

Art's-Way Manufacturing Co., Inc.

Model 660800
6812 Leveling & Depth Control Kit

Operator's Manual & Illustrated Parts List
660885

Issued July 2020



This symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED. The message that follows the symbol contains important information about your safety. Carefully read the message. Make sure you fully understand the causes of possible injury or death.

IF THIS MACHINE IS USED BY AN EMPLOYEE, IS LOANED, OR IS RENTED, MAKE SURE THAT THE OPERATOR UNDERSTANDS THE TWO INSTRUCTIONS BELOW.

BEFORE THE OPERATOR STARTS THE ENGINE:

GIVE INSTRUCTIONS TO THE OPERATOR ON SAFE AND CORRECT USE OF THE MACHINE.

MAKE SURE THE OPERATOR READS AND UNDERSTANDS THE OPERATOR'S MANUAL FOR THIS MACHINE.

⚠ WARNING

IMPROPER OPERATION OF THIS MACHINE CAN CAUSE INJURY OR DEATH.

BEFORE STARTING THE ENGINE, DO THE FOLLOWING:

1. READ THE OPERATOR'S MANUAL.
2. READ ALL SAFETY DECALS ON THE MACHINE.
3. CLEAR THE AREA OF OTHER PERSONS.
4. LEARN AND PRACTICE SAFE USE OF MACHINE CONTROLS IN A SAFE AND CLEAR AREA BEFORE YOU OPERATE THIS MACHINE ON A JOB SITE.

It is your responsibility to observe pertinent laws and regulations and to follow manufacturer's instructions on machine operation and maintenance.

See your Authorized Art's-Way Manufacturing Co., Inc. dealer or Art's-Way Manufacturing Co., Inc. for additional operator's manuals, illustrated parts catalogs, and service manuals.

TO THE OWNER

Congratulations on the purchase of your new Art's-Way 6812 Leveling & Depth Control Kit. You have selected a top quality machine that is designed and built with pride to ensure you have many years of efficient and reliable service.

Many people have worked on the design, production, and delivery of this 6812 Leveling & Depth Control Kit. The information in this manual is based on the knowledge, study, and experience through years of specializing in the manufacturing of farm machinery. This manual is designed to provide you with important information regarding safety, maintenance, and machine operation so you can and will get the best possible performance from your 6812 Leveling & Depth Control Kit.

Even if you are an experienced operator of this or similar equipment, we ask that you read this manual before operating this 6812 Leveling & Depth Control Kit. The way you operate, adjust, and maintain this unit will have much to do with its successful performance. Any further questions you may have about this product of Art's-Way equipment should be directed to your local Art's-Way dealer or to Art's-Way Manufacturing Co., Inc. Armstrong, Iowa, 50514, (712) 864-3131.

SPECIFICATIONS AND DESIGN ARE SUBJECT TO CHANGE WITHOUT NOTICE

Art's-Way Manufacturing Co., Inc. is continually making product improvements. In doing so, we reserve the right to make changes and/or add improvements to our products without obligation for the equipment previously sold.

Modifications to this 6812 Leveling & Depth Control Kit may affect the performance, function, and safety of its operation. Therefore, no modifications are to be made without the written permission of Art's-Way Manufacturing Co., Inc. Any modification made without the written permission of Art's-Way Mfg. Co. Inc. shall void the warranty of this product.

In the interest of continued safe operation of this 6812 Leveling & Depth Control Kit, pay particular attention to the safety alert symbol(s) throughout this manual.

Art's-Way Manufacturing Co., Inc. STATEMENT OF PRODUCT LIABILITY

Art's-Way Manufacturing Co., Inc. recognizes its responsibility to provide customers with a safe and efficient product. Art's-Way Manufacturing Co., attempts to design and manufacture its products in accordance with all accepted engineering practices effective at the date of design. This statement should not be interpreted to mean that our products will protect against the user's own carelessness or failure to follow common safety practices nor will Art's-Way Manufacturing Co., be liable for any such act. In addition, Art's-Way Manufacturing Co., assumes no liability for any altered product or any modified product by users or anyone other than an authorized dealer.

IMPORTANT WARRANTY INFORMATION

The warranty for this 6812 Leveling & Depth Control Kit appears on page 6 of this manual. In order to establish proper warranty registration, the Warranty Registration must be completed and returned to the factory. Failure to comply with this requirement will result in invalidating the warranty!

LIMITATIONS OF THIS MANUAL

This manual contains operating instructions for your 660800 6812 Leveling & Depth Control Kit only. Any mention of other machinery in this manual other than the 660800 6812 Leveling & Depth Control Kit is for reference only. This manual does not replace nor is it to be used for any machinery that may be attached to or used in conjunction with the 660800 6812 Leveling & Depth Control Kit.

PARTS & SERVICE

As the purchaser of your new [MACHINE] (S), it is very important to consider the following factors:

A. Original Quality

B. Availability of Service Parts

C. Availability of Adequate Service Facilities

Art's-Way Manufacturing Co., Inc. has an excellent dealership network ready to answer any questions you may have about your [MACHINE] (S). Parts for your machine may be ordered through our dealers. When placing a parts order, please have the **model** and **serial number** ready. This will allow the dealer to fill your order as quickly as possible.

For your convenience, we have provided this space for you to record your model number, serial number, and the date of purchase, as well as your dealer's name and address.



Location of Serial & Model Number Placard on Header



Serial and Model Number Placard

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LIMITED WARRANTY FOR NEW ART'S WAY MANUFACTURING CO. FARM MACHINERY (U.S. ONLY)

- A. GENERAL PROVISIONS:** Art's Way Manufacturing Co., Inc. (Art's Way Mfg.) warrants the products it sells to be free from defects in material and workmanship for the periods of time set forth in the Warranty Table below. Art's Way Mfg. obligation and liability under this limited warranty, is to repair or replace (at Art's Way Mfg. option) any part(s) that upon manufacture were defective in material or workmanship. Warranty service shall be performed by an authorized Art's Way Mfg. dealer or authorized service center and will be completed using Art's Way Mfg. supplied parts. Parts supplied by Art's Way Mfg. are shipped F.O.B. Art's Way. The original purchaser shall be responsible for service calls and transportation of the farm machinery to and from their dealer or service center. The original purchaser is also responsible for any expedited repair charges (i.e., overtime and "next day air" deliveries) requested by the original purchaser. The original purchaser is also responsible for any repair service, parts, and labor on repairs made to the farm machinery at the time the warranty service was being performed.
- B. SECURING WARRANTY SERVICE:** The original purchaser must (1) contact their authorized dealer and report the break-down. (2) The authorized dealer shall provide objective evidence of the farm machinery's warranty status to Art's Way Mfg. (3) The authorized dealer shall provide all documentation to Art's Way Mfg. which supports that the farm machinery was thoroughly inspected prior to set-up and delivery to the original purchaser. (4) The original purchaser shall make the farm machinery available to their Art's Way Mfg. authorized dealer and/or Art's Way Mfg. authorized service center within 30 days of the reported break-down. All parts or assemblies replaced under the limited warranty must be held for inspection for ninety (90) days, or until credit has been issued, or a claim has been returned to a dealer. When a claim is returned to a dealer with instructions to return and/or hold the part(s) for inspection, parts must be handled as instructed or the claim may be denied.
- C. SPARE PARTS WARRANTY:** Art's Way Mfg. warrants that it will replace or repair (excluding labor) as Art's Way Mfg. elects, without charge, any genuine spare part purchased from Art's Way Mfg. which is defective in material or workmanship within ninety (90) days of the date of installation. This warranty applies to parts that, in Art's Way Mfg. judgement, prove to be defective in either material or workmanship. All parts to be shipped F.O.B. Art's Way Mfg. All spare parts replaced under the spare parts warranty must be held for inspection for ninety (90) days or until credit has been issued, or a claim has been returned to a dealer. When a claim is returned to a dealer with instructions to return and/or hold the part(s) for inspection, parts must be handled as instructed or the claim may be denied.
- D. LIMITATIONS:** Art's Way Mfg. Limited Warranty does not extend coverage to product being used in a commercial application (i.e. rented equipment). Art's Way Mfg. Limited Warranty does not extend to parts and elements not manufactured by Art's Way Mfg., and which carry the warranty of another manufacturer. Art's Way Mfg. makes no other warranty expressed or implied and makes no warranty of merchantability or fitness for any particular purpose beyond that expressly stated in this warranty. Art's Way Mfg. liability is limited to the terms set forth in this warranty and does not include any liability for direct, indirect, incidental or consequential damages or expenses of delay and Art's Way Mfg. liability is limited to the repair and replacement of defective parts as set forth herein. Any improper use and/or maintenance, including operation after the discovery of defective or worn parts, operation beyond the rated capacity, substitution of parts not approved by Art's Way Mfg. or any alteration or repair by others than the authorized Art's Way Mfg. dealer or authorized service center which affect the product materially and adversely, shall void the warranty. No dealer, employee or representative is authorized to change this warranty in any way or grant any other warranty unless such change is made in writing and signed by an officer of Art's Way Mfg. Some states do not allow limitations on how long an implied warranty lasts or exclusions or limitations of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you the specific legal rights, and you may have other rights that vary from state to state.

NOTE: As of April 1, 2015, all previously distributed information concerning the limited warranty coverage of any Art's Way Manufacturing Company, Inc. manufactured product is to be considered null and void and replaced by this document.

Art's Way Mfg. Farm Machinery	Warranty Coverage
Grinder / Mixer – Model 6520, 6530, 6140, 6105, and Portable and Stationary equipment	1 (one) Year from Date of Delivery to Original Purchaser
Manure Spreader	1 (one) Year from Date of Delivery to Original Purchaser
Graders and Land Planes	1 (one) Year from Date of Delivery to Original Purchaser
Beet Harvesting Machinery	1 (one) Harvest Season from Date of Delivery to Original Purchaser
Shredders – Model 180C and 240C	1 (one) Year from Date of Delivery to Original Purchaser
Plows	1 (one) Year from Date of Delivery to Original Purchaser
Forage Blowers – Model 1060 and 2060	1 (one) Year from Date of Delivery to Original Purchaser
Forage Boxes/Receivers – Model 5300 and 1250	1 (one) Year from Date of Delivery to Original Purchaser
Rakes	1 (one) Year from Date of Delivery to Original Purchaser
Dump Boxes	1 (one) Year from Date of Delivery to Original Purchaser
Augers	1 (one) Year from Date of Delivery to Original Purchaser
Running Gear	1 (one) Year from Date of Delivery to Original Purchaser
Snow Blowers	1 (one) Year from Date of Delivery to Original Purchaser
Harvester Reel	1 (one) Year from Date of Delivery to Original Purchaser

SAFETY INSTRUCTIONS

GENERAL

Most work related accidents are caused by failure to observe basic safety rules or precautions. An accident can often be avoided by recognizing potentially hazardous situations before an accident occurs. As you operate and maintain the [MACHINE] (G) you must be alert to potential hazards. You should also have the necessary training, skills, and tools to perform any assembly procedure.

Improper operation and/or maintenance of this unit could cause a dangerous situation that results in injury or death.

Do not use this unit until you read and understand the information contained in this manual. Do not use this equipment for anything other than its intended purpose.



Safety precautions and warnings are provided in this manual and on the unit. If these hazard warnings are not heeded, bodily injury or death could occur to you or to other persons.

Art's-Way Manufacturing Co., Inc. cannot anticipate every possible circumstance that might involve a potential hazard. The warnings in this manual and on the product are, therefore, not all-inclusive. If a method of operation not specifically recommended by us is used, you must satisfy yourself that it is safe for you and for others. You should also ensure that the unit will not be damaged or be made unsafe by the methods that you choose.

The information, specifications, and illustrations in this manual are based on the information that was available at the time this material was written and can change at any time.

Safety Alert Symbols



death.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or

This manual contains DANGERS, WARNINGS, CAUTIONS, NOTICES, SAFETY INSTRUCTIONS, and NOTES which must be followed to prevent the possibility of improper service, damage to the equipment, personal injury, or death. The following key words call the readers attention to potential hazards.

Hazards are identified by the "Safety Alert Symbol" and followed by a signal word such as "DANGER", "WARNING", or "CAUTION".

SAFETY INSTRUCTIONS

Remember:

"The Best Operator is a Safe Operator"

CAUTION



Read and understand the operator's manual and all the safety decals before operating the [MACHINE] (S). Review all safety instructions with all operators annually.

SAFETY FIRST

SAFETY INSTRUCTIONS

"A careful operator is the best insurance against an accident." Quote from the National Safety Council.

Most accidents can be prevented if the operator:

1. Fully understands how the machine functions.
2. Can anticipate situations which may produce problems.
3. Can make necessary corrections before problems develop.

**THIS SYMBOL MEANS ATTENTION!
BECOME ALERT!
YOUR SAFETY IS INVOLVED!**



- Universal Safety Alert Symbol

The American Society of Agricultural Engineers has adopted the Universal Safety Alert Symbol as a way to identify areas of potential danger if the equipment is not operated correctly. Please be alert whenever you see this symbol in the manuals or on your [MACHINE] (S).

Art's-Way Manufacturing Co., Inc. strives to make our equipment as safe as possible. The Art's-Way 660800 6812 Leveling & Depth Control Kit conforms to applicable safety standards at the time of manufacturing. A safety conscious equipment operator makes an effective accident-prevention program complete.

Safety features and instructions for the [MACHINE] (S) are detailed in the Safety Guidelines section of this Operator's Manual. It is the responsibility of the owner to ensure that all operators read and understand the manual before they are allowed to operate the [MACHINE] (G). (Occupational Safety and Health Administration (OSHA) regulations 1928.57).

NOTICES OF DANGER, WARNING, AND CAUTION

Signal Words: Note the use of signal words **DANGER**, **WARNING**, and **CAUTION** on the [MACHINE] (S) and in this manual. The appropriate signal word for each has been selected using the following guidelines:

DANGER

Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to physical injury.

SAFETY INSTRUCTIONS

Safety instructions (or equivalent) signs indicate specific safety-related instructions or procedures.

Note: Contains additional information important to a procedure and will be found within the regular text body of this manual.

BEFORE OPERATING

SAFETY
INSTRUCTIONS

Do not wear loose fitting clothing as it may catch in moving parts.



Make sure all guards and shields are installed, including the tractor power take-off (PTO) master shield, before starting or operating the [MACHINE] (S).



Be sure that the correct implement driveline parts are used and that they are properly secured.

Lower the lifter wheels when the [MACHINE] (S) is not in use.

Install the safety chain when attaching the [MACHINE] (S) to the tractor.



Clear the area of bystanders, especially children, when making repairs, adjustments, or performing maintenance on the [MACHINE] (S).



Do not allow riders.

Put all tractor and machine controls in “neutral” and disengage the PTO before starting. Follow the starting instructions according to the OEM tractor manual.



Operate the [MACHINE] (S) only while seated on the tractor seat.



Make sure the unit is adequately supported with safety blocks or safety stands when changing tires or performing maintenance.

DURING OPERATION

CAUTION



Entanglement Hazard
Keep hands, feet, hair, and clothing away from moving parts. Wait for all movement to stop before approaching equipment.

Before making adjustments:

1. Shut off the tractor,
2. Set parking brake,
3. Put machine in neutral, and
4. Remove key while making adjustments.



Keep all shields and guards in place and in good working condition.



Keep all bystanders, especially children, away from the [MACHINE] (S) while in operation.



Do not allow riders while the [MACHINE] (S) is in operation.



Do not attempt to unclog, clean, or adjust the [MACHINE] (S) while it is running.



Stay away from overhead power lines. Electrocution can occur even without direct contact.



Keep all hydraulic lines, fittings, and couplers tight and free of leaks. (Refer to Safety Guidelines – Hydraulic Safety).



Use caution when ascending or descending on the [MACHINE] (S). Wet shoes or boots are slippery.

MAINTENANCE SAFETY

SAFETY
INSTRUCTIONS

Follow all operating, maintenance, and safety instructions found in this Manual.



Before servicing, adjusting, repairing, or unclogging the machine, always make sure the tractor engine is stopped, key in your pocket, the machine is lowered to the ground, all controls are placed in neutral, the parking brake is set, and all the moving parts have stopped.



Use sufficient tools, jacks, and hoists that have the capacity for the job.



Use support blocks or safety stands when changing tires or performing maintenance.



Follow good shop practices of keeping the service area clean and dry, and use adequate light for the job at hand.



Before applying pressure to the hydraulic system, make sure all lines, fittings, and couplers are tightly secured and in good condition.



Make sure all shields/guards are in place and properly secured when performing maintenance.

HYDRAULIC SAFETY

SAFETY INSTRUCTIONS

Follow all operating, maintenance, and safety instructions found in this Manual.

Make sure components in the hydraulic system are kept clean and in good working condition.



Relieve pressure from the hydraulic system before servicing or disconnecting from the tractor.



Keep all hydraulic lines, fittings, and couplers tightly secured and free of leaks.



Replace any worn, cut, abraded, flattened, or crimped hoses.



Do not make any temporary repairs to the hydraulic lines, fittings, or hoses using tape, clamps, or cement. The hydraulic system operates under extremely high pressure and temporary repairs may fail suddenly and create a hazardous/dangerous situation.



Wear proper hand and eye protection when searching for a high-pressure hydraulic leak. Use a piece of wood or cardboard as a backstop instead of hands to identify and isolate a leak. If injured by a concentrated high-pressure stream of hydraulic fluid, seek medical attention immediately. Serious infection or toxic reaction can develop if hydraulic fluid penetrates the surface of the skin.



Before applying pressure to the system, make sure all components are tight and that the hydraulic lines, hoses, and couplings are not damaged.

TRANSPORTATION SAFETY

SAFETY INSTRUCTIONS

Follow all operating and safety instructions found in this manual when transporting this equipment.

Make sure the [MACHINE] (S) complies with all local regulations regarding transporting equipment on public roads and highways.



Make sure the Slow Moving Vehicle (SMV) emblem and all lights and reflectors required by local highway and transportation authorities are properly in place, clean, and clearly visible to traffic.



Do not allow riders on any machinery during transport.

Make sure the [MACHINE] (S) is securely attached to the tractor and install a safety chain to the [MACHINE] (S).

Make sure the tractor brake pedals are latched together.

Do not exceed 20 mph (32 km/h) when transporting the [MACHINE] (S). Always reduce speed on rough roads and surfaces, or when going down inclines.

Use caution when turning and always use the turn signals on the tractor to indicate your turning intentions to the other traffic.

The weight of the trailed machine should NEVER exceed the weight of the towing vehicle.

Check all clearances carefully whenever the machine is towed.

Lower the elevator into the transport position before transporting the [MACHINE] (S) on the highway.



Stay away from overhead obstructions and power lines during transport. Electrocuting can occur even without direct contact.

STORAGE SAFETY

SAFETY INSTRUCTIONS

Follow all operating and safety instructions found in this manual when storing this equipment.



Store the [MACHINE] (S) in an area away from human activity.



Do not permit children to play on or around the stored machine at any time.

Make sure that the [MACHINE] (S) is stored in an area with a firm and level base to prevent the machine from tipping or sinking into the ground.



Block the wheels to prevent the machine from rolling.

TIRE SAFETY

SAFETY INSTRUCTIONS

Follow all operating and safety instructions found in this manual when working around tires.

Have only a qualified tire dealer or tire repair service perform tire repairs.

Do not attempt to install a tire on a wheel or rim unless you have the proper equipment and experience to do the job.

Do not substitute tires with a lesser road rating and/or capacity for the original equipment tires.

WARNING



Explosive Force Hazard
Tire replacement, repair, and/or maintenance should be done by a qualified tire dealer or qualified repair service.

Failure to follow proper procedures when installing a tire on a wheel or rim can produce an explosive force that will result in serious injury or death.

Do not attempt to install a tire without proper equipment and experience to perform the job.

ASSEMBLY SAFETY

SAFETY INSTRUCTIONS

Follow all assembly, operating, and safety instructions found in this manual when assembly this equipment.



Use adequate manpower to perform assembly procedures safely.

Assemble the [MACHINE] (S) in an area with sufficient space to maneuver the largest components and allow easy access to all sides of the machine.



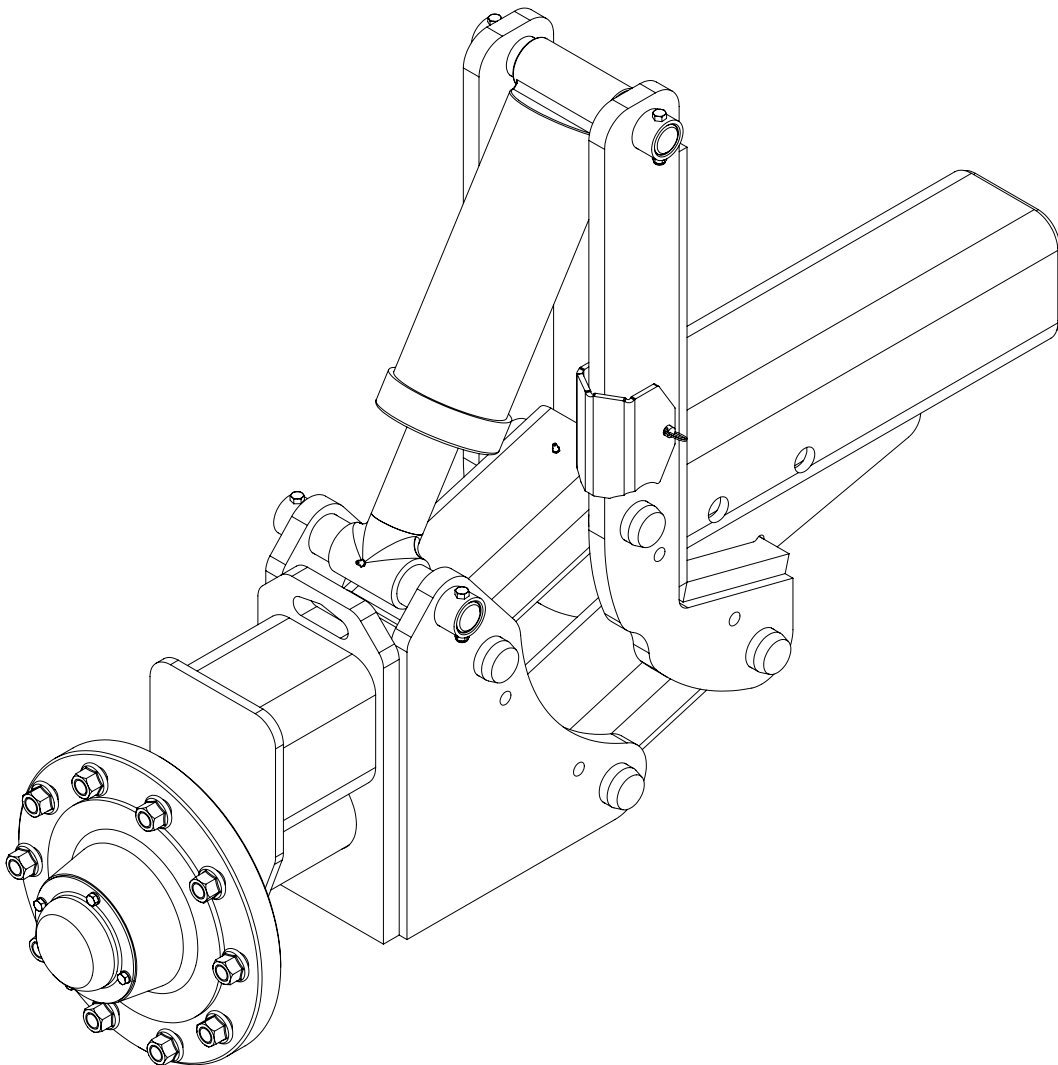
Use only forklifts, lift cranes, jacks, and tools with sufficient capacity for the loads.



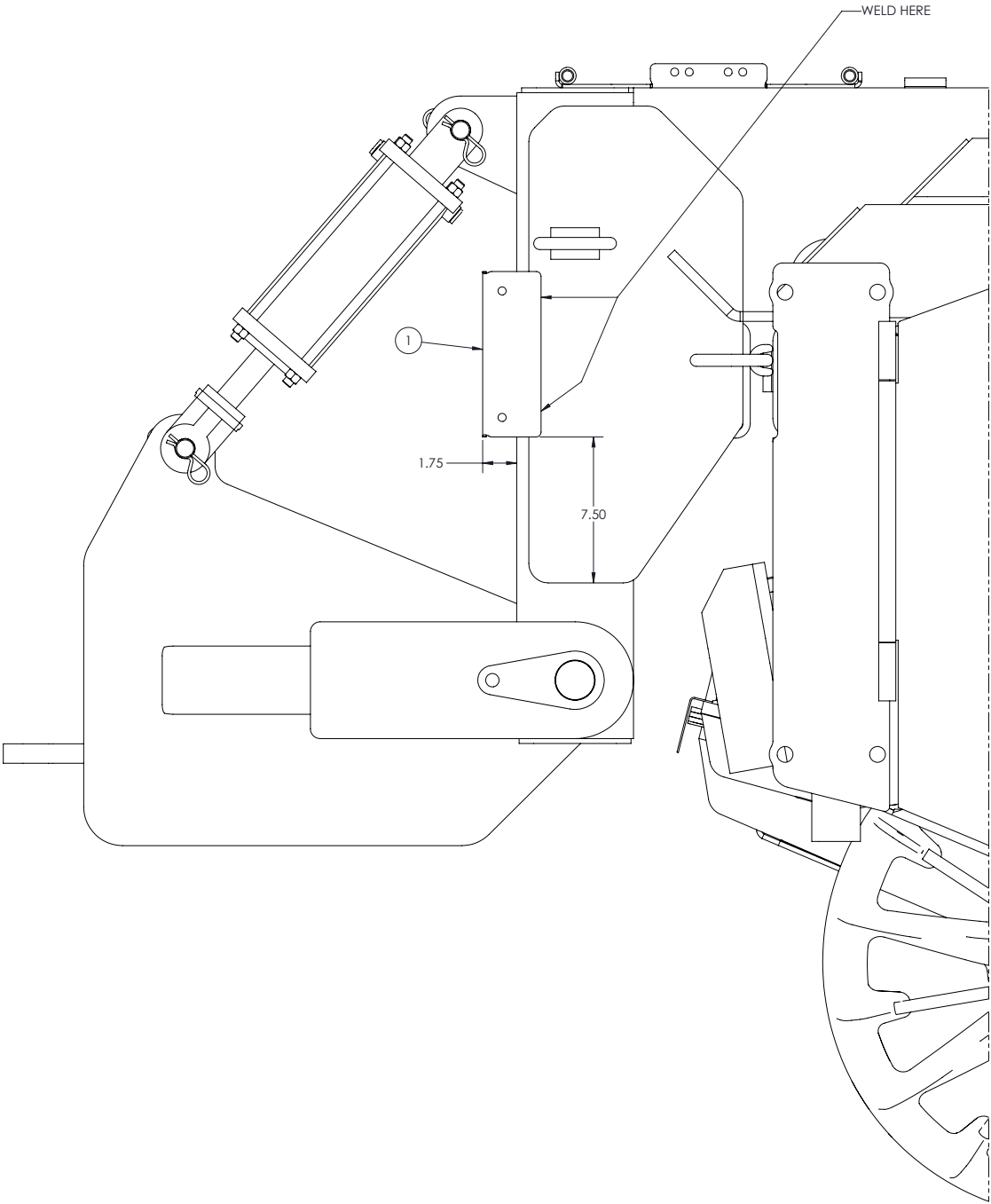
Do not allow spectators, especially children, in the working area.

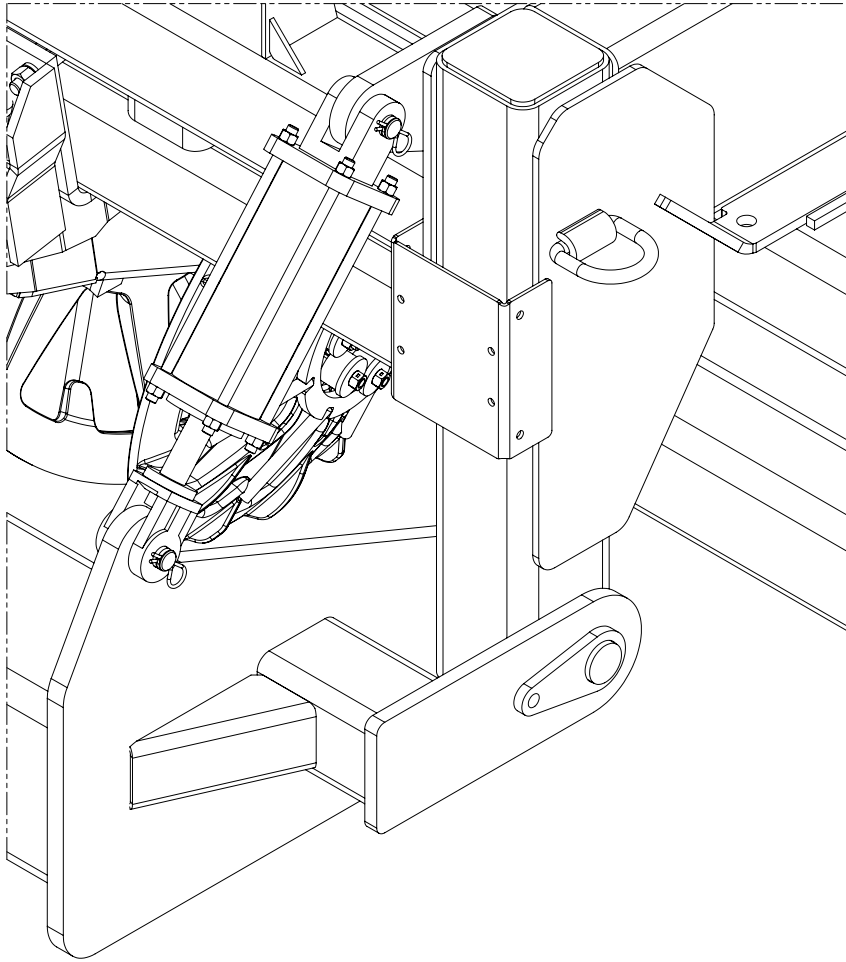
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SECTION 1: PARTS & INSTALLATION



WELD-ON PARTS





ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	660801	MOUNT, CONTROLLER	1
2	660814	MOUNT, MANIFOLD	1
3	114280	MOUNT, HOSE CLAMP	1
4	619640	STRIP, HARNESS	1

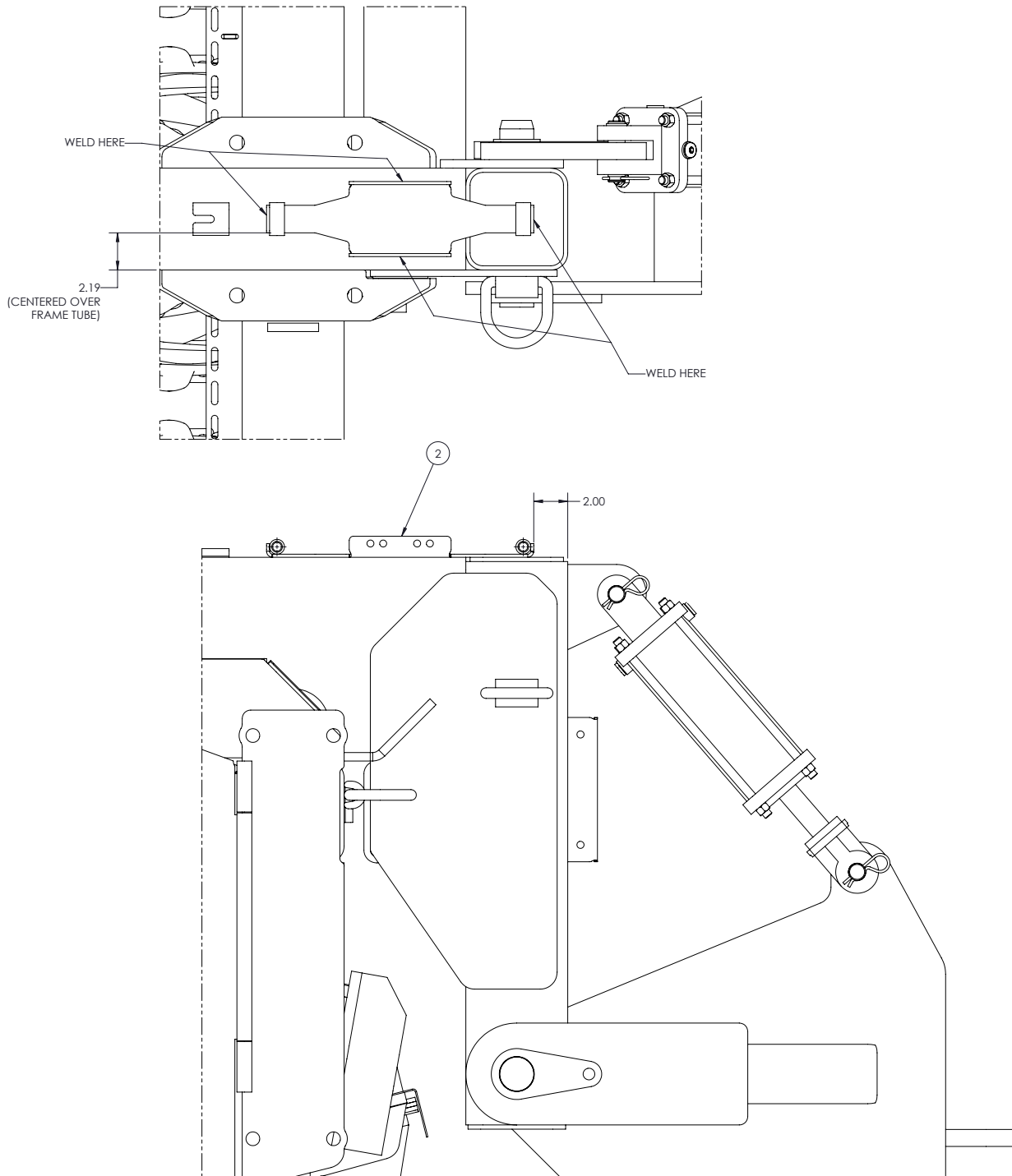
INSTALLING “WELD-ON” COMPONENTS

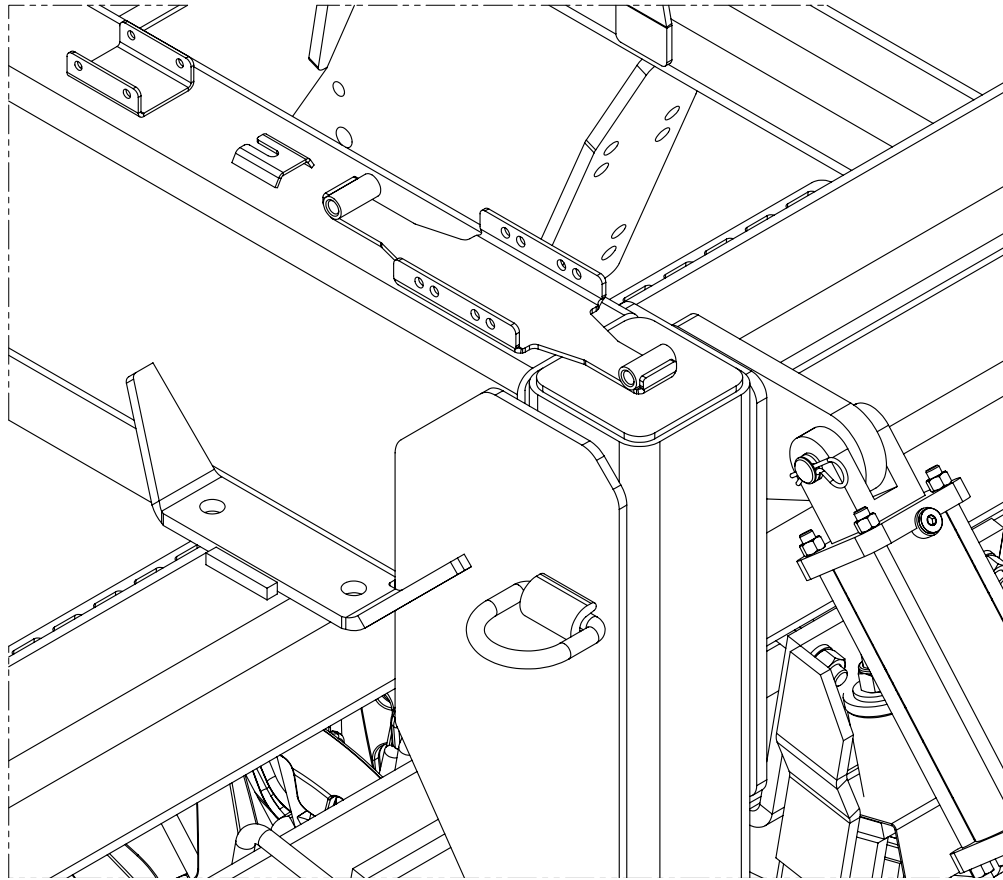
For machines produced prior to 2020 the following parts will need to be welded onto the unit:

1. **Controller (Computer) mount**
2. Hydraulic Manifold Mount
3. Harness and Hose Mounts

If welding is being performed while the unit is connected to a tractor, it is highly recommended that the battery be disconnected.

For best results, prepare the areas to be welded by thoroughly cleaning and removing paint adjacent to the surfaces to be welded. It is also recommended that paint be removed at any areas where the welder ground cable is connected. After welding is completed, it is recommended that any raw steel be re-paint and allowed to dry prior to installing new components.

WELD-ON PARTS



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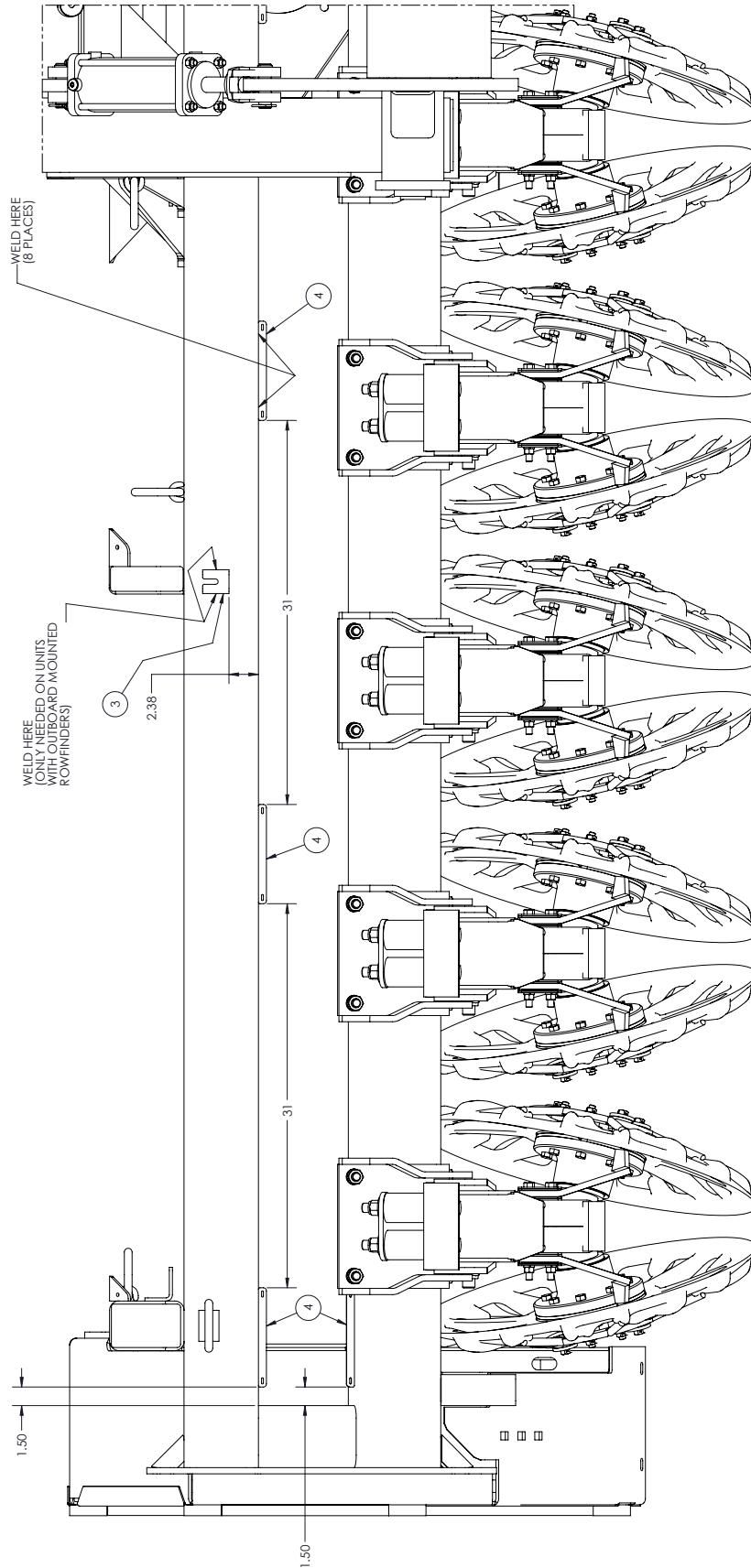
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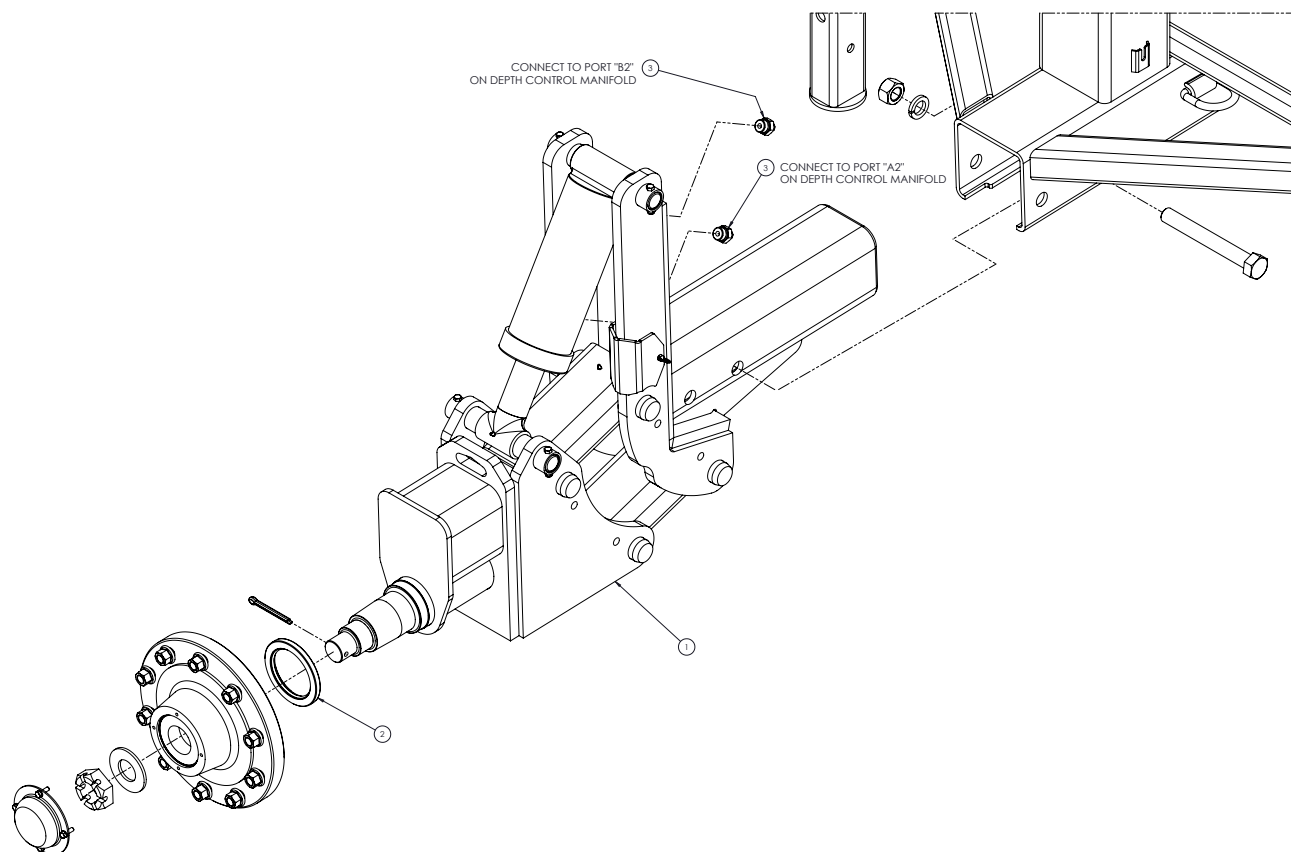
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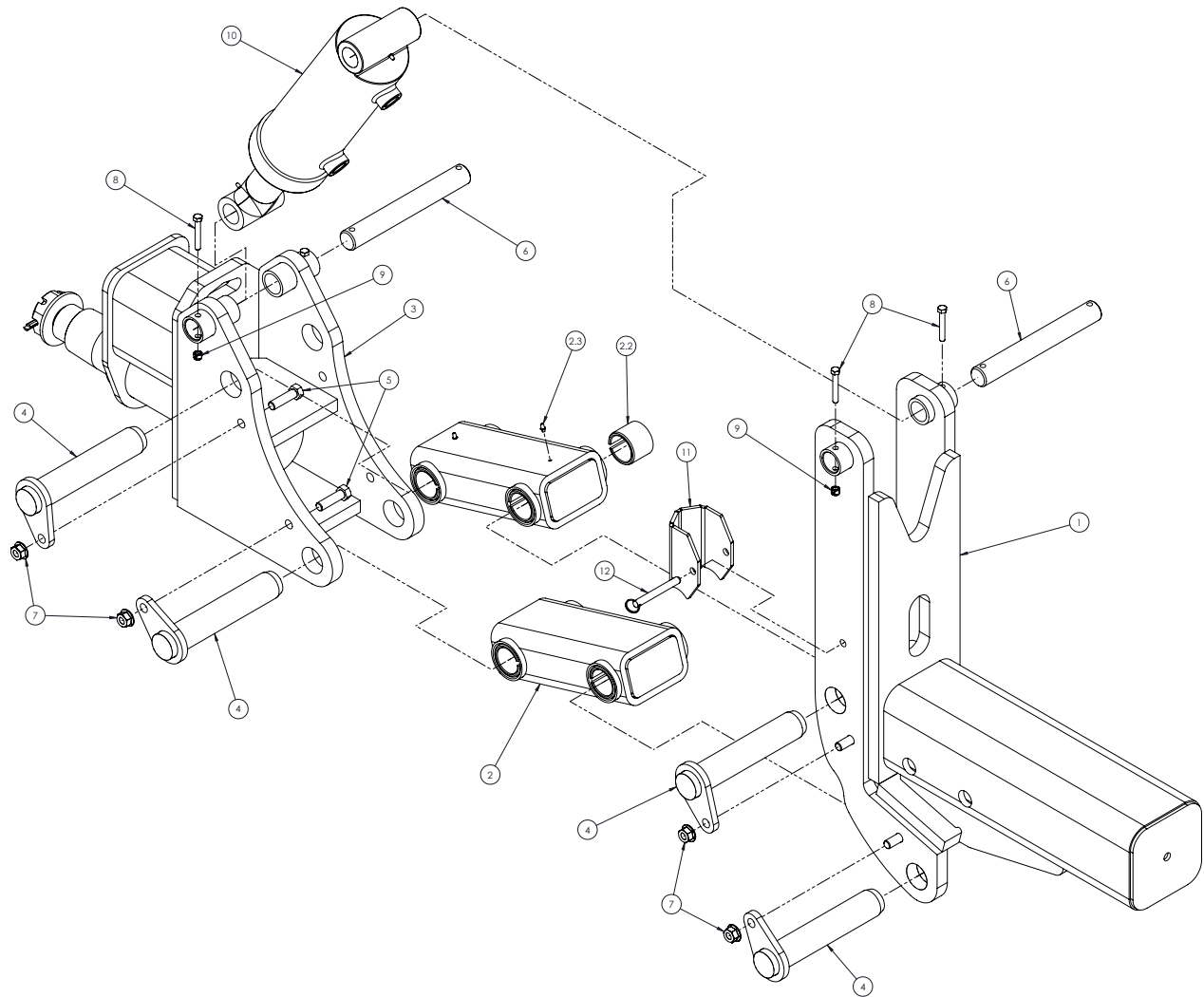
AXLE INSTALLATION



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	660405	6812 LEVELING AXLE	1
2	522110	SEAL, GREASE	1
3	605840	FITTING, HYD STRAIGHT	2

LEVELING AXLE INSTALLATION

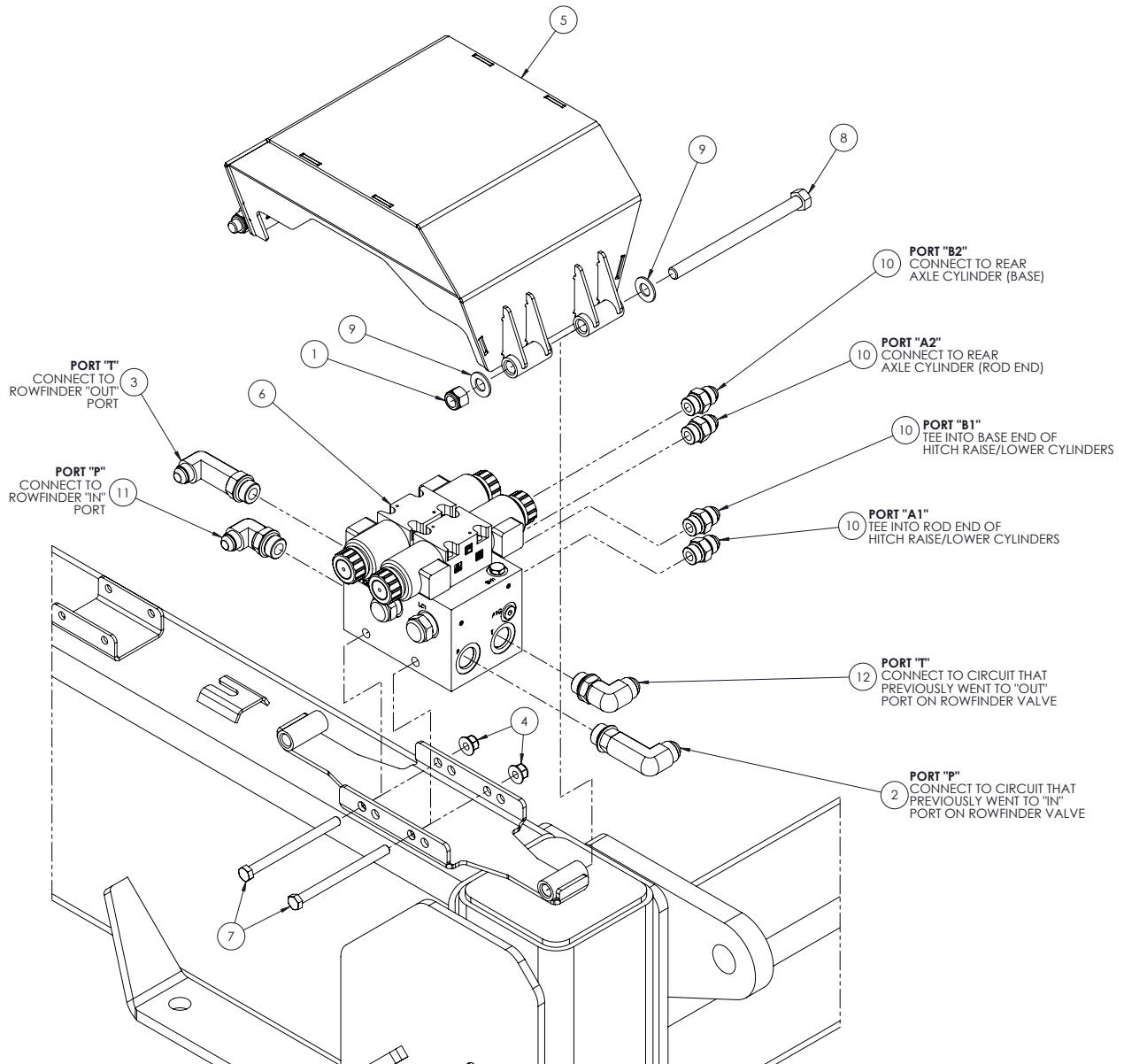
The leveling axle is to be installed on the right-hand side of the machine. The 10-bolt hub originally provided on the harvester is to be re-used on the leveling axle. Before installing the hub onto the leveling axle spindle, inspect the bearings. If bearings are worn it is recommended that they be replaced, part numbers are 522090P and 522100P. Re-pack the bearings and install a new grease seal 522110P (provided). Install the hub onto the leveling axle spindle using new castle nut, washer, and cotter pin (provided). Install straight hydraulic fittings (605840) on the leveling axle cylinder with the ports orientated toward the harvester (see image). Use a 300" -8 hose, p/n 619670, to connect the base end of the leveling axle cylinder to the "B2" port on the Depth Control Manifold. Use the second 300" -8 hose to connect the rod end of the leveling axle cylinder to the "A2" port on the depth control manifold.



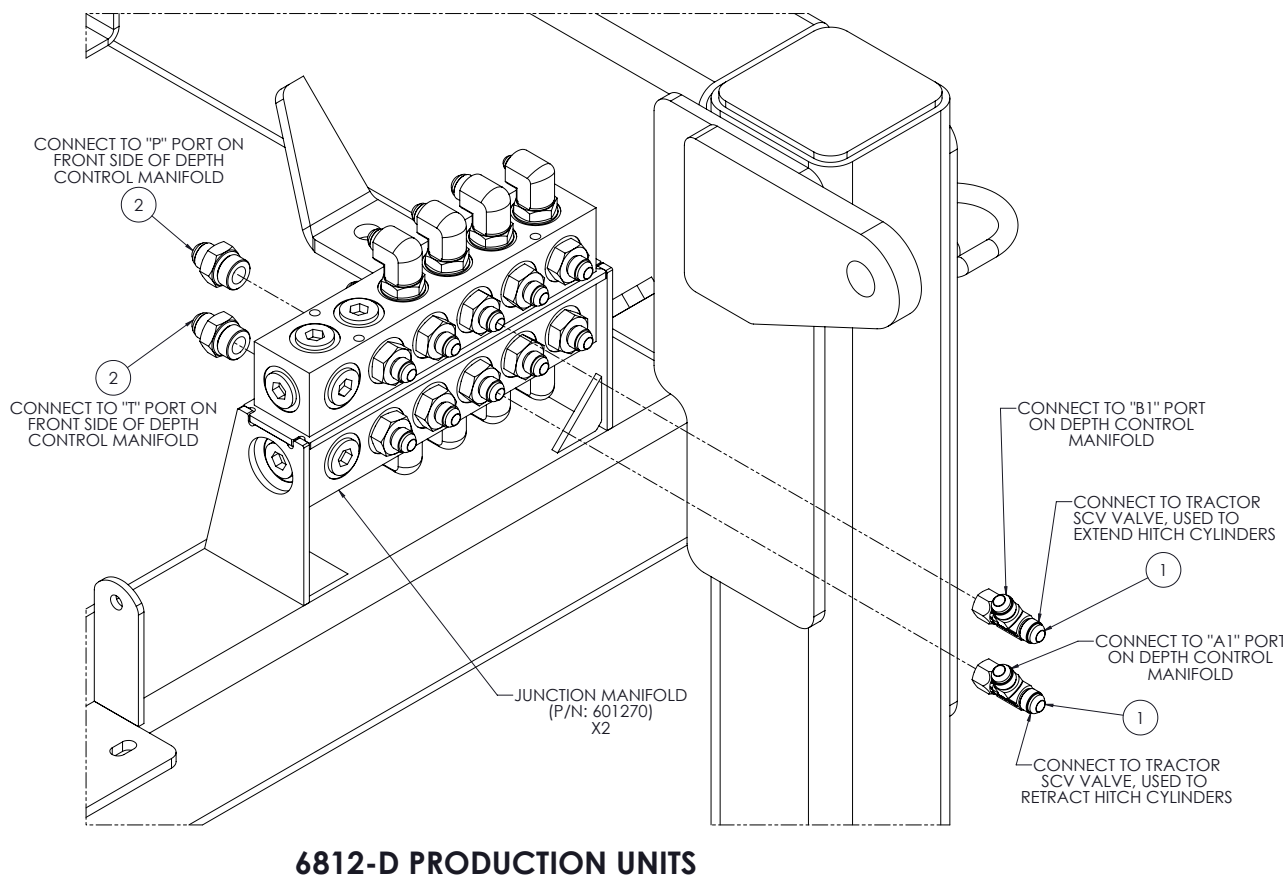
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	660350	AXLE SUPPORT WLDT	1
2	660315	CONTROL ARM ASSY	2
2.2	537610	BUSHING, TENSION	4
2.3	115590	FITTING, GREASE	2
3	660420	SPINDLE SUPPORT WLDT	1
4	660330	PIN WELDMENT	4
5	013430	BOLT, HHCS 5/8-11 X 2-1/4"	4
6	590220	PIN, LR LEVELING	2
7	600150	NUT, HFH NYLOC 5/8-11	4
8	037630	BOLT, HHCS 3/8-16 X 2-1/2"	4
9	073630	NUT, LOCK 3/8-16	4
10	660360	CYLINDER, HYD	1
11	660406	STOP, CYLINDER	1
12	255320	PIN, COTTERLESS HITCH	1

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CONTROLLER & MANIFOLD INSTALL



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	037540	NUT, NYLOCK 1/2-13	2
2	591990	FITTING, HYD 90 LL	1
3	594840	FITTING, HYD 90 LL	1
4	600120	NUT, HHF NYLOC 3/8-16	2
5	660808	COVER, MANIFOLD	1
6	660850	MANIFOLD, HYD CONTROL	1
7	991170	BOLT, HHCS 3/8-16 X 5	2
8	E672313	BOLT, HHCS 1/2-13 X 7	2
9	I120396	WASHER, FLAT 1/2"	4
10	MP09.74155	FITTING, HYD STRAIGHT	4
11	MP32.03794	FITTING, HYD 90	1
12	MP907670	FITTING, HYD 90°	1

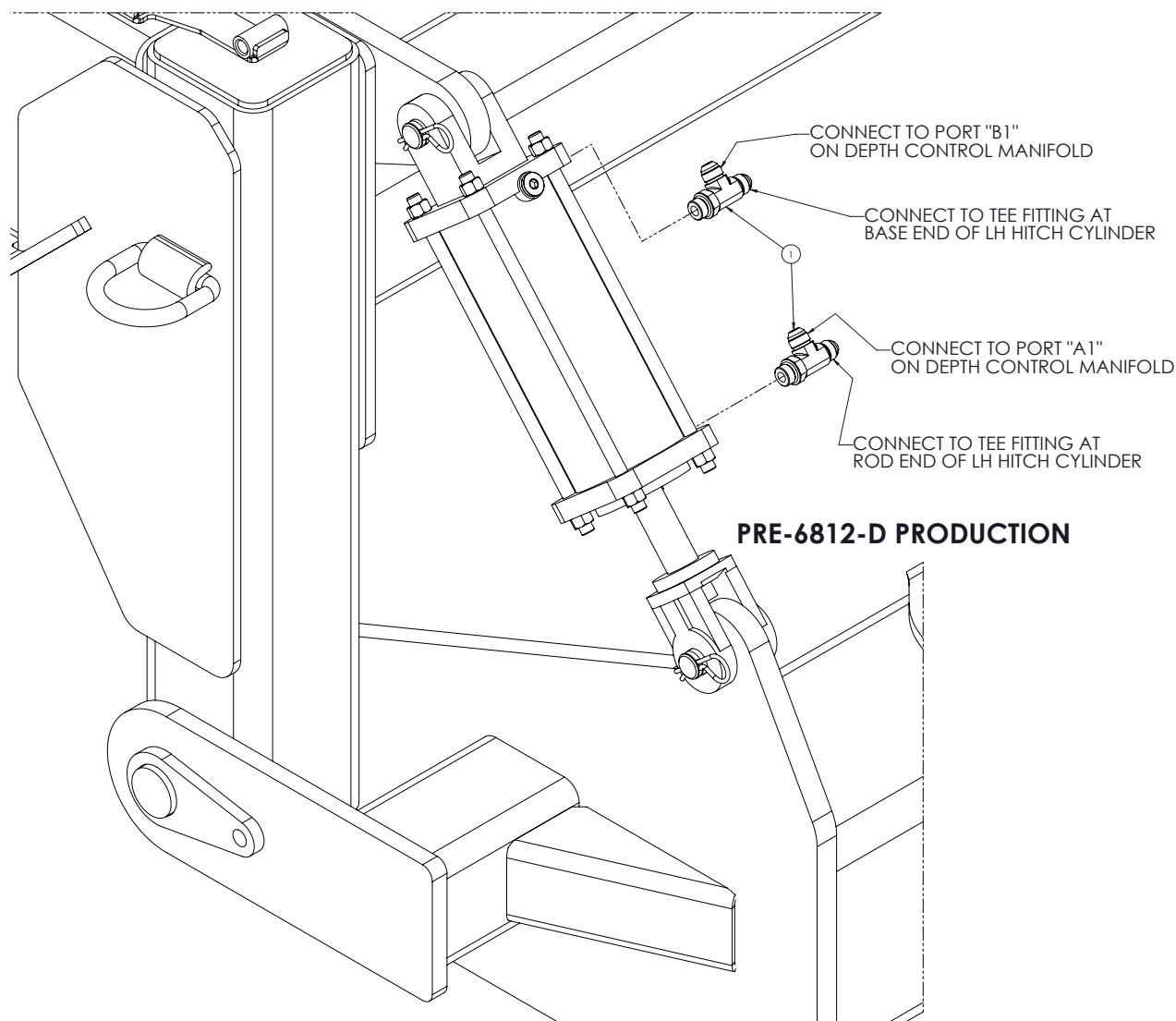


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	MP32.02033	FITTING, HYD TEE	2
2	575840	FITTING, HYD STRAIGHT	2

INSTALLING HITCH CYLINDER HYDRAULICS ON 6812-D AND NEWER UNITS

Determine which hoses coming from the tractor are used to raise and lower the hitch of the harvester. Disconnect both hoses from the Junction Manifolds, install TEE fittings, p/n MP32.02033, re-install hoses to Tee Fittings. Connect 64" -8 hoses, p/n 660154, to new TEE fittings. Determine which of the new 64" hoses is connected to the base end of the hitch cylinders, connect this hose to port "B1" on the depth control manifold. Connect the second 64" hose to the "A1" port on the depth control manifold.

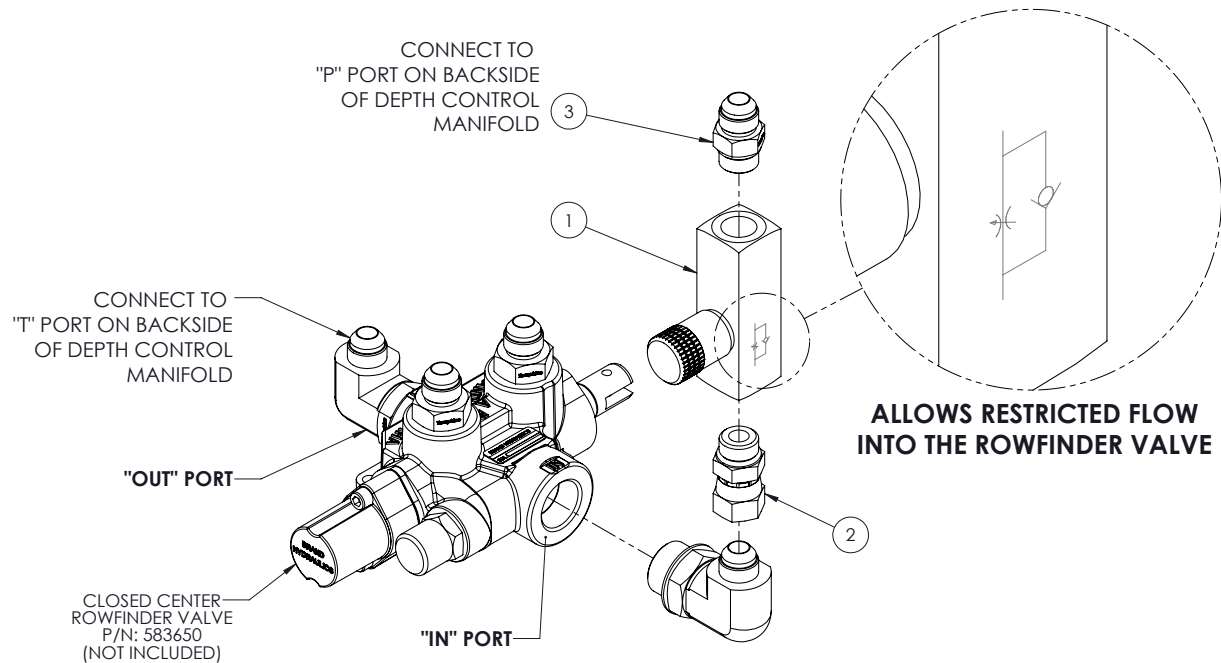
HYDRAULIC INSTALLATION



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	562850P	FITTING, HYD TEE	2

INSTALLING HITCH CYLINDER HYDRAULICS ON PRE-6812-D UNITS

On harvesters built prior to the 6812-D model, the two hitch cylinders are plumbed in parallel. From the tractor, hoses are connected to Tee fittings connected directly to the hitch cylinders (could be left or right). From the Tee fittings, short hoses connect the left to right cylinder. Disconnect the short hoses from the cylinder without the Tee fittings. Removed the straight fittings from the cylinder and install two additional Tee fittings (provided). Reconnect the short hoses to the new Tee fittings. From the remaining ports on the new Tee fittings, connect 64" -8 hoses (p/n 660154). Connect the hose from the base of the hydraulic cylinders to the "B1" port on the depth control manifold. Connect the hose from the rod end of the hydraulic cylinders to the "A1" port on the depth control manifold.



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	591930	VALVE, FLOW CONTROL	1
2	592520	FITTING, HYD STRAIGHT	1
3	MP09.74155	FITTING, HYD STRAIGHT	1

INSTALLING ROWFINDER HYDRAULICS ON 6812-D AND NEWER UNITS

Remove and discard the hose connected to the "IN" port on the Rowfinder valve. Install one-way flow control valve and associated fittings to the Rowfinder "IN" port, see diagram. Use 120" -8 hose, p/n 580940, to connect "P" port on back of Depth Control Manifold to the Rowfinder one-way flow control manifold. Remove and discard the hose connected to the "OUT" port on the Rowfinder Valve. Use second 120" -8 hose, p/n 580940, to connect the "T" port on the back of the depth control manifold to the "OUT" port on the Rowfinder. Use the 74" -10 hoses, p/n 660159, to connect the "P" and "T" ports on the front of the depth control manifold to the ports on the junction manifold that were previously used to operate the Rowfinder valve.

INSTALLING ROWFINDER HYDRAULICS ON PRE-6812-D UNITS

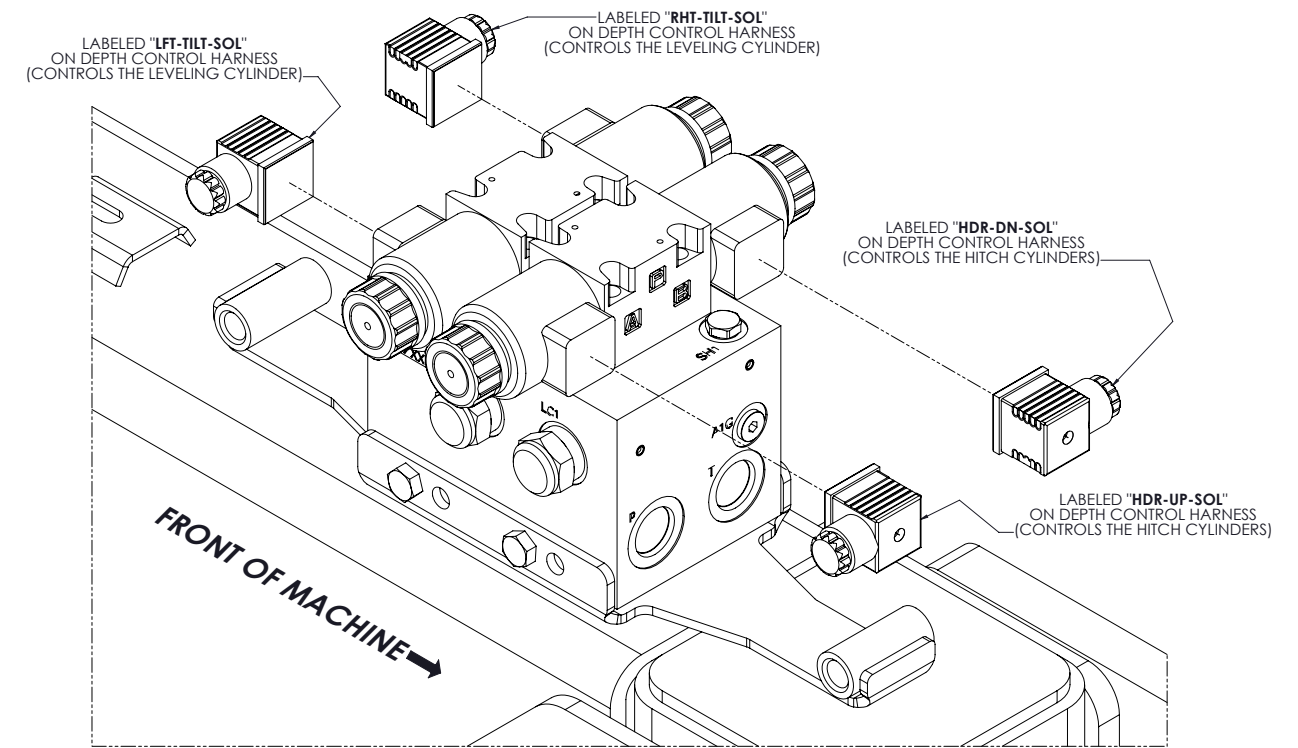
Remove and discard the hose connected to the "IN" port on the Rowfinder valve. Install one-way flow control valve and associated fittings to the Rowfinder "IN" port, see diagram. Use 120" -8 hose, p/n 580940, to connect "P" port on back of Depth Control Manifold to the Rowfinder one-way flow control manifold. Remove and discard the hose connected to the "OUT" port on the Rowfinder Valve. Use second 120" -8 hose, p/n 580940, to connect the "T" port on the back of the depth control manifold to the "OUT" port on the Rowfinder. Use the 155" -10 hoses, p/n 576270, to connect the "P" and "T" ports on the front of the depth control manifold to the SCV ports previously used to operate the Rowfinder valve.

GENERAL HYDRAULIC OPERATION

The Leveling and Depth Control System operates on a "Closed Center" circuit. Typically, it is installed in the same circuit that the Rowfinder operates on. The SCV valve used to operate the Rowfinder and Depth Control System should be set to the highest flow available. A flow control valve (provided) should be installed at the "In" port on the Rowfinder valve, this allows the Rowfinder valve and associated hydraulic cylinder to operate at a slower speed than the depth and leveling components. If the system is going to be operated using a Power Beyond circuit, a Load Sense line must be installed. It is recommended that the load sense line be tied into the base of one of the hitch raise/lower cylinders. A quick connect fitting for the Load Sense circuit can be acquired from the dealer of the tractor.

PLUMBING CHECK

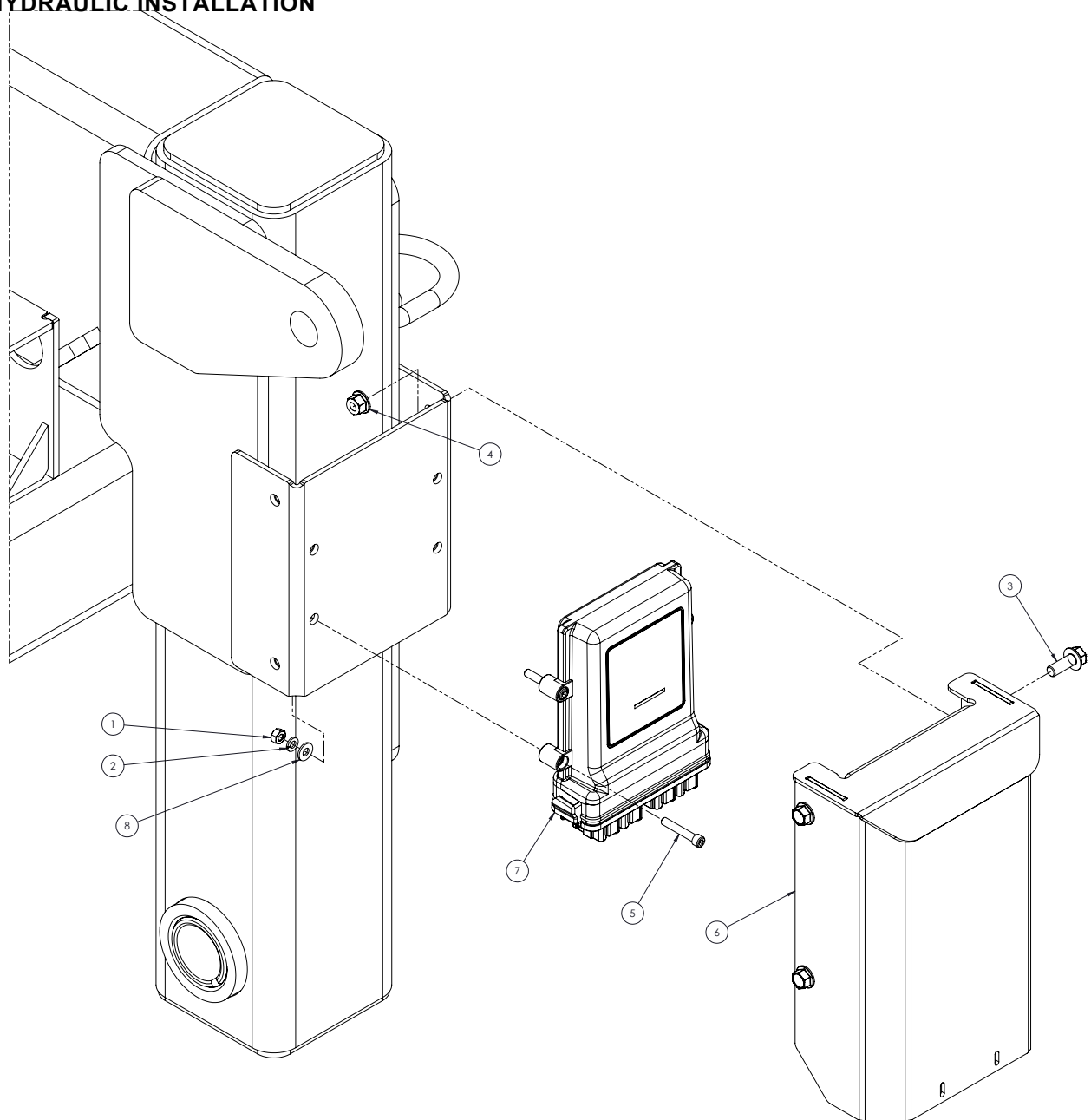
For all units, once plumbing is completed as detailed above, completely close the one-way flow control valve on the Rowfinder by turning the knob clockwise unit tight. Raise the unit using the tractor SCV valve connected to the hitch circuit. Engage the SCV valve on the tractor that operates the Rowfinder valve. Manually manipulate the Rowfinder arms, the unit should NOT respond. If the unit moves then the hoses connecting the Rowfinder Valve to the tractor SCV need to be reversed. If the unit does not move, slowly open the one-way flow control valve and continue to manipulate the Rowfinder arms. Adjust the valve until the Rowfinder moves the unit at a desired speed. Conform that the Rowfinder is functioning in the correct direction. Pulling a Rowfinder arm should result in the unit moving in the same direction. If the unit moves in the opposite direction of the arm being pulled, the hoses attached to the "A" and "B" ports on the Rowfinder Valve need to be reversed.



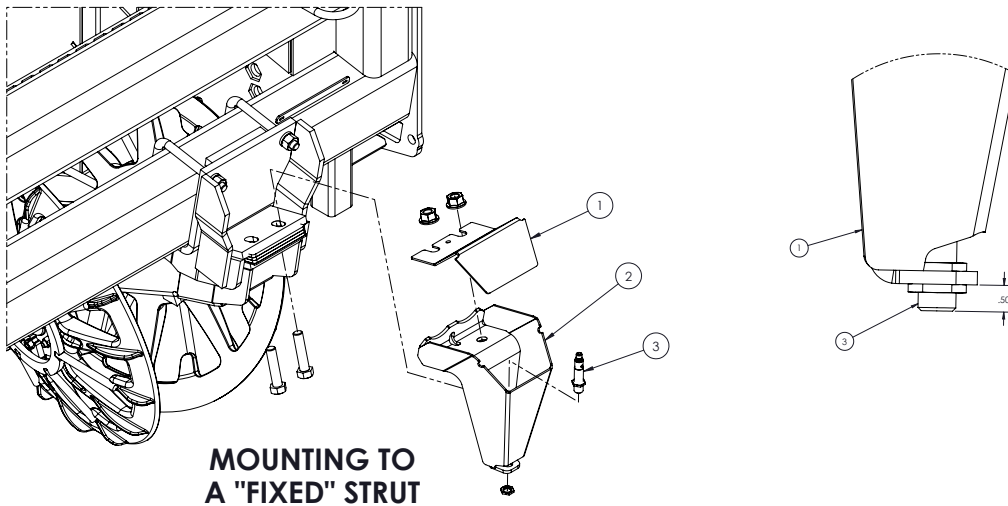
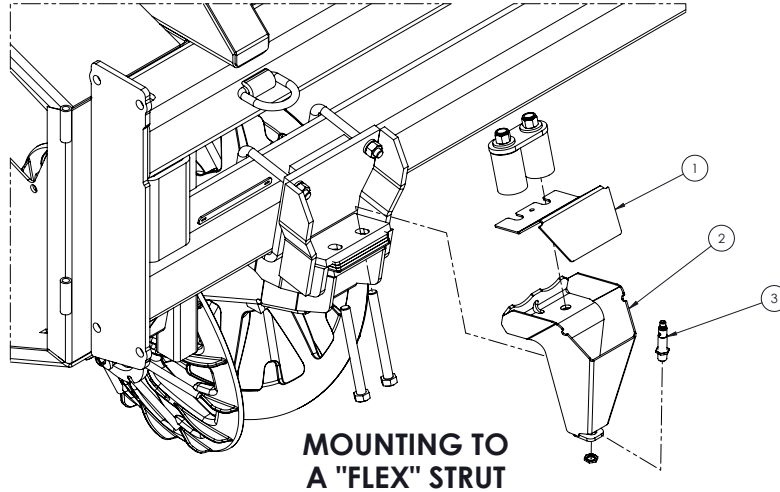
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	660830	HARNESS ASSEMBLY	1

INSTALLING THE DEPTH & LEVELING CONTROL MODULE AND WIRE HARNESS

Install the depth & leveling control module onto its mounting bracket per the diagram. Lay out the wire harness in front of the unit. Route the harness across the front of the machine, using the weld on harness mounts when possible. Connect the harness to the control module, the connectors are labeled FLCN-A, FLCN-B, and FLCN-C and should be connected to the corresponding ports on the control module. Each of the 3 connectors are slightly different and will only connect where intended. Port D on the control module is not used in this application and should remain plugged. Do not install the cover until after initial run-up and function tests have been completed.

HYDRAULIC INSTALLATION

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	027660	NUT, HEX 1/4-20 GR5 ZN	4
2	029440	WASHER, LOCK 1/4 SAE	4
3	600050	BOLT, HFH 3/8-16 X 1.00"	4
4	600120	NUT, HFH NYLOC 3/8-16	4
5	650114	SCREW, SHCS 1/4-20 X 1	4

SONAR & ROWFINDER INSTALL

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	660818	COVER, SENSOR	2
2	660819	MOUNT, SENSOR	2
3	660820	SENSOR, SONIC	2

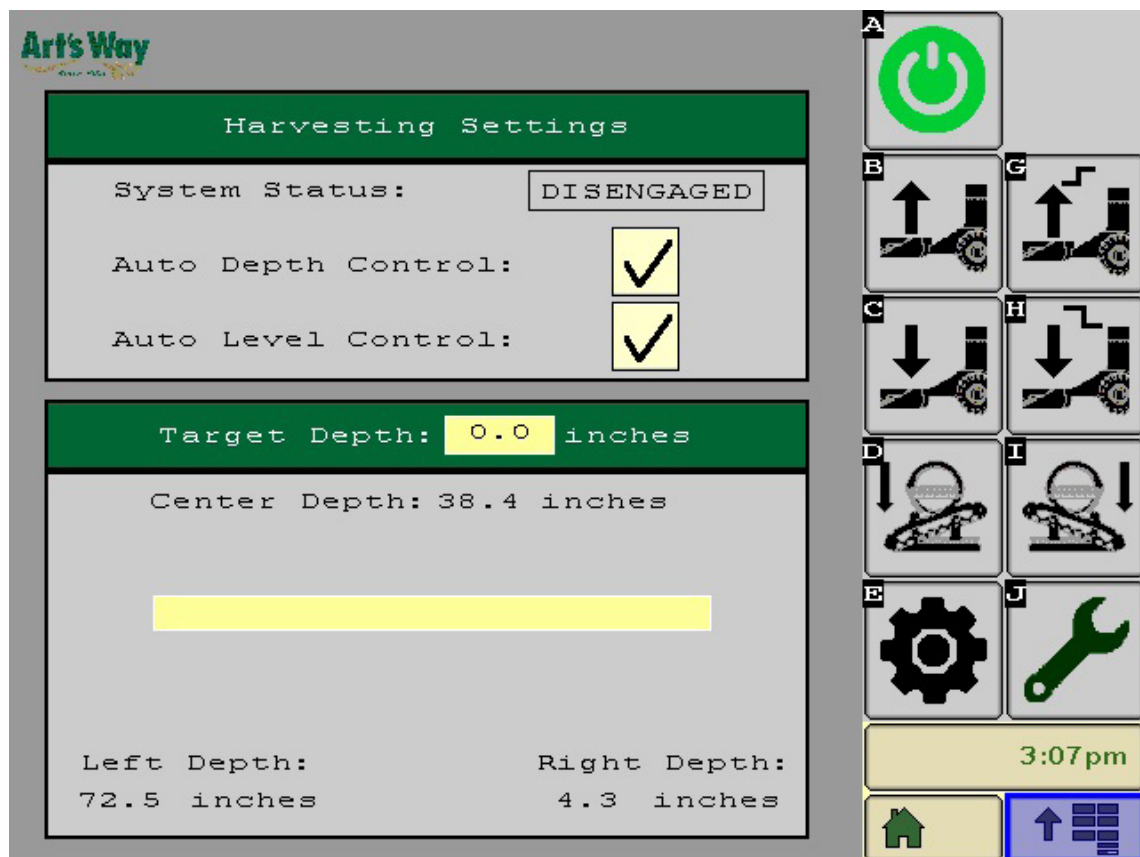
INSTALLING SONAR SENSOR UNITS

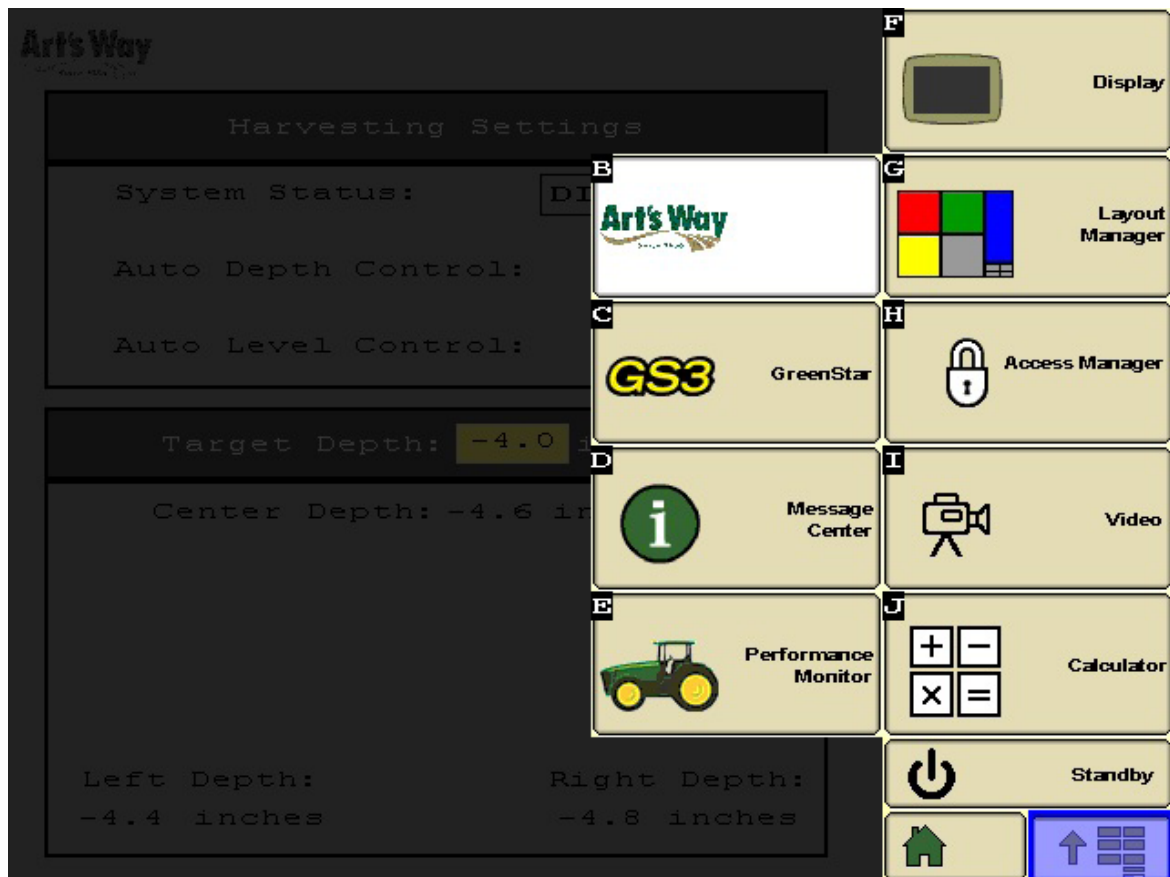
For best results, it is recommended that the sonar sensors be mounted on the outside row on each side of the head. When installing on "Flex" struts the sensor mount should be installed under the cushions (see image). Connect the sonar sensors to the ends of the wire harness. To install a sensor in the sensor mount, first remove the rubber cap and the lower jam nut. Discard the rubber cap. Adjust the remaining nut to be approximately 3/4" from the end of the sensor. Drop the sensor down into the mount and install the jam nut below the mount face. Sensors should protrude below the mount face roughly 1/2". Install the mount and covers per diagram, there is a groove cut in the top of the mount for the wire harness to pass through without being damaged.

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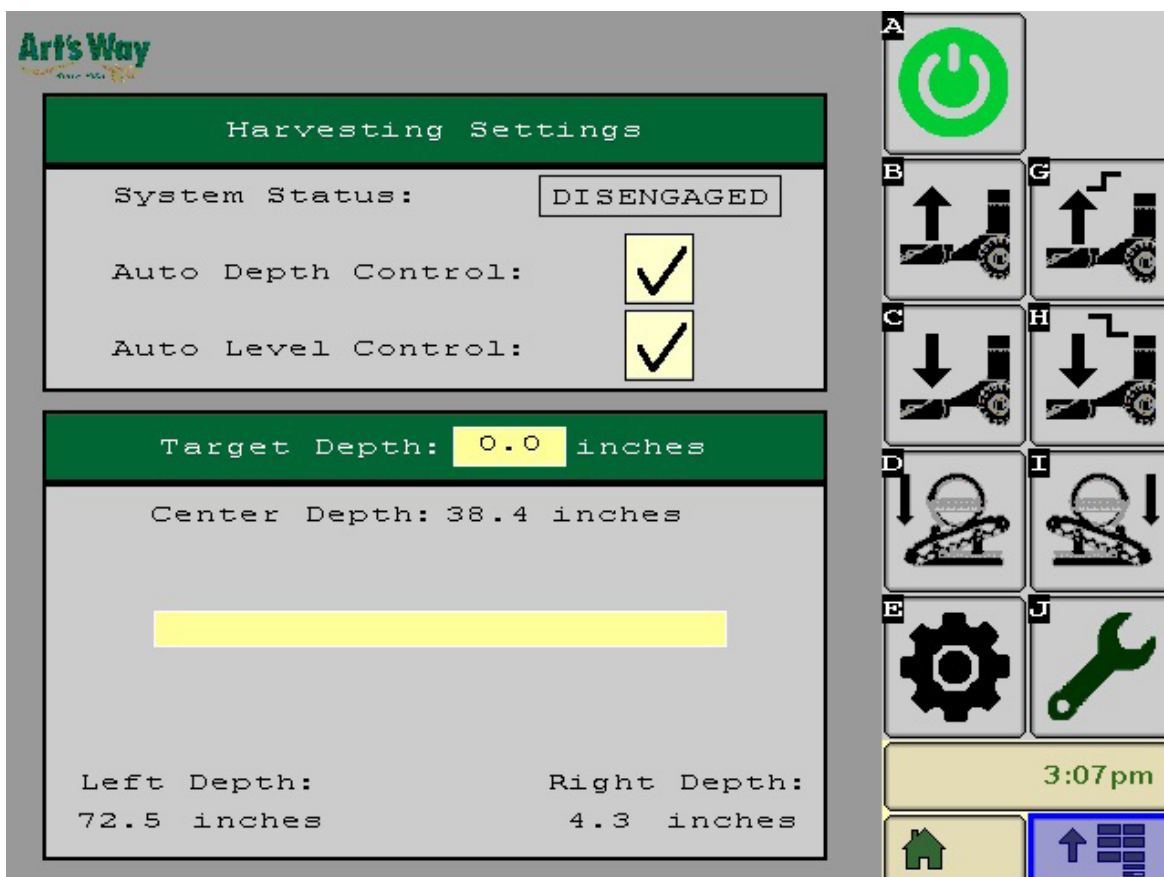
SECTION 2: SOFTWARE AND OPERATION



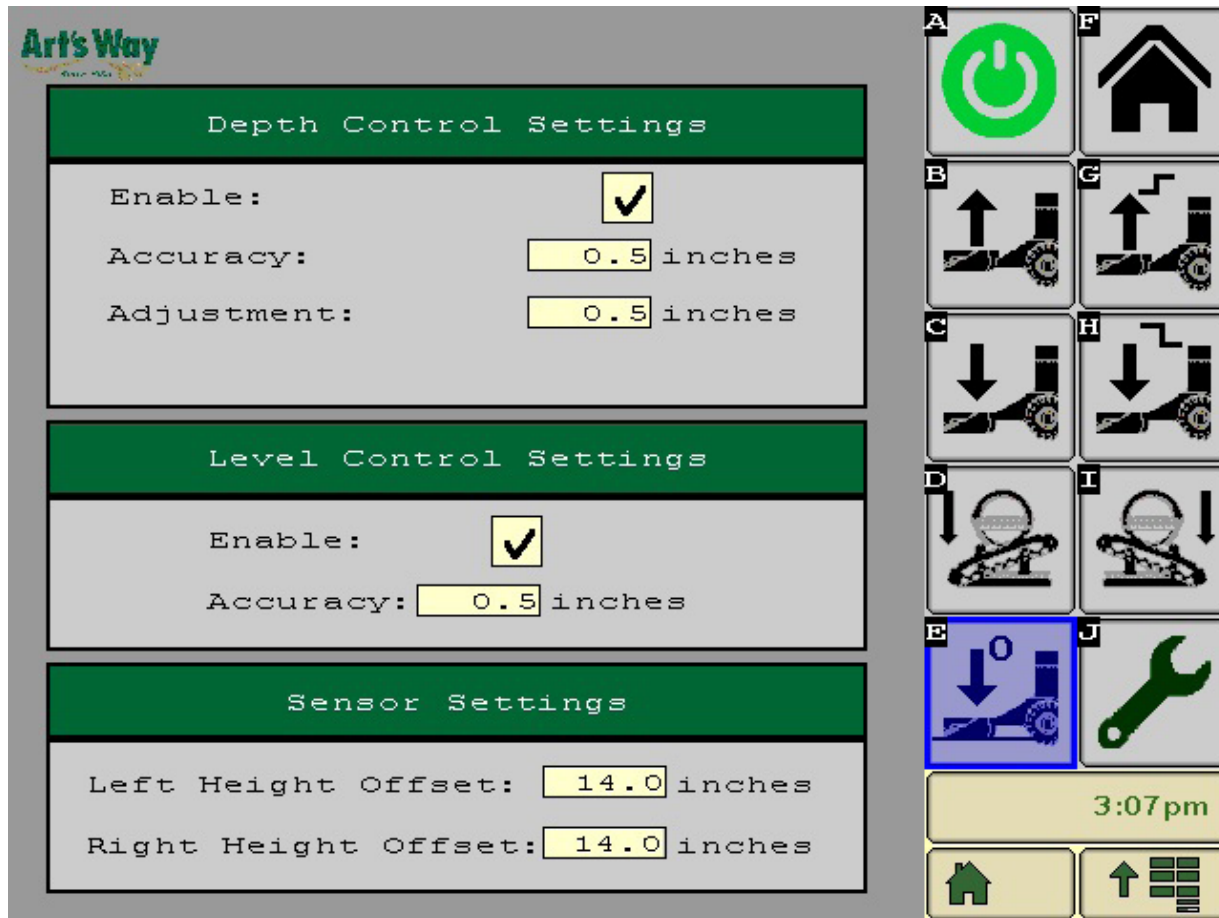


SYSTEM OPERATION

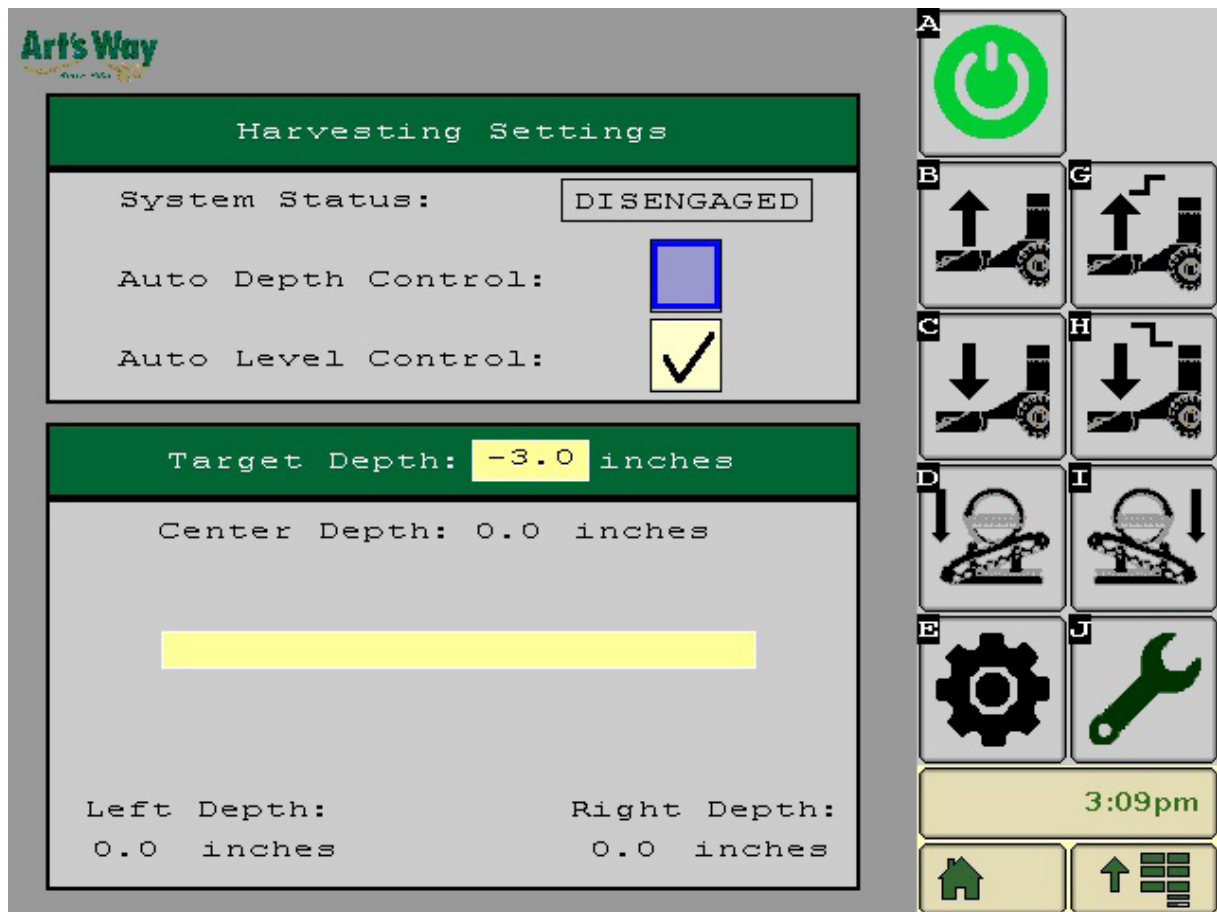
Once all physical components are installed and general hydraulic function is confirmed, the harness can be connected to the ISO-BUS port on the back of the tractor. Follow all safety precautions, ensuring personnel are clear of the machine. Start the tractor like normal. The first time the tractor is started after hooking up the new controller, new software will be loaded onto the VT (Virtual Terminal), this usually takes less than a minute. Once the software is loaded an Art's Way tab will be available on the VT, shown above on softkey square "B".



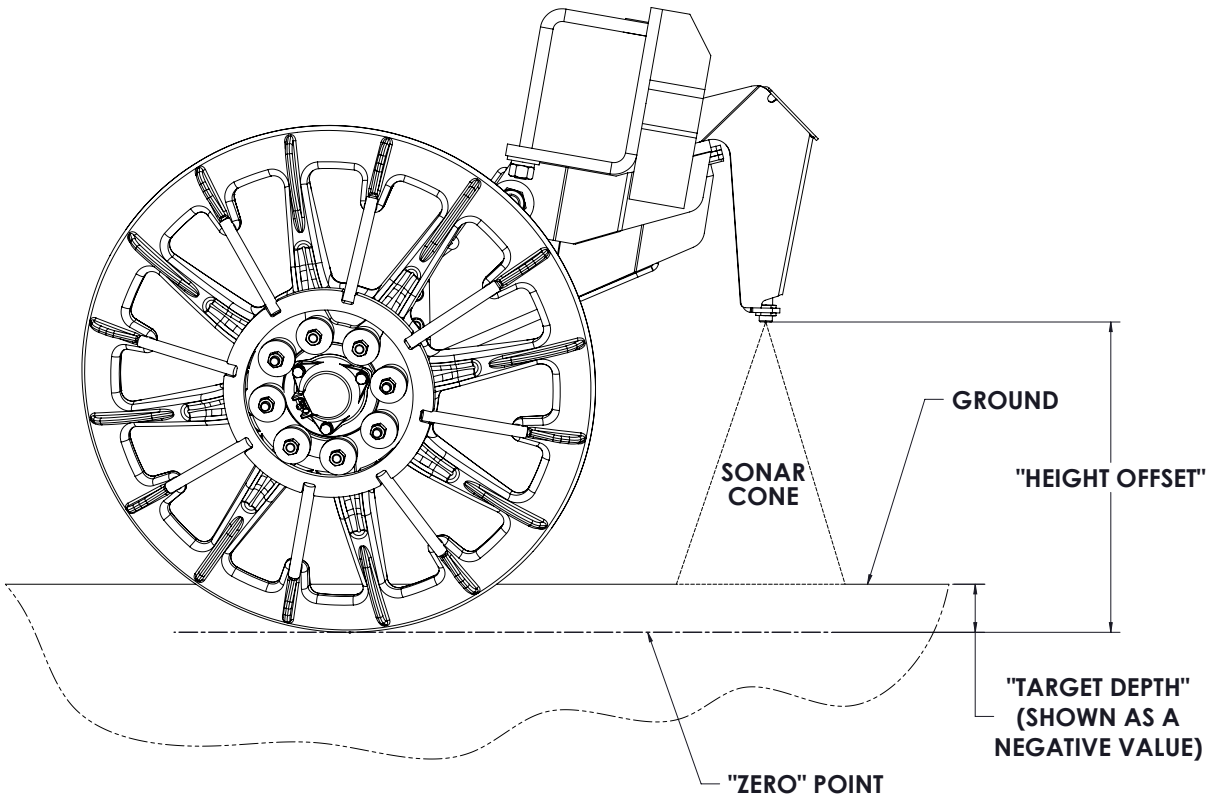
Selecting the Art's Way tab will open the Depth and Leveling Control system. A brief screen showing the Art's Way logo will appear, followed by the system home screen shown above. At this time, uncheck the boxes for Auto Depth Control and Auto Level Control. Use the tractor SCV Valve to raise the front of the unit to full height. Engage the tractor SCV valve used to run the Rowfinder and set flow to 50%, this will provide hydraulic pressure to the Leveling/Depth Control manifold. If there are cylinder stops installed on the hitch cylinders, remove those now. If the cylinder stop is installed on the leveling axle it should also be removed. To extend the leveling axle cylinder, touch softkey "I". If after 2 or 3 attempts to extend the cylinder it hasn't moved, attempt to extend the cylinder using softkey "D". Once the cylinder is extended, remove the cylinder stop and store on it on the axle support arm.



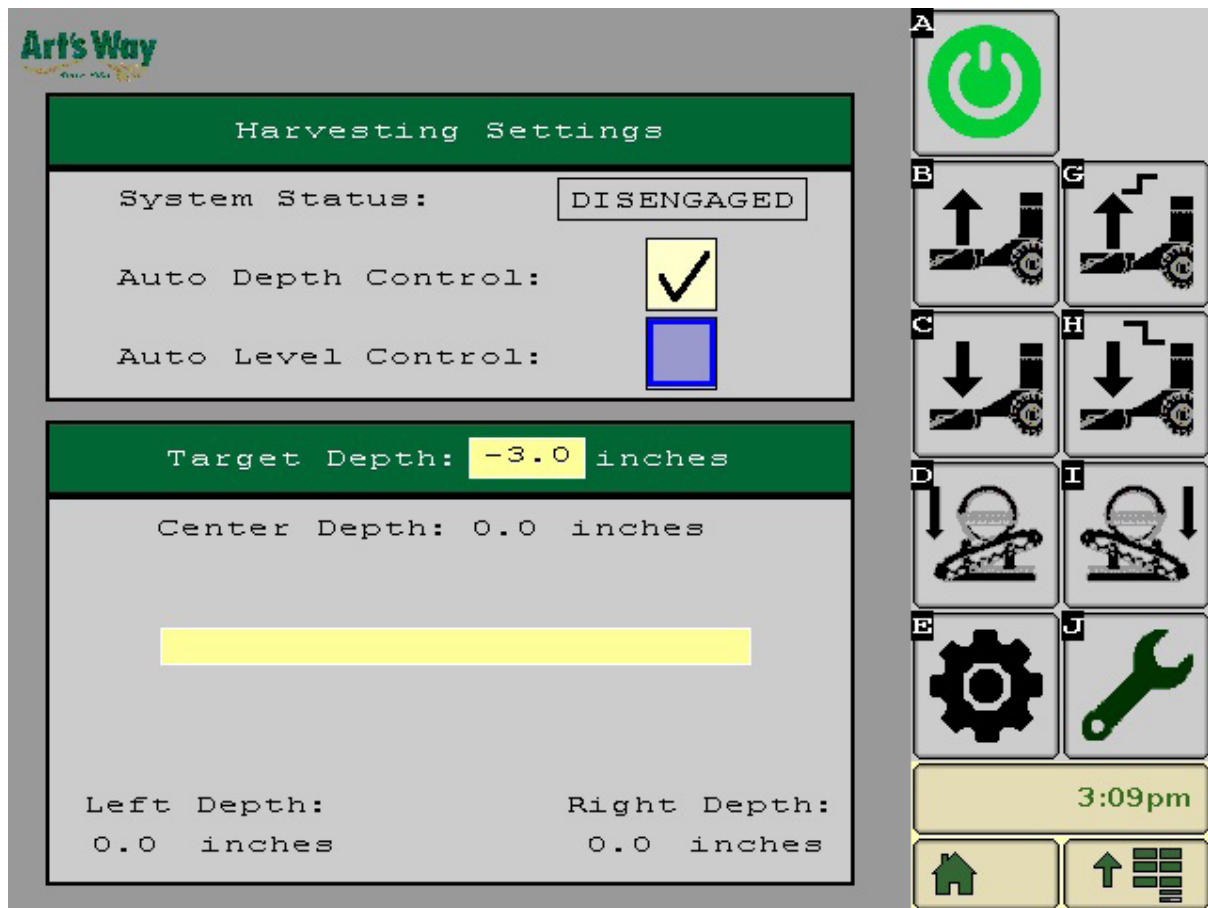
Move the unit to a fairly level surface, a cement shop floor is ideal. Using the tractor SCV valve along with softkeys "D" and "I" level the machine and lower it to the ground. Attempt to get the lifter wheels on each end of the head to touch the floor simultaneously. Once the unit is resting on the floor press softkey "E" on the home screen, it will look like a sprocket. This will take to you to the settings screen, and softkey E will change from a sprocket to an image of the harvester with an arrow pointing down (shown above). To calibrate the machine, press softkey "E" to "Zero" out the machine. You may notice the Left and Right height offset numbers change. The software will restart. Return to the home page by pressing softkey F.



On the home screen, the left, right, and center depths should all read at or close to “0.0 inches”. At this time, check the box labeled Auto Level Control (as shown above). Press the softkey “A” to engage the system, it will turn from green to red. Place a wood block, ideally a 4 X 4 or a 6 X 6, on the ground under the right hand sensor. The leveling system should automatically adjust to extend the leveling axle cylinder to raise the right side of the unit. (If the leveling cylinder retracts, the wiring harness connectors that connect to the rear solenoid valve need to be flipped.) With the wood block still under the right side sensor, place a similar block under the left side sensor. The leveling system should adjust the machine accordingly.



The Depth Control System operates on parameters based off a user input value referred to as the "Target Depth". The Target Depth is always a negative number and represents how deep you want the machine to dig. The Target Depth also determines when the Auto Depth Control engages and disengages. If the Target Depth is set at -3.0, as the machine is lowered into the ground the Auto Depth Control System will engage when the unit reaches a depth of -2.0. When the operator raises the machine the Auto Depth Control System will disengage when the unit is 1.0 above ground. This allows the operator to use a dedicated SCV to raise and lower the machine, but still allows the computer to make adjustments as field conditions change.



NOTES:

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Art's-Way Manufacturing Co., Inc. TECHNICAL MANUALS

Manuals are available from your local dealer or Art's-Way Manufacturing Co., Inc. for the operation, service, and repair of your machine. For prompt convenient service, contact your local dealer for assistance in obtaining the manuals for your machine.

Your local dealer can expedite your order for operator manuals, illustrated parts catalogs, service manuals, and maintenance records.

Always give the Machine Name, Model, and Serial Number so your local dealer can provide the correct manuals for your machine.

Art's-Way Manufacturing Co., Inc. reserves the right to make improvements in design or changes in specifications at any time without incurring any obligation to install them on units previously sold.

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ART'S-WAY MANUFACTURING CO., INC.

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