DIGGERKING

Auger

OPERATOR'S MANUAL

INDEX

INTRODUCTION 3

SAFETY NOTES 4

Protect Yourself 4

You May Need 4

Know Your Equipment 4

Danger, Warning And Caution 4

Protective And Safety Devices 5

Check The Equipment 5

Hazard Classification (Only applicable to ANSI Safety Labels) 5

Safety Precautions 6

IDENTIFICATION 7

Typical Setup 7

Rope Wind Hitch Parts 8

MOUNTING - HITCH FITTING 9

Single Pin Hitch 9

Double Pin Hitch 10

Cradle Hitch 11

Skid Steer Loader & Telehandler 12

MOUNTING - TRUCK CRANE 13

Linkage Block 13

Rope Wind Hitch 14

Attach Rope Wind Hitch 15

MOUNTING - 150XHT / 250XHT 16

Mounting Unit from Cradle 16

HYDRAULIC CONNECTIONS 18

Rope Wind Hitch 19

Attach Hydraulic Hoses - Auger 19

Attach Hoses - Auger Stop Valve 19

Maximum Permissible Back Pressures 19

INTRODUCTION

Digger King thank you for purchasing your new product. This operating manual has been prepared to enable you to operate the equipment in a safe manner.

Digger King Auger Units have been designed for use with specific Digger King mounting frames, Augers, Auger extensions and Auger wear parts. Provided these are used and maintained correctly, they will provide a safe and reliable method of boring holes in the earth.

NOTE:

This operating manual should be used in conjunction with the parent machine's operating instructions.

Instruction books should be regarded as part of the machine. They should always be kept safe with the machine for easy and quick reference.

New or extra copies can be obtained from your Digger King dealer or direct from Digger King.

Digger King Auger Units have been designed for use with specific parent machines along with the Digger King range of mounting frames, Augers, Auger extensions and Auger wear parts. Provided these are used and maintained correctly, they will provide a safe and reliable method of boring holes in the earth.

Digger King continually strives to improve and increase its range of products and therefore reserves the right to alter its specifications at any time without notice or obligation. The company accepts no responsibility for discrepancies which may occur between specifications of its machines and descriptions thereof contained in its publications

SAFETY NOTES

Protect Yourself

Make sure you wear protective clothing and personal safety items.

You May Need

- A Hard Hat
- Safety Goggles
- Hearing Protection
- Foul Weather Clothing
- Reflective Clothing
- Protective Gloves
- Safety Boots

DO NOT wear items of loose clothing, jewellery or other items and tie up any long hair which could entangle in the controls or other parts of the machine.

Know Your Equipment

Get to know all you how to operate all controls on the machine and the attachments

IF THERE IS SOMETHING IN THE MANUAL WHICH YOU DO NOT UNDERSTAND, CONTACT THE MACHINE AGENT OR MANUFACTURER AND ASK THEM TO EXPLAIN IT TO YOU.

Danger, Warning And Caution

This symbol below has 3 important meanings when used with the following captions.

DANGER: An IMMINENTLY HAZARDOUS situation that WILL result in DEATH or VERY SERIOUS INJURY

WARNING: A POTENTIALLY HAZARDOUS situation that COULD result in DEATH or VERY SERIOUS INJURY

CAUTION: A POTENTIALLY HAZARDOUS situation that MAY result in MINOR INJURY

Protective And Safety Devices

Keep all protective devices in place and securely fastened. Make sure all guards, sheilds and safety signs are properly installed and are in good condition.

Check The Equipment

Before you operate the equipment, take time to check your machine and ensure that all systems are in good operational order.

- Never operate the equipment with worn, damaged or missing parts. Use only genuine replacement parts.
- Always ensure that the parent machine is secure and stable with its engine switched off and hydraulic pipes disconnected before carrying out any maintenance work.
- Check for loose, broken, missing or damaged parts. Have everything put into good repair and make sure all safety devices are in place.
- Perform all maintenance procedures outlined for the equipment.
- Always protect hands. Select appropriate gloves when handling the equipment during fitting, removing or adjusting
- Always protect feet with safety boots.

WARNING: Hydraulic fluid under pressure can penetrate the skin or eyes and cause serious PERSONAL INJURY, BLINDNESS OR DEATH.
Fluid leaks under pressure may not be visible. Use a piece of wood or thick cardboard to find leaks. DO NOT USE YOUR BARE HANDS.
Wear safety goggles for eye protection.
If any fluid is injected into the skin, it MUST be surgically removed.
SEE A DOCTOR IMMEDIATELY

Make sure all hydraulic lines are correctly installed

Before applying pressure to the hydraulic system be sure all connections are tight and that lines, pipes and hoses are not damaged. Before disconnecting hydraulic lines, be sure to relieve all pressure.

Hazard Classification (Only applicable to ANSI Safety Labels)

DANGER: IMMEDIATE HAZARD! - Failure to understand or obey this information is likely to result in personal injury or death.

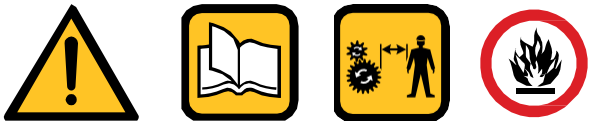
WARNING: Failure to follow these instructions may result in personal injury or death.

CAUTION: Failure to follow these instructions may result in minor personal injury or damage to the machine or the vehicle.

NOTICE: This is important information for the proper use of this equipment. Failure to comply may lead to premature equipment failure.

CLEAN OR REPLACE THE SAFETY LABELS IF THEY CANNOT BE CLEARLY READ OR UNDERSTOOD

Safety Precautions



NEVER operate or assemble the equipment without **fully** understanding the operating instructions of both the equipment unit and the parent machine.

Digger King recommend you receive dealer instruction before operating the unit.

NEVER operate the equipment unless you are in good physical condition and mental health.

NEVER operate the equipment under the influence of any substance (including drugs & alcohol) which might impair vision.

NEVER operate the equipment with worn, damaged or missing parts. Use only genuine replacement parts.

NEVER proceed with works before completing a site risks assessment immediately before commencing work. Nominating the safe work exclusion zone radius for persons and animals as part of identifying risks and implementing controls.

NEVER allow minors to operate the equipment.

ALWAYS survey the work area before commencing operations. Check for potential hazards, eg. Electricity or communication cables etc.

ALWAYS ensure that the parent machine is secure and stable with it's engine switched off before carrying out any maintenance work.

ALWAYS ensure the hydraulic oil supply to the attachment is disconnected by uncoupling the hydraulic hose connectors before fitting, removing or adjusting the equipment

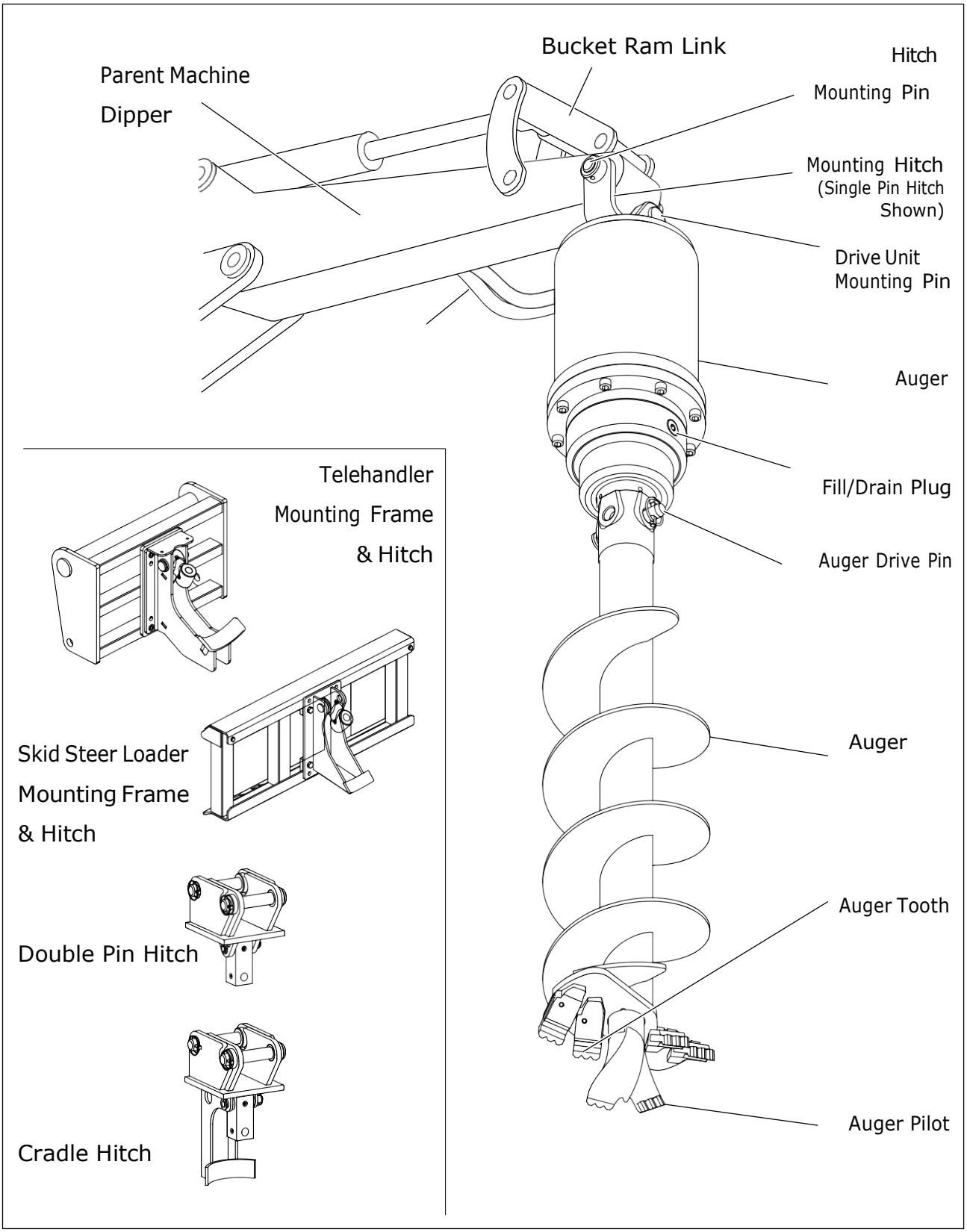
ALWAYS wear head protection and eye protection when working on the unit.
ALWAYS protect hands. Select appropriate when handling the equipment during fitting, removing or adjusting the unit.
ALWAYS protect feet. Wear approved safety boots.

ALWAYS follow the parent machine instructions regarding noise protection.

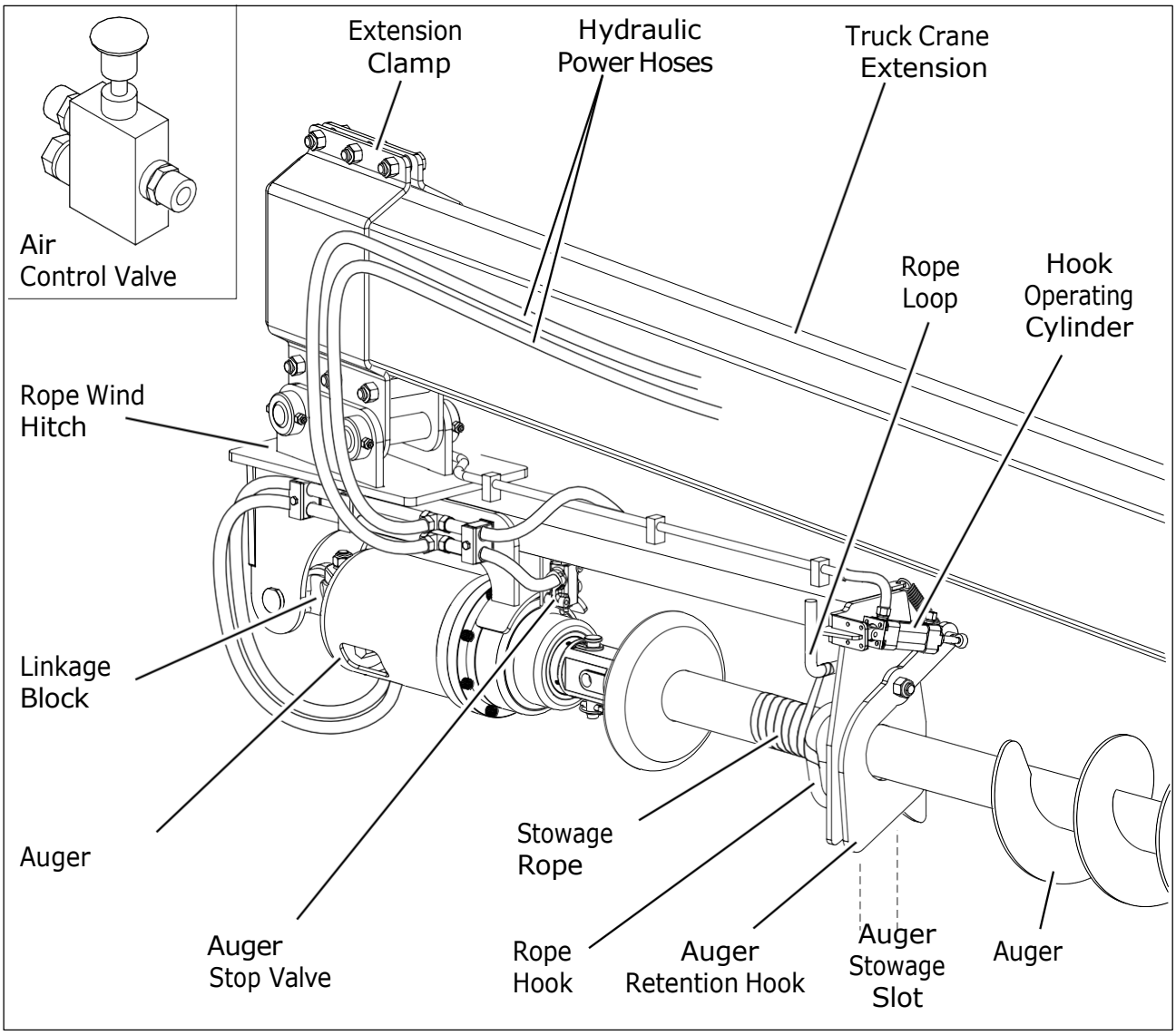
STAY ALERT. Should something break, come loose or fail to operate on your equipment, STOP WORK, lower equipment to the ground, shut off the engine and lock out hydraulic supply, inspect the machine and have repairs or adjustments made before resuming operation.

IDENTIFICATION

Typical Setup



Rope Wind Hitch Parts



MOUNTING - HITCH FITTING

Single Pin Hitch

SAFETY FIRST

ALWAYS work in pairs (2 skilled operatives) whenever Auger unit components are being assembled or disassembled from the parent machine. Always check the weight of the attachment and ensure you have the correct equipment for handling it.

ALWAYS check parent machine:

- Is in correct working order
- Is parked correctly on flat ground
- Has its hand brake **ON**, its hydraulic circuit locked out and its engine switched **OFF**.

Check that the mounting frame is of the correct model and type to fit the parent machine.
Ensure mounting frame and attachment points are clean before fitting.
Use suitably rated lifting equipment if required (see data plate for weight).

DIN 1284

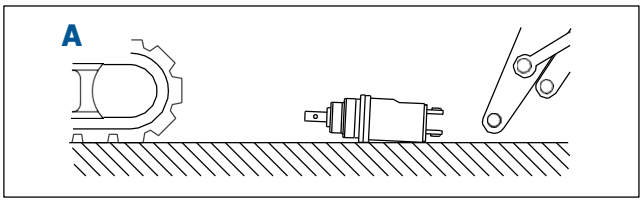
NOTE: The single Pin Hitch **CANNOT** be fitted to a quick Hitch.
FITTING Ensure all components are greased on assembly:

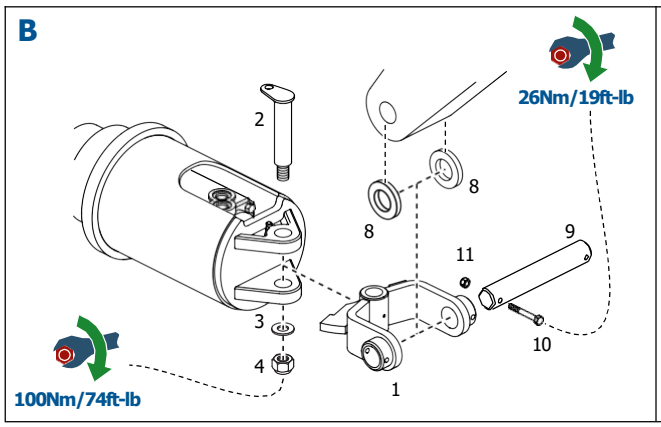
Set the Auger unit horizontally, with the output shaft towards the parent machine as in fig A.
There are two types of Pin for fitting the hood to the Mounting Hitch (1):

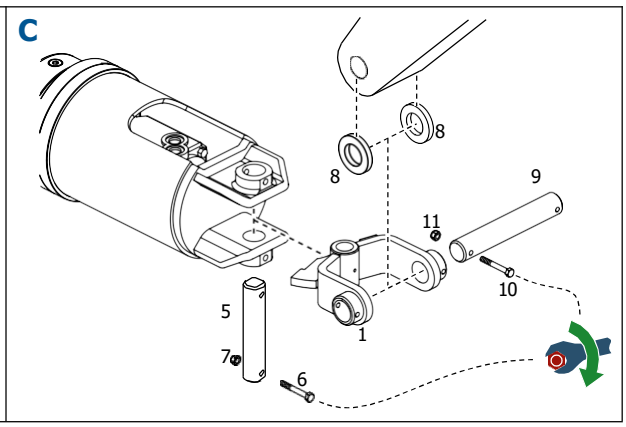
The **Threaded Mounting Pin** (item 2, fig B) Has a locating plate with a hole that fits over a peg in the hood ear. Align the Pin holes, fit the Pin (2), washer (3) and nylon insert nut (4) and torque to 100Nm/74ft-lb.

To fit the **Through-Bolted Mounting Pin** (item 5, fig C) Align the Pin holes and push the Pin (5) fully home taking care to line up the Through Bolt holes. At both ends of the Pin fit the Through Bolts (6) and Nylon Insert Nuts (7) and tighten to 26Nm/19ft-lb.

Fitting to the parent machine is with through-bolted Pins in all cases:
Align the Pin holes of the mounting Hitch (1) and parent machine. Align bolt location holes fit spacers (8) if required to centralise the Hitch. Push the Pin (9) fully home, taking care to line up the Through Bolt holes. Fit the Through Bolts (10) and Nylon Insert Nuts (11) and tighten to 26Nm/19ft-lb.
Once fitted, check the Auger swings freely in all directions.







Double Pin Hitch

SAFETY FIRST

ALWAYS work in pairs (2 skilled operatives) whenever Auger unit components are being assembled or disassembled from the parent machine. Always check the weight of the attachment and ensure you have the correct equipment for handling it

ALWAYS check parent machine:

- Is in correct working order
- Is parked correctly on flat ground
- Has its hand brake **ON**, its hydraulic circuit locked out and its engine switched **OFF**.

Check that the mounting frame is of the correct model and type to fit the parent machine.
Ensure mounting frame and attachment points are clean before fitting.
Use suitably rated lifting equipment if required (see data plate for weight).

DIN 1284

NOTE: If a quick Hitch is fitted to the parent machine, refer to the quick Hitch manufacturer's installation instructions for correct fitting procedure.
FITTING ensure all components are greased on assembly:

Set the Auger unit horizontally, with the output shaft towards the parent machine as in fig A.

There are two types of Pin for fitting the hood to the Mounting Hitch (1):

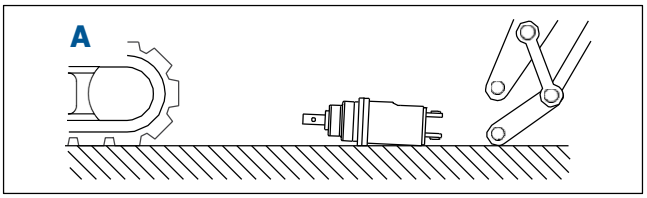
The **Threaded Mounting Pin** (item 2, fig B) has a locating plate with a hole that fits on a peg in the hood ear. Align the Pin holes, fit the Pin (2), washer (3) and nylon insert nut (4) and torque to 100Nm/74ft-lb.

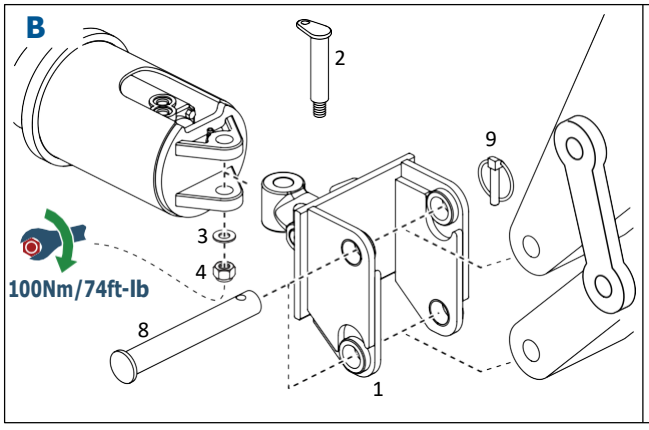
To fit the **Through-Bolted Mounting Pin** (item 5, fig C), align the Pin holes and push the Pin (5) fully home taking care to line up the Through Bolt holes. At both ends of the Pin fit the Through Bolts (6), Nylon Insert Nuts (7) and tighten to 26Nm/19ft-lb.

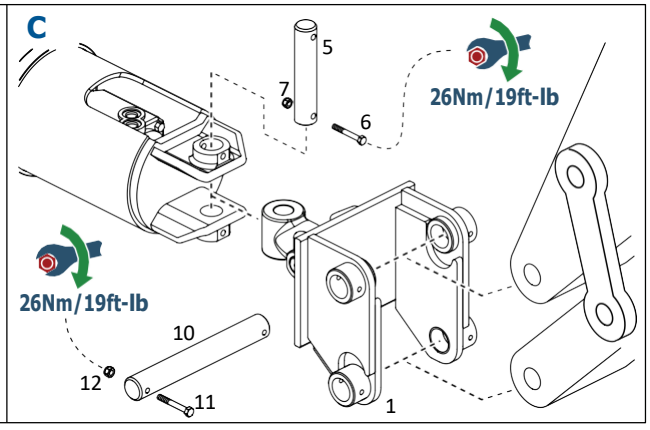
There are two types of Pin for fitting the Mounting Hitch (1) to the Parent Machine:

To attach a **Linch Pin** fitting (item 8, fig B), align the Pin holes, push the Pin (8) fully home and fit the linch Pin (9)

To fit the **Through-Bolted Mounting Pin** (10, fig C), align the Pin holes and push the Pin (10 fully home taking care to line up the Through Bolt holes, fit the Through Bolts (11) and Nylon Insert Nuts (12) and tighten to 26Nm/19ft-lb.







Cradle Hitch

SAFETY FIRST

ALWAYS work in pairs (2 skilled operatives) whenever Auger unit components are being assembled or disassembled from the parent machine. Always check the weight of the attachment and ensure you have the correct equipment for handling it.

ALWAYS check parent machine:

- Is in correct working order
- Is parked correctly on flat ground
- Has its hand brake **ON**, its hydraulic circuit locked out and its engine switched **OFF**.

Check that the mounting frame is of the correct model and type to fit the parent machine.
Ensure mounting frame and attachment points are clean before fitting.
Use suitably rated lifting equipment if required (see data plate for weight).

DIN 1284

NOTE: If a quick Hitch is fitted to the parent machine, refer to the quick Hitch manufacturer's installation instructions for correct fitting procedure.
FITTING Ensure all components are greased on assembly:

Set the Auger Unit horizontally in the cradle Hitch, with the output shaft towards the parent machine as in Fig A.

There are two types of Pin for fitting the Hood to the Mounting Hitch (1):

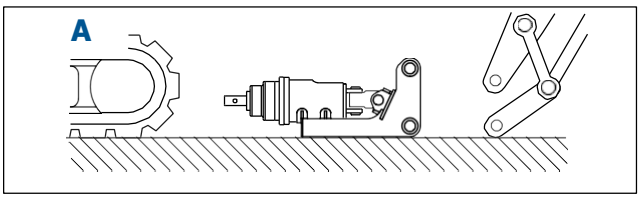
The **Threaded Mounting Pin** (item 2, Fig B) has a locating plate with a hole that fits on a peg in the hood ear. Align the Pin holes, fit the Pin (2), Washer (3) and Nylon Insert Nut (4) and torque to 100Nm/74ft-lb.

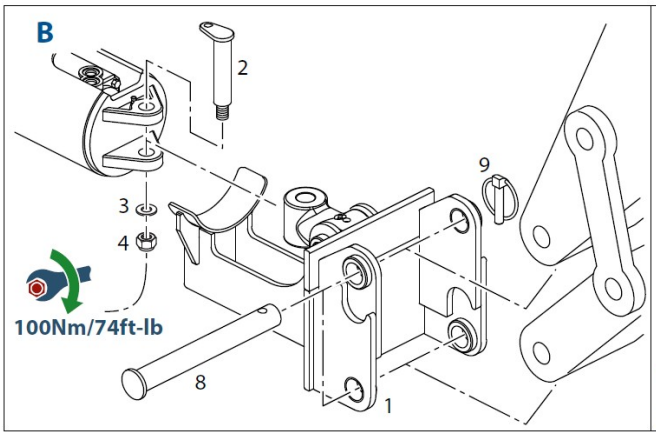
To fit the **Through-Bolted Mounting Pin** (item 5, Fig C), align the Pin holes and push the Pin (5) fully home taking care to line up the Through Bolt holes. At both ends of the Pin fit the Through Bolts (6) and Nylon Insert Nuts (7) and tighten to 26Nm/19ft-lb.

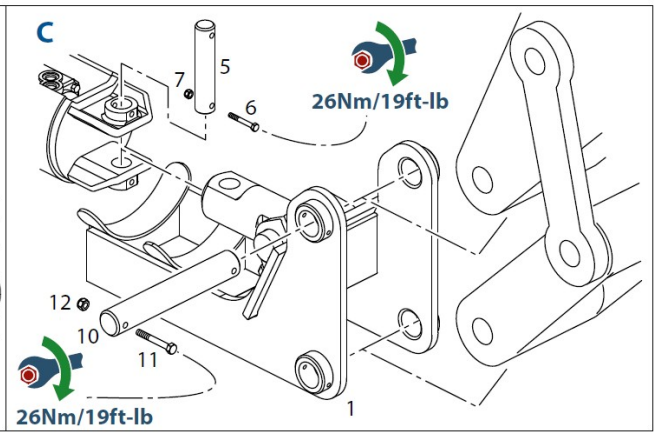
There are two types of Pin for fitting the Mounting Hitch (1) to the Parent Machine:

To attach a **Linch Pin** fitting (item 8, Fig B), align the Pin holes, push the Pin (8) fully home and fit the Linch Pin (9)

To fit the **Through-Bolted Mounting Pin** (item 10, Fig C), align the Pin holes and push the Pin (10) fully home taking care to line up the Through Bolt holes, fit the Through Bolts (11) and Nylon Insert Nuts (12) and tighten to 26Nm/19ft-lb.







Skid Steer Loader & Telehandler

SAFETY FIRST

ALWAYS work in pairs (2 skilled operatives) whenever Auger unit components are being assembled or disassembled from the parent machine. Always check the weight of the attachment and ensure you have the correct equipment for handling it.

ALWAYS check parent machine:

- Is in correct working order
- Is parked correctly on flat ground
- Has its hand brake **ON**, its hydraulic circuit locked out and its engine switched **OFF**.

Check that the mounting frame is of the correct model and type to fit the parent machine.
Ensure mounting frame and attachment points are clean before fitting.
Use suitably rated lifting equipment if required (see data plate for weight).

DIN 1284

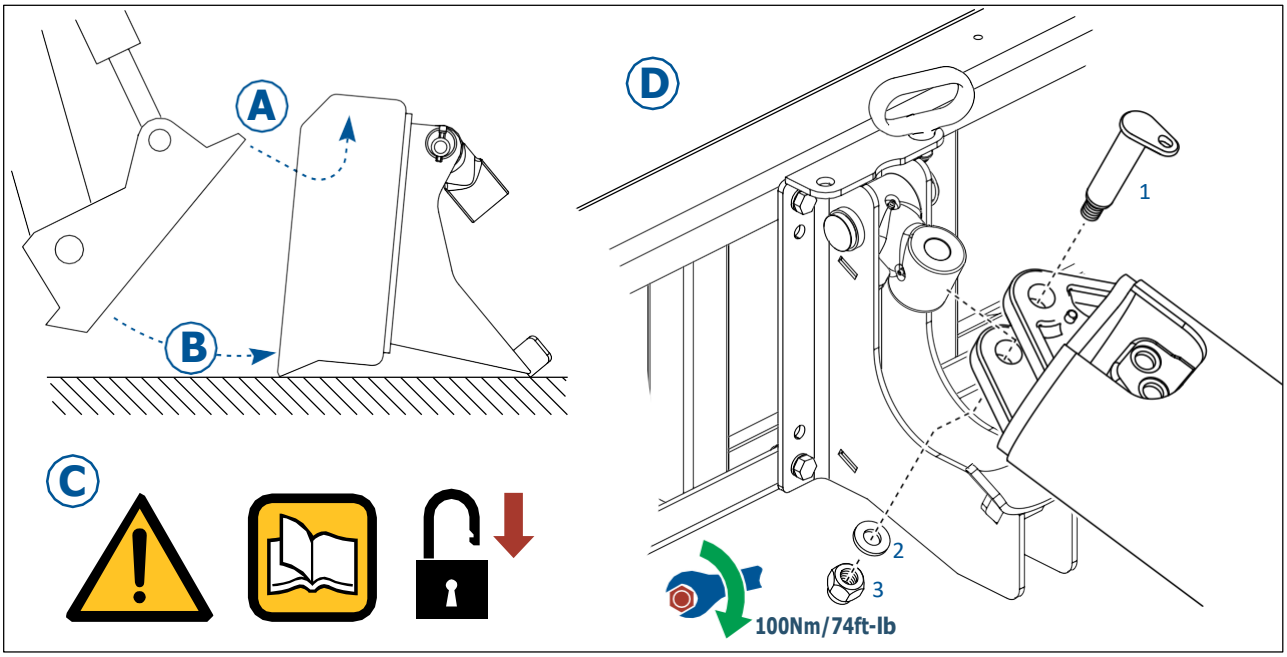
FITTING: Ensure all components are greased on assembly:

A Slot the top of the parent machine frame under the top edge of the Mounting Frame or Locating Hooks (refer to parent machine operator's manual).

B Swing the parent machine frame to the vertical position.

C Following the parent machine operator's manual, ensure that the Mounting Frame is securely locked in place.

D Working as a pair, lift the Auger in to place with the port opening facing upwards Align hood ears with the hole in the linkage block. Secure the Auger with the Pin (1), Washer (2) and Nylon Insert Nut (3) and torque to 100Nm/74ft-lb.



MOUNTING - TRUCK CRANE

Linkage Block

SAFETY FIRST

ALWAYS work in pairs (2 skilled operatives) whenever Auger unit components are being assembled or disassembled from the parent machine. Always check the weight of the attachment and ensure you have the correct equipment for handling it

ALWAYS check parent machine:

- Is in correct working order
- Is parked correctly on flat ground
- Has its hand brake **ON**, its hydraulic circuit locked out and its engine switched **OFF**.

Check that the mounting frame is of the correct model and type to fit the parent machine. Ensure mounting frame and attachment points are clean before fitting.
Use suitably rated lifting equipment if required (see data plate for weight).
On Truck Cranes, the Auger is attached via a Linkage Block.
The Linkage Block fits between the hook attachment ears.

DIN 1284 **FITTING** Ensure all components are greased on assembly:

Set the Auger Unit horizontally, with the output shaft towards the parent machine as in Fig A.

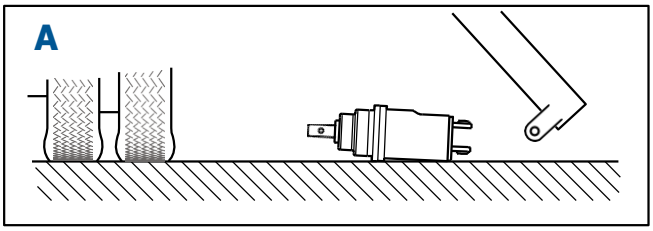
The Threaded Mounting Pin has a locating plate with a hole that fits on a peg in the hood ear Fig B. Align the Pin holes in the hood ears and Linkage Block (1), fit the Pin (2), Washer (3) and Nylon Insert Nut (4) and torque to 100Nm/74ft-lb.

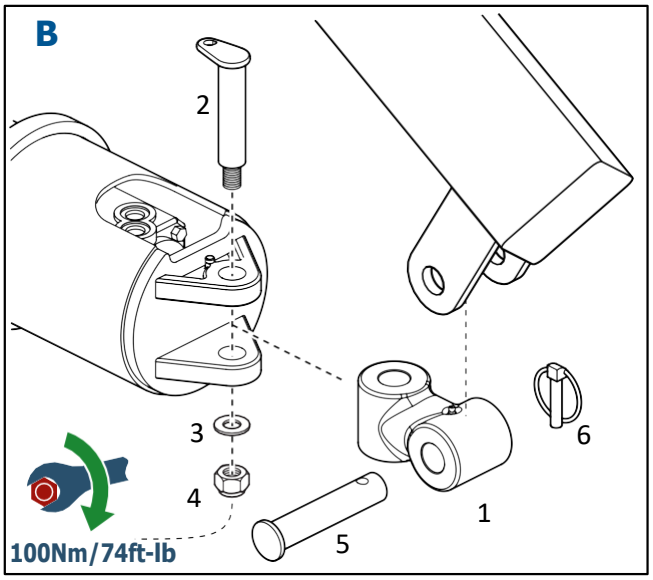
Align the holes in the Linkage Block (1) with the attachment ears on the parent machine Fig B.

Insert the mounting Pin (5) and spring clip (6)

Once fitted, check that the Linkage Block swings freely.

Mounting pionts may differ. (refer to parent machine operator's manual for further information).





Rope Wind Hitch

SAFETY FIRST

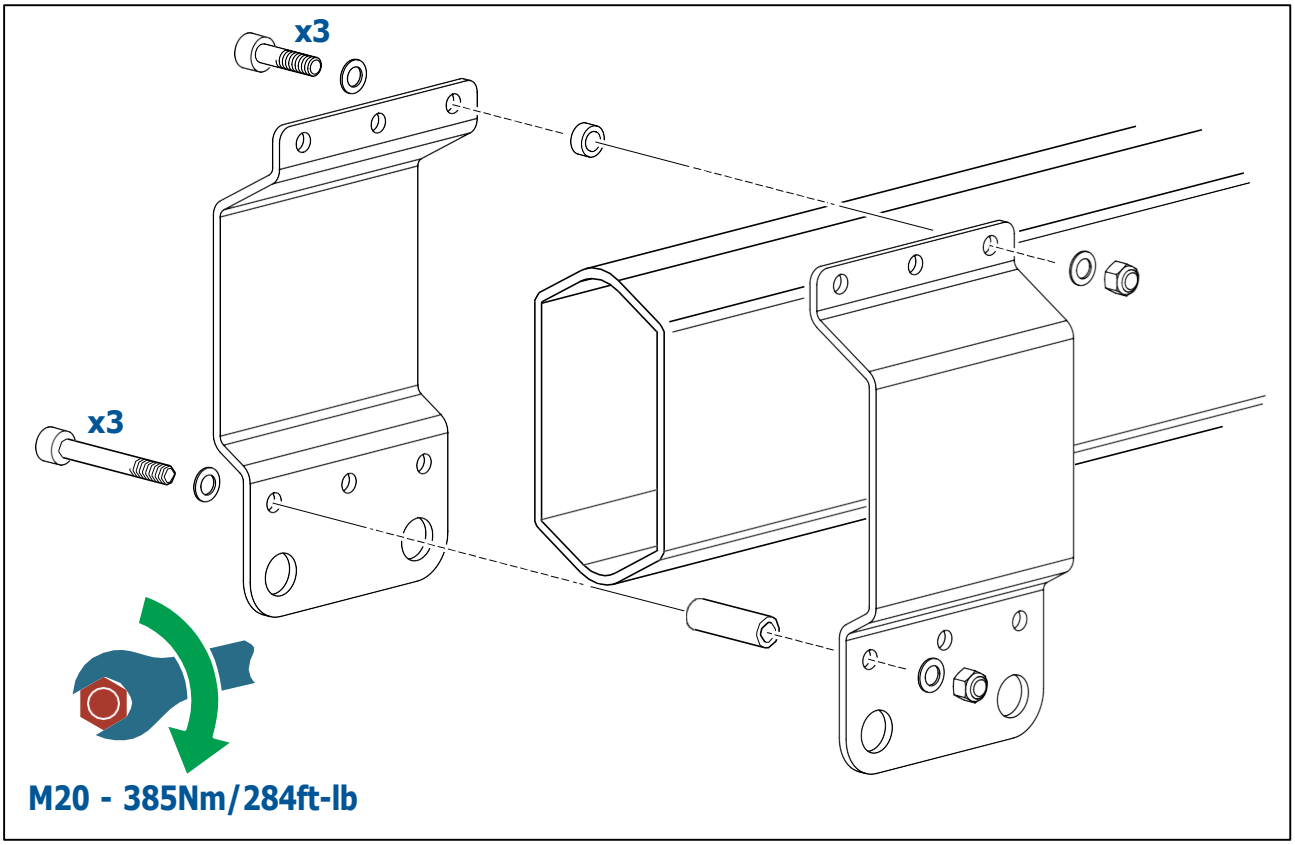
ALWAYS work in pairs (2 skilled operatives) whenever Auger unit components are being assembled or disassembled from the parent machine. Always check the weight of the attachment and ensure you have the correct equipment for handling it.

ALWAYS check parent machine:

- Is in correct working order
- Is parked correctly on flat ground
- Has its hand brake **ON**, its hydraulic circuit locked out and its engine switched **OFF**.

Check that the mounting Hitch is of the correct model and type to fit the parent machine.
Ensure mounting Hitch and attachment points are clean before fitting.
Use suitably rated lifting equipment if required (see data plate for weight).

Attach Extension Clamp
Dedicated extension clamps are supplied for each model of truck crane.
Fit the 2 halves of the boom clamp with M20 bolts, Nylon Insert Nuts, Washers & Spacers provided and torque to 385Nm/284ft-lb.

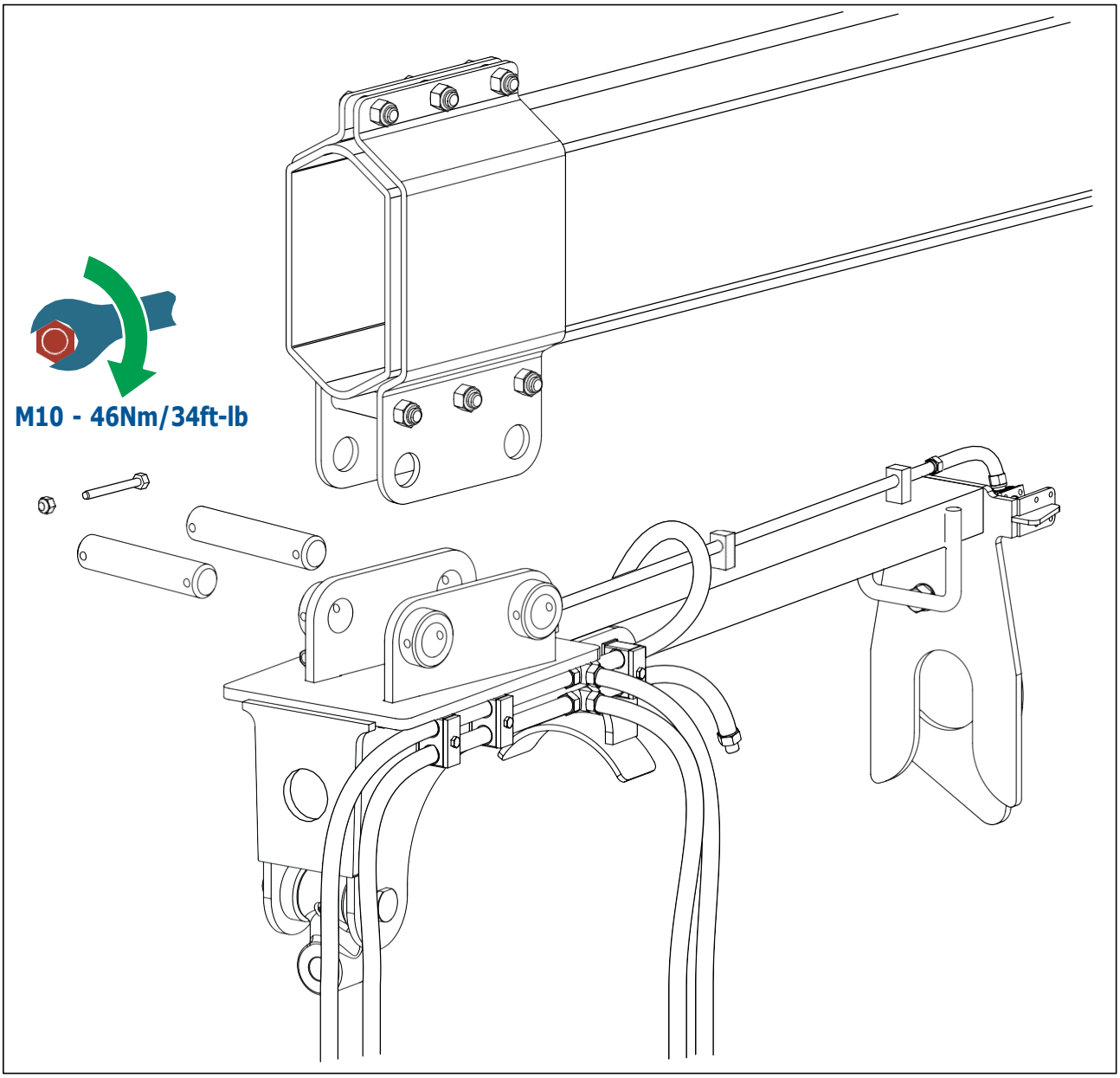


Rope Wind Hitch (continued)

Attach Rope Wind Hitch

Fit the hitch with the 2 pins and secure with M10 bolts & nuts. Tighten to 46Nm/34ft-lb.

The Rope wind Hitch is supplied with a Linkage Block fitted. Refer to Linkage Block section to fit Auger (see page 19).



MOUNTING - 150XHT / 250XHT

SAFETY FIRST

ALWAYS work with 3 skilled operatives whenever Auger unit components are being assembled or disassembled from the parent machine. Always check the weight of the attachment and ensure you have the correct equipment for handling it

ALWAYS check parent machine:

- Is in correct working order
- Is parked correctly on flat ground
- Has its hand brake **ON**, its hydraulic circuit locked out and its engine switched **OFF**

Check that the mounting frame is of the correct model and type to fit the parent machine.
Ensure mounting frame and attachment points are clean before fitting.
Use suitably rated lifting equipment if required (see data plate for weight).

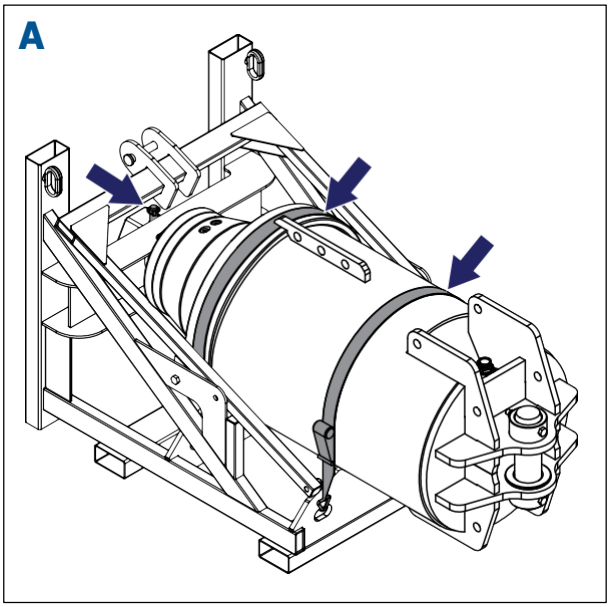
DIN 1284

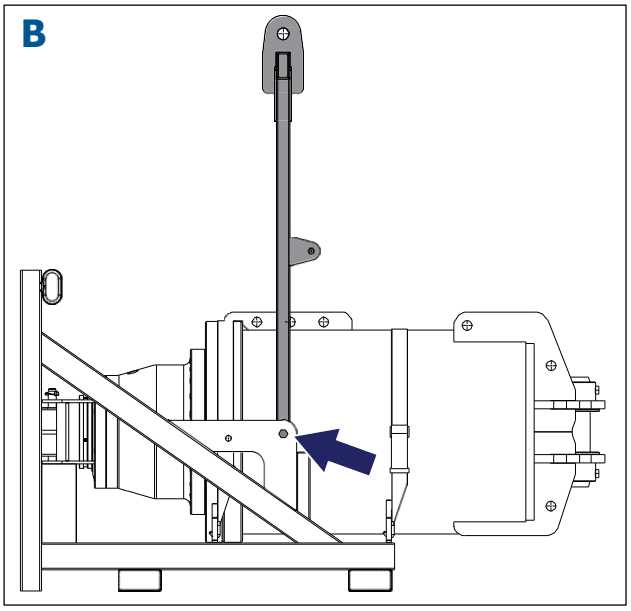
FITTING Ensure all components are greased on assembly:

Before moving the Cradle ensure the Auger is firmly secured to the Cradle by the Drive Pin and Ratchet Straps (Fig A).

Unscrew the 2 fixing bolts and remove Lifting Yoke from its transit position on the Cradle. Re-fit Yoke in to it's lifting position using the 2 fixing bolts (Fig B).

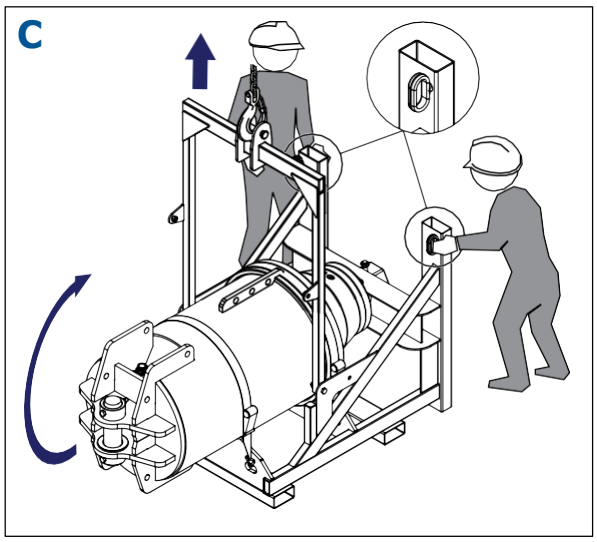
If the correct position is not used the Cradle and Drill will be unstable when lifted.



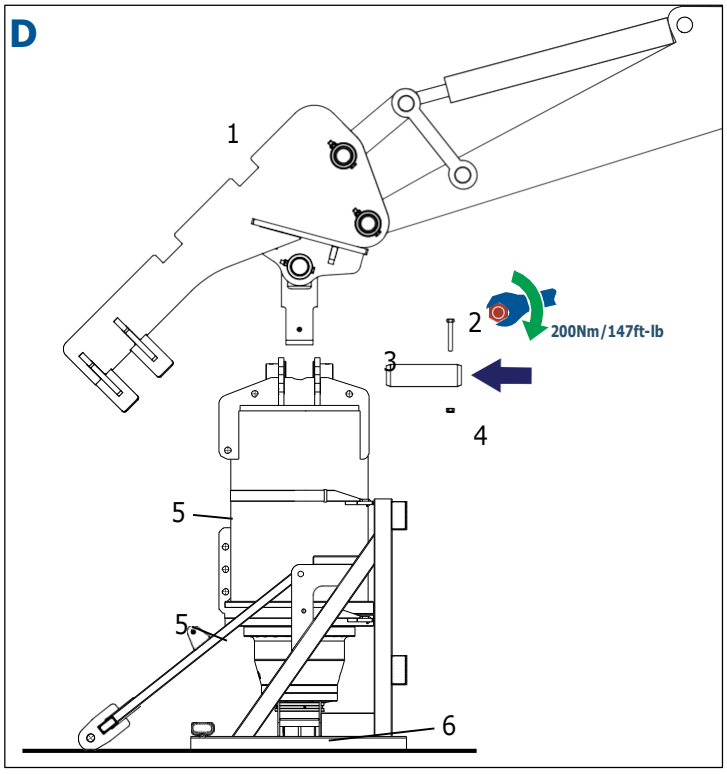


Mounting Unit from Cradle

Slowly lift the Cradle in to upright position, one person should be stood on either side of the Cradle holding the grab handles to steady the Cradle during the lift (Fig C).



- Fit Mounting Hitch to the parent machine (item 1, Fig D).
- Remove nuts and bolts from Hood Pin and remove Pin (items 2, 3, & 4 Fig D).
- Align the Pin holes on the Mounting Hitch and Hood. Push the Hood Pin fully home taking care to line up the bolt holes.
- Refit nuts and bolts at both ends of the Pin tighten to 200Nm/147ft-lb.
- Remove Drive Pin and Ratchet Straps, lift Auger off Cradle with parent machine (items 5 & 6, Fig D).



HYDRAULIC CONNECTIONS

WARNING:

Hydraulic fluid under pressure can penetrate the skin or eyes and cause serious personal injury, blindness or death. Fluid leaks under pressure may not be visible. Use a piece of card or wood to find leaks. **DO NOT** use your bare hands. Wear safety goggles to protect your eyes. If any fluid is injected into the skin, it **MUST** be surgically removed. Seek immediate medical attention.

All Digger King Auger Units require a 'flow' and 'return' of hydraulic oil from the parent machine's auxiliary hydraulic power supply to operate. The oil should be clean and free of contaminants such as water, dust and particulates. Digger King products require oil fluid cleanliness to meet or exceed: ISO Code 20/18/13 (ISO4406) to satisfy warranty requirements.
All gearboxes are reversible, but require the host machine to be fitted with a two-way flow auxiliary circuit. (Check with parent machine dealer for advice).

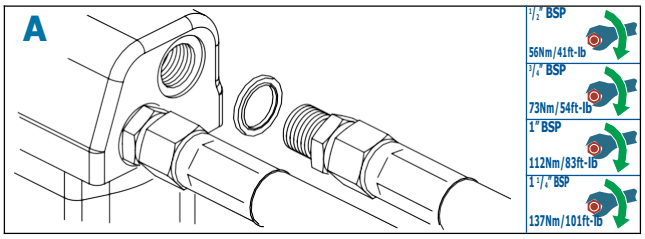
When fitting hydraulic hoses, ensure that they are tightened to the correct torque for the hose fittings (Fig A).

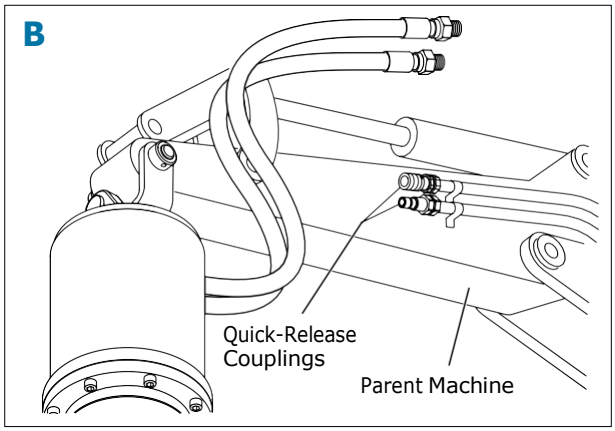
Quick Release Couplers are required for connection to the parent machine, but may not supplied with the unit. These can be sourced locally and should be compatible with the auxiliary hydraulic Quick Release Couplers on the parent machine (Figs B & C). The parent machine auxiliary hydraulic connections are normally located near the end of the loader arms, excavator dipper or truck crane booms.

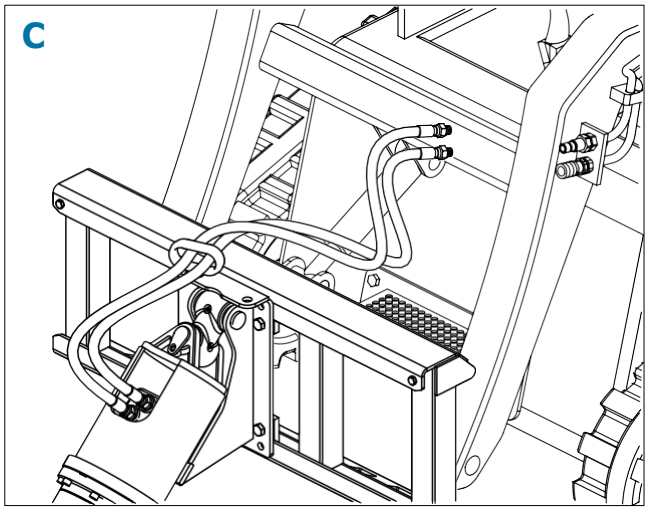
Ensure that the drilling rotation of the Auger Unit is clockwise.

It is critical that the supply of oil is within the stated ffow & pressure limits for the particular Auger;

Refer to the serial plate on the top of the Auger hood (see page 4).

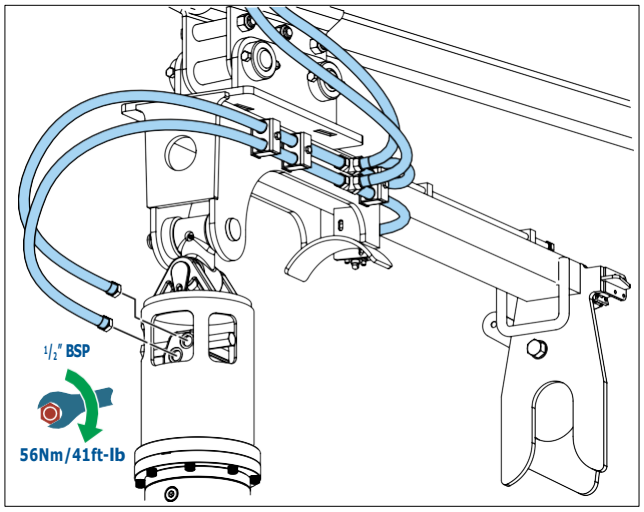






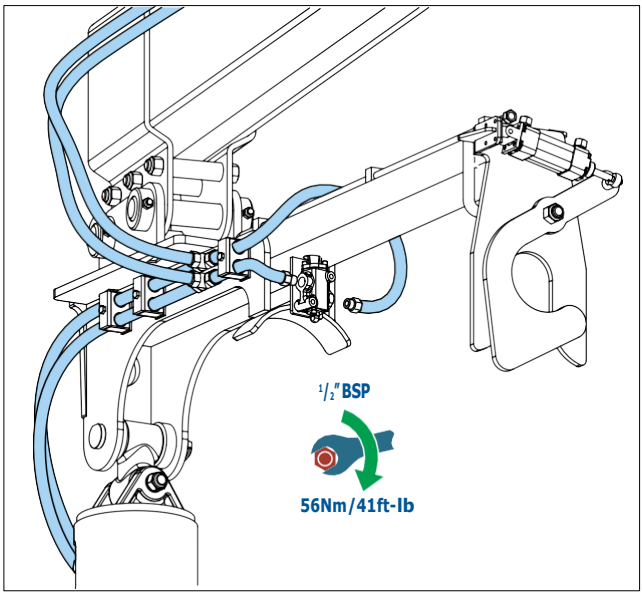
Rope Wind Hitch

Attach Hydraulic Hoses - Auger
Fit the hoses to the motor ports. Tighten to 56Nm/41ft-lb.



Attach Hoses - Auger Stop Valve
A hydraulic valve is fitted at the top of the rope wind hitch.

The purpose of the valve is to stop the rotation of the Auger when it reaches its stowed position.

This function is described in more detail on page 45.

Fit the hoses to the Auger Stop Valve. Tighten to 56Nm/41ft-lb.