OPERATOR'S MANUAL & PARTS LIST

MULTI-drill
MODEL ND-96

FIRST PRODUCTS INC.
164 Oakridge Church Road
Tifton, Georgia 31794 U.S.A.
Phone (229) 382-4768
1-800-363-8780
Fax (229) 382-0506
Web: www.1stproducts.com Email: Sales@1stproducts.com

ND-96 SER. 1008 thru ___
Printed in U.S.A.
PBREV 0221

INTRODUCTION

Thank you for purchasing a First Products Multi-Drill. This piece of equipment has been carefully engineered and manufactured to provide years of reliable service.

The Multi-Drill is one of the most unique and versatile pieces of equipment on the market today. It is designed for primary seeding in various soil conditions.

We recommend that you carefully read the operators manual prior to operation. Also ensure that all future operators read this manual and become fully trained before allowing them to use or maintain this equipment. Time spent becoming acquainted with the safe operation, performance, and maintenance of the Multi-Drill will add longer life and greater satisfaction to your new purchase.

This machine is designed with safety in mind. However, if the machine is handled carelessly and not as instructed, it can be a dangerous piece of equipment. Observe all safety information in this manual and decals on the equipment.

The illustrations and data used in the manual were current at the time of printing. The manufacturer reserves the right to make changes or add improvements to its products at any time without incurring any obligation to make such changes to products manufactured previously.

For service, your authorized First Products dealer has trained mechanics, genuine First Products parts, and the necessary tools/equipment to handle all your needs.

Use only genuine First Products parts. Substituting parts will void warranty and may not meet standards required for safe and satisfactory operation. Record the model number and serial number of your equipment in the spaces provided below:

MODEL: _____
SERIAL NUMBER: _____
DATE OF PURCHASE: _____

REMEMBER SAFETY IS ALWAYS FIRST!

- **Read and understand the instructions and warnings carefully before using this machine.**

- **Read the warranty located on page 18. Fill in the required information on the warranty registration provided and return to the address on the front of this manual. The warranty registration must be returned to validate warranty.**

TABLE OF CONTENTS

GENERAL INFORMATION

The purpose of this manual is to assist you in operating and maintaining your Multi-Drill. Read it carefully. It furnishes information and istructions that will help you achieve years of dependable performance. These instructions have been compiled from extensive field experience and engineering data. Some informatin may be general in nature due to unknown and variying operating conditions. However, through experience and these instructions, you should be able to develp procedures suitable to your particular situation.

The illustrations and data used in this manual were current at the time of printing, but due to possible inline production changes, your machine may vary slightly in detail. We reserve the right to redesign and change the machines as may be necessary without notification.

⚠ Warning

Multi-Drill should never be operated with any safety shielding removed.

Throughout this manual, references are made to right and left locations. These are determined by standing behind the equipment facing the direction of forward travel.

SPECIFICATIONS for ND-96

Working Width	90”
Overall Width	115 ¼”
Disc Diameter	Coulter disc: 16” / Seed disc: 15”
Disc Spacing	9”
Hitch Category	CAT II
Quick Hitch Compatible	Yes
Hydraulic Lift Compatible	Yes
Towing Hitch Compatible	Yes
Guage Tires	26 X 6.6 X 14 (Implement Tire – 20 mph max)
Weight w/ all options	3200 Lbs
Primary Seedbox Capacity	12 Bushels
Small Seedbox Capcity	5 Bushels
Primary Seed Distribution Method	Gravity metered into rows
Seed Depth Gauge Method	Guage Tires – hydraulic or turnbuckle

SAFETY SYMBOLS

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

This is a standard safety alert symbol meaning

CAUTION — **Indicates hazardous situation, injury may occur, used to alert against carelessness.**

WARNING — **Indicates potentially hazardous situation. Death or serious injury may occur if proper procedures are not followed.**

DANGER — **Indicates most hazardous situation. Death or serious injury will occur if proper procedures are not followed.**

SAFETY RULES

Safety is a primary concern in the design and manufacturing of our products. However, our efforts to provide safe equipment can be avoided by an operator's careless act. Accident prevention ultimately is dependent upon the awareness, concern, judgement, and proper training of the personnel involved in the operation, transport, maintenance, and storage of the equipment. It is incumbent upon every operator to practice proper safety protocol to avoid life-threatening situations.

Training

Safety instructions are important! Read all attachment and power unit manuals; follow all safety rules and safety decal information. Failure to follow instructions or safety rules can result in serious injury or death.

If you do not understand any part of this manual and need assistance, see your dealer.

Know your controls and how to stop engine and attachment quickly in an emergency.

Operators must be instructed in and be capable of the safe operation of the equipment, its attachments, and all controls. Do not allow anyone to operate this equipment without proper instructions.

Never allow children or untrained persons to operate equipment.

Preparation

Check that all hardware is properly installed. Always tighten to torque chart specifications unless instructed otherwise in this manual.

Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear proper personal protective equipment for eyes, hair, hands, hearing, and head.

Make sure all safety decals are installed. Replace if damaged. See Safety Decals section for location and part numbers for ordering replacements.

A minimum 20% of tractor and equipment weight must be on the tractor's front wheels when attachments are in transport position. Without this weight, front tractor wheels could raise up and result in loss of steering.

Operation

Keep bystanders away from equipment.

Do not operate or transport equipment while under the influence of alcohol or drugs.

Operate only in daylight or good artificial light.

Keep hands, feet, hair, and clothing away from equipment while engine is running. Stay clear of all moving parts.

Always comply with all state and local lighting and marking requirements.

Never allow riders on power unit or attachment.

Power unit must be equipped with ROPS or ROPS cab and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS system in "locked up" position at all times.

Always sit in power unit seat when operating controls or starting engine.

Securely fasten seat belt, place transmission in neutral, engage brake, and ensure all other controls are disengaged before starting power unit engine.

Look down and to the rear and make sure area is clear before traveling in reverse.

Do not operate seeder in reverse.

Use extreme care when working close to fences, ditches, other obstructions, or on hillsides.

Do not operate or transport on steep slopes.

Do not start, stop, or change directions suddenly on slopes.

Use extreme care and reduce ground speed on slopes and rough terrain.

Watch for hidden hazards on the terrain during operation.

Stop power unit and equipment immediately upon striking an obstruction. Turn off engine, remove key, inspect, and repair any damage before resuming operation.

Transportation

Use additional caution and reduce speed when under adverse surface conditions, turning, or on inclines.

A minimum 20% of tractor and equipment weight must be on the tractor's front wheels when attachments are in transport position. Without this weight, front tractor wheels could raise up and result in loss of steering. The weight may be attained with front wheel weights, ballast in tires, front tractor weights, or front loader. Weigh the tractor and equipment. Do not estimate.

Do not operate or transport on steep slopes.

Always raise unit and install transport lock before transporting. Leak down or failure of mechanical or hydraulic systems can cause equipment to drop.

Always attach safety chain to tractor drawbar when transporting unit.

Never exceed 25 mph (40.2 hm/h) during transport.

Maintenance

Before dismounting power unit or performing any service or maintenance, follow these steps: 1) disengage power to equipment 2) lower unit to ground 3) operate valve levers to release any hydraulic pressure 4) set parking brake 5) stop engine 6) remove key 7) unfasten seat belt.

NEVER GO UNDERNEATH EQUIPMENT. Never place any part of the body underneath equipment or between moveable parts even when the engine has been turned off. Hydraulic system leak-down, hydraulic system failures, mechanical failures, or movement of control levers can cause equipment to drop or rotate unexpectedly resulting in severe injury or death. (Service work does not require going underneath).

Read Operator's Manual for service instructions or have service performed by qualified dealer.

Make sure attachment is properly secured, adjusted, and in good operating condition.

Keep all persons away from operator control area while performing adjustment, service, or maintenance.

Tighten all bolts, nuts, and screws to torque chart specifications. Check that all cotter pins are installed securely to ensure

equipment is in a safe condition before putting unit into service.

Make sure all safety decals are installed. Replace if damaged. See Safety Decals section for location and corresponding part numbers.

Storage

Block equipment securely for storage.

Cover with tarp included with seeder.

Keep children and bystanders away from storage area.

SAFETY DECALS

Your implement comes equipped with all safety labels in place. They were designed to help you safely operate your implement.

1. Read and follow decal directions.
2. Keep all safety decals clean and legible.
3. Replace all damaged or missing decals.
4. Refer to this section for proper decal placement.

Avoid spraying too close to decals when using a pressure washer; high pressure water can enter through very small scratches or under edges of decals causing them to peel or come off.

To install new decals:
Clean the area the decal is to be placed. Peel backing from decal. Press firmly on surface being careful not to cause air bubbles under label.

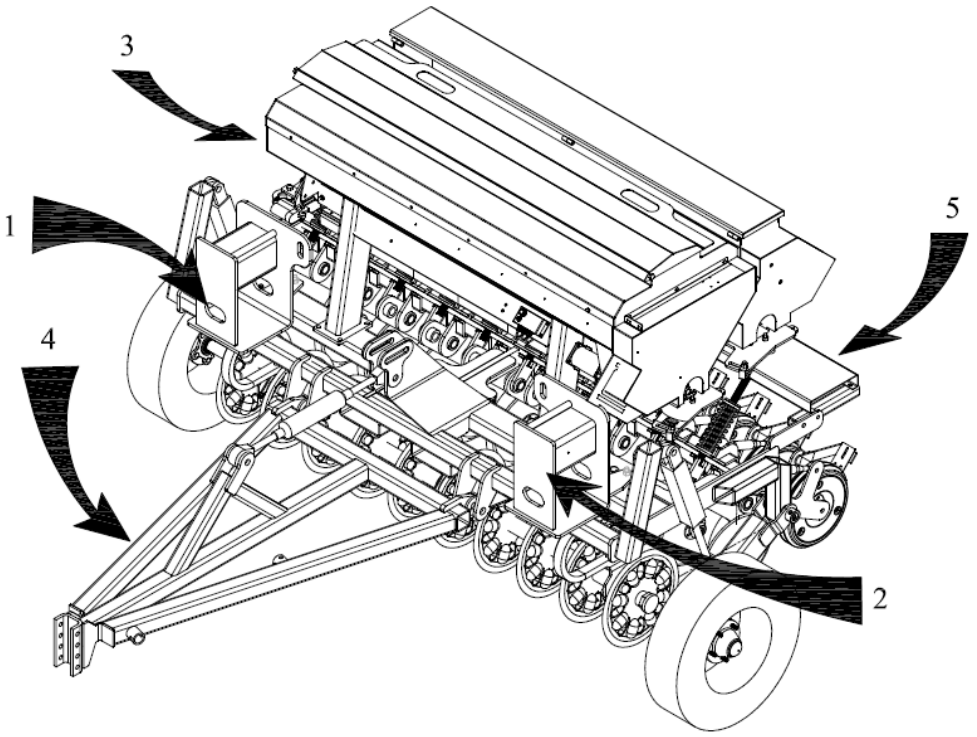


Figure 1. Safety Decal placement on Multi-Drill

1 – General Warning (DS50-067)

2 – Operator Warning (DS50-068)

3 – Pinch Point (AE50-075)

4 – Hydraulic Pressure (AE50-194)

5 – No Riders (AG50-089)

OPERATION

The operator is responsible for the safe operation of this seeder. The operator must be properly trained. Operators should be familiar with the equipment, the tractor, and all safety practices before starting operation. Read the safety rules and safety decals provided in this operator's manual.

The Multi-Drill is an excellent primary seeder, food plot seeder, and conservation seeder. Its primary function is to deliver a variety of seed to the soil at the desired depth with minimal ground disturbance. The Multi-Drill does this utilizing a series of discs to cut narrow slits in the ground where seed is precisely positioned at the proper depth and packed down via closing wheels. The Multi-Drill is capable of planting multiple seed varieties at once due to its optional second seed box attachment. Seed plates are adjusted on the hoppers to achieve the desired seed rates while electric actuators shuttle the hopper outlets open and closed. When the electric actuators open the hopper outlets, an electric motor stirs the seed over every outlet to encourage the free flow of seed at the measured rate. The speed of the electric motor can be manipulated to finetune the seed rate.

⚠ WARNING

Power unit must be equipped with Roll Over Protection System (ROPS) or ROPS cab and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS system in" locked up" position at all times.

Never allow children or untrained persons to operate equipment.

Keep bystanders away from equipment.

Keep hands, feet, hair, and clothing away from equipment while engine is running. Stay clear of all moving parts.

⚠ CAUTION

Stop power unit and equipment immediately upon striking an obstruction. Turn off engine, set parking brake, remove key, inspect, and repair any damage before resuming operation.

Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear proper personal protective equipment for eyes, hair, hands, hearing, and head.

Front Coulter Disc Shaft

The Multi-Drill is equipped with a coulter disc shaft mounted to the front of the frame. The function of this shaft is to cut a narrow slit in the ground in preparation for the seed delivery to follow. The cutting depth of the shaft is manipulated using the gauge wheels on the sides of the frame. Whatever the desired depth of the final seed delivery may be, it is recommended that these coulter discs be set to cut ¼" deeper to allow adequate room for the seed to easily fall in and be packed into place. If the ground is too hard for the coulter shaft to reach its target depth, weights can be added to the weight brackets located on both sides of the frame above the coulter disc shaft.

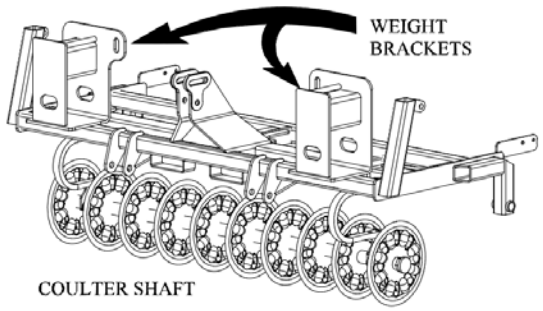


Figure 2. Coulter Disc Shaft

Seed Disc Assembly

Often referred to as double disc openers, the Multi-Disc sports offset discs which follow directly behind each coulter disc and are specifically designed to open the slit made by the preceded coulter and drop seed from the primary hopper in the trench made. Each seed disc assembly is comprised of two angled discs, pressure spring, turnbuckle, seed tube, and press wheel. The seed depth is adjusted utilizing the turnbuckle. The seed tube receives the hose from the primary box and drops the seed directly between the discs at the measured depth created by the discs. The press wheel utilizes the force from the spring to firm up the soil over the seed.

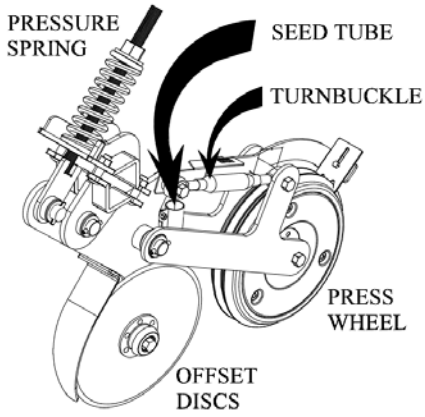


Figure 3. Seed Disc Assembly

Seeders

The Multi-Disc is equipped with a standard hopper, referred to as "primary", while having the capability of adding a smaller hopper for simultaneous applications. The seeders are comprised of a hopper, seed plates, electric actuator, motor, and one handheld control harness. Each seeder utilizes the same metering principle and delivery system. The outlets on the bottom of the seeders have their sizes adjusted manually by sliding the seed plates past one another, Figure 4. There are different sizes of seed plates to account for the various seeds

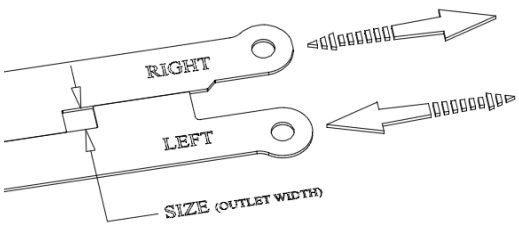


Figure 4. Seed plates

which are specified in the calibration instructions. A handheld control harness tethered to the seeders turns the seeder on and off. When the seeder is energized, an electric actuator opens the bottom of the seeder exposing the outlets while an electric motor stirs the seed inside the hopper as shown in

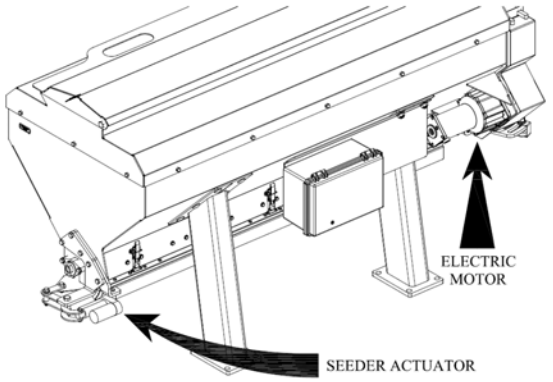


Figure 5. Seeder Actuator and Motor

Figure 5. The speed of the electric motor is adjusted using the speed control box, Figure 6, mounted to the front of the hopper (some seed varieties and seed rates respond to electric motor speed).

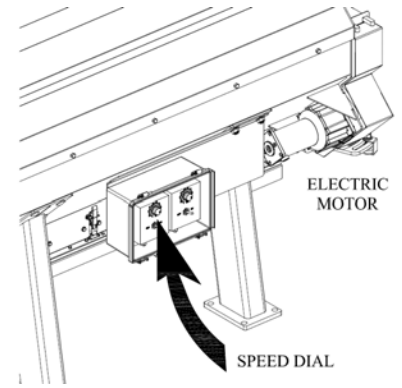


Figure 6. Electric Motor Speed Control

Attaching Multi-Drill

Note: The ND-96 Model is designed to have three ways of attaching to power unit:

1. Standard Cat. II 3-point hitch
2. Standard Cat. II Quick hitch
3. Pull hitch w/ hydraulics

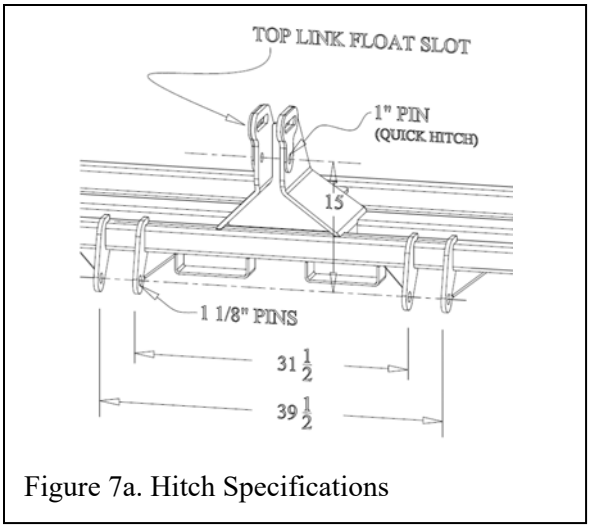


Figure 7a. Hitch Specifications

Figures 7a&b show hitch specifications and illustrations for these methods.

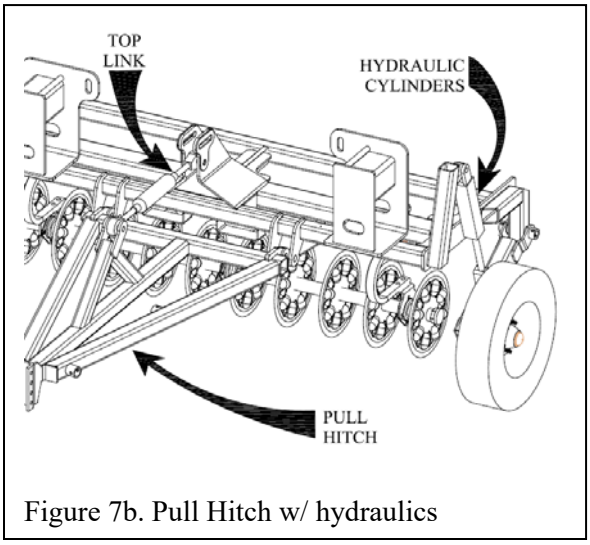


Figure 7b. Pull Hitch w/ hydraulics

1. Standard Cat. II 3-point hitch:

Attach the tractor's lower lift arms to the Multi-Drill's frame and secure with indicated hitch/lynch pins (Figure 7a). Attach the tractor's top link to the mast plates of the Multi-Drill.

For a rigid hitch connection, use the quick hitch hole location.

To enable the seeder to follow the contours of the uneven ground, install the tractor's top

link in the long slot in the top of the mast plates.

For proper float (up/down), the top link pin should be centered in the slot (for initial setup).

2. Standard Cat. II Quick hitch:

For quick hitch use, install the bushings with lower lift pins and appropriate top pin to receive upper hook. Note that the seeder will not float when quick hitch is utilized.

3. Pull hitch with hydraulic cylinders:

The pull hitch is illustrated in Figure 7b. This attachment allows the power unit to utilize a drawbar to pull the Multi-Drill while using hydraulics to lift, transport, and set seed depth.

Pin drawbar and hitch tongue and adjust the top link on the hitch until the Multi-Drill is level with the ground when in the operating position.

The hydraulic hoses connect to the power unit controls and are manipulated from there.

Seeder Setup

The Multi-Drill is capable of planting a wide variety of seeds over a wide range of seeding rates. Several variables have to be taken into account when planting: seed depth, ground speed, and seed rate. These all have to come together in order to achieve the optimum stand desired.

The Multi-drill seeder utilizes a gravity feed system combined with variable seed agitation and adjustable outlets to achieve consistent and precise seed rates. The size of the outlets is primarily a function of what size seed plate is used during calibration. The speed of the seed agitator is manipulated toward the end of the calibration process to finetune the desired rate.

Seeder Calibration

Before operating the seeder, calibration has to be done in order to take all variables into account and maximize efficiency of the seeder. The following steps must be done to calibrate the seeder:

1. Determine ground speed.
2. Select seed rate.
3. Select seed plates.
4. Use calibration chart to find target seed weight.
5. Position calibration trough to catch seed.
6. Operate seeder in air for 1 minute.
7. Compare weight of seed caught to the target weight in step 4.
8. Manipulate seed plates or electric motor speed to reach target weight.
9. Repeat steps 5 thru 8 until target weight is achieved.

Each of these steps is detailed below:

1. Determine ground speed

Determining ground speed usually depends on the terrain in which the seeding is done. In order to help set a ground speed, it is recommended the operator make a test pass without operating the seeder to determine a good starting point. If the tractor isn't equipped with a speedometer, a smartphone app may prove useful.

2. Select seed rate

Most seed varieties have a set standard for what rate works best. Investigate the seed and determine what the recommended rate would be for the particular application. The calibration chart uses pounds per acre.

3. Set seed plates and electric motor setting

Determine the seed plates needed to achieve the desired seed rate. The seed plates come in four different sizes identified with laser etching on one end. Figure 9 displays a Quick Start Setting Guide. This chart is used as a point of reference

to help select the proper seed plate, set them in the right position, and start the electric motor at the right speed.

If the Quick Start Setting Guide is not helpful for selecting a seed plate, below is a list of common seeds under the corresponding seed plates:

¼" Seed Plate: Clover, Grain, Sorghum, Canola

3/8" Seed Plate: Soybeans

½" Seed Plate: Wheat and Rye Grass Peas, Beans **(under 60 lbs/acre)**

¾" Seed Plate: Wheat and Rye Grass, Oats, Mixes, medium to large Grains, Peas, Beans **(over 60 lbs/acre)**

If the current plates inside the hopper are not the desired set to use, refer to "Changing Seed Plates" for step-by-step instructions.

To set the seed plates, the Multi-Drill is supplied with a wrench, DS27-026, to help as shown in Figure 8. Use the wrench to loosen the Setting Bolt sporting the arrow; the wrench also adds leverage for shifting the plates to the desired setting. When the setting is adjusted, retighten the Setting Bolt and store the wrench for future use.

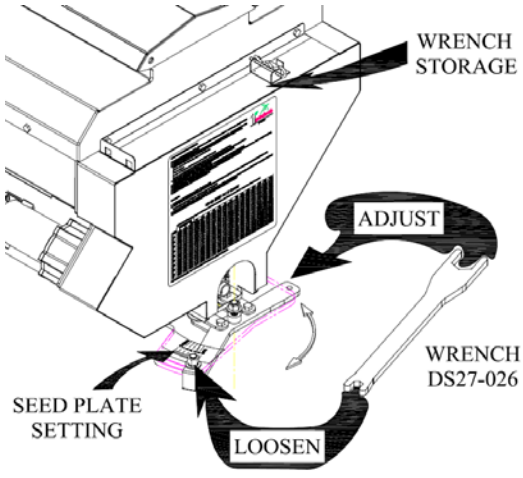


Figure 8. Seed Plate Setting/Adjustment

At this time, the electric motor control located on the front of the hopper, Figure 6, should be set to what the Quick Start Setting Guide recommends.

Quick Start Setting Guide

Model ND-96

Seed Type	Seed Rate (Lbs/Acre)	Plate Size	Motor Control Setting	Ground Speed (mph)	Plate Position	Weight Collected (Lbs/min)
Oats	105	3/4"	10	3	3	4.77
				4	3 2/3	6.38
				5	4 1/3	7.95
Rye	100	1/2"	5	3	2	4.55
				4	2 2/3	6.06
				5	3 1/3	7.58
Rye Grass	25	1/2"	5	3	2	1.14
				4	2 1/3	1.51
				5	2 2/3	1.89
Wheat	100	1/2"	5	3	2 1/3	4.55
				4	2 2/3	6.06
				5	3	7.58
Cow Peas	70	1/2"	5	3	3	3.19
				4	3 2/3	4.24
				5	4 1/3	5.3
Soybean	100	1/2"	5	3	3 1/3	4.55
				4	4	6.06
				5	4 2/3	7.58
Clover	25	1/4"	5	3	1 2/3	1.14
				4	2	1.51
				5	2 1/3	1.89
Browntop Millet	20	1/4"	5	3	1 2/3	0.91
				4	2	1.21
				5	2 1/3	1.51

Figure 9. Quick Start Setting Guide - Step 3

4. Find Target Seed Weight

Finding the Target weight is simply done using the calibration chart seen in Figure 10. Knowing the ground speed (left side of chart) and the desired seed rate (top of chart), a target weight to be caught can be selected.

5. Position Calibration Trough

Every Multi-Drill is equipped with calibration trough which is used to catch the seed. In order to do so, the trough should be positioned directly under the seed discs while the machine is lifted.

ND-96 Calibration Chart

This Chart Lists the Weight of Seed Captured for One Minute (Target Weight) - *STEP 4*

Ground Speed (MPH) - *STEP 1*	Desired Seed Rate (Pounds/Acre) - *STEP 2*																
	3	5	10	20	30	40	50	60	70	80	90	100	120	140	160	180	200
1	0.05	0.08	0.16	0.32	0.48	0.64	0.76	0.91	1.06	1.21	1.37	1.52	1.82	2.12	2.42	2.74	3.04
1.5	0.06	0.11	0.22	0.44	0.66	0.88	1.14	1.37	1.59	1.82	2.06	2.28	2.73	3.18	3.63	4.11	4.56
2	0.09	0.16	0.32	0.64	0.96	1.28	1.52	1.82	2.12	2.42	2.74	3.04	3.64	4.24	4.84	5.48	6.08
2.5	0.11	0.19	0.38	0.76	1.14	1.52	1.90	2.28	2.65	3.03	3.43	3.80	4.55	5.30	6.05	6.85	7.60
3	0.14	0.23	0.46	0.92	1.38	1.84	2.28	2.73	3.18	3.63	4.11	4.55	5.46	6.36	7.26	8.22	9.12
3.5	0.16	0.26	0.52	1.04	1.56	2.08	2.66	3.19	3.71	4.24	4.80	5.32	6.37	7.42	8.47	9.59	10.64
4	0.19	0.30	0.60	1.20	1.80	2.40	3.04	3.64	4.24	4.84	5.48	6.08	7.28	8.48	9.68	10.96	12.16
4.5	0.20	0.34	0.68	1.36	2.04	2.72	3.42	4.10	4.77	5.45	6.17	6.84	8.19	9.54	10.89	12.33	13.68
5	0.23	0.38	0.76	1.52	2.28	3.04	3.80	4.55	5.30	6.05	6.85	7.60	9.10	10.60	12.10	13.70	15.20
5.5	0.25	0.41	0.82	1.64	2.56	3.28	4.18	5.01	5.83	6.65	7.54	8.36	10.01	11.66	13.31	15.07	16.72
6	0.28	0.45	0.90	1.80	2.70	3.60	4.56	5.46	6.36	7.26	8.22	9.12	10.92	12.72	14.52	16.44	18.24
6.5	0.30	0.49	0.98	1.96	2.94	3.92	4.94	5.92	6.89	7.87	8.91	9.88	11.83	13.78	15.73	17.81	19.76
7	0.32	0.53	1.06	2.12	3.18	4.24	5.32	6.37	7.42	8.47	9.59	10.64	12.74	14.84	16.94	19.18	21.28
7.5	0.34	0.56	1.12	2.24	3.36	4.48	5.70	6.83	7.95	9.08	10.28	11.40	13.65	15.90	18.15	20.55	22.80
8	0.36	0.60	1.20	2.40	3.60	4.80	6.08	7.28	8.48	9.68	10.96	12.16	14.56	16.96	19.36	21.92	24.32
8.5	0.39	0.65	1.30	2.60	3.90	5.20	6.46	7.74	9.01	10.29	11.65	12.92	15.47	18.02	20.57	23.29	25.84
9	0.41	0.69	1.38	2.76	4.14	5.52	6.84	8.19	9.54	10.89	12.33	13.68	16.38	19.08	21.78	24.66	27.36
9.5	0.44	0.73	1.46	2.92	4.38	5.84	7.22	8.65	10.07	11.50	13.02	14.44	17.29	20.14	22.99	26.03	28.88
10	0.46	0.76	1.52	3.04	4.56	6.08	7.60	9.10	10.60	12.10	13.70	15.20	18.20	21.20	24.20	27.40	30.40

Figure 10. ND-96 Calibration Chart used for Step 4

6. Operate Seeder for One Minute

With seed loaded in Multi-Drill, use the handheld control harness to operate the seeder in the air for one minute. The seed should flow through the seed discs and be captured by the calibration trough.

7. Weigh and Compare Seed Weight

The seed caught in the calibration trough from step 6 will need to be weighed on an accurate digital scale capable of producing pounds (in decimal form is preferred). If the scale displays pounds and ounces, divide the ounces by 16 and add the decimal to the pounds to get the complete weight.

8. Manipulate Seed Plates/Electric Motor

If the weight of seed is within 10% of the target, the speed of the electric motor can be modified to finetune the rate. Otherwise, the seed plates can be repositioned to dial the seed rate in closer to the target using the same method outlined in step 3. If the rate needs to increase, the setting will be increase; and likewise, the setting will decrease if the rate needs to be cut down.

9. Repeat Steps as Necessary

Until the target weight is achieved, steps 5 through 8 should be repeated. In some instances, the seed plates may need to be changed during this process.

Once the seeder is metering the seed at the desired rate, it is time to set the seed depth.

Seed Depth Adjustment (ND-96)

The ND-96 Multi-Drill has two way to adjust the seed depth: 1) Hydraulic Cylinders 2) Turnbuckles. The method for setting the seed depth is as follows:

1. Lower the Multi-drill to the ground.
2. Adjust top link as necessary to ensure the Multi-drill is parallel to the ground.

3. The goal is to set the front coulter discs to cut ¼" deeper than the seed depth. With the machine on the ground and the tires touching the ground, whatever distance the tires are adjusted up from the ground is roughly the depth the coulter discs will cut ahead of the seeder discs.

Hydraulic Cylinder setup: Use cylinder stops to set the maximum height that the tires can be lifted while achieving proper seed depth.

Turnbuckle Setup: rotate top links to lift tires off the ground approximately the distance desired to achieve proper seed depth.

4. Test the gauge setting by operating the Multi-drill where seeding is desired. Observe the gauge wheels during the test; if they don't touch the ground, weights can be added to the Multi-Drill frame.
5. Measure the results of the test. For drastic changes, the gauge wheels can be further adjusted, but for small depth adjustments, the turnbuckle on each seed disc assembly can be rotated to lift or lower the seed within the trench made.
6. Repeat these last steps until desired seed depth is achieved and don't forget to occasionally verify seed depth during operation. Soil conditions can change over the course of operation.

Changing Seed Plates

The seed plates are strategically positioned between the hopper's outlet holes (seen when the hopper is empty) and the "cutoff plate" which the linear actuator shuttles back and forth to start and stop seed flow.

Each set of plates are labeled with laser etching on one side: "left", "right", and their respective sizes.

In order to change the seed plates, the hopper must be clean. If the plates are removed with seed in the hopper, the seed can wedge between the "cutoff plate" and the hopper outlets making it impossible to slide the next set of plates into place.

The seed plates are changed using the following steps:

1. To change plates you will need two 9/16" wrenchs and the Adjuster Wrench, DS27-026. Using the small end of the Adjuster Wrench, located on top of chain cover as shown in Figure 9. Loosen and remove the two ½" carriage head bolts connecting the adjuster handle to the Adjuster mount as shown Figure 11.

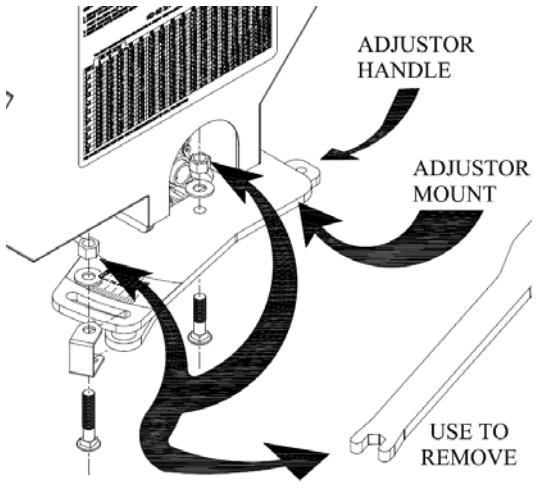


Figure 11. Seed Plates – *Step 1*

2. Pull straight out on the adjuster handle and slide the seed plate assembly out of the seed box as shown in Figure 12.
3. Using the 9/16" wrenches, loosen and remove the 3/8" bolts connecting both

seed plates to the adjuster linkages as shown in Figure 12.

4. Slide the plates and bushings out of linkages, set plates to the side, hold onto the bushings.

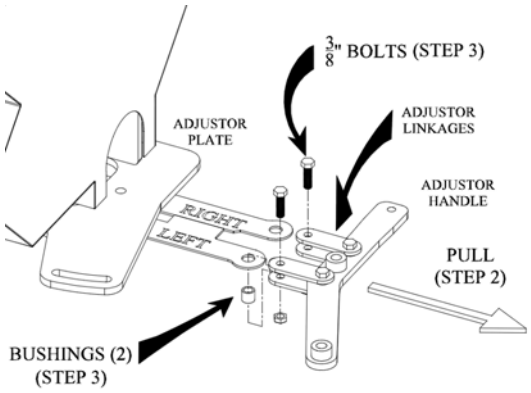


Figure 12. Seed Plates – *Steps 2,3 & 6*

5. Select plates you want in machine and be sure to read etchings on plate ensuring both plates have the same size with corresponding sides.
6. Reassemble the seed plate assembly; be sure the left and right plates are oriented as shown in Figure 12.
7. Take seed plate assembly and slide back into machine; be sure to put seed plates on top of cut off plate when starting to push them into the machine as shown in Figure 13.
8. Reattach the Adjuster Handle to the Adjuster Mount as shown in Figure 11, and fasten bolts.

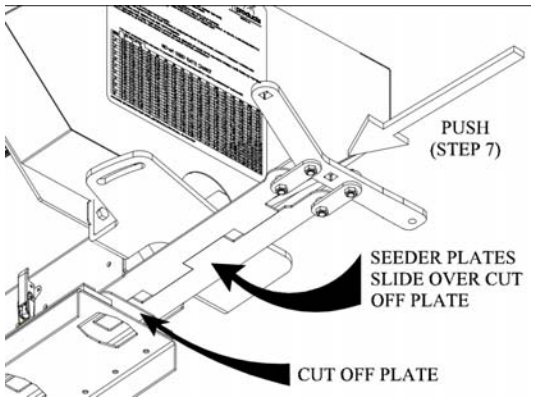


Figure 13. Seed Plates – *Step 7*

CLEANING

After Each Use

Remove large debris such as clumps of dirt, grass, crop residue, etc. from machine.

Inspect machine and replace worn or damaged parts.

Replace any safety decals that are damaged, missing, or not legible.

Periodic or Before Extended Storage

Remove large debris such as clumps of dirt, grass, crop residue, etc. from machine.

Remove the remaining debris with a low-pressure washer spray:

1. Be careful when spraying near scratched or torn safety decals or near edges of decals as water spray can peel decal off surface.
2. Be careful when spraying near chipped or scratched paint as water spray may lift paint.
3. If a pressure washer is used, follow the advice of the pressure washer manufacturer.

Inspect machine and replace worn or damaged parts.

Check all hardware and ensure proper torque is present.

Sand down scratches and the edges of area of missing parts and coat with First Products spray paint of matching color (purchase from your local dealer).

Replace any safety decals with that are missing or not legible (supplied by your First Products dealer). See Safety Decals section for location drawing.

Cover the seeder with supplied tarp when the Multi-drill is being stored.

WARRANTY INFORMATION

ONE YEAR LIMITED WARRANTY

FIRST PRODUCTS INC. WARRANTS THIS PRODUCT TO BE FREE OF DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF TWELVE MONTHS FROM THE ORIGINAL DELIVERY DATE. THIS WARRANTY DOES NOT COVER PARTS CAUSED TO BE DEFICIENT DUE TO NORMAL WEAR, MISUSE, ACCIDENTS, OR LACK OF PROPER MAINTENANCE.

ANY PARTS THOUGHT TO BE DEFECTIVE MUST BE RETURNED TO THE DEALER/DISTRIBUTOR FOR WARRANTY CONSIDERATION JOINTLY WITH FACTORY REPRESENTATIVES. A RETURN AUTHORIZATION NUMBER MUST BE OBTAINED AND CLEARLY MARKED ON ALL PACKAGES OF PARTS REQUIRING RETURN TO THE FACTORY.

THE OBLIGATION OF FIRST PRODUCTS INC. UNDER THIS WARRANTY SHALL BE EXCLUSIVELY LIMITED TO REPLACEMENT OF PARTS DETERMINED TO BE DEFECTIVE BY FIRST PRODUCTS INC. WITH FREIGHT PREPAID. IN NO EVENT SHALL FIRST PRODUCTS INC. BE LIABLE FOR INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH THE USE OF THIS PRODUCT.

FIRST PRODUCTS INC. RESERVES THE RIGHT TO MAKE CHANGES OR ADD IMPROVEMENTS TO ITS PRODUCTS AT ANY TIME WITHOUT OBLIGATION TO MAKE SUCH CHANGES OR IMPROVEMENTS ON PRODUCTS SOLD PREVIOUSLY.

WARRANTY CLAIMS ARE PAID USING A JOB STANDARD (AUTHORIZING MAN HOURS) USING THE APPROPRIATE TIME FRAME ALLOWED FOR EACH PART REPLACED OR LABOR FUNCTIONS PERFORMED. THIS JOB STANDARD LIMITS THE MAN HOURS AUTHORIZED BY TASK. IT DOES NOT SET A SPECIFIC HOURLY RATE BUT LIMITS THE AUTHORIZED MAN HOURS THAT WILL BE PAID BY EACH TASK. MILEAGE IS NOT PAID.

Warranty page 1 (must remain for cut-out and sending warranty info)

Warranty page 2 (must remain for cut-out and sending warranty info)

FIRST PRODUCTS INC.

WARRANTY REGISTRATION CARD

WARRANTY VOID IF THIS CARD IS NOT ON FILE AT FIRST PRODUCTS INC.

DEALER: COMPLETE THIS CARD AND RETURN WITHIN 30 DAYS OF DELIVERY.

THE MACHINE WAS SET UP AND INSPECTED BY DEALER. OWNERS & OPERATOR'S MANUAL PROVIDED TO THE CUSTOMER WITH INSTRUCTIONS TO READ AND UNDERSTAND THE MANUAL PRIOR TO OPEATION.

DEALER NAME_____

NAME OF SALESMAN_____

DATE OF SALE_____

MODEL NUMBER_____**SERIAL NUMBER**_____

CUSTOMBER INFORMATION

NAME_____

ADDRESS_____

CITY_____STATE_____ZIP_____

ATTACHMENTS: TOW HTICH ☐ SMALL BOX ☐

UNIT TO BE USED INWHAT APPLICATION (CHECK ALL THAT APPLY)

CITY/COUNTY ☐	EQUESTRIAN ☐	COM. LANDSCAPE ☐
TURF/SOD FARM ☐	SPORTS FIELDS ☐	COVER CROP ☐
FOOD PLOT ☐	PATURE ☐	RENTAL ☐

PLEASE HELP US DETERMINE THE BEST WAY TO ADVERTISE OUR PRODUCTS & BREIFLY EXPLAINED WHERE YOU HEARD ABOUT THIS EQUIPMENT:

REAL TREE ☐	KILLIN THE GAME ☐	SOCIAL MEDIA ☐
ORGANIC SEARCH ☐	WORD OF MOUTH ☐	OTHER_____ ☐

RETURN THIS PORTION

(warranty card can be mailed removing this page, emailing it to sales@1stproducts.com or faxed to 229-382-0506)

CUT ALONG LINE TO REMOVE

CUSTOMER'S RECORD

MODEL NUMBER_____

SERIAL NUMBER_____

DATE PURCHASED_____

DEALER INFORMATION

NAME_____

ADDRESS_____

CITY/STATE_____

PHONE #_____

FIRST PRODUCTS INC.
1-800-363-8780
E-mail: sales@1stproducts.com

AFTER COMPLETING, REMOVE MANUFACTURERS CARD, FOLD, STAPLE CORNERS, STAMP & MAIL.

PLACE
STAMP
HERE

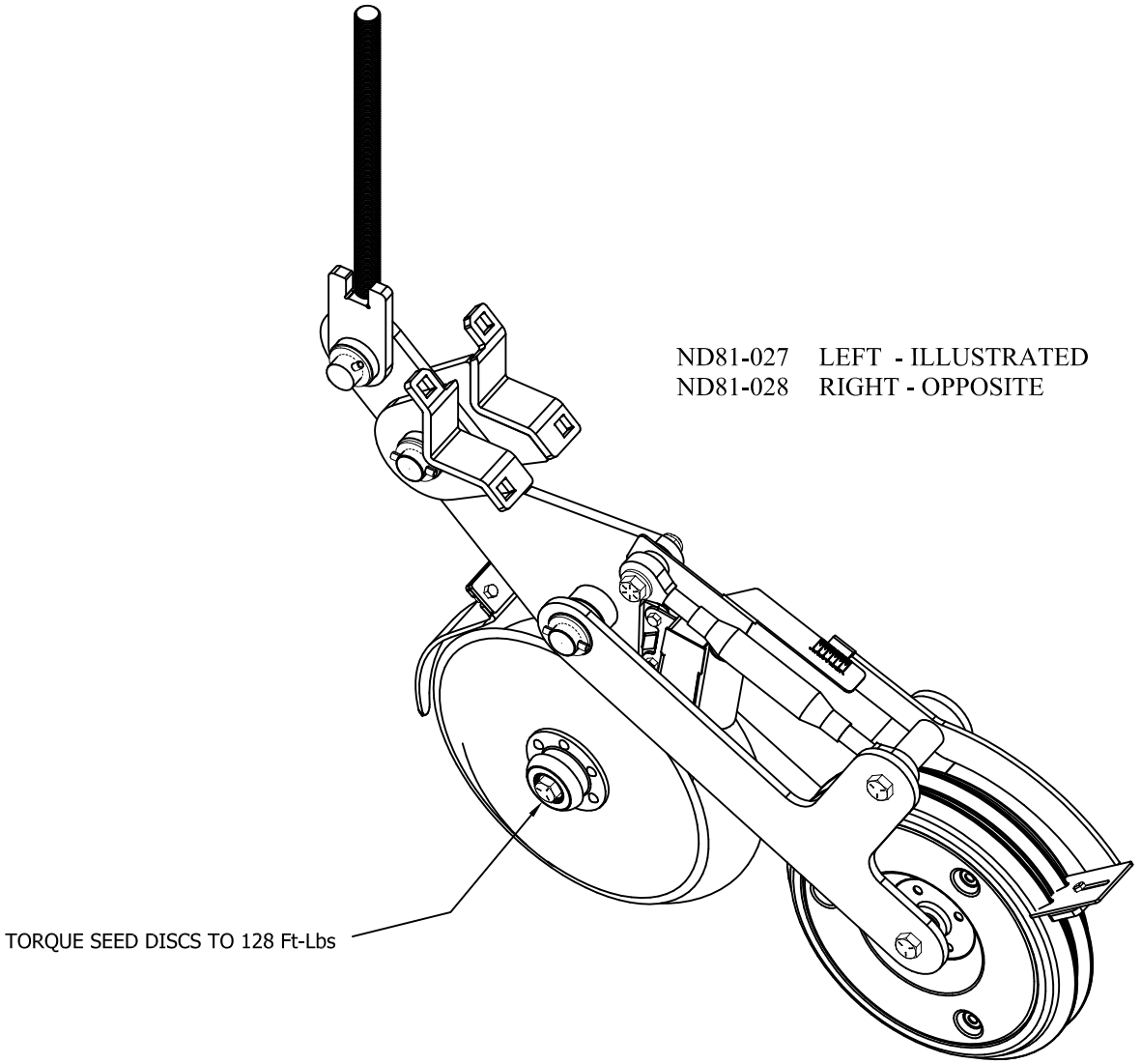
FIRST PRODUCTS INC.
164 OAKRIDGE CHURCH RD.
TIFTON, GA 31794

Warranty page 3 (must remain for cut-out and sending warranty info)

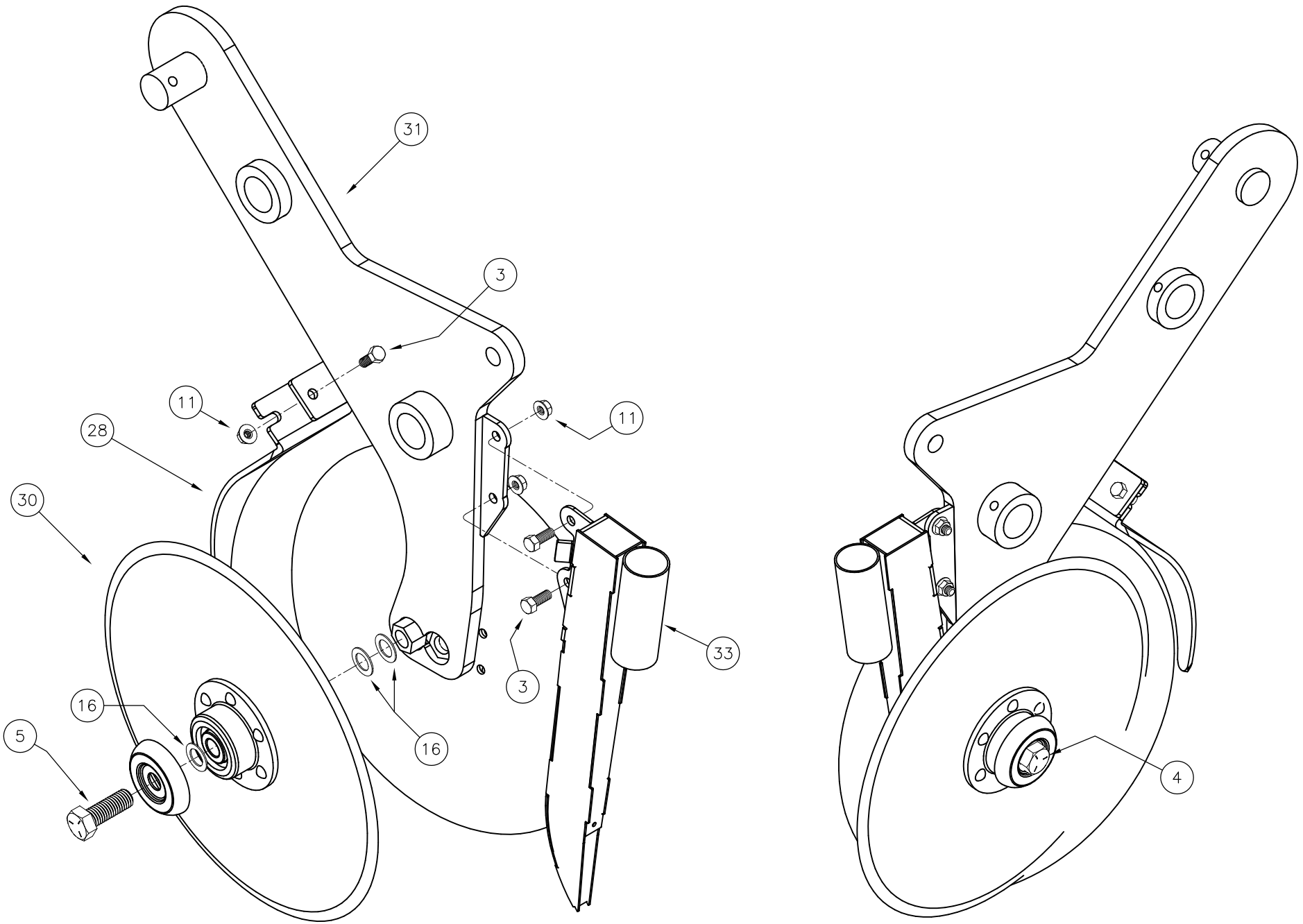
Warranty page 4 (must remain for cut-out and sending warranty info)

ROW UNIT GROUP

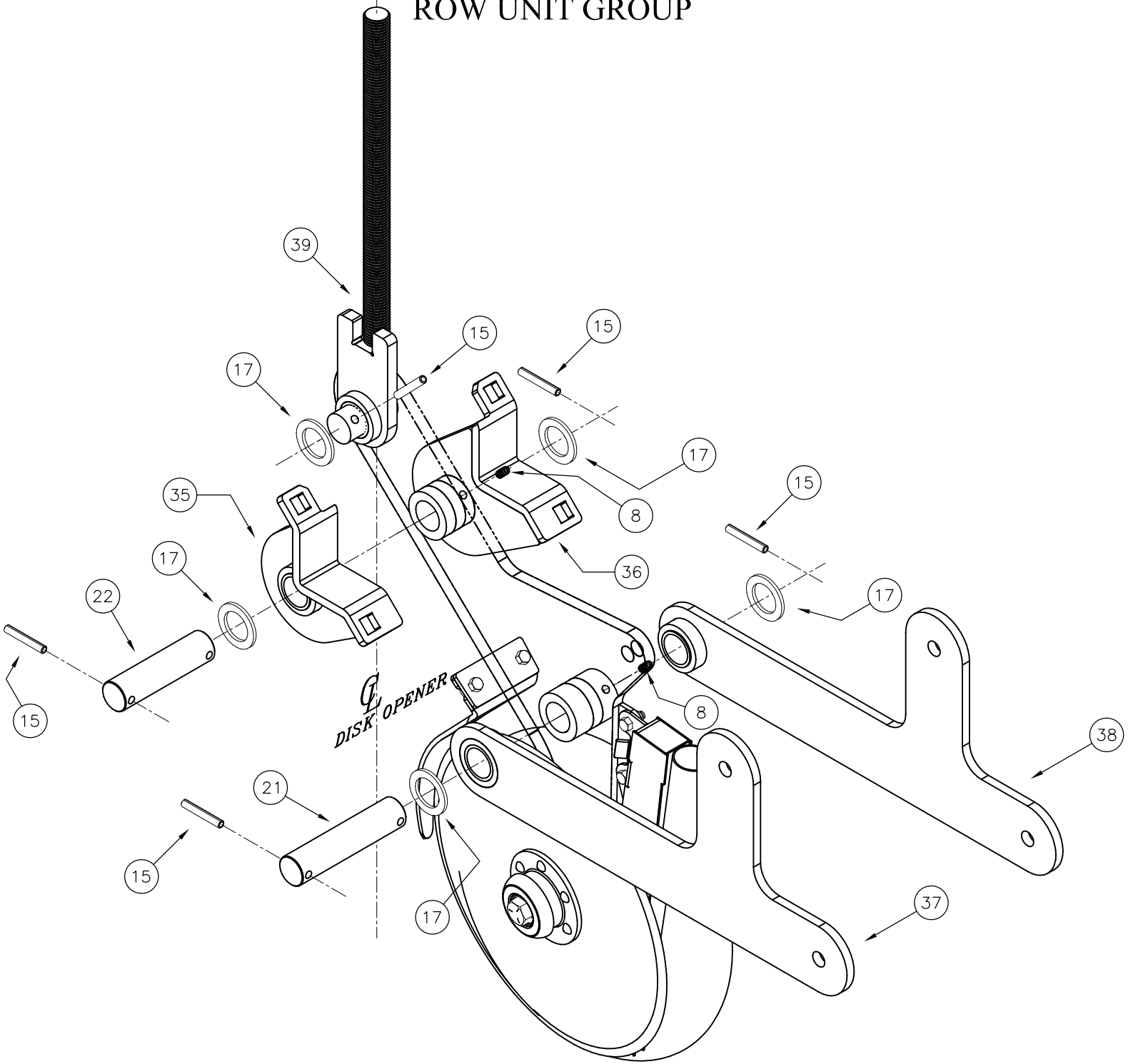
ITEM	PART NO	DESCRIPTION	QTY	ITEM	PART NO	DESCRIPTION	QTY	ITEM	PART NO	DESCRIPTION	QTY
1	FL50-008	CAT. 0 TOP LINK	1	14	HW32020TAZP	5/8 Lockwasher	2	27	ND27-071	SCRAPER GAUGE, RT (ND81-028)	1
2	HW01008024G2ZPC	1/4 X 3/4 HHCS	1	15	HW42010064ZP	5/16 X 2 ROLL PIN	5	28	ND27-076	No-Till Rock Gaurd 13.5"	1
3	HW01010024SSPLC	5/16 X 3/4 HHCS	4	16	HW6002003218GZP	5/8 ID X 1 OD 18 GA. M.B.	6	29	ND50-001	DUAL RIB PRESS WHEEL	1
4	HW01020056G5ZPC	5/8 x 1 3/4 HHCS G5	1	17	HW6004006010GZP	1 1/4 x 1-7/8 x 10 GA. M.B.	5	30	ND50-006	13.5" SEED DISK	2
5	HW01020056G5ZPD	5/8 x 1 3/4 HHCS G5 Left hand	1	18	ND24-005	GAUGE ARM SPACER 1	1	31	ND80-005	OFFSET DISK OPENER LEG; LT (ND81-027)	1
6	HW01020096G5ZPC	5/8 X 3 HHCS	1	19	ND24-006	GAUGE ARM SPACER 2	1	32	ND80-006	OFFSET DISK OPENER LEG; RT (ND81-028)	1
7	HW01020160G5ZPC	5/8 X 5 HHCS	2	20	ND24-007	PRESS WHEEL SPACER	2	33	ND80-046	SEED TUBE; Left (ND81-027)	1
8	HW08010016PLC	5/16 X 1/2 SET SCW	2	21	ND26-020	MASTER PIN: R.U.	1	34	ND80-047	SEED TUBE; Right (ND81-028)	1
9	HW20020G5ZPC	5/8 HEX NUT	2	22	ND26-021	FULCRUM PIN: R.U.	1	35	ND81-001	SEE DIAMOND MOUNT GROUP	1
10	HW22008G5ZPC	1/4 FLG. LOCK NUT	1	23	ND27-015	SCRAPER	1	36	ND81-002	SEE DIAMOND MOUNT GROUP	1
11	HW22010G5PLC	5/16 FLG. LOCK NUT	4	24	ND27-068	SCRAPER ARM; LT (ND81-027)	1	37	ND81-003	SEE PRESS WHEEL ARM GROUP	1
12	HW24020GBZPC	5/8 STOVER LOCK NUT	1	25	ND27-069	SCRAPER ARM; RT (ND81-028)	1	38	ND81-004	SEE PRESS WHEEL ARM GROUP	1
13	HW30020G8ZPC	5/8" Flatwasher G8	1	26	ND27-070	SCRAPER GAUGE, LT (ND81-027)	1	39	ND81-009	SEE SPRING ROD GROUP	1



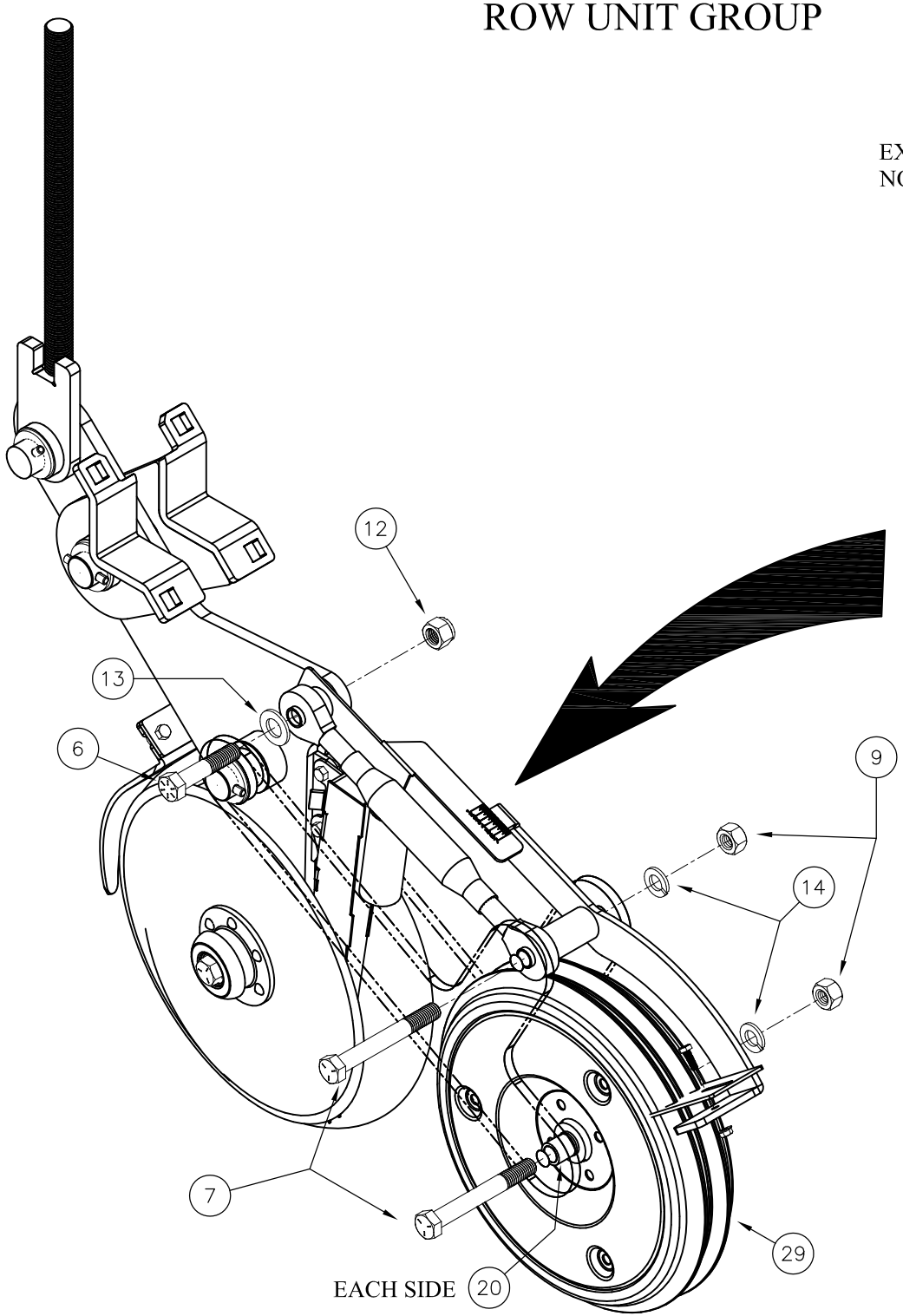
ROW UNIT GROUP



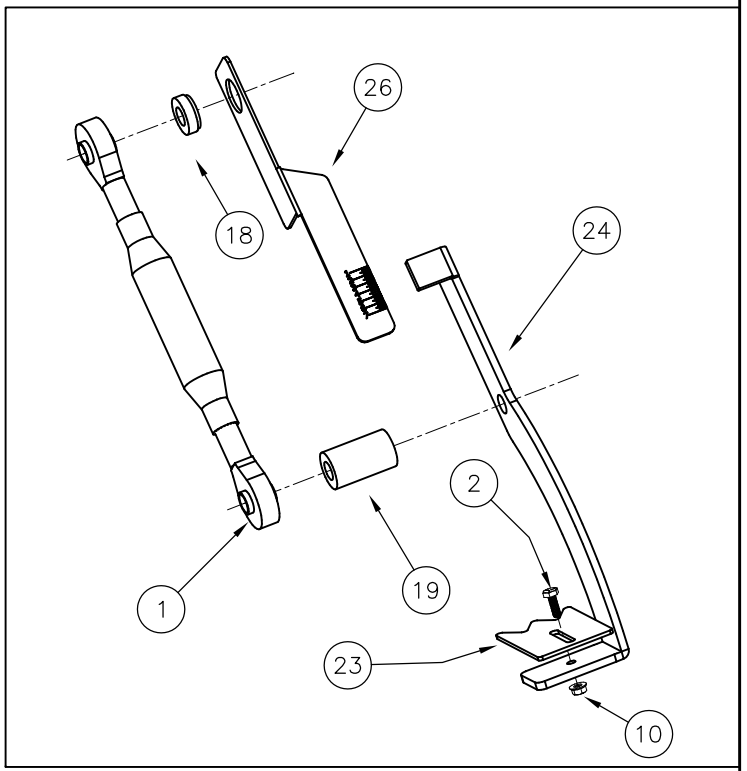
ROW UNIT GROUP



ROW UNIT GROUP

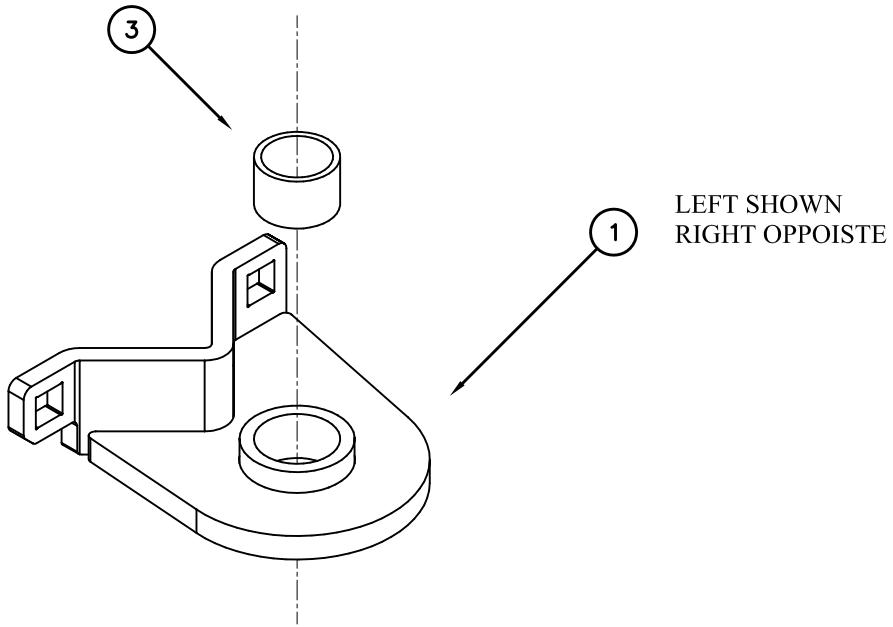


EXPLODED VIEW BETWEEN PRESS WHEEL ARMS:
NOTE SHOULDER OF SPACER ORIENTED INTO GAUGE ARM



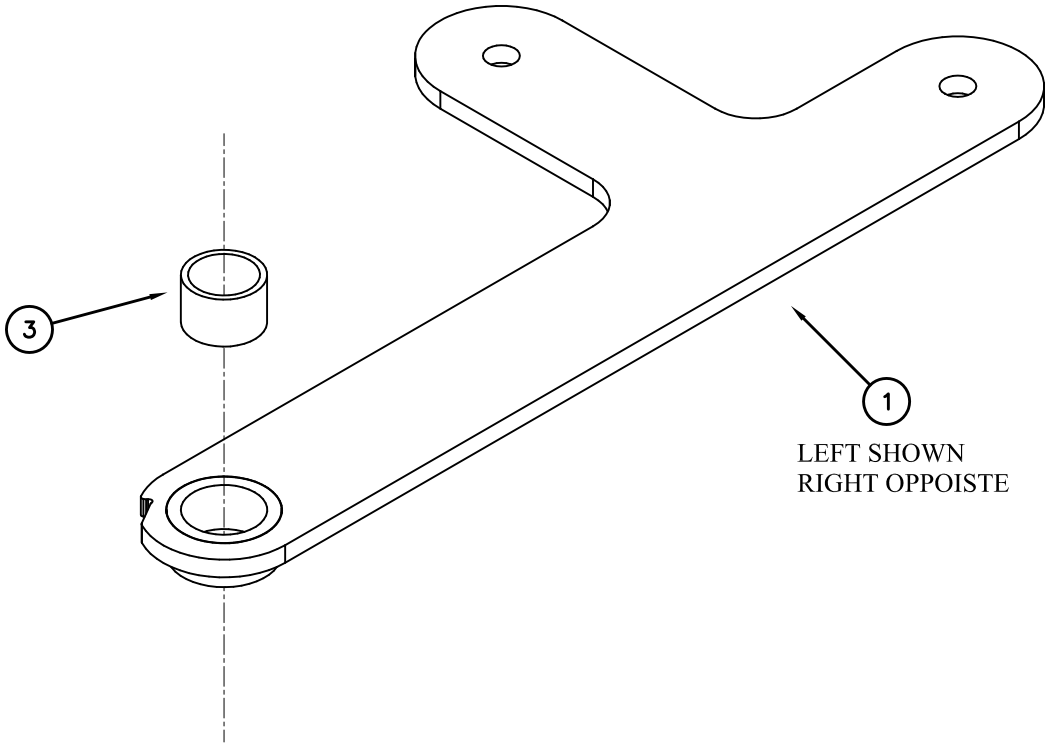
DIAMOND MOUNT GROUP

ITEM	PART NO	DESCRIPTION	QTY
1	ND80-007	BTTM. DIAMOND MT; LT (use 001)	1
2	ND80-008	BTTM. DIAMOND MT; RT (use 002)	1
3	ND50-009	1-1/4" ID PLASTIC BUSHING	1



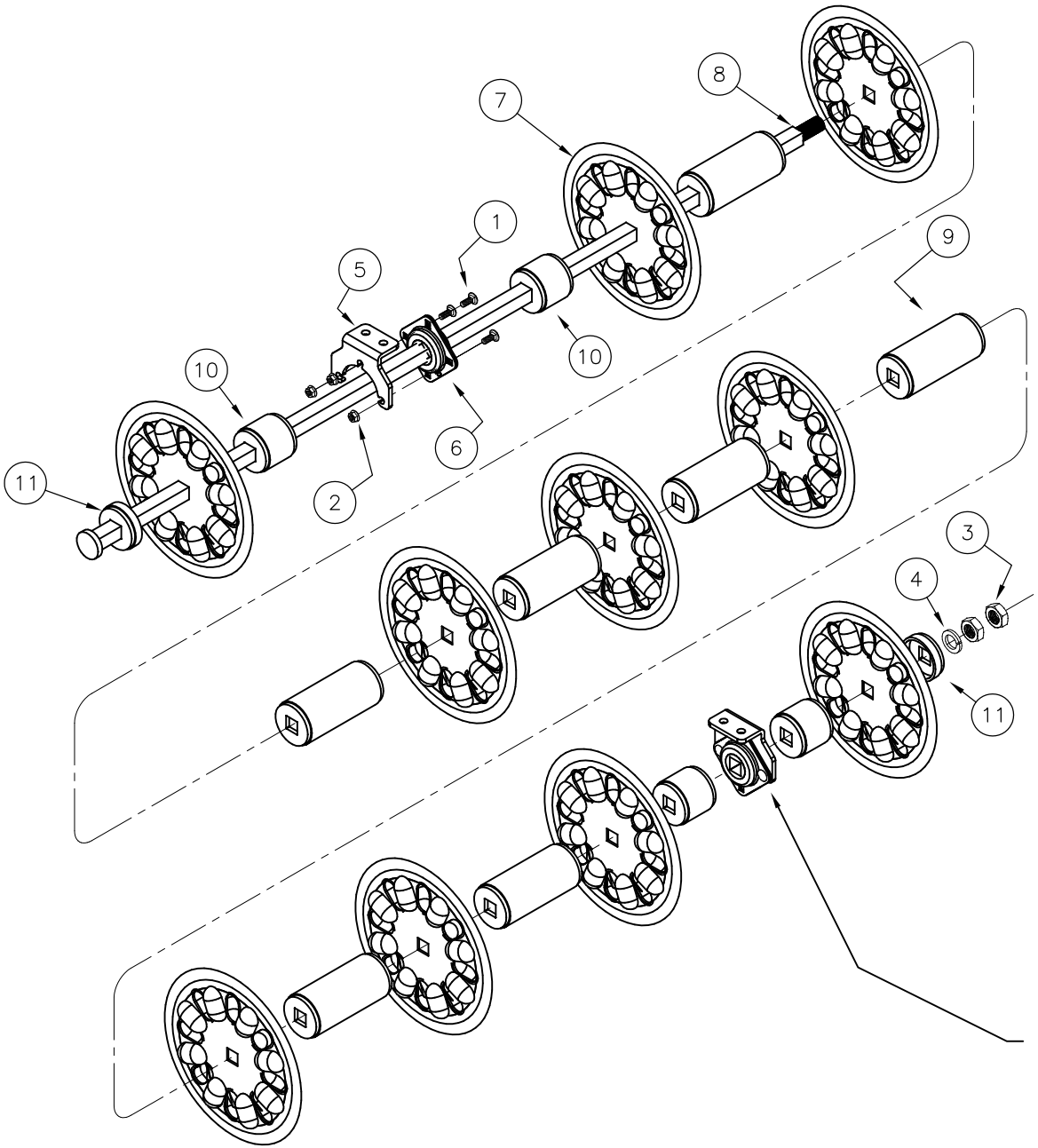
PRESS WHEEL ARM GROUP

ITEM	PART NO	DESCRIPTION	QTY
1	ND80-009	PRESS WHEEL ARM; LT (003)	1
2	ND80-010	PRESS WHEEL ARM; RT (004)	1
3	ND50-009	1-1/4" ID PLASTIC BUSHING	1



COULTER SHAFT GROUP

ITEM	PART NO	DESCRIPTION	QTY	ITEM	PART NO	DESCRIPTION	QTY	ITEM	PART NO	DESCRIPTION	QTY
1	HW03016040G5ZPC	1/2" X 1-1/4" CARR. BOLT	6	5	ND27-041	BEARING HANGER	2	9	ND80-029	9" SPACER	7
2	HW22016G5ZPC	1/2" FL. NUT	6	6	ND50-003	1-1/4" BORE BEARING	2	10	ND80-030	9" BEARING SPACER	4
3	HW25040G5ZPC	1-1/4" JAM NUT ZPL	2	7	ND50-007	16" BUBBLE COULTER	10	11	ND80-031	AXLE END CAP	2
4	HW33040G8ZP	1-1/4" LOCK WASHER HVY	1	8	ND50-018	10 OUTLET 9" SPAC. DISK AXLE	1				

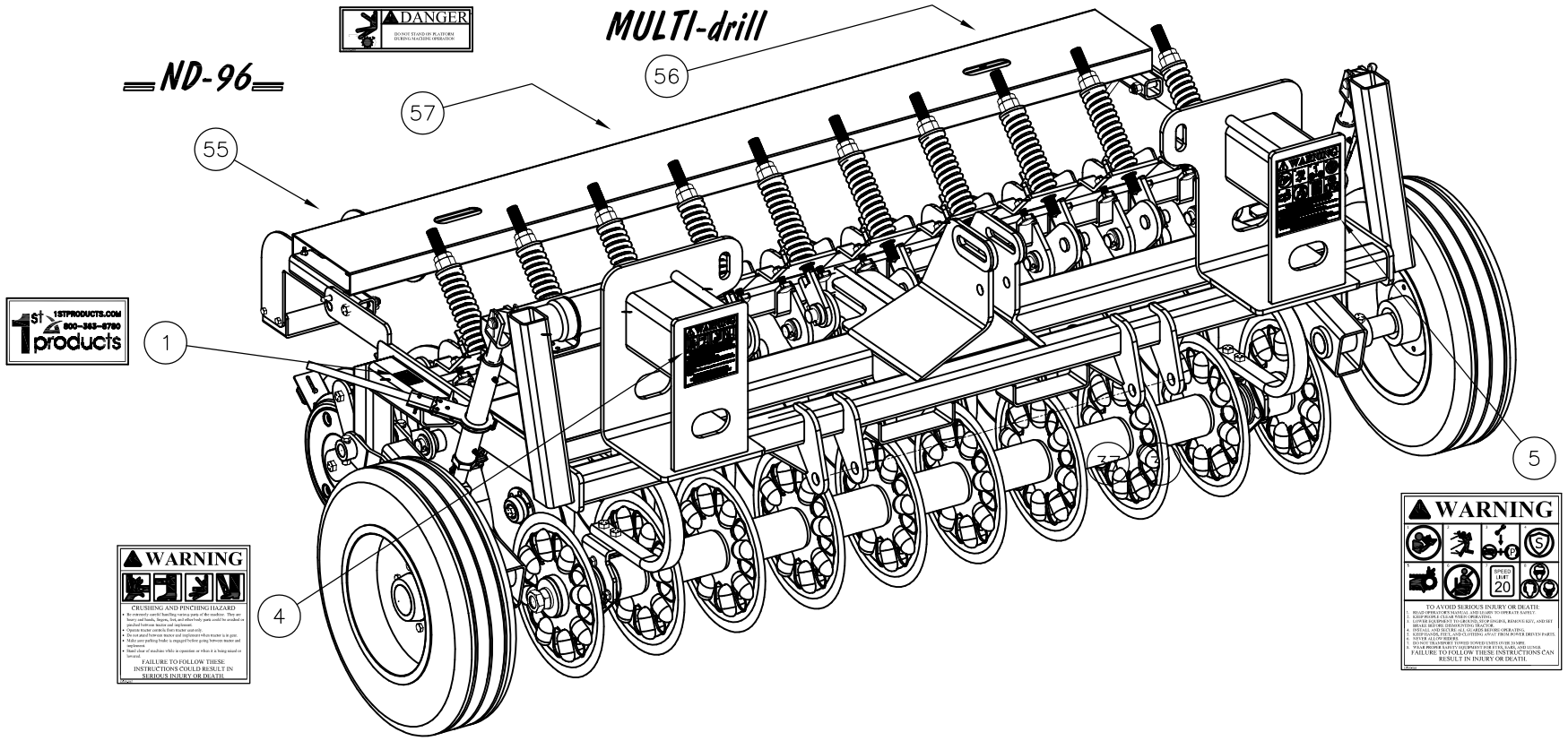


TORQUE 1 $\frac{1}{4}$" JAM NUT TO 475-500 FT-LBS (RECOMMENDED)

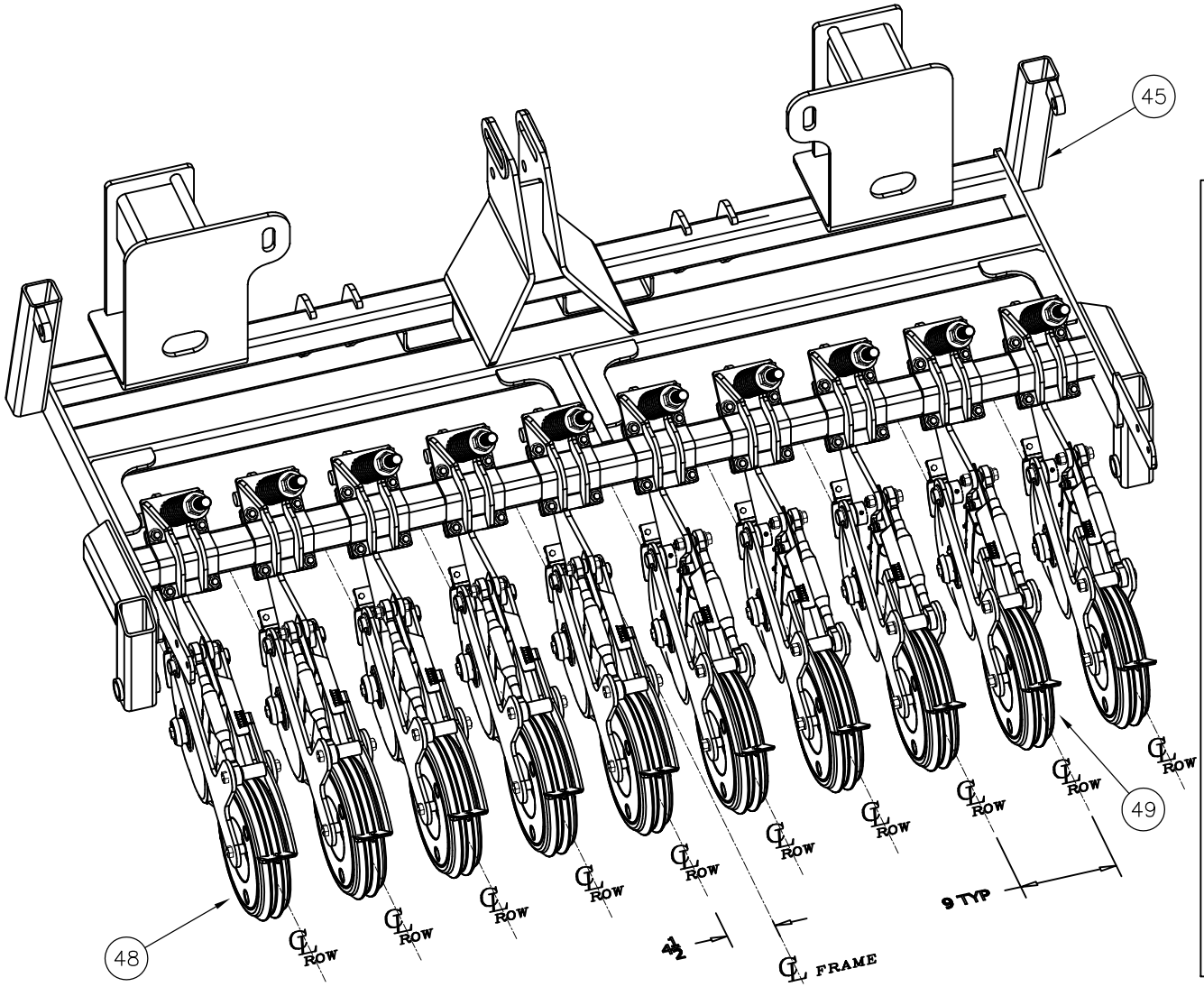
ORIENT GREASE FITTINGS IN SAME DIRECTION OF TRAVEL AND POINTING OUTWARDLY FOR EASIER MAINTENANCE BY USER

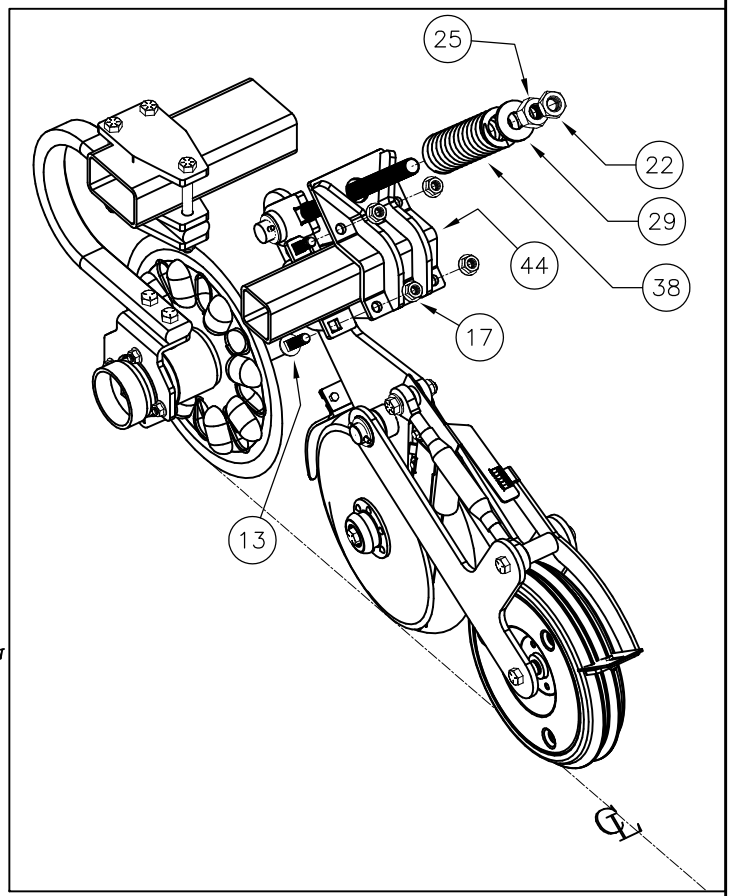
FRAME GROUP

ITEM	PART NO	DESCRIPTION	QTY
1	AE50-059	SMALL FP DECAL	2
2	AE50-156	BRIDGE PIN	2
3	AG26-003	STAND PIN	2
4	DS50-067	DECAL - GENERAL WARNING	1
5	DS50-068	DECAL - OPERATOR WARNING	1
6	HW01010096G5ZPC	5/16 X 3 HHCS	4
7	HW01012032G5ZPC	3/8 X 1 HHCS	4
8	HW01016080G5ZPC	1/2 X 2 1/2 HHCS	4
9	HW01020064G5ZPC	5/8 X 2 HHCS	4
10	HW01020112G5ZPC	5/8 X 3 1/2 HHCS	2
11	HW01020128G5ZPC	5/8 X 4 HHCS	2
12	HW01020208G5ZPC	5/8 X 6-1/2 HHCS	6
13	HW03020072G5ZPC	5/8 X 2 1/4 CARR. BOLT	40
14	HW06008016G5ZPC	1/4 X 1/2 FLANGE LOCK SCREW	6
15	HW06010024G5ZPC	5/16 X 3/4 FLANGE LOCK SCREW	2
16	HW22008G5ZPC	1/4 FLANGE LOCK NUT	6
17	HW22020G5ZPC	5/8 FLG. LOCK NUT	40
18	HW24010GBZPC	5/16 STOVER LOCK NUT	6
19	HW24012GBZPC	3/8 STOVER LOCK NUT	4
20	HW24016GBZPC	1/2 STOVER LOCKNUT	2
21	HW24020GBZPC	5/8 STOVER LOCK NUT	14
22	HW25032G5ZPC	1" JAM NUT	10
23	HW30010TAZP	5/16 FLATWASHER	6
24	HW31020TAZP	5/8 SAE WASHER	5
25	HW36032G8ZPC	1" HEAVY HEX NUT ZINC PL.	10
26	HW62016026G5ZPF	1/2 X 13/16 LUG BOLT	12
27	ND24-013	WALK BOARD MOUNT	2
28	ND26-011	ND-96 GAUGE WHEEL PIVOT PIN	2
29	ND27-016	SPRING WASHER	10
30	ND27-099	C-SHANK MOUNT PLATES	6
31	ND27-100	COVER BOX BOTTOM	1
32	ND27-101	COVER BOX TOP	1
33	ND27-102	COVER BOX CATCH	1
34	ND27-133	ND STEP SIDE; LEFT	1
35	ND27-134	ND STEP SIDE; RIGHT	1
36	ND27-135	STEP - ND	1
37	ND50-002	C-FLEX SHANK	2
38	ND50-008	2.5" X 9.5" COMP. SPRING	10
39	UA50-007	3/16 LYNCH PIN	1
40	ND50-019	ND-96 GAUGE WHEEL	2
41	ND50-020	ND-96 GAUGE WHEEL HUB & SPINDLE KIT	2
42	ND50-021	20-28" RATCHET JACK	2
43	ND50-064	IGUS 1 1/4 FLANGE BUSHING	4
44	ND80-013	TOP DIAMOND BAR MOUNTS 3 X 3	10
45	ND80-025	ND-96 FRAME	1
46	ND80-026	ND-96 GAUGE WHEEL ARM: LT	1
47	ND80-027	ND-96 GAUGE WHEEL ARM: RT	1
48	ND81-027	ND ROW UNIT: LEFT	5
49	ND81-028	ND ROW UNIT: RIGHT	5
50	ND81-024	8' Walk Board ASSM.	1
53	ND81-053	ND96 SHAFT ASS'Y - 16" DISC X 9"	1
54	UA50-009	OM CANISTER	1
55	ND50-052	ND-96 DECAL	1
56	ND50-054	MULTI-DRILL DECAL	1
57	AG50-089	RIDER HAZARD DECAL	1

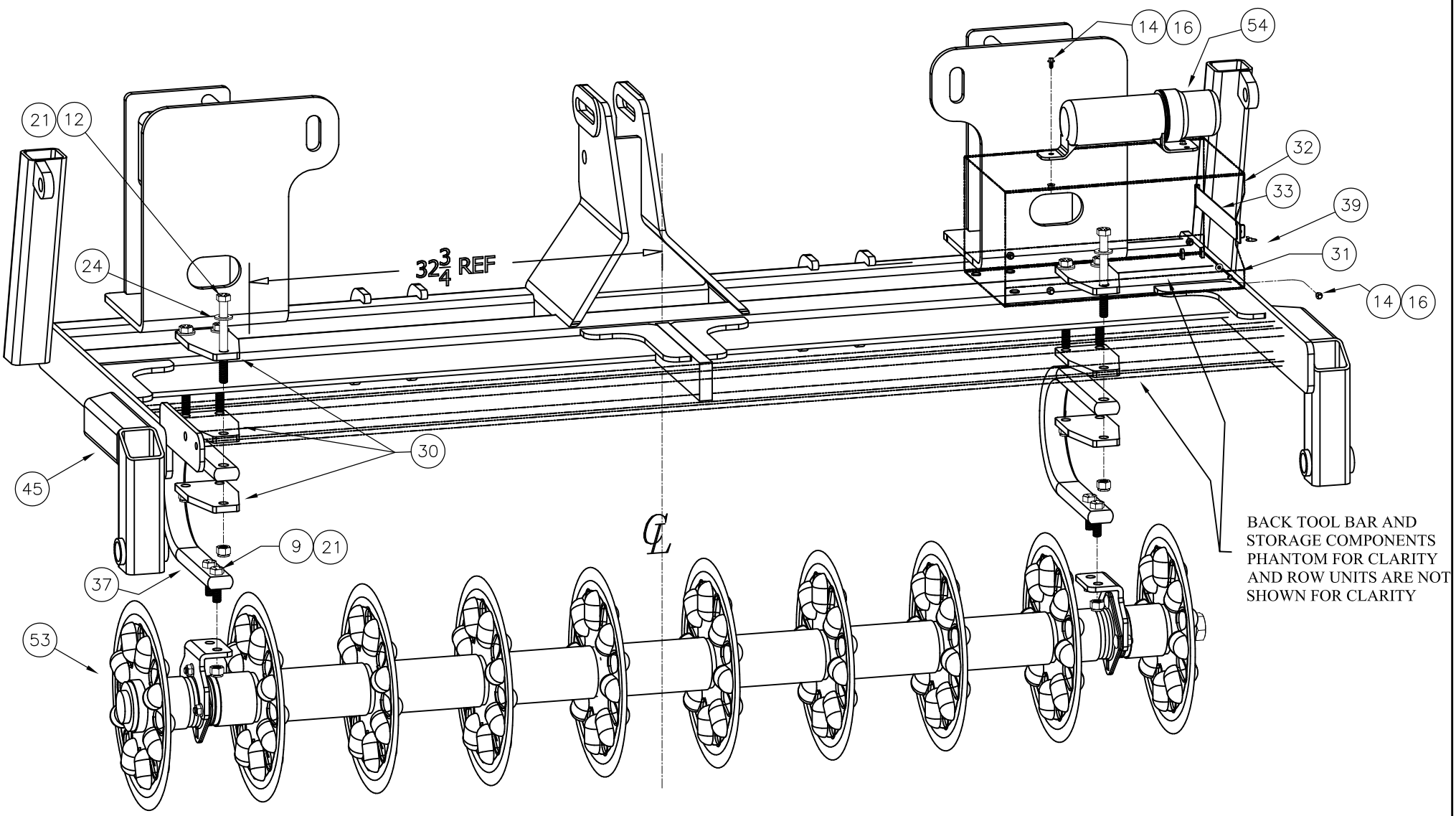


FRAME GROUP



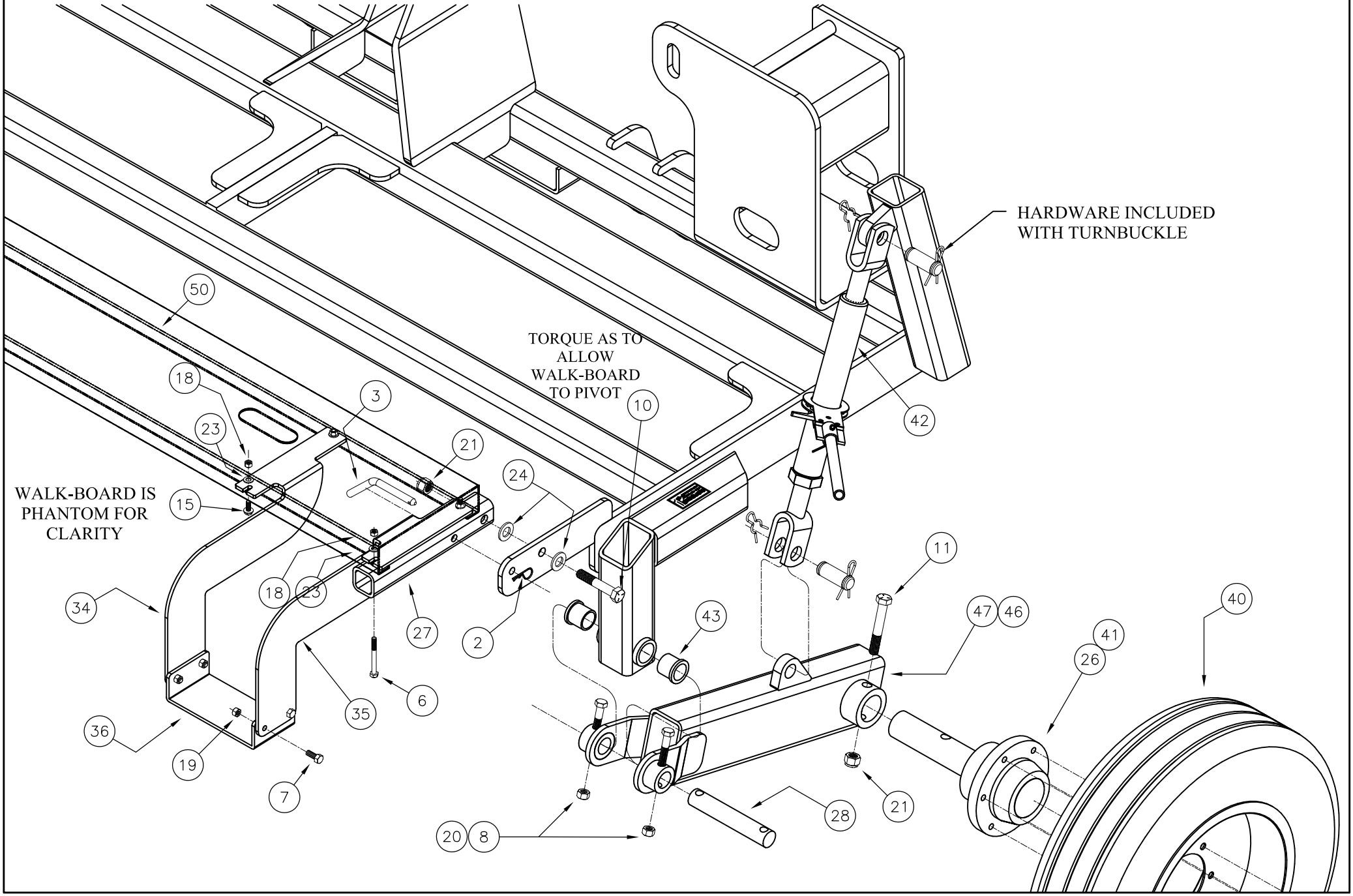


FRAME GROUP


14
16
54
21
12
32
33
39
24
$32\frac{3}{4}$ REF
31
14
16
30
45
9
21
37
53
℄
BACK TOOL BAR AND STORAGE COMPONENTS PHANTOM FOR CLARITY AND ROW UNITS ARE NOT SHOWN FOR CLARITY

FRAME GROUP

ROW UNITS AND COULTER DISC NOT SHOWN FOR CLARITY



FRAME TO SEEDER GROUP

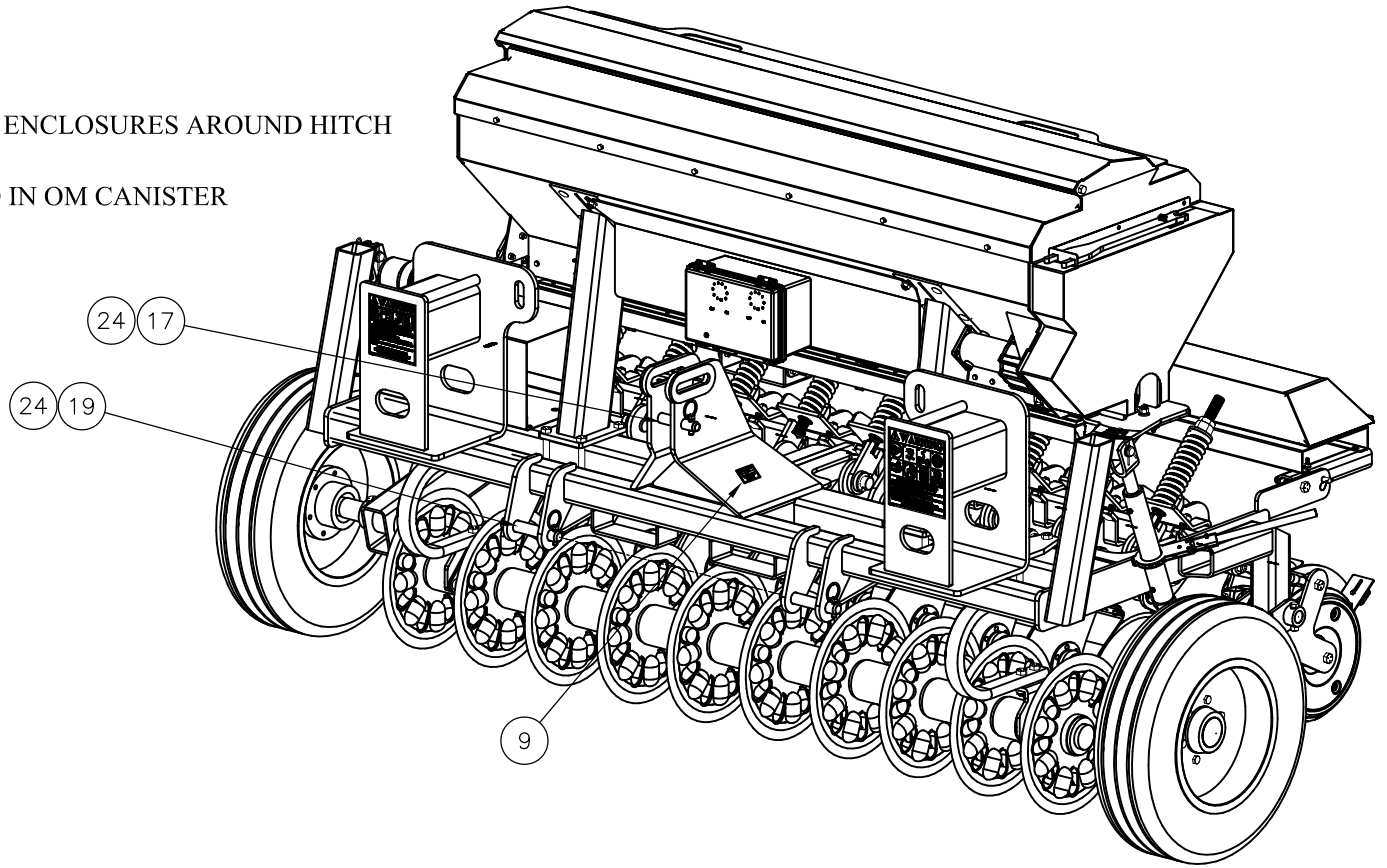
ITEM	PART NO	DESCRIPTION	QTY	ITEM	PART NO	DESCRIPTION	QTY	ITEM	PART NO	DESCRIPTION	QTY
1	AG50-084	SMV SIGN	1	9	ND50-082	ND-96 SERUAL # TAG	1	17	ND50-023	CAT. 2 Toplink Pin	1
2	DS27-055	SEEDBOX BOTTOM MNT.	2	10	DS81-016	PRIMARY HOPPER - DS96	1	18	ND50-024	1" ID X 1 1/4" OD CVT	10
3	DS27-086	10 OUTLET LEFT SEED PLATE 1/2	1	11	HW01020160G5ZPC	5/8 X 5 HHCS	8	19	ND50-028	CAT. 2 Bottom Link Pin	2
4	DS27-087	10 OUTLET RIGHT SEED PLATE 1/2	1	12	HW06008024G5ZPC	1/4 X 3/4 FLANGE LOCK SCREW	2	20	ND50-093	ND96 PARTSBOOK	1
5	DS27-088	10 OUTLET LEFT SEED PLATE 3/8	1	13	HW24008G5ZPC	1/4 STOVER LOCK NUT	2	21	ND80-033	ND-96 CALIBRATION TROUGH	1
6	DS27-089	10 OUTLET RIGHT SEED PLATE 3/8	1	14	HW24020G5ZPC	5/8 STOVER LOCK NUT	8	22	ND81-015	ND96 FRAME ASSEMBLY	1
7	DS27-090	10 OUTLET LEFT SEED PLATE 1/4	1	15	HW31020TAZP	5/8 SAE FLATWASHER	8	23	SB50-062	1 3/8 HOSE CLAMP	10
8	DS27-091	10 OUTLET RIGHT SEED PLATE 1/4	1	16	ND50-017	8 FT TARP	1	24	SE50-035	Hitch Pin	3

(3) (4) (5) (6) (7) (8) ADDITIONAL SEED PLATES

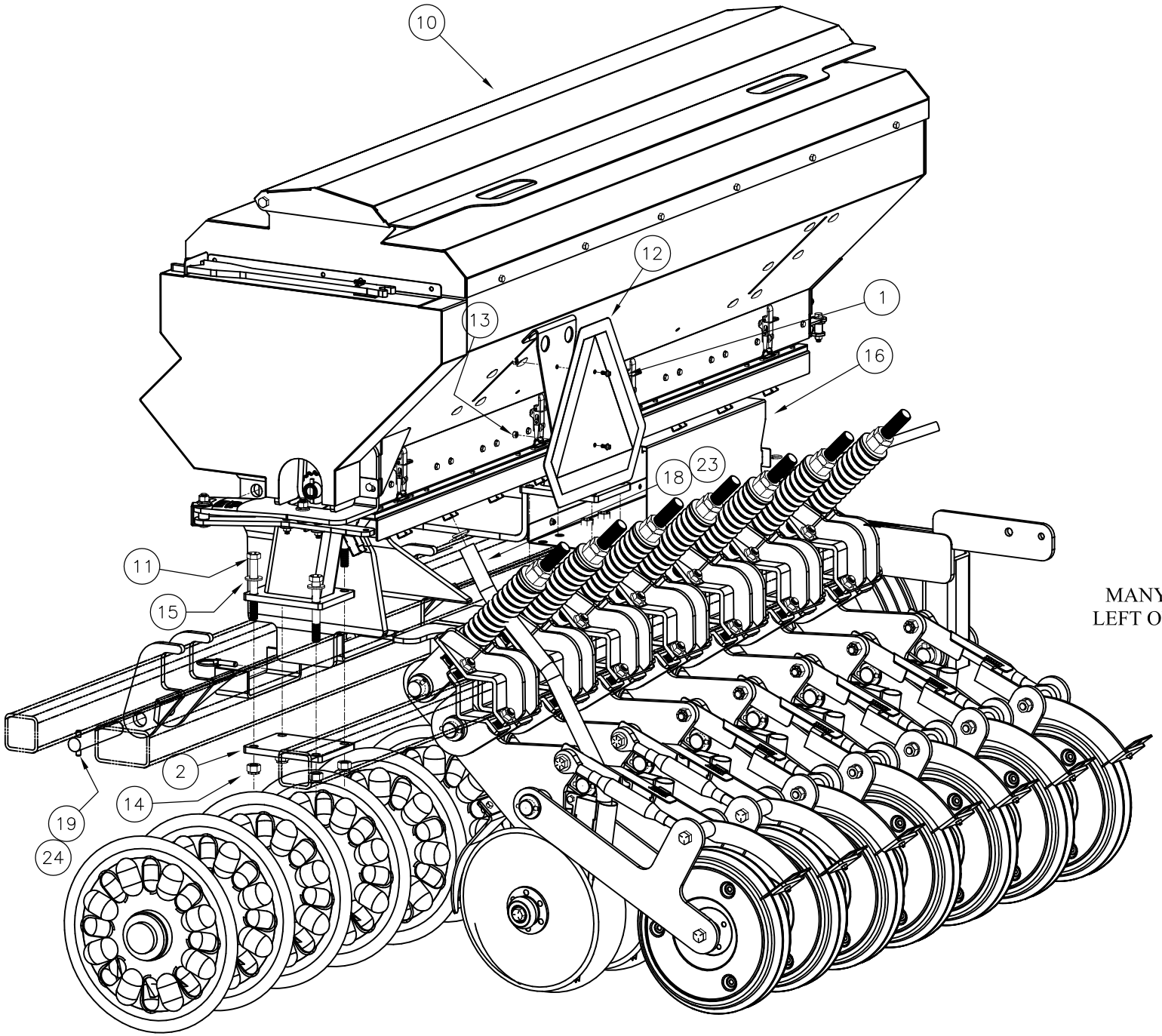
(16) TARP IS STORED INSIDE ENCLOSURES AROUND HITCH

(20) PARTS BOOK IS STORED IN OM CANISTER

(21) CALIBRATION TROUGH



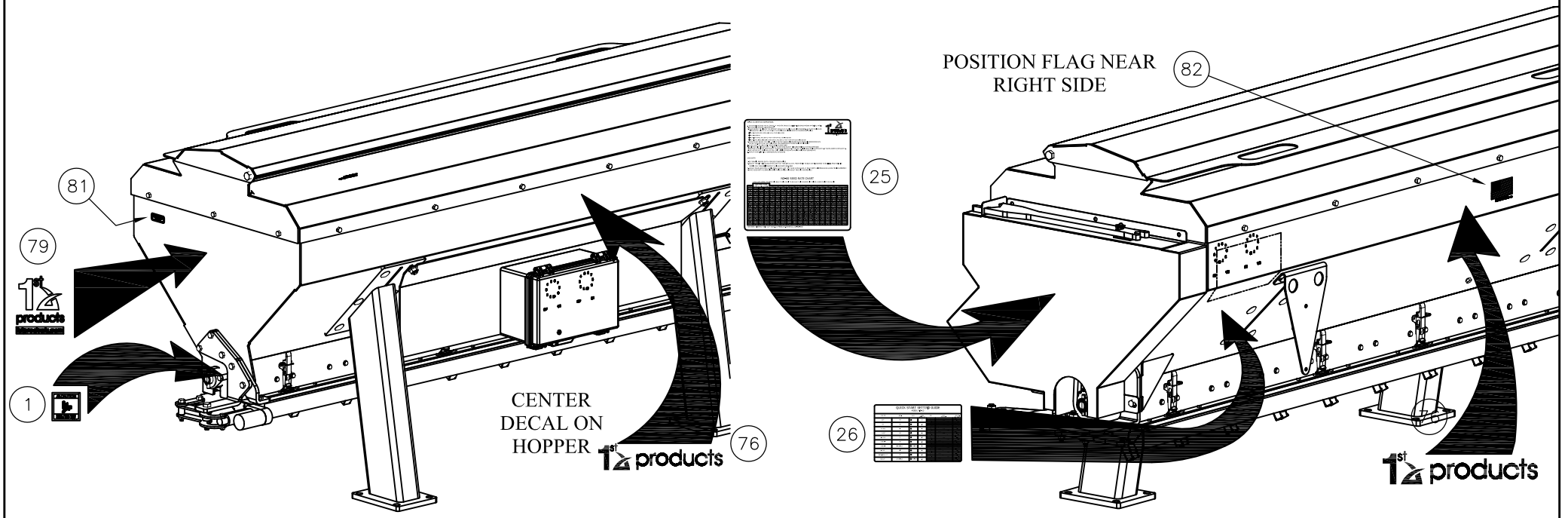
FRAME TO SEEDER GROUP



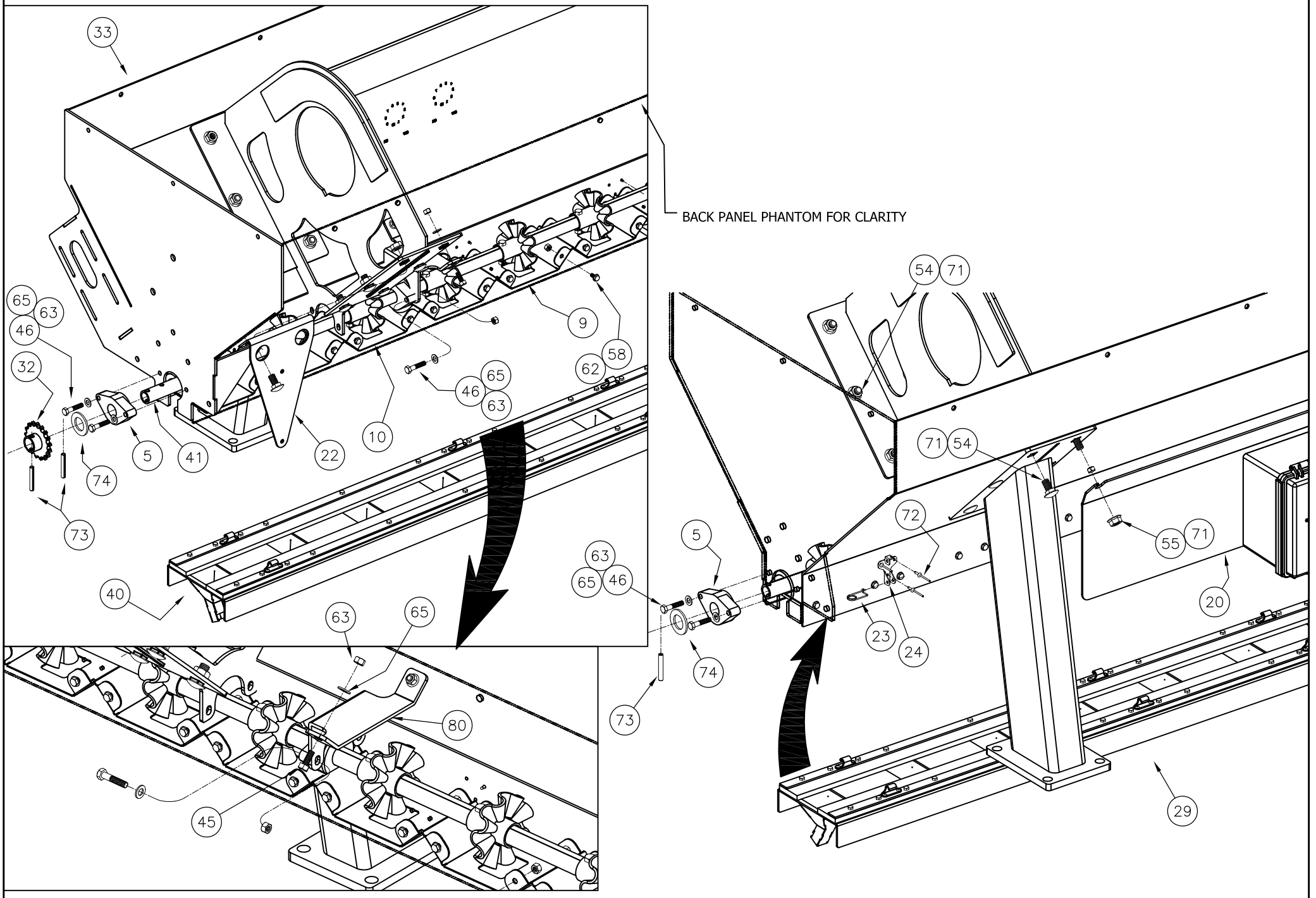
MANY COMPONENTS
LEFT OUT OF VIEW FOR
CLARITY

HOPPER GROUP

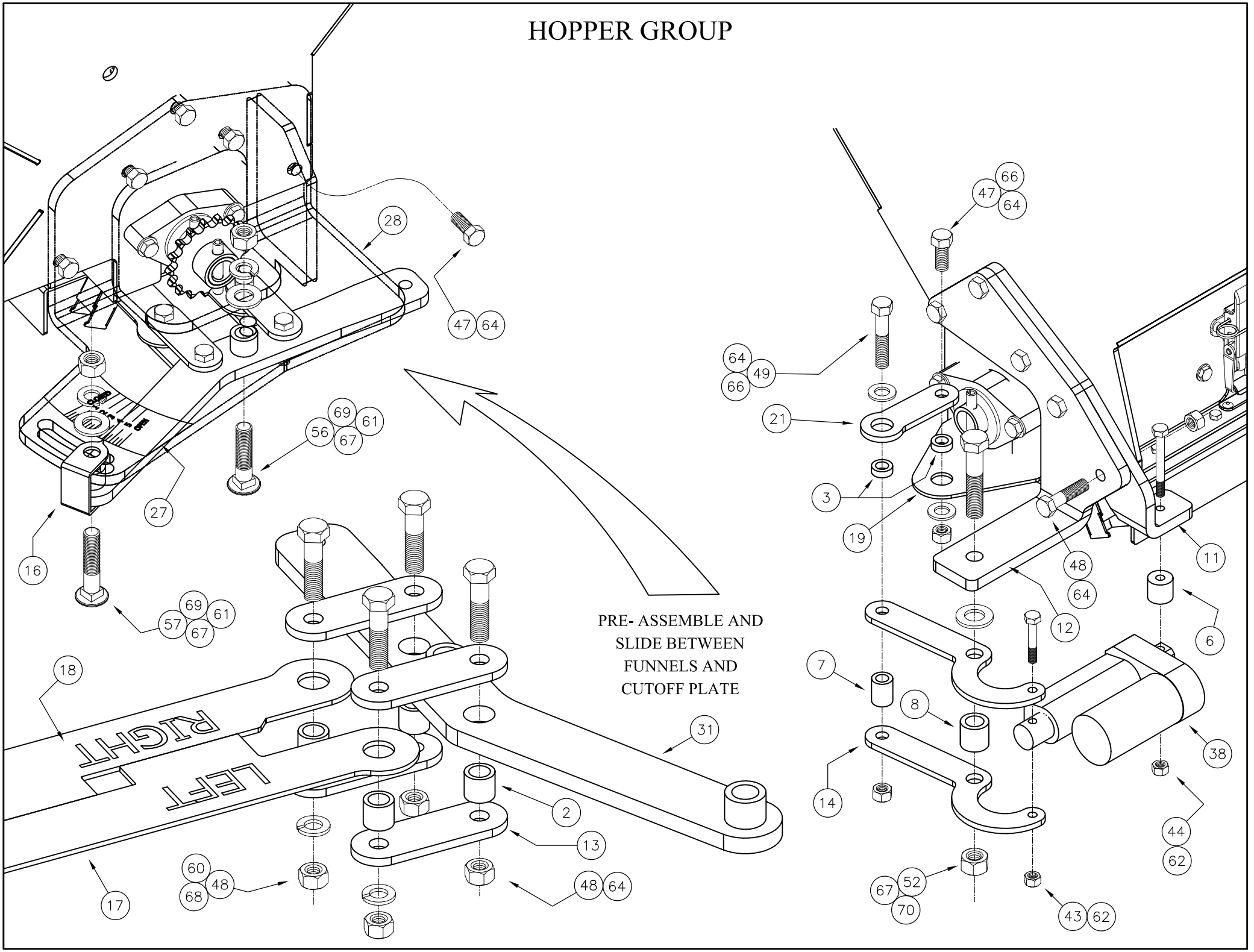
ITEM	PART NO	DESCRIPTION	QTY
1	AE50-075	PINCH POINT CAUTION DECAL	1
2	DS24-004	METER PLATE BUSHINGS	4
3	DS24-011	CUT OFF PLATE BUSHINGS	2
4	DS24-016	IDLER SPACERS	2
5	DS26-001	AGITATOR SHAFT BEARING	2
6	DS26-003	ACTUATOR SPACER 1	1
7	DS26-004	ACTUATOR SPACER 2	1
8	DS26-005	ACTUATOR SPACER 3	1
9	DS27-012	SEED FUNNEL 1	8
10	DS27-013	SEED FUNNEL 2	2
11	DS27-020	Actuator Mount	1
12	DS27-021	Actuator Linkage Pivot	1
13	DS27-022	METER PLATE LINKAGES	4
14	DS27-024	CUT OFF PLATE LEVER ACTION	2
15	DS27-026	METER ADJ. HANDLE COMBO WRENCH	1
16	DS27-027	METER SCALE POINTER	1
17	DS27-084	10 OUTLET LEFT SEED PLATE 3/4"	1
18	DS27-085	10 OUTLET RIGHT SEED PLATE 3/4"	1
19	DS27-092	10 OUTLET CUT OFF PLATE	1
20	DS27-120	CONTROLLER PLATE ND-96	1
21	DS27-083	CUT OFF PLATE BUSHING LINKAGE	1
22	DS27-123	SMV BRACKET - ND	1
23	DS50-001	TOGGLE LATCH	8
24	DS50-003	TOGGLE LATCH RETAINING PIN	8
25	DS50-042	ND-96 CHART DECAL	1
26	DS50-043	ND-96 QUICK CHART DECAL	1
27	DS50-044	ADJUSTER DECAL	1
28	DS80-006	Meter Adj. Bracket	1
29	DS80-009	SEEDBOX MOUNT	2
30	DS80-019	CHAIN GAURD	1
31	DS80-035	METER ADJUSTER	1
32	DS80-037	AGITATOR SPKT - DS	1
33	DS80-060	DS-96 PRIMARY HOPPER	1
34	DS80-061	DS-96 CAP	1
35	DS80-062	DS-96 LID	1
36	DS80-063	DS-96 SPLASH GUARD	1
37	DS81-004	CONTROL WIREING HARNESS	1
38	DS81-005	ACTUATOR ASSEMBLY	1
39	DS81-006	MOTOR ASSEMBLY	1
40	DS81-062	SPOUT TRAY - DS96	1
41	DS81-063	AGITATOR - DS96	1
42	FA50-035	#40 Chain x 98P	1
43	HW01008048G5ZPC	1/4 X 1 1/2 HHCS	1
44	HW01008072G5ZPC	1/4 X 2 1/4 HHCS	1
45	HW01010024G5ZPC	5/16 X 3/4 HHCS	22
46	HW01010048G5ZPC	5/16 x 1 1/2 Hex Head Cap Screw	8
47	HW01012032G5ZPC	3/8 X 1 HHCS	6
48	HW01012048G5ZPC	3/8 X 1 1/2 HHCS	9
49	HW01012064G5ZPC	3/8 X 2 HHCS	1
50	HW01012144G5ZPC	3/8 X 4 1/2 HHCS	2
51	HW01016032G5ZPC	1/2 X 1 HHCS	2
52	HW01016080G5ZPC	1/2 X 2 1/2 HHCS	1
53	HW01016096G5ZPC	1/2 X 3 HHCS	2
54	HW03016032G5ZPC	1/2 X 1 Carriage Bolt	22
55	HW03016040G5ZPC	1/2 X 1 1/4 CARRIAGE BOLT	2
56	HW03016072G5ZPC	1/2 x 2 1/4 CARRIAGE BOLT	1
57	HW03016080G5ZPC	1/2 X 2 1/2 CARRIAGE BOLT	1
58	HW06008016G5ZPC	1/4 X 1/2 FLANGE LOCK SCREW	40
59	HW06008024G5ZPF	1/4 X 3/4 HEX FLG LK SC. FINE	4
60	HW20012G5ZPC	3/8 HEX NUT	2
61	HW20016G5ZPC	1/2 HEX NUT	2
62	HW24008GBZPC	1/4 Stover Lock Nut	42
63	HW24010GBZPC	5/16 Stover Lock Nut	30
64	HW24012GBZPC	3/8 Stover Lock Nut	16
65	HW30010TAZP	5/16 Flat Washer	12
66	HW31012TAZP	3/8 SAE FLATWASHER	2
67	HW31016TAZP	1/2 SAE FLATWASHER	5
68	HW32012G5ZP	3/8 LOCKWASHER	2
69	HW32016G5ZP	1/2 LOCK WASHER	2
70	HW34016G5ZPC	1/2 2-WAY LOCKUT	5
71	HW35016G5ZPC	1/2 FLANGE STOVER LOCKNUT	24
72	HW41005008SS	5/32 X 1/8 - 1/4 RIVETS SS	24
73	HW42010040G5ZP	5/16" x 1 1/4" Roll Pin Zinc Plated	3
74	HW6003204810GZP	1" ID x 1 1/2" OD 10GA Machine Bushing	2
75	UA50-007	3/16 LYNCH PIN	1
76	ND50-035	1st PRODUCTS DECAL - LONG - SPING 2020	2
77	SB50-023	#40 CHAIN IDLER	2
78	SB50-112	10 TOOTH SPROCKET	1
79	UA50-012	UA BELT COVER DECAL	1
80	DS27-172	DS BEARING HANGER	2
81	DS50-082	DS PATENT DECAL	1
82	UA50-180	USA FLAG DECAL	1



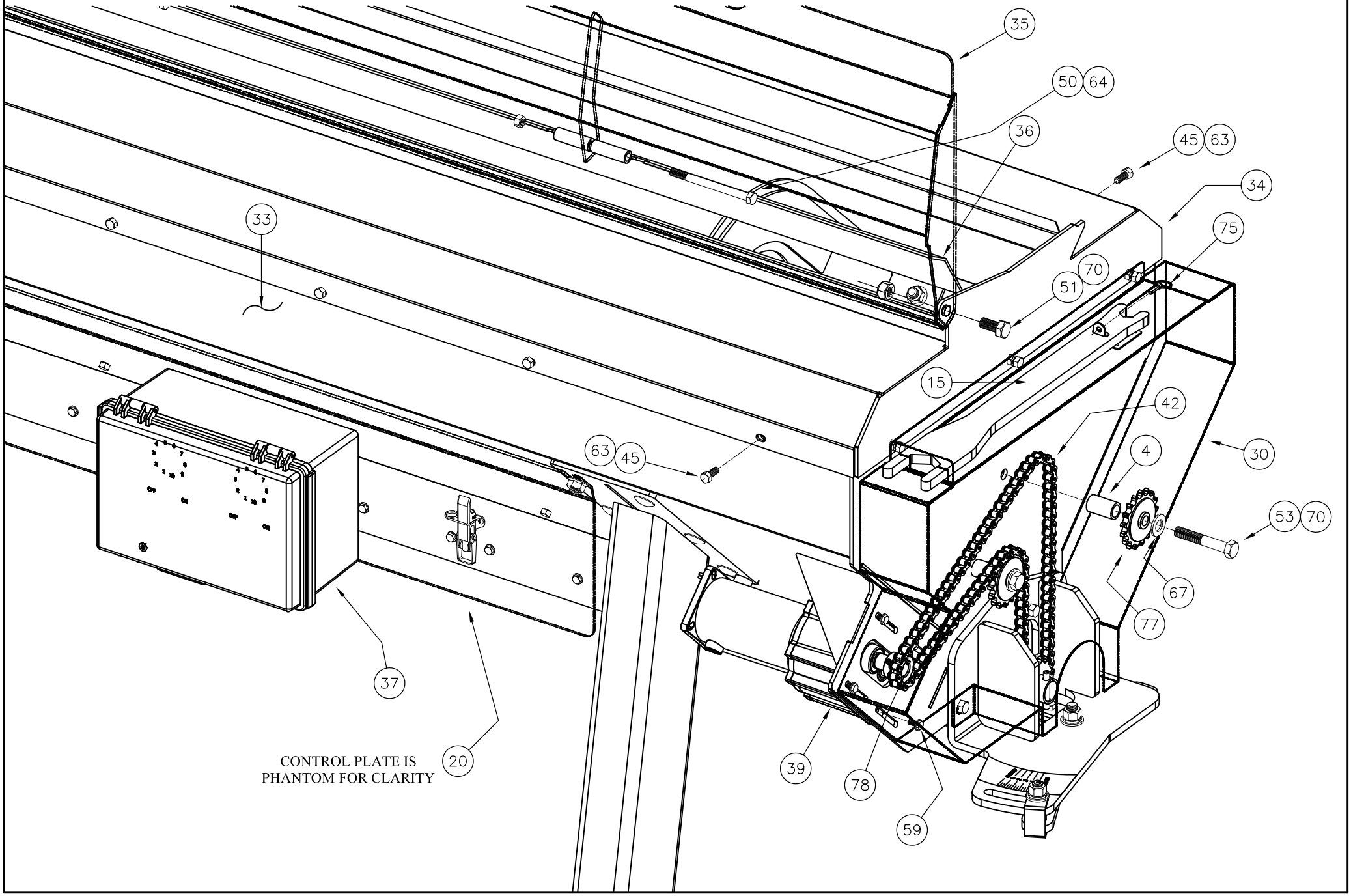
HOPPER GROUP



HOPPER GROUP

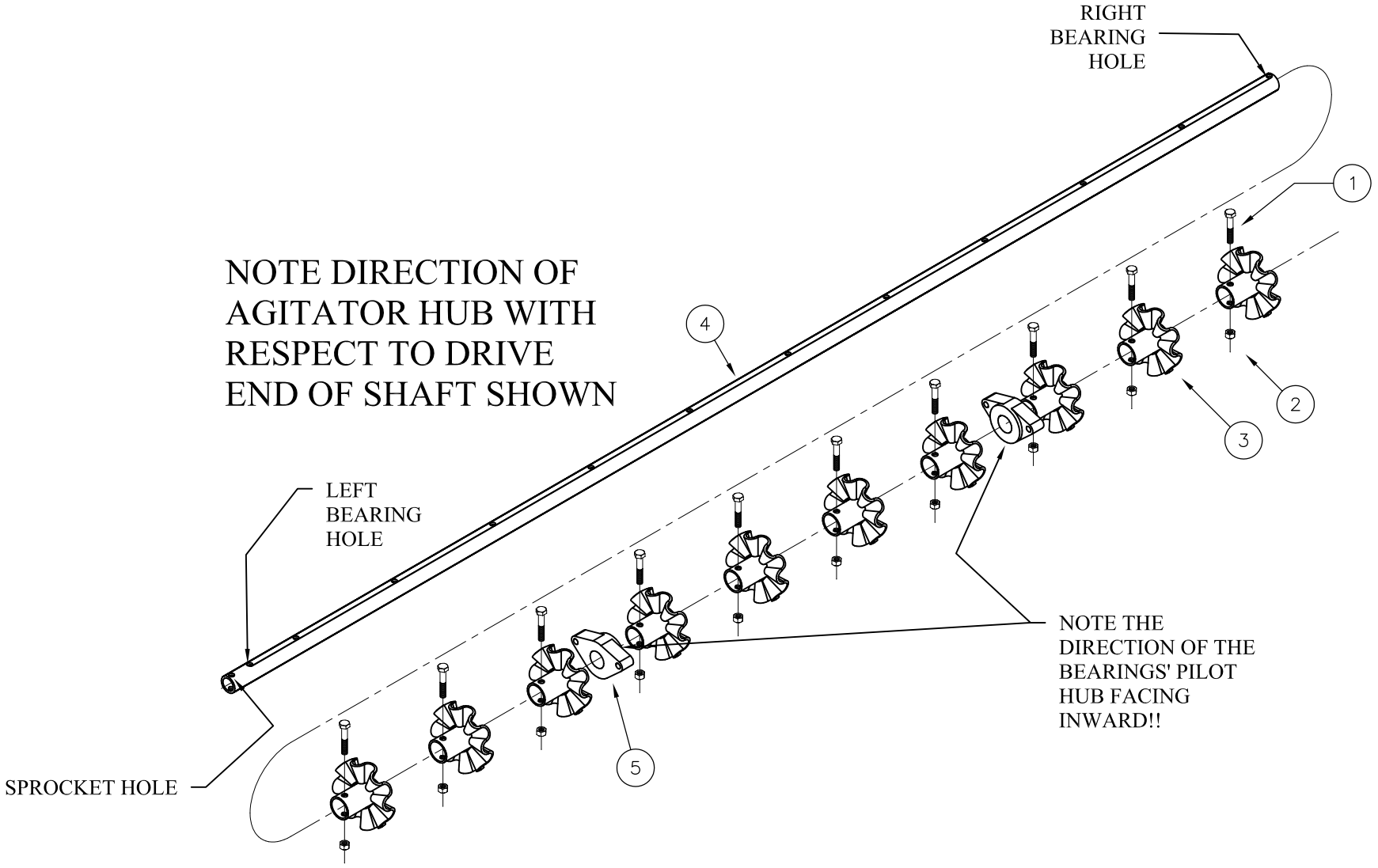


HOPPER GROUP



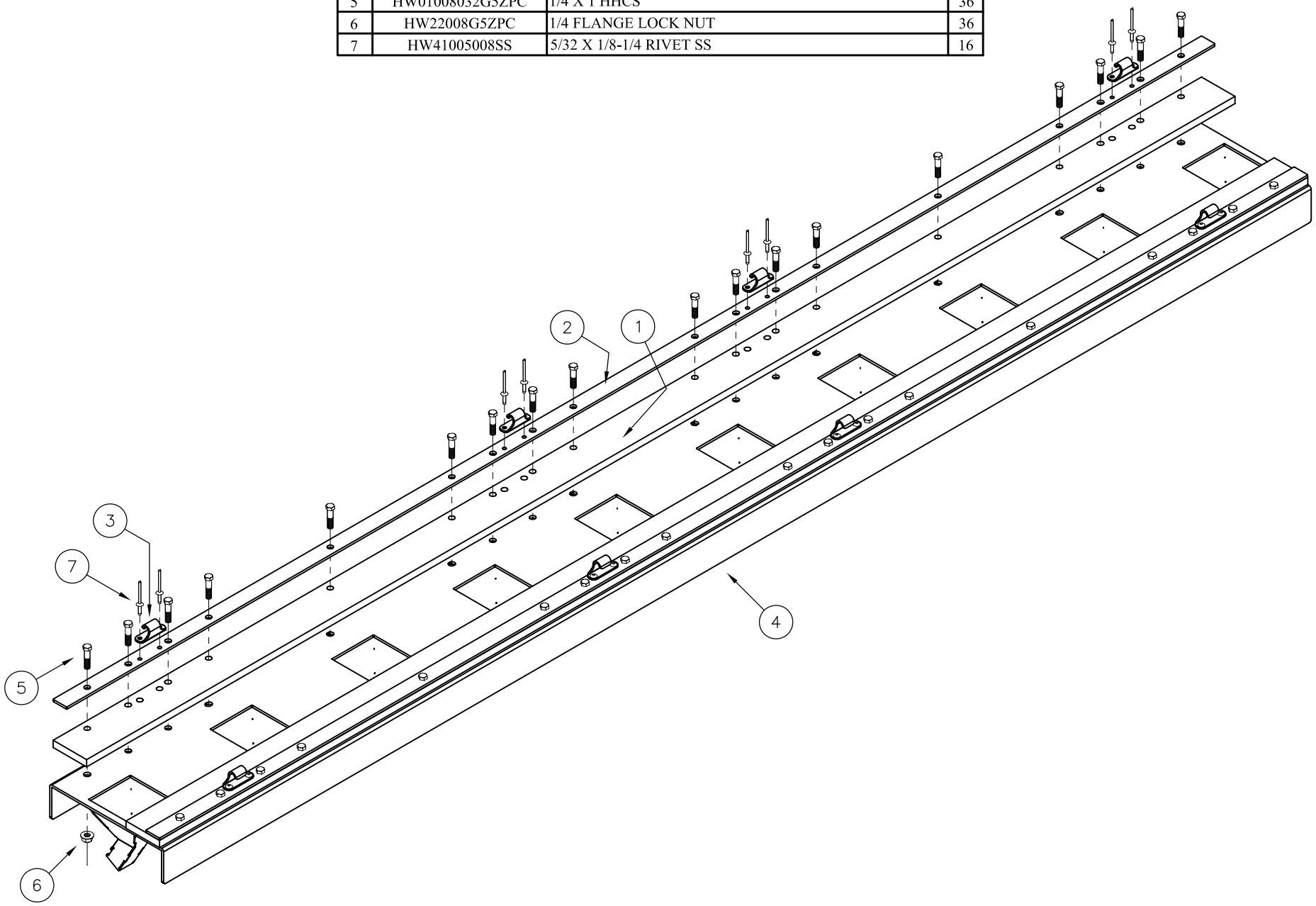
AGITATOR GROUP

ITEM	PART NO	DESCRIPTION	QTY
1	HW01010056G5ZPC	5/16 1 3/4 HHCS	10
2	HW24010GBZPC	5/16 STOVER LOCKNUT	10
3	DS80-010	AGITATOR	10
4	DS24-022	AGITATOR SHAFT - DS96	1
5	DS26-001	AGITATOR SHAFT BEARING	2



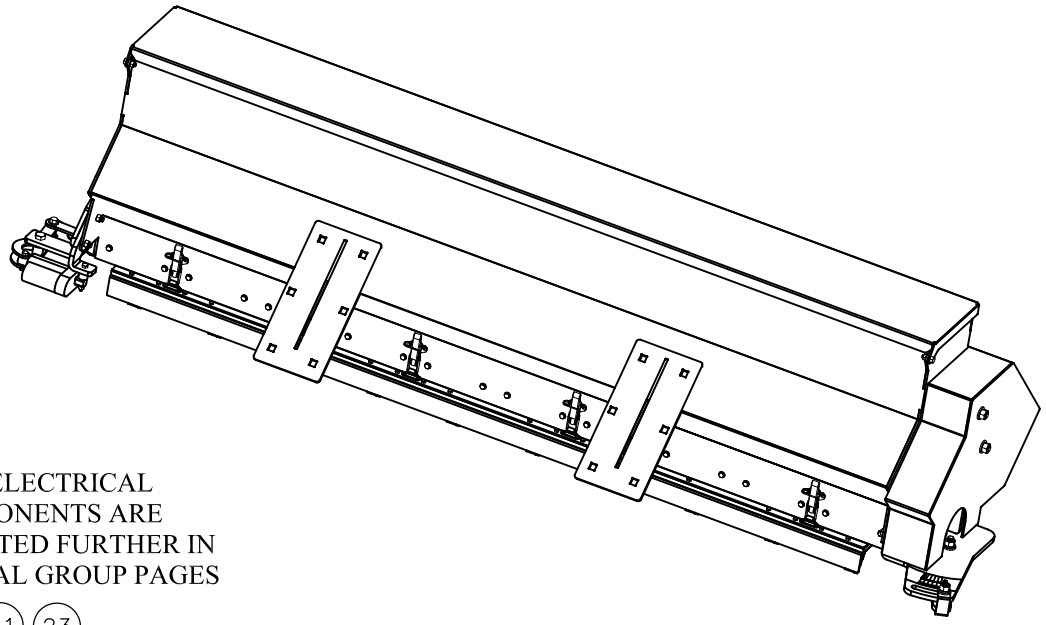
SPOUT TRAY GROUP

ITEM	PART NO	DESCRIPTION	QTY
1	DS26-009	10 OUTLET CUT OFF PLATE SLIDE	2
2	DS27-062	10 OUTLET CATCH PLATE STRIP	2
3	DS50-002	TOGGLE LATCH PLATE	6
4	DS80-064	DS-96 SPOUT TRAY	1
5	HW01008032G5ZPC	1/4 X 1 HHCS	36
6	HW22008G5ZPC	1/4 FLANGE LOCK NUT	36
7	HW41005008SS	5/32 X 1/8-1/4 RIVET SS	16



SMALL BOX GROUP

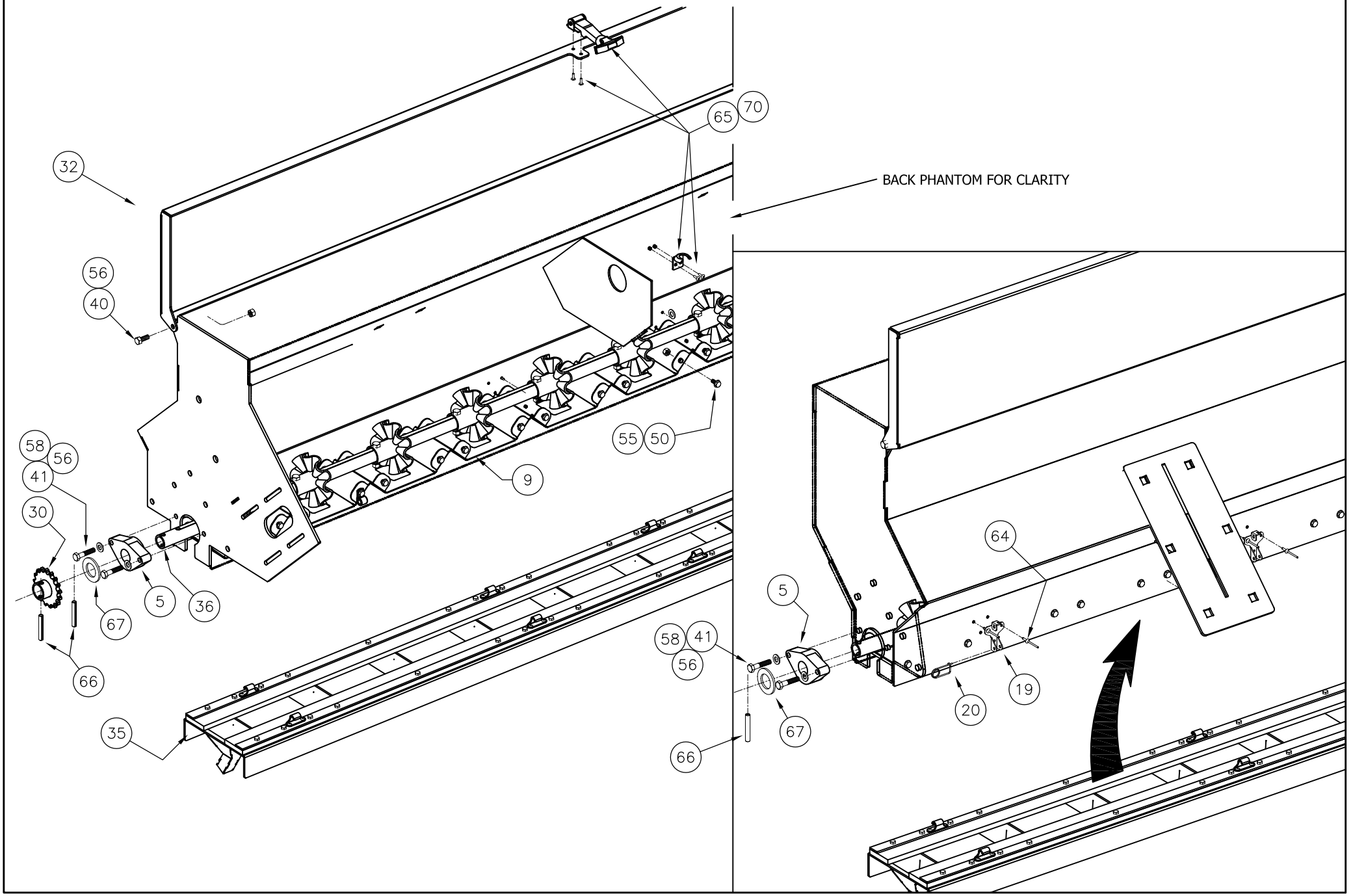
ITEM	PART NO	DESCRIPTION	QTY
1	AE50-075	PINCH POINT CAUTION DECAL	1
2	DS24-004	METER PLATE BUSHINGS	4
3	DS24-011	CUT OFF PLATE BUSHINGS	2
4	DS24-016	IDLER SPACERS	4
5	DS26-001	AGITATOR SHAFT BEARING	2
6	DS26-003	ACTUATOR SPACER 1	1
7	DS26-004	ACTUATOR SPACER 2	1
8	DS26-005	ACTUATOR SPACER 3	1
9	DS27-012	SEED FUNNEL 1	10
10	DS27-020	Actuator Mount	1
11	DS27-021	Actuator Linkage Pivot	1
12	DS27-022	METER PLATE LINKAGES	4
13	DS27-024	CUT OFF PLATE LEVER ACTION	2
14	DS27-027	METER SCALE POINTER	1
15	DS27-083	CUT OFF PLATE BUSHING LINKAGE	1
16	DS27-092	10 OUTLET CUT OFF PLATE	1
17	DS27-090	10 OUTLET LEFT SEED PLATE 1/4"	1
18	DS27-091	10 OUTLET RIGHT SEED PLATE 1/4"	1
19	DS50-001	TOGGLE LATCH	8
20	DS50-003	TOGGLE LATCH RETAINING PIN	8
21	DS50-005	JOHN BLUE 35 AMP CONTROLLER	1
22	DS50-044	ADJUSTER DECAL	1
23	DS50-050	JOHN BLUE CONTROLLER HARNESS SB	1
24	DS50-051	3/4" ID LOOP CLAMP	1
25	DS50-043	ND-96 QUICK CHART DECAL	1
26	DS50-069	3/8" ID LOOP CLAMP, INSULATED	2
27	DS80-006	Meter Adj. Bracket	1
28	DS80-027	SMALL BOX CHAIN COVER	1
29	DS80-035	METER ADJUSTER	1
30	DS80-037	AGITATOR SPKT - DS	1
31	DS80-065	DS-96 SMALL HOPPER	1
32	DS80-066	SMALL HOPPER LID - DS96	1
33	DS81-005	ACTUATOR ASSEMBLY	1
34	DS81-006	MOTOR ASSEMBLY	1
35	DS81-062	SPOUT TRAY - DS96	1
36	DS81-064	AGITATOR - DS96 (small box)	1
37	FA50-035	#40 Chain x 98P	1
38	HW01008048G5ZPC	1/4 X 1 1/2 HHCS	1
39	HW01008072G5ZPC	1/4 X 2 1/4 HHCS	1
40	HW01010024G5ZPC	5/16 X 3/4 HHCS	2
41	HW01010048G5ZPC	5/16 x 1 1/2 Hex Head Cap Screw	4
42	HW01012032G5ZPC	3/8 X 1 HHCS	6
43	HW01012048G5ZPC	3/8 X 1 1/2 HHCS	9
44	HW01012064G5ZPC	3/8 X 2 HHCS	1
45	HW01016080G5ZPC	1/2 X 2 1/2 HHCS	1
46	HW01016160G5ZPC	1/2 X 5 HHCS	2
47	HW03016072G5ZPC	1/2 x 2 1/4 CARRIAGE BOLT	1
48	HW03016080G5ZPC	1/2 X 2 1/2 CARRIAGE BOLT	1
49	HW06#10016G5ZPC	#10 X 1/2 FLANGE LOCK SCREW	4
50	HW06008016G5ZPC	1/4 X 1/2 FLANGE LOCK SCREW	40
51	HW06008024G5ZPF	1/4 X 3/4 HEX FLG LK SC. FINE	4
52	HW20012G5ZPC	3/8 HEX NUT	2
53	HW20016G5ZPC	1/2 HEX NUT	4
54	HW23#10G5ZPC	#10 NYLON LOCKNUT	4
55	HW24008GBZPC	1/4 Stover Lock Nut	42
56	HW24010GBZPC	5/16 Stover Lock Nut	6
57	HW24012GBZPC	3/8 Stover Lock Nut	14
58	HW30010TAZP	5/16 Flat Washer	4
59	HW31012TAZP	3/8 SAE FLATWASHER	2
60	HW31016TAZP	1/2 SAE FLATWASHER	7
61	HW32012G5ZP	3/8 LOCKWASHER	2
62	HW32016G5ZP	1/2 LOCK WASHER	2
63	HW34016G5ZPC	1/2 2-WAY LOCKUT	3
64	HW41005008SS	5/32 X 1/8 - 1/4 RIVETS SS	24
65	HW41006008SS	3/16 X 1/16-1/8 RIVET	4
66	HW42010040G5ZP	5/16" x 1 1/4" Roll Pin Zinc Plated	3
67	HW6003204810GZP	1" ID x 1 1/2" OD 10GA Machine Bushing	2
68	ND50-035	1st PRODUCTS DECAL - LONG - SPING 2020	1
69	SB50-023	#40 CHAIN IDLER	2
70	SB50-053	T-HANDLE DRAW LATCH	1
71	SB50-112	10 TOOTH SPROCKET	1



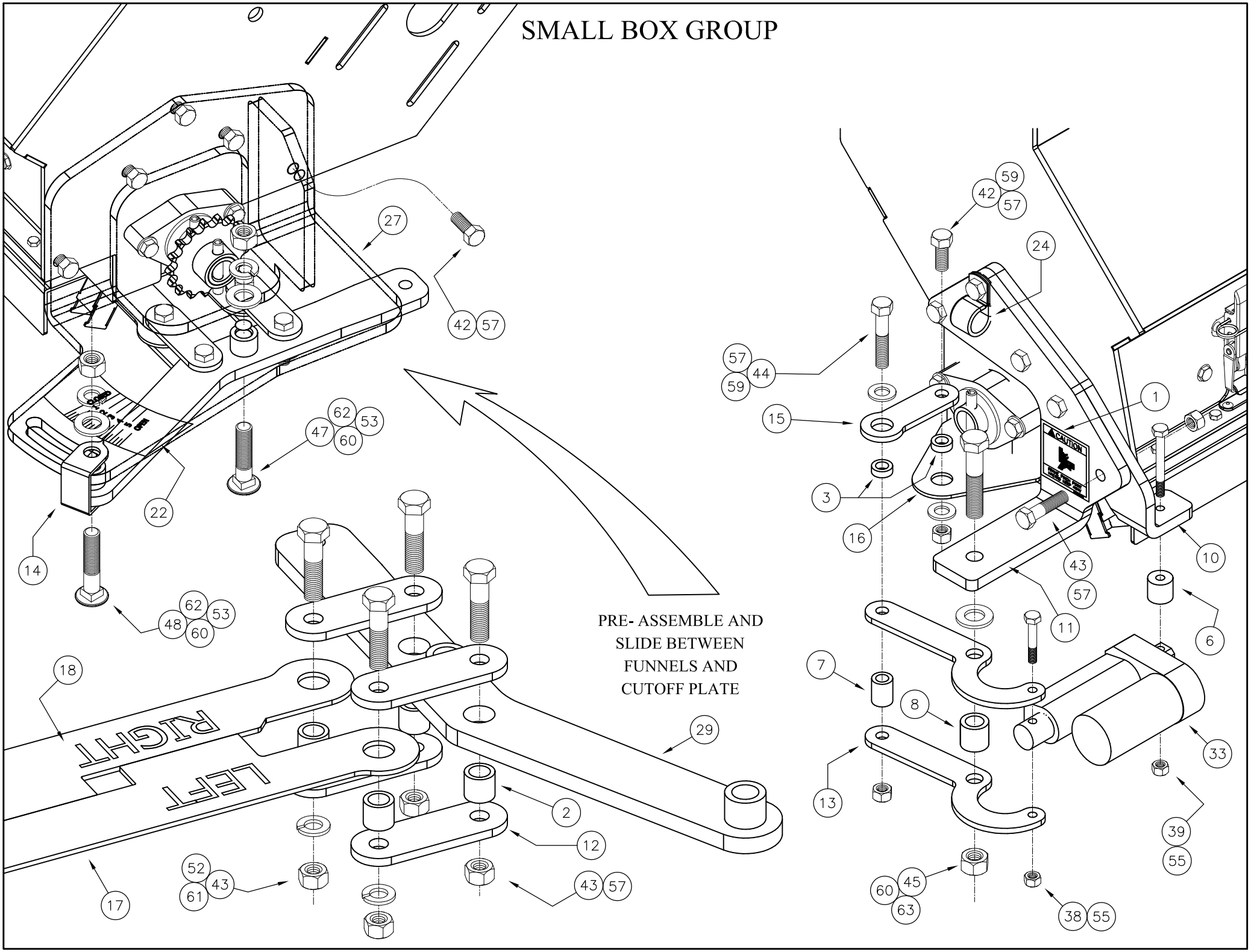
ALL ELECTRICAL COMPONENTS ARE ILLUSTRATED FURTHER IN ELECTRICAL GROUP PAGES

21 23

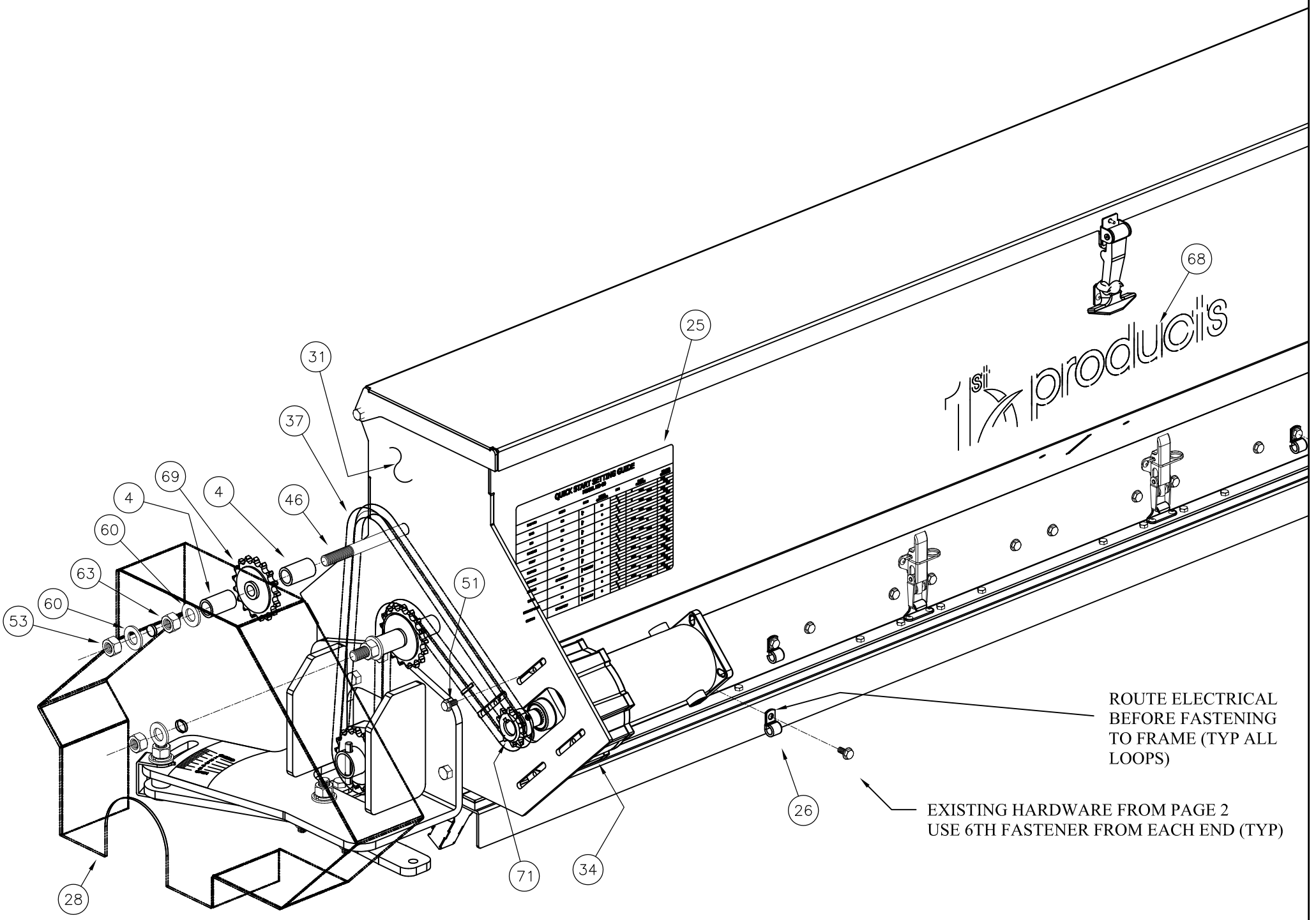
SMALL BOX GROUP



SMALL BOX GROUP

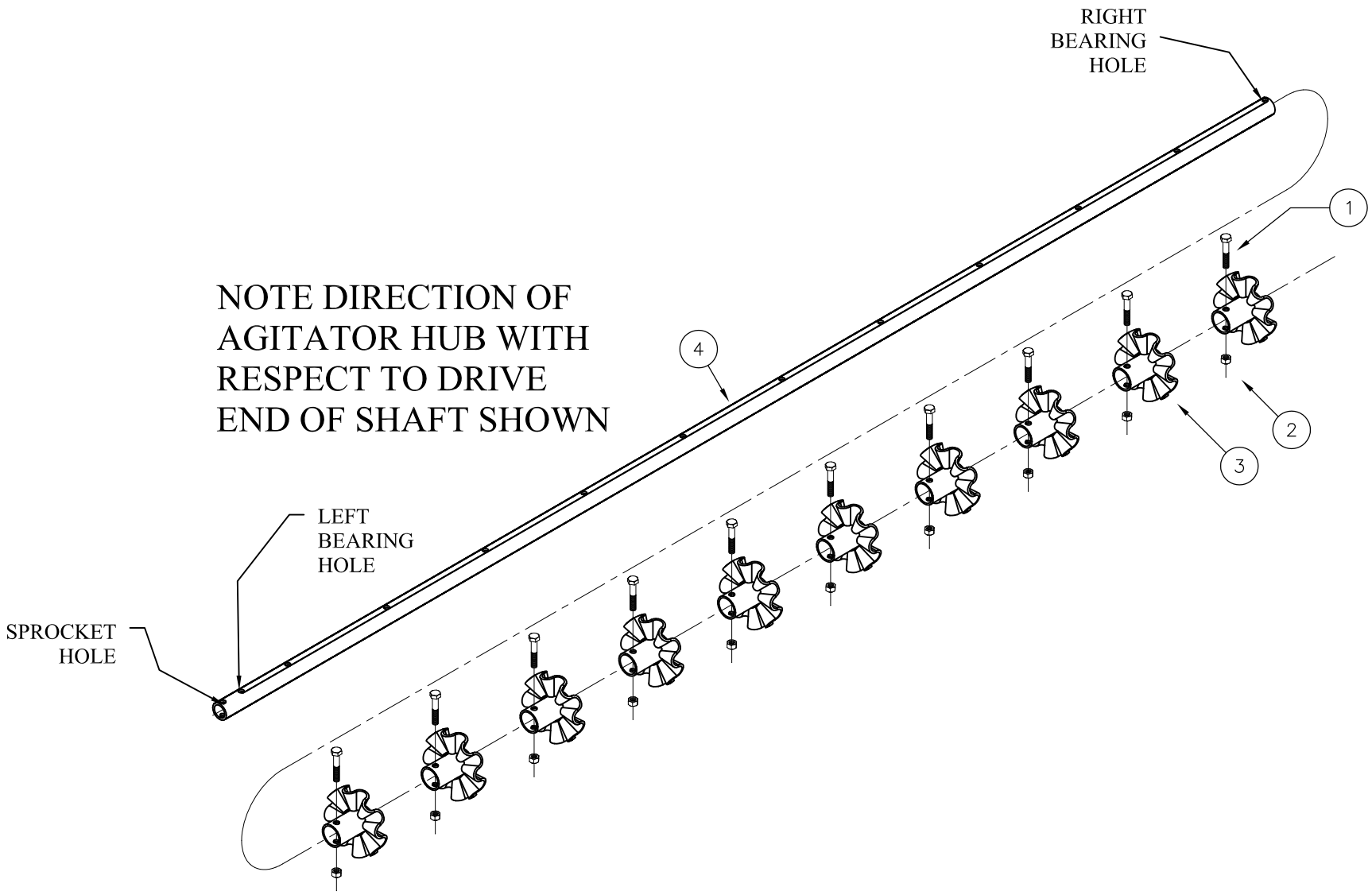


SMALL BOX GROUP



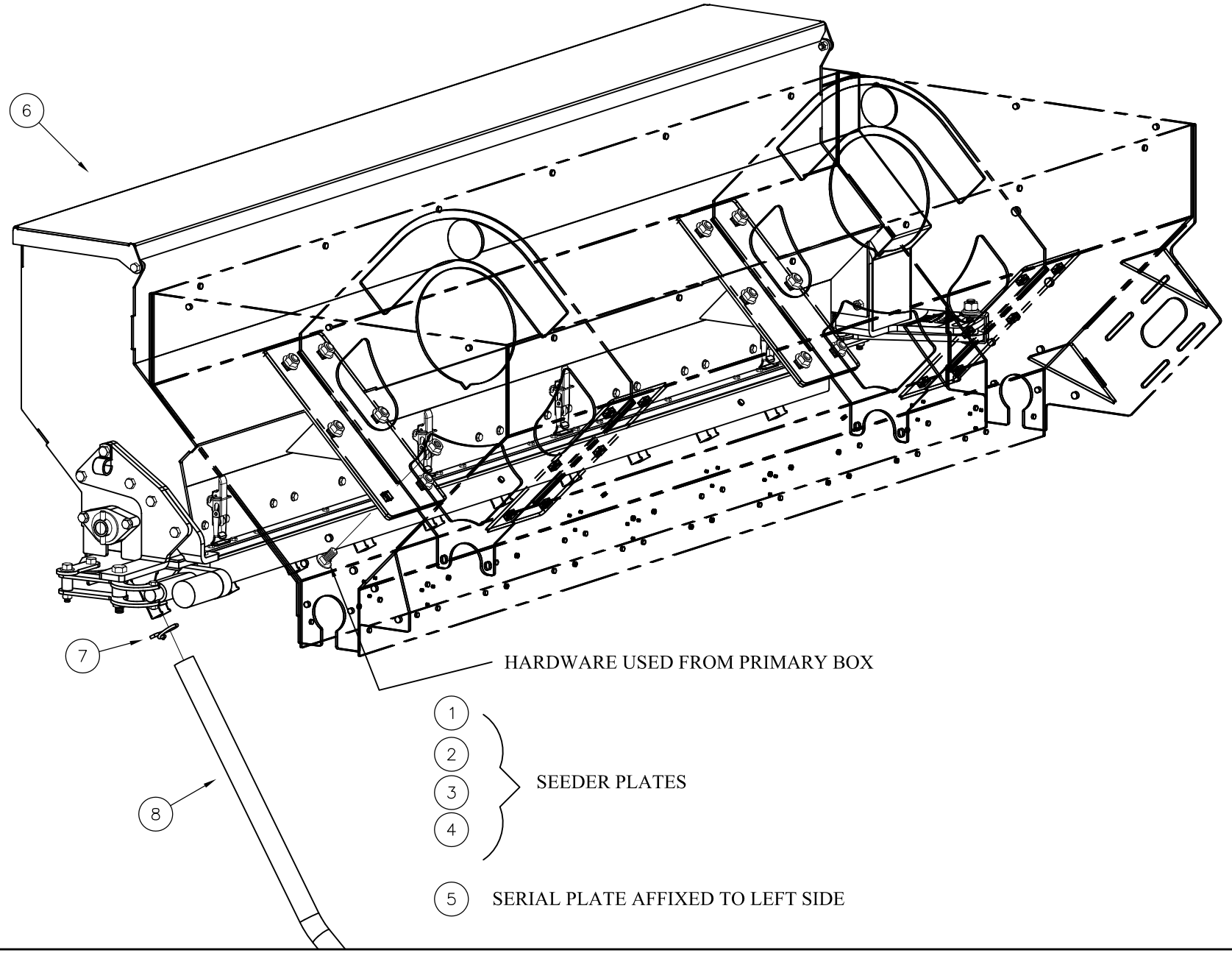
SMALL BOX AGITATOR GROUP

ITEM	PART NO	DESCRIPTION	QTY
1	HW01010056G5ZPC	5/16 1 3/4 HHCS	10
2	HW24010GBZPC	5/16 STOVER LOCKNUT	10
3	DS80-010	AGITATOR	10
4	DS24-022	AGITATOR SHAFT - DS96	1



SMALL BOX TO PRIMARY GROUP

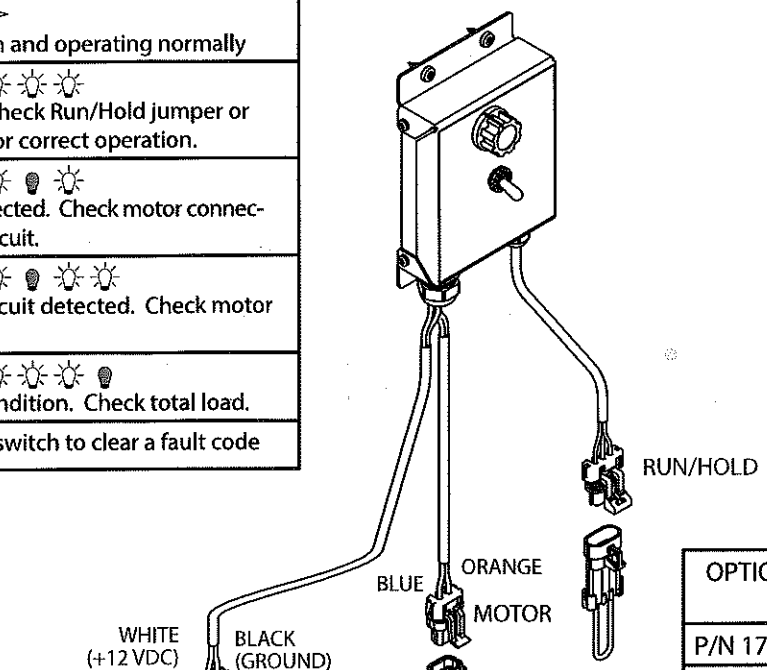
ITEM	PART NO	DESCRIPTION	QTY	ITEM	PART NO	DESCRIPTION	QTY	ITEM	PART NO	DESCRIPTION	QTY
1	DS27-086	10 OUTLET LEFT SEED PLATE 1/2	1	4	DS27-089	10 OUTLET RIGHT SEED PLATE 3/8	1	7	SB50-062	1 3/8 HOSE CLAMP	10
2	DS27-087	10 OUTLET RIGHT SEED PLATE 1/2	1	5	ND50-086	DS-96 SERUAL # TAG	1	8	ND50-102	1 ID X 1 1/4 OD CLEAR VINYL DS SB	10
3	DS27-088	10 OUTLET LEFT SEED PLATE 3/8	1	6	DS81-027	SMALL BOX - DS96	1				



MICRO-TRAK
PRECISION TRACK THE WORLD UP
www.micro-trak.com 800.328.9613

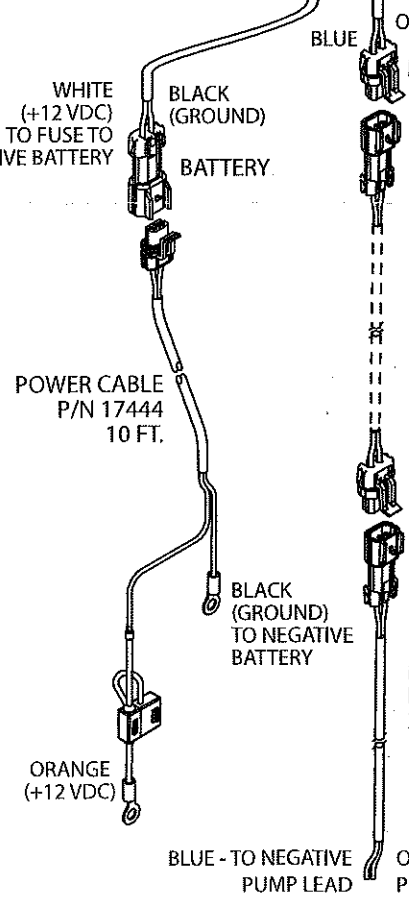
25 Amp Manual Controller
Installation Instructions

LED STATUS INDICATOR CODES	
Light on steady	Unit is turned on and operating normally
Steady Flashing	Unit in HOLD. Check Run/Hold jumper or remote switch for correct operation.
1 Flash/pause	Open circuit detected. Check motor connections for open circuit.
2 Flashes/pause	Output short circuit detected. Check motor wiring.
3 Flashes/pause	Over-current condition. Check total load.
NOTE: Cycle power with the ON/OFF switch to clear a fault code	



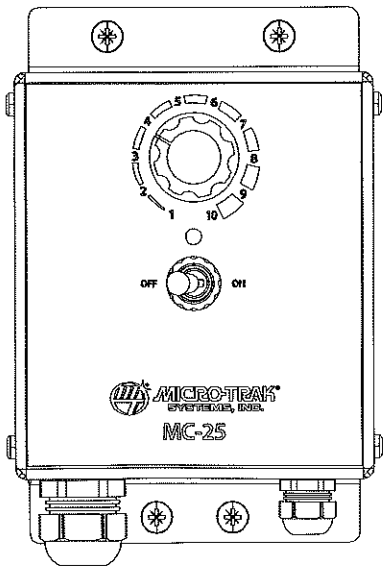
OPTIONAL 2-PIN M/P 280 MOTOR EXTENSION CABLES		
P/N 17445	10'	CABLE
P/N 17446	20'	CABLE

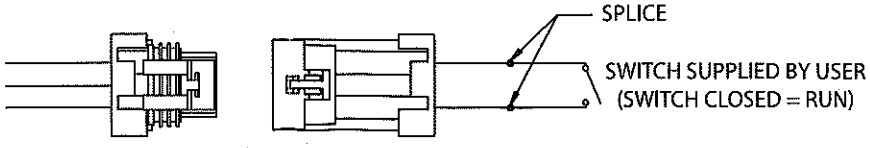
Optional Pressure Gauge Bracket also available - P/N 14799



⚠ *IMPORTANT!* ⚠
Do **not** connect the motor leads to the battery or power supply. Resulting damage to controller will **not** be covered under warranty.

Front View

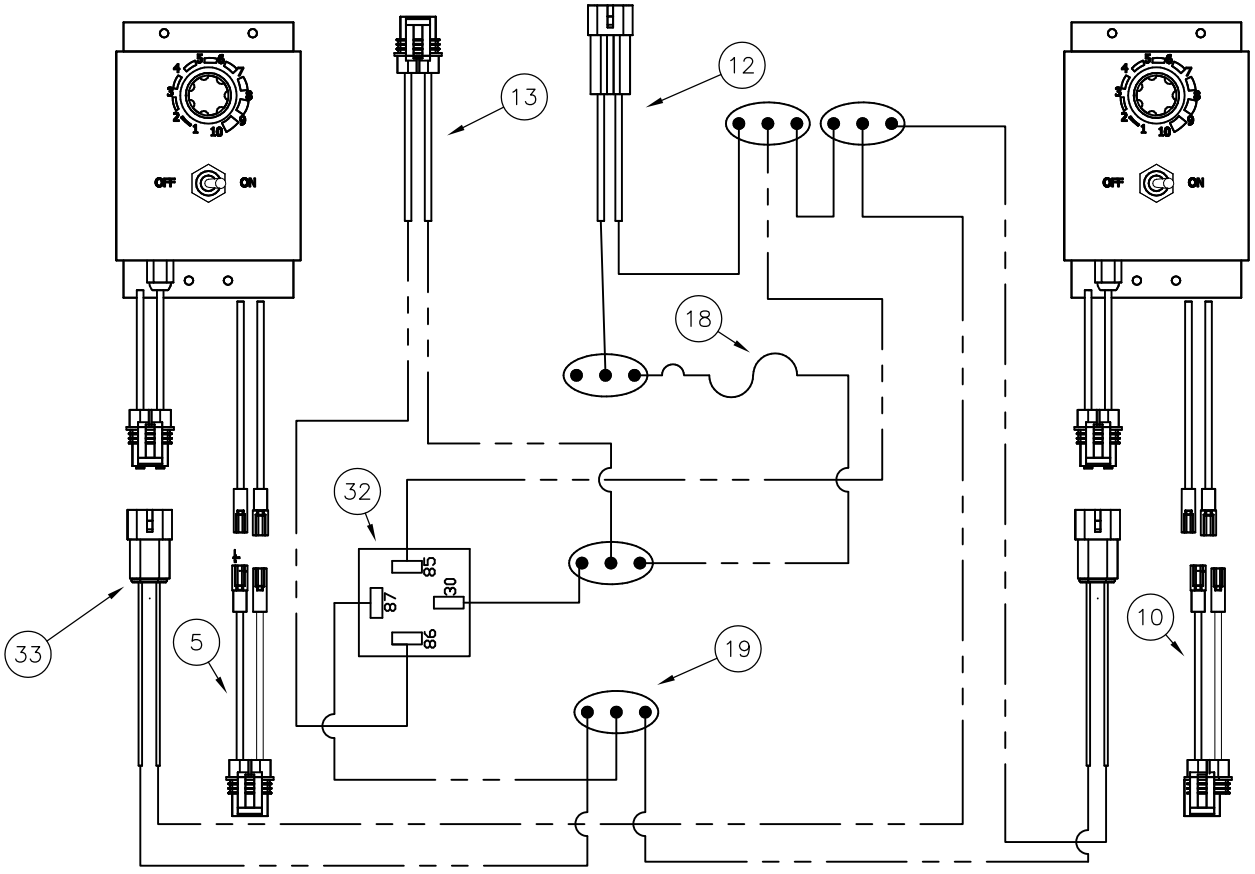




OPTIONAL RUN/HOLD CONNECTION
CUT JUMPER AND WIRE TO
SWITCH AS SHOWN

ELECTRICAL GROUP

ITEM	PART NO	DESCRIPTION	QTY
1	AE50-129	2-7/8 TEST CLIP	2
2	AE50-130	RED INSULATOR	1
3	AE50-131	BLACK INSULATOR	1
4	DS27-170	VARIABLE SPEED CONTOLLER MOUNT	1
5	DS50-009	MOTOR POWER HARNESS, BOX 1	1
6	DS50-010	MOTOR EXTENSIN HARNESS, BOX 1	1
7	DS50-011	RELAY ACTUATOR HARNESS, BOX 1	1
8	DS50-012	RELAY ACTUATOR HARNESS, BOX 2	1
9	DS50-013	ACTUATOR HARNESS, BOX 1	1
10	DS50-014	MOTOR POWER HARNESS, BOX 2	1
11	DS50-015	CABLE GLAND	3
12	DS50-016	CONTROL BOX POWER IN HARNESS	1
13	DS50-017	CONTROL BOX SWITH HARNESS	1
14	DS50-018	ACTUATOR HARNESS, BOX 2	1
15	DS50-020	SWITCH	1
16	DS50-020	DS SWITCH HARNESS	1
17	DS50-020	SWITCH	1
18	DS50-023	FUSE LINK	1
19	DS50-029	22-14 GA 3 COND PIGTAIL CONNECTOR	5
20	DS50-030	RELAY POWER WIRE	1
21	DS50-032	DS SWITCH HARNESS	1
22	DS50-033	RELAY GROUND WIRE ASSM	1
23	DS50-046	POWER HARNESS W/ TEST CLIPS	1
24	DS50-050	MOTOR HARNESS, SMALL BOX	1
25	DS50-052	SYSTEM POWER WIRE	1
26	DS50-066	MINI FUSE, 25 AMP	1
27	DS50-073	25 AMP CONTROLLER	1
28	DS50-074	RELAY, DPDT	2
29	DS50-075	CONTROL ENCLOSURE	1
30	DS50-076	GLAND NUT	3
31	DS50-077	GROUND EXTENSION WIRE	1
32	DS50-078	RELAY, 4 PIN	1
33	DS50-079	CONTROLLER POWER HARNESS	2
34	DS81-005	ACTUATOR WITH PLUG	1
35	DS81-006	MOTOR WITH PLUG	1
36	HW16#10016G5ZPC	#10 X 1/2 CROSS HEAD SCREW	4
37	HW34#10G5ZPC	#10 2-WAY LOCK NUT	4
38	HW62#08010ZP	#8 X 5/16 THREAD FORMING SCREW	4
39	HW16M5012ZPC	M5X.8 X 12 MM LG CROSS HEAD SCREW	4
40	ND50-095	PIERCE ON/OFF SWITCH	1
41	ND50-100	ON/OFF DECAL	1



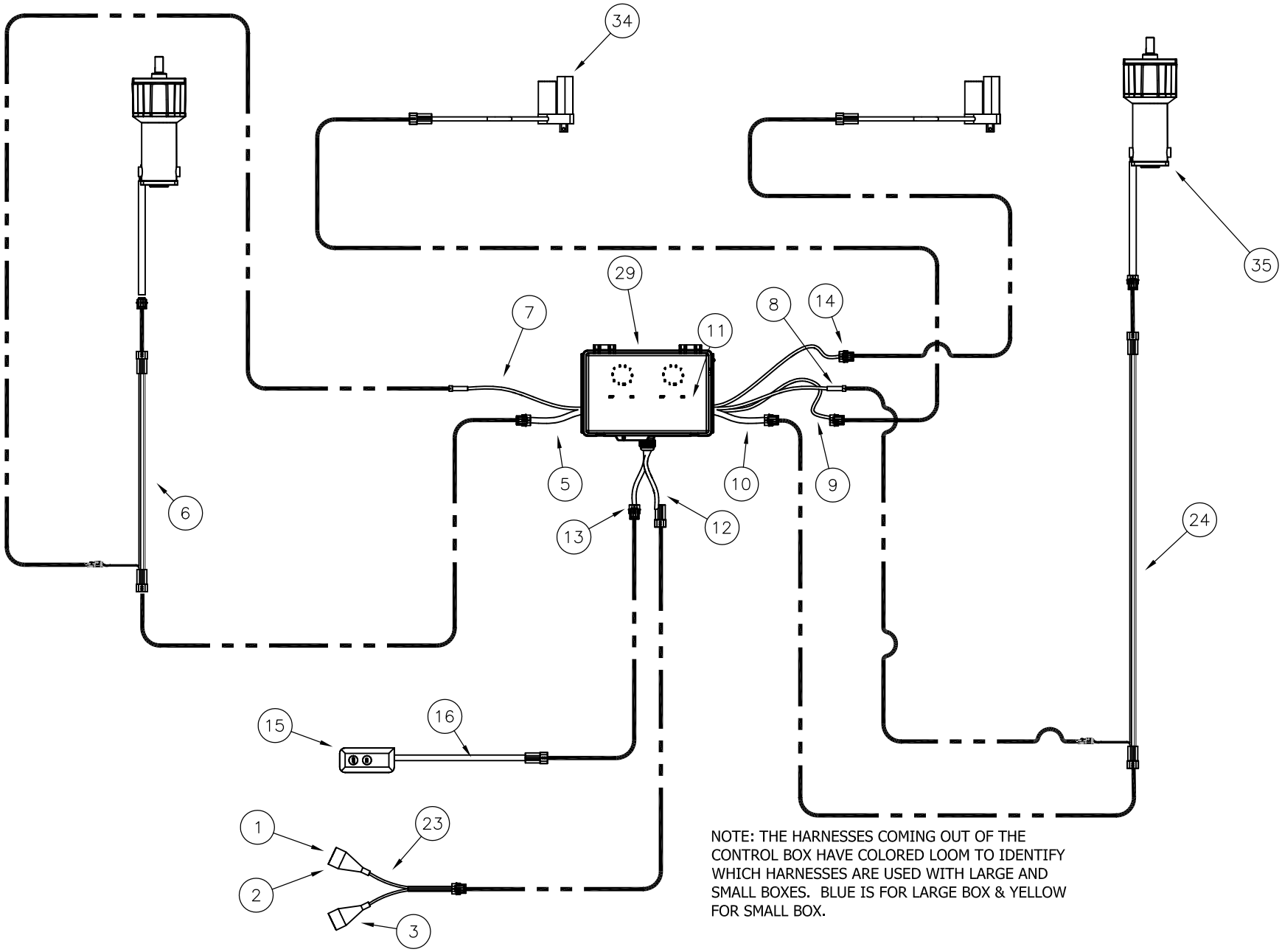
ELECTRICAL GROUP (BOX WIRE LAYOUT)

LARGE BOX

WIRES WRAPPED WITH BLUE LOOM ARE
FOR THE LARGE BOX

SMALL BOX

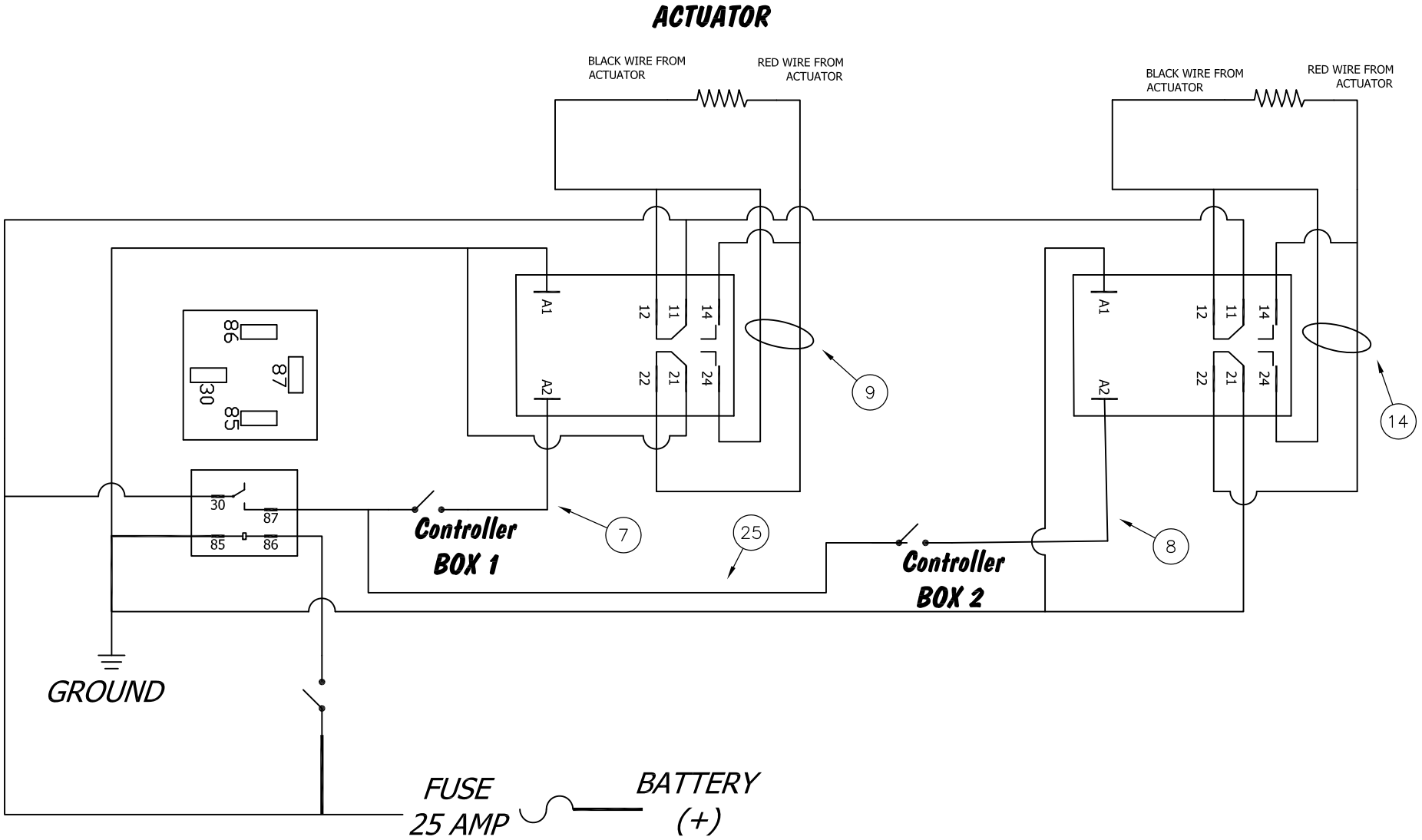
WIRES WRAPED WITH YELLOW LOOM ARE
FOR THE SMALL BOX



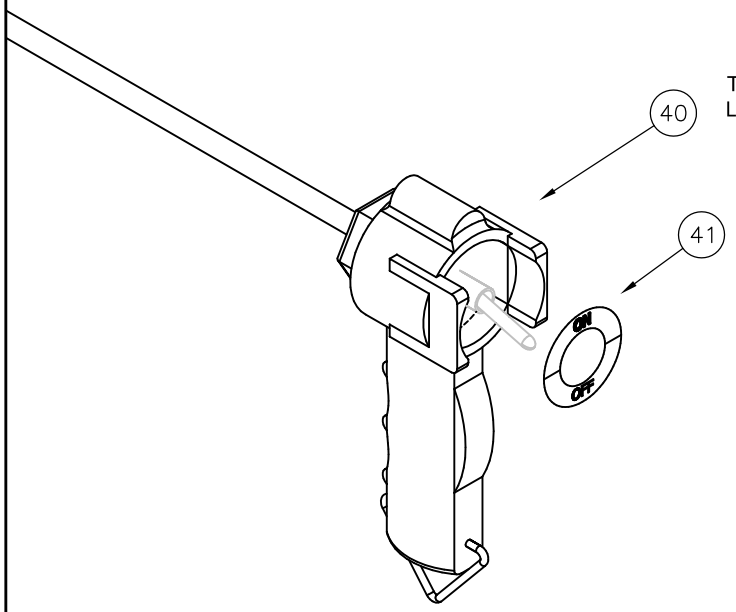
NOTE: THE HARNESSES COMING OUT OF THE CONTROL BOX HAVE COLORED LOOM TO IDENTIFY WHICH HARNESSES ARE USED WITH LARGE AND SMALL BOXES. BLUE IS FOR LARGE BOX & YELLOW FOR SMALL BOX.

ELECTRICAL GROUP (CONTROL BOX SCHEMATIC)

BLACK WIRE ON ACTUATOR EXTENDS ACTUATOR WHEN ON POSITIVE TERMINAL



ELECTRICAL GROUP (BULK COMPONENTS)



THIS IS COMPLETE SWITCH
LESS DECAL