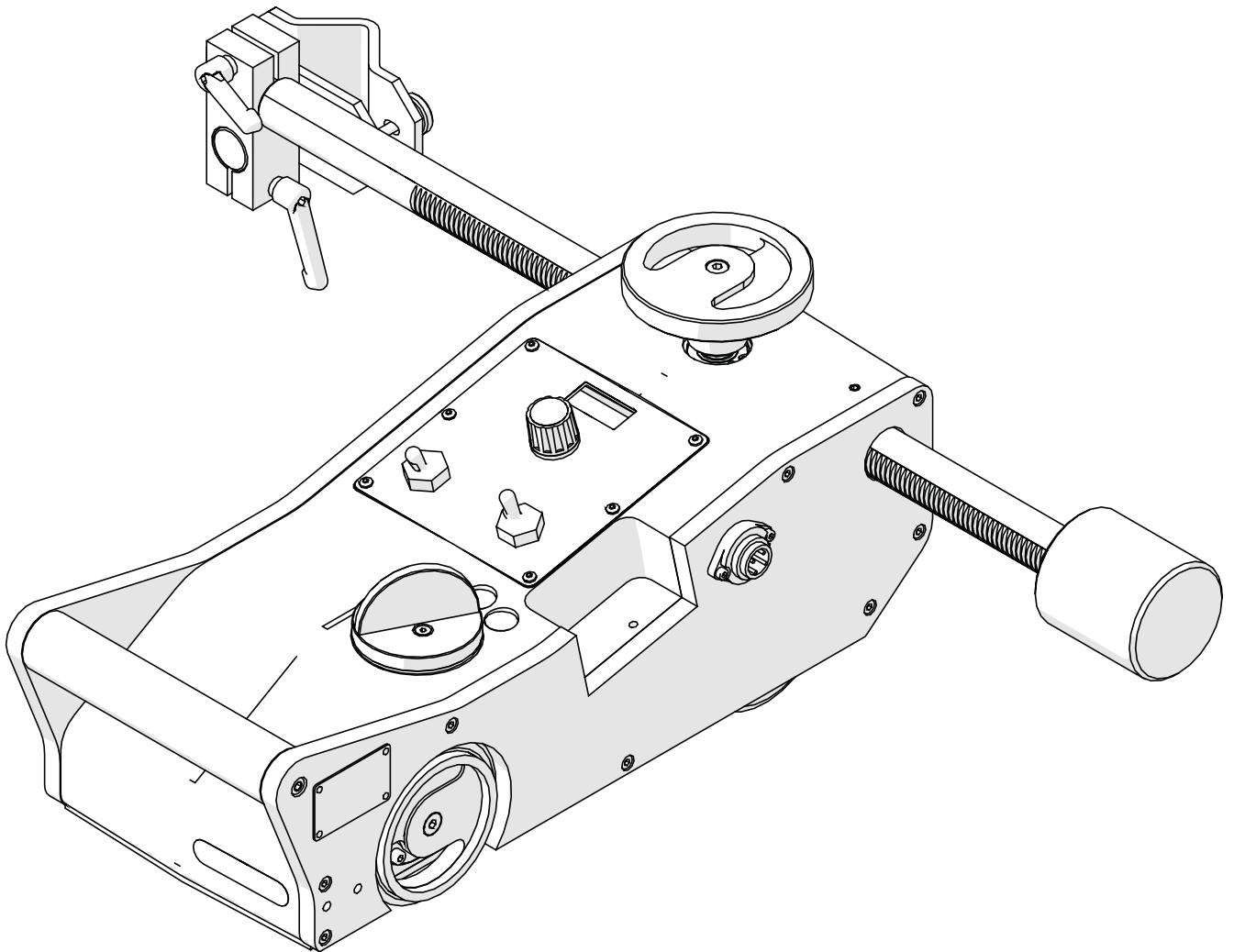




DRAGON

FLAME CUTTING CARRIAGE

OPERATOR'S MANUAL



BEFORE USE, ENSURE EVERYONE USING THIS MACHINE READS AND UNDERSTANDS
ALL SAFETY AND OPERATING INSTRUCTIONS IN THIS MANUAL .

Serial #.....

Date of Purchase.....1

TRADEMASTER DRAGON FLAME CUTTING CARRIAGE

IMPORTED & DISTRIBUTED BY



INDUSTRIAL TOOL & MACHINERY SALES

18 BUSINESS ST

YATALA QLD 4207 AUSTRALIA

T 07 3287 1114
F 07 3287 1115
E sales@industrialtool.com.au
W www.industrialtool.com.au

WARRANTY TERMS

In addition to any warranties or conditions implied by applicable Statute or Regulations, Industrial Tool & Machinery Sales warrants all of its products against defective workmanship and faulty materials for a period of twelve (12) months from the date of purchase, unless otherwise stated. At our option we will repair or replace, free of charge, any item on the condition that:

- The complete machine or tool is returned, freight prepaid to ITM or one of its authorised service agents as directed by ITM, and is found to have a material or constructional defect.
- The machine or tool has not been subject to misuse, neglect or damage by accident.
- The fault is not a result of normal "wear and tear".
- Written permission has been received from ITM prior to commencement of repair.
- Repairs, tampering or modification carried out by unauthorised personnel will void all warranty.
- Consumable items such as cutting tools, pilot pins, saw blades, grinding wheels etc. are NOT covered by warranty.

Our goods come with guarantees which cannot be excluded under the Australian Consumer Law. You are entitled to replacement or refund for a major failure and to compensation for other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

TABLE OF CONTENTS

1. GENERAL INFORMATION.....	3
1.1. Application.....	3
1.2. Technical data.....	3
1.3. Design.....	4
1.4. Equipment included.....	5
2. SAFETY PRECAUTIONS.....	6
3. STARTUP AND OPERATION.....	8
3.1. Preparing to operation.....	8
3.2. Operation.....	9
3.3. Changing unit of speed.....	9
3.4. Meaning of display messages.....	11
4. OPTIONAL EQUIPMENT.....	12
4.1. Track way.....	12
4.2. Longer follower arm.....	12
4.3. Larger counterweight.....	13
4.4. Carriage support.....	13
4.5. Cable holder.....	14
4.6. Gas distributor.....	14
4.7. Additional torch holders.....	15
4.7.1. Precise holder.....	15
4.7.2. Machine torch holder.....	16
4.7.3. Precise machine torch holder.....	16
4.8. Independent holder.....	17
4.9. Circle guide.....	18
5. WIRING DIAGRAM.....	19

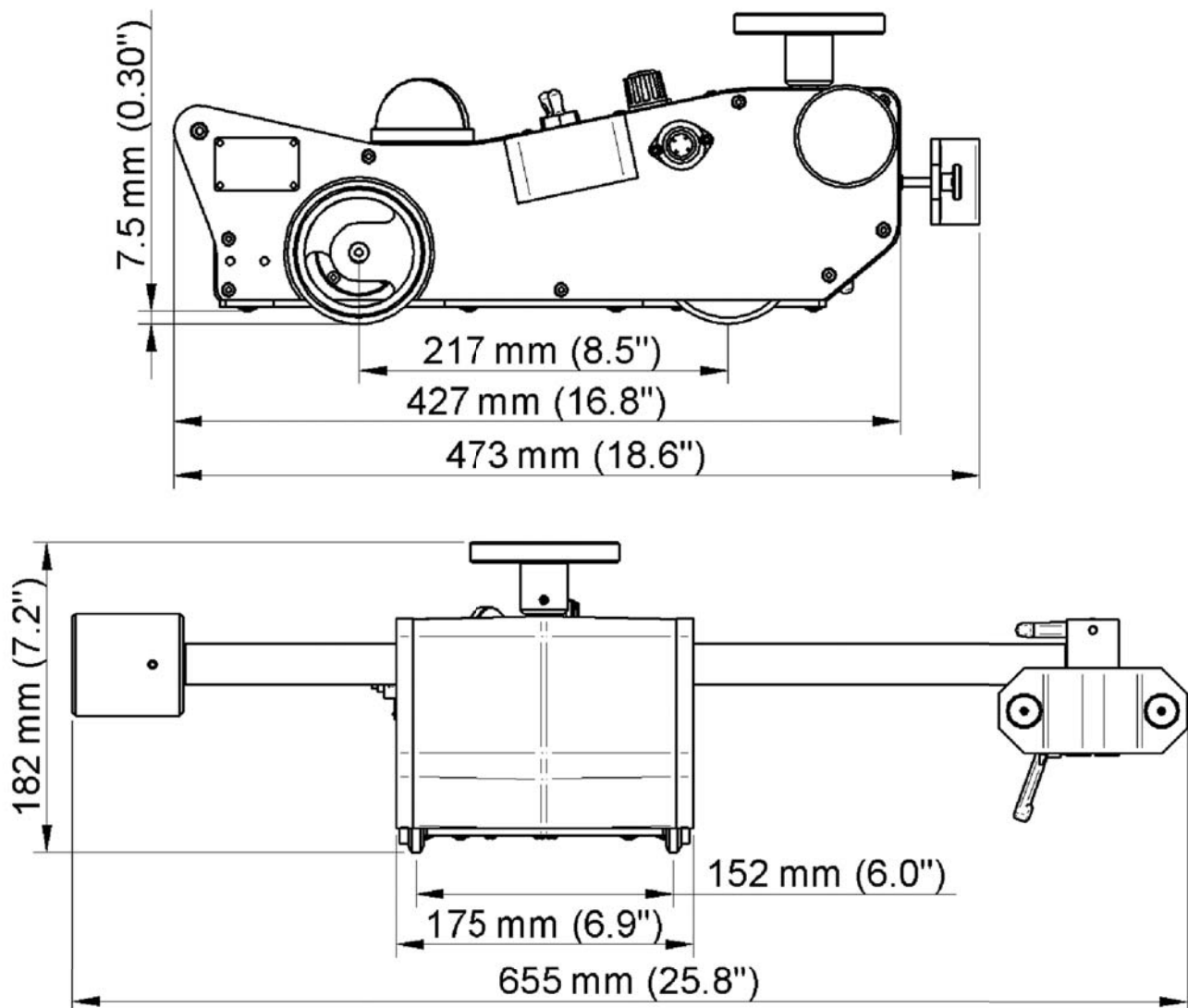
GENERAL INFORMATION

1. GENERAL INFORMATION

1.1. Application

The DRAGON Flame Cutting Carriage is designed for cutting steel using oxy fuel torches with a handle diameter in 28–35 mm range (1.10–1.38"). The machine performs straight-line horizontal cuts with maximum 10° working material inclination. The machine is easy to use, to transport, to maintain and to position in the worksite. It contains rear-wheel drive and enables speed adjustment. The machine can travel on the working material or track. With optional equipment it can use two torches and cut holes with radius in 240–1000 mm range (9.4–39.4").

1.2. Technical data



GENERAL INFORMATION

Oscillation type	115-230 V, 50-60 Hz
Power	20 W
Operating position	horizontal
Torch diameter	28–35 mm (1.10–1.38")
Ground clearance	7.5 mm (0.30")
Speed	0–150 cm/min (0–59.0"/min)
Dimensions	473 mm (L) × 655 mm (W) × 182 mm (H) 18.6" (L) × 25.8" (W) × 7.2" (H)
Weight	16.8 kg (37.0 lbs)

1.3. Design

DRAGON Flame Cutting Carriage contains drive system with controller, follower arm, counterweight and angular torch holder. The drive system comprises a gear-motor that drives two steel wheels. The machine is equipped with a coupling that enables the user to disconnect the drive using a knob (Figure 1, Item 8) and then perform manual travel of the carriage.

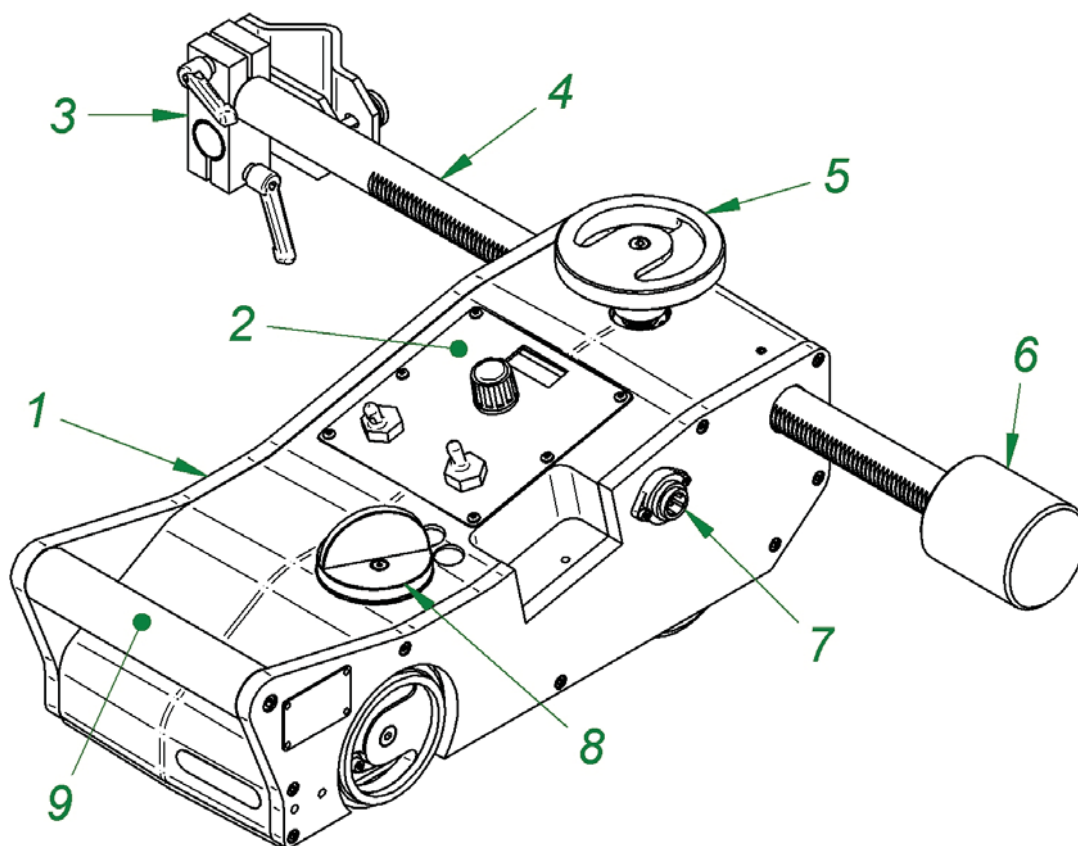


Figure 1. DRAGON flame cutting carriage design: 1 – drive system, 2 – control panel, 3 – angular torch holder, 4 – follower arm, 5 – follower arm position handwheel, 6 – counterweight, 7 – power supply socket, 8 – coupling knob, 9 – carrying handle

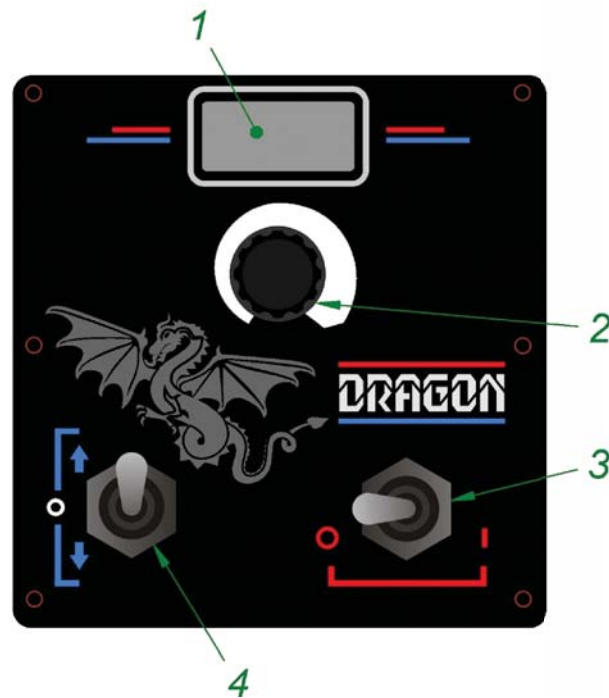


Figure 2. Control panel design: 1 – LED display, 2 – speed adjusting knob, 3 – power switch, 4 – travel direction switch (forwards / 0 / backwards)

1.4. Equipment included

DRAGON flame cutting carriage is supplied with all the standard equipment packaged in a foam filled cardboard box. The included equipment consists of:

- Flame Cutting Carriage – 1 unit
- Foam filled Cardboard Box – 1 unit
- Follower Arm of 580 mm (22.8") – 1 unit
- Counterweight of 1.3 kg (2.9 lbs) – 1 unit
- Angular Torch Holder – 1 unit
- Power Cord – 1 unit
- Size 2.5 Allen Key – 1 unit
- Size 3 Allen Key – 1 unit
- size 4 Allen Key – 1 unit
- Size 5 Allen Key – 1 unit
- Operator's Manual – 1 unit

2. SAFETY PRECAUTIONS

Using the machine is not allowed if:

1. Operator has not read Operator's Manual or has not completed proper occupational safety and health training.
2. Machine is to be used in applications not stated in Operator's Manual.
3. Machine is not complete or parts used for repair are not genuine.
4. Power supply specifications do not conform to those stated on rating plate.
5. Operator has not checked condition of machine, including power cord and control panel components.
6. Power supply socket is not equipped with earthing pin.
7. Bystanders are present in immediate vicinity of machine.

Detailed safety rules:

- 1) Before you start to work with the machine, check the condition of the electrical installation, including the power cord and plug.
- 2) Connect the machine only to an installation equipped with a safety circuit (earthing) protected with a 16 A fuse for a 230 V supply. When used on building sites, supply power to the machine through a separation transformer made in the second protection class.
- 3) Never carry machine by the cord or yank it to disconnect plug from socket. It may cause the power cord to break and result in electric shock!
- 4) Keep the machine dry. Exposing it to rain or snow is prohibited.
- 5) Ensure proper lighting in your worksite.
- 6) Never use the machine in the vicinity of combustible fluids or gases or in an explosive environments.
- 7) Transport and position machine using carrying the handle.
- 8) Do not stay underneath the machine when it is placed at heights.
- 9) Plug the power cord into the mains only when the power switch is set to "0" position.
- 10) Keep the power socket clean. Do not use compressed air for cleaning purposes.
- 11) Only use a genuine power cord. Replace it with new if damaged.
- 12) Operating in positions other than horizontal is prohibited.
- 13) Never try to manually stop the motion of machine. For this purpose set coupling knob to "OFF" or travel direction switch to "0" position.
- 14) Mounting torches with a handle diameter outside the 28–35 mm range (1.10–1.38") is prohibited.
- 15) Operate the torch according to all corresponding torch documentation.
- 16) Keep the torch cables from touching the surface (they must be suspended to reduce carriage load).

SAFETY PRECAUTIONS

- 17) Always use eye protection (helmet, shield, screen), hearing protection, gloves and protective clothing during operation. Do not wear loose clothing!
- 18) Before every use, inspect the machine to ensure it is not damaged. Check whether any part is cracked and whether all parts are properly fitted. Make sure to maintain proper conditions that may affect machine operation.
- 19) Clean machine after work and the follower arm teeth once a week.
- 20) Perform all maintenance work and repairs only with power cord disconnected from the power socket!
- 21) Replace damaged parts of the machine only with genuine ones.
- 22) Perform all mechanical and electrical repairs only in service centre appointed by seller.
- 23) If machine falls on a hard surface, from a height, is wet or has any other damage that could affect technical state of machine, stop operation and immediately send the machine to service centre for inspection.
- 24) Never leave machine unattended during operation.
- 25) Remove from the worksite and store in safe and dry location when not in use.



WARNING! Safety rules must be closely observed.

3. STARTUP AND OPERATION



WARNING! Read safety precautions before starting.

3.1. Preparation for Operation

Use the handle (Figure 1, Item 9) to carry the machine to the worksite. Set power switch (Figure 2, Item 3) and travel direction switch (Figure 2, Item 4) to “0”, while coupling knob (Figure 1, Item 8) to “OFF” position. Put the torch into the torch holder (Figure 3, Item 3), secure with knobs (Figure 3, Item 2) and connect the torch to a gas source. Position the machine on the working material or track way in a manner to place the torch right above starting point of the cut. Then, toggle coupling knob to “ON”.

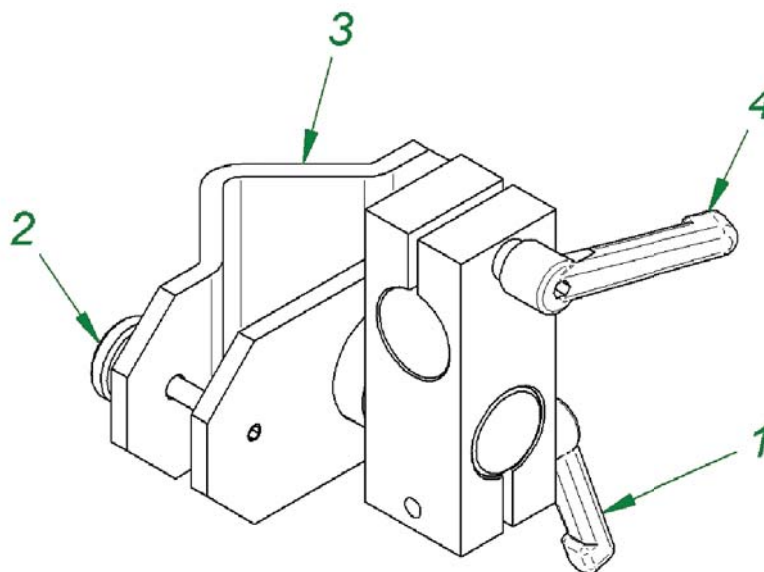


Figure 3. Angular torch holder design: 1 – handle securing torch angle, 2 – knob securing torch into holder, 3 – torch holder, 4 – handle securing follower arm

The Angular torch holder enables mounting torches with handle diameter in 28–35 mm range (1.10–1.38”). Loosen the handle (Figure 3, Item 1) to roughly set the torch angle. Use handwheel (Figure 1, Item 5) to adjust torch horizontal position by moving follower arm in or out of the machine body.

3.2. Operation

Plug the power cord into the mains and turn on the power, toggling the power switch (Figure 2, Item 3) to “I” position, what will be indicated by illuminating all segments of the display (8.8.8.). After a while, the indication will change to “Eur” if the unit of speed is set to centimetres per minute, or to “USA” – for inches per minute. Then, you will see the carriage speed; adjust it by rotating the knob (Figure 2, Item 2). It is also possible to perform manual travel of the carriage after setting coupling knob to “OFF” position.



WARNING! Before you light the torch, read its instruction manual carefully.

To start the cutting process, light the torch in a manner described in corresponding documentation of the employed torch. Then, choose direction of motion using travel direction switch (Figure 2, Item 4). The real speed of the carriage will show up on the display. To stop the motion, set travel direction switch to “0” position or the coupling knob to “OFF”. To put out the torch, proceed according to documentation of the employed torch.

3.3. Change unit of speed

To change the unit of speed from centimetres per minute to inches per minute, or vice versa, follow the steps shown in Figures 4 and 5. After changing the unit and powering up the machine, the actual measurement unit will show up. With the jumper removed, the display will show “USA” message and the speed will be indicated in inches per minute. With the jumper in place, the display will show “Eur” and speed will be given in centimetres per minute. A size 2 Allen key used to unscrew control panel is not included in the standard equipment.



Figure 4. Front side of the control panel

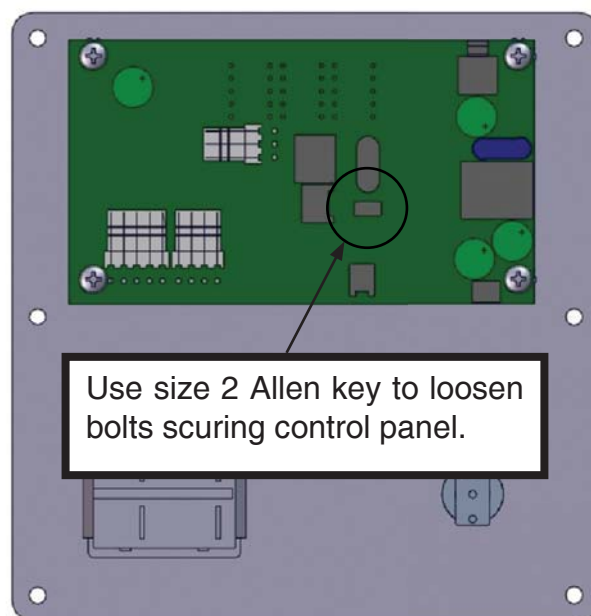


Figure 5. Back side of the control panel

3.4. Meaning of display messages

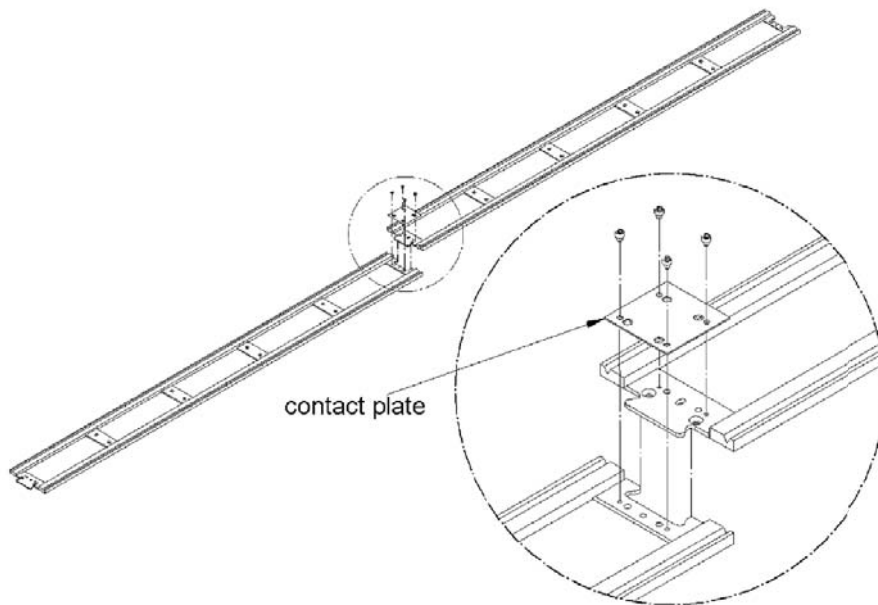
Message	Description	Solution
"8.8.8."	Display test If some segments are not illuminated, it indicates a problem with the display.	Contact service centre to investigate the problem.
"Eur"	Indicates that the speed will be displayed in centimetres per minute.	-
"USA"	Indicates that the speed will be displayed in inches per minute.	-
"Er.S."	Travel direction switch error 1. Travel direction switch is active (forward or backward direction chosen) when powering up. 2. If displayed during motion, it indicates a malfunction of travel direction switch or travel direction identification circuit of the controller.	1. Set travel direction switch to "0" position. 2. Contact service centre. Possible switch or controller fault.
"crL"	Motor overload Motor safe current level exceeded. Carriage stops immediately.	Adjust arrangement of the cables that block carriage motion. Remove any other elements that block the carriage or its wheels. If this message still appears, contact service centre.
"150"	Maximum speed in centimetres per minute.	-
"59.8"	Maximum speed in inches per minute.	-

Table 1. Settings available in basic version of LIZARD welding carriage

4. OPTIONAL EQUIPMENT

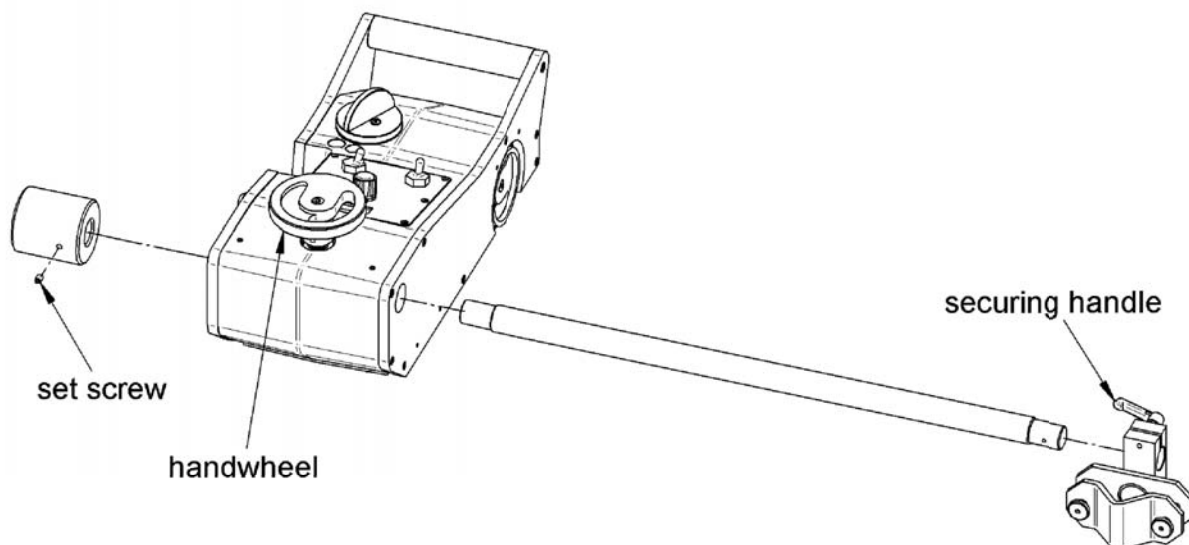
4.1. Track way

Track way increases the cutting precision by forcing straight-line motion of the carriage. The length of a single segment is 1800 mm (70.9") and the distance between the rail centres equals 152 mm (6"). Connect tracks with M5x5 screws in a manner shown in the figure, using a size 4 Allen key.



4.2. Longer follower arm

Follower arm with the length of 1000 mm (39.4") increases machine range.

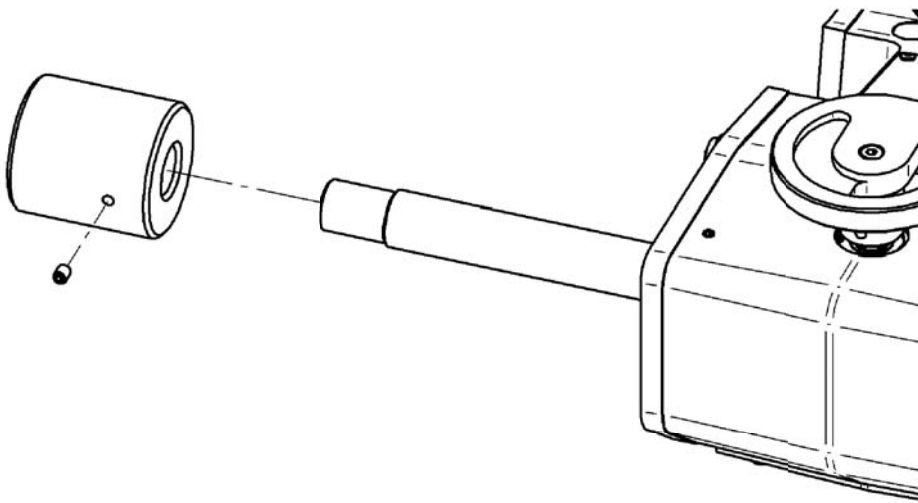


OPTIONAL EQUIPMENT

To disassemble the mounted follower arm, remove the counterweight by loosening set screw using a size 3 Allen key. Loosen securing handle and remove torch holder. Then, rotating the handwheel, move the follower arm out of the carriage body. Assemble in reverse order. **WARNING!** Using longer follower arm may also require larger counterweight or holder to balance the carriage.

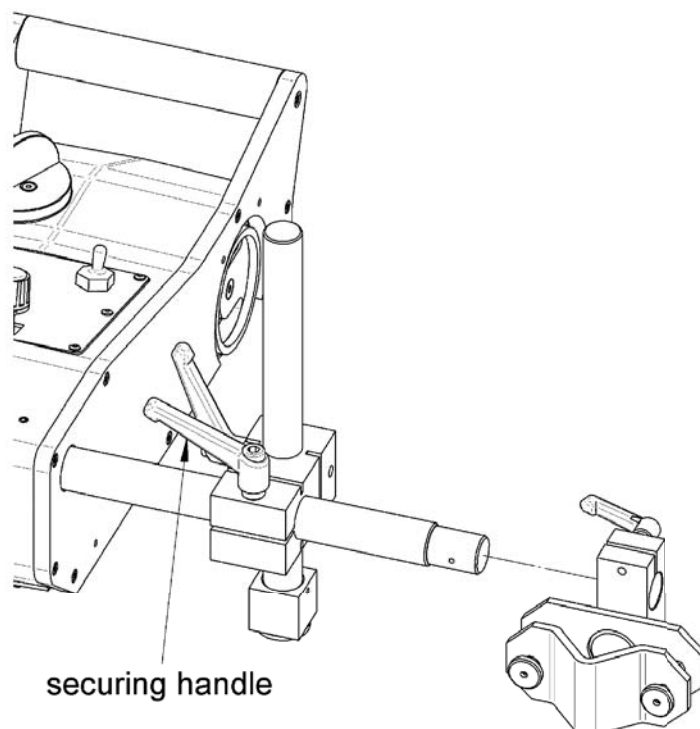
4.3. Larger counterweight

Larger counterweight with the weight of 2.6 kg (5.7 lbs) provides extra balance when using additional holders, a longer follower arm or a heavier torch. To disassemble the counterweight, unscrew set screw using a size 3 Allen key. Assemble in reverse order.



4.4. Carriage support

The carriage support provides balance when the machine is used with an additional load, a longer follower arm or a heavier torch.

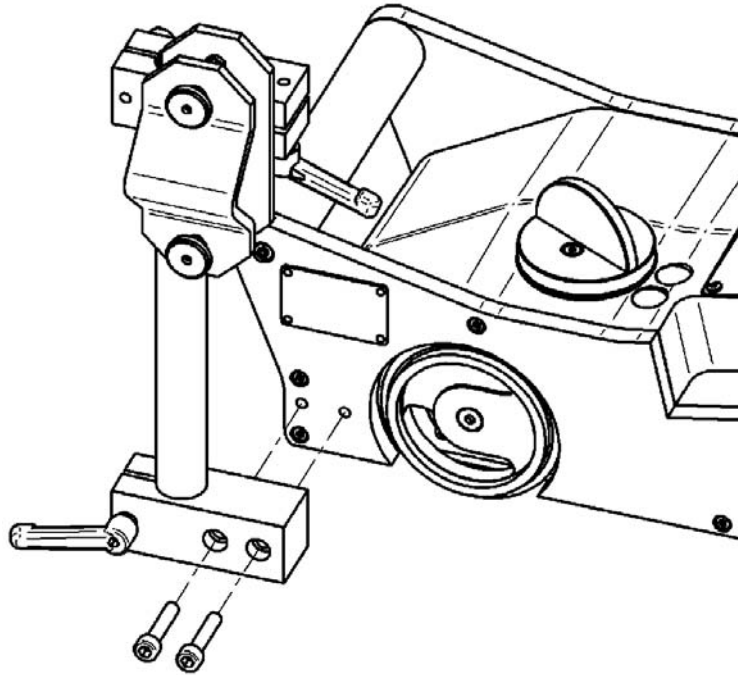


OPTIONAL EQUIPMENT

To assemble, remove the torch holder after loosening the handle. Mount the support onto the follower arm and secure with the handle, then mount the holder again.

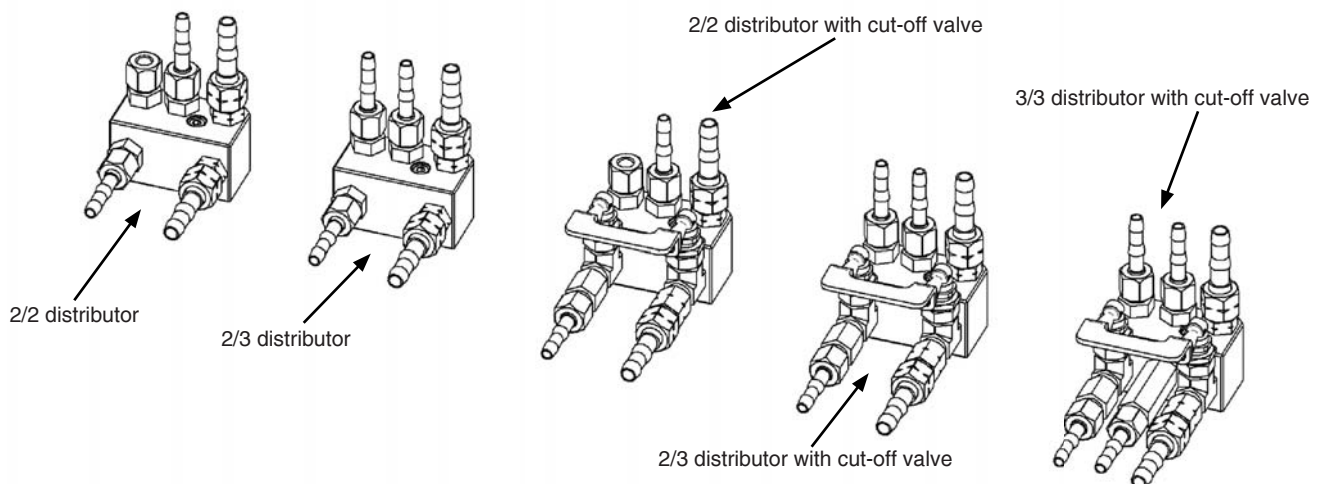
4.5. Cable holder

The cable holder is designed to immobilise the gas and power cables. Mount it to the side wall with two M6x30 screws, using size 5 Allen key.



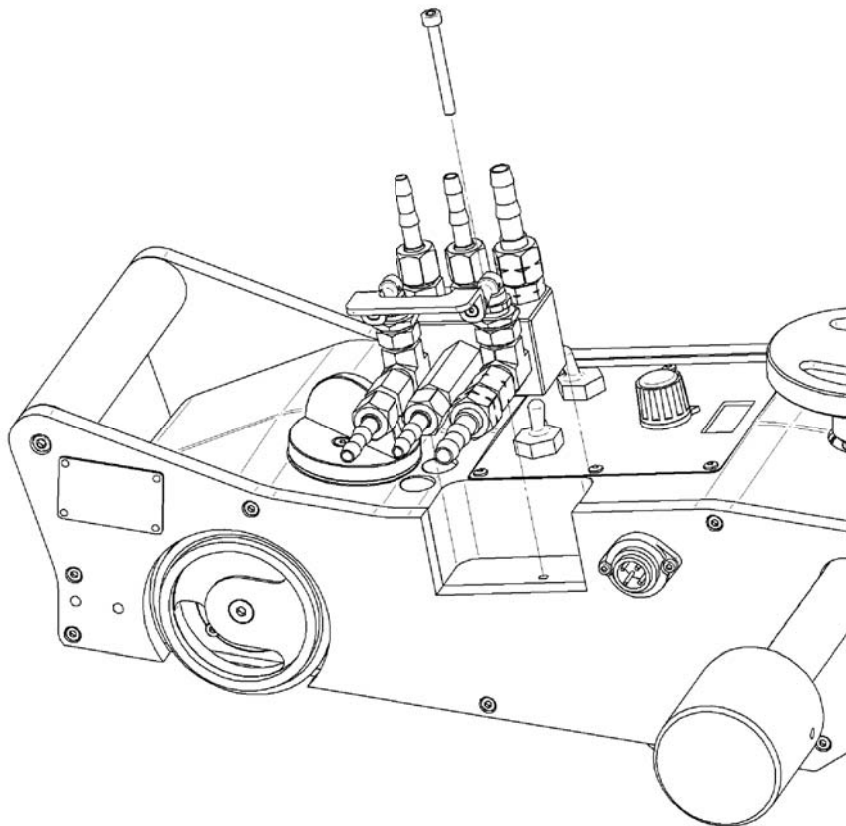
4.5. Gas Distributor

The distributor provides safe gas delivery to the torch. 2/2 and 2/3 versions supply gas to respectively 2-hose or 3-hose torches. Extended distributors contain a quick gas cut off valve. All distributors are available in both imperial and metric versions.



OPTIONAL EQUIPMENT

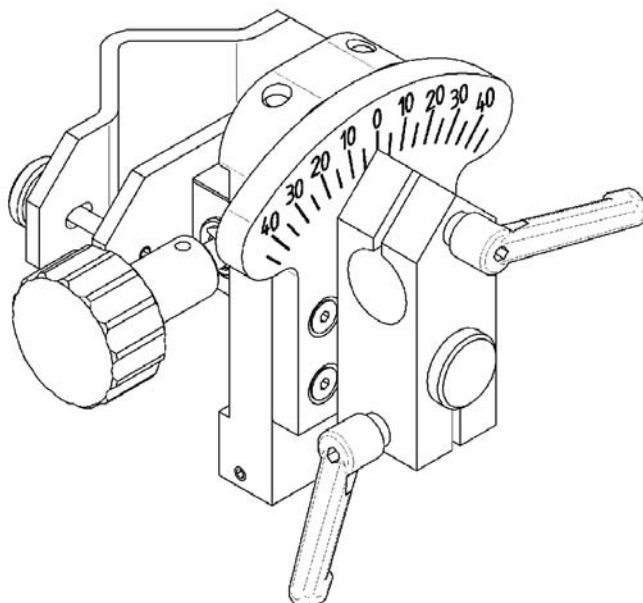
To assemble, place the distributor into the slot and secure it with M5x45 screw using size 4 Allen key.



4.7. Additional torch holders

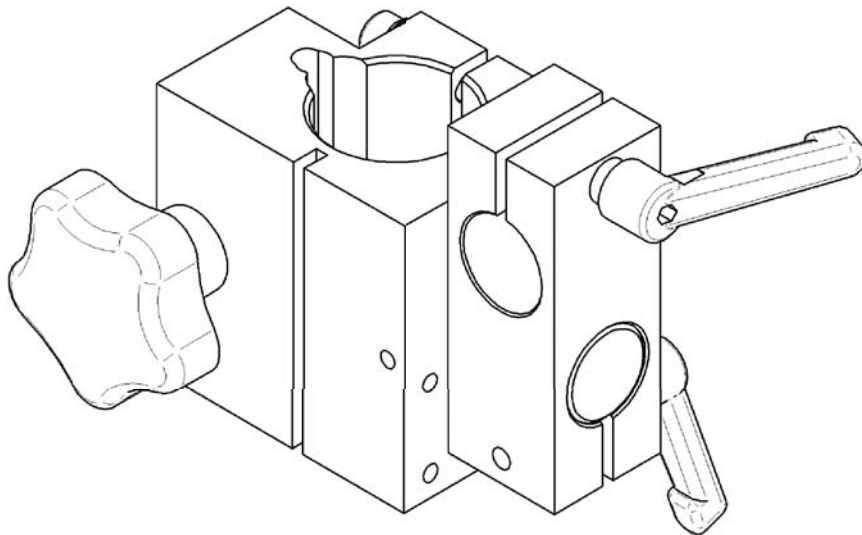
4.7.1. Precise holder

The precise holder is designed for torches with diameter in 28–35 mm range (1.10–1.38") and enables precise torch angle adjustment. Use the knob to adjust the torch's vertical position.



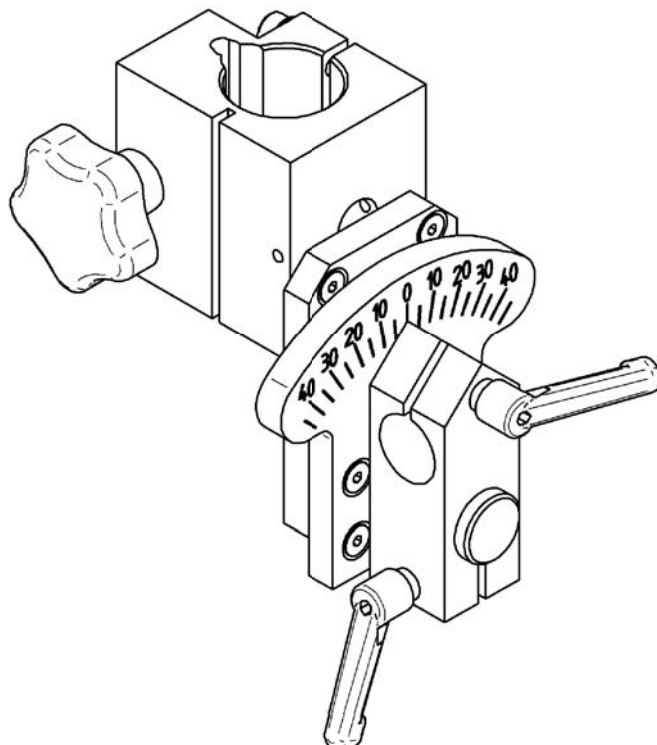
4.7.2. Machine torch holder

The machine torch holder is designed for torches with diameter of 35 mm (1.38" or different, depending on the order) equipped with a rack. It enables torch vertical position adjustment using the knob and rough angle adjustment.



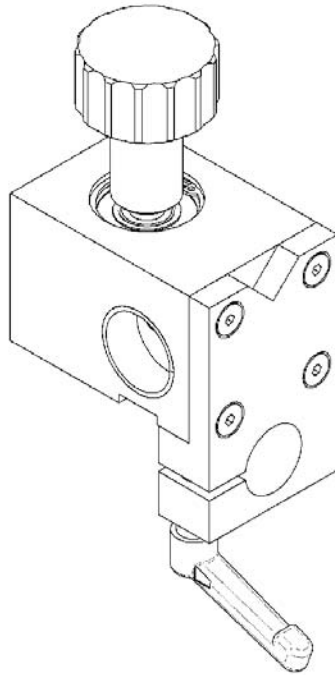
4.7.3. Precise machine torch holder

The precise machine torch holder is designed for torches with diameter of 35 mm (1.38" or different, depending on the order) equipped with a rack. It enables the torch vertical position adjustment, using the knob, and precise angle adjustment.

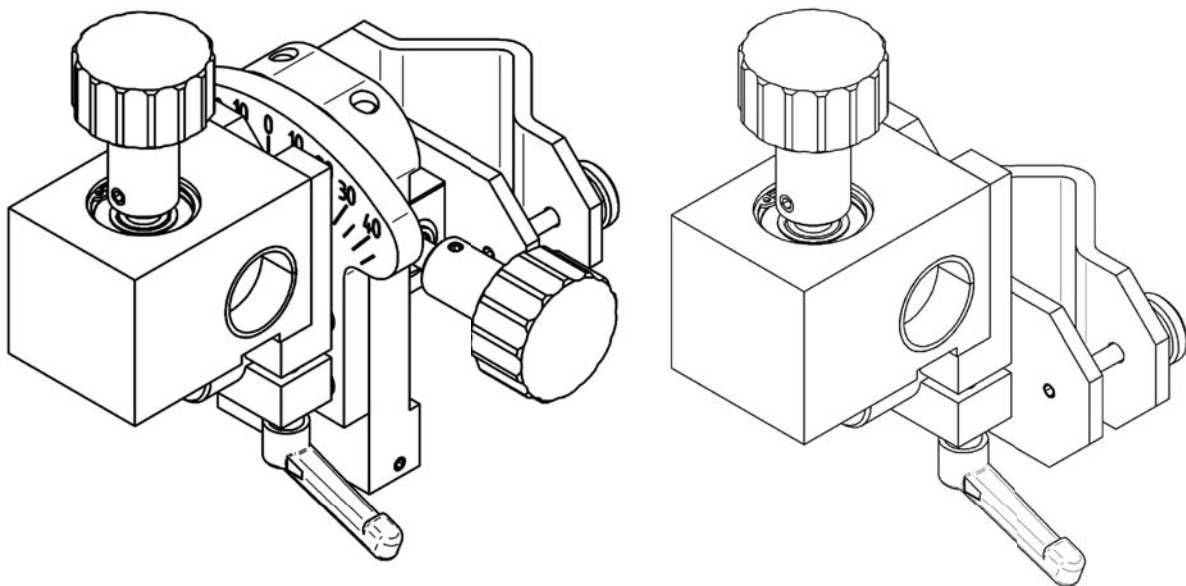


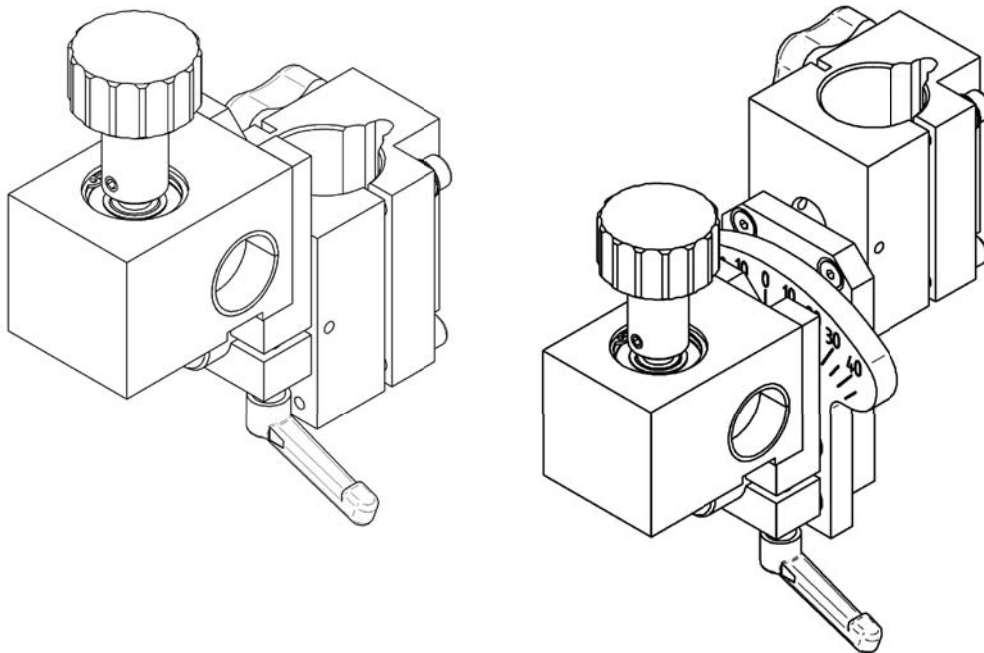
4.8. Independent holder

The independent holder can be combined with other holders, which enables the use of a second torch independently to the standard torch.



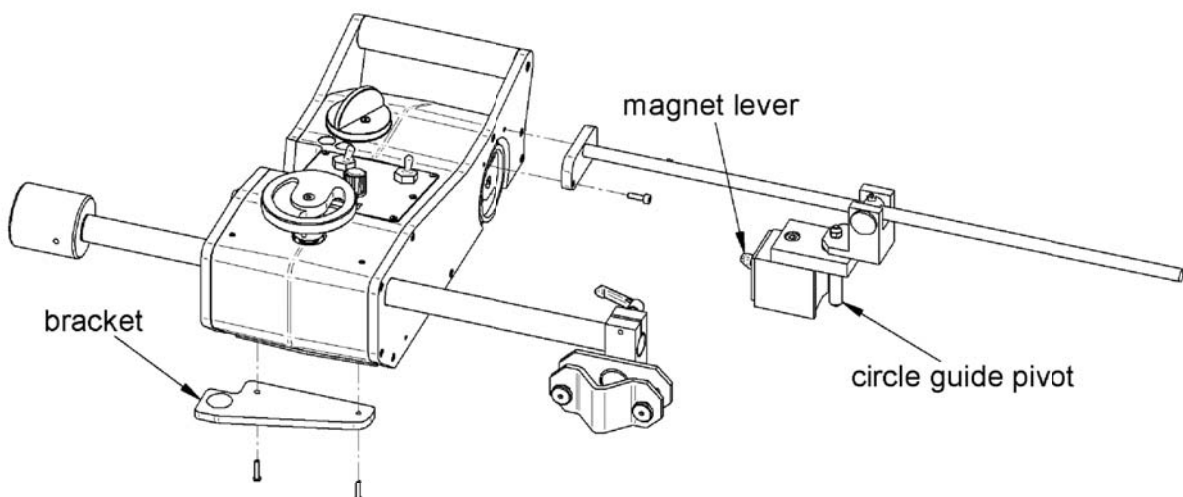
Remove the holder clamping block (part with two handles) before linking to the independent holder. The combined holder should be mounted onto the follower arm after previously removing the counterweight or the standard holder. Next, rotate knob to set the holder in the required position along the arm axis.





4.9. Circle guide

The circle guide enables cutting holes in 240–1000 mm diameter range (9.4–39.4"). To assemble, unscrew the two front screws that secure the carriage bottom plate and mount the bracket with M4x20 screws using a size 2.5 Allen key as shown in the figure. Mount the guide to the side wall with M5x16 screws, using a size 4 Allen key. Set the circle guide pivot above determined centre of the circle and toggle the magnet lever to change the adhesion to the work surface from minimum to maximum.



WIRING DIAGRAM

