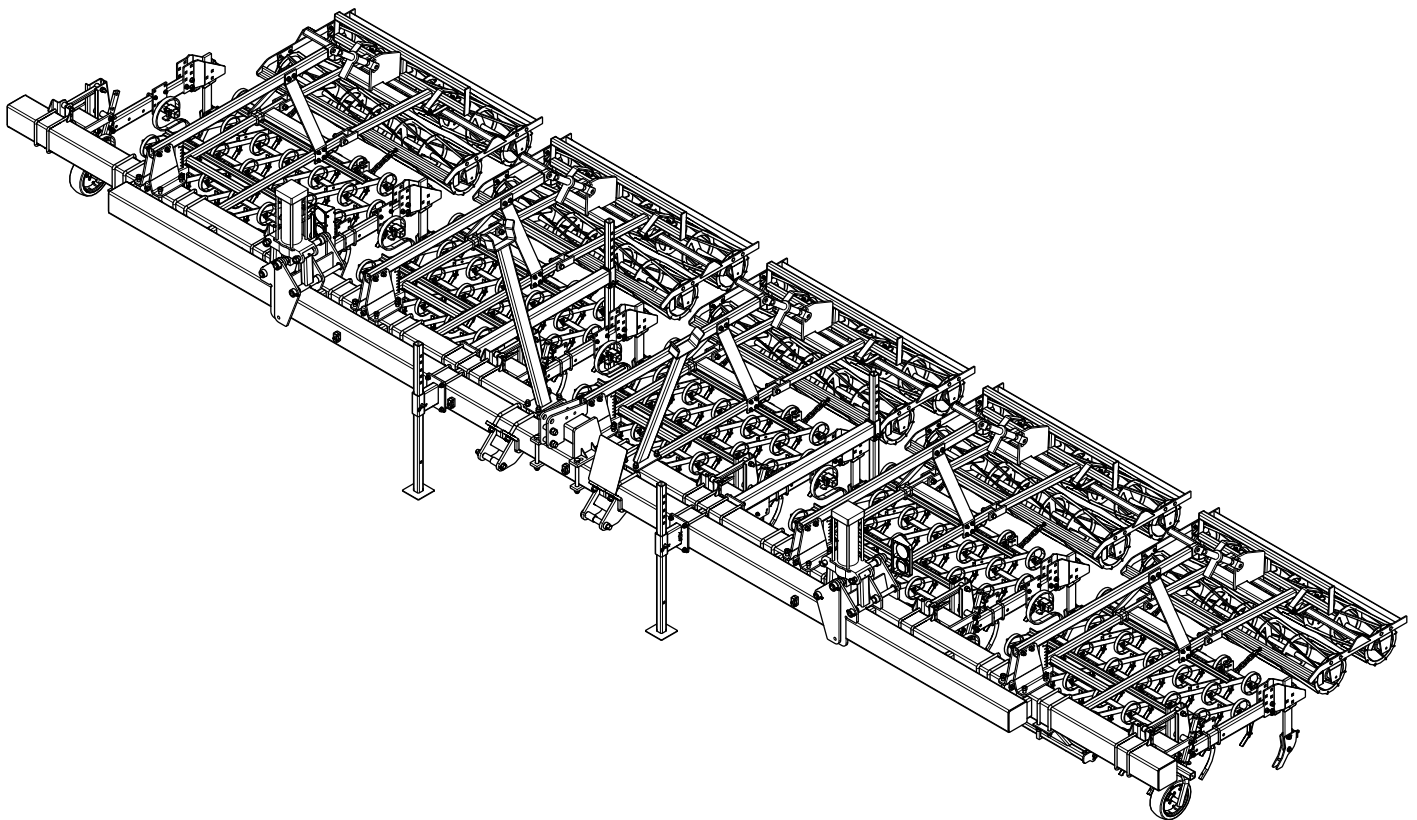


ALLOWAY

2011

BED RTS *(Residue Tillage System)*



OPERATOR'S MANUAL

TO THE DEALER:

Assembly and proper installation of this product is the responsibility of the Alloway dealer. Read manual instructions and safety rules. Make sure all items on the Dealer's Pre-Delivery and Delivery Check Lists in the Operator's Manual are completed before releasing equipment to the owner.

The dealer must complete the Warranty Registration included in this manual. Both dealer and customer must sign the registration which certifies that all Dealer Check List items have been completed. The dealer is to return the prepaid postage portion to Alloway, give one copy to the customer, and retain one copy.

Note: Warranty credit is subject to this form being completed and returned.

TO THE OWNER:

Read this manual before operating your Alloway equipment. The information presented will prepare you to do a better and safer job. Keep this manual handy for ready reference. Require all operators to read this manual carefully and become acquainted with all the adjustment and operating procedures before attempting to operate. Replacement manuals can be obtained from your dealer.

The equipment you have purchased has been carefully engineered and manufactured to provide dependable and satisfactory use. Like all mechanical products, it will require cleaning and upkeep. Lubricate the unit as specified. Observe all safety information in this manual and safety decals on the equipment.

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

Use only genuine Alloway service parts. Substitute parts will void the 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:

Model: _____ **Date of Purchase** _____

Serial Number: (see Safety Decal section for location) _____

Provide this information to your dealer to obtain correct repair parts.

Throughout this manual, the term **IMPORTANT** is used to indicate that failure to observe can cause damage to equipment. The terms **CAUTION**, **WARNING** and **DANGER** are used in conjunction with the Safety-Alert Symbol, (a triangle with an exclamation mark), to indicate the degree of hazard for items of personal safety.



This Safety-Alert Symbol indicates a hazard and means **ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**



Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury.



WARNING

Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed



CAUTION

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

IMPORTANT

Indicates that failure to observe can cause damage to equipment.

NOTE

Indicates helpful information.

ALLOWAY

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GENERAL INFORMATION

The purpose of this manual is to assist you in operating and maintaining your Beet Defoliator. Read it carefully. It furnishes information and instructions that will help you achieve years of dependable performance. These instructions have been compiled from extensive field experience and engineering data. Some information may be general in nature due to unknown and varying operating conditions. However, through experience and these instructions, you should be able to develop 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

- **Some illustrations in this manual show the Beet Defoliator with safety shields removed to provide a better view. The Beet Defoliator should never be operated with any safety shielding removed.**

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



SAFETY RULES

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



Safety is a primary concern in the design and manufacture of our products. Unfortunately, our efforts to provide safe equipment can be wiped out by a single careless act of an operator.

In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of equipment.

It has been said "The best safety device is an informed, careful operator." We ask you to be that kind of an operator.

The designed and tested safety of this equipment depends on it being operated within the limitations as explained in this manual.

TRAINING

- **Safety instructions are important! Read all attachment and power unit manuals; follow all safety rules and safety decal information. (Replacement manuals are available from dealer). 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.**
- **Keep hands and body away from pressurized lines. Use paper or cardboard, not body parts to check for leaks. Wear safety goggles. Hydraulic fluid under pressure can easily penetrate skin and will cause serious injury or death.**
- **Make sure that all operating and service personnel know that in the event hydraulic fluid penetrates skin, it must be surgically removed as soon as possible by a doctor familiar with this form of injury, or gangrene, serious injury or death will result. CONTACT A PHYSICIAN IMMEDIATELY IF FLUID ENTERS SKIN OR EYES. DO NOT DELAY.**

- **Never allow children or untrained persons to operate equipment.**

PREPARATION

- **Check that all hardware is tight and properly installed. Always tighten to torque chart specifications unless instructed otherwise in this manual.**
- **Air in hydraulic systems can cause erratic operation and allows loads or equipment components to drop unexpectedly. Before operating or allowing anyone to approach the equipment, purge any air in the system by operating all hydraulic functions several times after connecting equipment, connecting hoses, or doing any hydraulic maintenance.**
- **Make sure all hydraulic hoses, fittings and valves are in good condition and not leaking before starting power unit or using equipment. Check and route hoses carefully to prevent damage. Hoses must not be twisted, bent sharply, kinked, frayed, pinched, or come into contact with any moving parts. Operate moveable components through full operational range to check clearances. Replace any damaged hoses immediately.**
- **Always wear relatively tight and belted clothing to avoid entanglement in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing and head; and respirator or filter mask where appropriate.**
- **Ensure implement is properly attached, adjusted and in good operating condition.**
- **Make sure spring-activated locking pin or collar slides freely and is seated firmly in tractor PTO spline groove.**
- **Before starting power unit, check all equipment driveline guards for damage and make sure they rotate freely on all drivelines. Replace any damaged guards. If guards do not rotate freely on drivelines, repair and replace bearings before operating.**

(Safety Rules continued on next page)



SAFETY RULES

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



(Safety Rules continued from previous page)

- 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 systems in “locked up” position at all times.
- Connect PTO driveline directly to power unit PTO shaft. Never use adapter sleeves or adapter shafts. Adapters can cause driveline failures due to incorrect spline or incorrect operating length and can result in personal injury or death. ■ Inspect rubber flaps and swing rod before each use. Replace if damaged or missing. Flaps must pivot and hang freely so there are no gaps. Do not put equipment into service until repaired.
- Remove accumulated debris from this equipment, tractor and engine to avoid fire hazard.
- Ensure all safety decals are installed. Replace if damaged. (See Safety Decals section for location.)
- Ensure shields and guards are properly installed and in good condition. Replace if damaged.
- A minimum 20% of tractor and equipment weight must be on tractor front wheels when attachments are in transport position. Without this weight, tractor could tip over, causing personal injury or death. The weight may be attained with a loader, front wheel weights, ballast in tires or front tractor weights. When attaining the minimum 20% weight on the front wheels, you must not exceed the Roll Over Protection Structure (ROPS) weight certification. Weigh the tractor and equipment. Do not estimate.
- Make sure hydraulic hoses and cylinders are fully purged of air before operating. Keep all persons away and fill the system by raising and lowering all functions several times. Air in the system can allow components to fall unexpectedly.
- Inspect and clear area of stones, branches, or other hard objects that might be thrown, causing injury or damage.

TRANSPORTING

- 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 systems 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.
- A minimum 20% of tractor and equipment weight must be on the tractor front wheels when attachments are in transport position. Without this weight, tractor could tip over, causing personal injury or death. The weight may be attained with a loader, front wheel weights, ballast in tires or front tractor weights. Weigh the tractor and equipment. Do not estimate.
- Always attach safety chain to tractor drawbar when transporting unit.
- Always raise unit and install transport locks before transporting. Leak down or failure of mechanical or hydraulic system can cause equipment to drop.
- Never exceed 20 MPH during transport. See the Speed vs. Weight Ratio Table in "Field Operation, Transporting the Unit" for proper tow vehicle to machine weight ratios.
- Watch for hidden hazards on the terrain.
- Always comply with all state and local lighting and marking requirements.
- Never allow riders on power unit or attachment.
- Do not operate PTO during transport.
- Look down and to the rear and make sure area is clear before operating in reverse.

(Safety Rules continued on next page)



SAFETY RULES

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



(Safety Rules continued from previous page)

- Do not operate or transport on steep slopes.
- Use extreme care and reduce ground speed on slopes and rough terrain.
- Do not operate or transport equipment while under the influence of alcohol or drugs.

OPERATION

- Do not operate or transport equipment while under the influence of alcohol or drugs.
- Equipment may be pictured with covers open for instructional purposes. Never operate equipment with covers open.
- Do not allow bystanders in the area when operating, attaching, removing, assembling, or servicing equipment.
- Do not allow anyone to stand between tractor and unit when backing up to unit.
- Never go underneath equipment (lowered to the ground or raised) unless it is properly blocked and secured. 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 and cause severe injury or death. Follow Operator's Manual instructions for working underneath and blocking requirements or have work done by a qualified dealer.
- 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.
- Avoid contact with electrical wires.
- 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 systems 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.
- Operate tractor PTO at the RPM speed stated in "Specifications" section.
- Do not operate PTO during transport.
- Look down and to the rear and make sure area is clear before operating in reverse.
- Do not operate or transport on steep slopes.
- Do not stop, start, 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.
- Never work on scalper attachment in the raised position. Lower scalpings to the ground and service each unit individually.
- Always raise scalper arms before going in reverse.
- Always connect safety chain from equipment to towing vehicle when transporting.

(Safety Rules continued on next page)



SAFETY RULES

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



(Safety Rules continued from previous page)

■ AVOID INJURY OR DEATH FROM POWER LINES:

- Stay away from power lines.
- Electrocutation can occur without direct contact.
- Check clearances before raising implement.
- Do not leave the operator's seat if any part of the tractor or implement contacts electric lines.

■ Before servicing, adjusting, repairing or unplugging, stop tractor engine, place all controls in neutral, set park brake, remove ignition key, and wait for all moving parts to stop.

■ Before working underneath a raised implement, read and follow all Operator's Manual instructions and safety rules. Implement must be attached to tractor. Lift cylinder locks must be installed and lift cylinders lowered against locks. Hydraulic system leak down, hydraulic system failures, or movement of control levers can cause equipment to drop unexpectedly and cause severe injury or death.

MAINTENANCE

■ Before servicing, adjusting, repairing or unplugging, stop tractor engine, place all controls in neutral, set park brake, remove ignition key, and wait for all moving parts to stop.

■ Before working underneath a raised implement, read and follow all Operator's Manual instructions and safety rules. Implement must be attached to tractor. Lift cylinder locks must be installed and lift cylinders lowered against locks. Hydraulic system leak down, hydraulic system failures, or movement of control levers can cause equipment to drop unexpectedly and cause severe injury or death.

■ Service and maintenance work not covered in OWNER SERVICE must be done by a qualified dealership. Special skills, tools, and safety procedures may be required. Failure to follow these instructions can result in serious injury or death.

■ Do not modify or alter or permit anyone else to modify or alter the equipment or any of its components in any way.

■ Your dealer can supply original equipment hydraulic accessories and repair parts. Substitute parts may not meet original equipment specifications and may be dangerous.

■ Always wear relatively tight and belted clothing to avoid entanglement in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing and head; and respirator or filter mask where appropriate.

■ Do not allow other people in the area when operating, attaching, removing, assembling or servicing equipment.

■ Never go underneath equipment lowered to the ground or raised, unless it is properly blocked and secured. 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 and cause severe injury or death. Follow Operator's Manual instructions for working underneath and blocking requirements, or have work done by a qualified dealer.

■ Ensure implement is properly attached, adjusted and in good operating condition.

■ Never perform service or maintenance with engine running.

■ Make sure hydraulic hoses and cylinders are fully purged of air before operating. Keep all persons away and fill the system by raising and lowering all functions several times. Air in the system can allow components to fall unexpectedly.

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

(Safety Rules continued on next page)



SAFETY RULES

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



(Safety Rules continued from previous page)

- **Make certain all movement of implement components has stopped before approaching for service.**
- **Do not handle blades with bare hands. Careless or improper handling may result in serious injury.**
- **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 operating.**
- **Ensure all safety decals are installed. Replace if damaged. (See Safety Decals section for location.)**

- **Ensure shields and guards are properly installed and in good condition. Replace if damaged.**

- **Do not disconnect hydraulic lines until machine is securely blocked or placed in lowest position and system pressure is released by operating all valve control levers.**

STORAGE

- **Follow manual instructions for storage.**
- **Keep children and bystanders away from storage area.**

(Safety Rules continued on next page)

CHECK LISTS

PRE-DELIVERY CHECK LIST

(DEALER'S RESPONSIBILITY)

Inspect the equipment thoroughly after assembly to ensure it is set up properly before delivering it to the customer.

The following check lists are a reminder of points to inspect. Check off each item as it is found satisfactory or after proper adjustment is made.

- Check that all safety decals are installed and in good condition. Replace if damaged.
- Check that all safety decals are installed and in good condition. Replace if damaged.
- Properly attach implement to tractor and make all necessary adjustments.
- Check all bolts to be sure they are tight.
- Check wheel bolts for proper torque.
- Check that all cotter pins and safety pins are properly installed. Replace if damaged.
- Check and grease all lubrication points as identified in "Service, lubrication information."
- Check that tractor hydraulic reservoir has been serviced and that hydraulic system and all functions have been operated through full cylinder stroke to purge air from system.
- After pressurizing and operating all Bed RTS functions, stop tractor and make sure there are no leaks in the hydraulic system. Follow all safety rules when checking for leaks.

DELIVERY CHECK LIST

(DEALER'S RESPONSIBILITY)

- Show customer how to make adjustments.
- Instruct customer how to lubricate and explain importance of lubrication.
- Point out the safety decals. Explain their meaning and the need to keep them in place and in good condition. Emphasize the increased safety hazards when instructions are not followed.
- Present Operator's Manual and request that customer and all operators read it before operating equipment. Point out the manual safety rules, explain their meanings and emphasize the increased safety hazards that exist when safety rules are not followed.
- Show customer the safe, proper procedures to be used when mounting, dismounting, and storing equipment.
- Explain to customer that when equipment is transported on a road or highway, safety devices should be used to give adequate warning to operators of other vehicles.
- Explain to customer that when equipment is transported on a road or highway, a Slow Moving Vehicle (SMV) sign should be used to provide adequate warning to operators of other vehicles.
- Explain to customer that when towing on a public road to comply with all state and local lighting/marketing laws and to use a safety tow chain.
- Make customer aware of optional equipment available so that customer can make proper choices as required.

OPERATOR SIGN-OFF RECORD

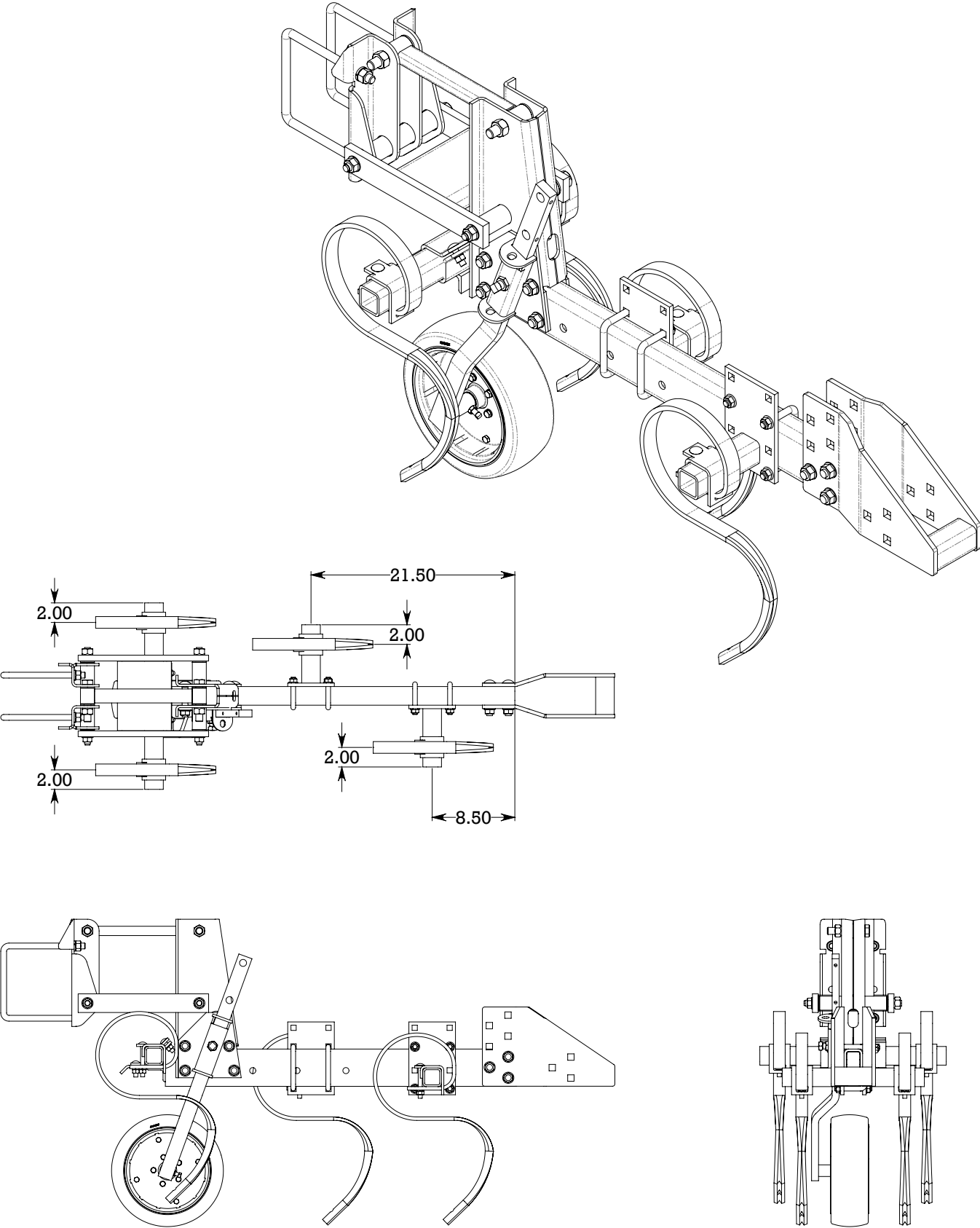
It has been said “The best safety device is an informed, careful operator.” We ask you to be that kind of operator.

Alloway Equipment Company follows the general safety standards specified by the American Society of Agricultural Engineers (ASAE) and the

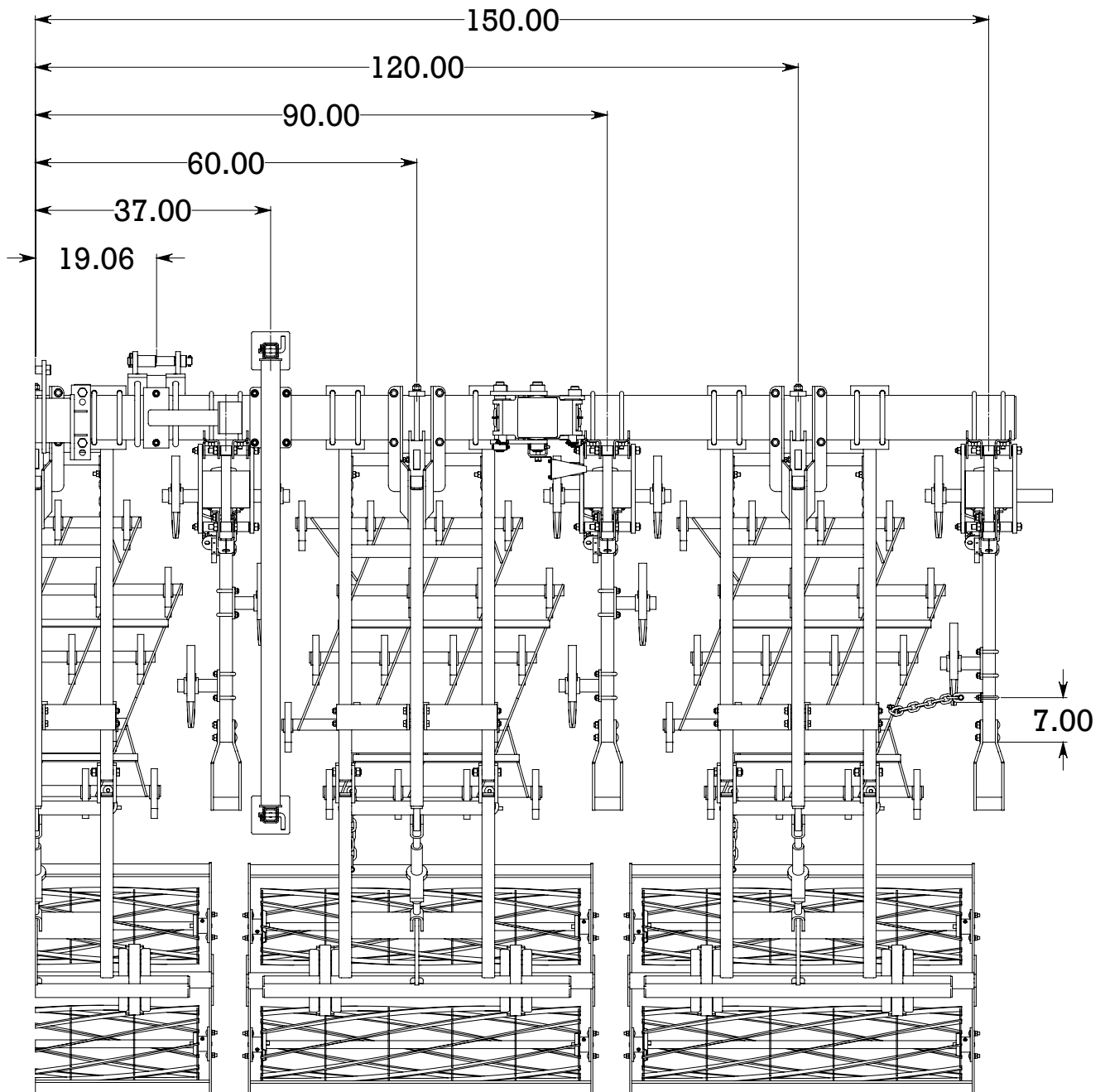
Use the following Operator Sign-off Record to verify that each operator has read and understood the information in this manual and has been instructed in the safe operation of the defoliator.

[illegible]

TYPICAL GANG LAYOUT

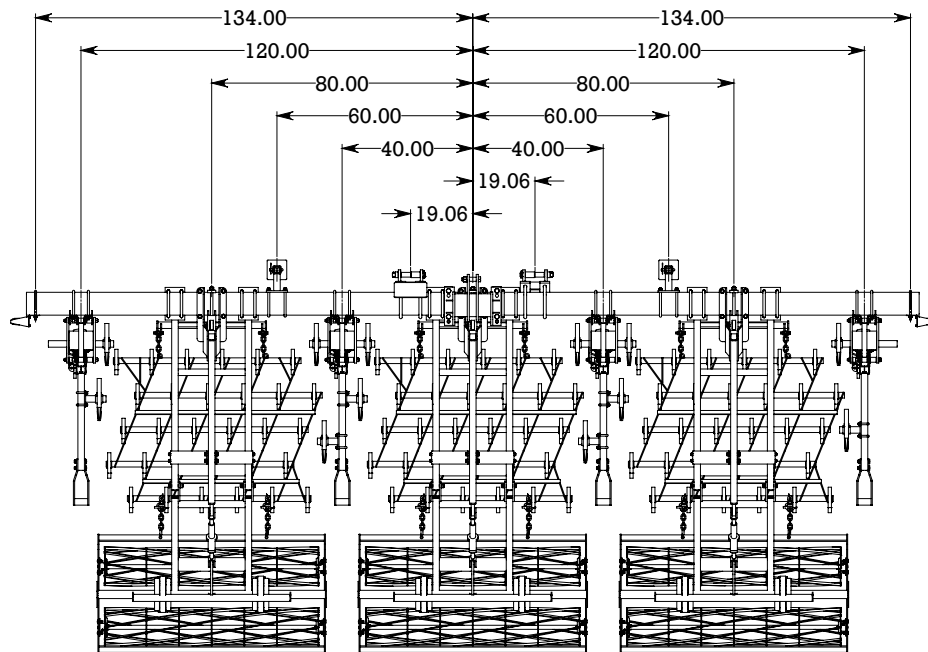


TYPICAL TOOLBAR LAYOUT

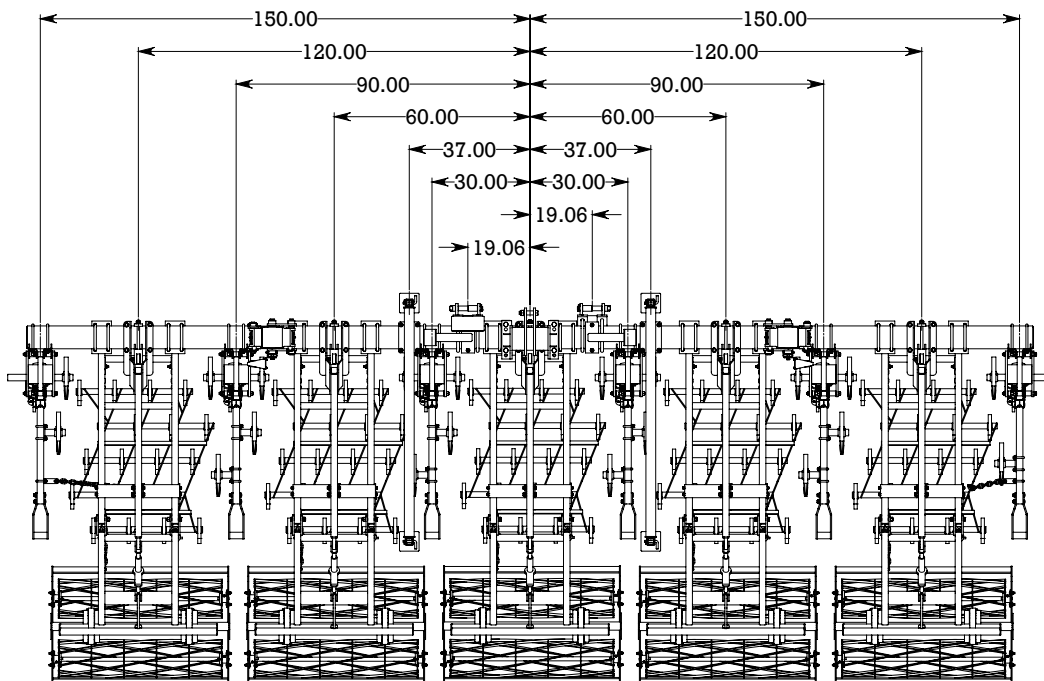


TYPICAL TOOLBAR LAYOUTS

3 ROW 60" LAYOUT

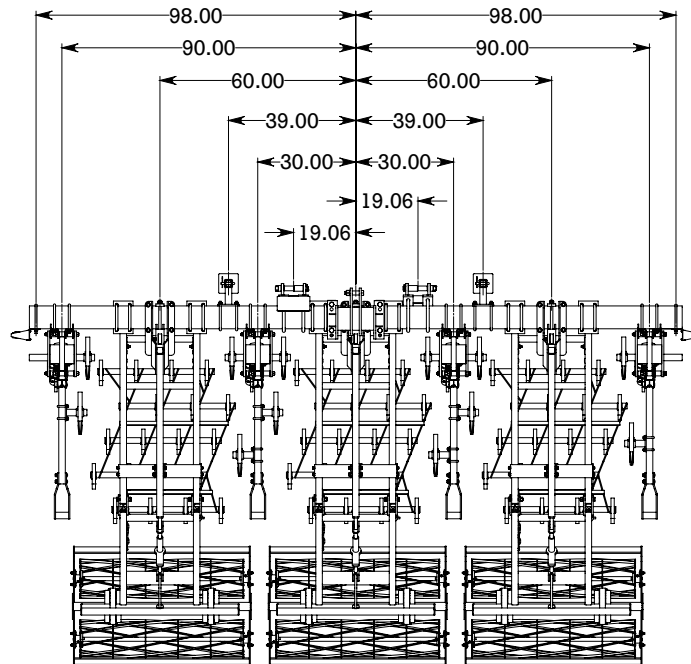


5 ROW 60" LAYOUT

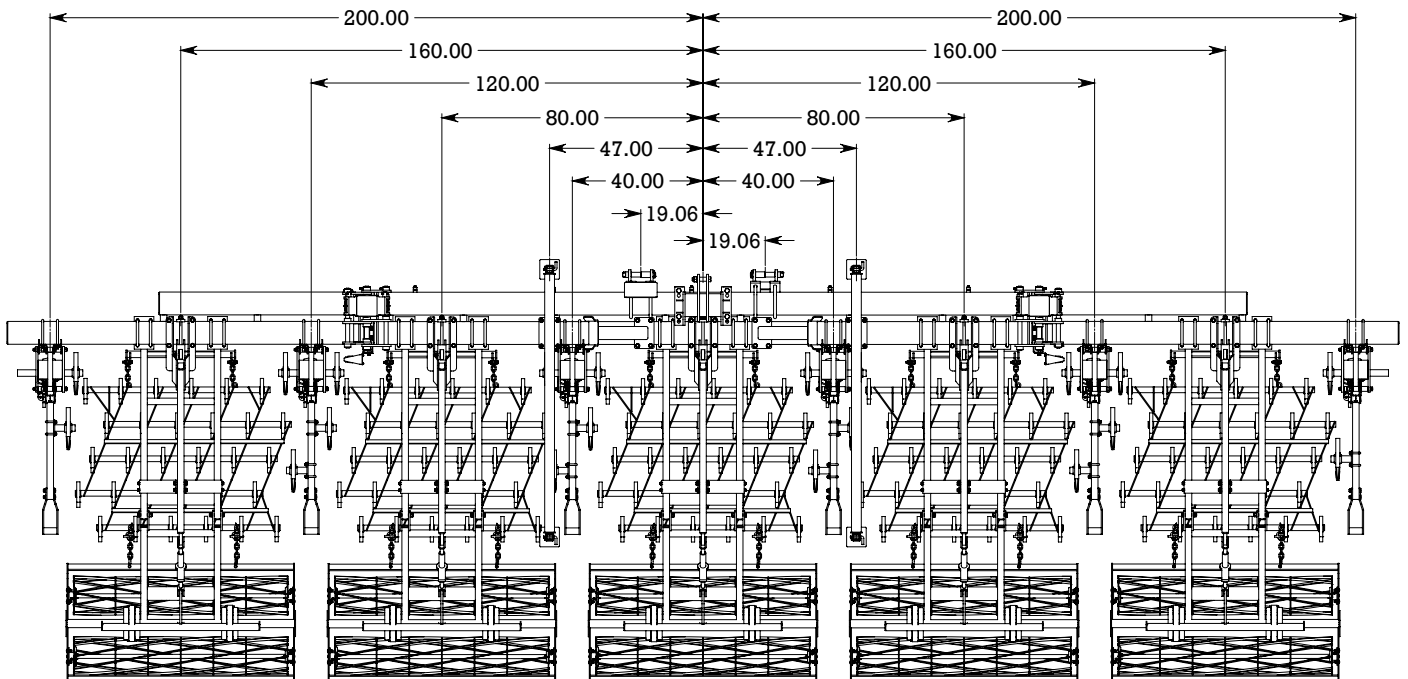


TYPICAL TOOLBAR LAYOUTS

3 ROW 80" LAYOUT



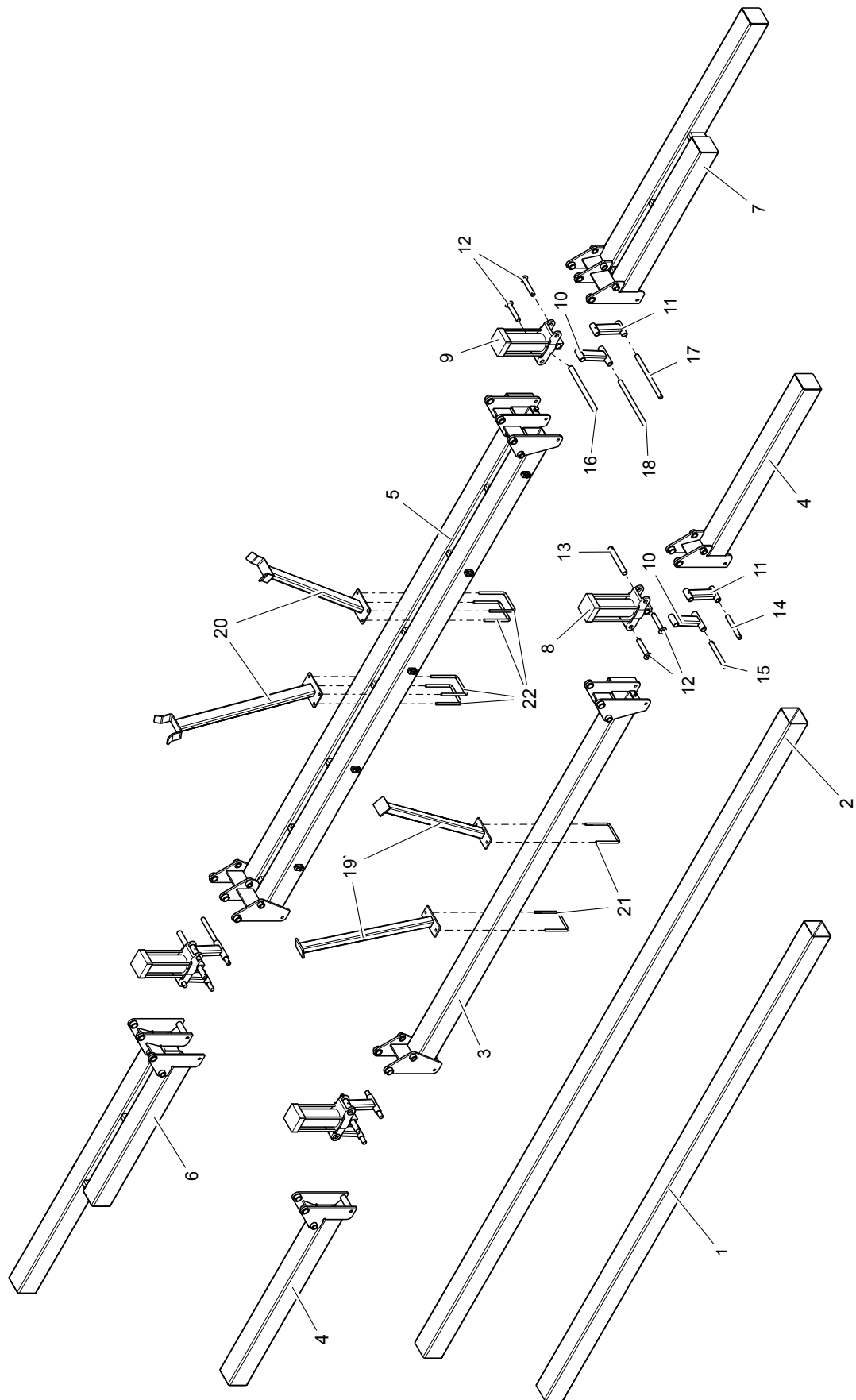
5 ROW 80" LAYOUT



BED RTS (*Residue Tillage System*)

TOOLBAR COMPONENTS	14 - 15
DOWN PRESSURE COMPONENTS	16
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LIGHT KIT COMPONENTS	56 - 57
PARKING STAND COMPONENTS	58 - 59

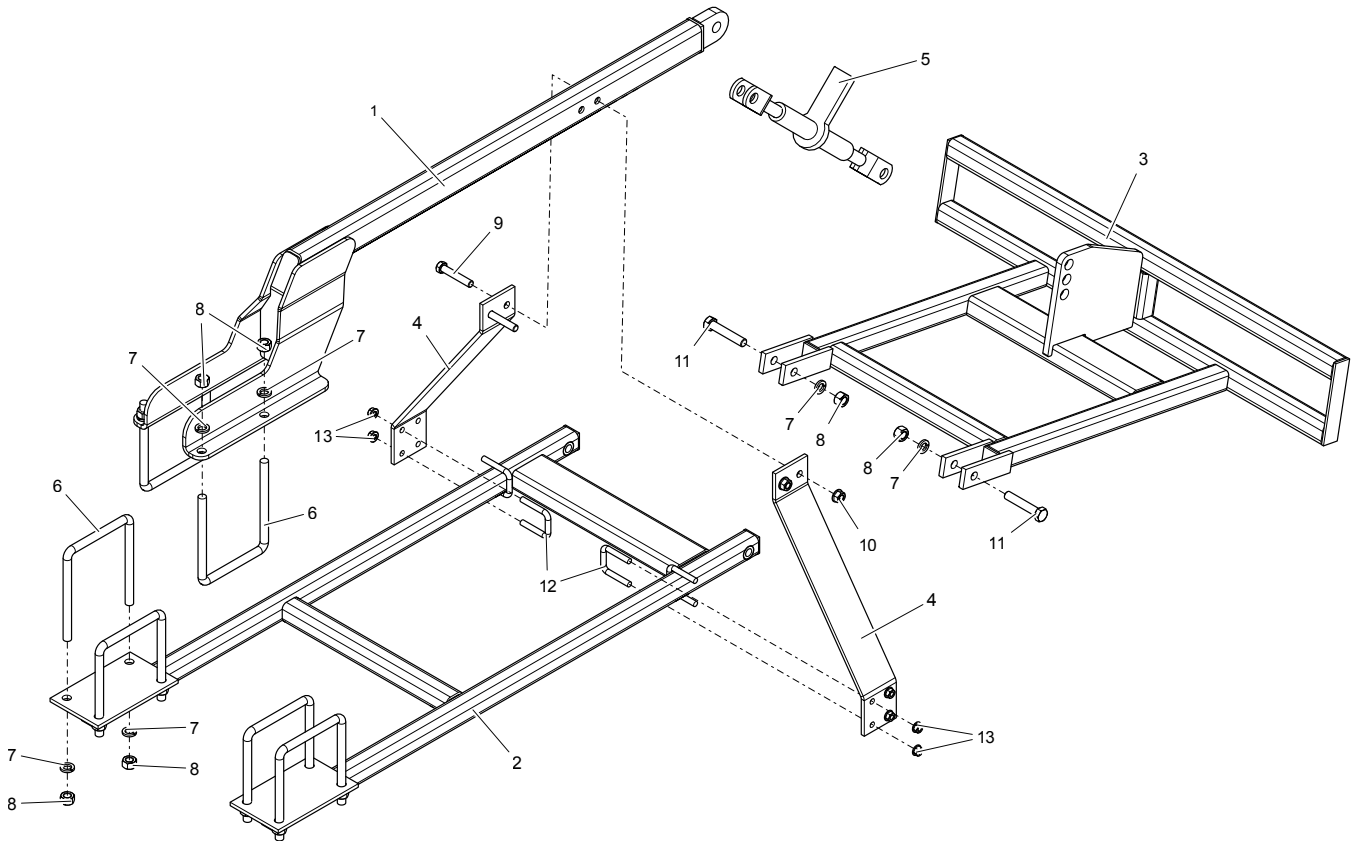
TOOLBAR COMPONENTS



TOOLBAR COMPONENTS

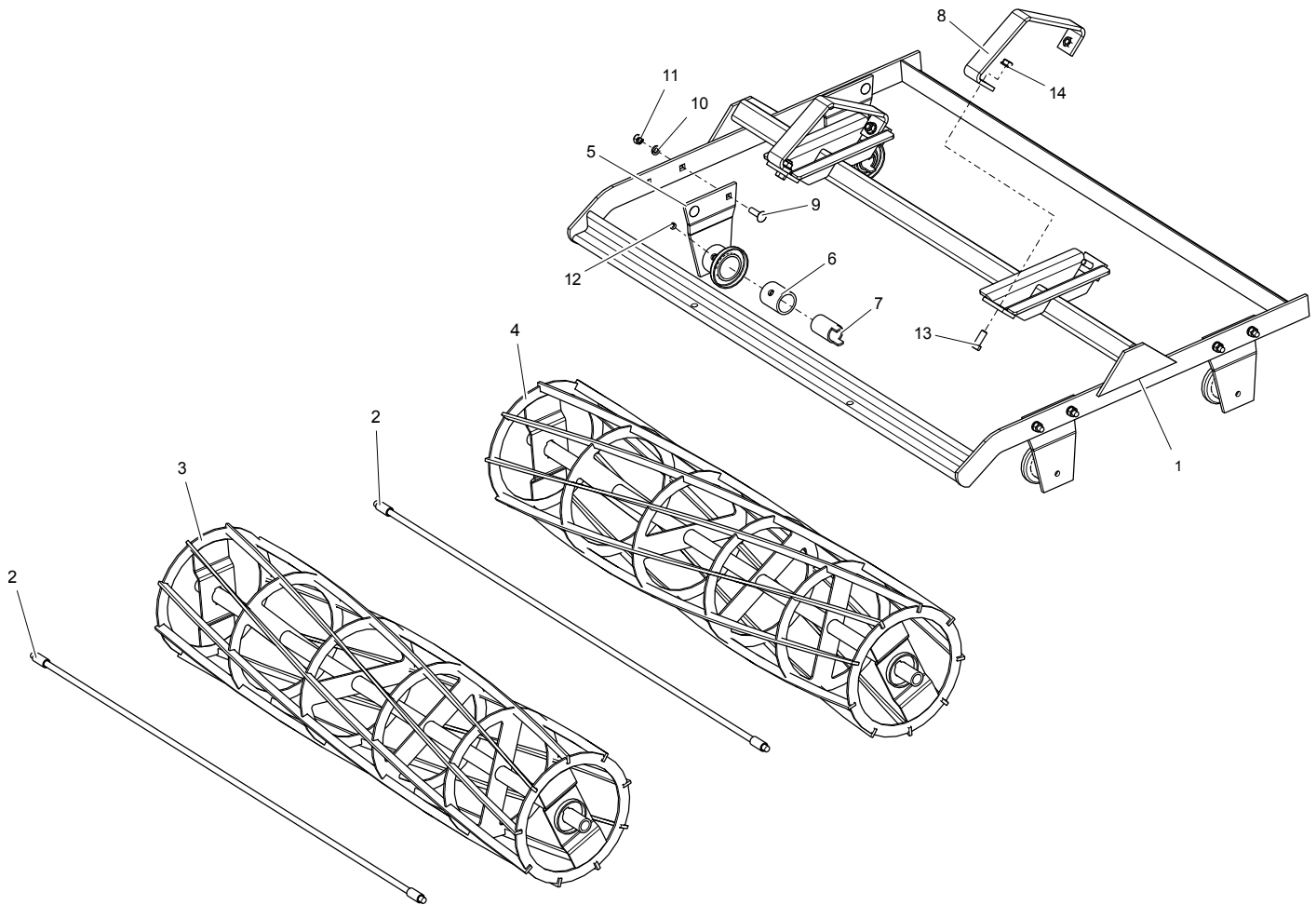
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	200-3-2425	TOOLBAR, 200" (3R60)	1
2	200-3-3925	TOOLBAR, 273.50" (3R80)	1
3	200-2-1626	CENTER TOOLBAR, 158" (5R60)	1
4	200-2-1627	WING TOOLBAR, 75" (5R60)	2
5	200-2-2371	DOUBLE CENTER TOOLBAR, 206" (5R80)	1
6	200-2-1632	RIGHT DOUBLE WING TOOLBAR, 110" (5R80)	1
7	200-2-1631	LEFT DOUBLE WING TOOLBAR, 110" (5R80)	1
8	200-2-0503	CYLINDER, 5 x 12	2
9	200-2-1564	CYLINDER, 6 x 12	2
10	200-2-0316	INNER CYLINDER LINKAGE	4
11	200-2-0317	OUTER CYLINDER LINKAGE	4
12	200-2-1611	CYLINDER LINKAGE PIN, 7"	8
13	200-3-4396	HINGE PIN, 11"	2
14	200-3-0526	PIN, 9.63"	2
15	200-3-0513	PIN, 11.25"	2
16	200-3-3170	PIN, 19.75"	2
17	200-3-2451	PIN, 18.38"	2
18	200-3-2450	PIN, 19.75"	2
19	200-2-2351	WING REST (SINGLE TOOLBAR)	2
20	200-2-2368	WING REST (DOUBLE TOOLBAR)	2
21	200-3-0344	U-BOLT, 5/8 NC x 7 x 8.5	2
22	200-3-0345	U-BOLT, 3/4 NC x 7 x 9.13	4
-	200-2-2061	TOOLBAR ASSY (3R60) - INCLUDES : TOOLBAR, DECALS	-
-	200-2-2125	TOOLBAR ASSY (3R80) - INCLUDES : TOOLBAR, DECALS	-
-	200-1-3817	TOOLBAR ASSY (5R60) - INCLUDES : TOOLBARS, DECALS, CYLINDER, LINKAGES, PINS, WING RESTS, HOSE KIT, HARDWARE	-
-	200-2-2374	DOUBLE TOOLBAR ASSY (5R80) - INCLUDES : TOOLBARS, DECALS, CYLINDER, LINKAGES, PINS, WING RESTS, HOSE KIT, HARDWARE	-

DOWN PRESSURE COMPONENTS



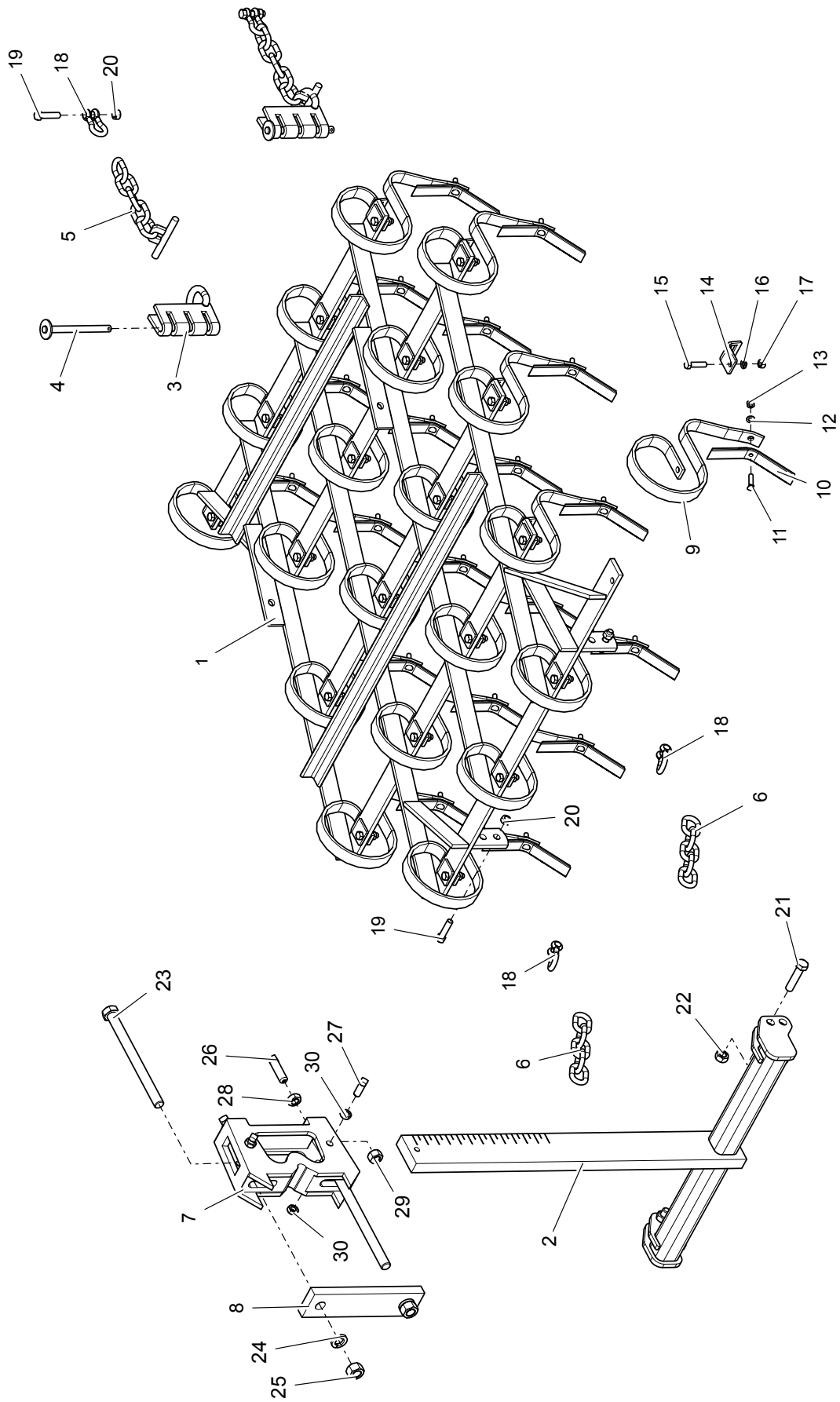
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	205-2-5001	DOWN PRESSURE ARM	1
2	205-2-0017	H-FRAME	1
3	210-2-5035	CRUMBLER FRAME	1
4	205-3-0043	SUPPORT STRAP	2
5	905-23014	RATCHET JACK	1
6	200-3-0345	U-BOLT, 3/4 NC x 7 x 9-1/8	6
7	900-11017	LOCK WASHER, 3/4	14
8	900-06015	NUT, 3/4 NC	14
9	900-01357	BOLT, 5/8 NC x 3-1/2	2
10	900-06145	SPIRALOCK NUT, 5/8 NC	2
11	900-01419	BOLT, 3/4 NC x 4	2
12	200-3-0801	U-BOLT, 1/2 NC x 2 x 3	4
13	900-06143	SPIRALOCK NUT, 1/2 NC	8
-	205-2-5003	DOWN PRESSURE ASSY	-

CRUMBLER COMPONENTS



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	205-2-0028	FRAME (60" ROWS)	1
	200-2-2364	FRAME (80" ROWS)	
2	210-2-0133	REINFORCING ROD (60" ROWS)	2
	210-2-0134	REINFORCING ROD (80" ROWS)	
3	210-2-0111	BASKET - RH (60" ROWS)	1
	210-2-0114	BASKET - RH (80" ROWS)	
4	210-2-0112	BASKET - LH (60" ROWS)	1
	210-2-0113	BASKET - LH (80" ROWS)	
5	210-2-0026	BEARING BRACKET	4
6	210-3-0617	RYERTEX BUSHING	4
7	210-3-0223	SLEEVE	4
8	210-3-0263	LIFT STRAP	2
9	900-01726	CARRIAGE BOLT, 7/16 NC x 1-1/2	8
10	900-11012	LOCK WASHER, 7/16	8
11	900-06007	NUT, 7/16 NC	8
12	210-3-0015	GREASE ZERK	4
13	900-01223	BOLT, 1/2 NC x 1-1/4	4
14	900-06143	SPIRALOCK NUT, 1/2 NC	4
-	210-2-0025	BEARING BRACKET ASSY - INCLUDES : BEARING BRACKET, BUSHING, ZERK	-

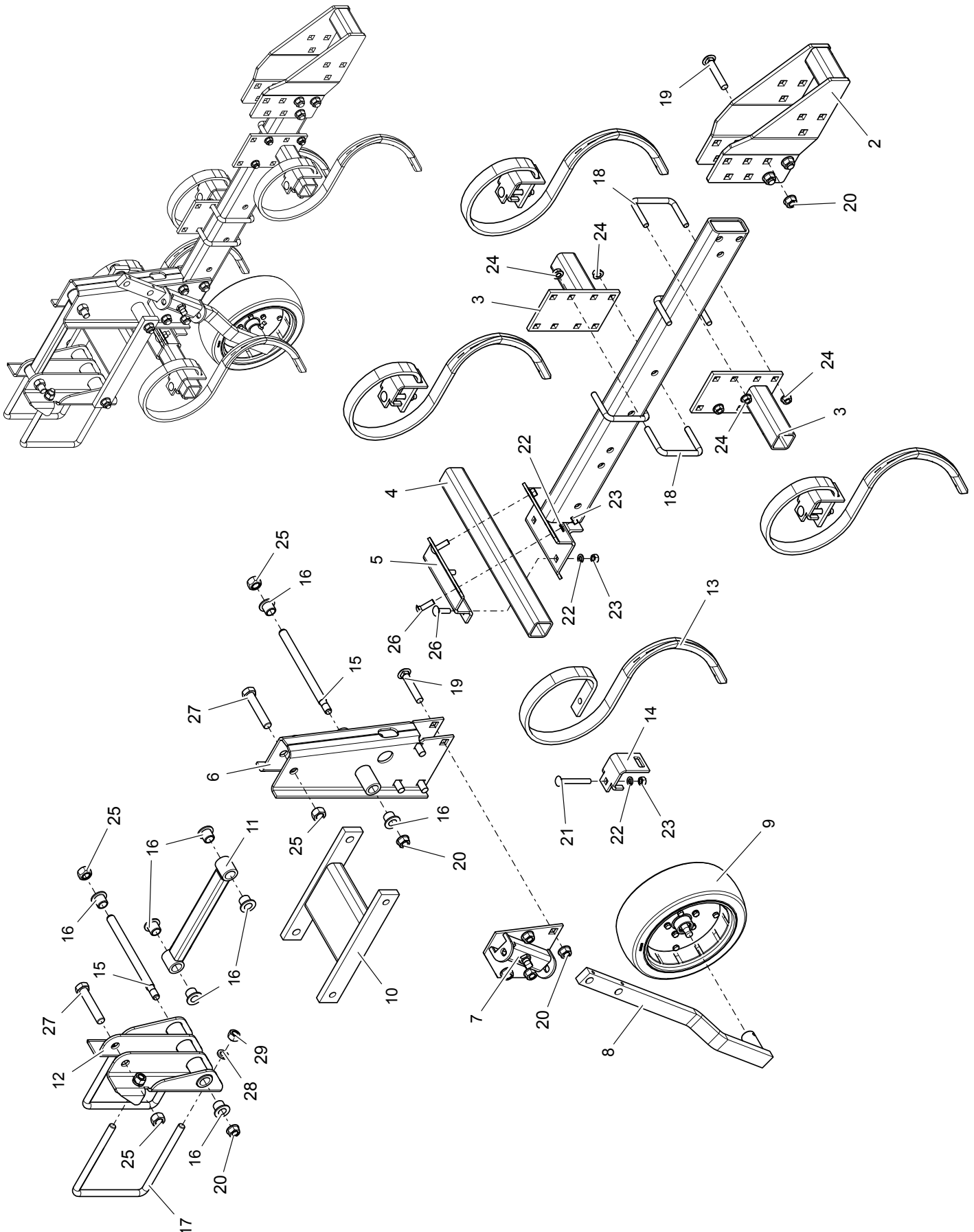
HARROW COMPONENTS



HARROW COMPONENTS

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	205-2-0014	HARROW FRAME (60" ROWS)	1
	210-2-5036	HARROW FRAME (80" ROWS)	
2	205-2-0018	T-BAR (60" ROWS)	1
	200-2-2270	T-BAR (80" ROWS)	
3	210-3-0442	PULL BRACKET	2
4	200-2-2264	PULL BRACKET PIN	2
5	205-2-0031	REAR PULL CHAIN	2
6	210-3-0499	FRONT PULL CHAIN	2
7	200-3-1023	LARGE CLAMP	1
8	200-3-1024	BOLTING STRAP	1
9	905-10106	HARROW TINE	20, 30
10	905-10102	HARROW POINT	20, 30
11	900-01905	PLOW BOLT, M8 x 1-1/4	20, 30
12	900-11235	WASHER, M8	20, 30
13	900-06541	NUT, M8 x 1-1/4	20, 30
14	205-3-0110	HARROW TINE CLAMP	20, 30
15	900-01113	BOLT, 3/8 NC x 1-1/2	20, 30
16	900-11011	LOCK WASHER, 3/8	20, 30
17	900-06005	NUT, 3/8 NC	20, 30
18	210-3-0327	CLEVIS	4
19	900-01177	BOLT, 7/16 NC x 1-3/4	4
20	900-06502	TOP LOCK NUT, 7/16 NC	4
21	900-01291	BOLT, 9/16 NC x 2-1/2	2
22	900-06506	TOP LOCK NUT, 9/16 NC	2
23	900-01441	BOLT, 3/4 NC x 9-1/2	2
24	900-11017	LOCK WASHER, 3/4	2
25	900-06015	NUT, 3/4 NC	2
26	900-16095	SET SCREW, 5/8 NC x 2	2
27	900-16063	SET SCREW, 1/2 NC x 1-1/4	2
28	900-06280	JAM NUT, 5/8 NC	2
29	900-06013	NUT, 5/8 NC	2
30	900-06276	JAM NUT, 1/2 NC	4
-	200-2-0586	CAST CLAMP ASSY - INCLUDES : CLAMP, BOLTING STRAP, HARDWARE	-
-	905-10100	HARROW TINE ASSY - INCLUDES : HARROW TINE, HARROW POINT, HARDWARE	-

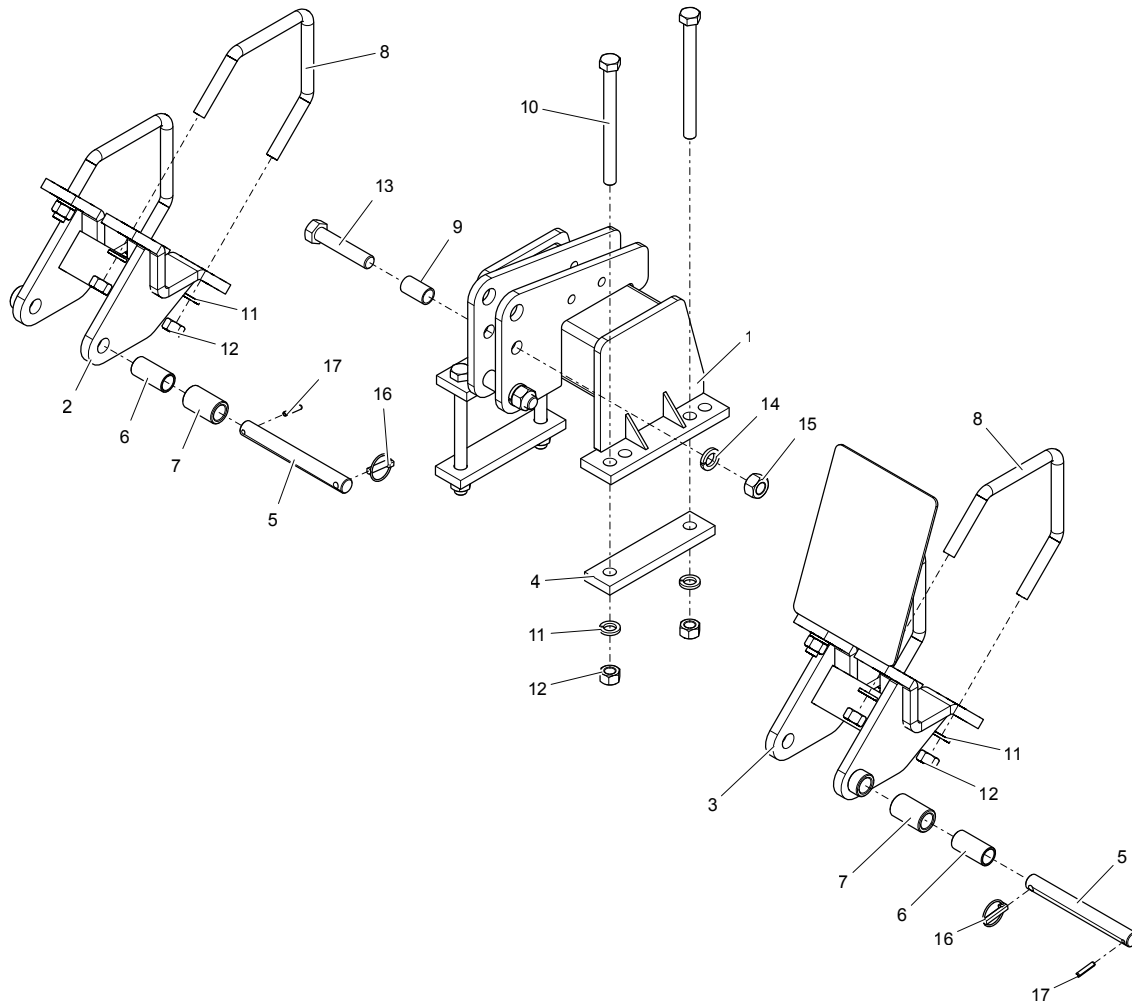
GANG COMPONENTS



GANG COMPONENTS

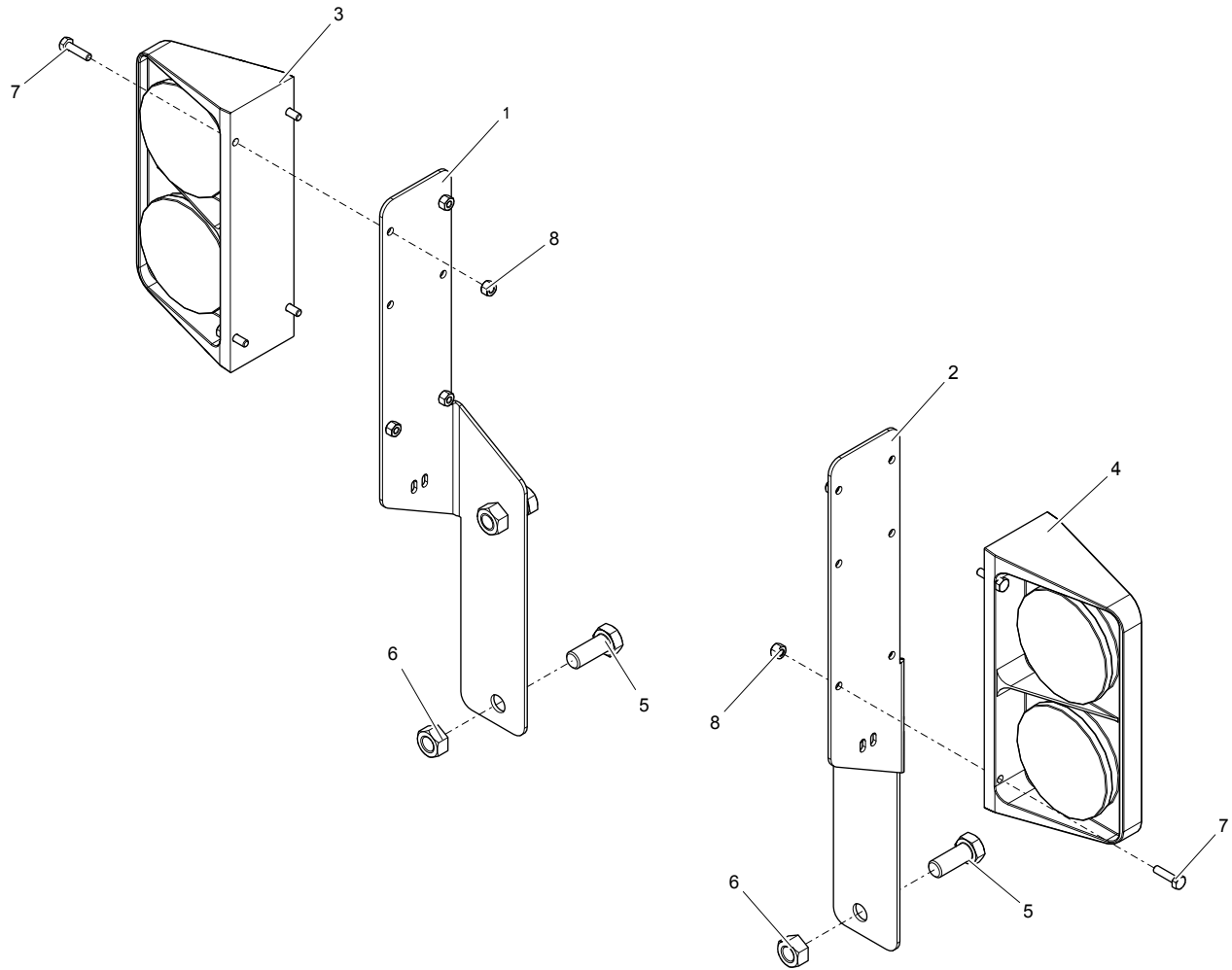
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	200-2-0575	ADJUSTABLE TREE	1
2	200-2-0668	ADJUSTABLE REAR TINE	1
3	200-2-0574	ATTACHMENT TUBE	2
4	200-3-0993	CROSS TUBE	1
5	200-3-0994	TUBE CLAMP	1
6	200-2-1707	REAR UPRIGHT	1
7	200-2-1864	GUAGE ARM POCKET	1
8	200-2-1672	GUAGE ARM	1
9	200-2-0475	GUAGE WHEEL	1
10	200-2-1412	H-TYPE PARALLEL LINKAGE	1
11	200-2-1744	PARALLEL TUBE	1
12	200-2-1318	TUBE MOUNT	1
13	200-3-1755	SPRING TINE	4
14	200-3-1833	TINE CLAMP	4
15	200-3-2631	PARALLEL LINK PIN	2
16	200-3-0877	LINKAGE BUSHING	8
17	200-3-0344	U-BOLT, 5/8NC x 7 x 8.5	2
18	200-3-1445	U-BOLT, 1/2NC x 4 x 3	4
19	900-01792	CARRIAGE BOLT, 5/8NC x 3-1/2	7
20	900-06145	SPIRALOCK NUT, 5/8NC	10
21	900-01734	CARRIAGE BOLT, 7/16NC x 3-1/2	4
22	900-11012	LOCK WASHER, 7/16	8
23	900-06007	NUT, 7/16NC	8
24	900-06143	SPIRALOCK NUT, 1/2NC	8
25	900-06510	TOP LOCK NUT, 3/4NC	4
26	900-01726	CARRIAGE BOLT, 7/16NC x 1-1/2	4
27	900-01419	BOLT, 3/4NC x 4	2
28	900-11015	LOCK WASHER, 5/8	4
29	900-06013	NUT, 5/8NC	4
-	200-2-2352	GANG ASSY (RH)	-
-	200-2-2353	GANG ASSY (CENTER)	-
-	200-2-2354	GANG ASSY (LH)	-

D-TYPE HITCH COMPONENTS



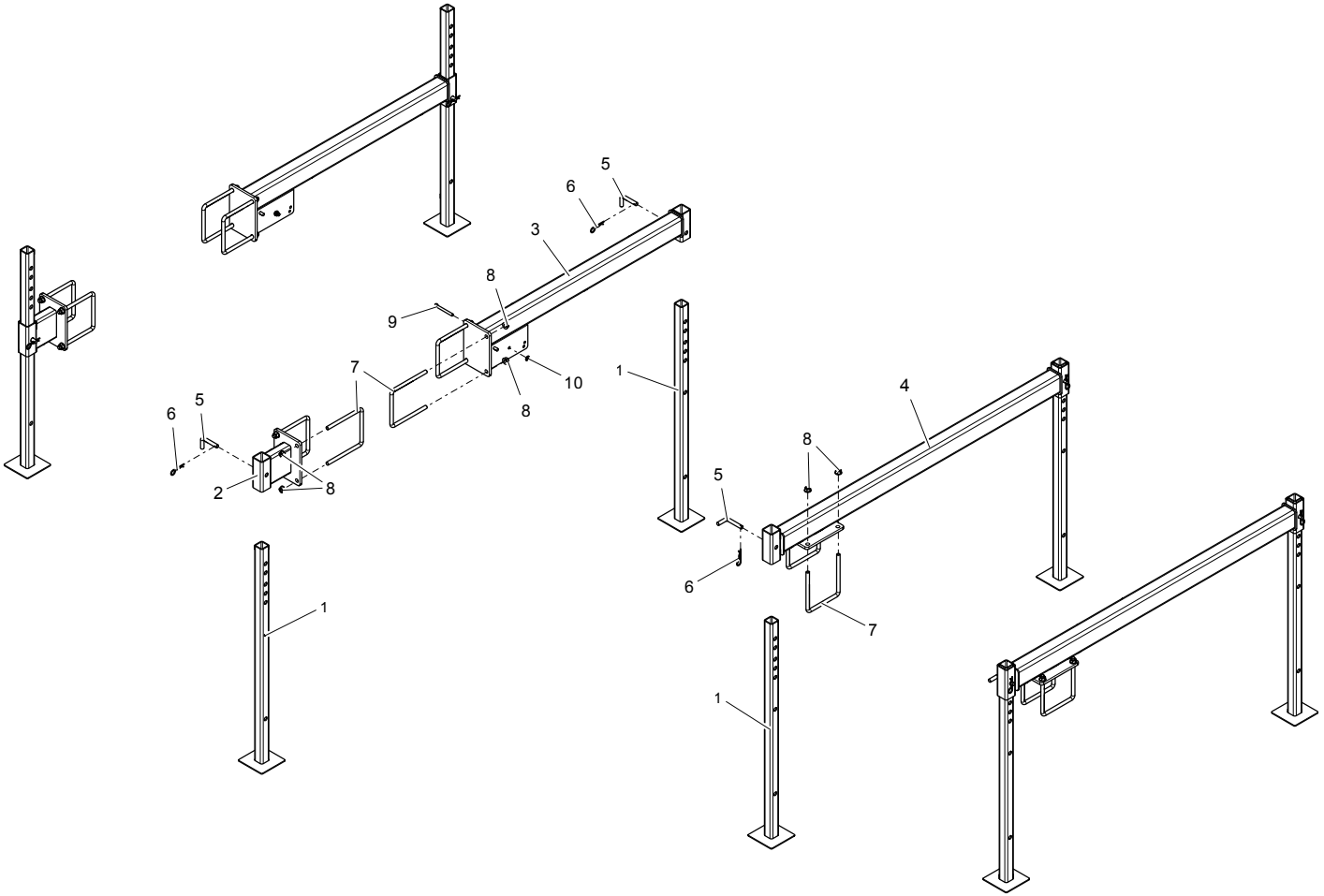
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	200-2-0670	UPPER MAST	1
2	200-2-0554	LOWER 3-POINT (RH)	1
3	200-2-2088	LOWER 3-POINT (LH)	1
4	200-3-0970	BOLTING STRAP	2
5	200-3-0962	3-POINT PIN	2
6	200-3-0961	SPACER, 1-7/16"	2
7	200-3-0959	SPACER, 1-3/4"	2
8	200-3-1443	A-BOLT, 7/8 NC x 7 x 7	4
9	200-3-0151	MAST SPACER	2
10	900-03039	BOLT, 7/8 NC x 10	4
11	900-11019	LOCK WASHER, 7/8	12
12	900-06017	NUT, 7/8 NC	12
13	900-01531	BOLT, 1 NC x 5	2
14	900-11021	LOCK WASHER, 1	2
15	900-06019	NUT, 1 NC	2
16	900-25012	KLIK PIN, 7/16 x 1-3/4"	2
17	900-29204	ROLL PIN, 5/16 x 1-5/8"	2
-	200-1-2858	D-TYPE 3-POINT HITCH, COMPLETE KIT	

LIGHT KIT COMPONENTS



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	200-3-3869	MOUNTING BRACKET (RH)	1
2	200-3-3870	MOUNTING BRACKET (LH)	1
3	904-01150	DUAL LAMP (RH)	1
4	904-01149	DUAL LAMP (LH)	1
5	900-01341	BOLT, 5/8 NC x 1-1/2	4
6	900-06508	TOP LOCK NUT, 5/8 NC	4
7	900-01009	BOLT, 1/4 NC x 1	8
8	900-06496	TOP LOCK NUT, 1/4 NC	8
9	200-3-4239	WIRE HARNESS <i>(NOT SHOWN)</i>	1
10	200-3-4242	PLUG ADAPTER <i>(NOT SHOWN)</i>	1
-	200-1-3707	LIGHT KIT	-

PARKING STAND COMPONENTS



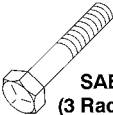
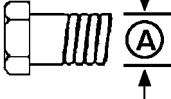
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	200-2-1885	PARKING STAND LEG	2, 4
2	200-2-1886	FRONT PARKING STAND MOUNT	2
3	200-2-2028	REAR PARKING STAND MOUNT	2
4	200-2-2386	PARKING STAND MOUNT (SINGLE TOOLBAR)	2
	200-2-2387	PARKING STAND MOUNT (DOUBLE TOOLBAR)	
5	505-3-0279	PARKING STAND PIN	2, 4
6	900-25005	HAIRPIN COTTER PIN, 5/32	2, 4
7	200-3-0344	U-BOLT, 5/8 NC x 7 x 8-1/2	4
8	900-06145	SPIRALOCK NUT, 5/8 NC	8
9	900-01195	BOLT, 7/16 NC x 4	2
10	900-06141	SPIRALOCK NUT, 7/16 NC	2
-	200-1-3597	FRONT PARKING STAND, COMPLETE KIT (PAIR)	-
-	200-1-3732	REAR PARKING STAND, COMPLETE KIT (PAIR)	-
-	200-1-3828	SINGLE TOOLBAR PARKING STAND, COMPLETE KIT (PAIR)	-
-	200-1-3829	DOUBLE TOOLBAR PARKING STAND, COMPLETE KIT (PAIR)	-

BOLT TORQUE CHART

SAE Series Torque Chart

Always tighten hardware to these values unless a different torque value or tightening procedure is listed for a specific application. Fasteners must always be replaced with the same grade as specified in the manual parts list.

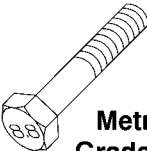
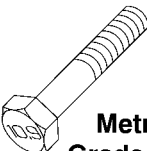
Make sure fastener threads are clean and you properly start thread engagement.

SAE Bolt Head Identification		 SAE Grade 2 (No Dashes)		 SAE Grade 5 (3 Radial Dashes)		 SAE Grade 8 (6 Radial Dashes)	
Ⓐ Diameter (Inches)	Wrench Size	MARKING ON HEAD					
		SAE 2		SAE 5		SAE 8	
		ft./lb.	(Nm)	ft./lb.	(Nm)	ft./lb.	(Nm)
1/4"	7/16'	6	(8)	10	(13)	14	(18)
5/16'	1/2"	12	(17)	19	(26)	27	(37)
3/8"	9/16"	23	(31)	35	(47)	49	(67)
7/16"	5/8"	36	(48)	55	(75)	78	(106)
1/2"	3/4"	55	(75)	85	(115)	120	(163)
9/16"	13/16"	78	(106)	121	(164)	171	(232)
5/8"	15/16"	110	(149)	170	(230)	240	(325)
3/4"	1-1/8"	192	(261)	297	(403)	420	(569)
7/8"	1-5/16"	306	(416)	474	(642)	669	(907)
1"	1-1/2"	350	(475)	680	(925)	1020	(1383)
1-1/8"	1-11/16"	450	(610)	885	(1200)	Bolt Diameter 	
1-1/4"	1-7/8"	600	(815)	1255	(1700)		
1-3/8"	2-1/16"	675	(915)	1620	(2200)		
1-1/2"	2-1/4'	920	(1250)	2200	(2900)		

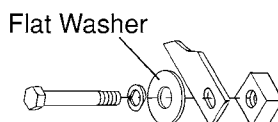
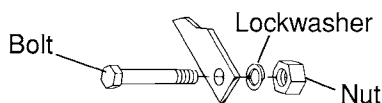
Metric Series Torque Chart

Use only metric tools on metric hardware. Always tighten hardware to these values unless a different torque value or tightening procedure is listed for a specific application. Fasteners must always be replaced with the same grade.

Make sure fastener threads are clean and you properly start thread engagement.

Ⓐ Diameter & Thread Pitch (Millimeters)	Wrench Size	COARSE THREAD				FINE THREAD				Ⓐ Diameter & Thread Pitch (Millimeters)	Metric Bolt Head Identification
		MARKING ON HEAD				MARKING ON HEAD					
		Metric 8.8		Metric 10.9		Metric 8.8		Metric 10.9			
		Nm	ft./lb.	Nm	ft./lb.	Nm	ft./lb.	Nm	ft./lb.		
6x1.0	10 mm	8	6	11	8	8	6	11	8	6x1.0	 Metric Grade 8.8
8x1.25	13 mm	20	15	27	20	21	16	29	22	8x1.0	
10x1.5	16 mm	39	29	54	40	41	30	57	42	10x1.25	
12x1.75	18 mm	68	50	94	70	75	55	103	76	12x1.25	
14x2.0	21 mm	109	80	151	111	118	87	163	120	14x1.5	
16x2.0	24 mm	169	125	234	173	181	133	250	184	16x1.5	 Metric Grade 10.9
18x2.5	27 mm	234	172	323	239	263	194	363	268	18x1.5	
20 x 2.5	30 mm	330	244	457	337	367	270	507	374	20x1.5	
22 x 2.5	34 mm	451	332	623	460	495	365	684	505	22 x 1.5	
24 x 3.0	36 mm	571	421	790	583	623	459	861	635	24 x 2.0	
30 x 3.0	46 mm	1175	867	1626	1199	1258	928	1740	1283	30 x 2.0	

Typical Washer Installations



8/9/00

ABBREVIATIONS

AG	Agriculture	NC	National Course
ASAE	American Society of Agricultural Engineers	NF.....	National Fine
ATF.....	Automatic Transmission Fluid	NPSM.....	National Pipe Straight Mechanical
BSPP.....	British Standard Pipe Parallel	NPT	National Pipe Tapered
BSPTM.....	British Standard Pipe Tapered Male	NPT SWF.....	National Pipe Tapered Swivel Female
CV	Constant Velocity	Nm.....	Newton Meter
CCW	Counter-Clockwise	OSHA...Occupational Safety and Health Administration	
CW	Clockwise	P	Pitch
DIA.....	Diameter	PBY	Power Beyond
EP.....	Extreme Pressure	psi.....	Pounds per Square Inch
F	Female	PTO	Power Take Off
FB.....	Female O-Ring Boss	QD	Quick Disconnect
FJ	Female Boss	RH	Right Hand
FJX.....	Female Swivel JIC	ROPS.....	Roll Over Protection Structure
FP	Female Pipe	RPM	Revolutions Per Minute
ft./lb.....	Foot Pound	RT.....	Right
GA	Gauge	SAE	Society of Automotive Engineers
GR (5, etc.)	Grade (5, etc.)	SMV	Slow Moving Vehicle
HHCS.....	Hex Head Cap Screw	UNC	Unified Coarse
HT.....	Heat Treated	UNF	Unified Fine
in.....	Inch	UNS.....	Unified Special
JIC	Joint Industry Council 37° Flare	ZP.....	Zinc Plate
kg.....	Kilogram		
km/h	Kilometers Per Hour		
lb.....	Pound		
LH.....	Left Hand		
LT.....	Left		
in.....	Inches		
m	Meter		
mm	Millimeter		
M	Male		
MB.....	Male O-Ring Boss		
MJ.....	Male JIC		
MJX.....	Male Swivel JIC		
MP	Male Pipe		
MPa.....	Mega Pascal		
MPH	Miles Per Hour		
N.....	Newton		

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WARRANTY

Please Enter Information Below and Save For Future Reference.

Date Purchased: _____ From (Dealer): _____

Model Number: _____ Serial Number: _____

ALLOWAY STANDARD, d/b/a ALLOWAY, warrants this product to be free from defect in material and workmanship for TWELVE (12) MONTHS COMMENCING ON THE DATE OF DELIVERY OF THE PRODUCT TO THE ORIGINAL PURCHASER.

Under no circumstances will this Warranty apply in the event that the product, in the good faith opinion of ALLOWAY, has been subjected to improper operation, improper maintenance, misuse, or an accident. This Warranty does not apply in the event that the product has been materially modified or repaired by someone other than ALLOWAY, a ALLOWAY authorized dealer or distributor, and/or a ALLOWAY authorized service center; This Warranty does not cover normal wear or tear, or normal maintenance items. This Warranty also does not cover repairs made with parts other than those obtainable through ALLOWAY.

This Warranty is extended solely to the original purchaser of the product. Should the original purchaser sell or otherwise transfer this product to a third party, this Warranty does not transfer to the third party purchaser in any way. There are no third party beneficiaries of this Warranty.

ALLOWAY makes no warranty, express or implied, with respect to tires or other parts or accessories not manufactured by ALLOWAY. Their respective manufacturers, if any, provide warranties for these items, separately. ALLOWAY'S obligation under this Warranty is limited to, at ALLOWAYS' option, the repair or replacement, free of charge, of the product if ALLOWAY, in its sole discretion, deems it to be defective or in noncompliance with this Warranty. The product must be returned to ALLOWAY with proof of purchase within thirty (30) days after such defect or noncompliance is discovered or should have been discovered, routed through the dealer and distributor from whom the purchase was made, transportation charges prepaid. ALLOWAY shall complete such repair or replacement within a reasonable time after ALLOWAY receives the product. THERE ARE NO OTHER REMEDIES UNDER THIS WARRANTY. THE REMEDY OF REPAIR OR REPLACEMENT IS THE SOLE AND EXCLUSIVE REMEDY UNDER THIS WARRANTY.

THERE ARE NO WARRANTIES, WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE OF THIS WARRANTY. ALLOWAY MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, AND ALLOWAY SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY AND/OR ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

ALLOWAY shall not be liable for any incidental or consequential losses, damages or expenses, arising directly or indirectly from the product, whether such claim is based upon breach of contract, breach of warranty, negligence, strict liability in tort or any other legal theory. Without limiting the generality of the foregoing. Alloway specifically disclaims any damages relating to (i) lost profits, business, revenues or goodwill; (ii) loss of crops; (iii) loss because of delay in harvesting; (iv) any expense or loss Incurred for labor, supplies, substitute machinery or rental; or (v) any other type of damage to property or economic loss.

This Warranty is subject to any existing conditions of supply, which may directly affect ALLOWAYS' ability to obtain materials or manufacture replacement parts.

No agent, representative, dealer, distributor, serviceperson, salesperson, or employee of any company; including without limitation, ALLOWAY, its authorized dealers, distributors, and service centers, is authorized to alter, modify, or enlarge this Warranty.

This Warranty is effective only if the warranty registration card is returned within ten (10) days.

Answers to any questions regarding warranty service and locations may be obtained by contacting:

Alloway
4230 14th Ave.NW
Fargo, North Dakota 58102
701-356-4983



WARRANTY

ALLOWAY STANDARD, d/b/a ALLOWAY, warrants this product to be free from defect in material and workmanship for a period of One (1) year, ninety (90) days for Service Parts, from the date of delivery of the product to the original purchaser.

Under no circumstances will this Warranty apply in the event that the product, in the good faith opinion of ALLOWAY, has been subjected to improper operation, improper maintenance, misuse, or an accident. This Warranty does not cover normal wear or tear, or normal maintenance items.

This Warranty is extended solely to the original purchaser of the product. Should the original purchaser sell or otherwise transfer this product to a third party, this Warranty does not transfer to the third party purchaser in any way. There are no third party beneficiaries of this Warranty.

ALLOWAY'S obligation under this Warranty is limited to, at ALLOWAY'S option, the repair or replacement, free of charge, of the product. If ALLOWAY, in its sole discretion, deems it, to be defective or in noncompliance with this Warranty. The product must be returned to ALLOWAY with proof of purchase within thirty (30) days after such defect or noncompliance is discovered or should have been discovered, routed through the dealer and distributor from whom the purchase was made, transportation charges prepaid. ALLOWAY shall complete such repair or replacement within a reasonable time after ALLOWAY receives the product. THERE ARE NO OTHER REMEDIES UNDER THIS WARRANTY. THE REMEDY OF REPAIR OR REPLACEMENT IS THE SOLE AND EXCLUSIVE REMEDY UNDER THIS WARRANTY.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE OF THIS WARRANTY. ALLOWAY MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, AND ALLOWAY SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY AND/OR ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

ALLOWAY shall not be liable for any incidental or consequential losses, damages or expenses, arising directly or indirectly from the product, whether such claim is based upon breach of contract, breach, of warranty, negligence, strict liability in tort or any other legal theory. Without limiting the generality of the foregoing, Alloway specifically disclaims any damages relating to (i) lost profits, business, revenues or goodwill; (ii) loss of crops; (iii) loss because of delay in harvesting; (iv) any expense or loss incurred for labor, supplies, substitute machinery or rental; or (v) any other type of damage to property or economic loss.

This Warranty is subject to any existing conditions of supply, which may directly affect ALLOWAYS' ability to obtain materials or manufacture replacement parts.

No agent, representative, dealer, distributor, service person, salesperson, or employee of any company, including without limitation, ALLOWAY, Its authorized dealers, distributors, and service centers, IS authorized to alter, modify, or enlarge this Warranty.

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Alloway
4230 14th Ave.NW
Fargo, North Dakota 58102
701-356-4983



PART NUMBER
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ALLOWAY 

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4230 14th Avenue NW
Fargo, North Dakota 58102

Local/Intl: 1-701-356-4983
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