

Operating instructions

Pipe Cutter

SCORP 220 Plus
SCORP 360



Code 790 014 762

Machine-no.:

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0 About these instructions

To allow quick understanding of these instructions and safe handling of the machine, all the warning messages, notes and symbols used in these instructions are presented here along with their meaning.

0.1 Warning messages

In these instructions, warning messages are used to warn you against the dangers of injury or material damage. Always read and observe these warning messages!




This is a warning symbol. It should warn you against dangers of injury.

Follow all instructions which are identified with this safety symbol in order to avoid injuries or death.

Warning symbol	Meaning
 DANGER	Direct danger! Non-observance could result in death or critical injury. ⊙ Restrictions (if applicable). ► Measures to prevent danger.
 WARNING	Possible danger! Non-observance could result in serious injury. ⊙ Restrictions (if applicable). ► Measures to prevent danger.
 ATTENTION	Dangerous situation! Non-observance could result in minor injuries.
ATTENTION	Dangerous situation! Non-observance could result in material damage.

0.2 Further symbols and displays

Symbol	Meaning
Important Note	Notes: Contain particularly important information for comprehension.
	Instruction: You must take notice of this symbol.
1.	Request for action in a sequence of actions: You have to do something here.
▶	Single request for action: You have to do something here.
▷	Conditional request for action: You have to do something here if the specified condition is met.

1 Notes on safety

The SCORP is a state-of-the-art machine. Using it for purposes other than those described in this manual may cause injury to the user or to others. It may also damage the machine or other equipment.

Therefore:

- Always ensure that the machine is in good working order and comply with these notes on safety.
- Keep complete documents close by the machine.
- Generally valid regulations for the prevention of accidents must be observed.

1.1 Proper use

- Only use the SCORP for cutting of pipes.
- For damages caused by using not according to regulations is just the user responsible.

1.2 Safety regulations

- Only use the dimensions and materials specified in these instructions. Other materials should only be used after consulting the Orbitalum Tools customer service department.
- Only use authentic Orbitalum Tools saw and cutting blades, spare parts and materials.
- Check the SCORP daily for any externally visible damages or defects. Have any damages or defects repaired immediately.
- Work on the electrical equipment should only be carried out by a qualified electrician.
- Pull out the mains plug before carrying out a tool change or maintenance and repair work.

1.3 Working with safety in mind

"Make your contribution to safety in the workplace."



- Report any deviations from normal operation to the person responsible immediately.
- Always keep safety in mind while working.
- When working with the SCORP, wear mask, protective goggles, safety gloves and ear muffs.
- Tie up long hair (hair-net); do not wear wide clothing.
Attention: Jewellery, loose fitting clothing and ties can be caught in rotating parts!
- Turn the SCORP off at the end of each operating cycle and allow the machine to run to a stop.
- Keep hands away from the tools during processing.
- Before carrying out a tool change, cleaning, performing any maintenance work, adjustments or repair work on the SCORP, pull out the mains plug and allow the machine to run to a stop.
- Do not carry the electric tool holding it at the cable and do not use it to pull the plug out of the socket. Protect the cable against heat, oil and sharp edges (chips).
- Pay attention to the surroundings. Do not use any electric tools in a damp or wet area. Make sure to have good illumination. Do not work near combustible liquids or gases.
- The power-on time is max. 25%. With higher power-on time the machine can be overloaded.



DANGER

Danger of death by electric shock!

If the mains cable is damaged, live parts may cause death when being touched directly.

- ⊗ Keep the mains cable of the cutter motor away from the saw blade or cutting blade.
- ▶ While processing the pipe, always keep an eye on the position of the mains cable.
- ⊗ Do **not** let the cut-off pipe piece drop in an uncontrolled way.
- ⊗ Do **not** run the machine unattended.



WARNING

Danger of being injured by sharp cutting edges!

Non-observance could result in serious injury.

- ⊗ Keep hands away from the tools during cutting.
- ▶ Wear safety gloves.

1.4 Waste disposal / environmental protection

- Dispose of chips and used gear lubricant oil according to the regulations.

Discarded electric tools and accessories contain a large share of valuable raw and synthetic materials which can be recycled.

Therefore:

- Electrical (electronic) devices which are marked with the symbol to the left, may not be disposed of with household waste in accordance to the EU directive 2002/96/EC.
- By actively using the offered return and collection systems, you actively contribute to the reuse, recycling and utilization of electrical (electronic) devices.
- Electrical (electronic) used devices contain parts which must be handled selectively according to the EU directive. Separate collection and selective treatment is the basis for environment-friendly disposal and the protection of human health.
- Our products that were sold to you after August 13th, 2005 are taken back and treated according to legal standards. These products have to be send free of charge.
- The return of used devices which pose a health or safety risk for human beings due to soiling during use may be refused.
- The legally compliant disposal of electrical (electronic) devices that were placed on the market before August 13th, 2005 are in the responsibility of the end-user.



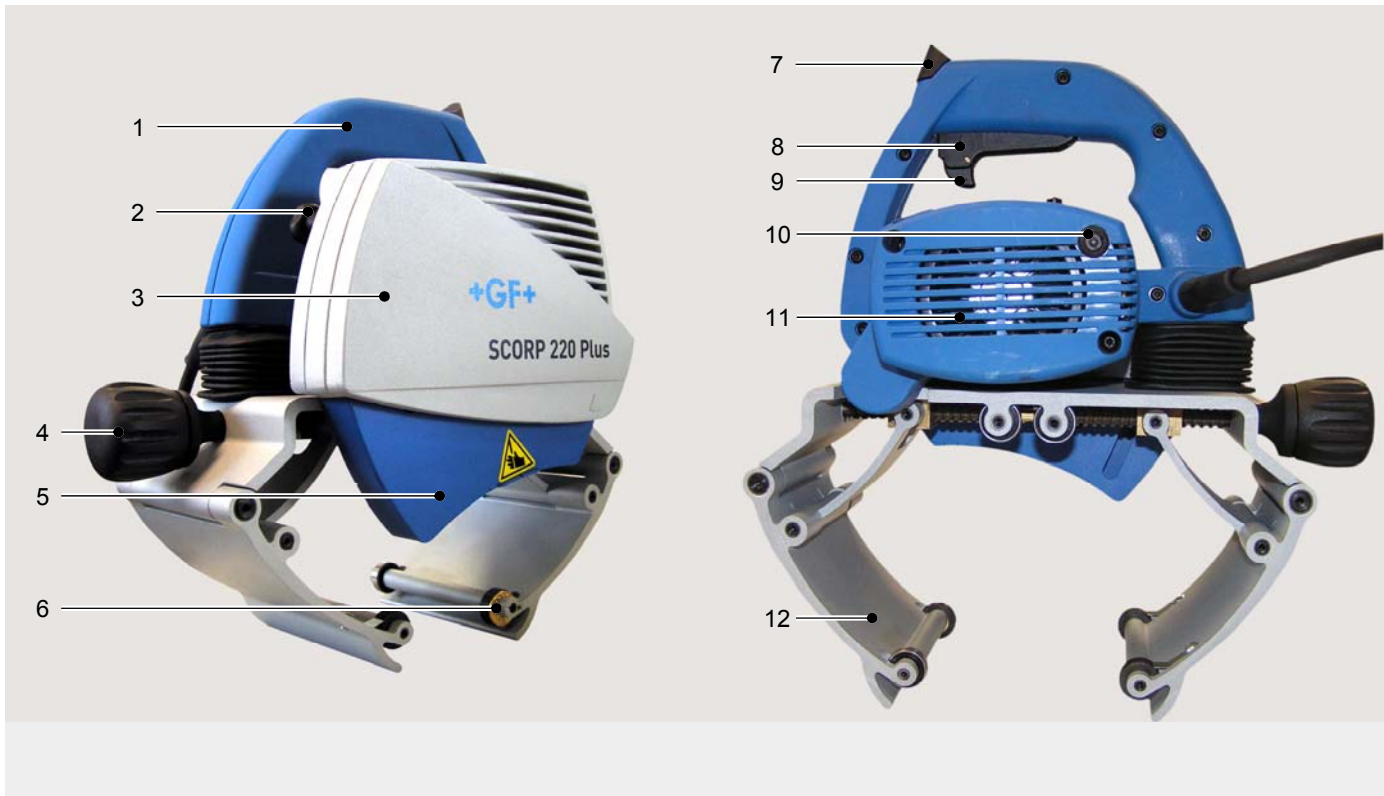
(RL 2002/96/EC)

1.5 Further safety regulations

Observe country-specific regulations, norms and guidelines.

2 Construction of the product





2.1 Standard



- 1 *Operating handle*
- 2 *Locking screws of the cover*
- 3 *Fixed protection housing*
- 4 *Regulating knob for fixing clamps*
- 5 *Moveable protection housing*
- 6 *Adjustable wheel to prevent misalignment*
- 7 *Release button*
- 8 *On / Off button*
- 9 *Protection switch for On / Off button*
- 10 *Switch for overload protection*
- 11 *Motor*
- 12 *Fixing clamps (pipe clamps)*

2.2 Accessories

2.2.1 Cutting disc/saw blades

	Saw blade TCT 	Cutting disc DIAMANT 	Saw blade CERMET 	Saw blade TCT 
Code	790 014 055	790 014 057	790 014 056	790 014 058
to SCORP 220 Plus	*	*	*	–
to SCORP 360	*	*	*	*
Blade-Ø [mm]	140 x 62	140 x 62	140 x 62	155 x 62
Blade-Ø [inch]	5.5 x 2.4	5.5 x 2.4	5.5 x 2.4	6.102 x 2.4
Rotation speed, idle [rpm]	4200	4200	4200	4200
Saw blade thickness max. [mm]	1.5 – 2	1.5 – 2	1.5 – 2	1.5 – 2
Saw blade thickness max. [inch]	0.06 - 0.08	0.06 - 0.08	0.06 - 0.08	0.06 - 0.08
Max. cutting width saw blade [mm]	2.0	2.0	2.0	2.0
Max. cutting width saw blade [inch]	0.08	0.08	0.08	0.08
Pipe materials	Aluminum Steel Copper All plastics Composed pipes	Cast / ductile iron	Stainless steel	All plastics

3 Characteristics and range of applications

3.1 Characteristics

The SCORP is designed for easy cutting of pipes on-site and has the following features:

- Efficient and light hand held machine
- Quick cutting of pipes
- Large operating and dimension range
- Suitable for spigot and socket joints
- Reduction of tooling costs
- Economical

3.2 Range of applications

3.2.1 Working range

		SCORP 220 Plus	SCORP 360
Outer-Ø	[mm]	20 – 220	75 – 360
	[inch]	0.800 – 8.660	2.950 – 14.170
Wall thickness Steel, max.	[mm]	8	8
	[inch]	0.315	0.315
Wall thickness Plastic, max.	[mm]	10	27.9
	[inch]	0.394	1.098
Pipe materials		Steel, stainless steel, copper, cast iron, aluminum, all plastics	

4 Technical Data

Rating	SCORP 220 Plus	SCORP 360
Dimensions (l x w x h)	35 x 22 x 28 cm 13.8 x 8.7 x 11 inch	50 x 22 x 30 cm 19.7 x 8.7 x 11 inch
Weight	8.4 kg 18.52 lbs	14.3 kg 31.53 lbs
Max. rotation speed, idle	4000 rpm	4000 rpm
Power	1100 W 1.5 HP	1400 W 1.9 HP
Mains supply	220 – 230 V; 50/60 Hz 110 – 115 V; 50/60 Hz	200 – 240 V, 50/60 Hz 100 – 120 V, 50/60 Hz
Minimum protection	10 A	10 A
Noise level at the workplace ^{*)}	Idle running approx. 95.5 dB (A)	Idle running approx. 95.5 dB (A)
Vibration level according to EN 50144, part 1	1.1 m/s ²	1.1 m/s ²

^{*)} The noise level measurement was carried out under normal operating conditions according to EN 50144. The noise level can exceed the limit of 85 dB (A) during processing of different materials. **Wear ear muffs!**

5 Commissioning

Checking the scope of delivery

- ▶ Check all parts of the delivery for completeness and transportation damage.
- ▶ Report any missing parts or transportation damage to your supplier immediately.

5.1 Scope of delivery

- 1 SCORP Pipe Cutter
- 1 Transport bag
- 4 small pipe roller (SCORP 220 Plus) or
2 small and 1 large pipe roller (SCORP 360)
- 1 Saw blade TCT 140 x 62 / Z 46
- 1 Saw blade key
- 1 Operating instructions
- 1 Spare parts list

Subject to alterations

5.1 Transport

The SCORP is a portable machine. Special transportation aids are not required.



DANGER

Danger of death by electric shock or inadvertent restart of the machine!

During transport, the ON/OFF switch could be actuated inadvertently so that the machine is started.

- ▶ Cut off the power supply before carrying out the transport or changing the workplace.
-

5.2 Connection requirements

The mains supply must meet the following requirements:

- 1-phase alternating current 200 – 240 V, 50/60 Hz or 100 – 120 V, 50/60 Hz, protection class II
- Mains fuse at least 10 A

6 Operation



Danger of death by electric shock!

If the mains cable is damaged, live parts may cause death when being touched directly.

- ⊙ Keep the mains cable of the motor away from the saw blade or cutting disc.
- ▶ While processing the pipe, always keep an eye on the position of the mains cable.

Unintentional operation of the ON/OFF switch.

- ▶ Pull out the mains plug before carrying out any adjustment, repair and maintenance work or changing the tool and allow the machine to run a stop.
- ▶ Before attaching the SCORP, examine whether the motor is locked in the upper position (out of cut).

6.1 Mounting and changing of saw blades

Attention Material damage

A distorted, blunt or otherwise damaged saw blade / cutting disc can damage the electric motor of the SCORP.

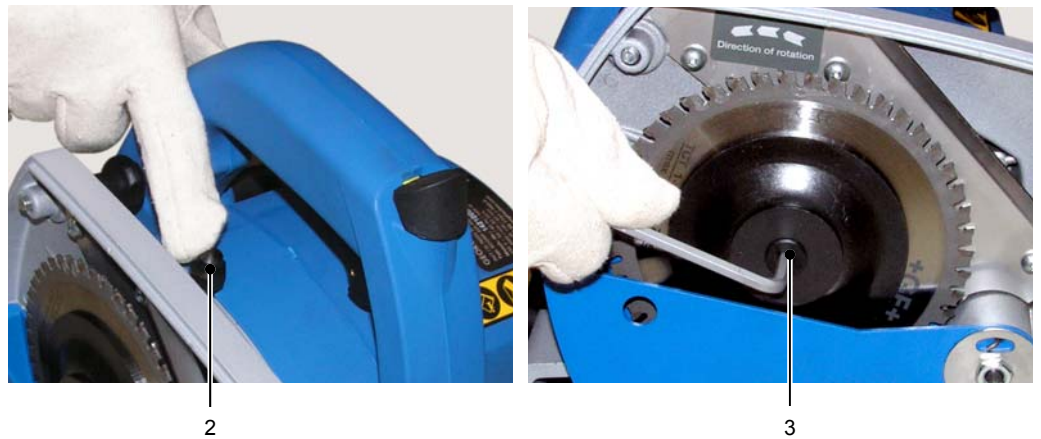
- ▶ Regularly check the condition of the saw blades / cutting discs, replace when needed.
- ▶ Saw blades / cutting discs must be free from swarf and clean.
- ▶ Only use saw blades and cutting discs from Orbitalum Tools.
- ▶ Install saw blade / cutting disc so that the inscription is visible.

Removal of saw blade/ cutting disc

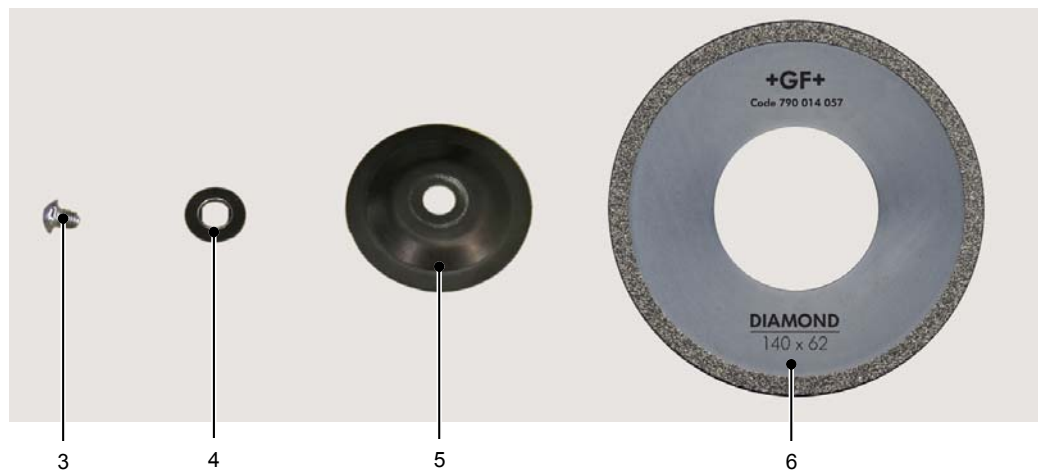
1. Remove the fixed protection panel by loosening both locking screws (1).



2. Press the spigot of the locking mechanism (2) and at the same time turn the saw blade/cutting disc, until the knob of the spigot of the locking mechanism (2) can be pressed down approximately 7 mm.
The saw blade should not be able to move.
3. Release the saw blades/cutting disc securing screw (3) using the saw blade key in the direction of the arrows (see inside of the fixed protection panel).



4. Remove fixing screw (3), washer (4), clamping disc (5) and the saw blade/cutting disc (6) can now be removed.



Important

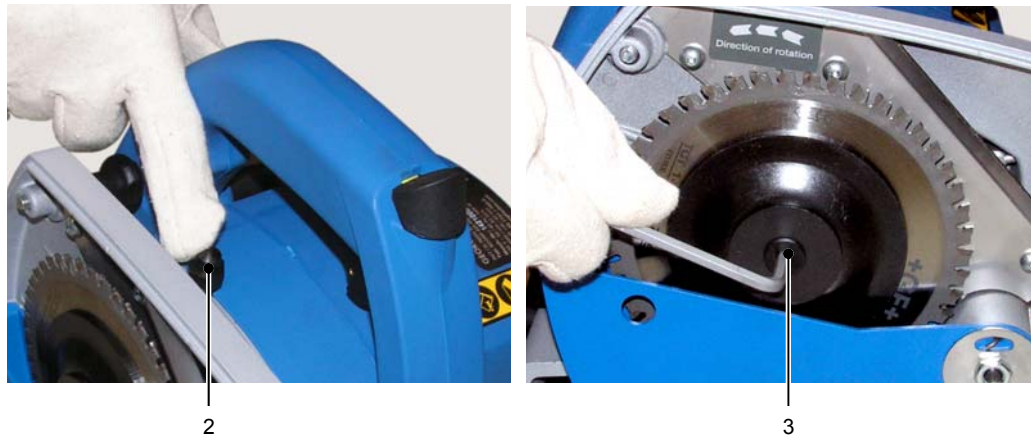
Before the installation of a new saw blade / cutting disc check whether both clamping surfaces are clean. If required clean.

Saw blade/cutting disc installation



5. Install the saw blade / cutting disc so that the inscription on the saw blade / cutting disc is visible. With the saw blade you must ensure that the arrows marked on it are indicating in the same direction as those marked on the inside of the fixed protection housing (see photograph on left).
 - ▷ Check whether the saw blade / cutting disc is sitting correctly on the clamping disc.
6. Clamping disc (5), washer (4) and fixing screw (3) can now be replaced.

7. Press down spigot of saw blade / cutting disc locking mechanism (2) and tighten the fixing screw (3).



8. Replace the fixed protection housing and tighten the locking screws (1).



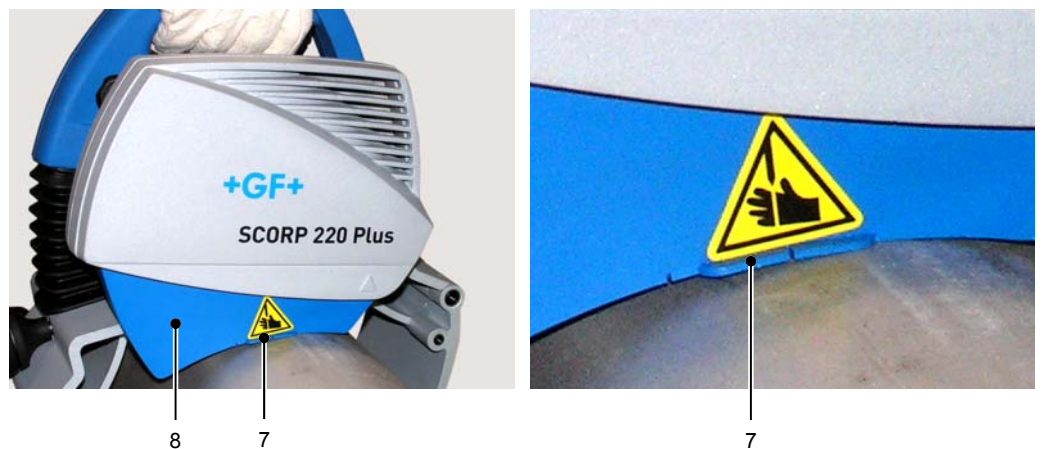
6.2 Mounting SCORP onto pipe

Note The saw blade / cutting disc of the SCORP cuts the pipe **20 mm from the nib** of the moveable protection panel:

Marked position = required dimension – 20 mm

Marking of cutting point

1. Mark on the pipe the point where you wish to cut.
2. Put the SCORP onto the pipe to be cut.
3. Put the nib (7) of the moveable protection housing (8) on the mark where the pipe should be cut.



- The SCORP can now be fixed onto the pipe.

Clamping of the SCORP onto the outside of the pipe to be cut:

4. Tighten the clamping handle (9) in a clockwise direction until the clamping arms (10) of the SCORP are fixed on to the pipe.

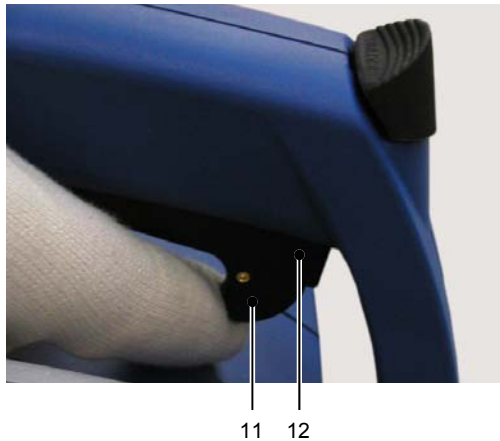
Important The SCORP is only correctly clamped when the pipe can freely turn within the clamping arms (10). It should not be able to move along the pipe.



6.3 Pipe cutting

Switch on the SCORP

1. Press the power protection button (11) forwards.
2. Press the power button (12) fully and hold fully pressed during the cutting operation.

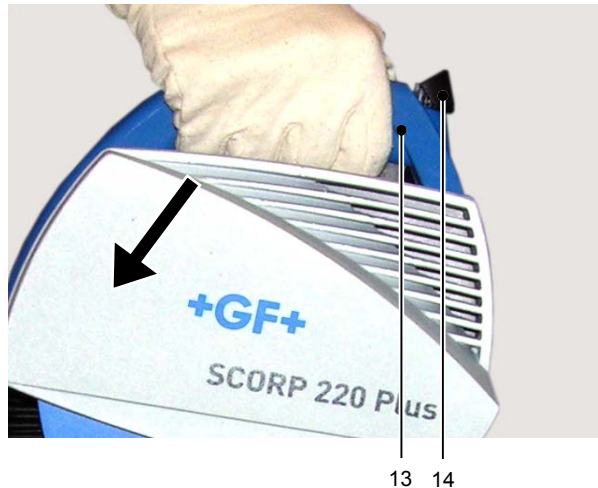


The motor of will now start running.

Important Before starting to cut the pipe wait until the saw blade has reached its full speed.

3. Press the operation handle (13) downwards until the saw blade / cutting disc has cut through the wall of the pipe and the machine motor is running freely.

Note When the release button (14) springs back to its fixed position, the saw blade is fixed in its cutting position and the sawing operation can now begin.



13 14

Overload protection The cutting speed depends upon the material and pipe wall thickness (the most favourable speed can easily be judged by hand). A too high cutting speed can damage the saw blades and overload the SCORP.

The pipe saw is equipped with overload protection. When the blade is dull or the speed is too high, the overload protection cuts power automatically. Restore the power by pushing the overload protection switch (switch for overload protection, see chapter 2.1, p. 6).

Pipe cutting 4. Cutting always takes place in opposite direction, as the pipe is turned to the operator and the SCORP in opposite direction.

To stop the cutting operation Should the cutting operation need to be stopped before the pipe has been fully cut you must:

- ▶ Free the pipe, by using the release button (14) so that the motor part of the SCORP can be elevated to its uppermost position.

Attention Material damage

- ⊙ **Never** start the motor if the SCORP is stopped in the cutting position or if the teeth of the saw blades are still in contact with the pipe material.

When the pipe is cut:

5. Release the power button (12) and press the release button (14) forwards, so that the motor part is released from the cutting position.
6. Leave the motor part to glide back to its uppermost position.
7. Lift the SCORP from the pipe and check that the moveable protection housing is fixed in its lowest position.

Important Pull out the mains plug after every working step and allow the machine to run to a stop.



12 14

6.4 Straightness of cut and control wheel

The cut is affected by many factors, e.g. the size of the pipe, the material, the wall thickness, the quality of the pipe's surface, the roundness, welded seams, blade condition, feed rate, operator's experience. For this reason the result may vary, and the cut may turn to left or right (misalignment of the cut's starting and ending point).

The pipe saw gripper (1) has one adjustable wheel (2) which should be used for improving the quality of the cut and for reducing the misalignment.



The adjustment applies only to the actual pipe size and material, and the wheel may have to be readjusted as the blade is worn.

The wheel can be adjusted in 9 positions; mid position and 4 steps to left and right (see picture below).



Adjusting the control wheel

8. Loosen the locking screw (3).
9. Turn the wheel center clockwise or counterclockwise to the desired position:
 - if the misalignment of the cut depends too much to the right, adjust the wheel center clockwise.
 - if the misalignment of the cut depends too much to the left, adjust the wheel counterclockwise.

The number of steps depend on the actual misalignment. Remember to lubricate the adjusting wheel at regular intervals.

10. Lock the wheel again.



3

7 Maintenance

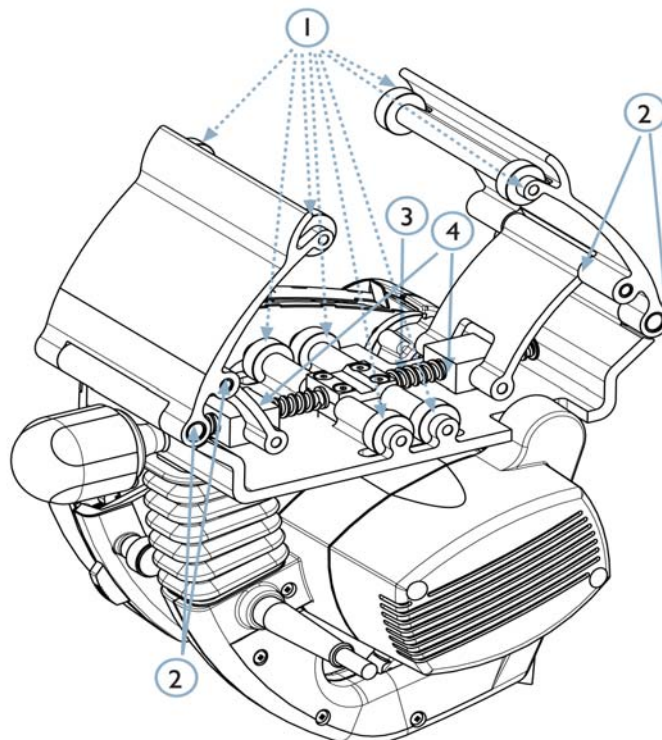


Danger of death by electric shock!

Non-observance could result in death or critical injury.

- ▶ Pull out the mains plug before performing any maintenance work.

Time	Activity
Before starting work	▶ Check the saw blade / cutting disc, exchange if necessary.
At each cleaning	<ul style="list-style-type: none"> ▶ Plastic parts: <ul style="list-style-type: none"> – For the cleaning of the plastic parts only use a soft rag and mild detergents. Do not use solvents or intense detergents, since it can damage the plastic parts or coated surfaces. ▶ Clean the insides of the fixed and moveable protection housing. ▶ Fixing clamps (see fig. below): <ul style="list-style-type: none"> – clean with compressed air, – lubricate the axles of the roles (1) and the joints (2), – lubricate the screw (3) and the two lock nuts (4). ▶ Regularly clean the louvers of the engine.
At each material change (e.g. from plastic to metal pipes)	▶ Clean the insides of the fixed and moveable protection housing.



8 What to do if ...?

8.1 Problem solving

In the following table you will find possible causes for faults and the appropriate remedies.

Fault	Possible cause	Remedy
The engine does not run.	Current supply interrupted.	Examine the inlet cable.
	When the blade is dull or the speed is too high, the overload protection cuts power automatically.	Restore the power by pushing the overload protection switch (switch for overload protection, see chapter 2.1, p. 6).
SCORP is not turnable.	Pipe clamp too strong fixed.	Loosen the pipe clamp by adjusting the regulating knob until the SCORP is turnable.
Pipe clamp cannot be opened and/or closed.	Too high contamination.	Clean and/or lubricate the SCORP.
	Abrasion.	Contact the service station (see chapter 8.2).
Moveable protection housing is jammed.	Too high contamination.	Clean and/or lubricate the SCORP.
	Abrasion.	Contact the service station (see chapter 8.2).
Release button is locked or cannot be locked.	Too high contamination.	Clean and/or lubricate the SCORP.
	Release button defect.	Contact the service station (see chapter 8.2).

8.2 Servicing/customer service

For ordering spare parts, see the separate spare parts list.

For problem solving, please contact your competent branch office directly.

Please give the following details:

- Machine type: **SCORP 220 Plus** or **SCORP 360**
- Machine number: *(see the identification plate)*

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