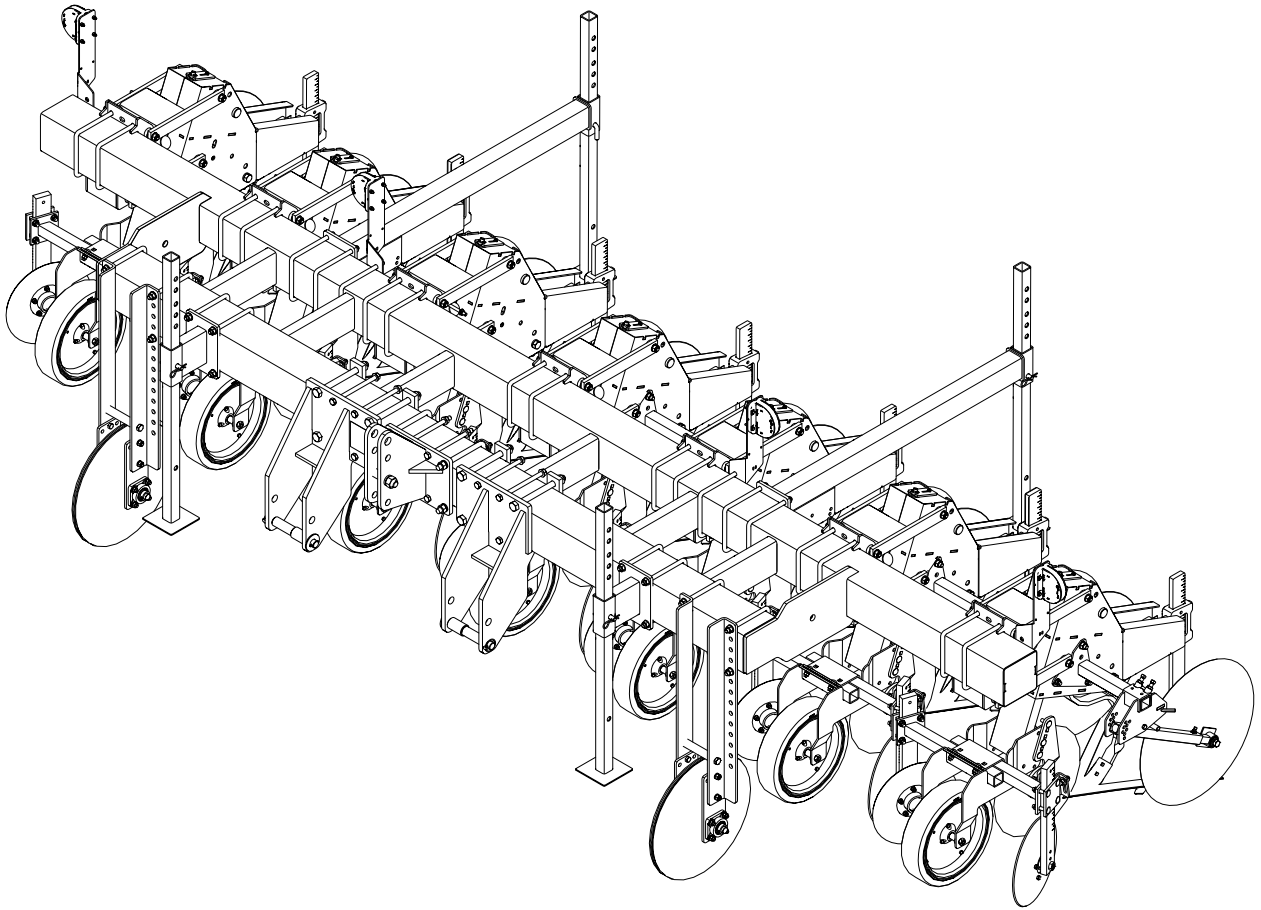


ROW CROP CULTIVATOR 2026



3130 **ALLOWAY**

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 row crop cultivator. 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.

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.

SPECIFICATIONS

RIGID TOOLBARS	PART #	WEIGHT	WIDTH	TRANSPORT WIDTH	Pg. #'s
ASSY, TOOLBAR 152" RIGID 6R22	200-2-2060	564.99 lbs	152.00"	152.00"	40-41
ASSY, TOOLBAR 152" RIGID STANDOFF 6R22	200-2-2760	955.69 lbs	152.15"	152.15"	40-41
ASSY, TOOLBAR 200" RIGID 6R30/8R22	200-2-2061	652.90 lbs	200.00"	200.00"	40-41
ASSY, TOOLBAR 200" RIGID STANDOFF 6R30/8R22	200-2-2761	1043.61 lbs	200.15"	200.15"	40-41
ASSY, TOOLBAR 252" RIGID 6R40/8R30	200-2-2062	749.45 lbs	252.00"	252.00"	40-41
ASSY, TOOLBAR 252" RIGID STANDOFF 6R40/8R30	200-2-2762	1140.18 lbs	252.00"	252.00"	40-41
ASSY, TOOLBAR 288" RIGID 12R22	200-2-2063	818.60 lbs	288.15"	288.15"	40-41
ASSY, TOOLBAR 288" RIGID STANDOFF 12R22	200-2-2763	1209.29 lbs	288.00"	288.00"	40-41
ASSY, TOOLBAR 300" RIGID 12R24	200-2-2064	840.96 lbs	300.00"	300.00"	40-41
ASSY, TOOLBAR 300" RIGID STANDOFF 12R24	200-2-2764	1231.67 lbs	300.00"	300.00"	40-41
ASSY, TOOLBAR 328" RIGID 8R36/8R40	200-2-2065	893.17 lbs	328.00"	328.00"	40-41
ASSY, TOOLBAR 328" RIGID REINFORCED 8R36/8R40	200-2-2086	1398.84 lbs	328.00"	328.00"	40-41
ASSY, TOOLBAR 328" RIGID STANDOFF 8R36/8R40	200-2-2765	1283.88 lbs	328.00"	328.00"	40-41
ASSY, TOOLBAR 328" RIGID REINFORCED STANDOFF 8R36/8R40	200-2-2766	1820.02 lbs	328.00"	328.00"	40-41
ASSY, TOOLBAR 372" RIGID REINFORCED 12R30	200-2-1748	1480.91 lbs	372.00"	372.00"	40-41
ASSY, TOOLBAR 372" RIGID REINFORCED STANDOFF 12R30	200-2-2767	1902.07 lbs	372.00"	372.00"	40-41

Folding Toolbars	Part No.	Weight	Center Length	Wing Length	Transp. Width	Pg. #'s
ASSY, TOOLBAR 263" FOLDING 6R40	800-0-0023	1404.37 lbs	136.0"	63.5"	149.37"	42-43
ASSY, TOOLBAR 269" FOLDING 8R30	800-0-0022	1415.51 lbs	142.0"	63.5"	155.37"	42-43
ASSY, TOOLBAR 281" FOLDING 8R30/12R22	800-0-0371	1439.86 lbs	154.0"	63.5"	167.37"	42-43
ASSY, TOOLBAR 281" FOLDING STANDOFF 8R30/12R22	800-0-0669	1828.52 lbs	154.0"	63.5"	167.37"	42-43
ASSY, TOOLBAR 308" FOLDING 10R30	800-0-0374	1487.86 lbs	158.0"	75.0"	171.37"	42-43
ASSY, TOOLBAR 308" FOLDING STANDOFF 10R30	800-0-0671	1878.56 lbs	158.0"	75.0"	171.37"	42-43
ASSY, TOOLBAR 316" FOLDING 12R24	800-0-0372	1504.07 lbs	168.0"	74.0"	181.37"	42-43
ASSY, TOOLBAR 316" FOLDING STANDOFF 12R22	800-0-0670	1855.73 lbs	168.0"	74.0"	181.37"	42-43
ASSY, TOOLBAR 328" FOLDING 8R36/8R40	800-0-0362	1525.05 lbs	184.0"	72.0"	197.37"	42-43
ASSY, TOOLBAR 328" FOLDING REINFORCED 8R36/8R40	800-0-0363	2126.96 lbs	184.0"	72.0"	196.75"	44-45
ASSY, TOOLBAR 328" FOLDING STANDOFF 8R36/8R40	800-0-0668	1915.70 lbs	184.0"	72.0"	197.37"	42-43
ASSY, TOOLBAR 366" FOLDING 16R22	800-0-7125	1595.55 lbs	198.0"	84.0"	211.37"	42-43
ASSY, TOOLBAR 366" FOLDING STANDOFF 16R22	800-0-0674	1986.25 lbs	198.0"	84.0"	211.37"	42-43
ASSY, TOOLBAR 382" FOLDING REINFORCED 16R22	800-0-0664	2261.23 lbs	198.0"	92.0"	210.75"	44-45
ASSY, TOOLBAR 390" FOLDING 12R30	800-0-0301	1640.11 lbs	206.0"	92.0"	219.37"	42-43
ASSY, TOOLBAR 390" FOLDING REINFORCED 12R30/12R32	800-0-0352	2286.97 lbs	206.0"	92.0"	219.37"	44-45
ASSY, TOOLBAR 390" FOLDING STANDOFF 12R30/12R32	800-0-0672	2030.82 lbs	206.0"	92.0"	219.37"	42-43
ASSY, TOOLBAR 426" FOLDING 18R22	800-0-0367	1706.95 lbs	242.0"	92.0"	255.37"	42-43
ASSY, TOOLBAR 426" FOLDING REINFORCED 18R22	800-0-0364	2424.63 lbs	242.0"	92.0"	254.75"	44-45
ASSY, TOOLBAR 426" FOLDING STANDOFF 18R22	800-0-0675	2097.66 lbs	242.0"	92.0"	255.37"	42-43
ASSY, TOOLBAR 462" FOLDING REINFORCED 15R30	800-0-0397	2602.97 lbs	242.0"	110.0"	254.75"	44-45
ASSY, TOOLBAR 508" FOLDING REINFORCED 12R36/12R40/16R30	800-0-0353	2737.79 lbs	264.0"	122.0"	276.75"	44-45
ASSY, TOOLBAR 554" FOLDING REINFORCED 24R22	800-0-0663	3083.63 lbs	286.0"	134.0"	293.08"	44-45
ASSY, TOOLBAR 815" REAR FOLDING REINFORCED 36R22	200-1-3845	9814.25 lbs	238.0"	285.0"	238.50"	48-57

OPTIONAL EQUIPMENT

The Alloway Row Crop Cultivator has several toolbar types and a variety of optional equipment for row crop applications.

Optional equipment may change these specifications.

Cultivator weights do not include optional equipment.

STRUTS	PART #	WEIGHT
KIT, PNEUMATIC GUIDE WHEELS PAIR	200-1-3699	184.37 lbs/pair
KIT, STEEL GUIDE WHEELS PAIR	200-1-3668	253.09 lbs/pair
KIT, ADJ. GUIDE WHEEL HC TRI RIB PAIR	200-1-3666	311.09 lbs/pair
KIT, ADJ. GUIDE WHEEL, WITH RIM PAIR	200-1-3667	160.61 lbs/pair
KIT, ADJ. GUIDE WHEEL TRI RIB PAIR	200-0-0768	395.14 lbs/pair
KIT, RIGID CENTER STRUT	200-1-3891	1037.45 lbs/pair
KIT, STEERABLE CENTER STRUT	200-1-3872	2035.92 lbs/pair
ASSY, STEERABLE WING STRUT LH	200-2-2811	523.99 lbs
ASSY, STEERABLE WING STRUT RH	200-2-2812	523.99 lbs

HITCHES	PART #	WEIGHT
KIT, SHORT KNIVES W/HARDWARE	200-1-2858	216.02 lbs
KIT, LONG KNIVES W/HARDWARE	200-1-3529	160.19 lbs
KIT, HITCH 3-POINT HC 3130/2065HC	200-1-3640	390.71 lbs

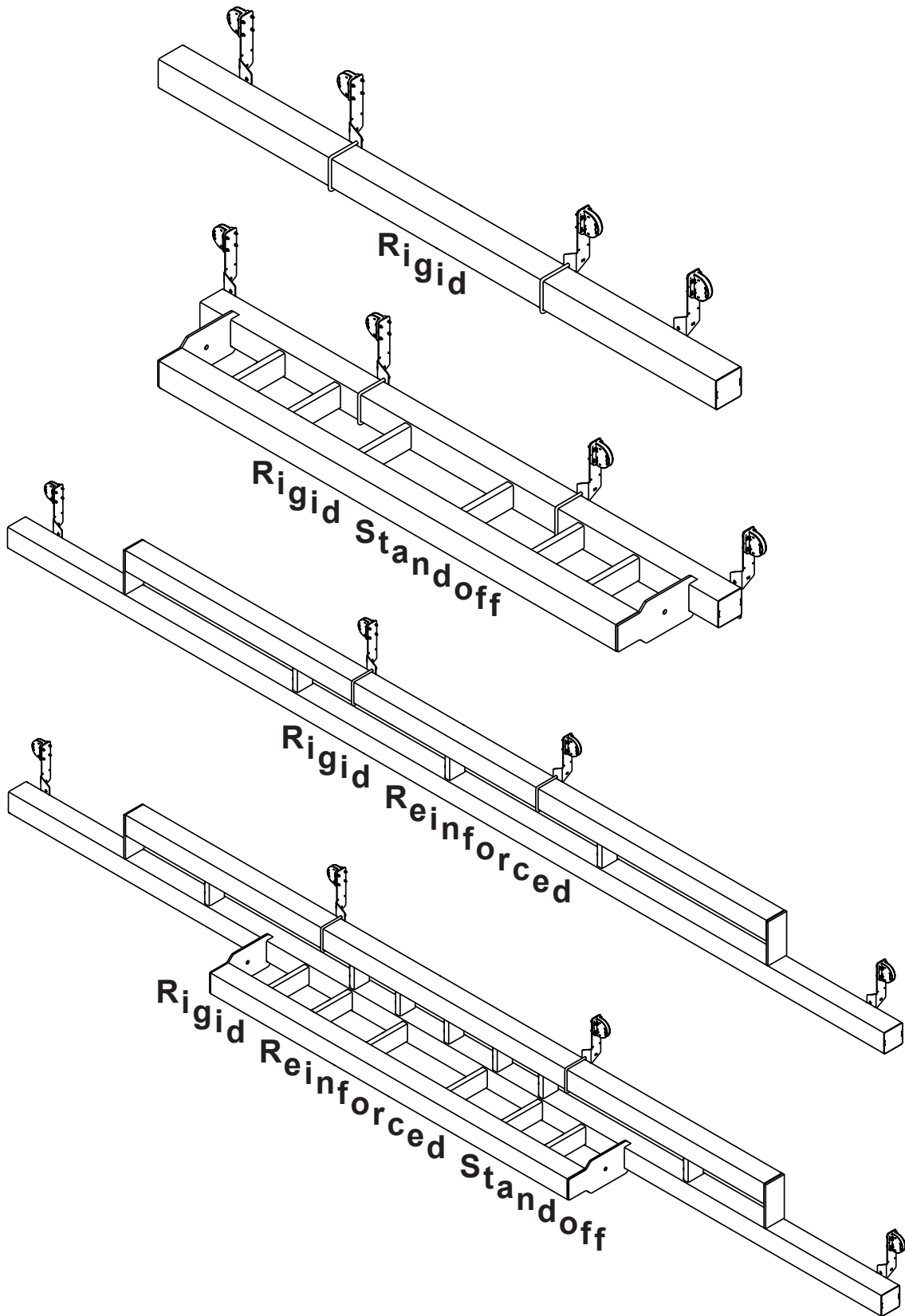
SHOVELS	PART #	WEIGHT
KIT, REVERSIBLE POINT SHOVEL 1-1/2"	200-1-3417	1 lbs
KIT, SWEEP SHOVEL 2-3/4" X 1/4"	200-1-3418	1 lbs
KIT, SWEEP SHOVEL 4" X 1/4"	200-1-3419	1 lbs
KIT, SWEEP SHOVEL 7" X 1/4"	200-1-3420	2 lbs
KIT, PEN SHOVEL 1-3/4" X 1/4"	200-1-3421	1.5 lbs
KIT, PEN SWEEP SHOVEL 4" X 1/4"	200-1-3422	2 lbs
KIT, PEN SWEEP SHOVEL 6" X 1/4"	200-1-3423	2.5 lbs
KIT, PEN SWEEP SHOVEL 7" X 1/4"	200-1-3424	3 lbs
KIT, EDGE SWEEP SHOVEL 7" X 1/4"	200-1-3552	5 lbs
KIT, EDGE SWEEP SHOVEL 8" X 1/4"	200-1-3433	5 lbs
KIT, EDGE SWEEP SHOVEL 12" X 1/4"	200-1-3434	6 lbs
KIT, EDGE SWEEP SHOVEL 16" X 1/4"	200-1-3435	6.5 lbs
KIT, EDGE BEET SWEEP SHOVEL 14"	200-1-0854	4 lbs
KIT, EDGE BEET SWEEP SHOVEL 20"	200-1-0855	5 lbs
KIT, EDGE BEET SWEEP SHOVEL 24"	200-1-3653	6 lbs
KIT, EDGE HD BEET SWEEP SHOVEL 14"	200-1-3563	5 lbs
KIT, EDGE HD BEET SWEEP SHOVEL 16"	200-1-3635	5 lbs
KIT, RIGID SHANK ADJ SWEEP SHOVEL 16" X 1/4"	200-1-3426	5 lbs
KIT, RIGID SHANK ADJ SWEEP SHOVEL 18" X 1/4"	200-1-3426	6 lbs
KIT, RIGID SHANK ADJ SWEEP SHOVEL 20" X 1/4"	200-1-3427	7 lbs
KIT, RIGID SHANK ADJ SWEEP SHOVEL 24" X 1/4"	200-1-3428	9 lbs
KIT, RIGID SHANK ADJ SWEEP SHOVEL 26" X 1/4"	200-1-3429	9 lbs
KIT, RIGID SHANK ADJ SWEEP SHOVEL 28" X 1/4"	200-1-3430	12 lbs

PARKING STANDS	PART #	WEIGHT
KIT, PARKING STAND FRONT PAIR	200-1-3597	77.79 lbs/pair
KIT, PARKING STAND REAR PAIR	200-1-3732	174.40 lbs/pair

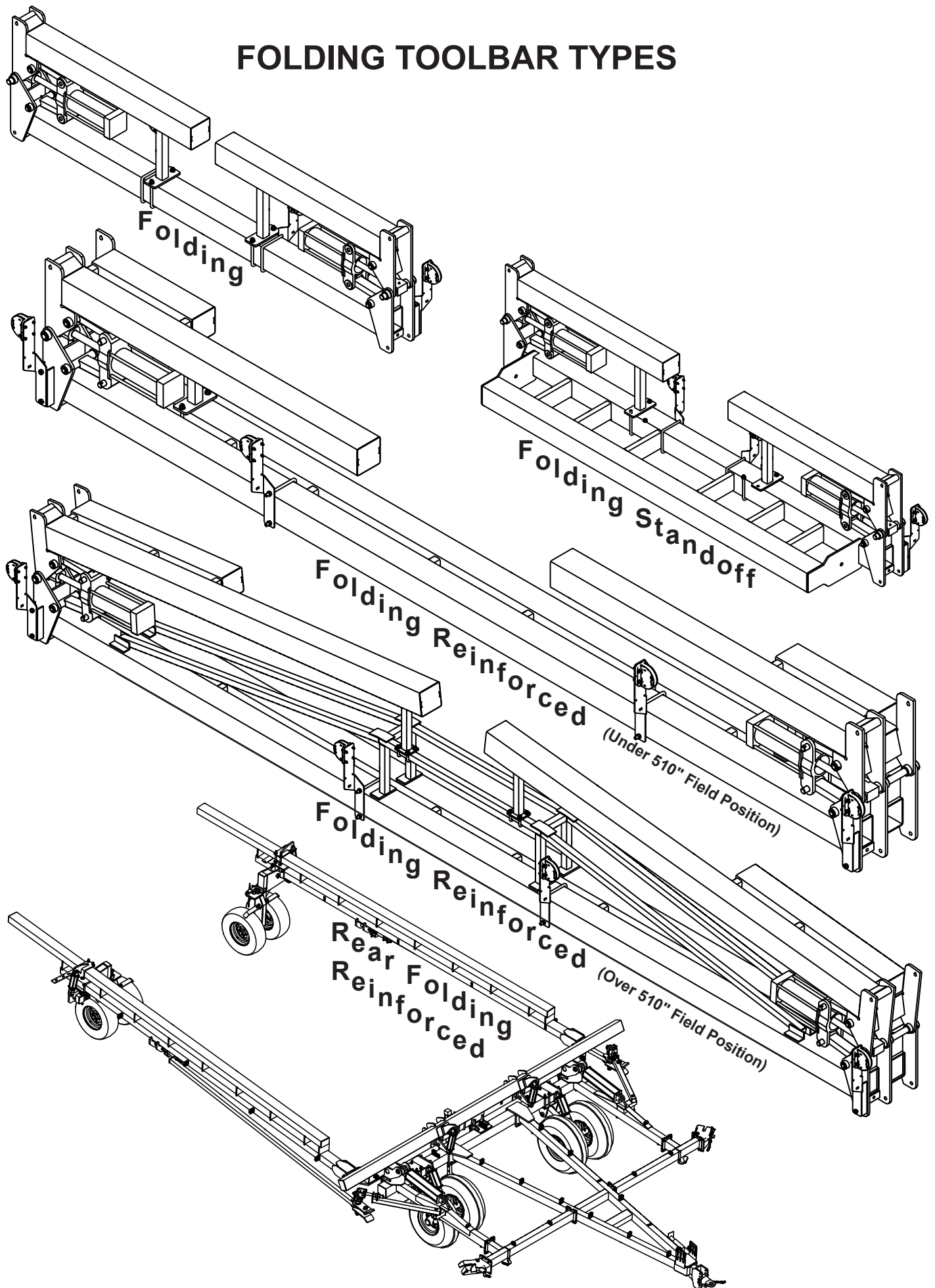
3130 GANGS	PART #	WEIGHT
KIT, GANG 3130 KICK DOWN	200-1-3798	174.44 lbs
KIT, GANG 3130 KICK FORWARD	200-1-3638	183.52 lbs
KIT, GANG 3130 KICK BACKWARD	200-1-3747	174.83 lbs

3130 ACCESSORIES	PART #	WEIGHT
KIT, RAISED BED WEEDER DISC 30"	200-1-3758	36.87 lbs
KIT, RAISED BED WEEDER DISC 40"	200-1-3759	40.47 lbs
KIT, ROW WEEDER DISCS, 30"	200-1-3123	75.34 lbs
KIT, ROW WEEDER DISCS, 36" - 40"	200-1-3124	78.14 lbs
KIT, ROW WEEDER HILLER 1ROW/30 3130	200-1-3655	80.22 lbs
KIT, ROW WEEDER HILLER 1ROW/40 3130	200-1-3661	83.04 lbs
KIT, DUAL DISC, 14" WITH SCREW	200-1-3645	51.65 lbs
KIT, KNIFE MOUNTS W/HARDWARE (P/ROW)	200-1-3323	9.81 lbs/pair
KIT, SHORT KNIVES W/HARDWARE	200-1-0669	3.56 lbs/pair
KIT, LONG KNIVES W/HARDWARE	200-1-0670	4.92 lbs/pair
KIT, KNIVES, SHORT, 3030/3130 W/HDW	200-1-3616	3.87 lbs/pair
KIT, FLIP UP DUAL DISC TUBE 20"-24"	200-1-3327	25.74 lbs
KIT, FLIP UP DUAL DISC TUBE 26"-30"	200-1-3328	29.71 lbs
KIT, ADJUSTABLE COULTER ASSY	200-1-3748	32.05 lbs
KIT, ROW GUIDE SETBACK 3130	200-1-3648	18.18 lbs
KIT, REAR SETBACK PIVOT 3130	200-1-3470	32.55 lbs
KIT, ROW GUIDE M 32" W/CLAMP	200-1-3322	32.76 lbs
KIT, ROWGUIDE CLEAN-OUTS PAIR	200-1-3437	9.25 lbs/pair
KIT, ROLLING SHIELD 24" DIA X 22" ROWS PAIR	200-1-3768	107.27 lbs/pair
KIT, ROLLING SHIELD 24" DIA X 30" ROWS PAIR	200-1-3742	110.17 lbs/pair
KIT, ROLLING SHIELD 24" DIA X 40" ROWS PAIR	200-1-3743	113.76 lbs/pair
KIT, ROLLING END SHIELD 24" DIA X 22" ROWS PAIR	200-1-3769	78.04 lbs/pair
KIT, ROLLING END SHIELD 24" DIA X 30" ROWS PAIR	200-1-3756	81.02 lbs/pair
KIT, ROLLING END SHIELD 24" DIA X 40" ROWS PAIR	200-1-3757	84.61 lbs/pair
KIT, OPEN TOP SHLDS 22" 1 GANG 3130	200-1-3691	91.49 lbs
KIT, OPEN TOP SHLDS 30" 1 GANG 3130	200-1-3642	93.79 lbs
KIT, OPEN TOP SHLDS 36"-40" 1 GANG 3130	200-1-3692	96.42 lbs
KIT, DOWN PRESSURE SPRING	200-1-3711	10.01 lbs
KIT, KING GUIDE 3130 PAIR	200-1-3639	311.94 lbs
ASSY, KING GUIDE HD 3130, 1-ROW	200-2-2694	347.03 lbs
KIT, STRAIGHT EDGE TINE	200-1-0849	19.28 lbs
KIT, STRAIGHT EDGE TINE HD	200-1-3569	20.15 lbs
ASSY, GLOBE TOWER	200-2-2818	33.26 lbs

RIGID TOOLBAR TYPES



FOLDING TOOLBAR TYPES





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.

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, 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 movable 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.**
- **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.**



SAFETY RULES

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



(Safety Rules continued from previous page)

TRANSPORTATION

- 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.

- 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 tractor front wheels when attachments are in transport position. Weight may be attained with a loader, front wheel weights, ballast in tires or front tractor weights. Weigh 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.
- 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.
- Look down and to the rear and make sure area is clear before operating in reverse.
- 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.



SAFETY RULES

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



(Safety Rules continued from previous page)

OPERATION

- Do not allow bystanders in the area when operating, attaching, removing, assembling or servicing equipment.
- Never walk, stand or position yourself or others under a raised wing or in the path of a lowering wing.
- Never go under equipment (lowered to the ground or raised) unless it is properly blocked and secured.
- Never place any part of the body under equipment or between movable 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 under equipment 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.
- Look down and to the rear and ensure 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.
- Always connect safety chain from equipment to towing vehicle when transporting.



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.
- Electrocution can occur without direct contact.
- Check clearances before raising implement.
- Do not leave operator's seat if any part of 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 under 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, 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 under equipment lowered to the ground or raised unless it is properly blocked and secured. Never place any part of the body under equipment or between movable 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 under 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

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.

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.
- Properly attach implement to tractor and make all necessary adjustments.
- Check all bolts to be sure they are tight.
- Check wheel lug nuts and adjust to 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 Defoliator 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)

- Check that all safety decals are installed and in good condition. Replace if damaged.
- 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.
- Point out all guards and shields. Explain their importance and the safety hazards that exist when not kept in place and in good condition.



SAFETY & INSTRUCTIONAL DECALS

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

Replace Immediately If Damaged!



J, K

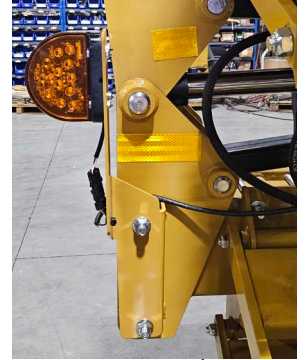
A, D, E,
G, H, O



J, K

B, C

A, D,
E, G,
H, O



I



F, I, L,
M, N



F, I, L,
M, N

CAUTION

1. Read Operator's Manual before starting.
2. Stop tractor engine, place all controls in neutral, lower machine to the ground, set park brake, remove ignition key, and wait for all moving parts to stop before servicing, adjusting, repairing, or unplugging.
3. Keep all guards and access doors closed and secured before operating.
4. Keep hands, feet, hair, and clothing away from moving parts.
5. Do not allow riders.
6. Do not enter rotor area when engine is running.
7. Never exceed a safe travel speed when transporting.
8. Use hazard flashers when transporting.
9. Use drawbar pin with retainer and attach safety pin.
10. Wear appropriate hearing protection for prolonged exposure to excessive noise.
11. Review safety instructions annually.

PRECAUCION

1. Lea el Manual del Operario antes de empezar.
2. Pare el motor del tractor, ponga todos los controles en neutro, baje la máquina hasta el suelo, ponga el freno de estacionamiento, quite la llave del encendido, y espere a que todas las piezas móviles hayan parado antes de dar servicio, hacer ajustes, reparaciones, o de desatascar.
3. Mantenga cerrados y asegurados todos los protectores y las compuertas antes de poner a funcionar la máquina.
4. Mantenga retirados de las piezas móviles, las manos, los pies, el pelo, y la ropa.
5. No permita que nadie vaya con usted en la máquina.
6. No entre en el área del rotor mientras el motor está en marcha.
7. Nunca sobrepase la velocidad segura cuando viaja con la máquina.
8. Use luces intermitentes de aviso cuando viaja con la máquina.
9. Use el pasador de la barra de tiro con flador y enganche la cadena de seguridad.
10. Use un protector apropiado para los oídos cuando esté expuesto a ruido excesivo por un tiempo prolongado.
11. Revise anualmente las instrucciones de seguridad.

50030077 A

A. 500-3-0977 Caution (1-11)

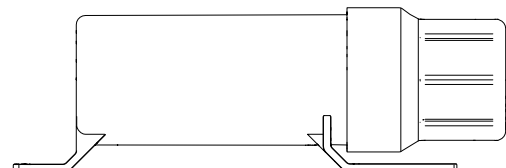
WARNING

MANUAL CONTAINER AND MANUAL ARE MISSING

- REPLACE AND READ BEFORE OPERATING.
- KEEP MANUAL CONTAINER AND MANUAL MOUNTED IN THIS LOCATION. (Available from dealer or call 1-800-319-6637.)

FAILURE TO FOLLOW MANUAL INSTRUCTIONS AND SAFETY RULES CAN RESULT IN SERIOUS INJURY OR DEATH. 506-3-0192

B. 506-3-0192 Manual Container Warning



C. 100-3-3957 Manual Container



SAFETY & INSTRUCTIONAL DECALS

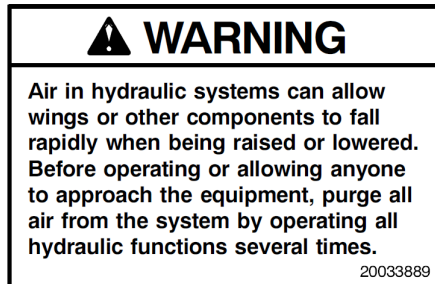
ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!
Replace Immediately If Damaged!



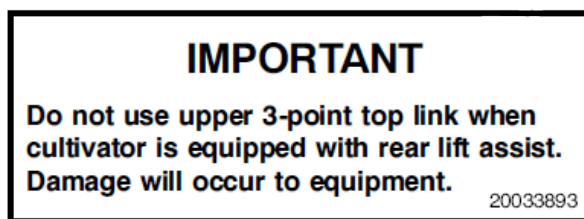
D. 200-3-1366 Serial Number Tag



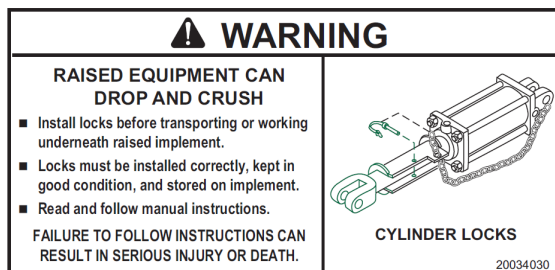
E. 200-3-3887 Falling Warning



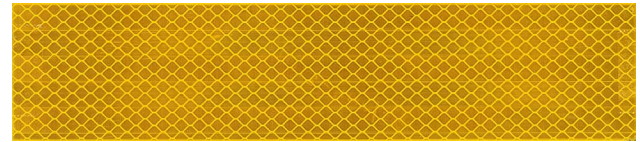
F. 200-3-3889 Hydraulic Air Warning



G. 200-3-3893 Three Point Top Link Warning



H. 200-3-4030 Cylinder Lock Warning



I. 200-3-4004 Amber Reflector 9 x 2



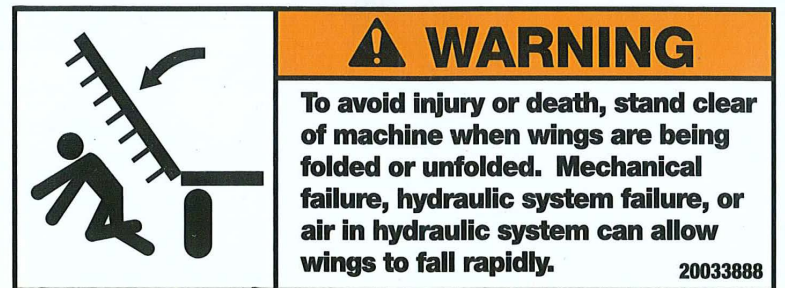
J. 200-3-4005 Red Reflector 9 x 2



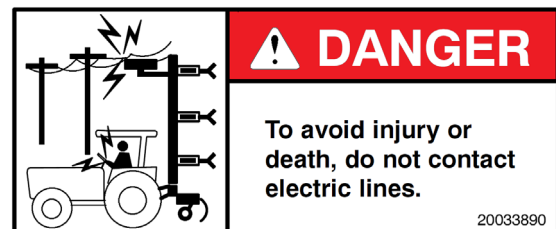
K. 200-3-4034 Orange Fluorescent Reflector 9 x 2



L. 506-3-0195 Hydraulic Pressure Warning



M. 200-3-3888 Raised Wing Hazard



N. 200-3-3890 Electrical Hazard



O. 200-3-4028 Tipping Hazard Warning Decal

OPERATION

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 an operator's single careless act.

In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, judgment, 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 operator.



WARNING

■ 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 or, in the United States and Canada, call 1-877-275-8714.) Failure to follow instructions or safety rules can result in serious injury or death.

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

■ Make sure that all operating and service personnel know that if 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.

■ Keep bystanders away from equipment.

■ 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.



WARNING

■ Before dismounting power unit or performing any service or maintenance, follow these steps: disengage power to implement, lower the 3-point hitch and all raised components to the ground, operate valve levers to release any hydraulic pressure, set parking brake, stop engine, remove key, and unfasten seat belt.

■ Implement can tip over and crush if attached, removed, or stored improperly.

- Read and follow instructions and safety rules for procedures and use of parking stands.
- Front parking stands must be on all cultivators.
- Rear parking stands must be on all folding cultivators unless cultivator has rear lift assist.
- Parking stands must be kept in good condition and replaced if damaged.
- Remove on solid, level ground.
- Before removing from tractor, cultivator must be level and stable with parking stands properly positioned and rear lift assist (when equipped) lowered to rest on cylinder stops.
- Keep all bystanders away.

■ NEVER GO UNDERNEATH EQUIPMENT. Never place any part of the body underneath equipment or between movable 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.

- Service work does not require going underneath.
- Read Operator's Manual for service instructions or have service performed by a qualified dealer.
- Keep all bystanders away.

■ Before folding or unfolding cultivator:

- Make sure you have adequate clearance on each side and overhead.
- Make sure wing cylinder restrictor fittings are properly installed.
- Make sure wing-mounted gauge wheels and guide coulters will not contact tractor cab or tires.

Operation *Continued*



CAUTION

- 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.
- Always sit in tractor 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 tractor engine.
- Always comply with all state and local lighting and marking requirements.



DANGER

- **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.

PRE-OPERATION CHECK LIST

(OWNER'S RESPONSIBILITY)

IMPORTANT

- **This Pre-Operation Check List is provided for the operator. It is important to follow for both personal safety and maintenance of the row crop cultivator.**

- Review and follow all safety rules and safety decal instructions on page 6 through page 10.
- Check that all safety decals are installed and in good condition. Replace if damaged.
- Check that all hardware and cotter pins are properly installed and secured.
- Check that equipment is properly and securely attached to tractor.
- Check all lubrication points and grease as instructed in "Service, lubrication information."
- Check hydraulic reservoir level.

- Check that all cotter pins and safety pins are properly installed. Replace if damaged.
- Check that all hydraulic hoses and fittings are in good condition and not leaking before starting tractor. Check that hoses are not twisted, bent sharply, kinked, frayed or pulled tight. Replace any damaged hoses immediately.
- Raise and lower equipment and wings to make sure air is purged from hydraulic cylinder and hose.
- Make sure tractor 3-point lift links do not interfere with hydraulic hoses.
- Make sure tractor ROPS or ROPS cab and seat belt are in good condition. Keep seat belt securely fastened during operation.
- Before starting engine, operator must be in tractor seat with seat belt fastened. Place transmission in neutral or park, engage brake and disengage tractor PTO.

Operation *Continued*

Attaching Cultivator (Pull-Type Hitch)

1. Park cultivator on a solid, level, dry area that is free from debris and other foreign objects.

NOTE: Before attaching cultivator, be sure the tractor has a clevis type hitch that can handle drawbar loads in both the downward and upward direction. Be sure to use a hardened drawbar pin that allows for a mechanical retainer, such as a klik pin.

2. Clear the area of bystanders, especially children.



WARNING

■ Keep bystanders away from equipment.

3. Set cultivator hitch height to match tractor drawbar height.
4. Carefully back up the tractor to align with hitch.
5. Pin cultivator to tractor drawbar, using hardened drawbar pin. Attach a mechanical retainer, such as a klik pin.
6. Attach safety chain to tractor.
7. Clean the hydraulic couplers and fittings to avoid oil contamination.



WARNING

- Air in hydraulic systems can cause erratic operation and allow loads or equipment components to drop unexpectedly. When connecting equipment or hoses or performing any hydraulic maintenance, purge any air in hydraulic system by operating all hydraulic functions several times. Do this before putting into service or allowing anyone to approach the equipment.

8. Connect wing fold hydraulic lines to the tractor #1 hydraulic couplers. Couplers must be connected so that pushing the control lever forward moves (unfolds) the wings to operating position and pulling the lever rearward moves (folds) the wings to transport position.
9. Connect lift wheel hydraulic lines to the tractor #2 hydraulic couplers. Couplers must be connected so that pushing the control lever forward lowers the cultivator and pulling the lever rearward raises the cultivator.
10. Connect 7-pin electrical connector to the tractor.
11. Raise the tool bar slightly so that rear parking stands are off the ground.
12. Stop engine, set parking brake, wait for all moving parts to stop. Remove the ignition key before dismounting.
13. Raise all parking stands to upper position. Install pin through parking stands and bracket.

IMPORTANT

- To prevent damage, raise parking stands to upper position before moving cultivator. Parking stands must be replaced if bent or damaged.
- To prevent damage to cultivator, do not drop. Lower slowly. Dropping cultivator could result in damage to gauge wheel.

Operation *Continued*

Attaching Cultivator (Quick Hitch)

1. Park cultivator on a solid, level, dry area that is free from debris and other foreign objects.

NOTE: Before attaching tractor to cultivator, be sure hitch pins and spacers are completely assembled to match the hitch configuration of your tractor as shown in Figure 1.

2. Set the height of the 3-point hitch so that quick hitch coupler is lower than the mounting pins.
3. Make sure the lower links on the tractor are set in the free-float position (see tractor manual for details).
4. Make sure 3-point hitch is set in the sway position (see tractor manual for details).
5. Align the couplers under the mounting pins while backing up.

NOTE: Use the proper size bushings for lower link mounting pins and the correct upper link pin location for Category II, III, or III N operation.

6. Clear the area of bystanders, especially children.



WARNING

■ Keep bystanders away from equipment.

7. Carefully back up the tractor until the coupler hooks align with the cultivator hitch pins.
8. When the coupler is under the pins, slowly raise the 3-point hitch. Be sure each of the mounting pins seat in their respective coupler hook.
9. Stop engine, set parking brake, wait for all moving parts to stop. Remove the ignition key before dismounting.
10. Release the coupler retainer locks to secure the mounting pins in the coupler.

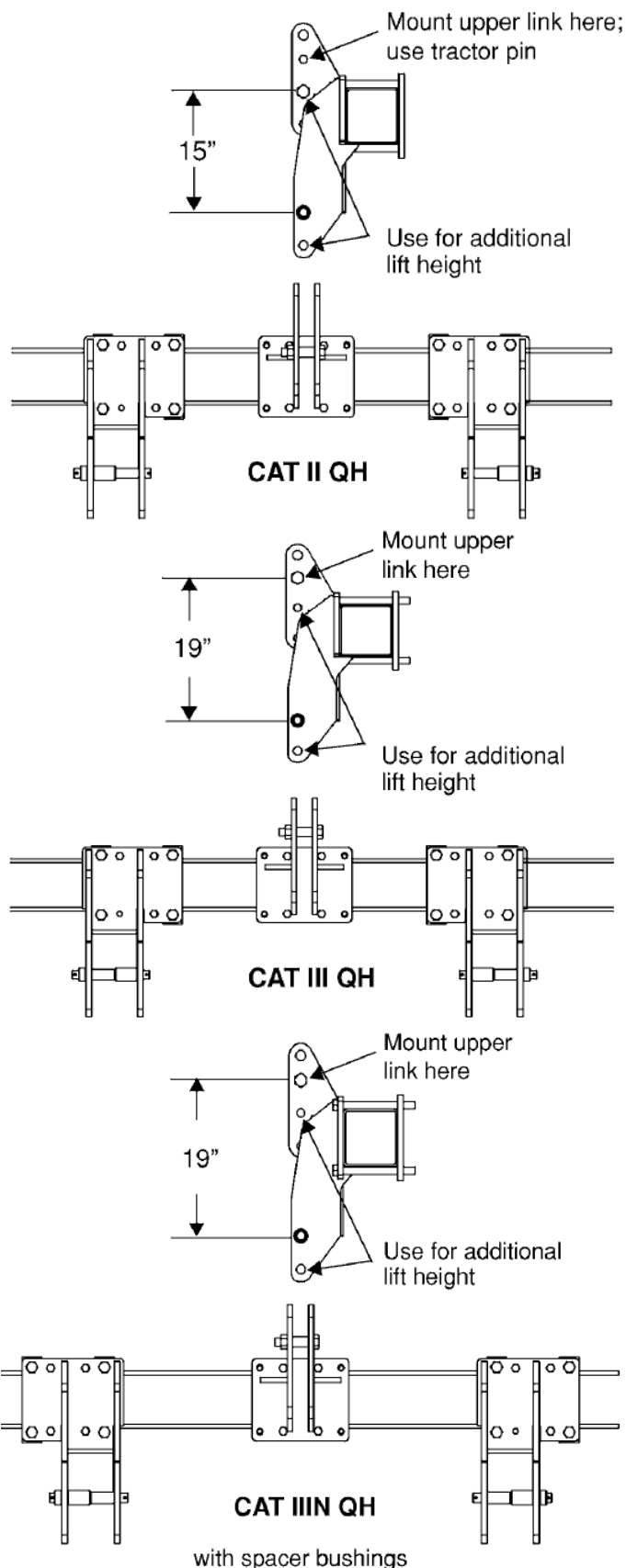


Figure 1 Quick Hitch Configurations

Operation *Continued*

Attaching Cultivator (Quick Hitch) *Cont'd*

11. Park cultivator on a solid, level, dry area that is free from debris and other foreign objects.



WARNING

- **Air in hydraulic systems can cause erratic operation and allow loads or equipment components to drop unexpectedly. When connecting equipment or hoses or performing any hydraulic maintenance, purge any air in hydraulic system by operating all hydraulic functions several times. Do this before putting into service or allowing anyone to approach the equipment.**

12. Connect hydraulic couplings. Couplings must be completely engaged.
13. Connect wing fold hydraulic lines to the tractor #1 hydraulic couplers. Couplers must be connected so that pushing the control lever forward moves (unfolds) the wings to operating position and pulling the lever rearward moves (folds) the wings to transport position.

14. Connect lift assist hydraulic lines to the tractor #2 hydraulic couplers. Couplers must be connected so that pushing the control lever forward lowers the cultivator and pulling the lever rearward raises the cultivator.

15. Connect 7-pin electrical connector to the tractor.

16. Raise the tool bar slightly.

17. Stop engine, set parking brake, wait for all moving parts to stop. Remove the ignition key before dismounting.

18. Raise all parking stands to upper position. Install pin through parking stands and bracket.

IMPORTANT

- **To prevent damage, raise parking stands to upper position before moving cultivator. Parking stands must be replaced if bent or damaged.**
- **To prevent damage to cultivator, do not drop. Lower slowly. Dropping cultivator could result in damage to gauge wheel.**

Operation Continued

Attaching Cultivator (Standard Hitch)

1. Park cultivator on a solid, level, dry area that is free from debris and other foreign objects.
2. Clear the area of bystanders, especially children.



WARNING

■ Keep bystanders away from equipment.

3. Make sure hitch pins and spacers are completely assembled to match the hitch configuration of your tractor. See Figure 2.
4. Remove 3-point hitch lower pins and upper link bolt. Back tractor and align lower links with hitch pins.
5. Stop engine, set parking brake, and wait for all moving parts to stop. Remove ignition key before dismounting.
6. Install pins with correct bushings and secure quick-lock pins. Align upper link and fasten with bolt and spacer bushing (or upper link pin for CAT II hitches).
7. Clean the hydraulic couplers and fittings to avoid oil contamination.
8. Connect hydraulic couplings. Couplings must be completely engaged.



WARNING

■ Air in hydraulic systems can cause erratic operation and allow loads or equipment components to drop unexpectedly. When connecting equipment or hoses or performing any hydraulic maintenance, purge any air in hydraulic system by operating all hydraulic functions several times. Do this before putting into service or allowing anyone to approach the equipment.

9. Connect wing fold hydraulic lines to the tractor #1 hydraulic couplers. Couplers must be connected so that pushing the control lever forward moves (unfolds) the wings to operating position and pulling the lever rearward moves (folds) the wings to transport position.
10. When the coupler is under the pins, slowly raise the 3-point hitch. Be sure each of the mounting pins seat in their respective coupler hook.
11. Stop engine, set parking brake, wait for all moving parts to stop. Remove the ignition key before dismounting.

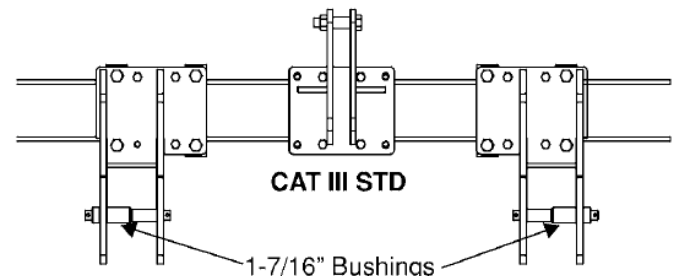
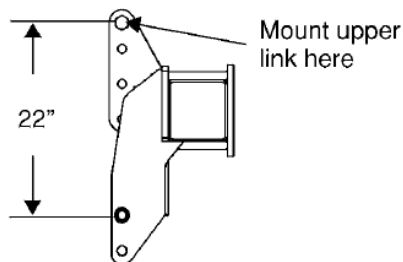
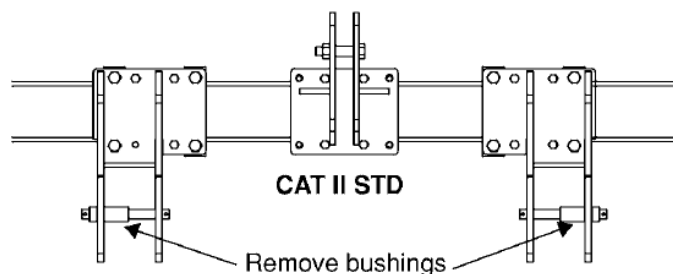
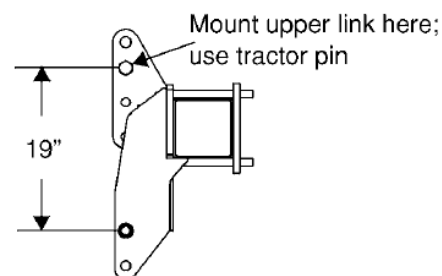


Figure 2 Standard Hitch Configuration

12. Raise the tool bar slightly.
13. Stop engine, set parking brake, and wait for all moving parts to stop. Remove ignition key before dismounting.
14. Raise all parking stands into upper position. Install pin through parking stand and bracket as shown in Figure 4.

IMPORTANT

- To prevent damage, raise parking stands to upper position before moving cultivator. Parking stands must be replaced if bent or damaged.
- To prevent damage to cultivator, do not drop. Lower slowly. Dropping cultivator could result in damage to gauge wheel.

Operation Continued

Attaching Cultivator (Rear Folding)

1. Place unit on a level, dry area free of debris and other foreign objects.

■ **Do not allow anyone to stand between tractor and unit when backing up to the unit.**



WARNING

- **Keep bystanders away from equipment.**
2. Use clevis style hitch on the tractor. Lock the tractor drawbar in the center position.
 3. Provide enough clearance to back the tractor safely into the unit.
 4. Use the implement jacks, found on the front hitch and back of center section of the toolbar, to align hitch height with tractor drawbar, releasing pressure on the hitch.
 5. Back slowly and align the drawbar with the hitch.
 6. Shut off the tractor, place all controls in neutral, set the parking brake, remove the key, and wait for all moving parts to stop.

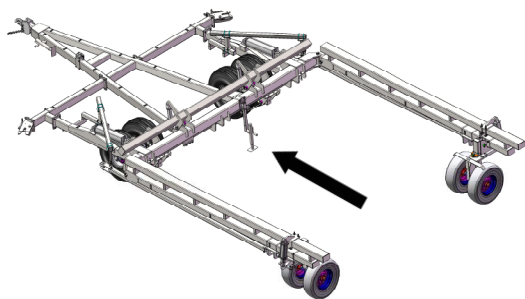


Figure 3. Jack in adjustment position (DOWN)

7. Use the hardened drawbar pin with provisions for a mechanical retainer. Install a retainer, such as a locking pin.
8. Attach the safety chain around the drawbar or cage to prevent unexpected separation. Provide sufficient slack for turning.
9. Remove any safety locks before unfolding, folding, or cultivating.

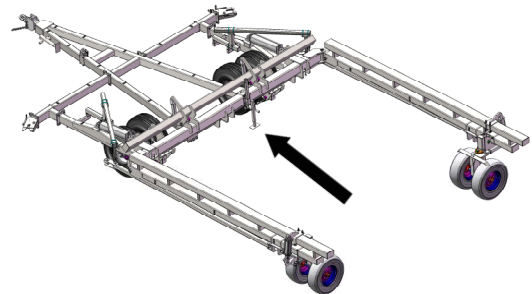


Figure 4. Jack in field / transport position (UP)

Connecting the Hydraulics & Electrical

1. Use a clean cloth or paper towel to clean the couplers on the end of the hoses/cables and the area around the couplers/connectors on the tractor.
2. Insert the male ends into the couplers/connectors on the tractor. Be sure they are locked in place.

Operation *Continued*

Removing Cultivator (Pull-Type Hitch)

1. Park cultivator on a solid, level, dry area that is free from debris and other foreign objects.

■ **Do not allow anyone to stand between tractor and unit when pulling away from the unit.**



WARNING

■ **Keep bystanders away from equipment.**

2. Stop engine, set parking brake, wait for all moving parts to stop. Remove ignition key before dismounting.
3. Lower rear parking stands. Pin in position so the tool bar will be level with the hitch stored at drawbar height. See Figure 6.
4. Lower tongue jack into position.
5. From tractor cab, start engine and raise cultivator.
6. Remove transport locks Figure 5. Store transport locks where they won't get lost.
7. Lower cultivator until weight is carried on the rear parking stands and parking jack.
8. Stop engine, set parking brake, wait for all moving parts to stop. Remove ignition key before dismounting.
9. Relieve hydraulic pressure on fold and lift cylinders.

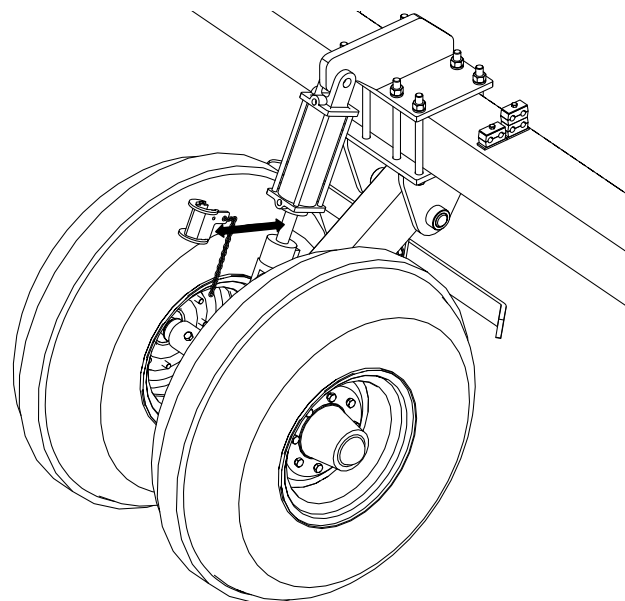


Figure 5 Transport Lock

10. Unhook hydraulic lines.
11. Unhook safety chain from tractor.
12. Unhook electrical connector.
13. Remove hitch pin.
14. Start engine and slowly drive away from cultivator.
15. Stop engine, set parking brake, and remove key.

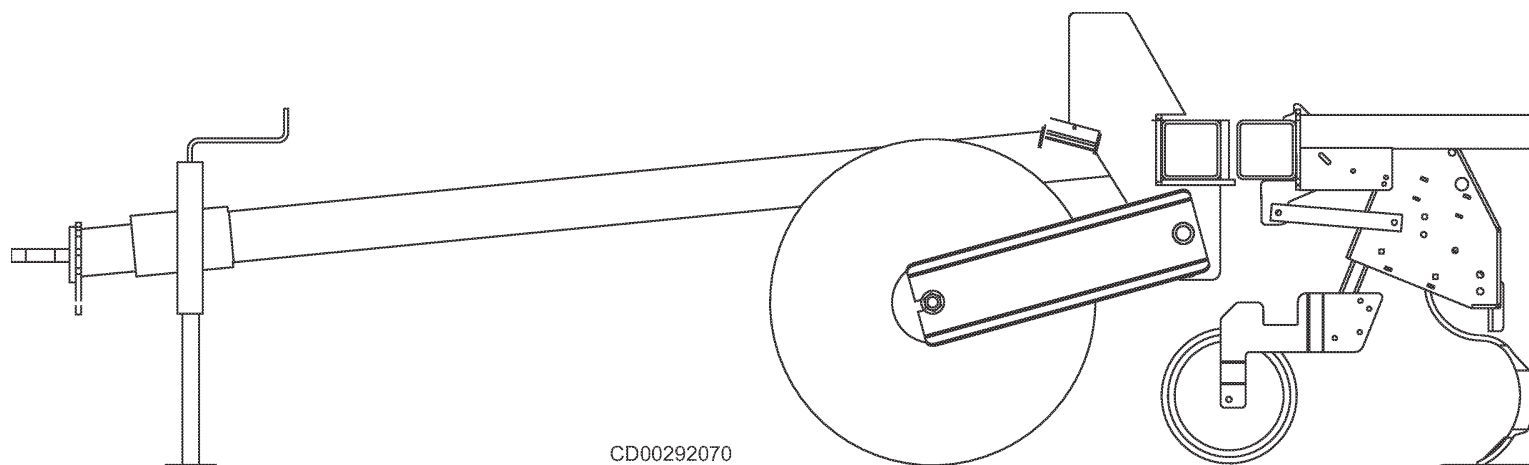


Figure 6 Rear parking stand lowered and pinned
Tongue jack in correct position for storing cultivator

Operation *Continued*

Removing Cultivator

(Rigid Cultivators or Folding With Wings Unfolded)



WARNING

■ Implement can tip over and crush if attached, removed, or stored improperly.

- Read and follow instructions and safety rules for procedures and use of parking stands.
- Front parking stands must be on all cultivators.
- Rear parking stands must be on all folding cultivators unless cultivator has rear lift assist.
- Parking stands must be kept in good condition and replaced if damaged.
- Remove on solid, level ground.
- Before removing from tractor, cultivator must be level and stable with parking stands properly positioned and rear lift assist (when equipped) lowered to rest on cylinder stops.
- Keep all bystanders away.

■ Keep bystanders away from equipment.

1. Park cultivator on a solid, level, dry area that is free from debris and other foreign objects.
2. Make sure bystanders are clear from working area.
3. Lower lift assist wheels (if equipped) to rest on cylinder stops.
4. Lower cultivator so that sweeps and gauge or guide wheels rest on the ground. Position toolbar in the operating position so that cultivator linkage is nearly horizontal. See Figure 7.
5. Stop engine, set parking brake, and wait for all moving parts to stop. Remove ignition key before dismounting.
6. Lower front parking stands to the ground and pin in position so that parking stands will be vertical when the tractor is removed. See Figure 8.
7. Relieve hydraulic pressure in wing fold and lift assist cylinders (if equipped).
8. Adjust center link as necessary to remove load from hitch.
9. With Quick-Hitch: Release coupler latches and lower hitch to release hitch pins.
10. Without Quick-Hitch: Remove hitch pins from upper and lower hitch links.

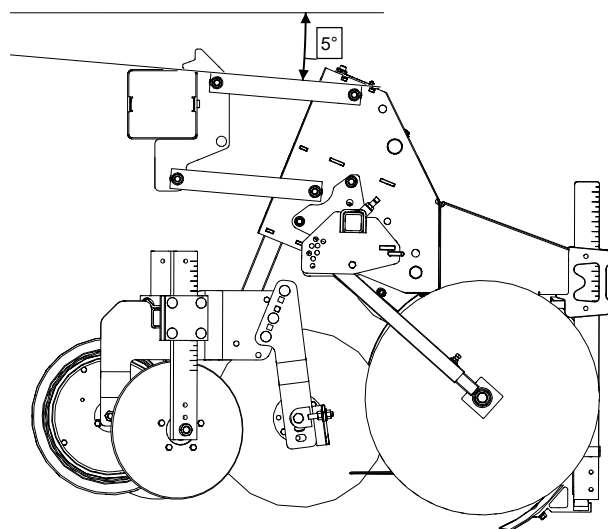


Figure 7 Operating Position

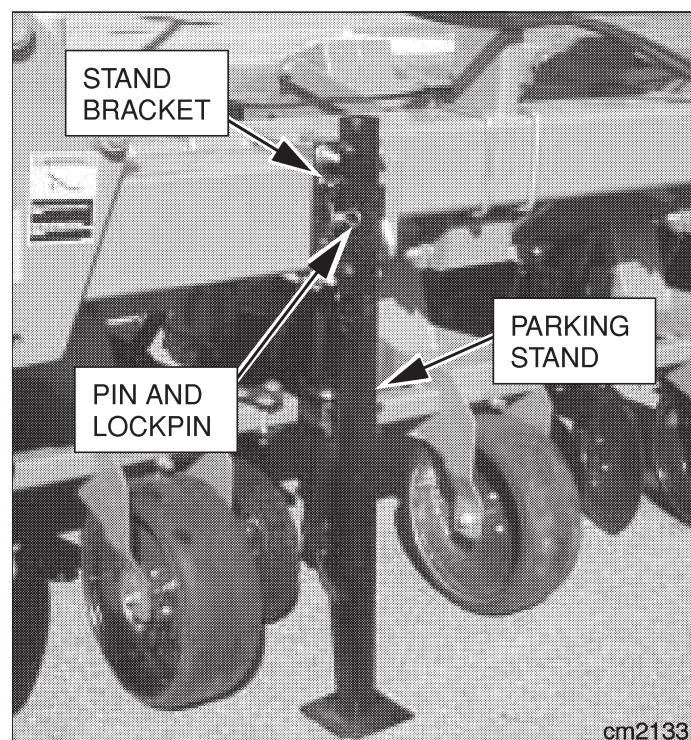


Figure 8 Front Parking Stand Lowered and Pinned

11. Disconnect hydraulic couplers and electrical connector from tractor.
12. Start engine and slowly drive away from cultivator.

Operation *Continued*

Removing Cultivator (Foldable Cultivators with Wings Folded)



WARNING

■ Implement can tip over and crush if attached, removed, or stored improperly.

- Read and follow instructions and safety rules for procedures and use of parking stands.
- Front parking stands must be on all cultivators.
- Rear parking stands must be on all folding cultivators unless cultivator has rear lift assist.
- Parking stands must be kept in good condition and replaced if damaged.
- Remove on solid, level ground.
- Before removing from tractor, cultivator must be level and stable with parking stands properly positioned and rear lift assist (when equipped) lowered to rest on cylinder stops.
- Keep all bystanders away.

■ Keep bystanders away from equipment.

1. Park cultivator on a solid, level, dry area that is free from debris and other foreign objects.
2. Make sure bystanders are clear from working area.
3. Lower lift assist wheels (if equipped) to rest on cylinder stops.
4. Lower cultivator so that sweeps and gauge or guide wheels rest on the ground. Position toolbar in the operating position so that cultivator linkage is nearly horizontal. See Figure 9.
5. Stop engine, set parking brake, and wait for all moving parts to stop. Remove ignition key before dismounting.
6. Lower front parking stands to the ground and pin in position so that parking stands will be vertical when the tractor is removed. See Figure 10.
7. Relieve hydraulic pressure in wing fold and lift assist cylinders (if equipped).
8. Adjust center link as necessary to remove load from hitch.
9. With Quick-Hitch: Release coupler latches and lower hitch to release hitch pins.
10. Without Quick-Hitch: Remove hitch pins from upper and lower hitch links.

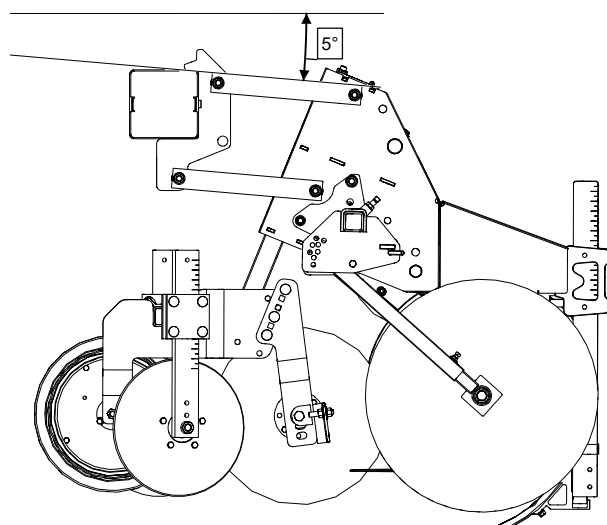


Figure 9 Operating Position

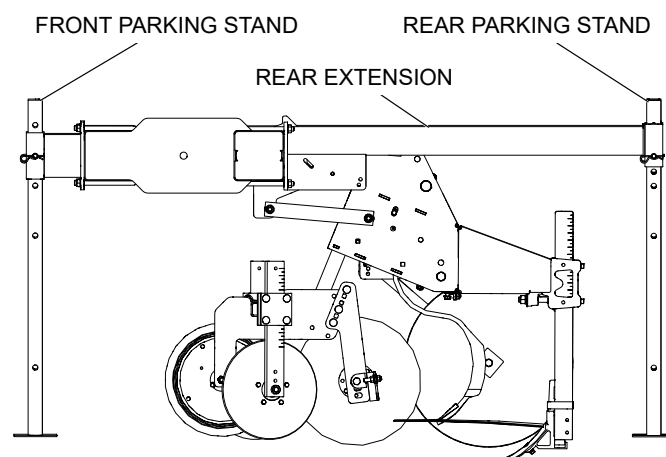


Figure 10 Front & Rear Parking Stands
(offset toolbar)

11. Disconnect hydraulic couplers and electrical connector from tractor.
12. Start engine and slowly drive away from cultivator.

Operation *Continued*

Removing Cultivator (Foldable Cultivators with Lift Assist Wheels)



WARNING

■ Implement can tip over and crush if attached, removed, or stored improperly.

- Read and follow instructions and safety rules for procedures and use of parking stands.
- Front parking stands must be on all cultivators.
- Rear parking stands must be on all folding cultivators unless cultivator has rear lift assist.
- Parking stands must be kept in good condition and replaced if damaged.
- Remove on solid, level ground.
- Before removing from tractor, cultivator must be level and stable with parking stands properly positioned and rear lift assist (when equipped) lowered to rest on cylinder stops.
- Keep all bystanders away.

■ Keep bystanders away from equipment.

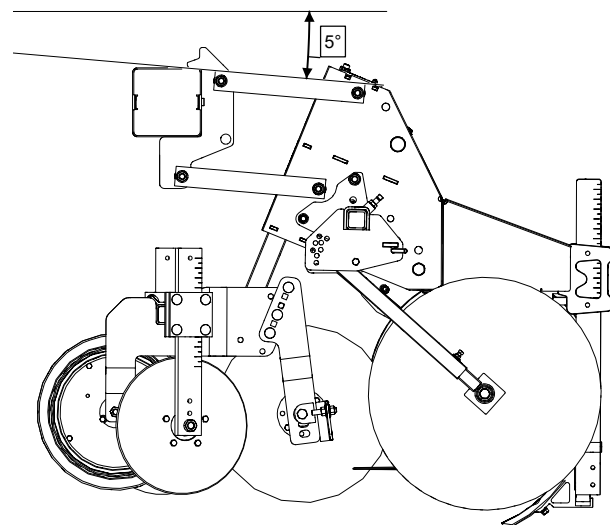


Figure 11 Operating Position

1. Park cultivator on a solid, level, dry area that is free from debris and other foreign objects.
2. Make sure bystanders are clear from working area.
3. Lower lift assist wheels (if equipped) to rest on cylinder stops.
4. Lower cultivator so that sweeps and gauge or guide wheels rest on the ground. Position toolbar in the operating position so that cultivator linkage is nearly horizontal. See Figure 11.
5. Stop engine, set parking brake, and wait for all moving parts to stop. Remove ignition key before dismounting.
6. Lower front parking stands to the ground and pin in position so that parking stands will be vertical when the tractor is removed. See Figure 12.
7. Relieve hydraulic pressure in wing fold and lift assist cylinders (if equipped).
8. Adjust center link as necessary to remove load from hitch.
9. With Quick-Hitch: Release coupler latches and lower hitch to release hitch pins.
10. Without Quick-Hitch: Remove hitch pins from upper and lower hitch links.

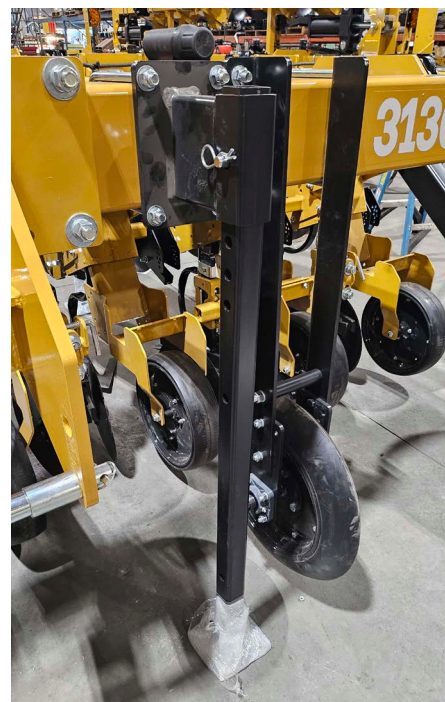


Figure 12 Front Parking Stand Lowered and Pinned

11. Disconnect hydraulic couplers and electrical connector from tractor.

12. Start engine and slowly drive away from cultivator.

Operation Continued

Removing Cultivator (Rear Folding)

1. Place unit on a level, dry area free of debris and other foreign objects.

■ **Do not allow anyone to stand between tractor and unit when driving from the unit.**



WARNING

■ **Keep bystanders away from equipment.**

2. Lock the tractor drawbar in the center position.
3. Provide enough clearance to remove the tractor safely away from the unit.
4. Shut off the tractor, place all controls in neutral, set the parking brake, remove the key, and wait for all moving parts to stop.
5. Install all safety locks for storage or transport.
6. Use the implement jacks, found on the front hitch and back of center section of the toolbar, to take the weight of the implement. See Figure 13 & 14. If the unit is unfolded, lower the gangs to take the weight of the implement off of the tractor.
7. Disconnect the hydraulic lines and electrical connections.

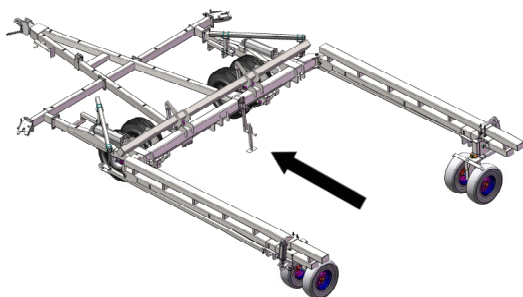


Figure 14 Jack in adjustment position (DOWN)

8. Remove the hardened drawbar pin.
9. Remove the safety chain around the drawbar or cage.
10. Drive slowly away from the cultivator to make sure nothing is still attached.

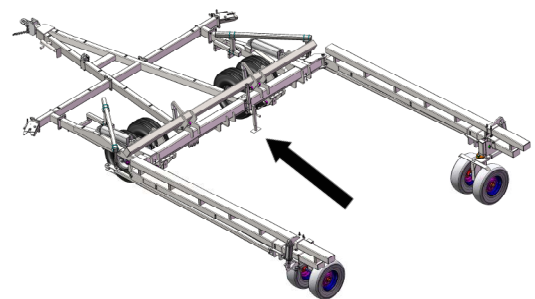


Figure 13 Jack in field / transport position (UP)

Disconnecting the Hydraulics & Electrical

1. Disconnect the couplers/connectors attached to the tractor.
2. Use a clean cloth or paper towel to clean the couplers on the end of the hoses/cables and the area around the couplers/connectors on the tractor.

Operation Continued

Electrical System

The tractor must be equipped with an SAE J560a 7-pin electrical connector (Figure 15) to adapt to the wire harness's 4-pin electrical connector (Figure 16). This will provide power for turn signals, warning flashers, and tail lights.

The cultivator is equipped with warning flashers and turn signals, located on each end of the main tool bar. Warning lights must be functional whenever transporting on public highways. See Figure 17.

See your tractor operator's manual for instructions on warning light and turn signal operation.

If warning lights, turn signals, and tail lights do not function correctly, see your Alloway dealer.

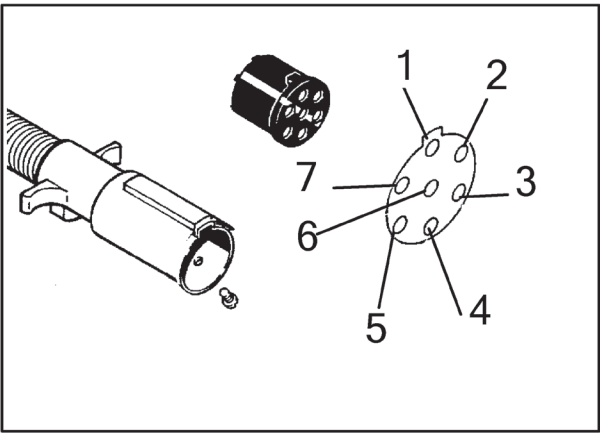


Figure 15 7-Pin Electrical Connector

Position	Wire Color	Wire Function
1	White	Ground
2	Brown	Tail and Running Lights
3	Green	Right Turn and Hazard
4	Red	Stop Lamps
5	Yellow	Left Turn and Hazard
6	Black	Clearance / Marker
7	Blue	Auxiliary Circuit

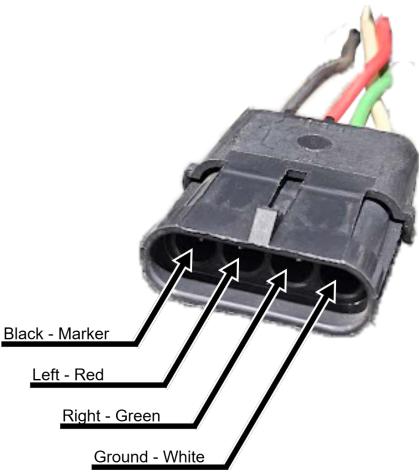


Figure 16 4-Pin Electrical Connector

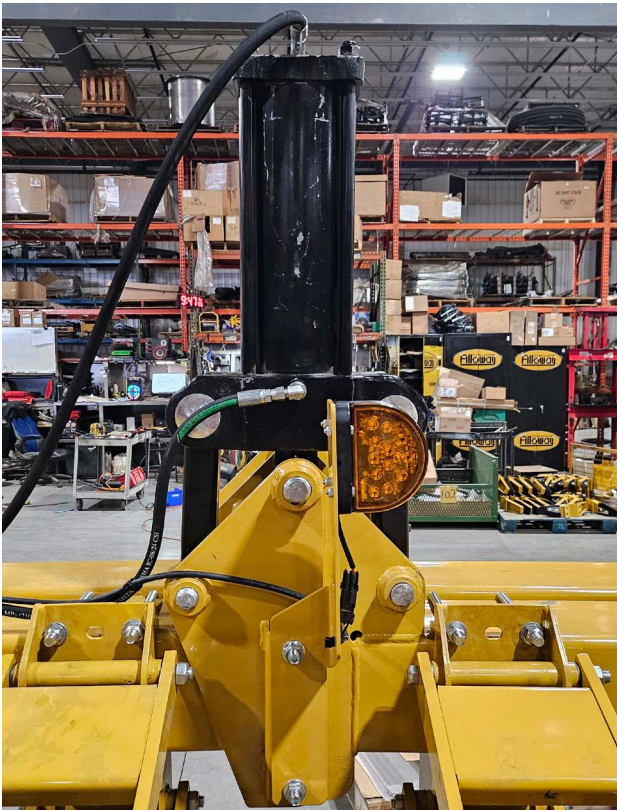


Figure 17 Storage Position

Operation *Continued*

Front Parking Stands

Front parking stands are supplied with all 3130 cultivators. Front stands must be installed to support the cultivator whenever it is removed from the tractor.

1. Lower front parking stands to the ground and pin in position so that parking stands will be vertical when the tractor is removed. See Figure 18.

Rear Parking Stands

Rear parking stands are supplied with all folding toolbar 3130 cultivators without rear lift assist wheels. Either rear parking stands or lift assist wheels must be installed to support the cultivator whenever it is removed in the folded transport position.

1. Lower rear parking stands (folding cultivators without lift assist) to the ground and pin in position so that parking stands will be vertical when tractor is removed. Front and rear stands should be pinned in the same hole position as shown in Figure 16.

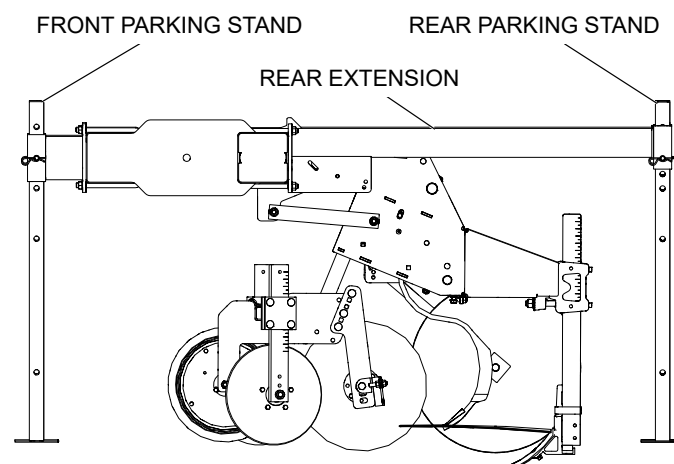


Figure 18 Front & Rear Parking Stands
(offset toolbar)

Unfolding Top Fold into Field Position



WARNING

■ Never walk, stand, or place yourself or others under a raised wing or in the path of a lowering wing. Hydraulic system leak-down, hydraulic system failures, mechanical failures, or movement of control levers can cause wings to drop unexpectedly and cause severe injury or death.

■ Before folding or unfolding cultivator:

- Make sure you have adequate clearance on each side and overhead.
- Make sure wing cylinder restrictor fittings are properly installed.
- Make sure wing-mounted gauge wheels and guide coulters will not contact tractor cab or tires.

1. Connect wing fold hydraulic lines to the tractor #1 hydraulic couplers. Couplers must be connected so that pushing the control lever forward moves (unfolds) the wings to operating position and pulling the lever rearward moves (folds) the wings to transport position.
2. Position the tractor and cultivator in a level area, free of overhead obstacles and with enough clear area to permit the cultivator to unfold.



DANGER

■ AVOID INJURY OR DEATH FROM POWER LINES:

- Stay away from power lines.
- Electrocution 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.

3. Use the tractor 3-point hitch and lift assist wheels (if equipped) or pull-type hitch to raise the cultivator to a level position off the ground.
4. Activate SVC lever and move the cultivator wings until they contact the wing rests that are attached to the main frame. Raise the cultivator into transport position.
5. Move tractor into position for cultivating.

Operation *Continued*

Unfolding Rear Fold into Field Position



WARNING

- Make sure Machine is on **LEVEL GROUND**.



CAUTION

- Stay Clear of Cultivator when wings are being raised or lowered. Hydraulic or Mechanical failure can result in a rapid, uncontrolled falling of wings, hitch jump or spring back. Failure to follow these instructions may result in serious injury or death.

Step: 1

Confirm the toolbar is fully raised, center section struts are at their tallest, and safety locks removed.



Figure 19 Folded Unit Fully Raised

Step: 2

Turn wing wheels approximately 45° angle from Transport Position. Start backing machine up; this will start folding the wings forward. While backing up turn the wheels to the full 90° position. This will help push wing completely forward.

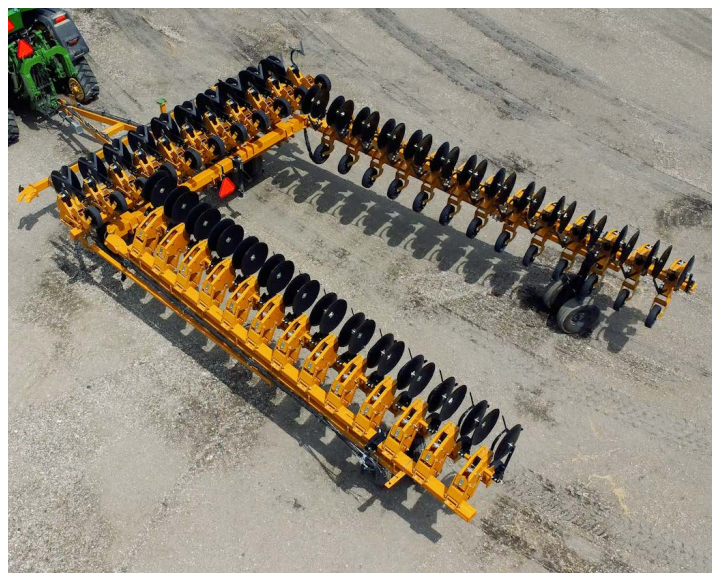


Figure 20 Wheels turned 45° for unfolding

Operation Continued

Unfolding Rear Fold into Field Position *Cont.*

Step: 3

When toolbar is straight, start folding the unit to the ground. When it is approximately at a 20° angle from the ground. Back the tractor up slightly to engage the wing locks.

IMPORTANT

■ **DO NOT PULL FORWARD** when the wings are down and unlocked. Irreparable harm to gangs and other components will occur.

Step: 4

Continue to lower machine to the ground and Rotate the wing wheels into field position.

Step: 5

Turn off and exit the tractor to check that the wing locks are snapped over the pin locks securely.



Figure 21 Toolbar Straight w/ Wheels in Field Position

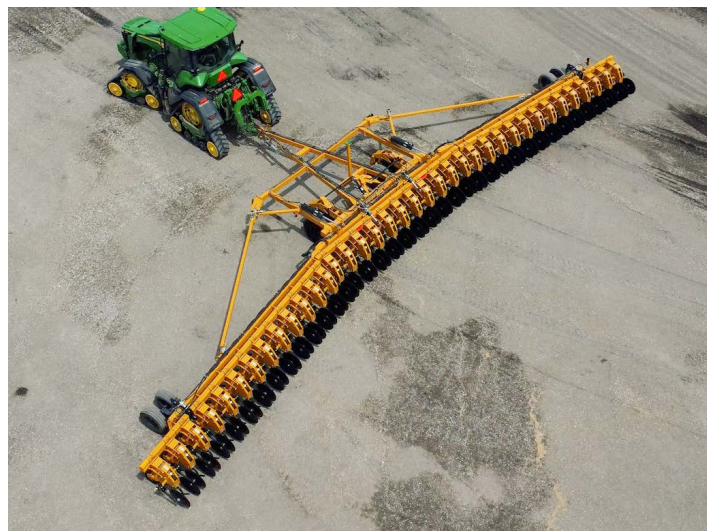


Figure 22 Toolbar Down and Unlocked

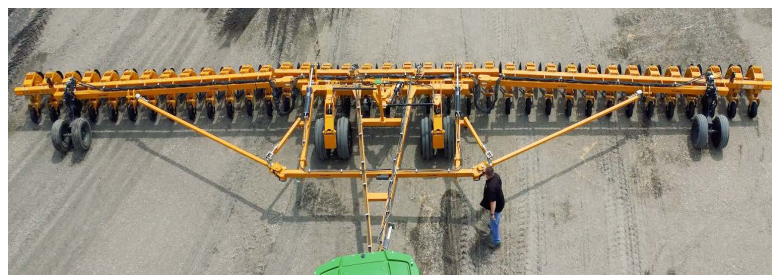


Figure 23 Operator Checking Pin Locks

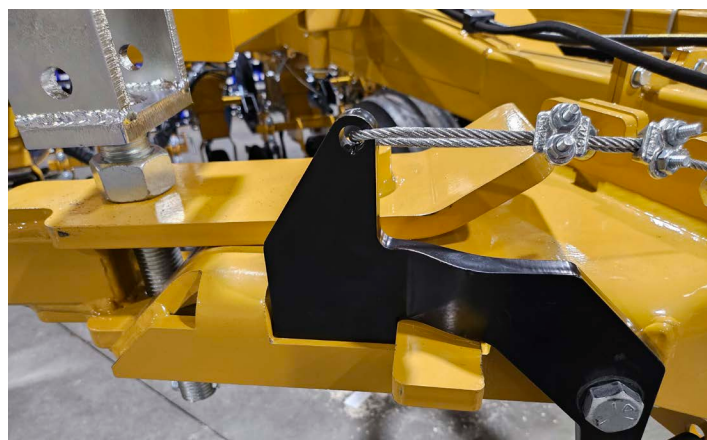


Figure 24 Pin in Locked Position

Operation *Continued*

Folding Rear Fold into Transport Position



WARNING



CAUTION

■ Stay Clear of Cultivator when wings are being raised or lowered. Hydraulic or Mechanical failure can result in a rapid, uncontrolled falling of wings, hitch jump or spring back. Failure to follow these instructions may result in serious injury or death.

Step: 1

Stop the tractor before attempting to fold unit into Transport Position.

Step: 2

Confirm the toolbar is fully raised, the center section struts are at their tallest, and the safety locks have been removed.



Figure 25 Fully Raised Toolbar

Step: 3

Raise the unit 90° from the ground, while doing so this will release wing latches.

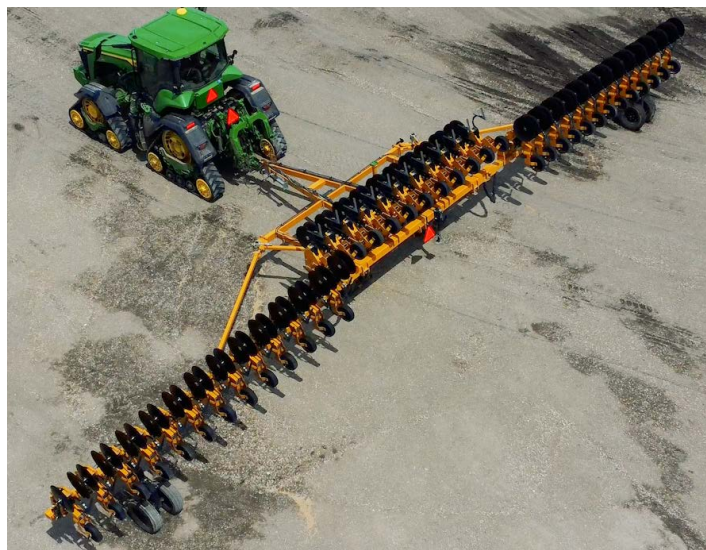


Figure 26 Toolbar Straight w/
Wheels in Field Position

Operation Continued

Folding Rear Fold into Transport Position *Cont.*

Step: 4

Turn wheels approximately 45° from Field Position. Start moving forward, this will start unfolding the wings backward. While moving forward turn the wheels to the full 90° position. This will help push wings completely backward.



Figure 27 Toolbar Angled w/ Wheels turned 90°

Step: 5

Make sure all components look transport ready. Check all lights and slow moving vehicle sign.

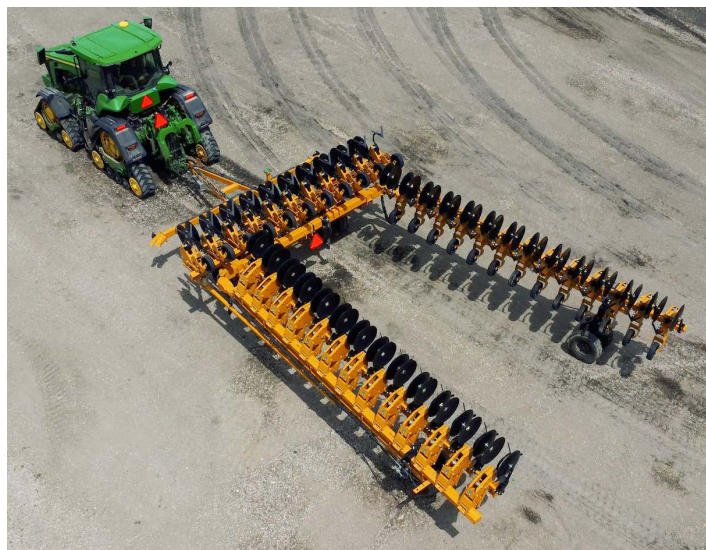


Figure 28 Toolbar Folded back w/ Wheels in Transport Position

Operation *Continued*

Folding Top Fold into Transport Position



WARNING

■ Never walk, stand, or place yourself or others under a raised wing or in the path of a lowering wing. Hydraulic system leak-down, hydraulic system failures, mechanical failures, or movement of control levers can cause wings to drop unexpectedly and cause severe injury or death.

■ Before folding or unfolding cultivator:

- Make sure you have adequate clearance on each side and overhead.
- Make sure wing cylinder restrictor fittings are properly installed.
- Make sure wing-mounted gauge wheels and guide coulters will not contact tractor cab or tires.

1. Connect wing fold hydraulic lines to the tractor #1 hydraulic couplers. Couplers must be connected so that pushing the control lever forward moves (unfolds) the wings to operating position and pulling the lever rearward moves (folds) the wings to transport position.



DANGER

■ AVOID INJURY OR DEATH FROM POWER LINES:

- Stay away from power lines.
- Electrocution 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.

2. Position the tractor and cultivator in a level area, free of overhead obstacles.
3. Use the tractor 3-point hitch and lift assist wheels (if equipped) or pull-type hitch to raise the cultivator to a level position off the ground.
4. Activate SVC lever rearward and move the cultivator wings until they contact the wing rests that are attached to the main frame. Raise the cultivator into transport position.

Connecting Lift Assist (3-Point Hitch Semi-Mounted Cultivator)

IMPORTANT

■ If the cultivator is used with lift assist wheels, it must be operated as a semi-mounted unit to prevent damage to the 3-point hitch components. Remove the upper link mast and attach the cultivator to the lower 3-point hitch links only. Lift assist wheels will always carry part of the cultivator weight.

1. Connect lift assist hydraulic lines to the tractor #2 hydraulic couplers. Couplers must be connected so that pushing the control lever forward lowers the cultivator and pulling the lever rearward raises the cultivator.
2. Use the adjustment nuts on the lift assist cylinders to level and control the operating position of the rear of the cultivator.
3. When storing the folding cultivator in the transport position, lower lift assist wheels to rest on the cylinder stops and front parking stands installed as described in Removing Cultivator from Tractor, from page 21 to page 24.

Operation *Continued*

Field Operation



WARNING

■ 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.

IMPORTANT

■ Raise cultivator out of the ground when making sharp turns.

■ Do not back up with sweeps or tools in the ground.

1. Enter the field and straddle rows in the same direction of planter travel.
2. Make sure no one is near the cultivator when raising or lowering wings.
3. Unfold into operating position.
4. Lower cultivator slowly and move forward approximately 20 feet.

IMPORTANT

■ Raise cultivator out of the ground when making sharp turns.

5. Check shovel working depth by brushing worked soil aside to determine the amount of ground penetration. Shovel depth is adjusted by raising or lowering the gauge wheel on each gang. Gangs behind tractor wheels are often adjusted deeper to loosen compacted soil.

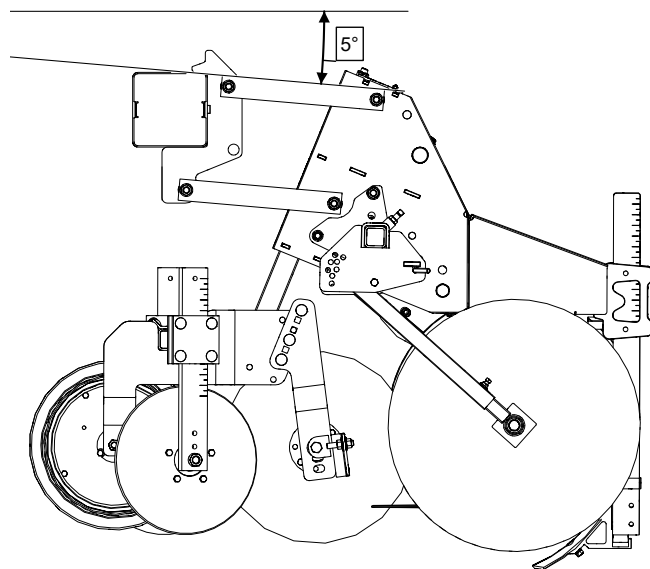


Figure 29 Operating Position

6. If necessary, readjust tine placement for proper coverage.
7. After establishing working depth, it may be necessary to reset the 3-point lever stop and adjust the support wheels or to adjust the stops on pull-type wheel cylinders to maintain operating position as shown in Figure 14.
8. To adjust individual attachments, refer to MAKING ADJUSTMENTS, page 35 to page 38.

Operation *Continued*

Storage



WARNING

- **Block equipment securely for storage.**
- **Keep children and bystanders away from storage area.**

At the end of the season, the cultivator should be thoroughly inspected and prepared for storage. Repair or replace any worn or damage components to prevent unnecessary down time at the beginning of the next season.

To ensure a long, trouble-free life, prepare the unit for storage by carrying out the following procedure:

1. Clear the area of bystanders, especially children.
2. On solid, level ground, lower unit to rest in a stable level position with parking stands properly positioned.
3. Stop engine, set parking brake, and wait for all moving parts to stop. Remove ignition key before dismounting.
4. Thoroughly wash the unit, using a pressure washer to remove all dirt, mud, debris, and residue.
5. Repair or replace damaged parts. Remove any entangled material.
6. Inspect all hydraulic hoses, lines, couplers, and fittings. Tighten all loose fittings. Replace any hose that is badly cut, nicked, abraded, or separating from the crimped end of a fitting.
7. Lubricate all grease fittings. Make sure all grease cavities have been filled with grease to remove any water residue from pressure washing. Touch up all paint nicks and scratches to prevent rust.
8. Move to storage area. Select a dry area free of debris. Store in an area away from human activity.
9. Unhook from tractor (see Removing Cultivator from Tractor. See page 21 to page 24).

NOTE: Do not deflate tires.

10. Store the unit away from human activity
11. Do not allow children to play on or around the stored unit.

Operation *Continued*

Transportation



CAUTION

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

1. Make sure all bystanders are clear of the unit.
2. Make sure the unit is securely attached to the tractor and all retainer pins are installed.
3. Make sure safety chain is installed on pull-type model.
4. Raise the unit.
5. Lower front parking stands to the ground and pin in position so that parking stands will be vertical when the tractor is removed. See Figure 6.
6. Install transport locks on pull-type cultivator.
7. Make sure you are in compliance with all applicable lighting and marking regulations when transporting. Check with your local authorities.
8. Never transport the unit faster than 20 mph (32 km/h).
9. Know the transport height and width of your unit.
10. Stay clear of overhead power lines when folding and unfolding unit. Electrocution can occur without direct contact.

Making Adjustments (Leveling Toolbar Wings)

1. Level wings to center toolbar, using leveling bolts.
2. Tighten jam nuts when wings are level.

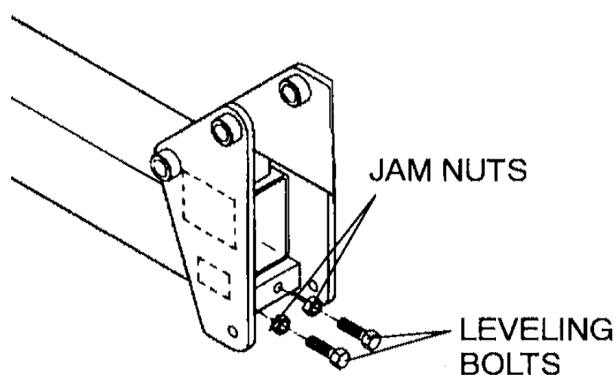


Figure 30 Toolbar Wings

Operation *Continued*

Adjusting Gangs

1. Keep cultivator frame level with ground by adjusting upper link on tractor to maintain consistent ground penetration of each tine.
2. Adjust tractor 3-point hitch and frame gauge wheels so that cultivator linkage operates approximately 5 degrees from level as shown in Figure 31.
3. Set working depth by adjusting gauge wheel. Turn adjusting nut clockwise to increase working depth and counterclockwise to decrease working depth.
4. Set tine pitch by adjusting tine pitch adjustment screw as shown in Figure 32.

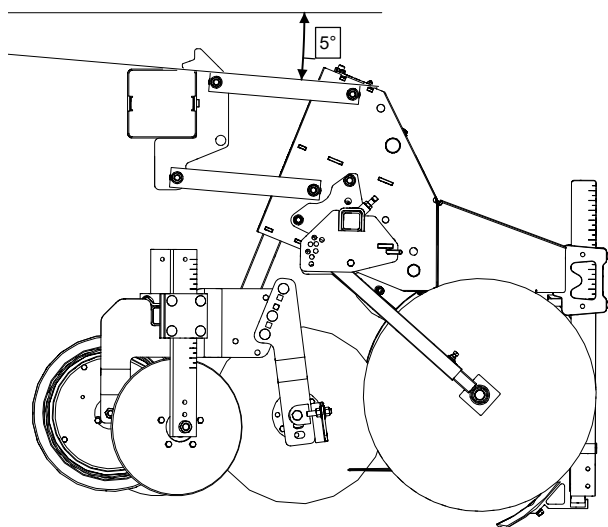


Figure 31 Operating Position

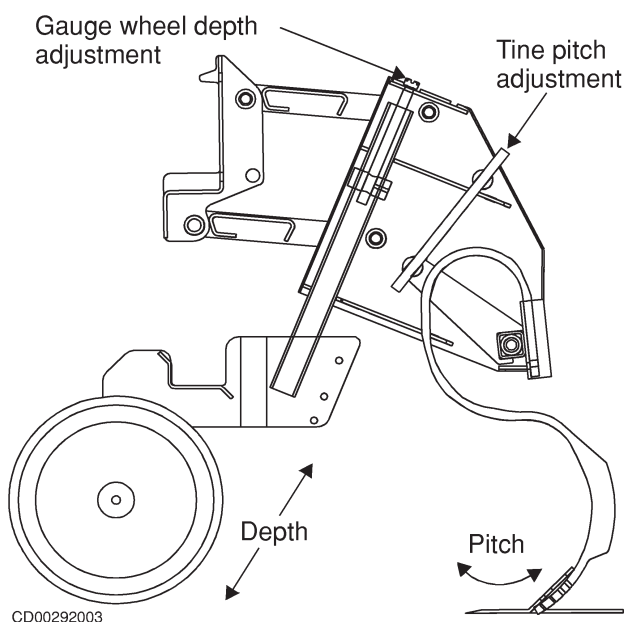


Figure 32 Gang Adjustment

Operation *Continued*

Adjusting Support Wheels

Center Frame Support Wheels

The toolbar weight should be split between the tractor 3-point and the support wheels. To provide level operation of the toolbar, adjust the support wheels mounted on rigid toolbars or on the center section of folding toolbars.

Use field conditions and desired cultivator performance to set support wheel operating height.

1. Make sure safety chain is installed on pull-type model.

Wing Support Wheels

To maintain a proper working height at the outer end of the toolbar's wings, position and adjust the support wheels. Re-adjust the wing support wheels if the center frame operating position is changed.

1. Shorten the screw jack to lower to toolbar. Lengthen the screw jack to raise the toolbar. See Figure 33.



Figure 33 Adjusting Support Wheels

Operation *Continued*

Adjusting Dual Discs

1. Adjust disc width by loosening bolts and jam nuts on top of the disc clamp.
2. Slide discs on rails until reaching desired width.
3. Tighten bolts and jam nuts.

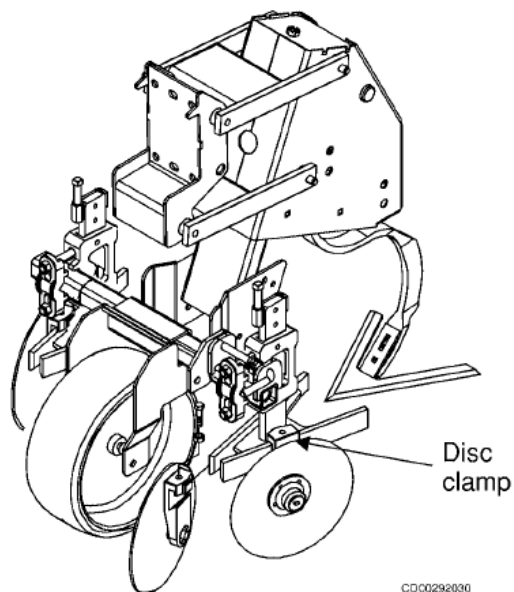


Figure 34 Adjusting Dual Discs

Adjusting Sweeps

1. Adjust pitch by selecting a different hole on the tine (straight edge tine). Use pitch adjusting screw. See Figure 35.

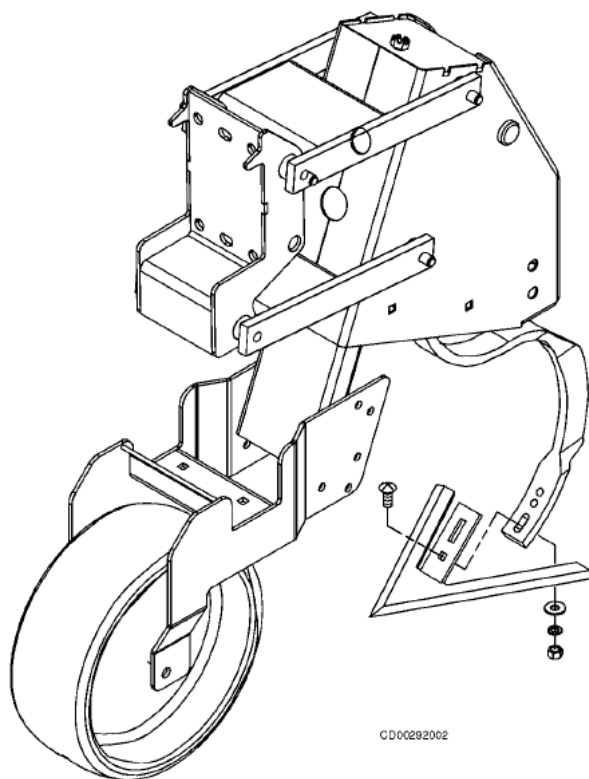


Figure 35 Adjusting Sweep Pitch

SERVICE & MAINTENANCE



WARNING

- **NEVER GO UNDERNEATH EQUIPMENT.** Never place any part of the body underneath equipment or between movable 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.
 - Service work does not require going underneath.
 - Read Operator's Manual for service instructions or have service performed by a qualified dealer.
- Know your controls and how to stop engine and attachment quickly in an emergency.
- Keep hands and body away from pressurized lines. Use paper or cardboard, not hands or other 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 if 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.
- Do not allow bystanders in the area when operating, attaching, removing, assembling, or servicing equipment.
- Before dismounting power unit or performing any service or maintenance, follow these steps: disengage power to implement, lower the 3-point hitch and all raised components to the ground, operate valve levers to release any hydraulic pressure, set parking brake, stop engine, remove key, and unfasten seat belt.
- Before servicing, unfold completely to operating position. Do not service with wings in any other position.



CAUTION

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

Greasing

Use an SAE multi-purpose high temperature grease with extreme pressure (EP) performance. An SAE multi-purpose lithium-based grease is also acceptable.

1. Use a hand-held grease gun for all greasing.
2. Wipe grease fitting with a clean cloth before greasing to avoid injecting dirt and grit.
3. Replace and repair broken fittings immediately.
4. If fittings will not take grease, remove and clean thoroughly. Also clean lubricant passageway. Replace fitting if necessary.

Storing Lubricants

Your unit can operate at top efficiency only if clean lubricants are used. Use clean containers to handle all lubricants. Store them in an area protected from dust, moisture, and other contaminants.

The recommended lubrication intervals are based on normal operating conditions. Severe or unusual conditions may require more frequent lubrication.

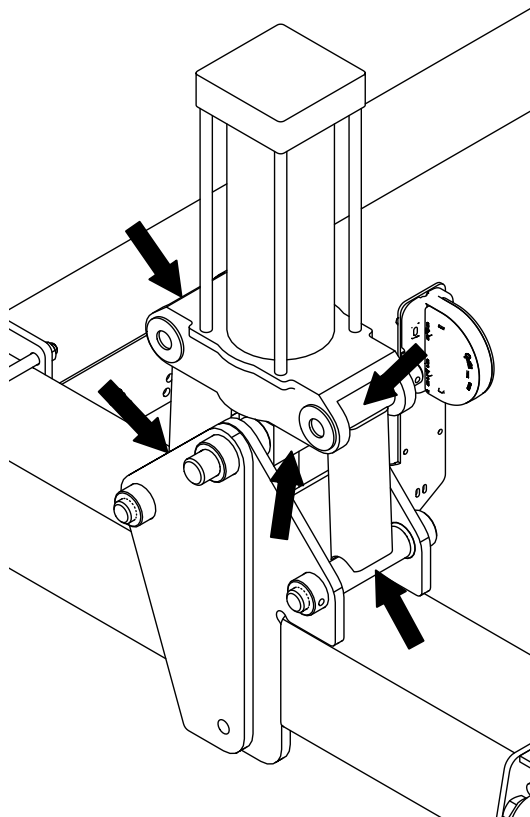


Figure 36 Folding Toolbar Components

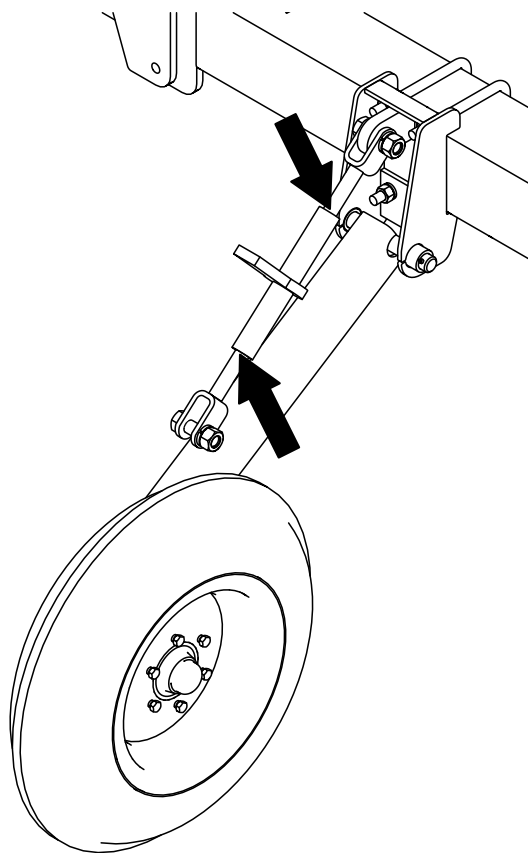


Figure 37 Guide Wheel Screw Jacks

Lubrication Schedule

The period recommended is based on normal operating conditions. Severe or unusual conditions may require more frequent lubrication.

■ Daily or every 10 hours

1. Lubricate top and rear folding toolbar component zerks (Figure 36)
2. Lubricate guide wheel screw jacks (Figure 37)
3. Lubricate depth stop zerks (Figure 38, 41)
4. Lubricate any rigid, steerable, or wing strut component zerks (Figure 38, 42)

■ Every 20 hours

1. Lubricate bearing zerks on guide wheels with one shot of grease (Figure 39)
2. Lubricate the screw jacks in King Guides, or 3130 gangs (Figure 40)

■ Annually

1. Repack all wheel bearings (Figure 37, 38, 39, 40, 42)
2. Lubricate flip up mounting tubes (Figure 41)

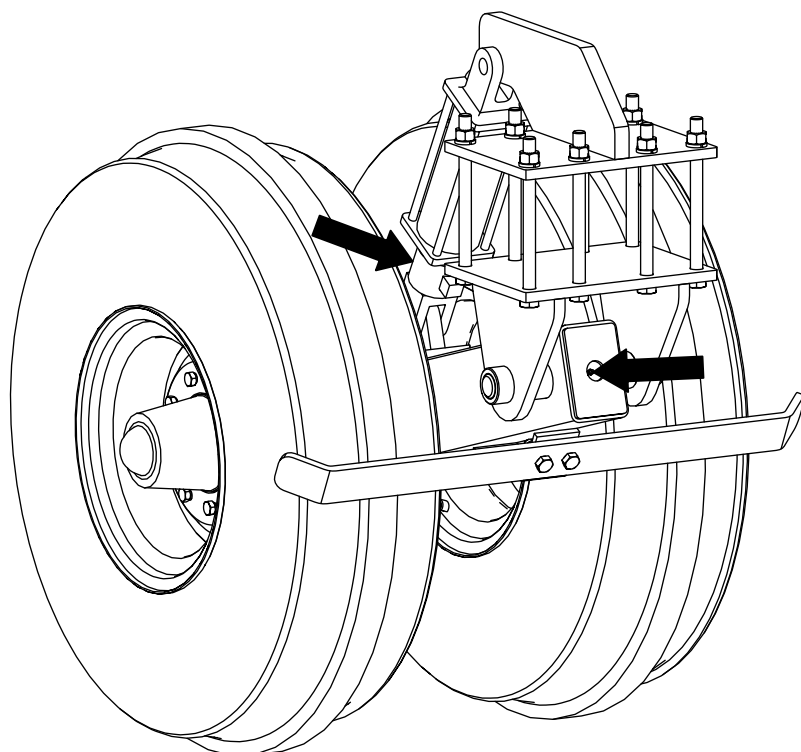


Figure 38 Rigid Struts Zerk and Depth Stop

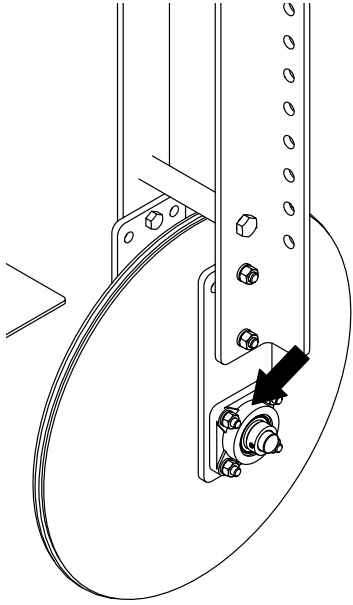


Figure 39 Guide Wheel Bearing Zerks

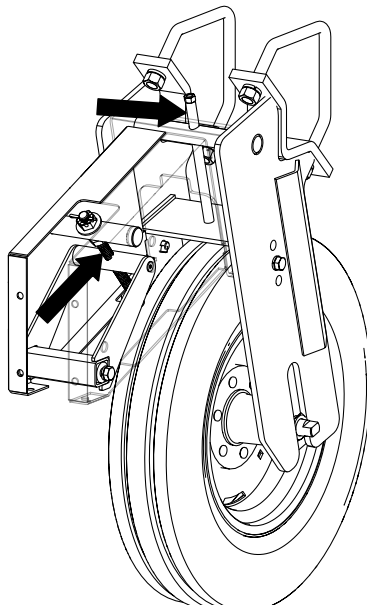


Figure 40 King Guide Screw Jacks

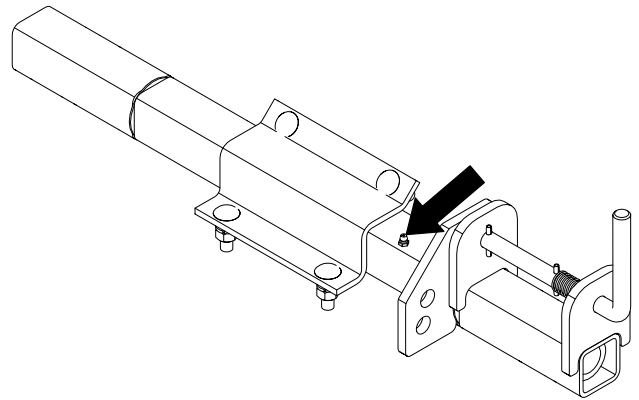


Figure 41 Flip UP Dual Disk Mounting Tube Zerks

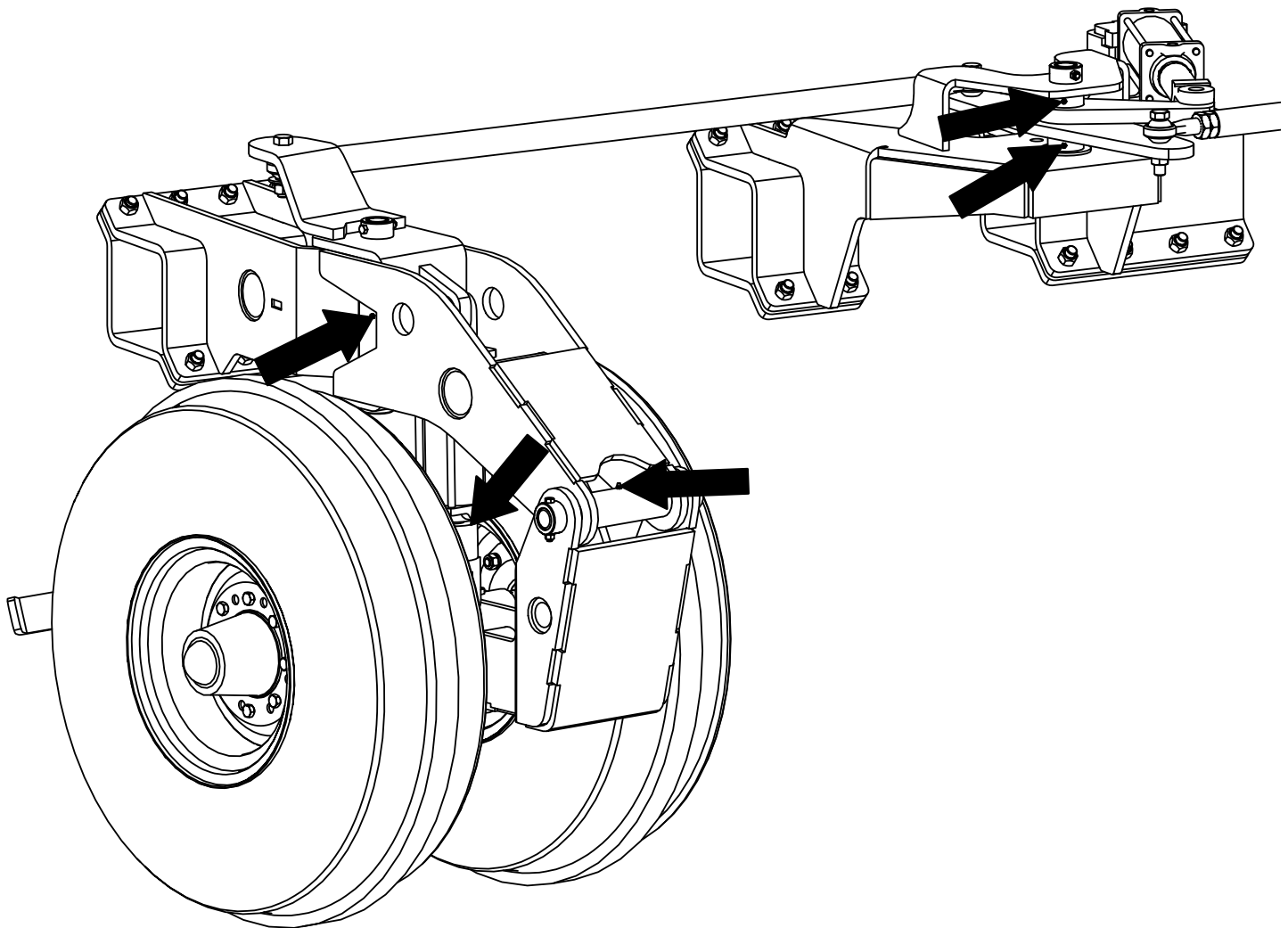


Figure 42 Steerable Struts Zerks and Depth Stop

Service & Maintenance *Continued*

Lubrication Service Record

NOTE: See prior pages for details.
Copy this page to continue service record.

✓ = CHECK
L = LUBRICATE

C = CHANGE
R = REPACK

[illegible]

Service & Maintenance *Continued*

Lubrication Service Record

NOTE: See prior pages for details.
Copy this page to continue service record.

✓ = CHECK
L = LUBRICATE

C = CHANGE
R = REPACK

[illegible]

TROUBLE SHOOTING

This Troubleshooting section applies specifically to the struts and folding systems of the cultivator.

Please contact your dealer's service department if you encounter a malfunction not addressed in this section.

PROBLEM	CAUSE	SOLUTION
Steering valve does not respond when activated	Coupler checking flow between tractor and valve	Inspect quick coupler on tractor and defoliator
	Faulty hydraulic couplers	Identify and replace faulty coupler
	Tractor hydraulic oil level low	Add hydraulic oil to tractor's reservoir
Weak/slow steering/lift/folding operation	Tractor hydraulic system has insufficient pressure	Inspect hydraulic system and repair or replace components causing problem
Wing Struts settling	Faulty or broken Counter-balance Valve	Replace and check tractor hydraulics

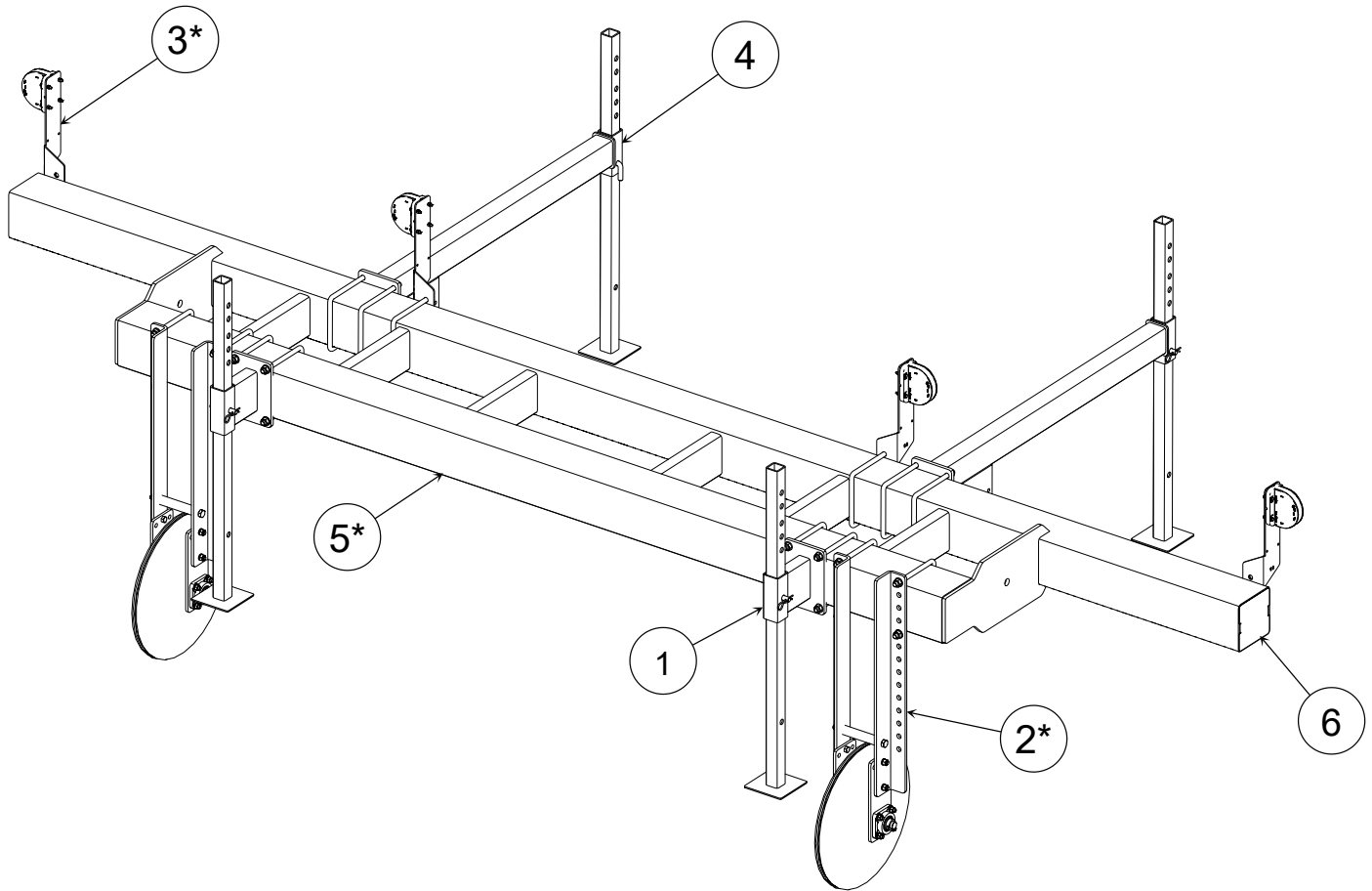


ROW CROP CULTIVATOR

Toolbar Components	46 - 63
Hitch Components	64 - 67
3130 Gang Components	68 - 71
Strut Components	72 - 85
Guide Wheel Components	86 - 103
Row Weeder Disc Components	104 - 111
Mounted Knives Components	112 - 113
Coulter Components	114 - 115
Flip Up Dual Disc Tubes Components	116 - 119
Setback Components	120 - 123
Tine Components	124 - 127
Row Guide Components	128 - 131
Rolling Shield Components	132 - 135
Open Top Shield Components	136 - 137
Down Pressure Spring Components	138 - 139
Parking Stand Components	140 - 143
Globe Tower Components	144 - 145

RIGID TOOLBARS

(ASSEMBLY DRAWING)



*OPTIONS AVAILABLE

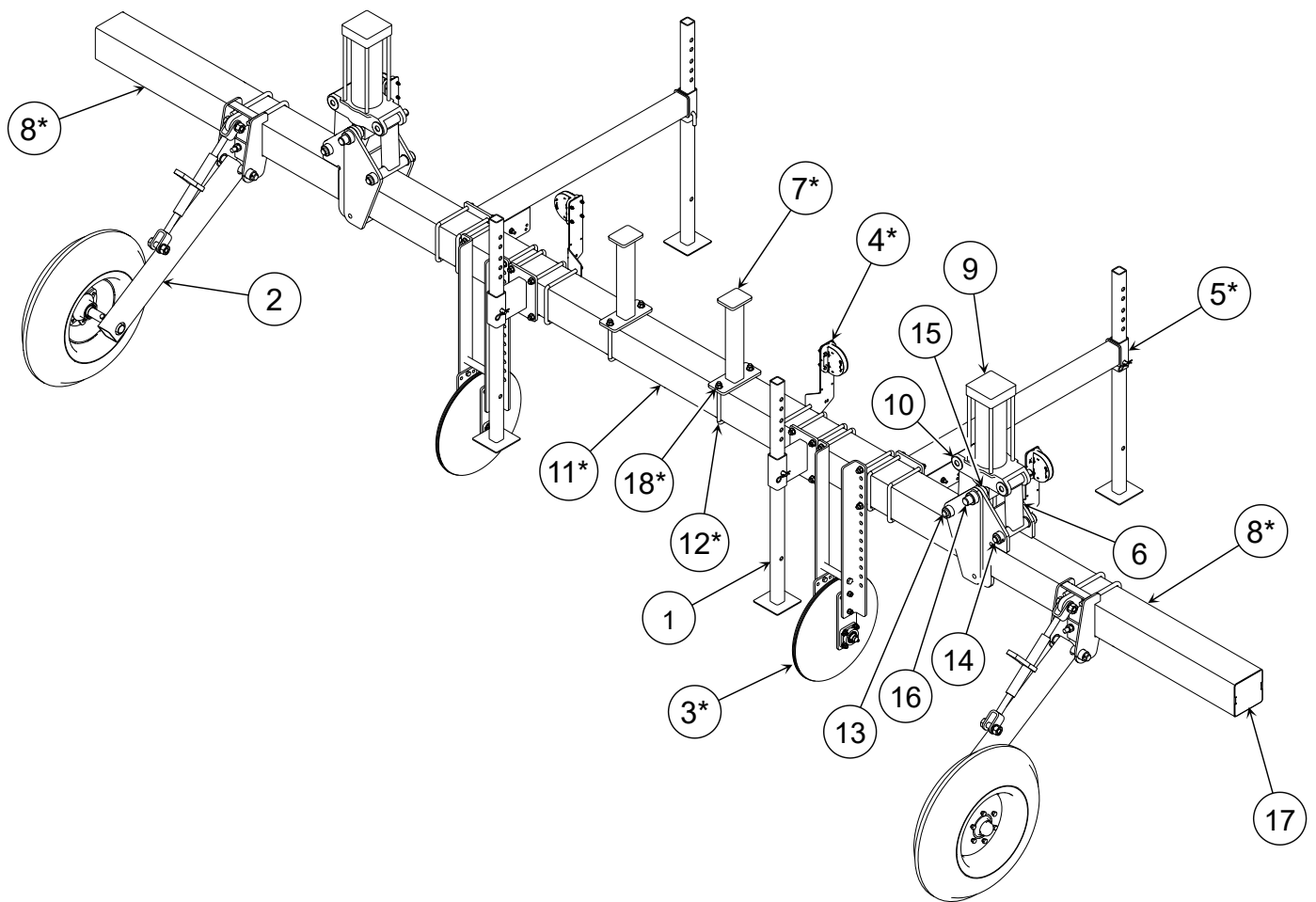
RIGID TOOLBARS

(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-1-3597	FRONT PARKING STAND ASSY	1
2-1	200-1-3666	ADJ. GUIDE WHEEL, SINGLE RIB, PAIR	0-1
2-2	200-1-3668	STEEL GUIDE WHEELS, PAIR	0-1
2-3	200-1-3699	PNEUMATIC GUIDE WHEELS, PAIR	0-1
3-1	200-1-3706	LIGHT KIT, RCC UNDER 200"	1
3-2	200-1-3707	LIGHT KIT, RCC OVER 200"	1
4	200-1-3732	REAR PARKING STANDS, PAIR	1
5-1	200-2-2740	WELD, 152" STANDOFF BAR	1
5-2	200-2-2741	WELD, 200" STANDOFF BAR	1
5-3	200-2-2742	WELD, 252" STANDOFF BAR	1
5-4	200-2-2743	WELD, 288" STANDOFF BAR	1
5-5	200-2-2744	WELD, 300" STANDOFF BAR	1
5-6	200-2-1687	WELD, 328" REINFORCED BAR	1
5-7	200-2-2746	WELD, 328" STANDOFF BAR	1
5-8	200-2-2745	WELD, 328" REINFORCED STANDOFF BAR	1
5-9	200-2-1743	WELD, 372" REINFORCED BAR	1
5-10	200-2-2759	WELD, 372" REINFORCED STANDOFF BAR	1
5-11	200-3-2109	TOOLBAR, 7" X 7" X 152"	1
5-12	200-3-2425	TOOLBAR, 7" X 7" X 200"	1
5-13	200-3-1986	TOOLBAR, 7" X 7" X 252"	1
5-14	200-3-2426	TOOLBAR, 7" X 7" X 288"	1
5-15	200-3-1983	TOOLBAR, 7" X 7" X 300"	1
5-16	200-3-1984	TOOLBAR, 7" X 7" X 328"	1
6	200-3-4307	PLATE, 7X7 TUBE END CAP	2

TOP FOLDING TOOLBARS

(ASSEMBLY DRAWING)



*OPTIONS AVAILABLE

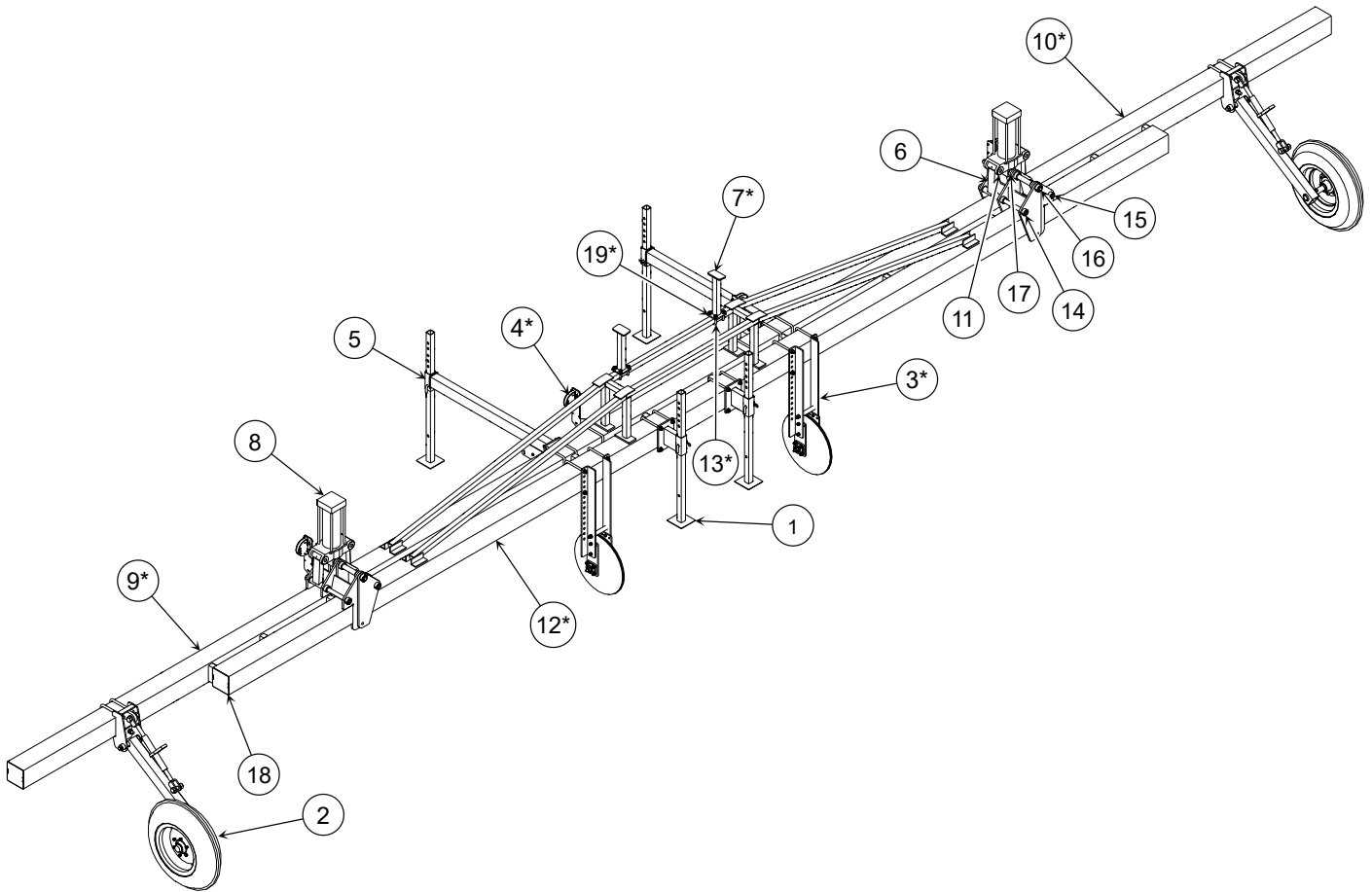
TOP FOLDING TOOLBARS

(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-1-3597	FRONT PARKING STAND ASSY	1
2	200-1-3666	ADJ. GUIDE WHEEL, SINGLE RIB, PAIR	0-1
3-1	200-1-3668	STEEL GUIDE WHEELS, PAIR	0-1
3-2	200-1-3699	PNEUMATIC GUIDE WHEELS, PAIR	0-1
4-1	200-1-3706	LIGHT KIT, RCC UNDER 200"	1
4-2	200-1-3707	LIGHT KIT, RCC OVER 200"	1
5	200-1-3732	REAR PARKING STANDS, PAIR	1
6	200-2-0316	CYLINDER LINKAGE	4
7-1	200-2-0321	WELDMENT, WING REST FLAT	2
7-2	200-2-2429	WELDMENT, WING REST 6.5 ANGLED	2
8-1	200-2-1277	63.5" WING WELD 180°	2
8-2	200-2-0413	72" WING WELD 180°	2
8-3	200-2-2017	74" WING WELD 180°	2
8-4	200-2-1627	75" WING WELD 180°	2
8-5	200-2-1491	84" WING WELD 180°	2
8-6	200-2-0381	92" WING WELD 180°	2
9	200-2-1564	6 X 12 CYLINDER ASSY	2
10	200-2-1611	CYL LINKAGE PIN - 7" LONG	4
11-1	200-2-2807	CENTER TOOLBAR 136" W/DECALS	1
11-2	200-2-2066	CENTER TOOLBAR 142" W/DECALS	1
11-3	200-2-2031	CENTER TOOLBAR 154" W/DECALS	1
11-4	200-2-2779	STANDOFF CENTER TOOLBAR 154" W/DECALS	1
11-5	200-2-2068	CENTER WELD, 158" F W/DECALS	1
11-6	200-2-2794	STANDOFF CENTER TOOLBAR 158" W/DECALS	1
11-7	200-2-2032	CENTER TOOLBAR 168" W/DECALS	1
11-8	200-2-2791	STANDOFF CENTER TOOLBAR 168" W/DECALS	1
11-9	200-2-2071	CENTER WELD, 184" F W/DECALS	1
11-10	200-2-2788	STANDOFF CENTER TOOLBAR 184" W/DECALS	1
11-11	200-2-2072	CENTER WELD, 198" F W/DECALS	1
11-12	200-2-2803	STANDOFF CENTER TOOLBAR 198" W/DECALS	1
11-13	200-2-2073	CENTER WELD, 206" F W/DECALS	1
11-14	200-2-2797	STANDOFF CENTER TOOLBAR 206" W/DECALS	1
11-15	200-2-2074	CENTER WELD, 242" F W/ DECALS	1
11-16	200-2-2800	STANDOFF CENTER TOOLBAR 242" W/DECALS	1
12-1	200-3-0344	U-BOLT, 5/8 NC X 7 X 8.5 LONG	2
12-2	200-3-0801	U-BOLT, 1/2 NC X 2 X 3IN LG	4
13	200-3-0513	PIN, 1-1/4" X 11" PLATED	2
14	200-3-0526	PIN, 1-1/4" X 9.62" PLATED	2
15	200-3-3285	BUSHING, GARMAX, 1 1/2" X 1 3/4" X 1 1/2"	4
16	200-3-3431	PIN, 1 1/2" X 11 1/2" PLATED	2
17	200-3-4307	PLATE, 7X7 TUBE END CAP	2
18-1	900-06145	VM-NUT, FLNG SPIRALOCK	4
18-2	900-06143	VM-NUT, SPIRALOCK FLNG 1/2-13	8

REINFORCED TOP FOLDING TOOLBARS

(ASSEMBLY DRAWING)



*OPTIONS AVAILABLE

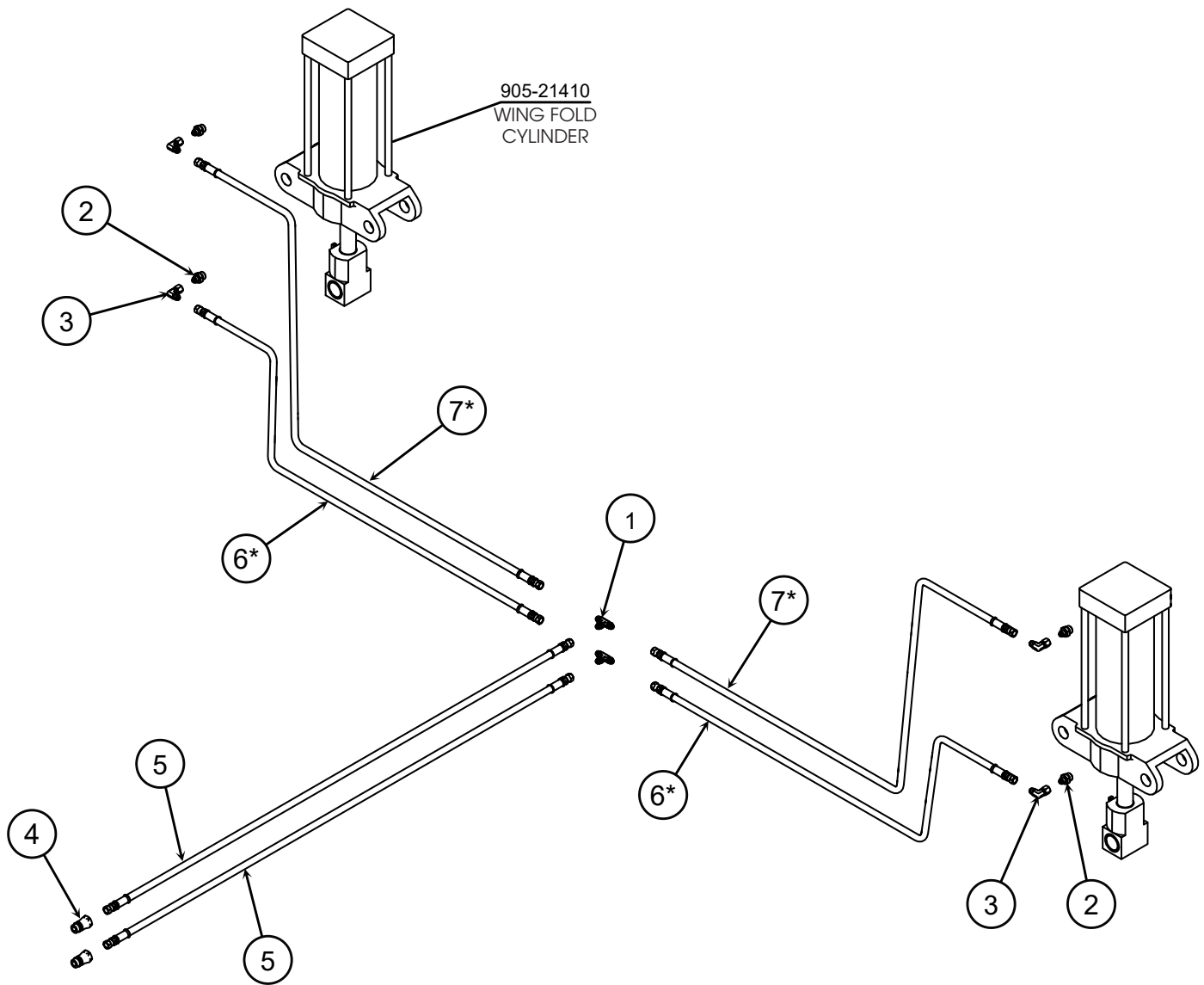
REINFORCED TOP FOLDING TOOLBARS

(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-1-3597	FRONT PARKING STAND ASSY	1
2	200-1-3666	ADJ. GUIDE WHEEL, SINGLE RIB, PAIR	0-1
3-1	200-1-3668	STEEL GUIDE WHEELS, PAIR	0-1
3-2	200-1-3699	PNEUMATIC GUIDE WHEELS, PAIR	0-1
4-1	200-1-3706	LIGHT KIT, RCC UNDER 200"	1
4-2	200-1-3707	LIGHT KIT, RCC OVER 200"	1
5	200-1-3732	REAR PARKING STANDS, PAIR	1
6	200-2-0316	CYLINDER LINKAGE	4
7-1	200-2-0321	WELDMENT, WING REST FLAT	2
7-2	200-2-2429	WELDMENT, WING REST 6.5 ANGLED	2
8	200-2-1564	6 X 12 CYLINDER ASSY	2
9-1	200-2-1309	72" DBL BEAM WING WELD RH	1
9-2	200-2-1311	92" DBL BEAM WING WELD RH	1
9-3	200-2-1632	110" DBL BEAM WING WELD RH	1
9-4	200-2-1313	122" DBL BEAM WING WELD RH	1
9-5	200-2-1387	134" DBL BEAM WING WELD RH	1
10-1	200-2-1310	72" DBL BEAM WING WELD LH	1
10-2	200-2-1312	92" DBL BEAM WING WELD LH	1
10-3	200-2-1631	110" DBL BEAM WING WELD LH	1
10-4	200-2-1314	122" DBL BEAM WING WELD LH	1
10-5	200-2-1388	134" DBL BEAM WING WELD LH	1
11	200-2-1611	CYLINDER LINKAGE PIN 7" LONG	4
12-1	200-2-2075	CENTER WELD, 184" F W/DECALS	1
12-2	200-2-2076	CENTER WELD, 198" FR W/DECALS	1
12-3	200-2-2078	CENTER WELD, FFDB 206" W/DECALS	1
12-4	200-2-2083	CENTER WELD, FR 242 W/DECALS	1
12-5	200-2-2084	CENTER WELD, FFDB 264 W/DECALS	1
12-6	200-2-2085	CENTER WELD, FR 286 W/DECALS	1
13-1	200-3-0344	U-BOLT, 5/8 NC X 7 X 8.5 LONG	2
13-2	200-3-0801	U-BOLT, 1/2 NC X 2 X 3IN LG	4
14	200-3-2450	PIN, 1-1/4" X 19.75" PLATED	2
15	200-3-2451	PIN, 1-1/4" X 18.38"	2
16	200-3-3170	PIN, 1 1/2" X 19 3/4"	2
17	200-3-3285	BUSHING, GARMAX, 1 1/2" X 1 3/4" X 1 1/2"	4
18	200-3-4307	PLATE, 7X7 TUBE END CAP	2-4
19-1	900-06143	VM-NUT, SPIRALOCK FLNG 1/2-13	8
19-2	900-06145	VM-NUT, FLNG SPIRALOCK	4

TOP FOLDING HOSE KITS

(ASSEMBLY DRAWING)



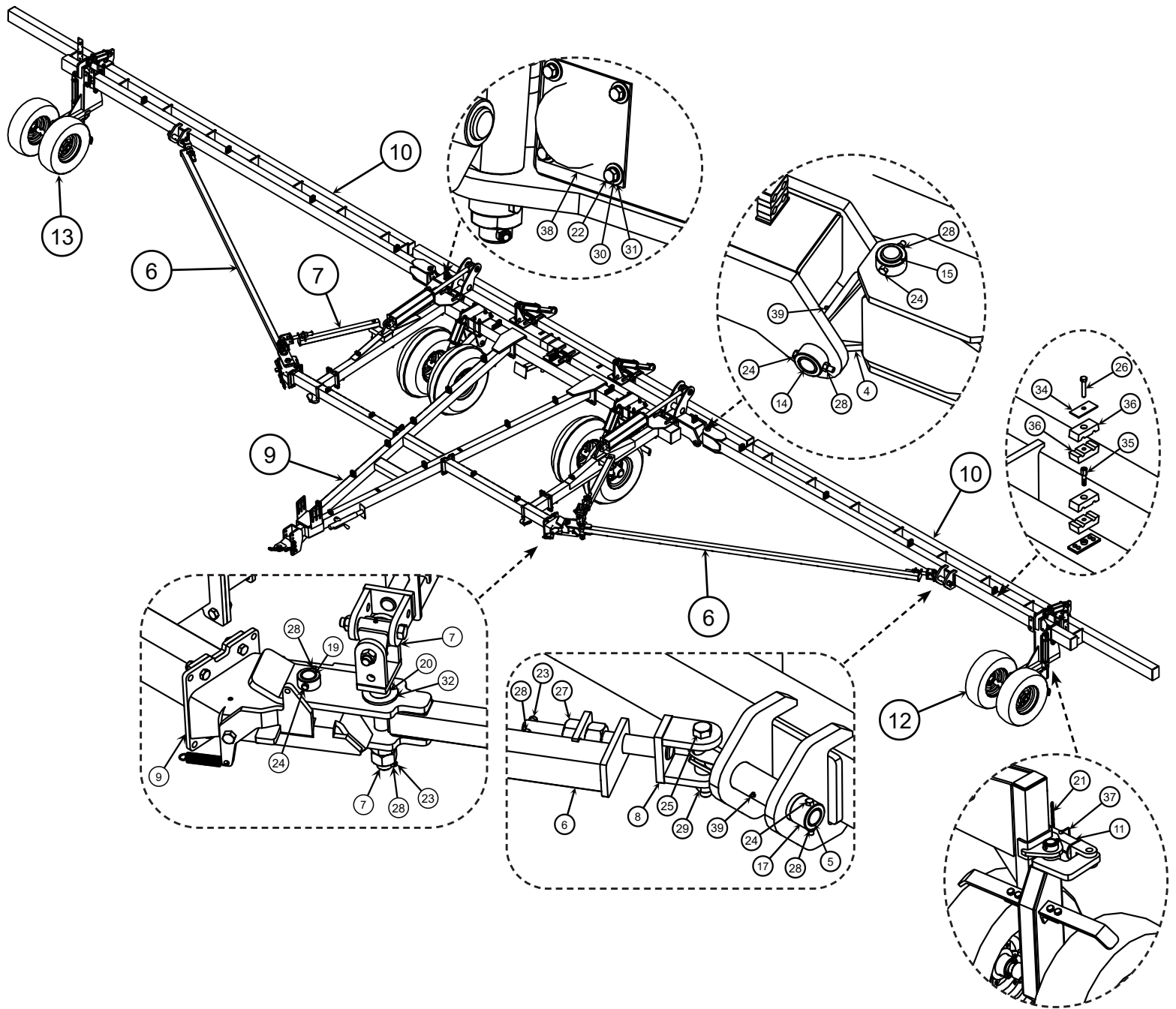
*OPTIONS AVAILABLE

TOP FOLDING HOSE KITS

(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	905-03112	ADAPTER, TEE, 6MJ	2
2	905-03162	RESTRICTOR , 6MJ x 6MB, 1/16 HOLE	4
3	905-03163	ADAPTER, ELBOW 90°, 6FJX x 6MJ	4
4	905-19126	QUICK, COUPLER, TIP, 8FB	2
5	905-19146	HOSE, 3/8 X 60", 8MB X 6FJX	2
-	200-1-3720	HOSE KIT, 12R-22	
6	905-19152	HOSE, 3/8 x 82", 6FJX x 6FJX	2
7	905-19119	HOSE, 3/8 x 100", 6FJX x 6FJX	2
-	200-1-3719	HOSE KIT, 12R-30	
6	905-19147	HOSE, 3/8 x 111", 6FJX x 6FJX	2
7	905-19155	HOSE, 3/8 x 120", 6FJX x 6FJX	2
-	200-1-3718	HOSE KIT, 18R-22	
6	905-19151	HOSE, 3/8 x 134", 6FJX x 6FJX	2
7	905-19148	HOSE, 3/8 x 142", 6FJX x 6FJX	2
-	200-1-3717	HOSE KIT, 16R-30	
6	905-19148	HOSE, 3/8 x 142", 6FJX x 6FJX	2
7	905-19149	HOSE, 3/8 x 152", 6FJX x 6FJX	2
-	200-1-3716	HOSE KIT, 24R-22	
6	905-19149	HOSE, 3/8 x 152", 6FJX x 6FJX	2
7	905-19150	HOSE, 3/8 x 160", 6FJX x 6FJX	2
**	905-21410	CYLINDER 6 X 12 PAINTED BLACK	2
		**NOT INCLUDED IN HOSE KIT	

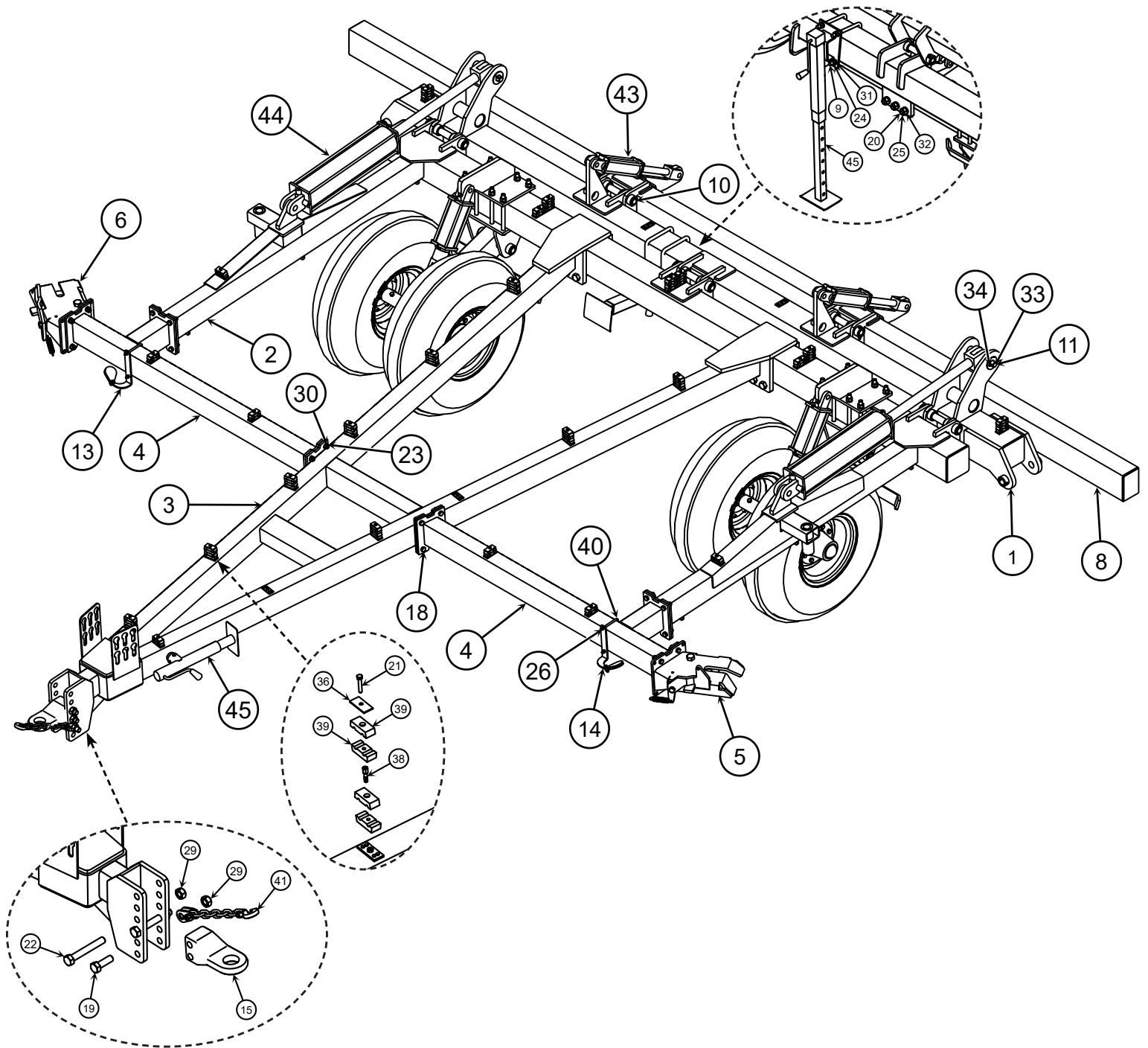
REAR FOLDING TOOLBAR 36R22
200-1-3845
(ASSEMBLY DRAWING)



REAR FOLDING TOOLBAR 36R22
200-1-3845
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-1-3805	LIGHT KIT, 42' - 52' TOOLBAR	1
2	200-1-3834	HOSE KIT, 65' REAR FOLD TOOLBAR	1
3	200-1-3843	DECAL PACKAGE, TOOLBAR, 3130 REAR FOLD CULTIVATOR	1
4	200-2-2236	WING PIVOT LINKAGE WELD	2
5	200-2-2249	WING SUPPORT LINKAGE WELD	2
6	200-2-2360	WING SUPPORT TUBE WELD - (3622 CULTIVATOR)	2
7	200-2-2417	WING SUPPORT ARM ASSEMBLY - STRAIGHT	2
8	200-2-2440	CLEVIS WELD - WING SUPPORT TUBE	2
9	200-2-2456	CENTER SECTION ASSY-REAR FOLD 36R TOOLBAR	1
10	200-2-2458	WING WELD, 3622, 2013	2
11	200-2-2479	REAR WING STEER TRANSPORT LOCK WELD-CULTIVATOR	2
12	200-2-2811	EXT. WING WHEEL ADJ STRUT ASSY - LH (3130)	1
13	200-2-2812	EXT. WING WHEEL ADJ STRUT ASSY - RH (3130)	1
14	200-3-3431	HINGE PIN, WING 1.5" DIA	2
15	200-3-4396	HINGE PIN, WING 1.5" DIA	2
16	200-3-4775	DECAL - WHEEL TRANSPORT LOCK	2
17	200-3-4777	BUSHING	2
18	200-3-4785	NYLON SLEEVE W/ VELCRO - 5FT LONG	2
19	200-3-5464	PIN - KNUCKLE, WING SUPPORT	2
20	500-3-1151	BUSHING, REAMED	2
21	500-3-2858	FUD RETAINING CHAIN	2
22	900-01105	3/8-16 X .75" HEX BOLT	8
23	900-01117	3/8 NC X 2 HEX BOLT GR 5	6
24	900-01125	3/8NC X 3 HEX BOLT GR5	10
25	900-01481	HEX BOLT - 7/8 NC X 6	2
26	900-02356	BOLT, HH 5/16 X 1-3/4, GR5 ZP	8
27	900-06027	NUT HEX 1½ NC ZP	4
28	900-06500	NUT HEX 3/8 TOP LOCK	16
29	900-06512	7/8 NC TOP LOCK NUT	2
30	900-11011	WASHER LOCK 3/8"	8
31	900-11033	FLAT WASHER 3/8 ZP	8
32	900-11044	REGULAR FLAT WASHER 1.5	2
33	900-31002	3/16" CABLE CLAMP	4
34	900-31068	COVER PLATE	8
35	900-31071	BOLT, STACKING 5/16 UNC	8
36	900-31083	CLAMP BODY - HOSE HOLDER 9.5 MM	32
37	900-42055	SNAPPER PIN .25 X 2.50 USABLE LENGTH	2
38	905-04064	BUMPER	2
39	905-15024	ZERK 1/4-28 UNF STRAIGHT	8

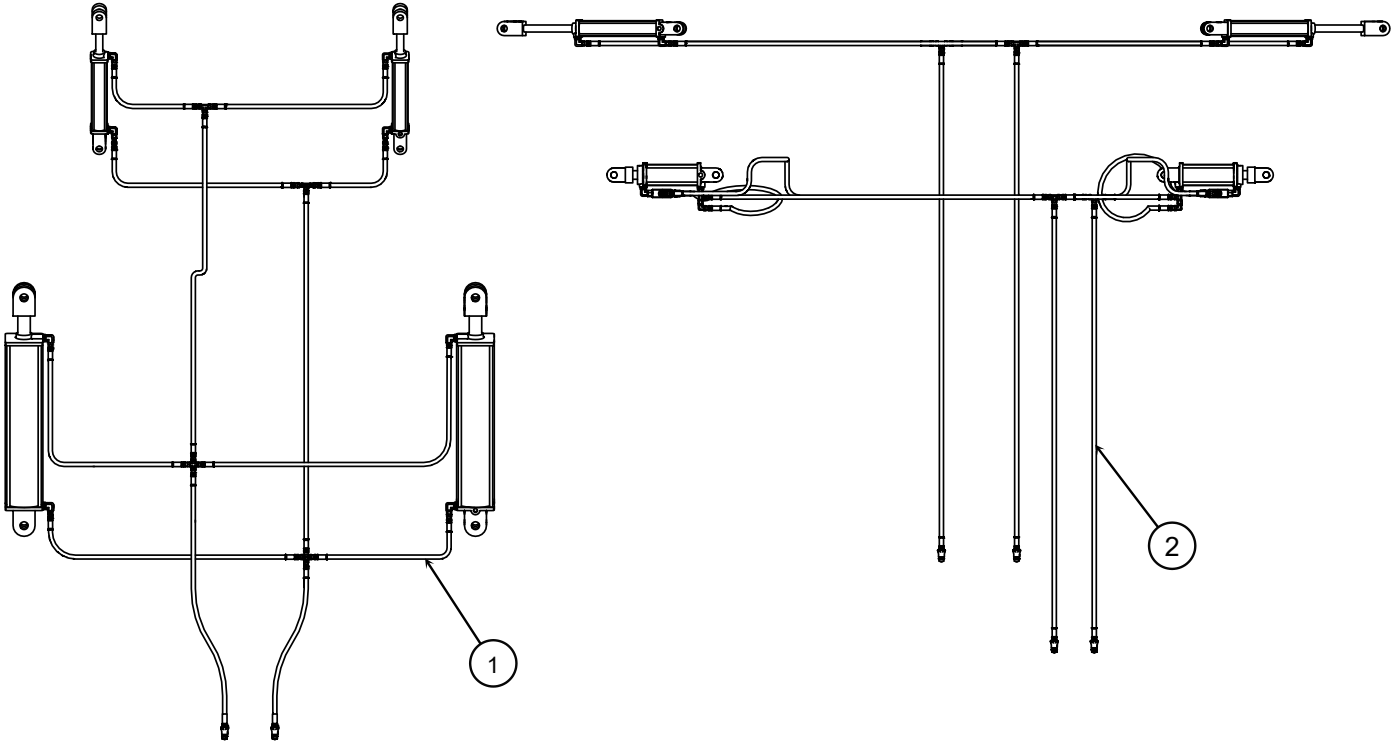
REAR FOLDING TOOLBAR 36R22 - CENTER ASSEMBLY 200-2-2456 (ASSEMBLY DRAWING)



REAR FOLDING TOOLBAR 36R22 - CENTER ASSEMBLY
200-2-2456
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-2-2238	CENTER MID BAR WELD	1
2	200-2-2239	CENTER FRONT BAR WELD	1
3	200-2-2241	HITCH FRAME WELDMENT	1
4	200-2-2285	SIDE TUBE WELD - HITCH	2
5	200-2-2361	WING LATCH ASSY - LH	1
6	200-2-2372	WING LATCH ASSY - RH	1
7	200-2-2396	JACK STAND WELD W/ EXTENSION	1
8	200-2-2457	CENTER REAR BAR WELD - 2013	1
9	200-3-0345	3/4 NC U-BOLT, 7 X 9.13	2
10	200-3-3431	HINGE PIN, WING 1.5" DIA	5
11	200-3-4426	PIN - MAIN LIFT	2
12	200-3-4428	CABLE, 3/16" X 12 FT	2
13	200-3-4459	CABLE SHEAVE MOUNT - RH	1
14	200-3-4546	CABLE SHEAVE MOUNT - LH	1
15	505-3-0831	HITCH TONGUE COMP CAT3	1
16	900-01111	3/8NC X 1-1/4 HEX BOLT GR 5	2
17	900-01125	3/8NC X 3 HEX BOLT GR5	5
18	900-01345	BOLT, HH, 5/8-11 X 2, GR5 ZP	24
19	900-01519	BOLT, HH, 1-8 x 3, GR5 ZP	1
20	900-01553	HEX BOLT - 1NC X 10-1/2	6
21	900-02356	BOLT, HH 5/16 X 1-3/4, GR5 ZP	24
22	900-02930	BOLT, HH, 1-8 x 7, GR5 ZP	2
23	900-06013	NUT, HH, 5/8-11, ZP	24
24	900-06015	NUT, HH, 3/4-10, ZP	4
25	900-06019	1-8 HEX NUT	6
26	900-06139	3/8 NC FLANGED WHIZ NUT	4
27	900-06143	1/2 NC SPIRALOCK NUT ZP GR5	4
28	900-06500	NUT HEX 3/8 TOP LOCK	7
29	900-06514	NUT, LOCK, 1" NC, TOP, ZP	3
30	900-11015	WASHER, LOCK, 5/8, ZP	24
31	900-11017	WASHER, LOCK, 3/4, ZP	4
32	900-11021	LOCK WASHER - 1	6
33	900-11042	FLAT WASHER 1-1/4"	4
34	900-29208	5/16 X 2-1/4 ROLL PIN	4
35	900-31002	3/16" CABLE CLAMP	4
36	900-31068	COVER PLATE	24
37	900-31069	CLAMP BODY - HOSE HOLDER	42
38	900-31071	BOLT, STACKING 5/16 UNC	15
39	900-31083	CLAMP BODY - HOSE HOLDER 9.5 mm	36
40	900-35000	U-BOLT 3/8 X 6 X 5 X 1.5	2
41	905-07123	TOW CHAIN SAFETY 21,000 LB	1
42	905-07129	FIXED EYE BLOCK (PULLEY) 2-1/2"	2
43	905-21391	HYD CYL - 3 X 10	2
44	905-21442	HYDRAULIC CYL 5 X 24	2
45	905-23018	JACK - 5000 LB (long)	1

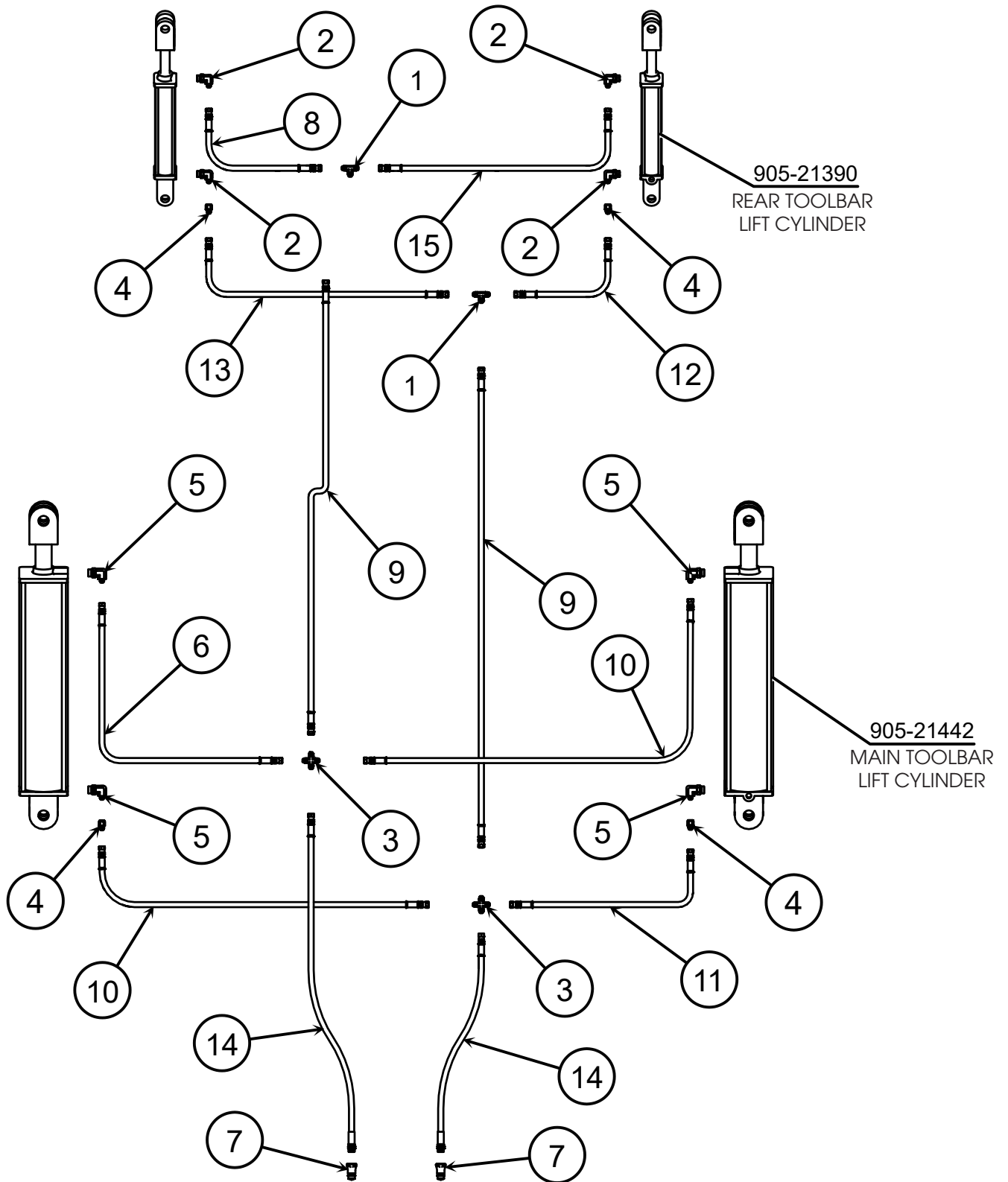
HOSE KIT, 65' REAR FOLD TOOLBAR
200-1-3834
(ASSEMBLY DRAWING)



HOSE KIT, 65' REAR FOLD TOOLBAR
200-1-3834
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-1-3801	HOSE KIT, TOOLBAR LIFT	1
2	200-1-3889	HOSE KIT, OUTSIDE WHEEL CYLINDERS (65')	1

HOSE KIT, TOOLBAR LIFT 200-1-3801 (ASSEMBLY DRAWING)



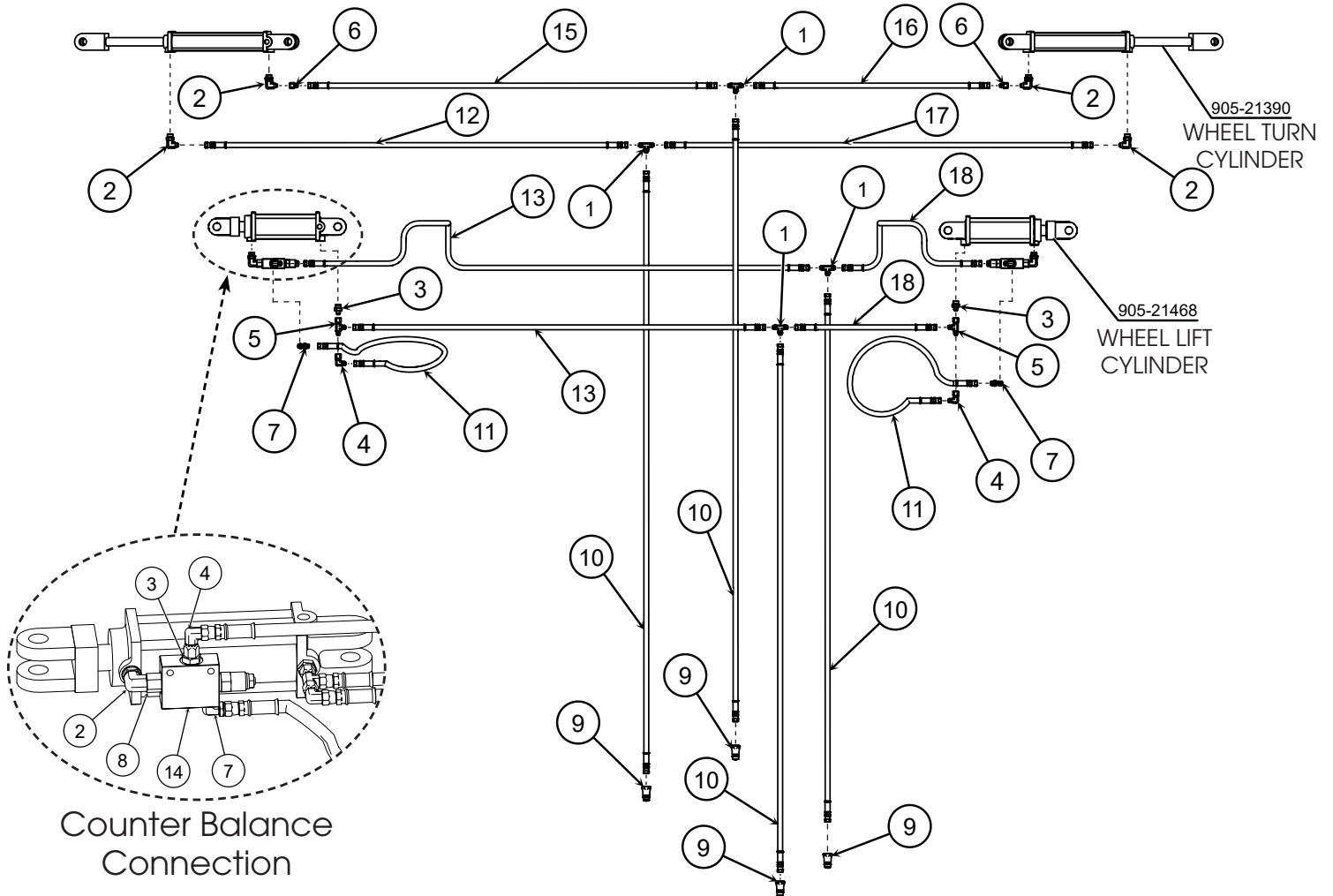
HOSE KIT, TOOLBAR LIFT
200-1-3801
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	905-03112	ADAPTER, TEE, 6MJ	2
2	905-03114	ADAPTER, ELBOW 90°, 6MJ x 8MB	4
3	905-03141	ADAPTER, CROSS, 6MJ	2
4	905-03220	RESTRICTOR , 6FJ x 6MJ, 1/16 HOLE	4
5	905-03257	ADAPTER, ELBOW 90°, 6MJ x 10MB	4
6	905-19122	HOSE, 3/8 X 175.0, 6FJX x 6FJX	1
7	905-19126	QUICK, COUPLER, TIP, 8FB	2
8	905-19152	HOSE, 3/8 X 84.0, 6FJX x 6FJX	1
9	905-19153	HOSE, 3/8 x 96", 6FJX x 6FJX	2
10	905-19175	HOSE, 3/8" x 144", 6FJX x 6FJX	2
11	905-19182	HOSE, 3/8 x 114", 6FJX x 6FJX	1
12	905-19191	HOSE, 3/8 x 24", 6FJX x 6FJX	1
13	905-19196	HOSE, 3/8 x 72", 6FJX x 6FJX	1
14	905-19236	HOSE, 3/8 x 155", 8MB x 6FJX	2
15	905-19237	HOSE, 3/8 x 38", 6FJX x 6FJX	1
**	905-21390	HYD CYL TIE ROD 2" X 10" BLACK	2
**	905-21442	HYD CYL TIE ROD 5" X 24" BLACK	2
		**NOT INCLUDED IN HOSE KIT	

HOSE KIT, OUTSIDE WHEEL CYLINDERS (65')

200-1-3889

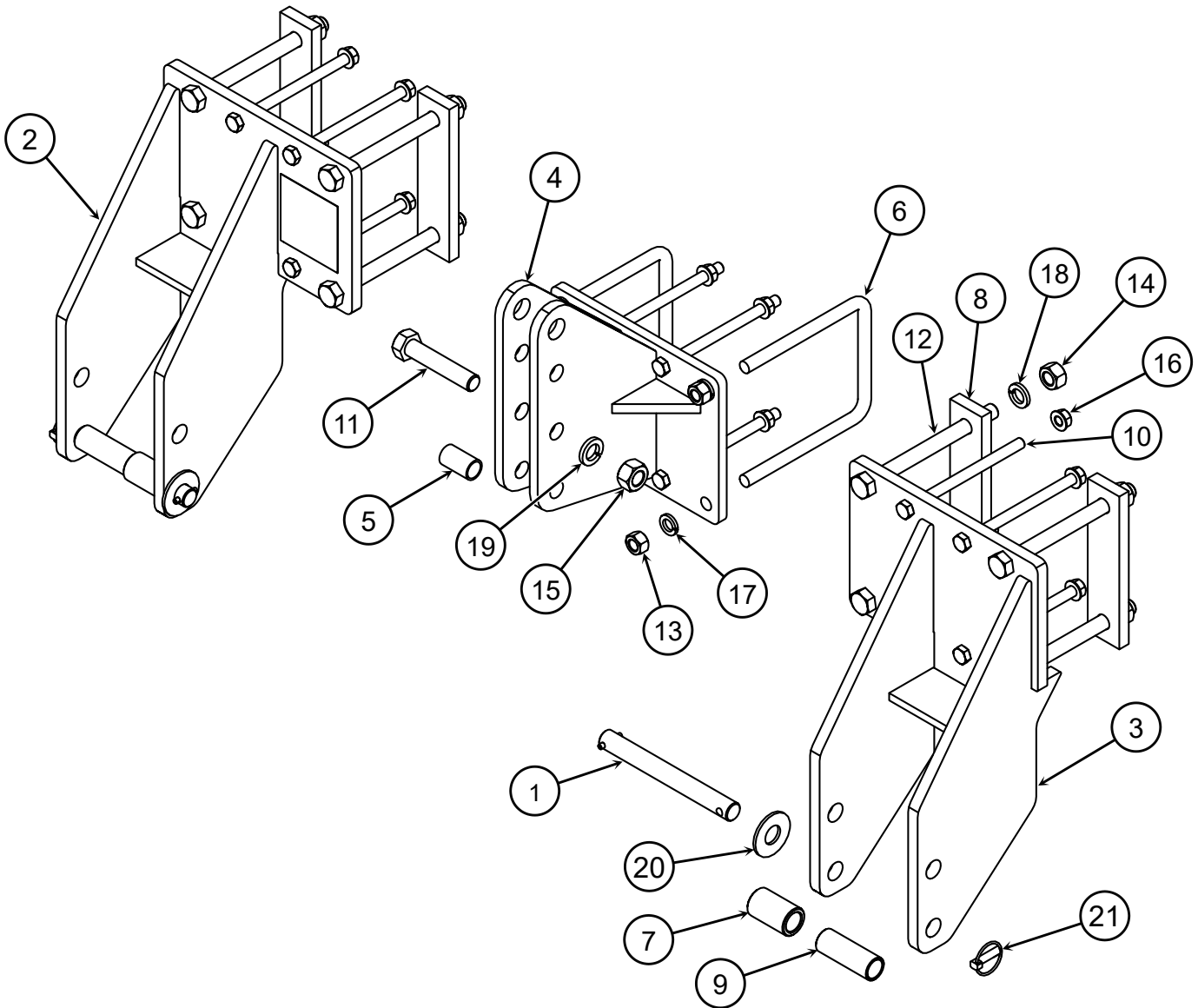
(ASSEMBLY DRAWING)



HOSE KIT, OUTSIDE WHEEL CYLINDERS (65')
200-1-3889
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	905-03112	ADAPTER, TEE, 6MJ	4
2	905-03114	ADAPTER, ELBOW 90°, 6MJ x 8MB	6
3	905-03115	ADAPTER - 8MORB X 6FJIC	4
4	905-03163	ADAPTER, ELBOW 90°, 6FJX x 6MJ	4
5	905-03199	ADAPTER, TEE, 6FJX X 6MJ X 6MJ	2
6	905-03220	RESTRICTOR , 6FJ x 6MJ, 1/16 HOLE	2
7	905-03303	ADAPTER, ELB 90, 6MJ X 4MORB	2
8	905-03304	ADAPTER - 8MORB X 6FJIC	2
9	905-19126	QUICK, COUPLER, TIP, 8FB	4
10	905-19179	HOSE, 3/8" X 270", 6FJX X 8MB	4
11	905-19192	HOSE, 3/8 x 18", 6FJX x 6FJX	2
12	905-19264	HOSE, 3/8" x 398", 6FJX x 6FJX	1
13	905-19265	HOSE, 3/8" x 412", 6FJX x 6FJX	2
14	905-98090	COUNTER BALANCE VALVE FORCE AMERICA 1012828	2
15	905-98161	HOSE, 3/8" x 382", 6FJX x 6FJX	1
16	905-98162	HOSE, 3/8" X 426", 6FJX X 6FJX	1
17	905-98163	HOSE, 3/8" X 436", 6FJX X 6FJX	1
18	905-98160	HOSE, 3/8" X 358", 6FJX X 6FJX	2
**	905-21390	HYD CYL TIE ROD 2" X 10" BLACK	2
**	905-21468	HYD CYLINDER, 3" X 6"	2
		**NOT INCLUDED IN HOSE KIT	

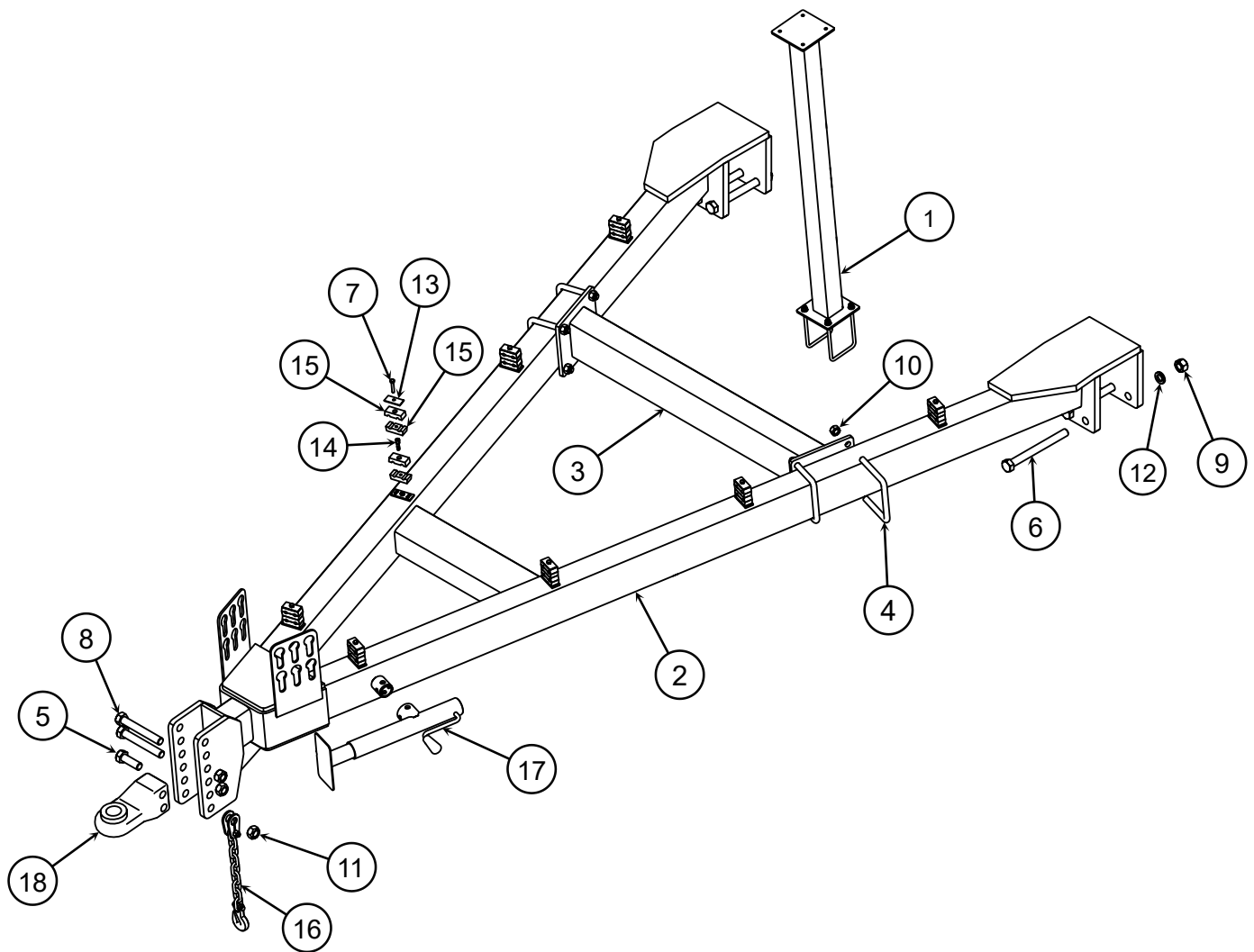
KIT, HITCH 3-POINT HC 3130/2065HC
200-1-3640
(ASSEMBLY DRAWING)



KIT, HITCH 3-POINT HC 3130/2065HC
200-1-3640
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-2-0553	PIN, LOWER 3 PT HITCH	2
2	200-2-2041	LOWER 3 PT HITCH LH	1
3	200-2-2043	LOWER 3PT HITCH RH	1
4	200-2-2045	UPPER MAST WITH DECAL	1
5	200-3-0151	MAST SPACER BUSHING 1" ID	1
6	200-3-0345	U-BOLT, 3/4 NC X 7 X 9.13 LG	2
7	200-3-0959	SPACER, 1 3/4 OD, LOWER, PLATED	2
8	200-3-0970	STRAP, 7 X 7 BOLTING, 7/8"	4
9	200-3-5500	BUSHING - LOWER 3 PT	2
10	900-01381	VM-BOLT, HH 5/8 X 9 GR5 ZP	12
11	900-01531	VM-BOLT, HH 1-8 X 5 GR5 ZP	1
12	900-03039	VM-BOLT, HH 7/8 NC 10 GR8 ZP	8
13	900-06015	VM-NUT, HEX 3/4-10 ZP	4
14	900-06017	VM-NUT, HH 7/8-9 FINISHED ZP	8
15	900-06019	VM-NUT, HEX FINISHED FULL	1
16	900-06145	VM-NUT, FLNG SPIRALOCK	12
17	900-11017	VM-WASHER, LOCK 3/4" ZP	4
18	900-11019	VM-WASHER, LOCK 7/8"	8
19	900-11021	VM-WASHER, LOCK REGULAR 1" ZP	1
20	900-11041	WASHER, FLAT 1-1/8" ZP	2
21	900-25012	VM-PIN, KLIK, 7/16" X 1 3/4"	2

**KIT, HITCH PULL TYPE
200-2-2821
(ASSEMBLY DRAWING)**

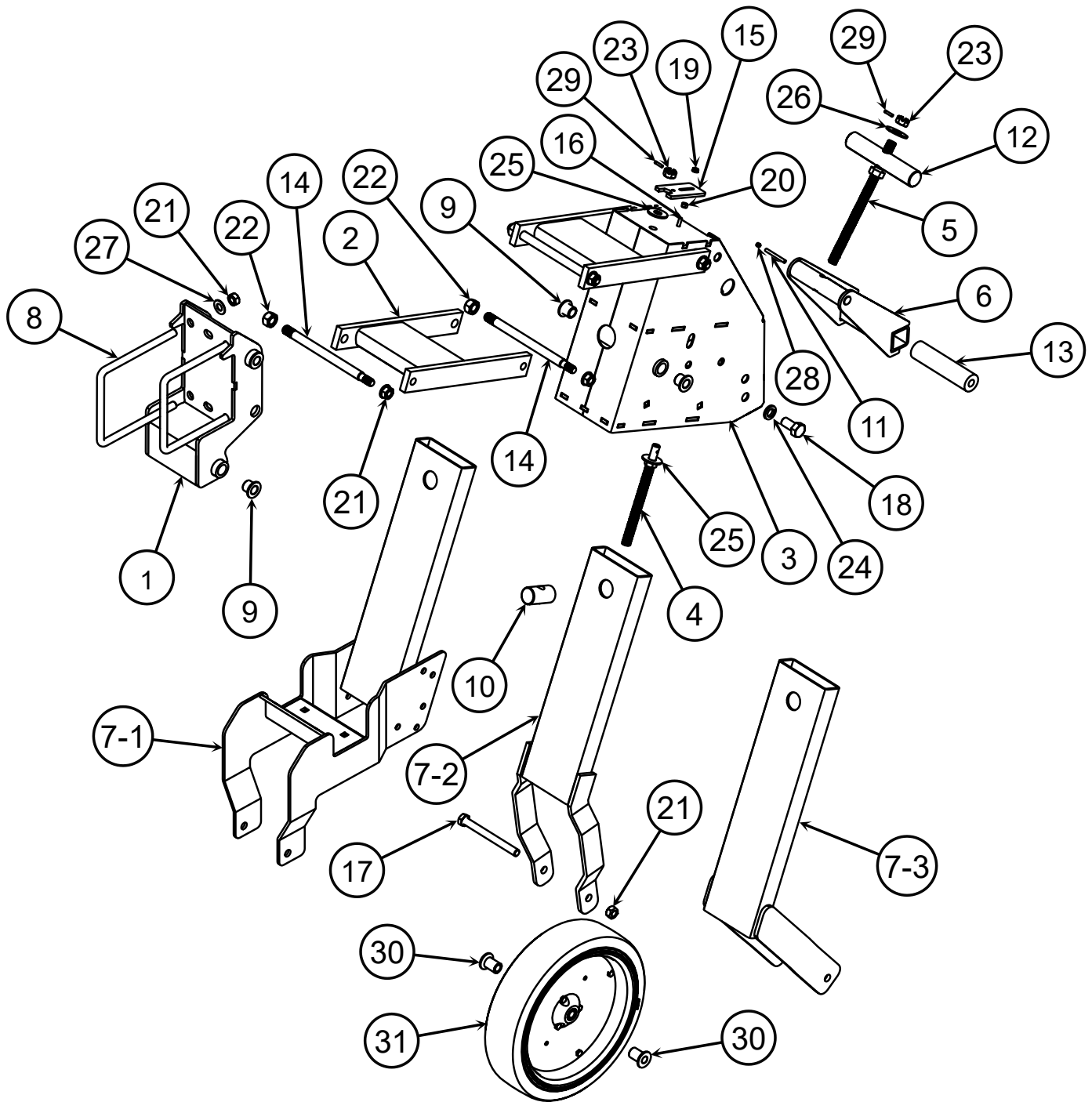


**KIT, HITCH PULL TYPE
200-2-2821
(BILL OF MATERIALS)**

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-2-2818	GLOBE TOWER ASSY	1
2	200-2-2819	HITCH FRAME WELD, 24R W/STEERABLES	1
3	200-2-2820	GLOBE TOWER MOUNT 24R, WELD	1
4	200-3-0024	U-BOLT 3/4 X 6 X 5.5 X 1.5	4
5	900-01519	BOLT, HH, 1-8 x 3, GR5 ZP	1
6	900-01553	HEX BOLT - 1NC X 10-1/2	6
7	900-02356	BOLT, HH 5/16 X 1-3/4, GR5 ZP	8
8	900-02930	BOLT, HH, 1-8 x 7, GR5 ZP	2
9	900-06019	1-8 HEX NUT	6
10	900-06510	3/4 NUT, HEX TOP LOCK	8
11	900-06514	NUT, LOCK, 1" NC, TOP, ZP	3
12	900-11021	LOCK WASHER - 1	6
13	900-31068	COVER PLATE	8
14	900-31071	BOLT, STACKING 5/16 UNC	8
15	900-31083	CLAMP BODY - HOSE HOLDER 9.5 mm	32
16	905-07123	TOW CHAIN SAFETY 21,000 LB	1
17	905-23018	JACK - 5000 LB (long)	1
18	905-23023	HITCH TONGUE (BULL PULL) CAT4	1

3130 GANGS

200-1-3638 (KICK FORWARD), 200-1-3747 (KICK BACKWARD), 200-1-3798 (KICK DOWN)
(ASSEMBLY DRAWING)

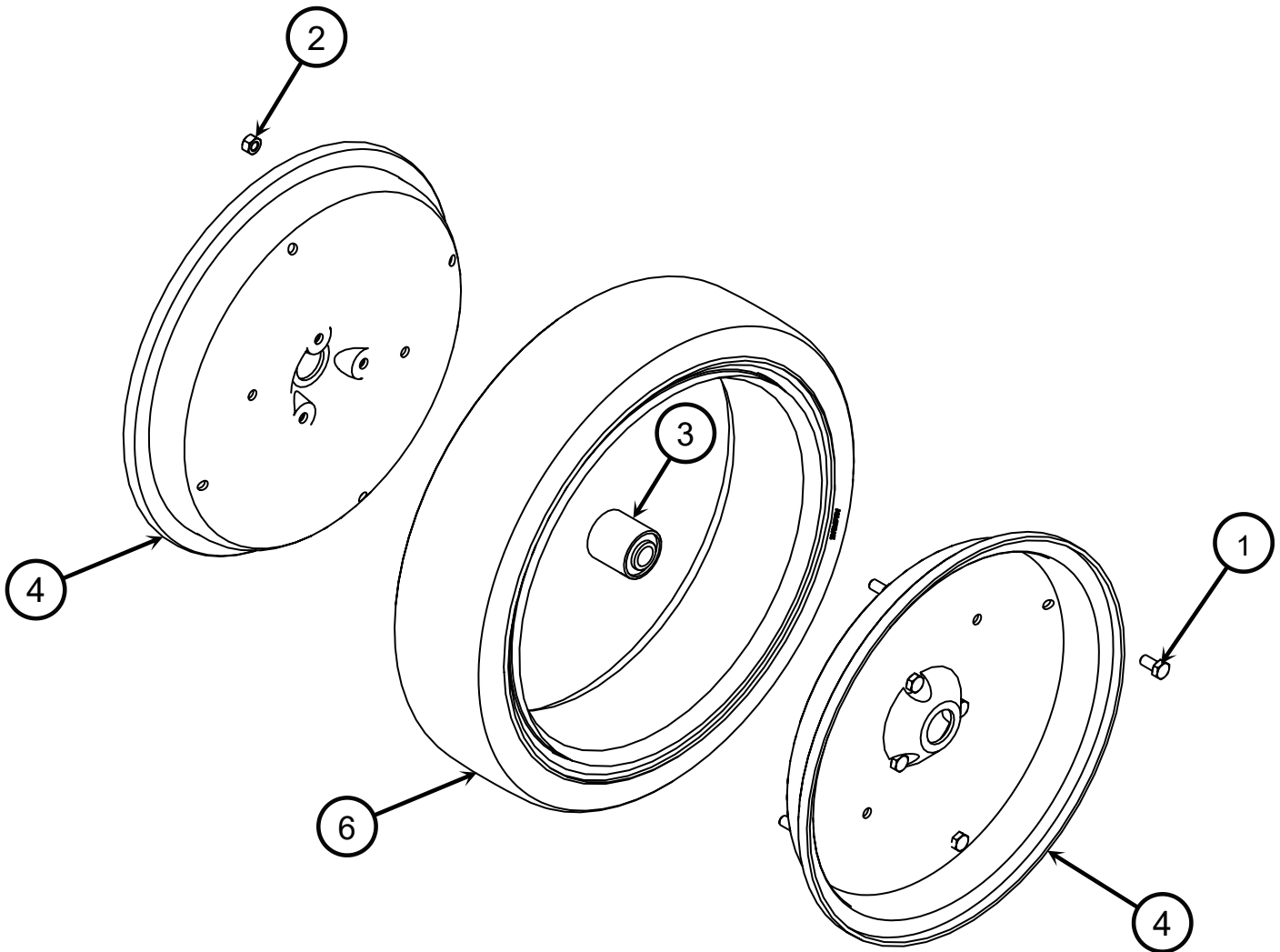


*OPTIONS AVAILABLE

3130 GANGS
200-1-3638 (KICK FORWARD), 200-1-3747 (KICK BACKWARD), 200-1-3798 (KICK DOWN)
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-2-1932	MOUNTING ANGLE	1
2	200-2-1933	LINKAGE H WELD	2
3	200-2-1936	MAST WELD	1
4	200-2-1945	MAST ADJUSTABLE SCREW WELD - ZP	1
5	200-2-2215	SCREW PITCH ADJUSTMENT	1
6	200-2-2216	PIVOT WELD	1
7-1	200-2-2095	GAUGE WHEEL MAST 3130 OPEN TOP (KICK FORWARD)	1
7-2	200-2-2233	WHEEL ARM GUIDE ROW (KICK DOWN)	1
7-3	200-2-2810	WHEEL (4 X 16) ARM GUIDE ROW (KICK BACKWARD)	1
8	200-3-0344	U-BOLT 5/8 X 7 X 7.5 X 1.69	2
9	200-3-0877	BUSHING FLANGED	8
10	200-3-3201	TRUNNION, THREADED	1
11	200-3-3438	1/4" ROUND 2-3/8" UHMW	1
12	200-3-3523	TRUNNION	1
13	200-3-3743	BAR PIVOT	1
14	200-3-3756	PIN DOWNPRESSURE KIT	4
15	200-3-4798	PLATE, GANG BOLT HOLD, 15/16"	1
16	900-01009	1/4-20 X 1 ZP HEX BOLT	1
17	900-01369	SCREW, CAP 5/8 X 6 UNC ZP	1
18	900-01399	3/4-NC X 1-1/2 HEX BOLT	2
19	900-06135	WHIZ NUT - 1/4 - 20	1
20	900-06496	1/4-20 TOP LOCK HEX NUT	1
21	900-06508	NUT HEX 5/8 UNC TOP LOCK	9
22	900-06510	3/4 NUT, HEX TOP LOCK	4
23	900-06705	5/8-18UNC SLOTTED HEX NUT	2
24	900-11017	WASHER, LOCK, 3/4, ZP	2
25	900-11037	WASHER, FLAT, 5/8"	2
26	900-11038	3/4" FLAT WASHER	1
27	900-11088	WASHER, FLAT, SAE, 5/8, ZP	4
28	900-16237	SOCKET HEAD SET SCREW, 5/16 x 5/16	1
29	900-29470	PIN 3/16 X 7/8 SHEAR PROOF DL	2
30	903-08424	SPACER ROLLER STANDOFF	2
31	905-09189	WHEEL ASSY 4 X 16	1

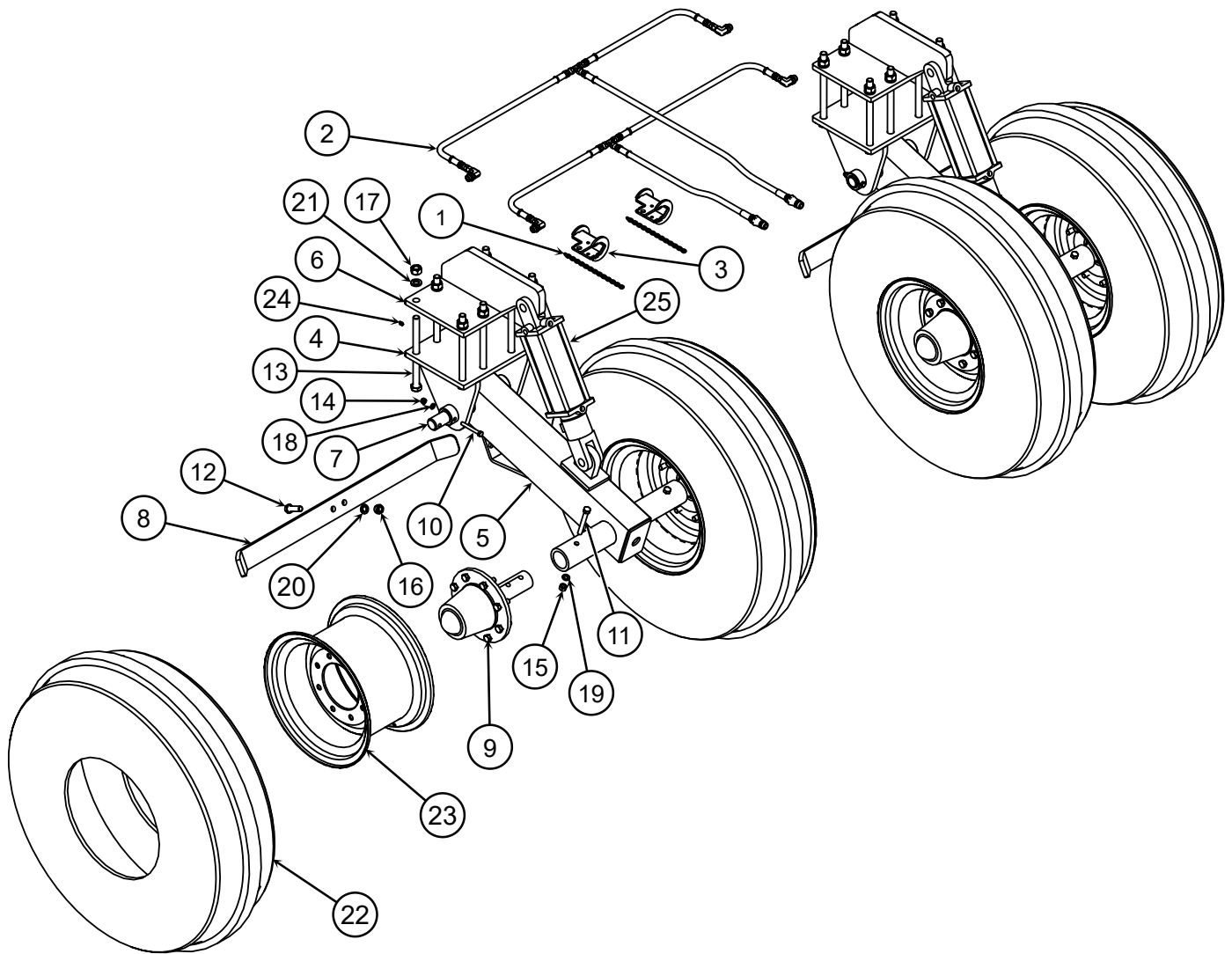
**4X16 GAUGE WHEEL
905-09189
(ASSEMBLY DRAWING)**



**4X16 GAUGE WHEEL
905-09189
(BILL OF MATERIALS)**

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	900-01055	VM-BOLT, HH, 5/16-18 X 3/4 GR5 ZP	7
2	900-06137	VM-NUT, LOCK 5/16NC SRTD FLNG ZP	7
3	905-09140	BEARING, BALL, 40MM	1
4	905-09148	RIM HALF, 4" X 16"	2
5	905-09149	TIRE, 4" X 16"	1

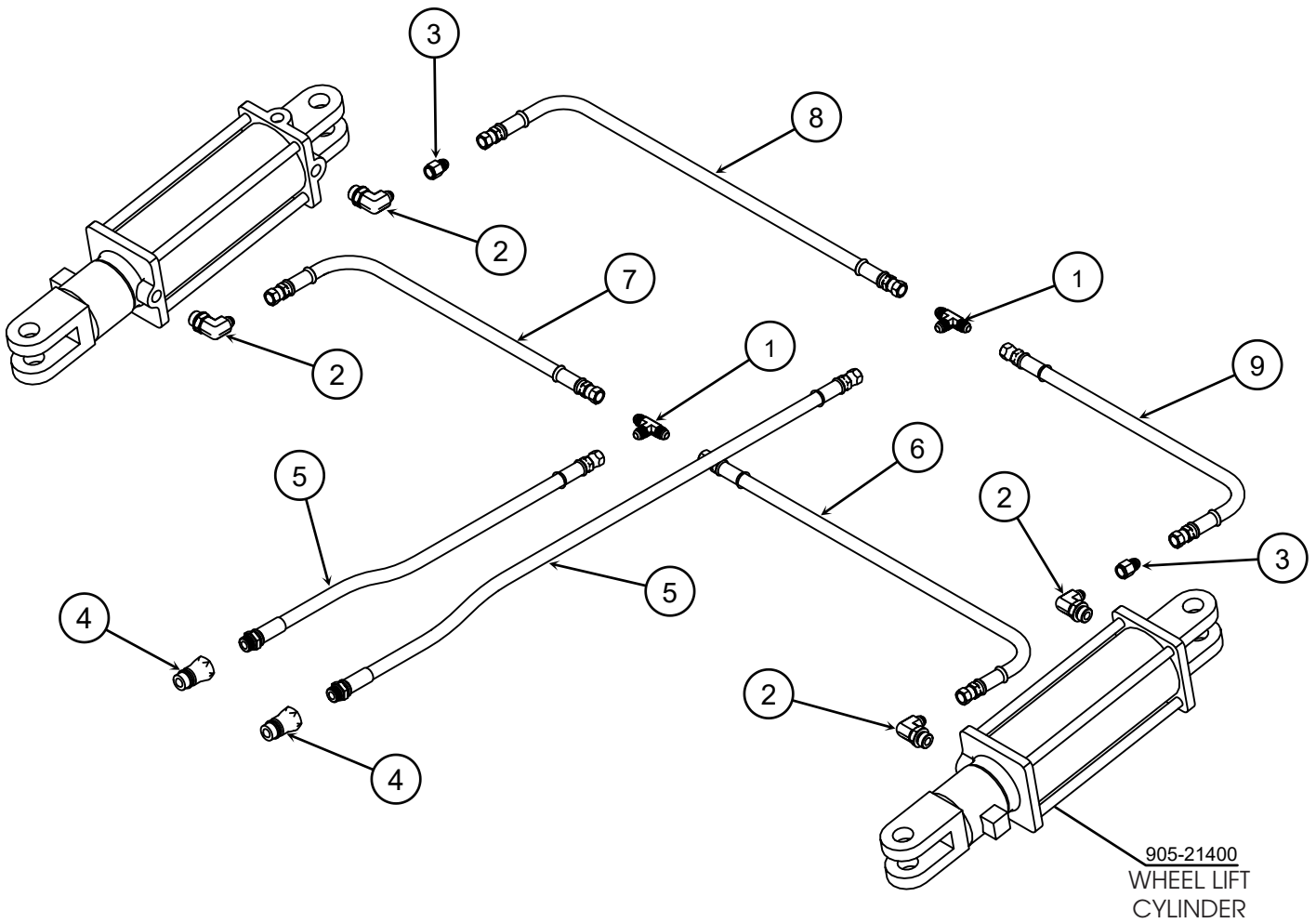
RIGID STRUT KIT, TRI RIB
200-1-3891
(ASSEMBLY DRAWING)



RIGID STRUT KIT, TRI RIB
200-1-3891
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	120-3-0427	CHAIN, PTO HOOK-UP	2
2	200-1-3803	HOSE KIT, CENTER WHEEL CYLINDERS (52")	1
3	200-2-2059	WELD, CYL STOP 3.5 LONG	2
4	200-2-2258	WELD, MAIN STRUT	2
5	200-2-2261	WELD, MAIN STRUT TUBE	2
6	200-2-2409	WELD, MAIN STRUT TOP (3130)	2
7	200-3-4397	HINGE PIN, STRUT 1.5" DIA	2
8	200-3-4437	WHEEL SCRAPER - CENTER	2
9	700-2-0165	LARGE WHEEL SPINDLE HUB, 8-BOLT	4
10	900-01125	VM-BOLT, HH 3/8 NC X 3 GR5 ZP	2
11	900-01245	VM-BOLT, HH 1/2 NC X 4 GR5 ZP	4
12	900-01345	VM-BOLT, HH 5/8-11 X 2 GR5 ZP	4
13	900-01443	BOLT, HH 3/4 NC X 10 GR5 ZP	16
14	900-06005	VM-NUT, HEX 3/8 NC ZP	2
15	900-06009	VM-NUT, HEX 1/2 NC ZP	4
16	900-06013	VM-NUT, HEX 5/8-11 ZP	4
17	900-06015	VM-NUT, HEX 3/4-10 ZP	16
18	900-11011	VM-WASHER, LOCK REGULAR 3/8 ZP	2
19	900-11013	VM-WASHER, LOCK REGULAR 1/2 ZP	4
20	900-11015	VM-WASHER, LOCK REGULAR 5/8 ZP	4
21	900-11017	VM-WASHER, LOCK REGULAR 3/4 ZP	16
22	905-09143	TIRE, TRI-RIB, 11.00 X 16	2
23	905-09146	WHEEL, 16 X 10, 8 BOLT	2
24	905-15024	VM-ZERK, STRAIGHT 1/4-28	2
25	905-21400	CYLINDER, 3-1/2 X 8 W/ DEPTH STOP	2

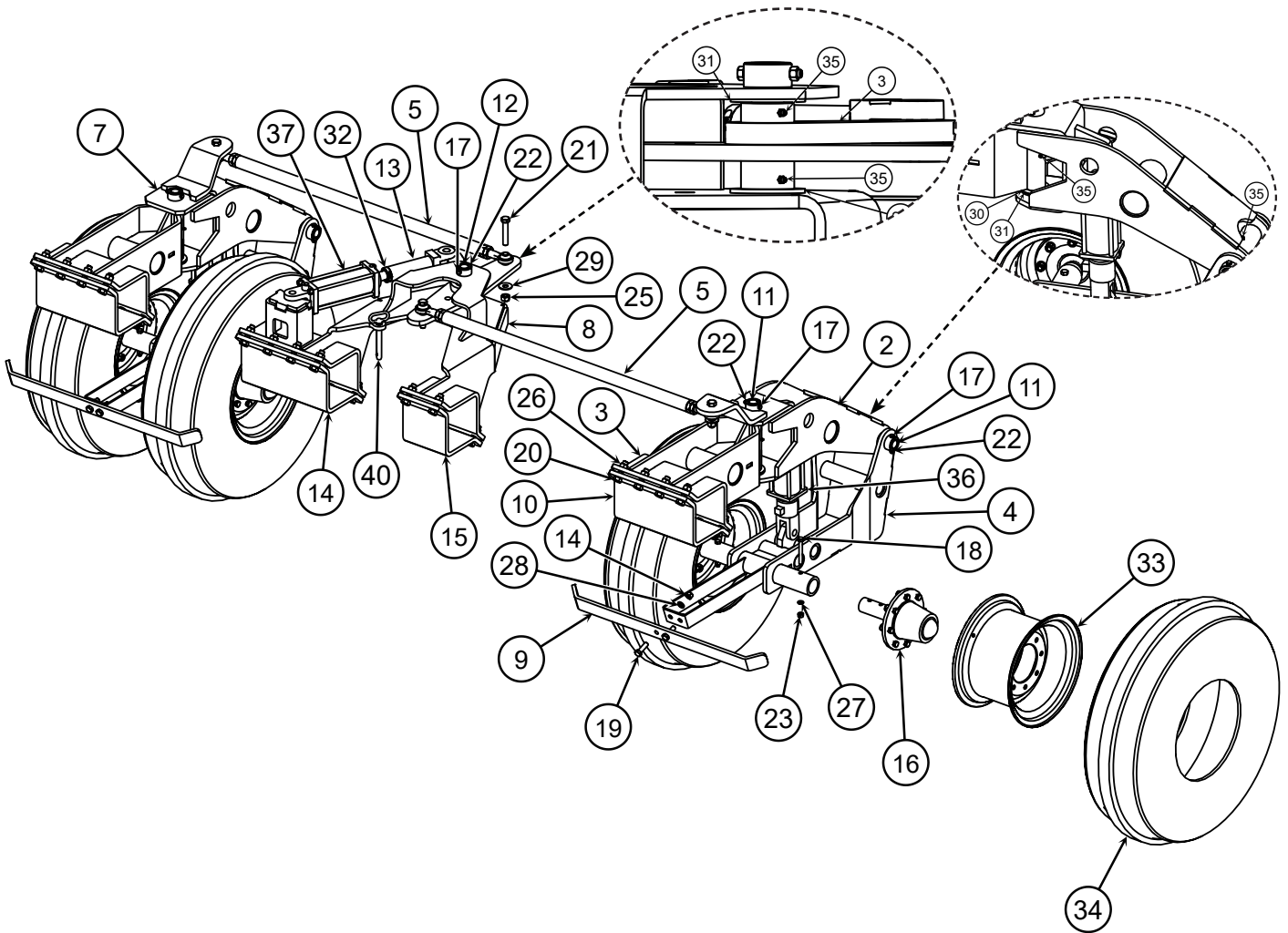
HOSE KIT, CULTIVATOR CENTER RIGID STRUTS
200-1-3803
(ASSEMBLY DRAWING)



HOSE KIT, CULTIVATOR CENTER RIGID STRUTS
200-1-3803
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	905-03112	ADAPTER, TEE, 6MJ	2
2	905-03114	ADAPTER, ELBOW 90°, 6MJ x 8MB	4
3	905-03220	RESTRICTOR , 6FJ x 6MJ, 1/16 HOLE	2
4	905-19126	QUICK, COUPLER, TIP, 8FB	2
5	905-19133	HOSE, 3/8 x 252", 8MB x 6FJX	2
6	905-19141	HOSE, 3/8 x 50", 6FJX x 6FJX	1
7	905-19193	HOSE, 3/8 x 106", 6FJX x 6FJX	1
8	905-19226	HOSE, 3/8 X 96.0, 6FJX x 6FJX	1
9	905-19237	HOSE, 3/8 x 38", 6FJX x 6FJX	1
**	905-21400	CYLINDER, 3-1/2 X 8 W/ DEPTH STOP	2
		**NOT INCLUDED IN HOSE KIT	

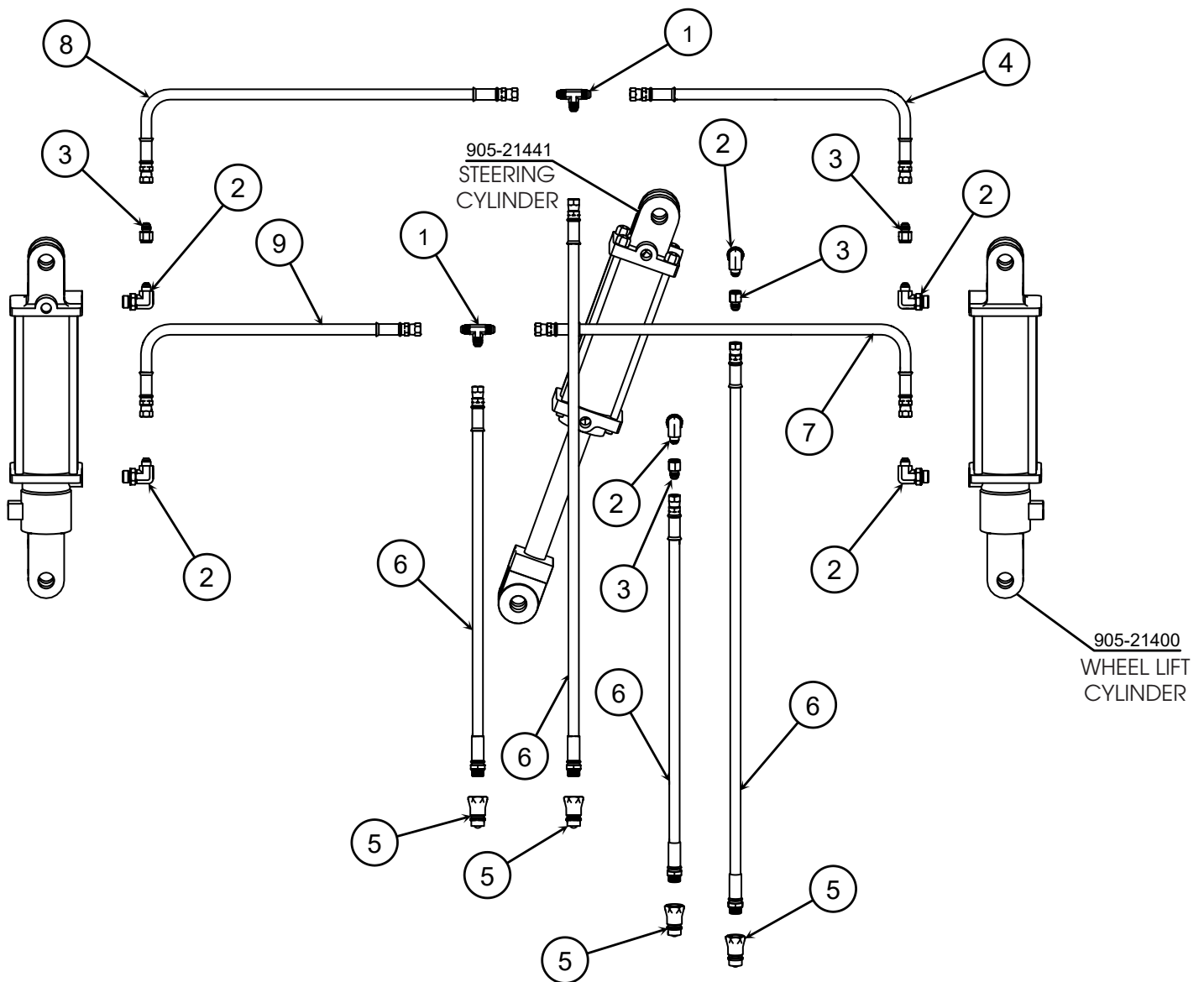
STEERABLE STRUT KIT, TRI RIB
200-1-3872
(ASSEMBLY DRAWING)



STEERABLE STRUT KIT, TRI RIB
200-1-3872
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-1-3892	HOSE KIT, CENTER WHEEL CYL STEERABLE STRUTS	1
2	200-2-2724	UPPER ARM WELDMENT, RH	1
3	200-2-2725	STAND OFF WELDMENT	2
4	200-2-2726	LOWER ARM WELDMENT	2
5	200-2-2728	TIE ROD ASSY	2
6	200-2-2729	LINK WELDMENT	1
7	200-2-2730	UPPER ARM WELDMENT, LH	1
8	200-2-2731	LINK MOUNT WELDMENT	1
9	200-3-4437	WHEEL SCRAPER - CENTER	2
10	200-3-5337	MOUNTING PLATE 15 IN	2
11	200-3-5361	HINGE PIN, WING 1.5" DIA	4
12	200-3-5362	PIN - SHORT	1
13	200-3-5470	STEERING CYLINDER STOP	1
14	200-3-5472	MOUNTING PLATE 16.25 IN	1
15	200-3-5473	MOUNTING PLATE 8.13 IN	1
16	700-2-0165	LARGE WHEEL SPINDLE HUB, 8-BOLT	4
17	900-01123	BOLT, HH 3/8 NC X 2-3/4	6
18	900-01245	1/2 X 4 HEX BOLT GR5 ZP	4
19	900-01345	BOLT, HH, 5/8-11 X 2, GR5 ZP	4
20	900-01409	3/4-10 X 2-3/4 HEX BOLT ZP	28
21	900-01417	HEX BOLT-3/4NC X 3.75 GR5 ZP	4
22	900-06005	NUT HEX 3/8	5
23	900-06009	NUT HEX 1/2 UNC	4
24	900-06013	NUT, HH, 5/8-11, ZP	4
25	900-06015	NUT, HH, 3/4-10, ZP	4
26	900-06510	3/4 NUT, HEX TOP LOCK	28
27	900-11013	WASHER, LOCK 1/2	4
28	900-11015	WASHER, LOCK, 5/8, ZP	4
29	900-11038	3/4" FLAT WASHER, USS	4
30	900-11044	REGULAR FLAT WASHER 1.5	2
31	901-01147	OILITE THRUST BEARING (1.51 ID X 3.5" OD)	4
32	901-01471	CLAMPING TWO-PIECE SHAFT COLLAR	1
33	905-09143	16 X 10 LB RIM 8 BOLT	4
34	905-09146	TRI-RIB, 11.00 X 16 TUBELESS TIRE	4
35	905-15024	ZERK 1/4-28 UNF STRAIGHT	6
36	905-21400	HYD CYL - 3.5 X 8	2
37	905-21441	CYLINDER, 3-1/2 X 8 (A350080ABAAA07B)	1
38	905-21448	CYLINDER DEPTH STOP 1"	1
39	905-21449	CYLINDER DEPTH STOP 1/2"	1
40	905-98134	3/4" PIN- LOOP GRIP QUICK RELEASE	1

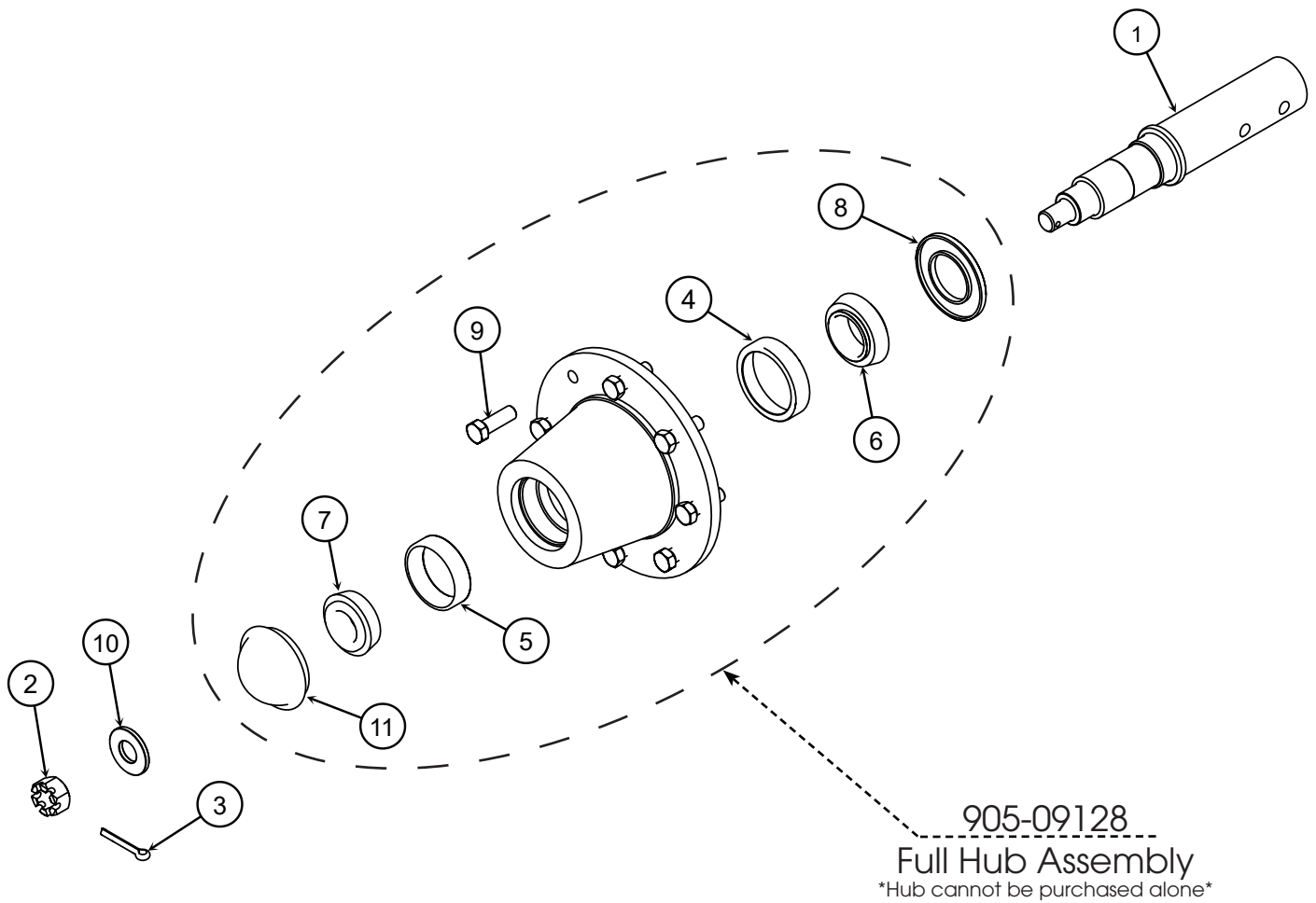
HOSE KIT, CULTIVATOR CENTER STEERABLE STRUTS 200-1-3892 (ASSEMBLY DRAWING)



HOSE KIT, CULTIVATOR CENTER STEERABLE STRUTS
200-1-3892
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	905-03112	ADAPTER, TEE, 6MJ	2
2	905-03114	ADAPTER, ELBOW 90°, 6MJ x 8MB	6
3	905-03220	RESTRICTOR , 6FJ x 6MJ, 1/16 HOLE	4
4	905-19117	HOSE, 3/8 X 57.0, 6FJX x 6FJX	1
5	905-19126	QUICK, COUPLER, TIP, 8FB	4
6	905-19133	HOSE, 3/8 x 252", 8MB x 6FJX	4
7	905-19142	HOSE, 3/8 x 70", 6FJX x 6FJX	1
8	905-19182	HOSE, 3/8 x 114", 6FJX x 6FJX	1
9	905-19214	HOSE, 3/8 x 126", 6FJX x 6FJX	1
**	905-21400	CYLINDER, 3-1/2 X 8 W/ DEPTH STOP	2
**	905-21441	CYLINDER, 3 1/2" X 8"	1
		**NOT INCLUDED IN HOSE KIT	

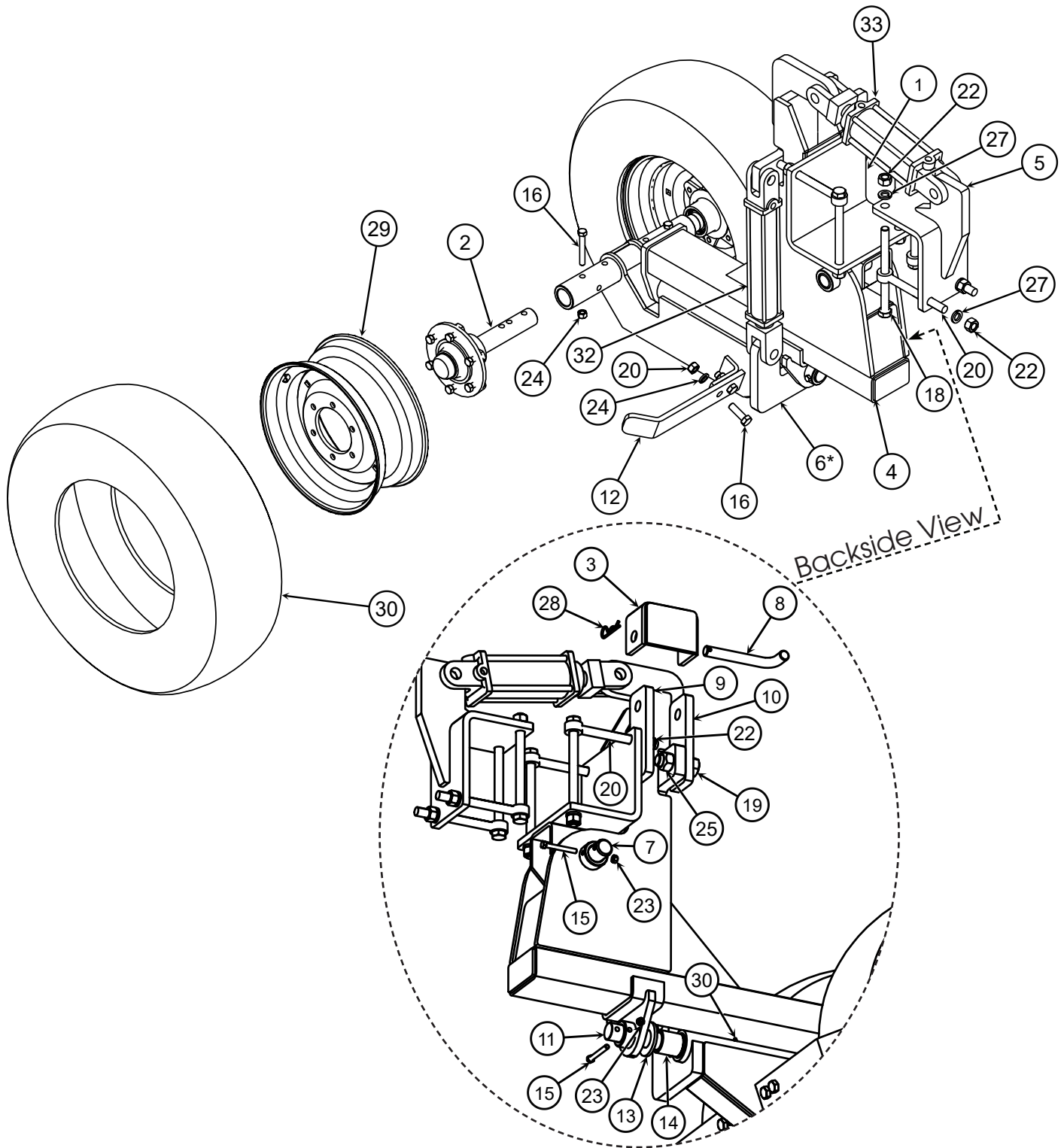
LARGE WHEEL SPINDLE & HUB, 8-BOLT
700-2-0165
(ASSEMBLY DRAWING)



LARGE WHEEL SPINDLE & HUB, 8-BOLT
700-2-0165
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	700-3-0143	SPINDLE REAR STRUT	1
2	900-06060	SLOTTED HEX NUT 7/8 -14 NF	1
3	900-23045	PIN, COTTER, 3/16 x 2	1
4	901-01152	BEARING CUP (TIMKEN #25520)	1
5	901-01324	BEARING CUP (TIMKEN #25821)	1
6	901-01325	BEARING CONE (TIMKEN #25590)	1
7	901-01326	BEARING CONE (TIMKEN #25877)	1
8	901-09215	GREASE SEAL	1
9	905-09039	WHEEL BOLT 9/16-18 X 1-11/16	8
10	905-09067	WASHER, 7/8" SAE	1
11	905-09135	HUB CAP	1

**ASSY, STEERABLE WING STRUT
200-2-2811 LH, 200-2-2812 RH
(ASSEMBLY DRAWING)**

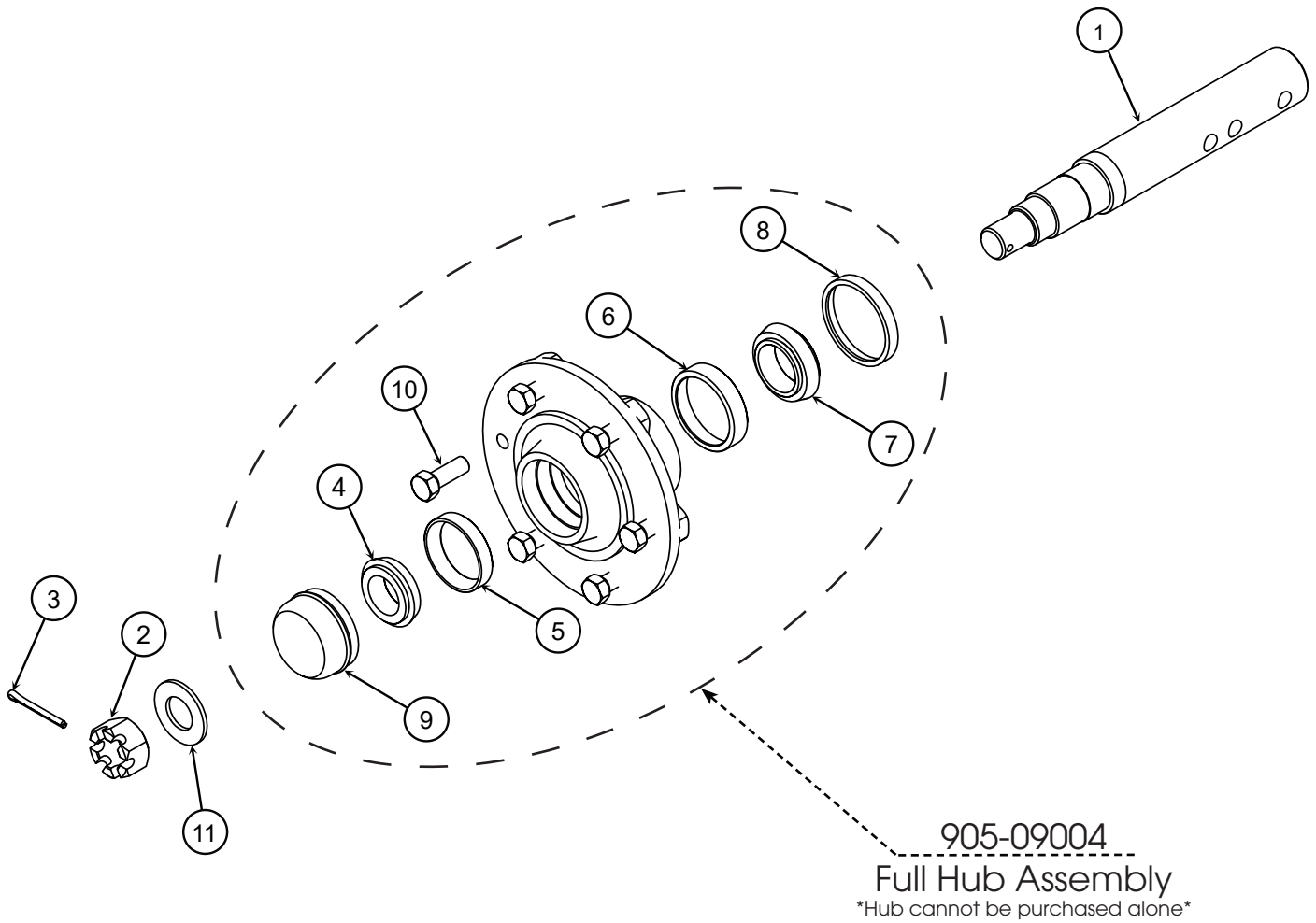


*OPTIONS AVAILABLE

**ASSY, STEERABLE WING STRUT
200-2-2811 LH, 200-2-2812 RH
(BILL OF MATERIALS)**

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-2-2316	WING WHEEL MOUNTING PLATE	1
2	200-2-2344	ASSY, HUB & SPINDLE, 6 BOLT	2
3	200-2-2473	HOLDING BRACKET W/ END CAP WELD-CULTIVATOR	1
4	200-2-2813	EXT. WING WHEEL - LOWER PIVOT (3130)	1
5	200-2-2814	CYL EAR WELD - EXT. WING WHEEL	1
6-1	200-2-2815	PIVOT WELDMENT LH - EXT. WING STRUT	1
6-2	200-2-2816	PIVOT WELDMENT RH - EXT. WING STRUT	1
7	200-3-4477	HINGE PIN, WING STRUT	1
8	200-3-4768	PIN	1
9	200-3-4772	PLATE - STRUT - CULTIVATOR	1
10	200-3-4774	PLATE - CYL MOUNT PLATE HOLDER	1
11	200-3-5460	PIN, PIVOT	1
12	200-3-5461	WHEEL SCRAPER (HALF) - WING	2
13	500-3-0538	SPACER - BUSHING	1
14	500-3-1151	BUSHING, REAMED	2
15	900-01125	3/8NC X 3 HEX BOLT GR5 ZP	2
16	900-01241	BOLT, HH, 1/2-13 x 3-1/2, GR5 ZP	2
17	900-01345	BOLT, HH, 5/8-11 X 2, GR5 ZP	4
18	900-01441	HEX BOLT - 3/4 NC X 9-1/2 GR5	4
19	900-01519	BOLT, HH, 1-8 x 3, GR5 ZP	1
20	900-03462	EYE BOLT 3/4 X 8	4
21	900-06013	NUT, HH, 5/8-11, ZP	4
22	900-06015	NUT, HH, 3/4-10, ZP	8
23	900-06500	NUT HEX 3/8 TOP LOCK	2
24	900-06504	NUT, LOCK, TOP, 1/2-13, GR C ZP	2
25	900-06514	NUT, LOCK, 1" NC, TOP, ZP	1
26	900-11015	WASHER, LOCK, 5/8, ZP	4
27	900-11017	WASHER, LOCK, 3/4, ZP	8
28	900-25005	5/32 (#9) HITCH PIN	1
29	905-09077	15 X 6 LB RIM 6 BOLT	2
30	905-09202	TIRE - 9.5L X 15, 12 PLY	2
31	905-15024	ZERK 1/4-28 UNF STRAIGHT	2
32	905-21390	HYDRAULIC CYL 2 X 10	1
33	905-21468	HYD CYL - 3 X 6	1

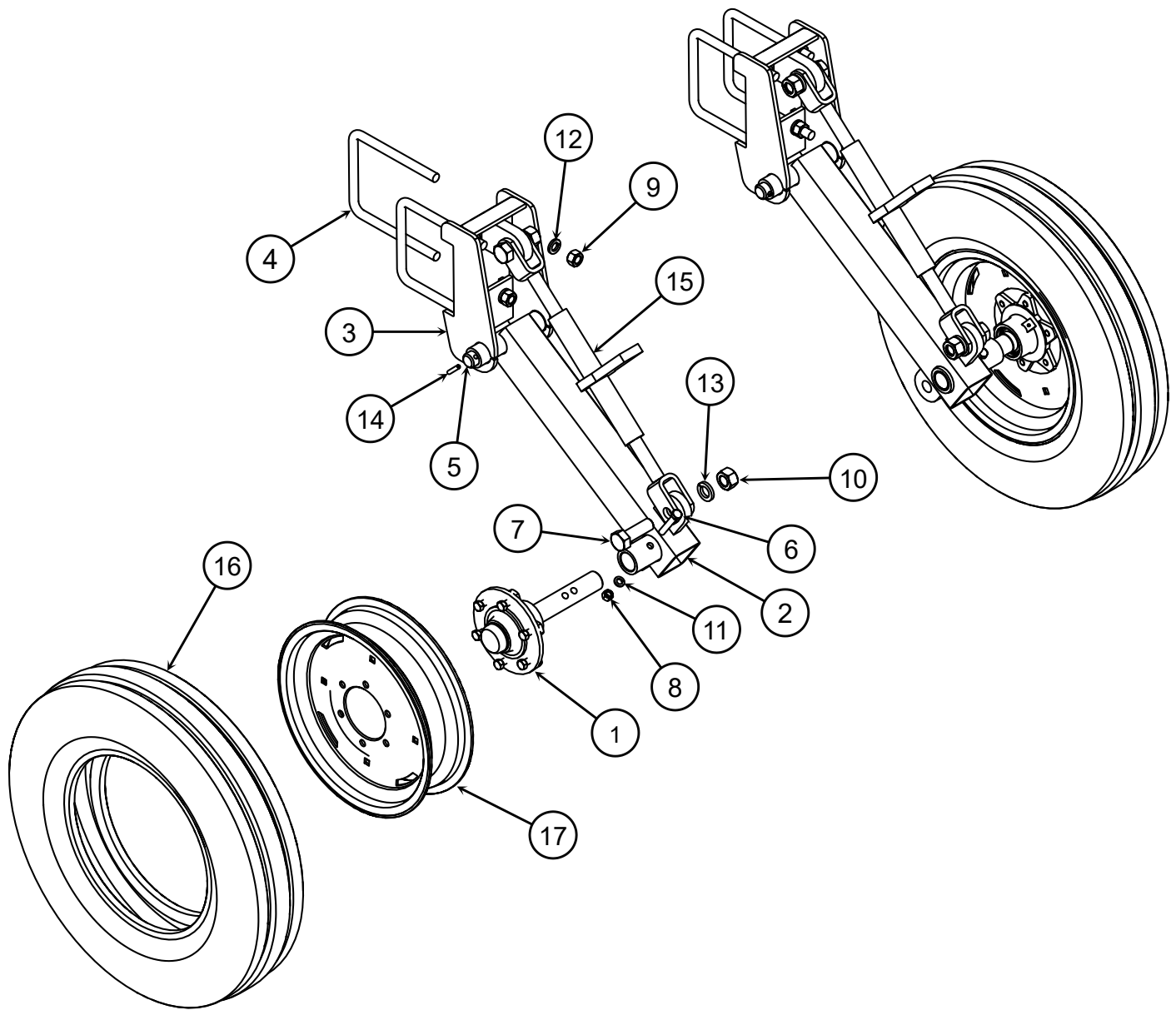
HUB & SPINDLE HD - 6 BOLT
200-2-2344
(ASSEMBLY DRAWING)



**HUB & SPINDLE HD - 6 BOLT
200-2-2344
(ASSEMBLY BILL OF MATERIALS)**

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-3-4440	SPINDLE - 6 BOLT (HD)	1
2	900-06062	NUT, SLOTTED HEX, 1-12	1
3	900-23045	PIN, COTTER, 3/16 x 2	1
4	901-01015	BEARING CONE, LM67048	1
5	901-01016	CUP BEARING, LM67010	1
6	901-01024	BEARING CUP, LM29710	1
7	901-01025	BEARING CONE, LM29749	1
8	901-09002	BORE SEAL	1
9	905-09009	DUST CAP	1
10	905-09010	WHEEL BOLT 1/2-20 X 1.06	6
11	905-09068	WASHER, 1 SAE	1

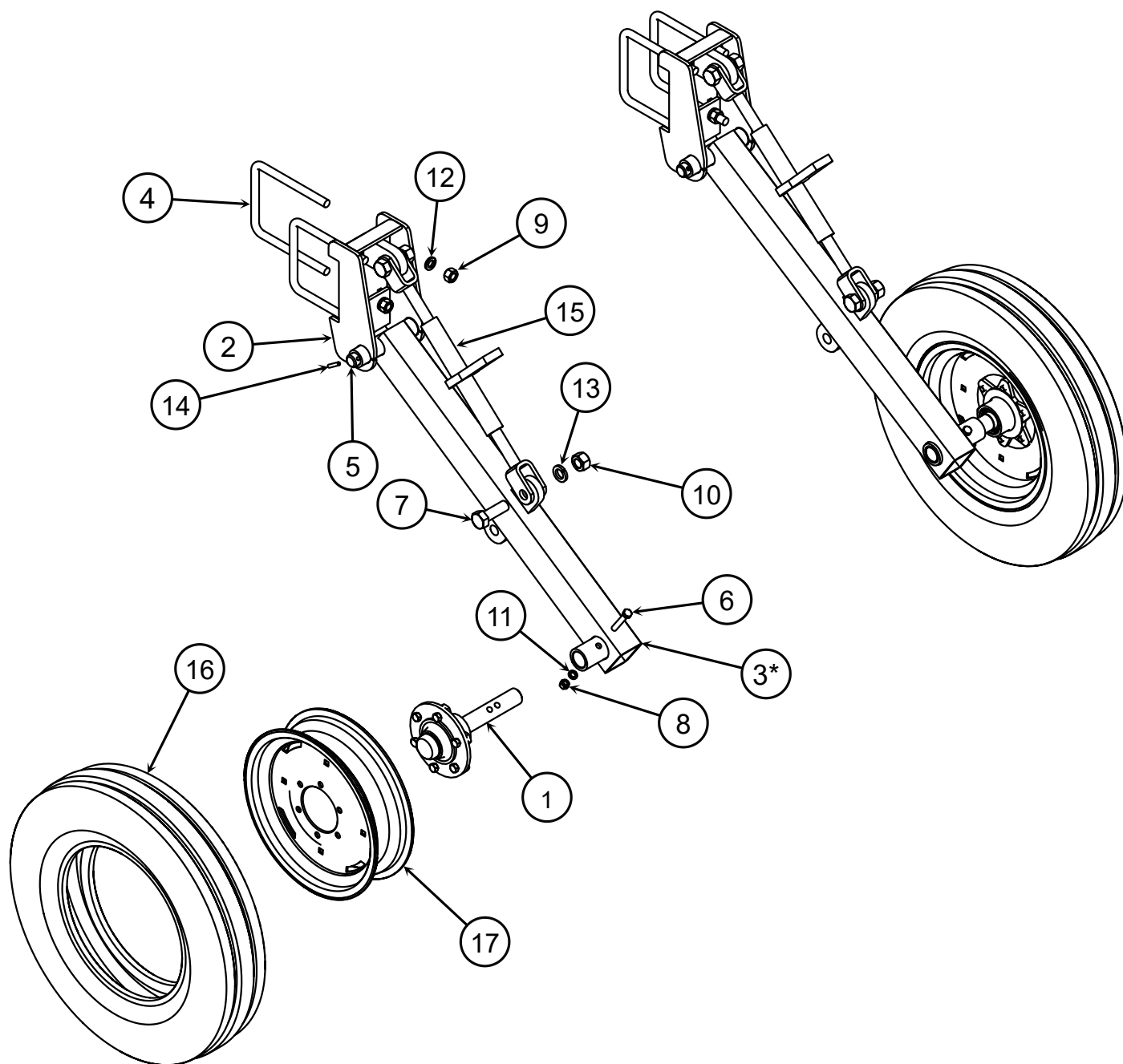
KIT, ADJUSTABLE GUIDE WHEELS PAIR, TRI RIB
200-0-0768
(ASSEMBLY DRAWING)



KIT, ADJUSTABLE GUIDE WHEELS PAIR, TRI RIB
200-0-0768
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-2-0531	SPINDLE & HUB ASSEMBLY - 6 BOLT	2
2	200-2-0534	ARM WELD, ADJ STRUT	2
3	200-2-0535	MOUNT WELD, 7" ADJ STRUT	2
4	200-3-0345	U-BOLT, 3/4 NC X 7 X 9.13 LG	4
5	200-3-0896	PIN, ADJUSTABLE STRUT	2
6	900-01237	VM-BOLT, HH 1/2-13 X 3 GR5 ZP	2
7	900-01519	VM-BOLT, HH 1 CN X 3 GR5 ZP	4
8	900-06009	VM-NUT, HEX 1/2 NC ZP	2
9	900-06015	VM-NUT, HEX 3/4-10 ZP	8
10	900-06019	VM-NUT, HEX FINISHED FULL 1-8 ZP	4
11	900-11013	VM-WASHER, LOCK REGULAR	2
12	900-11017	VM-WASHER, LOCK 3/4" ZP	8
13	900-11021	VM-WASHER, LOCK REGULAR 1" ZP	4
14	900-29204	VM-PIN, ROLL, PLAIN, 5/16" X 1 5/8"	4
15	905-23014	RATCHET JACK, HEAVY DUTY	2
16	905-98114	TIRE, 6.00-16SL (TITAN)	2
17	905-98115	RIM, 16 X 4.50E 6-BOLT (TITAN)	2

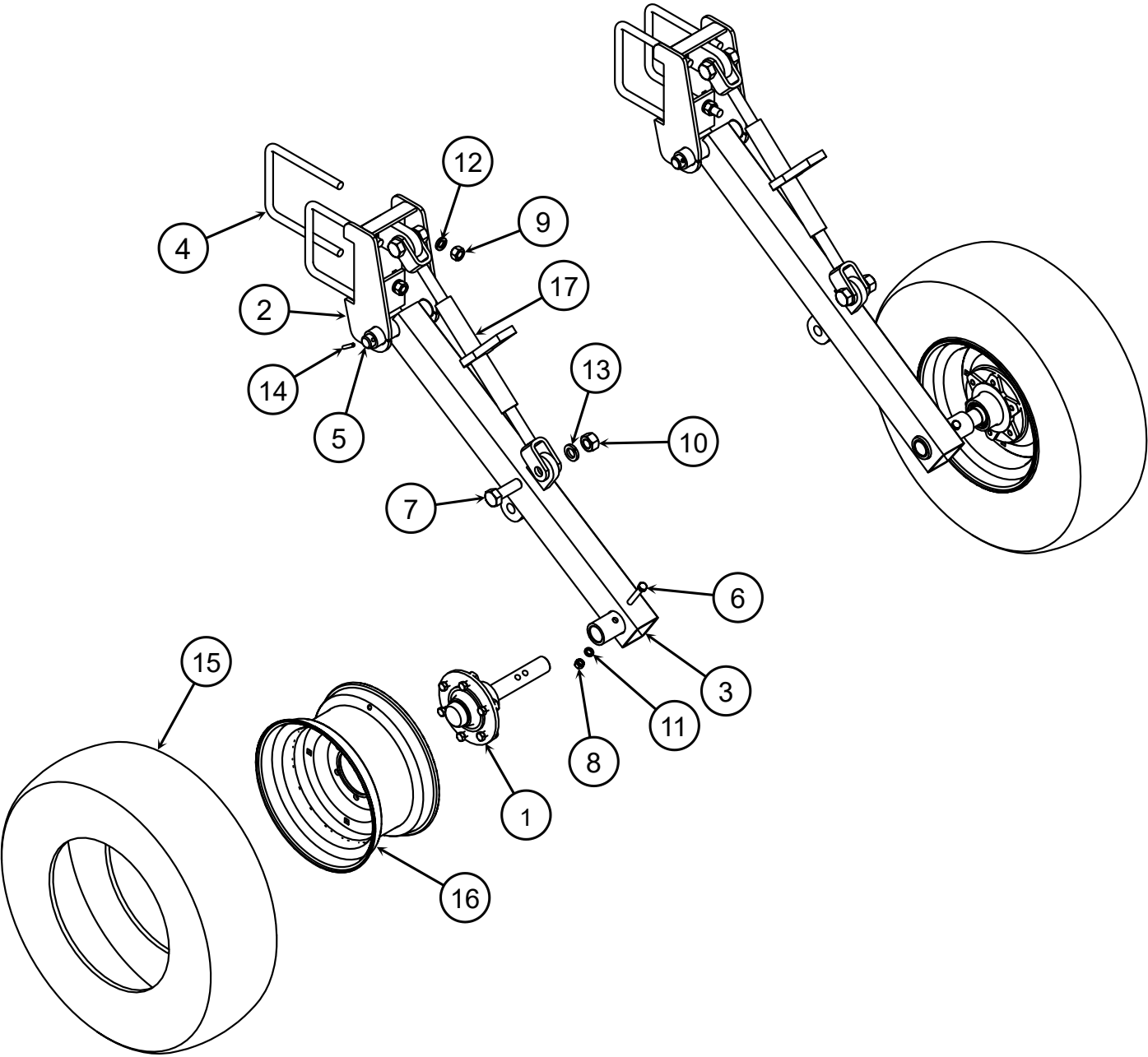
(ASSEMBLY DRAWING)



KIT, ADJUSTABLE GUIDE WHEELS PAIR, HIGH CLEARANCE TRI RIB
200-1-3666
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-2-0531	SPINDLE & HUB ASSEMBLY - 6 BOLT	2
2	200-2-0535	MOUNT WELD, 7" ADJ STRUT	2
3	200-2-1971	ARM WELD, ADJ STRUT HC	2
4	200-3-0345	U-BOLT, 3/4 NC X 7 X 9.13 LG	4
5	200-3-0896	PIN, ADJUSTABLE STRUT	2
6	900-01237	VM-BOLT, HH 1/2-13 X 3 GR5 ZP	2
7	900-01519	VM-BOLT, HH 1 CN X 3 GR5 ZP	4
8	900-06009	VM-NUT, HEX 1/2 NC ZP	2
9	900-06015	VM-NUT, HEX 3/4-10 ZP	8
10	900-06019	VM-NUT, HEX FINISHED FULL 1-8 ZP	4
11	900-11013	VM-WASHER, LOCK REGULAR	2
12	900-11017	VM-WASHER, LOCK 3/4" ZP	8
13	900-11021	VM-WASHER, LOCK REGULAR 1" ZP	4
14	900-29204	VM-PIN, ROLL, PLAIN, 5/16" X 1 5/8"	4
15	905-23014	RATCHET JACK, HEAVY DUTY	2
16	905-98114	TIRE, 6.00-16SL (TITAN)	2
17	905-98115	RIM, 16 X 4.50E 6-BOLT (TITAN)	2

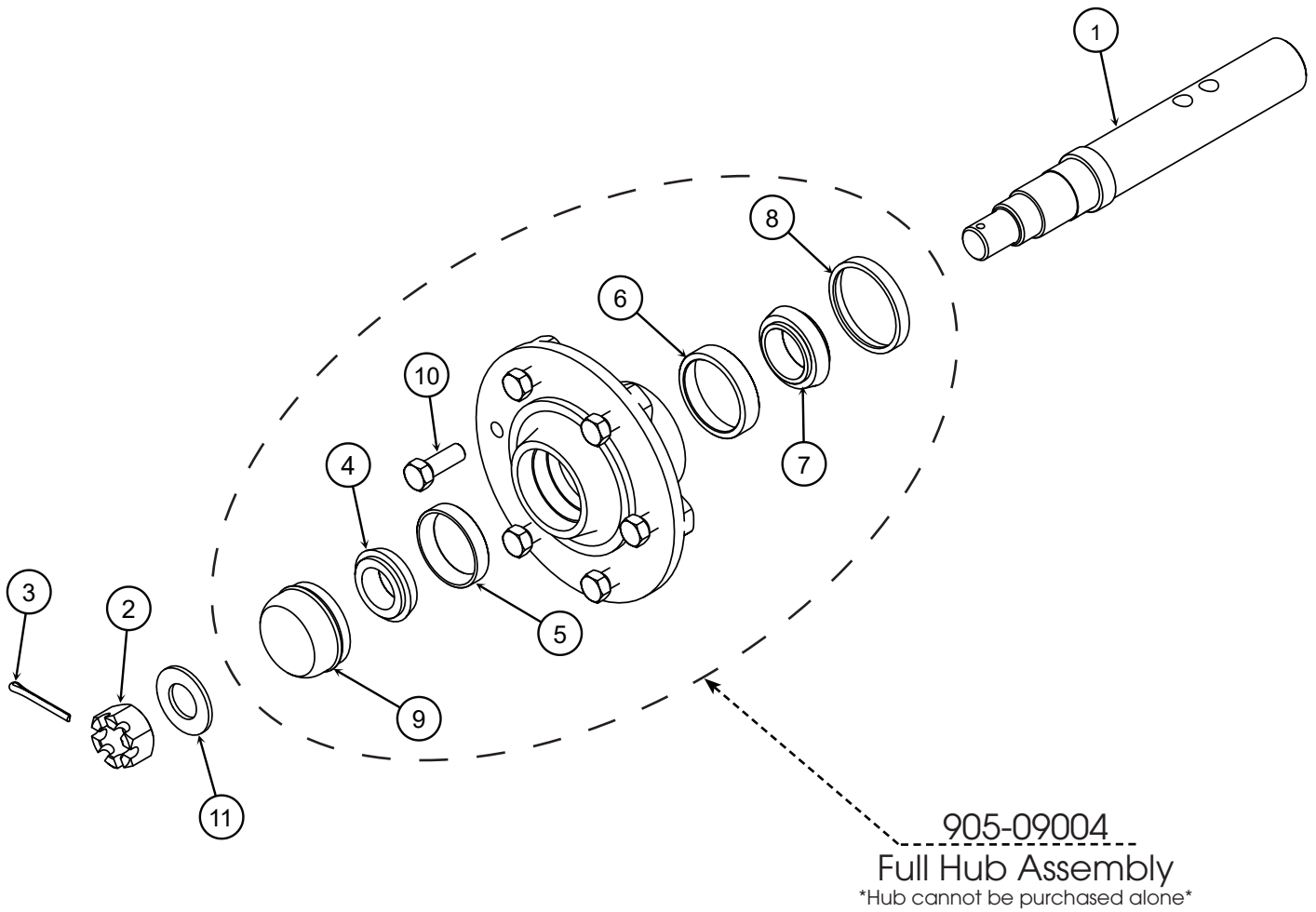
KIT, ADJUSTABLE GUIDE WHEELS PAIR, STANDARD TIRE HIGH CLEARANCE
200-1-3667
(ASSEMBLY DRAWING)



**KIT, ADJUSTABLE GUIDE WHEELS PAIR, STANDARD TIRE HIGH CLEARANCE
200-1-3667
(BILL OF MATERIALS)**

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-2-0531	SPINDLE & HUB ASSEMBLY - 6 BOLT	2
2	200-2-0535	MOUNT WELD, 7" ADJ STRUT	2
3	200-2-1971	ARM WELD, ADJ STRUT HC	2
4	200-3-0345	U-BOLT, 3/4 NC X 7 X 9.13 LG	4
5	200-3-0896	PIN, ADJUSTABLE STRUT	2
6	900-01237	VM-BOLT, HH 1/2-13 X 3 GR5 ZP	2
7	900-01519	VM-BOLT, HH 1 CN X 3 GR5 ZP	4
8	900-06009	VM-NUT, HEX 1/2 NC ZP	2
9	900-06015	VM-NUT, HEX 3/4-10 ZP	8
10	900-06019	VM-NUT, HEX FINISHED FULL 1-8 ZP	4
11	900-11013	VM-WASHER, LOCK REGULAR	2
12	900-11017	VM-WASHER, LOCK 3/4" ZP	8
13	900-11021	VM-WASHER, LOCK REGULAR 1" ZP	4
14	900-29204	VM-PIN, ROLL, PLAIN, 5/16" X 1 5/8"	4
15	905-09070	TIRE, 9-1/2 L X 15" IMPLEMENT	2
16	905-09077	RIM, 15" X 6" X 6 HOLE	2
17	905-23014	RATCHET JACK, HEAVY DUTY	2

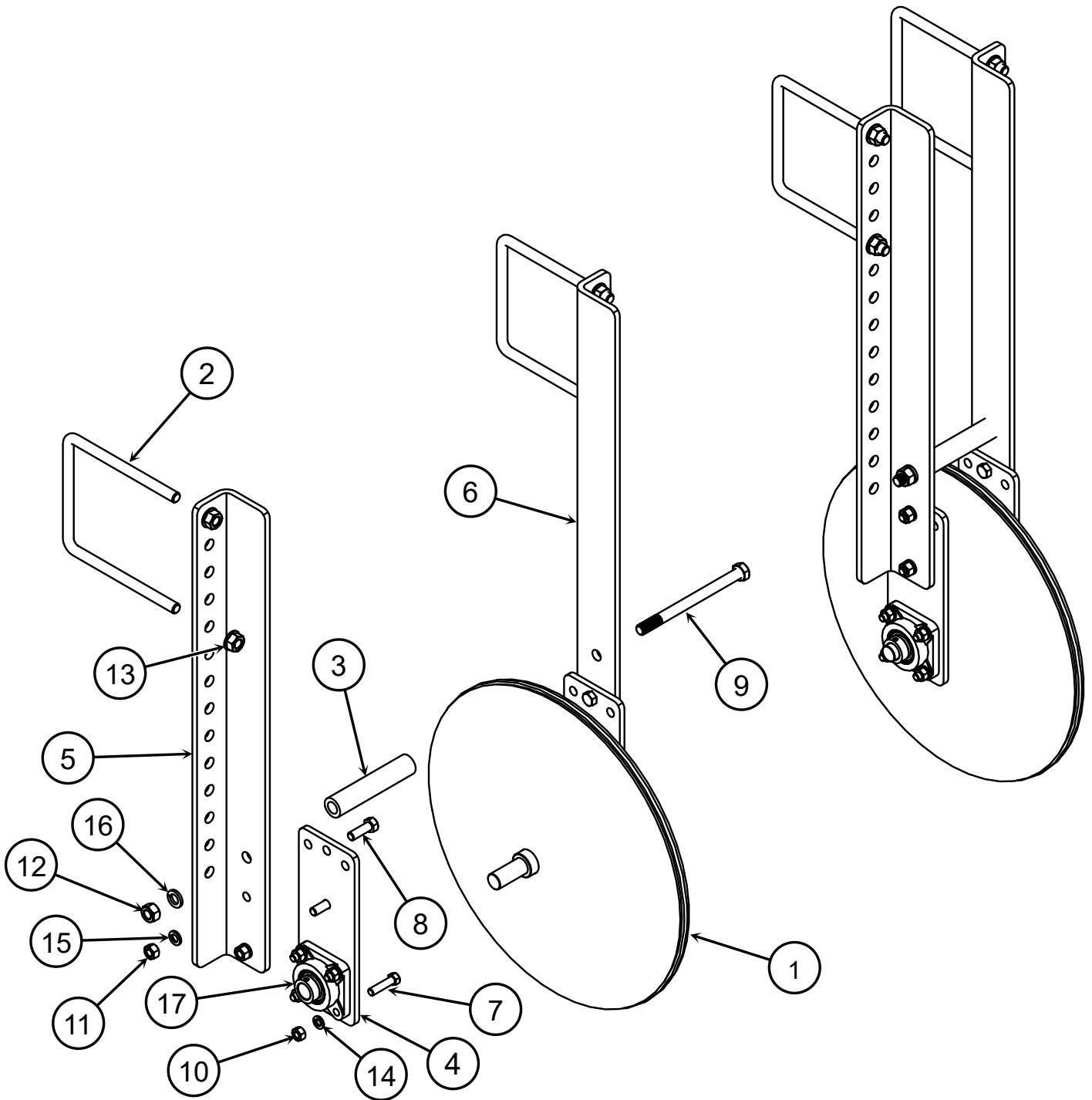
HUB & SPINDLE - 6 BOLT
200-2-0531
(ASSEMBLY DRAWING)



HUB & SPINDLE - 6 BOLT
200-2-0531
(ASSEMBLY BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-3-1784	SPINDLE - 6 BOLT	1
2	900-06062	NUT, SLOTTED HEX, 1-12	1
3	900-23045	PIN, COTTER, 3/16 x 2	1
4	901-01015	BEARING CONE, LM67048	1
5	901-01016	CUP BEARING, LM67010	1
6	901-01024	BEARING CUP, LM29710	1
7	901-01025	BEARING CONE, LM29749	1
8	901-09002	BORE SEAL	1
9	905-09009	DUST CAP	1
10	905-09010	WHEEL BOLT 1/2-20 X 1.06	6
11	905-09068	WASHER, 1 SAE	1

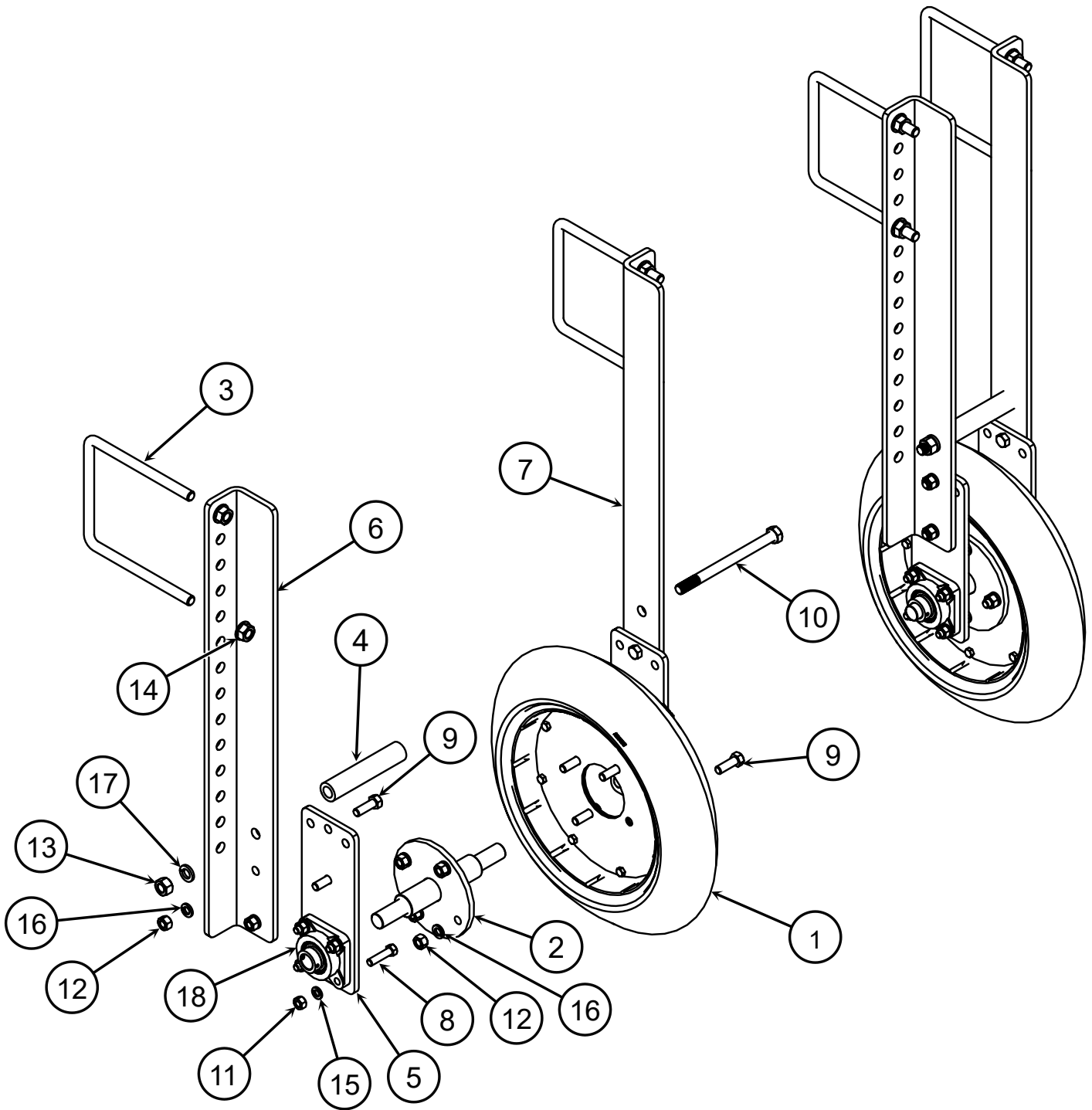
KIT, STEEL GUIDE WHEELS PAIR
200-1-3668
(ASSEMBLY DRAWING)



KIT, STEEL GUIDE WHEELS PAIR
200-1-3668
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-2-2094	WHEEL STEEL GUIDE	2
2	200-3-0344	U-BOLT 5/8 X 7 X 7.5 X 1.69	4
3	200-3-2758	SPACER TUBE	2
4	200-3-2815	PLATE BEARING	4
5	200-3-3858	ANGLE MOUNTING RH	2
6	200-3-3859	ANGLE MOUNTING LH	2
7	900-01177	7/16 NC X 1-3/4 HEX BOLT	16
8	900-01225	1/2 NC X 1-1/2 HEX BOLT GR 5	8
9	900-01377	SCREW, CAP 5/8 X 8 UNC	2
10	900-06007	HEX NUT 7/16-14	16
11	900-06009	NUT HEX 1/2 UNC	8
12	900-06013	NUT, HH, 5/8-11, ZP	2
13	900-06145	5/8 WHIZ NUT	8
14	900-11012	7/16 LOCK WASHER	16
15	900-11013	WASHER, LOCK 1/2	8
16	900-11015	WASHER, LOCK, 5/8, ZP	2
17	901-01004	IPTCI- NANF 205-16 1" BEARING	4

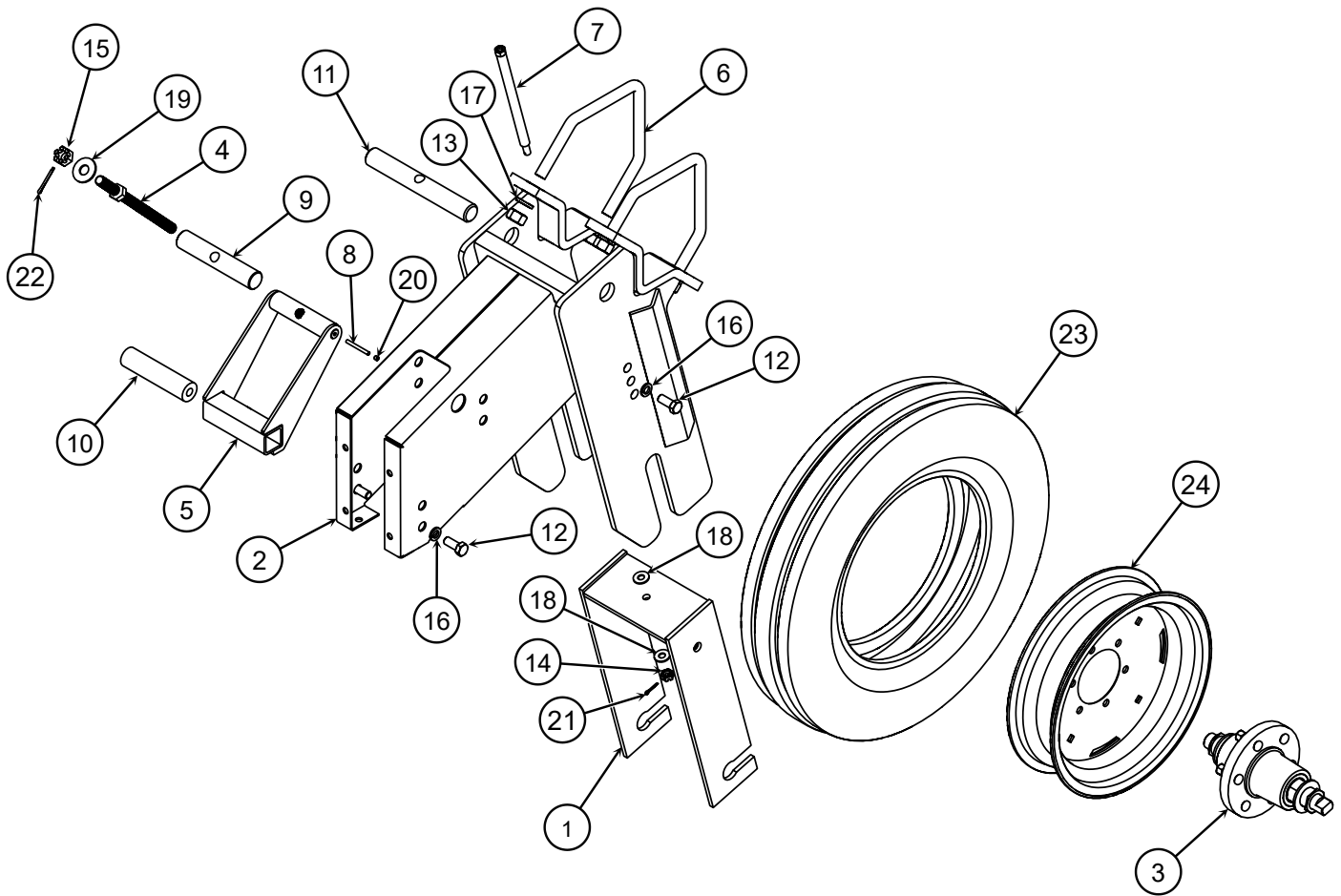
KIT, PNEUMATIC GUIDE WHEELS PAIR
200-1-3699
(ASSEMBLY DRAWING)



KIT, PNEUMATIC GUIDE WHEELS PAIR
200-1-3699
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-2-0536	TIRE & WHEEL ASSY	2
2	200-2-1315	HUB YOKE MNT VRT	2
3	200-3-0344	U-BOLT 5/8 X 7 X 7.5 X 1.69	4
4	200-3-2758	SPACER TUBE	2
5	200-3-2815	PLATE BEARING	4
6	200-3-3858	ANGLE MOUNTING RH	2
7	200-3-3859	ANGLE MOUNTING LH	2
8	900-01177	7/16 NC X 1-3/4 HEX BOLT	16
9	900-01225	1/2 NC X 1-1/2 HEX BOLT GR 5	16
10	900-01377	SCREW, CAP 5/8 X 8 UNC	2
11	900-06007	HEX NUT 7/16-14	16
12	900-06009	NUT HEX 1/2 UNC	16
13	900-06013	NUT, HH, 5/8-11, ZP	2
14	900-06145	5/8 WHIZ NUT	8
15	900-11012	7/16 LOCK WASHER	16
16	900-11013	WASHER, LOCK 1/2	16
17	900-11015	WASHER, LOCK, 5/8, ZP	2
18	901-01004	IPTCI- NANF 205-16 1" BEARING	4

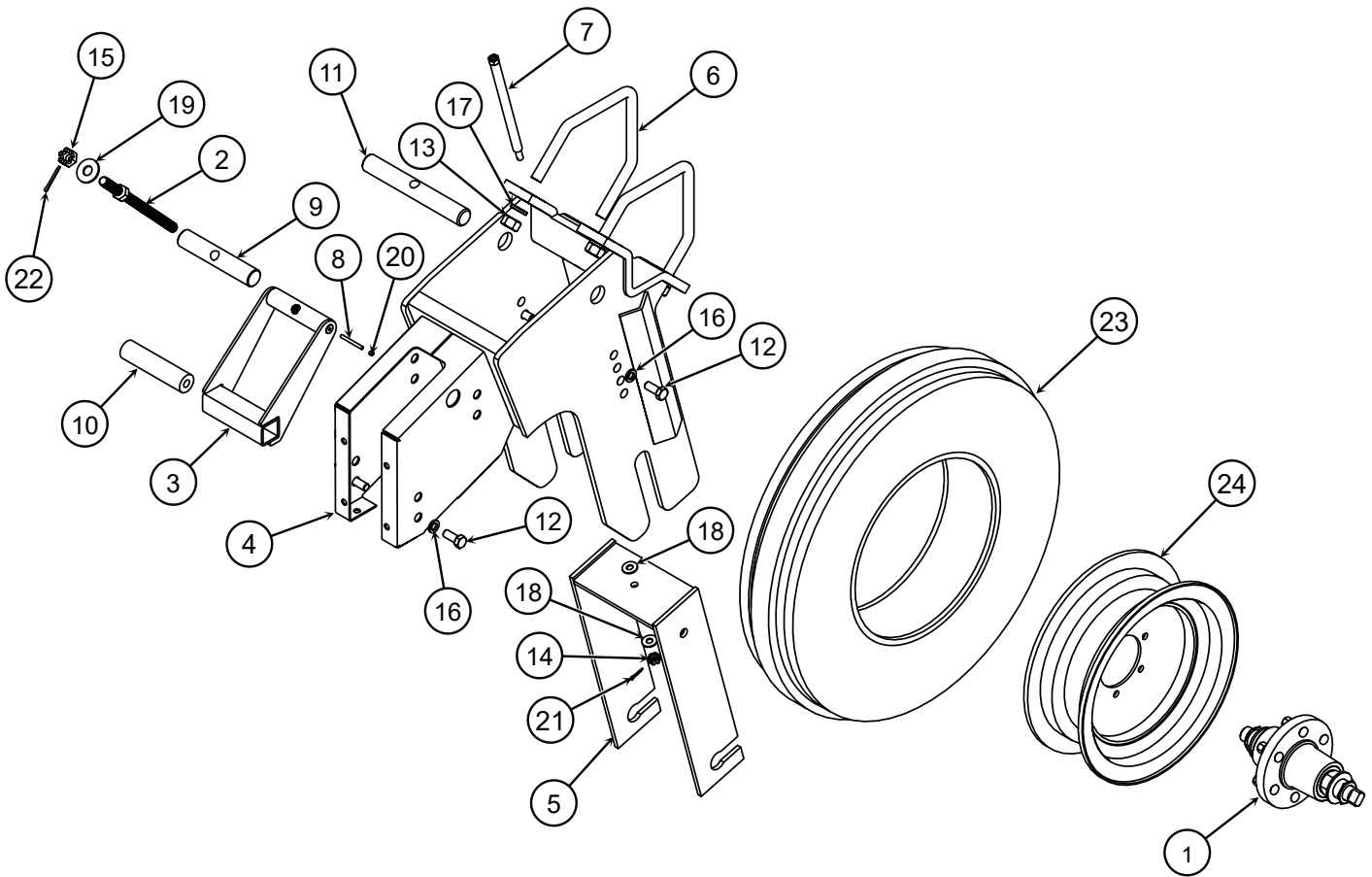
ASSY, KING GUIDE 3130
200-1-1959 ASSY, 200-1-3639 PAIR
(ASSEMBLY DRAWING)



ASSY, KING GUIDE 3130
200-1-1959 ASSY, 200-1-3639 PAIR
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-2-1947	INNER YOKE WELD, KING GUIDE	1
2	200-2-1948	KING GUIDE, MAST WELD	1
3	200-2-1958	HUB AND SPINDLE ASSEMBLY	1
4	200-2-2215	SCREW PITCH ADJUSTMENT	1
5	200-2-2216	PIVOT WELD	1
6	200-3-1443	A-BOLT, 7/8-9 X 7 X 7	2
7	200-3-3190	ADJUSTMENT SCREW	1
8	200-3-3438	1/4" ROUND 2-3/8" UHMW	1
9	200-3-3523	TRUNNION	1
10	200-3-3743	BAR PIVOT	1
11	200-3-3783	TRUNNION, THREADED KING GUIDE	1
12	900-01341	HEX BOLT 5/8 NC X 1-1/2 NC GR5 ZP	4
13	900-06017	7/8 NC HEX NUT	4
14	900-06052	VM-NUT, SLOTTED 1/2 NF ZP	1
15	900-06057	VM-NUT, SLOTTED 3/4 NC ZP	1
16	900-11015	WASHER, LOCK, 5/8, ZP	4
17	900-11019	7/8 LOCK WASHER	4
18	900-11035	1/2 FLAT WASHER	2
19	900-11038	3/4" FLAT WASHER, USS	1
20	900-16237	SOCKET HEAD SET SCREW, 5/16 x 5/16	1
21	900-23025	1/8" X 1" COTTER PIN	1
22	900-23043	3/16 X 1 1/2 COTTER PIN	1
23	905-98114	6.00-16SL TIRE (TITAN)	1
24	905-98115	16X4.50E 6BOLT (TITAN)	1

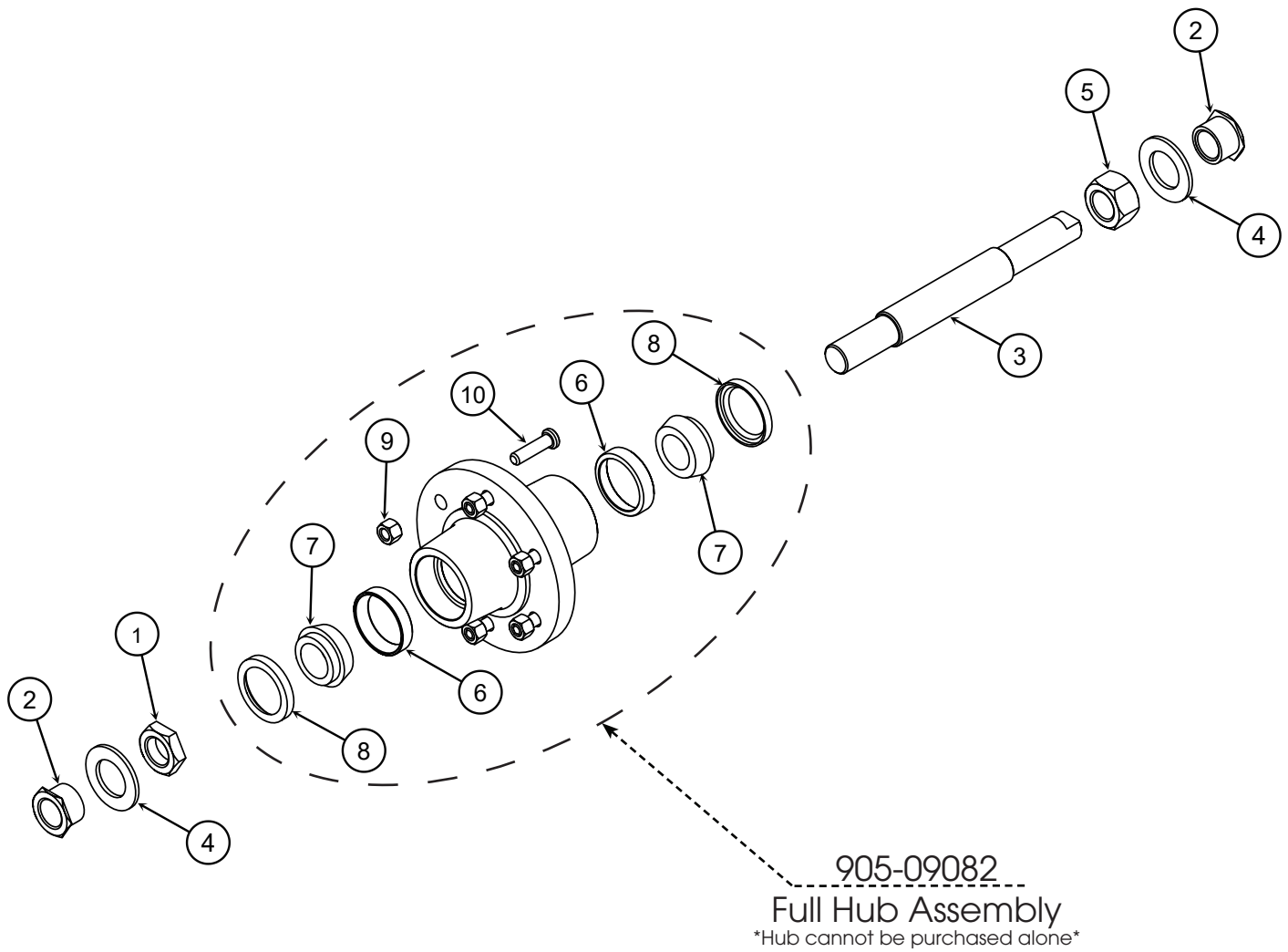
ASSY, KING GUIDE HD 3130
200-2-2694 ASSY
(ASSEMBLY DRAWING)



ASSY, KING GUIDE HD 3130
200-2-2694 ASSY
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-2-1958	HUB AND SPINDLE ASSEMBLY	1
2	200-2-2215	SCREW PITCH ADJUSTMENT	1
3	200-2-2216	PIVOT WELD	1
4	200-2-2690	HD KING GUIDE, MAST WELD	1
5	200-2-2777	HD INNER YOKE WELD, KING GUIDE	1
6	200-3-1443	A-BOLT, 7/8-9 X 7 X 7	2
7	200-3-3190	ADJUSTMENT SCREW	1
8	200-3-3438	1/4" ROUND 2-3/8" UHMW	1
9	200-3-3523	TRUNNION	1
10	200-3-3743	BAR PIVOT	1
11	200-3-3783	TRUNNION, THREADED KING GUIDE	1
12	900-01341	HEX BOLT 5/8 NC X 1-1/2 NC GR5 ZP	4
13	900-06017	7/8 NC HEX NUT	4
14	900-06052	VM-NUT, SLOTTED 1/2 NF ZP	1
15	900-06057	VM-NUT, SLOTTED 3/4 NC ZP	1
16	900-11015	WASHER, LOCK, 5/8, ZP	4
17	900-11019	7/8 LOCK WASHER	4
18	900-11035	1/2 FLAT WASHER	2
19	900-11038	3/4" FLAT WASHER, USS	1
20	900-16237	SOCKET HEAD SET SCREW, 5/16 x 5/16	1
21	900-23025	1/8" X 1" COTTER PIN	1
22	900-23043	3/16 X 1 1/2 COTTER PIN	1
23	905-09200	TIRE, 7.50-16SL F-2 (TL)8 PLY	1
24	905-09201	RIM, 142 AG 16.0 X 6.0	1

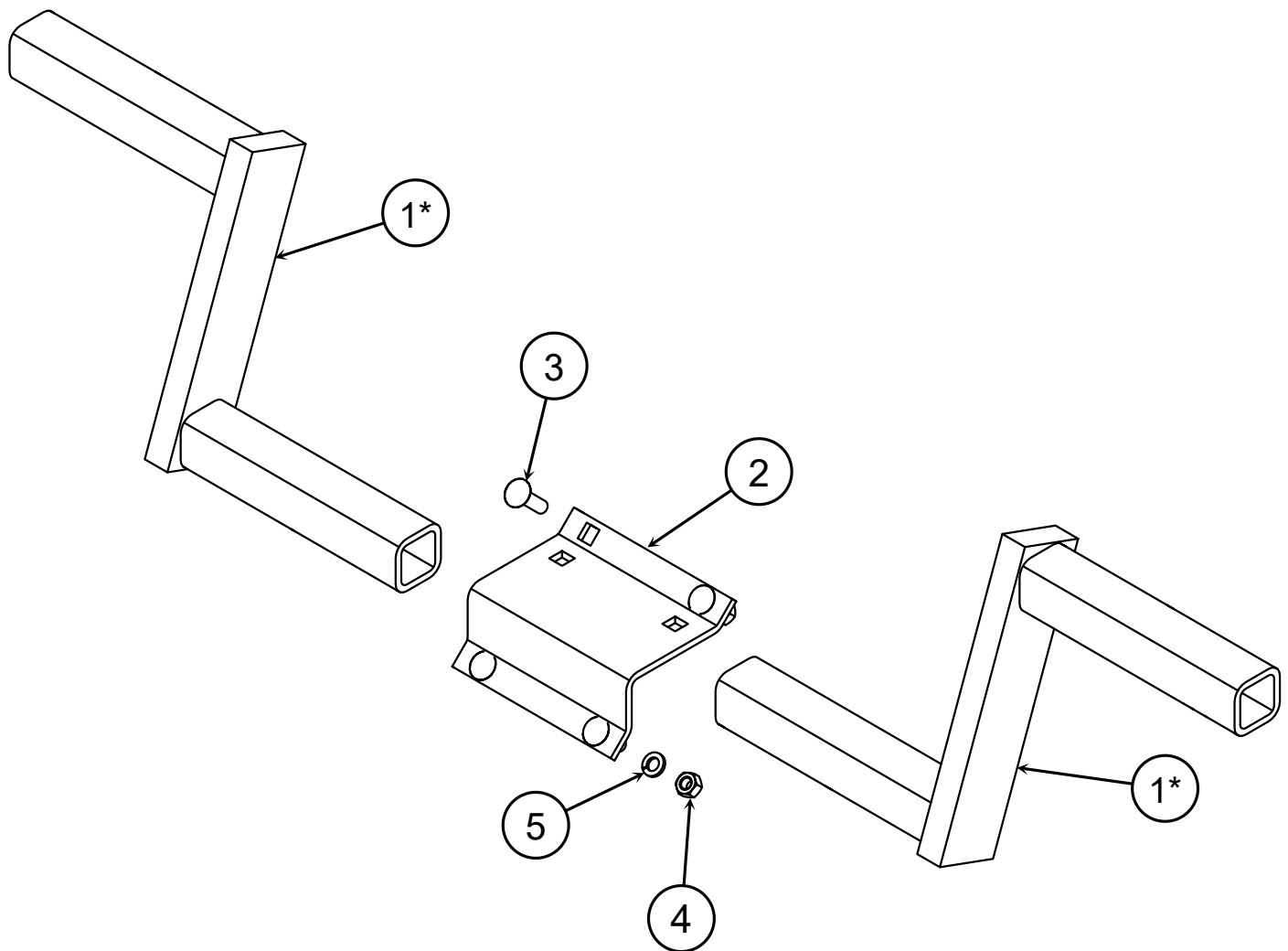
ASSY, HUB & FORK SPINDLE - 6 BOLT
200-2-1958
(ASSEMBLY DRAWING)



ASSY, HUB & FORK SPINDLE - 6 BOLT
200-2-1958
(ASSEMBLY BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-3-2726	NUT, SHORT use 900-06291 NUT	1
2	200-3-3754	NUT, SHOULDER, CASTOR	2
3	200-3-3771	SPINDLE FORK	1
4	200-3-3791	WASHER 2.75" OD X 1.63 ID	2
5	900-06024	1 1/4-12 HEX NUT ZP	1
6	901-01148	BEARING, CUP	2
7	901-01149	BEARING CONE	2
8	901-09127	SEAL	2
9	905-09011	1/2-20 WHEEL NUT	6
10	905-09117	WHEEL BOLT, 1/2" NF X 1 7/8"	6

RAISED BED WEEDER DISC KIT 30", 40"
200-1-3758 30", 200-1-3759 40"
(ASSEMBLY DRAWING)

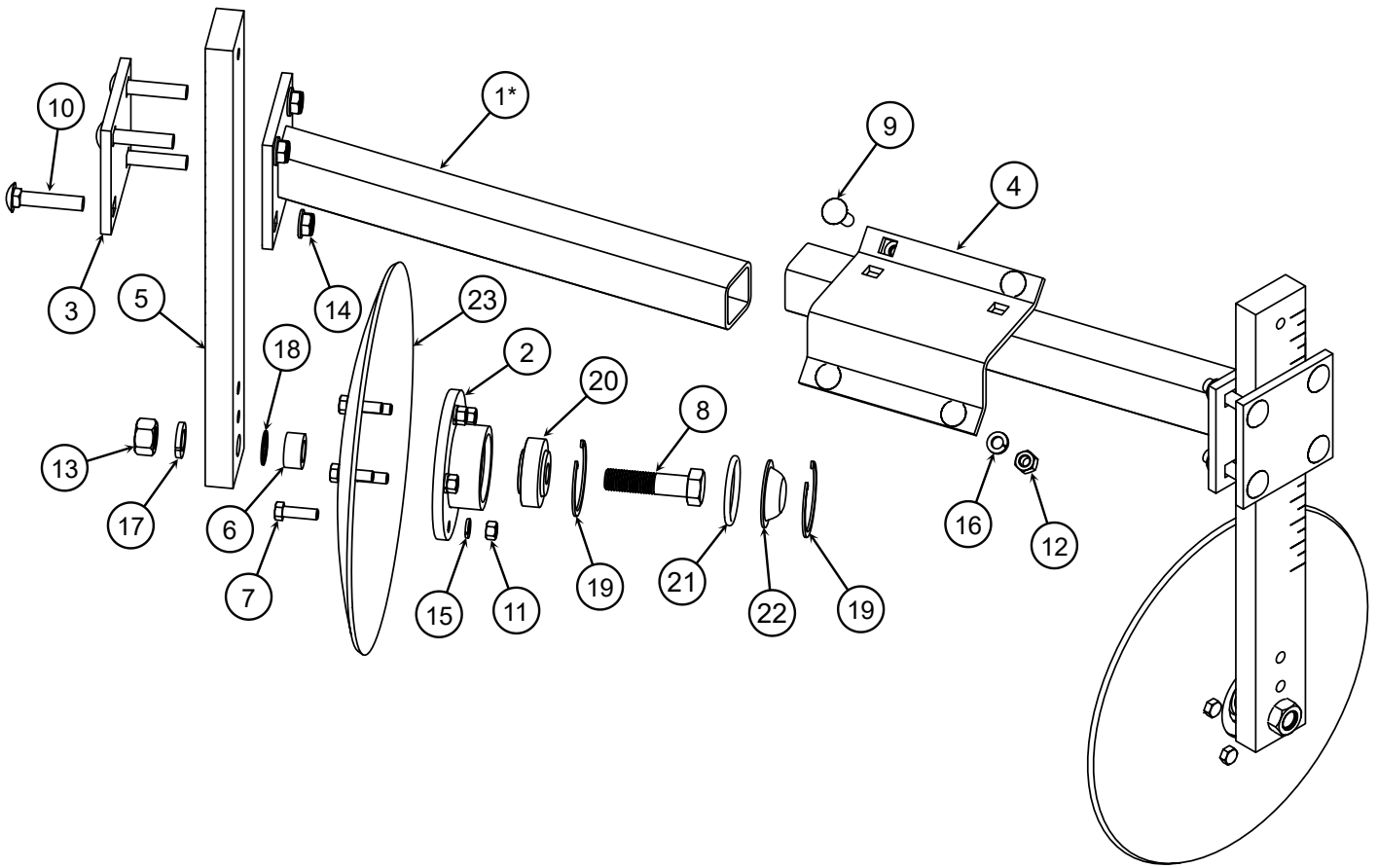


*OPTIONS AVAILABLE

RAISED BED WEEDER DISC KIT 30", 40"
200-1-3758 30", 200-1-3759 40"
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1-1	200-2-2090	FRONT TUBE WELD, OFST 20LG	2
1-2	200-2-2104	FRONT TUBE WELD,OFST 24 LNG	2
2	200-3-2533	DOUBLE TUBE CLAMP PAINTED	1
3	900-01726	7/16 NC X 1.5 CARRIAGE BOLT	4
4	900-06007	HEX NUT 7/16-14 X 2	4
5	900-11012	7/16 LOCK WASHER	4

ROW WEEDER DISCS KIT 30", 36" - 40"
200-1-3123 30", 200-1-3124 36" - 40"
(ASSEMBLY DRAWING)

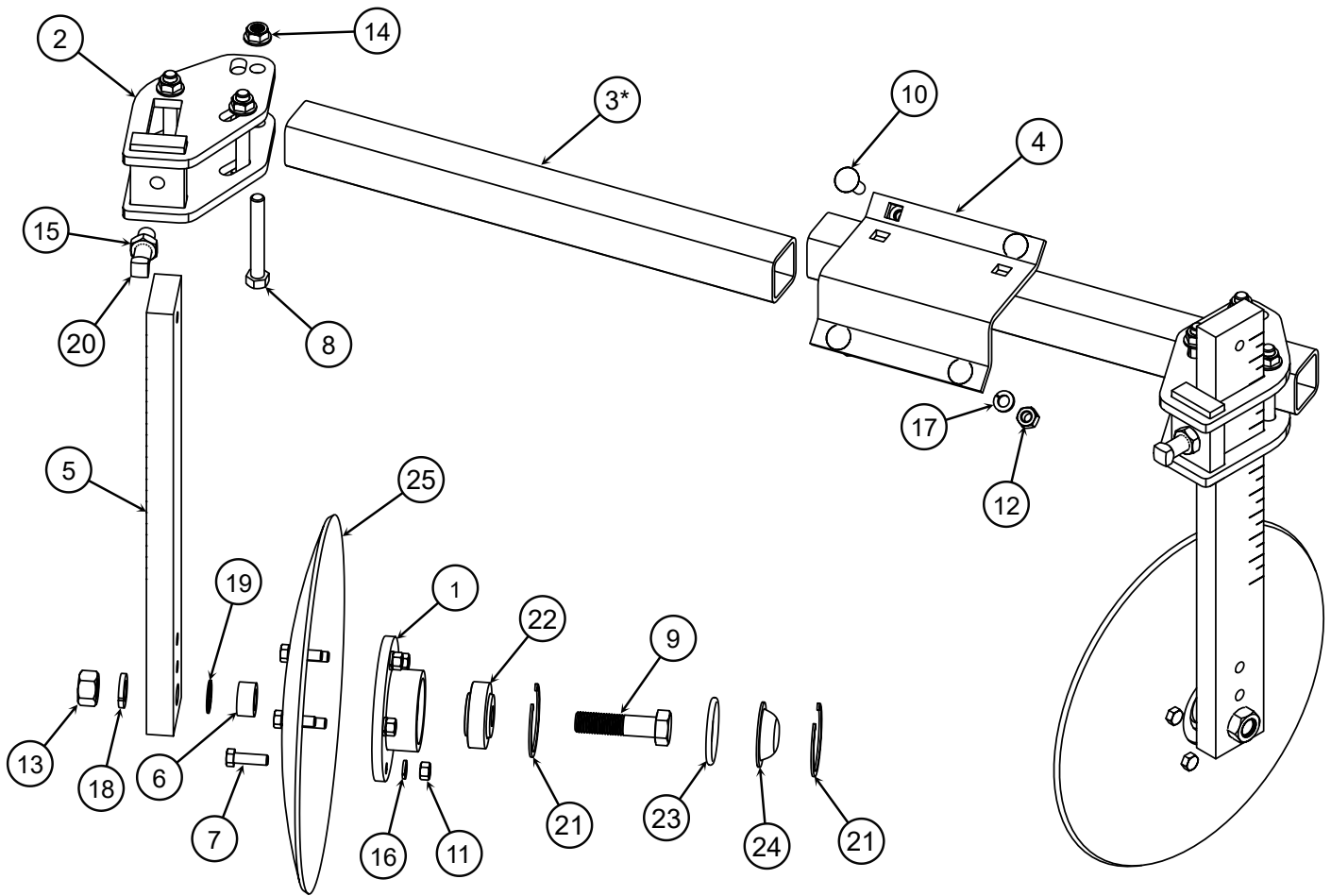


*OPTIONS AVAILABLE

ROW WEEDER DISCS KIT 30", 36" - 40"
200-1-3123 30", 200-1-3124 36" - 40"
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1-1	200-2-1465	TUBE WELD, 30" ROWS	2
1-2	200-2-1464	TUBE WELD, 40" ROWS	2
2	200-2-1466	HUB DISC MACHINED	2
3	200-3-2152	CAP, TUBE	2
4	200-3-2533	DOUBLE TUBE CLAMP	1
5	200-3-2704	SHANK CUT-AWAY DISC	2
6	200-3-2705	TUBE SPACER	2
7	900-01111	3/8NC X 1-1/4 HEX BOLT GR 5	10
8	900-01411	BOLT HEX 3/4 X 3 NC	2
9	900-01726	7/16 NC X 1.5 CARRIAGE BOLT	4
10	900-01755	1/2-13 X 2 1/2 CARRIAGE BOLT ZP	8
11	900-06005	NUT HEX 3/8	10
12	900-06007	HEX NUT 7/16-14 X 2	4
13	900-06089	NUT HEX .75 UNC	2
14	900-06143	1/2 NC SPIRALOCK NUT ZP GR5	8
15	900-11011	WASHER LOCK 3/8"	10
16	900-11012	7/16 LOCK WASHER	4
17	900-11017	WASHER, LOCK, 3/4, ZP	2
18	900-11190	WASHER INTERNAL STAR	2
19	900-39046	SNAP RING INTERNAL RETAINING	4
20	901-01254	BEARING RADIAL BALL	2
21	901-09206	O-RING AS 330	2
22	905-09118	CAP DUST	2
23	905-10080	DISC MIN TILL 14"	2

ROW WEEDER DISCS KIT HILLER 30", 40"
200-1-3655 30", 200-1-3661 40"
(ASSEMBLY DRAWING)

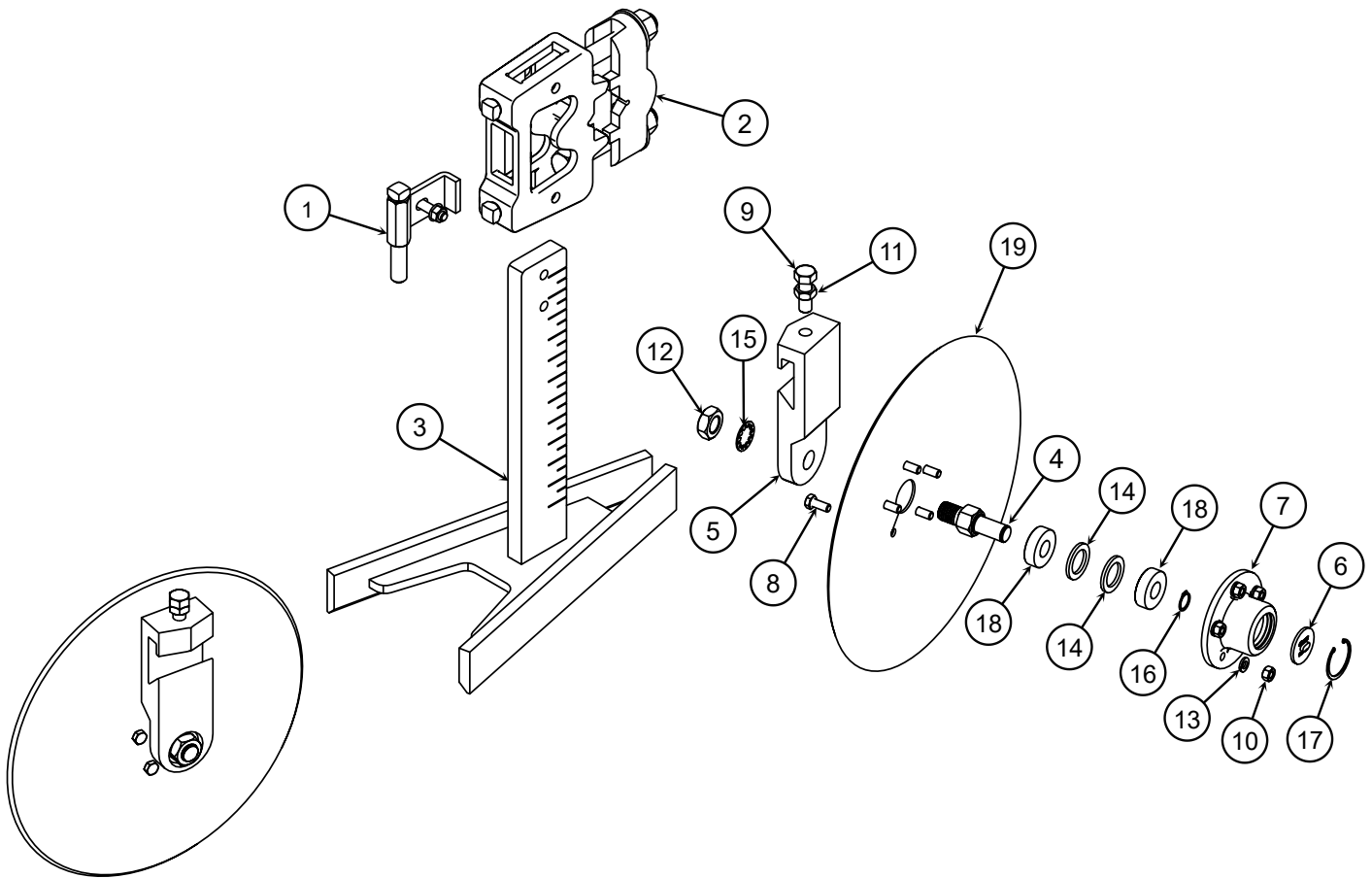


*OPTIONS AVAILABLE

ROW WEEDER DISCS KIT HILLER 30", 40"
200-1-3655 30", 200-1-3661 40"
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-2-1466	HUB DISC MACHINED	2
2	200-2-1876	CLAMP WLDMT	2
3-1	200-3-0993	TUBE, 3/16 X 2 X 2 X 20 LG	2
3-2	200-3-3576	TUBE, 3/16 X 2 X 2 X 23.94 LG	2
4	200-3-2533	DOUBLE TUBE CLAMP	1
5	200-3-2704	SHANK CUT-AWAY DISC	2
6	200-3-2705	TUBE SPACER	2
7	900-01111	3/8NC X 1-1/4 HEX BOLT GR 5	10
8	900-01241	BOLT, HH, 1/2-13 x 3-1/2, GR5 ZP	6
9	900-01411	BOLT HEX 3/4 X 3 NC	2
10	900-01726	7/16 NC X 1.5 CARRIAGE BOLT	4
11	900-06005	NUT HEX 3/8	10
12	900-06007	HEX NUT 7/16-14 X 2	4
13	900-06089	NUT HEX .75 UNC	2
14	900-06143	1/2 NC SPIRALOCK NUT ZP GR5	6
15	900-06280	NUT HEX JAM 5/8 UNC	2
16	900-11011	WASHER LOCK 3/8"	10
17	900-11012	7/16 LOCK WASHER	4
18	900-11017	WASHER, LOCK, 3/4, ZP	2
19	900-11190	WASHER INTERNAL STAR	2
20	900-16095	5/8-11 X 2 SQUARE HEAD SET SCREW	2
21	900-39046	SNAP RING INTERNAL RETAINING	4
22	901-01254	BEARING RADIAL BALL	2
23	901-09206	O-RING AS 330	2
24	905-09118	CAP DUST	2
25	905-10080	DISC MIN TILL 14"	2

DUAL DISC KIT 14"
200-1-3645
(ASSEMBLY DRAWING)

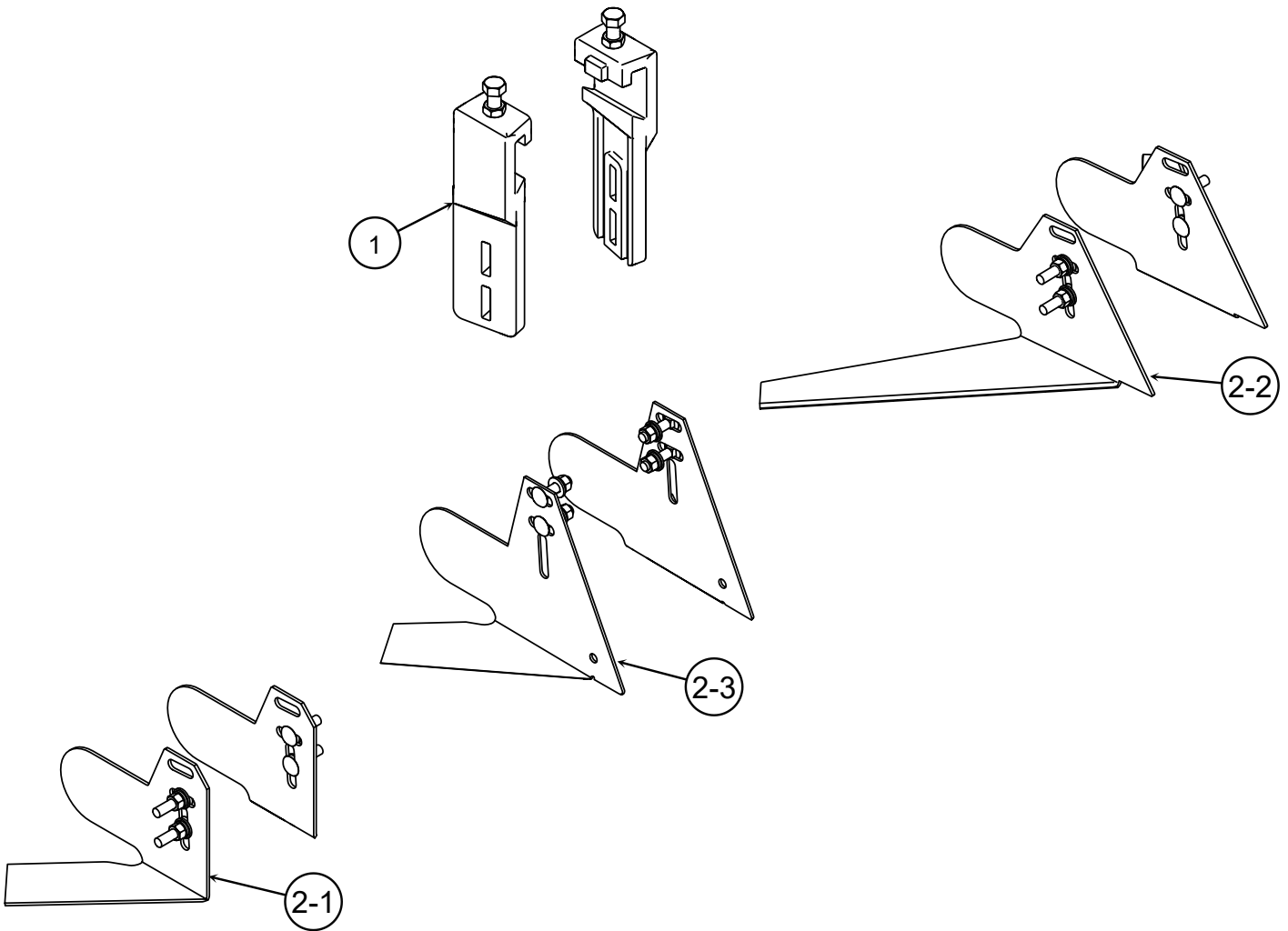


DUAL DISC KIT 14"
200-1-3645
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-1-1482	SCREW KIT, DUAL DISC, 2130	1
2	200-2-1414	CLAMP ASSY, 3/4" X 2 1/2"	1
3	200-2-1942	SHANK WELD, DUAL DISC 14"	1
4	200-3-1261	AXLE, DUAL DISC	2
5	200-3-3155	DUAL DISC ADAPTER 12°	2
6	200-3-3278	PLASTIC DUST CAP	2
7	200-3-3279	DUAL DISC HUB, MACH. OPEN END	2
8	900-01055	BOLT HEX 5/16 X 3/4	10
9	900-01225	1/2 NC X 1-1/2 HEX BOLT GR 5	2
10	900-06003	NUT HEX 5/16	10
11	900-06276	NUT, JAM, HEX HEAD, 1/2" NC, ZP	2
12	900-06282	NUT HEX JAM 3/4 NC	2
13	900-11010	5/16 WASHER LOCK	10
14	900-11073	BUSHING MACHINERY	4
15	900-11190	WASHER INTERNAL STAR	2
16	900-39029	SNAP RING, EXTERNAL RETAINING	2
17	900-39048	SNAP RING, TRUARC	2
18	901-01143	BEARING DUAL DISC	4
19	905-10110	DISC CONCAVE 14"	2

MOUNTED KNIVES

(ASSEMBLY DRAWING)

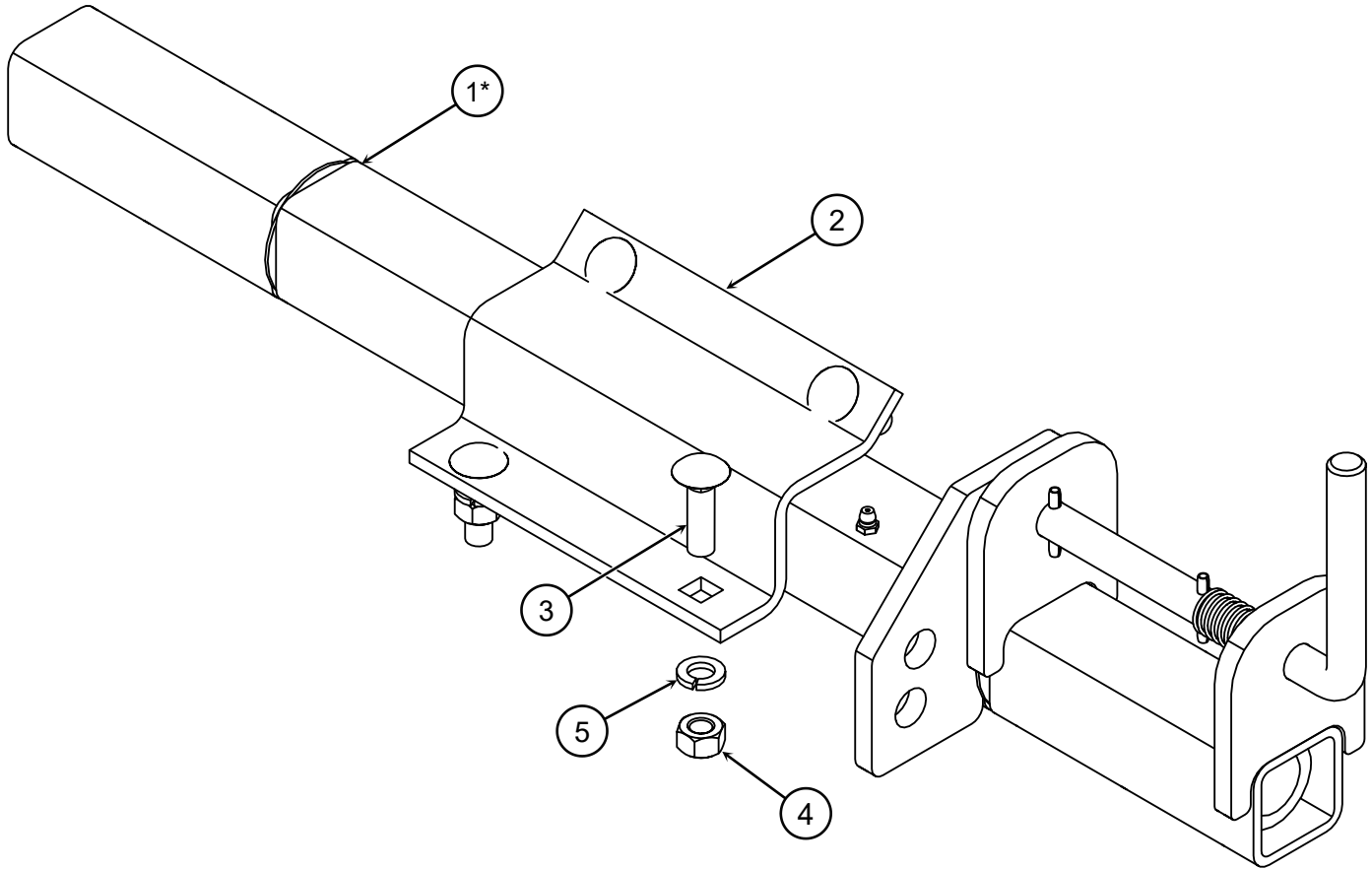


*OPTIONS AVAILABLE

MOUNTED KNIVES
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-1-3323	KIT, KNIFE MOUNTS W/HARDWARE (P/ROW)	1
2-1	200-1-0669	KIT, SHORT KNIVES W/HARDWARE	1
2-2	200-1-0670	KIT, LONG KNIVES W/HARDWARE	1
2-3	200-1-3616	KIT, SHORT KNIVES 3030/3130 W/HDW	1

FLIP UP DUAL DISK TUBES
200-1-3327 20"- 24" , 200-1-3328 26"- 30"
(ASSEMBLY DRAWING)

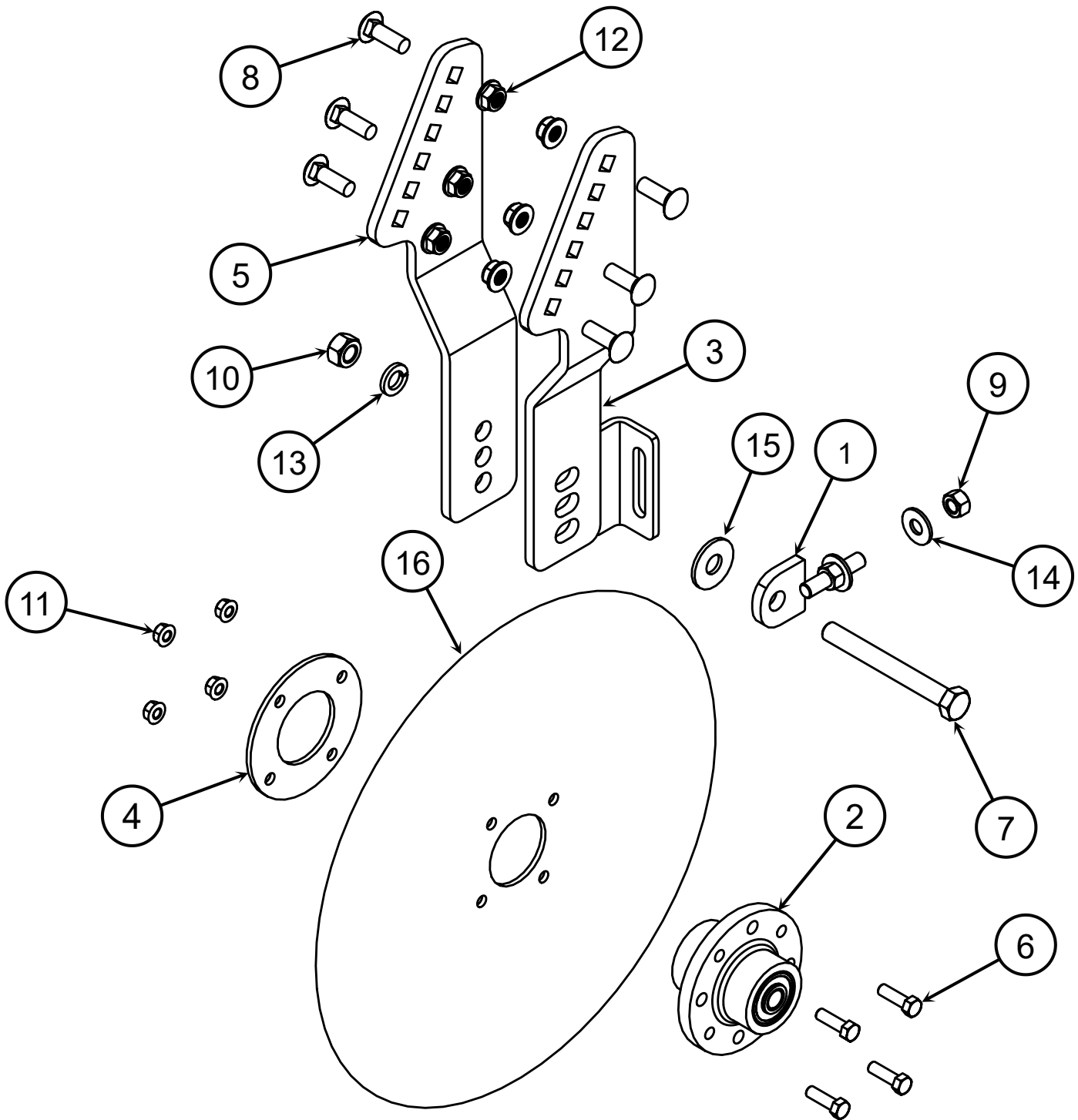


*OPTIONS AVAILABLE

FLIP UP DUAL DISK TUBES
200-1-3327 20" - 24" , 200-1-3328 26" - 30"
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1-1	200-2-1698	DISC TUBE ASSY (20" - 24")	1
1-2	200-2-1699	DISC TUBE ASSY (26" - 30")	1
2	200-3-0994	TUBE CLAMP SINGLE	4
3	900-01726	7/16 NC X 1.5 CARRIAGE BOLT	4
4	900-06007	HEX NUT 7/16-14 X 2	4
5	900-11012	7/16 LOCK WASHER	4

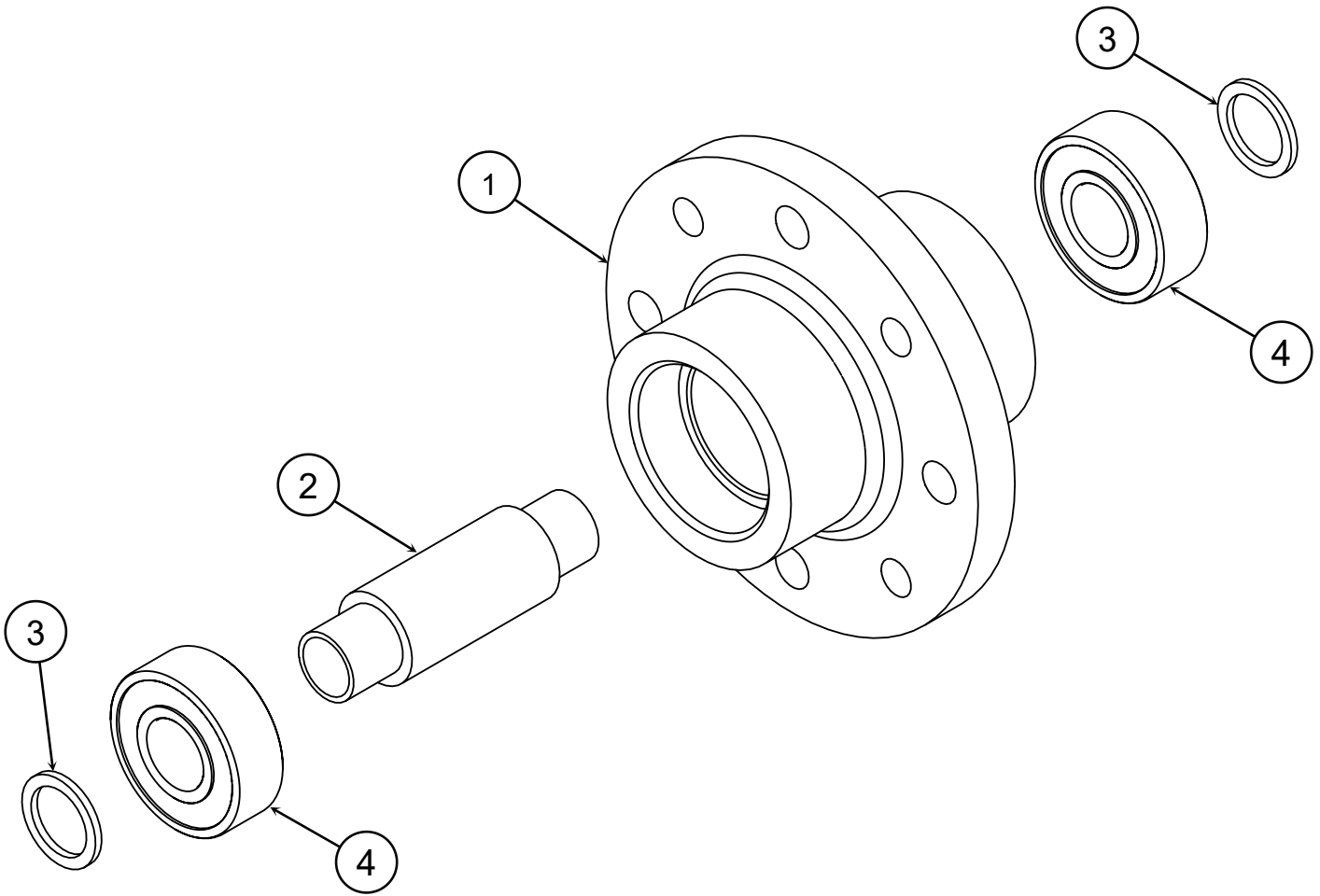
KIT, ADJUSTABLE COULTER ASSY
200-1-3748
(ASSEMBLY DRAWING)



KIT, ADJUSTABLE COULTER ASSY
200-1-3748
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-2-0699	ADJUSTING TAB	1
2	200-2-1773	ASSY, 4 BOLT COULTER HUB	1
3	200-2-2381	LEFT SIDE PLATE WELD - COULTER	1
4	200-3-0685	BLADE WASHER	1
5	200-3-4621	SIDE PLATE - COULTER MOUNT RH	1
6	900-01111	3/8NC X 1-1/4 HEX BOLT GR 5	4
7	900-01367	SCREW, CAP 5/8 X 5-1/2 UNC	1
8	900-01751	BOLT, CRG, 1/2-13 X 1-1/2, GR5 ZP	6
9	900-06009	NUT HEX 1/2 UNC	2
10	900-06013	NUT, HH, 5/8-11, ZP	1
11	900-06139	3/8 NC FLANGED WHIZ NUT	4
12	900-06143	1/2 NC SPIRALOCK NUT ZP GR5	6
13	900-11015	WASHER, LOCK, 5/8, ZP	1
14	900-11035	1/2 FLAT WASHER	2
15	900-11037	WASHER, FLAT, 5/8"	1
16	905-10079	COLTER BLADE	1

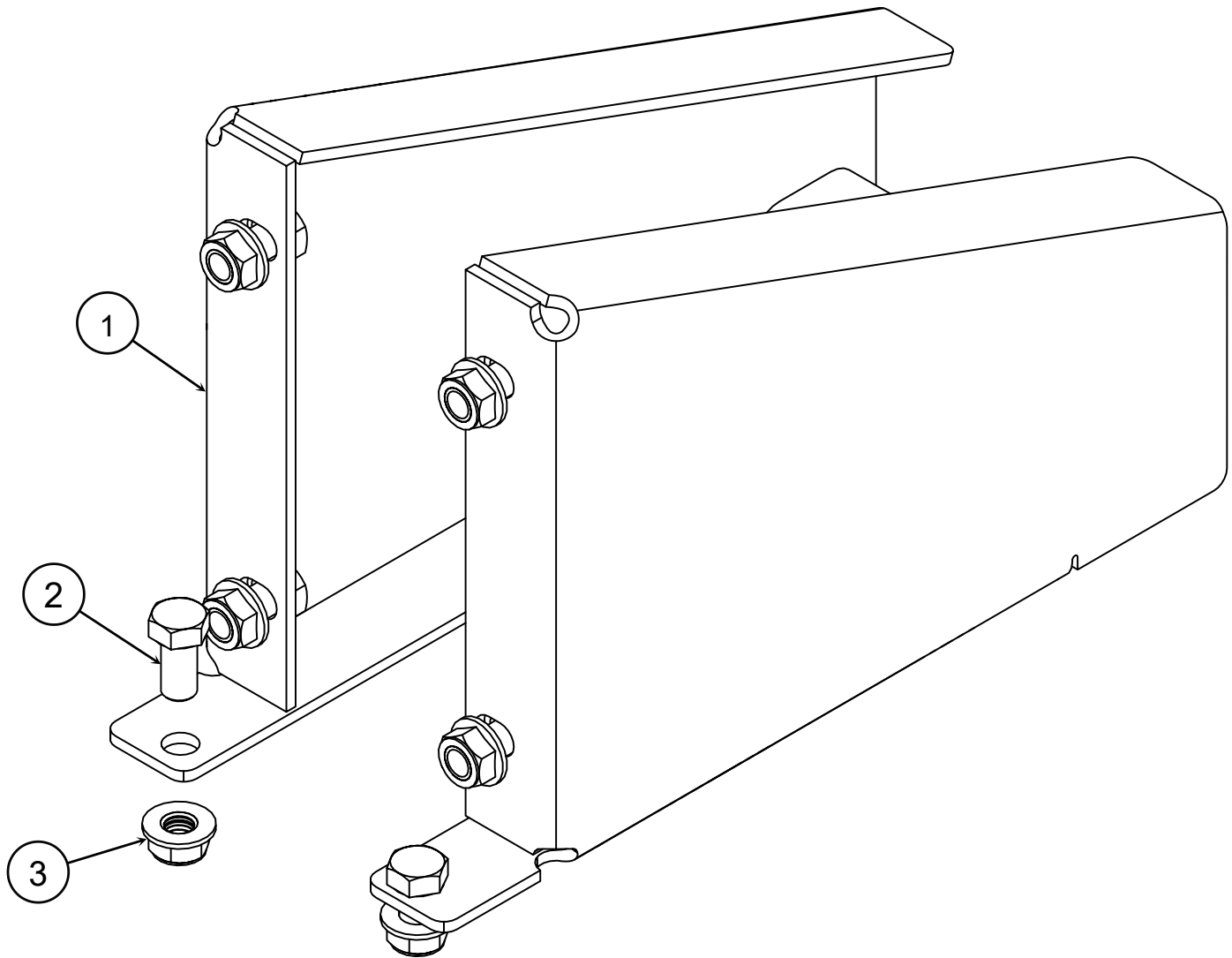
ASSY, 4 BOLT COULTER HUB
200-2-1773
(ASSEMBLY DRAWING)



ASSY, 4 BOLT COULTER HUB
200-2-1773
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-2-1772	HUB WELD, MACHINED	1
2	200-3-3351	TUBE, COULTER HUB AXEL	1
3	900-11060	VM-3/4" X 14 GAUGE, NAR RIM	2
4	901-01278	BEARING, RADIAL BALL, SEALED	2

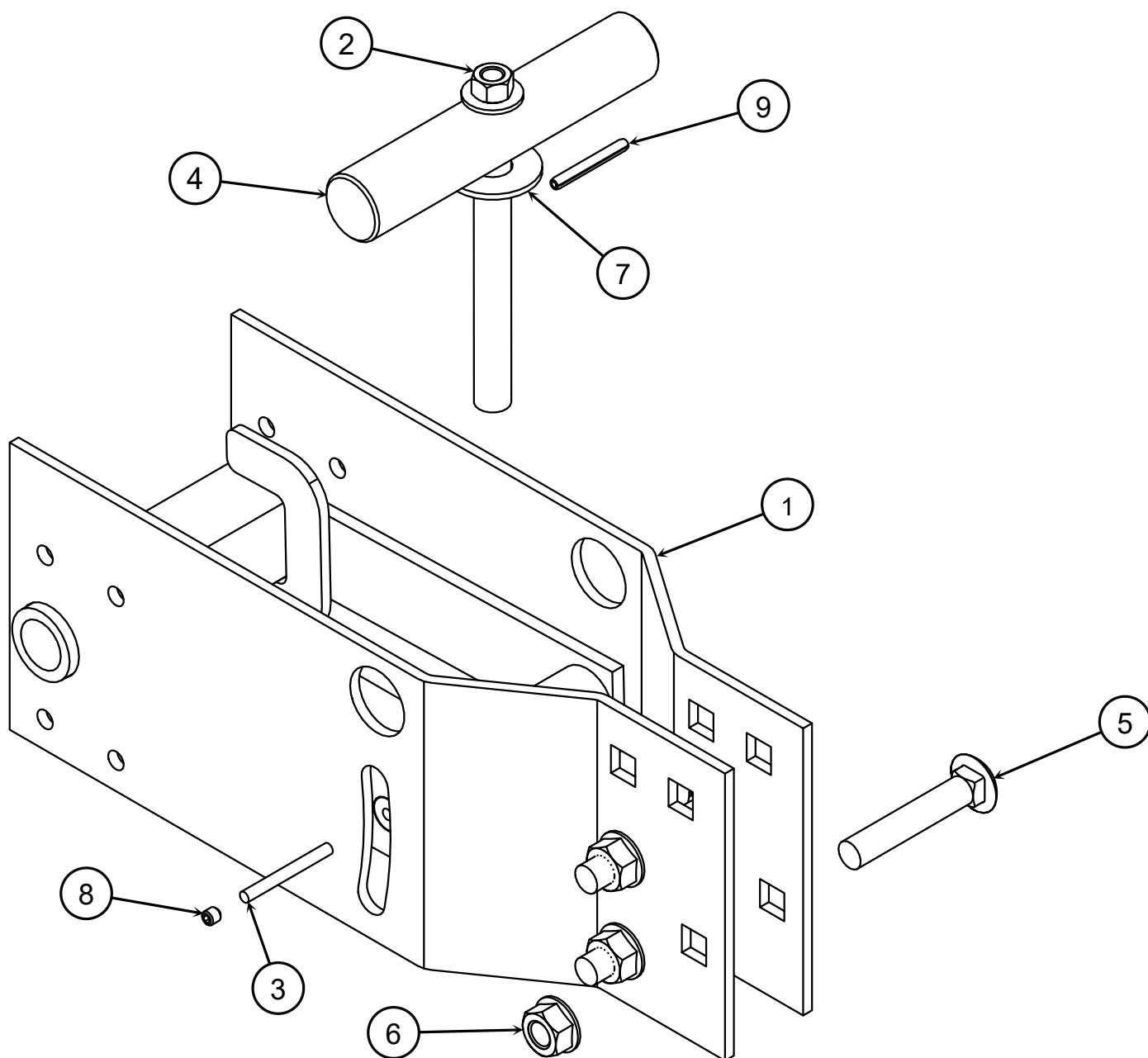
3130 ROW GUIDE SETBACK ASSY
200-1-3648
(ASSEMBLY DRAWING)



3130 ROW GUIDE SETBACK ASSY
200-1-3648
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-2-1946	SETBACK WELD, CLEANOUT	1
2	900-01221	BOLT HEX ½" X 1"	6
3	900-06143	1/2 NC SPIRALOCK NUT ZP GR5	6

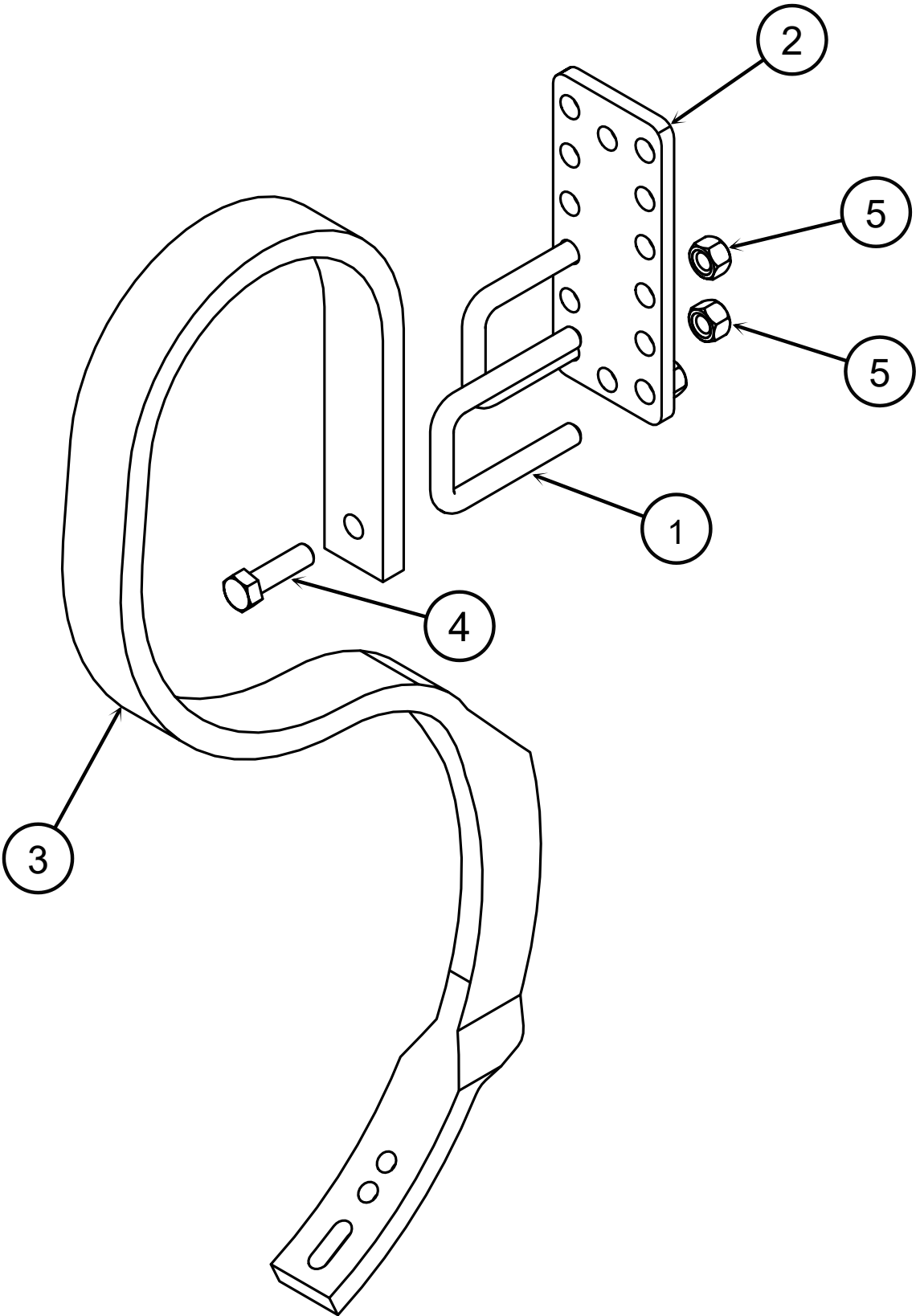
KIT, REAR SETBACK PIVOT 3130
200-1-3470
(ASSEMBLY DRAWING)



KIT, REAR SETBACK PIVOT 3130
200-1-3470
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-2-1850	PIVOT WELD	1
2	200-3-3219	SCREW, GAGE ARM	1
3	200-3-3438	1/4" ROUND 2-3/8" UHMW	1
4	200-3-3523	TRUNNION	1
5	900-01792	BOLT CARRIAGE 5/8-11 X 3.50	3
6	900-06145	5/8 WHIZ NUT	3
7	900-11038	3/4" FLAT WASHER, USS	1
8	900-16237	SOCKET HEAD SET SCREW, 5/16 x 5/16	1
9	900-29182	1/4 X 2 ROLL PIN	1

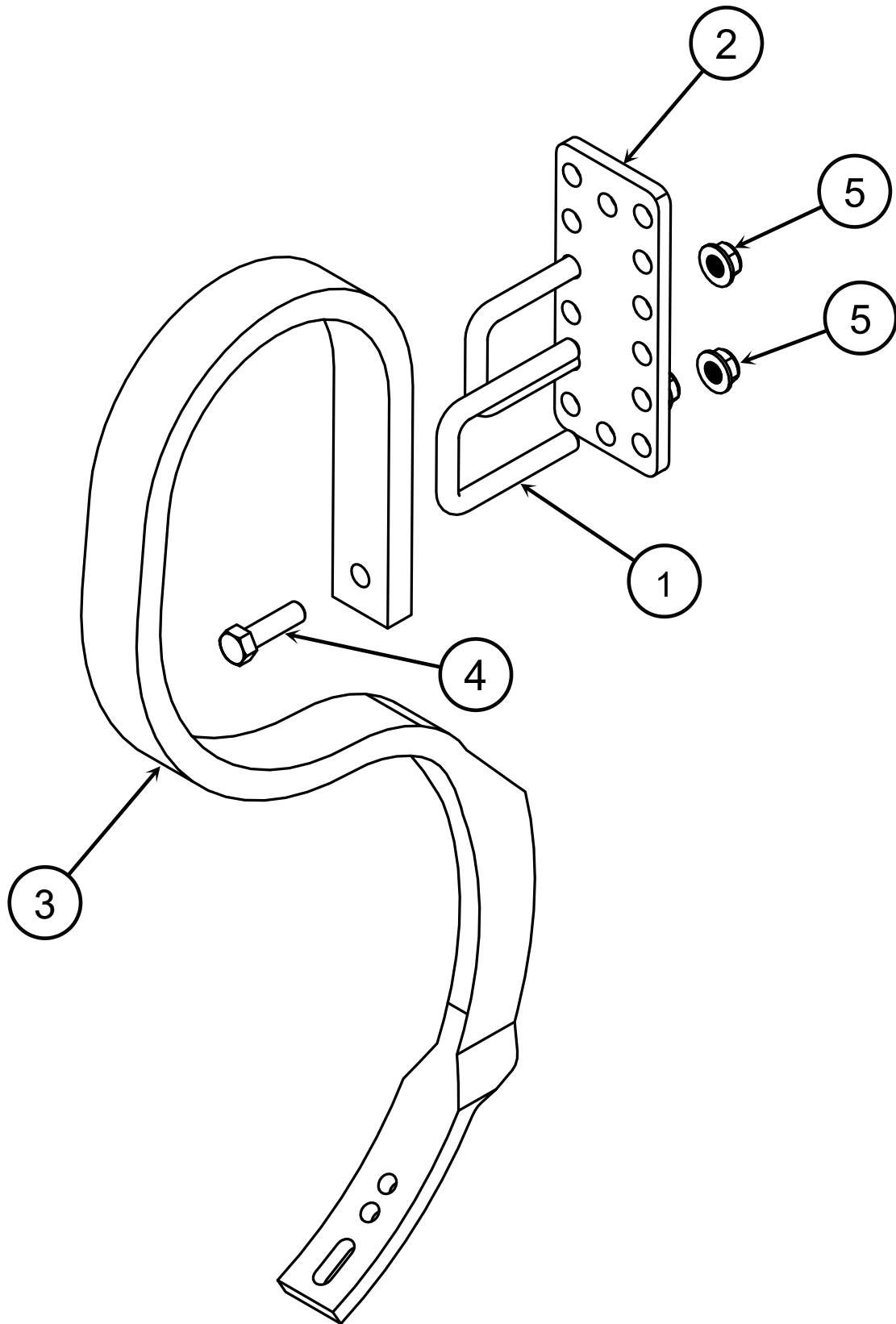
KIT, STRAIGHT EDGE TINE
200-1-0849
(ASSEMBLY DRAWING)



KIT, STRAIGHT EDGE TINE
200-1-0849
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-3-2954	U-BOLT 1/2 X 2 X 3.75 X 1	2
2	200-3-2955	PLATE BOLTING	1
3	200-3-3524	STRAIGHT EDGE TINE 5/8"	1
4	900-01227	BOLT HEX ½ X 1 3/4 GR 5 ZP	1
5	900-06504	900-06504 NUT, LOCK, TOP, 1/2-13, GR C ZP	5

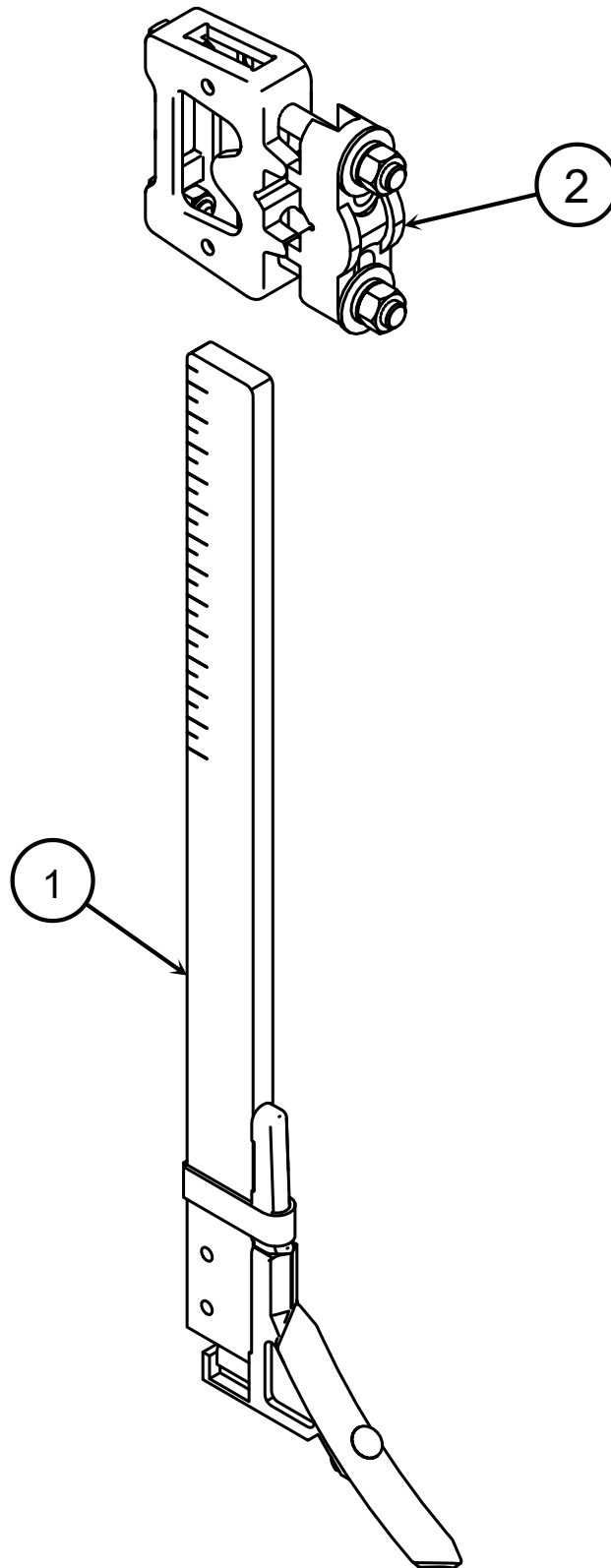
KIT, STRAIGHT EDGE TINE HD
200-1-3569
(ASSEMBLY DRAWING)



KIT, STRAIGHT EDGE TINE HD
200-1-3569
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-3-2954	U-BOLT 1/2 X 2 X 3.75 X 1	2
2	200-3-2955	PLATE BOLTING	1
3	200-3-3525	HD STRAIGHT EDGE TINE 3/4"	1
4	900-01227	BOLT HEX ½ X 1 3/4 GR 5 ZP	1
5	900-06143	1/2 NC SPIRALOCK NUT ZP GR5	5

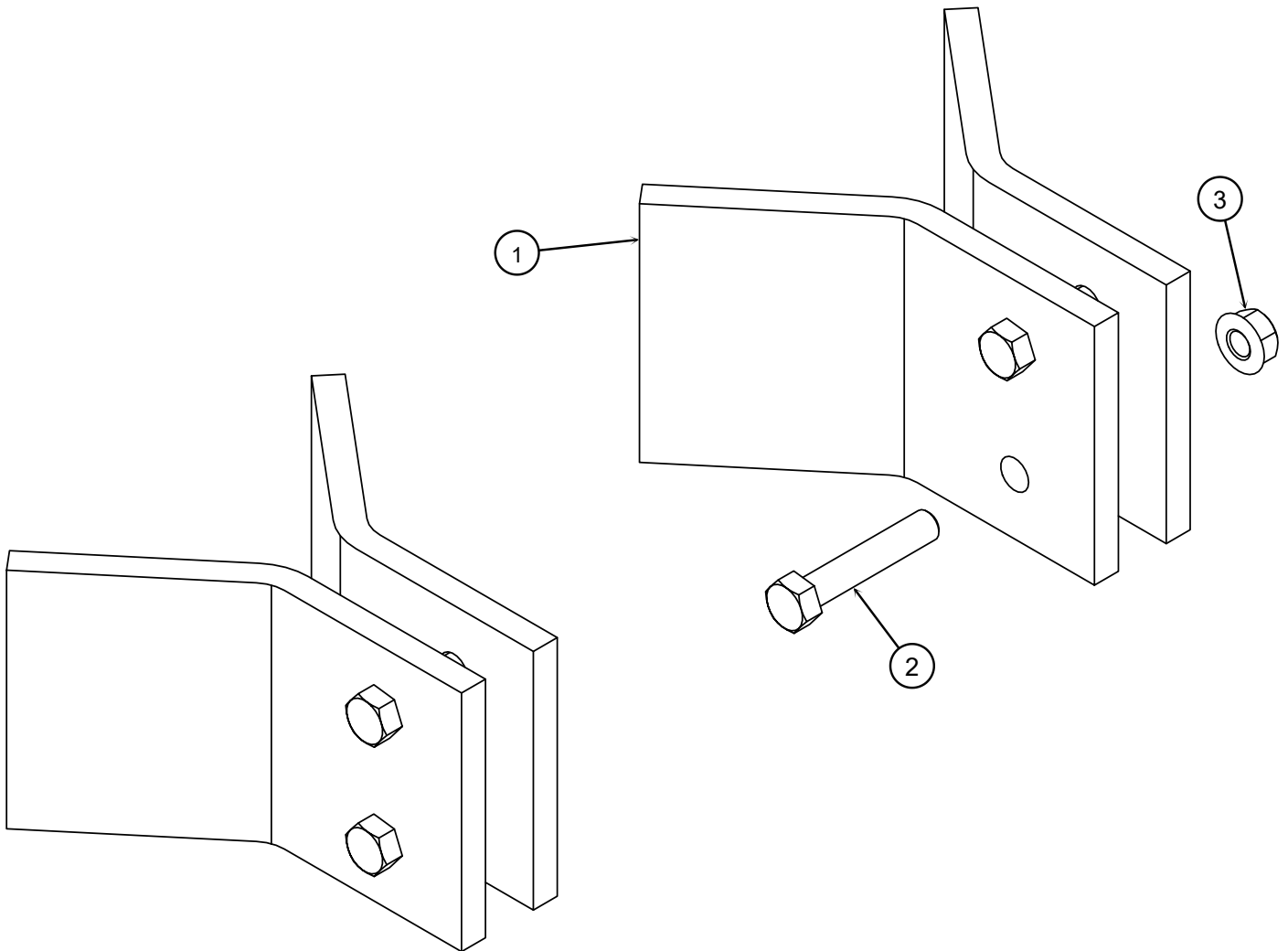
KIT, ROW GUIDE M 32" W/CLAMP
200-1-3322
(ASSEMBLY DRAWING)



KIT, ROW GUIDE M 32" W/CLAMP
200-1-3322
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-2-0903	32" ROW GUIDE ASSEMBLY	1
2	200-2-1414	CLAMP ASSY, 3/4" X 2 1/2"	1

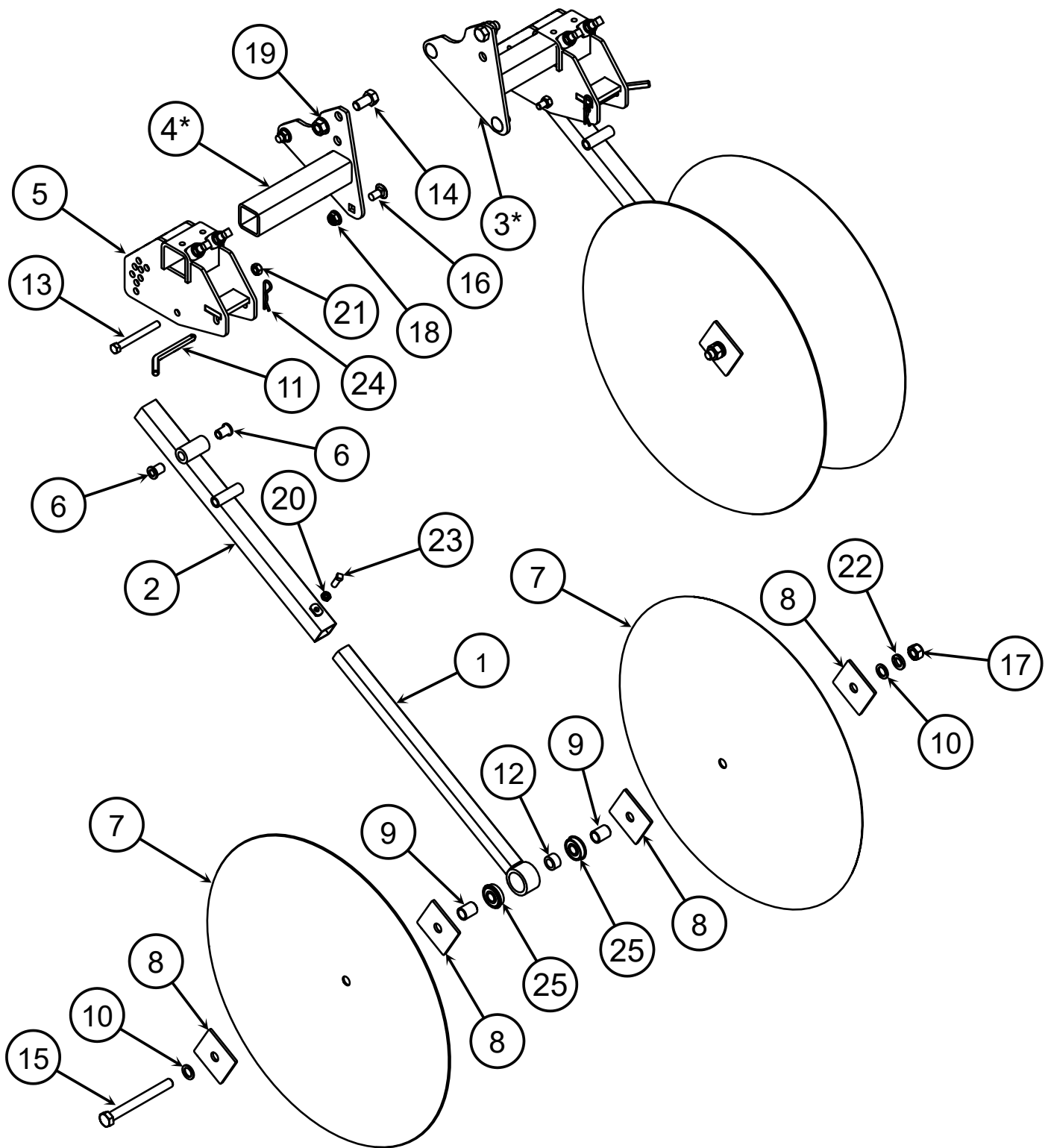
CTN, ROWGUIDE CLEAN-OUTS PAIR
200-1-3437
(ASSEMBLY DRAWING)



CTN, ROWGUIDE CLEAN-OUTS PAIR
200-1-3437
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-3-3294	CLEANOUT WING, ROW GUIDE	4
2	900-01117	3/8 NC X 2 HEX BOLT GR 5	4
3	900-06139	3/8 NC FLANGED WHIZ NUT	4

KIT, ROLLING END SHIELD 24" DIA X 22", 30", 36"- 40" ROWS PAIR
200-1-3768 22", 200-1-3742 30", 200-1-3743 36"- 40"
(ASSEMBLY DRAWING)

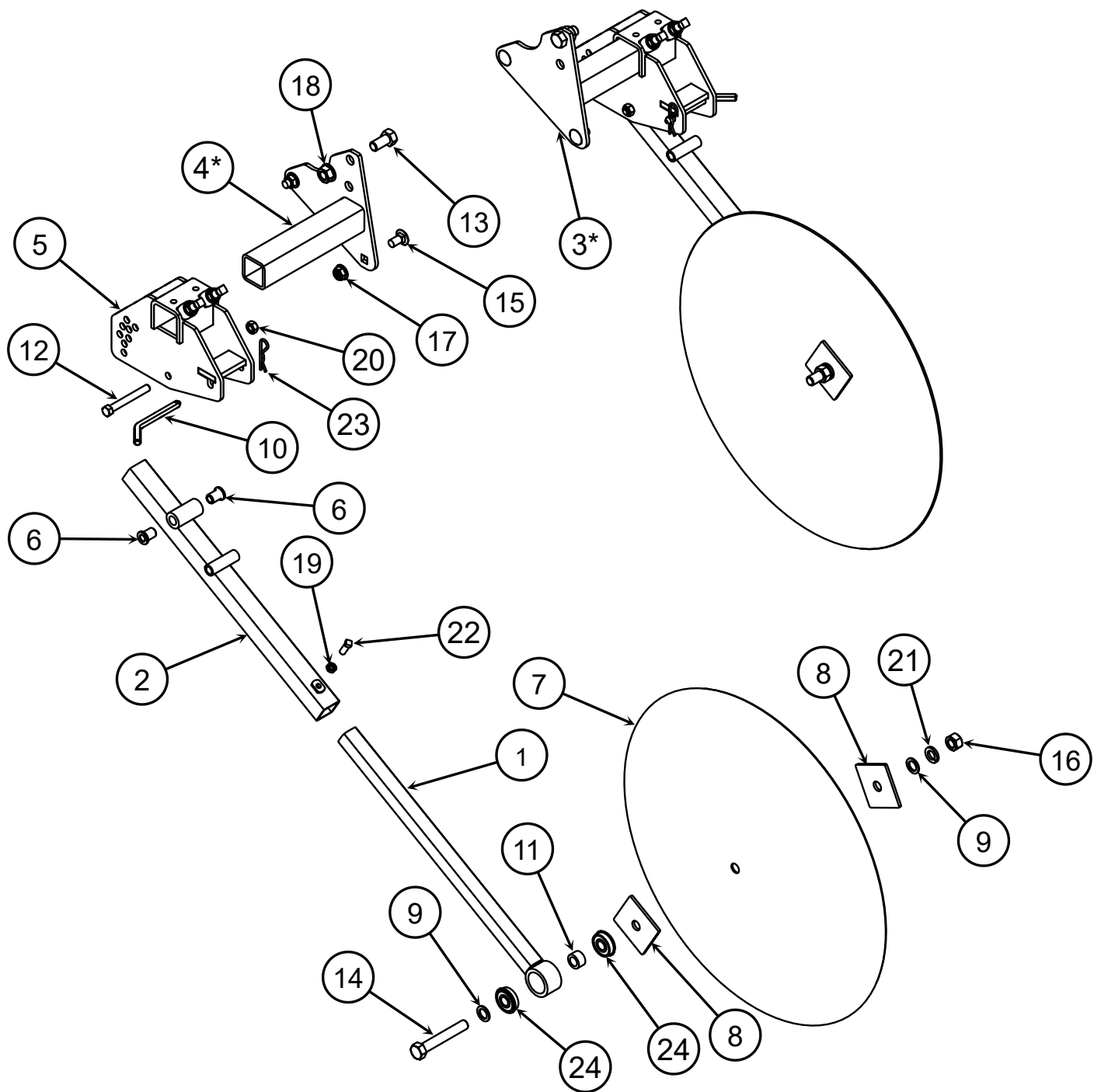


*OPTIONS AVAILABLE

KIT, ROLLING END SHIELD 24" DIA X 22", 30", 36" - 40" ROWS PAIR
200-1-3768 22", 200-1-3742 30", 200-1-3743 36" - 40"
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-2-1714	MOUNT WELDMENT, (RCC)	2
2	200-2-1816	WELD, ROLLING SHIELD TUBE	2
3-1	200-2-2122	ROLLING SHIELD MT 3130 RH 22"	1
3-2	200-2-2026	ROLLING SHIELD MT 3130 RH 30"	1
3-3	200-2-2056	ROLLING SHIELD MT 3130 RH 36"-40"	1
4-1	200-2-2123	ROLLING SHIELD MT 3130 LH 22"	1
4-2	200-2-2027	ROLLING SHIELD MT 3130 LH 30"	1
4-3	200-2-2057	ROLLING SHIELD MT 3130 LH 36"-40"	1
5	200-2-2214	MOUNT ROLLING SHIELD ADJ	2
6	200-3-2913	BUSHING, FLANGED PIVOT STRAP, .444" x .627" x 1.235" x 1"	4
7	200-3-3305	24" ROLLING SHIELD (PAINTED)	4
8	200-3-3326	PLATE SHIELD REINFORCEMENT	8
9	200-3-3507	SPACER	4
10	200-3-3508	WASHER - 13 GA	4
11	200-3-3705	PIN BEND	2
12	200-3-4138	SPACER - ROLLING SHIELDS	2
13	900-01195	7/16 NC X 4 HEX BOLT	2
14	900-01339	HEX BOLT 5/8 NC X 1 1/4 GD 5 ZP	2
15	900-01369	SCREW, CAP 5/8 X 6 UNC ZP	2
16	900-01749	CARRIAGE BOLT 1/2 NC X 1	4
17	900-06013	NUT, HH, 5/8-11, ZP	2
18	900-06143	1/2 NC SPIRALOCK NUT ZP GR5	4
19	900-06145	5/8 WHIZ NUT	2
20	900-06329	NUT, WELD 3/8 NC	2
21	900-06502	7/16 NC TOP LOCK NUT	2
22	900-11015	WASHER, LOCK, 5/8, ZP	2
23	900-16033	SQUARE HEAD SET SCREW 3/8" NC X 1"	2
24	900-25004	1/8 HAIR PIN CLIP	2
25	901-01334	BEARING - ROLLING SHIELDS	4

KIT, ROLLING SHIELD 24" DIA X 22", 30", 36" - 40" ROWS PAIR
200-1-3769 22", 200-1-3756 30", 200-1-3757 36" - 40"
(ASSEMBLY DRAWING)

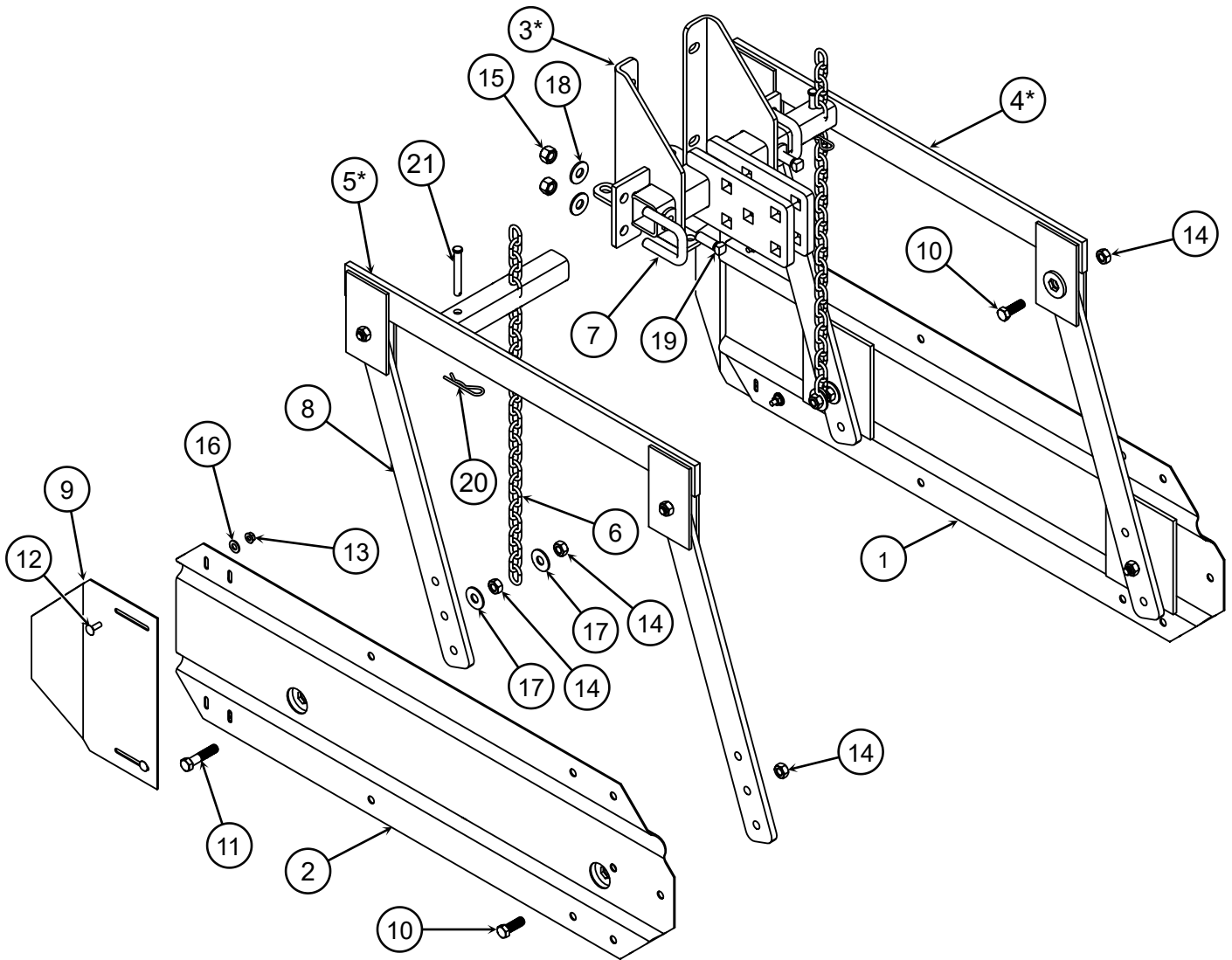


*OPTIONS AVAILABLE

KIT, ROLLING SHIELD 24" DIA X 22", 30", 36" - 40" ROWS PAIR
200-1-3768 22", 200-1-3742 30", 200-1-3743 36"- 40"
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-2-1714	MOUNT WELDMENT, (RCC)	2
2	200-2-1816	WELD, ROLLING SHIELD TUBE	2
3-1	200-2-2122	ROLLING SHIELD MT 3130 RH 22"	1
3-2	200-2-2026	ROLLING SHIELD MT 3130 RH 30"	1
3-3	200-2-2056	ROLLING SHIELD MT 3130 RH 36"-40"	1
4-1	200-2-2123	ROLLING SHIELD MT 3130 LH 22"	1
4-2	200-2-2027	ROLLING SHIELD MT 3130 LH 30"	1
4-3	200-2-2057	ROLLING SHIELD MT 3130 LH 36"-40"	1
5	200-2-2214	MOUNT ROLLING SHIELD ADJ	2
6	200-3-2913	BUSHING, FLANGED PIVOT STRAP, .444" x .627" x 1.235" x 1"	4
7	200-3-3305	24" ROLLING SHIELD (PAINTED)	4
8	200-3-3326	PLATE SHIELD REINFORCEMENT	8
9	200-3-3508	WASHER - 13 GA	4
10	200-3-3705	PIN BEND	2
11	200-3-4138	SPACER - ROLLING SHIELDS	2
12	900-01195	7/16 NC X 4 HEX BOLT	2
13	900-01339	HEX BOLT 5/8 NC X 1 1/4 GD 5 ZP	2
14	900-01361	HEX BOLT 5/8 - 11 X 4 GRADE 5	2
15	900-01749	CARRIAGE BOLT 1/2 NC X 1	4
16	900-06013	NUT, HH, 5/8-11, ZP	2
17	900-06143	1/2 NC SPIRALOCK NUT ZP GR5	2
18	900-06145	5/8 WHIZ NUT	2
19	900-06270	3/8" JAM NUT	2
20	900-06502	7/16 NC TOP LOCK NUT	2
21	900-11015	WASHER, LOCK, 5/8, ZP	2
22	900-16033	SQUARE HEAD SET SCREW 3/8" NC X 1"	2
23	900-25004	1/8 HAIR PIN CLIP	2
24	901-01334	BEARING - ROLLING SHIELDS	4

KIT, OPEN TOP SHIELDS 22", 30", 36" - 40" ROWS PAIR
200-1-3691 22", 200-1-3642 30", 200-1-3692 40"
(ASSEMBLY DRAWING)

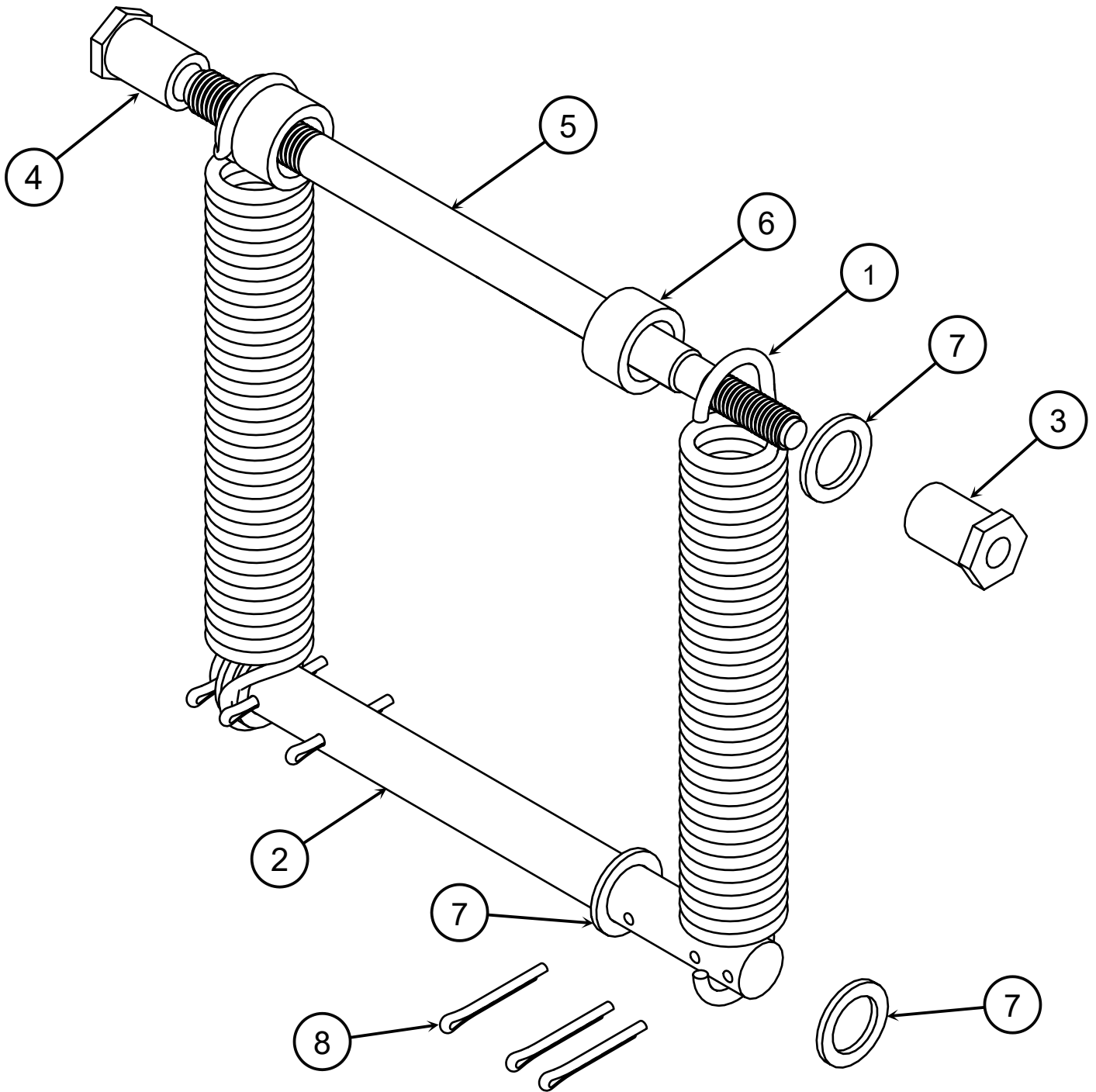


*OPTIONS AVAILABLE

KIT, OPEN TOP SHIELDS 22", 30", 36" - 40" ROWS PAIR
200-1-3691 22", 200-1-3642 30", 200-1-3692 40"
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-2-1929	SHIELD WELD, RH	1
2	200-2-1930	SHIELD WELD, LH	1
3-1	200-2-2011	SETBACK WELD RIGID SHANK 22"	1
3-2	200-2-1950	SETBACK WELD RIGID SHANK 30"	1
3-3	200-2-2012	SETBACK WELD RIGID SHANK 36"-40"	1
4-1	200-2-2013	OPEN TOP BRACKET RH 3130 22"	1
4-2	200-2-2009	OPEN TOP BRACKET LH 3130 30"	1
4-3	200-2-2015	OPEN TOP BRACKET RH 3130 36"-40"	1
5-1	200-2-2014	OPEN TOP BRACKET LH 3130 22"	1
5-2	200-2-2010	OPEN TOP BRACKET RH 3130 30"	1
5-3	200-2-2016	OPEN TOP BRACKET LH 3130 36"-40"	1
6	200-3-2964	CHAIN	2
7	200-3-3323	U BOLT 1 1/2 X 2 1/2	2
8	200-3-3519	PARALLEL ARM	4
9	200-3-3688	GUIDE SHIELD, OPEN TOP	2
10	900-01173	7/16-14 HEX HEAD BOLT 1.25" LENGTH	6
11	900-01179	7/16-14 HEX HEAD BOLT 2" LENGTH	2
12	900-01647	CARRIAGE BOLT 1/4-20 X 1 ZP	4
13	900-06135	WHIZ NUT - 1/4 - 20	4
14	900-06502	7/16 NC TOP LOCK NUT	10
15	900-06504	NUT, LOCK, TOP, 1/2-13, GR C ZP	4
16	900-11032	5/16" STANDARD WROUGHT WASHER	4
17	900-11034	7/16 FLAT WASHER	4
18	900-11035	1/2 FLAT WASHER	4
19	900-16064	SCREW, SQUARE HEAD SET, CUP	2
20	900-25004	1/8 HAIR PIN CLIP	2
21	900-42026	.38 X 2.75 CLEVIS PIN	2

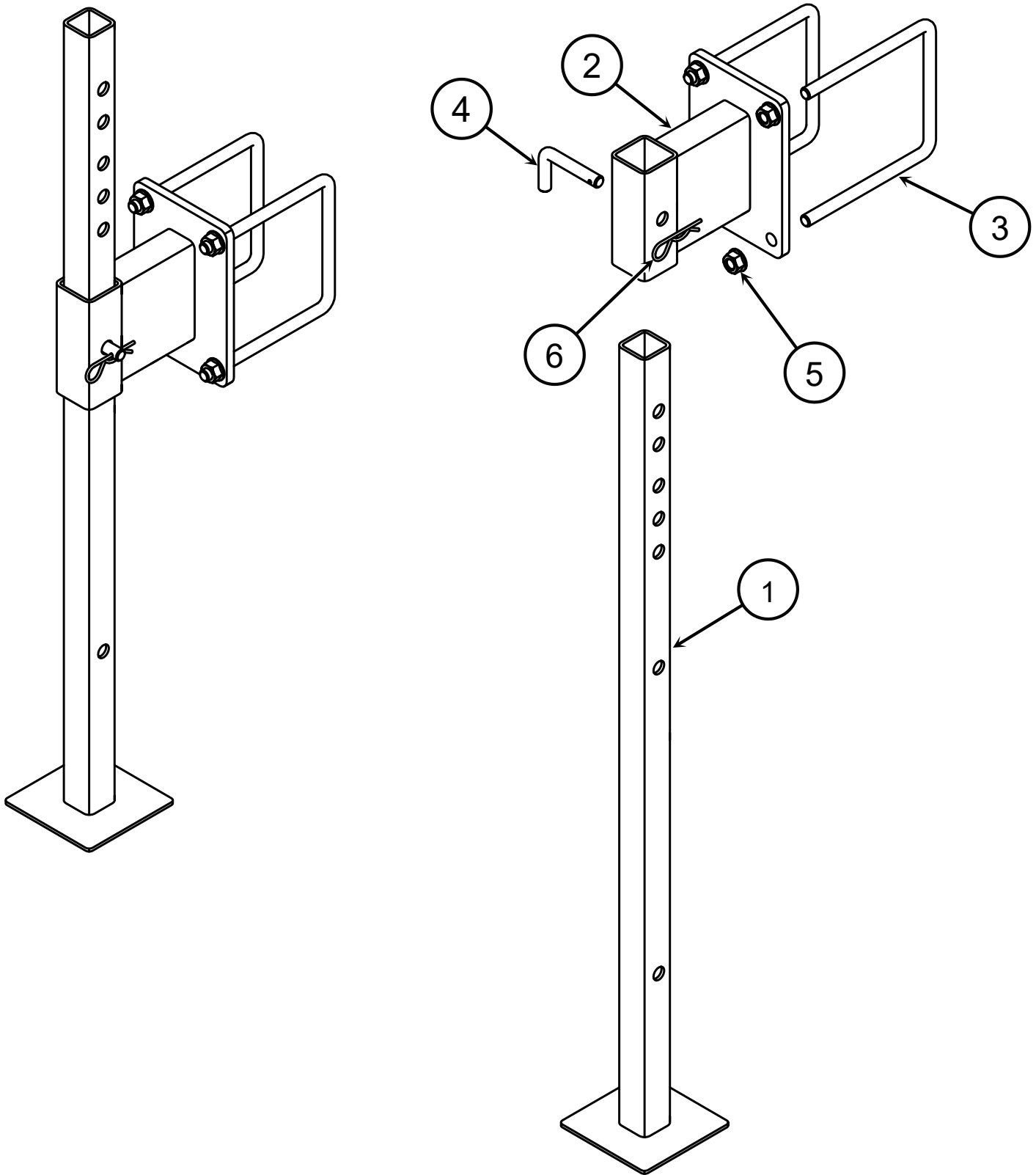
KIT, DOWN PRESSURE SPRING 3130
200-1-3711
(ASSEMBLY DRAWING)



KIT, DOWN PRESSURE SPRING 3130
200-1-3711
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-3-2163	SPRING	2
2	200-3-3871	BAR DOWN PRESSURE SPRING	1
3	200-3-3872	NUT, SHOULDER 5/8 THREADS	1
4	200-3-3873	NUT, SHOULDER 3/4 THREADS	1
5	200-3-5439	PIN, DOWN PRESSURE KIT	1
6	505-3-0713	TUBE, SPACER	2
7	900-11073	BUSHING MACHINERY	6
8	900-23043	3/16 X 1 1/2 COTTER PIN	6

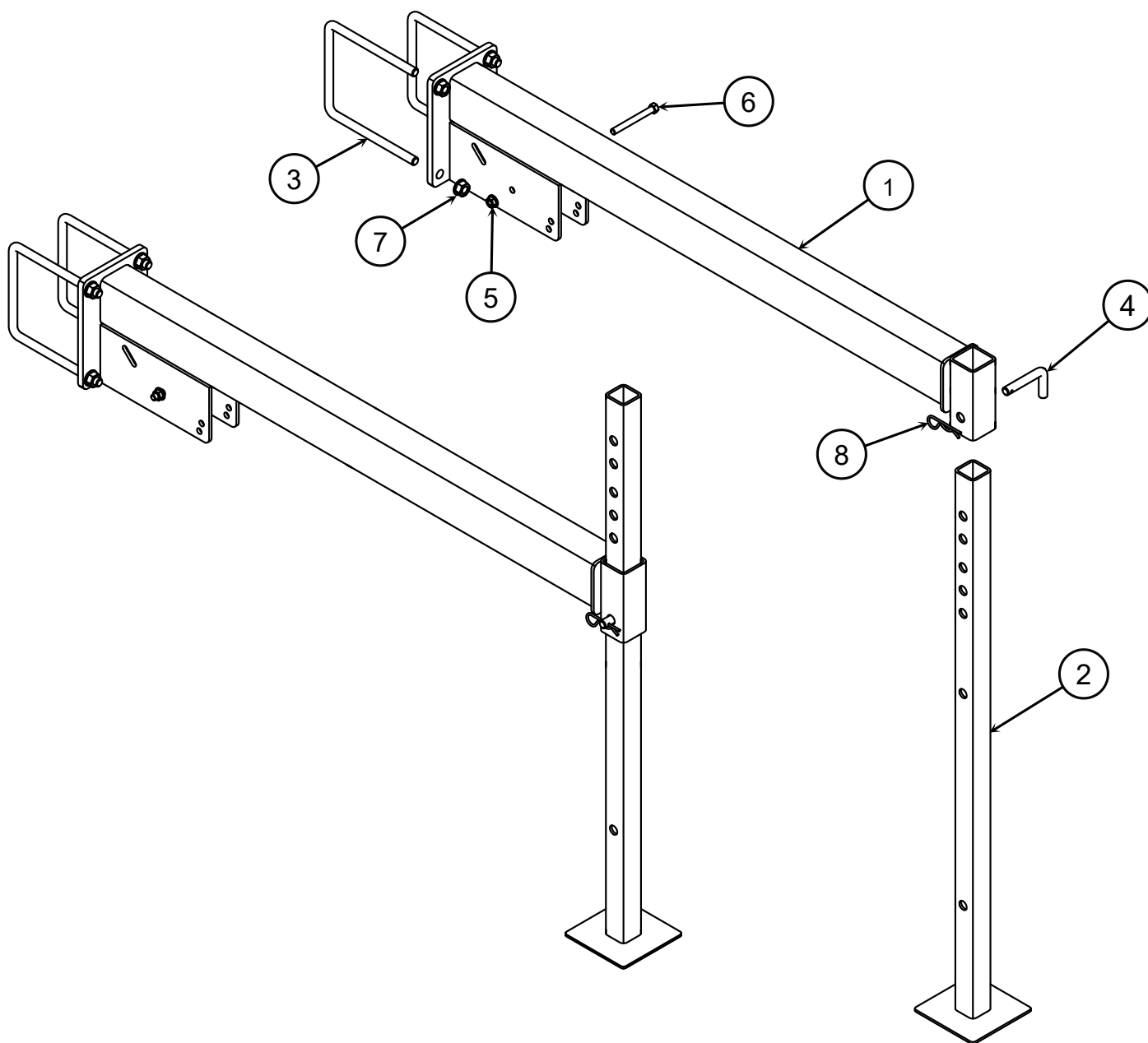
PARKING STAND FRONT PAIR KIT
200-1-3597
(ASSEMBLY DRAWING)



PARKING STAND FRONT PAIR KIT
200-1-3597
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-2-1885	PARKING STAND TUBE WELD	2
2	200-2-1886	PARKING STAND SETBACK WELD	2
3	200-3-0344	U-BOLT 5/8 X 7 X 7.5 X 1.69	4
4	505-3-0279	PIN PARK STAND	2
5	900-06145	5/8 WHIZ NUT	8
6	900-25005	HITCH PIN, 5/32 (#9)	2

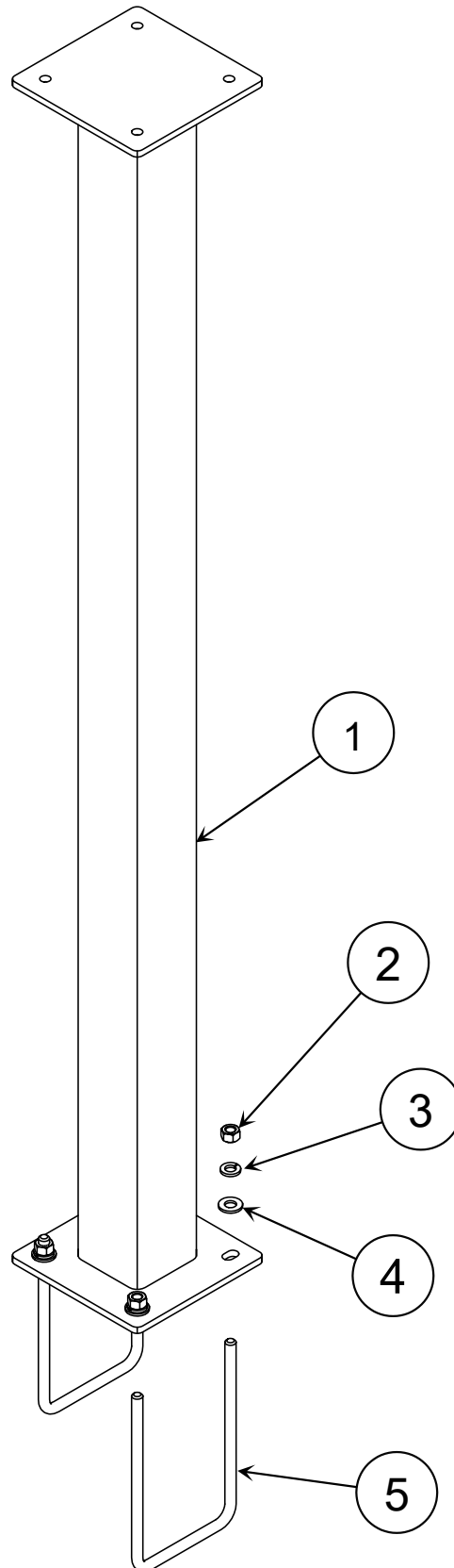
PARKING STAND REAR PAIR KIT
200-1-3732
(ASSEMBLY DRAWING)



PARKING STAND REAR PAIR KIT
200-1-3732
(BILL OF MATERIALS)

ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-2-2028	REAR PARK STAND WELD	2
2	200-2-1885	PARKING STAND TUBE WELD	2
3	200-3-0344	U-BOLT 5/8 X 7 X 7.5 X 1.69	4
4	505-3-0279	PIN PARK STAND	2
5	900-06141	7/16 SPIRAL LOCK FLANGE NUT	2
6	900-01195	7/16 NC X 4 HEX BOLT	2
7	900-06145	5/8 WHIZ NUT	8
8	900-25005	HITCH PIN, 5/32 (#9)	2

GLOBE TOWER ASSEMBLY
200-2-2818
(ASSEMBLY DRAWING)



GLOBE TOWER ASSEMBLY
200-2-2818
(BILL OF MATERIALS)

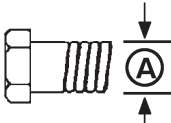
ITEM NO.	PART NO.	DESCRIPTION	Qty.
1	200-2-2817	GLOBE TOWER WELDMENT	1
2	900-06005	NUT HEX 3/8	4
3	900-11011	WASHER LOCK 3/8"	4
4	900-11033	FLAT WASHER 3/8 ZP	4
5	900-35001	3/8-16 X 4 X 7 U-BOLT	2

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.

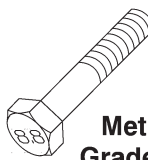
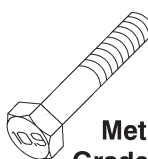
Make sure fastener threads are clean and you properly start thread engagement.

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)		

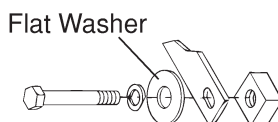
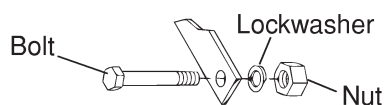
Metric Series Torque Chart

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	 Metric Grade 10.9
16x2.0	24 mm	169	125	234	173	181	133	250	184	16x1.5	
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

AGAgriculture
 ASAE American Society of Agricultural Engineers
 ATF Automatic Transmission Fluid
 BSPP British Standard Pipe Parallel
 BSPTM British Standard Pipe Tapered Male
 CV Constant Velocity
 CCW Counter-Clockwise
 CW Clockwise
 DIA Diameter
 EP Extreme Pressure
 F Female
 FB Female O-Ring Boss
 FJ Female Boss
 FJX Female Swivel JIC
 FP Female Pipe
 ft./lb Foot Pound
 GA Gauge
 GR (5, etc.) Grade (5, etc.)
 HHCS Hex Head Cap Screw
 HT Heat Treated
 in Inch
 JIC Joint Industry Council 37° Flare
 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

NC National Course
 NF National Fine
 NPSM National Pipe Straight Mechanical
 NPT National Pipe Tapered
 NPT SWF National Pipe Tapered Swivel Female
 Nm Newton Meter
 OSHA... Occupational Safety and Health Administration
 P Pitch
 PBY Power Beyond
 psi Pounds per Square Inch
 PTO Power Take Off
 QD Quick Disconnect
 RH Right Hand
 ROPS Roll Over Protection Structure
 RPM Revolutions Per Minute
 RT Right
 SAE Society of Automotive Engineers
 SMV Slow Moving Vehicle
 UNC Unified Coarse
 UNF Unified Fine
 UNS Unified Special
 ZP Zinc Plate

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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 obtained 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, 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.

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
5650 13th Ave N, Ste A
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.

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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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