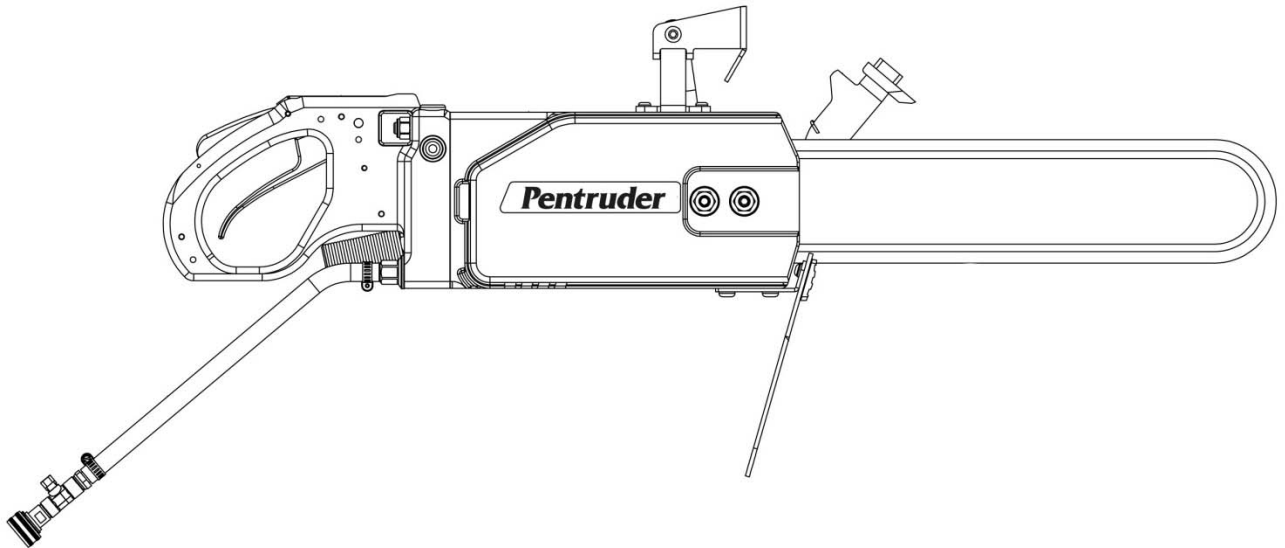


# Operator's Manual

## Pentruder<sup>®</sup> CW630 HF Chain Saw



***Pentruder***<sup>®</sup>  
Concrete Cutting Systems

**Operator's Manual for  
Pentruder® CW630 HF Chain Saw for use with  
Pentpak HF-power packs**



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Support & Service document  
Original instructions



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# 1 Introduction

Thank you very much for your confidence in our product! You have chosen to invest in a product which will give you many years of efficient and profitable production. The Pentruder CW630 has been developed based on more than 30 years of experience in this specialized field. With correct handling it offers outstanding performance, safety and reliability.



It is essential that all personnel working with or in close proximity of the machine have read and understood the contents of this manual before commencing operations. Please take careful note of the Safety Precautions.

The Operator's Manual should be kept where the machine is.

To avoid serious or even fatal injury to the operator and persons in close proximity of the machine, it is important that the machine always is operated by trained, responsible personnel.

By reading and understanding the manual the operator will be able to get the maximum benefit from the Pentruder CW630 HF Chain Saw. Be sure to read this manual thoroughly and periodically review safety instructions.

We are confident that your investment in this equipment and its many design features will enhance your competitive edge and profitability!

## 1.1 Validity of this Operator's Manual

This Operator's Manual is only valid for the Pentruder CW630 as described in Chapter 2 Description of The . Please also refer to the Operator's Manual for the Pentpak high frequency power pack being used.

Tractive AB always strives to improve the products. Therefore we reserve the right to make technical changes without prior information.

In the following Operator's Manual, "the machine", "chain saw" or "Pentruder CW630" is used to refer to the complete machine as listed in Chapter 2 Description of The .

Should questions arise, please contact our sales distributor. The address can be found at [www.pentruder.com](http://www.pentruder.com).

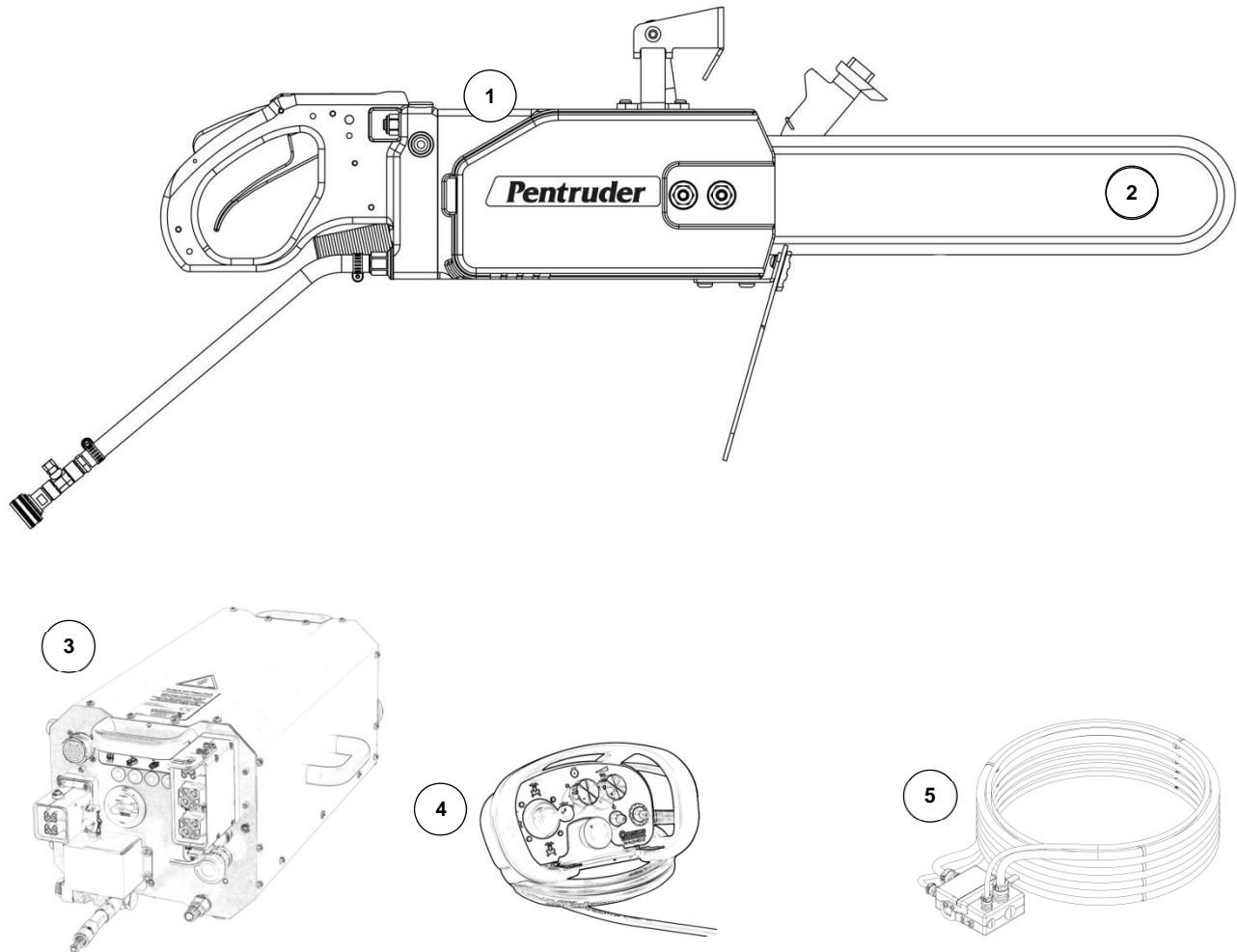
Product	Description	Serial number
Category:	HF Chain Saw	
Make and type:	Pentruder CW630-HF400	_____
Drive system:	Pentpak High Frequency Power Pack	
Type of drive system:	427 / 422 / 418	_____
Drive motor:	High Frequency electric motor	
<b>Manufacturer</b>		<b>Pentruder Distributor</b>
Tractive AB		
Gjutargatan 54		
S-781 70 Borlänge		
Sweden		
Phone: +46 (0)243 - 22 11 55		
Fax: +46 (0)243 - 22 11 80		
E-mail: info@tractive.se		
Web: www.tractive.se		

## 2 Description of The Machine

The Pentruder CW630 is developed and manufactured by **Tractive AB** in Sweden in a process where safety awareness, performance and reliability were the most important design parameters.

The Pentruder CW630 is designed to cut concrete, stone and masonry when used with the appropriate Diamond Chain. Other materials including ductile iron, cast iron or PVC pipe require a special chain. Follow the manufacturer's recommendations. Tractive recommends using genuine ICS® diamond chains, guidebars and drive sprockets.

### 2.1 List of complete machine



The Pentruder CW630 is used with the Pentruder HF drive system to be a complete machine.

1. Pentruder CW630 HF Chain Saw
2. Bar and diamond chain
3. Pentruder high frequency power pack
4. Remote control
5. High voltage cable

Please note that a Pentruder CW630 is not complete without the modules listed in this paragraph. Please also refer to the Operator's Manual for the Pentpak HF-drive system being used.

The manufacturer cannot take responsibility for diamond consumables used with the Pentruder CW630. Please refer to the technical documentation of the diamond tool in question before using it with the Pentruder CW630.

## 2.2 Signs and data plates on the CW630 HF Chain Saw and/or in this Operator's manual

The following signs can be found on the Pentruder CW630 HF Chain Saw and/or throughout this Operator's manual and are designed to make you aware of potential hazards or unsafe practices.



### Safety alert

This machine is a professional tool and can be dangerous if not used correctly.



### Read instructions

The Operator's manual of the CW630 and the Pentruder HF-drive system contain important safety and operating information. Read and follow the instructions carefully.



### Wear eye, hearing and respiratory protection. Wear head protection

All persons working with, or in the proximity of the machine should wear safety equipment.



### Wear long pants

Wear long pants when operating the saw.



### Wear foot protection

Wear appropriate closed-toe boots when operating the saw.



### Wear hand protection

Wear hand protection when operating the saw.



### Kerf width

Do not insert tool into slot narrower than chain.



### Beware of kickback

Kickback can cause severe injuries.



### Two-handed hold

Operate the saw with two hands, securely gripping both handles.



### One-handed hold

Do not operate the saw with one hand.



### Do not use a ladder

Never stand on a ladder when using the saw.



### Slippery surface

Unsure footing can lead to accidents.



This product is in accordance with applicable EC-directives.



The trash bin symbol is an environmental marking and indicates that this machine contains electrical/electronic equipment which should be recycled.



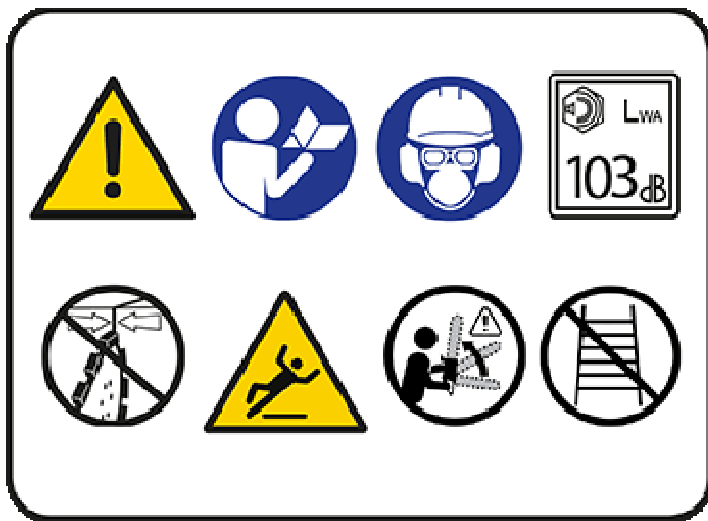
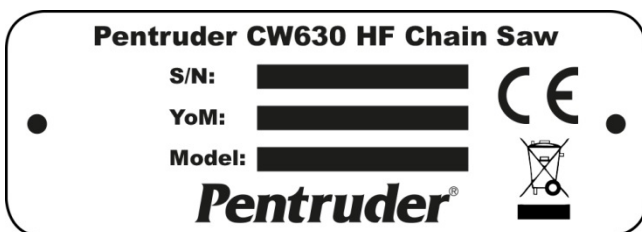
Noise emission to the environment according to the European Community's Directive. The noise levels can be found in Chapter 7 Technical Data.

**Cutting in a power line**

Cutting in a power line which is energized can result in serious injury and even to fatal injuries.

**Disconnect from power supply**

Before any kind of service on the machine is commenced, the machine must always be disconnected from the electric power supply.

**Safety label****Nameplate label****Meaning of abbreviations**

**S/N:** Serial Number

**YoM:** Year of Manufacture

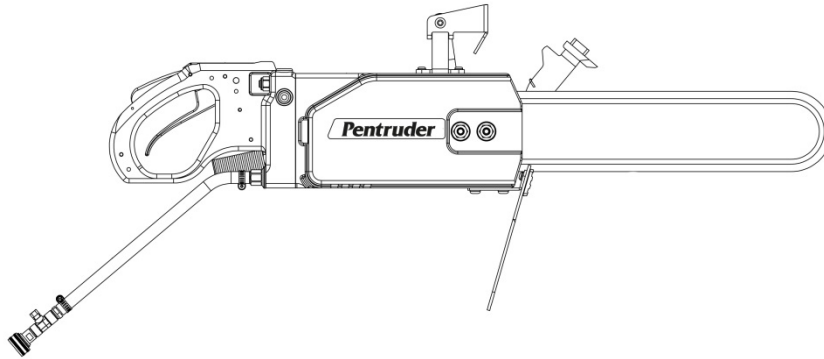
**Model:** CW630-HF400, 380-480V version -

**Warning label**

<b>WARNING</b>	<ul style="list-style-type: none"> <li>• Do NOT operate saw without side cover.</li> <li>• Do NOT use this saw cover on any other saw model.</li> </ul>	<ul style="list-style-type: none"> <li>• Connect only to Pentpak® High Frequency Power Packs.</li> <li>• Failure to observe these precautions can result in serious injury.</li> </ul>
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## 2.3 Pentruder CW630

- Pentruder CW630 HF Chain Saw
  - CW630-HF400, 380-480V version
- ICS® Diamond Chain and guide bar combinations
  - Bar 25 cm (10 in), 38 cm (15 in), 50 cm (20 in), 63 cm (25 in)



*Pentruder CW630 HF Chain Saw*

## 2.4 Pentruder HF drive system

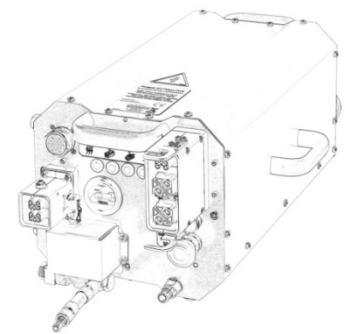
### 2.4.1 Pentruder high frequency (HF) power pack with cable remote control

The CW630-HF400, 380-480V Input voltage is powered by the Pentpak 427 , 422 or 418 equipped with digital communication connectors.

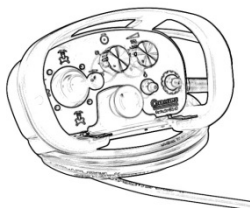
- PP427, Pentpak 427 (50-60 Hz)
- PP422, Pentpak 422 (50-60 Hz)
- PP418, Pentpak 418 (50-60 Hz)

In the following Operator's Manual Pentpak HF power pack or just Pentpak is used to refer to all of the Pentpak HF power packs listed above.

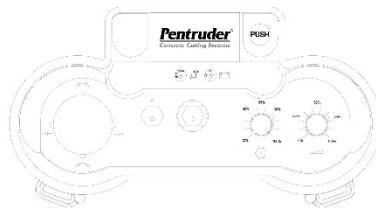
The Pentruder CW630 HF Chain Saw is used with the CRC cable remote control or WRC radio remote control. The chain saw has a fixed cable with connector attached to the machine that connects directly into the Pentpak. The high voltage cable HF400-9-30 can be used as an extension cable.



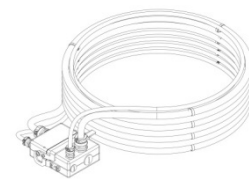
*Pentruder 427, 422, 418*



*CRC Cable Remote Control*



*WRC Wireless Remote Control*



*HF400-9-30*

### 3 Safety Instructions

#### 3.1 Safety instructions which are used in this Operator's Manual



#### **WARNING!**

Here we inform about risks connected with use of the machine, and, if the safety precautions are not respected, can result in serious injury and even to fatal injuries to persons in close proximity of the machine.



#### **Important!**

Here we inform about risks connected with use of the machine, and, if the safety precautions are not respected, can result in damage to property and persons in close proximity of the machine.



#### **Note!**

This sign indicates technical specifics and methods which will facilitate the job.

#### 3.2 Intended use of the machine



#### **Important!**

- Please observe that Tractives responsibility as a manufacturer can only be accepted when the Pentruder CW630, is used together with the HF drive system described in this Operator's Manual. If the machine is used with non-original equipment the warranty and Tractives CE-marking will be void.
- The manufacturer cannot take responsibility for diamond consumables used with the Pentruder CW630.
- Please refer to the manufacturer of the diamond consumable in question before using it with the Pentruder CW630.

The Pentruder CW630 HF Chain Saw is designed to cut concrete, stone and masonry when used with an appropriate genuine ICS® Diamond Chain. Other materials including ductile iron, cast iron or PVC pipe require the use of ICS® PowerGrit® Utility Saw Chain. Tractive recommends using genuine ICS® diamond chains, guidebars and drive sprockets.

This machine may not be used unless the operator is fully familiar with the contents of this manual as well as the Operator's Manuals for the high frequency drive system and has been trained in its operation by an authorised distributor of Tractive AB's products. The operator is fully responsible for the manner in which the machine is operated. It is the responsibility of the purchaser of the machine that the operator has received the information needed to operate and handle the machine in a safe and correct way.

Good working practice should always be used along with common sense. Tractive cannot foresee every possible situation and this manual is not a substitute for professional skills and experience.

The Pentruder CW630 HF Chain Saw is powered by a Pentruder HF-power pack and remote control. The Pentruder CW630 cannot be used with any other type of drive system.

The manufacturer cannot take responsibility for diamond consumables used with the Pentruder CW630. Please refer to the technical documentation from the manufacturer of the diamond consumable in question before using it with the Pentruder CW630.



### 3.3 General safety instructions



#### WARNING - DANGER OF LIFE!

- Cutting in a power line which is energized can result in serious injury and even to fatal injuries. The chain saw can get energized. A circuit breaker cannot protect against this danger.
- Diamond chain breakage can result in high-speed ejection of parts, which can result in death or serious personal injury to operators or bystanders. The items listed below are critical to minimizing the risk of diamond chain breakage and injury.



#### WARNING!



- The machine is state of the art and follows the present regulations. However, incorrect handling of the machine can result in serious or even fatal injury to the operator and persons in proximity of the machine.
- All persons which are operating or in any way working on the machine has to read and understand the whole Operator's Manual and especially the safety instructions, before any work is commenced. It is the obligation of the employer to make sure that the operator really has received the information necessary to operate and take care of the machine in a correct and safe way.
- Good working practice should always be used along with common sense. Tractive cannot foresee every possible situation and this manual is not a substitute for professional skills and experience.
- The machine may only be operated and serviced by authorized and trained personnel. The personnel should be trained by personnel authorized by Tractive.
- A Pentruder machine used in the correct way is a safe and efficient tool. If the machine is used improperly this can expose the operator and other persons staying in the same area to extreme danger or even risk of fatal injuries.
- The user is liable that the machine is in faultless condition and that all functions are in order before work is commenced.
- To maintain the level of safety inherent in the design of this machine, only Tractive original parts may be fitted. Tractive AB disclaims all responsibility for damages occurring as a result of use of non-original parts.
- Modifications or changes on the machine are not allowed.
- Before any kind of service on the machine is commenced, the machine must always be disconnected from the electric power supply.
- The machine may not be used in an environment where explosion protected equipment is demanded.
- Tractive AB disclaims all responsibility for damages to persons and / or property resulting from use of the machine, whether they are caused by faulty handling or from damages that have occurred as a consequence of negligent or faulty maintenance, or as a consequence of failure to check and control the machine with regard to damages and / or faults.
- DO NOT operate a diamond chain saw with a damaged, modified, broken or missing side cover or mud flap. The side cover and mud flap provide protection against contact with moving parts, ejected debris, broken diamond chain, thrown water and concrete slurry.
- DO NOT insert the saw into a slot narrower than the chain segments. Rapid pushback might occur. Reference: Most diamond segments are 5.72 mm (.225) wide.
- DO NOT use the side cover as a replacement cover for another saw.
- DO NOT use damaged, modified or improperly repaired chain.



### 3.4 Safety precautions at site

#### WARNING!

#### BEFORE CUTTING

Before cutting is commenced, make sure that;

- There are no power lines, gas or piping which can be damaged by the CW630 chain saw.
- The statics of the building are not compromised because of the cut openings.
- No damage is done on the other side of the concrete when cutting through.
- Check with the foreman responsible that all necessary precautions have been performed before commencing work. Await the approval of the safety precautions and position of the machine from the foreman before work is commenced.
- Safety and health regulations at the work place must be followed.
- No work should be commenced which cannot be judged to be safe. Always use common sense and good working practice.
- Always check that the machine, diamond chain and guidebar are in faultless condition and that all functions are in order before work is commenced.
- Never use a diamond chain for material which it is not intended for.
- Before cutting is commenced all persons involved must know how the emergency stop buttons are working.
- Insufficient water supply may result in excessive wear to the diamond chain, which can lead to loss of strength and chain breakage, and/or damage to the guidebar nose sprocket. Assure that the water supply is capable of delivering 1.5 bar (20 psi) pressure to the chain saw at a minimum flow rate of 4 lpm (1 gpm).
- Only use PowerGrit® Utility Saw Chain when cutting ductile iron pipe or like materials with the saw. Using chain platforms not specifically designed for this type of material may cause segment loss or diamond chain breakage.

#### WEAR SAFETY EQUIPMENT



- All persons working with, or in the proximity of the machine should wear safety equipment, i.e. protection helmet, protection shoes, gloves, eye and ear protectors and long pants.
- The noise level during cutting might lead to permanent hearing disorders if ear guards are not worn.
- Find out what material is cut and wear appropriate dust mask or respirator protection if necessary.
- Avoid loose fitting clothing.

#### MOUNT ACCORDING TO THE INSTRUCTIONS



- Before any kind of service including chain tensioning, on the machine is commenced, the machine must always be disconnected from the electric power supply.
  - Never start the saw unless the guide bar, diamond chain and side cover are properly installed.



#### CUTTING

- Follow the instructions for cutting in Chapter 5.
- Do not run the saw upside-down. Concrete debris can fly back into the operator's face.
- Always operate the saw with solid footing and with both hands firmly gripping the handle. Do not stand on a ladder when using the saw.

#### LIFTING AND TRANSPORTING

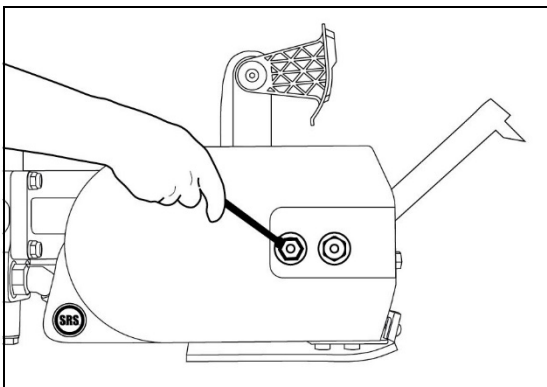
- Always lift the tool ergonomically correct and in a safe way.

**WARNING!****RISK AREA**

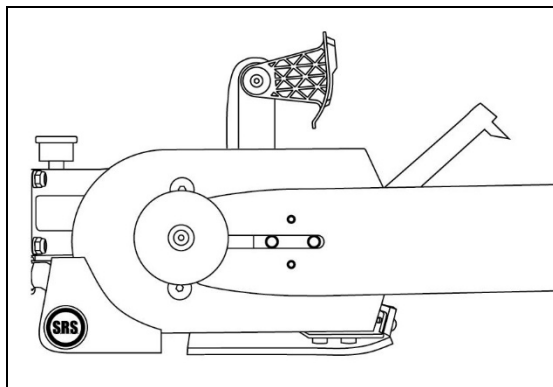
- The risk area must be roped off and the operator must make sure that no unauthorised persons enter the risk area.
- Clear the working area and make sure no unauthorized persons are within the risk area before the machine is allowed to be started.
- Remember always to cover cut openings so that no person falls down and hurts himself.
- Secure the concrete before starting work to make sure there is no possibility that concrete blocks may fall down causing injury or damage to persons or property.

## 4 Preparations

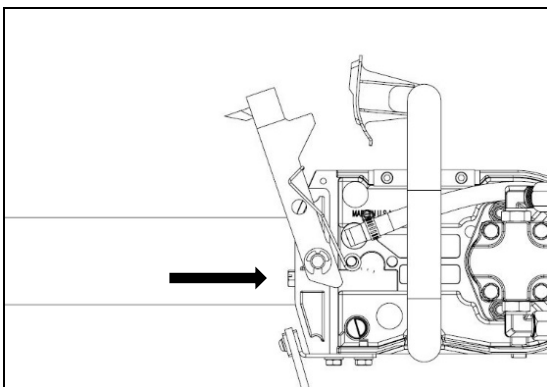
### 4.1 Guide bar and diamond chain installation

**STEP 1**

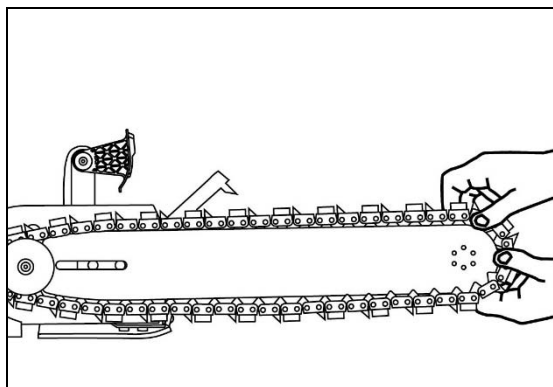
Loosen the side cover nuts and remove the side cover and bar clamp plate.

**STEP 2**

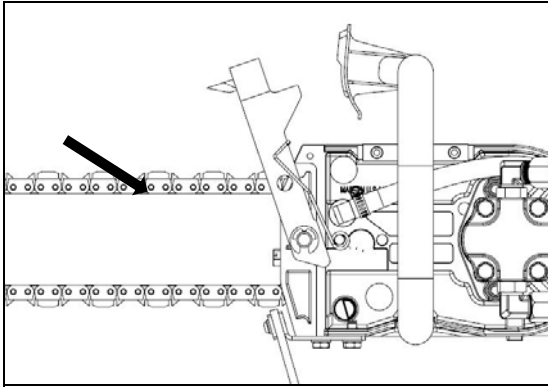
Place the bar onto the studs and the chain adjustment pin.

**STEP 3**

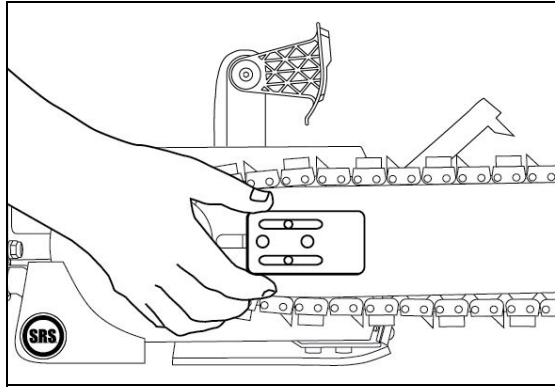
Turn the chain-tensioning screw counter clockwise until the bar comes into contact with the drive sprocket.

**STEP 4**

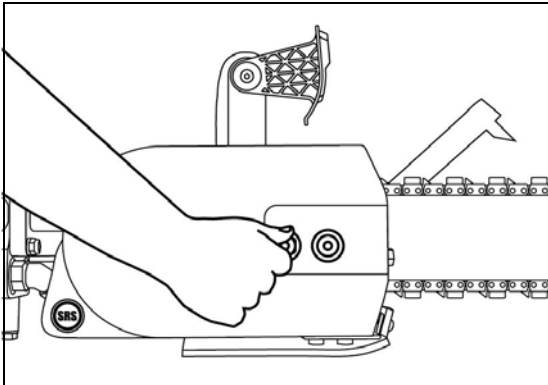
Mount the chain on the bar starting at the drive sprocket & continue over the bar nose.

**STEP 5**

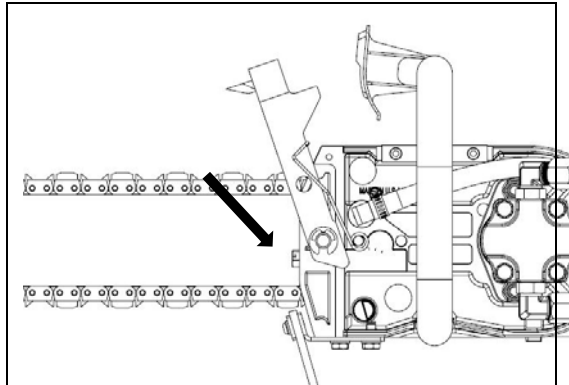
Make sure all of the drive links are inside the bar groove, then pre-tension the chain.

**STEP 6**

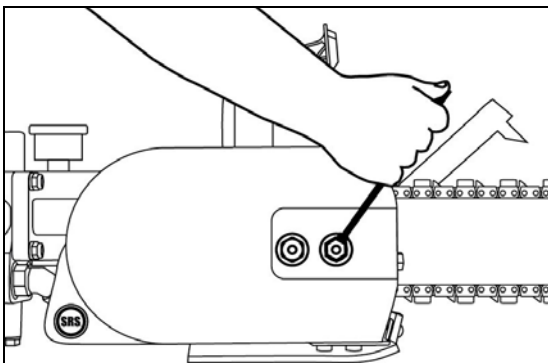
Install the bar clamp plate over the bar studs.

**STEP 7**

Install the side cover over the bar studs and install side cover nuts. Finger tighten only.

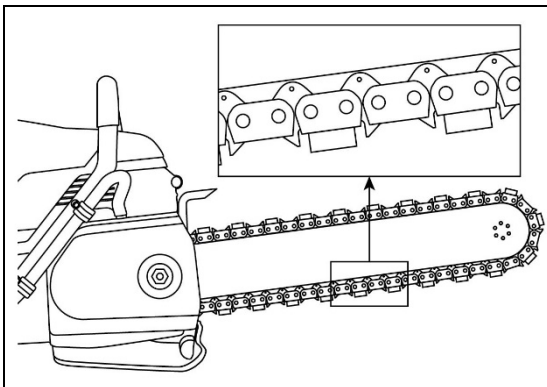
**STEP 8**

Tension the chain. Do not over tension the diamond chain. Loss of power will result.

**STEP 9**

Lift up on the nose of the bar and firmly tighten the side cover nuts. To prevent chain tensioner breakage, be sure the side cover nuts are tightened to approximately 27 Nm (20 ft-lbs).

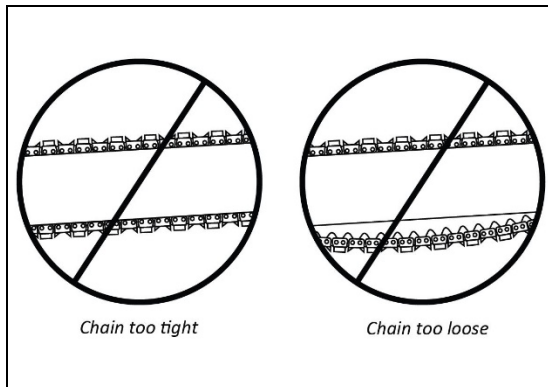
## 4.2 Determining proper chain tension



### Correct Chain Tension

All chains have a tendency to stretch when used. Diamond chains stretch more than wood cutting chains because of the abrasive materials they are cutting.

If the chain is too tight, a lot of the saw's power goes into turning the chain rather than into the cut. In extreme over-tightened cases, the saw may not be able to turn the chain at all. In addition, damage can occur to the bar nose and premature stretch may occur.



### Chain Too Loose

If the chain is too loose, it could come off the bar.

When a chain stretches to a point where the drive links are hanging approximately 12 mm (1/2 in) to 18 mm (3/4 in) below the bar, it is time to tension the chain.

## 4.3 Connection to water supply



### Important!

- The HF-power pack and HF-chain saw have to be drained from water in sub zero temperatures. The HF-chain saw is self draining if put on a flat surface with the chain side down and with the water hose open.
- Insufficient water supply will result in excessive wear to the chain, which can lead to loss of strength and chain breakage, and/or damage to the guide bar nose sprocket.

Cooling water is supplied through the HF-drive system to the Pentruder CW630.

The Pentruder CW630 is equipped with an efficient electric motor cooling system. At least 4 litres/minute (1 gpm) of cool water is required to keep the temperature down when maximum power is used

Please refer to the Operator's Manual for the Pentruder HF-drive system being used for information regarding water flow, pressure, etc. for the HF-power pack.

- Adequate water supply and pressure  
Minimum flow: 4 lpm (1 gpm)  
Minimum water pressure: 1.5 bar (20 psi)

#### 4.4 Pre-cut checklist

- Ensure proper chain tension: The chain should be easily pulled around the guide bar by hand.
- Ensure all safety devices are properly mounted and functional and that all controls are in proper working order.
- Be sure there are no obstructions (plumbing, electrical conduit, air ducts, etc.) and no unnecessary people present.
- Always wear protective clothing, including hard hat, eye protection, hearing protection, non-slip safety boots, gloves. Avoid wearing loose fitting clothing.

#### 4.5 Planning the cut

- Outline the cut with a permanent marker for a visual cutting guide.
- Avoid pinching the guide bar and diamond chain. Always cut the bottom of an opening first, then top, and then the sides. Save the easiest cut for last.
- For the straightest cuts use the "Step Cut" method. First score the entire cut line approximately 12 mm (1/2 in) deep using the nose of the guide bar. Next, deepen the cut by about 50 mm (2 in). Then plunge all the way through and complete the cut using the WallWalker®.



#### Warning!

- Be sure cut concrete cannot fall and injure operator or bystanders. Concrete is very heavy, one cubic foot = 30 cm x 30 cm x 30 cm = 68 kg (12 in x 12 in x 12 in = 150 lbs).



- Check for live electrical wiring near the cutting area or in the concrete to avoid electrocution.
-

## 5 Cutting



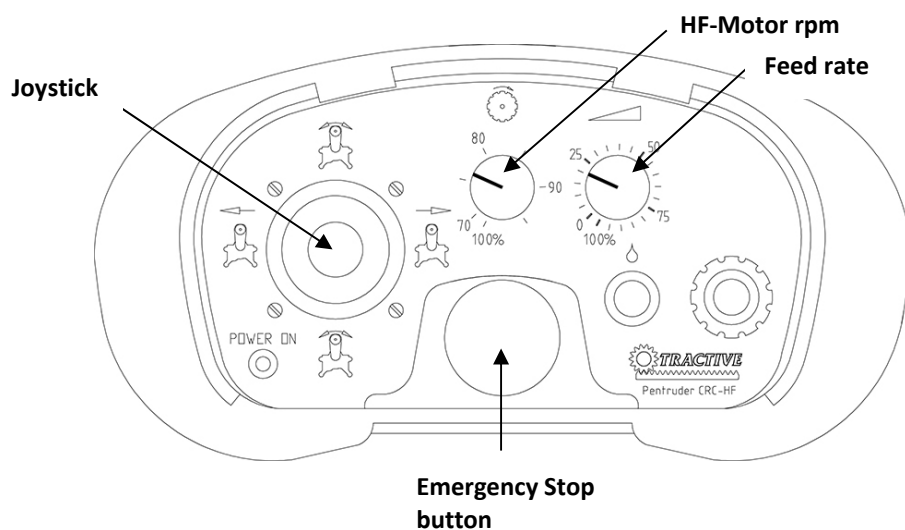
### Warning!

- Before cutting, it is essential that all personnel working with or in close proximity of the machine have read and understood the contents of this Operator's Manual and the Operator's Manual for the HF-drive system and that the instructions are followed.
- If the safety precautions are not respected, this can result in serious injury and even fatal injuries to persons in close proximity of the machine.

When all safety precautions are taken as described in chapter 3 and the Pentruder CW630 is prepared as described in chapter 4, the operation can start. Please refer to the Operator's Manual for the Pentpak HF-drive system being used for detailed information on how to connect and start the HF-power pack.

### 5.1 Starting and stopping the Pentruder CW630

The remote control must be connected to the Pentpak for being able to operate the CW630. It is part of the emergency stop safety system.



- Make sure the emergency stop button on the remote control is out (released position).
- Turn the start key on the Wireless remote control to pos "1". Two short beeps will follow and the green LED on the Wireless remote control will start flashing. The wireless remote control is now on but not yet activated.
- To activate, turn the start key from pos "1" to the next position (like starting a car) and release.

Step b and c are not necessary when using the cable remote control.

- Push the green start button on the Pentpak and check that the green light comes on.
- Make sure that both the emergency stop buttons on the remote control as well as on the Pentpak is out and the green start button on the Pentpak is on.
- To start the motor, press and hold the trigger on the Pentruder CW630. As long as the trigger is pressed, the motor (chain) will be running.
- The water flow will be switched on automatically as long as motor is running.
- To stop the motor (chain), release the trigger. The water flow will be switched off automatically after 15 seconds.

## 5.2 Cutting tips



### Warning!

- Do not run the saw upside-down. Concrete debris can fly back into the operator's face.
- Always operate tool with solid footing and with both hands firmly gripping the handles.



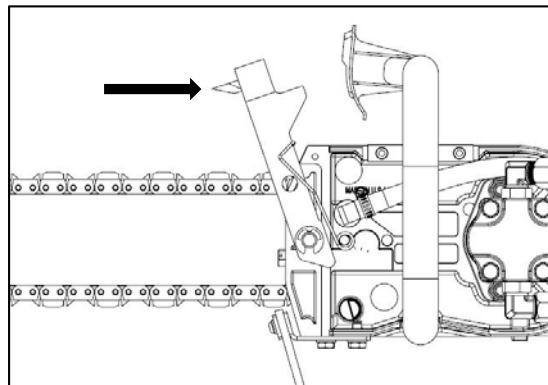
### Important!

- To avoid overheating, the HF-motor will be switched off automatically if the motor winding temperature is over 140°C (284°F). The coolant water should then be left running through the HF-power pack and HF-chain saw to avoid terminal overheating.
- If the water is turned off immediately after the HF-motor has been switched off automatically, for instance due to overload and the warning light is on, terminal damage to the motor windings may occur.
- Rebar must be encased in concrete. Never cut bare rebar with a Diamond Chain.



### Note!

- If one of the emergency stop buttons is pressed or the unit has been unplugged from the power supply, both the blade speed and the feed and travel potentiometers must be returned to zero before the machine is operational again.
- The single most important factor an operator can control to increase chain life is to use adequate water pressure and flow.



- To start a cut, hold trigger and slowly plunge the nose of the guide bar straight into the wall. Use the fixed WallWalker® as a pivot point and pull up on the rear handle to rotate the guide bar into the cut.
- Always operate the saw at full speed. If too much force is applied, the saw will lug or stall. The chain will not have enough speed to cut effectively. If too little feed force is applied, the diamonds will skid and glaze over.
- For straighter cuts use the "Step Cut" method. First score the entire cut line with the nose of the guide bar approximately 12 mm (1/2 in) to 25 mm (1 in) deep. Next, deepen the cut by about 50 mm (2 in). This groove will help guide the guide bar for a straight cut. Then plunge all the way through and complete the cut using the WallWalker®.
- Use the WallWalker® to help cut more efficiently and reduce operator fatigue. The WallWalker® is a fulcrum that converts inward force to downward force and will develop a 4-to-1 mechanical advantage. To use correctly, plunge into the wall and simply engage the point of the WallWalker® into the cut and push straight in. The WallWalker® will force the saw to feed down.