

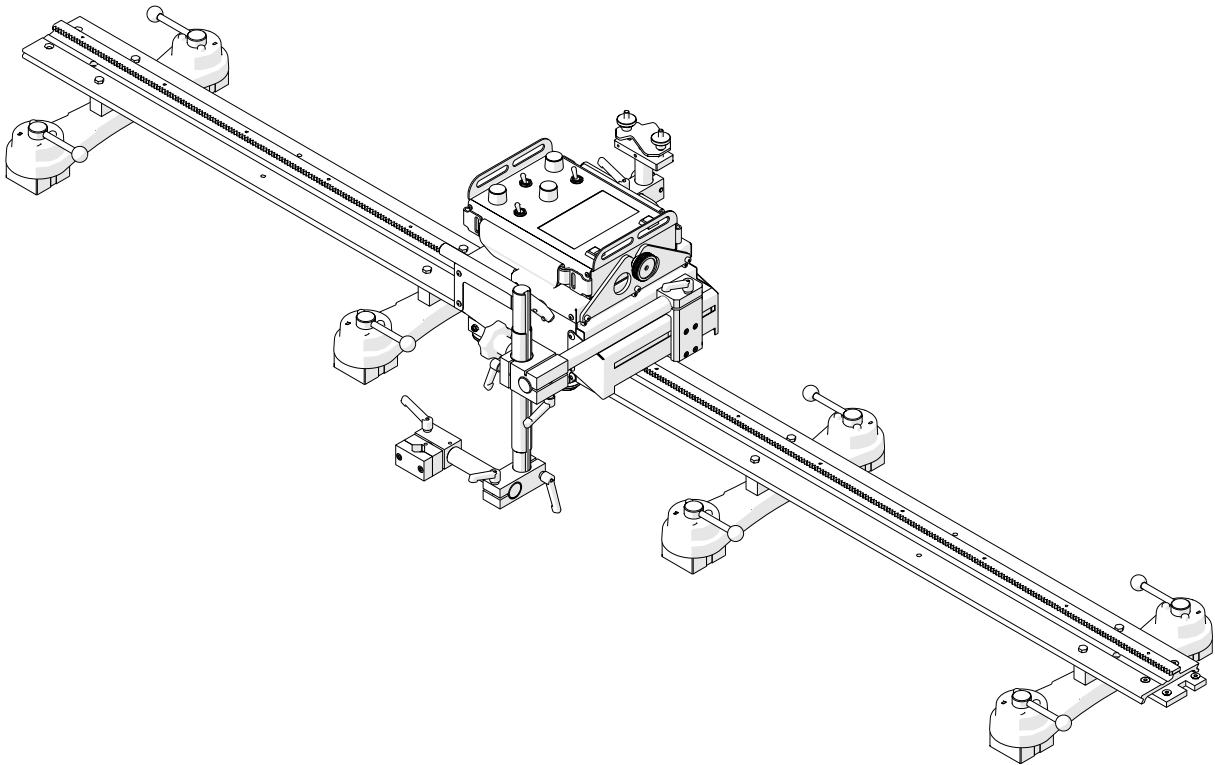


The tools of innovation.

OPERATOR'S MANUAL

Rail Runner 2

WELDING CARRIAGE



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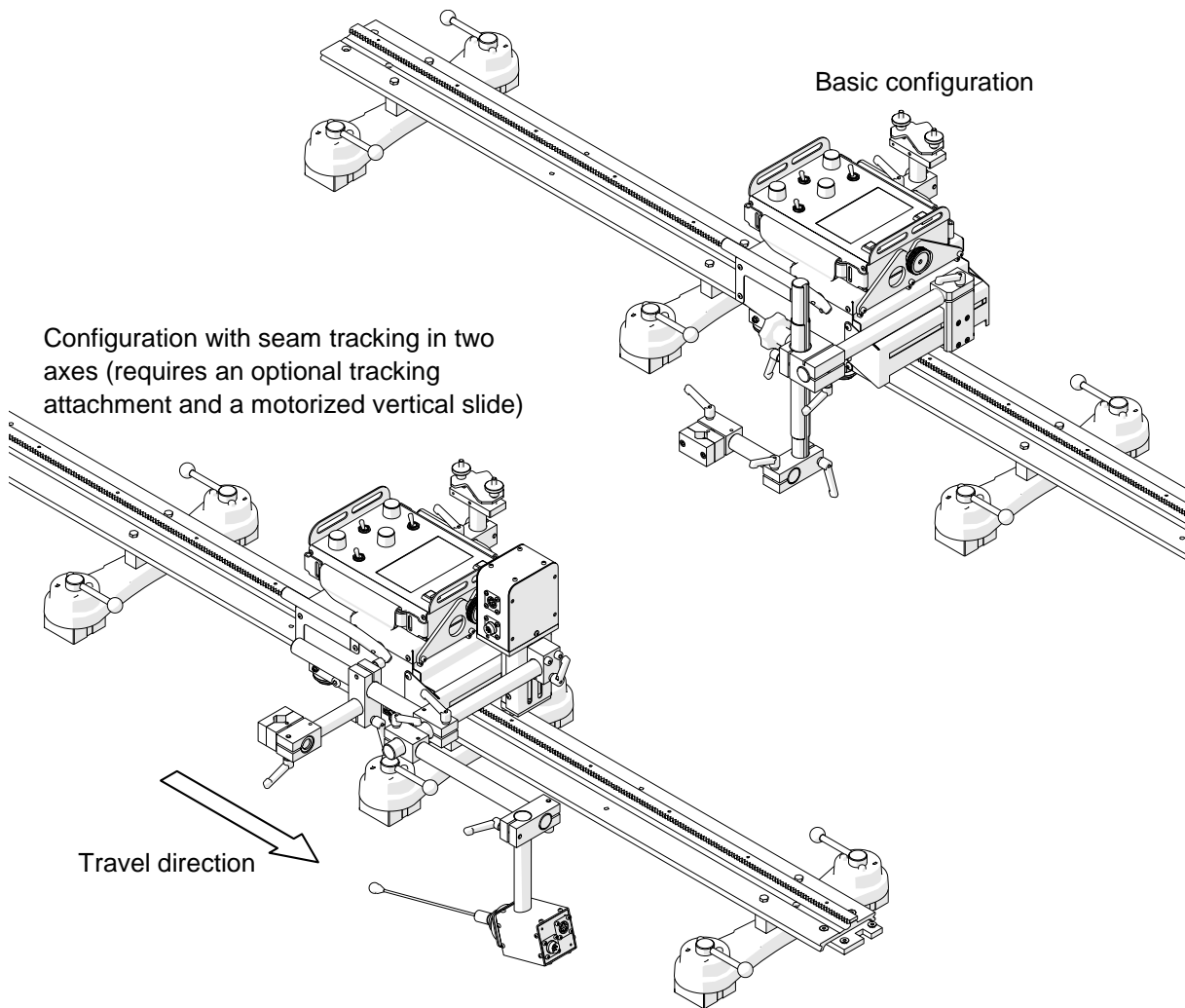
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1. GENERAL INFORMATION

1.1. Application

The Rail Runner 2 welding carriage is a track carriage designed to produce butt and fillet welds with or without oscillation by using MIG/MAG torches with the handle diameter of 16–22 mm (0.63–0.87”). It travels on a track fixed by using dual magnetic units to ferromagnetic surfaces that are flat or curved with a radius of at least 5 m (16 ft).

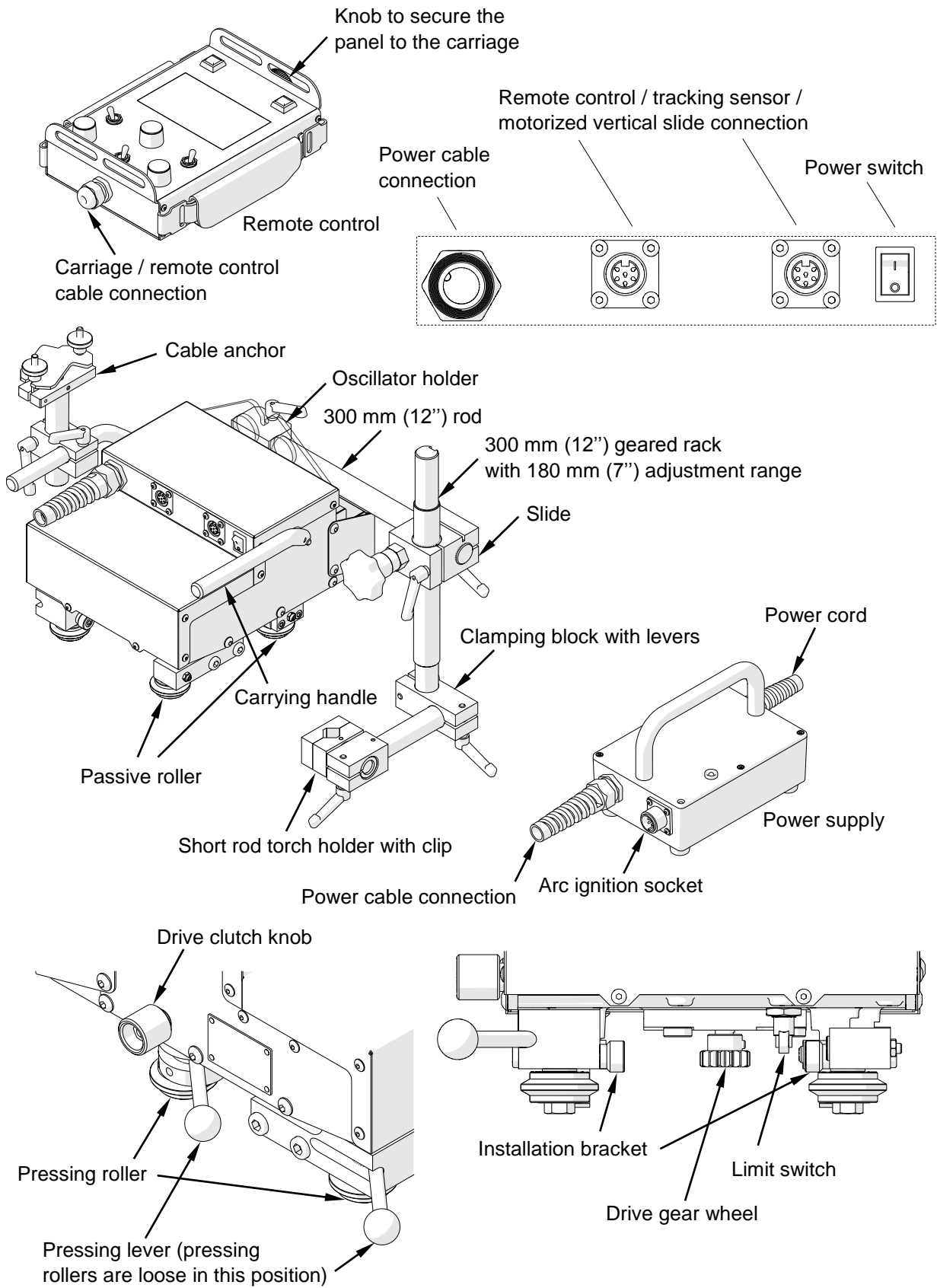
Accessories allow, for instance, using a torch with the handle diameter larger than 22 mm (0.87”), guiding the carriage on a semi-flexible, rigid, or ring track, and tracking the welding seam. Using a vacuum track fixing system allows the track to be fixed to surfaces that are non-ferromagnetic.



1.2. Technical data

Voltage		1~ 230 V, 50–60 Hz 1~ 115 V, 50–60 Hz
Power		120 W
Welding position (according to EN ISO 6947 and AWS/ASME)	horizontal	PA / 1F / 1G PB / 2F PC / 2G PD / 4F PE / 4G
	vertical	PF / 3G PF / 3F (contact dealer) PG / 3G
Minimum curvature radius of a semi-flexible track		5 m (16 ft)
Torch type		MIG/MAG
Torch diameter		16–22 mm (0.63–0.87")
Minimum workpiece thickness		5 mm (0.2")
Horizontal pulling force		400 N (88 lbs)
Vertical pulling force		300 N (66 lbs)
Horizontal speed		0–300 cm/min (0–120 in/min)
Vertical speed		0–300 cm/min (0–120 in/min)
Oscillation type		linear
Weld path		straight, triangle, trapezoid
Oscillation width		0.2–11.8 cm (0.1–4.5")
Oscillation speed		10–300 cm/min (5–120 in/min)
Oscillation delay at center and on ends		0–5 s
Maximum oscillator pulling force		100 N (22 lbs)
Permitted ambient temperature		0–45°C (32–113°F)
Maximum permitted ambient humidity without condensation		80%
Protection level		IP 23
Weight		10 kg (22 lbs)

1.3. Design



1.4. Equipment included

The Rail Runner 2 is supplied including the following elements.

Carriage	1 unit
Metal box	1 unit
Remote control	1 unit
Power supply	1 unit
Oscillator holder	1 unit
300 mm (12") rod	1 unit
300 mm (12") geared rack	1 unit
Clamping block with levers	1 unit
Short rod torch holder with clip	1 unit
Cable anchor	1 unit
6.5 m (21 ft) arc ignition cable	1 unit
5 m (17 ft) power cable	1 unit
3 m (10 ft) remote control cable	1 unit
6 mm hex wrench	1 unit
Operator's Manual	1 unit

2. SAFETY PRECAUTIONS

1. Before beginning, read this Operator's Manual and complete proper occupational safety and health training.
2. Use the carriage only in applications specified in this Operator's Manual.
3. The carriage must be complete and all parts must be genuine and fully operational.
4. The specifications of the power source must conform to those specified on the rating plate.
5. Connect the carriage into a properly grounded power source.
6. Never carry the carriage by the cords or arc ignition cable and never pull them as this may damage them and result in electric shock.
7. Untrained bystanders must not be present near the carriage.
8. Before beginning, make sure that the correct is the condition of the carriage, power source, cords, arc ignition cable, plugs, control panel, rollers, and gear wheel.
9. Keep the carriage dry. Exposure to rain, snow, or frost is prohibited.
10. Keep the work area well lit, clean, and free of obstacles.
11. Never use near flammable liquids or gases, or in explosive environments.
12. Transport and position the carriage by using the carrying handles.
13. Install the carriage only on the supplied track.
14. Make sure that the gear wheel and the rollers are clean and not damaged.
15. Plug the cords and cables into sockets only when the power switch is set to the position 'O'.
16. Keep the sockets clean. Do not use compressed air for cleaning.
17. Install only MIG/MAG torches with the handle diameter corresponding to the torch holder in use.
18. Suspend cables to reduce the load of the carriage.
19. Do not bend the semi-flexible track to a radius less than 5 m (16 ft).
20. Use the rigid track only on flat surfaces.
21. When operating at heights, protect the carriage and the track from dropping. To do this, fasten the semi-flexible or rigid track to a fixed structure with chains attached to the leftmost and rightmost dual magnetic units. Protect the carriage by attaching a chain to a carrying handle. The chains must not be loose.
22. Do not stay below the carriage or the track placed at heights.

23. Always use eye protection (helmet, shield, and screen), hearing protection, gloves, and protective clothing during operation. Do not wear loose clothing.
24. Before every use, inspect the carriage to ensure it is not damaged. Check whether any part is cracked or improperly fitted. Make sure to maintain proper conditions that may affect the operation of the carriage.
25. Never try to manually stop the motion of the carriage. To stop, set the travel direction switch to the position 'O'.
26. Maintain only when the carriage is unplugged from the power source.
27. Repair only in a service center appointed by the seller.
28. If the carriage falls from any height, is wet, or has any other damage that could affect the technical state of the carriage, stop the operation and immediately send the carriage to the service center for inspection and repair.
29. Never leave the carriage unattended during operation.
30. Remove from the worksite and store in a secure and dry location when not in use.

3. STARTUP AND OPERATION

3.1. Assembling the semi-flexible or rigid track

Connect dual magnetic units to the rail, and position it on the workpiece. Attach additional rails with the 4 mm hex wrench (1, Fig. 1), and then switch the levers of the magnetic units to the position 'I', which will clamp the track to the surface.

When working in PC/2G welding position, place the track in such a way to direct the teeth of the gear rack downward.

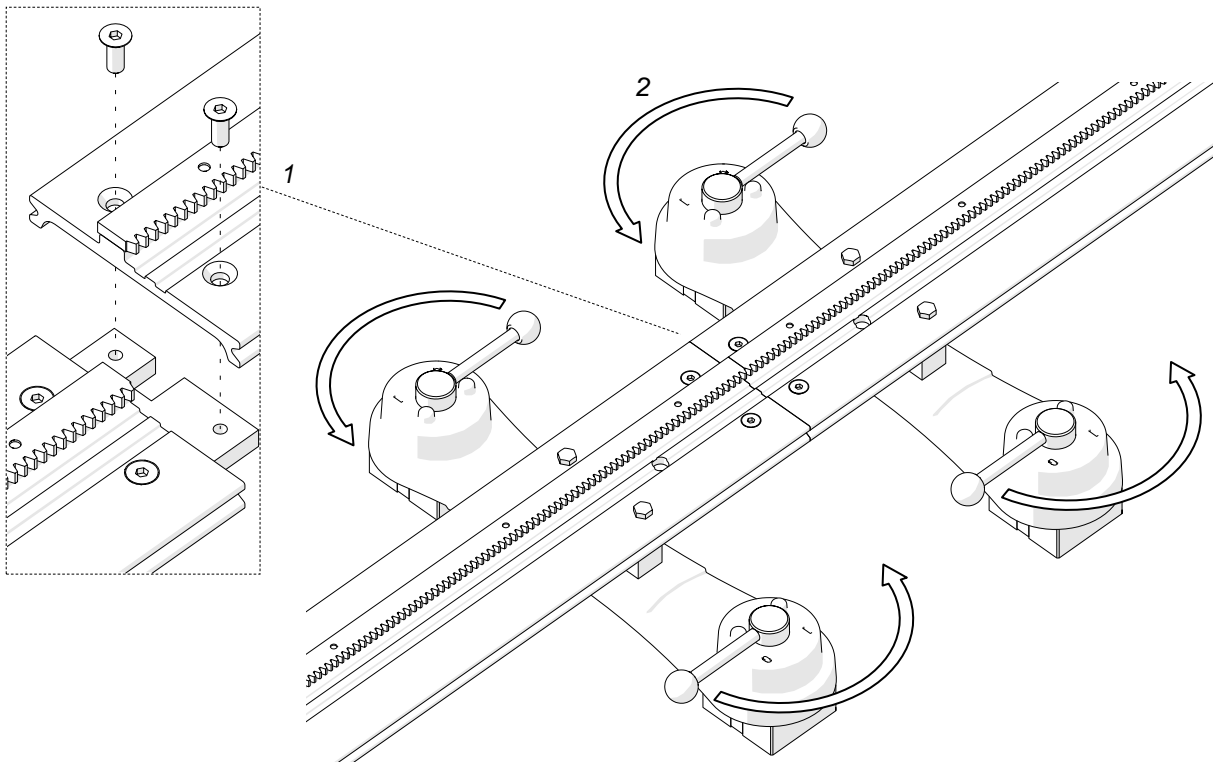


Fig. 1. Interconnecting the rails and clamping the magnetic units to the surface

Before attaching additional rails to a semi-flexible rail placed on a curvature, loosen the screws of the connecting plates (1, Fig. 2) and of the gear racks (2) with the 4 mm hex wrench. Next, attach the rails, clamp them with levers, and then tighten the connecting plates. Place the gear rack adjustment tool into the hole (3), rotate the tool to the left (4) to remove the gap (5) between the gear racks, and then tighten the leftmost screw and the rightmost screw of each gear rack (2).

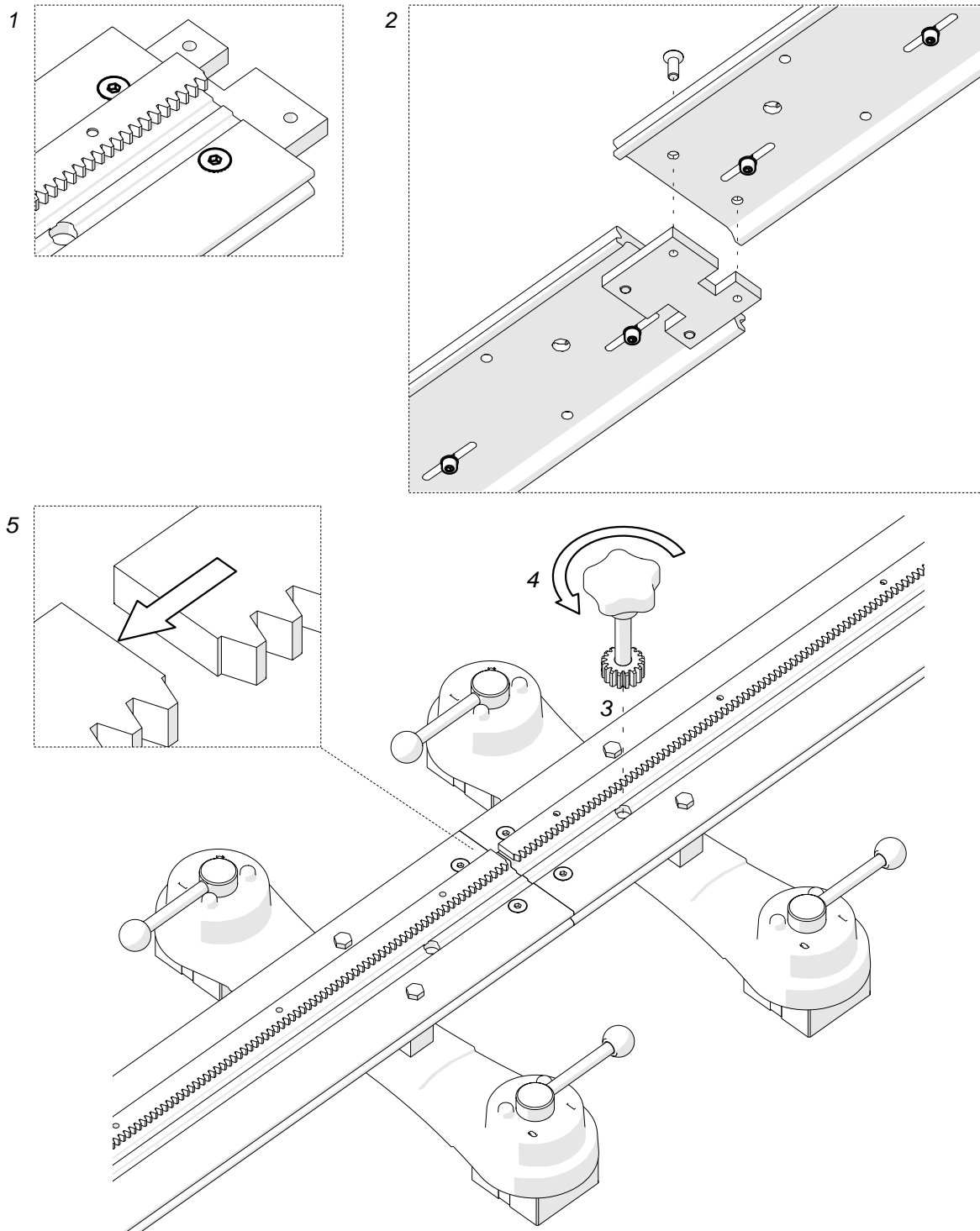


Fig. 2. Removing the gap between the gear racks of a semi-flexible track

3.2. Assembling the ring track

Select the track suitable to the outer diameter of the round workpiece. Depending on the workpiece diameter, the track consists of two to four rails. First, use the 5 mm hex wrench to attach the supports to the rails (1, Fig. 3). Next, on all supports, retract the bolts 2 (or screws) as much as possible.

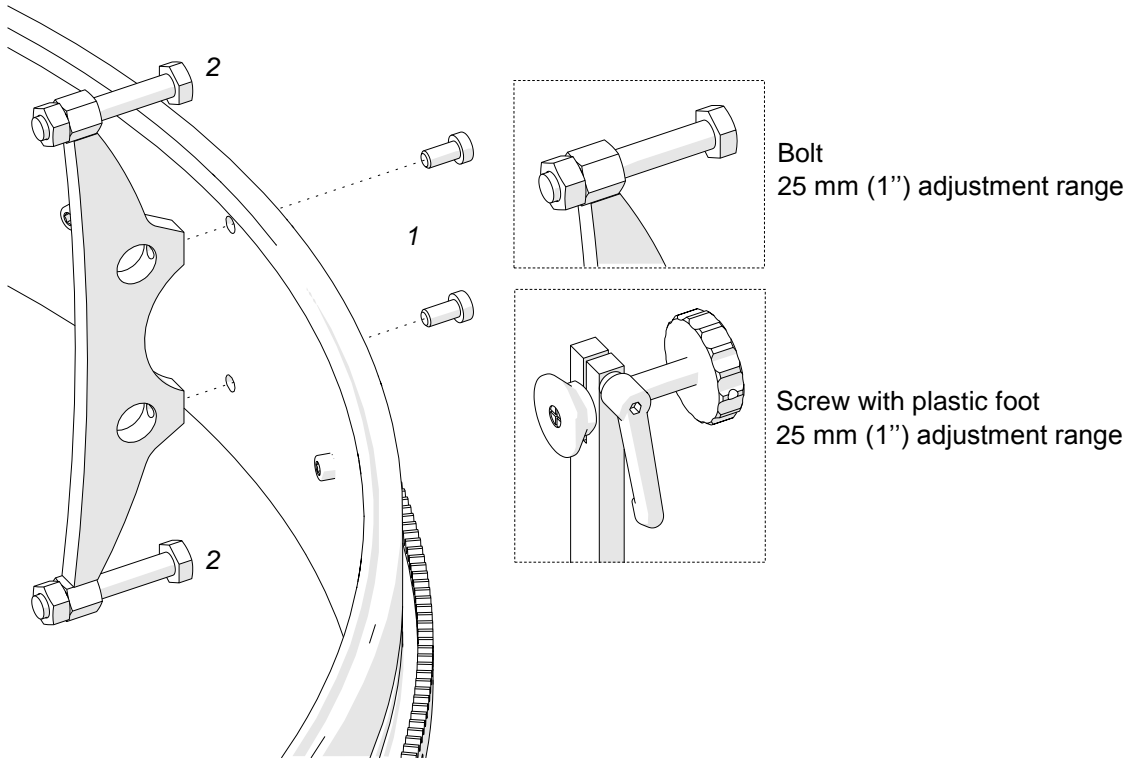


Fig. 3. Connecting the supports to the rails

Position the workpiece vertically and wrap the rails around it in such a way to direct the teeth of the gear racks downward. Next, for all rails, use the 12 mm hex wrench to set the hinge as shown in Fig. 4, insert the lock pin through the holes (1), and then rotate the wrench (2) to connect the rails.

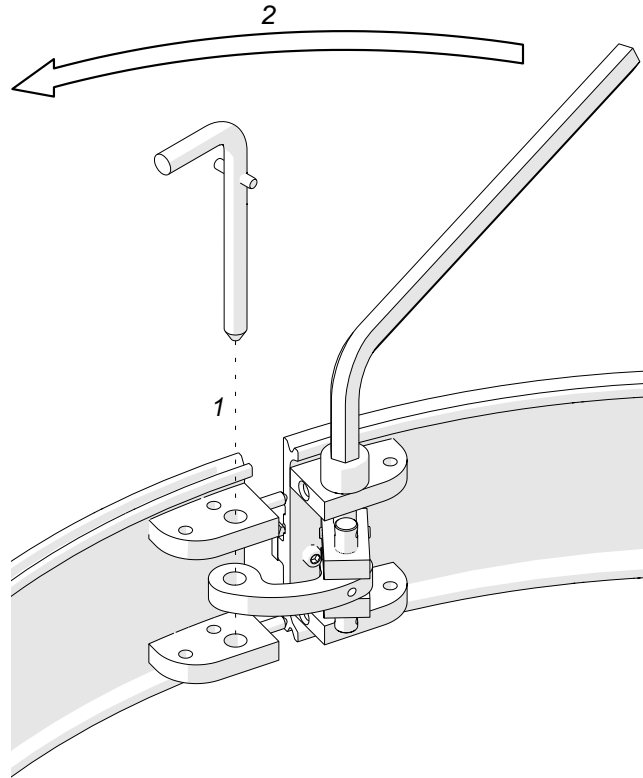


Fig. 4. Connecting the rails of the ring track

Use the 13 mm flat wrench to adjust the bolts (or manually the screws) to the same extent on each support so that the bolts (screws) are in contact with the workpiece (1, Fig. 5). If the workpiece is exactly in the center of the track, lock the supports in this position with the nuts (2) or levers.

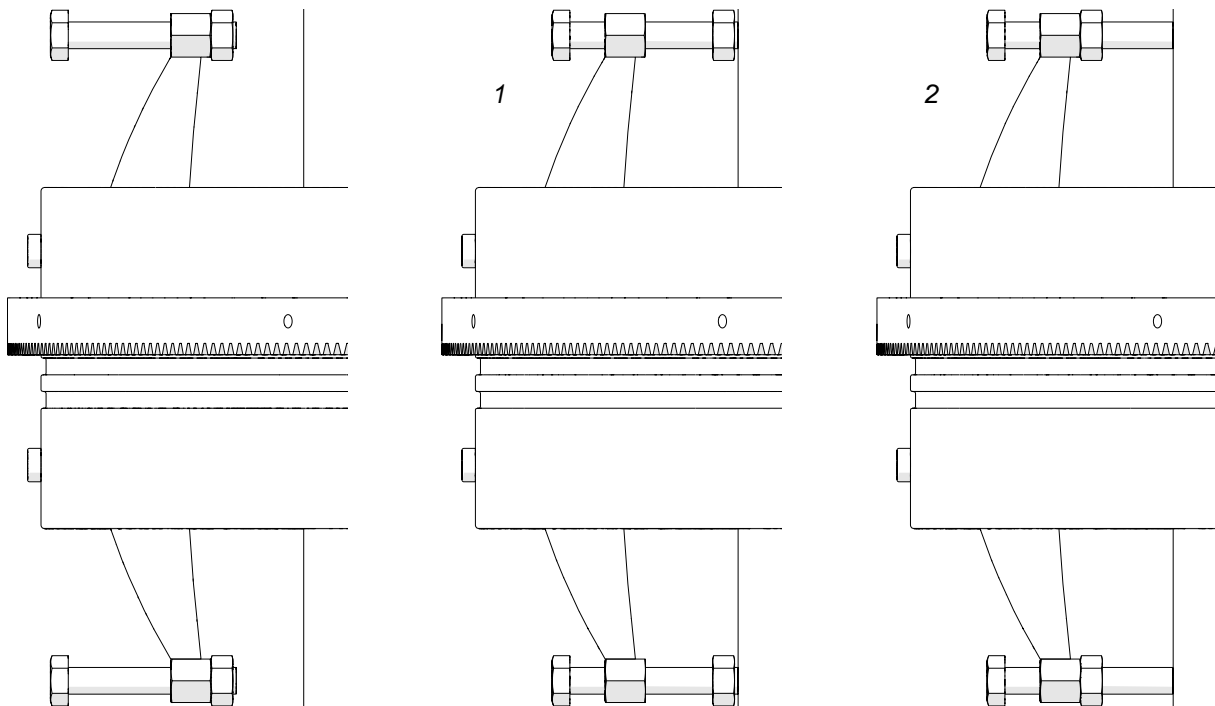


Fig. 5. Securing the ring track to the workpiece

3.3. Adapting for seam tracking (option)

Use the 3 mm hex wrench to unscrew the oscillator holder, and then unlock the levers to remove the rest of the parts (Fig. 6). Use the same wrench to install the motorized vertical slide, and then assemble the rest of the parts as shown. Next, connect the signal cable of the motorized vertical slide to the carriage, and then the sensor either to the motorized slide with the 0.5 m (1.5 ft) signal cable or to the carriage with the 1 m (3 ft) signal cable if the slide is not used. To install an adapter at the end of the sensor rod, tighten the set screws of the adapter with the 1.5 mm hex wrench.

The carriage must travel to the direction specified in Fig. 6 to be able to track the seam properly.

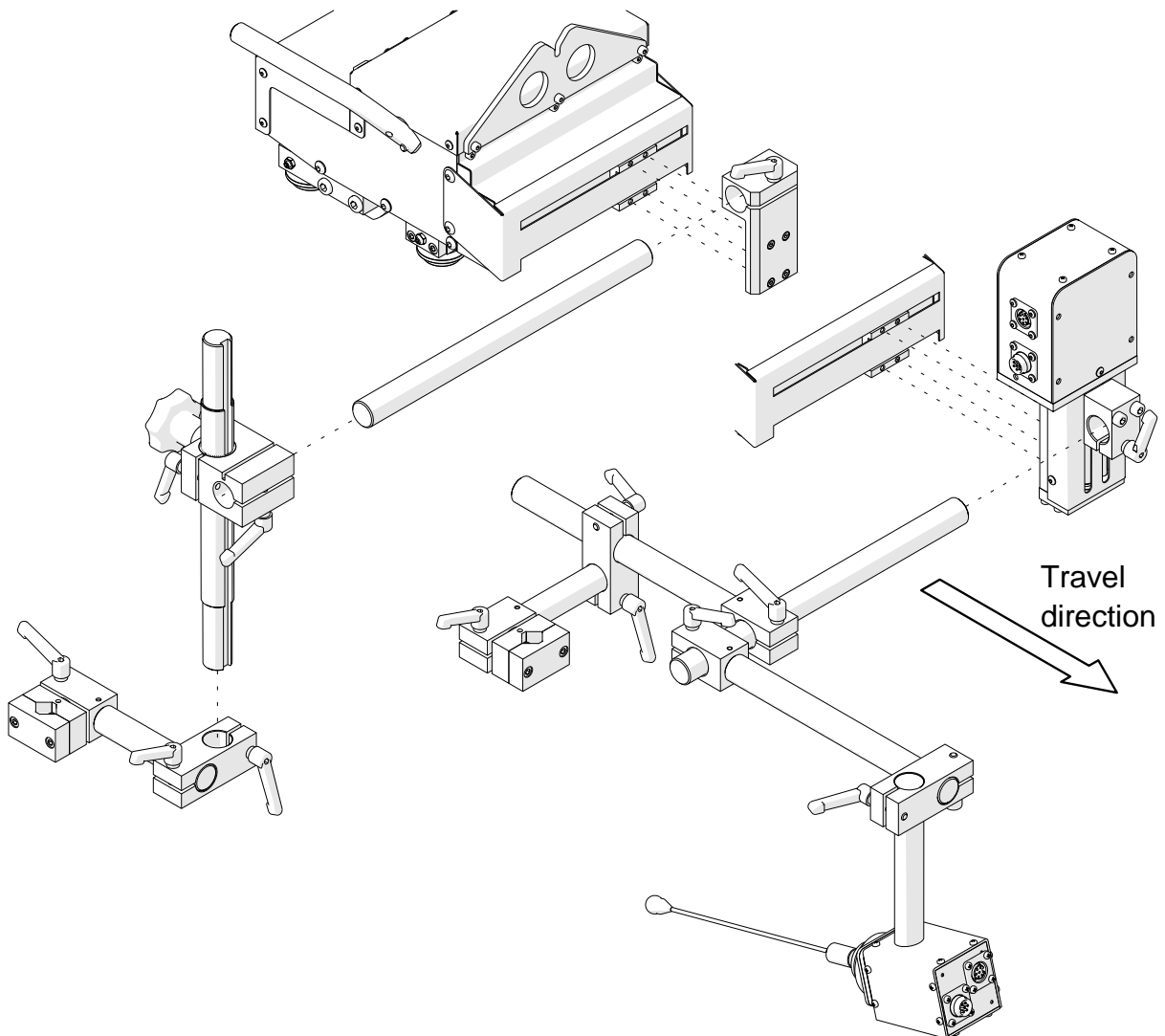


Fig. 6. Changing the basic configuration to seam tracking configuration

3.4. Positioning on a straight track

Set the power switch, arc ignition switch, oscillation switch, and travel direction switch to the position 'O'. Next, with the pressing levers in the position OFF (1, Fig. 7) loosen the drive clutch knob (2) fully to retract the drive gear wheel (3). Then, set the carriage onto the track (4) so that the installation brackets rest on the rail (5).

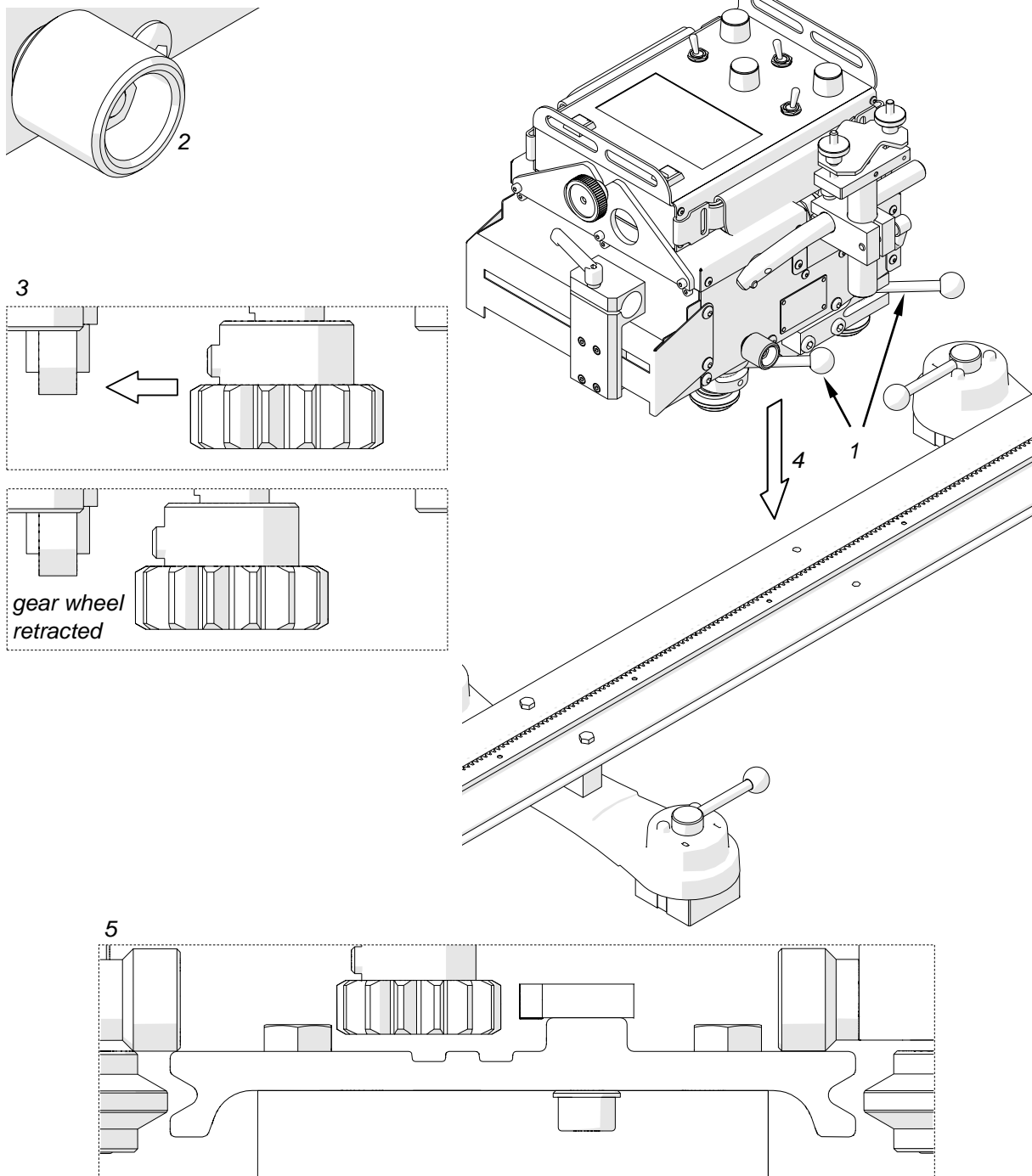


Fig. 7. Placing the carriage on a straight track

Rotate the pressing levers to the position ON (1, Fig. 8) to place the rollers into the grooves (2). Then, while moving the carriage slightly left or right, tighten the drive clutch knob (3) to engage the gear wheel of the carriage with the gear rack of the rail. However, do not force the knob and keep some backlash between the gear wheel and gear rack.

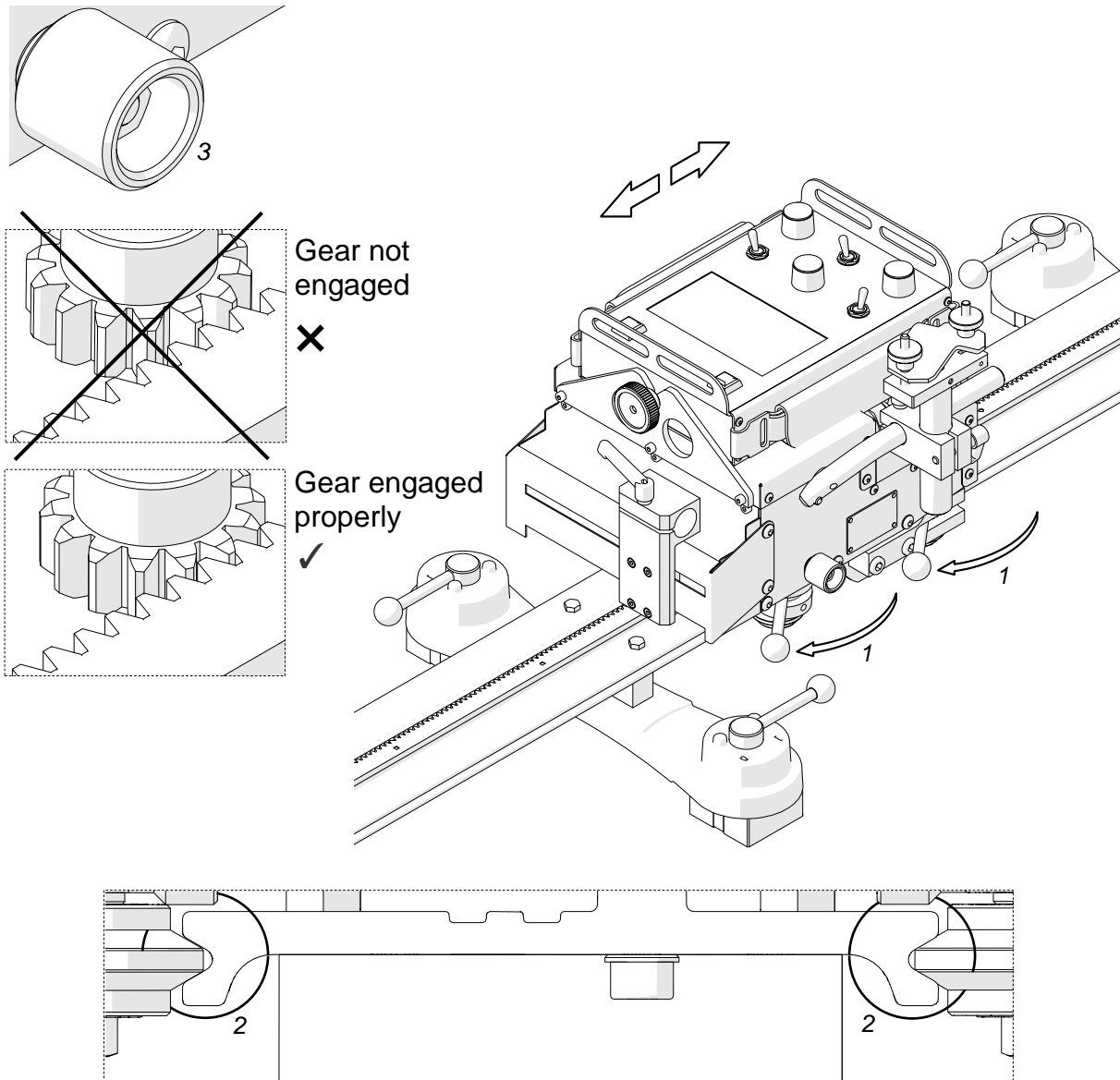


Fig. 8. Positioning the carriage on a straight track

3.5. Positioning on a ring track

Use the 6 mm hex wrench to loosen four screws (1, Fig. 9) to allow the two roller brackets to be rotated so that the rollers can be placed into the grooves of the rail.

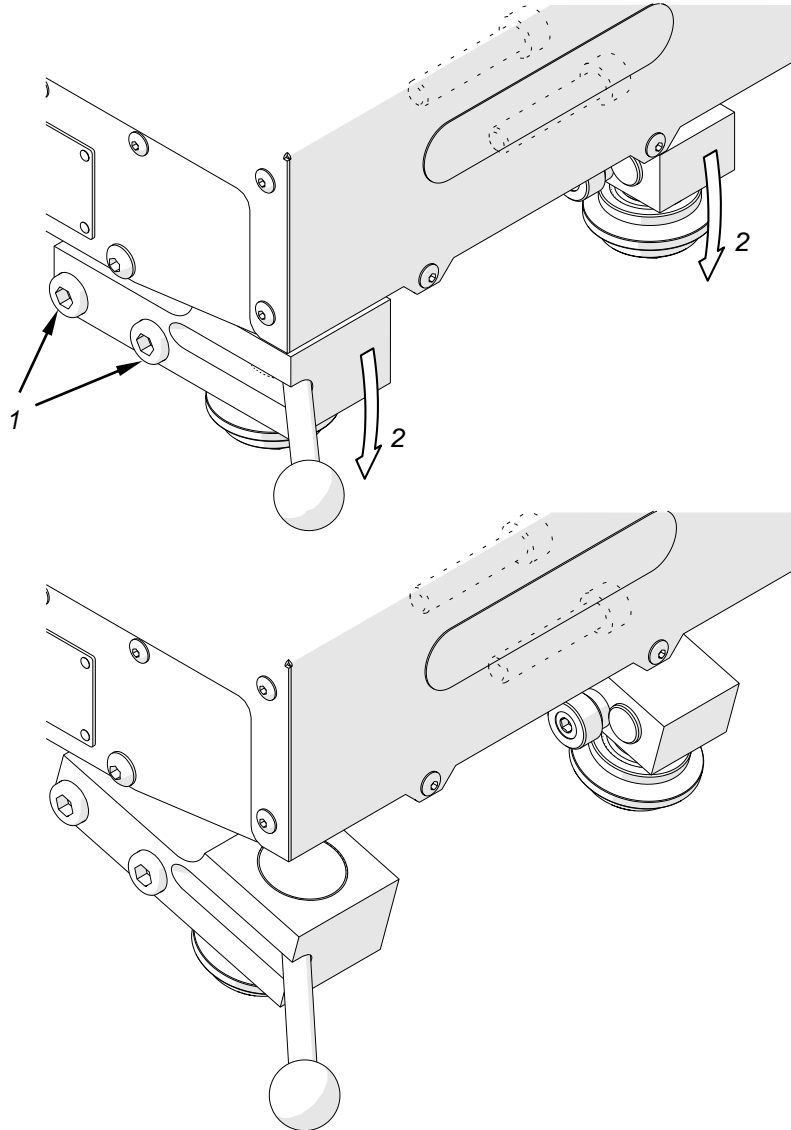


Fig. 9. Rotating the rollers for the ring track

Position the carriage on the ring track as described for the straight track. However, rotate two roller brackets so that the rollers are placed into the grooves, tighten the four screws 1, and then engage the gear wheel of the carriage with the gear rack of the rail.

3.6. Preparing

When operating at heights, protect the carriage and the track from dropping. To do this, fasten the semi-flexible or rigid track to a fixed structure with chains attached to the leftmost and rightmost dual magnetic units. Protect the carriage by attaching a chain to a carrying handle. The chains (not included) must not be loose.

Connect the carriage to the remote control and power supply, plug the power cord of the power supply into the power source, and then insert the torch into the torch holder and secure with the knob. Next, insert the torch cable into the cable anchor, secure with knobs, and then fix the anchor in the required position with levers.

3.7. Connecting to welding circuits

The carriage can control two torches by using the arc ignition cable plugged into the arc ignition socket. To do this, connect any blue-jacketed wire to any terminal of the welding circuit, and then connect the second blue-jacketed wire to the second terminal of the same circuit, according to the diagram shown in Fig. 10. To control the second torch, connect the green-jacketed wires to the terminals of the second welding circuit.

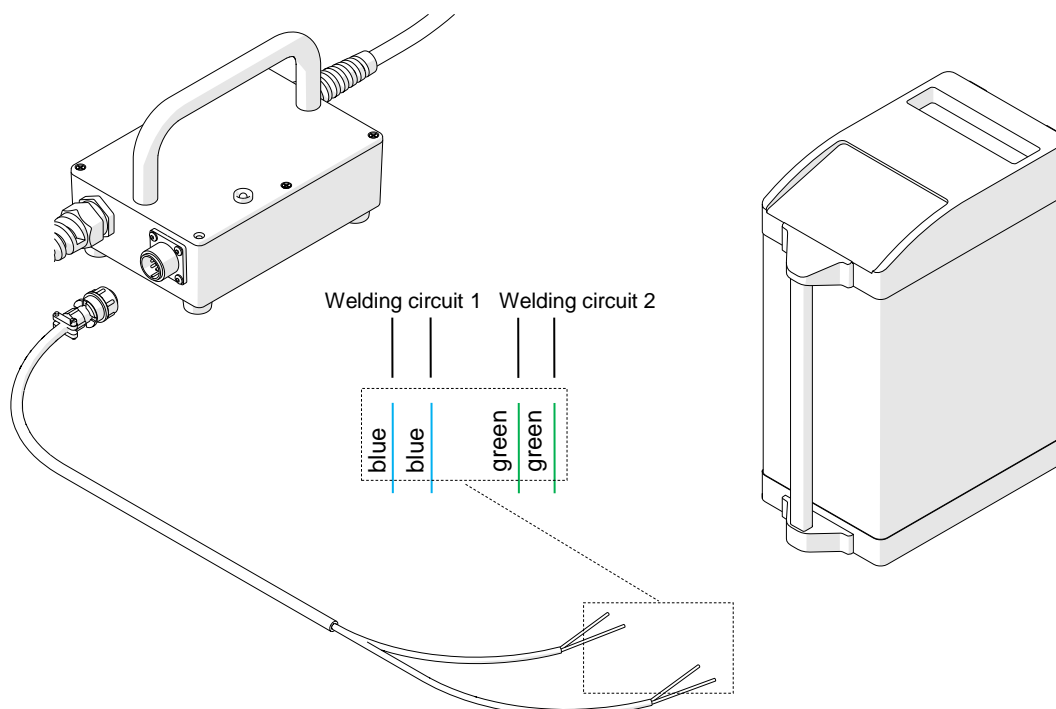


Fig. 10. Connecting the arc ignition cable to welding circuits

To make sure that the arc ignition cable is connected correctly, turn on the power of the carriage, and set the arc ignition switch to the position TEST, which should enable the arc for a while.

3.8. Operating

Set the power switch to the position 'I' to turn on the carriage. After the initialization of the control system finishes, the main screen from Fig. 11 will show.

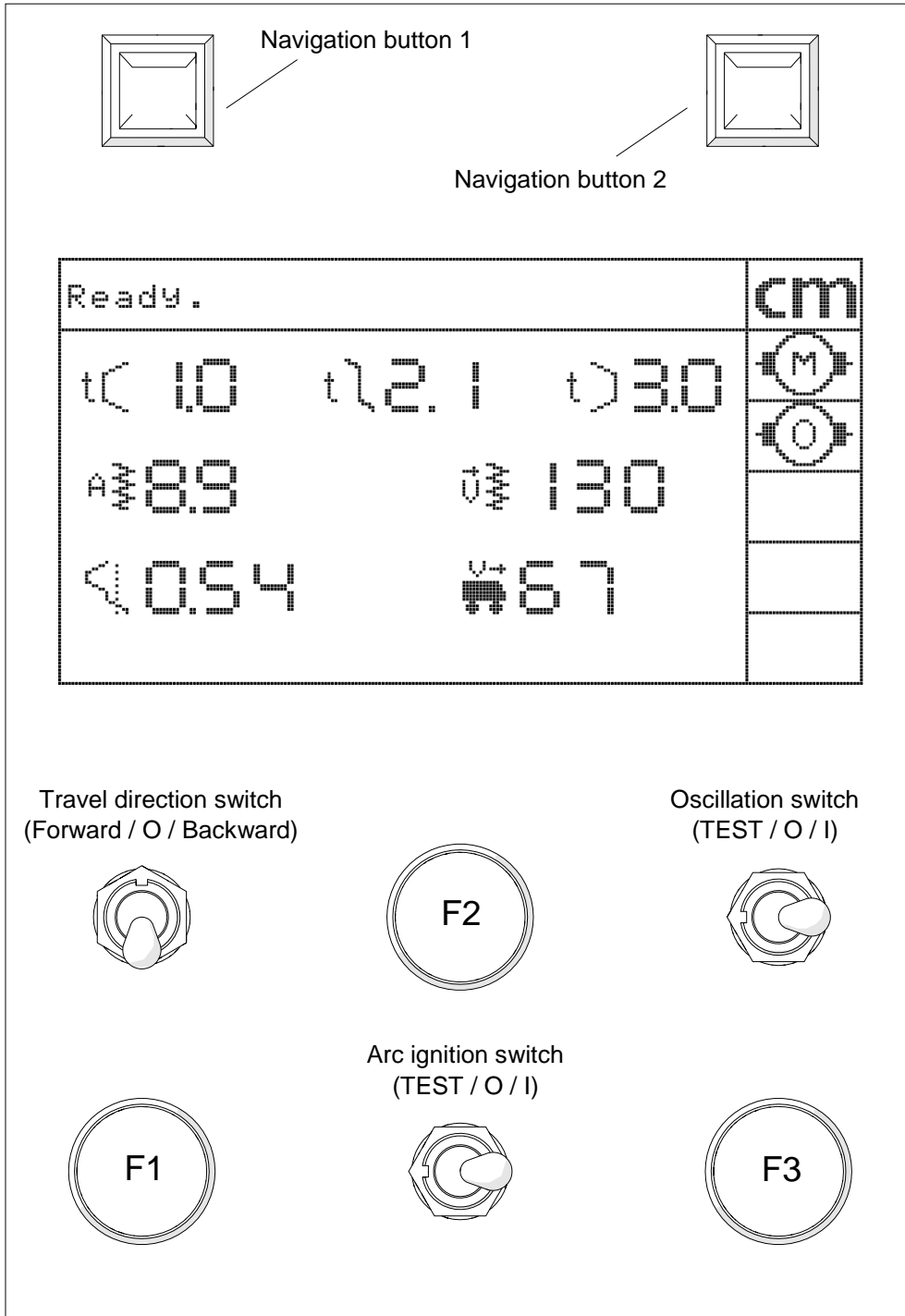






Fig. 11. Control panel with the main screen displayed

Tab. 1 explains the meaning of symbols shown on the right of the main screen.

Tab. 1. List of symbols indicating connected modules

Symbol	Description
	Main drive initialized.
	Linear oscillator initialized.
	Motorized vertical slide initialized (option).
	Tracking sensor initialized (option).

Use the knobs to set the required process parameters (Tab. 2). Right rotation increases the value of the parameter, and left rotation decreases the value.

Tab. 2. Parameters shown on the main screen

Parameter	Value	Description	Method of control
	0–5 s [step: 0.1]	Delay in left position of the oscillation.	Press and hold and rotate (F1)
	0–5 s [step: 0.1]	Delay in center position of the oscillation.	Press and hold and rotate (F2)
	0–5 s [step: 0.1]	Delay in right position of the oscillation.	Press and hold and rotate (F3)
	0.2–11.8 cm [step: 0.1] 0.1–4.5 in [step: 0.01]	Oscillation width.	Rotate (F2)
	10–300 cm/min 5–120 in/min [step: 5]	Oscillation speed.	Press, hold, and rotate (F2)
	From –9.9 to +9.9 cm From –3.9 to +3.9 in [step: 0.02]	Oscillation offset.	Rotate (F1)
	From –2.5 to +2.5 cm From –1 to +1 in [step: 0.01]	Torch height (an optional motorized vertical slide required)	Press, hold, and rotate (F1)
	0–300 cm/min 0–120 in/min [step: 1/0.5]	Carriage speed.	Rotate (F3) Press and hold (F3) when the arc ignition switch is set to the position 'O' to travel the carriage with the maximum speed.
	cm inch	Unit of measure.	Can be changed on one of the configuration screens (Fig. 12).

To set the rest of the parameters, make sure that the travel direction switch is set to the position 'O', and then hold both navigation buttons for three seconds, which will show the first configuration screen (Fig. 12).

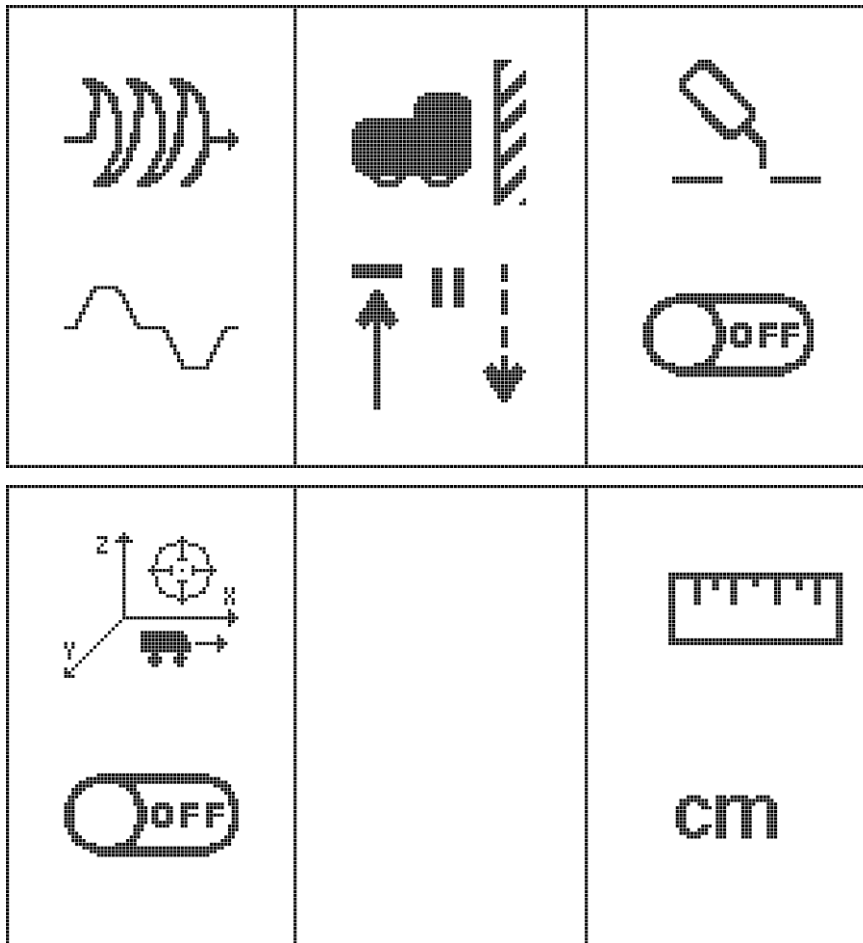








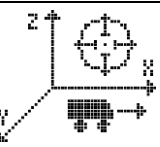


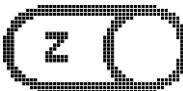


Fig. 12. Configuration screens: first (top), next (bottom)

To change between configuration screens, use navigation buttons. Right button goes to the next screen, and left button goes to the previous screen. The number of configuration screens depends on the values of parameters.

Use the knobs to set the required parameters (Tab. 3).

Tab. 3. Parameters shown on the configuration screens

Parameter	Value	Description	Method of control
		Triangle. If delay time in left, center, or right oscillation position is non-zero, both the carriage and oscillation will stop in such a position to fill the crater.	Rotate (F1)
		Trapezoid. The carriage travels at all times even if delay time in left, center, or right oscillation position is non-zero.	
		Stops the carriage and arc. To proceed, loosen the drive clutch knob and travel the carriage manually to the direction opposite to the current direction of the travel. Set the travel direction switch to the position 'O' to remove the warning symbol.	Rotate (F2)
		Stops the arc and travels the carriage opposite to the current direction of the travel to the initial position. To proceed after the carriage reaches the initial position, set the travel direction switch to the position 'O', which will remove the warning symbol.	
		Stops the carriage and arc. To proceed: 1) Press F1, F2, or F3 to travel the carriage opposite to the current direction of the travel to the initial position. or 2) Set the travel direction switch to the position 'O', which will travel the carriage 10 mm (0.5 in) to the direction opposite to the current direction of the travel.	
		Off. Continuous welding is active.	Rotate (F3)
		On. Activates additional configuration screens with parameters of stitch welding. Do not set these parameters to zero if you want to weld continuously. Set this parameter to OFF instead.	
	0–100 cm 0–40 in [step: 0.1]	Weld length (parameter available only when the stitch welding is set to ON).	Rotate (F1)

Parameter	Value	Description	Method of control
	0–100 cm 0–40 in [step: 0.1]	Space between welds (parameter available only when the stitch welding is set to ON).	Rotate F2
	0–10 cm 0–4 in [step: 0.1]	Backweld length (parameter available only when the stitch welding is set to ON).	Rotate F1
	0–5 s [step: 0.1]	Crater fill time (parameter available only when the stitch welding is set to ON).	Rotate F2
		Behavior of the arc ignition while filling the crater (parameter available only when the stitch welding is set to ON).	Rotate F3
		Off. Welding source lowers the current of the arc while filling the crater. Set the crater fill time higher or equal to the time of the current lowering that is set at the welding source.	
		On. Welding source uses full current while filling the crater.	
		Automatic tracking of the welding seam (parameter available only when the optional tracking sensor and the motorized vertical slide are initialized). When Y, Z, or YZ is set, you can also adjust the initial position of the torch manually from the main screen.	Rotate F1
		Off. The welding seam will not be tracked automatically. However, you can manually adjust the torch in the Y axis from the main screen during welding (also in the Z axis when an optional motorized vertical slide is initialized).	
		Automatic tracking in the Y axis only.	
		Automatic tracking in the Z axis only.	
		Automatic tracking in the both Y and Z axes.	
	cm inch	Unit of measure. Metric or imperial.	Rotate F3

If the carriage is to control the torch, set the arc ignition switch to the position 'I'.



CAUTION: If the arc ignition switch is set to the position 'I', the torch will start welding immediately after selecting a travel

Use the travel direction switch to select a direction of motion (The **Ready** will change to **Running**), which will start the movement of the carriage according to the parameters set. It is possible to adjust the parameters from the main screen at any time with the knobs. The parameters from the configuration screens can be adjusted only when the carriage is stopped.

To stop the motion, set the travel direction switch to the position 'O'.

After the work is finished, turn off the power with the power switch and unplug the carriage from the power source.

3.9. Troubleshooting

Problem	Cause	Solution
WARNING #1	Travel direction switch not in the position 'O' when powering.	Set the travel direction switch to the position 'O'.
WARNING #2	Limit switch active when powering.	Loosen the drive clutch knob to disengage the gear wheel, and move the carriage such that the limit switch is released.
WARNING #3	Arc ignition switch in the position 'TEST' when powering.	Set the arc ignition switch to the position 'O'.
WARNING #4	Oscillation switch in the position 'TEST' when powering.	Set the oscillation switch to the position 'O'.
ERROR #1	Controller failure.	Contact service center for inspection and repair.

4. MAINTENANCE

Daily:

1. Clean the drive gear wheel of the carriage and the gear rack of each rail.
2. Clean the rollers and make sure that they rotate freely.
3. Clean the torch nozzle. Replace if damaged.

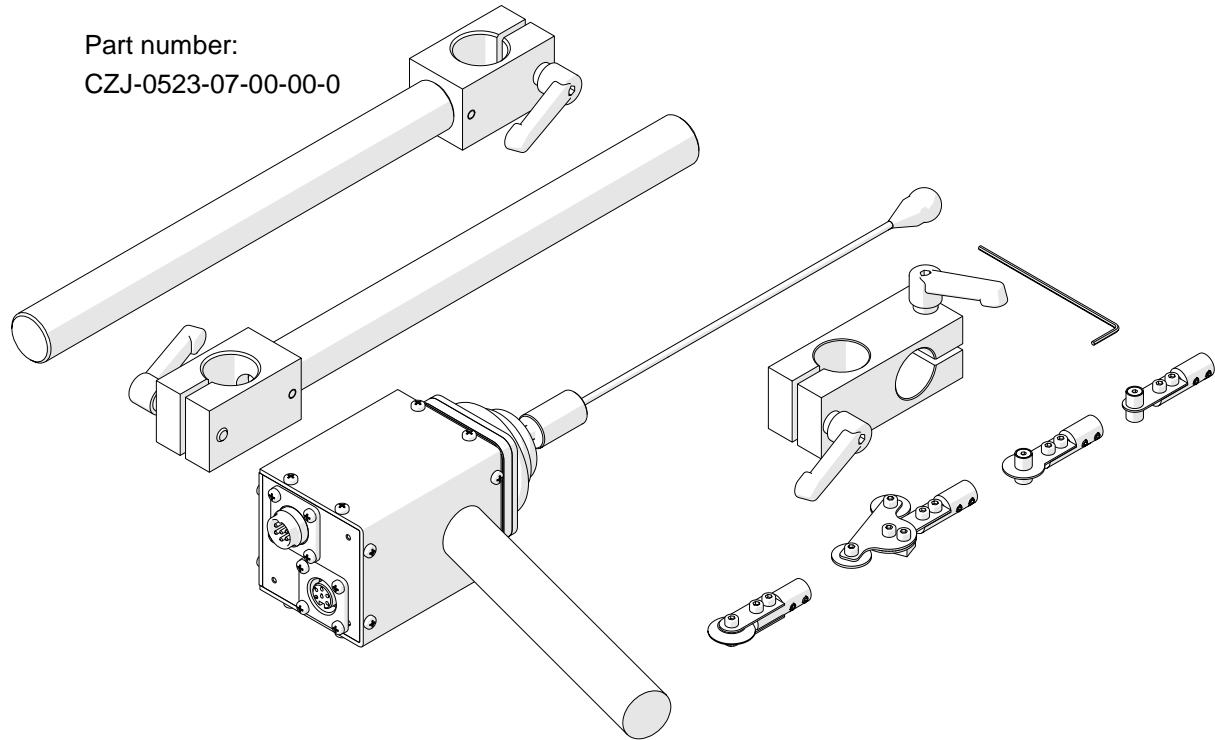
Monthly:

1. Check whether the knobs and the switches operate as intended. Replace if loose or damaged.
2. Inspect cables, cords, and hoses. Replace if damaged.
3. Tighten screws if loose.

5. ACCESSORIES

5.1. Tracking attachment

The attachment allows the carriage to track the welding seam.

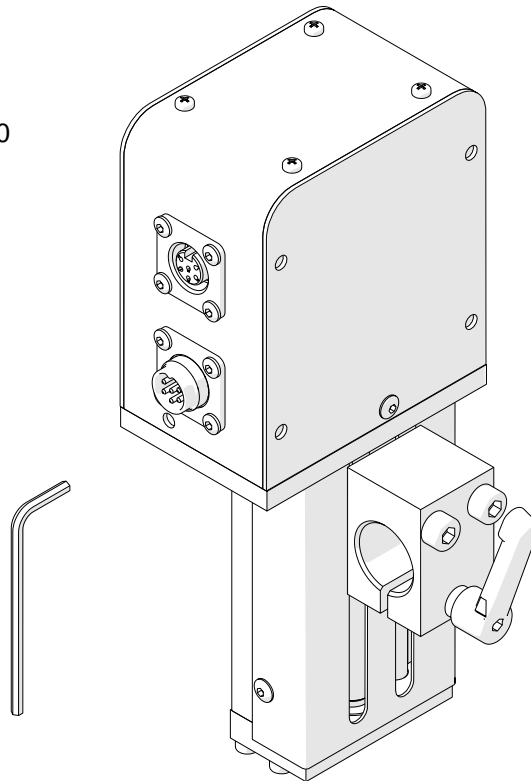


Parts included	Part number
Tracking sensor	CZJ-0523-07-01-00-0
1 m (3 ft) signal cable	PWD-0523-07-01-09-0
0.5 m (1.5 ft) signal cable	PWD-0523-07-01-12-0
Support	WSP-0523-07-01-10-0
Two clamping blocks with levers	KST-0525-11-00-00-0
Adapter I	ADT-0506-40-00-00-0
Adapter II	ADT-0506-41-00-00-0
Adapter III	ADT-0506-42-00-00-0
Adapter IV	ADT-0506-43-00-00-0
1.5 mm hex wrench	KLC-000060

5.2. Motorized vertical slide

Allows the vertical position of the torch to be controlled.

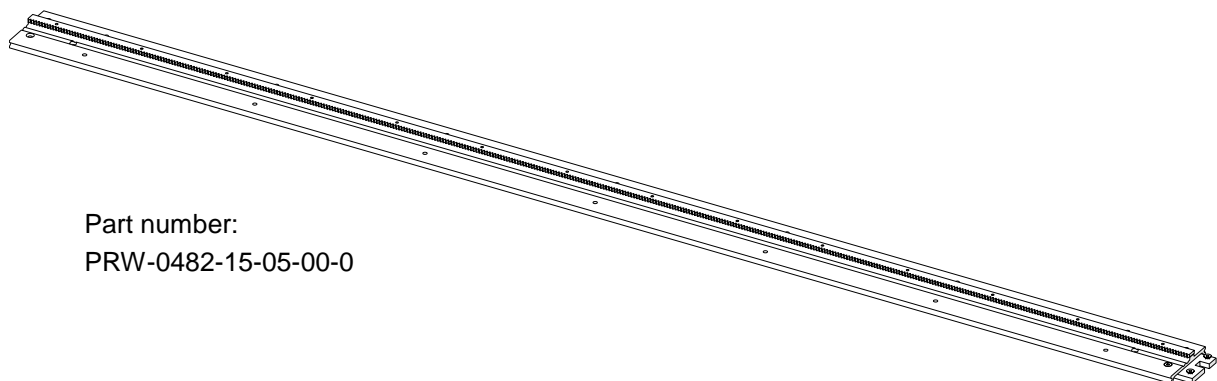
Part number:
OSK-0523-06-00-00-0



Parts included	Part number
Vertical slide	OSK-0523-06-01-00-0
0.75 m (2.5 ft) signal cable	PWD-0523-06-01-18-0
3 mm hex wrench	KLC-000006

5.3. Semi-flexible track

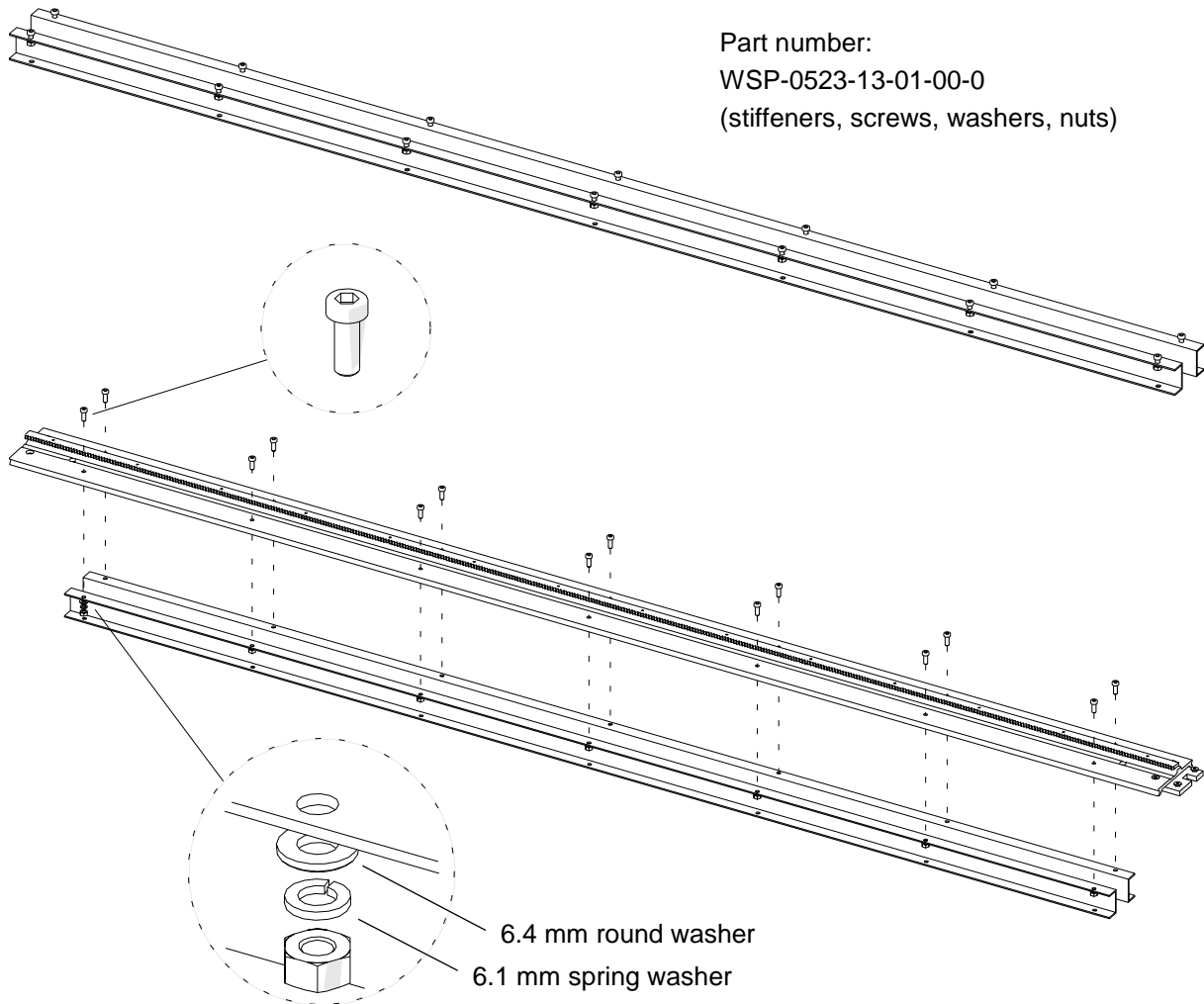
Allows guiding the carriage along a curvature. The length of a single rail is 2 m (6.5 ft).



Part number:
PRW-0482-15-05-00-0

5.4. Rigid track

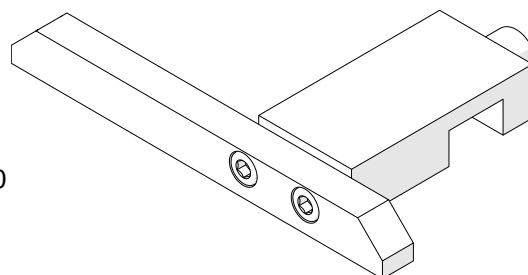
Allows guiding the carriage along a straight line. To assemble the rigid rail, attach stiffeners to a semi-flexible rail with M6x16 screws and M6 nuts by using the 5 mm hex wrench and 10 mm flat wrench. Place the washers between the nuts and stiffeners in the order shown in the figure below.



5.5. Contact cam

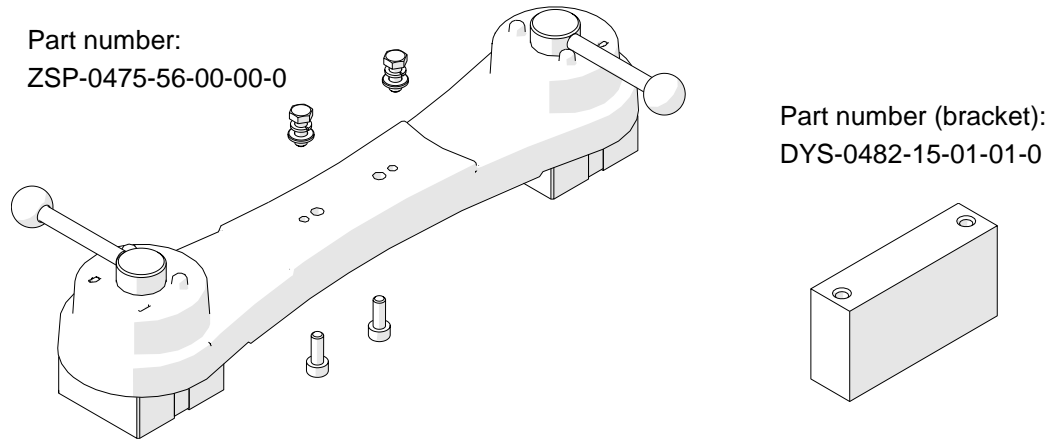
Protects the carriage from falling off a track with open ends. Two cams can limit the travel path to a defined section. Install on a semi-flexible or rigid track with the 6 mm hex wrench. When the carriage reaches the cam, the limit switch is activated.

Part number:
ZDR-0523-76-00-00-0



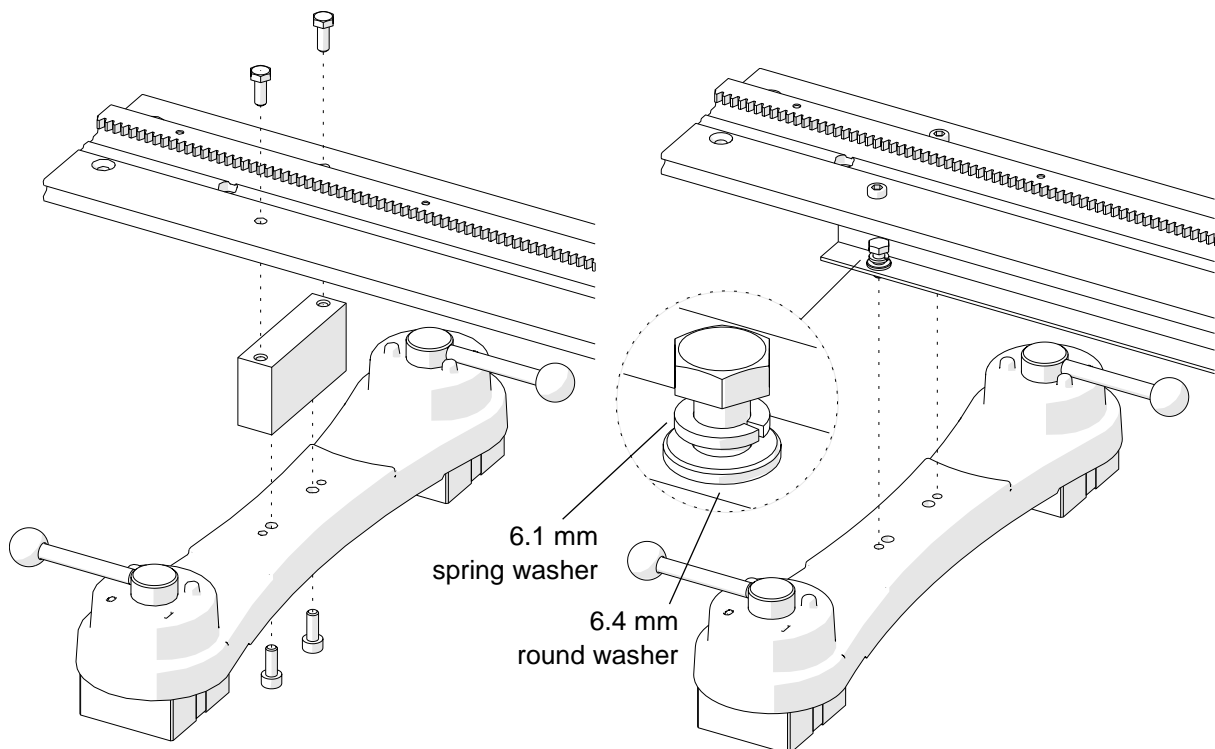
5.6. Dual magnetic unit

Allows clamping a semi-flexible track (by using a bracket) or rigid track to ferromagnetic surfaces. The holding force on a 5 mm (0.2") thick surface is 900 N (200 lbs) up to a temperature of 100°C (212°F). At 180°C (356°F) the force decreases to 540 N (120 lbs).



To attach the dual magnetic unit to a semi-flexible rail, join the unit to the bracket with two M6x16 socket head cap screws by using the 5 mm hex wrench. Then, attach the bracket to the rail with two M6x16 hex head cap screws by using the 10 mm flat wrench (left figure).

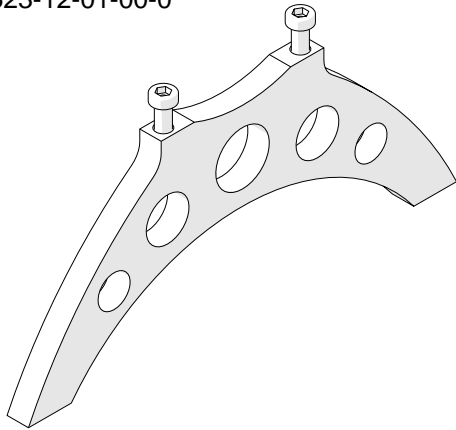
To attach the dual magnetic unit to a rigid rail, join the unit to the stiffeners with two M6x16 hex head cap screws by using the 10 mm flat wrench. Place the washers under the screws in the order shown in the right figure.



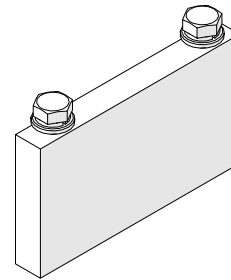
5.7. Track supports

Allow supporting a semi-flexible or rigid track and can be used instead of some dual magnetic units.

Part number (for semi-flexible track):
WSP-0523-12-01-00-0

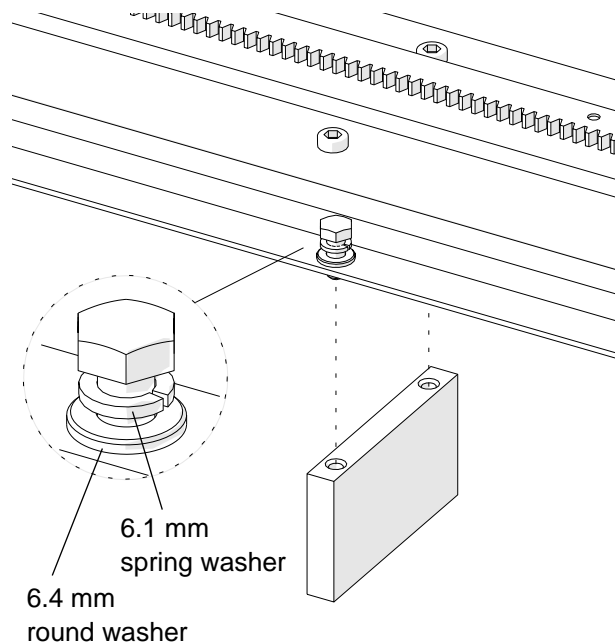
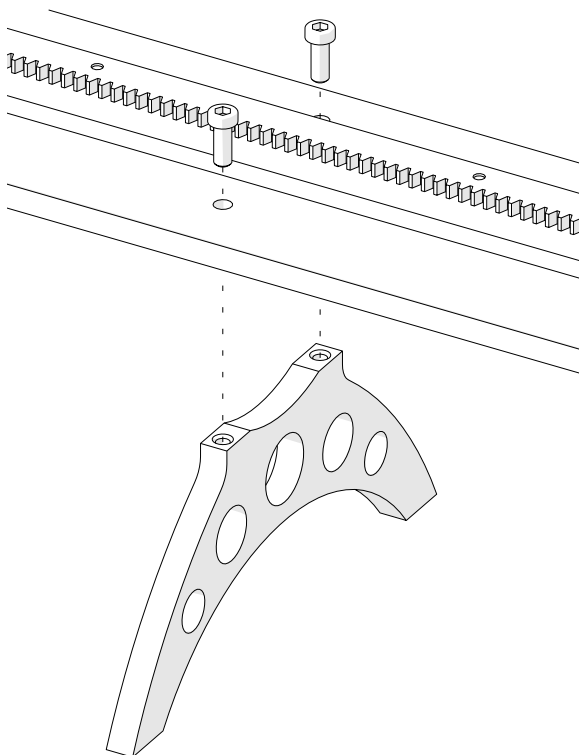


Part number (for rigid track):
WSP-0523-13-02-00-0



Attach the support for semi-flexible track with two M6x16 socket head cap screws by using the 5 mm hex wrench (left figure).

Attach the support for rigid track to the stiffeners with two M6x16 hex head cap screws by using the 10 mm flat wrench. Place the washers under the screws in the order shown in the right figure.



5.8. Ring track

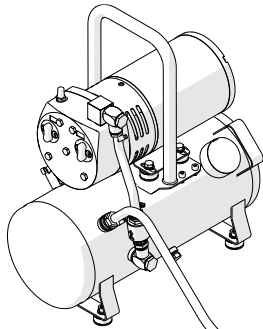
Allows welding of round workpieces with the outer diameters from 200 mm (8”) to 3000 mm (120”). Depending on the workpiece diameter, the track consists of two to four rails and can be adjusted to a diameter of up to 50 mm larger than the diameter for which the track is dedicated. Tracks other than specified in the following table are available on request.

Minimum pipe outer diameter [mm]	Maximum pipe outer diameter [mm]
200	250
250	300
300	350
350	400
400	450
450	500
500	550
550	600
600	650
650	700
700	750
750	800
800	850
850	900
900	950
950	1000
1000	1050
1050	1100
1100	1150
1150	1200
1200	1250
1250	1300
1300	1350
1350	1400
1400	1450
1450	1500
1500	1550
1550	1600
1600	1650

Minimum pipe outer diameter [mm]	Maximum pipe outer diameter [mm]
1650	1700
1700	1750
1750	1800
1800	1850
1850	1900
1900	1950
1950	2000
2000	2050
2050	2100
2100	2150
2150	2200
2200	2250
2250	2300
2300	2350
2350	2400
2400	2450
2450	2500
2500	2550
2550	2600
2600	2650
2650	2700
2700	2750
2750	2800
2800	2850
2850	2900
2900	2950
2950	3000
3000	3050

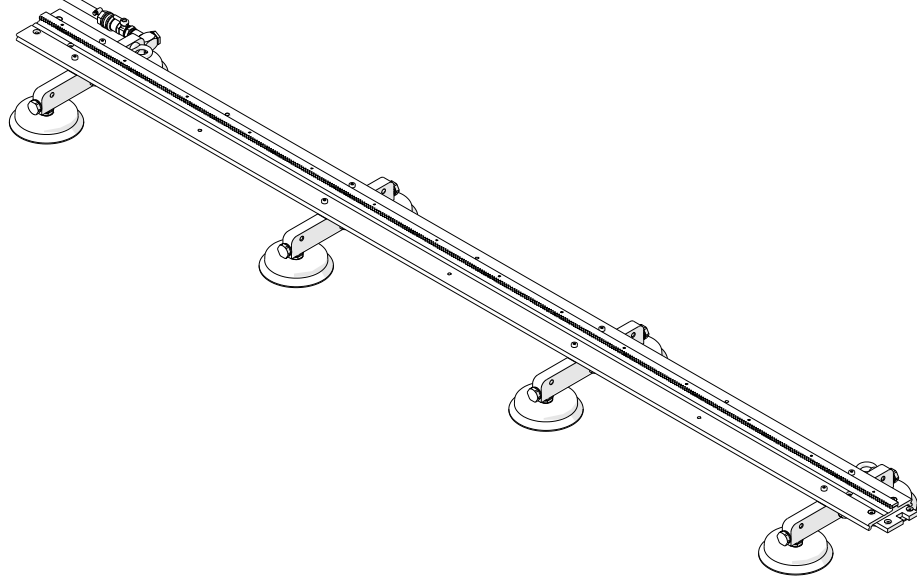
5.9. Vacuum track fixing system

Dedicated to fixing the track to non-ferromagnetic surfaces.



Part number (vacuum pump with safety reservoir):
AGR-0541-24-10-00-0 (115 V US)
AGR-0541-24-20-00-0 (230 V US)

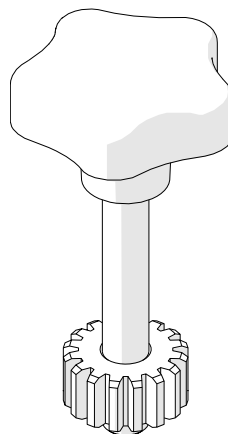
Information about the other elements of the system are included in a separate manual.



5.10. Gear rack adjustment tool

Allows removing the clearance between the gear racks of two semi-flexible rails placed on a curvature.

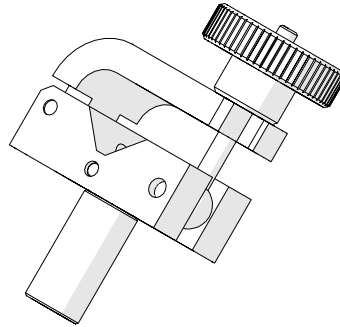
Part number:
PKT-0341-13-00-00-0



5.11. 16–22 mm torch clamp

Allows using a torch with the handle diameter of 16–22 mm (0.63–0.87”).

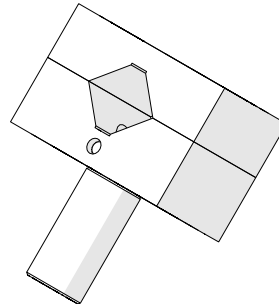
Part number:
ZRZ-0466-04-01-00-0



5.12. 16–22 mm torch clip

Allows using a torch with the handle diameter of 16–22 mm (0.63–0.87”). Tighten the torch in the clip with the 4 mm hex wrench.

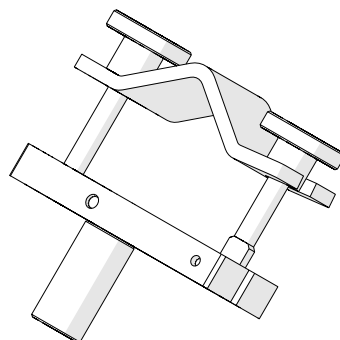
Part number:
ZCS-0476-06-01-00-0



5.13. 22–35 mm torch clamp

Allows using a torch with the handle diameter of 22–35 mm (0.87–1.38”).

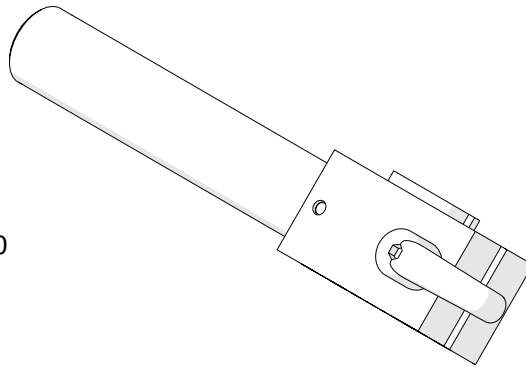
Part number:
ZRZ-0466-19-00-00-0



5.14. Short rod

Provides a 120 mm (4.72") reach.

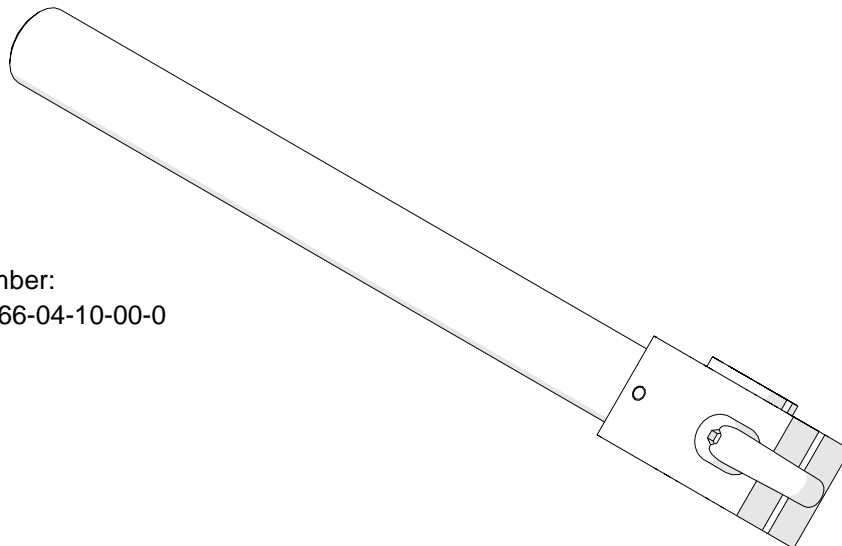
Part number:
WLK-0476-20-01-00-0



5.15. Long rod

Provides a 240 mm (9.45") reach.

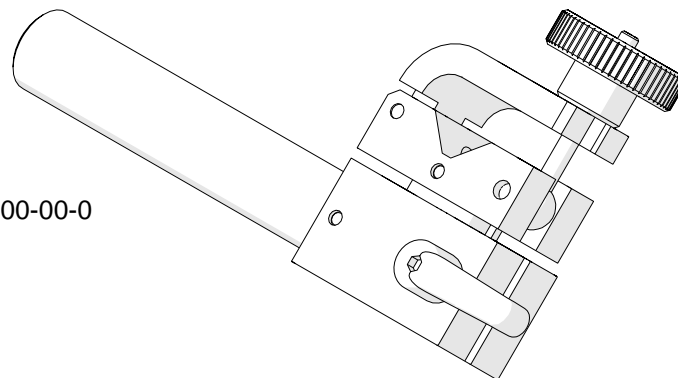
Part number:
WLK-0466-04-10-00-0



5.16. Short rod torch holder with clamp

Allows using a torch with the handle diameter of 16–22 mm (0.63–0.87").

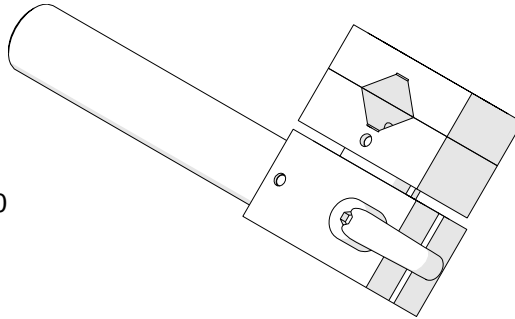
Part number:
UCW-0476-20-00-00-0



5.17. Short rod torch holder with clip

Allows using a torch with the handle diameter of 16–22 mm (0.63–0.87"). Tighten the torch in the clip with the 4 mm hex wrench.

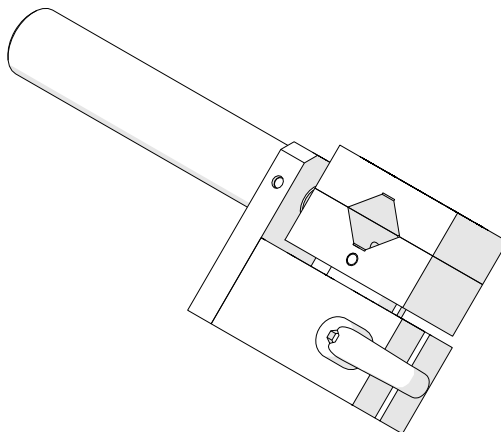
Part number:
UCW-0476-27-00-00-0



5.18. Short rod low torch holder with clip

Allows using a torch with the handle diameter of 16–22 mm (0.63–0.87"). Tighten the torch in the clip with the 4 mm hex wrench.

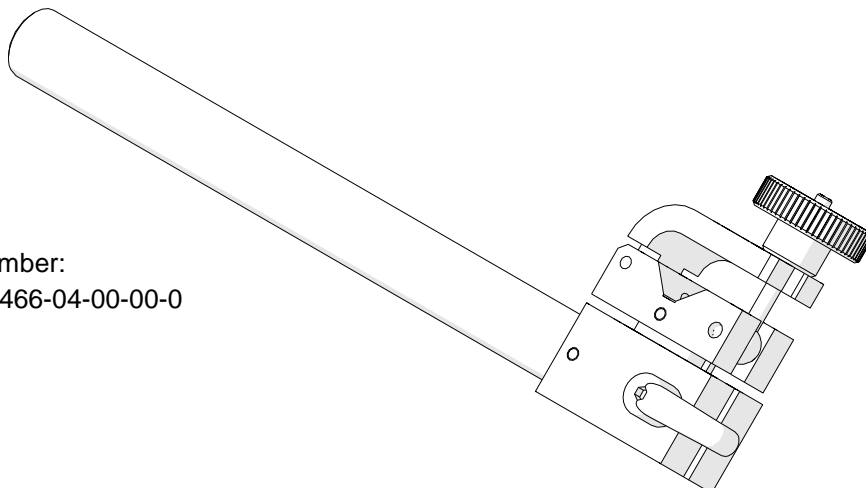
Part number:
UCW-0476-06-00-00-0



5.19. Long rod torch holder with clamp

Allows using a torch with the handle diameter of 16–22 mm (0.63–0.87").

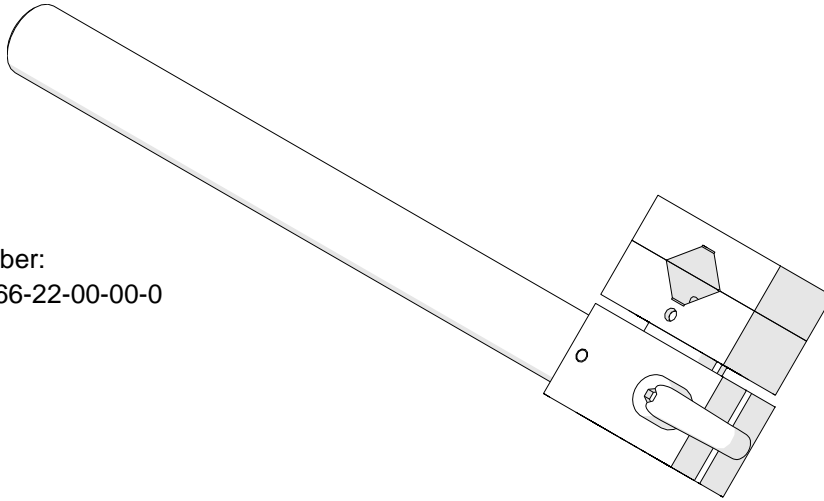
Part number:
UCW-0466-04-00-00-0



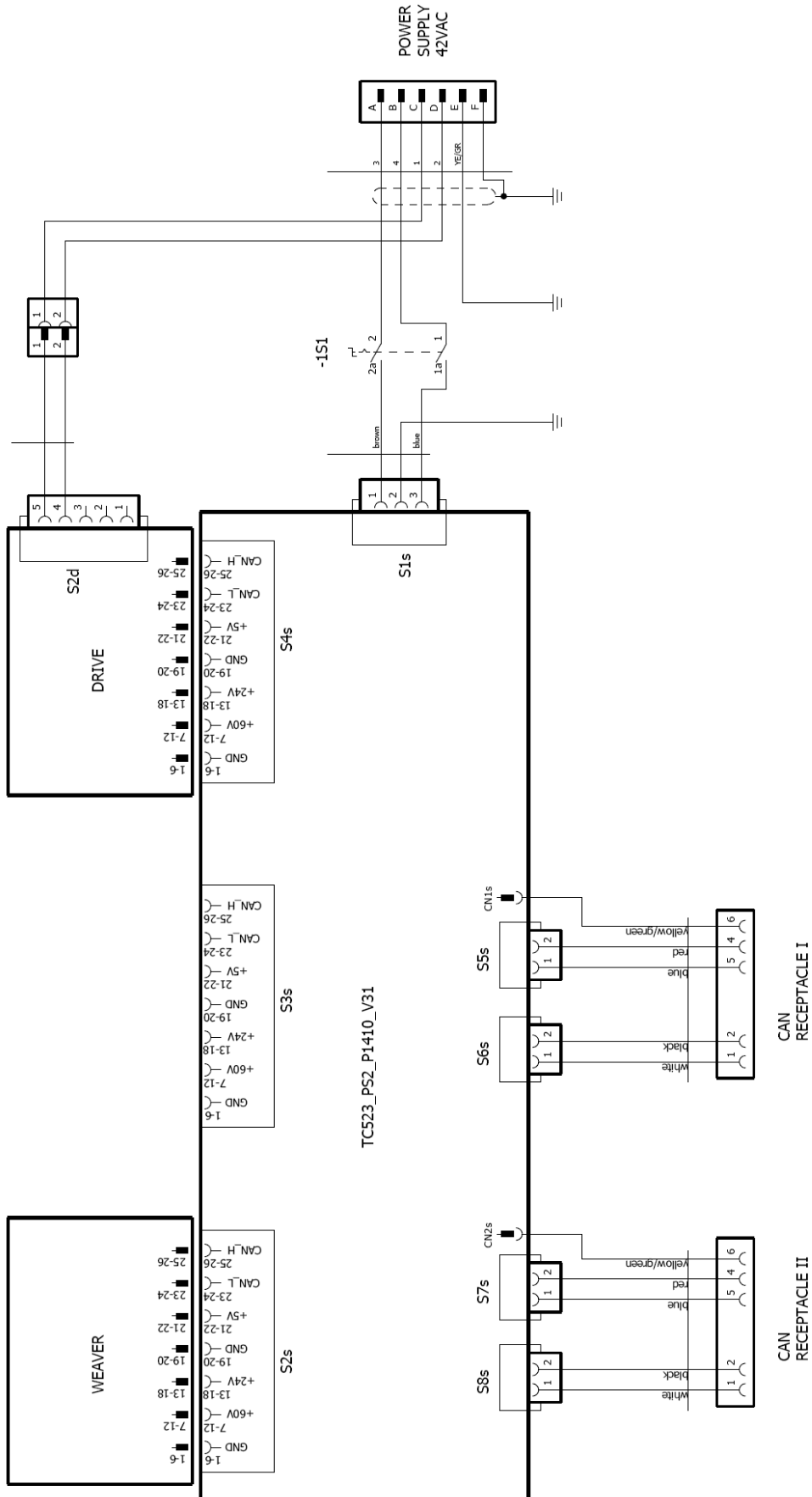
5.20. Long rod torch holder with clip

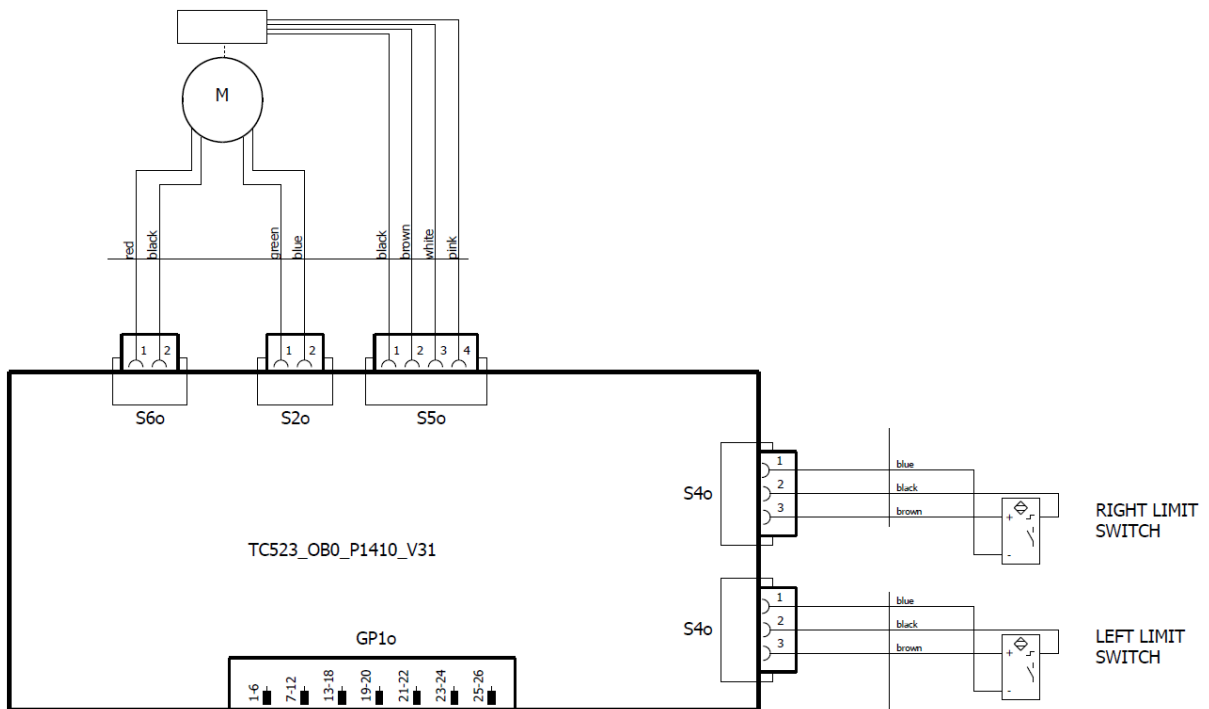
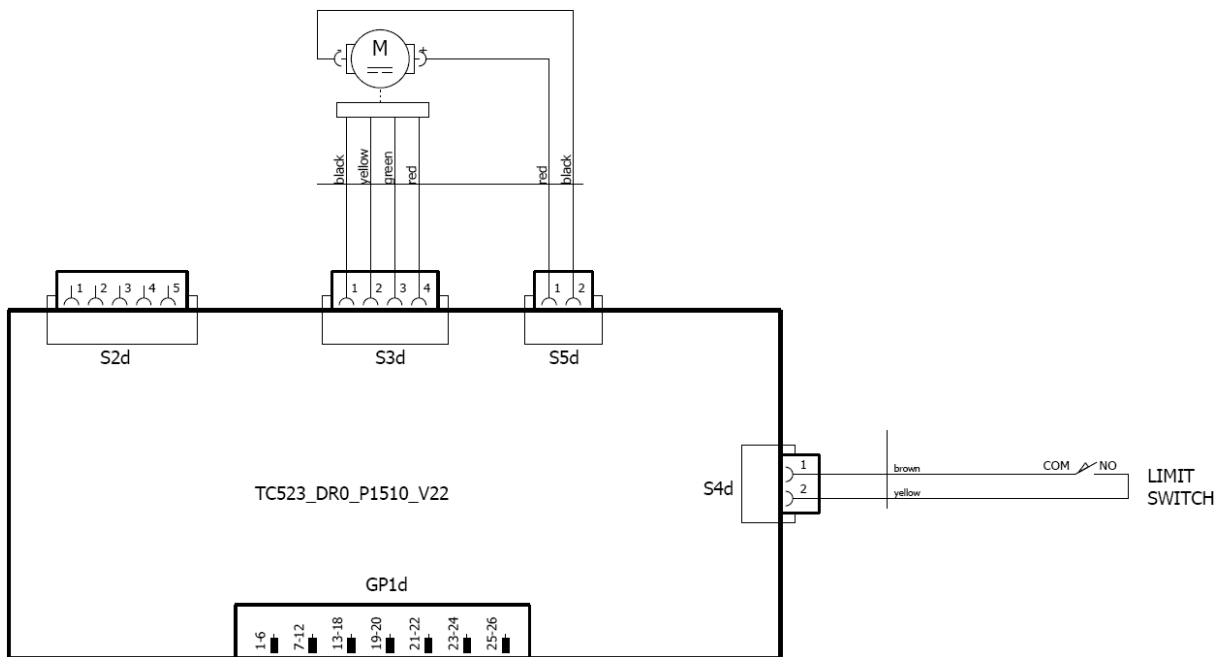
Allows using a torch with the handle diameter of 16–22 mm (0.63–0.87"). Tighten the torch in the clip with the 4 mm hex wrench.

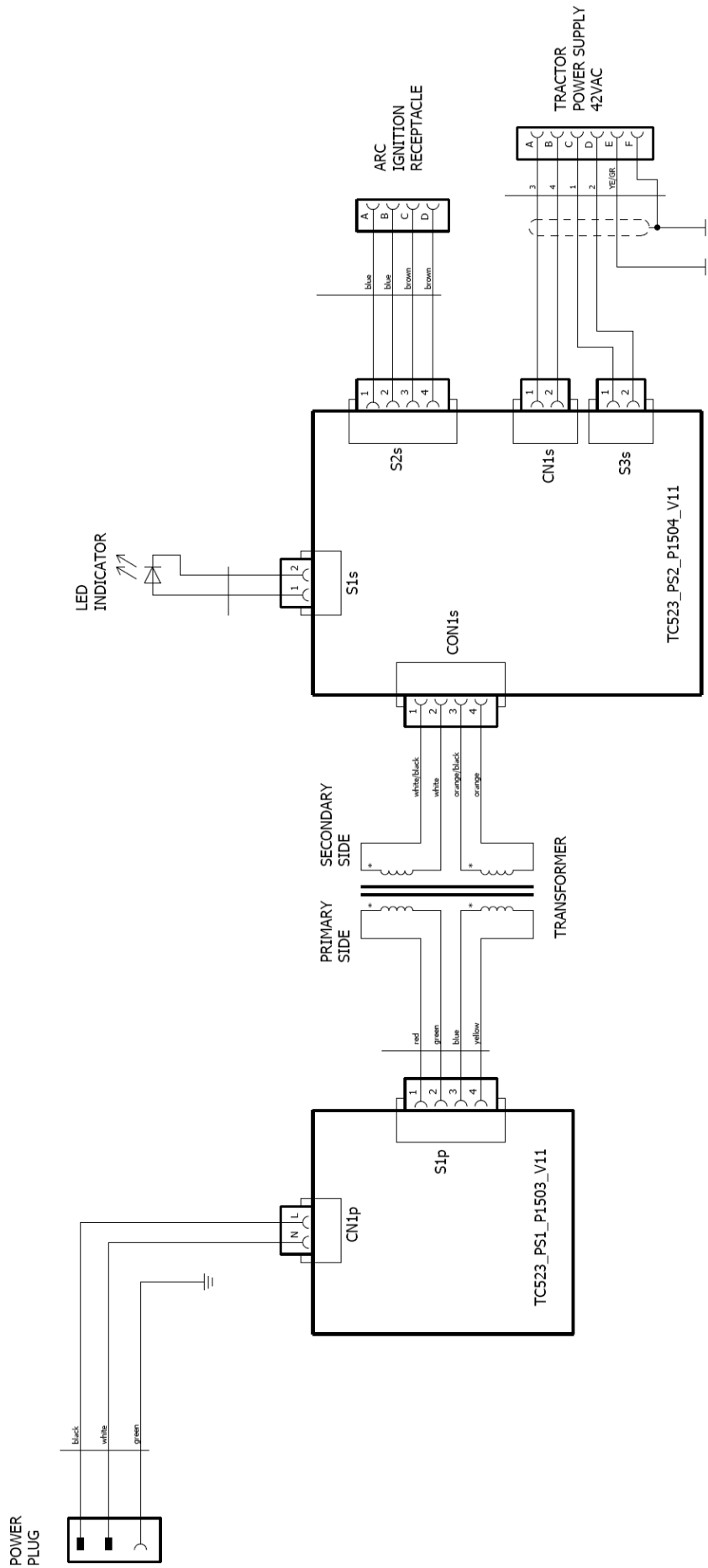
Part number:
UCW-0466-22-00-00-0



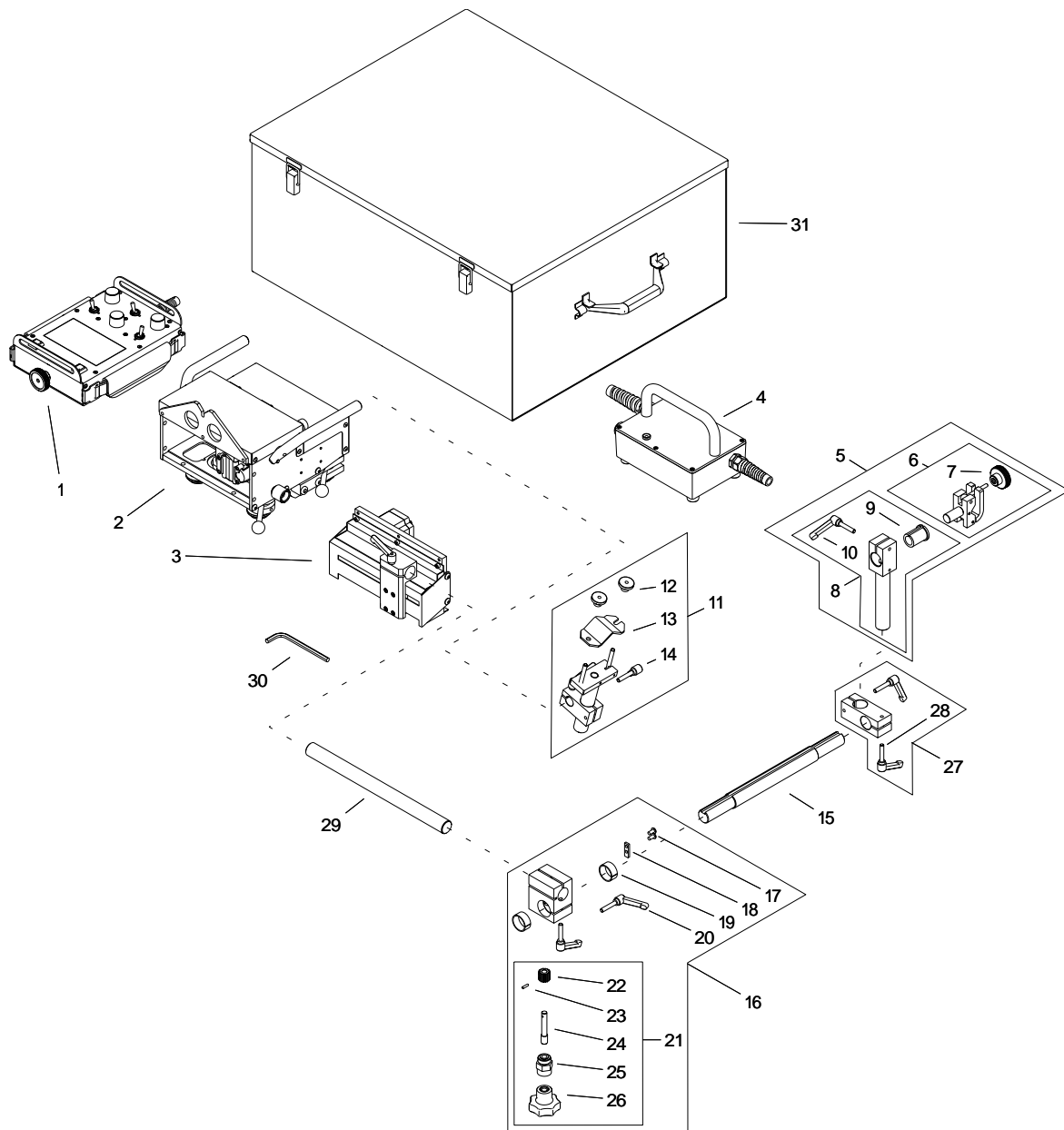
6. WIRING DIAGRAM







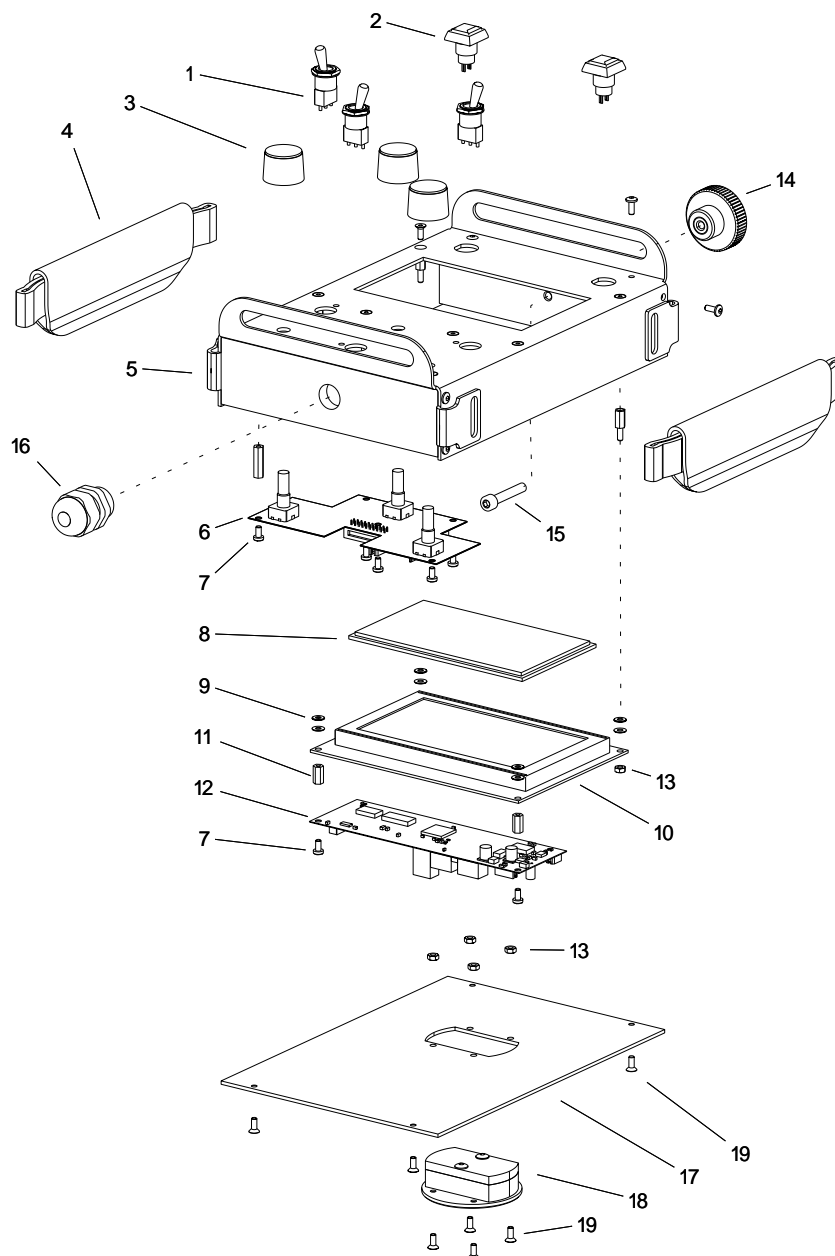
7. EXPLODED DRAWINGS AND PARTS LIST



ITEM	PART NUMBER	DESCRIPTION	Q-TY
1	PNL-0523-03-00-00-0	REMOTE CONTROL	1
2	ZSP-0523-01-00-00-0	DRIVE SYSTEM ASSY	1
3	OSC-0523-02-00-00-0	OSCILLATOR	1
4	ZSL-0523-09-00-00-0	POWER SUPPLY – 230V	1
4	ZSL-0523-09-00-01-0	POWER SUPPLY – 115V	1
5	UCW-0476-20-00-00-0	SHORT ROD TORCH HOLDER WITH CLAMP ASSY	1
6	ZRZ-0466-04-01-00-0	TORCH CLAMP ASSY	1
7	PKT-0466-04-01-10-0	KNOB	1
8	WLK-0476-20-01-00-0	SHORT ROD ASSY	1
9	TLJ-0419-04-02-03-0	INSULATION SLEEVE	1
10	RKJ-000036	HANDLEVER M6-32	1
11	UCW-0523-05-01-00-0	CABLE ANCHOR	1
12	NKR-000121	KNURLED NUT M6	2

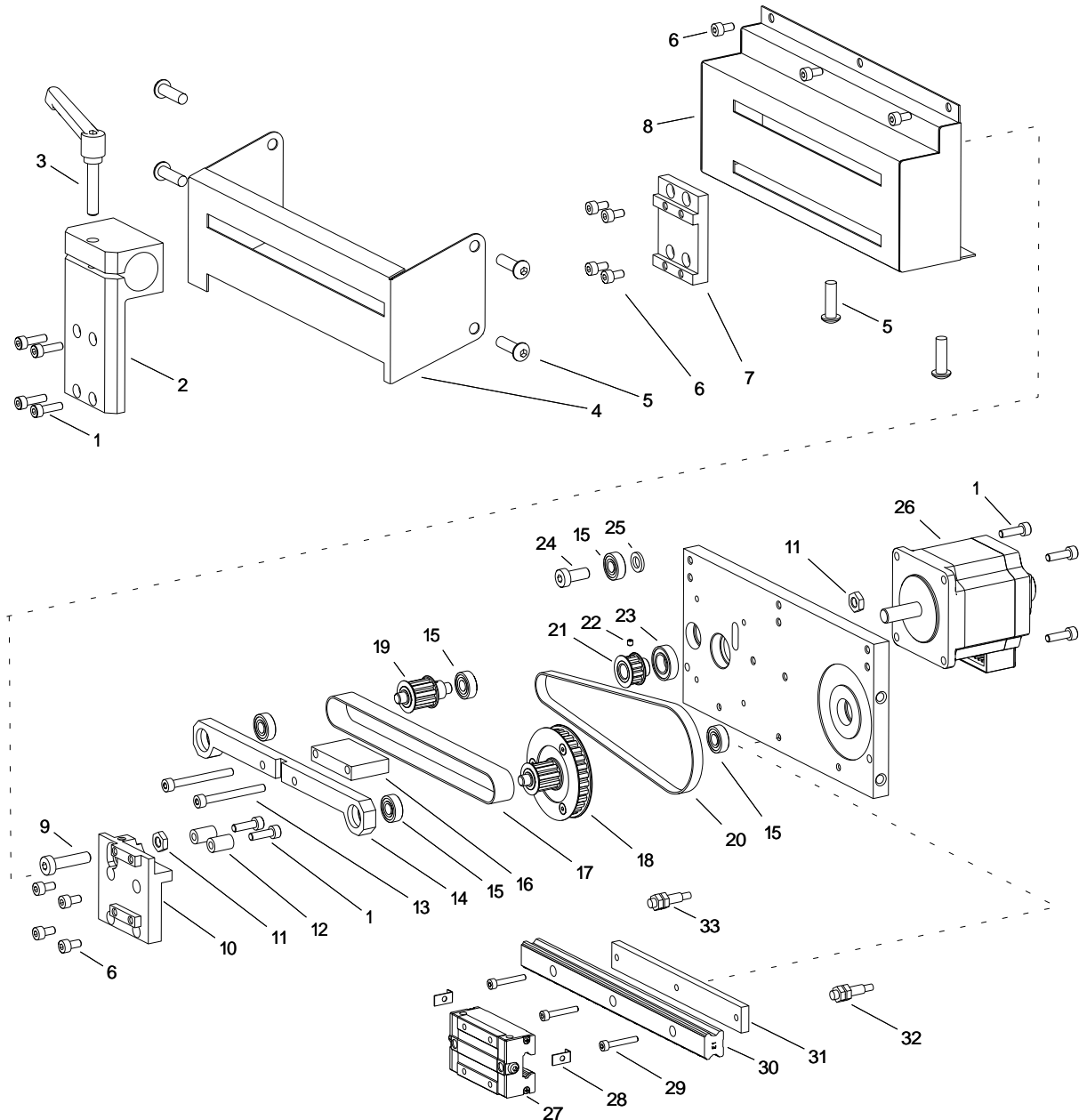
ITEM	PART NUMBER	DESCRIPTION	Q-TY
13	TRM-0219-06-16-00-0	CLAMP PLATE	1
14	RKJ-000036	HANDLEVER M6-32	2
15	RAM-0523-17-00-00-0	300 MM (12") GEARED RACK	1
16	ZSP-0475-62-00-00-0	SLIDE	1
17	WKR-000096	HEX SOCKET BUTTON HEAD SCREW M5x10	2
18	WPS-0475-62-03-00-0	KEY	1
19	TLJ-0475-62-04-00-0	SELF-LUBRICATING SLEEVE 25x28x12	2
20	RKJ-000036	HANDLEVER M6-32	2
21	PKT-0475-62-02-00-0	KNOB	1
22	KOL-0475-62-02-03-0	GEAR z16	1
23	KLK-000004	SPRING PIN 3x12	1
24	OSK-0475-62-02-02-0	PIVOT PIN	1
25	ZLC-0475-62-02-01-0	THREAD JOINT	1
26	PKT-000039	KNOB D50xM10	1
27	KST-0525-11-00-00-0	DOUBLE CLAMPING BLOCK	1
28	RKJ-000036	HANDLEVER M6-32	2
29	WSP-0523-16-00-00-0	300 MM (12") ROD	1
30	KLC-000009	6 MM HEX WRENCH	1
31	SKR-0523-98-00-00-0	METAL BOX ASSY	1
32*	PWD-0523-10-03-00-0	POWER CABLE L=5 M	1
33*	KBL-0466-17-00-00-0	ARC IGNITION WIRE SET L=6.5 M	1
34*	PWD-0523-10-01-00-0	REMOTE CONTROL CABLE L=3 M	1

*not shown in the drawing



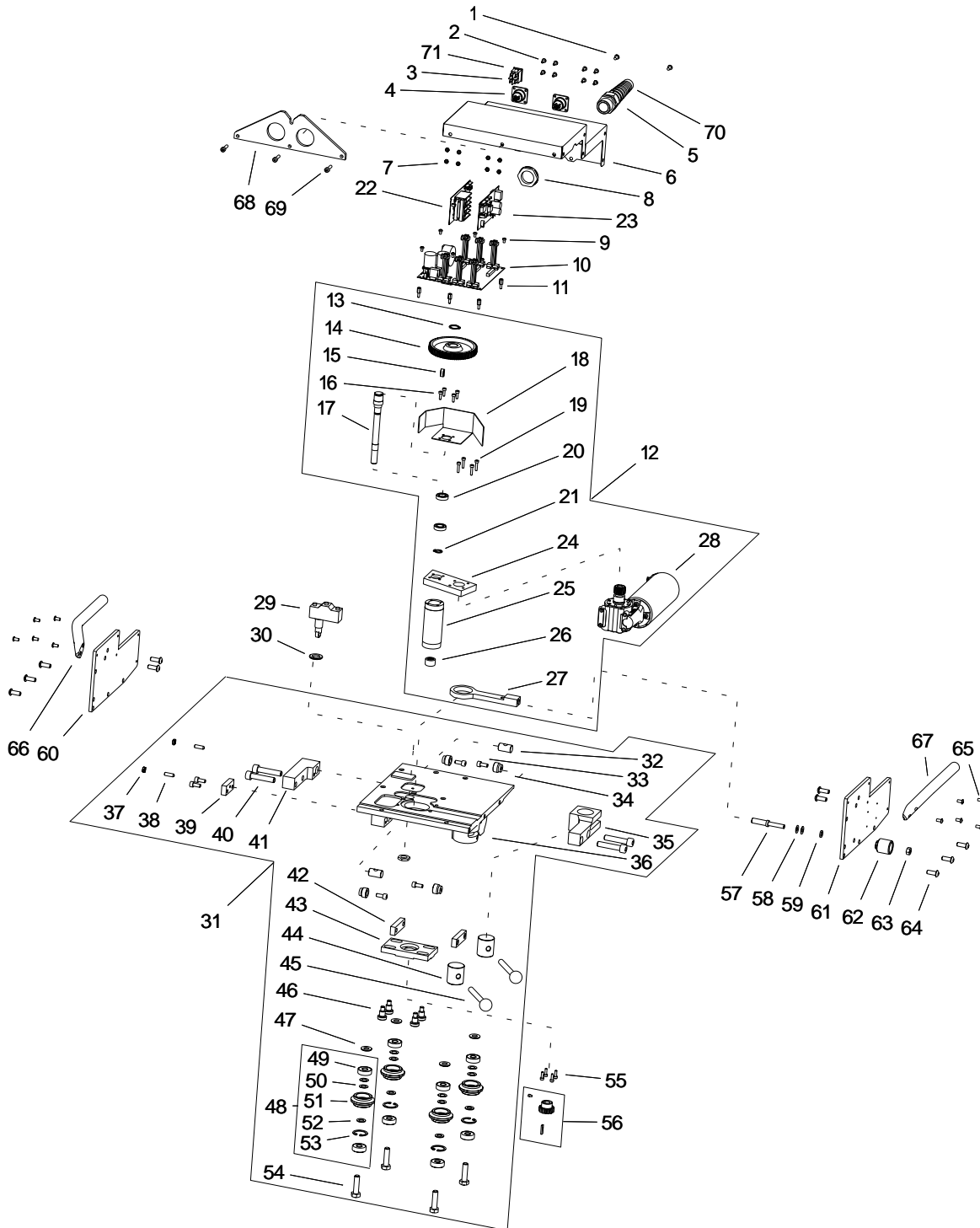
ITEM	PART NUMBER	DESCRIPTION	Q-TY
1	WZK-0526-02-02-03-0	TRAVEL DIRECTION SWITCH WIRE SET	3
2	WZK-0523-03-13-00-0	BUTTON WIRE SET	2
3	PKT-0496-99-07-00-0	KNOB 23	3
4	RKJ-0523-03-12-00-0	HANDLE	2
5	KRP-0523-99-02-00-0	CONTROL PANEL BODY ASSY	1
6	MDL-0523-03-10-00-0	ENCODER MODULE ASSY	1
7	WKR-000181	CROSS RECESSED PAN HEAD SCREW M3x6	7
8	OSL-0523-03-09-00-0	DISPLAY COVER	1
9	PDK-000014	ROUND WASHER 3.2	8
10	MDL-0523-03-03-00-0	PANEL MODULE	1
11	TLJ-000023	SLEEVE M3x10	2
12	MDL-0523-03-11-00-0	CONTROLLER MODULE	1
13	NKR-000010	HEX NUT M3	6
14	PKT-0466-04-01-10-0	KNOB	1

ITEM	PART NUMBER	DESCRIPTION	Q-TY
15	SRB-000089	HEX SOCKET HEAD CAP SCREW M5x30	1
16	WZK-0523-03-06-00-0	CONTROL PANEL WIRE SET	1
17	PLY-0523-03-01-00-0	BOTTOM PLATE	1
18	CHW-0523-03-07-00-0	PANEL MAGNET HOLDER	1
19	WKR-000261	HEX SOCKET COUNTERSUNK HEAD SCREW M3x10	8



ITEM	PART NUMBER	DESCRIPTION	Q-TY
1	SRB-000063	HEX SOCKET HEAD CAP SCREW M4x14	10
2	UCW-0523-02-07-00-0	OSCILLATOR HOLDER	1
3	RKJ-000036	HANDLEVER M6-32	1
4	OSL-0523-02-10-00-0	SECONDARY COVER	1
5	WKR-000102	HEX SOCKET ROUND HEAD SCREW WITH FLANGE M6x20	6
6	SRB-000074	HEX SOCKET HEAD CAP SCREW M4x8	11

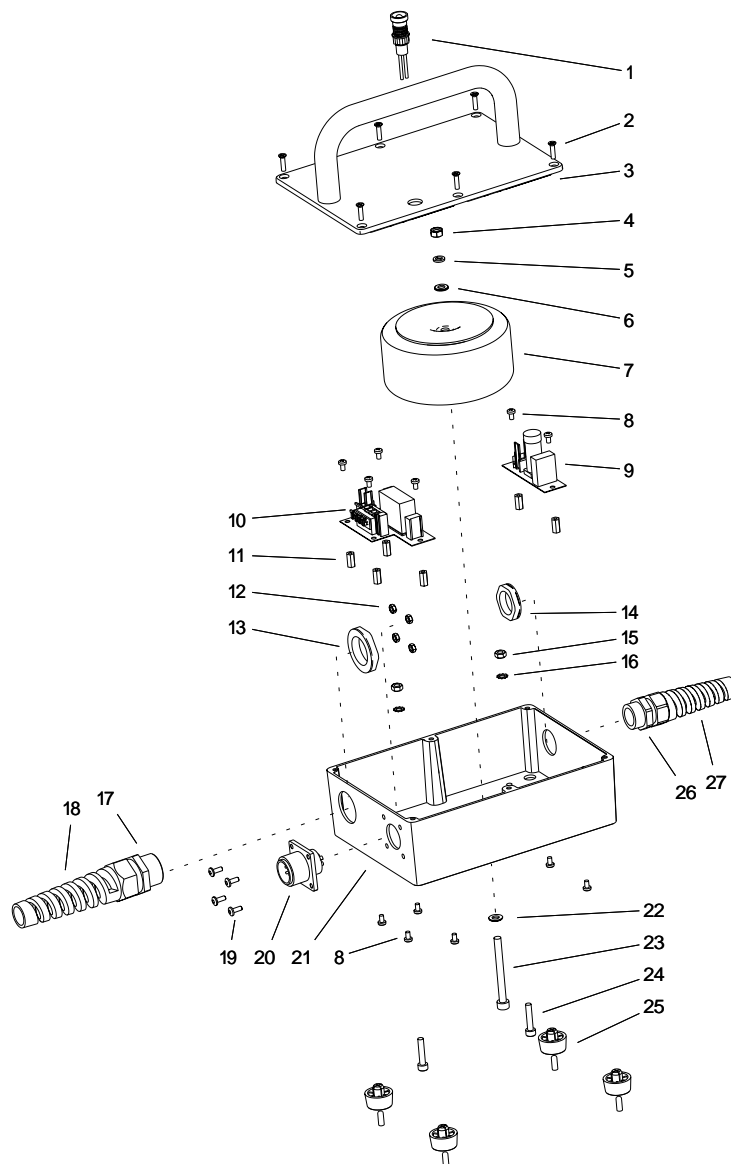
ITEM	PART NUMBER	DESCRIPTION	Q-TY
7	PLY-0523-02-17-00-0	INTERMEDIATE PLATE	1
8	OSL-0523-02-05-00-0	OSCILLATOR COVER ASSY	1
9	SRB-000262	HEX SOCKET LOW HEAD BOLT M6x25	1
10	PLY-0523-02-04-00-0	MOUNTING PLATE	1
11	DCS-0523-02-19-00-0	BELT TENSIONER	1
12	UCW-0523-02-09-00-0	BELT HOLDER	2
13	SRB-000067	HEX SOCKET HEAD CAP SCREW M4x40	2
14	WSP-0523-02-06-00-0	BEARING BRACKET	1
15	LOZ-000110	BALL BEARING 6x15x5	5
16	DYS-0523-02-08-00-0	SPACER I	1
17	PAS-000010	TOOTHED BELT	1
18	KOL-0523-02-03-00-0	DRIVEN GEAR ASSY	1
19	WLK-0523-02-15-00-0	PINION ASSY	1
20	PAS-000011	TOOTHED BELT	1
21	KOL-0523-02-02-00-0	MOTOR GEAR ASSY	1
22	WKR-000484	HEX SOCKET SET SCREW WITH FLAT POINT M3x3	1
23	LOZ-000123	BALL BEARING 10x19x5	1
24	SRB-000175	LOW HEAD SOCKET CAP SCREW M6x12	1
25	PDK-000155	SMALL ROUND WASHER 6.4	1
26	SLN-0523-06-01-13-0	MOTOR	1
27	PRW-000066	CARRIAGE	1
28	ZDR-0523-02-11-00-0	BUMPER	2
29	SRB-000377	HEX SOCKET HEAD CAP SCREW M3x20	3
30	PRW-000067	LINEAR GUIDE	1
31	DYS-0523-02-16-00-0	SPACER II	1
32	WZK-0523-02-13-00-0	LEFT LIMIT SWITCH WIRE SET	1
33	WZK-0523-02-14-00-0	RIGHT LIMIT SWITCH WIRE SET	1
34	PLY-0523-02-01-00-0	OSCILLATOR PLATE	1
35	NKR-000035	NUT SHORT M6	1



ITEM	PART NUMBER	DESCRIPTION	Q-TY
1	WKR-000091	HEX SOCKET BUTTON HEAD SCREW M4x8	2
2	WKR-000313	HEX SOCKET BUTTON HEAD SCREW M3x8	8
3	PNK-000059	POWER SWITCH	1
4	GNZ-000053	FEMALE SOCKET 6-PIN	2
5	DLW-000042	CABLE GLAND WITH STRAIN RELIEF	1
6	OSL-0523-01-05-01-0	TOP COVER	1
7	NKR-000010	HEX NUT M3	8
8	NKR-000163	GLAND NUT PG16	1
9	WKR-000180	CROSS RECESSED PAN HEAD SCREW M3x5	6

ITEM	PART NUMBER	DESCRIPTION	Q-TY
10	MDL-0523-01-07-00-0	POWER SUPPLY MODULE	1
11	TLJ-000060	SLEEVE M3/8	6
12	ZSP-0523-01-02-00-0	DRIVE SYSTEM	1
13	PRS-000004	EXTERNAL RETAINING RING 14z	1
14	KOL-0523-01-02-03-0	LARGE GEAR	1
15	WPS-000009	KEY 5x5x12	1
16	SRB-000310	HEX SOCKET HEAD CAP SCREW M3x10	4
17	WLK-0523-01-02-04-0	DRIVE SHAFT	1
18	OSL-0523-01-02-06-0	GEAR COVER	1
19	SRB-000336	HEX SOCKET HEAD CAP SCREW M3x14	4
20	LOZ-000123	BALL BEARING	2
21	PRS-000002	EXTERNAL RETAINING RING 10z	1
22	MDL-0523-01-09-01-0	LINEAR OSCILLATION MODUL	1
23	MDL-0523-01-08-00-0	DRIVE MODUL	1
24	PLY-0523-01-02-01-0	TOP PLATE	1
25	KRP-0523-01-02-02-0	SHAFT BODY	1
26	LOZ-000009	NEEDLE BEARING 10x16x10	1
27	WDZ-0523-01-02-05-0	PISTON ROD	1
28	MTR-0523-99-01-00-0	MOTOR ASSY	1
29	MKP-000003	LIMIT SWITCH WIRE SET	1
30	PDK-000104	SMALL ROUND WASHER 13	1
31	PDW-0523-01-01-00-0	CHASSIS	1
32	NKR-0523-01-01-09-0	NUT	2
33	SRB-000078	HEX SOCKET HEAD CAP SCREW M5x12	6
34	ZDR-0523-01-01-08-0	BUMPER	4
35	WSP-0523-01-01-04-0	RIGHT BRACKET	1
36	KRP-0523-01-01-01-0	CHASSIS BODY	1
37	NKR-000034	NUT M5 SHORT	2
38	WKR-000077	HEX SOCKET SET SCREW WITH FLAT POINT M5x16	2
39	PLY-0523-01-01-02-0	RESISTING PLATE	1
40	SRB-000158	HEX SOCKET HEAD CAP SCREW M8x40	4
41	WSP-0523-01-01-05-0	LEFT BRACKET	1
42	NKR-0523-01-01-06-0	SPECIAL NUT	2
43	PLY-0523-01-01-07-0	BOTTOM PLATE	1
44	MMS-0523-01-01-03-0	ECCENTRIC	2
45	DZW-0419-01-04-13-0	HANDLE	2
46	SRB-0341-02-10-00-0	MOUNTING SCREW	4
47	PDK-000022	ROUND WASHER 8.4	4
48	RLK-0341-01-02-00-0	PRESSURE ROLLER ASSY	1
49	LOZ-000053	BALL BEARING 8x22x7	8
50	PDK-000174	WASHER 8x14x0.1	8
51	RLK-0341-01-02-01-0	PRESSURE ROLLER	4
52	PDK-000173	SPACER WASHER 8x14x1	4
53	PRS-000014	INTERNAL RETAINING RING 22w	4
54	SRB-000030	FULL THREAD HEX HEAD BOLT M8x30	4
55	SRB-000310	HEX SOCKET HEAD CAP SCREW M3x10	4
56	ZST-0341-99-01-00-0	GEAR ASSY	1
57	SRB-0523-01-03-03-0	FEED SCREW	1
58	SPR-000010	DISC SPRING 6.2x12.5x0.6	2
59	PDK-000155	SMALL ROUND WASHER 6.4	1
60	PLY-0523-01-04-01-0	RIGHT SIDE PLATE	1

ITEM	PART NUMBER	DESCRIPTION	Q-TY
61	PLY-0523-01-03-01-0	LEFT SIDE PLATE	1
62	PKT-0341-02-08-00-0	KNOB	1
63	NKR-000017	HEX NUT M6	1
64	WKR-000101	HEX SOCKET BUTTON HEAD SCREW M6x16	10
65	WKR-000091	HEX SOCKET BUTTON HEAD SCREW M4x8	10
66	RKJ-0523-01-04-02-0	RIGHT HANDLE	1
67	RKJ-0523-01-03-02-0	LEFT HANDLE	1
68	UCW-0523-15-00-00-0	PANEL HOLDER	1
69	SRB-000064	HEX SOCKET HEAD CAP SCREW M4x16	3
70	WZK-0523-01-05-02-0	POWER WIRE SET	1
71	WZK-0523-01-05-05-0	POWER CORD WIRE SET	1



ITEM	PART NUMBER	DESCRIPTION	Q-TY
1	WZK-0523-09-10-00-0	LED WIRE	1
2	WKR-000147	CROSS RECESSED COUNTERSUNK HEAD SCREW M3x12	1
3	PKR-0523-09-02-00-0	LID	1
4	NKR-000015	HEX NUT M5	1
5	PDK-000044	SPRING WASHER 5.1	1
6	PDK-000017	ROUND WASHER 5.3	1
7	WZK-0523-09-09-00-0	TOROID TRANSFORMER WIRE SET	1
8	WKR-000180	CROSS RECESSED PAN HEAD SCREW M3x5	12
9	MDL-0523-09-04-01-0	PRIMARY SIDE MODUL – 230V	1
9	MDL-0523-09-04-02-0	PRIMARY SIDE MODUL – 115V	1
10	MDL-0523-09-05-00-0	SECONDARY SIDE MODUL	1
11	TLJ-000023	SLEEVE M3x10	6
12	NKR-000010	HEX NUT M3	4
13	NKR-000163	STRAIN RELIEF NUT PG16	1
14	NKR-000040	STRAIN RELIEF NUT PG11	1
15	NKR-000013	HEX NUT M4	2
16	PDK-000060	EXTERNAL TOOTH LOCK WASHER 4.3	2
17	WZK-0523-09-08-00-0	SECONDARY SIDE WIRE SET	1
18	DLW-000042	CABLE GLAND WITH STRAIN RELIEF PG16	1
19	WKR-000313	HEX SOCKET BUTTON HEAD SCREW M3x8	4
20	WZK-0523-09-07-00-0	ARC IGNITION WIRE SET	1
21	KRP-0523-09-01-00-0	BODY	1
22	PDK-000017	ROUND WASHER 5.3	1
23	SRB-000094	HEX SOCKET HEAD CAP SCREW M5x50	1
24	SRB-000323	HEX SOCKET HEAD CAP SCREW M4x20	2
25	STP-000005	BRACKET 20	4
26	WZK-0523-09-06-01-0	PRIMARY SIDE WIRE SET – 230V	1
26	WZK-0523-09-06-02-0	PRIMARY SIDE WIRE SET – 115V	1
27	DLW-000007	CABLE GLAND WITH STRAIN RELIEF PG11	1

8. DECLARATION OF CONFORMITY

EC Declaration of Conformity

We

***PROMOTECH sp. z o.o.
ul. Elewatorska 23/1
15-620 Białystok
Poland***

declare with full responsibility that:

Rail Runner 2 Welding Carriage

is manufactured in accordance with the following standards:

- EN 12100
- EN 60745-1
- EN 60974-10

and satisfies safety regulations of the guidelines: 2004/108/EC, 2006/95/EC, 2006/42/EC.

Białystok, 10 December 2015



Marek Siergiej
CEO

9. QUALITY CERTIFICATE

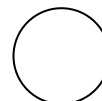
**Machine control card
Rail Runner 2 Welding Carriage**

Serial number.....

Electric test

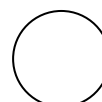
Type of test	Result	Name of tester
Test with sinusoidal voltage (voltage 1000 V, frequency 50 Hz)	 Date
Resistance of the protective circuit Ω Signature

Quality control



Adjustments, inspections

Quality control



10. WARRANTY CARD

WARRANTY CARD No.....

..... in the name of Manufacturer warrants the Rail Runner 2 Welding Carriage to be free of defects in material and workmanship under normal use for a period of 12 months from the date of sale.

This warranty does not cover rollers as well as damage or wear that arise from misuse, accident, tempering, or any other causes not related to defects in workmanship or material.

Date of production

Serial number

Date of sale

Signature of seller.....

1.00 / 15 December 2015

WE RESERVE THE RIGHT TO MAKE CHANGES IN THIS MANUAL WITHOUT NOTICE