BRADCO
BY PALADIN

OPERATOR'S MANUAL

TRENCHER
615

FOR
COMPACT TOOL CARRIERS
SMALL SKID STEER LOADERS
MINI EXCAVATORS

SERIAL NUMBER: _____

MODEL NUMBER: _____

Manual Number: OM627
Part Number: 75527
Rev. 7

800-456-7100 I www.paladinattachments.com 503 Gay Street, Delhi, IA 52223, United States of America

9089 7-27-18-10

TABLE OF CONTENTS

THIS PAGE
IS INTENTIONALLY
BLANK

PREFACE

GENERAL COMMENTS

Congratulations on the purchase of your new BRADCO product! This product was carefully designed and manufactured to give you many years of dependable service. Only minor maintenance (such as cleaning and lubricating) is required to keep it in top working condition. Be sure to observe all maintenance procedures and safety precautions in this manual and on any safety decals located on the product and on any equipment on which the attachment is mounted.

This manual has been designed to help you do a better, safer job. Read this manual carefully and become familiar with its contents.

WARNING! Never let anyone operate this unit without reading the "Safety Precautions" and "Operating Instructions" sections of this manual.
Always choose hard, level ground to park the vehicle on and set the brake so the unit cannot roll.

Unless noted otherwise, right and left sides are determined from the operator's control position when facing the attachment.

NOTE: The illustrations and data used in this manual were current (according to the information available to us) at the time of printing, however, we reserve the right to redesign and change the attachment as may be necessary without notification.

BEFORE OPERATION

The primary responsibility for safety with this equipment falls to the operator. Make sure the equipment is operated only by trained individuals that have read and understand this manual. If there is any portion of this manual or function you do not understand, contact your local authorized dealer or the manufacturer to obtain further assistance. Keep this manual available for reference. Provide the manual to any new owners and/or operators.

SAFETY ALERT SYMBOL

This is the "Safety Alert Symbol" used by this industry. This symbol is used to warn of possible injury. Be sure to read all warnings carefully. They are included for your safety and for the safety of others working with you.

SERVICE

Use only manufacturer replacement parts. Substitute parts may not meet the required standards.

Record the model and serial number of your unit on the cover of this manual. The parts department needs this information to insure that you receive the correct parts.

SOUND AND VIBRATION

Sound pressure levels and vibration data for this attachment are influenced by many different parameters: some items are listed below (not inclusive):

- prime mover type, age, condition, with or without cab enclosure and configuration
- operator training, behavior, stress level
- job site organization, working material condition, environment

Based on the uncertainty of the prime mover, operator, and job site, it is not possible to get precise machine and operator sound pressure levels or vibration levels for this attachment.

NOTE: A list of all Paladin Patents can be found at http://www.paladinattachments.com/patents.asp.

10344 7-31-13-4

THIS PAGE
IS INTENTIONALLY
BLANK

SAFETY STATEMENTS

THIS SYMBOL BY ITSELF OR WITH A WARNING WORD THROUGHOUT THIS MANUAL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY OR THE SAFETY OF OTHERS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.

DANGER — **THIS SIGNAL WORD INDICATES A HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, WILL RESULT IN DEATH OR SERIOUS INJURY.**

WARNING — **THIS SIGNAL WORD INDICATES A HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN DEATH OR SERIOUS INJURY.**

CAUTION — **THIS SIGNAL WORD INDICATES A HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN MINOR OR MODERATE INJURY.**

NOTICE — **NOTICE IS USED TO ADDRESS PRACTICES NOT RELATED TO PHYSICAL INJURY.**

GENERAL SAFETY PRECAUTIONS

WARNING!

READ MANUAL PRIOR TO INSTALLATION

Improper installation, operation, or maintenance of this equipment could result in serious injury or death. Operators and maintenance personnel should read this manual, as well as all manuals related to this equipment and the prime mover thoroughly before beginning installation, operation, or maintenance. **FOLLOW ALL SAFETY INSTRUCTIONS IN THIS MANUAL AND THE PRIME MOVER'S MANUAL(S).**

READ AND UNDERSTAND ALL SAFETY STATEMENTS

Read all safety decals and safety statements in all manuals prior to operating or working on this equipment. Know and obey all OSHA regulations, local laws, and other professional guidelines for your operation. Know and follow good work practices when assembling, maintaining, repairing, mounting, removing, or operating this equipment.

KNOW YOUR EQUIPMENT

Know your equipment's capabilities, dimensions, and operations before operating. Visually inspect your equipment before you start, and never operate equipment that is not in proper working order with all safety devices intact. Check all hardware to ensure it is tight. Make certain that all locking pins, latches, and connection devices are properly installed and secured. Remove and replace any damaged, fatigued, or excessively worn parts. Make certain all safety decals are in place and are legible. Keep decals clean, and replace them if they become worn or hard to read.

10338 5-10-16-2

GENERAL SAFETY PRECAUTIONS

WARNING! PROTECT AGAINST FLYING DEBRIS

Always wear proper safety glasses, goggles, or a face shield when driving pins in or out, or when any operation causes dust, flying debris, or any other hazardous material.

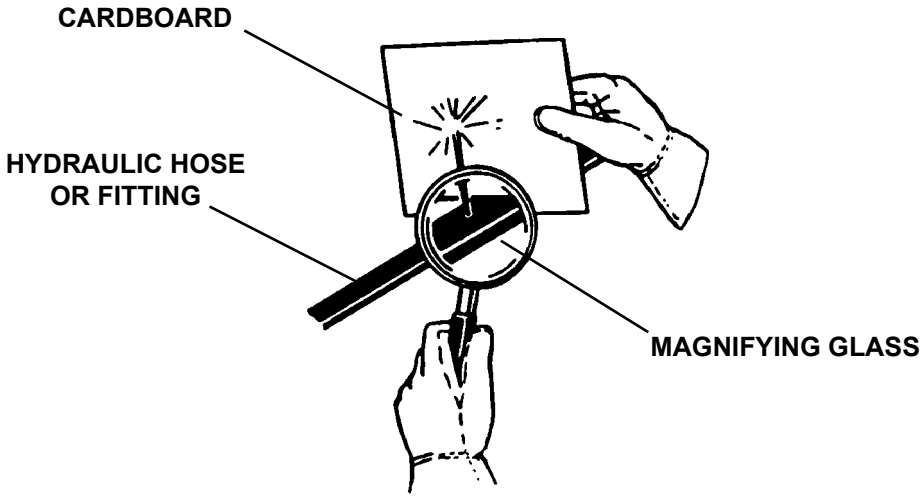
WARNING! LOWER OR SUPPORT RAISED EQUIPMENT

Do not work under raised booms without supporting them. Do not use support material made of concrete blocks, logs, buckets, barrels, or any other material that could suddenly collapse or shift positions. Make sure support material is solid, not decayed, warped, twisted, or tapered. Lower booms to ground level or on blocks. Lower booms and attachments to the ground before leaving the cab or operator's station.

WARNING! USE CARE WITH HYDRAULIC FLUID PRESSURE

Hydraulic fluid under pressure can penetrate the skin and cause serious injury or death. Hydraulic leaks under pressure may not be visible. Before connecting or disconnecting hydraulic hoses, read your prime mover's operator's manual for detailed instructions on connecting and disconnecting hydraulic hoses or fittings.

- Keep unprotected body parts, such as face, eyes, and arms as far away as possible from a suspected leak. Flesh injected with hydraulic fluid may develop gangrene or other permanent disabilities.
- If injured by injected fluid, see a doctor at once. If your doctor is not familiar with this type of injury, ask him to research it immediately to determine proper treatment.
- Wear safety glasses, protective clothing, and use a piece of cardboard or wood when searching for hydraulic leaks. **DO NOT USE YOUR HANDS! SEE ILLUSTRATION.**



GENERAL SAFETY PRECAUTIONS

WARNING!

DO NOT MODIFY MACHINE OR ATTACHMENTS

Modifications may weaken the integrity of the attachment and may impair the function, safety, life, and performance of the attachment. When making repairs, use only the manufacturer's genuine parts, following authorized instructions. Other parts may be substandard in fit and quality. Never modify any ROPS (Roll Over Protective Structure) or FOPS (Falling Object Protective Structure) equipment or device. Any modifications must be authorized in writing by the manufacturer.

WARNING!

SAFELY MAINTAIN AND REPAIR EQUIPMENT

- Do not wear loose clothing or any accessories that can catch in moving parts. If you have long hair, cover or secure it so that it does not become entangled in the equipment.
- Work on a level surface in a well-lit area.
- Use properly grounded electrical outlets and tools.
- Use the correct tools for the job at hand. Make sure they are in good condition for the task required.
- Wear the protective equipment specified by the tool manufacturer.

SAFELY OPERATE EQUIPMENT

Do not operate equipment until you are completely trained by a qualified operator in how to use the controls, know its capabilities, dimensions, and all safety requirements. See your machine's manual for these instructions.

- Keep all step plates, grab bars, pedals, and controls free of dirt, grease, debris, and oil.
- Never allow anyone to be around the equipment when it is operating.
- Do not allow riders on the attachment or the prime mover.
- Do not operate the equipment from anywhere other than the correct operator's position.
- Never leave equipment unattended with the engine running, or with this attachment in a raised position.
- Do not alter or remove any safety feature from the prime mover or this attachment.
- Know your work site safety rules as well as traffic rules and flow. When in doubt on any safety issue, contact your supervisor or safety coordinator for an explanation.

WARNING!

CALIFORNIA PROPOSITION 65 WARNING

This product may contain a chemical known to the state of California to cause cancer, or birth defects or other reproductive harm. www.P65Warnings.ca.gov

10340 7-16-18-2

EQUIPMENT SAFETY PRECAUTIONS

WARNING! KNOW WHERE UTILITIES ARE

Observe overhead electrical and other utility lines. Be sure equipment will clear them. When digging, call your local utilities for location of buried utility lines, gas, water, and sewer, as well as any other hazard you may encounter.

WARNING! EXPOSURE TO RESPIRABLE CRYSTALLINE SILICA DUST ALONG WITH OTHER HAZARDOUS DUSTS MAY CAUSE SERIOUS OR FATAL RESPIRATORY DISEASE.

It is recommended to use dust suppression, dust collection and if necessary personal protective equipment during the operation of any attachment that may cause high levels of dust.

WARNING! REMOVE PAINT BEFORE WELDING OR HEATING

Hazardous fumes/dust can be generated when paint is heated by welding, soldering or using a torch. Do all work outside or in a well ventilated area and dispose of paint and solvent properly. Remove paint before welding or heating.

When sanding or grinding paint, avoid breathing the dust. Wear an approved respirator. If you use solvent or paint stripper, remove stripper with soap and water before welding. Remove solvent or paint stripper containers and other flammable material from area. Allow fumes to disperse at least 15 minutes before welding or heating.

WARNING! END OF LIFE DISPOSAL

At the completion of the useful life of the unit, drain all fluids and dismantle by separating the different materials (rubber, steel, plastic, etc.). Follow all federal, state and local regulations for recycling and disposal of the fluid and components.

OPERATING THE TRENCHER

- Block off work area from bystanders, livestock, etc. Stop operation if bystanders or livestock enter the work area.
- Operate only from the operator's station.
- Never drop a boom with a rapidly moving digging chain on the ground. The force of the trencher may cause the vehicle to move suddenly and unexpectedly.
- Use caution when operating on slopes. The natural vibration will cause the unit to creep sideways downhill. Try to dig with trencher in a level position.
- Do not adjust relief valve settings. Incorrect valve settings could result in equipment damage and/or personal injury.
- An operator must not use drugs or alcohol, which can change his or her alertness or coordination. An operator taking prescription or over-the-counter drugs should seek medical advice on whether or not he or she can safely operate equipment.
- Before exiting the prime mover, lower the unit to the ground, turn off the prime mover's engine, remove the key and apply the brakes.
- Do not use the trencher crumber bar or chain as a step when climbing in or out of the prime mover.
- Be alert to changes in the work area. Watch out for bystanders, changes in weather and soil conditions.

EQUIPMENT SAFETY PRECAUTIONS

OPERATING THE TRENCHER

- Do not make sharp turns while trenching. Trencher could become wedged in the trench and damaged.
- Keep equipment and bystanders away from the trencher after it has been dug. The weight could cause a cave in.
- If chain becomes jammed, never attempt to free it while the unit is running. Stop the unit, shut off the engine and review the situation.

TRANSPORTING THE TRENCHER

- When driving on public roads use safety lights, reflectors, Slow Moving Vehicle signs etc., to prevent accidents. Check local government regulations that may affect you.
- Do not drive close to ditches, excavations, etc., cave in could result.
- Do not smoke when refueling the prime mover. Allow room in the fuel tank for expansion. Wipe up any spilled fuel. Secure cap tightly when done.
- When transporting keep the trencher as low as the terrain will allow.

MAINTAINING THE TRENCHER

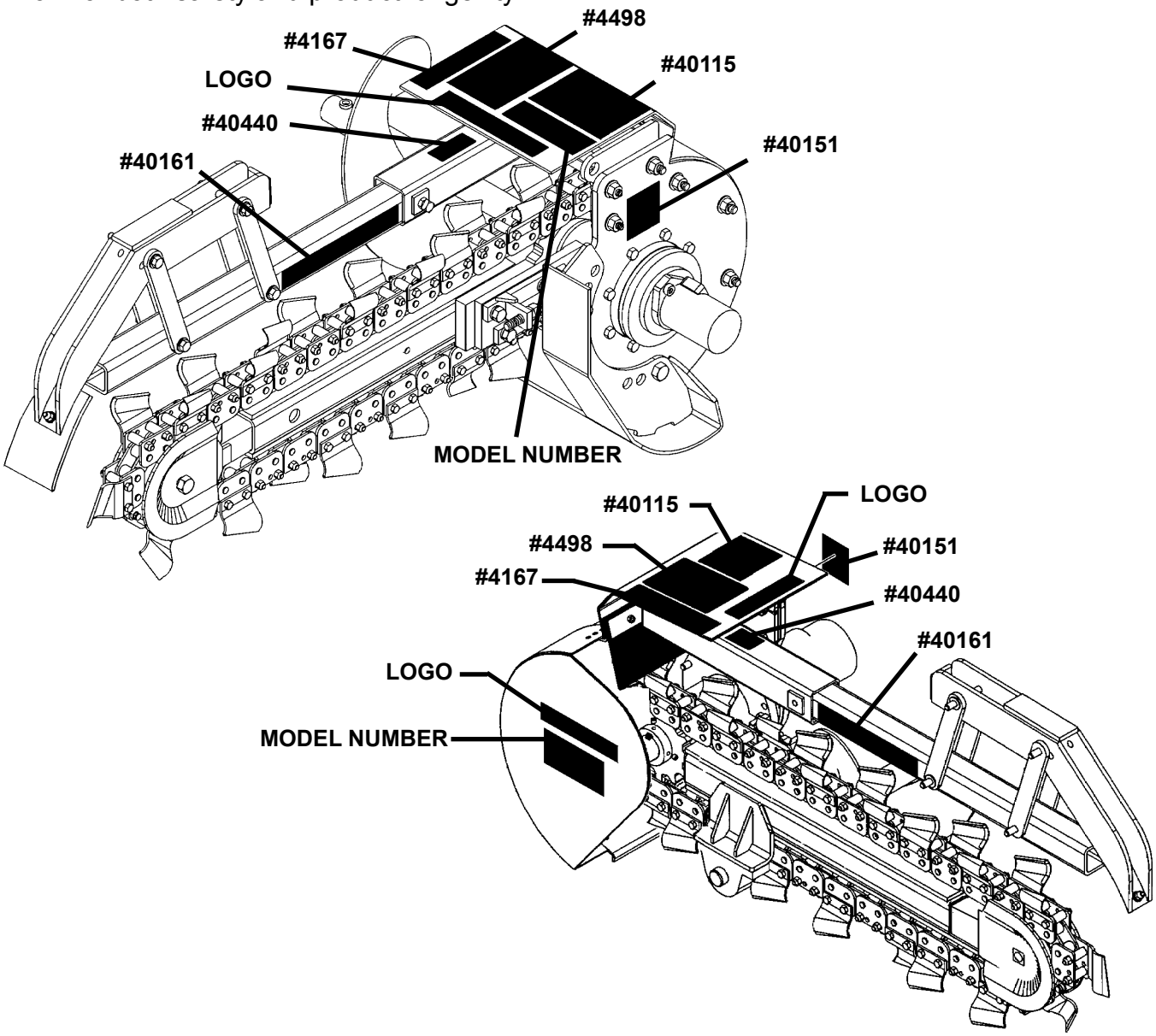
- Before performing maintenance, lower the attachment to the ground, turn off the engine, remove the key and apply the brakes.
- Never perform any work on the attachment unless you are authorized and qualified to do so. Always read the operator service manuals before any repair is made. After completing maintenance or repair, check for correct functioning of the backhoe. If not functioning properly, always tag “DO NOT OPERATE” until all problems are corrected.
- Worn, damaged, or illegible safety decals must be replaced. New safety decals can be ordered from BRADCO.
- Never make hydraulic repairs while the system is under pressure. Serious personal injury or death could result.
- Never work under a raised attachment.
- Replace all safety shields and guards when done performing maintenance. Do not operate trencher with protective equipment removed.

DECALS

DECAL PLACEMENT

GENERAL INFORMATION

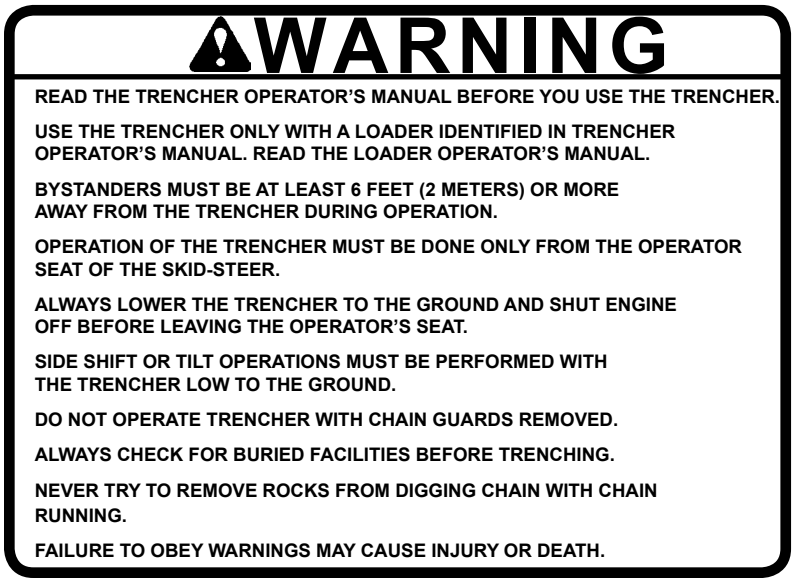
The diagram on this page shows the location of the decals used on your attachment. The decals are identified by their part numbers, with reductions of the actual decals located on the following page. Use this information to order replacements for lost or damaged decals. Be sure to read all decals before operating the attachment. They contain information you need to know for both safety and product longevity.



IMPORTANT: Keep all safety decals clean and legible. Replace all missing, illegible, or damaged safety decals. When replacing parts with safety decals attached, the safety decals must also be replaced.

REPLACING SAFETY DECALS: Clean the area of application with nonflammable solvent, then wash the same area with soap and water. Allow the surface to fully dry. Remove the backing from the safety decal, exposing the adhesive surface. Apply the safety decal to the position shown in the diagram above, and smooth out any bubbles.

DECALS



PART #40151
WARNING

PART #40161
STAND CLEAR

PART #40440
CALL BEFORE YOU DIG

PART #4167
NO STEP

PART #4498
DANGER

NOTE: CONTACT YOUR LOCAL DEALER FOR MODEL NUMBER AND LOGO DECALS.

9144 4-11-16-3

PREOPERATION

615 TRENCHER

PREPARING THE PRIME MOVER

WARNING! Never let anyone operate this loader and trencher without understanding all of the "Safety Precautions" and "Operating Instructions" located in this manual . Always choose hard, level ground to park the loader on, and set the brake so that the loader cannot roll.

Your loader **MUST** have auxiliary hydraulics to run the trencher. If your unit does not have an auxiliary hydraulic system, contact your dealer for information on availability.

The hydraulic kits for the Trencher include two hoses that connect the trencher to the auxiliary hydraulic system.

The trencher was designed to be easy to use and maintain. The trencher mounts to the universal toolbar/attachment plate of the loader. The mounting incorporates the quick attach mechanism of the loader for fast, easy mounting. **The 615F Footing Trencher requires a mounting kit with side shift capabilities.**

See your operators manual on "Installing an Attachment" for the correct installation procedure.

OPTIONS

Eventually you may wish to dig a trench of a depth or width other than what your unit was originally equipped to dig. The 615 trencher can be fitted with optional booms, digging chains, and crumber assemblies to allow you to dig a variety of different sized trenches with a tooth every station digging chain. The chart on this page will give you an idea of the different trench depths and widths a properly equipped unit is capable of digging. For more detailed information on trencher options see Digging Chain Sections of this manual.,

615 TRENCHER

TRENCH DEPTHS*	TRENCH WIDTHS				
24" (61.0cm) Depth		6.00"(15.2cm)	8.00"(20.3cm)	10.00"(25.4cm)	12.00"(30.5cm)
30" (76.2cm) Depth		6.00"(15.2cm)	8.00"(20.3cm)	10.00"(25.4cm)	NA
36" (91.4cm) Depth	4.50"(11.4cm)	6.00"(15.2cm)	8.00"(20.3cm)	NA	NA
48" (121.9cm) Depth	4.50"(11.4cm)	6.00"(15.2cm)	NA	NA	NA

*Trench depths are given with the digging boom at an optimum 65° digging angle and the skid shoe touching the ground. Trenches of various depths can be made by varying the digging angle and raising the trencher up higher. These methods are less efficient however.

615F FOOTING TRENCHER

TRENCH DEPTHS*	TRENCH WIDTHS			
24" (61.0cm) Depth	6.00"(15.2cm)	8.00"(20.3cm)	10.00"(25.4cm)	12.00"(30.5cm)
30" (76.2cm) Depth	6.00"(15.2cm)	8.00"(20.3cm)	10.00"(25.4cm)	NA

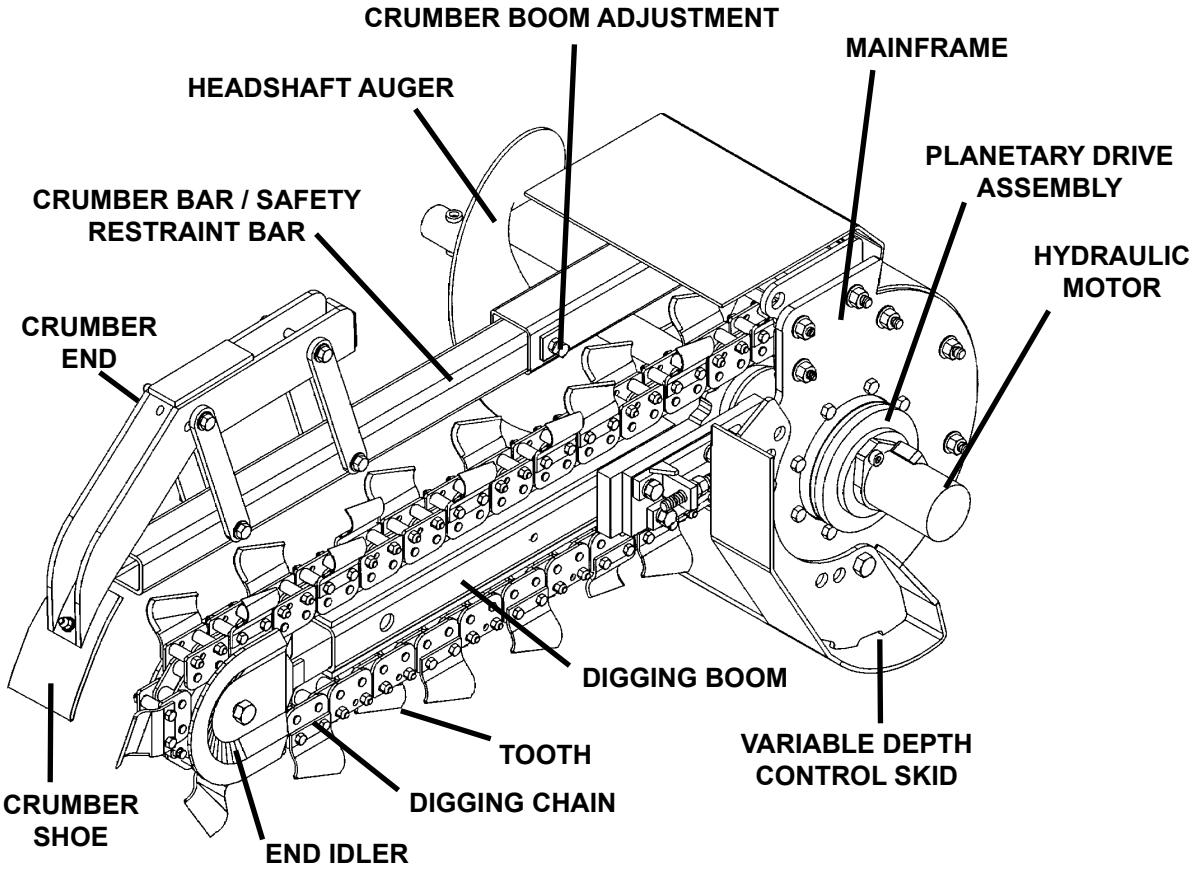
*Trench depths are given with the digging boom at an optimum 65° digging angle and the skid shoe touching the ground. Trenches of various depths can be made by varying the digging angle and raising the trencher up higher. These methods are less efficient however.

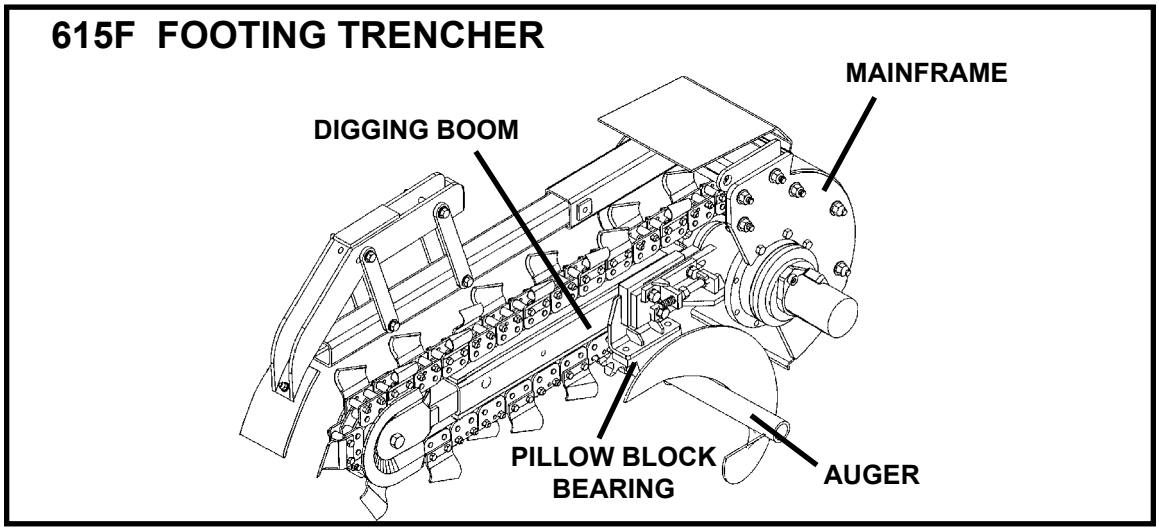
PREOPERATION

TRENCHER MAJOR COMPONENT NOMENCLATURE
615 TRENCHER

GENERAL INFORMATION

The purpose of this page is to acquaint you with the trencher and the names of its various components. This knowledge will be helpful when reading through this manual or when ordering service parts.





9082 9-10-14-2

INSTALLATION
615 TRENCHER

GENERAL INFORMATION

The following instructions will help you to mount your trencher on your loader. The trencher uses the quick attach mechanism for ease of installation.

Remember to read all safety warnings, decals and operating instructions before operating the attachment If there is any portion of this manual that you do not understand, contact your dealer.

INSTALLATION INSTRUCTIONS

1. Remove shipping banding.

2. Remove any existing attachments from the loader.

3. Following all standard safety practices and the instructions for installing an attachment in your prime mover operator's manual, install the trencher onto your loader.

NOTE: IT IS IMPORTANT TO MAKE SURE THE LOCKING MECHANISM ON YOUR QUICK ATTACH IS ENGAGED, THEREFORE LOCKING THE TRENCHER ONTO THE LOADER.

4 Lower the unit to the ground and remove the key.

5. Relieve pressure from the auxiliary hydraulic system. After making sure that there is not any foreign matter on the hydraulic couplers, connect the power and return hoses to the auxiliary hydraulic system of your prime mover. Route the hydraulic hoses in such a fashion to avoid pinching and chafing.

DISCONNECT INSTRUCTIONS

1. Lower the trencher to the ground.

2. Following Safety Shut Down Procedures; stop the engine and set the parking brake, relieve any pressure in the hydraulic lines.

3. Disconnect the power and return hoses from the auxiliary hydraulics.

4. Following all standard safety practices and the instructions for disconnecting an attachment in your prime mover operator's manual, disconnect the trencher from your prime mover.

5. Connect the hydraulic couplers on the attachment together to prevent contaminants from entering the hydraulic system. Store the hydraulic hoses off the ground.

OPERATING INSTRUCTIONS

CONTROLS
615 TRENCHER

GENERAL INFORMATION

Simplicity of operation is one of the key features our trencher. The trenchers themselves have no controls, just a few adjustments to check. It is important however, to be familiar with, and know the controls and adjustments on both the trencher and the loader. Such knowledge is crucial for safe, efficient operation of equipment. Take the time to learn how they operate now.

LOADER

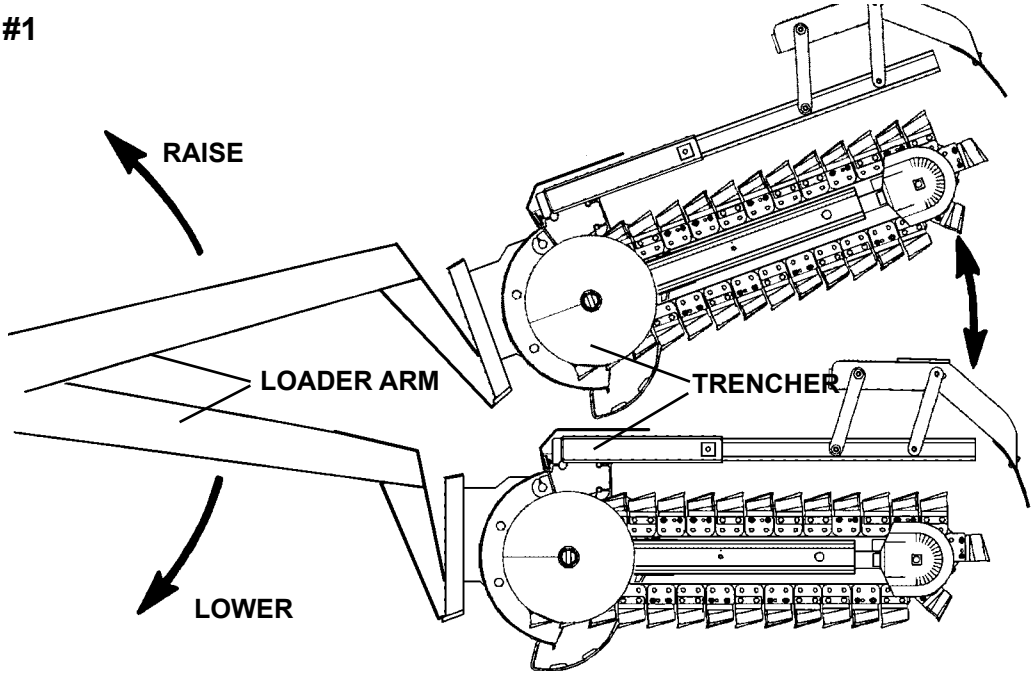
Your trencher mounts to the toolbar / attachment plate of the loader. Due to this arrangement, thorough knowledge of the loader controls is necessary for trencher operation. Read your loader owner's manual for information regarding operation before attempting to use the trencher.

RAISING / LOWERING THE TRENCHER

Raise / lower the trencher unit by raising / lowering the loader arms through their appropriate controls. (See Figure #1)

CAUTION! **Become aware of any overhead power or telephone lines, tree limbs, etc., that the raised trencher could come into contact with. Contact with electrical lines could cause serious injury or death.**

FIGURE #1



9109 9-5-14-2

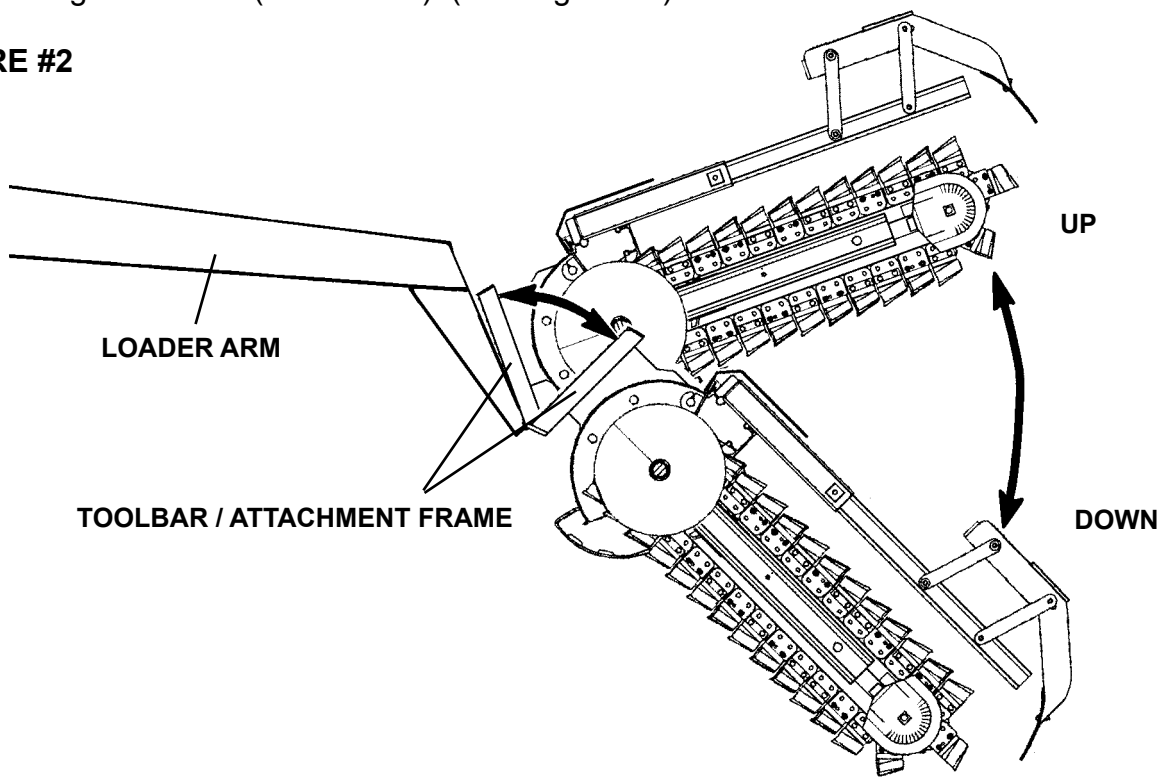
OPERATING INSTRUCTIONS

CONTROLS
615 TRENCHER

TILTING THE TRENCHER

Tilt the trencher unit up or down by tilting the toolbar / attachment plate back or forward through its loader control. We recommend a 60° digging angle for general trenching as measured from ground level (the horizon). (See Figure #2)

FIGURE #2



SIDE SHIFTING THE TRENCHER (IF EQUIPPED)

Some trencher mounts have an adjustment to shift the whole unit to the side.

To shift the unit sideways with Mounting Kit #15495: Lower the trencher until trencher frame is resting on the ground and remove the clevis pin. Counter-rotate the tires so that the loader moves in a sideways motion until the side shift holes are aligned and replace clevis pin.
IMPORTANT: Always reinstall the clevis pin to prevent the trencher from shifting sideways during operation.

NOTE: Slight shifting of the trencher from side to side may be necessary to align the side shift holes for reinstalling the clevis pin.

To shift the unit sideways with Mounting Kit #18696: Lower the trencher until trencher frame is resting on the ground and loosen the four capscrews securing the side shift bracket to the attachment frame. Counter-rotate the tires so that the loader moves in a sideways motion until the desired location is obtained. Tighten all hardware.
IMPORTANT: Always retighten all hardware to prevent the trencher from shifting sideways during operation.

OPERATING INSTRUCTIONS

CONTROLS
615 TRENCHER

STARTING AND STOPPING THE TRENCHER

Power to the trencher is supplied by oil from the loader auxiliary hydraulic system, which passes through the hydraulic hoses and into the trencher's hydraulic motor.

The trencher unit itself does not have an on/off control, but is operated by the loader's auxiliary hydraulic control mechanism. To start the trencher, engage the auxiliary hydraulics. (See your loader owner's manual.) To stop the trencher, disengage the auxiliary hydraulics.

TRENCHER SPEED CONTROL

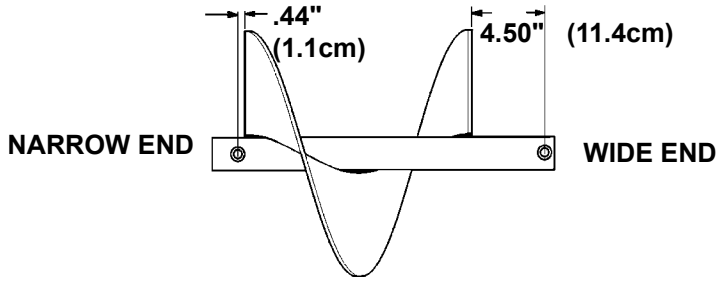
Again it may be noted that power to the trencher is supplied by the loader's auxiliary hydraulics. Trencher speed and power are determined by the flow of oil coming out of the auxiliary system, which in turn is dependent upon loader engine speed. To increase trencher speed, increase loader engine speed, to decrease trencher speed, decrease loader engine speed.

When first starting a trench, throttle down the engine to half throttle. This will reduce the shock to the loader and trencher when the digging teeth first contact the ground. Once the trench is started, set the engine back to full throttle.

For general use, operate the trencher with the loader engine at full throttle to provide maximum power to the auxiliary hydraulics and thus the trencher.

AUGER HEIGHT

The auger on the 615 trencher is double ended. When a 4.50" (11.4cm)- 6" (15.2cm) chain is used, the auger must be installed with the narrow end closest to the chain. When an 8" (20.3cm) - 12" (30.5cm) chain is used, the auger must be turned end for end and installed with the wide end closest to the chain. (If the auger is not installed correctly it will interfere with the digging chain causing damage to the unit.) The auger is bolted to the trencher mainframe, and has no separate adjustment for auger height. To raise the auger, raise the trencher as previously described. This will raise the auger, and thus leave the dirt or spoil closer to the trench.



Lowering the trencher will cause the auger to lower, moving the spoil away from the trench. The variable depth skid shoe on the 615 trencher will prevent the auger from being lowered to the extent that the auger itself starts to dig in the ground, as this will greatly reduce efficiency.

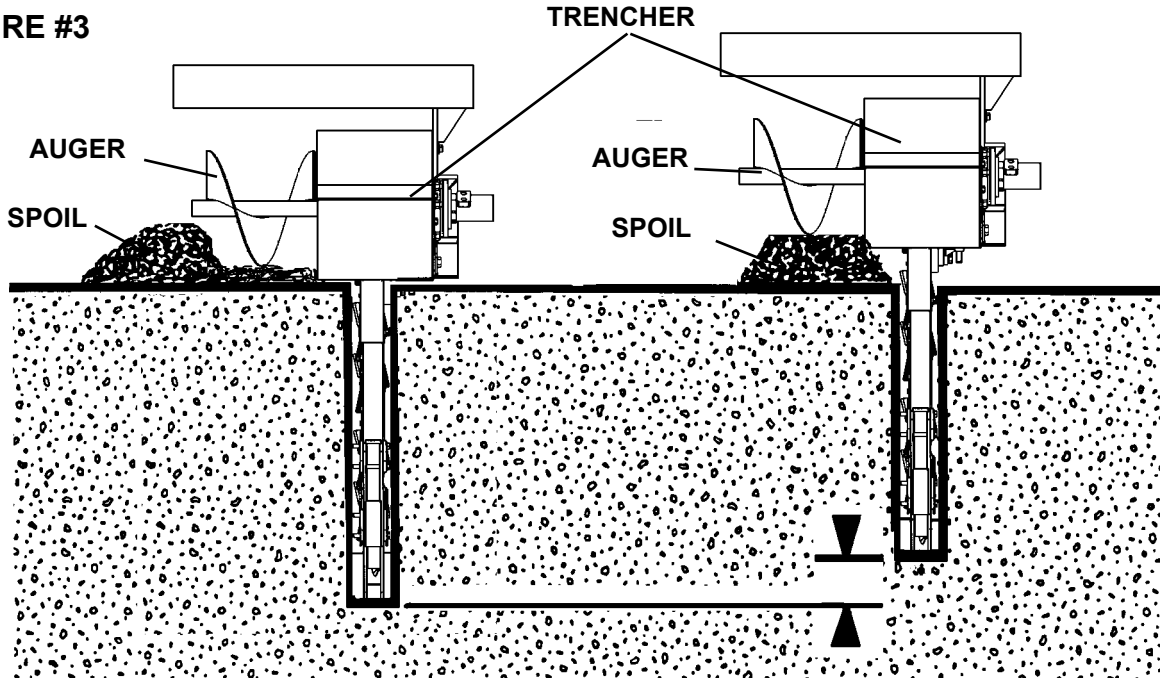
9111 9-5-14-2

OPERATING INSTRUCTIONS

CONTROLS
615 TRENCHER

It should be noted that raising or lowering the trencher to change the auger height will also change the trenching depth. You will need to compensate for this by changing the tilt of the trencher down or up accordingly. (See Figure #3)

FIGURE #3

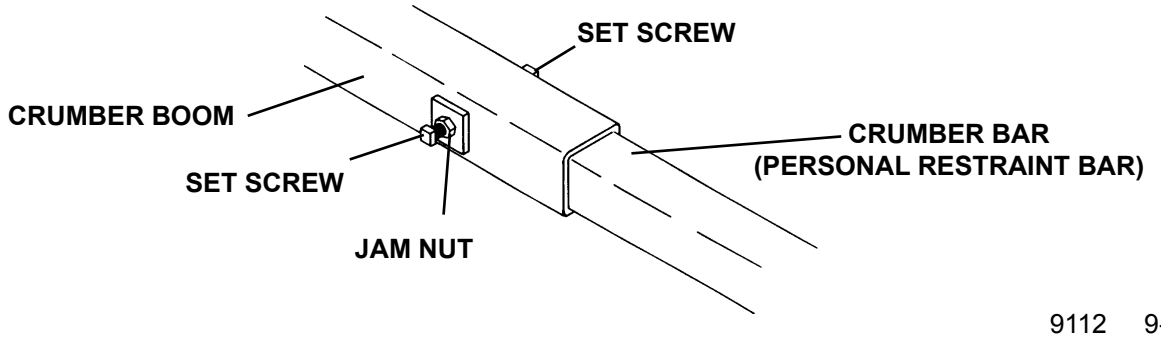


CRUMBER SHOE/BAR ADJUSTMENT

The purpose of the crumber shoe is to keep any loose dirt in the trench close enough to the digging chain so that the digging teeth can grab it and remove it. This will give you a cleaner finished trench. Your trencher has an adjustable crumber bar that can be lengthened or shortened to bring the crumber shoe closer or farther from the digging chain.

To adjust the crumber bar length, loosen the two jam nuts found at the end of the main-frame crumber bar tube. Slide the bar in or out to achieve the desired spacing (we suggest a distance of about 4" between crumber shoe and digging teeth for best overall results). Tighten the set screws and jam nuts when finished. (See Figure #4)

FIGURE #4



9112 9-5-14-2

OPERATING INSTRUCTIONS

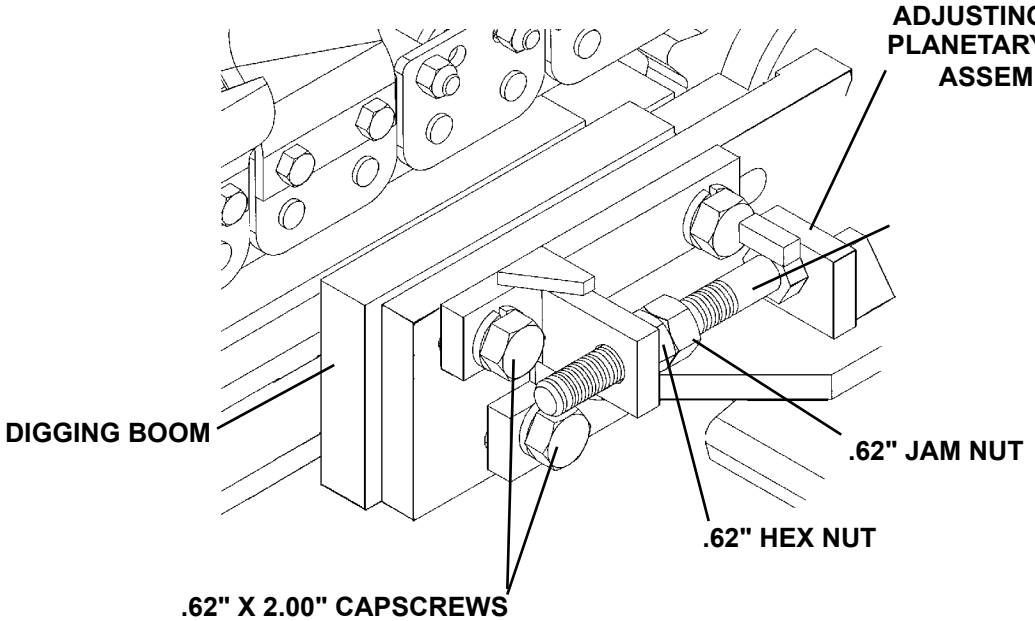
CONTROLS
615 TRENCHER

CHAIN TENSION ADJUSTMENT

When trenching, the digging chain tension should be adjusted so that the chain is as loose as possible, without jumping off the sprocket or idler wheel. To do this, an adjustment is provided on the digging boom.

These booms have an adjusting bolt on the left side at the trencher end of the boom. The head of the bolts are kept from rotating by stops welded onto the planetary drive assemblies. The adjusting bolt has a jam nut and a hex nut on it. To tighten the chain, loosen the .62" x 2.00" capscrews and "back off" the jam nut from the regular nuts on the adjustment bolt. Now turn the standard nuts off the adjusting bolt. This will push the boom out, and thus tighten the chain. Retighten the jam nut and the .62" x 2.00" capscrews when finished. **NOTE: Operating the trencher without properly tightening the .62" x 2.00" bolts will cause damage to the trencher boom and adjusting bolt.** To loosen the chain, follow the same procedure, except turn the hex nut onto the adjusting bolt. (See Figure #5)

FIGURE #5



CAUTION! Never work on or make adjustments to any part of the trencher, while the unit is running. You could get caught in the digging teeth, which could cause severe injury or death.

It is common for your trencher to need its digging chain tightened after the first 10 to 20 minutes of operation, as the chain and sprocket seat themselves.

9113 9-5-14-2

OPERATING INSTRUCTIONS

CONTROLS
615 TRENCHER

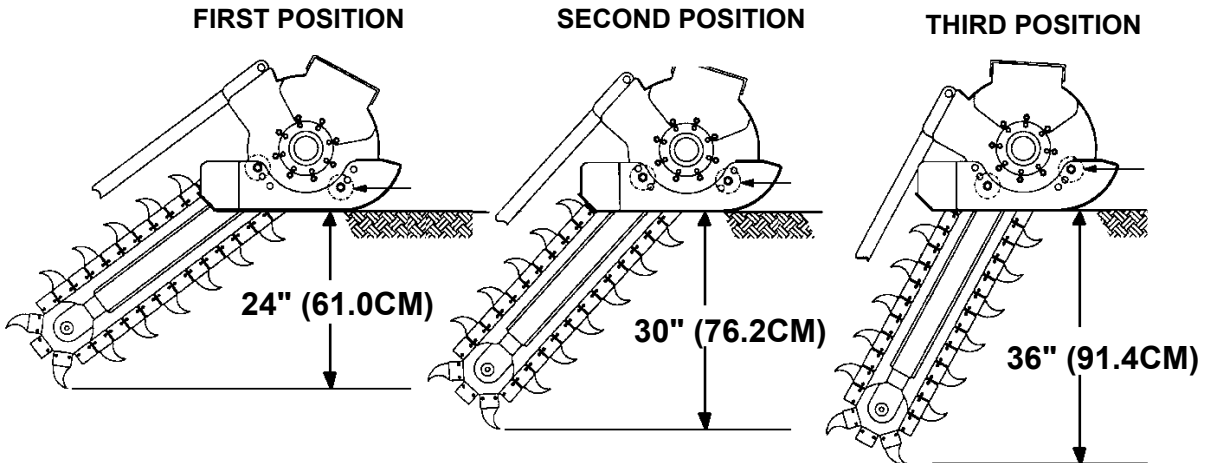
VARIABLE DEPTH CONTROL SKID ADJUSTMENT

The Variable Depth Control (VDC) Skid is used to control the trench depth ,by maintaining one of three set angles. For example, by changing the position of the VDC skid with a 36" (91.4cm) boom you can change the depth of your trench from 24" (61.0cm) to 30" (76.2cm) to 36" (91.4cm) and still move the spoil away from the trench.

To adjust the trench depth on your trencher, you will need to remove the two 75" bolts that secure the VDC skid to the trencher mainframe. Remove the VDC skid and rotate it until the holes line up for the trench depth that you require. Reinstall the .75" bolts and deformed lock nuts, securing the VDC skid to the mainframe. See Figure #6

FIGURE #6

36" (91.4CM) BOOM WITH THE VARIABLE DEPTH CONTROL (VDC) SKID SET TO:



OPERATING INSTRUCTIONS

OPERATING TECHNIQUES
615 TRENCHER

INTENDED USE: This unit is designed to dig holes and trenches up to the depth and width of your digging chain. Use in any other way is considered contrary to the intended use.

GENERAL INFORMATION

The design of your trencher makes it relatively simple to use. With the help of the information in this section and a little practice, you should become proficient in its operation in no time. Observe the following points to obtain the best results with the least amount of wear on the machine. Read the "Safety Precautions" section of this manual before you begin.

CAUTION! **Operate the trencher only from the operator's station.**

Do not operate a skid-steer without proper ROPS (Roll-Over-Protective-Structure), seat belt, and hard hat.

Pay attention to the job at hand. Be alert to the possibilities of others in the work area.

Never let anyone work around, or perform maintenance on the trencher while it is running.

Always use a crumber assembly on the trencher.

BEFORE YOU START TRENCHING

Before any excavating is started, plan out the job first. Various things need to be considered prior to the actual trenching. The operator should inspect the job site and take notice of any potential hazards in the area. He should have a complete understanding of the task he is expected to performed. Figure out what will be done with the spoil (excavated soil). Will it be used to backfill or be trucked out? What are the soil conditions like? Will you have to work around others? Etc.

WARNING! **Check the prospective trenching area for hidden utility lines before operating the trencher. Contacting a utility line with the trencher could cause electrocution, resulting in death. Call all utility companies and have them plot out all their lines first. If you damage a utility line, shut off the equipment at once and contact the affected utility immediately.**

Once you have become familiar with the job site and understand the job requirements, it is time to set up for the actual trenching. Check the soil type (hard, soft, rocky, etc.) and the trenching requirements (how deep, wide, etc.). Install the proper digging chain, boom, crumber bar, and shoe for the job at hand. Information on chains, booms, crumber bars, and shoes may be found in this manual.

9116 9-5-14-2

OPERATING INSTRUCTIONS

OPERATING TECHNIQUES
615 TRENCHER

If equipped with a sideshift mount, locate the trencher on the mount with the side shift mechanism (as explained earlier in this manual) where it will be most efficient and easy to use.

Adjust the variable depth control (VDC) skid to obtain the desired depth and angle for the job at hand (as explained earlier in this section).

Check digging chain tension and crumber bar and shoe adjustments (as explained earlier in this section).

Mark off the area to be trenched out. This can be done with powdered lime, chalk, or a guide string and stakes. Block off the area from all bystanders if possible.

STARTING THE TRENCH

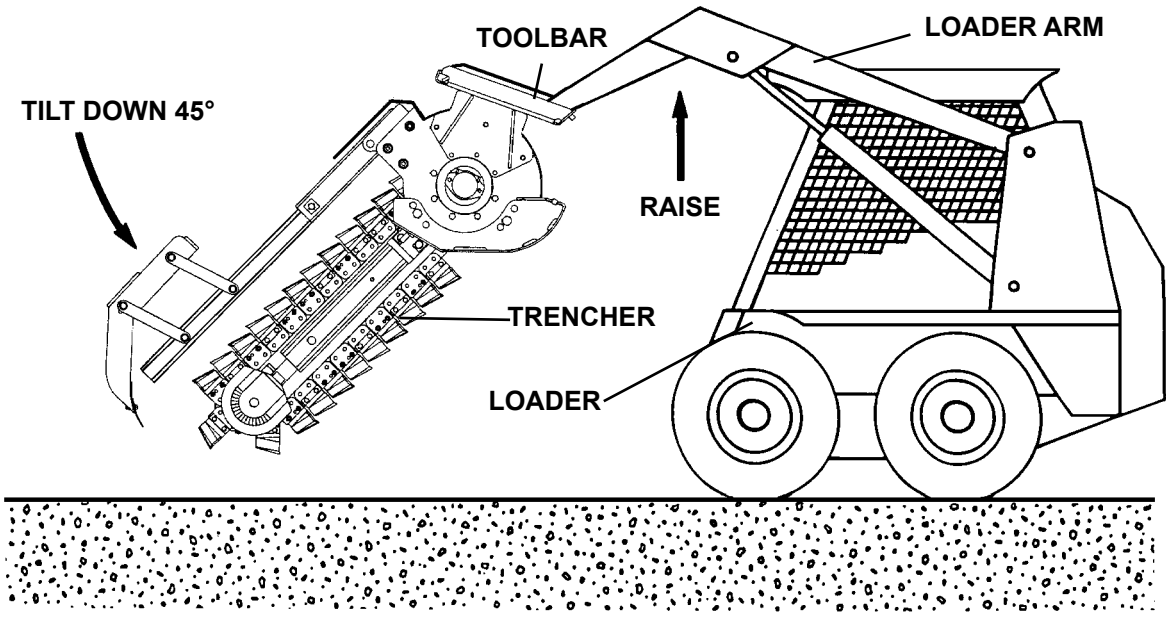
Position the loader with the trencher boom directly over the center of the trench layout. It will take about 4' (121.9cm) of trenching before the trencher will be able to operate at the desired level, so plan for this and position the trencher about 4' (121.9cm) behind where you want the actual trench to start.

NOTE: The loader is driven in <u>reverse</u> when trenching. You cannot trench driving forward.

Raise the trencher with the loader arms and tilt the trencher at a 45° angle. (See Figure #6) Position the unit so that the digging teeth are just above ground level.

Set the loader throttle at half speed. Start the digging chain by engaging the auxiliary hydraulic system.

FIGURE #6



9117 9-5-14-2

OPERATING INSTRUCTIONS

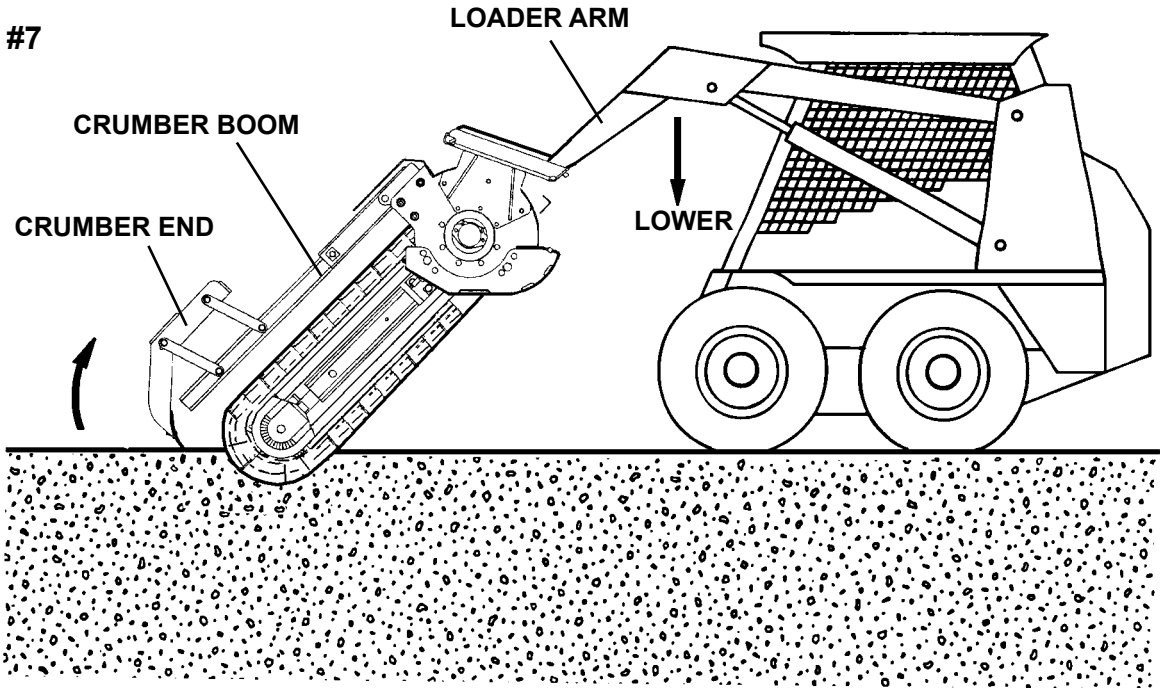
OPERATING TECHNIQUES
615 TRENCHER

CAUTION! **When lowering a moving digging chain to the ground, the force of the teeth grabbing the ground will try to pull the trencher suddenly forward. Be prepared. Have the brake set to help counteract the force.**

Slowly lower the digging chain into the ground to start the trench. Do this by lowering the trencher with the loader arms. Continue lowering the unit until the crumber end rolls all the way back on the crumber bar. (See Figure #7)

NOTICE: After the crumber end has rolled all the way back, do not lower the trencher any farther without moving the loader in reverse. Failure to do so could result in bending of the crumber boom, which is not covered by warranty.

FIGURE #7



Once the crumber end has "bottomed out", begin slowly creeping the loader in reverse while continuing to lower the loader arms. When nearing the required depth, stop lowering and tilt the trencher to a 60° to 65° angle (third position on the VDC skid). A 60° - 65° angle works best for general trenching. (See Figure #8)

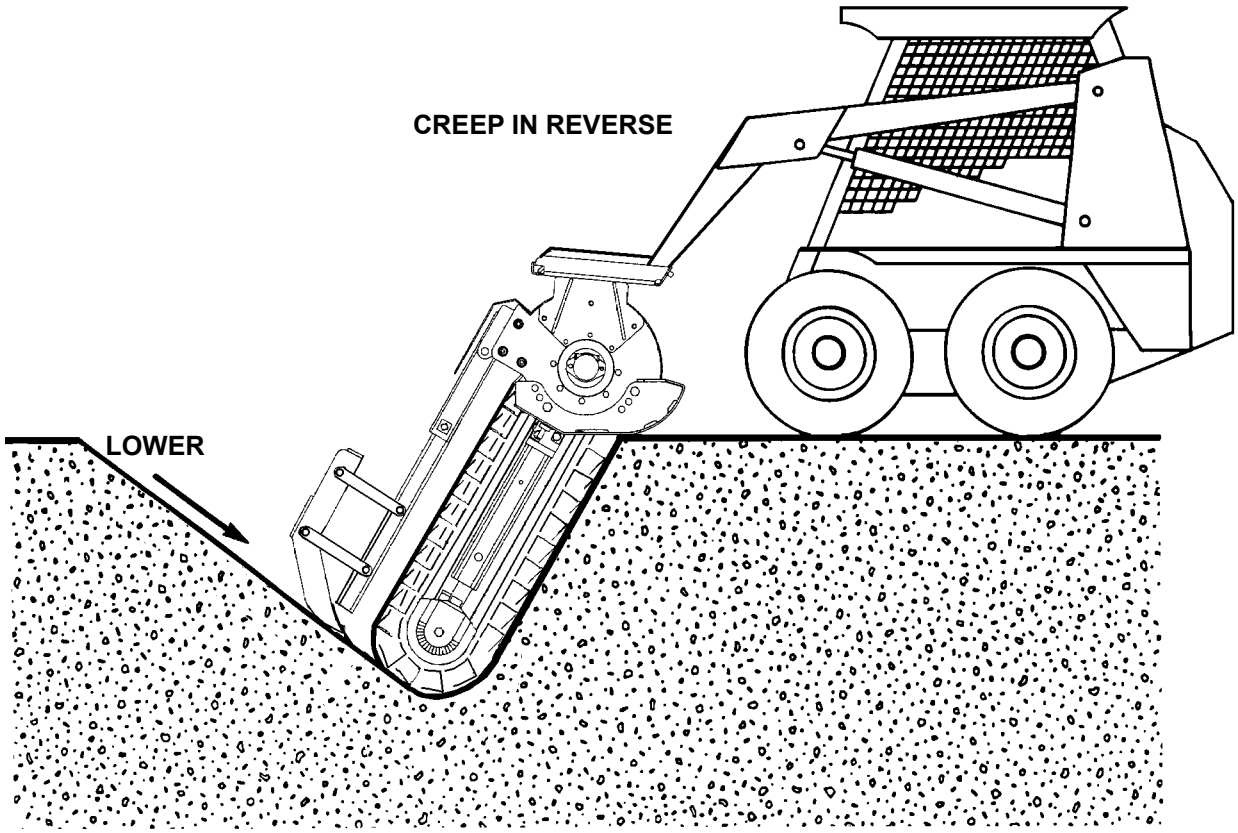
WARNING! **Be alert to what is happening around you. Look behind you before reversing the loader to trench. Be aware of any person or thing in the path of the loader. Observe any terrain changes, such as drop-offs or soft ground.**

9118 9-5-14-2

OPERATING INSTRUCTIONS

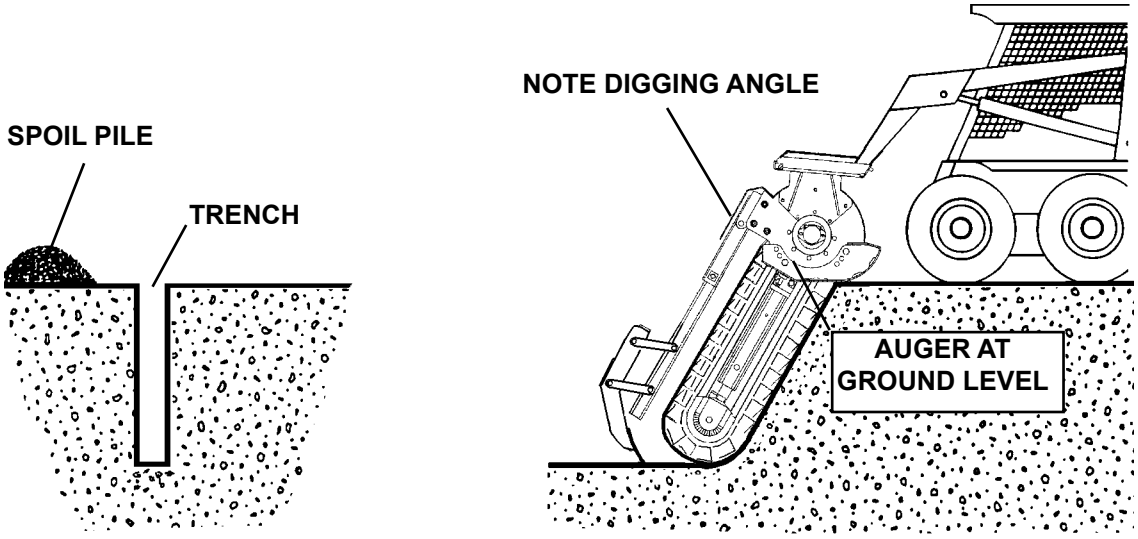
OPERATING TECHNIQUES
615 TRENCHER

FIGURE #8



When trenching, remember to keep in mind the spoil placement. Position the trencher so that the auger floats at ground level to move spoil away from the trench. (See Figure #9)

FIGURE #9



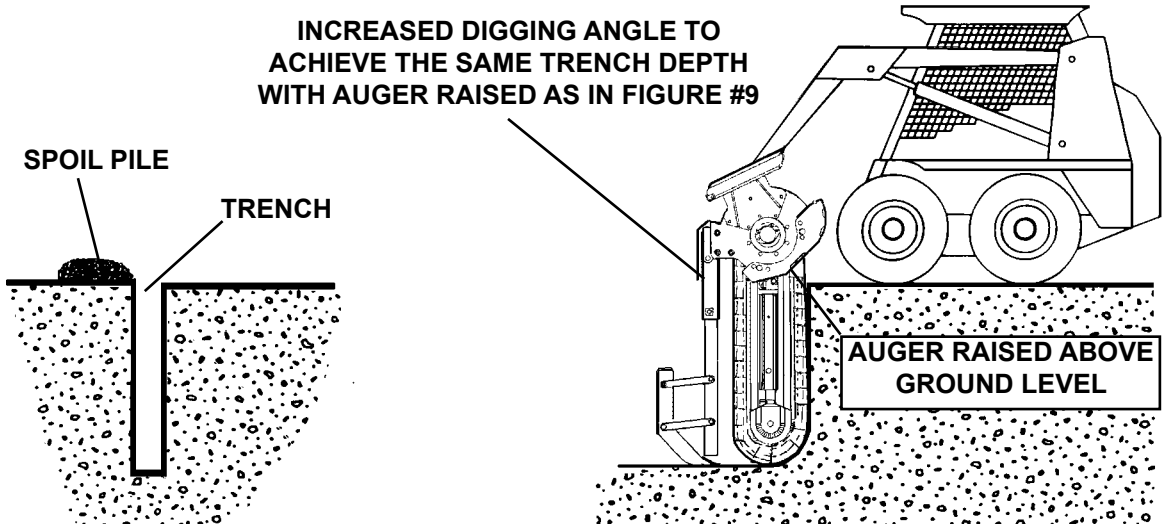
9119 9-5-14-2

OPERATING INSTRUCTIONS

OPERATING TECHNIQUES
615 TRENCHER

Raise the trencher so that the auger rides above the ground level, to leave the spoil beside the trench. The higher the auger, the closer to the trench the spoil will be placed. You may find that it generally takes less power to run the digging chain if the auger runs 3" - 6" (inches) (7.6cm - 15.2cm) off the ground, and thus increasing the potential footage of trench produced per hour. The higher you want the auger, the more vertical you will have to tilt the trencher to achieve the same trench depth. (See Figure #10)

FIGURE #10



With the desired trench depth reached, advance the loader throttle to the desired engine RPM (we suggest full throttle for maximum digging power). Continue creeping the loader in reverse. Monitor the hydraulic oil pressure and temperature gauges as you trench. If hydraulic oil temperature or pressure gets too high, reduce loader creeping speed to reduce the load on the auxiliary hydraulic system.

NOTICE: Trying to trench at a speed faster than the auxiliary hydraulic system can handle could cause the trencher to stall. Continued stalling in a short period of time can cause excessive oil temperature, which can lead to pump failure. Do not try to trench too much too quickly. If oil temperature becomes too hot, stop the trencher and allow the oil to cool.

STALLING THE TRENCHER

If the trencher stalls while digging, move the loader forward slightly to free the trencher. You may be able to free up the digging chain by changing its direction of travel with the auxiliary hydraulic controls. Repeated stalling of the trencher will cause oil to overheat rapidly and should be avoided.

9120 9-5-14-2

TURNING WHILE TRENCHING

Gradual turns can be made while trenching. However, the tightness of the turn is directly proportional to the angle and length of the boom. The greater the angle of the trencher boom to the ground , the sharper the turn that can be trenched. (See Figures #11 & #12) Also the shorter the boom length, the sharper the possible turn. Remember, the greater the increase in boom angle, the higher the unit will have to be raised out of the trench to keep a unified trench depth. Shallow boom angles will severely limit turning ability.

NOTICE: Turning too tightly while trenching will cause the trencher to jam in the trench and stall, leading to excessive oil temperatures. Turning too tightly can also cause the trencher boom to bend. Take it easy when turning. Proceed slowly with caution.

FIGURE #11

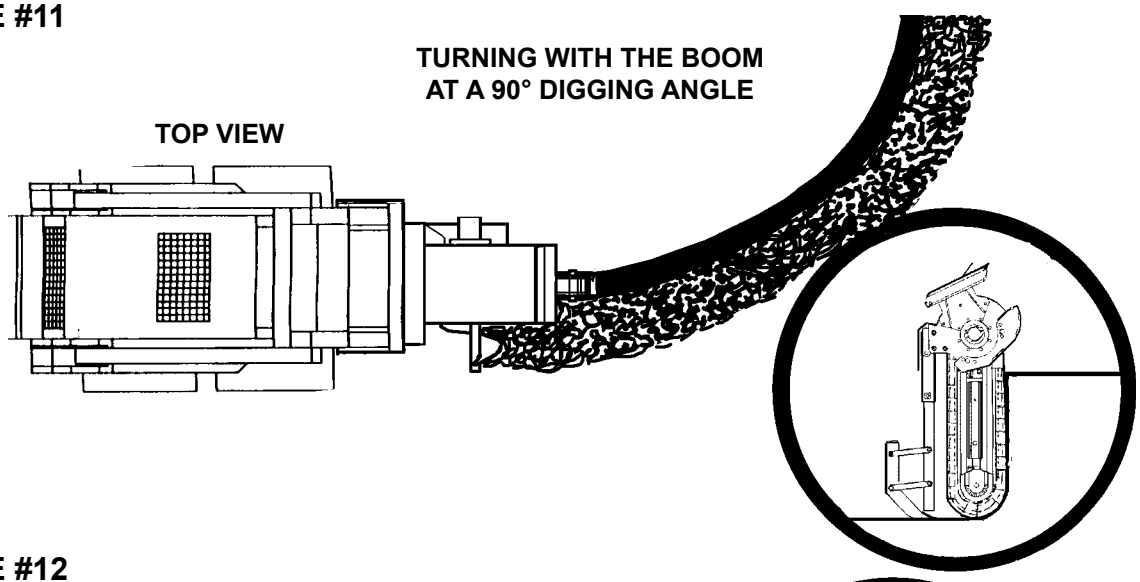
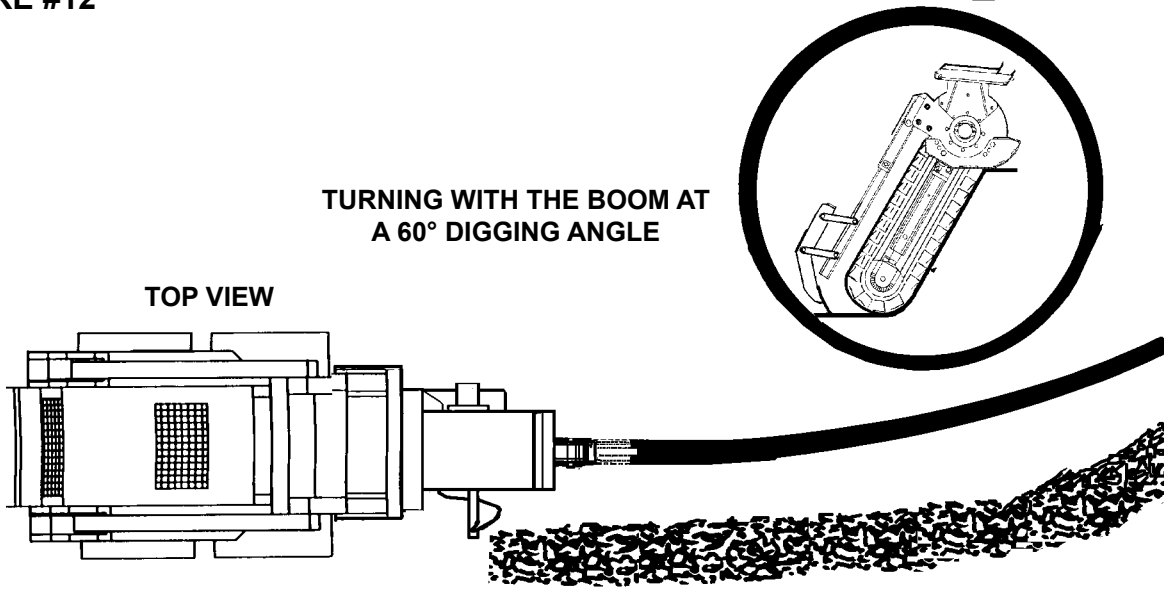


FIGURE #12



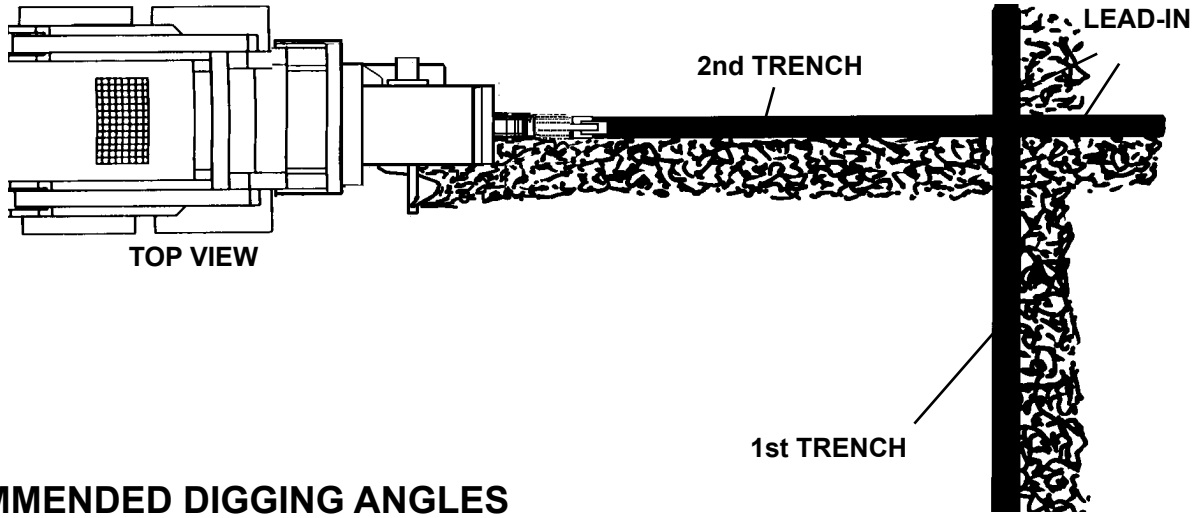
OPERATING INSTRUCTIONS

OPERATING TECHNIQUES
615 TRENCHER

MAKING SHARP TURNS

To make sharp turns and 90° angles, you will have to dig two trenches. Dig the first trench as you normally would. Then reposition the unit and dig the second trench at the appropriate angle. Be sure to take into account the extra lead-in space needed for the trencher to get down to the desired trench depth. (See Figure #13)

FIGURE #13

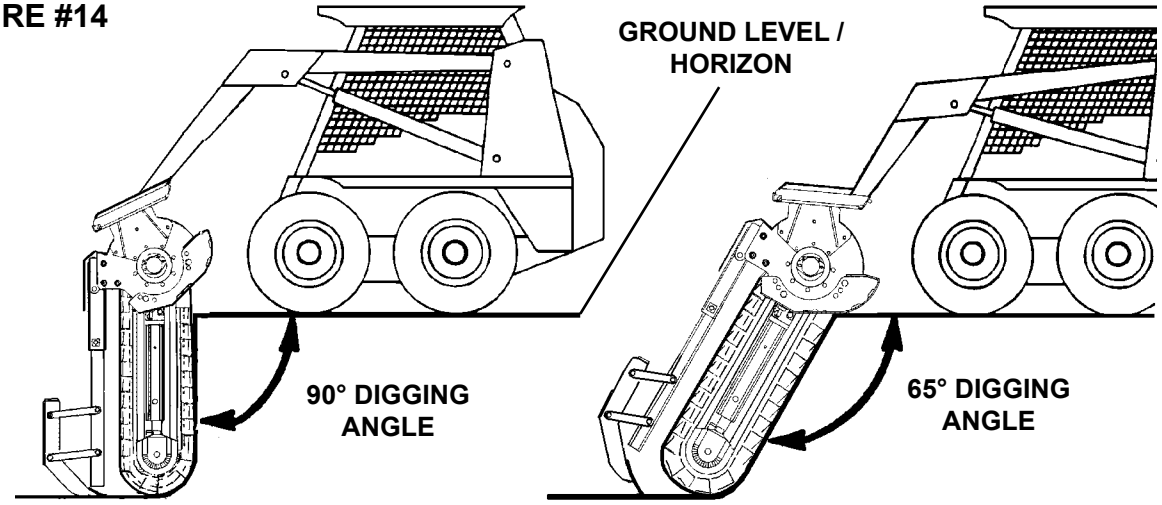


RECOMMENDED DIGGING ANGLES

A 90° digging angle is recommended for use in rock and frost conditions, and when trenching sharp corners. The 90° angle reduces excessive side pressure on the boom and digging chain when trenching corners. (See Figure #14)

A 60° - 65° digging angle is recommended for normal trenching. At this angle there will be less carry-over, and a cleaner trench bottom can be maintained than at a 90° angle. (See Figure #14)

FIGURE #14



9122 9-5-14-2

OPERATING INSTRUCTIONS

OPERATING TECHNIQUES
615 TRENCHER

TRENCHING WITHOUT THE CRUMBER ASSEMBLY

WARNING! **The crumber bar and crumber shoe assembly are there for a reason, YOUR SAFETY! There are a few instances where removal may be necessary, however. In these cases, operate with extreme caution. Reinstall the crumber bar and crumber shoe as soon as possible.**

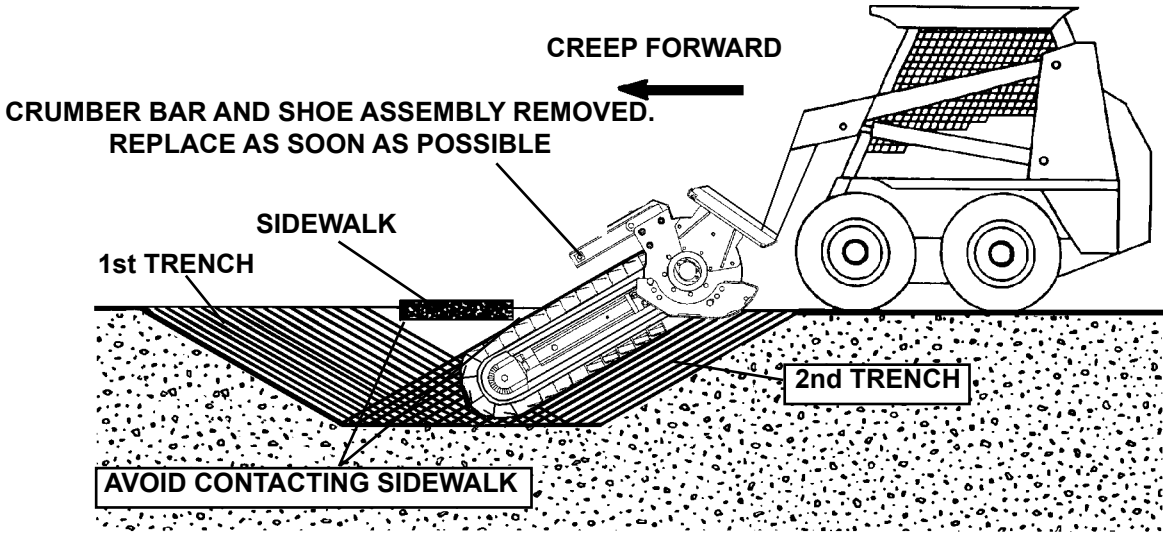
You can use your trencher to dig under obstacles such as sidewalks. To do so, remove the crumber shoe and bar assembly and start your trench as before within a foot of the sidewalk. With the crumber bar and shoe removed, you can start the trench vertically without any lead-in space.

When the desired depth has been reached, tilt the trencher at a 60° angle while digging, then creep the loader forward and trench under the sidewalk. Be careful not to contact the edge of the sidewalk with the digging teeth.

After you have gone as far as you can without contacting the sidewalk, drive the loader in reverse to clear the sidewalk and remove the trencher from the trench. Line up the unit on the other side of the walk and continue to trench as described above, until the two trenches are connected. (See Figure #15)

Reinstall the crumber bar and crumber shoe assembly immediately. Some spoil will be left in the trench, since the crumber was removed during the operation.

FIGURE #15



ENDING A TRENCH

When you have dug your trench, remember that the trencher boom is at an angle, and that you must continue trenching until the end of the boom has dug past the proposed end of the trench. Once the end of the trench has been dug, keep the trencher running and lift the loader arms to lift the unit clear of the trench. When the trencher has cleared the trench, disengage the auxiliary hydraulics to stop the trencher. Drive away from the trench.

TRANSPORTING THE TRENCHER

When transporting the trencher, remember to keep the trencher as low to the ground as is practical. The lower the trencher rides, the more stable the loader will be. You do not want the trencher so low that the digging teeth touch the ground in rough terrain. Shut off the trencher before moving it away from the trench. Never transport the trencher around the job site or anywhere else while the digging chain is moving.

TRENCHER PERFORMANCE

Remember that your trencher's performance is directly related to the power available at your loader's auxiliary hydraulic system. If the trencher seems to lack power or speed, it may be due to your loader's lack of sufficient auxiliary power.

Trencher performance is also related to how well it's maintained, digging tooth wear, and type and size of digging chain, crumber boom and shoe used. For more information on proper maintenance and chain wear see Maintenance Section. For information on chain, boom, and crumber options see Digging Chain Options and Parts. If problems arise see "Trouble Shooting".

615F FOOTING TRENCHER - SPECIAL APPLICATIONS

NOTE: When installing the footing trencher onto your unit, you MUST have a mount with side shift capabilities.

The 615F footing trencher is operated in the same manner as the 615 trencher with just a few points to be taken into consideration when digging a footing.

When digging a footing with the footing trencher, keep in mind the extra lead-in space needed for the trencher to get down to the desired depth. Set the inside forms in place and trench the footings before install the outside forms. (See Figure #16)

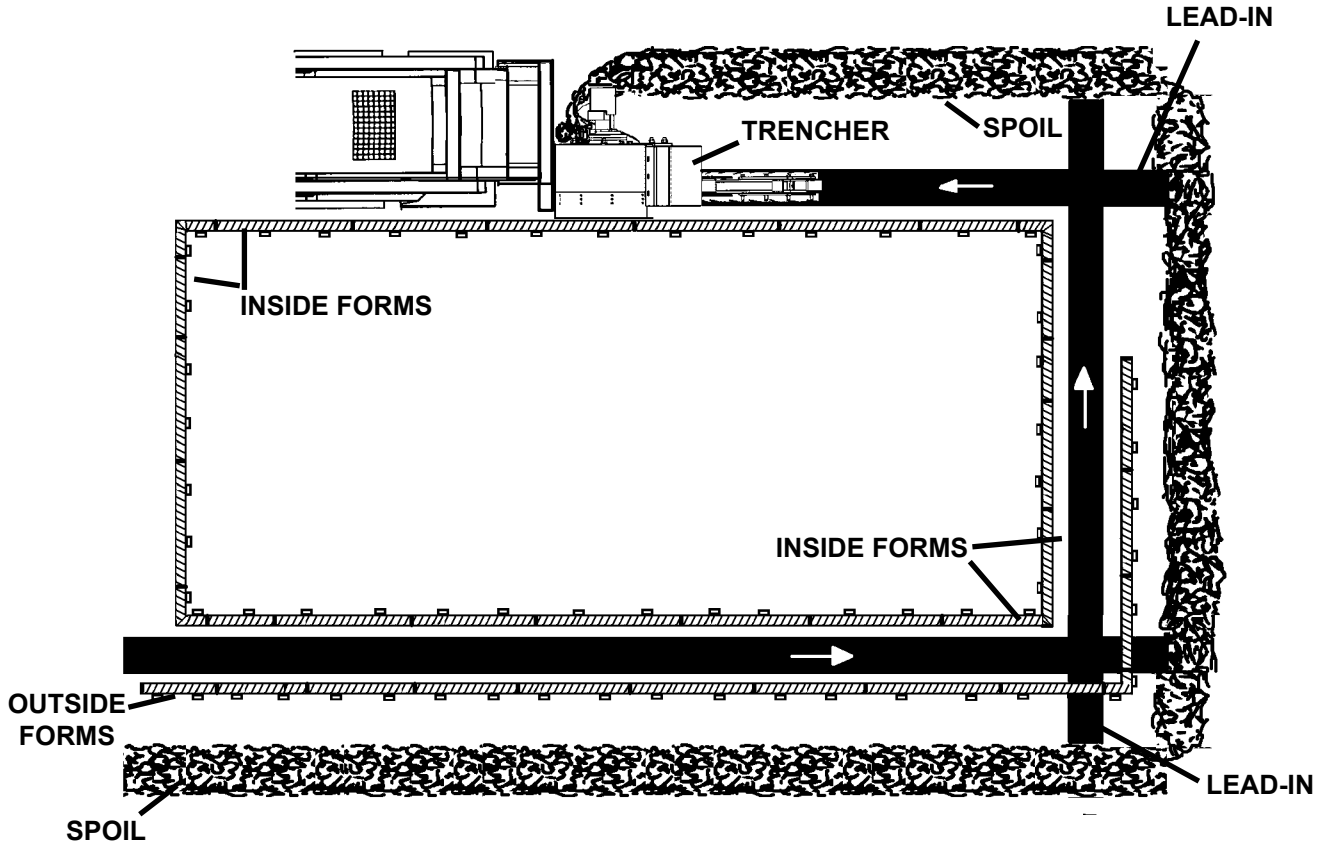
615F FOOTING TRENCHER - SPECIAL APPLICATIONS (CONTINUED)

Check to ensure that the side shield is at the correct position for the width of chain being used and follow along the inside forms.

NOTE: When trenching with one of the wider chains (increasing the amount of spoil), it may be necessary to manually remove some of the spoil to prevent it from falling back into the trench.

NOTE: It is important when digging footings to keep the auger and side shield at ground level, but not below grade. This will give you good trencher performance, and still move the spoil out of the way for setting up the outside forms.

FIGURE #16



OPERATING INSTRUCTIONS

OPERATING TECHNIQUES
615 TRENCHERS

STORAGE

- Clean the trencher thoroughly, removing all mud, dirt, and grease.
- Tighten all loose capscrews, nuts, and set screws.
- Coat the digging chain with a thin covering of oil. Operate chain for a short period to work the oil into the pins.
- Inspect for visible signs of wear, breakage or damage. Order any parts required and make necessary repairs to avoid delays when starting next season.
- Replace decals if damaged or in unreadable condition.
- Seal hydraulic system from contaminants and secure all hydraulic hoses off the ground to help prevent damage.
- Store the trencher in a dry and protected place. Leaving the trencher outside, exposed to the elements will materially shorten its life.

Additional Precautions for Long Term Storage:

- Touch up unpainted and exposed areas with paint to prevent rust.

REMOVING FROM STORAGE

- Remove all protective coverings
- Check hydraulic hoses for deterioration and if necessary, replace.
- During cold weather, operate the trencher slowly for a short time before placing the unit under full load.

LIFT POINTS

Lifting points are identified by lifting decals where required. Lifting at other points is unsafe and can damage attachment. Do not attach lifting accessories around cylinders or in any way that may damage hoses or hydraulic components.

- Attach lifting accessories to unit at recommended lifting points.
- Bring lifting accessories together to a central lifting point.
- Lift gradually, maintaining the equilibrium of the unit.

WARNING! **Use lifting accessories (chains, slings, ropes, shackles and etc.) that are capable of supporting the size and weight of your attachment. Secure all lifting accessories in such a way to prevent unintended disengagement. Failure to do so could result in the attachment falling and causing serious personal injury or death.**

TIE DOWN POINTS

Tie down points are identified by tie down decals where required. Securing to trailer at other points is unsafe and can damage attachment. Do not attach tie down accessories around cylinders or in any way that may damage hoses or hydraulic components.

- Attach tie down accessories to unit as recommended.
- Check unit stability before transporting.

WARNING! **Verify that all tie down accessories (chains, slings, ropes, shackles and etc.) are capable of maintaining attachment stability during transporting and are attached in such a way to prevent unintended disengagement or shifting of the unit. Failure to do so could result in serious personal injury or death.**

12875 9-10-14

DIGGING CHAIN OPTIONS

GENERAL INFORMATION

This section is devoted to digging chain options for your trencher. In it you will find a listing of all the chain options available. You will also find information on replacement parts, chain assembly, and chain conversion. These options will increase the flexibility of your equipment, and make your trenching job easier.

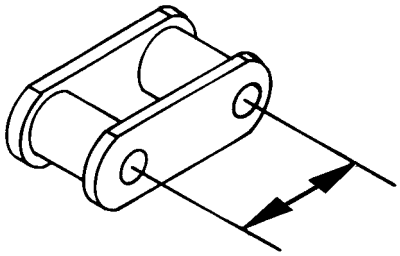
There is some basic information about the trencher and it's digging components that you should know before you try to order any options. This information is given here for your convenience. With it you will be able to better understand the rest of this section.

CHAIN PITCH

Digging chains are divided into groups by pitch. The pitch of the chain is the distance between the centers of the holes in the chain links (See Figure 1). The word pitch can also be used to describe the length of the chain.

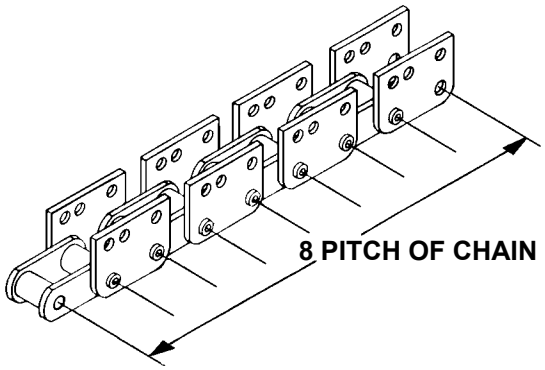
The 615 Trencher has a heavy weight chain with a tensil strength of 38,000 pounds and a pitch of 1.654".

FIGURE #1



DISTANCE BETWEEN HOLE CENTERS = PITCH

FIGURE #2



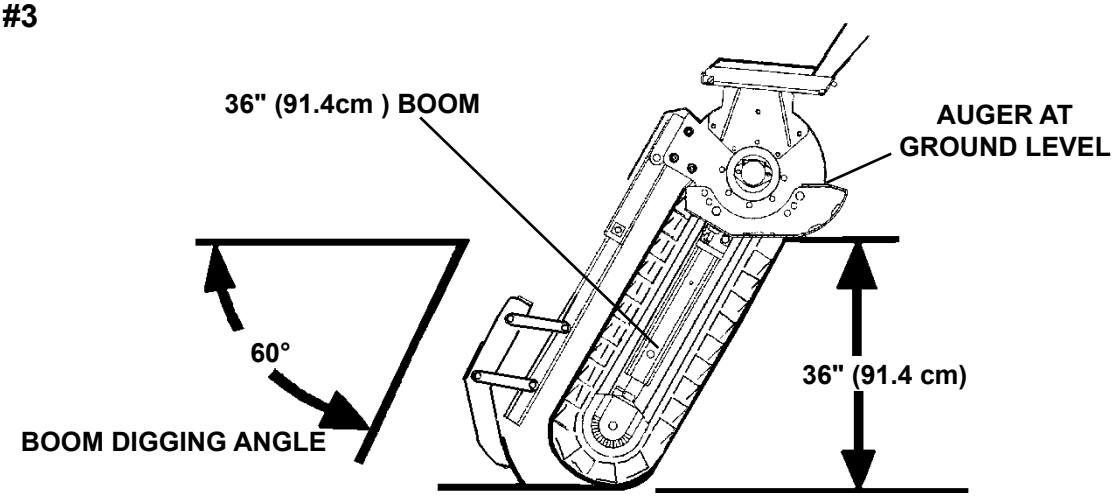
You can not intermix components of different pitches. You cannot substitute chain links of different pitches in a digging chain. Nor can you use a digging chain of one pitch, with a driver sprocket of a different pitch. Attempting to do so will cause the chain to "jump" off the sprocket continuously.

DIGGING CHAIN OPTIONS

COMPONENT SIZE

The size of the digging component is based on the depth of the trench it will dig with auger at ground level and a 60° boom digging angle (See Figure 3). For example, a 36" (91.4cm) boom is not necessarily 36" (91.4cm) long. The 36" (91.4cm) length means it will dig a trench 36" (91.4cm) deep with the augers in their float position and at a 60° digging angle.

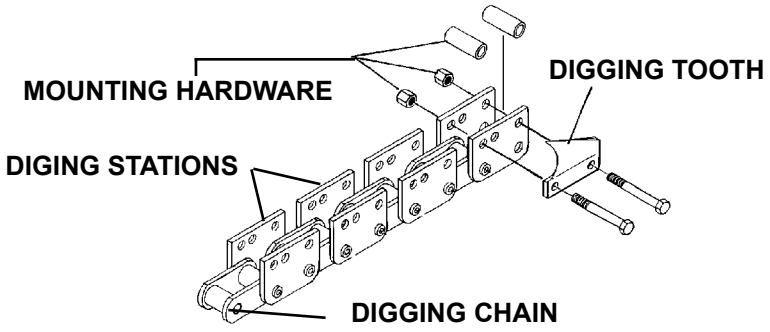
FIGURE #3



DIGGING STATIONS

Digging chains are made up of a series of individual links pinned together. Every link has a special "Digging Station" link. These links are designed so that the digging teeth can be attached to the basic chains (See Figure 4). Digging chains may be purchased in any length, with or without teeth. All chains, teeth, spacers and assorted digging hardware may be purchased separately.

FIGURE #4



This completes the basic information on digging chain options. The rest of this section contains specific information on digging chains and a description of the parts available.

9130 9-5-14-2

DIGGING CHAIN OPTIONS

1.654” (4.2CM) DIGGING CHAIN ASSEMBLIES

GENERAL INFORMATION

This page contains a listing of all of the 1.654" (4.2cm) pitch digging chain assemblies offered for your trencher. Each chain assembly comes with all necessary teeth and spacers already installed. Just thread the chain onto the trencher and fasten the two ends together with the pin and keeper pin included in the assembly. A crumber shoe of the appropriate width is also included in the chain assembly.

Before you order a new chain, be sure to check for compatibility with corresponding components. You may need to order more than just a chain assembly. You must use a digging boom of the same digging depth as the chain. The crumber bar must also be of the same digging depth. The digging sprocket must also be of the same pitch as the chain. All of these components must match for the trencher to function properly.

Bare 1.654" (4.2cm) pitch digging chain (without teeth, spacers, or hardware) can be ordered in any desired length under the part number #17015. Just use this number and then specifiy the length desired in pitches (example, 64 pitches of chain would be needed for a 615 with a 36" boom).

1.654" (4.2CM) PITCH CUP TOOTH DIGGING CHAIN ASSEMBLIES

Complete chain assemblies. Includes chain with all teeth and spacers attached. Also includes appropriate width crumber shoe.

615 TRENCHER CHAIN ASSEMBLIES WITH A TOOTH EVERY STATION

DESCRIPTION (boom used X trench width)		LENGTH OF CHAIN (in 1.654" pitches)	TENSIL STRENGTH	PART NO.
For 24" (61cm) Boom	6" (15.2cm) Wide	50 Pitch	38,000#	16691
For 24" (61cm) Boom	8" (20.3cm) Wide	50 Pitch	38,000#	16690
For 24" (61cm) Boom	10" (25.4cm) Wide	50 Pitch	38,000#	16689
For 24" (61cm) Boom	12" (30.5cm) Wide	50 Pitch	38,000#	16688
For 30" (76.2cm) Boom	6" (15.2cm) Wide	58 Pitch	38,000#	16686
For 30" (76.2cm) Boom	8" (20.3cm) Wide	58 Pitch	38,000#	16685
For 30" (76.2cm) Boom	10" (25.4cm) Wide	58 Pitch	38,000#	16684
For 36" (91.4cm) Boom	4.5" (11.4cm) Wide	64 Pitch	38,000#	89822
For 36" (91.4cm) Boom	6" (15.2cm) Wide	64 Pitch	38,000#	89823
For 36" (91.4cm) Boom	8" (20.3cm) Wide	64 Pitch	38,000#	89824
For 48" (121.9cm) Boom	4.5" (11.4cm) Wide	82 Pitch	38,000#	18772
For 48" (121.9cm) Boom	6" (15.2cm) Wide	82 Pitch	38,000#	18773

DIGGING CHAIN OPTIONS

1.654” (4.2CM) DIGGING CHAIN ASSEMBLIES

1.654" (4.2CM) PITCH CUP TOOTH DIGGING CHAIN ASSEMBLIES

Complete chain assemblies. Includes chain with all teeth and spacers attached. Also includes appropriate width crumber shoe.

615F TRENCHER CHAIN ASSEMBLIES WITH A TOOTH EVERY STATION

DESCRIPTION (boom used X trench width)		LENGTH OF CHAIN (in 1.654" pitches)	TENSIL STRENGTH	PART NO.
For 24" (61cm) Boom	6" (15.2cm) Wide	64 Pitch	38,000#	89823
For 24" (61cm) Boom	8" (20.3cm) Wide	64 Pitch	38,000#	89824
For 24" (61cm) Boom	10" (25.4cm) Wide	64 Pitch	38,000#	16681
For 24" (61cm) Boom	12" (30.5cm) Wide	64 Pitch	38,000#	16682
For 30" (76.2cm) Boom	6" (15.2cm) Wide	72 Pitch	38,000#	18909
For 30" (76.2cm) Boom	8" (20.3cm) Wide	72 Pitch	38,000#	18774
For 30" (76.2cm) Boom	10" (25.4cm) Wide	72 Pitch	38,000#	18775

NOTE: THESE CHAIN ASSEMBLIES ARE FOR THE FOOTING TRENCHER ONLY

1.654" (4.2CM) PITCH 70/30 COMBINATION DIGGING CHAIN ASSEMBLIES

Complete chain assemblies. Includes chain with all teeth and spacers attached. Also includes appropriate width crumber shoe.

615 TRENCHER CHAIN ASSEMBLIES WITH A TOOTH EVERY STATION

DESCRIPTION (boom used X trench width)		LENGTH OF CHAIN (in 1.654" pitches)	TENSIL STRENGTH	PART NO.
For 24" (61cm) Boom	6" (15.2cm) Wide	50 Pitch	38,000#	18763
For 24" (61cm) Boom	8" (20.3cm) Wide	50 Pitch	38,000#	18764
For 24" (61cm) Boom	10" (25.4cm) Wide	50 Pitch	38,000#	18765
For 24" (61cm) Boom	12" (30.5cm) Wide	50 Pitch	38,000#	18766
For 30" (76.2cm) Boom	6" (15.2cm) Wide	58 Pitch	38,000#	18767
For 30" (76.2cm) Boom	8" (20.3cm) Wide	58 Pitch	38,000#	18768
For 30" (76.2cm) Boom	10" (25.4cm) Wide	58 Pitch	38,000#	18769
For 36" (91.4cm) Boom	4.5" (11.4cm) Wide	64 Pitch	38,000#	89825
For 36" (91.4cm) Boom	6" (15.2cm) Wide	64 Pitch	38,000#	89826
For 36" (91.4cm) Boom	8" (20.3cm) Wide	64 Pitch	38,000#	89827
For 48" (121.9cm) Boom	4.5" (11.4cm) Wide	82 Pitch	38,000#	18770
For 48" (121.9cm) Boom	6" (15.2cm) Wide	82 Pitch	38,000#	18771

9132 9-5-14-2

DIGGING CHAIN OPTIONS

1.654” (4.2CM) DIGGING CHAIN ASSEMBLIES

1.654" (4.2CM) PITCH 70/30 COMBINATION DIGGING CHAIN ASSEMBLIES

Complete chain assemblies. Includes chain with all teeth and spacers attached. Also includes appropriate width crumber shoe.

615F TRENCHER CHAIN ASSEMBLIES WITH A TOOTH EVERY STATION

DESCRIPTION (boom used X trench width)		LENGTH OF CHAIN (in 1.654" pitches)	TENSIL STRENGTH	PART NO.
For 24" (61cm) Boom	6" (15.2cm) Wide	64 Pitch	38,000#	89826
For 24" (61cm) Boom	8" (20.3cm) Wide	64 Pitch	38,000#	89827
For 24" (61cm) Boom	10" (25.4cm) Wide	64 Pitch	38,000#	18777
For 24" (61cm) Boom	12" (30.5cm) Wide	64 Pitch	38,000#	18778
For 30" (76.2cm) Boom	6" (15.2cm) Wide	72 Pitch	38,000#	18996
For 30" (76.2cm) Boom	8" (20.3cm) Wide	72 Pitch	38,000#	18779
For 30" (76.2cm) Boom	10" (25.4cm) Wide	72 Pitch	38,000#	18780

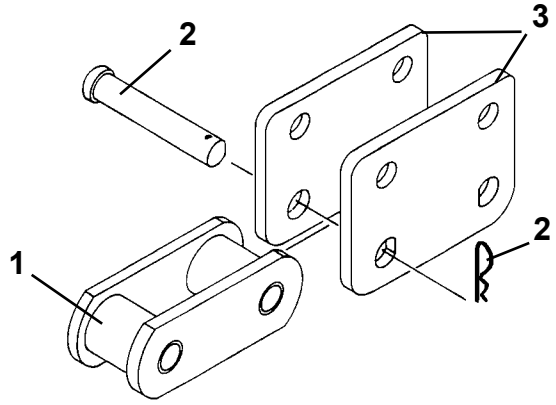
NOTE: THESE CHAIN ASSEMBLIES ARE FOR THE FOOTING TRENCHER ONLY!

1.654" (4.2CM) PITCH CHAIN REPLACEMENT PARTS

GENERAL INFORMATION

You can purchase individual chain links and pins for your trencher. These can be used to repair a damaged chain, or lengthen and modify an existing chain. Below is a diagram of the chain’s basic components with their descriptions and corresponding part numbers. Use these numbers when ordering. You can also order a complete bare chain (without teeth and spacers) in any length desired. The chain is ordered under part number 17015 for 1.654" Pitch. Just specify the length you want in pitches. (See “1.654” (4.2cm) PITCH DIGGING CHAIN ASSEMBLIES” chart located in this section.)

When pinning links of chain together, first tap the pin through the connector link with the perfectly round holes and then on through the inner link. Place the second connector link in position, you will note that the end of the pin has one side flattened. Rotate the pin until its flat side lines up with the corresponding flat side of the connector link hole and tap the pin on through. Place the chain keeper pin into the hole at the end of the main pin and tap down tight. Bend the end of the keeper pin over to secure it in place.



NO.	PART NO.	DESCRIPTION
1	100004	Inner Link
2	100003	Pin & Keeper
3	100005	Connector Link

9133 9-5-14-2

DIGGING CHAIN OPTIONS

1.654” (4.2CM) PITCH DIGGING CHAIN TOOTH STATION SEQUENCE

GENERAL INFORMATION

Every second link on a digging chain is a special link called a digging station. These digging station links are designed so that digging teeth can be bolted onto them in a variety of configurations. It is the number and the make up of these different digging stations that make each chain unique.

The following pages show the various chains available for the 615 trenchers. The digging tooth make up of each digging station is given in code. The key to the code is listed below. Thus the chain assembly diagrams will show you the order of the digging stations on each digging chain. The actual parts break down of each digging tooth station is also shown on the following pages.

C-D .....CENTER SHARK STYLE TOOTH

CL-C .....CENTER LEFT CUP TOOTH

CL-D .....CENTER LEFT SHARK STYLE TOOTH

CR-C .....CENTER RIGHT CUP TOOTH

CR-D .....CENTER RIGHT SHARK STYLE TOOTH

4L-C.....4" (10.2cm) LEFT CUP TOOTH

4L-D.....4" (10.2cm) LEFT SHARK STYLE TOOTH

4R-C .....4" (10.2cm) RIGHT CUP TOOTH

4R-D .....4" (10.2cm) RIGHT SHARK STYLE TOOTH

6L-C.....6" (15.2cm) LEFT CUP TOOTH

6L-D.....6" (15.2cm) LEFT SHARK STYLE TOOTH

6R-C .....6" (15.2cm) RIGHT CUP TOOTH

6R-D .....6" (15.2cm) RIGHT SHARK STYLE TOOTH

8-C.....8" (20.3cm) CUP TOOTH

8-D.....8" (20.3cm) SHARK STYLE TOOTH

10-C.....10" (25.4cm) CUP TOOTH

10-D.....10" (25.4cm) SHARK STYLE TOOTH

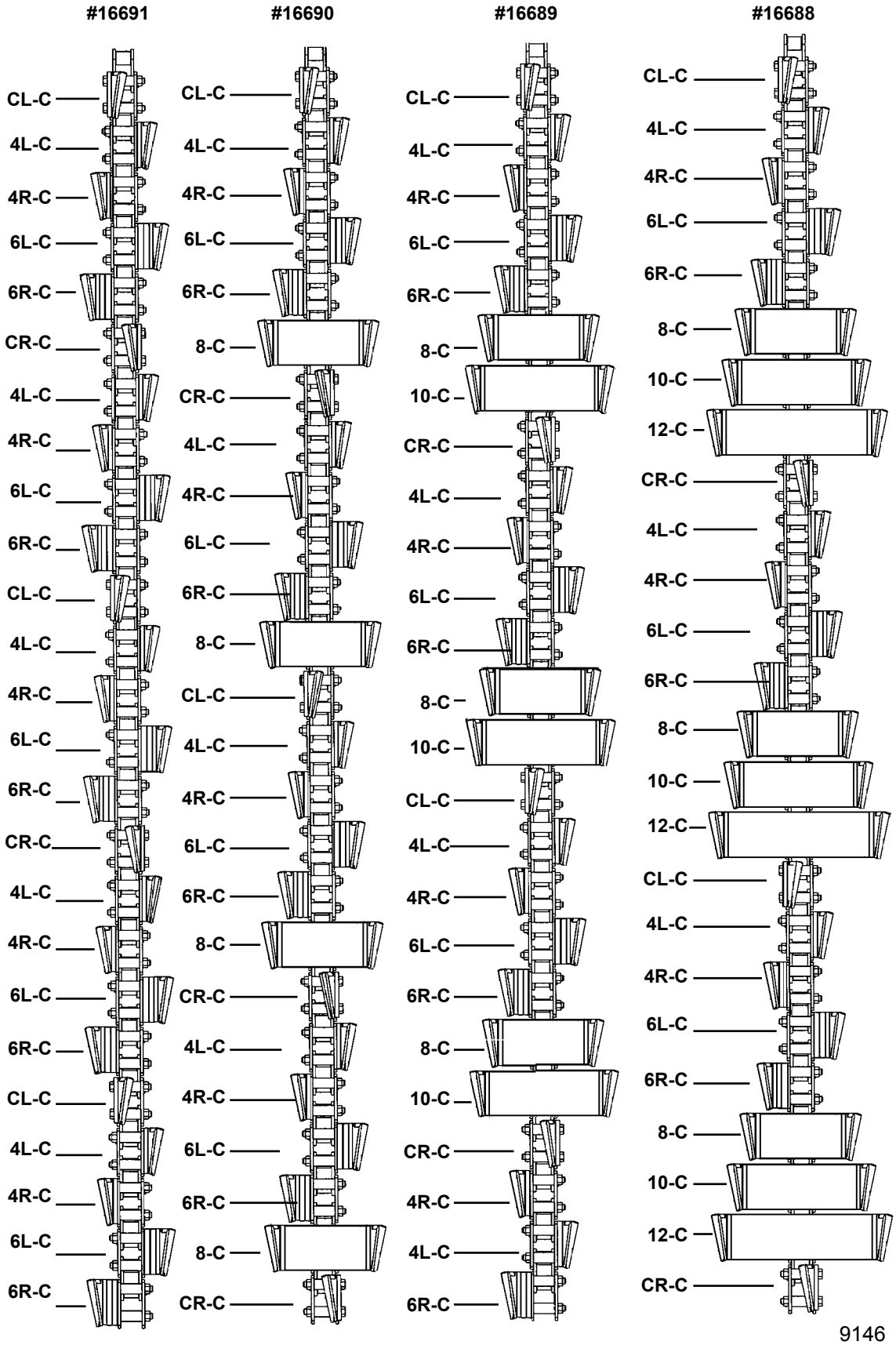
12-C.....12" (30.5cm) CUP TOOTH

12-D.....12" (30.5cm) SHARK STYLE TOOTH

9177 9-9-14-2

DIGGING CHAIN OPTIONS

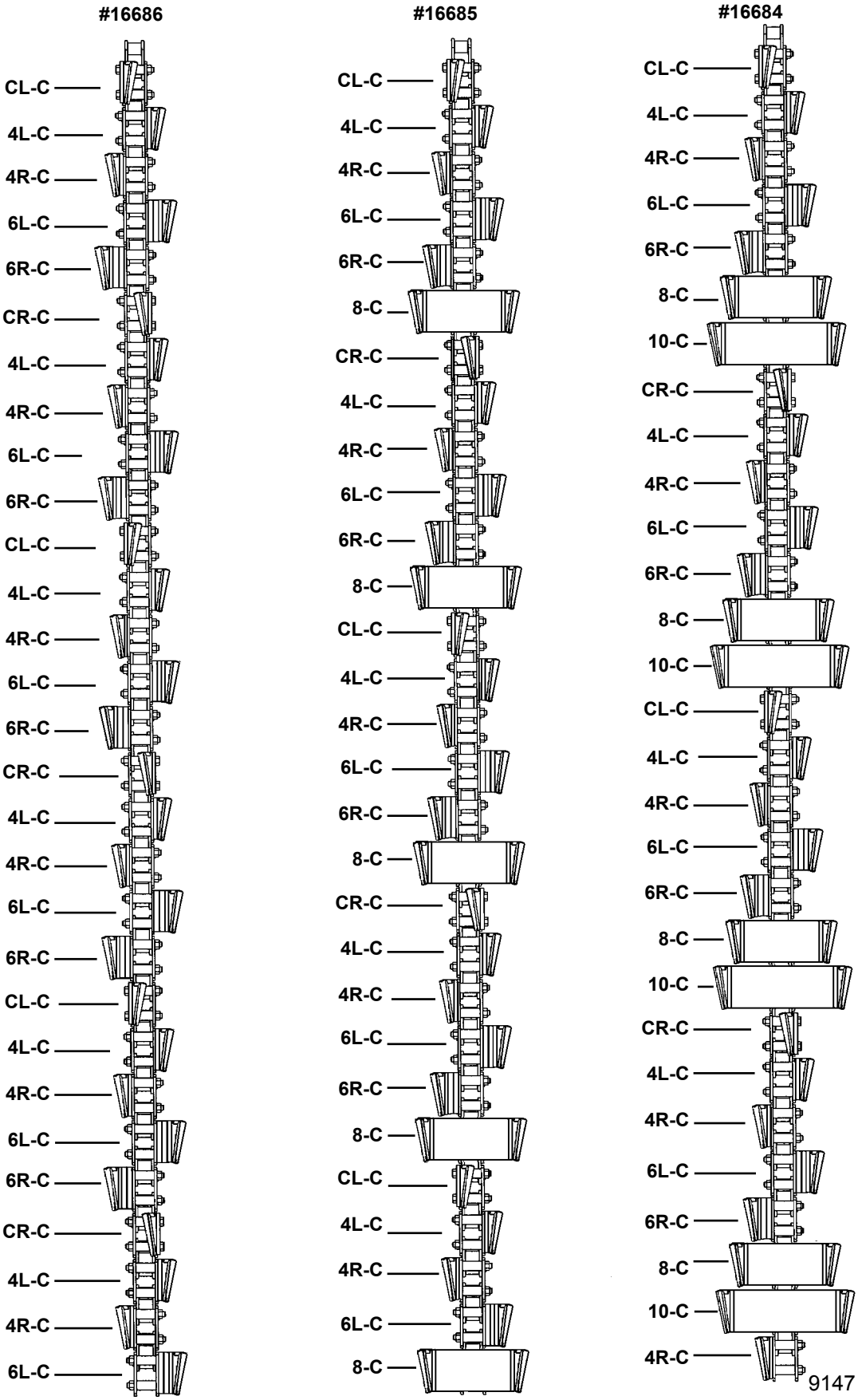
615 TRENCHER WITH 24” (61.0cm) BOOM AND CUP TEETH



9146 9-9-14-3

DIGGING CHAIN OPTIONS

615 TRENCHER WITH 30” (76.2cm) BOOM AND CUP TEETH

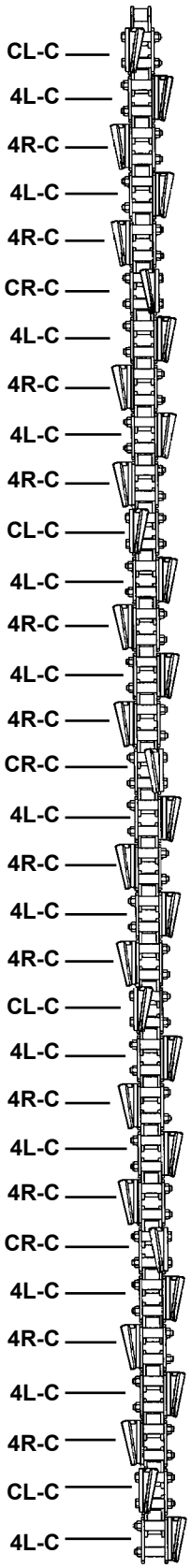


9147 9-9-14-3

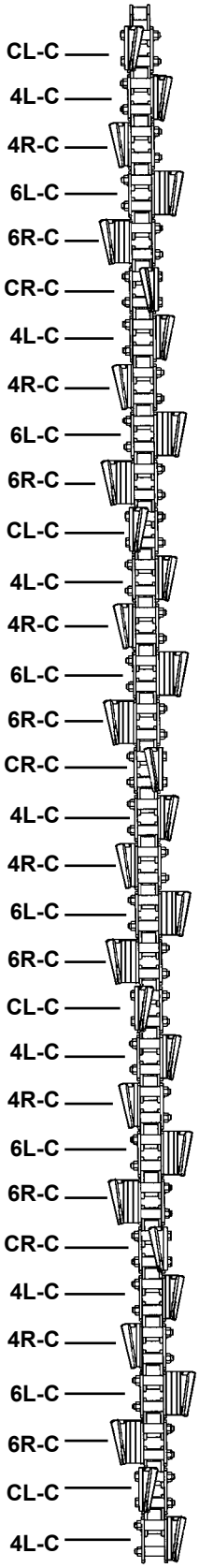
DIGGING CHAIN OPTIONS

615 TRENCHER WITH 36” (91.4cm) BOOM AND CUP TEETH

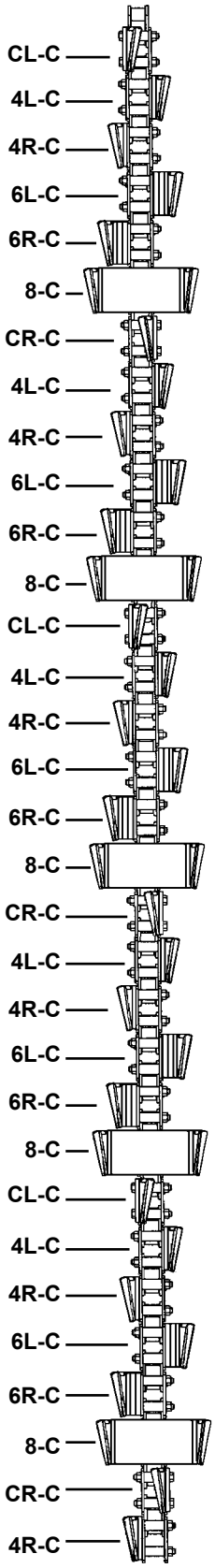
#89822



#89823



#89824

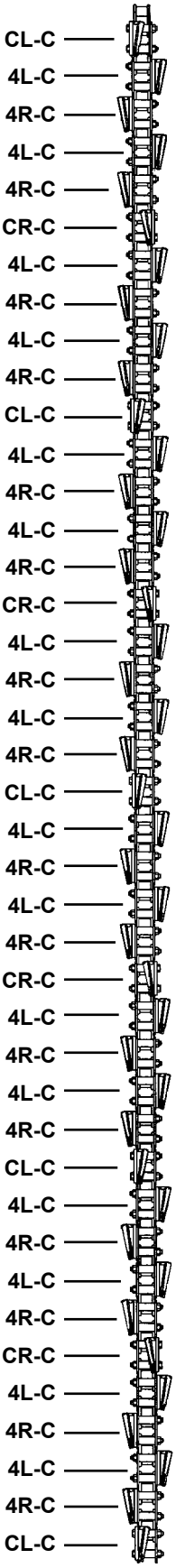


9148 9-9-14-3

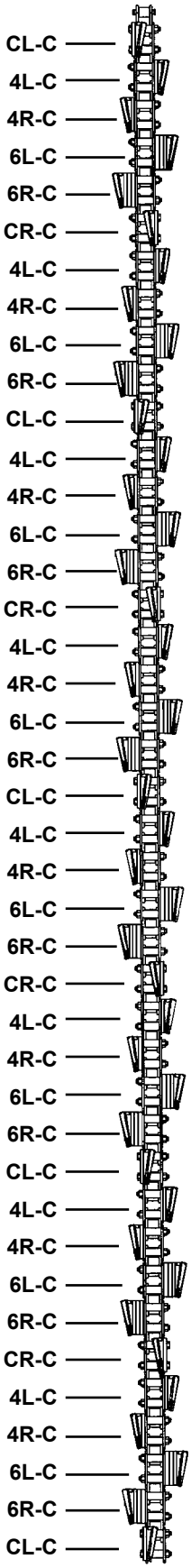
DIGGING CHAIN OPTIONS

615 TRENCHER WITH 48” (121.9cm) BOOM AND CUP TEETH

#18772



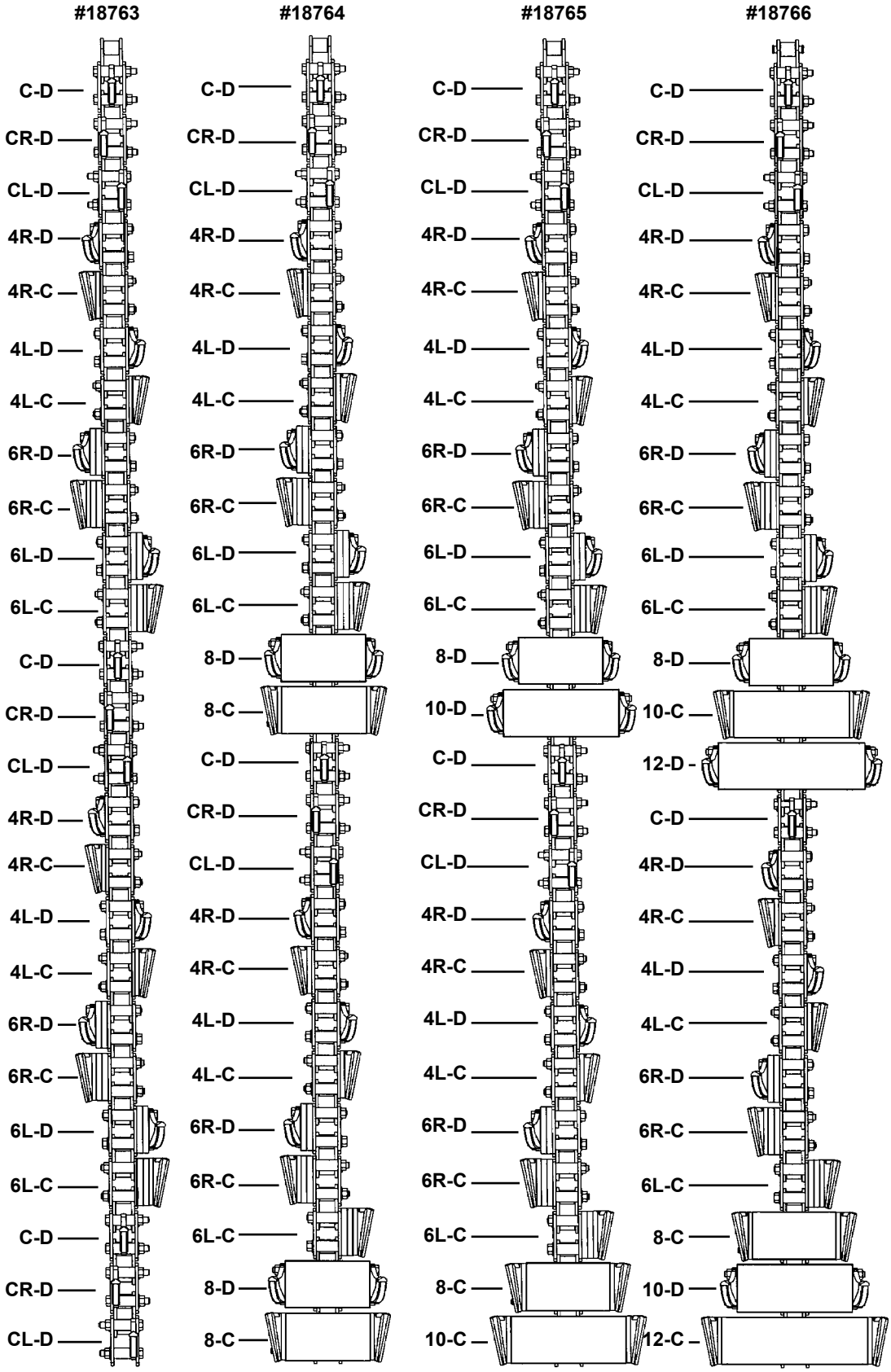
#18773



9149 9-9-14-2

DIGGING CHAIN OPTIONS

615 TRENCHER WITH 24” (61.0cm) BOOM AND 70/30 COMBINATION TEETH

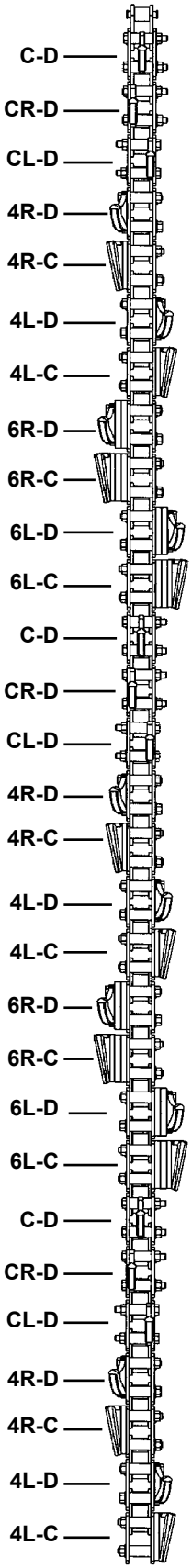


9152 9-9-14-2

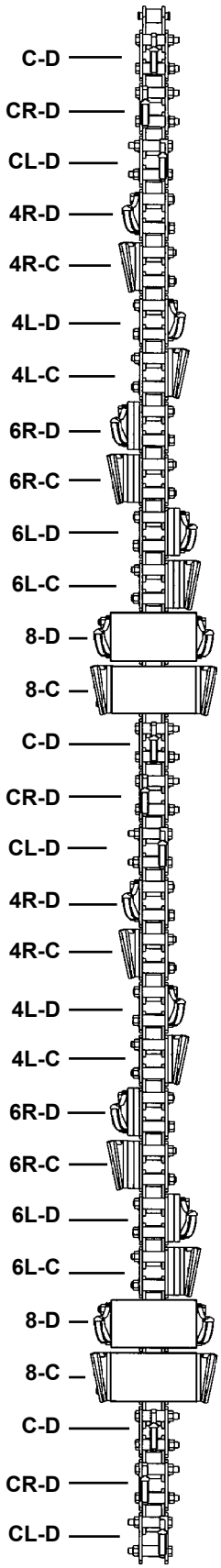
DIGGING CHAIN OPTIONS

615 TRENCHER WITH 30” (76.2cm) BOOM AND 70/30 COMBINATION TEETH

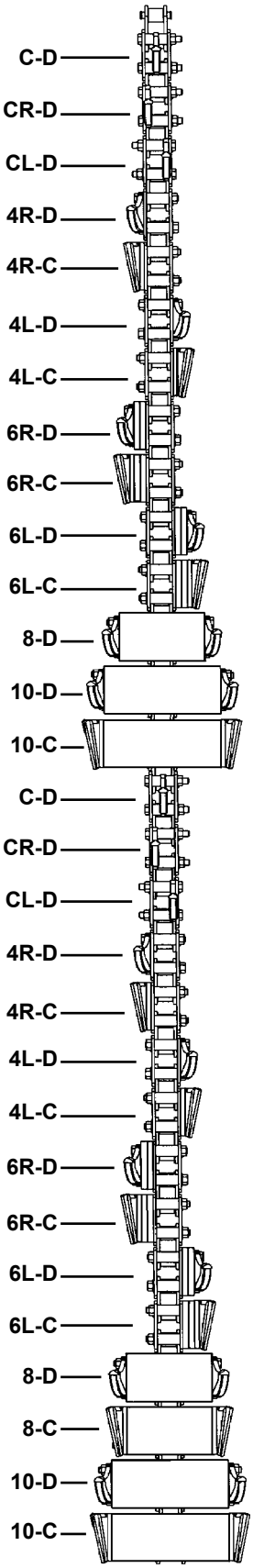
#18767



#18768



#18769

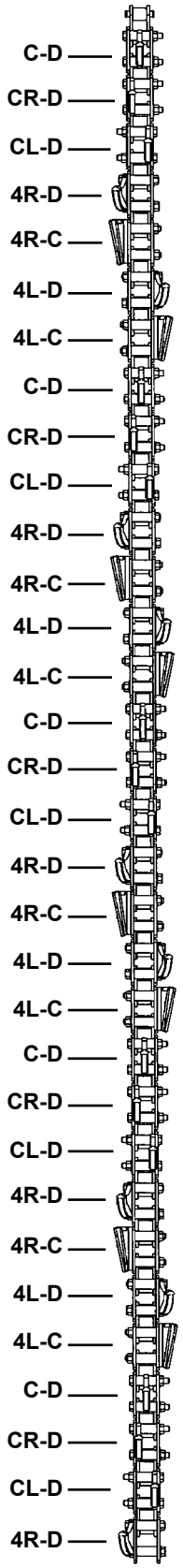


9153 9-9-14-2

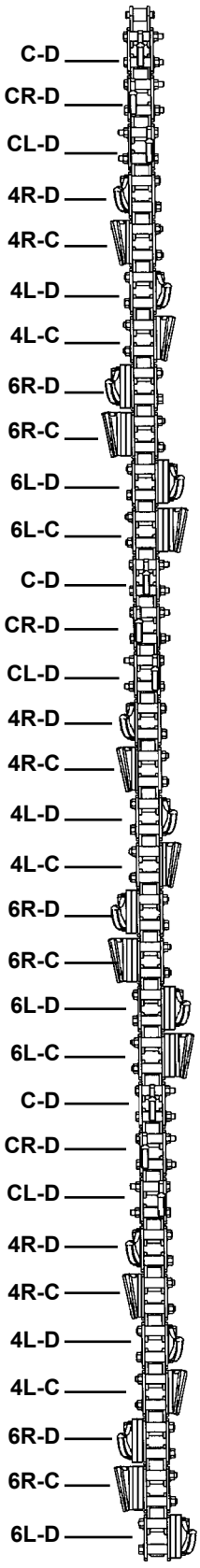
DIGGING CHAIN OPTIONS

615 TRENCHER WITH 36” (91.4cm) BOOM AND 70/30 COMBINATION TEETH

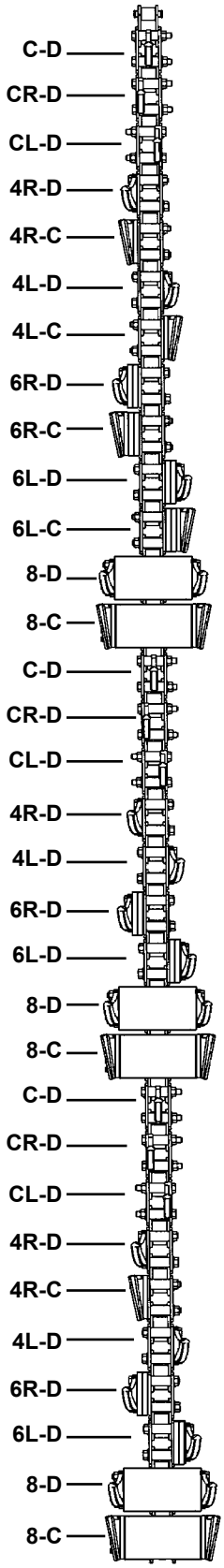
#89825



#89826



#89827

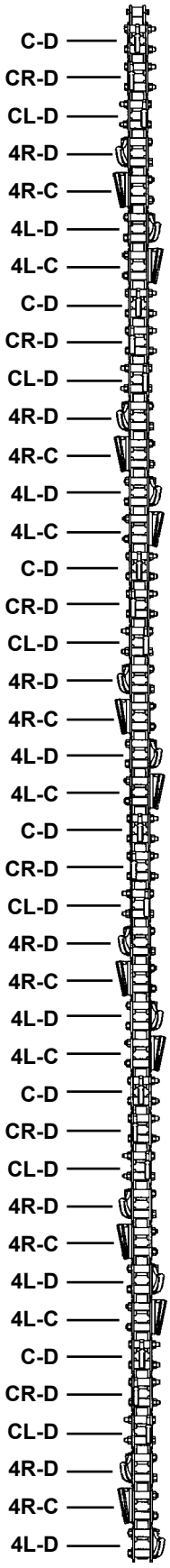


9154 9-9-14-2

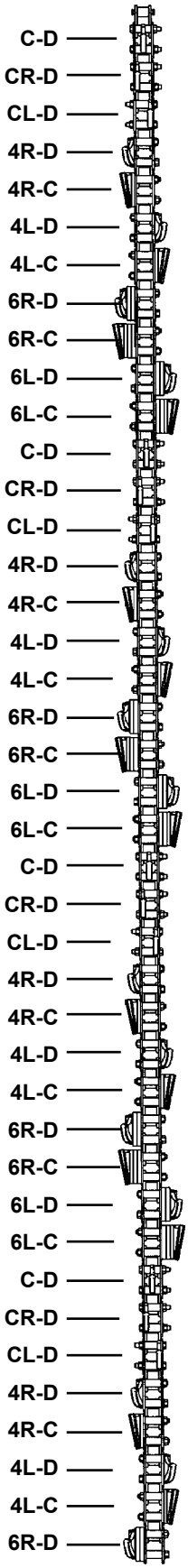
DIGGING CHAIN OPTIONS

615 TRENCHER WITH 48” (121.9cm) BOOM AND 70/30 COMBINATION TEETH

#18770



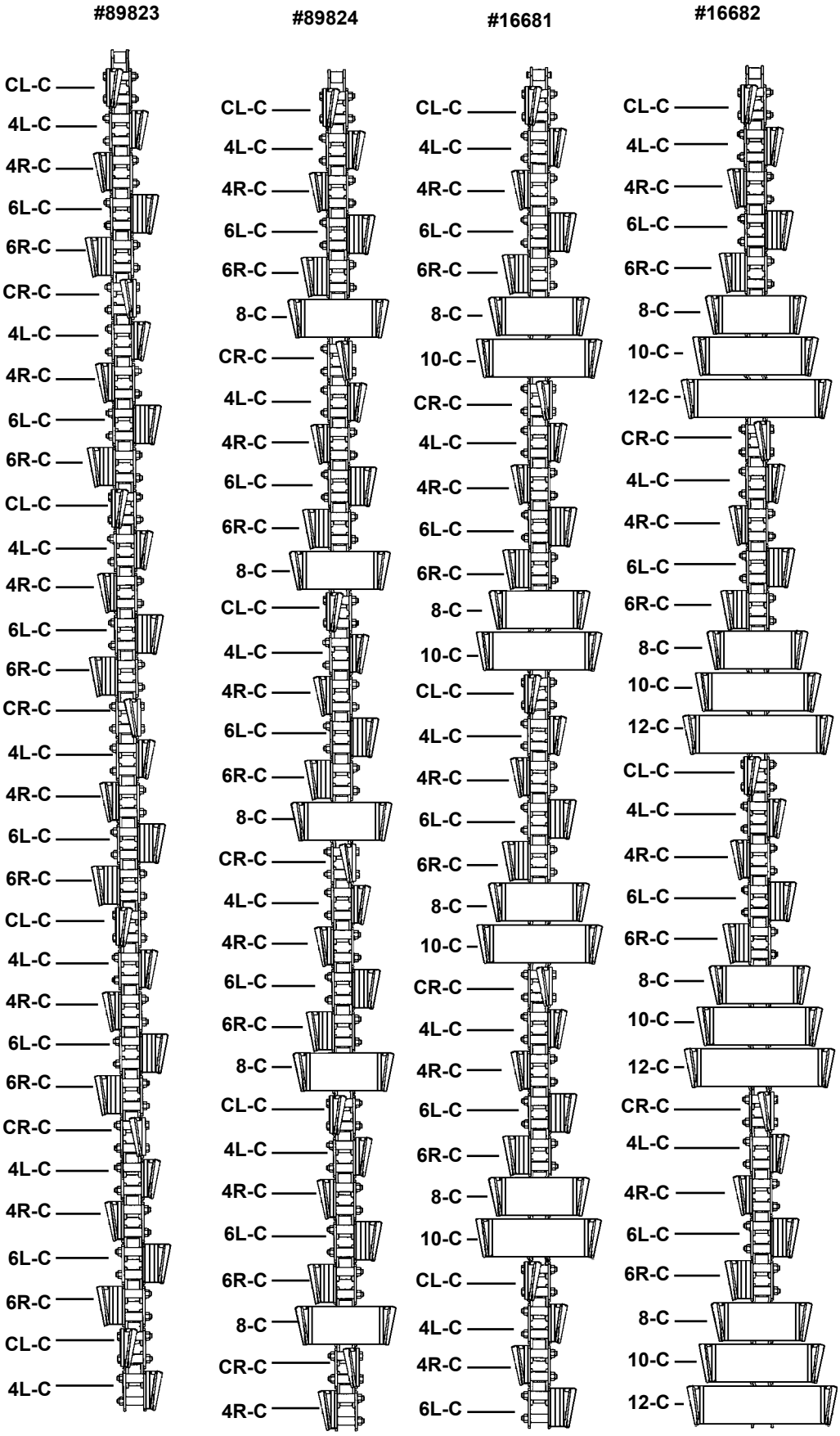
#18771



9155 9-9-14-2

DIGGING CHAIN OPTIONS

615F TRENCHER WITH 24” (61.0cm) BOOM AND CUP TEETH

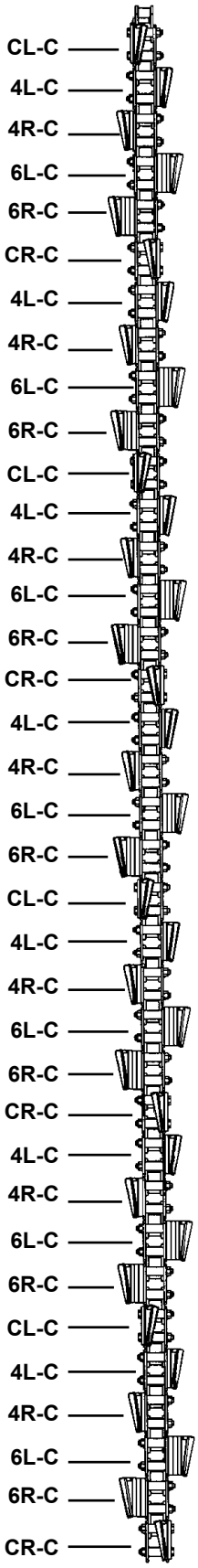


9150 9-9-14-3

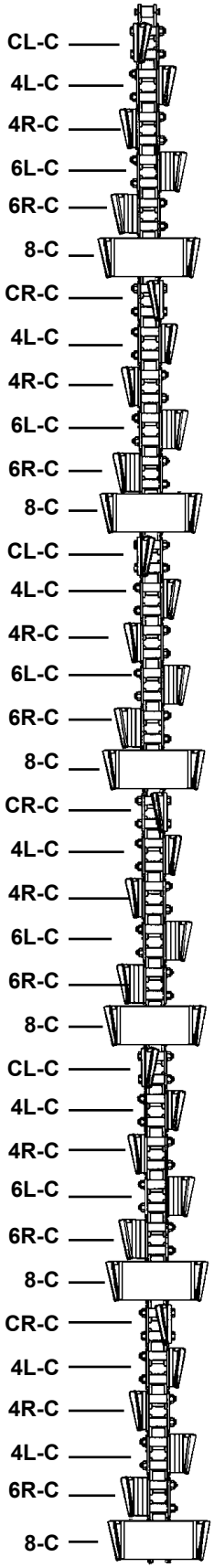
DIGGING CHAIN OPTIONS

615F TRENCHER WITH 30” (76.2cm) BOOM AND CUP TEETH

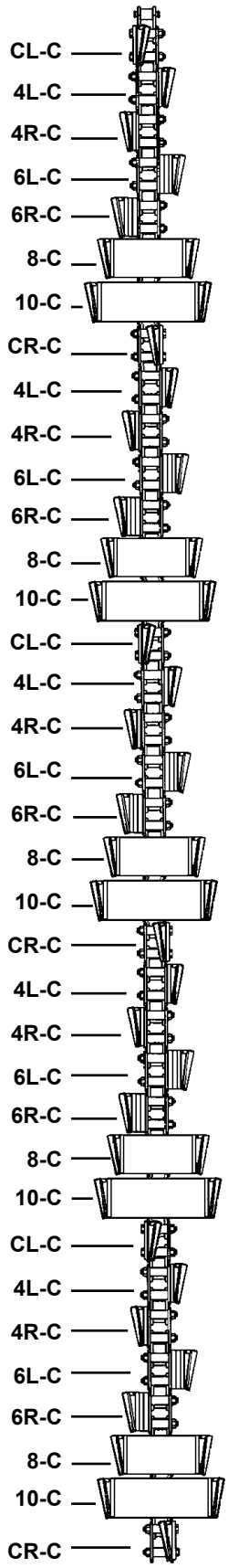
#18909



#18774



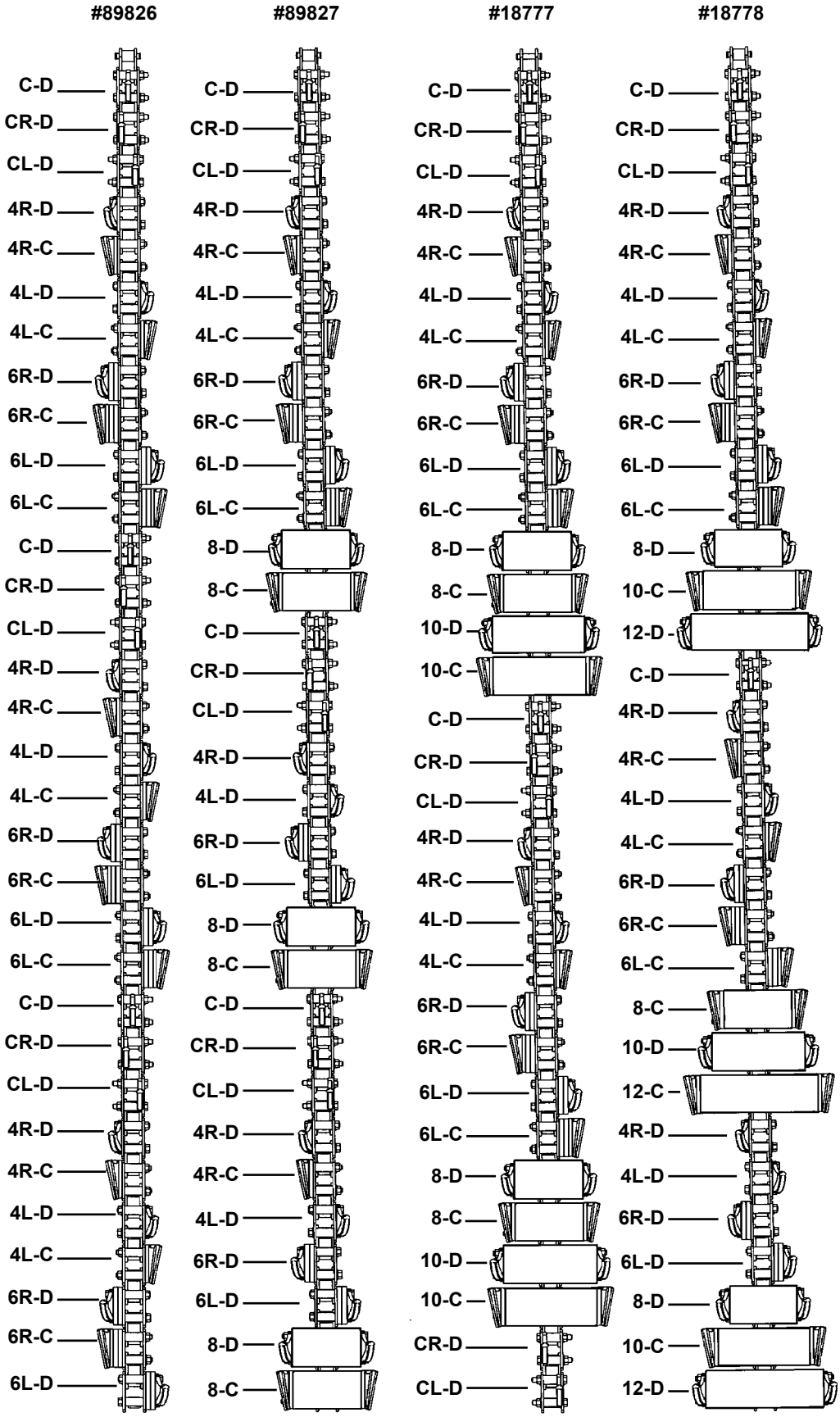
#18775



9151 9-9-14-3

DIGGING CHAIN OPTIONS

615F TRENCHER WITH 24” (61.0cm) BOOM AND 70/30 COMBINATION TEETH

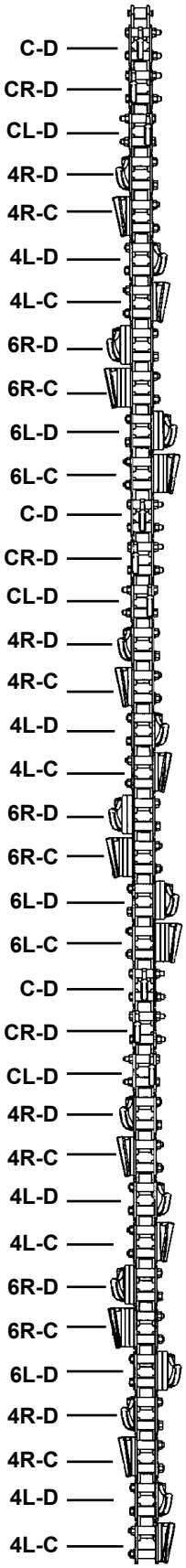


9156 9-9-14-3

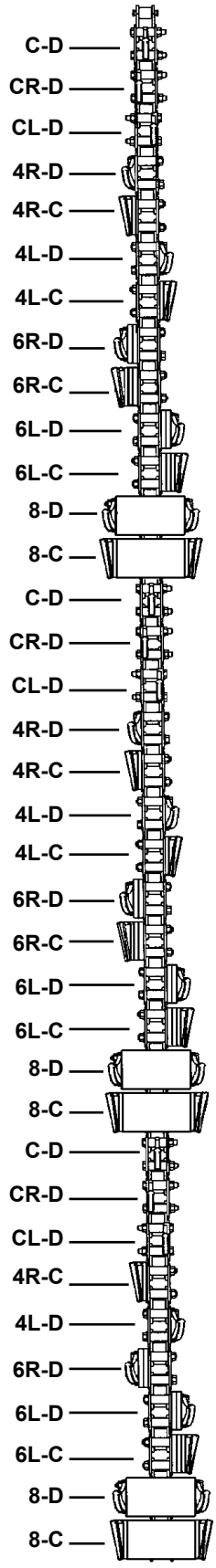
DIGGING CHAIN OPTIONS

615F TRENCHER WITH 30” (76.2cm) BOOM AND 70/30 COMBINATION TEETH

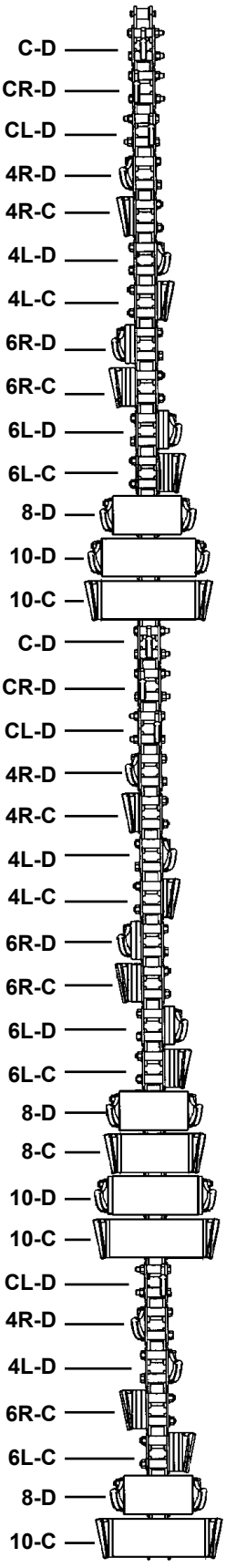
#18996



#18779



#18780



9157 9-9-14-3

DIGGING CHAIN OPTIONS

DIGGING CHAIN WIDTH CONVERSIONS FOR 615 TRENCHER

GENERAL INFORMATION

Digging chains can be modified to dig trenches in a variety of widths. By modifying an existing chain, it can be used to dig the width you want and thus save going the expense of a whole new digging chain assembly. This can be a considerable cost savings, however it is more work than just installing a new digging chain assembly.

The information given below is a complete listing of all the possible chain width conversions for 1.654" (4.2cm) pitch chain for your trencher. Included in the listing is a break down of all the parts (including part numbers and quantities) needed to make the conversion. Simply install the new parts (and re-arrange the old parts) so that the finished chain construction follows that shown in the diagram of the digging chains and the digging station break down diagrams for the 1.654" (4.2cm) pitch chain (located elsewhere in this section).

It should be noted that this information only applies to modifying chains of the same length and pitch. All components must be of the same pitch. You cannot intermix components of different pitch.

615 TRENCHER CHAIN CONVERSIONS FOR 24" (61.0CM) BOOMS - CUP TEETH

1) FROM 6" (15.2cm) WIDE TO 8" (20.3cm) WIDE (Kit #17079)

REQ'D	PART NO.	DESCRIPTION
8	1796	.38" UNF Lock Nut
1	31595	Left Cup Tooth
3	31596	Right Cup Tooth
16	10078	.38" UNF X 2.75" Hex Capscrew - Grade 8
4	17017	8" Tooth Spacer
1	53055	8" Crumber Shoe

New stations: (4) 8-C (1) CR-C Remove: (1) CL-C (1) 4L-C (1) 4R-C (1) 6L-C (1) 6R-C

2) FROM 8" (20.3cm) WIDE TO 6" (15.2cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
4	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
4	10054	.38" UNF X 3.25" Hex Capscrew - Grade 8
8	17024	Spacer
4	17016	Tooth Spacer
1	53054	6" Crumber Shoe

New stations: (1) 4L-C (1) 4R-C (1) 6L-C (1) 6R-C (1) CL-C Remove: (4) 8-C (1) CR-C

3) FROM 6" (15.2cm) WIDE TO 10" (25.4cm) WIDE (Kit #17080)

REQ'D	PART NO.	DESCRIPTION
12	1796	.38" UNF Lock Nut
2	31595	Left Cup Tooth
4	31596	Right Cup Tooth
12	10078	.38" UNF X 2.75" Hex Capscrew - Grade 8
3	17017	8" Tooth Spacer
12	10079	.38" UNF X 3.75" Hex Capscrew - Grade 8
3	17018	10" Tooth Spacer
1	53058	10" Crumber Shoe

New stations: (3) 8-C (3) 10-C Remove: (2) 6L-C (1) CL-C (1) 4L-C (1) 4R-C (1) 6R-C

DIGGING CHAIN OPTIONS

DIGGING CHAIN WIDTH CONVERSIONS FOR 615 TRENCHER

4) FROM 10" (25.4cm) WIDE TO 6" (15.2cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
6	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
6	10054	.38" UNF X 3.25" Hex Capscrew - Grade 8
12	17024	Spacer
6	17016	Tooth Spacer
1	53054	6" Crumber Shoe

New stations: (3) 8-C (3) 10-C Remove: (2) 6L-C (1) CL-C (1) 4L-C (1) 4R-C (1) 6R-C

5) FROM 6" (15.2cm) WIDE TO 12" (30.5cm) WIDE (Kit #17081)

REQ'D	PART NO.	DESCRIPTION
18	1796	.38" UNF Lock Nut
4	31595	Left Cup Tooth
5	31596	Right Cup Tooth
3	17017	8" Tooth Spacer
12	10078	.38" UNF X 2.75" Hex Capscrew - Grade 8
12	10079	.38" UNF X 3.75" Hex Capscrew - Grade 8
3	17018	10" Tooth Spacer
12	10080	.38" UNF X 4.75" Hex Capscrew - Grade 8
3	17019	12" Tooth Spacer
1	53059	12" Crumber Shoe

New stations: (3) 8-C (3)10-C (3)12-C Remove: (2) 4L-C (2) 4R-C (2) 6L-C (2) 6R-C (1) CL-C

6) FROM 12" (30.5cm) WIDE TO 6" (15.2cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
10	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
8	10054	.38" UNF X 3.25" Hex Capscrew - Grade 8
18	19024	Spacer
8	17016	Tooth Spacer
1	53054	6" Crumber Shoe

New stations: (2) 4L-C (2) 4R-C (2) 6L-C (2) 6R-C (1) CL-C Remove: (3) 8-C (3) 10-C (3) 12-C

7) FROM 8" (20.3cm) WIDE TO 10" (25.4cm) WIDE (Kit #17082)

REQ'D	PART NO.	DESCRIPTION
2	1796	.38" UNF Lock Nut
1	31595	Left Cup Tooth
1	31596	Right Cup Tooth
12	10079	.38" UNF X 3.75" Hex Capscrew - Grade 8
3	17018	10" Tooth Spacer
1	53058	10" Crumber Shoe

New stations: (3) 10-C Remove: (1) 6L-C (1) 8-C (1) CR-C

8) FROM 10" (25.4cm) WIDE TO 8" (20.3cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
2	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
2	10054	.38" UNF X 3.25" Hex Capscrew - Grade 8
4	17024	Spacer
2	17016	Tooth Spacer
4	10078	.38" UNF X 2.75" Hex Capscrew - Grade 8
1	17017	8" Tooth Spacer
1	53055	8" Crumber Shoe

New stations: (1) 6L-C (1) 8-C (1) CR-C Remove: (3) 10-C

9159 9-9-14-3

DIGGING CHAIN OPTIONS

DIGGING CHAIN WIDTH CONVERSIONS FOR 615 TRENCHER

9) FROM 8" (20.3cm) WIDE TO 12" (30.5cm) WIDE (Kit #17083)

REQ'D	PART NO.	DESCRIPTION
10	1796	.38" UNF Lock Nut
3	31595	Left Cup Tooth
2	31596	Right Cup Tooth
12	10079	.38" UNF X 3.75" Hex Capscrew - Grade 8
3	17018	10" Tooth Spacer
12	10080	.38" UNF X 4.75" Hex Capscrew - Grade 8
3	17019	12" Tooth Spacer
1	53059	12" Crumber Shoe

New stations:(3) 10-C (3) 12-C Remove: (1) 4R-C (1) 4L-C (1) 6R-C (1) 6L-C (1) 8-C (1) CL-C

10) FROM 12" (30.5cm) WIDE TO 8" (20.3cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
6	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
4	10054	.38" UNF X 3.25" Hex Capscrew - Grade 8
10	17024	Spacer
4	17016	Tooth Spacer
4	10078	.38" UNF X 2.75" Hex Capscrew - Grade 8
1	17017	8" Tooth Spacer
1	53055	8" Crumber Shoe

New stations: (1) 4R-C (1) 4L-C (1) 6R-C (1) 6L-C (1) 8-C (1) CL-C Remove: (3) 10-C (3) 12-C

11) FROM 10" (25.4cm) WIDE TO 12" (30.5cm) WIDE (Kit #17084)

REQ'D	PART NO.	DESCRIPTION
6	1796	.38" UNF Lock Nut
2	31595	Left Cup Tooth
1	31596	Right Cup Tooth
12	10080	.38" UNF X 4.75" Hex Capscrew - Grade 8
3	17019	12" Tooth Spacer
1	53059	12" Crumber Shoe

New stations: (3) 12-C Remove: (1) 4R-C (1) 4L-C (1) 6R-C

12) FROM 12" (30.5cm) WIDE TO 10" (25.4cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
4	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
2	10054	.38" UNF X 3.25" Hex Capscrew - Grade 8
6	17024	Spacer
2	17016	Tooth Spacer
1	53058	10" Crumber Shoe

New Stations: (1) 4R-C (1) 4L-C (1) 6R-C Remove: (3) 12-C

615 TRENCHER CHAIN CONVERSIONS FOR 30" (76.2CM) BOOMS - CUP TEETH

1) FROM 6" (15.2cm) WIDE TO 8" (20.3cm) WIDE (Kit #17085)

REQ'D	PART NO.	DESCRIPTION
10	1796	.38" UNF Lock Nut
3	31595	Left Cup Tooth
2	31596	Right Cup Tooth
20	10078	.38" UNF X 2.75" Hex Capscrew - Grade 8
5	17017	8" Tooth Spacer
1	53055	8" Crumber Shoe

New stations: (5) 8-C Remove: (1) CR-C (1) 4L-C (1) 4R-C (1) 6L-C (1) 6R-C

DIGGING CHAIN OPTIONS

DIGGING CHAIN WIDTH CONVERSIONS FOR 615 TRENCHER

2) FROM 8" (20.3cm) WIDE TO 6" (15.2cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
6	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
4	10054	.38" UNF X 3.25" Hex Capscrew - Grade 8
10	17024	Spacer
4	17016	Tooth Spacer
1	53054	6" Crumber Shoe

New stations: (1) 4L-C (1) 4R-C (1) 6L-C (1) 6R-C (1)CR-C Remove: (5) 8-C

3) FROM 6" (15.2cm) WIDE TO 10" (25.4cm) WIDE (Kit #17086)

REQ'D	PART NO.	DESCRIPTION
24	1796	.38" UNF Lock Nut
3	31595	Left Cup Tooth
5	31596	Right Cup Tooth
16	10078	.38" UNF X 2.75" Hex Capscrew - Grade 8
4	17017	8" Tooth Spacer
16	10079	.38" UNF X 3.75" Hex Capscrew - Grade 8
4	17018	10" Tooth Spacer
1	53058	10" Crumber Shoe

New stations: (4) 8-C (4) 10-C Remove: (2) 6L-C (1) CL-C (2) 4L-C (1) 4R-C (1) 6R-C (1) CR-C

4) FROM 10" (25.4cm) WIDE TO 6" (15.2cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
10	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
6	10054	.38" UNF X 3.25" Hex Capscrew - Grade 8
16	17024	Spacer
6	17016	Tooth Spacer
1	53054	6" Crumber Shoe

New stations: (2) 4L-C (1) 4R-C (1) 6R-C (2) 6L-C (1) CL-C (1) CR-C Remove: (4) 8-C (4) 10-C

5) FROM 8" (20.3cm) WIDE TO 10" (25.4cm) WIDE (Kit #17088)

REQ'D	PART NO.	DESCRIPTION
14	1796	.38" UNF Lock Nut
3	31596	Right Cup Tooth
16	10079	.38" UNF X 3.75" Hex Capscrew - Grade 8
4	17018	10" Tooth Spacer
1	53058	10" Crumber Shoe

New stations: (4) 10-C Remove: (1) 6L-C (1) 8-C (1) CL-C (1) 4L-C

6) FROM 10" (25.4cm) WIDE TO 8" (20.3cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
4	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
2	10054	.38" UNF X 3.25" Hex Capscrew - Grade 8
6	17024	Spacer
2	17016	Tooth Spacer
4	10078	.38" UNF X 2.75" Hex Capscrew - Grade 8
1	17017	8" Tooth Spacer
1	53055	8" Crumber Shoe

New Stations: (1) 6L-C (1) 8-C (1) CL-C (1) 4L-C Remove: (4) 10-C

9161 9-9-14-3

DIGGING CHAIN OPTIONS

DIGGING CHAIN WIDTH CONVERSIONS FOR 615 TRENCHER

615 TRENCHER CHAIN CONVERSIONS FOR 36" (91.4CM) BOOMS - CUP TEETH

1) FROM 4.50" (11.4cm) WIDE TO 6" (15.2cm) WIDE (Kit #100014)

REQ'D	PART NO.	DESCRIPTION
24	17016	Tooth Spacer
24	10054	.38" UNF X 3.25" Hex Capscrew - Grade 8
1	53054	6" Crumber Shoe

New stations: (6) 6L-C (6) 6R-C Remove: (6) 4L-C (6) 4R-C

2) FROM 6" (15.2cm) WIDE TO 4.50" (11.4cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
24	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
1	59808	4.5" Crumber Shoe

New stations: (6) 4L-C (6) 4R-C Remove: (6) 6L-C (6) 6R-C

3) FROM 4.50" (11.4cm) WIDE TO 8" (20.3cm) WIDE (Kit #100015)

REQ'D	PART NO.	DESCRIPTION
10	1796	.38" UNF Lock Nut
1	31595	Left Cup Tooth
4	31596	Right Cup Tooth
20	10054	.38" UNF X 3.25" Hex Capscrew - Grade 8
20	17016	Tooth Spacer
20	10078	.38" UNF X 2.75" Hex Capscrew - Grade 8
5	17017	8" Tooth Spacer
1	53055	8" Crumber Shoe

New stations: (5) 8-C (5) 6L-C (5) 6R-C Remove: (1) CL-C (8) 4L-C (6) 4R-C

4) FROM 8" (20.3cm) WIDE TO 4.50" (11.4cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
30	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
10	17024	Spacer
1	59808	4.5" Crumber Shoe

New stations: (8) 4L-C (6) 4R-C (1) CL-C Remove: (5) 8-C (5) 6L-C (5) 6R-C

5) FROM 6" (15.2cm) WIDE TO 8" (20.3cm) WIDE (Kit #17091)

REQ'D	PART NO.	DESCRIPTION
10	1796	.38" UNF Lock Nut
1	31595	Left Cup Tooth
4	31596	Right Cup Tooth
20	10078	.38" UNF X 2.75" Hex Capscrew - Grade 8
5	17017	8" Tooth Spacer
1	53055	8" Crumber Shoe

New station: (5) 8-C Remove: (1) 6L-C (1) 6R-C (1) CL-C (2) 4L-C

6) FROM 8" (20.3cm) WIDE TO 6" (15.2cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
6	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
10	17024	Spacer
4	10054	.38" UNF X 3.25" Hex Capscrew - Grade 8
4	17016	Tooth Spacer
1	53054	6" Crumber Shoe

New Stations: (1) 6L-C (1) 6R-C (1) CL-C (2) 4L-C Remove: (5) 8-C

9162 9-9-14-3

DIGGING CHAIN OPTIONS

DIGGING CHAIN WIDTH CONVERSIONS FOR 615 TRENCHER

615 TRENCHER CHAIN CONVERSIONS FOR 48" (121.9CM) BOOMS - CUP TEETH

1) FROM 4.50" (11.4cm) WIDE TO 6" (15.2cm) WIDE (Kit #100016)

REQ'D	PART NO.	DESCRIPTION
32	10054	.38" UNF X 3.25" Hex Capscrew - Grade 8
32	17016	Tooth Spacer
1	53054	6" Crumber Shoe

New stations: (8) 6L-C (8) 6R-C Remove: (8) 4L-C (8) 4R-C

2) FROM 6" (15.2cm) WIDE TO 4.50" (11.4cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
32	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
1	59808	4.5" Crumber Shoe

New stations: (8) 4L-C (8) 4R-C Remove: (8) 6L-C (8) 6R-C

615 TRENCHER CHAIN CONVERSIONS FOR 24" (61.0CM) BOOMS - 70/30 COMBINATION

1) FROM 6" (15.2cm) WIDE TO 8" (20.3cm) WIDE (Kit #100017)

REQ'D	PART NO.	DESCRIPTION
8	1796	.38" UNF Lock Nut
1	31593	Left Shark Style Tooth
2	31594	Right Shark Style Tooth
2	31595	Left Cup Tooth
2	31596	Right Cup Tooth
16	10078	.38" UNF X 2.75" Hex Capscrew - Grade 8
4	17017	8" Tooth Spacer
1	53055	8" Crumber Shoe

New stations: (2) 8-C (2) 8-D Remove: (1) 6L-D (1) C-D (1) CR-D (1) CL-D

2) FROM 8" (20.3cm) WIDE TO 6" (15.2cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
4	100001	Spacer (.55" Wide)
4	100002	Spacer (1.09" Wide)
6	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
2	10054	.38" UNF X 3.25" Hex Capscrew - Grade 8
2	17024	Spacer
2	17016	Tooth Spacer
3	31592	Center Shark Style Tooth
1	53054	6" Crumber Shoe

New stations: (1) 6L-D (1) C-D (1) CR-D (1) CL-D Remove: (2) 8-C (2) 8-D

3) FROM 6" (15.2cm) WIDE TO 10" (25.4cm) WIDE (Kit #100018)

REQ'D	PART NO.	DESCRIPTION
8	1796	.38" UNF Lock Nut
1	31593	Left Shark Style Tooth
2	31594	Right Shark Style Tooth
2	31595	Left Cup Tooth
2	31596	Right Cup Tooth
8	10078	.38" UNF X 2.75" Hex Capscrew - Grade 8
2	17017	8" Tooth Spacer
8	10079	.38" UNF X 3.75" Hex Capscrew - Grade 8
2	17018	10" Tooth Spacer
1	53058	10" Crumber Shoe

New stations: (1) 8-C (1) 8-D (1) 10-C (1) 10-D Remove: (1) 6L-D (1) C-D (1) CR-D (1) CL-D

9163 9-9-14-3

DIGGING CHAIN OPTIONS

DIGGING CHAIN WIDTH CONVERSIONS FOR 615 TRENCHER

4) FROM 10" (25.4cm) WIDE TO 6" (15.2cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
4	100001	Spacer (.55" Wide)
4	100002	Spacer (1.09" Wide)
6	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
2	10054	.38" UNF X 3.25" Hex Capscrew - Grade 8
2	17024	Spacer
2	17016	Tooth Spacer
3	31592	Center Shark Style Tooth
1	53054	6" Crumber Shoe

New stations: (1) 6L-D (1) C-D (1) CR-D (1) CL-D Remove:(1) 8-C (1) 8-D (1) 10-C (1) 10-D

5) FROM 6" (15.2cm) WIDE TO 12" (30.5cm) WIDE (Kit #100019)

REQ'D	PART NO.	DESCRIPTION
12	1796	.38" UNF Lock Nut
2	31593	Left Shark Style Tooth
3	31594	Right Shark Style Tooth
3	31595	Left Cup Tooth
3	31596	Right Cup Tooth
8	10078	.38" UNF X 2.75" Hex Capscrew - Grade 8
2	17017	8" Tooth Spacer
8	10079	.38" UNF X 3.75" Hex Capscrew - Grade 8
2	17018	10" Tooth Spacer
4	10080	.38" UNF X 4.75" Hex Capscrew - Grade 8
4	10081	.38" UNF X 5.00" Hex Capscrew - Grade 8
2	17019	12" Tooth Spacer
1	53059	12" Crumber Shoe

New stations: (1) 8-C (1) 8-D (1) 10-C (1) 10-D (1) 12-C (1) 12-D Remove: (2) CR-D (2) CL-D (1) 6L-D (1) C-D

6) FROM 12" (30.5cm) WIDE TO 6" (15.2cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
4	100001	Spacer (.55" Wide)
8	100002	Spacer (1.09" Wide)
10	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
2	10054	.38" UNF X 3.25" Hex Capscrew - Grade 8
2	17024	Spacer
2	17016	Tooth Spacer
5	31592	Center Shark Style Tooth
1	53054	6" Crumber Shoe

New stations: (2) CR-D (2) CL-D (1) 6L-D (1) C-D Remove: (1) 8-C (1) 8-D (1) 10-C (1) 10-D (1) 12-C (1) 12-D

7) FROM 8" (20.3cm) WIDE TO 10" (25.4cm) WIDE (Kit #100020)

REQ'D	PART NO.	DESCRIPTION
8	10079	.38" UNF X 3.75" Hex Capscrew - Grade 8
2	17018	10" Tooth Spacer
1	53058	10" Crumber Shoe

New stations: (1) 10-C (1) 10-D Remove: (1) 8-C (1) 8-D

8) FROM 10" (25.4cm) WIDE TO 8" (20.3cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
8	10078	.38" UNF X 2.75" Hex Capscrew - Grade 8
2	17017	8" Tooth Spacer
1	53055	8" Crumber Shoe

New Stations: (1) 8-C (1) 8-D Remove: (1) 10-C (1) 10-D

9164 9-9-14-3

DIGGING CHAIN OPTIONS

DIGGING CHAIN WIDTH CONVERSIONS FOR 615 TRENCHER

9) FROM 8" (20.3cm) WIDE TO 12" (30.5cm) WIDE (Kit #100021)

REQ'D	PART NO.	DESCRIPTION
4	1796	.38" UNF Lock Nut
1	31593	Left Shark Style Tooth
1	31594	Right Shark Style Tooth
1	31595	Left Cup Tooth
1	31596	Right Cup Tooth
8	10079	.38" UNF X 3.75" Hex Capscrew - Grade 8
2	17018	10" Tooth Spacer
4	10080	.38" UNF X 4.75" Hex Capscrew - Grade 8
4	10081	.38" UNF X 5.00" Hex Capscrew - Grade 8
2	17019	12" Tooth Spacer
1	53059	12" Crumber Shoe

New stations: (1) 10-C (1) 10-D (1) 12-C (1) 12-D Remove: (1) CR-D (1) CL-D (1) 8-D (1) 8-C

10) FROM 12" (30.5cm) WIDE TO 8" (20.3cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
4	100002	Spacer (1.09" Wide)
4	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
2	31592	Center Shark Style Tooth
8	10078	.38" UNF X 2.75" Hex Capscrew - Grade 8
2	17017	8" Tooth Spacer
1	53055	8" Crumber Shoe

New stations: (1) CR-D (1) CL-D (1) 8-C (1) 8-D Remove: (1) 10-C (1) 10-D (1) 12-C (1) 12-D

11) FROM 10" (25.4cm) WIDE TO 12" (30.5cm) WIDE (Kit #100022)

REQ'D	PART NO.	DESCRIPTION
4	1796	.38" UNF Lock Nut
1	31593	Left Shark Style Tooth
1	31594	Right Shark Style Tooth
1	31595	Left Cup Tooth
1	31596	Right Cup Tooth
4	10080	.38" UNF X 4.75" Hex Capscrew - Grade 8
4	10081	.38" UNF X 5.00" Hex Capscrew - Grade 8
2	17019	12" Tooth Spacer
1	53059	12" Crumber Shoe

New stations: (1) 12-C (1) 12-D Remove: (1) CR-D (1) CL-D

12) FROM 12" (30.5cm) WIDE TO 10" (25.4cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
4	100002	Spacer (1.09" Wide)
4	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
2	31592	Center Shark Style Tooth
1	53058	10" Crumber Shoe

New Stations: (1) CR-D (1) CL-D Remove: (1) 12-C (1) 12-D

DIGGING CHAIN OPTIONS

DIGGING CHAIN WIDTH CONVERSIONS FOR 615 TRENCHER

615 TRENCHER CHAIN CONVERSIONS FOR 30" (76.2CM) BOOMS - 70/30 COMBINATION

1) FROM 6" (15.2cm) WIDE TO 8" (20.3cm) WIDE (Kit #100023)

REQ'D	PART NO.	DESCRIPTION
8	1796	.38" UNF Lock Nut
1	31593	Left Shark Style Tooth
1	31594	Right Shark Style Tooth
1	31595	Left Cup Tooth
1	31596	Right Cup Tooth
16	10078	.38" UNF X 2.75" Hex Capscrew - Grade 8
4	17017	8" Tooth Spacer
1	53055	8" Crumber Shoe

New stations: (2) 8-C (2) 8-D Remove: (1) 4R-D (1) 4R-C (1) 4L-D (1) 4L-C

2) FROM 8" (20.3cm) WIDE TO 6" (15.2cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
8	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
8	17024	Spacer
1	53054	6" Crumber Shoe

New stations: (1) 4R-D (1) 4R-C (1) 4L-D (1) 4L-C Remove: (2) 8-C (2) 8-D

3) FROM 6" (15.2cm) WIDE TO 10" (25.4cm) WIDE (Kit #100024)

REQ'D	PART NO.	DESCRIPTION
14	1796	.38" UNF Lock Nut
3	31593	Left Shark Style Tooth
3	31594	Right Shark Style Tooth
2	31595	Left Cup Tooth
2	31596	Right Cup Tooth
12	10078	.38" UNF X 2.75" Hex Capscrew - Grade 8
3	17017	8" Tooth Spacer
16	10079	.38" UNF X 3.75" Hex Capscrew - Grade 8
4	17018	10" Tooth Spacer
1	53058	10" Crumber Shoe

New stations:(1) 8-C (2) 8-D (2) 10-D (2) 10-C Remove: (1) 4R-D (1) 4R-C (1) 4L-D (1) 4L-C (1) C-D (1) CR-D (1) CL-D

4) FROM 10" (25.4cm) WIDE TO 6" (15.2cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
4	100001	Spacer (.55" Wide)
4	100002	Spacer (1.09" Wide)
14	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
8	17024	Spacer
3	31592	Center Shark Style Tooth
1	53054	6" Crumber Shoe

New stations:(1) 4R-D (1) 4R-C (1) 4L-D (1) 4L-C (1) C-D (1) CR-D (1) CL-D Remove: (1) 8-C (2) 8-D (2) 10-D (2) 10-C

5) FROM 8" (20.3cm) WIDE TO 10" (25.4cm) WIDE (Kit #100025)

REQ'D	PART NO.	DESCRIPTION
6	1796	.38" UNF Lock Nut
2	31593	Left Shark Style Tooth
2	31594	Right Shark Style Tooth
1	31595	Left Cup Tooth
1	31596	Right Cup Tooth
16	10079	.38" UNF X 3.75" Hex Capscrew - Grade 8
4	17018	10" Tooth Spacer
1	53058	10" Crumber Shoe

New stations: (2) 10-C (2) 10-D Remove: (1) C-D (1) CR-D (1) CL-D (1) 8-C

9166 9-9-14-3

DIGGING CHAIN OPTIONS

DIGGING CHAIN WIDTH CONVERSIONS FOR 615 TRENCHER

6) FROM 10" (25.4cm) WIDE TO 8" (20.3cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
4	100001	Spacer (.55" Wide)
4	100002	Spacer (1.09" Wide)
6	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
3	31592	Center Shark Style Tooth
4	10078	.38" UNF X 2.75" Hex Capscrew - Grade 8
1	17017	8" Tooth Spacer
1	53055	8" Crumber Shoe

New Stations: (1) C-D (1) CR-D (1) CL-D (1) 8-C Remove: (2) 10-C (2) 10-D

615 TRENCHER CHAIN CONVERSIONS FOR 36" (91.4CM) BOOMS - 70/30 COMBINATION

1) FROM 4.50" (11.4cm) WIDE TO 6" (15.2cm) WIDE (Kit #100026)

REQ'D	PART NO.	DESCRIPTION
12	17024	Spacer
2	31593	Left Shark Style Tooth
1	31594	Right Shark Style Tooth
1	31595	Left Cup Tooth
2	31596	Right Cup Tooth
22	10054	.38" UNF X 3.25" Hex Capscrew - Grade 8
22	17016	Tooth Spacer
1	53054	6" Crumber Shoe

New stations:(3) 6R-D (3) 6R-C (3) 6L-D (2) 6L-C Remove: (2) C-D (2) CR-D (2) CL-D (2) 4R-D (1) 4R-C (1) 4L-D (1) 4L-C

2) FROM 6" (15.2cm) WIDE TO 4.50" (11.4cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
8	100001	Spacer (.55" Wide)
8	100002	Spacer (1.09" Wide)
22	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
6	31592	Center Shark Style Tooth
1	59808	4.5" Crumber Shoe

New stations:(2) C-D (2) CR-D (2) CL-D (2) 4R-D (1) 4R-C (1) 4L-D (1) 4L-C Remove: (3) 6R-D (3) 6R-C (3) 6L-D (2) 6L-C

3) FROM 4.50"(11.4cm) WIDE TO 8" (20.3cm) WIDE (Kit #100027)

REQ'D	PART NO.	DESCRIPTION
12	1796	.38" UNF Lock Nut
5	31593	Left Shark Style Tooth
4	31594	Right Shark Style Tooth
1	31595	Left Cup Tooth
2	31596	Right Cup Tooth
16	10054	.38" UNF X 3.25" Hex Capscrew - Grade 8
16	17016	Tooth Spacer
24	10078	.38" UNF X 2.75" Hex Capscrew - Grade 8
6	17017	8" Tooth Spacer
1	53055	8" Crumber Shoe

New stations: (3) 6R-D (1) 6R-C (3) 6L-D (1) 6L-C (3) 8-D (3) 8-C Remove: (2) C-D (2) CR-D (2) CL-D (2) 4R-D (2) 4R-C (1) 4L-D (3) 4L-C

9167 9-9-14-3

DIGGING CHAIN OPTIONS

DIGGING CHAIN WIDTH CONVERSIONS FOR 615 TRENCHER

4) FROM 8" (20.3cm) WIDE TO 4.50" (11.4cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
8	100001	Spacer (.55" Wide)
8	100002	Spacer (1.09" Wide)
28	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
6	31592	Center Shark Style Tooth
1	59808	4.5" Crumber Shoe

New stations: (2) C-D (2) CR-D (2) CL-D (2) 4R-D (2) 4R-C (1) 4L-D (3) 4L-C Remove: (3) 6R-D (1) 6R-C (3) 6L-D (1) 6L-C (3) 8-D (3) 8-C

5) FROM 6" (15.2cm) WIDE TO 8" (20.3cm) WIDE (Kit #100028)

REQ'D	PART NO.	DESCRIPTION
12	1796	.38" UNF Lock Nut
3	31593	Left Shark Style Tooth
3	31594	Right Shark Style Tooth
24	10078	.38" UNF X 2.75" Hex Capscrew - Grade 8
6	17017	8" Tooth Spacer
1	53055	8" Crumber Shoe

New stations: (3) 8-D (3) 8-C Remove: (1) 6L-C (2) 6R-C (1) 4R-C (2) 4L-C

6) FROM 8" (20.3cm) WIDE TO 6" (15.2cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
6	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
12	17024	Spacer
6	10054	.38" UNF X 3.25" Hex Capscrew - Grade 8
6	17016	Tooth Spacer
1	53054	6" Crumber Shoe

New Stations: (1) 6L-C (2) 6R-C (1) 4R-C (2) 4L-C Remove: (3) 8-D (3) 8-C

615 TRENCHER CHAIN CONVERSIONS FOR 48" (121.9CM) BOOMS - 70/30 COMBINATION

1) FROM 4.50" (11.4cm) WIDE TO 6" (15.2cm) WIDE (Kit #100029)

REQ'D	PART NO.	DESCRIPTION
1	31593	Left Shark Style Tooth
2	31594	Right Shark Style Tooth
2	31595	Left Cup Tooth
1	31596	Right Cup Tooth
12	17024	Spacer
26	10054	.38" UNF X 3.25" Hex Capscrew - Grade 8
26	17016	Tooth Spacer
1	53054	6" Crumber Shoe

New stations:(4) 6R-D (3) 6R-C (3) 6L-D (3) 6L-C Remove: (2) C-D (2) CR-D (2) CL-D (2) 4R-D (2) 4R-C (2) 4L-D (1) 4L-C

2) FROM 6" (15.2cm) WIDE TO 4.50" (11.4cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
8	100001	Spacer (.55" Wide)
8	100002	Spacer (1.09" Wide)
26	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
6	31592	Center Shark Style Tooth
1	59808	4.5" Crumber Shoe

New stations: (2) C-D (2) CR-D (2) CL-D (2) 4R-D (2) 4R-C (2) 4L-D (1) 4L-C Remove: (4) 6R-D (3) 6R-C (3) 6L-D (3) 6L-C

DIGGING CHAIN OPTIONS

DIGGING CHAIN WIDTH CONVERSIONS FOR 615F FOOTING TRENCHER

615F TRENCHER CHAIN CONVERSIONS FOR 24" (61.0 CM) BOOMS - CUP TEETH

1) FROM 6" (15.2cm) WIDE TO 8" (20.3cm) WIDE (Kit #17091)

REQ'D	PART NO.	DESCRIPTION
10	1796	.38" UNF Lock Nut
1	31595	Left Cup Tooth
4	31596	Right Cup Tooth
20	10078	.38" UNF X 2.75" Hex Capscrew - Grade 8
5	17017	8" Tooth Spacer
1	53055	8" Crumber Shoe

New stations: (5) 8-C Remove: (1) 6L-C (1) 6R-C (1) CL-C (2) 4L-C

2) FROM 8" (20.3cm) WIDE TO 6" (15.2cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
6	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
10	17024	Spacer
4	10054	.38" UNF X 3.25" Hex Capscrew - Grade 8
4	17016	Tooth Spacer
1	53054	6" Crumber Shoe

New Stations: (1) 6L-C (1) 6R-C (1) CL-C (2) 4L-C Remove: (5) 8-C

3) FROM 6" (15.2cm) WIDE TO 10" (25.4cm) WIDE (Kit #100031)

REQ'D	PART NO.	DESCRIPTION
16	1796	.38" UNF Lock Nut
4	31595	Left Cup Tooth
4	31596	Right Cup Tooth
16	10078	.38" UNF X 2.75" Hex Capscrew - Grade 8
4	17017	8" Tooth Spacer
16	10079	.38" UNF X 3.75" Hex Capscrew - Grade 8
4	17018	10" Tooth Spacer
1	53058	10" Crumber Shoe

New stations: (4) 8-C (4) 10-C Remove: (1) 6L-C (2) 6R-C (1) 4R-C (2) 4L-C (1) CR-C (1) CL-C

4) FROM 10" (25.4cm) WIDE TO 6" (15.2cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
10	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
6	10054	.38" UNC X 3.25" Hex Capscrew - Grade 8
16	17024	Spacer
6	17016	Tooth Spacer
1	53054	6" Crumber Shoe

New Stations: (1) 6L-C (2) 6R-C (1) 4R-C (2) 4L-C (1) CR-C (1) CL-C Remove: (4) 8-C (4) 10-C

5) FROM 6" (15.2cm) WIDE TO 12" (30.5cm) WIDE (Kit #100032)

REQ'D	PART NO.	DESCRIPTION
24	1796	.38" UNF Lock Nut
5	31595	Left Cup Tooth
7	31596	Right Cup Tooth
4	17017	8" Tooth Spacer
16	10078	.38" UNF X 2.75" Hex Capscrew - Grade 8
16	10079	.38" UNF X 3.75" Hex Capscrew - Grade 8
4	17018	10" Tooth Spacer
16	10080	.38" UNF X 4.75" Hex Capscrew - Grade 8
4	17019	12" Tooth Spacer
1	53059	12" Crumber Shoe

New stations: (4) 8-C (4) 10-C (4) 12-C Remove: (2) CL-C (3) 4L-C (2) 4R-C (2) 6L-C (2) 6R-C (1) CR-C 9169 9-9-14-3

DIGGING CHAIN OPTIONS

DIGGING CHAIN WIDTH CONVERSIONS FOR 615F FOOTING TRENCHER

6) FROM 12" (30.5cm) WIDE TO 6" (15.2cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
16	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
8	10054	.38" UNF X 3.25" Hex Capscrew - Grade 8
24	17024	Spacer
8	17016	Tooth Spacer
1	53054	6" Crumber Shoe

New Stations: (2) CL-C (3) 4L-C (2) 4R-C (2) 6L-C (2) 6R-C (1) CR-C Remove: (4) 8-C (4) 10-C (4) 12-C

7) FROM 8" (20.3cm) WIDE TO 10" (25.4cm) WIDE (Kit #100033)

REQ'D	PART NO.	DESCRIPTION
6	1796	.38" UNF Lock Nut
3	31595	Left Cup Tooth
16	10079	.38" UNF X 3.75" Hex Capscrew - Grade 8
4	17018	10" Tooth Spacer
1	53058	10" Crumber Shoe

New stations: (4) 10-C Remove: (1) 6R-C (1) 8-C (1) CR-C (1) 4R-C

8) FROM 10" (25.4cm) WIDE TO 8" (20.3cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
4	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
2	10054	.38" UNF X 3.25" Hex Capscrew - Grade 8
6	17024	Spacer
4	10078	.38" UNF X 2.75" Hex Capscrew - Grade 8
2	17016	Tooth Spacer
1	17017	8" Tooth Spacer
1	53055	8" Crumber Shoe

New Stations: (1) 6R-C (1) 8-C (1) CR-C(1) 4R-C Remove: (4) 10-C

9) FROM 8" (20.3cm) WIDE TO 12" (30.5cm) WIDE (Kit #100034)

REQ'D	PART NO.	DESCRIPTION
14	1796	.38" UNF Lock Nut
4	31595	Left Cup Tooth
3	31596	Right Cup Tooth
16	10079	.38" UNF X 3.75" Hex Capscrew - Grade 8
4	17018	10" Tooth Spacer
16	10080	.38" UNF X 4.75" Hex Capscrew - Grade 8
4	17019	12" Tooth Spacer
1	53059	12" Crumber Shoe

New stations: (4) 12-C (4) 10-C Remove: (2) 4R-C (1) CL-C (1) 4L-C (1) 6L-C (1) 6R-C (1) 8-C (1) CR-C

10) FROM 12" (30.5cm) WIDE TO 8" (20.3cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
10	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
4	10054	.38" UNF X 3.25" Hex Capscrew - Grade 8
14	17024	Spacer
4	17016	Tooth Spacer
4	10078	.38" UNF X 2.75" Hex Capscrew - Grade 8
1	17017	8" Tooth Spacer
1	53055	8" Crumber Shoe

New Stations: (2) 4R-C (1) CL-C (1) 4L-C (1) 6L-C (1) 6R-C (1) 8-C (1) CR-C Remove: (4) 12-C (4) 10-C

DIGGING CHAIN OPTIONS

DIGGING CHAIN WIDTH CONVERSIONS FOR 615F FOOTING TRENCHER

11) FROM 10" (25.4cm) WIDE TO 12" (30.5cm) WIDE (Kit #10035)

REQ'D	PART NO.	DESCRIPTION
8	1796	.38" UNF Lock Nut
1	31595	Left Cup Tooth
3	31596	Right Cup Tooth
16	10080	.38" UNF X 4.75" Hex Capscrew - Grade 8
4	17019	12" Tooth Spacer
1	53059	12" Crumber Shoe

New stations: (4) 12-C Remove: (1) CL-C (1) 4L-C (1) 4R-C (1) 6L-C

12) FROM 12" (30.5cm) WIDE TO 10" (25.4cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
6	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
2	10054	.38" UNF X 3.25" Hex Capscrew - Grade 8
8	17024	Spacer
2	17016	Tooth Spacer
1	53058	10" Crumber Shoe

New Stations: (1) CL-C (1) 4L-C (1) 4R-C (1) 6L-C Remove: (4) 12-C

615F TRENCHER CHAIN CONVERSIONS FOR 30" (76.2 CM) BOOMS - CUP TEETH

1) FROM 6" (15.2cm) WIDE TO 8" (20.3cm) WIDE (Kit #100036)

REQ'D	PART NO.	DESCRIPTION
12	1796	.38" UNF Lock Nut
3	31595	Left Cup Tooth
3	31596	Right Cup Tooth
24	10078	.38" UNF X 2.75" Hex Capscrew - Grade 8
6	17017	8" Tooth Spacer
1	53055	8" Crumber Shoe

New stations: (6) 8-C Remove:(1) CL-C (1) 4L-C (1) 6L-C (1) 6R-C (1) CR-C (1) 4R-C

2) FROM 8" (20.3cm) WIDE TO 6" (15.2cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
6	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
4	10054	.38" UNF X 3.25" Hex Capscrew - Grade 8
5	1525	.38" Flat Washer
4	17016	Tooth Spacer
1	53054	6" Crumber Shoe

New Stations: (1) CL-C (1) 4L-C (1) 6L-C (1) 6R-C (1) CR-C (1) 4R-C Remove: (6) 8-C

3) FROM 6" (15.2cm) WIDE TO 10" (25.4cm) WIDE (Kit #100037)

REQ'D	PART NO.	DESCRIPTION
20	1796	.38" UNF Lock Nut
5	31595	Left Cup Tooth
5	31596	Right Cup Tooth
20	10078	.38" UNF X 2.75" Hex Capscrew - Grade 8
5	17017	8" Tooth Spacer
20	10079	.38" UNF X 3.75" Hex Capscrew - Grade 8
5	17018	10" Tooth Spacer
1	53058	10" Crumber Shoe

New stations: (5) 8-C (5) 10-C Remove: (2) 4L-C (2) 4R-C (2) 6L-C (2) 6R-C (1) CL-C (1) CR-C

9171 9-9-14-3

DIGGING CHAIN OPTIONS

DIGGING CHAIN WIDTH CONVERSIONS FOR 615F FOOTING TRENCHER

4) FROM 10" (25.4cm) WIDE TO 6" (15.2cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
12	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
8	10054	.38" UNF X 3.25" Hex Capscrew - Grade 8
20	17024	Spacer
8	17016	Tooth Spacer
1	53054	6" Crumber Shoe

New Stations: (2) 4L-C(2) 4R-C (2) 6L-C (2) 6R-C (1) CL-C (1) CR-C Remove: (5) 8-C (5) 10-C

5) FROM 8" (20.3cm) WIDE TO 10" (25.4cm) WIDE (Kit #100038)

REQ'D	PART NO.	DESCRIPTION
8	1796	.38" UNF Lock Nut
2	31596	Right Cup Tooth
2	31595	Left Cup Tooth
20	10079	.38" UNF X 3.75" Hex Capscrew - Grade 8
5	17018	10" Tooth Spacer
1	53058	10" Crumber Shoe

New stations: (5) 10-C Remove: (1) 4R-C (1) 4L-C (1) 6L-C (1) 6R-C (1) 8-C

6) FROM 10" (25.4cm) WIDE TO 8" (20.3cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
6	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
4	10054	.38" UNF X 3.25" Hex Capscrew - Grade 8
5	1525	.38" Flat Washer
4	17016	Tooth Spacer
1	53055	8" Crumber Shoe

New Stations: (1) 4R-C (1) 4L-C (1) 6L-C (1) 6R-C (1) 8-C Remove: (5) 10-C

615F TRENCHER CHAIN CONVERSIONS FOR 24" (61.0 CM) BOOMS - 70/30 COMBINATION

1) FROM 6" (15.2cm) WIDE TO 8" (20.3cm) WIDE (Kit #100028)

REQ'D	PART NO.	DESCRIPTION
12	1796	.38" UNF Lock Nut
3	31593	Left Shark Style Tooth
3	31594	Right Shark Style Tooth
24	10078	.38" UNF X 2.75" Hex Capscrew - Grade 8
6	17017	8" Tooth Spacer
1	53055	8" Crumber Shoe

New stations: (3) 8-D (3) 8-C Remove: (1) 6L-C (2) 6R-C (1) 4R-C (2) 4L-C

2) FROM 8" (20.3cm) WIDE TO 6" (15.2cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
6	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
12	17024	Spacer
6	10054	.38" UNF X 3.25" Hex Capscrew - Grade 8
6	17016	Tooth Spacer
1	53054	6" Crumber Shoe

New Stations: (1) 6L-C (2) 6R-C (1) 4R-C (2) 4L-C Remove: (3) 8-D (3) 8-C

DIGGING CHAIN OPTIONS

DIGGING CHAIN WIDTH CONVERSIONS FOR 615F FOOTING TRENCHER

3) FROM 6" (15.2cm) WIDE TO 10" (25.4cm) WIDE (Kit #100040)

REQ'D	PART NO.	DESCRIPTION
16	1796	.38" UNF Lock Nut
2	31593	Left Shark Style Tooth
2	31594	Right Shark Style Tooth
3	31595	Left Cup Tooth
2	31596	Right Cup Tooth
16	10078	.38" UNF X 2.75" Hex Capscrew - Grade 8
4	17017	8" Tooth Spacer
16	10079	.38" UNF X 3.75" Hex Capscrew - Grade 8
4	17018	10" Tooth Spacer
1	53058	10" Crumber Shoe

New stations: (2) 8-D (2) 8-C (2) 10-D (2) 10-C Remove: (1) 4L-D (1) 4L-C (1) 4R-D (1) 4R-C (1) C-D (1) 6R-D (1) 6R-C (1) 6L-D

4) FROM 10" (25.4cm) WIDE TO 6" (15.2cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
4	100001	Spacer (.55" Wide)
14	17024	Spacer
10	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
6	10054	.38" UNF X 3.25" Hex Capscrew - Grade 8
6	17016	Tooth Spacer
1	31592	Center Shark Style Tooth
1	53054	6" Crumber Shoe

New Stations: (1) 4L-D (1) 4L-C (1) 4R-D (1) 4R-C (1) C-D (1) 6R-D (1) 6R-C (1) 6L-D Remove: (2) 8-D (2) 8-C (2) 10-D (2) 10-C

5) FROM 6" (15.2cm) WIDE TO 12" (30.5cm) WIDE (Kit #100041)

REQ'D	PART NO.	DESCRIPTION
18	1796	.38" UNF Lock Nut
4	31593	LeftShark Style Tooth
5	31594	Right Shark Style Tooth
3	31595	Left Cup Tooth
2	31596	Right Cup Tooth
12	10078	.38" UNF X 2.75" Hex Capscrew - Grade 8
3	17017	8" Tooth Spacer
12	10079	.38" UNF X 3.75" Hex Capscrew - Grade 8
3	17018	10" Tooth Spacer
4	10080	.38" UNF X 4.75" Hex Capscrew - Grade 8
8	10081	.38" UNF X 5.00" Hex Capscrew - Grade 8
3	17019	12" Tooth Spacer
1	53059	12" Crumber Shoe

New stations: (2) 8-D (1) 8-C (1) 10-D (2) 10-C (2) 12-D (1) 12-C Remove: (2) CD-R (2) CL-D (1) 6L-C (1) C-D (1) 4R-C (1) 4L-C (1) 6R-C

DIGGING CHAIN OPTIONS

DIGGING CHAIN WIDTH CONVERSIONS FOR 615F FOOTING TRENCHER

6) FROM 12" (30.5cm) WIDE TO 6" (15.2cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
4	100001	Spacer (.55" Wide)
8	100002	Spacer (1.09" Wide)
14	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
4	10054	.38" UNF X 3.25" Hex Capscrew - Grade 8
8	17024	Spacer
4	17016	Tooth Spacer
5	31592	Center Shark Style Tooth
1	53054	6" Crumber Shoe

New Stations: (2) CD-R (2) CL-D (1) 6L-C (1) C-D (1) 4R-C (1) 4L-C (1) 6R-C Remove: (2) 8-D (1) 8-C (1) 10-D (2) 10-C (2) 12-D (1) 12-C

7) FROM 8" (20.3cm) WIDE TO 10" (25.4cm) WIDE (Kit #100042)

REQ'D	PART NO.	DESCRIPTION
4	1796	.38" UNF Lock Nut
3	31595	Left Cup Tooth
2	31596	Right Cup Tooth
16	10079	.38" UNF X 3.75" Hex Capscrew - Grade 8
4	17018	10" Tooth Spacer
1	53058	10" Crumber Shoe

New stations: (1) 4L-C (1) 6R-C (1) 6L-C (2) 10-D (2) 10-C Remove: (1) 4L-D (1) 8-D (1) 4R-D (1) 8-C (1) C-D (1) 6R-D (1) 6L-D

8) FROM 10" (25.4cm) WIDE TO 8" (20.3cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
4	100001	Spacer (.55" Wide)
2	17024	Spacer
4	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
1	31592	Center Shark Style Tooth
1	31593	Left Shark Style Tooth
1	31594	Right Shark Style Tooth
8	10078	.38" UNF X 2.75" Hex Capscrew - Grade 8
2	17017	8" Tooth Spacer
1	53055	8" Crumber Shoe

New Stations: (1) 4L-D (1) 8-D(1) 4R-D (1) 8-C (1) C-D (1) 6R-D (1) 6L-D Remove: (1) 4L-C (1) 6R-C (1) 6L-C (2) 10-D (2) 10-C

9) FROM 8" (20.3cm) WIDE TO 12" (30.5cm) WIDE (Kit #100043)

REQ'D	PART NO.	DESCRIPTION
2	10054	.38" UNF X 3.25" Hex Capscrew - Grade 8
2	17016	Tooth Spacer
4	17024	Spacer
6	1796	.38" UNF Lock Nut
1	31593	Left Shark Style Tooth
2	31594	Right Shark Style Tooth
3	31595	Left Cup Tooth
2	31596	Right Cup Tooth
12	10079	.38" UNF X 3.75" Hex Capscrew - Grade 8
3	17018	10" Tooth Spacer
4	10080	.38" UNF X 4.75" Hex Capscrew - Grade 8
8	10081	.38" UNF X 5.00" Hex Capscrew - Grade 8
3	17019	12" Tooth Spacer
1	53059	12" Crumber Shoe

New stations: (1) 4LC (1) 6RC (1) 6LC(1) 10-D (1) 12-C (2) 12-D (2) 10-C Remove: (2) CR-D (2) CL-D (2) 8-C (1) C-D (1) 8-D (1) 6LD

DIGGING CHAIN OPTIONS

DIGGING CHAIN WIDTH CONVERSIONS FOR 615F FOOTING TRENCHER

10) FROM 12" (30.5cm) WIDE TO 8" (20.3cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
4	100001	Spacer (.55" Wide)
8	100002	Spacer (1.09" Wide)
8	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
5	31592	Center Shark Style Tooth
12	10078	.38" UNF X 2.75" Hex Capscrew - Grade 8
3	17017	8" Tooth Spacer
1	53055	8" Crumber Shoe

New Stations: (2) CR-D (2) CL-D (2) 8-C (1) C-D (1) 8-D (1) 6LD Remove: (1) 4LC (1) 6RC (1) 10-D (1) 12-C (2) 12-D (2) 10-C (1)6LC

11) FROM 10" (25.4cm) WIDE TO 12" (30.5cm) WIDE (Kit #100044)

REQ'D	PART NO.	DESCRIPTION
2	10054	.38" UNF X 3.25" Hex Capscrew - Grade 8
2	17016	Tooth Spacer
6	17024	Spacer
2	1796	.38" UNF Lock Nut
2	31593	Left Shark Style Tooth
3	31594	Right Shark Style Tooth
4	10080	.38" UNF X 4.75" Hex Capscrew - Grade 8
8	10081	.38" UNF X 5.00" Hex Capscrew - Grade 8
3	17019	12" Tooth Spacer
1	53059	12" Crumber Shoe

New stations: (2) 12-D (1) 12-C (1) 4R-D (1) 4L-D (1) 6R-D Remove: (2) CR-D (2) CL-D (1) 8-C (1) 10-D

12) FROM 12" (30.5cm) WIDE TO 10" (25.4cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
8	100002	Spacer (1.09" Wide)
4	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
4	31592	Center Shark Style Tooth
4	10078	.38" UNF X 2.75" Hex Capscrew - Grade 8
1	17017	8" Tooth Spacer
4	10079	.38" UNF X 3.75" Hex Capscrew - Grade 8
1	17018	10" Tooth Spacer
1	53058	10" Crumber Shoe

New Stations: (2) CR-D (2) CL-D (1) 8-C (1) 10-D Remove: (2) 12-D (1) 12-C (1) 4R-D (1) 4L-D (1) 6R-D

615F TRENCHER CHAIN CONVERSIONS FOR 30" (76.2 CM) BOOMS - 70/30 COMBINATION

1) FROM 6" (15.2cm) WIDE TO 8" (20.3cm) WIDE (Kit #100045)

REQ'D	PART NO.	DESCRIPTION
12	1796	.38" UNF Lock Nut
2	31593	Left Shark Style Tooth
1	31594	Right Shark Style Tooth
2	31595	Left Cup Tooth
1	31596	Right Cup Tooth
24	10078	.38" UNF X 2.75" Hex Capscrew - Grade 8
6	17017	8" Tooth Spacer
1	53055	8" Crumber Shoe

New stations: (3) 8-D (3) 8-C (1) 6L-C Remove: (1) 6R-C (1) 4R-C (1) 4L-D (2) 4L-C (2) 4R-D

2) FROM 8" (20.3cm) WIDE TO 6" (15.2cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
12	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
12	17024	Spacer
1	53054	6" Crumber Shoe

New Stations: (1) 6R-C (1) 4R-C (1) 4L-D (2) 4L-C (2) 4R-D Remove: (3) 8-D (3) 8-C (1) 6L-C

9175 9-9-14-3

DIGGING CHAIN OPTIONS

DIGGING CHAIN WIDTH CONVERSIONS FOR 615F FOOTING TRENCHER

3) FROM 6" (15.2cm) WIDE TO 10" (25.4cm) WIDE (Kit #100046)

REQ'D	PART NO.	DESCRIPTION
18	1796	.38" UNF Lock Nut
3	31593	Left Shark Style Tooth
3	31594	Right Shark Style Tooth
3	31595	Left Cup Tooth
2	31596	Right Cup Tooth
16	10078	.38" UNF X 2.75" Hex Capscrew - Grade 8
4	17017	8" Tooth Spacer
20	10079	.38" UNF X 3.75" Hex Capscrew - Grade 8
5	17018	10" Tooth Spacer
1	53058	10" Crumber Shoe

New stations: (3) 8-D (1) 8-C (2) 10-D (3) 10-C (1) 6L-C Remove: (1) C-D (1) CR-D (2) 4R-C (2) 4L-C (1) 6R-D (1) 6L-D (1) 4R-D (1) 4L-D

4) FROM 10" (25.4cm) WIDE TO 6" (15.2cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
4	100001	Spacer (.55" Wide)
2	100002	Spacer (1.09" Wide)
16	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
2	10054	.38" UNF X 3.25" Hex Capscrew - Grade 8
14	17024	Spacer
2	17016	Tooth Spacer
2	31592	Center Shark Style Tooth
1	53054	6" Crumber Shoe

New Stations: (1) C-D (1) CR-D (2) 4R-C (2) 4L-C (1) 6R-D (1) 6L-D (1) 4R-D (1) 4L-D Remove: (3) 8-D (1) 8-C (2) 10-D (3) 10-C (1) 6L-C

5) FROM 8" (20.3cm) WIDE TO 10" (25.4cm) WIDE (Kit #100047)

REQ'D	PART NO.	DESCRIPTION
6	1796	.38" UNF Lock Nut
1	31593	Left Shark Style Tooth
2	31594	Right Shark Style Tooth
1	31595	Left Cup Tooth
1	31596	Right Cup Tooth
20	10079	.38" UNF X 3.75" Hex Capscrew - Grade 8
5	17018	10" Tooth Spacer
1	53058	10" Crumber Shoe

New stations: (2) 10-D (3) 10-C (1) 4R-D (1) 6R-C Remove: (2) 8-C (1) C-D (1) CR-D (1) 4R-C (1) 6R-D (1) 6L-D

6) FROM 10" (25.4cm) WIDE TO 8" (20.3cm) WIDE (Order seperately)

REQ'D	PART NO.	DESCRIPTION
4	100001	Spacer (.55" Wide)
2	100002	Spacer (1.09" Wide)
4	10053	.38" UNF X 2.50" Hex Capscrew - Grade 8
2	10054	.38" UNF X 3.25" Hex Capscrew - Grade 8
2	17024	Spacer
2	17016	Tooth Spacer
2	31592	Center Shark Style Tooth
8	10078	.38" UNF X 2.75" Hex Capscrew - Grade 8
2	17017	8" Tooth Spacer
1	53055	8" Crumber Shoe

New Stations: (2) 8-C (1) C-D (1) CR-D (1) 4R-C (1) 6R-D (1) 6L-D Remove: (2) 10-D (3) 10-C (1) 4R-D (1) 6R-C

MAINTENANCE

GENERAL INFORMATION

Follow these procedures to get full performance and longevity out of the trencher.

LUBRICATION

Not all trenchers require lubricating of the headshaft bearing. The 615 trencher has a sealed bearing that requires no maintenance.

IMPORTANT: DO NOT lubricate any other part of the trencher! Lubricating parts such as the digging chain or the idler wheel will only attract dirt, resulting in increased wear.

8 HOURS OF OPERATION

Every 8 hours of operation the trencher should be inspected for loose nuts, capscrews, bearings etc. Tighten as required, replace where necessary.

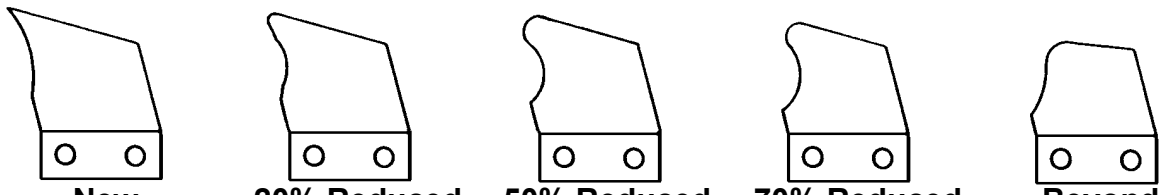
Clean equipment of all dirt, oil, grease, etc. This will assist you in making visual inspections and help avoid overlooking worn or damaged components.

Keep all safety decals clean and legible. Replace if damaged or worn.

DIGGING TOOTH REPLACEMENT

Sharp teeth are important to good performance. When teeth wear out, production will drop sharply, increasing wear and tear on other components.

Cup teeth wear on the tip and side bulge in varying amounts. Wear patterns change with different digging conditions. The following patterns and captions approximate, and should be used as a guide to help you determine your own best cost/benefit tooth replacement time. Normal replacement should be made between 30% and 60% reduction in performance. Replacement is a bolt-on procedure.



New | **20% Reduced Performance** | **50% Reduced Performance** | **70% Reduced Performance** | **Beyond Use**

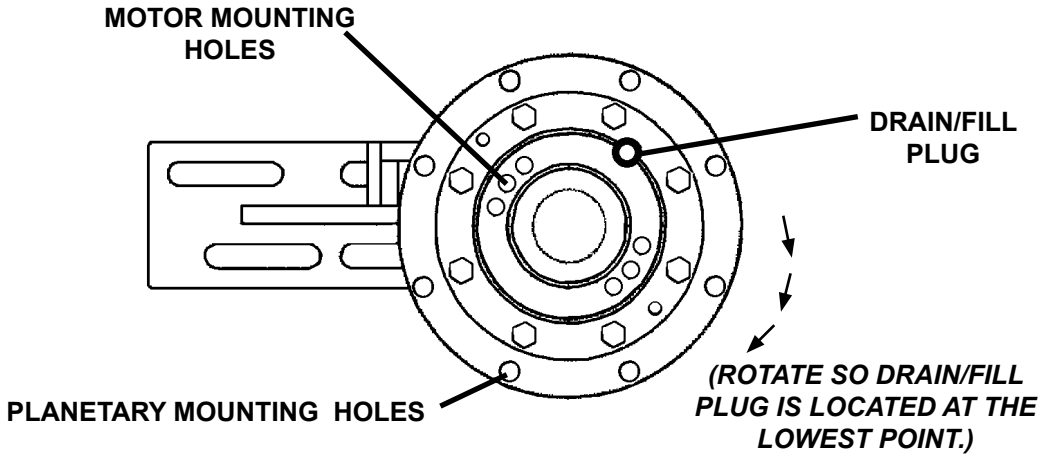
9135 9-5-14-2

MAINTENANCE

PLANETARY GEARBOX

Change planetary oil using API-GL-5, 80W or 90W lubricant after the first 50 hours of operation and then every 1200 hours or 12 months, whichever comes first. Oil should be at operating temperature when checking or changing oil.

DIGGA PLANETARY



CHANGING PLANETARY LUBRICANT (DIGGA PLANETARIES)

Digga Planetaries have one drain/fill plug.

1. Rotate the trencher up so drain/fill plug is located at the lowest point. Secure in place to avoid any inadvertant movement.
2. Wait 5 minutes to allow all of the oil to drain from the gears and bearings. Remove drain plug.
3. To Fill: Rotate the trencher down so the drain/fill hole is at the top. Secure in place to avoid any inadvertant movement. Add .85 quarts (27oz) of API-GL-5, 80W or 90W lubricant. Do not overfill.

TROUBLESHOOTING

615 TRENCHER

GENERAL INFORMATION

Your trencher was designed to be as simple and as trouble free as possible. The purpose of this section is to help you in the event that a problem does develop. While we cannot possibly cover every problem that might occur, you will find that those that are most common are covered here.

PROBLEM: DIGGING CHAIN WILL NOT TURN

POSSIBLE CAUSE AND SOLUTION:

1. Quick coupler not completely engaged. Check to see that all couplers are matched pairs and engaged correctly. Check coupler hook-up information for proper hydraulic hose routing.

2. Quick coupler failure. Check couplers for dirt, rust, or other contaminates that could affect coupler engagement. Clean or replace couplers as needed.

3. Obstruction in hydraulic hose. Remove hydraulic hoses and couplers one at a time, and check flow through hose by blowing through the hose or by pouring hydraulic fluid through the hose. Clean or replace hose, as needed.

4. Loader auxiliary hydraulics not operating properly. See loader operator's manual or dealer for information and help.

5. Hydraulic motor failed. Be sure you have hydraulic flow to the motor. If oil flow to motor is good, but motor will still not turn when detached from trencher headshaft, remove motor and have it serviced or replaced, as needed.

6. Headshaft bearings failed. Inspect headshaft bearings for free movement. Check for binding or foreign matter jamming bearing. Clean or replace, as necessary.

7. Boom end bearing failed. Inspect boom end bearing for free movement. Check for binding or foreign matter jamming bearing. Clean or replace, as necessary.

8. Digging chain too tight. Digging chain should only be tight enough to remain on sprockets while turning under load. There should be some sag in the chain. If too tight, loosen chain by the adjusting nut(s) on the boom.

9. Sand build-up in tooth root of sprocket. Sand can build up in the sprockets, effectively increasing the chain tension. Raise the boom out of the ditch and reverse the digging chain on the trencher, then run the trencher out of the trench to clear the sprockets. Reinstall the chain in its correct digging direction, and readjust chain tension.

10. Digging sprocket loose on headshaft. Observe if the headshaft is turning. If shaft is turning but sprocket is not, stop the trencher and tighten the sprocket.

9137 9-5-14-2

TROUBLESHOOTING

615 TRENCHER

PROBLEM: TRENCHER DOES NOT DIG FAST ENOUGH

POSSIBLE CAUSE AND SOLUTION:

1. Digging teeth worn. See maintenance section in this manual. Inspect teeth and replace, as needed.

2. Loader relief valve set too low. See loader operator's manual and or dealer for proper relief valve service and adjustment.

3. Quick coupler or hose restriction. Inspect couplers and hoses for dirt, rust, and other contaminates and repair or replace, as needed.

4. Hydraulic system over heating. Shut the trencher and loader down, and allow oil to cool. Repeated stalling of the trencher will cause the oil to overheat. Avoid excessive stalling.

5. Cutting a ditch size beyond the ability of the loader. Your trencher is powered by oil from the loader's auxiliary hydraulic system. The horsepower transmitted through the auxiliary hydraulics is substantially less than that of the engine.

PROBLEM: HYDRAULIC OIL OVER HEATING

POSSIBLE CAUSE AND SOLUTION:

1. Loader relief valve set too low. See loader operator's manual, and/or dealer for proper relief valve service and adjustment.

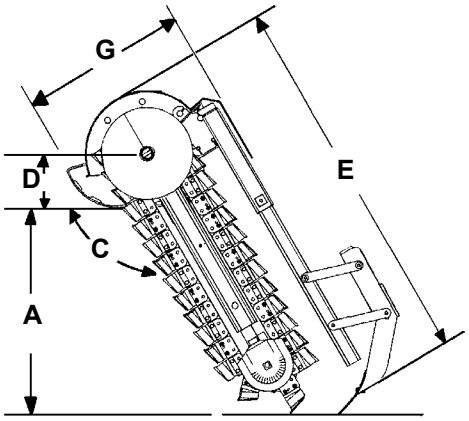
2. Quick coupler or hose restriction. Inspect couplers and hoses for dirt, rust, and other contaminates and repair or replace, as needed.

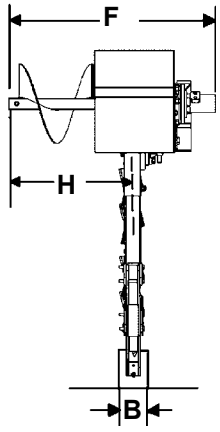
3. Motor or hose size not balanced to loader. A hose or a motor that is too small can cause added internal friction and resultant heat build-up. Check mounting kit parts list and diagram for proper hose size and type.

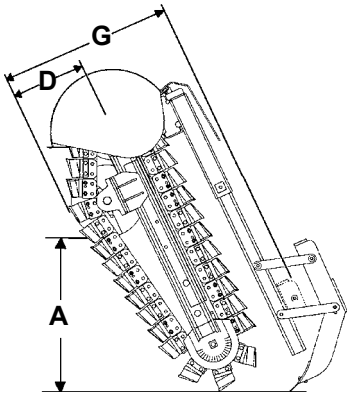
4. Loader not equipped with oil cooler or sufficient sump capacity. Check with your loader dealer for information and availability of auxiliary cooling and sump kits. Install, if available. If not available, stop loader and trencher and allow them to cool when they get too hot.

SPECIFICATIONS

615 TRENCHER







(615F TRENCHER)

SPECIFICATIONS AND DESIGN ARE SUBJECT TO CHANGE WITHOUT NOTICE AND WITHOUT LIABILITY THEREFOR.

	DESCRIPTION	BOOM SIZE 24"	30"	36"	48"
A.	615 Trench Depth w/Auger @ 65° Digging Angle	24"	30"	36"	48"
	615F Trench Depth w/Auger @ 65° Digging Angle	24"	30"		
B.	615 Chain Widths Available	6"	6"	4.5"	4.5"
		8"	8"	6"	6"
		10"	10"	8"	
		12"			
	615F Chain Widths Available	6"	6"		
		8"	8"		
		10"	10"		
		12"			
C.	Recommended Trenching Angle	65°	65°	65°	65°
D.	615 Headshaft Height	10"	10"	10"	10"
	615F Headshaft Height	17"	17"		
E.	615 Overall Trencher Length	51"	58"	65"	78"
	615F Overall Trencher Length	65"	72"		
F.	615 Overall Trencher Width	42"	42"	42"	42"
	615F Overall Trencher Width	26"	26"		
G.	Overall Trencher Height	28"	28"	28"	28"
	615F Overall Trencher Height	29"	29"		
H.	615 Spoil Discharge Reach	24"	24"	24"	24"
	615F Spoil Discharge Reach	18"	18"		
	Hydrostatic System:				
	GPM Requirements				6-10 or 10-16
	Operating Pressure				2000 - 3000 PSI
	Approximate Overall Shipping Weight (with 3' boom and 6" cup tooth chain and no mount)				510 lbs

9145 9-9-14-2

BOLT TORQUE SPECIFICATIONS

GENERAL TORQUE SPECIFICATION TABLES

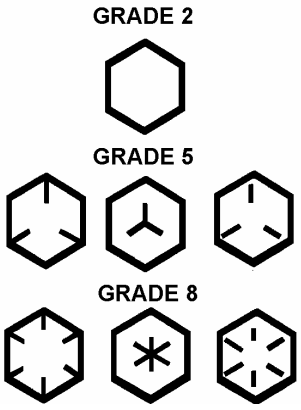
Use the following charts when determining bolt torque specifications when special torques are not given. Always use grade 5 or better when replacing bolts.

SAE BOLT TORQUE SPECIFICATIONS

NOTE: The following torque values are for use with extreme pressure lubricants, plating or hard washer applications Increase torque 15% when using hardware that is unplated and either dry or lubricated with engine oil.

Bolt Size		SAE GRADE 5 TORQUE Pounds Feet		SAE GRADE 5 TORQUE Newton-Meters		SAE GRADE 8 TORQUE Pounds Feet		SAE GRADE 8 TORQUE Newton-Meters	
Inches	Millimeters	UNC	UNF	UNC	UNF	UNC	UNF	UNC	UNF
1/4	6.35	8	9	11	12	10	13	14	18
5/16	7.94	14	17	19	23	20	25	27	34
3/8	9.53	30	36	41	49	38	46	52	62
7/16	11.11	46	54	62	73	60	71	81	96
1/2	12.70	68	82	92	111	94	112	127	152
9/16	14.29	94	112	127	152	136	163	184	221
5/8	15.88	128	153	174	207	187	224	254	304
3/4	19.05	230	275	312	373	323	395	438	536
7/8	22.23	340	408	461	553	510	612	691	830
1	25.40	493	592	668	803	765	918	1037	1245
1-1/8	25.58	680	748	922	1014	1088	1224	1475	1660
1-1/4	31.75	952	1054	1291	1429	1547	1700	2097	2305
1-3/8	34.93	1241	1428	1683	1936	2023	2312	2743	3135
1-1/2	38.10	1649	1870	2236	2535	2686	3026	3642	4103

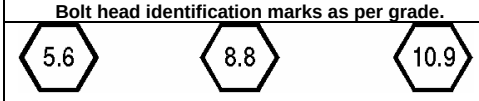
Bolt head identification marks as per grade. NOTE: Manufacturing Marks Will Vary



METRIC BOLT TORQUE SPECIFICATIONS

NOTE: The following torque values are for use with metric hardware that is unplated and either dry or lubricated with engine oil. Reduce torque 15% when using hardware that has extreme pressure lubricants, plating or hard washer applications.

Bolt head identification marks as per grade.



Size of Bolt	Grade No.	Pitch (mm)	Pounds Feet	Newton-Meters	Pitch (mm)	Pounds Feet	Newton-Meters
M6	5.6	1.0	3.6-5.8	4.9-7.9	-	-	-
	8.8		5.8-.4	7.9-12.7		-	-
	10.9		7.2-10	9.8-13.6		-	-
M8	5.6	1.25	7.2-14	9.8-19	1.0	12-17	16.3-23
	8.8		17-22	23-29.8		19-27	25.7-36.6
	10.9		20-26	27.1-35.2		22-31	29.8-42
M10	5.6	1.5	20-25	27.1-33.9	1.25	20-29	27.1-39.3
	8.8		34-40	46.1-54.2		35-47	47.4-63.7
	10.9		38-46	51.5-62.3		40-52	54.2-70.5
M12	5.6	1.75	28-34	37.9-46.1	1.25	31-41	42-55.6
	8.8		51-59	69.1-79.9		56-68	75.9-92.1
	10.9		57-66	77.2-89.4		62-75	84-101.6
M14	5.6	2.0	49-56	66.4-75.9	1.5	52-64	70.5-86.7
	8.8		81-93	109.8-126		90-106	122-143.6
	10.9		96-109	130.1-147.7		107-124	145-168
M16	5.6	2.0	67-77	90.8-104.3	1.5	69-83	93.5-112.5
	8.8		116-130	157.2-176.2		120-138	162.6-187
	10.9		129-145	174.8-196.5		140-158	189.7-214.1
M18	5.6	2.0	88-100	119.2-136	1.5	100-117	136-158.5
	8.8		150-168	203.3-227.6		177-199	239.8-269.6
	10.9		175-194	237.1-262.9		202-231	273.7-313
M20	5.6	2.5	108-130	146.3-176.2	1.5	132-150	178.9-203.3
	8.8		186-205	252-277.8		206-242	279.1-327.9
	10.9		213-249	288.6-337.4		246-289	333.3-391.6

PARTS

In order to provide you with the most UP-TO-DATE part information, all parts for this attachment have been moved to our website at ***www.paladinattachments.com/Manuals***. Please use these diagrams and parts lists to locate replacement parts.

When servicing your attachment, remember to use only original manufacturer replacement parts. Substitute parts may not meet the standards required for safe, dependable operation.

To facilitate parts ordering when contacting the factory, please have the product control number (PCN) or model and serial number of your product ready to ensure that you receive the correct parts for your specific attachment.

The product control number (PCN), model and serial number for your attachment should be recorded in the space provided on the cover of this manual. This information may be obtained from the serial number identification plate located on your attachment.

NOTE: Most daily and emergency parts orders (in stock) received by 10:30 A.M. (Eastern Standard Time) will be shipped UPS Ground the same day received. UPS Next Day orders must be received by 1:30 PM (Eastern Standard Time.)

SERVICE DEPARTMENT
(734) 996-9116
(800) 456-7100

For Fax and E-mail Orders
PLC_Sales@paladinattachments.com
(734) 996-9014

WARRANTY

In order to provide you with the most UP-TO-DATE Warranty information, Paladin Warranty Statement and Warranty Procedures along with Warranty Registration and Claim Forms have been moved to our website at ***www.paladinattachments.com***.

13033 8-4-16-2