



Remote control

R10 19POL
RG10 19POL 5M
R11 19POL
RG11 19POL 5M
R20 19POL
R40 7POL

Observe additional system documents!

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General instructions

CAUTION



Read the operating instructions!

The operating instructions provide an introduction to the safe use of the products.

- Read the operating instructions for all system components!
- Observe accident prevention regulations!
- Observe all local regulations!
- Confirm with a signature where appropriate.

NOTE



In the event of queries on installation, commissioning, operation or special conditions at the installation site, or on usage, please contact your sales partner or our customer service department on +49 2680 181-0.

A list of authorised sales partners can be found at www.ewm-group.com.

Liability relating to the operation of this equipment is restricted solely to the function of the equipment. No other form of liability, regardless of type, shall be accepted. This exclusion of liability shall be deemed accepted by the user on commissioning the equipment.

The manufacturer is unable to monitor whether or not these instructions or the conditions and methods are observed during installation, operation, usage and maintenance of the equipment.

An incorrectly performed installation can result in material damage and injure persons as a result. For this reason, we do not accept any responsibility or liability for losses, damages or costs arising from incorrect installation, improper operation or incorrect usage and maintenance or any actions connected to this in any way.

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2 Safety instructions

2.1 Notes on the use of these operating instructions



DANGER

Working or operating procedures which must be closely observed to prevent imminent serious and even fatal injuries.

- Safety notes include the "DANGER" keyword in the heading with a general warning symbol.
- The hazard is also highlighted using a symbol on the edge of the page.



WARNING

Working or operating procedures which must be closely observed to prevent serious and even fatal injuries.

- Safety notes include the "WARNING" keyword in the heading with a general warning symbol.
- The hazard is also highlighted using a symbol in the page margin.



CAUTION

Working or operating procedures which must be closely observed to prevent possible minor personal injury.

- The safety information includes the "CAUTION" keyword in its heading with a general warning symbol.
- The risk is explained using a symbol on the edge of the page.

CAUTION

Working and operating procedures which must be followed precisely to avoid damaging or destroying the product.

- The safety information includes the "CAUTION" keyword in its heading without a general warning symbol.
- The hazard is explained using a symbol at the edge of the page.

NOTE








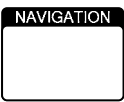





Special technical points which users must observe.

- Notes include the "NOTE" keyword in the heading without a general warning symbol.

Instructions and lists detailing step-by-step actions for given situations can be recognised via bullet points, e.g.:

- Insert the welding current lead socket into the relevant socket and lock.

2.2 Explanation of icons

Symbol	Description
	Press
	Do not press
	Turn
	Switch
	Switch off machine
	Switch on machine
	ENTER (enter the menu)
	NAVIGATION (Navigating in the menu)
	EXIT (Exit the menu)
	Time display (example: wait 4s/press)
	Interruption in the menu display (other setting options possible)
	Tool not required/do not use
	Tool required/use

2.3 General

DANGER



Electric shock!

Welding machines use high voltages which can result in potentially fatal electric shocks and burns on contact. Even low voltages can cause you to get a shock and lead to accidents.

- Do not touch any live parts in or on the machine!
- Connection cables and leads must be free of faults!
- Switching off alone is not sufficient!
- Place welding torch and stick electrode holder on an insulated surface!
- The unit should only be opened by specialist staff after the mains plug has been unplugged!
- Only wear dry protective clothing!
- Wait for 4 minutes until the capacitors have discharged!



Electromagnetic fields!

The power source may cause electrical or electromagnetic fields to be produced which could affect the correct functioning of electronic equipment such as IT or CNC devices, telecommunication lines, power cables, signal lines and pacemakers.

- Observe the maintenance instructions! (see Maintenance and Testing chapter)
- Unwind welding leads completely!
- Shield devices or equipment sensitive to radiation accordingly!
- The correct functioning of pacemakers may be affected (obtain advice from a doctor if necessary).



Validity of this document!

This document describes an accessory and is only valid in combination with the operating instructions for the power source being used (welding machine)!

- Read the operating instructions, in particular the safety instructions for the power source (welding machine)!

WARNING



Risk of accidents if these safety instructions are not observed!

Non-observance of these safety instructions is potentially fatal!

- Carefully read the safety information in this manual!
- Observe the accident prevention regulations in your country.
- Inform persons in the working area that they must observe the regulations!



Fire hazard!

Flames may arise as a result of the high temperatures, stray sparks, glowing-hot parts and hot slag produced during the welding process.

Stray welding currents can also result in flames forming!

- Check for fire hazards in the working area!
- Do not carry any easily flammable objects such as matches or lighters.
- Keep appropriate fire extinguishing equipment to hand in the working area!
- Thoroughly remove any residue of flammable substances from the workpiece before starting welding.
- Only continue work on welded workpieces once they have cooled down.
Do not allow to come into contact with flammable material!
- Connect welding leads correctly!

 **WARNING****Risk of injury due to radiation or heat!****Arc radiation results in injury to skin and eyes.****Contact with hot workpieces and sparks results in burns.**

- Use welding shield or welding helmet with the appropriate safety level (depending on the application)!
- Wear dry protective clothing (e.g. welding shield, gloves, etc.) according to the relevant regulations in the country in question!
- Protect persons not involved in the work against arc beams and the risk of glare using safety curtains!

**Hazards due to improper usage!****Hazards may arise for persons, animals and material objects if the equipment is not used correctly. No liability is accepted for any damages arising from improper usage!**

- The equipment must only be used in line with proper usage and by trained or expert staff!
- Do not modify or convert the equipment improperly!

 **CAUTION****Noise exposure!****Noise exceeding 70 dBA can cause permanent hearing damage!**

- Wear suitable ear protection!
- Persons located within the working area must wear suitable ear protection!

CAUTION**Obligations of the operator!****The respective national directives and laws must be observed for operation of the machine!**

- National implementation of the framework directive (89/391/EEG), as well as the associated individual directives.
- In particular, directive (89/655/EEG), on the minimum regulations for safety and health protection when staff members use equipment during work.
- The regulations regarding work safety and accident prevention for the respective country.
- Setting up and operating the machine according to IEC 60974-9.
- Check at regular intervals that users are working in a safety-conscious way.
- Regular checks of the machine according to IEC 60974-4.

**Damage due to the use of non-genuine parts!****The manufacturer's warranty becomes void if non-genuine parts are used!**

- Only use system components and options (power sources, welding torches, electrode holders, remote controls, spare parts and replacement parts, etc.) from our range of products!
- Only insert and lock accessory components into the relevant connection socket when the machine is switched off.

**Trained personnel!****Commissioning is reserved for persons who have the relevant expertise of working with arc welding machines.**

2.4 Transport

CAUTION



Damage due to supply lines not being disconnected!
During transport, supply lines which have not been disconnected (mains supply leads, control leads, etc.) may cause hazards such as connected equipment tipping over and injuring persons!

- Disconnect supply lines!

2.4.1 Scope of delivery

The delivery is checked and packaged carefully before dispatch, however it is not possible to exclude the possibility of damage during transit.

Receiving inspection

- Check that the delivery is complete using the delivery note!

In the event of damage to the packaging

- Check the delivery for damage (visual inspection)!

In the event of complaints

If the delivery has been damaged during transport:

- Please contact the last haulier immediately!
- Keep the packaging (for possible checking by the haulier or for the return shipment).

Packaging for returns

If possible, please use the original packaging and the original packaging material. If you have any queries on packaging and protection during transport, please contact your supplier.

2.5 Ambient conditions

CAUTION



Equipment damage due to dirt accumulation!
Unusually high quantities of dust, acid, corrosive gases or substances may damage the equipment.

- Avoid high volumes of smoke, vapour, oil vapour and grinding dust!
- Avoid ambient air containing salt (sea air)!

2.5.1 In operation

Temperature range of the ambient air:

- -20 °C to +40 °C

Relative air humidity:

- Up to 50% at 40 °C
- Up to 90% at 20 °C

2.5.2 Transport and storage

Storage in an enclosed space, temperature range of the ambient air:

- -25 °C to +55 °C

Relative air humidity

- Up to 90% at 20 °C

3 Intended use

WARNING



Hazards due to improper usage!

Hazards may arise for persons, animals and material objects if the equipment is not used correctly. No liability is accepted for any damages arising from improper usage!

- The equipment must only be used in line with proper usage and by trained or expert staff!
- Do not modify or convert the equipment improperly!

3.1 Use and operation solely with the following machines

The remote controls are designed specifically for use with welding machines in the Phoenix / Taurus / alpha Q range and offer various setting options, depending on the model.

R10 / RG10	R11 / RG11	R20	R40
<ul style="list-style-type: none"> • Taurus Synergic • Taurus Synergic S • Phoenix Progress • Phoenix Expert • Phoenix Concept • alpha Q 	<ul style="list-style-type: none"> • Taurus Basic • Taurus Basic S 	<ul style="list-style-type: none"> • Taurus Synergic S • Phoenix Progress • Phoenix Expert • alpha Q 	<ul style="list-style-type: none"> • Taurus Synergic S • Phoenix Progress • Phoenix Expert • alpha Q • Car Expert

3.2 Documents which also apply

3.2.1 Warranty

NOTE



For further information, please see the accompanying supplementary sheets "Machine and Company Data, Maintenance and Testing, Warranty"!

3.2.2 Declaration of Conformity



The designated machine conforms to EC Directives and standards in terms of its design and construction:

- EC Low Voltage Directive (2006/95/EC),
- EC EMC Directive (2004/108/EC),

This declaration shall become null and void in the event of unauthorised modifications, improperly conducted repairs, non-observance of the deadlines for the repetition test and / or non-permitted conversion work not specifically authorised by the manufacturer.

The original copy of the declaration of conformity is enclosed with the unit.

3.2.3 Welding in environments with increased electrical hazards



In compliance with IEC / DIN EN 60974, VDE 0544 the machines can be used in environments with an increased electrical hazard.

3.2.4 Service documents (spare parts and circuit diagrams)



DANGER



Do not carry out any unauthorised repairs or modifications!

To avoid injury and equipment damage, the unit must only be repaired or modified by specialist, skilled persons!

The warranty becomes null and void in the event of unauthorised interference.

- Appoint only skilled persons for repair work (trained service personnel)!

Original copies of the circuit diagrams are enclosed with the unit.

Spare parts can be obtained from the relevant authorised dealer.

4 Machine description – quick overview

4.1 R10 19POL

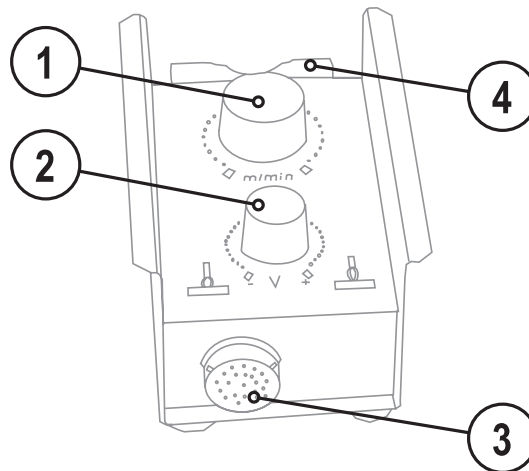


Figure 4-1

Item	Symbol	Description
1		Wire speed rotary dial Infinitely adjustable setting of the wire speed from min. to max. (welding output, one-dial operation)
2		Rotary dial, Arc length correction Arc length correction from -10 V to + 10 V
3		19-pole connection socket (analogue) For connecting the control lead.
4		Holder for suspending the remote control

4.2 RG10 19POL 5M

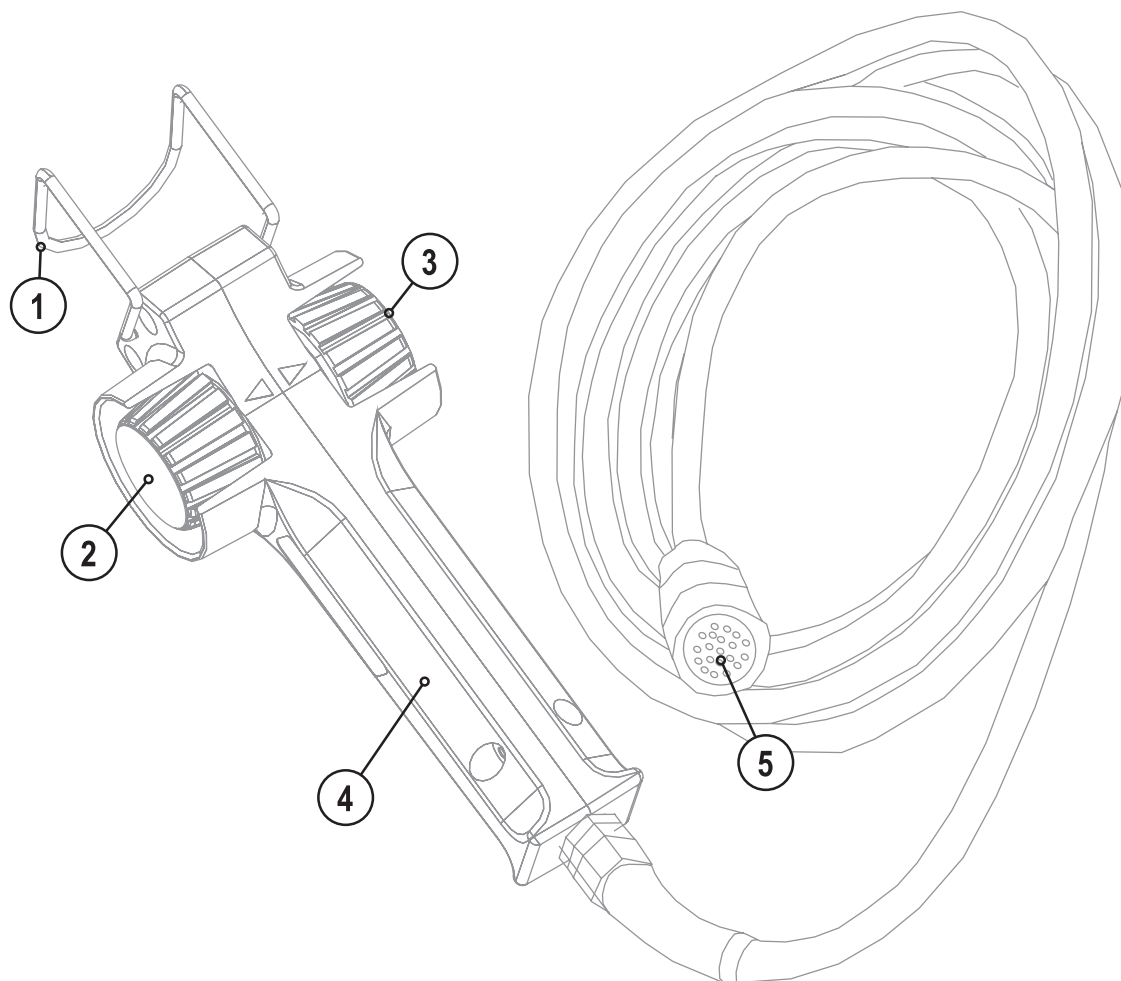




Figure 4-2

Item	Symbol	Description
1		Holder for suspending the remote control
2		Wire speed rotary dial Infinitely adjustable setting of the wire speed from min. to max. (welding output, one-dial operation)
3		Rotary dial, Arc length correction Arc length correction from -10 V to + 10 V
4		Torch body
5		Connector plug, 19-pole

4.3 R11 19POL

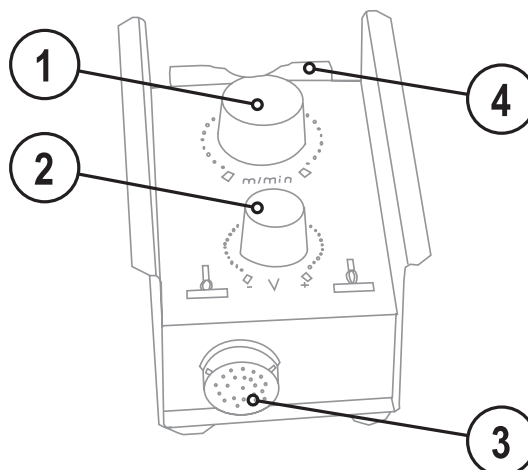


Figure 4-3

Item	Symbol	Description
1		Rotary dial, wire speed Infinite adjustment of the wire speed from min. to max. (twin-knob operation: wire speed/welding voltage)
2		Rotary dial, welding voltage Adjustment of the welding voltage from min. to max. (twin-knob operation: wire speed/welding voltage)
3		19-pole connection socket (analogue) For connecting the control lead.
4		Holder for suspending the remote control

4.4 RG11 19POL 5M

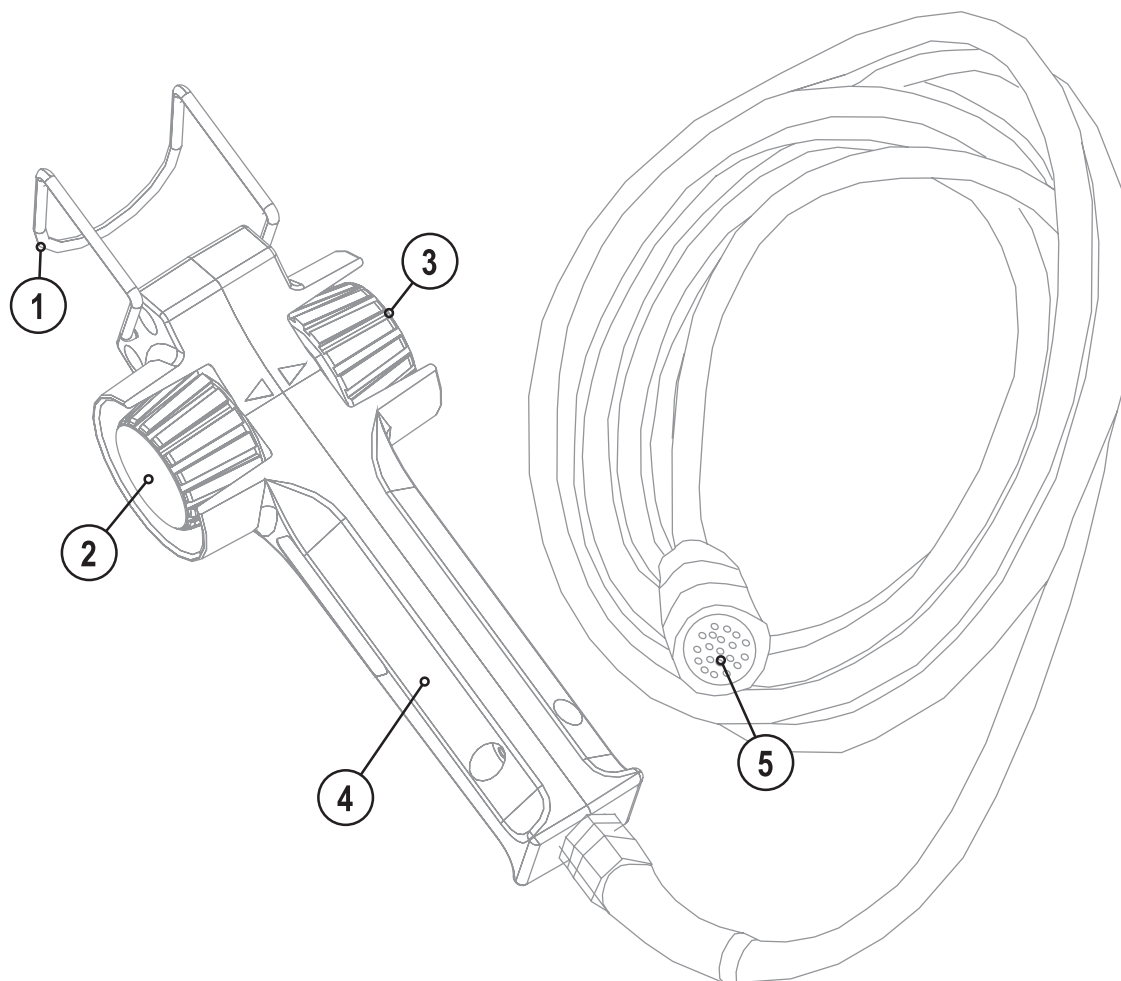


Figure 4-4

Item	Symbol	Description
1		Holder for suspending the remote control
2		Rotary dial, wire speed Infinite adjustment of the wire speed from min. to max. (twin-knob operation: wire speed/welding voltage)
3		Rotary dial, welding voltage Adjustment of the welding voltage from min. to max. (twin-knob operation: wire speed/welding voltage)
4		Torch body
5		Connector plug, 19-pole

4.5 R20 19POL

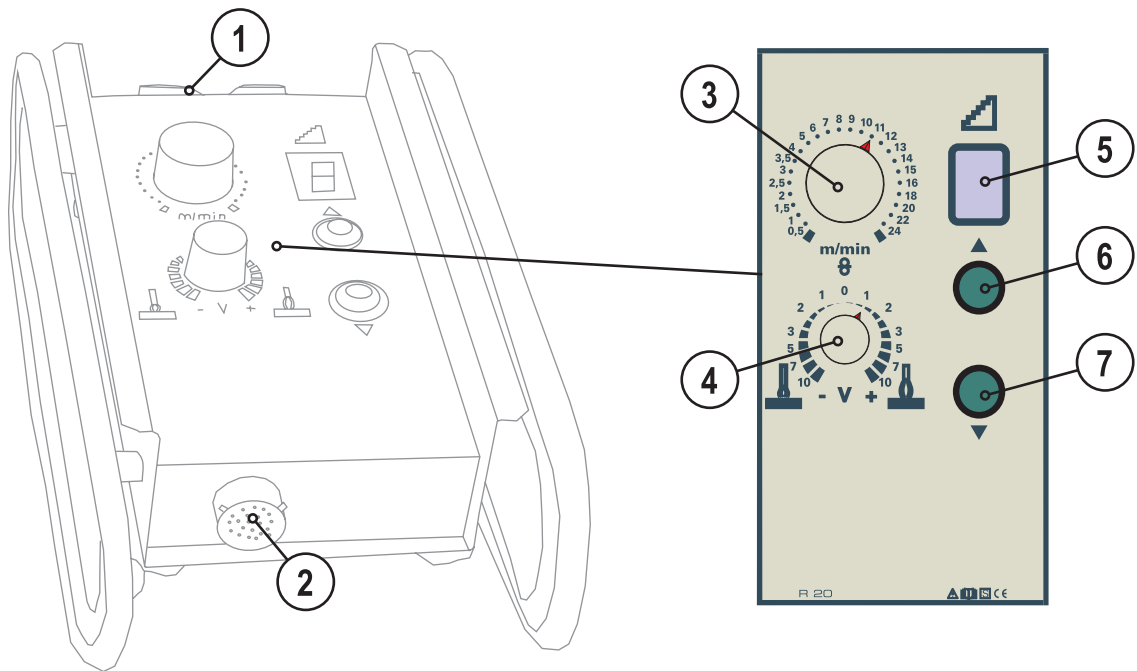


Figure 4-5

Item	Symbol	Description
1		Holder for suspending the remote control
2		19-pole connection socket (analogue) For connecting the control lead.
3		Wire speed rotary dial Infinitely adjustable setting of the wire speed from min. to max. (welding output, one-dial operation)
4		Rotary dial, Arc length correction Arc length correction from -10 V to + 10 V
5		Displays the current program number
6		Key button, program switching "Up" Select program number up
7		Key button, program switching "Down" Select program number down

4.6 R40 7POL

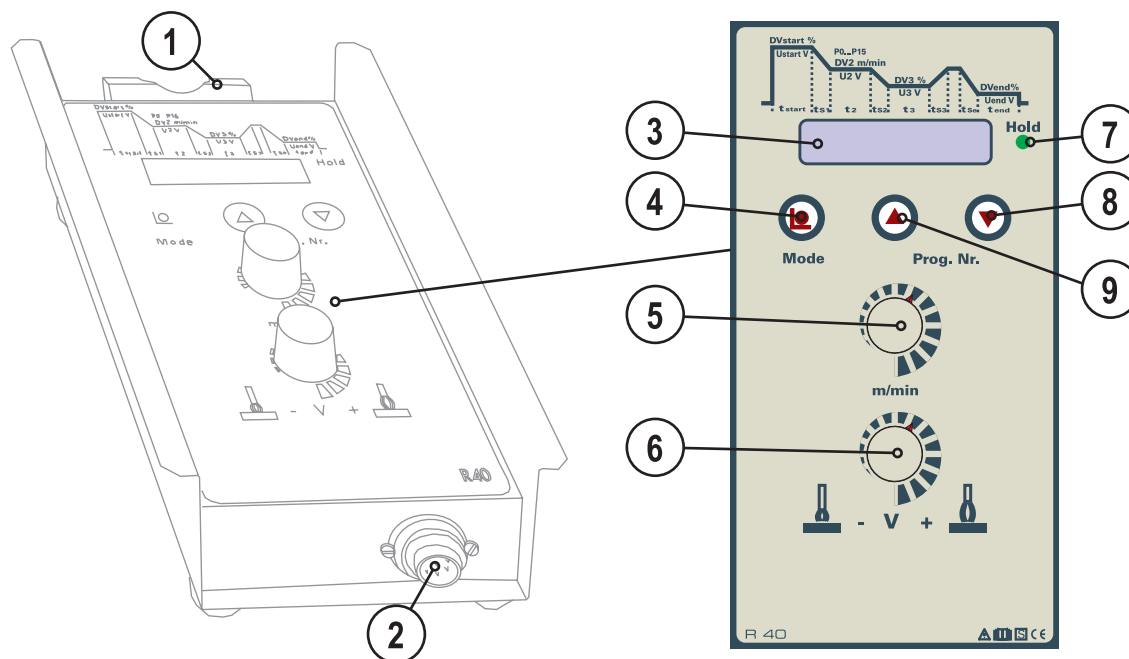


Figure 4-6

Item	Symbol	Description
1		Holder for suspending the remote control
2		Connection socket, 7-pole (digital) Connection to the digital remote control connection on power source or wire feed unit.
3		Display Display of all welding parameters and their values
4		Key button, "Mode" To select the program runtime parameters
5		Rotary dial, wire speed <ul style="list-style-type: none"> Setting the wire speed (0.5 m/min to 24 m/min in 0.1 m/min increments) Setting welding parameters
6		Rotary dial, Arc length correction Arc length correction from -10 V to + 10 V
7	HOLD	Signal light, HOLD Lit: Display shows the last parameters used for welding. Not lit: Display shows the setpoint values or current values during welding.
8		Key button, program switching "Down" Select program number down
9		Key button, program switching "Up" Select program number up

5 Design and function

NOTE

Observe documentation of other system components when connecting!

5.1 Establishing the connections

CAUTION



Damage to the machine due to improper connection!

The remote controls have been developed to be connected to welding machines or wire feed units only. Connecting them to other machines may cause damage to the machines!

- Observe the operating instructions for the welding machine or wire feed unit!
- Switch off the welding machine before connecting!

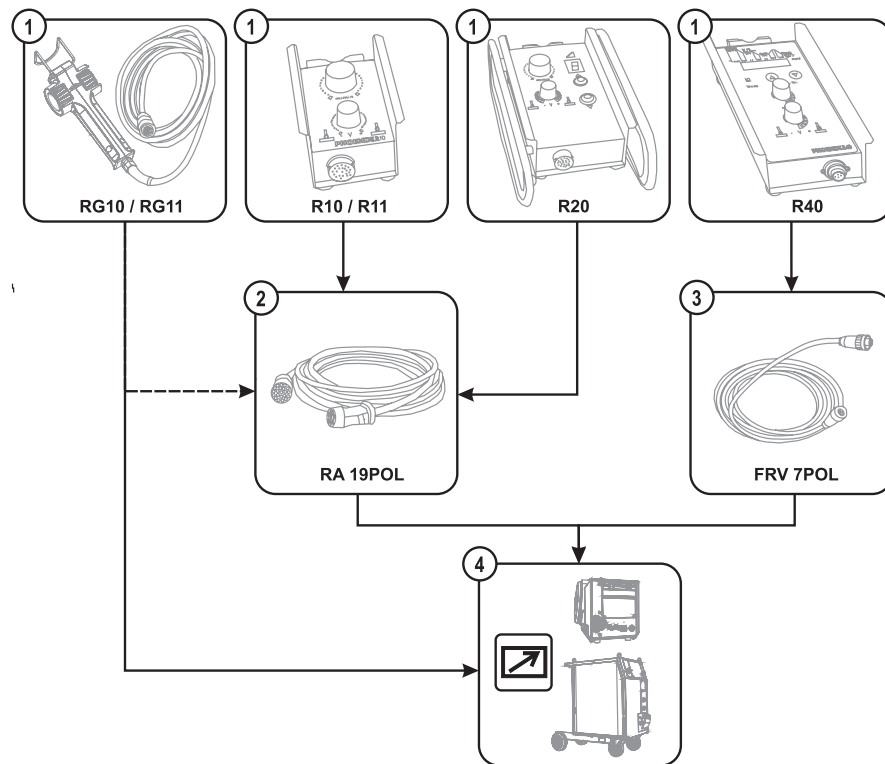


Figure 5-1

Item	Symbol	Description
1		Manual remote control
2		Extension cable for 19-pole connections
3		Extension cable for 7-pole connections
4		Power source/wire feed unit Observe additional system documents!

- Switch off the welding machine.
- Insert female connector plug into the remote control connection socket and lock by turning to the right.
- Insert male connector plug into the remote control connection socket on the welding machine/wire feed unit and lock by turning to the right.

5.2 Functional characteristics

The operation of the remote control and its settings are directly dependent on the configuration of the respective welding machine or wire feed unit. The settings are defined by changeover switches or by setting special parameters (dependent on the control).

The position of the key switch, to protect against unauthorised use, also has a direct influence on the operation of the respective remote control.

5.2.1 R10 19POL; RG10 19POL 5M

- Infinitely adjust wire feed speed and arc length correction (welding voltage) (the function is only available in program 0). Switch the “welding torch function” changeover switch to the program position.

Special functions

- Adjust wire feed speed and arc length correction within defined limits.
The function can only be enabled in connection with an M3.7x machine control.
Special parameter P7 must be switched on (see corresponding documentation).
The function can be used in all programs except program 0.

5.2.2 R11 19POL; RG11 19POL 5M

- Infinitely adjust wire feed speed and welding voltage. Set “remote control on/off” changeover switch to the ON position. Set the “Standard or Up/Down operation” changeover switch to the standard operation position (see corresponding documentation).

5.2.3 R20 19POL

- Infinitely adjust wire feed speed and arc length correction (welding voltage), (the function is only available in program 0). Set the “welding torch function” changeover switch to the program position.
- Switch over programs using the keys. Values of the parameters for wire speed and arc length correction cannot be changed except in program 0 (it is however possible to set the parameters within previously defined limits, see special functions).

Special functions

- Adjust wire feed speed and arc length correction within defined limits (the function can be used in all programs except program 0). Set the “welding torch function” changeover switch to the program position. Special parameter P7 must be switched on (see corresponding documentation).
- Limit the number of selectable welding programs. This setting is made in special parameter P2 or P4 (see corresponding documentation).
- Correct the wire speed from 0% to 100% (depending on the setting on the wire feed unit) using the keys on the remote control (program switching standard function). The welding voltage cannot be adjusted. Set the “welding torch function” changeover switch to the Up/Down operation setting (the machine switches automatically to program 0). Programs cannot be switched.

5.2.4 R40 7POL

- Adjust wire feed speed and arc length correction (welding voltage) in all programs.
- Switch over programs or limit the number of programs.
- Customise the entire program sequence ("Program Steps" mode).
- Switch superpulses on or off.
- Switch over welding types (standard welding/pulse arc welding).

The remote control runs through a system diagnostics process on being switched on. The following values are displayed.




- PHOENIX R40,001 (Type and initialisation status)
- SV: 00.00.00.XX (Software version)

The current values for the welding voltage and current are then displayed.

- U: 0.0V I: 0A













5.2.4.1 Program changeover

- Change between up to 16 (0 to 15) welding programs.
- Welding programs can be created using the control on the welding machine or wire feed unit or using the remote control itself. (see operating instructions for the relevant machine, chapter "Main program mode A", or the chapters following these instructions)

Operating element	Action	Result	Display
 		Select next or previous welding program.	P0 : 7.6M +1.1V ... P0 : 7.6M +1.1V

5.2.4.2 Program limit

- The maximum number of retrievable welding programs can be limited.

Operating element	Action	Result	Display
		Switch off the welding machine.	
  	 	Hold down "Mode" button on the remote control, switching on the welding machine.	PROGRAMM E: 0XX
 		Set program number.	PROGRAMM E: 0XX
		Switch off the welding machine and restart in order to put the change into effect.	

5.2.4.3 Specify program down parameter

NOTE

After the initial selection of a program, the relevant operating point is set as described in the "MIG/MAG operating point" chapter. Operating points are saved and will be available once again after the program is selected.

Operating element	Action	Result	Display
		Select program down parameter setting	DVstart : 120%
	$n \times$	Select down parameter to be set	Ustart : +0.0V
 m/min		Set down parameter	Ustart : +4.2V

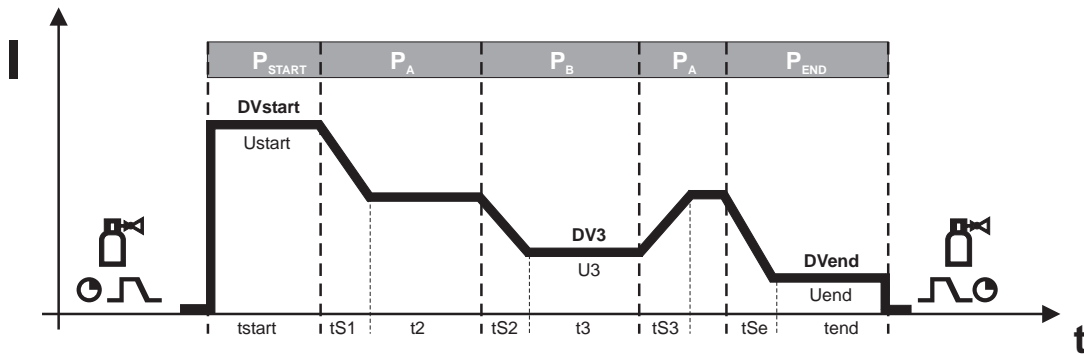


Figure 5-2

Start program P_{START}

DVstart	Wire-feed speed, relative	1% to 200%
Ustart	Arc length correction	-9.9 V to +9.9 V
tstart	Duration	0.0 s to 20.0 s

Main program P_A

tS1	Slope duration from P_{START} to P_A	0.0 s to 20.0 s
t2	Duration (spot time and superpulse)	0.01 s to 20.0 s
tS2	Slope duration from P_A to P_B (superpulse)	0.00 s to 20.0 s

Reduced main program P_B

DV3	Wire-feed speed, relative	1% to 200%
U3	Arc length correction	-9.9 V to +9.9 V
t3	Duration	0.01 s to 20.0 s
tS3	Slope duration from P_B to P_A (superpulse)	0.00 s to 20.0 s

End program P_{END}

tSe	Slope duration from P_A to P_{END}	0.0 s to 20 s
DVend (r)	Wire-feed speed, relative	1% to 200%
Uend	Arc length correction	-9.9 V to +9.9 V
tend	Duration (superpulse)	0.0 s to 20 s

Superpulse function

Superpuls xx	Superpulse function	On Off
--------------	---------------------	-----------

5.2.4.4 Changing over between standard MIG welding and pulse arc MIG welding

Operating element	Action	Result	Display
	3 s	Select setting option	Pul / Nor?
	n x	Select program	Px: _Nor
		Changeover	Px: ^Pul
		^Pul	
		_Nor	Standard MIG welding
		Confirm and save change	

5.2.4.5 Operating point setting changeover via wire feed speed or panel thickness

- The operating point in program 0 can also be set via the panel thickness parameter.

Operating element	Action	Result	Display	
		Switch off the welding machine.		
+		Hold down "Mode" button on the remote control, switching on the welding machine.	PROGRAMM E: 0XX	
		Press "Mode" button once	DV	
		Operating point setting changeover via wire speed or panel thickness.	th/mm	
		DV		Wire speed
		th/mm		Panel thickness
		Switch off the welding machine and restart in order to put the change into effect.		

6 Maintenance, care and disposal

6.1 General

When used in the specified environmental conditions and under normal operating conditions, this machine is largely maintenance-free and requires a minimum of care.

There are some points, which should be observed, to guarantee fault-free operation of your welding machine. Among these are regular cleaning and checking as described below, depending on the pollution level of the environment and the length of time the unit is in use.

6.2 Maintenance work, intervals

6.2.1 Monthly maintenance tasks

- Check control leads and their strain relief for damage.
- Carry out functional test of operating, signalling, safety and/or adjustment devices.
- Other, general condition

6.3 Maintenance work



DANGER



Do not carry out any unauthorised repairs or modifications!

To avoid injury and equipment damage, the unit must only be repaired or modified by specialist, skilled persons!

The warranty becomes null and void in the event of unauthorised interference.

- Appoint only skilled persons for repair work (trained service personnel)!

Repair and maintenance work may only be performed by qualified authorised personnel; otherwise the right to claim under warranty is void. In all service matters, always consult the dealer who supplied the machine. Return deliveries of defective equipment subject to warranty may only be made through your dealer. When replacing parts, use only original spare parts. When ordering spare parts, please quote the machine type, serial number and item number of the machine, as well as the type designation and item number of the spare part.

6.4 Disposing of equipment

NOTE



Proper disposal!

The machine contains valuable raw materials, which should be recycled, and electronic components, which must be disposed of.

- Do not dispose of in household waste!
- Observe the local regulations regarding disposal!



6.4.1 Manufacturer's declaration to the end user

- According to European provisions (guideline 2002/96/EG of the European Parliament and the Council of January, 27th 2003), used electric and electronic equipment may no longer be placed in unsorted municipal waste. It must be collected separately. The symbol depicting a waste container on wheels indicates that the equipment must be collected separately.
This machine is to be placed for disposal or recycling in the waste separation systems provided for this purpose.
- According to German law (law governing the distribution, taking back and environmentally correct disposal of electric and electronic equipment (ElektroG) from 16.03.2005), used machines are to be placed in a collection system separate from unsorted municipal waste. The public waste management utilities (communities) have created collection points at which used equipment from private households can be disposed of free of charge.
- Information about giving back used equipment or about collections can be obtained from the respective municipal administration office.
- EWM participates in an approved waste disposal and recycling system and is registered in the Used Electrical Equipment Register (EAR) under number WEEE DE 57686922.
- In addition to this, returns are also possible throughout Europe via EWM sales partners.

6.5 Meeting the requirements of RoHS

We, EWM HIGHTEC Welding GmbH Mündersbach, hereby confirm that all products supplied by us which are affected by the RoHS Directive, meet the requirements of the RoHS (Directive 2002/95/EC).

7 Technical data

Type	R10/R11	RG10/RG11	R20	R40
Interface	19-pole	19-pole	19-pole	7-pole
Display	-	-	single-digit	16-digit
Dimensions L x W x H in mm	180 x 100 x 75	225 x 70 x 60	330 x 180 x 95	270 x 150 x 75
Weight in kg	1	0.7	2.5	1.8

8 Accessories, options

8.1 Connection and extension cables

Type	Designation	Item no.
RA5 19POL 5M	Remote control e.g. connection cable	092-001470-00005
RA10 19POL 10M	Remote control e.g. connection cable	092-001470-00010
RA20 19POL 20M	Remote control e.g. connection cable	092-001470-00020

8.1.1 R 40

Type	Designation	Item no.
FRV10-L 7POL	Extension/connecting cable	092-000201-00000
FRV20-L 7POL	Extension/connecting cable	092-000201-00001

9 Appendix A

9.1 Overview of EWM branches

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