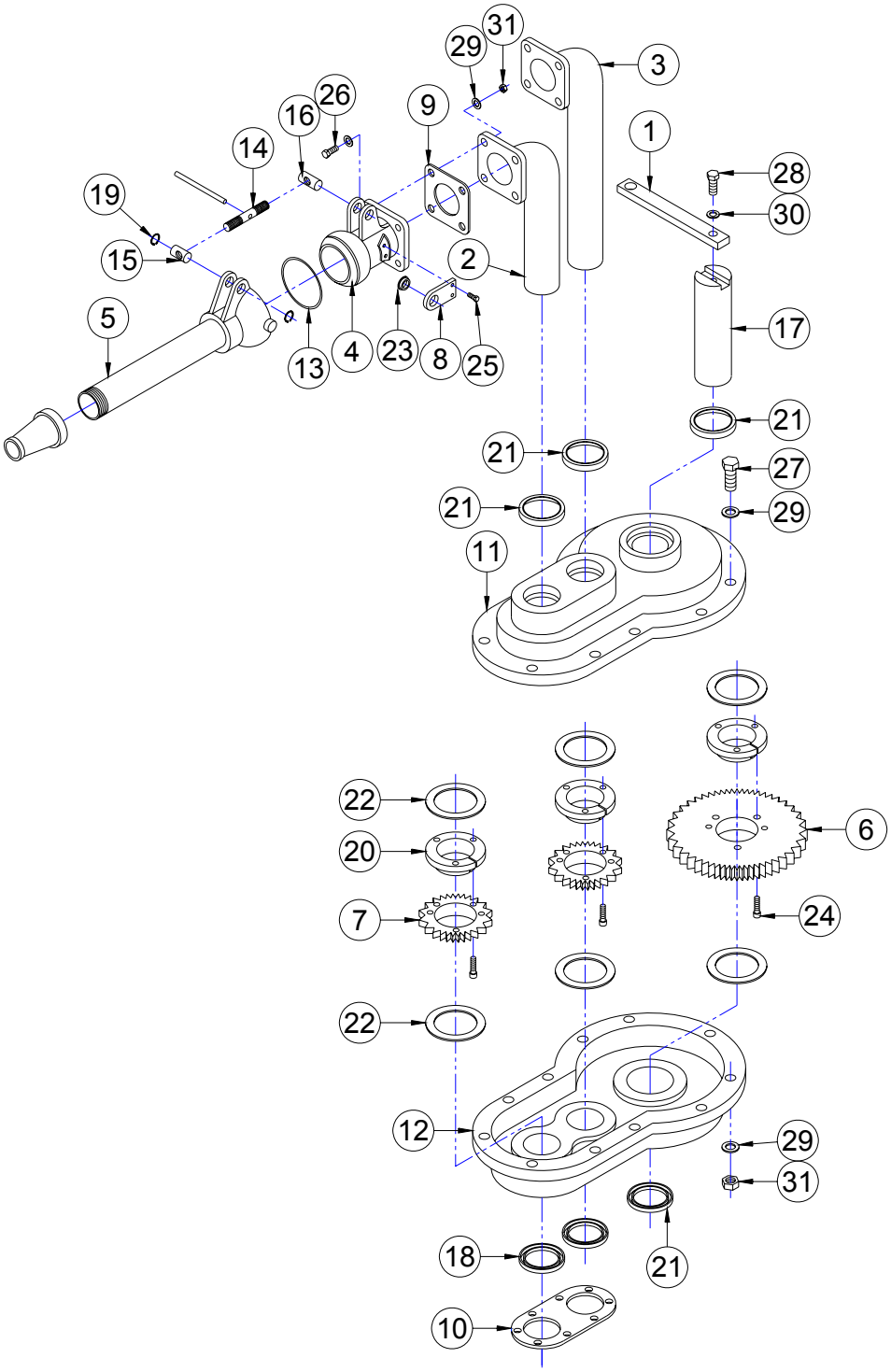
Drive System and Shielding *

Broadcast Cart

Item	Description	Part Number	Qty
1	GINSENG GUN ASSEMBLY	20-000	1
2	DRIVE ARM	14-240	1
3	ROD END, 3/4" - 16 MALE THREAD	40-488	1
4	DRIVE LINK	14-105	1
5	SPACER, 3/4" X 1/2" LG.	40-110	1
6	GEAR BOX ARM	14-108	1
7	GEAR BOX	40-486	1
8	1/4" SQ. X 1 1/4" LG. KEY	90-KEY-SQ025X125	1
9	GEAR, H50-14-1 1/8"	10-SPT-50B14X113	1
10	SET SCREW		4
11	RIVETED ROLLER CHAIN, #50-2	10-CHN_50-2RIV	14
12	CONNECTING LINK, #50-2	10-LNK-50-2CONN	1
13	GEAR, H50-14-3/4"	10-SPT-50B14X075	1
14	3/16" SQ. X 1 1/8" LG. KEY	90-KEY-SQ019X113	1
15	5.5 HP. HONDA ENGINE, GX120K1LX	40-159-A	1
16	GEARBOX HOUSING	14-102	1
-	LATCH KIT (NOT SHOWN)	40-217	1
17	GEARBOX HOUSING DOOR	14-103	1
18	BRASS HINGE PIN, 3/16" X 3" LG.	40-200-C	2
19	FUEL TANK CRADLE	14-104	1
20	TANK CUSHION	40-093-20	2
21	VIBRATION ISOLATOR	40-095	1
22	ALUMINUM FUEL TANK, 5 GAL.	40-017	1
23	VENTED GAS CAP	40-017-A	1
-	FUEL TANK STRAINER (NOT SHOWN)	40-HDA-16955ZE1000	1
-	14MM O-RING (NOT SHOWN)	40-HDA-91353671004	1
24	NEOPRENE FUEL LINE, 3/16"	40-066	16"
25	BOLT, 5/16" X 1 1/2" LG.	90-BLT-03118X150	4
26	BOLT, 3/8" X 1 1/4" LG.	90-BLT-03816X125	1
27	BOLT, 3/4" X 3" LG.	90-BLT-07510X300	2
28	BOLT, 1/2" X 1 1/4" LG.	90-BLT-05013X125	1
29	FLANGE HEAD BOLT, M10 X 20MM	90-BLT-FM10150X020	12
30	LOCK WASHER, 1/2"	90-WSR-LOC050	1
31	FLAT WASHER, 5/16"	90-WSR-FLT031	4
32	FLAT WASHER, 3/8"	90-WSR-FLT038	1
33	FLAT WASHER, 1/2"	90-WSR-FLT050	1
34	FLAT WASHER, 3/4"	90-WSR-FLT075	6
35	LOCK NUT, 3/8" - 16	90-NUT-LOC038-16	1
36	LOCK NUT, 3/4" - 10	90-NUT-LOC075-10	2

Gear Box Assembly *

Broadcast Cart



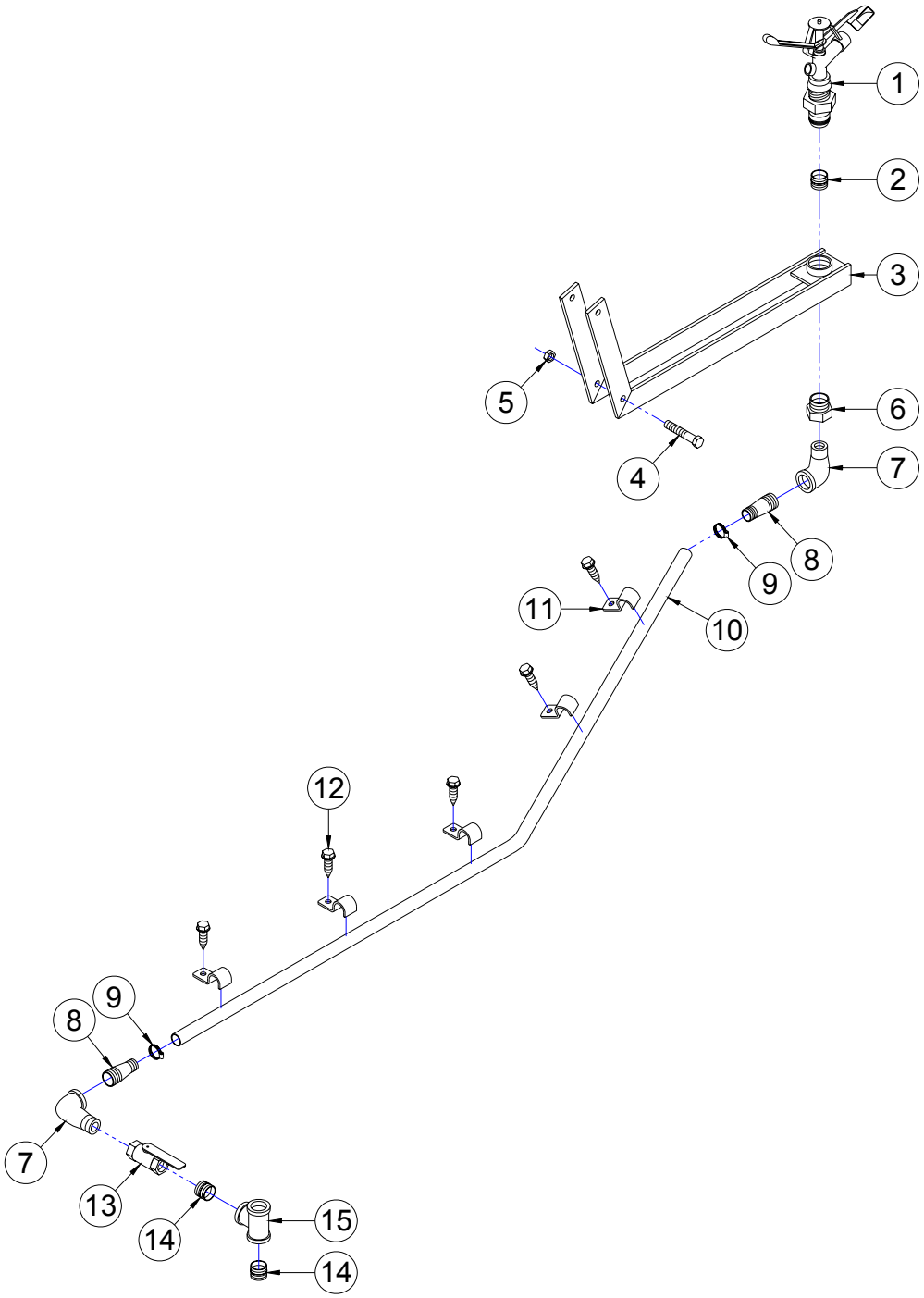
Gear Box Assembly *

Broadcast Cart

Item	Description	Part Number	Qty
1	DRIVE ARM	14-240	1
2	SHORT INLET	20-002	1
3	LONG INLET	20-003	1
4	GUN BALL	20-004	2
5	RANGE TUBE WELDMENT	20-005	2
6	CROWN GEAR	20-006	1
7	PINION GEAR	20-007	2
8	PIVOT ARM	20-008	4
9	FLANGE GASKET - VITON	20-009-V	2
10	GUN GASKET - VITON	20-010-V	1
11	GEAR CASE - TOP	20-011	1
12	GEAR CASE - BOTTOM	20-012	1
13	O-RING 2 3/4 ID X 0.135 - VITON	20-013-V	2
14	ADJUSTING ROD	20-014	2
15	PIVOT - R.H. THREAD	20-015	2
16	PIVOT - L.H. THREAD	20-016	2
17	SHAFT	20-017	1
18	2 IN. INLET SEAL	20-018	2
19	EXT. RETAINING RING - 5/8 IN. S.S.	20-019	8
20	2 IN. TAPER BUSHING	40-467	3
21	2 IN. SHAFT SEAL	40-468	4
22	2 IN. X 14 GA. MACHINERY BUSHING	90-WSR-M51	6
23	ROTATION BUSHING	SP-NEL-9993	4
24	1/4-20 X 1 1/2 LG. SHCS	89-SCR-SHO2520X150	9
25	BOLT, 5/16" X 3/4" LG.	90-BLT-03118X075	8
26	BOLT, 3/8" X 1 1/2" LG.	90-BLT-03816X150	8
27	BOLT, 3/8" X 2" LG.	90-BLT-03816X200	11
28	BOLT, 1/2" X 1 1/4" LG.	90-BLT-05013X125	1
29	SAE FLAT WASHER, 3/8"	90-WSR-SAE038	30
30	LOCK WASHER, 1/2"	90-WSR-LOC050	1
31	LOCK NUT, 3/8" - 16	90-NUT-LOC038-16	19

Sprinkler Kit *

All



Sprinkler Kit *

All

Item	Description	Part Number	Qty
1	RAINBIRD, 65PJ TNT PART CIRCLE	SP-RBD-KIT65PJTNT	1
2	1 NPT CLOSE NIPPLE GALV.	40-NPT-NPLC100G	1
3	SPRINKLER MOUNT	06-672	1
4	BOLT, 3/8" X 3 3/4" LG.	90-BLT-03816X375	2
5	LOCKNUT, 3/8"	90-NUT-LOC038-16	2
6	1" - 3/4" RED. BUSHING GALV.	40-NPT-RB100X075G	1
7	3/4" X 90 DEG STREET ELBOW GALV.	40-NPT-ELS075X90G	2
8	3/4" NPT X 3/4" HOSE BARB GALV.	40-NPT-BRB075G	2
9	GEAR CLAMP, HS-08	50-024	2
10	3/4" SUCTION HOSE	IR-HOZ-SUC075	15 ft.
11	GALV. SINGLE TUBE CLAMP, 1IN.	50-058	5
12	TEK SCREW, 1/4" X 1" LG.	90-SCR-TEK025X100	5
13	3/4" BALL VALVE, F X F	40-NPT-VLV075BLLFF	1
14	3/4" CLOSE NIPPLE GALV.	40-NPT-NPLC075G	2
15	3/4" NPT GALVANIZED TEE	40-NPT-TEE075G	1
	NOT SHOWN: (FOR USE ON TRAVELLERS WITHOUT AN EXISTING FLANGE)		
	3/4" NPT WELD-IN FLANGE	30-210	1
	GALV. RED. BUSHING, 3/4"-1/4" NPT	40-NPT-RB075X025G	1

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:

ONLY perform maintenace when the machine is shut down and is in a non-loaded condition. This means that no fluid is being pumped through the reel and all mechanical and hydraulic tension has been released from the hose rewind system.

Each Use

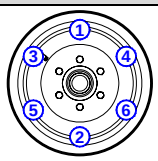
Maintenance Item	Figure	Procedure
Visually inspect equipment	N / A	Walk around the unit and inspect for loose, missing or damaged items. Check the condition of the indexer button, chains and connecting links. Replace missing or damaged items and tighten loosened items.
Maintain tire pressure.	N / A	Using a tire pressure gauge, check the pressure of each tire and add or remove air to achieve the manufacturer's recommended pressure posted on the tire sidewall. **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.**
Tighten all wheel bolts	 img-00224wmf	Before moving the unit, verify that the wheel bolts are tight. When tightening the lug nuts use the star pattern with your torque wrench set at 110 ft/lbs (149 N.m).
Adjust, if necessary, the tension of the indexer chain	N / A	Remove protective shield. The indexer chain is properly tensioned when it has no visible slack. Adjustments are made by moving the idler wheel (rub block) towards the chain. Replace the shield before operating this machine.
Lubricate the indexer drive button and indexer slide rail.	Figure 34	Use a brush to liberally apply acceptable grease along the length of the indexer screw and drive button. (See Lubricants)
Check engine oil and filter.	N / A	Check the oil level of the Honda engine, replenish if required. Check the condition of the air filter, replace if necessary.
Check main drive chain.	N / A	Check the alignment and tension of the main drive chain. Adjust if necessary.

Table 5 - Required Maintenance - Each Use

After First 25 Hours

Maintenance Item	Figure	Procedure
Change engine oil.	N / A	Change the oil in the Honda engine. Refer to the Honda engine manual for detailed maintenance instructions.
Change transmission oil.	Figure 33	Change the oil in the transmission gearbox.

Table 6 – After First 25 Hours of Use

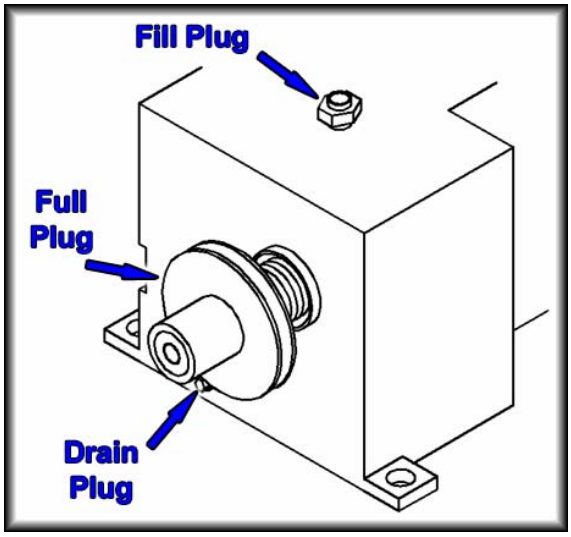


Figure 33 - Transmission Plug Layout

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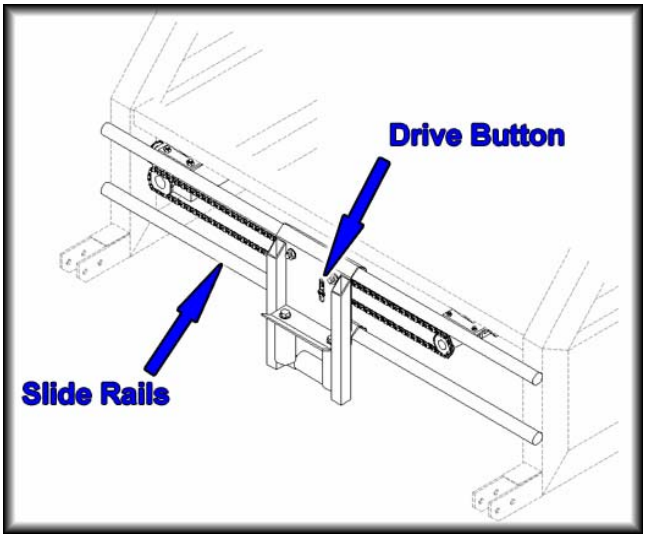


Figure 34 - Lubricate Indexer

img-00260.png

Every 100 Hours

Maintenance Item	Figure	Procedure
Change engine oil.	N / A	Change the engine oil. Consult the Honda engine manual for further information on oil requirements and change intervals as well as other required engine maintenance.
Lubricate the following.	Figure 34	▪ Turntable Ring ▪ Indexer Slide Rails ▪ Indexer Idler Block ▪ Drive Chain Idler Arm Pivot ▪ Drive Pulley Lead Screw ▪ All chains
Check transmission oil level	Figure 33	Check the oil level in the transmission gearbox. Replenish as necessary.
Check Indexer oil level	Figure 35	Check the oil level in the indexer gearbox.

Table 7 – Every 100 Hours of Use

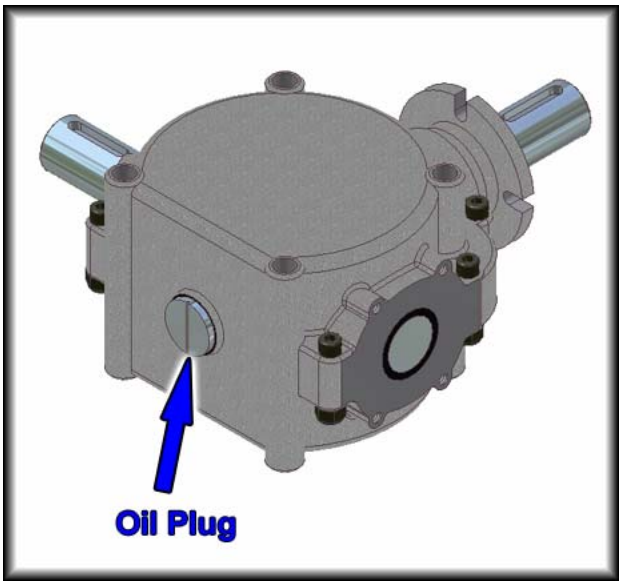


Figure 35 - Indexer Gearbox Oil Plug

img-00261.png

Every 250 Hours

Maintenance Item	Figure	Procedure
Check gun cart wheel bearings	N / A	Disassemble, clean, inspect, and repack the gun cart wheel bearings. Replace any defective components as required.

Table 8 – Every 250 Hours of Use

Before Storing

You MUST properly empty your Wide Body Series Traveller before storing the machine for more than one day. Failure to properly clean out the hose could result in the hose being plugged with sediment.

Maintenance Item	Figure	Procedure
Drain the hose.	N / A	Drain the hose. This is easily done by pulling out all but one (1) coil of hoses along a level path. Remove the drain plug from the gun cart. Use the Honda engine or a tractor PTO shaft to rewind the hose. **DO NOT leave the machine unattended during the hose drain process. Without fluid pressure present, the hose may flatten slightly causing it to lie improperly on the drum. It may be necessary to manually adjust the hose position on the hose drum during the draining process**
Disassemble and clean the variable speed pulley.	N / A	Disassemble and clean the variable speed pulley mounted on the engine. Remove the "moving face" of the pulley. Clean the bronze bushing and shaft of gum and belt dust and lubricate with a thin coat of light oil.
Main chassis wheel bearings.	N / A	Disassemble, clean, inspect and re-pack the main chassis wheel bearings with acceptable grease. (see Lubricants)
Lubricate all chains	N / A	Brush each chain with acceptable grease. (see "Lubricants")
Prepare Honda Engine.	N / A	Prepare the Honda engine for storage. See the storage instructions provided in the Honda engine manual.

Table 9 – Required Maintenance - Before Storing

Before Start Up (After long term storage)

Maintenance Item	Figure	Procedure
Review Operator's manual.	N / A	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.
Maintain tire pressure.	N / A	Using a tire pressure gauge, check the pressure of each tire and add or remove air to achieve the manufacturer's recommended pressure posted on the tire sidewall. **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.**
Change gearbox oil.	Figure 33	Change the oil in both the transmission gearbox and the indexer gearbox.
Fill fuel system	N / A	Fill the fuel system with fresh fuel.

Table 10 – Every 100 Hours of Use

Lubricants

Grease: Any good grade multi-purpose, waterproof grease is compatible with the greasing requirements of your **Cadman Wide Body Series Traveller**.

Engine Oil: Consult the Honda owner's manual for oil recommendations.

Transmission: SAE 80W or 90W gear oil.

Indexer Gearbox: SAE 80W or 90W gear oil.

Indexing System Adjustment

The indexing should ONLY be checked when only the base layer of hose is remaining on the drum. The hose connection should be in the 6 o'clock position (closest to the ground). If gaps exist between the coils of the hose, set the drum brake and manually push the coils together. If the hose does not travel straight off the drum and through the hose guide the indexing system must be adjusted using the instructions below.

During adjustments of the indexing system safety shields are removed. Before operating the machine you MUST properly re-install ALL shields.

Step 1

Remove the indexer and idler shields. Remove the bolts (4) from the indexer shield and the tek screws (5) from the idler shield and remove them both.

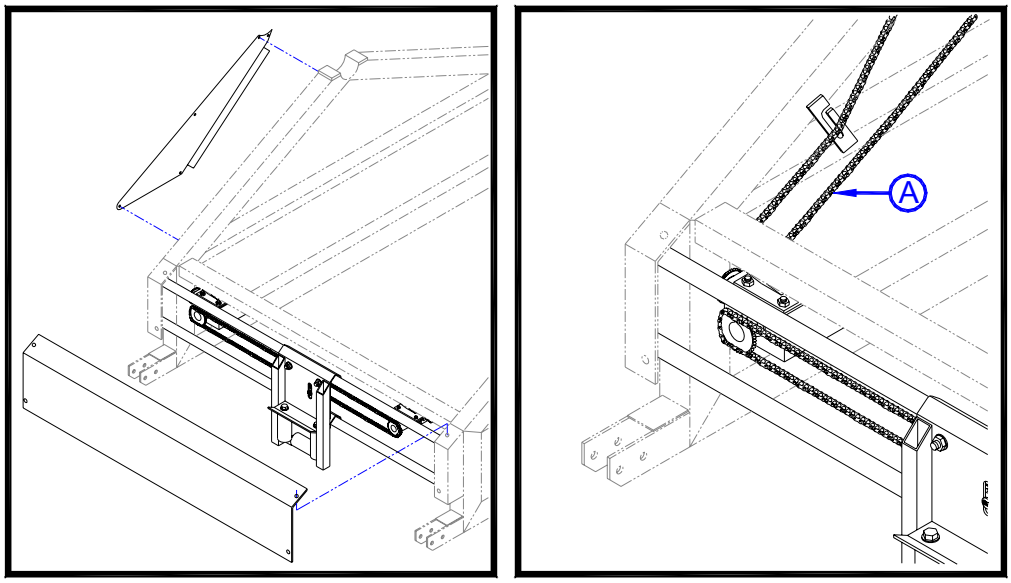


Figure 36 - Remove Shields / Loosen Chain

img-00235.wmf / img-00236.wmf

Step 2

Loosen the #50 chain ("A"). Remove the idler sprocket, and then remove the chain from the sprocket on the gear box.

Step 3

Manually adjust the hose guide position. Adjust the position of the hose guide by rotating the sprocket.

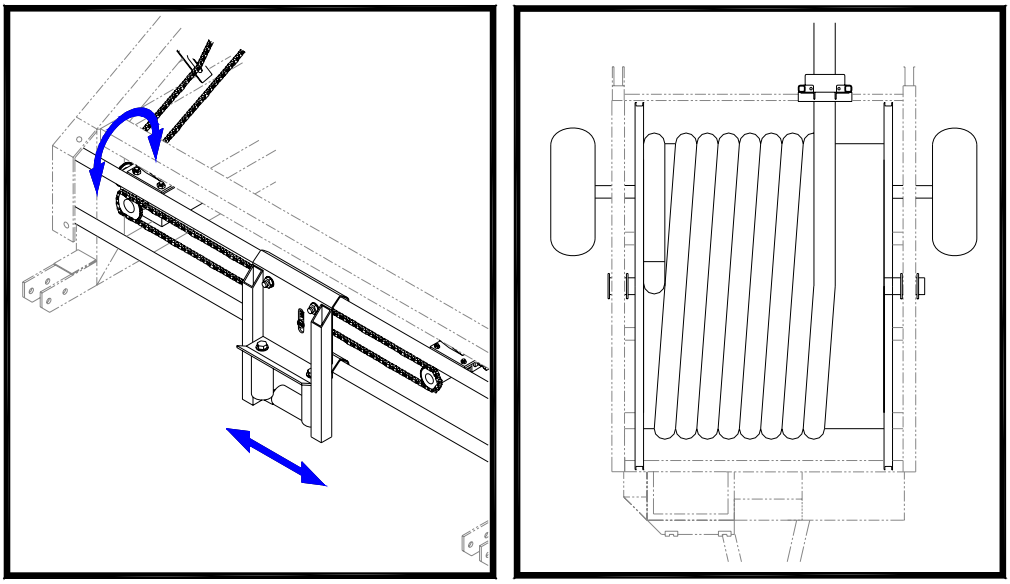


Figure 37 - Adjust Indexer / Hose Position

img-00237.wmf / img-00238.wmf

The hose travels in a straight line through the hose guide and lays snuggly against the drum elbow.

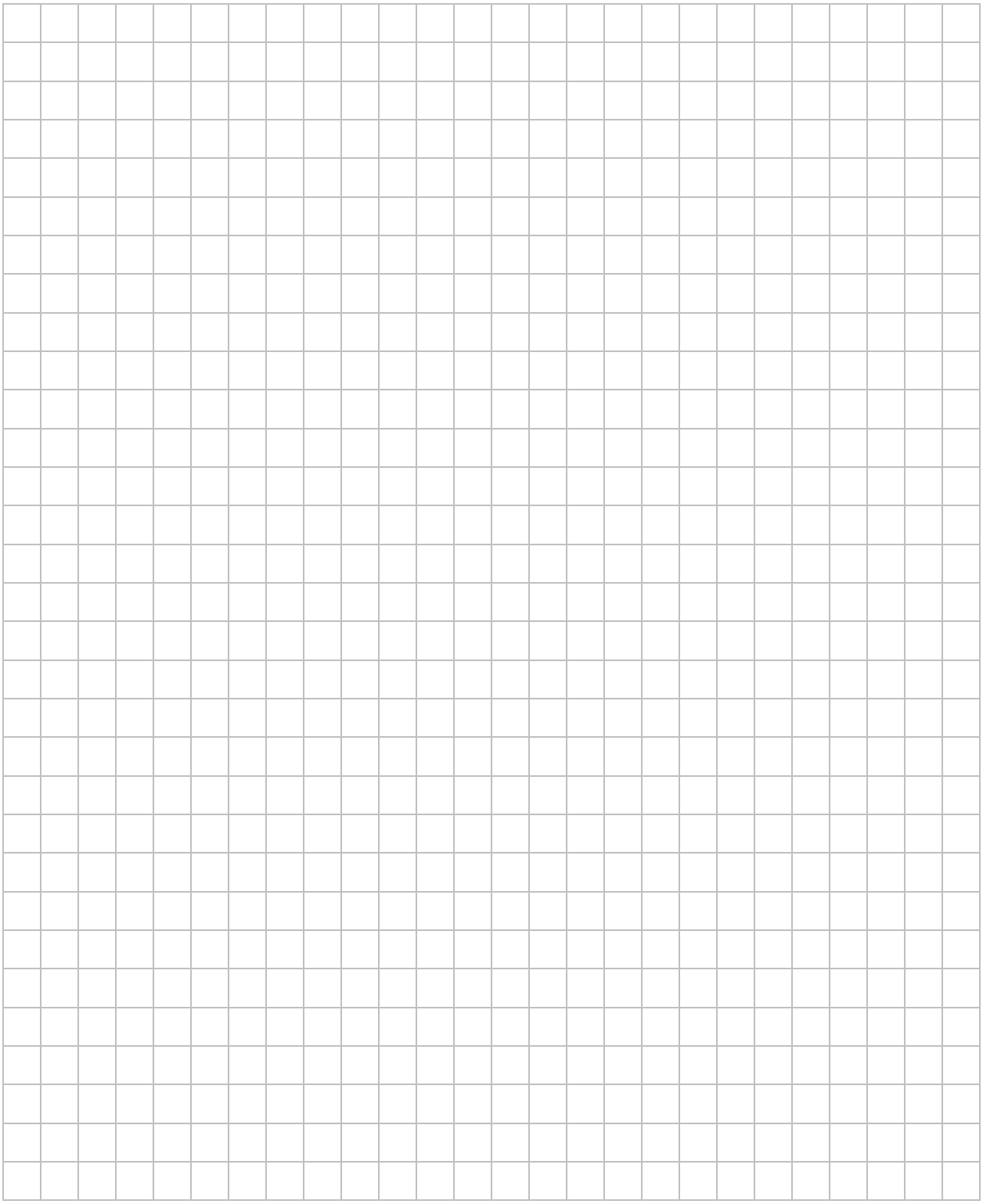
Step 4

Re-install the # 50 chain from the hose drum axle to the indexer gearbox.

When reinstalling the chain, hold pressure on the idler gear by pushing with a 15/16" wrench on the inside nut. Make sure all the slack from the lower portion of the chain is taken up. Tighten the idler gear bolt while holding pressure.

Step 5

Re-install the indexer and idler shields. Failure to complete this step can result in serious injury or death.



Useful Information

LENGTH

1 FOOT	= 12	Inches	**1 METER**	= 39.37	Inches
1 ROD	= 0.3048	Meter	**1 MILE**	= 3.2808	Feet

AREA

1 SQUARE FOOT	= 144	Square Inches
	= 0.0929	Square Meters
1 SQUARE YARD	= 1296	Square Inches
	= 0.8361	Square Meters
1 SQUARE METER	= 1549.4	Square Inches
	= 10.764	Square Feet
1 ACRE	= 43560	Square Feet
	= 4047	Square Meters
	= 0.4047	Hectare
1 HECTARE	= 107642.62	Square Feet
	= 10000	Square Meters
	= 2.47105	Acres
1 SQUARE MILE	= 640	Acres
	= 259	Hectares

VOLUME

1 GALLON (US)	= 0.8327	Imperial Gallons
	= 231	Cubic Inches
	= 0.1337	Cubic Feet
	= 8.345	Pounds
1 CUBIC FOOT	= 1728	Cubic Inches
	= 7.48	Gallons (US)
	= 62.4	Pounds
	= 28.32	Liters
1 ACRE INCH	= 27154	Gallons (US)
	= 254	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 5.8748