



EP AUGER SYSTEMS

EP615
EP1020
EP1530
EP2035



Read this entire manual. This safety alert symbol is used throughout this manual to call your attention to messages involving your personal safety and the safety of others. Failure to follow these instructions can result in injury or death.

WARNING

Si no entiende ingles, se prefiere que busque a alguien que interprete las instrucciones para usted.

Owner: _____

Date Purchased: _____

Model #: _____ Serial #: _____

Manual #: 9MEP2460098

Operator's Manual

Danuser Machine Company
500 E. 3rd St.
P.O. Box 368

Fulton, MO 65251

Tel: (573) 642-2246 Fax: (573) 642-2240

E-mail: sales@danuser.com

Website: www.danuser.com



Dear Owner/Operator,

Thank you for purchasing this Danuser Hydraulic Earth Auger. We appreciate your business.

The EP Auger System is designed to meet the needs of farmers, ranchers, contractors, landscapers, and municipalities. Various auger styles are available for drilling in light ground conditions to harder ground conditions, such as rock, frozen ground, and more.

Your safety as an operator of our product is very important to us. Therefore, *before* you assemble, install, operate, maintain, service, remove, or move your Danuser Earth Auger, read and understand this manual thoroughly. If there is anything you do not understand, immediately contact your dealer, or contact our factory direct.

Phone:	(573) 642-2246
Fax:	(573) 642-2240
E-mail:	sales@danuser.com

Your satisfaction in the performance and longevity of our product is also very important to us and can be prolonged by proper assembly, installation, operation, and maintenance as instructed in this manual.

Thank you again for your business and for your trust in our product. Please feel free to contact us at any time for further assistance.

Sincerely,

Danuser Machine Company
500 E. 3rd St.
P.O. Box 368
Fulton, MO 65251

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E-mail: sales@danuser.com Website: www.danuser.com

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Danuser is a registered trademark.

Foreword

Please read this manual thoroughly!

Before you assemble, install, operate, maintain, service, remove, or move your Danuser Earth Auger, read this manual thoroughly. If there is anything you do not understand, immediately contact your dealer, or call our factory direct at (573) 642-2246. Powered equipment can be dangerous if not assembled, installed, operated, maintained, serviced, removed, or moved properly.

Warranty Registration

To activate your warranty coverage and to provide you with efficient customer service, please fill out your WARRANTY REGISTRATION FORM. This form is included in your unit's paperwork package. If you did not complete a WARRANTY REGISTRATION FORM or did not receive one, please call Danuser Machine Company. Or, register online at www.Danuser.com. Your satisfaction with our product and your safety as a user of our product are both very important to us.

Symbols

 This SAFETY ALERT symbol identifies important safety messages. Carefully read each safety message that follows. Failure to understand and obey a safety message, or recognize a safety hazard, could result in injury or death to you or others around you. The operator is ultimately responsible for the safety of himself, as well as others, in the operating area of the earth auger.

<i>Symbol</i>	<i>Meaning</i>
	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury, including hazards that are exposed when guards are removed.
	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.
	This is important information for proper use of this equipment. Failure to comply may lead to premature equipment failure.

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WARNING

Working with unfamiliar equipment can lead to careless injuries. Read and understand this manual and the manual for your vehicle before assembling, installing, operating, maintaining, servicing, removing, or moving this earth auger. If there is anything in this manual you do not understand, contact your dealer or Danuser Machine Company. The safe use of this machine is strictly up to you, the operator. If this unit is used, loaned, or rented by any other person, it is the owner's responsibility to make certain that the operator prior to operating:

- Reads and understands the Operator's Manuals
- Is instructed in safe and proper use

There is an entanglement risk if you replace the **special** auger retaining bolt with a bolt longer than specified by Danuser Machine Company. This improper replacement occurs most often on machines that are loaned or rented to someone who has not read the Operator's Manual and is not familiar with an earth auger.

- This earth auger is designed for one-man operation from the vehicle seat. It is the responsibility of the operator to see that no one is within twenty-five feet (25') of the earth auger when it is started or in use. Do not operate the earth auger with another person near or in contact with any part of the drive unit or auger. Serious personal injury or death may result if any attempt is made to assist drilling operation by hand.
- All operators of this attachment must read and understand this entire manual, paying particular attention to safety messages and operation instructions, prior to assembling, installing, operating, maintaining, servicing, removing, or moving the earth auger.
- Please remember it is also important that you read, understand, and follow the safety signs on the attachment. Clean or replace all safety signs if they cannot be clearly read and understood. They are there for your safety as well as the safety of others. Danuser Machine Company will furnish new safety signs upon request at no charge.
- All things with moving parts are potentially hazardous. There is no substitute for a cautious, safe-minded operator who recognizes potential hazards and follows reasonable safety practices.
- Personal protection equipment including hard hat, safety glasses, safety shoes, and gloves are recommended during assembly, installation, operation, maintenance, service, removal, or movement of the attachment.
- When the use of hand tools is required to perform any part of assembly, installation, maintenance, service, removal, or movement of the earth auger, be sure the tools used are designed and recommended by the tool manufacturer for that specific task.
- Never check pressurized system for leaks with your bare hand. Wear proper hand and eye protection and use wood or cardboard when searching for suspected leaks. Oil escaping from pinhole leaks under pressure can penetrate skin and create a serious medical emergency. If any fluid is injected into the skin, gangrene, blood poisoning, even death may result. Obtain medical attention immediately.
- Always use two people to handle heavy, unwieldy components during assembly, installation, maintenance, service, removal, or movement of the attachment.
- Never place any part of your body where it would be in danger if movement should occur during assembly, installation, operation, maintenance, service, removal, or movement of the earth auger.
- Check clearances between vehicle and auger, as well as operator and auger, across the full range of loader arms operating heights. Keep earth auger drive unit in cradle when not drilling.
- Only properly trained people should operate this equipment. Do not allow anyone who has not read this entire manual and understood the safety rules, safety signs, and operation instructions to use this attachment.
- Never allow children to operate or be around this earth auger.

Safety

(continued)

- Do not allow riders on the equipment at any time. There is no safe place for any riders.
- Never use alcoholic beverages or drugs which can hinder alertness or coordination while operating this equipment. Consult your doctor about operating this equipment while taking prescription or over-the-counter medications.
- Safe operation of equipment requires the operator's full attention. Avoid distractions such as radio headphones, cell phones, etc. while operating.
- Contact with underground gas lines or electrical cables may result in serious injury or death from explosion or electrical shock. Before operating, call 811 or the local number to locate underground utilities.
- Do not drill near underground utility lines.
- Before beginning operation, clear the work area of objects which might be picked up and thrown by or entangled in the auger.
- The earth auger must be securely latched to the vehicle. Ensure quick attach latching method is properly secured. An improperly latched earth auger can fall without warning.
- Before you operate the attachment, check over all pins, bolts, and connections to be sure all are securely in place. Replace any damaged or worn parts immediately.
- Never replace the auger retaining bolt with anything other than the specified length bolt in this manual. A longer, or protruding, fastener is more likely to grab clothing or gloves, which can result in serious injury or death.
- Keep all helpers and bystanders twenty-five feet (25') away from an operating earth auger.
- Keep hands, feet, hair, jewelry, and clothing away from all moving and/or rotating parts.
- Never place yourself between the vehicle and the attachment.
- Worn teeth or a slightly rounded point can seriously affect auger penetration. Check for wear before each use, and replace as necessary.
- Never position the auger point by hand or with any tool when the vehicle is running.
- Never position the auger point by putting your hands on the auger or drive unit.
- Do not shovel dirt away from a rotating auger, as the shovel can be caught and thrown by the auger.
- Never transport with the drive unit out of the cradle or while the auger is rotating.
- Do not exceed the vehicle's rated operating load. Use sufficient counterweights. Move the vehicle slowly when the attachment is raised.
- A heavy load can cause instability of the vehicle. Use extreme care during travel. Slow down on turns and watch out for bumps. Use all safety devices, including a seat belt, as recommended in the vehicle operator's manual.
- Do not operate the earth auger on steep hillsides. When drilling on uneven or hilly terrain, position the vehicle with the earth auger uphill. With the earth auger downhill, the vehicle could tip when attempting to raise the auger from its hole. Consult your vehicle operator's manual for maximum incline allowable.
- Always shut off the vehicle engine, remove the key, lower vehicle arms, and relieve all hydraulic pressure before dismounting the vehicle. Never leave equipment unattended with the vehicle running.

Safety

(continued)

- Never attempt adjustments, service, or repairs while the equipment is in operation.
- Never work under equipment supported by hydraulics. Even with the vehicle shut off, equipment can suddenly drop if controls are actuated or if hydraulic lines burst.
- Before connecting or disconnecting hydraulic lines or fittings, be sure to relieve all pressure by cycling all hydraulic controls after shutdown. Remember hydraulic systems are under pressure whenever the engine is running and may hold pressure after shutdown.
- Store the attachment on a flat, level surface in an area where children do not play. Securely block and support the attachment.
- Do not modify the attachment. Modifications may weaken the integrity of the attachment and may impair the safety, function, life, and performance of the earth auger.
- When making repairs or servicing the earth auger, use only parts that meet original equipment manufacturer's standards and requirements.
- Always use care when operating the earth auger. Most accidents occur because of neglect or carelessness.

Safety is a primary concern in the design, manufacture, sale, and use of earth augers. Danuser confirms to you, our customer, our concern for safety.

DANGER

Improper operation of this earth auger can cause serious personal injury or death. Operation of this earth auger should only be done by a competent adult acting in compliance with the Operator's Manual. Since drilling operations are beyond our control, we disclaim all liability for any damages, injuries, or death which may result.

WARNING

This product can expose you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov/product.

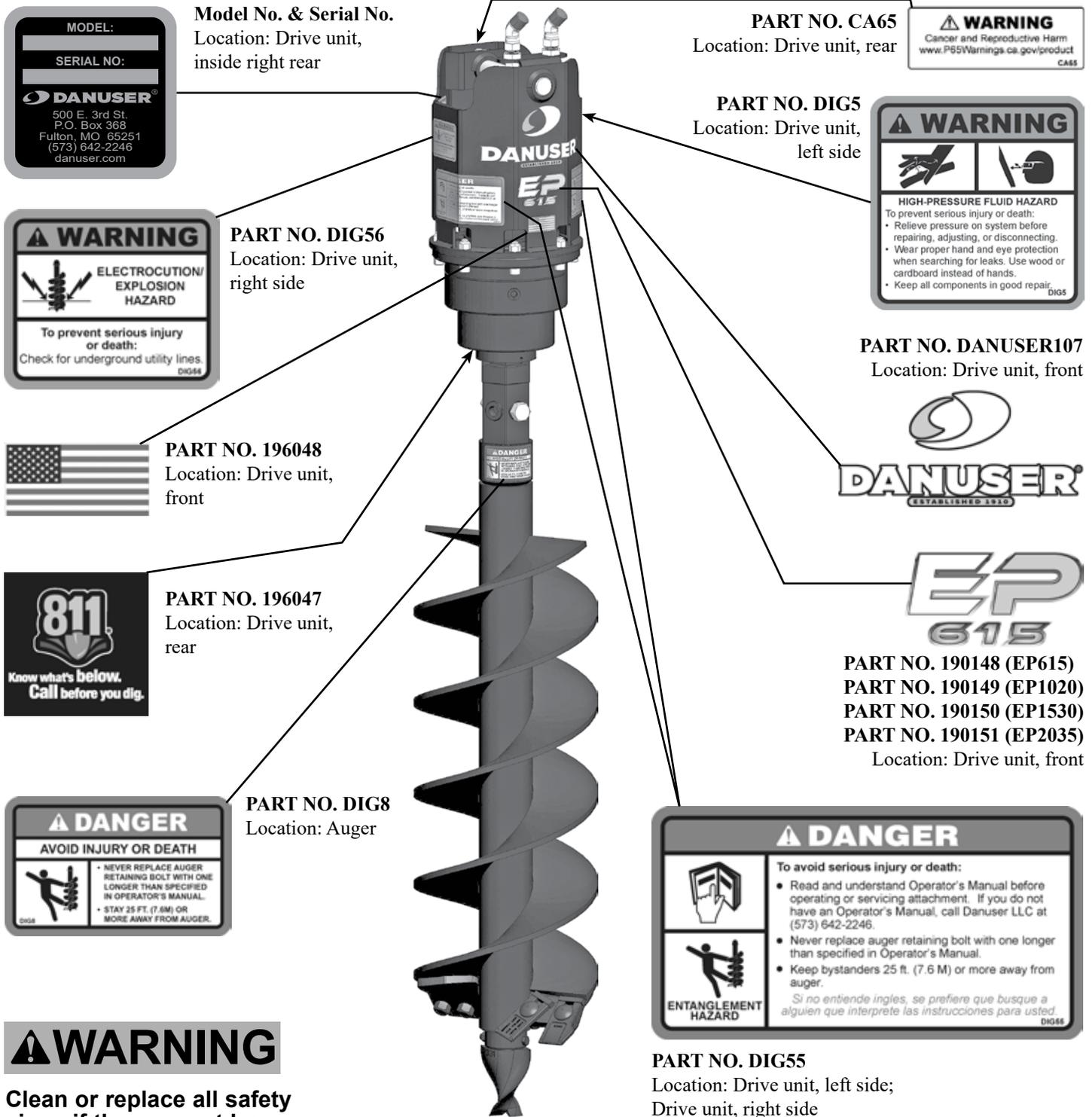
Decals & Safety Signs

The earth auger comes equipped with all safety signs in place. Their locations are shown in this section. Read and follow their instructions and ensure their care:

- Keep safety signs clean and legible at all times.
- Replace safety signs that are missing, illegible, or damaged.
- Ensure replacement parts installed during repair have safety signs attached.

To install new safety signs, follow these steps:

1. Clean the area where the safety sign is to be placed.
2. Spray a little soapy water on the surface where the safety sign is to be placed.
3. Peel the backing from the safety sign, and apply it in the position shown.
4. Firmly press the safety sign, and squeeze out the air bubbles with a straight edge (e.g., a credit card).



Clean or replace all safety signs if they cannot be clearly read and understood.

Decals & Safety Signs

(continued)



PART NO. DANUSER108

Locations: Frame, front; Frame, rear

**Backhoe & Excavator
Pin-on Mount Kit -
1" - 40mm Pin Sizes**



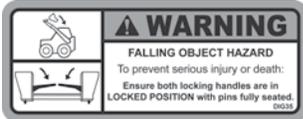
**Backhoe & Excavator
Pin-on Mount Kit -
1-5/8" - 55mm Pin Sizes**



PART NO. DANUSER106

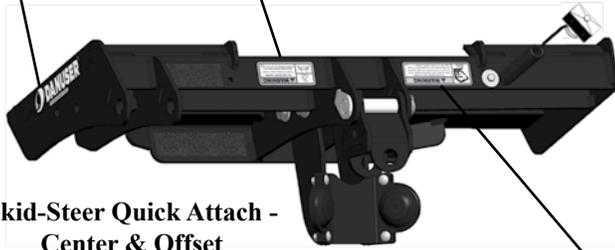
Locations: Quick attach plate, left side;
Quick attach plate, right side

**Backhoe & Excavator
Quick Attach**

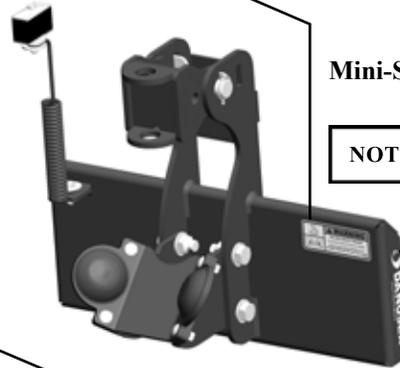


PART NO. DIG35

Location: Quick attach plate, top



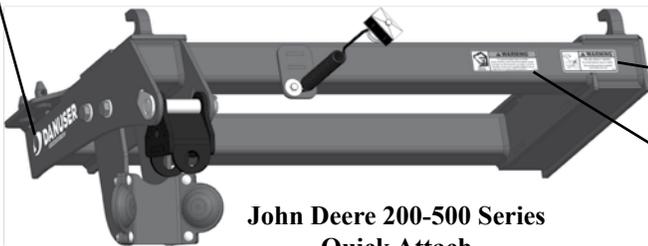
**Skid-Steer Quick Attach -
Center & Offset**



Mini-Skid-Steer Quick Attach

NOTE

**Bobcat MT Quick
Attach Uses
DANUSER106**

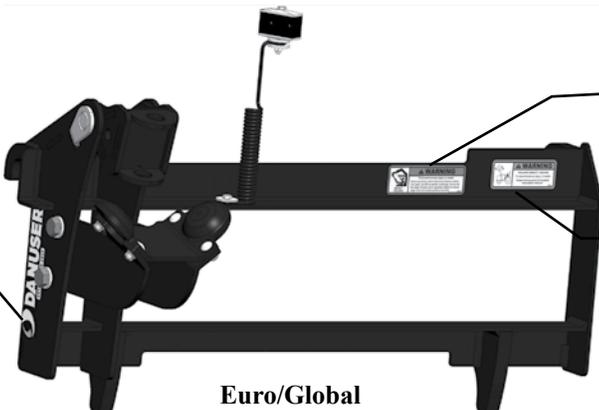


**John Deere 200-500 Series
Quick Attach**

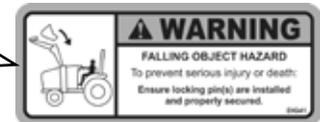


PART NO. DIG57

Location: Quick attach plate, top



**Euro/Global
Quick Attach**



PART NO. DIG41

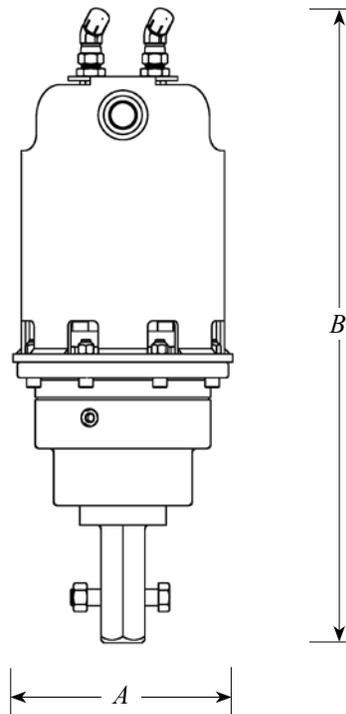
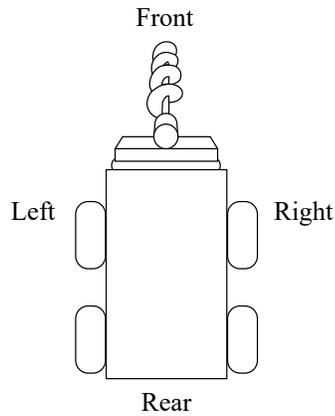
Location: Quick attach plate, top

! WARNING

**Clean or replace all safety
signs if they cannot be
clearly read and understood.**

Drive Unit Specifications

Operator's Manual
Direction Terminology



EP Auger Systems	Model EP615	Model EP1020	Model EP1530	Model EP2035
Overall Width (A)	10"			
Overall Height (B)	29"			
Weight	141 lb.	142 lb.	143 lb.	143 lb.
Minimum Hydraulic Flow	6 GPM	10 GPM	15 GPM	20 GPM
Maximum Hydraulic Flow	15 GPM	20 GPM	30 GPM	35 GPM
Maximum Continuous Operating Pressure	3,500 PSI			
Maximum Auger Diameter	24"	30"	36"	36"
Output Spindle	2" Hex			

Model EP615						
GPM	6	8	10	12	14	15
RPM	36	48	60	73	85	91
PSI	2,000	2,500	3,000	3,500		
TORQUE	1,014 ft.-lb.	1,267 ft.-lb.	1,520 ft.-lb.	1,774 ft.-lb.		

Model EP1020						
GPM	10	12	14	16	18	20
RPM	48	58	68	77	87	97
PSI	2,000	2,500	3,000	3,500		
TORQUE	1,270 ft.-lb.	1,587 ft.-lb.	1,904 ft.-lb.	2,222 ft.-lb.		

Model EP1530						
GPM	15	18	20	24	28	30
RPM	49	59	65	78	92	98
PSI	2,000	2,500	3,000	3,500		
TORQUE	1,874 ft.-lb.	2,342 ft.-lb.	2,811 ft.-lb.	3,279 ft.-lb.		

Model EP2035						
GPM	20	22	26	30	32	35
RPM	48	53	63	73	78	85
PSI	2,000	2,500	3,000	3,500		
TORQUE	2,529 ft.-lb.	3,161 ft.-lb.	3,794 ft.-lb.	4,426 ft.-lb.		

Torque and output speed specifications are based on theoretical values and are provided for comparative purposes only.

Hydraulic Requirements

Filtration Requirements:

- A filter of, at least, 25 micron filtration is required. A filter capable of 10 micron filtration is preferred. The majority of paper type filters are 25 microns or better.

NOTE The life of the hydraulic motor is almost entirely dependent upon cleanliness of the oil. Instructions in your vehicle operator's manual regarding filter and oil changes should be carefully followed. Even small amounts of dirt in the hydraulic oil can cause premature motor failure that is not covered by warranty.

- A low pressure type filter can be installed in the return line from the control valves to the sump. A low pressure type filter can also be installed in the sump or pump intake line but must be sized large enough to avoid starving the pump.
- A high pressure type filter can be used between the pump and the control valves.
- If the source of the hydraulic power does not have a filter, it will be necessary to install one at some point in the system so, at least, part of the hydraulic oil is being filtered whenever the system is operating. After a filter is installed and before attaching the drive unit, the entire hydraulic system should be drained, filled with new oil, and operated for 30 minutes or until the system is warm. During this run time, operate all valves, cylinders, and hydraulic motors on the machine.

Pressure and Flow Requirements:

- Models EP615, EP1020, EP1530, and EP2035 Danuser Earth Augers are designed to operate within the pressure range of 1,500 to 3,500 PSI.

NOTE For vehicles delivering higher than 3,500 PSI, a cross port relief valve is available. Refer to *Accessories* section.

- Operating flow rate is dependent on model: 6 to 15 GPM for Model EP615, 10 to 20 GPM for Model EP1020, 15 to 30 GPM for Model EP1530, and 20 to 35 GPM for Model EP2035.

Valve Requirements:

- The hydraulic system used to power the drive unit should be equipped with a four-way valve large enough to carry full pump outlet without restricting flow and causing oil heating.
- The four-way valve requires a relief valve which will open and relieve extreme pressures between the drive unit and control valve, even when the control valve is in a neutral position. This feature can be obtained by connecting two external relief valves between the main lines running from the control valve to the drive unit in such a way that high pressure in either line will be relieved to the other line.

Hydraulic Hose Requirements:

- High pressure hoses of, at least, 1/2" inside diameter connect four-way valve to the hydraulic fittings on the top of the drive unit.
- Working pressure of hydraulic hoses must be higher than the rated vehicle hydraulic pressure.
- An abrasion sleeve is recommended on all hydraulic hoses.
- The drive unit is equipped with two 45° adapters to which hoses can be connected. These adapters are #10 JIC M.
- Since the motor is reversible, hose connections to motor fittings are interchangeable.
- All hoses, pipes, adapters, and fittings used to connect the drive unit should be thoroughly cleaned before use. Care should be taken to see that no thread sealer or metal chips are forced to the inside of the joints when connections are being tightened.

Hydraulic Fluid Selection Requirements:

- Premium grade petroleum based fluids will provide the best performance.
- Fluids that contains anti-wear agents, rust inhibitors, anti-foaming agents, and oxidation inhibitors are recommended.
- The viscosity of the fluid should never fall below 70 SUS (13 cSt). The best viscosity range for the drive unit is 100-200 SUS (20-43 cSt).

Assembly & Installation

⚠️ WARNING

Personal protection equipment including hard hat, safety glasses, safety shoes, and gloves are recommended during assembly, installation, operation, maintenance, service, removal, or movement of the earth auger. Do not allow long hair, loose fitting clothing, or jewelry to be around moving and/or rotating parts.

Assembly & Installation

Skid-Steer, Euro/Global, & John Deere 200-500 Series Quick Attach Mounted Earth Auger

⚠️ CAUTION

Because of the weight of some components, and because some components are difficult to balance, two people are required for safe assembly and installation of this equipment.

Prepare the Vehicle

Read and understand the manual for your vehicle before assembling or installing the EP Auger System. The vehicle must be equipped with auxiliary hydraulics and either a quick attach, dipperstick, or bucket for use with the bolt-on bucket mount.

The use of the earth auger may require the addition of counterweights to ensure the weight of the attachment does not exceed the rated capacity of your vehicle.

⚠️ WARNING

Do not exceed the vehicle's rated operating load. If necessary, use sufficient counterweights.

Recommended Tools

- Box cutter/metal snips

STEP 1: Remove pallet, banding, and any other packaging materials from the earth auger.

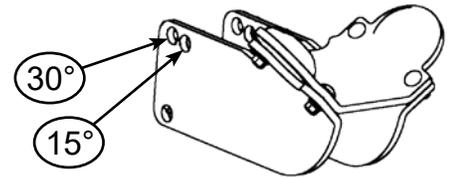
STEP 2: Inspect product for damage.

Proceed to the section below that matches your mounting style.

The quick attach mount allows the cradle to be installed in two different positions, allowing the drive unit to lie at either a 15° or 30° carry angle during transport. The 15° carry angle provides better operator visibility while transporting the earth auger, but reduces the clearance between cradle and drive unit housing during drilling operations.

- NOTE** Additional factors that influence clearance between cradle and drive unit include:
- Length of auger
 - Maximum tilt angle of vehicle
 - Angle of hole being drilled
 - Slope of ground

- NOTE** The cradle mounting bolt holes closer to the drive unit set the carry angle at 15°. The bolt holes further from the drive unit set the carry angle at 30°.

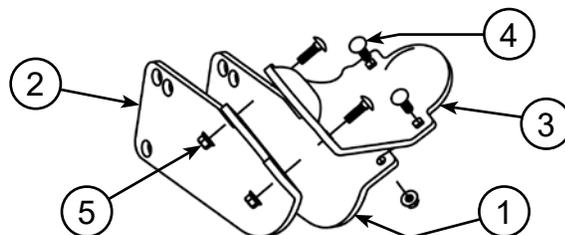


- NOTE** It is recommended to install the cradle in the 15° carry angle, provided the cradle does not come into contact with the drive unit housing during drilling operations. Damage may occur if the cradle comes into contact with the drive unit housing during drilling operations.

Recommended Tools

- 1-1/8" wrench
- 1-7/16" wrench
- 1/2" wrench (2)
- Torque wrench
- 1-1/8" socket
- 9/16" socket
- 7/8" wrench
- 1" wrench

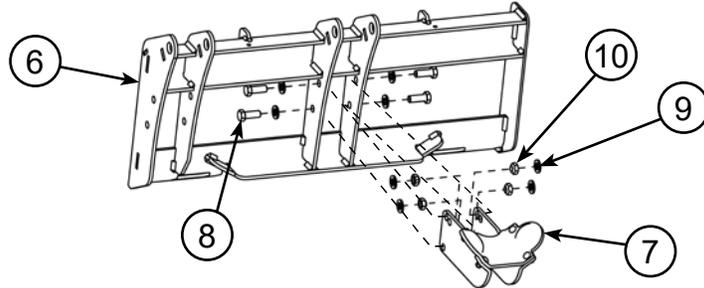
STEP 1: Bolt left and right cradle arms (1, 2) and cradle center plate (3) together with 3/8" carriage bolts (4) and 3/8" nuts (5). Tighten by hand only.



Assembly & Installation

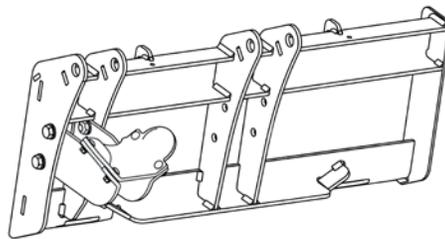
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STEP 2: Using a 1-1/8" wrench and torque wrench with 1-1/8" socket, bolt cradle assembly (7) to quick attach plate assembly (6) with 3/4" bolts (8) and washers (9), and secure with 3/4" nuts (10) and washers (9).

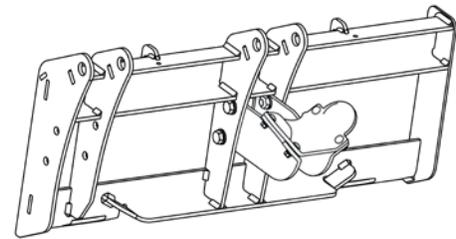


NOTE

On the skid-steer quick attach, the cradle may be bolted to the quick attach plate in either a center position or an offset position, as in the images below. Center mounting of the cradle is preferred when using the earth auger on a skid-steer, while offset mounting will provide better visibility when used on a tractor front-end loader.



Offset cradle installation



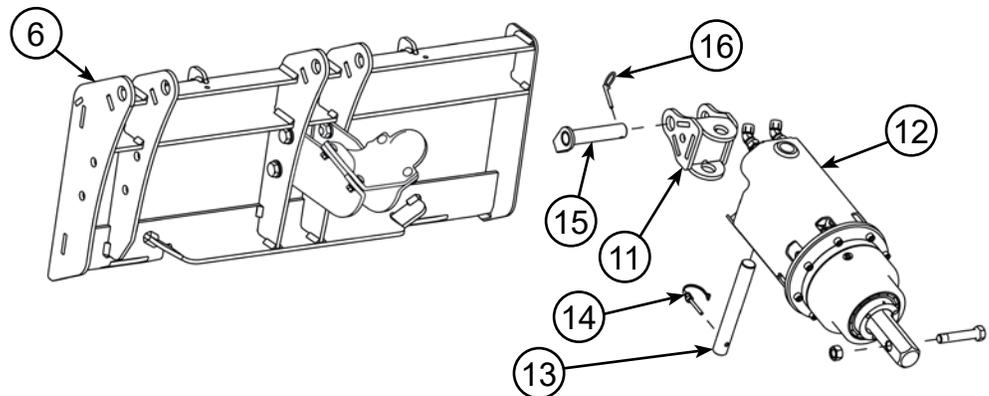
Center cradle installation

STEP 3: Using a torque wrench with 9/16" socket, tighten 3/8" nuts (5).

STEP 4: Park the vehicle on level ground, and install the quick attach plate assembly by following your vehicle operator's manual for installing an attachment.

! WARNING

The earth auger must be securely latched to the vehicle. Ensure quick attach latching method is properly secured. An improperly latched earth auger can fall without warning.



STEP 5: Attach the wider end of the knuckle assembly (11) to the drive unit (12) using pin (13). Secure pin (13) with lock pin (14).

STEP 6: Attach knuckle assembly/drive unit to the quick attach plate assembly (6) using pin (15). Align pin (15) head with slot on quick attach plate assembly (6). Secure pin (15) with klik pin (16).

Assembly & Installation

(continued)

STEP 7: If you purchased Danuser Hose Kits PN 196025 or PN 196027, install by using a 7/8" wrench and a 1" wrench to tighten the hose connections onto the 45° adapters on the drive unit.

NOTE

All hoses and fittings used to connect the earth auger should be thoroughly cleaned before use. Care should be taken to see that no thread sealer or metal chips are forced to the inside of the joints when connections are being tightened.

NOTE

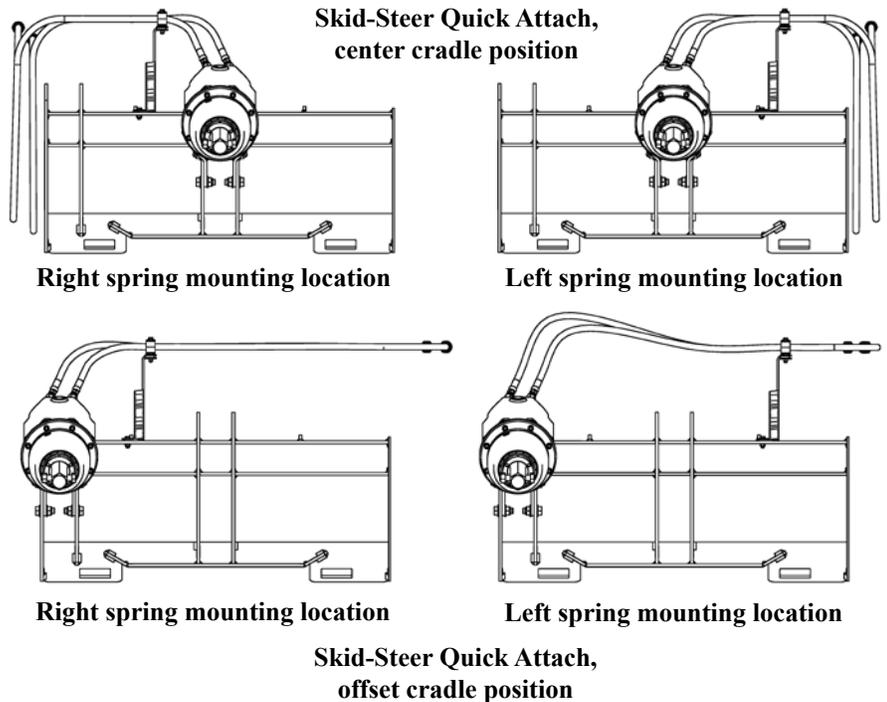
Since the hydraulic motor is reversible, hose connections to motor fittings are interchangeable.

STEP 8: Using a 1-7/16" wrench and a 1" wrench, tighten the hydraulic quick couplers onto the hoses.

NOTE

Danuser Hose Kit PN 196025 does not include hydraulic quick couplers. You must obtain the proper hydraulic quick couplers for your particular vehicle.

STEP 9: Install the hose holder spring kit in the desired mounting location. The quick attach mount uses a hose holder spring kit to allow adjustment of hose routing, reducing pinching, kinking, and stretching. The hose holder spring kit may be mounted left or right of center on the quick attach plate. For center cradle installations, it is recommended to install the hose holder spring kit in the mounting position nearest the vehicle's hydraulic valve block. For offset cradle installations, the desired spring mounting location will vary based on the location of the vehicle's hydraulic valve block. The vehicle loader arm and operator step configuration also may affect the desired spring mounting location.



NOTE

Each vehicle may require different positioning of the hose holder spring kit, and of the hoses as they pass through the clamp.

NOTE

The hose holder spring kit will suit 1/2" diameter hoses only.

STEP 10: Tighten the hose holder spring mounting nut. Using two 1/2" wrenches, loosen the hose clamp assembly, route the hydraulic hoses through the clamp assembly, and reattach the hardware.

STEP 11: If routing hoses to the right of center, using a 7/8" wrench, orient the 45° adapters on the drive unit toward the hose holder spring kit. The 45° adapters come from the factory oriented to accommodate the left spring mounting location.

Assembly & Installation

(continued)

⚠ WARNING

Keep hands, feet, hair, jewelry, and clothing away from all moving and/or rotating parts.

Assembly & Installation

Mini-Skid-Steer
Quick Attach Mounted
Earth Auger

STEP 12: Connect the quick couplers to the vehicle's auxiliary hydraulic outlets.

NOTE Ensure quick couplers are clean prior to connection.

⚠ WARNING

Before connecting or disconnecting hydraulic lines or fittings, be sure to relieve all pressure by cycling all hydraulic controls after shutdown. Remember hydraulic systems are under pressure whenever the engine is running and may hold pressure after shutdown.

STEP 13: Test the vehicle to make sure you have adequate hose length throughout the full operating range of the vehicle's loader arms. Adjust the position of the hoses as necessary to avoid pinching, kinking, or stretching.

NOTE Hose routing is the responsibility of the operator. Pinched, kinked, and/or stretched hoses are not covered under the warranty.

STEP 14: With the vehicle set at idle, engage the auxiliary hydraulics and verify output spindle rotation. The output spindle should rotate clockwise when viewed from above.

STEP 15: Check the hydraulic system for leaks.

⚠ WARNING

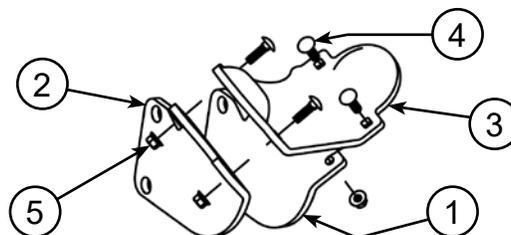
Never check pressurized system for leaks with your bare hand. Wear proper hand and eye protection and use wood or cardboard when searching for suspected leaks. Oil escaping from pinhole leaks under pressure can penetrate skin and create a serious medical emergency. If any fluid is injected into the skin, gangrene, blood poisoning, even death may result. Obtain medical attention immediately.

Proceed to *Assembly & Installation: Auger, Extension, & Adapter* section.

Recommended Tools

- 1-1/8" wrench
- 1-7/16" wrench
- 1/2" wrench (2)
- Torque wrench
- 1-1/8" socket
- 9/16" socket
- 7/8" wrench
- 1" wrench

STEP 1: Bolt left and right cradle arms (1, 2) and cradle center plate (3) together with 3/8" carriage bolts (4) and 3/8" nuts (5). Tighten by hand only.



Assembly & Installation

(continued)

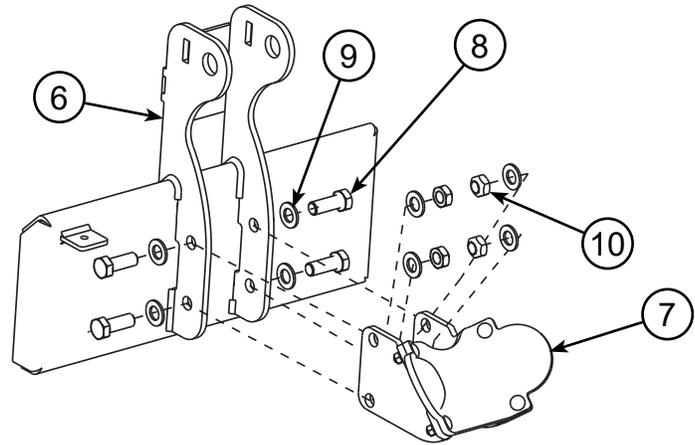
⚠️ WARNING

Personal protection equipment including hard hat, safety glasses, safety shoes, and gloves are recommended during assembly, installation, operation, maintenance, service, removal, or movement of the earth auger. Do not allow long hair, loose fitting clothing, or jewelry to be around moving and/or rotating parts.

⚠️ CAUTION

Because of the weight of some components, and because some components are difficult to balance, two people are required for safe assembly and installation of this equipment.

STEP 2: Using a 1-1/8" wrench and torque wrench with 1-1/8" socket, bolt cradle assembly (7) to quick attach plate assembly (6) with 3/4" bolts (8) and washers (9), and secure with 3/4" nuts (10) and washers (9).

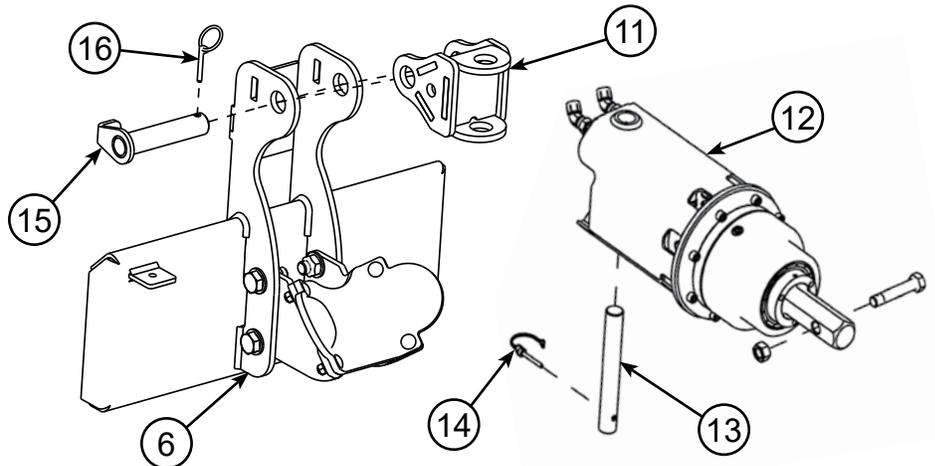


STEP 3: Using a torque wrench with 9/16" socket, tighten 3/8" nuts (5).

STEP 4: Park the vehicle on level ground, and install the quick attach plate assembly by following your vehicle operator's manual for installing an attachment.

⚠️ WARNING

The earth auger must be securely latched to the vehicle. Ensure quick attach latching method is properly secured. An improperly latched earth auger can fall without warning.



STEP 5: Attach the wider end of the knuckle assembly (11) to the drive unit (12) using pin (13). Secure pin (13) with lock pin (14).

STEP 6: Attach knuckle assembly/drive unit to the quick attach plate assembly (6) using pin (15). Align pin (15) head with slot on quick attach plate assembly (6). Secure pin (15) with klik pin (16).

STEP 7: If you purchased Danuser Hose Kits PN 206031 or PN 206032, install by using a 7/8" wrench and a 1" wrench to tighten the hose connections onto the 45° adapters on the drive unit.

NOTE

All hoses and fittings used to connect the earth auger should be thoroughly cleaned before use. Care should be taken to see that no thread sealer or metal chips are forced to the inside of the joints when connections are being tightened.

NOTE

Since the hydraulic motor is reversible, hose connections to motor fittings are interchangeable.

Assembly & Installation

(continued)

STEP 8: Using a 1-7/16" wrench and a 1" wrench, tighten the hydraulic quick couplers onto the hoses.

NOTE

Danuser Hose Kit PN 206031 does not include hydraulic quick couplers. You must obtain the proper hydraulic quick couplers for your particular vehicle.

STEP 9: Install the hose holder spring kit (17) onto the quick attach plate (6). The quick attach mount uses a hose holder spring kit to allow adjustment of hose routing, reducing pinching, kinking, and stretching.

NOTE

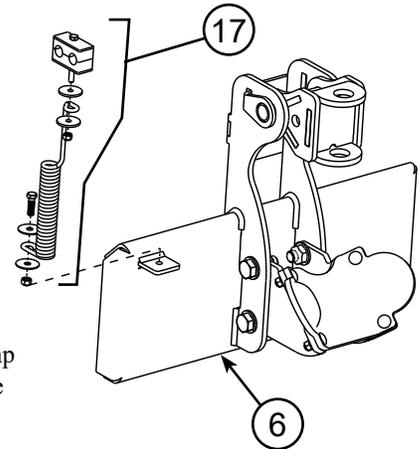
The hose holder spring kit will suit 1/2" diameter hoses only.

STEP 10: Tighten the hose holder spring mounting nut. Using two 1/2" wrenches, loosen the hose clamp assembly, route the hydraulic hoses through the clamp assembly, and reattach the hardware.

STEP 11: Connect the quick couplers to the vehicle's auxiliary hydraulic outlets.

NOTE

Ensure quick couplers are clean prior to connection.



Drive Unit not pictured for clarity

⚠ WARNING

Before connecting or disconnecting hydraulic lines or fittings, be sure to relieve all pressure by cycling all hydraulic controls after shutdown. Remember hydraulic systems are under pressure whenever the engine is running and may hold pressure after shutdown.

STEP 12: Test the vehicle to make sure you have adequate hose length throughout the full operating range of the vehicle's loader arms. Adjust the position of the hoses as necessary to avoid pinching, kinking, or stretching.

NOTE

Hose routing is the responsibility of the operator. Pinched, kinked, and/or stretched hoses are not covered under the warranty.

STEP 13: With the vehicle set at idle, engage the auxiliary hydraulics and verify output spindle rotation. The output spindle should rotate clockwise when viewed from above.

STEP 14: Check the hydraulic system for leaks.

⚠ WARNING

Never check pressurized system for leaks with your bare hand. Wear proper hand and eye protection and use wood or cardboard when searching for suspected leaks. Oil escaping from pinhole leaks under pressure can penetrate skin and create a serious medical emergency. If any fluid is injected into the skin, gangrene, blood poisoning, even death may result. Obtain medical attention immediately.

Proceed to *Assembly & Installation: Auger, Extension, & Adapter* section.

⚠ WARNING

Keep hands, feet, hair, jewelry, and clothing away from all moving and/or rotating parts.

Assembly & Installation

Backhoe & Excavator
Quick Attach Mounting Kit

⚠️ WARNING

Personal protection equipment including hard hat, safety glasses, safety shoes, and gloves are recommended during assembly, installation, operation, maintenance, service, removal, or movement of the earth auger. Do not allow long hair, loose fitting clothing, or jewelry to be around moving and/or rotating parts.

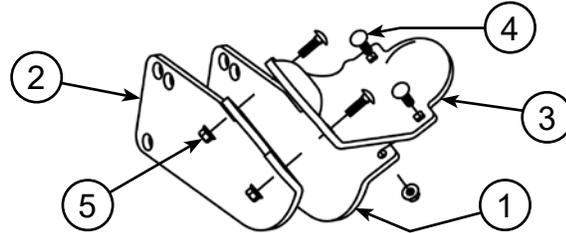
⚠️ CAUTION

Because of the weight of some components, and because some components are difficult to balance, two people are required for safe assembly and installation of this equipment.

Recommended Tools

- 1-1/8" wrench
- Torque wrench
- 1-1/8" socket
- 9/16" socket

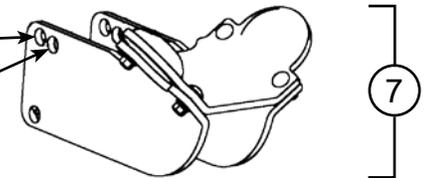
STEP 1: Bolt left and right cradle arms (1, 2) and cradle center plate (3) together with 3/8" carriage bolts (4) and 3/8" nuts (5). Tighten by hand only.



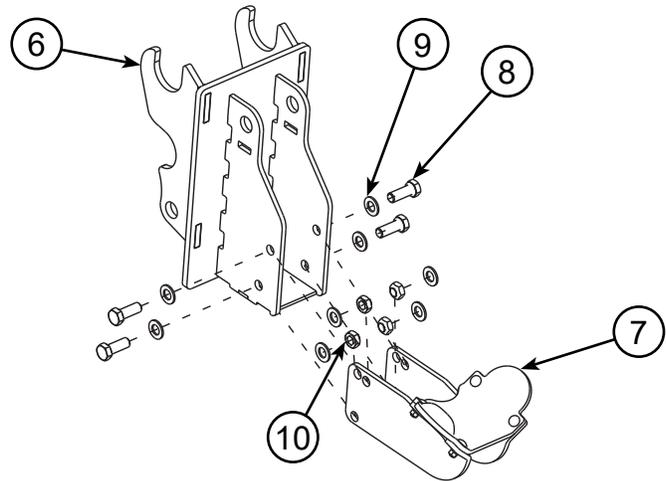
STEP 2: Align cradle assembly (7) onto quick attach plate assembly (6) such that the bolt holes in the quick attach plate align with the cradle mounting bolt holes closer to the drive unit.

Bolt holes further from drive unit are not used with the Backhoe & Excavator Quick Attach Mounting Kit

Install cradle mounting bolts in bolt holes closer to drive unit



STEP 3: Using a 1-1/8" wrench and torque wrench with 1-1/8" socket, bolt cradle assembly (7) to quick attach plate assembly (6) with 3/4" bolts (8) and washers (9), and secure with 3/4" nuts (10) and washers (9).



STEP 4: Using a torque wrench with 9/16" socket, tighten 3/8" nuts (5).

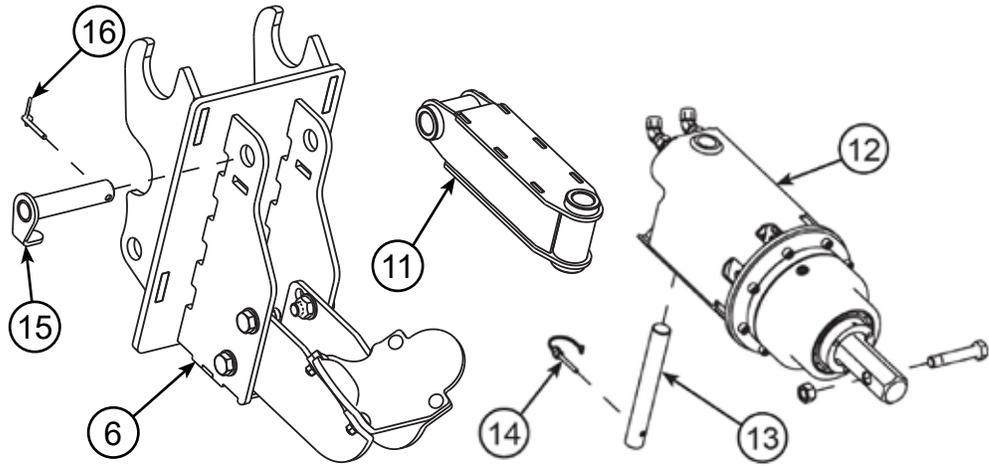
STEP 5: Park the vehicle on level ground, and install the quick attach plate assembly by following your vehicle operator's manual for installing an attachment.

⚠️ WARNING

The earth auger must be securely latched to the vehicle. Ensure quick attach latching method is properly secured. An improperly latched earth auger can fall without warning.

Assembly & Installation

(continued)



STEP 6: Attach the wider end of the knuckle assembly (11) to the drive unit (12) using pin (13). Secure pin (13) with lock pin (14).

STEP 7: Attach knuckle assembly/drive unit to the quick attach plate assembly (6) using pin (15). Align pin (15) head with slot on quick attach plate assembly (6). Secure pin (15) with klik pin (16).

Proceed to *Assembly & Installation: Backhoe & Excavator Hose Routing* section.

Assembly & Installation

Backhoe & Excavator
Pin-on Mounting Kit

WARNING

Personal protection equipment including hard hat, safety glasses, safety shoes, and gloves are recommended during assembly, installation, operation, maintenance, service, removal, or movement of the earth auger. Do not allow long hair, loose fitting clothing, or jewelry to be around moving and/or rotating parts.

CAUTION

Because of the weight of some components, and because some components are difficult to balance, two people are required for safe assembly and installation of this equipment.

Recommended Tools

- 3/4" socket
- Torque wrench

STEP 1: Attach drive unit (1) to the knuckle sub-assembly (2) using pin (3). Secure pin (3) with lock pin (4).

STEP 2: Park the vehicle on level ground. Remove bucket from dipperstick, and curl cylinder pin connections. The dipperstick pin will be used to attach the knuckle assembly to the dipperstick. The curl cylinder pin will not be required for drive unit installation.

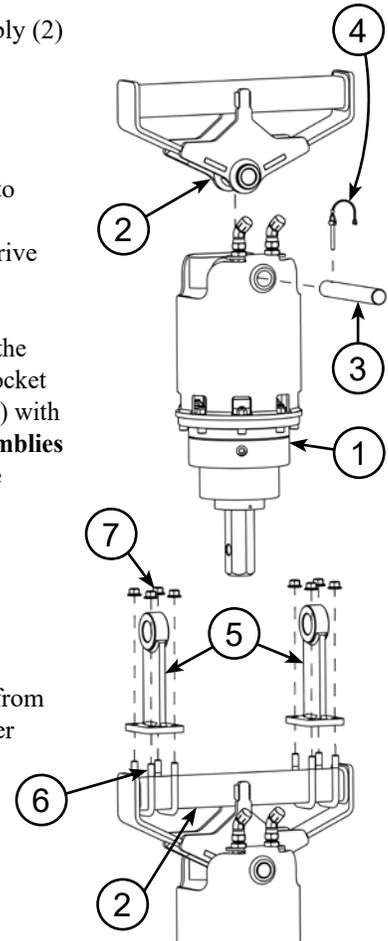
STEP 3: Space the two ear assemblies (5) to the width of the dipperstick, and use a torque wrench with 3/4" socket to secure the ears to the knuckle sub-assembly (2) with 1/2" U-bolts (6) and 1/2" nuts (7). **The ear assemblies should be spaced evenly from the center of the knuckle sub-assembly.**

NOTE

Check and re-torque nuts (7) after the first hour of use.

STEP 4: Attach knuckle assembly/drive unit to the dipperstick using the dipperstick pin removed from the bucket in STEP 2. Secure the bucket pin per vehicle manufacturer's recommendations.

Proceed to *Assembly & Installation: Backhoe & Excavator Hose Routing* section.



Assembly & Installation

Backhoe & Excavator Hose Routing

WARNING

Keep hands, feet, hair, jewelry, and clothing away from all moving and/or rotating parts.

Recommended Tools

- 7/8" wrench
- 1" wrench
- 1-7/16" wrench

STEP 1: If you purchased Danuser Hose Kits PN 196025, 196027, 206031, or 206032, install by using a 7/8" wrench and a 1" wrench to tighten the hose connections onto the 45° adapters on the drive unit.

NOTE

All hoses and fittings used to connect the earth auger should be thoroughly cleaned before use. Care should be taken to see that no thread sealer or metal chips are forced to the inside of the joints when connections are being tightened.

NOTE

Since the hydraulic motor is reversible, hose connections to motor fittings are interchangeable.

STEP 2: Using a 1-7/16" wrench and a 1" wrench, tighten the hydraulic quick couplers onto the hoses.

NOTE

Danuser Hose Kits PN 206031 and 196025 do not include hydraulic quick couplers. You must obtain the proper hydraulic quick couplers for your particular vehicle.

STEP 3: Connect the quick couplers to the vehicle's auxiliary hydraulic outlets.

NOTE

Ensure quick couplers are clean prior to connection.

WARNING

Before connecting or disconnecting hydraulic lines or fittings, be sure to relieve all pressure by cycling all hydraulic controls after shutdown. Remember hydraulic systems are under pressure whenever the engine is running and may hold pressure after shutdown.

STEP 4: Test the vehicle to make sure you have adequate hose length and clearance between attachment and vehicle throughout the full operating range of the vehicle's arm/dipperstick.

NOTE

If the vehicle has a thumb attachment, it may need to be removed in the event that it interferes with the mounting kit, drive unit, or hoses.

NOTE

Hose routing is the responsibility of the operator. Pinched, kinked, and/or stretched hoses are not covered under the warranty.

STEP 5: With the vehicle set at idle, engage the auxiliary hydraulics and verify output spindle rotation. The output spindle should rotate clockwise when viewed from above.

STEP 6: Check the hydraulic system for leaks.

WARNING

Never check pressurized system for leaks with your bare hand. Wear proper hand and eye protection and use wood or cardboard when searching for suspected leaks. Oil escaping from pinhole leaks under pressure can penetrate skin and create a serious medical emergency. If any fluid is injected into the skin, gangrene, blood poisoning, even death may result. Obtain medical attention immediately.

Proceed to *Assembly & Installation: Auger, Extension, & Adapter* section.

Assembly & Installation

Recommended Tools

- 9/16" wrench
- 9/16" socket
- 1" wrench
- 3/4" wrench
- 3/4" socket
- Drill
- Torque wrench
- 17/32" drill bit
- 1-7/16" wrench

Bolt-on Bucket Mounting Kit

WARNING

Personal protection equipment including hard hat, safety glasses, safety shoes, and gloves are recommended during assembly, installation, operation, maintenance, service, removal, or movement of the earth auger. Do not allow long hair, loose fitting clothing, or jewelry to be around moving and/or rotating parts.

CAUTION

Because of the weight of some components, and because some components are difficult to balance, two people are required for safe assembly and installation of this equipment.

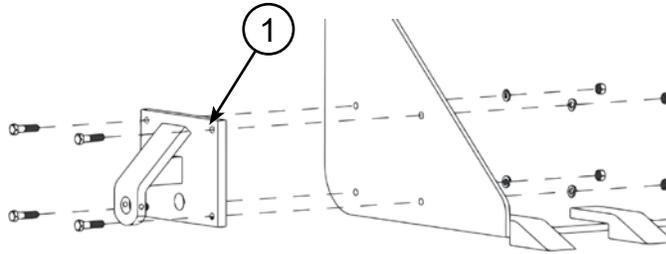
NOTE Consideration must be given to the installation location of the bolt-on bucket mount kit. The drive unit should be able to swing during normal operation without interference from the bucket. The bucket must be constructed with sufficient strength to safely handle the loads generated during drilling. Position the drive unit to allow space for the hydraulic hose connections and routing of hoses.

NOTE Hardware to attach the mount assembly is not included in the kit. You will need the following:

- 4 bolts (1/2" dia., Gr. 5 or greater)
- 4 lock washers (1/2")
- 4 nuts (1/2")

STEP 1: Using a drill and 17/32" drill bit, drill four holes in the left or right outside vertical surface of the loader bucket to accommodate bucket mount assembly (1).

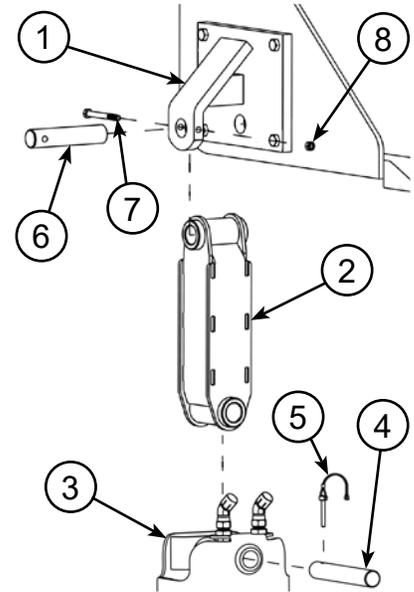
STEP 2: Using a 3/4" wrench and torque wrench with 3/4" socket, bolt bucket mount assembly (1) to the bucket.



STEP 3: Attach knuckle assembly (2) to the drive unit (3) using pin (4). Secure pin (4) with lock pin (5).

STEP 4: Attach knuckle assembly/drive unit to mount assembly (1) using pin (6). Using a 9/16" wrench and torque wrench with 9/16" socket, secure pin (6) with bolt (7) and nut (8).

STEP 5: If you purchased Danuser Hose Kits PN 196025 or 196027, install by using a 7/8" wrench and a 1" wrench to tighten the hose connections onto the 45° adapters on the drive unit.



NOTE All hoses and fittings used to connect the earth auger should be thoroughly cleaned before use. Care should be taken to see that no thread sealer or metal chips are forced to the inside of the joints when connections are being tightened.

NOTE Since the hydraulic motor is reversible, hose connections to motor fittings are interchangeable.

STEP 6: Using a 1-7/16" wrench and a 1" wrench, tighten the hydraulic quick couplers onto the hoses.

NOTE Danuser Hose Kit PN 196025 does not include hydraulic quick couplers. You must obtain the proper hydraulic quick couplers for your particular vehicle.

Assembly & Installation

(continued)

WARNING

Keep hands, feet, hair, jewelry, and clothing away from all moving and/or rotating parts.

Assembly & Installation

Auger, Extension, & Adapter

WARNING

Keep hands, feet, hair, jewelry, and clothing away from all moving and/or rotating parts.

STEP 7: Connect the quick couplers to the vehicle's auxiliary hydraulic outlets.

NOTE Ensure quick couplers are clean prior to connection.

WARNING

Before connecting or disconnecting hydraulic lines or fittings, be sure to relieve all pressure by cycling all hydraulic controls after shutdown. Remember hydraulic systems are under pressure whenever the engine is running and may hold pressure after shutdown.

STEP 8: Test the vehicle to make sure you have adequate hose length throughout the full operating range of the vehicle's loader arms. Adjust the position of the hoses as necessary to avoid pinching, kinking, or stretching.

NOTE Hose routing is the responsibility of the operator. Pinched, kinked, and/or stretched hoses are not covered under the warranty.

STEP 9: With the vehicle set at idle, engage the auxiliary hydraulics and verify output spindle rotation. The output spindle should rotate clockwise when viewed from above.

STEP 10: Check the hydraulic system for leaks.

WARNING

Never check pressurized system for leaks with your bare hand. Wear proper hand and eye protection and use wood or cardboard when searching for suspected leaks. Oil escaping from pinhole leaks under pressure can penetrate skin and create a serious medical emergency. If any fluid is injected into the skin, gangrene, blood poisoning, even death may result. Obtain medical attention immediately.

Proceed to *Assembly & Installation: Auger, Extension, & Adapter* section.

Recommended Tools

- 1-1/8" wrench (2, for PN 10038 Retaining Bolt and PN 10041 Nut)
- 15/16" wrench (2, for 2" round adapter with 5/8" bolt hole)
- 1-5/16" wrench (2, for 2-9/16" round adapter with 7/8" bolt hole)
- 3/4" wrench (2, for 2" round or 2-9/16" round adapters with 1/2" bolt hole)

STEP 1: If using an extension or adapter with an auger, grease the inside of the extension or adapter collar, and attach the extension or adapter to the drive unit using PN 10038 Retaining Bolt and PN 10041 Nut included with the drive unit.

STEP 2: Grease the inside of the auger collar and attach the auger using PN 10038 Retaining Bolt and PN 10041 Nut included with the drive unit, or the bolt and nut included with your auger.

WARNING

Never replace the auger retaining bolt with anything other than the specified length bolt in this manual. A longer, or protruding, fastener is more likely to grab clothing or gloves, which can result in serious injury or death.

NOTE Each time an auger, adapter, or extension is attached, the inside of the collar should be coated with grease.

Operation

! DANGER

This earth auger is designed for one-man operation from the vehicle seat. It is the responsibility of the operator to see that no one is within twenty-five feet (25') of the earth auger when it is started or in use. Do not operate the earth auger with another person near or in contact with any part of the drive unit or auger. Serious personal injury or death may result if any attempt is made to assist drilling operation by hand.

! WARNING

Personal protection equipment including hard hat, safety glasses, safety shoes, and gloves are recommended during assembly, installation, operation, maintenance, service, removal, or movement of the earth auger. Do not allow long hair, loose fitting clothing, or jewelry to be around moving and/or rotating parts.

! WARNING

Safe operation of equipment requires the operator's full attention. Avoid distractions such as radio headphones, cell phones, etc. while operating.

! DANGER

Do not allow riders on the equipment at any time. There is no safe place for any riders.

! DANGER

Contact with underground gas lines or electrical cables may result in serious injury or death from explosion or electrical shock. Before operating, call 811 or the local number to locate underground utilities. Do not dig near underground utility lines.

! WARNING

Before operating, check clearances between vehicle and auger, as well as operator and auger, across the vehicle's full operating range to ensure auger does not contact vehicle or operator.

! WARNING

For mounts including a cradle, keep earth auger drive unit in cradle when not drilling. To reduce the risk of personal injury, never transport with the drive unit out of the cradle or while the auger is rotating.

! WARNING

Before you operate the earth auger, check over all pins, bolts, and connections to be sure all are securely in place. Make sure the earth auger is securely latched to the vehicle.

STEP 1: Contact local utility companies to make certain there are no buried gas lines, electrical cables, etc., in the work area. Clear area of objects that could wrap around the auger or might be thrown. Check for ditches, stumps, holes, or other obstacles that could cause the vehicle to roll.

STEP 2: Lay out and mark where you want to drill your holes.

STEP 3: Lower the auger point slowly to the ground with the auger not powered.

NOTE For mounts including a cradle, the drive unit should not come into contact with the cradle during drilling maneuvers. While drilling, maintain the quick attach plate in a position as close to horizontal as possible. If cradle does come into contact with drive unit, refer to *Assembly & Installation* section to adjust carry angle.

STEP 4: With the auger point lowered to the ground and before actuating the auger, move the vehicle slowly left, right, forward, or backward as needed until the auger appears vertical to the ground.

STEP 5: Engage the auxiliary hydraulics to start the auger's rotation in the clockwise direction and increase the speed as required so dirt is conveyed from the hole.

NOTE The hydraulic actuation lever connected to the earth auger will have three positions: clockwise rotation, stop (neutral), and counter-clockwise rotation. The clockwise and counter-clockwise positions may be changed by switching the hose connections.

! DANGER

Never position the auger point by hand or with any tool when the vehicle is running. Never position the auger point by putting your hands on the auger or the drive unit.

Operation

(continued)

DANGER

To prevent injury, keep an area of at least twenty-five feet (25') around the auger clear of bystanders and all other people.

DANGER

Do not shovel dirt away from a rotating auger, as the shovel can be caught and thrown by the auger.

STEP 6: The hydraulic flow rate and pressure should not exceed the earth auger's specified maximums. The hydraulic minimums must be met to deliver satisfactory performance. Use only enough down pressure to assure positive penetration of the auger into the ground. Reduce down pressure if auger rotation slows down drastically or stalls. Excessive down pressure will cause the auger to frequently stall. Refer to *Hydraulic Requirements* section for filtration, pressure, and flow rate specifications.

NOTE If you have difficulty penetrating hard ground, refer to the *Troubleshooting* section.

STEP 7: When the auger has been lowered about 24" into the ground, raise the auger almost out of the hole to clear the dirt, then drill deeper and raise the auger again. Repeat this procedure until the desired hole depth is reached.

NOTE The earth auger should be raised and lowered by changing the elevation and not the tilt of the quick attach plate.

STEP 8: When the auger has reached the full depth required, allow the auger to dwell momentarily at this depth at a slower speed to assist in cleaning out the hole.

STEP 9: Deactivate the earth auger, and raise it from the hole.

NOTE For "heavy" soil conditions, allow the auger to turn at slow speed while raising it to the top of the hole.

STEP 10: Move away from the hole, then remove loose dirt from the auger by momentarily actuating the earth auger and spinning it at a faster speed than used for drilling. To remove clay or other stubborn soil, actuate in a *forward-stop, forward-stop* manner.

NOTE Do not actuate the earth auger in a *forward-reverse* manner, as damage may result.

STEP 11: If necessary, repeat STEPS 8 - 10 to obtain a cleaner hole.

NOTE In some soil conditions, or when excessive down pressure is applied, the auger may screw itself into the ground and become stuck, causing the earth auger to stall. Do not attempt to pull the auger out of the ground. Instead, reverse the auger rotation (counter-clockwise), and slowly raise the auger. Once unstuck, continue operation.

NOTE If the auger becomes lodged under rocks, roots, or other large obstructions, do not attempt to pull the auger out of the ground. If this happens, reverse the auger rotation (counter-clockwise), and slowly raise the auger. Once unstuck, continue operation.

STEP 12: Deactivate the auger and place the drive unit in the cradle when moving between holes.

NOTE Frequently check the condition of the auger teeth and point, and replace them when wear is detected. Always keep spare parts on hand for replacements to avoid damage to the auger head and auger flighting.

Removal & Storage

DANGER

Never allow anyone under the attachment at any time.

WARNING

Personal protection equipment including hard hat, safety glasses, safety shoes, and gloves are recommended during assembly, installation, operation, maintenance, service, removal, or movement of the earth auger. Do not allow long hair, loose fitting clothing, or jewelry to be around moving and/or rotating parts.

CAUTION

Because of the weight of some components, and because some components are difficult to balance, two people are required for safe assembly and installation of this equipment.

Before storage, the earth auger should be thoroughly cleaned, washing off all dirt and grime. Make sure the hydraulic system is properly sealed against contaminants entering the unit. Always store the earth auger in a dry, covered location.

STEP 1: Lower the earth auger onto a flat, level surface in an area where children do not play.

STEP 2: Disconnect the hydraulic hoses from the vehicle's auxiliary hydraulics.

WARNING

Before connecting or disconnecting hydraulic lines or fittings, be sure to relieve all pressure by cycling all hydraulic controls after shutdown. Remember hydraulic systems are under pressure whenever the engine is running and may hold pressure after shutdown.

NOTE

Connect the quick couplers together to prevent contaminants from entering the drive unit's hydraulic system.

STEP 3: Follow your vehicle operator's manual for removing an attachment. Securely block and support the attachment.

STEP 4: Tighten any loose nuts, bolts, and hydraulic components.

STEP 5: Replace any damaged or missing safety signs.

Troubleshooting

Problem	Possible Cause	Solution
Lacks drilling power	Low system pressure (PSI)	Check with pressure gauge. If low, investigate the cause.
Slow auger speed	Low flow (GPM)	Check with flow meter. If low, investigate cause.
	Fittings or connections are too small or incompatible	Replace with proper fittings.
	Hydraulic hose pinched or kinked	Fix pinched or kinked hose. Refer to <i>Assembly & Installation</i> .
	Dirty oil or filter	Change oil and filter according to vehicle manufacturer's recommendation.
	Hydraulic motor worn or damaged	See your dealer for repairs.
Auger will not drill	Worn teeth or point	Replace teeth or point. Refer to <i>Accessories</i> .
	Ground too hard and dry	Replace dirt teeth and point with hardfaced or carbide teeth and point. Refer to <i>Accessories</i> .
Drive unit contacting cradle	Cradle not installed in proper position	Refer to <i>Assembly & Installation</i> to adjust carry angle.
Gear oil leaks	Output seal worn or damaged	Replace output seal. Refer to <i>Parts: Drive Unit</i> .
	Motor seals worn or damaged, causing hydraulic oil to leak into gearbox	See your dealer for repairs.
Hydraulic oil leaks	Fittings loose or damaged	Tighten or replace fittings
	Hydraulic hose loose or damaged	Tighten or replace hydraulic hose
	Hydraulic motor seals worn or damaged	See your dealer for repairs.
Vehicle hydraulic oil overheating	Low quantity of hydraulic oil	Add hydraulic oil to vehicle.
	Improper hydraulic oil	Replace with proper hydraulic oil.
	Dirty hydraulic oil or filter	Change oil and filter according to vehicle manufacturer's recommendation.
	Improper hose size	Check hose diameter and length requirements
Hydraulic hose failure	Hydraulic relief pressure setting too high	Adjust vehicle hydraulic relief pressure setting to within drive unit specifications.
	Hoses worn or damaged	Replace hoses.
	Hose rating too low for hydraulic system pressure	Replace with hoses with working pressure rated higher than vehicle hydraulic pressure.
	Hoses pinched, kinked, or stretched	Refer to <i>Assembly & Installation</i> .

For additional assistance, please call your dealer or contact Danuser direct:

Tel: (573) 642-2246

Fax: (573) 642-2240

E-mail: sales@danuser.com

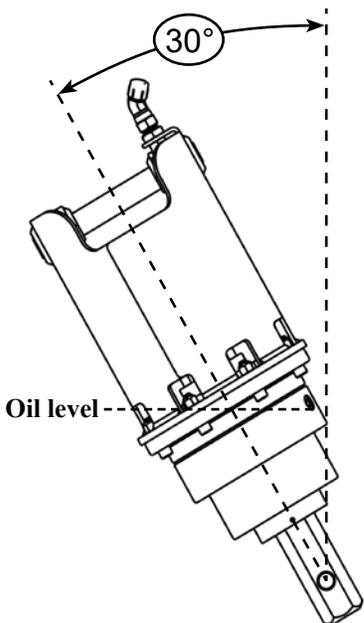
Maintenance & Lubrication

⚠ DANGER

Never allow anyone under the attachment at any time.

⚠ WARNING

Personal protection equipment including hard hat, safety glasses, safety shoes, and gloves are recommended during assembly, installation, operation, maintenance, service, removal, or movement of the earth auger. Do not allow long hair, loose fitting clothing, or jewelry to be around moving and/or rotating parts.



Proper servicing and maintenance are key to the long life of any attachment. Careful inspection and routine maintenance helps avoid costly downtime and repair. Do not use the earth auger with any damaged parts.

⚠ WARNING

Never check pressurized system for leaks with your bare hand. Wear proper hand and eye protection and use wood or cardboard when searching for suspected leaks. Oil escaping from pinhole leaks under pressure can penetrate skin and create a serious medical emergency. If any fluid is injected into the skin, gangrene, blood poisoning, even death may result. Obtain medical attention immediately.

⚠ WARNING

Do not modify the attachment. Modifications may weaken the integrity of the attachment and may impair the safety, function, life, and performance of the earth auger.

⚠ CAUTION

When making repairs or servicing the earth auger, use only parts that meet original equipment manufacturer's standards and requirements.

Maintenance	Interval
Inspect the attachment for any damage, worn parts, or cracked welds. Repair or replace as necessary.	Before each use
Check for damaged or missing safety signs. Replace as necessary.	Before each use
Coat the inside diameter of the auger or extension collar with grease.	Each time an auger or extension is attached
Check all fasteners. Ensure they are tight and secure. (Refer to <i>Torque Values Chart</i> .) Replace as necessary.	Daily
Check all hydraulic components for leaks or wear. Repair or replace as necessary.	Daily
Check planetary gear oil level to assure proper lubrication is maintained. Check by removing the front fill plug - with the drive unit angled approximately 30° from vertical.	Daily
Check for clean hydraulic oil. At all times, keep dirt and other contaminants from entering the hydraulic system during connecting and disconnecting the hydraulic system. Always use dust caps and plugs on all quick disconnects when not in use.	Daily
Change planetary gear reduction oil after first 500 hours of operation or 6 months, then every 2,000 hours or 12 months, whichever comes first. Use heavy duty extreme pressure lubricant API-GL-5 85W-140 for filling the planetary gear reduction. Approximate oil capacity is .90 quarts (.85 liters).	After 1st 500 hours, then every 2,000 hours or yearly

Torque Values Chart

Torque Values Chart																	
Bolt Size (inches)	Bolt Head Identification								Bolt Size (Metric)	Bolt Head Identification							
	Grade 2		Grade 5		Grade 8		ASTM A574			Class 5.8	Class 8.8		Class 10.9		Class 12.9		
in-tpi	Nm	ft.-lb.	Nm	ft.-lb.	Nm	ft.-lb.	Nm	ft.-lb.	mm x pitch	Nm	ft.-lb.	Nm	ft.-lb.	Nm	ft.-lb.	Nm	ft.-lb.
1/4"-20	7.4	5.6	11	8	16	12	19	14	M5 x 0.8	4	3	6	5	9	7	11	8
1/4"-28	8.5	6	13	10	18	14	22	16	M6 x 1	7	5	11	8	15	11	18	13
5/16"-18	15	11	24	17	33	25	39	29	M8 x 1.25	17	12	26	19	36	27	42	31
5/16"-24	17	13	26	19	37	27	43	32	M8 x 1	18	13	28	21	39	29	46	34
3/8"-16	27	20	42	31	59	44	69	51	M10 x 1.5	33	24	52	39	72	53	84	62
3/8"-24	31	22	47	35	67	49	79	58	M10 x 0.75	39	29	61	45	85	62	98	72
7/16"-14	43	32	67	49	95	70	110	81	M12 x 1.75	58	42	91	67	125	93	148	109
7/16"-20	49	36	75	55	105	78	123	91	M12 x 1.5	60	44	95	70	130	97	153	113
1/2"-13	66	49	105	76	145	105	168	124	M12 x 1	90	66	105	77	145	105	167	123
1/2"-20	75	55	115	85	165	120	190	140	M14 x 2	92	68	145	105	200	150	235	173
9/16"-12	95	70	150	110	210	155	235	173	M14 x 1.5	99	73	155	115	215	160	254	187
9/16"-18	105	79	165	120	235	170	262	193	M16 x 2	145	105	225	165	315	230	365	269
5/8"-11	130	97	205	150	285	210	323	238	M16 x 1.5	155	115	240	180	335	245	388	286
5/8"-18	150	110	230	170	325	240	366	270	M18 x 2.5	195	145	310	230	405	300	504	372
3/4"-10	235	170	360	265	510	375	574	423	M18 x 1.5	220	165	350	260	485	355	561	414
3/4"-16	260	190	405	295	570	420	640	472	M20 x 2.5	280	205	440	325	610	450	712	525
7/8"-9	225	165	585	430	820	605	925	682	M20 x 1.5	310	230	650	480	900	665	1052	776
7/8"-14	250	185	640	475	905	670	1020	752	M24 x 3	480	355	760	560	1050	780	1231	908
1"-8	340	250	875	645	1230	910	1386	1022	M24 x 2	525	390	830	610	1150	845	1337	986
1"-12	370	275	955	705	1350	995	1555	1147	M30 x 3.5	960	705	1510	1120	2100	1550	2447	1805
1-1/8"-7	480	355	1080	795	1750	1290	1971	1454	M30 x 2	1060	785	1680	1240	2320	1710	2706	1996
1-1/8"-12	540	395	1210	890	1960	1440	2202	1624	M36 x 3.5	1730	1270	2650	1950	3660	2700	4272	3151
1-1/4"-7	680	500	1520	1120	2460	1820	2771	2044	M36 x 2	1880	1380	2960	2190	4100	3220	5095	3758
1-1/4"-12	750	555	1680	1240	2730	2010	3068	2263									
1-3/8"-6	890	655	1990	1470	3230	2380	3638	2683									
1-3/8"-12	1010	745	2270	1670	3680	2710	4143	3056									
1-1/2"-6	1180	870	2640	1950	4290	3160	4823	3557									
1-1/2"-12	1330	980	2970	2190	4820	3560	5426	4002									

KEY:

in-tpi = nominal thread diameter in inches-threads per inch
 Nm = Newton-meter
 ft.-lb. = foot pounds
 mm x pitch = nominal thread diameter in millimeters by thread pitch

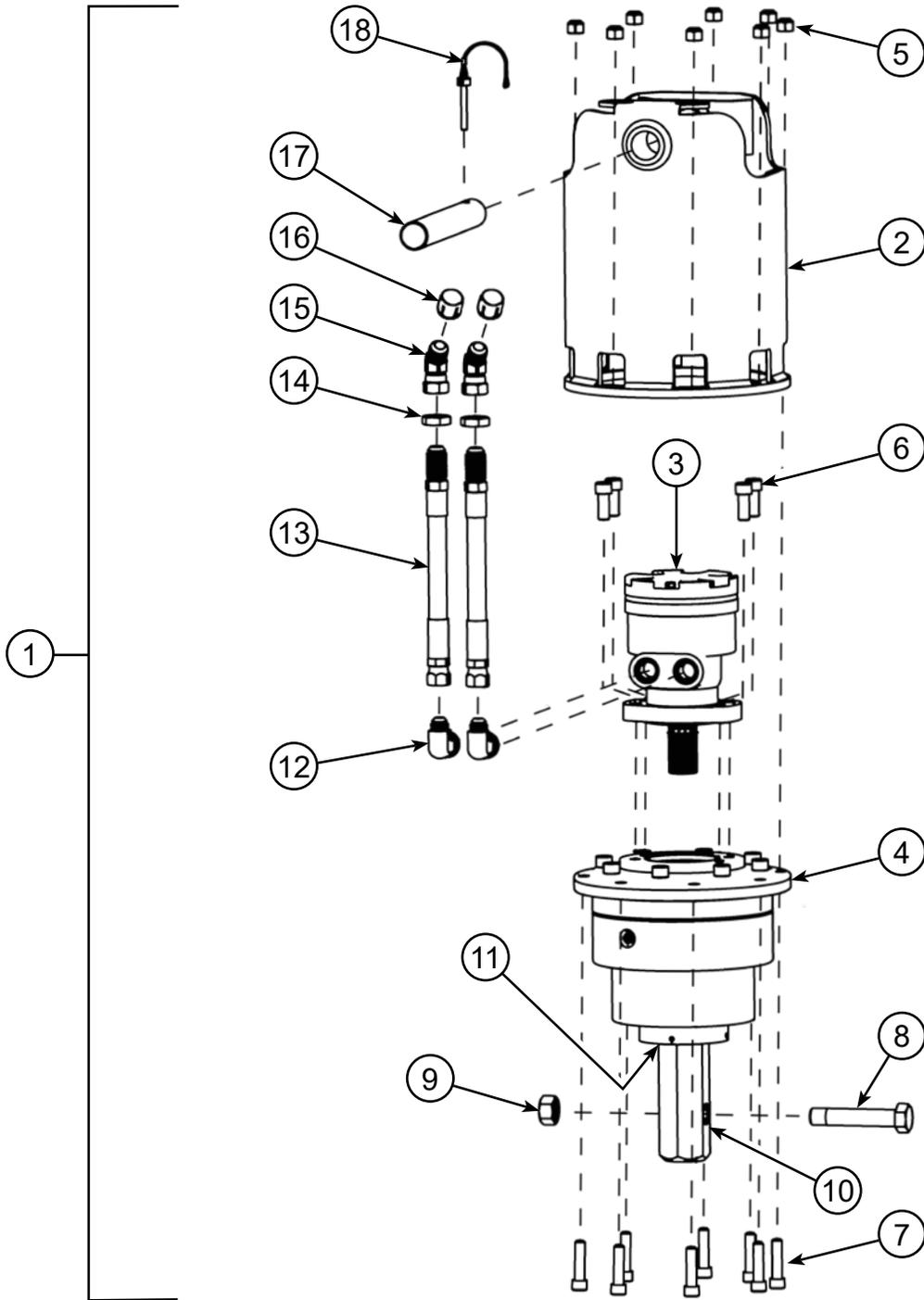
Torque tolerance +0%, -15% of torque values. Unless otherwise specified, use torque values listed above.

Parts

⚠ WARNING

Drive Unit

This product can expose you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov/product.



Parts

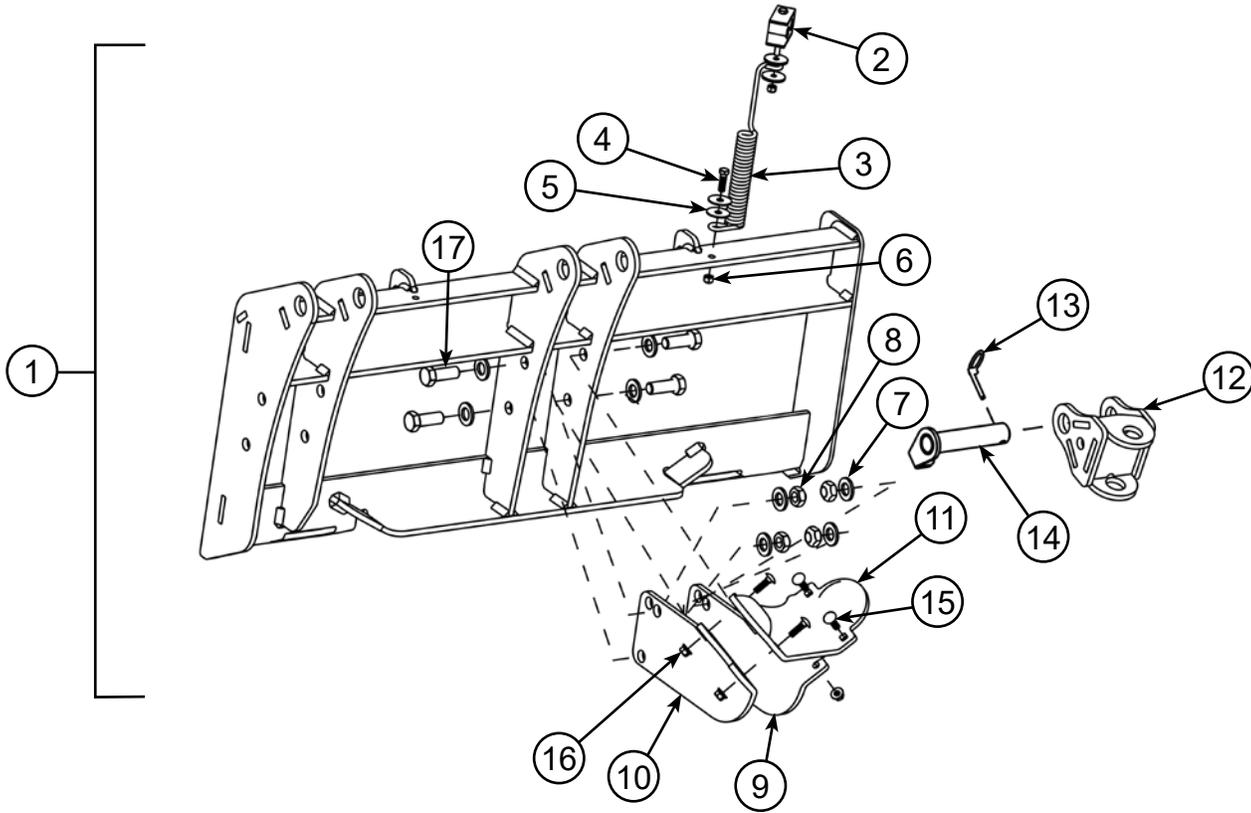
	REF. NO.	PART NO.	DESCRIPTION	QTY.	MODELS
(continued)	1	180405	Drive Unit	1	EP615
		180406	Drive Unit	1	EP1020
		180407	Drive Unit	1	EP1530
		180408	Drive Unit	1	EP2035
	2	180409S-EP615	Housing Assembly (Includes EP615 Decals & Safety Signs)	1	EP615
		180409S-EP1020	Housing Assembly (Includes EP1020 Decals & Safety Signs)		EP1020
		180409S-EP1530	Housing Assembly (Includes EP1530 Decals & Safety Signs)		EP1530
		180409S-EP2035	Housing Assembly (Includes EP2035 Decals & Safety Signs)		EP2035
	3	10184	Hydraulic Motor	1	EP615
		10185	Hydraulic Motor	1	EP1020
		10186	Hydraulic Motor	1	EP1530
		10964	Hydraulic Motor	1	EP2035
		10954	Hydraulic Motor Seal Kit (Not Pictured)		EP615, EP1020, EP1530
		10955	Hydraulic Motor Seal Kit (Not Pictured)		EP2035
	4	20300	Planetary Gearbox (2" Hex)	1	All Models
	5	10197	Nut (7/16"-14)	8	All Models
	6	10482	Socket Head Bolt (M12 x 1.75 x 35mm)	4	All Models
	7	196009	Socket Head Bolt (7/16"-14 x 1-3/4")	8	All Models
8	10038	Special Retaining Bolt (3/4"-10 x 4", Gr. 8, 3/4" of thread)	1	All Models	
9	10041	Nut (3/4"-10)	1	All Models	
10	20305	Output Spindle (2" Hex)	1	All Models	
11	20312	Output Spindle Seal	1	All Models	
12	20034	Adapter, 90° (#10 ORB M to #8 JIC M)	2	All Models	
13	186071	Hydraulic Hose (Motor Adapter to External Adapter, 9-1/8" length)	2	All Models	
14	20191	Nut (7/8"-14)	2	All Models	
15	10484	Adapter, 45° (#10 JIC F to #10 JIC M)	2	All Models	
16	10045	Adapter Thread Protector Cap	2	All Models	
17	180425	Pin (1-1/4" x 9-1/2")	1	All Models	
18	196018	Lock Pin	1	All Models	

Parts

⚠ WARNING

Skid-Steer Quick Attach -
Center & Offset

This product can expose you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov/product.



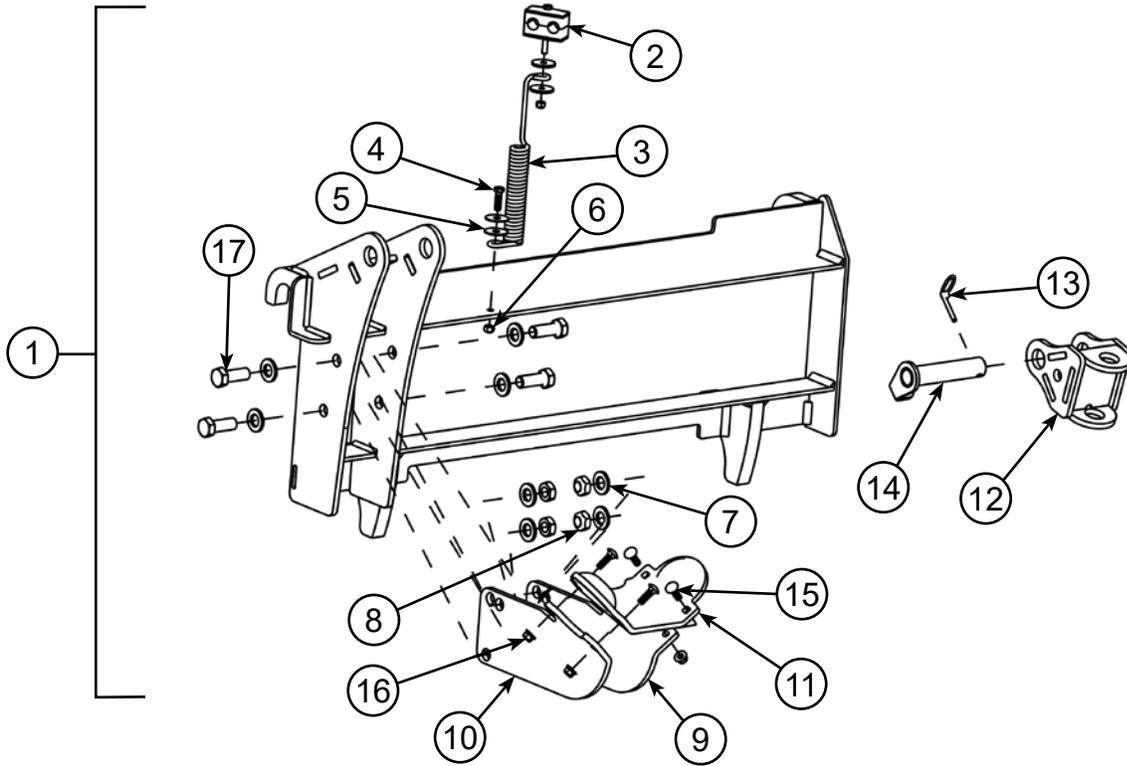
REF. NO.	PART NO.	DESCRIPTION	QTY.
1	180415	Skid-Steer Quick Attach Plate Assembly	1
2	12251	1/2" Hydraulic Hose Clamp Kit (Includes Hardware)	1
3	12247	Hydraulic Hose Spring	1
4	1180	Bolt (3/8"-16 x 1")	1
5	12259	Washer (13/32" x 1-1/2")	2
6	10412	Toplock Nut (3/8"-16)	1
7	10267	Washer (3/4")	8
8	10268	Lock Nut (3/4"-10)	4
9	190122	Left Cradle Arm	1
10	190123	Right Cradle Arm	1
11	190124	Center Cradle Plate	1
12	170607	Knuckle Assembly	1
13	1600	Klik Pin	1
14	180422	Pin Assembly	1
15	196020	Carriage Bolt (3/8"-16 x 1-1/4", Gr. 5)	4
16	21316	Nut (3/8"-16)	4
17	196012	Bolt (3/4"-10 x 2", Gr. 8)	4

Parts

⚠ WARNING

Euro/Global Quick Attach
- Offset

This product can expose you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov/product.



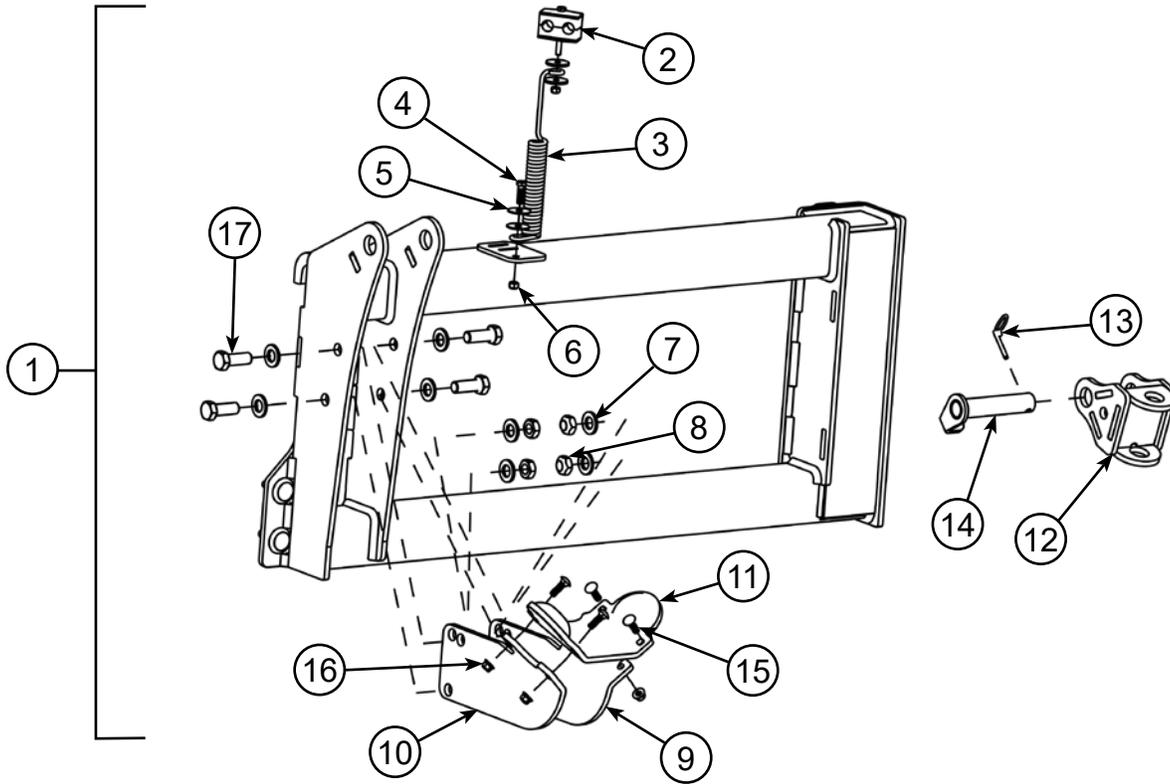
REF. NO.	PART NO.	DESCRIPTION	QTY.
1	190052	Euro/Global Quick Attach Plate Assembly	1
2	12251	1/2" Hydraulic Hose Clamp Kit (Includes Hardware)	1
3	12247	Hydraulic Hose Spring	1
4	1180	Bolt (3/8"-16 x 1")	1
5	12259	Washer (13/32" x 1-1/2")	2
6	10412	Toplock Nut (3/8"-16)	1
7	10267	Washer (3/4")	8
8	10268	Lock Nut (3/4"-10)	4
9	190122	Left Cradle Arm	1
10	190123	Right Cradle Arm	1
11	190124	Center Cradle Plate	1
12	170607	Knuckle Assembly	1
13	1600	Klik Pin	1
14	180422	Pin Assembly	1
15	196020	Carriage Bolt (3/8"-16 x 1-1/4", Gr. 5)	4
16	21316	Nut (3/8"-16)	4
17	196012	Bolt (3/4"-10 x 2", Gr. 8)	4

Parts

⚠ WARNING

John Deere 200-500 Series
Quick Attach - Offset

This product can expose you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov/product.



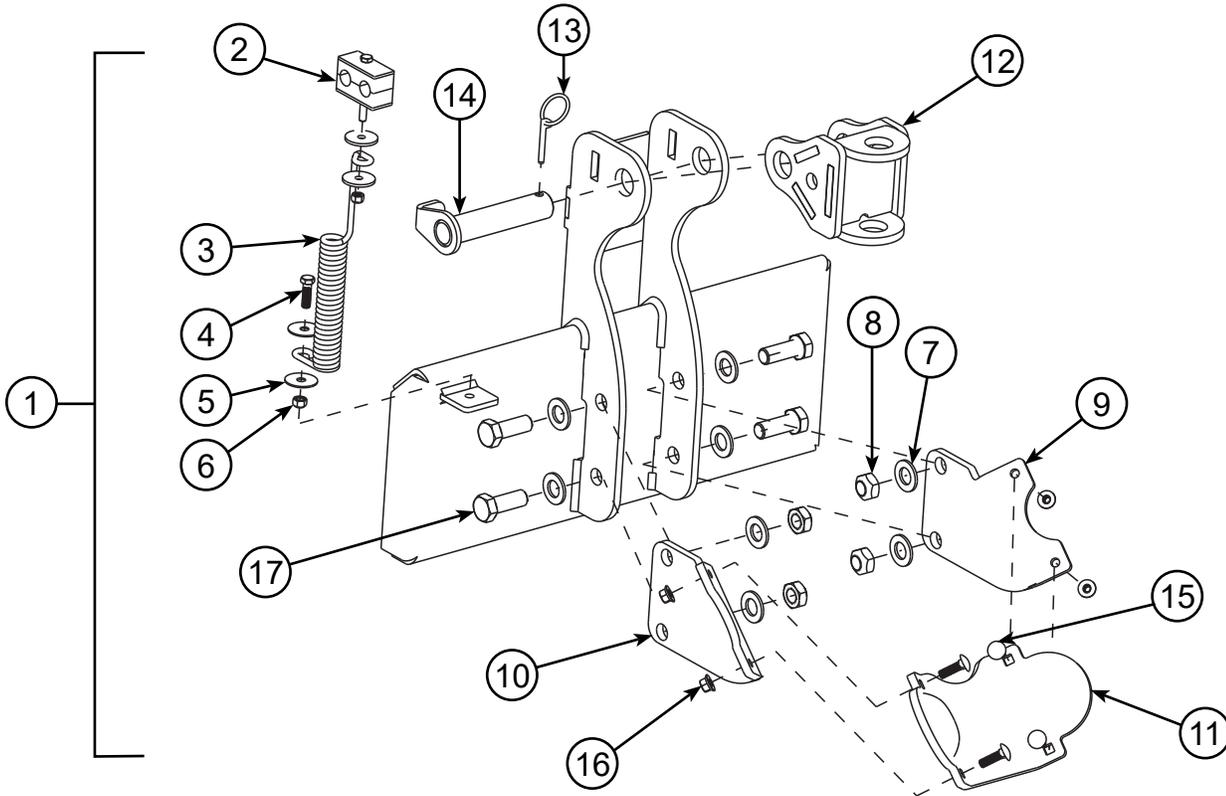
REF. NO.	PART NO.	DESCRIPTION	QTY.
1	190053	John Deere 200-500 Series Quick Attach Plate Assembly	1
2	12251	1/2" Hydraulic Hose Clamp Kit (Includes Hardware)	1
3	12247	Hydraulic Hose Spring	1
4	1180	Bolt (3/8"-16 x 1")	1
5	12259	Washer (13/32" x 1-1/2")	2
6	10412	Toplock Nut (3/8"-16)	1
7	10267	Washer (3/4")	8
8	10268	Lock Nut (3/4"-10)	4
9	190122	Left Cradle Arm	1
10	190123	Right Cradle Arm	1
11	190124	Center Cradle Plate	1
12	170607	Knuckle Assembly	1
13	1600	Klik Pin	1
14	180422	Pin Assembly	1
15	196020	Carriage Bolt (3/8"-16 x 1-1/4", Gr. 5)	4
16	21316	Nut (3/8"-16)	4
17	196012	Bolt (3/4"-10 x 2", Gr. 8)	4

Parts

⚠ WARNING

Mini-Skid-Steer
Quick Attach

This product can expose you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov/product.



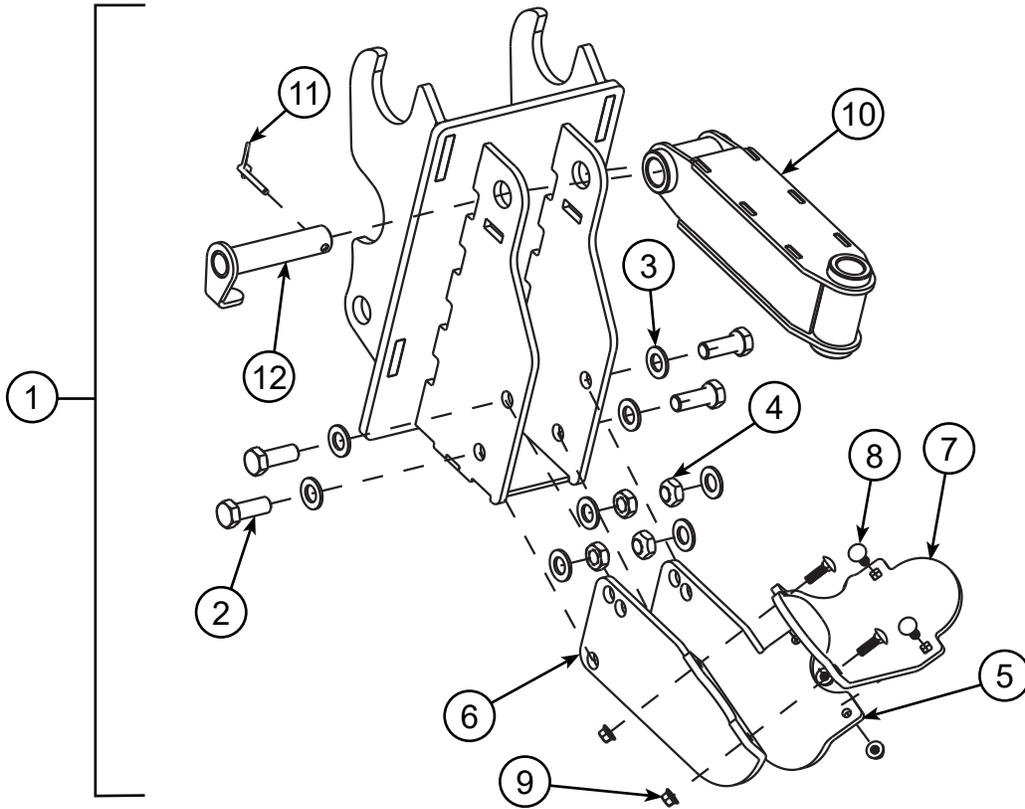
REF. NO.	PART NO.	DESCRIPTION	QTY.
1	200185	Mini-Skid-Steer Quick Attach Plate Assembly	1
	200207	Bobcat MT Quick Attach Plate Assembly (Not Pictured)	
2	12251	1/2" Hydraulic Hose Clamp Kit (Includes Hardware)	1
3	12247	Hydraulic Hose Spring	1
4	1180	Bolt (3/8"-16 x 1")	1
5	12259	Washer (13/32" x 1-1/2")	2
6	10412	Toplock Nut (3/8"-16)	1
7	10267	Washer (3/4")	8
8	10268	Lock Nut (3/4"-10)	4
9	200189	Left Cradle Arm	1
10	200190	Right Cradle Arm	1
11	190124	Center Cradle Plate	1
12	170607	Knuckle Assembly	1
13	1600	Klik Pin	1
14	180422	Pin Assembly	1
15	196020	Carriage Bolt (3/8"-16 x 1-1/4", Gr. 5)	4
16	21316	Nut (3/8"-16)	4
17	196012	Bolt (3/4"-10 x 2", Gr. 8)	4

Parts

⚠ WARNING

Backhoe & Excavator
Quick Attach Mounting Kit

This product can expose you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov/product.



REF. NO.	PART NO.	DESCRIPTION	QTY.
1	----	Quick Attach Mounting Kit	1
2	196012	Bolt (3/4"-10 x 2", Gr. 8)	4
3	10267	Washer (3/4")	8
4	10268	Lock Nut (3/4"-10)	4
5	190122	Left Cradle Arm	1
6	190123	Right Cradle Arm	1
7	190124	Center Cradle Plate	1
8	196020	Carriage Bolt (3/8"-16 x 1-1/4", Gr. 5)	4
9	21316	Nut (3/8"-16)	4
10	172015	Knuckle Assembly	1
11	1600	Klik Pin	1
12	180422	Pin Assembly	1

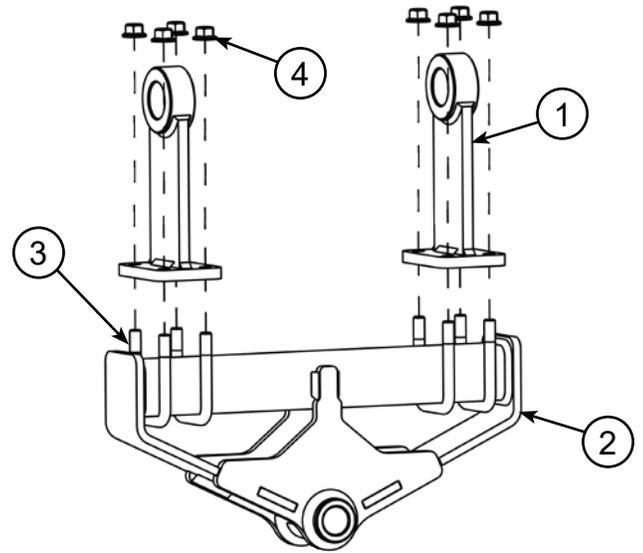
Parts

Backhoe & Excavator
Pin-on Mounting Kit

⚠️ WARNING

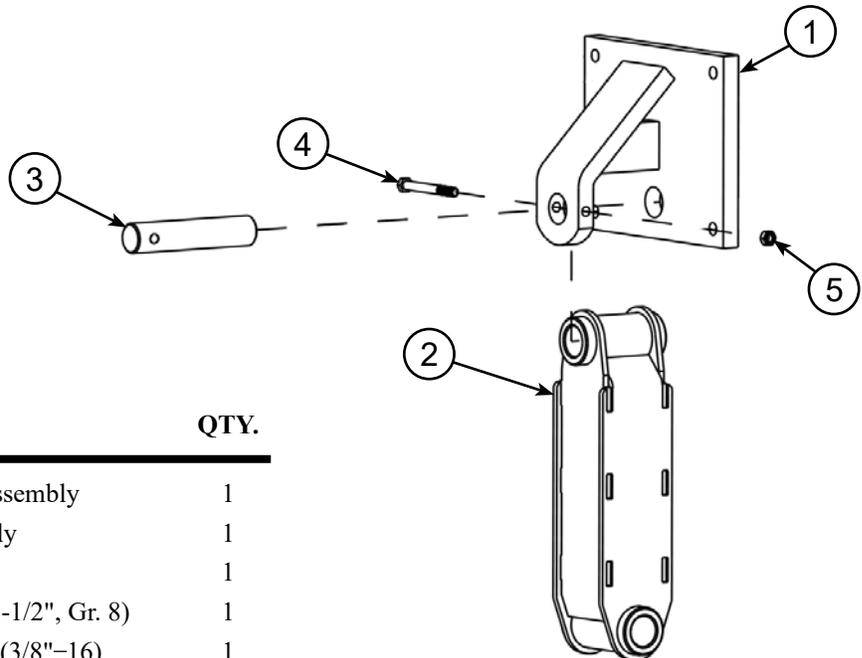
This product can expose you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov/product.

REF. NO.	PART NO.	DESCRIPTION	QTY.
1	----	Ear Assembly	2
2	180427	Knuckle Assembly	1
3	10220	U-bolt (1/2"-13)	4
4	6196	Locknut (1/2"-13)	8



Parts

Bolt-on Bucket Mounting Kit

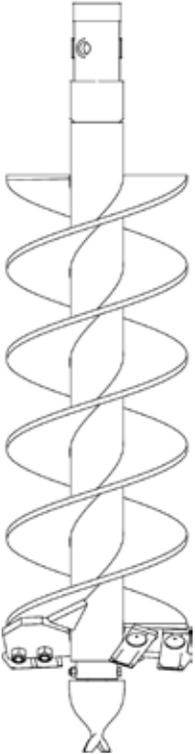


REF. NO.	PART NO.	DESCRIPTION	QTY.
1	9591B	Bucket Mount Assembly	1
2	172015	Knuckle Assembly	1
3	9595	Pin (1-1/4" x 6")	1
4	3041	Bolt (3/8"-16 x 3-1/2", Gr. 8)	1
5	2805	Self-locking Nut (3/8"-16)	1

Augers & Accessories

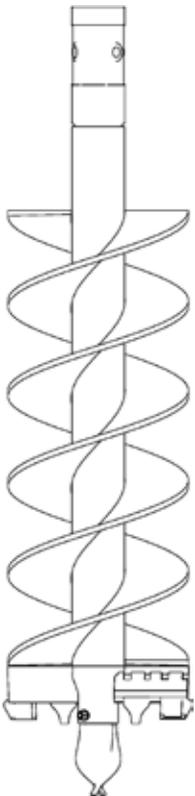
⚠ WARNING

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"FAB" AUGERS - Light-Duty Light to Moderate Ground Conditions 4' LENGTH

DIA.	NO. OF TEETH	PART NO.
4"	0	10600
6"	2	10603
8"	2	10606
9"	3	10609
10"	3	10612
12"	4	10615
15"	5	10618
16"	5	10621
18"	6	10624
20"	6	10627
24"	8	10630
30"	9	10633
36"	11	10636



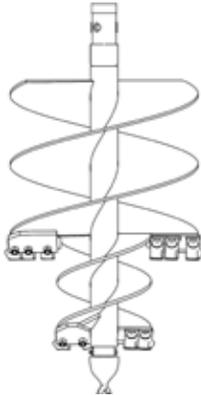
"CAST" AUGERS - Heavy-Duty Difficult Ground Conditions 4' LENGTH

DIA.	NO. OF TEETH	PART NO.
6"	2	10657
8"	4	10660
9"	4	10663
10"	4	10666
12"	4	10669
15"	6	10672
16"	6	10675
18"	6	10678
20"	6	10681
24"	8	10684
30"	10	10687
36"	12	10690

Augers & Accessories

⚠️ WARNING

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"TREE" AUGERS 4' LENGTH

DIA.	NO. OF TEETH	PART NO.
18"-9"	7	10639
24"-12"	10	10642
30"-15"	11	10645
36"-18"	13	10648

AUGER COLLAR

DESCRIPTION	PART NO.
-------------	----------

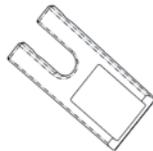
2" Hex	10328
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AUGER TEETH & HARDWARE



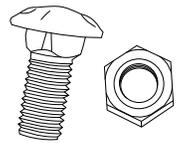
Gage tooth



Wisdom tooth



Chisel tooth



Teeth bolt & nut

<u>Gage tooth</u>		<u>Wisdom tooth</u>		<u>Chisel tooth</u>		<u>Teeth bolt & nut</u>	
DESCRIPTION	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION	PART NO.
Dirt	10340D	Dirt	10337D	Dirt	10342D	Carriage Bolt	10410
Hardfaced	10340HF	Hardfaced	10337HF	Hardfaced	10342HF	Nut	10411
		Carbide	10337C	Carbide	10342C		

FISHTAIL POINTS

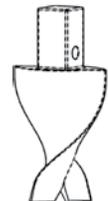


4" diameter augers

DESCRIPTION	PART NO.
Dirt	10333D
Hardfaced	10333HF
Chunky Carbide	10333C
Nut	10412
Bolt	10416

Other diameter augers

DESCRIPTION	PART NO.
Dirt	10331D
Hardfaced	10331HF
Chunky Carbide	10331C
Nut	10412
Bolt	10413



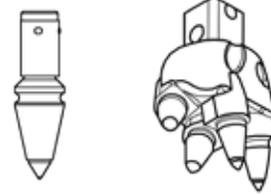
Augers & Accessories

⚠ WARNING

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"BULLET" ROCK AUGERS Rock, Concrete, Asphalt, and Frozen Ground 4' LENGTH



"BULLET" ROCK

<u>DIA.</u>	<u>NO. OF TEETH</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>
4.5"	4	200152	Retaining Bolt	206047
6"	6	200155	Retaining Nut	10041
8"	8	200158	Retaining Lock Washer	823
9"	10	200161	Pilot (6-Tooth, 6" dia., includes hardware)	200251
10"	10	200164	Pilot (4-Tooth, 8" dia. & up, includes hardware)	200192
12"	12	200167		
15"	14	200170	Pilot Bolt	10123
18"	16	200173	Pilot Nut	7733
24"	20	200176	Tooth	200281
30"	24	200179	Tooth Holder	10760
36"	28	200182	Tooth Hammer & Puller	10766

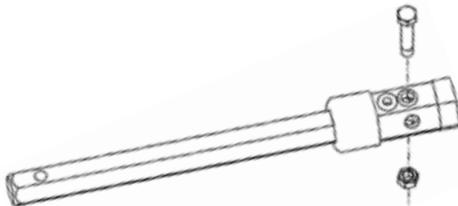
The Wobble Auger pushes through dirt, sand, clay, asphalt, compacted rock, and embedded rock. The 9" Wobble Auger should be used on a skid-steer with an Operating Load or Rated Operating Capacity of 2,250 lb. or greater, utilizing an auger drive with 2,000 ft.-lb. of torque or greater.

WOBBLE AUGERS 4' LENGTH

<u>DIA.</u>	<u>NO. OF TEETH</u>	<u>PART NO.</u>
4"	N/A	20600
6"	N/A	20603
9"	N/A	20606

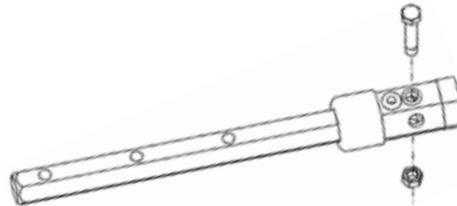


AUGER EXTENSIONS



Fixed length

<u>LENGTH</u>	<u>PART NO.</u>
12"	10910
24"	10911
48"	10912
72"	10913



Variable length

<u>LENGTH</u>	<u>PART NO.</u>
12"	----
24"	10900
48"	10901
72"	10902

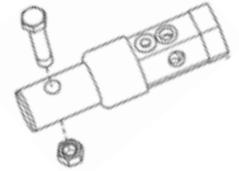
Augers & Accessories

⚠️ WARNING

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AUGER ADAPTERS

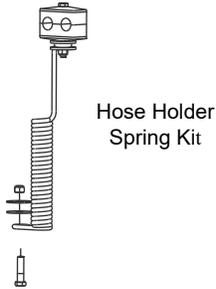
DRIVE UNIT		AUGER COLLAR	PART NO.
2" Hex	to	2-9/16" Rd.	10921
2" Hex	to	2" Rd.	10922
2" Hex	to	2-9/16" Rd.	*20211
2" Hex	to	2" Rd.	*20214



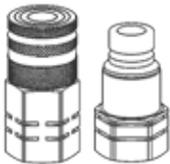
*Allows attachment of augers with 1/2" diameter bolt.

HOSES & HYDRAULIC ACCESSORIES

DESCRIPTION	PART NO.
Cross Port Relief Valve	196035
1/2" Hose Holder Spring Kit	190172
1/2" Hose Kit, 108" with Couplers & Abrasion Sleeves Includes 1/2" flush-face couplers (ISO 16028).	196027
1/2" Hose Kit, 108" with Abrasion Sleeves Does not include couplers.	196025
Front-End Loader Hose Kit	196056
1/2" hoses, 25' long, with 1/2" flush-face couplers (ISO 16028) on one end to connect to 196027 Hose Kit above (sold separately), and ISO 7241 Series A couplers (compatible with ISO 5675 Pioneer couplers) on the opposite end to connect to tractor rear remotes. Includes bolt-on/weld-on mounting bracket.	
1/2" Backhoe, Excavator, & Mini-Skid-Steer Hose Kit, 66" with Couplers & Abrasion Sleeves Includes 1/2" flush-face couplers (ISO 16028).	206032
1/2" Backhoe, Excavator, & Mini-Skid-Steer Hose Kit, 66" with Abrasion Sleeves Does not include couplers.	206031
Male Coupler (1/2" flush-face, ISO 16028)	10048
Female Coupler (1/2" flush-face, ISO 16028)	10049

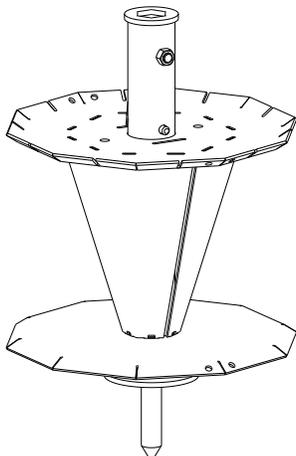


Hose Holder Spring Kit



1/2" flush-face couplers (ISO 16028)

PYTHON WIRE WINDER



DESCRIPTION	PART NO.
2" Hex	170610

The Python Wire Winder is designed to meet the needs of farmers, ranchers, and fencing professionals. The Python connects onto a 2" hex hydraulic auger drive unit and can wind up to 6 miles of smooth or 3/4 miles of barbed wire into convenient rolls.



2" ROCK DRILL - Pilot Holes 3' LENGTH

DIA.	NO. OF TEETH	PART NO.
2"	N/A	10739

2" ROCK DRILL DESCRIPTION PART NO.

Pilot	10745
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Warranty

DANUSER

Model # _____

LIMITED WARRANTY

Serial # _____

Danuser Machine Company ("Danuser") warrants its products, under normal use and maintenance, to be free from defects in material and workmanship for period(s) specified below from the purchase date from an authorized Danuser Dealer. Start of the warranty period is determined by purchase date given on your returned WARRANTY REGISTRATION FORM. Proof of purchase may be required. This Limited Warranty is extended only to the original purchaser of Danuser products.

EP Drive Units - 5 Years Mountings - 1 Year Augers - 1 Year

Lifetime Warranty Covering EP Drive Unit Output Pull Out

Wear Items Not Covered Under Warranty - Hydraulic Hoses, Seals, Auger Teeth, and Auger Point

1. During the applicable warranty period, Danuser, at its option, will repair or replace any part determined by Danuser to be defective. Such repair or replacement shall take place at Danuser's factory or a location designated by Danuser. Under no circumstances shall Danuser be obligated for the cost of any repair or replacement by anyone other than Danuser without its express written consent.
2. Parts may not be returned without written authorization from Danuser.
3. Some purchased components, including but not limited to hydraulic motors, planetary gears, and augers, are subject to the inspection and warranty of the respective manufacturer. Thus, delays in a warranty determination can be expected while Danuser awaits their decision.
4. This warranty is void if any attempt is made to make field repairs to hydraulic motors or planetary gears. To qualify for warranty inspection, the complete drive unit must be returned in its original "failed" condition.
5. To make a claim under this warranty, first contact your authorized Danuser Dealer. The Danuser Dealer shall complete the Warranty Claim Form and obtain written authorization from Danuser to return parts. All warranty claims must include detailed information regarding make and model of vehicle on which the Danuser product was mounted, hours of use, description of events that led up to the failure, and any other information helpful in reviewing the warranty claim. All warranty returns must be prepaid. Shipments arriving at our factory on a freight collect basis will be refused by our receiving department. The freight charge will be credited if the parts are determined by Danuser to be defective, and the associated freight costs in returning those parts will be prepaid by Danuser. **NOTE:** Hydraulic motors must arrive with all ports sealed from dirt and moisture. If a motor arrives with open ports, the warranty is void and no inspection will be made.
6. Products or parts thereof which, as determined by Danuser's examination, show wear from normal use, have been improperly operated, damaged by accident or negligence, field repaired, altered or modified are not considered defective in material and workmanship and are not covered by this warranty. This warranty does not apply to parts subject to normal wear ("Wear Items") or to damage caused by the failure to perform recommended maintenance or to replace worn parts. This warranty shall not obligate Danuser to bear any cost of labor for field repair, replacement, testing, or adjustment nor for damage caused by accident, abuse, misuse, or environmental elements.
7. Any parts or labor required to repair or replace parts not covered under this warranty will be charged to the customer. Parts repaired or replaced by Danuser are then covered by this warranty only for the remainder of the original warranty as if such parts were original parts.
8. Danuser reserves the right to change its specifications and designs at any time.

This warranty is exclusive and in lieu of all other express warranties, if any, including the implied warranties of merchantability and fitness for a particular purpose. It shall not extend beyond the duration of the expressed warranty provided herein and the remedy for violations of any implied warranty shall be limited to repair or replacement of the defective part pursuant to the terms contained herein. No employee, dealer, salesman, or representative is authorized to change this warranty in any way or grant any other warranty. Danuser shall not be liable for any consequential, incidental, or punitive damages, losses, or expenses, including those resulting from or caused by any defects.

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