

Automation.

Components and Solutions.

TECHNOLOGY



AUTOMATION

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MERKLE
ROBOTICS

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Supporting devices for wire feed systems

Swivelling Support Arm/Boom	A-2
Column for Swivelling Arm/Boom	A-4
Balancer Type G3	A-5
Price list	A-6

Large Operating radius and simplicity of use for welding in the workshop or production facility.



Dia. A - 1

- Designed for power sources with a total weight of up to 60 kg (e.g. HighPULSE 280/350K), or wire feeders for welding systems D/DW to be suspended from the machine carriage
- Designed to be manoeverable through tension on the welding torch cable
- Optimal workplace organisation and safety because the extension, interconnecting cables etc. are suspended
- Optimal positioning of the power source/wire feeder directly in the operational area
- Reduced hazard of crushing the interconnecting cable due to this being suspended from the cable support carriages

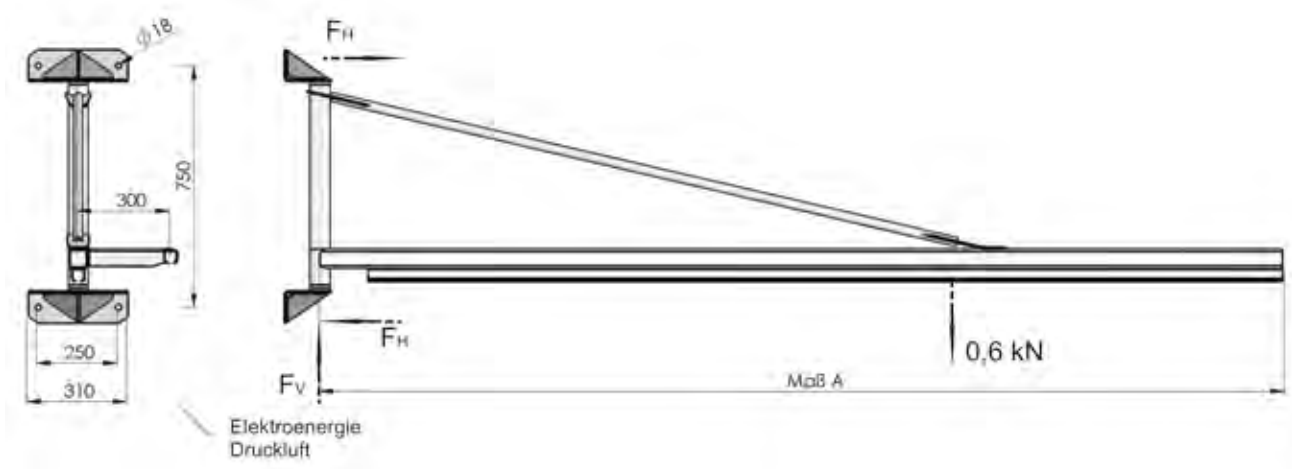
Assembly parts	model	part no.	SA 31	SA 41	SA 51	SA 61
End clamp	20 220	019.0.0700	1	1	1	1
Cable carriage	24 334	019.0.1600	2	3	4	5
Machine carriage	24 340	019.0.1200	1	1	1	1
End stop	20 218	019.0.0600	1	1	1	1
Stop angle	B 2997-20	102.019	2	2	2	2
Support Arm/Boom	B 2997-13-16		1 x 3 m	1 x 4 m	1 x 5 m	1 x 6 m
Pressure ring	E 2997-23	102.027	1	1	1	1

Assembly parts are included in the scope of supply

Option: Energy supply rail

All swiveling support arms/booms are available with an optional energy delivery rail. Four electrical sockets and a pneumatic supply line are connected to an adjustable cable carriage and suspended from an extra carriage rail.

Diagram of dimensions



Dia. A - 2

model	A (mm)	FH (kN)	FV (kN)	Weight (kg)	without energy supply rail Art.-Nr.	with energy supply rail Art.-Nr.
SA 31	3000	6,70	1,30	63,5	109.886	101.751
SA 41	4000	8,90	1,50	83,2	109.888	101.753
SA 51	5000	11,60	1,75	108,5	109.890	101.755
SA 61	6000	15,00	1,91	125,0	109.892	101.757



Dia. A - 3

End clamp

part no. 019.0.0700

The end clamp with attached strap is suitable for supporting the interconnecting cable.



Dia. A - 4

Cable carriage

part no. 019.0.1600

The cable carriage with ball bearing rollers is suitable for supporting the interconnecting cable.



Dia. A - 5

Machine carriage

part no. 019.0.1200

The machine carriage supports the welding power source or wire feeder and runs on four ball bearing rollers.



Dia. A - 6

End stop

part no. 019.0.0600

The end stop is manufactured from zinc plated steel, and is used to limit the carriage travel in the Boom rails.

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Column for Swivelling Arm/Boom

Column for Swivelling Support Arm/Boom
part no. 151.584



Machine-Platform
part no. 150.755

Dia. A - 7

This column is designed for a free standing installation of our swivelling support arms/booms type SA 31, 41, 51 & 61. A machine platform as option is available, and is mounted at the bottom of the column to support the welding power source. The support arm/boom is not included in the scope of supply and must be ordered separately.

Column for Swivelling Support Arm/Boom incl machine platform (without support arm/boom)
part no. 150.661

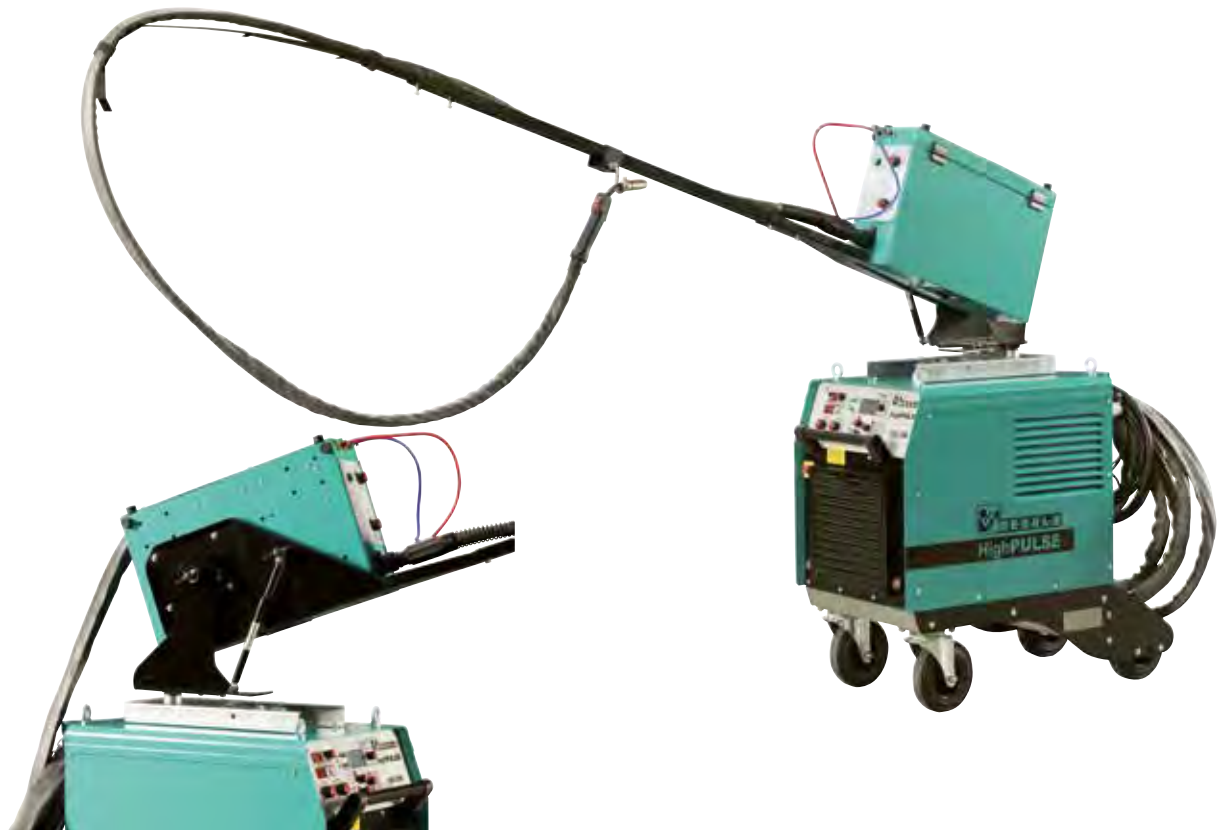
Column for Swivelling Support Arm/Boom without machine platform (without support arm/boom)
part no 151.584

Machine platform for column **part no. 150.755**

If instead of a wire spool wire from a barrel is used an additional wire feed liner with a connection kit from the barrel to the wire feed unit is required.
Depending on the swivelling support arm/boom (SA-31, SA-41, SA-51 or SA-61) different lengths of the wire feed liner will be required.
(Connection kit and wire feed liner see page B-4)

Column with swivelling support arm/boom:	SA-31	SA-41	SA-51	SA-61
Length of wire feed liner:	9,25 m	10,5 m	11,75 m	13 m

- Connection kit for SA-31** (incl. 9.25 m liner and connectors to barrel and wire feeder). **part no. 117.562**
- Connection kit for SA-41** (incl. 10.5 m liner and connectors to barrel and wire feeder). **part no. 117.564**
- Connection kit for SA-51** (incl. 11.75 m liner and connectors to barrel and wire feeder). **part no. 117.566**
- Connection kit for SA-61** (incl. 13 m liner and connectors to barrel and wire feeder). **part no. 117.568**



Dia. A - 8

The Balancer G3 allows a comfortable and uncluttered operation of the welding torch packet through supporting this from above, into the working area. The wire feeder is mounted on the balancer making horizontal and vertical rotation of the wire feeder and boom possible.

Mechanical forces and resulting damage to the Euro central torch connector are therefore eliminated. Through adjustable spring pressure, the angular positioning of the wire feeder and boom is maintained, with only light pressure necessary to return it to its original position.

The Balancer G3 can be used with our OptiMIG 351/451/55 DW and HighPULSE 454/554 DW welding systems. Due to an increase in overall height of the system when the wire feeder and boom is rotated fully upwards, an increase in wheelbase width of the power source is necessary to ensure vertical stability.

The welding torch can be suspended from the boom to prevent uncontrolled swinging of the torch. To use this function, a torch packet of $\geq 4\text{m}$ in length is necessary.

Wheel-base widening set for use of the balancer G2 / G3

(for HighPULSE 454/554 DW)

part no. 117.546

Wheel-base widening set for use of the balancer G2 / G3

(for OptiMIG 351/451/551 DW)

part no. 117.548

Balancer Type G3

part no. 147.244

Torch holder for Boom

Balancer G2 / G3 (clampable)

(for Hand Welding Torch SB/T)

Art.Nr. 131.598



Dia. A - 9

A



Supporting devices for wire feed systems

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Page	Description	PrGr	Part no.	Price/€
A-3	Swivelling boom, twin railed, incl. cable and machine carriage, Clamps, WITH energy rail and plug socket cube			
	Swivelling boom SA 31, 3 m 0,6 kN loading with energy rail Schuko socket cube and pneumatic connector	05	101.751	1.900,00
	Swivelling boom SA 41, 4 m 0,6 kN loading with energy rail Schuko socket cube and pneumatic connector	05	101.753	2.160,00
	Swivelling boom SA 51, 5 m 0,6 kN loading with energy rail Schuko socket cube and pneumatic connector	05	101.755	2.270,00
	Swivelling boom SA 61, 6 m 0,6 kN loading with energy rail Schuko socket cube and pneumatic connector	05	101.757	2.420,00
A-3	Swivelling boom, single railed, inkl. cable and machine carriage, clamps, WITHOUT energy rail and plug socket cube			
	Swivelling boom SA 31, 3 m 0,6 kN loading without energy rail incl cable and machine carriage, clamps	05	109.886	975,00
	Swivelling boom SA 41, 4 m 0,6 kN loading without energy rail incl cable and machine carriage, clamps	05	109.888	1.135,00
	Swivelling boom SA 51, 5m 0,6 kN loading without energy rail incl cable and machine carriage, clamps	05	109.890	1.285,00
	Swivelling boom SA 61, 6 m 0,6 kN loading without energy rail incl cable and machine carriage, clamps	05	109.892	1.400,00
A-3	Spare parts for swivelling boom:			
	End clamp consisting of end stop and strap in orange	05	019.0.0700	23,80
	Cable carriage	05	019.0.1600	68,00
	Machine carriage / 320 mm	05	019.0.1200	78,00
	End stop	05	019.0.0600	12,80
A-4	Column for swivelling boom:			
	Machine platform (with clamps for the column)	05	150.755	925,00
	Column for the swivelling boom / SA-31 bis SA-61	05	151.584	3.490,00



Supporting devices for wire feed systems

A

Price list

Page	Description	PrGr	Part no.	Price/€
	Wire feed conduit "Slider" for wire barrel connector			
	Wire feed conduit 9.25 m	05	117.562	175,00
	Wire feed conduit 10,50 m	05	117.564	185,00
	Wire feed conduit 11,75 m	05	117.566	195,00
	Wire feed conduit 13 m	05	117.568	205,00
A-5	Balancer			
	Balancer G3	05	147.244	980,00
	Wheelbase widening set for Balancer G2/G3 for HighPULSE, SpeedMIG 35x/45x/55x DW	05	117.546	82,00
	Wheelbase widening set for Balancer G2/G3 for OptiMIG	05	117.548	82,00
A-5	Torch holder for boom Balancer G2 / G3 (clampable) for Hand Welding Torch SB/T	05	131.598	
	All prices per piece or 1 m. Changes reserved.			



notes:



Large Spool Reel-off device

Type ASV 300	B-2
Type ASV 40	B-3
Wire feeding liner	B-4
Wire feeder Push MINI	B-6
Price list	B-7



Dia. B - 1

Application:

Device for the mechanical Reel-Off of spools up to 300 kg

Technical Details:

Connection voltage:	3Ph - 400V, PE 50Hz
Dimensions (WxLxH):	790 x 860 x 1350mm
Wire feed speed:	0 - 27 m/min
Wire Spools:	ø max. 780 mm Breite max. 420 mm
Mounting Spindle:	max. 50 mm
Spool Weight:	max. 300 kg

Operation:

First the axis of the reel-off device is mounted at the spool. After this the spool will be rolled into the reel-off device until the axis stop and secured with bolt and cotter pin.

The welding wire is then fed around the sabot through the wire feed conduit, and into the wire feed gearbox in the welding unit.

On activation of the Reel-Off controls, the device adjusts the rate of wire feed dependant on pull off speed from the wire feeder being used.

Reel-off device for 300 kg Spools
part no. 029.0.0100



Dia. B - 2



Dia. B - 3

Reel-off device for 40 kg Wire Spools, Type ASV 40 – Heated – part no. 110.130

Application:

Device for the mechanical Reel-Off of aluminium spools up to 40 kg

Technical Details:

Connection voltage:	1 x 230 V, 50/60 Hz
Dimensions (WxLxH):	570 x 780 x 1250mm
Wire feed speed:	0 - 30 m/min
Wire Spools:	ø max. 400 mm Width max. 220 mm
Mounting Spindle:	50 mm ø
Spool Weight:	max. 40 kg

Construction:

- Intergrated into a steel plate housing:
- Mounting spindle motor driven
 - Adjustable spindle for spool mounting
 - Spool rolling aid to help mounting
 - Control mechanism for controlling Reel-Off speed
 - Light sensor for wire end recognition
 - Adjustable heating for drying wires
 - Inner cabin illumination

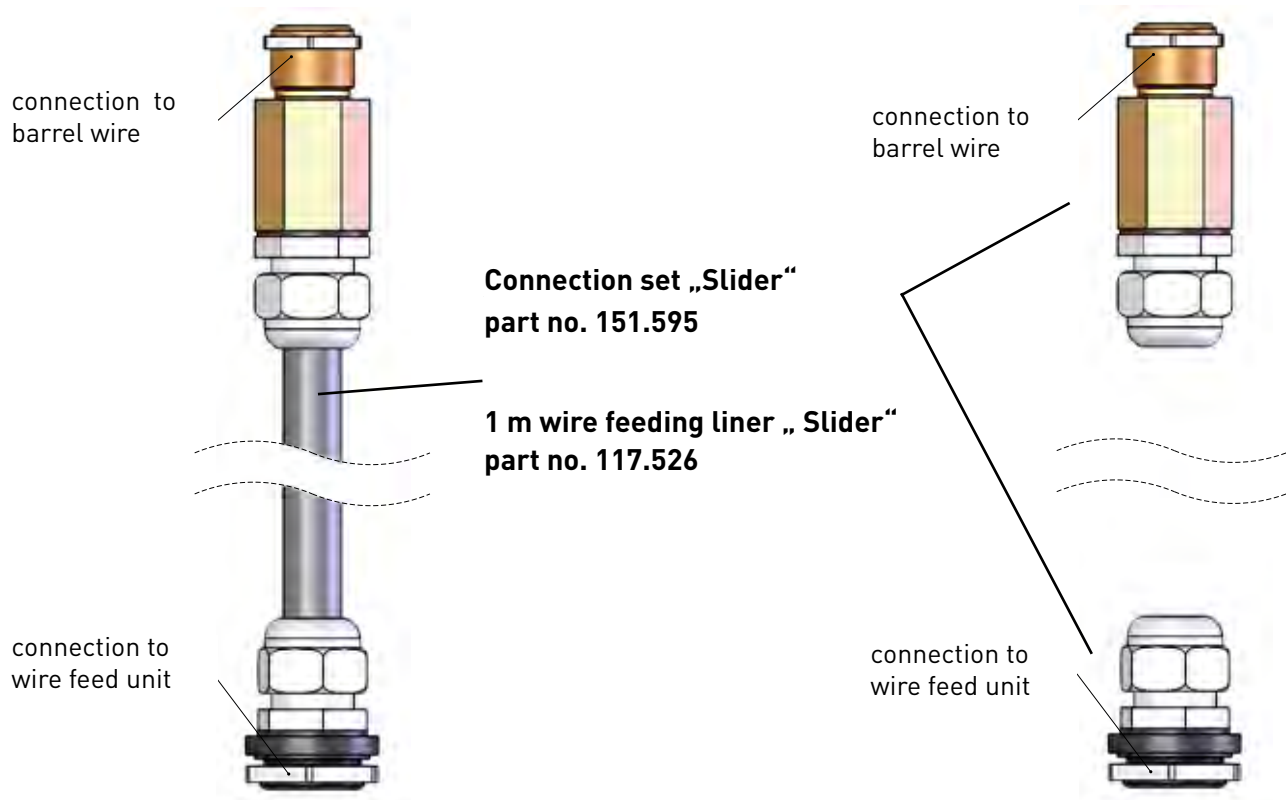
The inside of the reel off cabin is protected from dust through an intergrated rubber seal.
The device controls, controls for the spindle drive motors and the control instructions are mounted outside on the front of the housing.

Operation:

The spool is rolled into the cabin using the integrated spool ramp and is fitted into the spindle housing. The welding wire is then fed through the wire feed conduit, and into the wire feed gearbox in the welding unit. On closing the door of the Reel-Off device, a signal allowing rotation of the spool spindle is given.

On activation of the Reel-Off controls, the device adjusts the rate of wire feed dependant on pull off speed from the wire feeder being used..

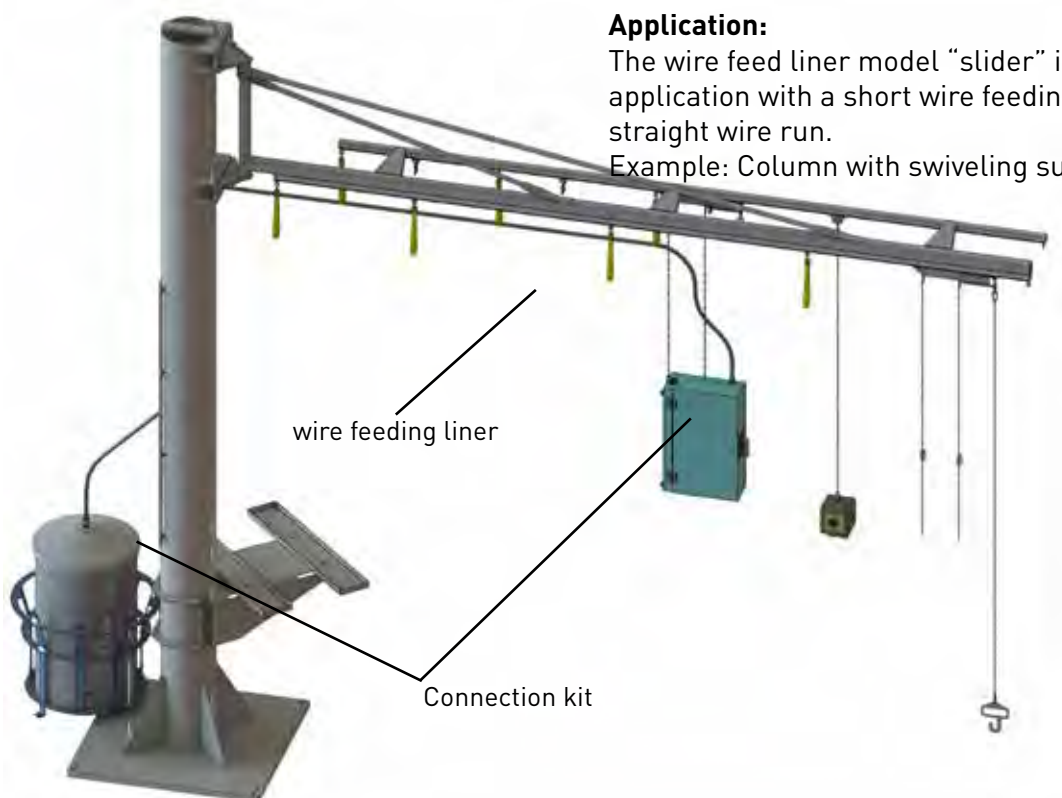
Wire feeding liner „Slider“



Application:

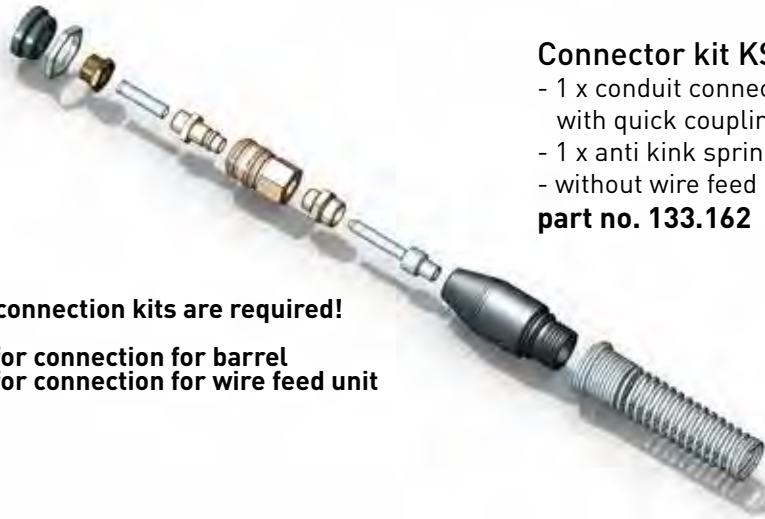
The wire feed liner model "slider" is used for all application with a short wire feeding distance and straight wire run.

Example: Column with swiveling support arm/boom



Dia. B - 4

Wire feeding liner „Roller“



Connector kit KSF consisting of:

- 1 x conduit connector with quick coupling
- 1 x anti kink spring
- without wire feed liner

part no. 133.162

Two connection kits are required!

- 1x for connection for barrel
- 1x for connection for wire feed unit

Dia. B - 5



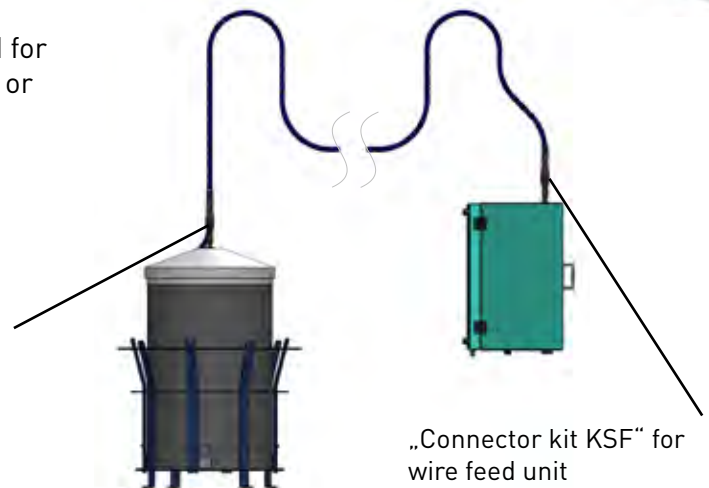
1 m wire feeding liner „Roller“
part no. 127.684

Dia. B - 6



Application:

The wire feed liner model "roller" is used for application with longer feeding distances or wire feeding through a drag chain.



Dia. B - 7

Option:

kink protection hose



Dia. B - 8

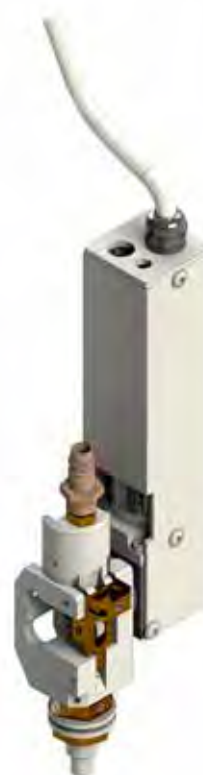
As an alternative to the anti king spring a kink protection hose is available as an option. When using this kink protection hose the wire feed liner is better protected against external damage. The kink protection hose can be partially or completely fitted over the wire feed liner. The exact lengths of the kink protection hose is needed when ordering.

1 m kink protection hose
part no. 133.166

The wire feeder push MINI is directly connected to the wire barrel and is used to support the wire feed drive.

Through a quick release coupler can be connected our Connector kit KSF (see page B-5) Art. Nr. 133.162 to the wire feeder Push MINI.

Thus, the wire drive can operate a machine-side equipment installed in the welding machine is required (Art.Nr. 145.444). The welding machine can also be retrofitted to operate with the wire feeder Push MINI.



Dia. B - 9



Dia. B - 11

Wire feeder PushMINI

supporting push feeder from wire barrel to wire feeder incl. connector for wire feed liner and 5 m cable

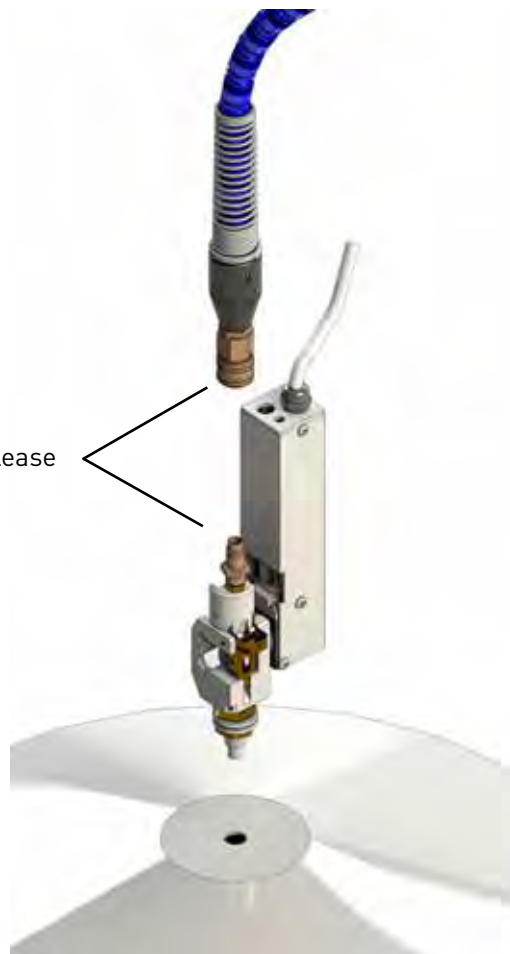
Art.Nr. 145.440

Kit for wire PushMINI

installed in series HighPULSE and SpeedMIG KW

Art.Nr. 145.444

quick release



Dia. B - 10



Large Spool Reel-off device

Price list

B

Page	Description	PrGr	Part no.	Price/€
	Reel-Off-Device			
B-2	Reel-Off Device ASV 300 for non-returnable large spools 300 kg	05	029.0.0100	5.020,00
B-3	Reel-Off Device ASV 40 for aluminium wire spools, heated incl. wire end recognition	05	110.130	8.500,00
B4	Wire feeding liner "Slider" Connection kit "Slider" consisting of: - 1 x connection to barrel wire - 1 x connection to wire feed unit - without wire feeding liner "Slider"	05	151.595	98,00
	Wire feed conduit 1m extension on above lengths (per 1m)	05	117.526	14,00
B-5	Wire feeding liner "Roller" Connector set KSF "Roller" consisting of: - 1x conduit connector with Quick release coupling - 1x anti kink spring - without wire feed conduit	05	133.162	119,00
	two connection-kits are required 1x for connection to wire feeder 1x for connection to barrel spool			
	1 m Wire feed conduit "Roller"	05	127.684	138,00
B-5	Option for "Roller": kink protecting hose extension in 1m length (per 1m)	05	133.166	23,80
B-6	Wire feeder PushMINI Wire feeder PushMINI supporting push feeder from wire barrel to wire feeder incl. connector for wire feed liner and 5 m cable	38	145.440	1.750,00
	Kit for wire PushMINI installed in series HighPULSE and SpeedMIG KW	46	145.444	435,00
	All prices per piece or 1 m. Changes reserved.			

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notes:



Water Cooling Units

Circulation cooling Unit WK 210 / 300 / 325

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Water Re-Cooling Unit ME-IK-V-4/T

C-3

Price list

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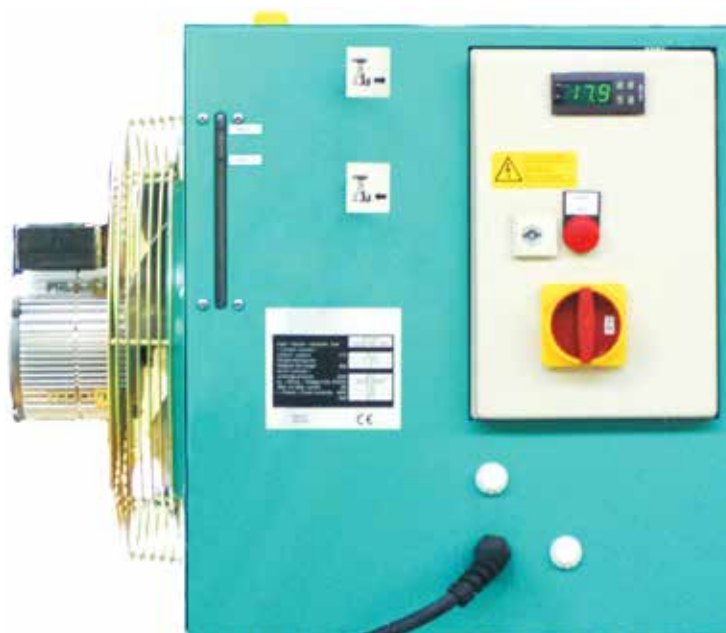
Water Cooling Units
Circulation cooling Unit
WK 210 / 300 / 325

C



Dia. C - 1 WK 210 / WK 300 / WK 325

Typ:	WK 210	WK 300	WK 325
Voltage:	1 x 230/400 V	1 x 230/400 V	1 x 230/400 V
Frequency:	50 Hz (60 Hz)	50 Hz (60 Hz)	50 Hz (60 Hz)
Power consumption:	1 A / 1,6 A	1 A / 1,6 A	1 A / 1,6 A
Pump:	Centrifugal 230 V	Centrifugal 230 V	Centrifugal 230 V
Rated output at a coolant temperature of +40°C:	2 kW	2 kW	2 kW
Coolant pressure:	3,5 bar	3,5 bar	3,5 bar
Tank capacity:	3 l	3 l	3 l
Isolating transformer:	400 / 230 V	400 / 230 V	400 / 230 V
Coolant pressure switch:	integrated	integrated	integrated
electrical connection:	cable	cable	cable
	with 6-pin plug	with 6-pin plug	with 6-pin plug
Coolant connection:	2 quick release connectors	2 quick release connectors	2 quick release connectors
Weight:	12 kg	20 kg	23 kg
Dimensions L x W x H:	575 x 210 x 215 mm	600 x 300 x 260 mm	650 x 325 x 260 mm
Part no.	143.136	026.1.0143	113.786



Dia. C - 2

Technical Details:	
Coolant	R134a
Rated output at a coolant temperature of +15°C:	4 kW
Operating temperature	25°C, max. 32°C
Noise emittance at 3m	58 dB (A)
Noise emittance at 10m	56 dB (A)
Pump type	NPY 2051
Tank capacity	15 l
pipe connection	DN 10
Airflow capacity	2600 m³/h
Compressor output	1,71 kW
Pump output	0,25 kW
Power	2,20 kW
Connection voltage	3 x 400 V/N/PE/50Hz
Control voltage	230 V AC
Max. Current	4,9 A
Control	Digital Thermostat
Housing	Stainless steel
Dimensions (L/W/H)	750/450/500 mm
Weight	85 kg

All switching and control electronics, thermostat and temperature display are installed in a dust protected cabinet. All cooling components are mounted onto a stable plate and are surrounded by a robust steel plate housing and protected against damage.

Water Re-Cooling Unit ME-IK-V-4/T
part no.113.040



Water Cooling Units

Price list

C

Page	Description	PrGr	Part no.	Price/€
	Water Cooling Units			
C-2	Water cooling unit model WK 210	46	143.136	990,00
C-2	Water cooling unit model WK 300	46	026.1.0143	990,00
C-2	Water cooling unit Type WK 325	46	113.786	1.200,00
C-3	Re-cooling unit model ME-IK-V 4/T	31	113.040	5.950,00
	Options for Cooling Units			
	Coolant ME-KM 20, 10 l for welding units to -20°C	07	107.822	29,00
	Connection socket WK, 6-pin. for TIG 300 DC LT 240 AC/DC, HighPULSE RS, HighTIG RS	46	103.675	57,00
	All prices per piece or 1 m. Changes reserved.			

Torch Positioning Systems

Linear Slide, Hand Stroke 40	D-2
Linear Slide, Hand Stroke 200 / 300 / 500	D-3
Compound Slide, Hand 3D - Adjustable Slide, Hand	D-4
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Torch Stand / 200	D-7
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Column & Boom ME-AT 4000	D-9
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**Linear Slide, Hand
Stroke 40**

Linear Slide Hand 40 mm

Application

For the fine adjustment of system components and welding torches

Main Areas of Use

Adjustment of sensors and torch heads

Construction

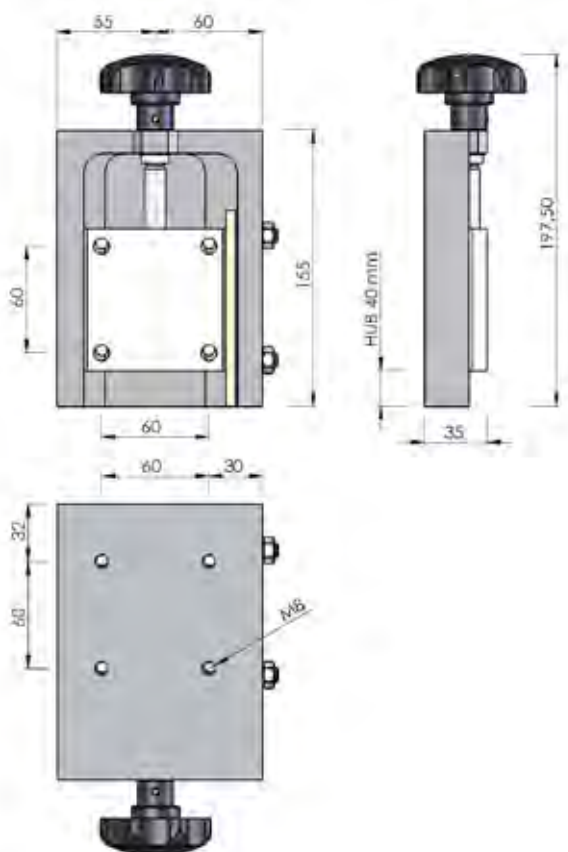
The base plate and slide body are constructed from billet aluminium

Dove tails with adjustable brass thrust faces

Adjustment over threaded spindle with star handle



Dia. D - 1



Dia. D - 2

Drilling Mount Pattern

Component standardisation 60x60 mm

4 x threaded holes M8
in base plate

4 x counter bored
holes for cylinder screws
M8 DIN 912 im in the slide

Weight: 1,4 kg
Stroke: 40 mm

**Linear Slide Hand
part no. 019.0.2500**

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**Compound Slide, Hand 3D -
Adjustable Slide, Hand**

Compound Slide, Hand

Application

Fine adjustment of components and welding torches
in 2 axis

Main Areas of Use

Adjustment of sensors and torch heads

Construction

The base plate and slide body are constructed from
billet aluminium

Precision dove tails with adjustable brass thrust faces

Adjustment over threaded spindle with star handle

2 x Linear Slide Hand part no. 019.0.2500,
are mounted together to form a compound slide.

Assembly bore pattern

Component standardisation 60x60 mm

4 x threaded holes M8
in base plate

4 x counter bored
holes for cylinder screws
M8 DIN 912 im in the slide

Weight: 2.82 kg

**Manual compound slide
part no. 019.0.1500**

3D Adjustable Slide, Hand

Application

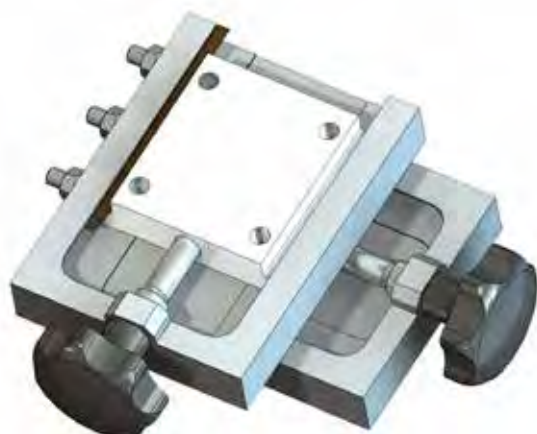
Fine adjustment of components and welding torches
in 3 axis

Construction

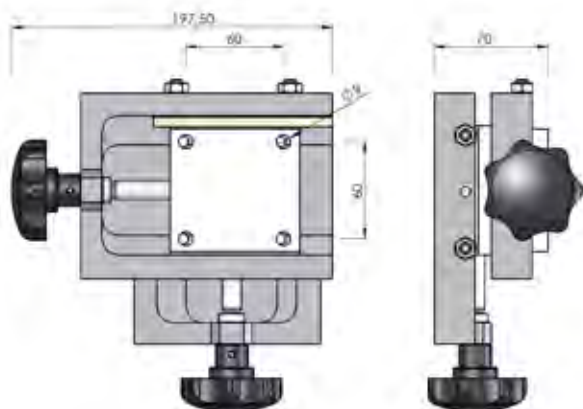
3 Linear Slide Hand, part no. 019.0.2500
1 Angle Plate part no. 019.0.1910,
are mounted together to form a 3 D adjustable slide.

Weight: 5,8 kg

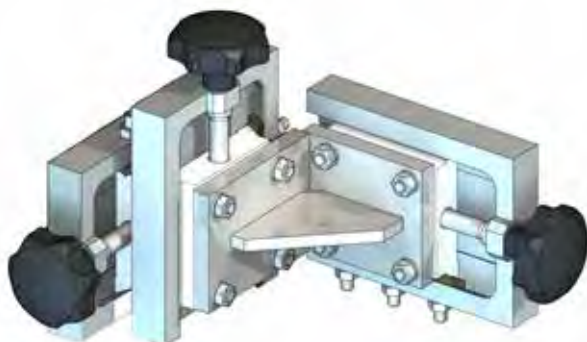
**3D - Adjustable Slide, Hand
part no. 019.0.1510**



Dia. D - 7



Dia. D - 8



Dia. D - 9

The torch and stand holder has been designed for holding and positioning the machine and robot torches.

When used as a mount for the tactile scanning stylus stand, this allows the sensor slides of the LS & KS series to be exactly position

The whole component has been manufactured from billet aluminium. The threaded adjustment holes are reinforced with steel wire thread inserts.

Technical Details:

Weight:	0.52 kg
Bore:	35 mm
Flange hole pattern:	4x8.5 60 x 60 mm

Torch and Stand Holder part no. 019.0.0201

The torch holder has been designed for machin-torch TM 450 and PM 400.

The whole component has been manufactured from billet aluminium. The threaded adjustment holes are reinforced with steel wire thread inserts.

Technical Details:

Weight:	0,50 kg
Bore:	46 mm
Flange hole pattern:	4 x 8,5 mm 60 x 60 mm

Machin-Torch holder TIG / Plasma part no. 131.994

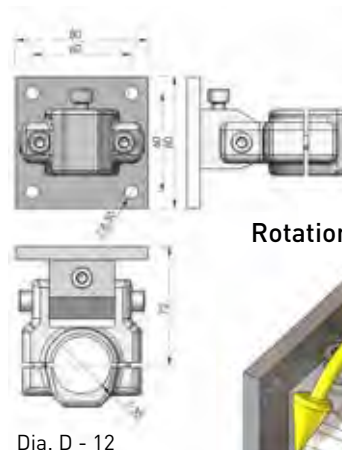
The machine welding torch ROB 505 W - PP can be removed and replaced into exactly the same position in the mounting clamp (TCP). The torch mount is also insulated.

The whole component has been manufactured from billet aluminium. The threaded adjustment holes are reinforced with steel wire thread inserts.

Technical Details:

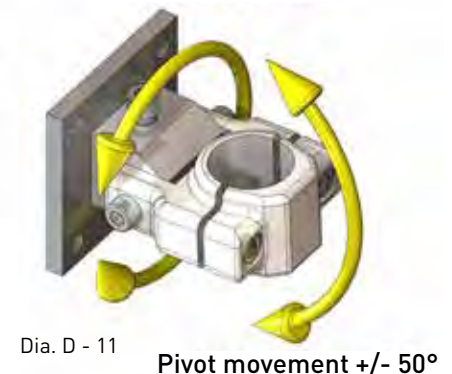
Weight:	0,66 kg
Bore:	35 mm
Flange hole pattern:	4 x 8,5 mm 60 x 60 mm

Machin-Torch Holder MIG / MAG part no. 152.232



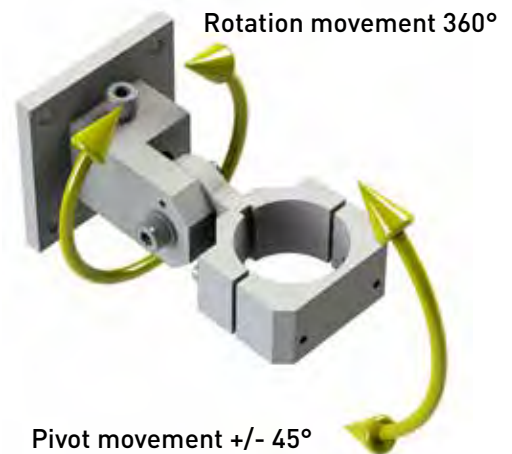
Dia. D - 12

Rotation movement 360°



Dia. D - 11

Pivot movement +/- 50°



Pivot movement +/- 45°

Dia. D - 13

Rotation movement 360°



Dia. D - 10

Pivot movement +/- 50°

Torch Stand / 30



The torch stand / 30 is designed to be solid and free from the influence of vibrations. The flange plate is standardised to match the Merkle-automaton components system.

The application is for the installation and initial positioning of SAW, MIG/MAG, TIG and plasma welding heads.

Both guide tubes are precision ground, and move accurately in cast iron guides.

Vertical adjusting is carried out with a precision threaded spindle and hand wheel.

Horizontal adjusting is carried out with a precision ground toothed rack drive and hand wheel.

Rotating movement around the vertical axis is carried out in the stand base.

All **stroke and rotating axis** are equipped with locking levers.

Technical Details:

Weight: 23.5 kg

Stroke:

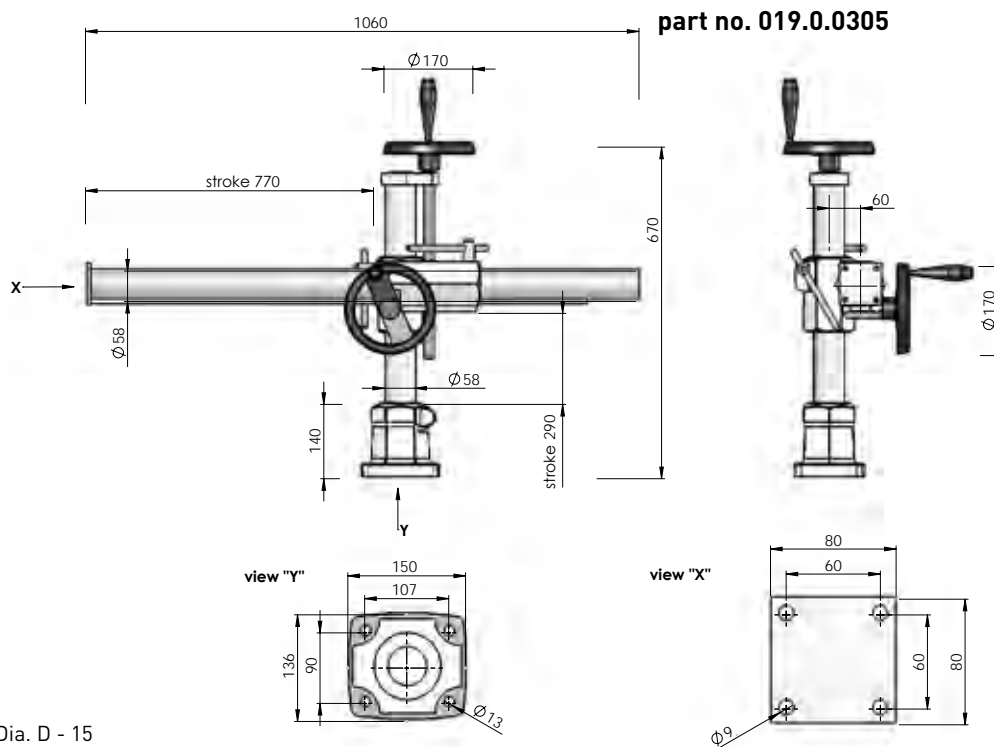
horizontal: 770 mm

vertical: 290 mm

Rotation in stand base: 360°

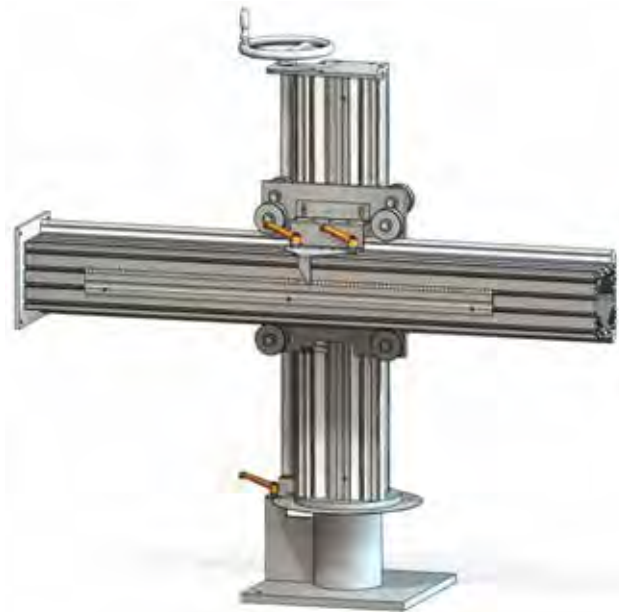
Max Loading (rack fully extended): 30kg

Torch Stand part no. 019.0.0305



Dia. D - 14

Dia. D - 15



Dia. D - 16

The **Torch Stand / 200** is designed to be solid and free from the influence of vibrations.

The application is for the installation and initial positioning of SAW, MIG/MAG, TIG and plasma welding heads.

Vertical adjustment is carried out with a precision threaded spindle and hand wheel.

Horizontal adjustment by hand on precision ground rails.

Stroke adjustment is achieved using an installed precision scale in mm.

Rotating movement around the vertical axis is carried out in the stand base.

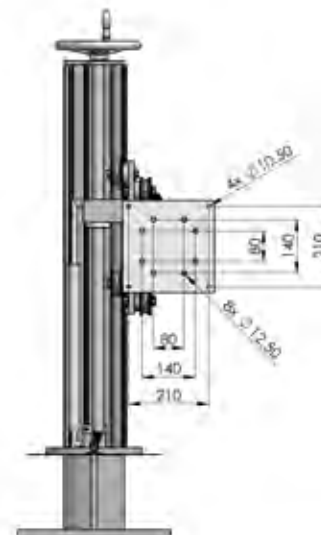
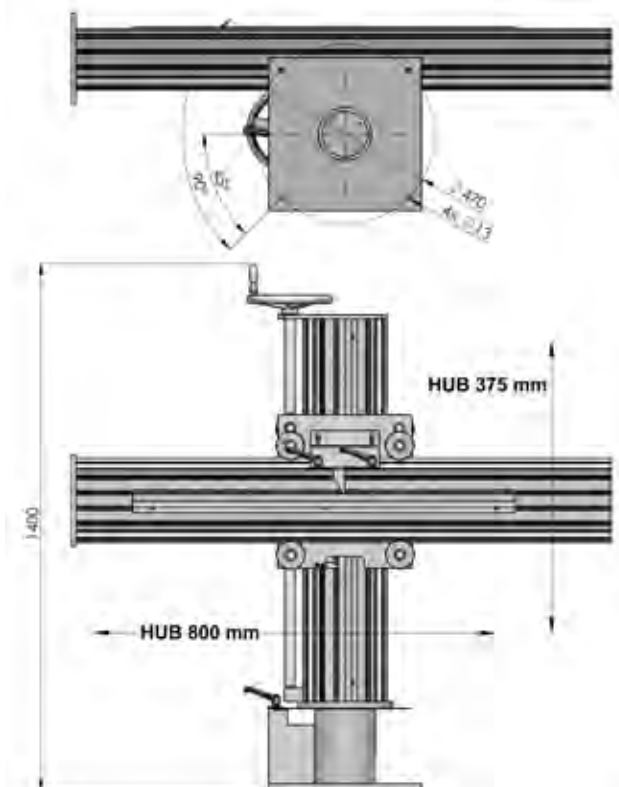
All **stroke and rotating axis** can be locked with locking levers.

Technical Details:

Weight:	approx.160 kg
Stroke	
horizontal:	800 mm
vertical:	375 mm
Rotation in stand base:	360°
Max loading:	200 kg

Special configurations on request!

Torch Stand / 200
part no. 124.106



Dia. D - 17

Column & Boom model Z-0021-337



The column and boom consists of 2 free moving precision driven guides for vertical and horizontal positioning.

The guides are driven by three phase electrical motors. The positioning of the rails is possible over a joystick on the control panel, or over a radio controller.

Max Travel Speed of Rails:

-vertical	8,3 cm/s (4.98 m/min)
-horizontal	5,0 cm/s (3.00 m/min)

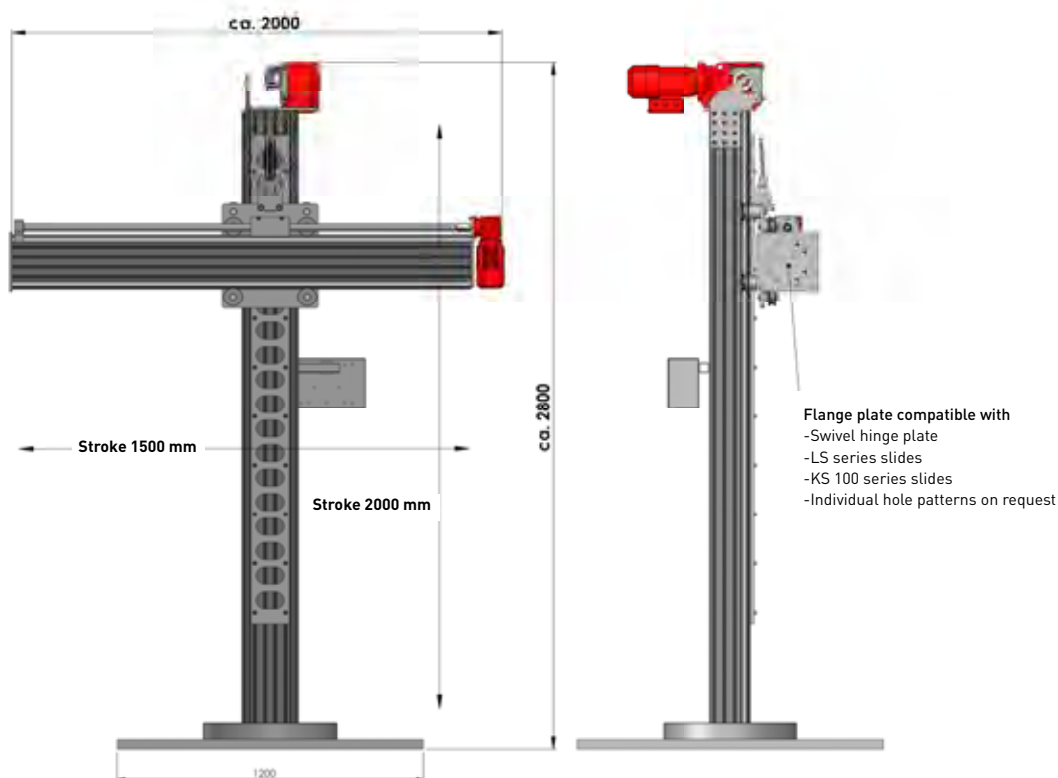
The column and boom can be rotated 360° using the installed ball joint connection and set using the installed locking device.

The controller is installed in a housing on the vertical column.

A welding head or jig can be mounted to the column and boom. Inner or outer circumferential welds on containers, silos or pipes with a max Dia of 2000 mm \varnothing are possible.

Attached jigs or systems up to a max loading of 200kg can be installed

Dia. D - 18



Dia. D - 19

Column & Boom model Z-0021337
part no. 132.022

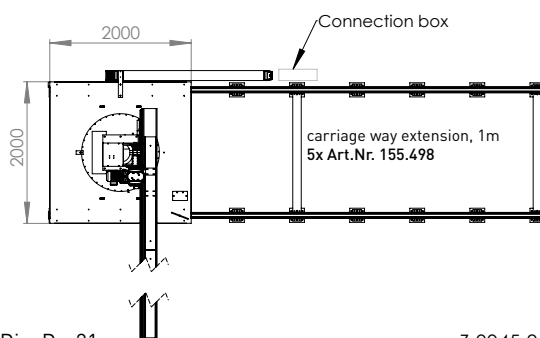
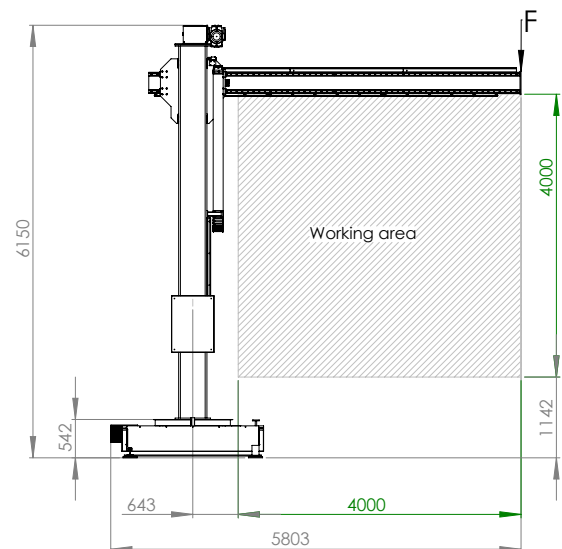
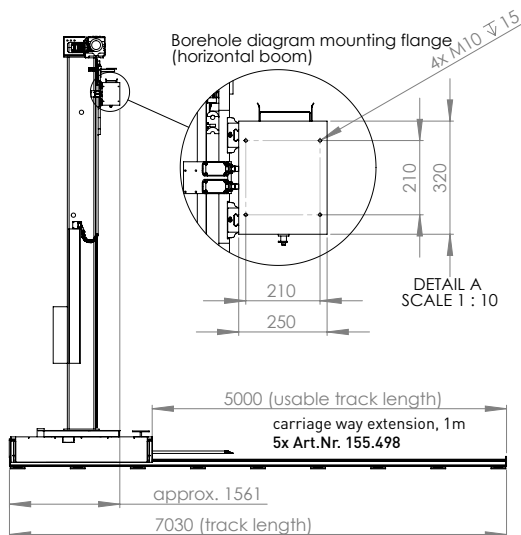
The long welder travel distance in the vertical and horizontal direction, make it extremely versatile and ideal for welding girth welds and longitudinal seams on larger workpieces. To extend the range of action of the column and boom, it is mounted on a trolley with track, available in any length. Alternatively, the column and boom can be fixed to a rigid base plate, which has then to be bolted onto a suitable concrete base.

Technical specifications:

Weight:	5.3 t
Depth:	6,800 mm
Width:	8,200 mm
Height (with trolley):	6,100 mm
Vertical stroke:	4,000 mm
Vertical speed:	
per joystick:	rapid/creep speed
Horizontal stroke:	4,000 mm
Horizontal speed:	
Welding speed:	6-600 cm/min
per joystick	rapid/creep speed
Max. vertical load-bearing capacity F (on the horizontal flange):	2800 N
Rotary bearings:	+/- 180°
Manual rotation/ and clamp-on (optional: motorized swivel)	
Track:	2,3 m (stroke = 0 m; can be extended)
Manually movable / and clamp-on (optional: motorized slide)	carriage way extension ME-AT-4000, 1m part no. 155.498



Dia. D - 20



Dia. D - 21

Z-0045-957

Vertical column and horizontal boom

- Structural hollow section
- Machined mounting surfaces for the guide rails
- Two recirculating linear ball bearing tracks mounted as a guide track
- Vertical and horizontal stroke, both 4000 mm
- Safety locking mechanism for the lifting motion

Vertical drive

- Regulated three-phase gear motor with frequency inverter
- Three-phase geared motor with a standstill brake controlled with a joystick for creep and rapid pre-set speeds
- Stroke limitation with safety end-switches
- Lifting motion with roller chain

Horizontal drive

- DC gear motor with speed control
- Positive connection for power transmission with zero-backlash, dust-insensitive toothed bars
- Controlled with a joystick for rapid and creep pre-set speeds
- Stroke limitation with safety end-switches

Controls

- Mounted on the control panel on the vertical column
- Cable routing in energy chains or channels to the users
- Control includes activation of the drives of the column and boom

Control panel

- External radio-controlled panel for operation of the system with mounted controls for the column and boom and an emergency-off switch

Column & Boom ME-AT 4000

included:

- vertical and horizontal stroke motorized by wireless remote control
- pivot bearing (rotatable and clampable by hand)
- carriage with 2,3 m carriage way (stroke = 0) (movable and clampable by hand)
- railway extension separately
- without welding technology

Art. No. 154.368

Typical assembly of a ME-AT 4000 Column and Boom

The adjacent ME AT 4000 column and boom with 5 m track is equipped with a submerged welding head and corresponding welding technology.

Construction of the submerged welding head:

- The mounted welding head with a swivel joint can be turned 90°, e.g. for welding rotating parts on a roller block, when the welding seam runs parallel to the track
- Minor deviations from the horizontal can be compensated with an additional swivel bracket
- Fine adjustment of the burner for the welding seam is by means of an LS-series cross slide during the welding process using radio remote control
- To aid adjustment the welding torch, an optical laser, projects a beam onto the work piece
- The wire feed system is designed for submerged welding rods and wires to max. Ø 3.2 mm
- In addition, the welding head has automatic powder feedback

Control panel

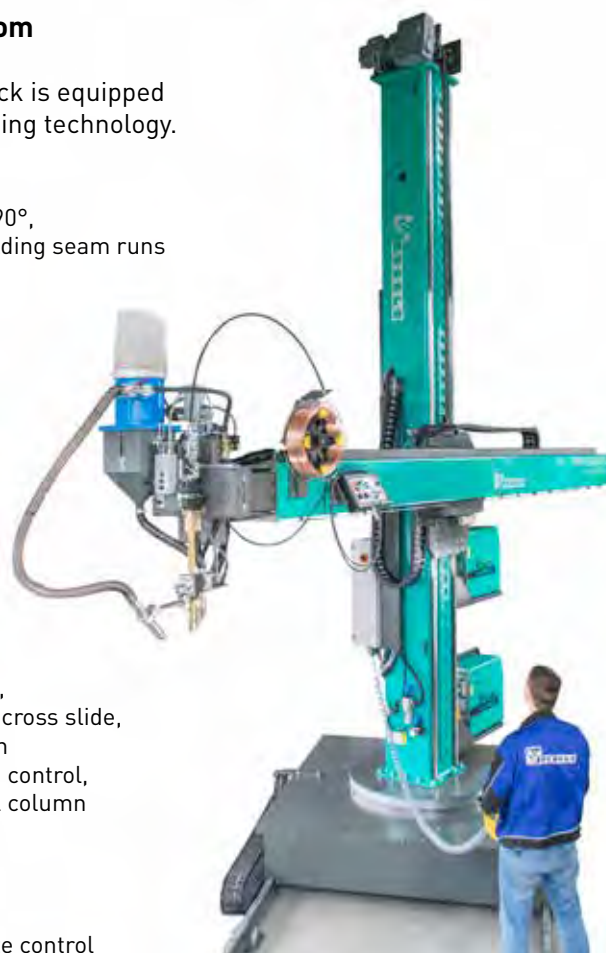
- An external radio control panel is used to operate the system, in which are mounted the controls for the column and boom, cross slide, submerged welding head, as well as an emergency-off switch
- Operation of the welding power sources can be with a remote control, or directly at the power sources, on a pedestal on the vertical column

ME-AT 4000 Column and Boom

Includes:

- Vertical and horizontal motorized lift operated by radio remote control
- Turntable (rotation/and clamping by hand)
- Trolley with 5m track (manual slide and clamp)
- Submerged complete welding head
- Control system for column and boom and submerged welding head

Art. No. 153.728



Dia. D - 22

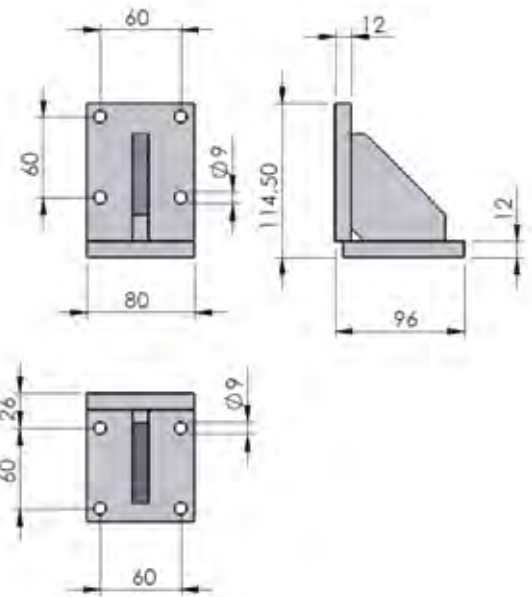
Angle Plate

part no. 019.0.1910

Used for mounting components at an angle of 90° to each other



Dia. D - 23

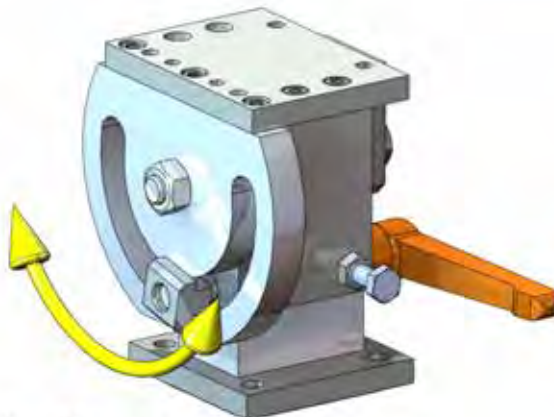


Dia. D - 24

Pivot Bracket

part no. 151.062

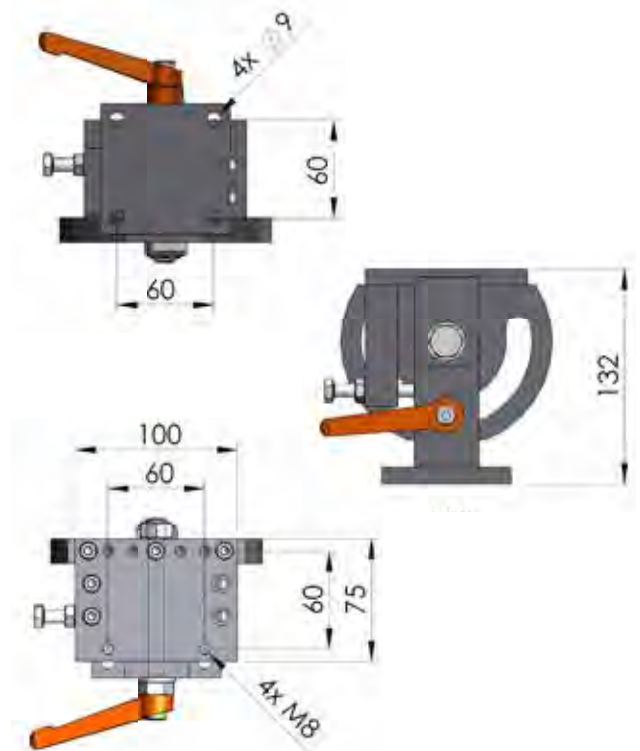
Used for mounting components at an angle of 0° - 180°



Pivot movement +/- 90°

Dia. D - 25

By using the delivered stop, rotational movement is limited to 0° - 90° or 90° - 180°. Without the stop, the full rotational movement of 0° - 180° is available for use.



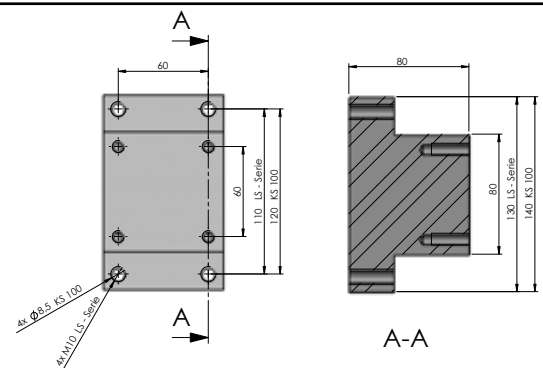
Dia. D - 26

Intermediate Flange for
Slides in the LS-Series
part no. 122.978



Dia. D - 27

Intermediate Flange
for KS 100
part no. 128.764



Dia. D - 28

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Torch Positioning Systems

Pneumatic Stroke Carriage // stroke = 100mm

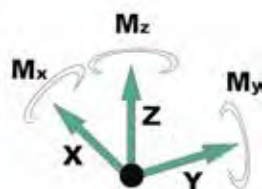
D



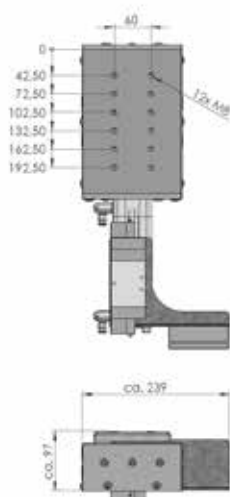
Technical Details:

Loading F:	300 N
max. torque My:	75 Nm
Stroke:	100 mm
Lifting force:	870 N at 6 bar
Weight :	11,2 kg

Pneumatic Stroke Carriage part no. 019.0.1844



Dia. D - 29

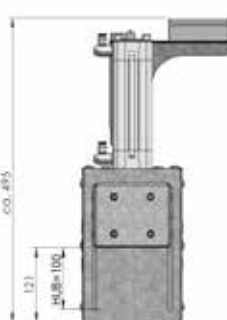
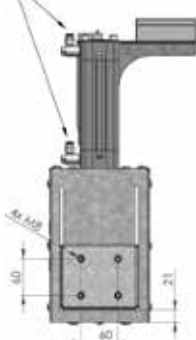


The stroke carriage is used for a simple, fast action setting or positioning of the welding torch or jigs. Especially useful when the operating position of the jig or torch blocks access to the clamping device (chucks etc) and prevents a fast change of components to be welded

The stroke range is achieved through a double acting pneumatic cylinder. The carriage is fitted with 2 position sensors and maintenance free, light action guides.

The stroke range is 100 mm.
Delivery including 5/2-direction control valve.

Anschluss für Pneumatikleitung
außenkolibriert Ø = 6 mm



Pneumatic Stroke Carriage part no. 019.0.1844

Dia. D - 30



Technical Details:

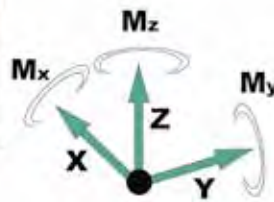
Loading F:	550 N at 200 gravity distance
max. torque M_y :	110 Nm
Stroke:	see below in table
Lifting force:	870 N at 6 bar
Weight :	see below in table

Pneumatic Stroke Carriage part no. 139.102

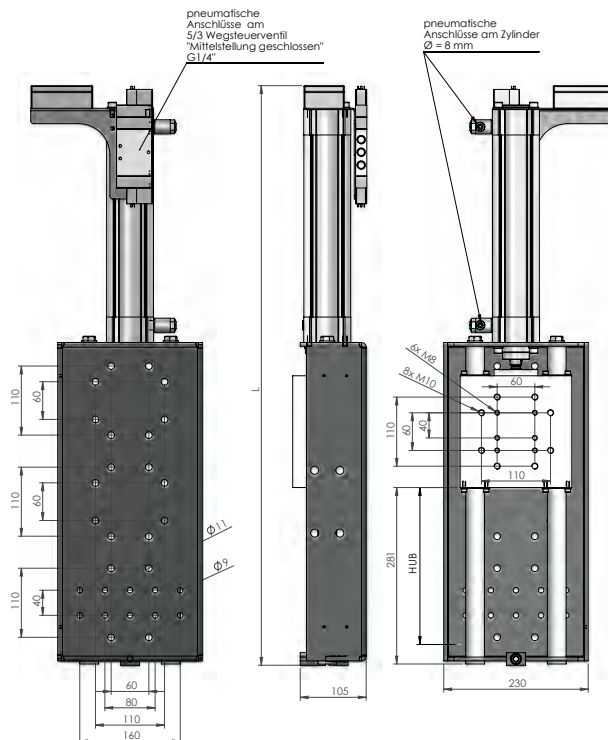
The stroke carriage is used for a simple, fast action setting or positioning of the welding torch or jigs. Especially useful when the operating position of the jig or torch blocks access to the clamping device (chucks etc) and prevents a fast change of components to be welded

The stroke range is achieved through a double acting pneumatic cylinder. The carriage is fitted with 2 position sensors and maintenance free, ball bushing guides.

Delivery including 5/3-direction control valve.



Dia. D - 31



model	dimension L (mm)	stroke (mm)	weight [kg]
LSP 425-150	823	150	ca. 31
LSP 425-250	923	250	ca. 35

Pneumatic Stroke Carriage LSP 425-150 part no. 149.172

Pneumatic Stroke Carriage LSP 425-250 part no. 139.102

Dia. D - 32

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**Controller model E012 for Slides/
Carriages and Horizontal Banks**



Dia. D - 33

The type **E 012 controller** is used for coordinating the drive on the tachometer driven motors in the **LS 425 to LS 1500 series electrical slides** and the **horizontal welding banks part no. 151.149 and 119.662**

The controller is connected over connection sockets and cable with the slides or welding banks. The RPM control is stepless. The RPM governor is designed to work with 24 volt tachometer controlled motors

The installed four quadrant controller monitors the tachometer voltage and allows a stepless RPM setting in the control range 1:100.

The RPM Governor is electrically isolated over a transformer from the main power supply, Operating voltage is 42 volts

The cabinet form and mounting points are uniform, with parallel running electrical control and switching units.

The following operating modes are available:

Automatic:

On pressing the START button, the slide or carriage moves to the welding start position. After the arc has ignited (sensed through the floating relay contact in the power source) the drive motors are activated and travel/welding commences. At the end of the weld, the arc and drive stops, and a (time delayed) return drive is instigated. The return drive then stops at the weld start position and the next weld can be activated. Slide/carriage start position, weld start and stop are adjusted over contact switch cams. Optionally, sensors (proximity) can be used.

Hand:

In hand mode, the running rails can be moved to any position using the joystick (forwards and backwards). By pressing the START button, the welding process and travel begins, and is stopped either manually by using the HALT button or on contact with the end switch cam "weld end"

Control Elements - Functions

Main switch with control lamp:	On/Off
Potentiometer:	Travel Speed
Switch:	Hand/Automatic
Joystick:	Forwards / Bacwards / fast and slow modes
Button:	Start
Button:	Stop
Ratchet button:	Emergency Stop
Connection voltage:	230-240V / 50-60Hz
Supply cable:	5 m, 3x2,5 mm2 with Schuko plug
Weight:	11,9 kg

**Controller model E012 for Slides/Carriages and Horizontal Banks
part no. 130.062**



Dia. D - 34

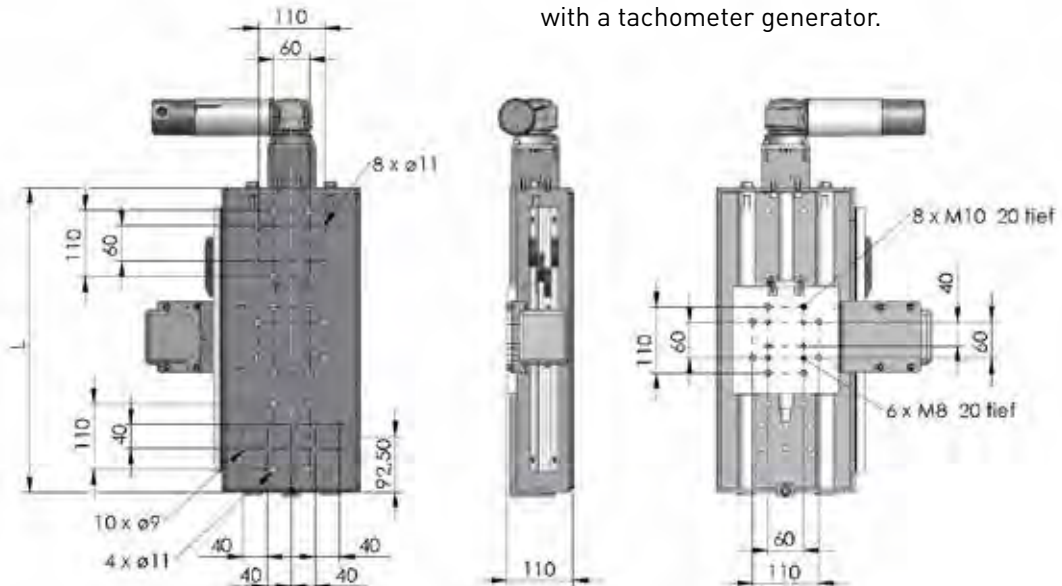
The LS slide series are motor driven to enable mechanical movement and positioning in the vertical or horizontal axis. These units are used in special machine construction to allow mechanised guided movement of the torch or jigs. They are all equipped with a Quad contact switch unit consisting of the following components:

- 1 contact switch (Quad)
- 1 Slot Plate (x 4 slots)
- 4 Contact switch cams

The slide units and controller are connected using a plug cable of 1.5m. The controller can be mounted directly on the slide body, or separately. (use of a longer control cable is necessary).

The slide units are delivered with DC shunt wound motors, a spindle pitch of 5mm and a travel speed of 1 - 45cm/m (0.01 - 0.45m/min).

The LS series slides are controlled using the E 012 controller. Displayed is the controller (s. D-11) for a single slide unit. We can also configure the controller to be used with multiple slides. To ensure an accurate feed speed within the control range of 1:100, the DC Shunt wound motors are equipped with a tachometer generator.



Dia. D - 35

model	Dimension L Length	Stroke	Weight [kg]	Loading at 200 mm Extension [N]	Part no.
LS 425.2	507	270	31	550	151.918
LS 525.2	607	370	32	500	151.919
LS 625.2	707	470	33	450	151.920
LS 750.2	856	600	36	400	121.246
LS 1500.2	1540	1270	100	700	151.902



Dia. D - 36

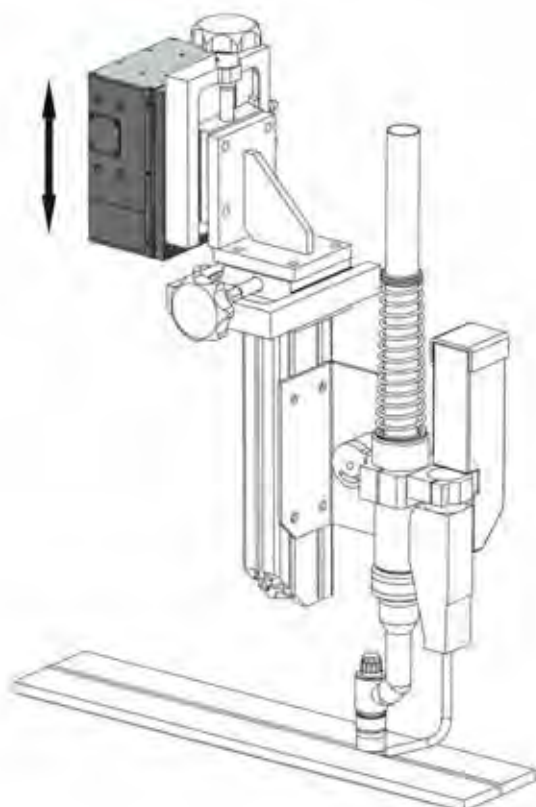
Using the E 101 type controller enables the motorised slide to be driven indirectly using signals gained from the length of the welding arc (voltage).

The automatic vertical adjustment of the welding torch using the arc voltage as reference is used in the TIG and Plasma welding (and cutting) process. The arc length can be set with the potentiometer on the controller. In **HAND** mode, the torch to work piece distance is manually adjustable (stepless). In **AUTOMATIC** mode, the slide (and therefore the arc length) is adjusted automatically dependent on arc voltage.

With the installed potentiometer for horizontal movement, the slide travel speed and therefore the reaction speed of the arc voltage compensation can be manually adjusted.

The RPM Controller and drive motor are electrically isolated from the supply voltage and use a 24 volt supply. For use in automation systems, the controller is integrated into the main switch cabinet and assumes the function of a memory programmed SPS controller.

Arc Length Monitoring/Adjusting Controller model E 101 part no. 102.743



The Motorised slide is controlled by the E101 controller. The voltage in the welding arc is held constant through automatic vertical movements of the motorised slide. Through this, we maintain a constant torch to workpiece distance and a constant weld/heat input.

Motorised Slide for Arc Length Compensation Stroke 30 mm part no. 128.494

Dia. D - 37

Sensor Controller model E062 / E062-KS / E063 for Motorised Slides in the LS and KS Series



Dia. D - 38

The sensor controller is the interface between the weld tracking sensors (laser or tactile) and the LS and KS series motorised slides. Sensing signals from the sensor heads are converted into driving signals for the slide motors.

The Sensor Controller, (based on 2 axis), is used mainly in the welding of horizontal and circumfrential welds, or when welding drawn out (unsymmetrical) radial or curved joints.

The height and sideways deviations in the joint construction to be welded are captured by the sensing stylus or laser, and transmitted as electrical impulses over the controller to the motorised slides. An automatic tracking and correct torch positioning throughout the welding cycle are thus guaranteed.

Pre-requisites for a succsesfull joint capture are:

- Tactile Tracking:** 60° joint prep with a minimum of 3mm edge or corner/lip height as guide
- Optical Laser Tracking:** Hi/Lo, lip or air gap of at least 0.2mm

Control of the motorised slides in **HAND** mode with Joystick.

Sensor Controller	model E 062 model E 062-KS	Signals for Controller of Stylus Heads (digital)
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Sensor Controller	model E 063	Signals for Controller of Laser Heads (analog)
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User panel and functions of the sensor controllers model E 062 and model E 062-KS	User panel and functions of the sensor controller model E 063
--	--

Main Switch with control lamp:	On/Off
Potentiometer:	Travel speed of the vertical slide
Potentiometer:	Travel speed of the horizontal slide
Switch 1:	Pre-load left or right
Switch 2:	Hand/Automatic
2 step Joystick:	Motorised Slide fast/slow up/down - right/left
Ratchet Switch:	Emergency Stop
Supply Voltage:	230-240V / 50-60Hz
Supply Cable:	5 m, 3x2,5 mm2 with Schuko plug
Connection Cable:	1,5m with 24 pin plug
Weight:	9,8 kg

Main Switch with control lamp:	On/Off
Switch:	Hand/Automatic
2 step Joystick:	Motorised Slide fast/slow up/down - right/left
Ratchet Switch:	Emergency Stop
Supply Voltage:	230-240V / 50-60Hz
Supply Cable:	5 m, 3x2,5 mm2 with Schuko plug
Connection Cable:	1,5m with 24 pin plug
Weight:	9,8 kg
Control lamp:	On/Off

Controller model E 062
for 2 Linear Slides LS Series
part no. 118.324

Controller model E 062-KS
for Compound Slide KS 100
part no. 118.582

Controller model E 063
for Compound Slide LS-Series with
laser seam tracking (p. D-18)
part no. 127.068

Compound Slide model KS 100

The Compound Slide model KS 100 is constructed from billet aluminium and is extremely light. It can be used as an alternative to the LS series slides

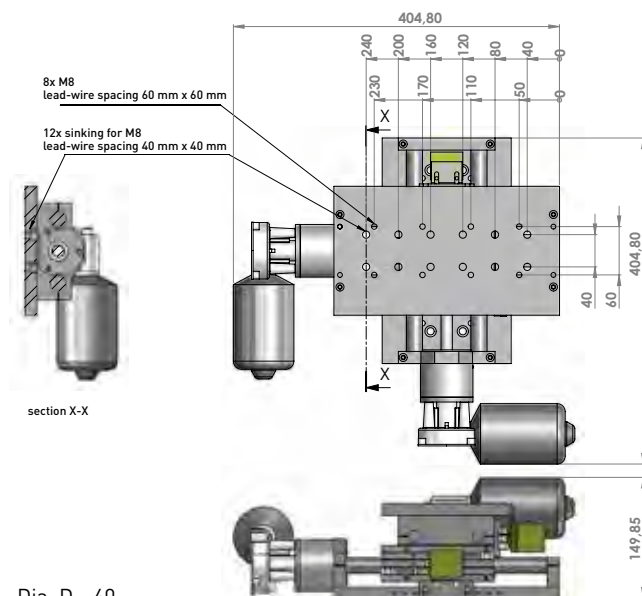
We recommend using the KS 100 for

- The torch positional correction of horizontal and circumferential welds
- For mounting on the static circumferential welding system model Z-0006598 and for the mounting on Torch Stand part no. 019.0.305.

The Vertical and Horizontal stroke is 100 mm.

The construction and dimensions of the KS 100 are identical to the LS series slides. The Controller model E 062-KS is used with Compound Slide KS 100.

Dia. D - 39



Dia. D - 40

Technical Details:

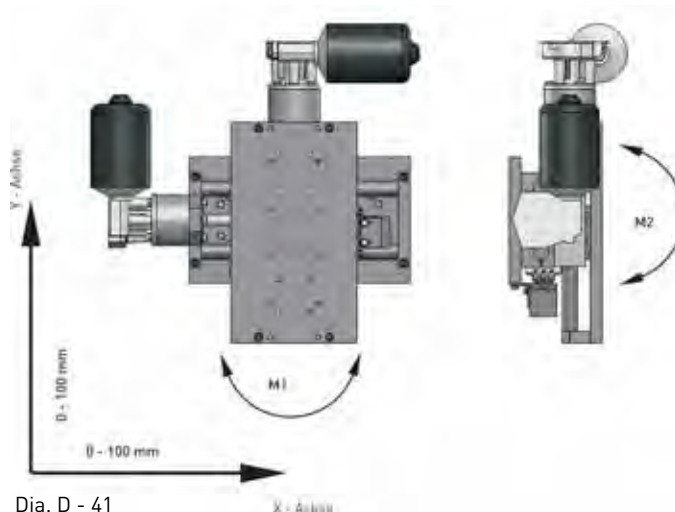
Stroke:	100 mm
Travel Speed:	10 – 40 cm/min
Axial Force (axis):	150 N
Loading M1/M2:	22,5 Nm
Weight:	11,5 kg
Voltage:	24 V DC

Compound Slide KS 100

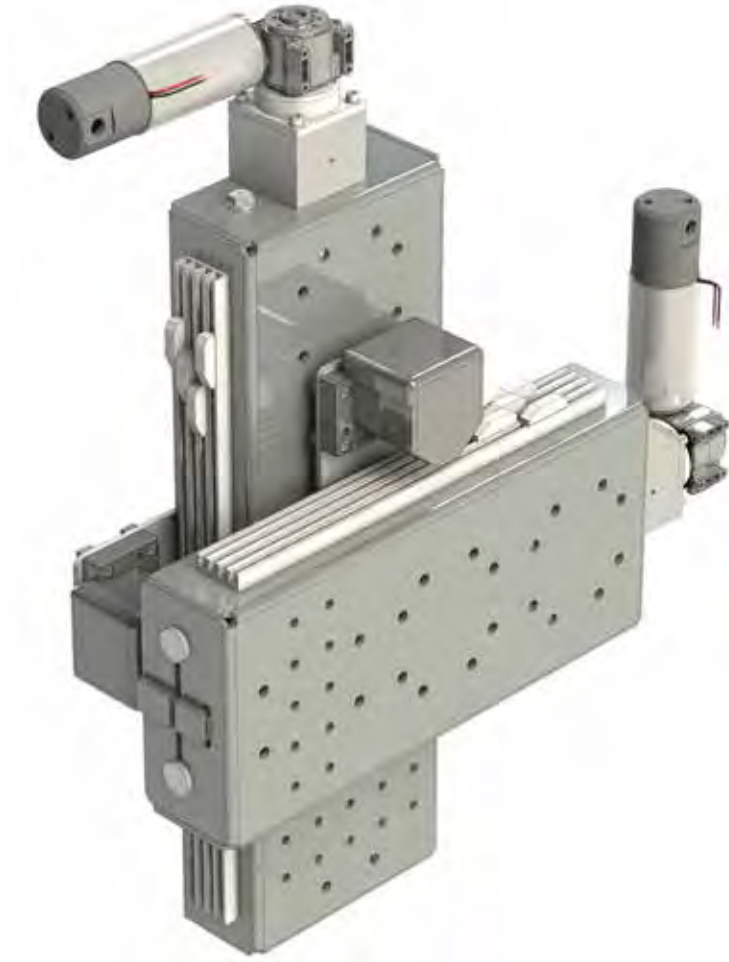
part no. 102.829

Sensor Controller model E 062-KS is used for controlling the KS 100 compound slide

part no. 118.582



Dia. D - 41



Dia. D - 42

LS Series Compound Slides with Sensor System:

All linear slides can be combined to make a compound slide E.g. LS 425.2 with LS 625.2.
 Standard construction with the model LS 425.2, Stroke 270 mm.

Consisting of:

Options:

1 Slide model LS 425.2	part no. 151.918
horizontal Stroke 270	
1 Slide model LS 625.2,	part no. 151.920
vertical Stroke 470 mm	
Torch Mount	part no. 019.0.0201
Compound Slide, Hand	part no. 019.0.1500
Tactile Sensor Head	part no. 121.060
Sensor Head Mounting	part no. 102.727
Angle Plate	part no. 019.0.1910
Controller model E 062 for	
compound Slide LS Series	part no. 118.324

Tactile Sensor model TK 15



Dia. D - 43

The Tactile sensor is used to track the joint seam in the X (left/right) and Z (up/down) axis.

The X and Z impulse signals are transferred to the sensor controller and then relayed to the motors on the slides giving a constant and reliable tracking of the weld seam.

Various exchangeable stylus tips are available to enable a constant and precise sensing when riding over spot welds, stamped holes etc.

Weight: 1,7 kg

Tactile Sensor model TK 15 (with Stylus R=2 mm)
part no. 121.060



Dia. D - 44

Tactile Sensor Mount

To fix the tactile sensor in the correct pre-load position, a mount with multiple adjustment possibilities is necessary.

The sensor mount is so constructed as to be torsionally rigid and robust enough to withstand the pre-load forces transmitted from the sensor stylus.

The standardised hole mounting pattern of 60 x 60mm fits in perfectly with the rest of our automation programm.

The mount makes it possible to mount the tactile sensor together with the torch holder and sensor mount allowing the necessary rotation to attain the pre load position.



Dia. D - 45



Dia. D - 46

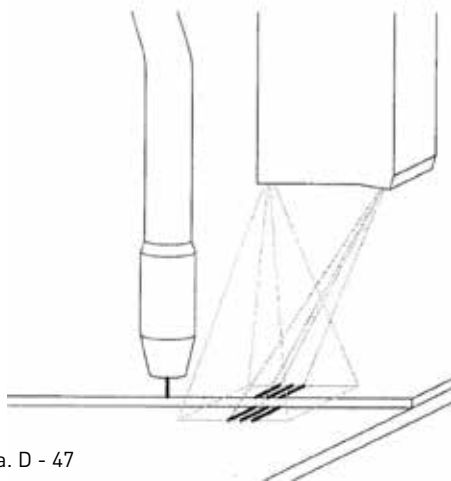
Tactile Sensor Mount
part no. 102.727

Sensor head

The sensor head scans the joint position in the **X** and **Z** axis.

The sensor head is fitted leading the welding torch and generates optical information about the welding joint.

The sensor head illuminates the welding joint with three parallel light beams.



Dia. D - 47



Dia. D - 48

The analog X/Z signals generated by the Sensor head are relayed over the type E 063-LA sensor controller to the drive motors on the motorised slides.

To enable a successful scanning of the joint, a Hi-Lo, lip, or an air gap of at least 0.2mm (0.008") is required.

Controller model E 063-LA
For LS-Series Compound Slides
with optical laser tracking
part no. 157.522

Digital/Analog Control Unit
for optical laser tracking
Art. Nr. 157.012

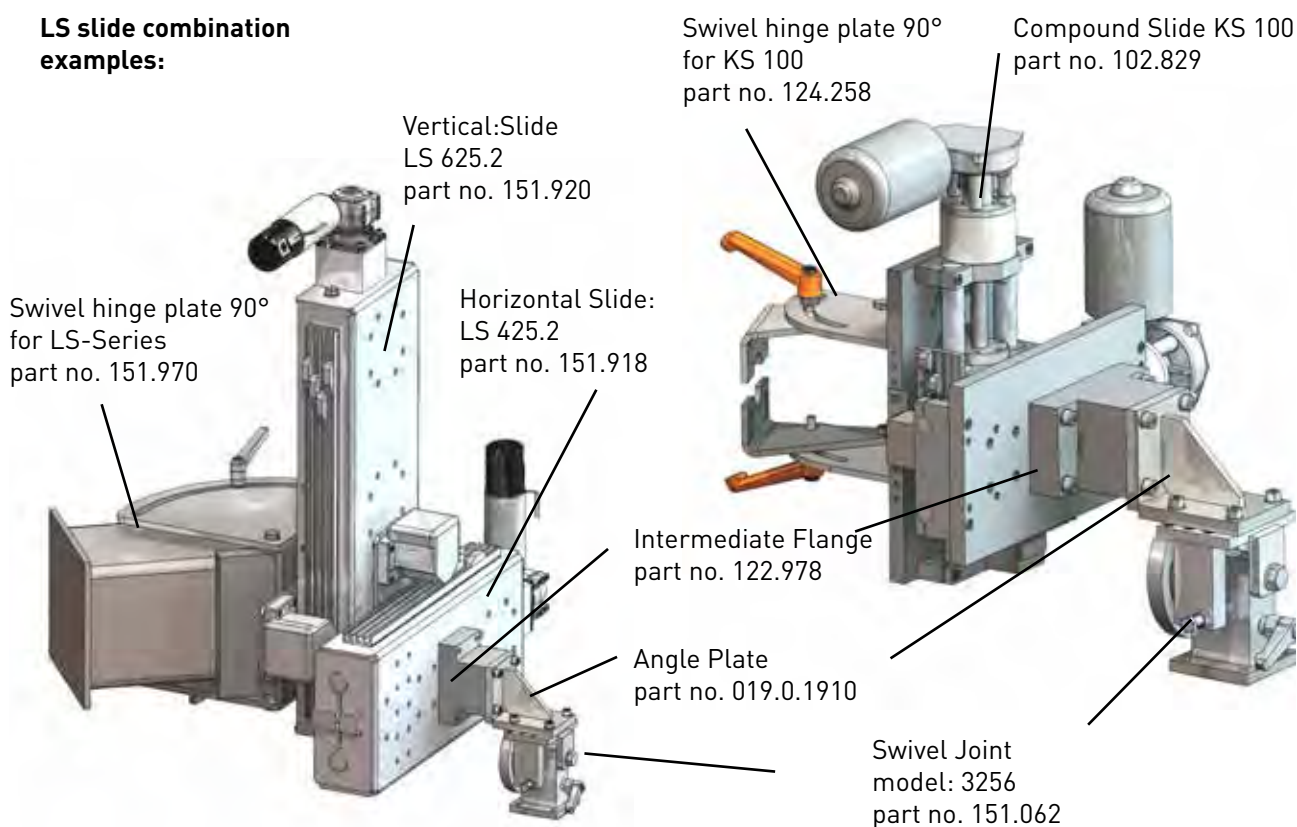
Optical laser tracking with equipment
and configuration software for Windows
without Industry PC
Art. Nr. 156.598

A
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I
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K
L



Application of Swivel Hinge Plates with Compound Slide LS-Series & KS 100

LS slide combination examples:



Dia. D - 49

Using this positioning system, the following types of torch mount can be flanged onto the swivel joint type 3526.



Dia. D - 50 MIG/MAG Torch Mount simple (s. Chapter F)



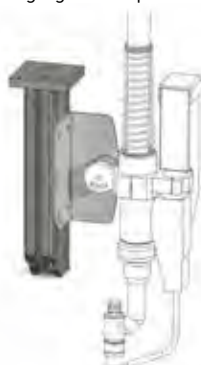
Dia. D - 51 TIG - Torch Mount with Purging (s. Chapter F)



Dia. D - 52 Plasma - Torch Mount with Purging (s. Chapter F)



Dia. D - 53 MIG/MAG Torch Mount for Tactile sensing (s. Chapter F)



Dia. D - 54 TIG - Torch Mount without Purging (s. Chapter F)



Dia. D - 55 Plasma - Torch Mount without Purging (s. Chapter F)

Compound Slide KS 100 with Tactile Sensor

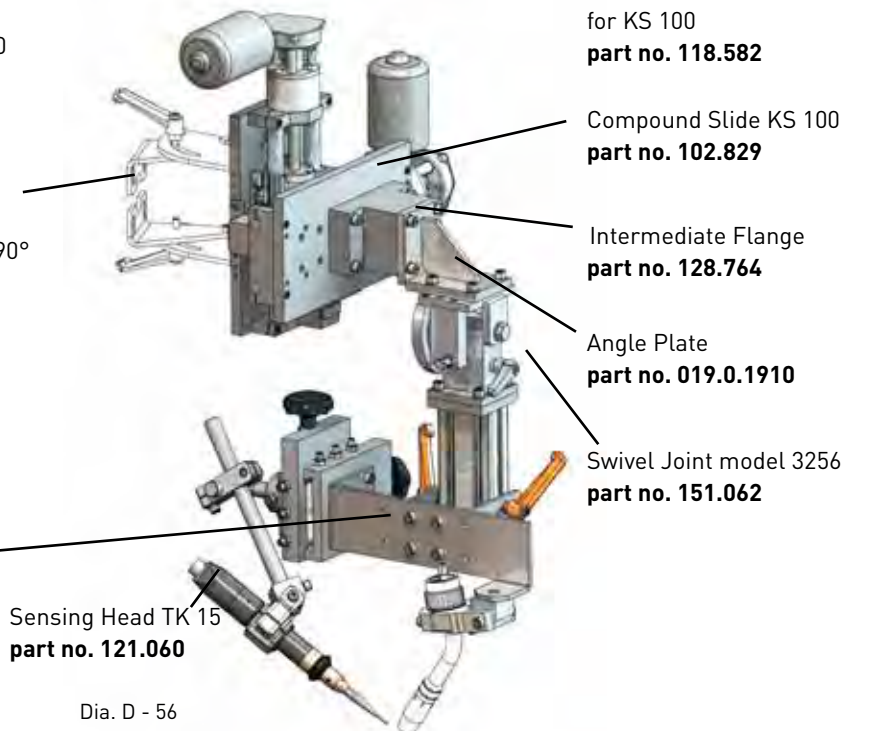
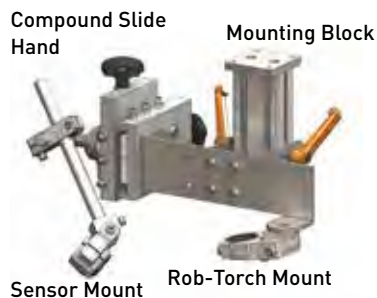
-without Pivot Hinge Plate for KS100
-without Machine Welding Torch
part no. 124.242

Option:
Pivot Hinge Plate 90°
for KS100
part no. 124.258

MIG/MAG Torch Positoner
for Tactile sensing
part no. 124.044 (s. Chapter F)

Consisting of:

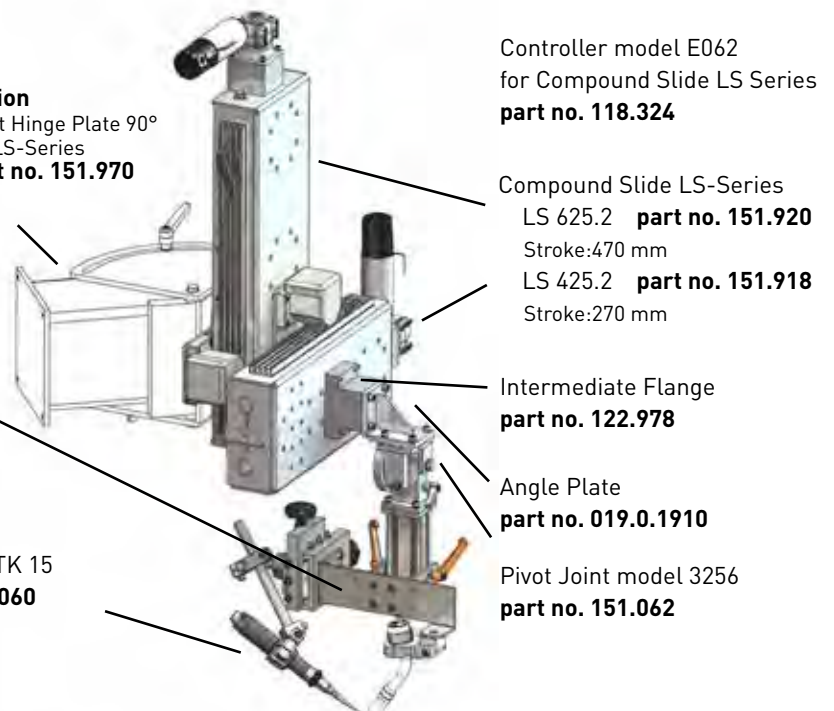
- Compound Slide, Hand
Stroke 40 mm
- Sensor Mount
- Rob-Torch Mount
- Mounting block
Pivot Range +/-45°



Option
Pivot Hinge Plate 90°
for LS-Series
part no. 151.970

Stylus Head TK 15
part no. 121.060

Dia. D - 57



Compound Slide LS-Series (LS 425 / LS 625) with Tactile sensing

-without Pivot Hinge Plate for LS-Series
-without Machine-Welding torch
part no. 124.244



Torch Positioning Systems

Price list

D

Page	Description	PrGr	Part no.	Price/€
	Torch Positioning Systems			
D-2	Linear Slide, Hand	05	019.0.2500	119,00
D-3	Linear Slide, Hand LH 200	05	120.716	805,00
D-3	Linear Slide, Hand LH 300	05	120.624	815,00
D-3	Linear Slide, Hand LH 500	05	120.718	845,00
D-4	Compound slide, hand (x-y)	05	019.0.1500	244,00
D-4	3D - Adjustable Slide, hand	05	019.0.1510	473,00
D-5	Torch and stand holder, d=35 mm Torch Joint Block	05	019.0.0201	137,00
D-5	Machine Torch Mount TIG / Plasma	05	131.994	169,00
D-5	Machine Torch Mount Ø=35 mm for MIG/MAG torches, isolated	05	152.232	158,00
D-6	Torch Stand / 30	05	019.0.0305	980,00
D-7	Torch Stand / 200	31	124.106	5.700,00
D-8	Column and Boom model Z-0021-337	31	132.022	
D-9	Column & Boom ME-AT 4000 incl.: - vertical and horizontal motorized movement - wireless remote control - pivot bearing (rotatable and clampable by hand) - carriage with 2.3 m carriage way (movement=0) (movable and clampable by hand) order railway extension separately - without welding technology	31	154.368	
D-8	Railway extension per 1 m for ME-AT-4000	31	155.498	
D-10	Column & Boom ME-AT 4000 included: - vertical and horizontal stroke motorized per remote control - pivot bearing (rotatable and clampable per hand) - carriage with 7m carriageway (movable and clampable per hand) - UP welding head complete with torch an powder return - Controller for Column & Boom and welding head - without welding technology	31	153.728	
D-11	Angle Plate Type 3-1613	05	019.0.1910	128,00
D-11	Intermediate flange for LS series slides	05	122.978	101,00
D-11	Intermediate Flange for KS100	05	128.764	107,00
D-11	Pivot Joint Typ: 3256	05	151.062	298,00
	Pneumatic Stroke Carriage			
D-12	Pneumatic Stroke Carriage	05	019.0.1844	1.030,00
D-13	Slide LSP 425-150 pneumatic stroke carriage (150mm)	05	149.172	



Torch Positioning Systems

Price list

D

Page	Description	PrGr	Part no.	Price/€
D-13	Slide LSP 425-250 pneumatic stroke carriage (250mm)	05	139.102	
	Motorised Linear Slides			
D-14	Controller Type E012 for LS series slides and longitudinal carriages	05	130.062	
D-15	Motor Driven Slide LS 425.2 (1-45 cm/min)	05	151.918	2.990,00
D-15	Motor Driven Slide LS 525.2 (1-45 cm/min)	05	151.919	3.290,00
D-15	Motor Driven Slide LS 625.2 (1-45 cm/min)	05	151.920	3.590,00
D-15	Motor Driven Slide LS 750.2 (1-45 cm/min)	05	121.246	3.790,00
D-15	Motor Driven Slide LS 1500 (1-45 cm/min)	05	151.902	7.235,00
D-16	Arc Length Monitoring/Adjusting Device Arc Length Monitoring/Adjusting Controller model E 101	05	102.743	3.850,00
	Motorised Slide for Arc Length Compensation Stroke 30 mm	05	128.494	3.270,00
	Motorised Compound Slides			
D-17	Sensor Controller Type E 062 for LS Series Compound Slides	05	118.324	3.090,00
D-17	Sensor Controller Type E 062 for KS 100	05	118.582	3.090,00
D-18	Compound Slide KS100	05	102.829	3.680,00
	Compound Slide LS Series individually combinable Stroke 270 mm + 470 mm			
D-20	Tactile Sensor and Mount	05	102.727	295,00
D-20	Tactile Sensor Type TK-15 with Stylus R=2 mm	05	121.060	1.770,00
	Stylus TK-05/TK-15 (R=2)	32	152.152	69,00
	Stylus TK-05/TK-15 (R=3)	32	152.153	69,00
	Stylus TK-05/TK-15 (R=4)	32	152.154	69,00
	Stylus TK-05/TK-15 (R=5)	32	152.155	69,00
	Stylus TK-05/TK-15 (R=6)	32	145.962	69,00
	Stylus TK-05/TK-15 (R=7)	32	145.964	
	Stylus TK-05/TK-15 (R=8)	32	145.966	



Torch Positioning Systems

D

Price list

Page	Description	PrGr	Part no.	Price/€
	Optical laser tracking			
D-21	Controller model E 063-LA	31	157.522	19.800,00
D-21	Optical laser tracking with equipment and configuration software for Windows without Industry PC	31	156.598	11.800,00
D-21	Digital/Analog Control Unit for optical laser tracking	31	157.012	3.500,00
D-22	Pivot Hinge Plate 90° for LS-Series	05	151.970	1.025,00
D-22	Pivot Hinge Plate 90° for KS 100	05	124.258	280,00
D-23	Compound Slide KS 100 with Tactile sensing consisting of: <ul style="list-style-type: none">- Controller Type E062 for KS 100- Compound Slide KS 100- Intermediate Flange- Angle Plate- Pivot Joint Type 3256- MIG/MAG Torch Positioner for Sensing- Tactile Sensor TK-15	31	124.242	7.800,00
D-23	Compound Slide LS-Series with Tactile Sensing consisting of: <ul style="list-style-type: none">- Controller Type E062 for LS-Series Slides- LS 425.2 und LS 625.2- Intermediate Flange- Angle Plate- Pivot Joint Type 3256- MIG/MAG Torch Positioner for Sensing- Tactile Sensor TK-15	31	124.244	12.345,00
	All prices per piece or 1 m. Changes reserved.			



Cold Wire Feed Systems

Cold / Hot Wire Controller	E-2
Cold Wire Feed (KDZF)	E-3
Spare Parts List KDZF	E-4
Hot Wire Feed (HDZF)	E-6
Spare Parts List HDZF	E-7
Wire Feed Unit DV31	E-9
Price list	E-10



Dia. E - 1

Cold Wire Controller E 052 / E 052-PP

With the Cold Wire Controller model E 052 (without Push-Pull function) and E 052-PP (with Push-Pull function for DC-Motors with tacho gen), a stepless control of the cold wire feed in the TIG and Plasma processes is made possible.

The automatic feeding of consumable wire is normally used in the automated TIG and Plasma welding processes. The controller can be mounted on horizontal welding banks, circumferential welding devices etc.

Hot Wire Controller E 053 / E 053-PP

With the Hot Wire Controller model E 053 (without Push-Pull function) and E 053-PP (with Push-Pull function for DC-Motors with tacho gen), a stepless control of the cold wire feed in the TIG processes is made possible.

The automatic feeding of consumable wire is normally used in the automated TIG welding processes. The controller can be mounted on horizontal welding banks, circumferential welding devices etc.

The controller is equipped with the following functions as standard: wire on/off, wire fast/slow, wire pull back time, wire feed start delay, torch mount start delay.

The RPM Governor and the drive motor in the Wire Feed Unit are electrically isolated from the supply voltage over a transformer. The operating voltage is 42 volt DC. The functions for the stepless supply of cold / hot wire are therefore assumed by a openly programmable (SPS) Controller.

Controller Functions:

Main switch with control lamp:	On/Off
Potentiometer:	Cold / Hot Wire Feed Speed
Switch:	Cold / Hot Wire On / Off
Timer Relay:	Cold / Hot Wire feed time delay
Timer Relay:	Cold / Hot Wire pull back time
Timer Relay:	Torch mount drive time delay
Supply Voltage:	230-240V / 50-60Hz
Connection Cable:	5 m, 3x2,5 mm ² with Schuko plug
Weight:	12,8 kg

**Controller for hot wire feed HDZF
without (!) push-pull operation / model E 052**
v = 0,1 – 5 m/min
part no. 142.072

**Controller for hot wire feed HDZF
with push-pull operation / model E 052-PP**
v = 0,5 – 5 m/min
part no. 142.074

**Controller for hot wire feed HDZF
without (!) push-pull operation / model E 053**
v = 0,1 – 5 m/min
part no. 145.832

**Controller for hot wire feed HDZF
with push-pull operation / model E 053-PP**
v = 0,5 – 5 m/min
part no. 145.834

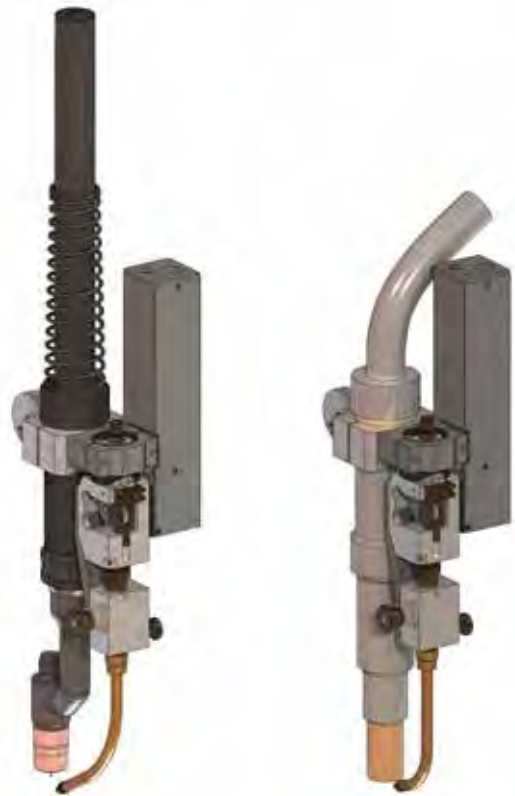
Cold Wire Feed (KDZF)

Technical Details:

Wire Diameter:	0,8 - 1,2 mm
Wire Feed Speed:	0,5 - 5,0 m/min
Motor Voltage:	42 V DC
Connection:	Euro Central connector and 10-pin plug

As shown in Dia E-2 & E-3, the cold wire feed system can be attached to various Merkle welding torches

- TIG (left)
- Plasma (right)



Dia. E - 2 TM 450 W with KDZF + Push/Pull drive Dia. E - 3 PM 400 W with KDZF + Push/Pull drive

Welding equipment for Cold Wire Feed KDZF

Cold Wire System without Push-Pull-Drive

Cold Wire Feed KDZF (Mechanics without Motor)
with Feed Tube KDZF for PM 400 W
Cold Wire Feed KDZF (Mechanics without Motor)
with Feed Tube KDZF for TM 450 W
Wire Feed Unit DV-31 KDZF
Wire Feed Conduit for KDZF 400 4m long
Controller for Cold Wire Feed
model: E 052 without Push-Pull-Function
Connection cable 24/10-pin Power source - KDZF 4m long

part no. 141.608

part no. 141.610

part no. 104.634

part no. 103.580

part no. 142.072

part no. 107.410



Cold Wire System with Push-Pull-Drive

Cold Wire Feed KDZF (Mechanics with Motor)
with Feed Tube KDZF for PM 400 W
Cold Wire Feed KDZF (Mechanics with Motor)
with Feed Tube KDZF for TM 450 W
Wire Feed Unit DV-31 KDZF
Wire Feed Conduit for KDZF 400 4m long
Controller for Cold Wire Feed
model E 052-PP with Push-Pull-Function
Controller for Cold Wire Feed Alternative:
model E 051 ROB with Push-Pull-Drive Control Voltage 0-10V
Connection cable 24/10-pin Power source - KDZF 4m long

part no. 141.612

part no. 141.614

part no. 104.634

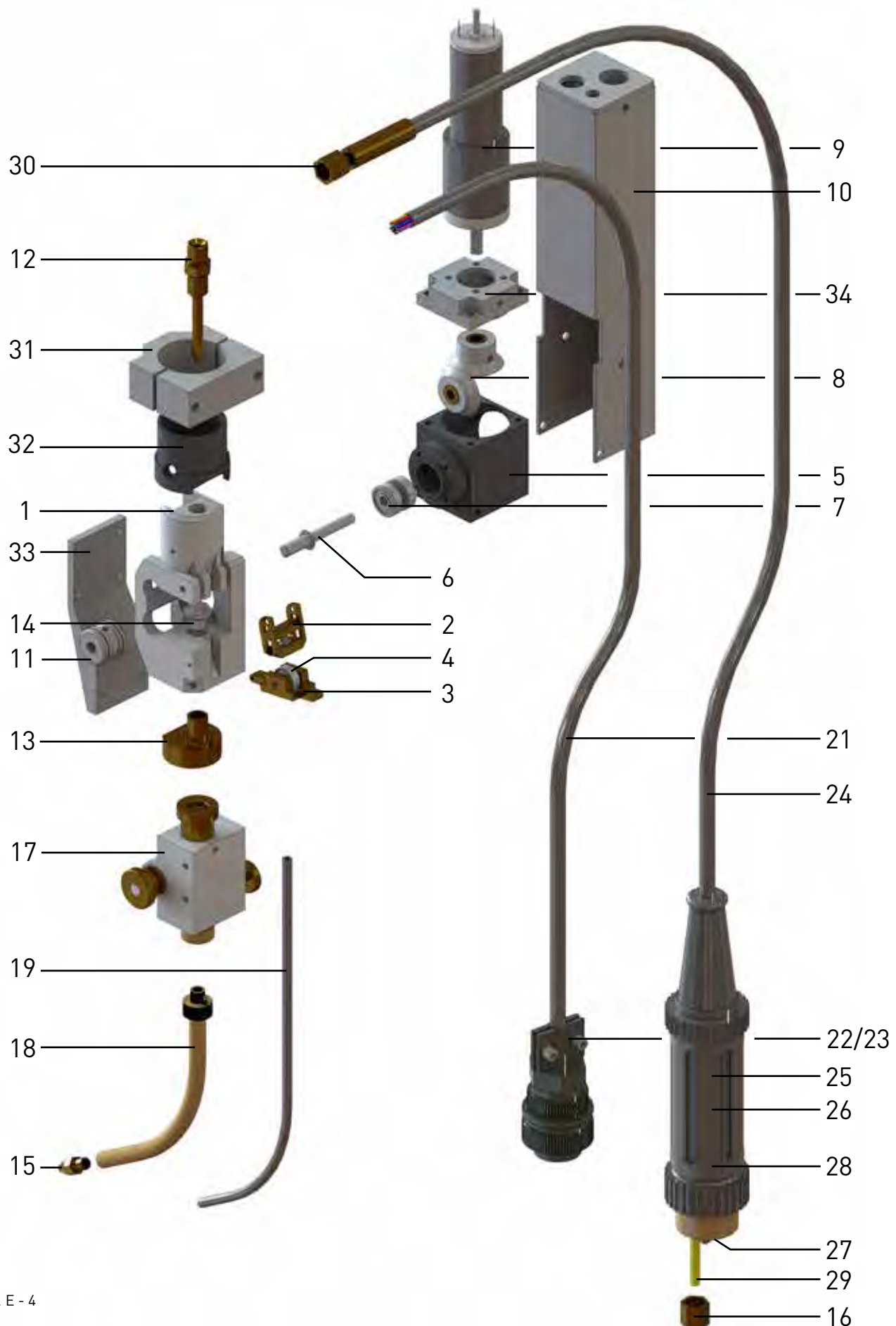
part no. 103.580

part no. 142.074

part no. 108.356

part no. 107.410





1	Motor block PP-Torch	021.1.0151	98,00 €
2	Clamping Bracket complete	021.1.0181	79,00 €
3	Pressure Bracket PPL/PPW complete	021.1.0160	
4	Pressure Roller PPL/PPW	021.1.0170	22,00 €
5	Gearbox Housing	124.528	
6	Shaft	104.714	78,00 €
7	Ball Bearing	104.716	12,80 €
8	Bevel Gear Set	124.602	88,90 €
9	Motor-Gearbox-Tacho Unit RE25 + 2932 + Tacho P000050	103.787	857,00 €
10	Protective Cover KDZF	124.532	
	Cover up	124.550	
	Cover down	134.380	
11	Drive Roller Alu 0,8 mm (PP)	021.1.0255	36,00 €
11.1	Drive Roller Alu 1,0 mm (PP)	021.1.0256	36,00 €
11.2	Drive Roller Alu 1,2 mm (PP)	021.1.0257	36,00 €
12	Conduit Guide Bush PP 307 Motor block/feed	021.1.0190	14,90 €
13	Liner Guide Bush KDZF 150/400	104.053	98,00 €
14	Wire Guide Jet Front PP 502	021.1.0205	12,20 €
15	Wire Exit Guide Jet Steel 1,0 mm	106.978	9,80 €
15.1	Wire Exit Guide Jet Steel 1,2 mm	106.980	9,80 €
15.2	Wire Exit Guide Jet Steel 1,6 mm	106.982	9,80 €
15.3	Wire Exit Guide Jet Alu 1,0 mm	127.654	9,80 €
15.4	Wire Exit Guide Jet Alu 1,2 mm	127.652	9,80 €
15.5	Wire Exit Guide Jet Alu 1,6 mm	127.650	12,20 €
16	Sleeve Nut M 10x1	014.0.0100	2,40 €
17	Cold Wire Adjuster	104.722	183,00 €
18.1	Feed Tube Cold Wire PM 400 W	104.740	36,00 €
18.2	Feed Tube Cold Wire TM 450 W	127.304	36,00 €
19	Plastic Liner 2,7 x 4,7, 250 mm	102.459	2,95 €
21	Control Cable PM 150/400 W	103.581	18,50 €
22	Plug 10-pin without Flange (for Push-Pull) Straight	021.1.0384	33,50 €
23	Cable plug with strain relief for energy switch on torch 410	021.1.0387	34,50 €
24	Wire Feed Conduit for KDZF 400; 4 m long	103.580	50,40 €
25	Central connector MAG, gas cooled with Brass body, Sleeve Nut, 3-part. kink protection	025.1.1350	39,00 €
26	Connection nipple	021.1.0310	10,80 €
27	Brass body central connector MAG gas cooled	025.1.1401	21,00 €
28	Sleeve nut black	025.1.0300	9,80 €
29	Plastic liner yellow (2,7 x 4,7) Alu / VA (1,2) - 1,6 mm 4 m long with brass exit guide	103.579	25,70 €
30	Connection nipple	021.1.0310	10,80 €
31	Clamp for Cold Wire	104.746	189,00 €
32	Bush for Cold Wire	106.984	46,00 €
33	Bracket for Cold Wire adjuster	106.976	28,00 €
34	Motor flange	124.530	

Hot Wire Feed (HDZF)

Technical Details:

Wire Diameter:	0,8 - 1,2 mm
Wire Feed Speed:	0,5 - 5,0 m/min
Motor Voltage:	42 V DC
Connection:	Euro Central connector and 10-pin plug

In this welding system the deposition rate is higher than with TIG cold wire feed system so that the welding speed can therefore be increased considerably. The hot wire feed system can only operate with an additional Power source 180 A for hot wire. This assumes the preheating of the welding wire

As shown in Dia E-5 & E-6, the hot wire feed system with and without PushPull attached on Merkle welding torches TM 450 W

- with PushPull (left)
- without PushPull (right)



Dia. E - 5 TM 450 W with HDZF
with PP-Motor

Dia. E - 6 TM 400 W with HDZF
without PP-Motor

Welding equipment for Hot Wire Feed HDZF

Hot Wire System without Push-Pull-Drive

Hot Wire Feed HDZF (Mechanics without Motor)
with Feed Tube HDZF for TM 450 W

Wire Feed Unit DV-31 KDZF / HDZF

Wire Feed Conduit for KDZF 400 4m long

Power source 180 A for hot wire

Controller for Cold Wire Feed

model: E 053 without (!) Push-Pull-Function

Connection cable 24/10-pin Power source - KDZF 4m long

part no. 145.513

part no. 104.634

part no. 103.580

part.no. 145.828

part no. 145.832

part no. 107.410



Hot Wire System with Push-Pull-Drive

Hot Wire Feed HDZF (Mechanics with Motor)

with Feed Tube KDZF for TM 450 W

Wire Feed Unit DV-31 KDZF / HDZF

Wire Feed Conduit for KDZF 400 4m long

Power source 180 A for hot wire

Controller for Cold Wire Feed

model E 052-PP with Push-Pull-Function

Controller for Cold Wire Feed Alternative:

model E 051 ROB with Push-Pull-Drive Control Voltage 0-10V

Connection cable 24/10-pin Power source - KDZF 4m long

part no. 145.512

part no. 104.634

part no. 103.580

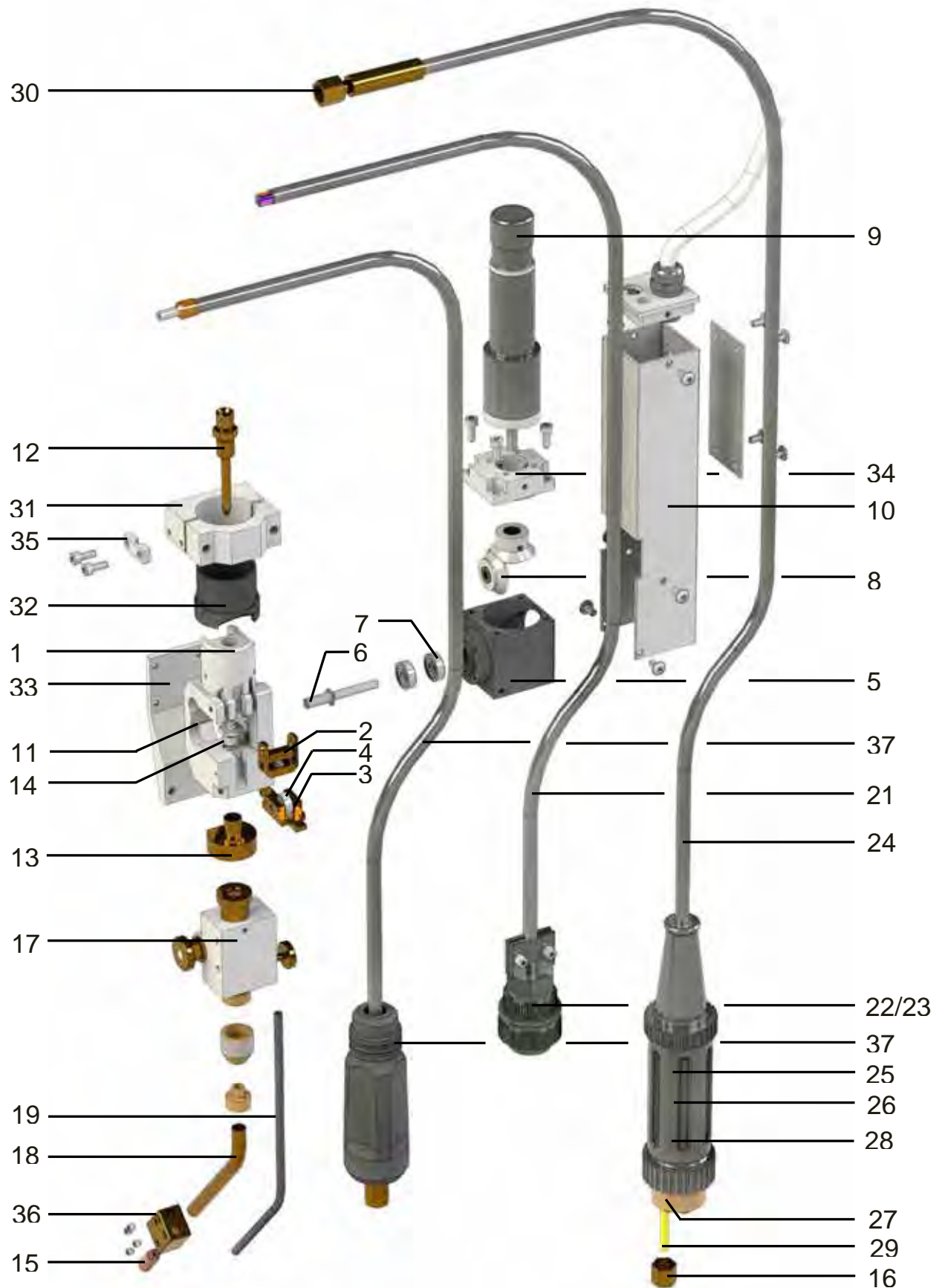
part.no. 145.828

part no. 145.834

part no. 108.356

part no. 107.410





Dia. E -

Z-0037-304



Cold /Hot Wire Feed Systems

E

Spare Parts List HDZF

1	Motor block PP-Torch	021.1.0151	98,00 €
2	Clamping Bracket complete	021.1.0181	79,00 €
3	Pressure Bracket PPL/PPW complete	131.890	
4	Pressure Roller PPL/PPW	021.1.0170	22,00 €
5	Gearbox Housing	124.528	
6	Shaft	104.714	78,00 €
7	Ball Bearing	104.716	12,80 €
8	Bevel Gear Set	124.602	88,90 €
9	Motor-Gearbox-Tacho Unit RE25 + 2932 + Tacho P000050	103.787	857,00 €
10	Protective Cover KDZF	124.532	
	Cover up (KDZF-Ghäuse)	124.550	
	Cover down (KDZF-Ghäuse)	134.380	
11	Drive Roller Alu 0,8 mm (PP)	021.1.0255	36,00 €
11.1	Drive Roller Alu 1,0 mm (PP)	021.1.0256	36,00 €
11.2	Drive Roller Alu 1,2 mm (PP)	021.1.0257	36,00 €
12	Conduit Guide Bush PP 307 Motor block/feed	021.1.0190	14,90 €
13	Liner Guide Bush KDZF 150/400	104.053	98,00 €
14	Wire Guide Jet Front PP 502	021.1.0205	12,20 €
15	Wire Exit Guide Jet Steel 1,0 mm	152.182	
15.1	Wire Exit Guide Jet Steel 1,2 mm	145.578	
15.2	Wire Exit Guide Jet Steel 1,6 mm	145.580	
15.3	Wire Exit Guide Jet Alu 1,0 mm	145.582	
15.4	Wire Exit Guide Jet Alu 1,2 mm	145.574	
15.5	Wire Exit Guide Jet Alu 1,6 mm	145.576	
16	Überwurfmutter	014.0.0100	2,40 €
17	Sleeve Nut M 10x1	104.722	183,00 €
18	Feed Tube Hot Wire TM 450 W with Gaslense	145.458	
19	MS-Liner 2,5 x 4,0, 215,5 mm	145.800	
21	Control Cable PM 150/400 W	103.581	18,50 €
22	Plug 10-pin without Flange (for Push-Pull) Straight	021.1.0384	33,50 €
23	Cable plug with strain relief for energy switch on torch 410	021.1.0387	34,50 €
24	Wire Feed Conduit for KDZF 400; 4 m long	103.580	50,40 €
25	Central connector MAG, gas cooled with Brass body, Sleeve Nut, 3-part. kink protection	025.1.1350	39,00 €
26	Connection nipple	021.1.0310	10,80 €
27	Brass body central connector MAG gas cooled	025.1.1401	21,00 €
28	Sleeve nut black	025.1.0300	9,80 €
29	Plastic liner yellow (2,7 x 4,7) Alu / VA (1,2) - 1,6 mm 4 m long with brass exit guide	103.579	25,70 €
30	Connection nipple	021.1.0310	10,80 €
31	Clamp for Cold Wire	104.746	189,00 €
32	Bush for Cold Wire	106.984	46,00 €
33	Bracket for Cold Wire adjuster	106.976	28,00 €
34	Motorflange	124.530	
35	Cabel bracket	145.508	
36	Kontakt socket	145.510	
37	Power supply hot wire	145.484	

Wire Feed Unit DV31

Cold / Hot Wire Wire Feed Unit DV31 KDZF / HDZF



Dia. E - 8



Dia. E - 9



The Wire Feed Unit model DV-31 KDZF /HDZF consists of a steel plate housing with plastic front and is equipped with a four roller wire drive unit, mounting spindle for D300/15 spools and integrated wire straightening device as standard. When using our Q.MACS option, an incremental wire feed speed sensor is installed.

The drive motor is DC with integrated Tacho Gen and is controlled (stepless) with the E 052 (PP) / E 053 (PP) cold wire controller. The wire drive unit can be equipped with rollers for steel and aluminium in 0,8 / 1,0 / 1,2 and 1,6 mm (please inform us which rollers are required when ordering).

The wire feed speed range can be adjusted from 0,1 to 5.0 m/min. (0.5 to 5.0 m/min for PP).

Weight: 21 kg

Wire Feed Unit DV-31 (for KDZF / HDZF)
part no. 104.634



Cold Wire Feed Systems

E

Price list

Page	Description	PrGr	Part no.	Price/€
E-3	Cold Wire System with Push-Pull-Drive: Controller for cold wire feed KDZF with push-pull operation, installed in an machine Fa. Merkle	31	134.570	2.750,00
	Controller for cold wire feed KDZF with push-pull operation, installed inside HighTIG/HighPLAS incl. software	31	138.921	680,00
E-2	Controller for cold wire feed KDZF with push-pull operation, model E052-PP installed in external cabinet supply voltage: 230 V incl. sequence controller	05	142.074	3.370,00
	Controller for cold wire feed KDZF with push-pull operation, model E051-ROB installed in an external cabinet supply voltage: 230 V control through: 1 x control voltage 0-10 V	05	108.356	1.780,00
	Connection cable 24-pol/10-pol. Power source to external KDZF controller housing, 4 m long	05	107.410	138,00
E-6	Wire feed unit DV-31 KDZF / HDZF for cold / hot wire feed / including 5 m control cable	38	104.634	2.470,00
	Cold Wire Feed KDZF with Feed Tube for PM 400 W (Mechanic with Motor) for Push-Pull use	05	141.612	2.250,00
	Cold Wire Feed KDZF with Feed Tube for TM 450 W (Mechanic with Motor) for Push-Pull use	05	141.614	2.250,00
	Torch holder TIG / Plasma for machine welding torch TM 450 W, PM 400 W	05	103.567	279,00
E-3	Cold Wire System without Push-Pull-Drive:			
E-2	Controller for cold wire feed KDZF without (!) push-pull operation, model E052 installed in an external cabinet supply voltage: 230 V incl. sequence controller	05	142.072	2.850,00
	Connection cable 24-pol/10-pol. Power source to external KDZF controller housing, 4 m long	05	107.410	138,00
E-9	Wire feed unit DV-31 KDZF / HDZF for cold / hot wire feed / including 5 m control cable	38	104.634	2.470,00
	Cold Wire Feed KDZF without (!) Push-Pull with Feed Tube for PM 400 W	05	141.608	905,00
	Cold Wire Feed KDZF without (!) Push-Pull with Feed Tube for TM 450 W	05	141.610	905,00
	Torch holder TIG / Plasma for machine welding torch TM 450 W, PM 400 W	05	103.567	279,00

Page	Description	PrGr	Part no.	Price/€
E-6	Hot Wire System with Push-Pull-Drive:			
E-2	Controller for hot wire feed HDZF with push-pull operation, model E053-PP installed in external cabinet supply voltage: 230 V incl. sequence controller, controller of the hot wire power source and 5 m cable to hot wire source	05	145.834	
	Connection cable 24-pol/10-pol. Power source to external KDZF controller housing, 4 m long	05	107.410	138,00
	Power source 180 A for hot wire incl. 5 m power cable to HDZF and Earth lead 16 mm ² , 4 m long with plug 50 mm ² and earth clamp	05	145.828	1.430,00
E-9	Wire feed unit DV-31 KDZF / HDZF for cold / hot wire feed / including 5 m control cable	38	104.634	2.470,00
	Hot Wire Feed HDZF with Feed Tube for TM 450 W with gas lens (Mechanic with Motor) for Push-Pull use	05	145.512	2.320,00
	Torch holder TIG / Plasma for machine welding torch TM 450 W, PM 400 W	05	103.567	279,00
E-6	Hot Wire System without Push-Pull-Drive:			
E-2	Controller for hot wire feed HDZF without (!) push-pull operation, model E053 installed in an external cabinet supply voltage: 230 V incl. sequence controller, controller of the hot wire power source and 5 m cable to hot wire source	05	145.832	
	Connection cable 24-pol/10-pol. Power source to external KDZF controller housing, 4 m long	05	107.410	138,00
	Power source 180 A for hot wire incl. 5 m power cable to HDZF and Earth lead 16 mm ² , 4 m long with plug 50 mm ² and earth clamp	05	145.828	1.430,00
E-9	Wire feed unit DV-31 KDZF / HDZF for cold / hot wire feed / including 5 m control cable	38	104.634	2.470,00
	Hot Wire Feed HDZF with Feed Tube for TM 450 W with gas lens (Mechanic without Motor)	05	145.513	970,00
	Torch holder TIG / Plasma for machine welding torch TM 450 W, PM 400 W Torch holder for TIG and Plasma machine welding torch TM 450 W, PM 400 W	05	103.567	279,00



Cold Wire Feed Systems

E

Price list

Page	Description	PrGr	Part no.	Price/€
	Accessories for DV-31			
	Drive ring steel 0.8 + 1.0 DV-26/31	38	113.946	35,00
	Drive ring steel 1.0 + 1.2 DV-26/31	38	012.0.0272	35,00
	Drive ring alu 1.0 + 1.2 DV-26/31	38	012.0.0281	35,00
	Drive ring alu 0.8 + 1.6 DV-26/31	38	012.0.0282	35,00
	All prices per piece or 1 m. Changes reserved.			



Welding Torch Mountings

MIG/MAG & TIG-Welding Head Mount	F-2
Plasma Welding Head Mount	F-3
Welding Torch Interchange System	F-4
TIG / Plasma Welding Head Mounts with Interchange System	F-5
Price list	F-6

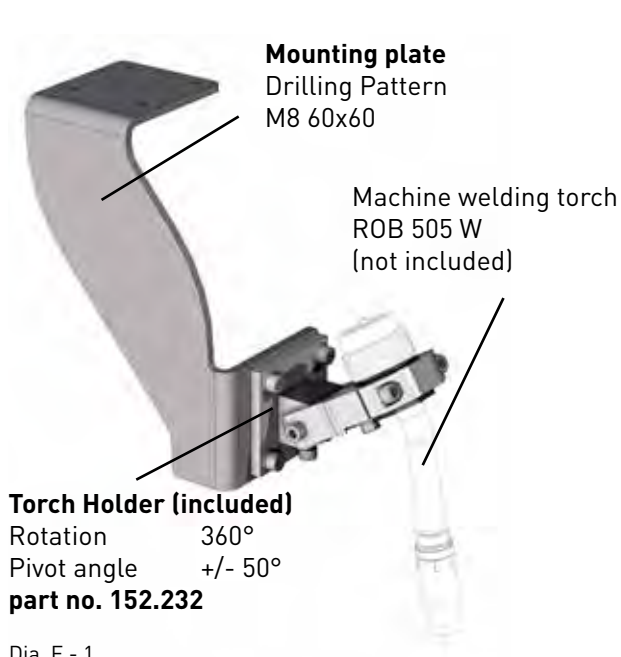
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Welding Torch Mountings

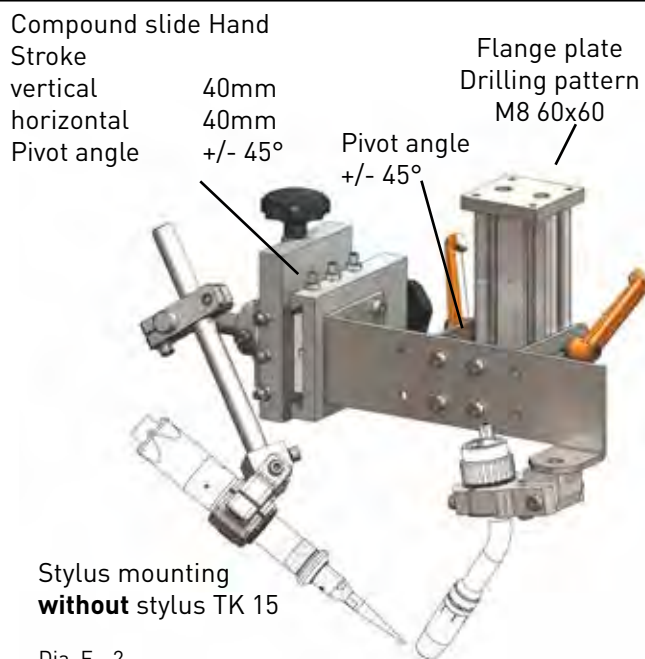
F

MIG/MAG & TIG-Welding Head Mount



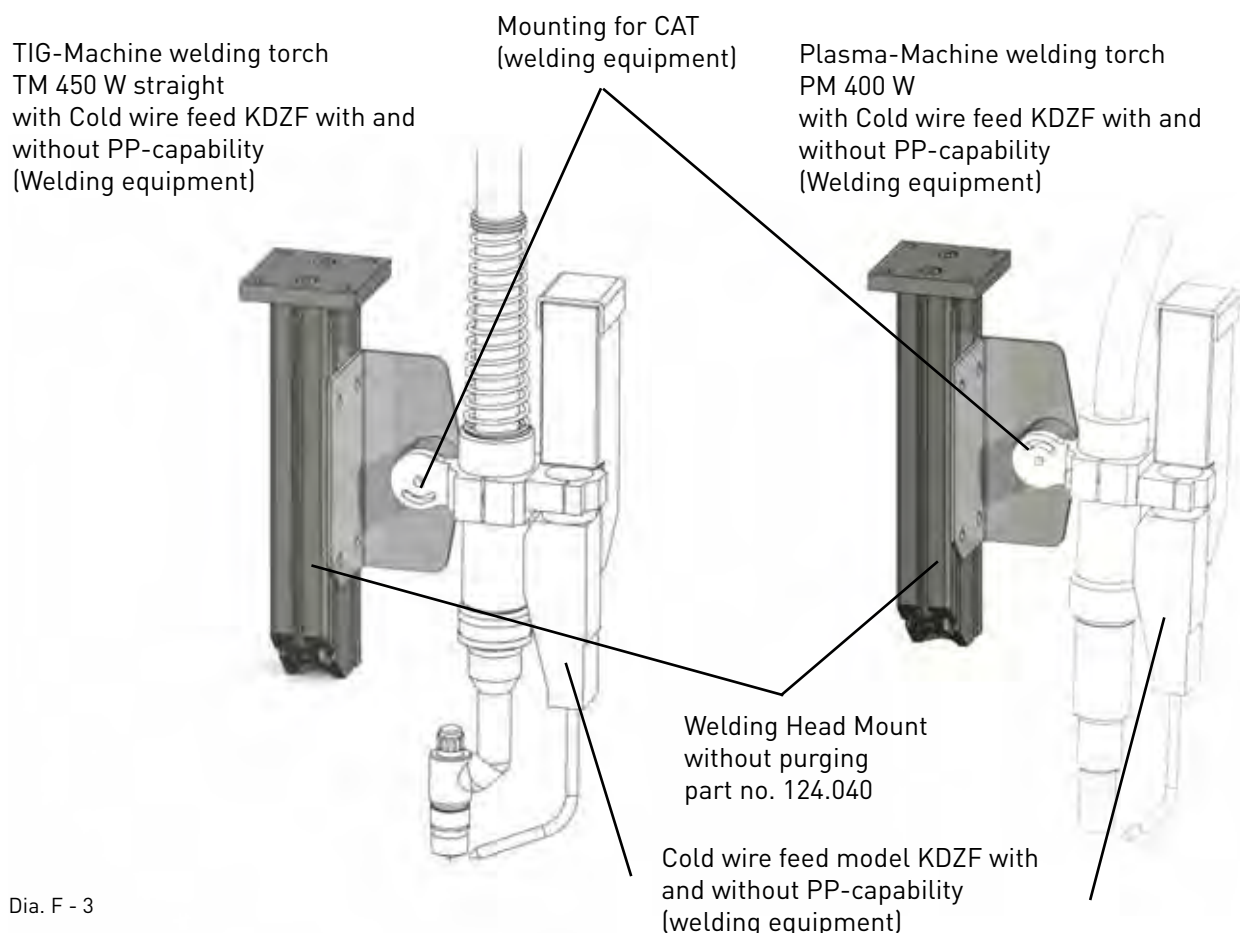
Dia. F - 1

MIG/MAG Torch adjustment (simple)
(without Machine-Welding torch)
part no. 123.926



Dia. F - 2

MIG/MAG Torch positioning for tactile sensing
(without sensor stylus and Machine-Welding torch)
part no. 124.044

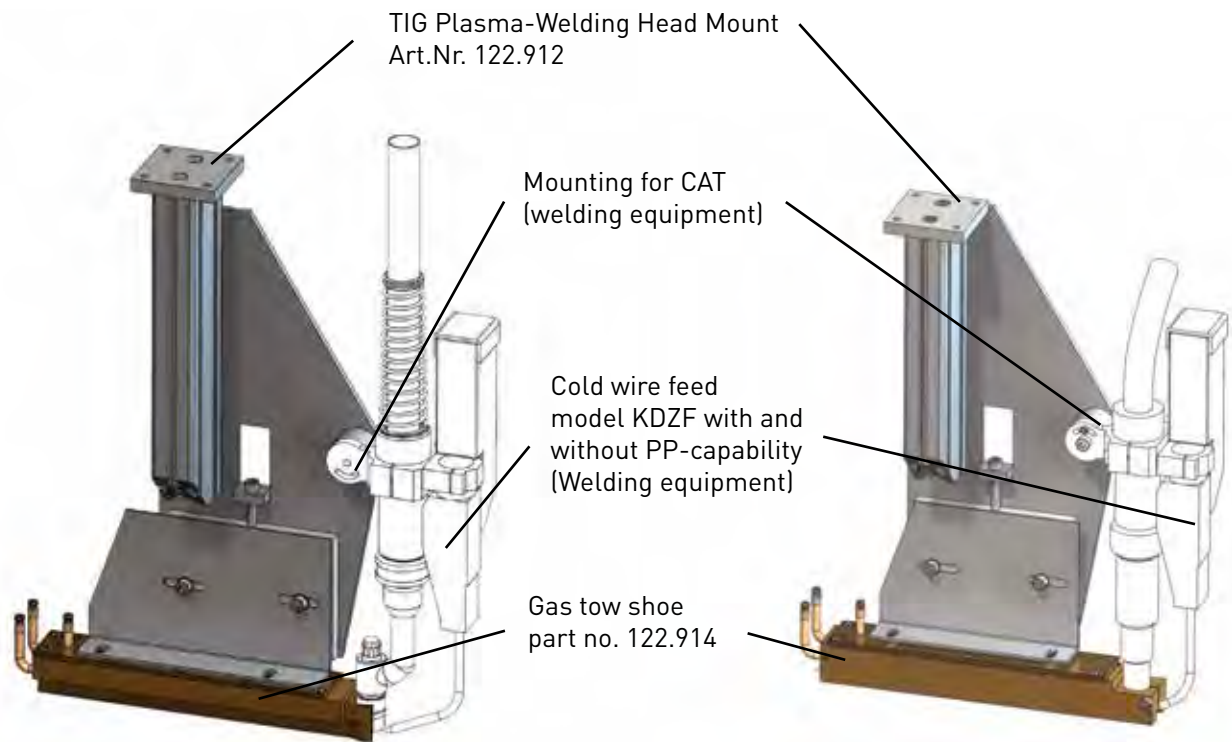


Dia. F - 3

TIG-Welding Head Mount without Gas tow shoe
(without welding equipment)
part no. 124.040

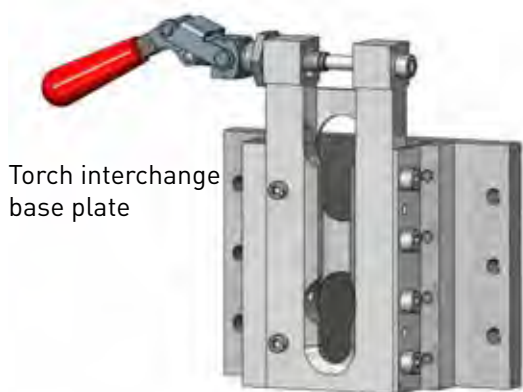
TIG-Machine welding torch
TM 450 W straight
with Cold wire feed KDZF with and
without PP-capability
(Welding equipment)

Plasma-Machine welding torch
PM 400 W
with Cold wire feed KDZF with and
without PP-capability
(Welding equipment)



Dia. F - 4

**TIG- / Plasma-Welding Head Mount
with Gas tow shoe**
(without welding equipment)
part no. 122.916

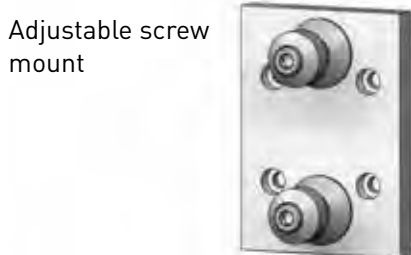


Torch interchange
base plate

With the Torch Interchange System, a fast and comfortable exchange of torch mounts and welding torch systems is made possible.

The Torch Interchange System includes:

- 1x Interchange base plate
- 1x Adjustable screw mount



Adjustable screw
mount

Torch Interchange System
part no. 127.576

Dia. F - 5

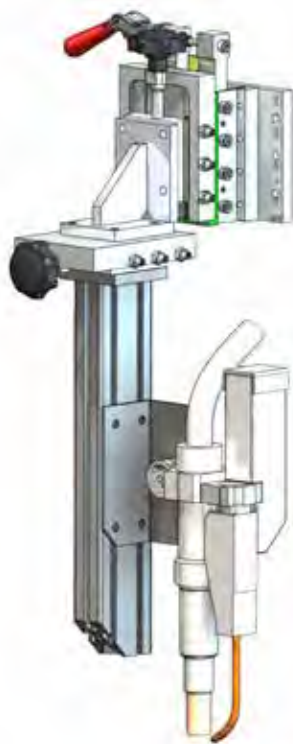


Dia. F - 6

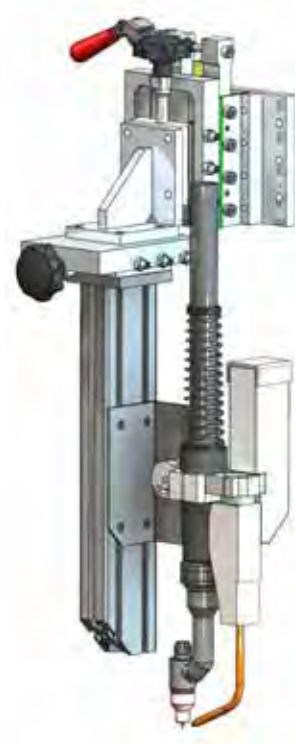
Every welding torch holder requires 1 x adjustable screw mount.

The adjustable screw mount is attached to the torch mount or welding torch system and enables a fast exchange of welding torches.

Adjustable screw mount
part no. 119.302

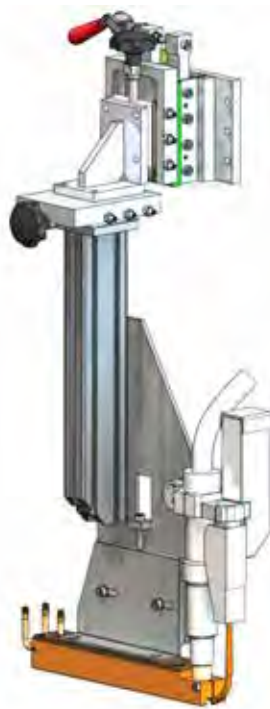


Dia. F - 7



Dia. F - 8

TIG & Plasma Welding Head Mount without Gas tow shoe, including Torch Interchange System
(without welding equipment)
part no. 127.508



Dia. F - 9

Plasma Welding Head Mount with Gas tow shoe and Torch Interchange System
(without welding equipment)
part no. 127.462



Dia. F - 10

TIG-Welding Head Mount with Gas tow shoe and Torch Interchange System
(without welding equipment)
part no. 127.510



Welding Torch Mountings

Price list

F

Page	Description	PrGr	Part no.	Price/€
F-2	MIG/MAG Welding Head Mount Torch positioning, manual for MIG/MAG torches	31	123.926	169,00
	MIG/MAG torch positioning for sensor system without sensor, without torch	31	124.044	976,00
F-2	TIG- /Plasma Welding Head Mount Welding head mount without purging for Plasma and TIG	31	124.040	167,00
	TIG welding head mount with gas tow shoe for more than 1.5 mm material thickness	31	122.916	1.120,00
F-4	Welding Torch Interchange System Torch Interchange system	31	127.576	627,00
	Adjustable screw mount	31	119.302	148,00
F-5	TIG- / Plasma Welding Head Mounts with Interchange System TIG & Plasma Welding Head Mount without Gas Tow Shoe including Torch Interchange System	31	127.508	1.097,00
	Plasma welding head mount with Gas Tow Shoe and Torch Interchange System	31	127.462	2.217,00
	TIG-Welding Head Mount with Gas tow shoe and torch interchange system	31	127.510	2.217,00
	All prices per piece or 1 m. Changes reserved.			

Circular welding units

Overview Welding Positioners	G-2
Welding Positioner D52 / 25 - D52 / 70 Table Height 320 mm and 800 mm	G-3
Welding Positioner D102 / D302 Table Height: 400 mm	G-6
Welding Positioner D102 / D302 Table Height: 750 mm	G-9
Welding Positioner D653 / D1003	G-12
Riegelsystem for The Welding Positioner D653 / D1003	G-14
Welding Positioner D5002	G-15
3 Jaw Chuck model ME-DBS	G-17
Circular welding unit model Z-0019-584	G-18
Circular welding unit model Z-0019-584-1	G-20
Circular welding unit model Z-0006-598 (Pneumatic Torch Positioner)	G-22
Circular welding unit model Z-0019-392 (tactile work piece sensing)	G-24
Circular welding unit model Z-0019-580	G-26
Boom with Counter Pressure Stock 1200	
(for circular welding unit model Z-0019-580)	G-27
Boom with trestle (for circular welding unit model Z-0019-580)	G-28
Circular welding unit model Z-0039-512	G-29
Circumferential weld device model Z-0039-692	G-30
Double circumferential weld device model Z-0033-981	G-32
Roller Trestle R1003	G-33
Roller Trestle R3002/2	G-35
Roller Trestle R16000	G-37
Price list	G-40

						
Series/model:	D52 / 25 D52 / 70	D102/60 D102/150	D 302/60 D 302/150	D 653	D1003 D1004	D 5002
Technical Data:						
Load Capacity (vertical)	50 kg/0,5 kN	100 kg/1,0 kN	100 kg/1,0 kN	650 kg/6,5 kN	1000 kg/10 kN	5000 kg/50 kN
Spindle RPM	0,25 – 2,5 min-1 0,70 – 9,0 min-1	0,1 – 10 min-1	0,05 – 5 min-1	0,075 – 3,26 min-1	0,01 – 1,3 min-1	0,002 – 1,1 min-1
Torque	2,5 – 15 Nm 2,5 – 10 Nm	15 – 50 Nm	30 – 100 Nm	700 Nm	1025 Nm	5000 Nm
Face Plate Diameter	250 mm	400 mm	400 mm	920 mm	920 mm	1000 mm
Table Height	320 mm 800 mm	400 mm 750 mm	400 mm 750 mm	970 mm	895 mm	1444 mm
Axle Height: Low High:	270 mm 750 mm	320 mm 670 mm	320 mm 670 mm	825 mm	736 mm	1275 mm
Spindle Bore	10 mm	60 mm	60 mm	47,5 mm	56 mm	60 mm
Large Bore Option		150 mm	150 mm			
Centralising Bore (Chuck or Jig Mount)	ø 50H7 3mm deep	ø 78H7 3 mm deep (60)	ø 78H7 3 mm deep (60)	ø 64H7 3 mm deep	ø 64H7 3 mm deep	ø 64H7 20 mm deep
(for D102/150 - D302/150)		ø154H7 25 mm deep (150)	ø154H7 25 mm deep (150)			
Tilting Angle- Face Plate	135°	135°	135°	135°	135°	135°
Tilting Operation	manual lockable	manual lockable and detents	manual lockable and detents	motor driven v = 4,4°/sec	motor driven v = 6,3°/sec	hydraulic
Tilting Moment	90Nm	130 Nm	130 Nm	1100 Nm	3000 Nm	31750 Nm
MAX Rotating Dia Low High	450 mm 1340 mm	490 mm 1160 mm	490 mm 1160 mm	1400 mm	1400 mm	2400 mm 2000 mm B.E.
Current Collector	400 A (34V) 80% ED	400 A (34V) 80% ED	400 A (34V) 80% ED	400 A	800 A	1200 A
Mains Voltage	230V / 240V	230V / 240V	230V / 240V	3x400V	3x400V	3x400V
Frequency	50 / 60Hz	50 / 60Hz	50 / 60Hz	50/Hz	50/Hz	50/Hz
Mains connection cable	3x2,5 mm², 5 m with Schuko plug	3x2,5 mm², 5 m with Schuko plug	3x2,5 mm², 5 m with Schuko plug	5x2,5mm², 5m with CEE- Plug 16 A	5x2,5mm², 5m with CEE-Plug 16 A	5x4mm², 5m with CEE-Plug 32 A
Interface for external operation	Foot Switch, Hand and Foot Remote	Foot Switch, Hand and Foot Remote	Foot Switch, Hand and Foot Remote	Foot Switch, Hand and Foot Remote	Foot Switch, Hand and Foot Remote	Foot Switch, Hand and Foot Remote
Speed Control Range	1:10	1:100	1:100	1:43,5	1:130	1:550
Limit switch overlap 360° + overlap length	no	Option	Option	Option	Option	Option
Weight Low High	33 kg 44 kg	55 kg 65 kg	56 kg 66 kg	420 kg	550 kg	2200 kg

Welding Positioner D52 / 25 - D52 / 70 Table Height 320 mm and 800 mm



Dia. G - 1

Technical Details:	D 52/25	D52/70
Load Capacity (vertical)	0,5 kN	0,5 kN
RPM	0,25 – 2,5 min-1	0,70 - 9 min-1
with Option Tachogenerator		
Torque	2,5 - 15 Nm	2,5 - 10 Nm
Face Plate Diameter	250 mm	250 mm
Table Height	320 mm 800 mm	320 mm 800 mm
Axle Height:	low: 270 mm high: 750 mm	270 mm 750 mm
Spindle Bore	10 mm	10 mm
Centralising Holes (Chuck or Jig Mounting)	ø 50H7 3mm deep	ø 50H7 3mm deep
Tilting Angle- Face Plate	135°	135°
Tilting Operation	manual lockable	manual lockable
Tilting Moment	90Nm	90 Nm
MAX Rotating Dia	Low 450 mm High 1340 mm	450 mm 1340 mm
Current Collector	400A (34V)	80% ED
Mains Voltage	230V / 240V	230V / 240V
Frequency	50 / 60Hz	50 / 60Hz
Mains connection cable	3x2,5 mm2, 5 m with Schuko plug	3x2,5 mm2, 5 m with Schuko plug
Interface for external operation	Foot Switch, Hand and Foot Remote	Foot Switch, Hand and Foot Remote
Speed Control Range	1:10	1:10
with Option Tachogenerator		
Limit switch overlap 360° + overlap length	no	no
Weight	33 kg 44 kg	33 kg 44 kg

The series D 52/25 and D 52/70 are welding positioners for welding with electrodes, MIG, MAG-TIG, Plasma and Plasma cutting.

The two devices /25, /70 differ only in their RPM range (see technical data)

The face plate has a diameter of 250 mm and can be tilted to any angle within the 135° range.

As standard, the turntables come delivered with a 10mm spindle bore. The spindle bore can be used when clamping long material in the chuck or jig, or for routing supply lines for compressed air/cooling fluid or for the supply of purging gas to the welding job. The face plate centralising bore has a Dia of 50mm and is used for centralising jigs or chucks when mounting to the face plate.

The Rotation speed is steplessly adjustable. The drive is supplied by a 24 V DC-motor with worm gear.

The control electronics are installed in a closed protective housing. The operating elements are arranged clearly visible on the front panel.

Speed controller and motor are electrically isolated from the mains and supplied with 24 V via a transformer.

The current collector is insulated and can be loaded with maximum of 400 A/34 V at 80% duty cycle.

Controller Functions

Main Switch:	Controller on/off
Push Button:	Rotation on/off
Button:	Rotation left / right
Potentiometer:	RPM
Coding Switch:	2 stroke/4 stroke
Plug (10 pin):	Foot Switch, Remote switch or remote control

**Turntable D52/25-320 (Table Height 320 mm)
part no. 117.406**

**Turntable D52/25-800 (Table Height 800 mm)
part no. 117.410**

**Turntable D52/70-320 (Table Height 320 mm)
part no. 117.408**

**Turntable D52/70-800 (Table Height 800 mm)
part no. 117.412**

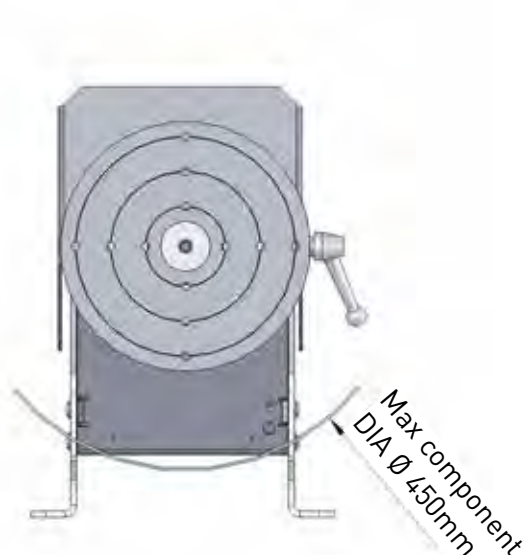
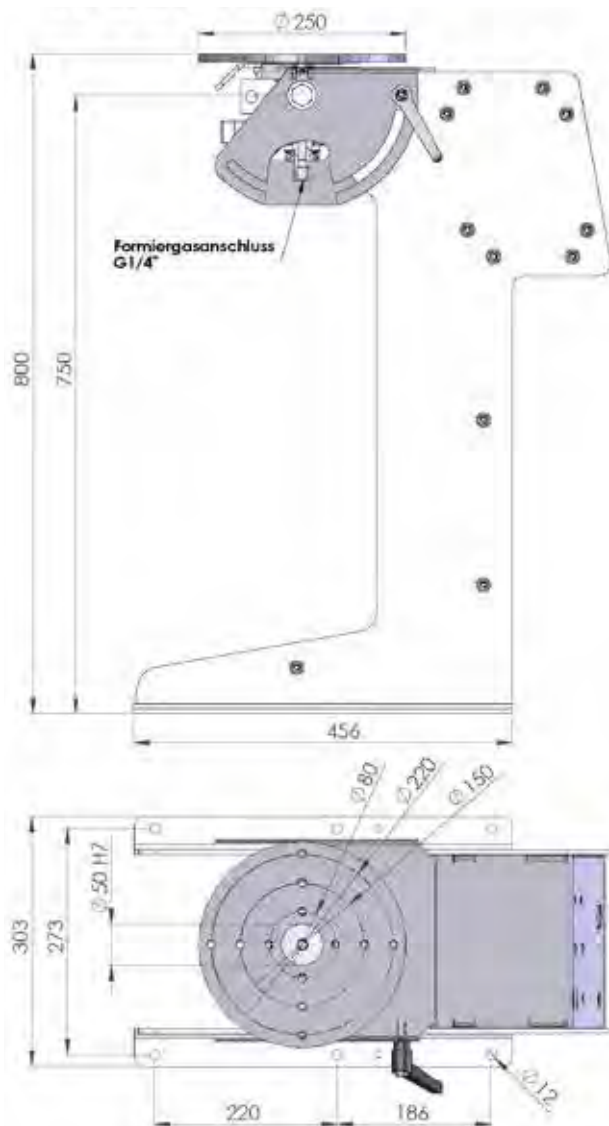
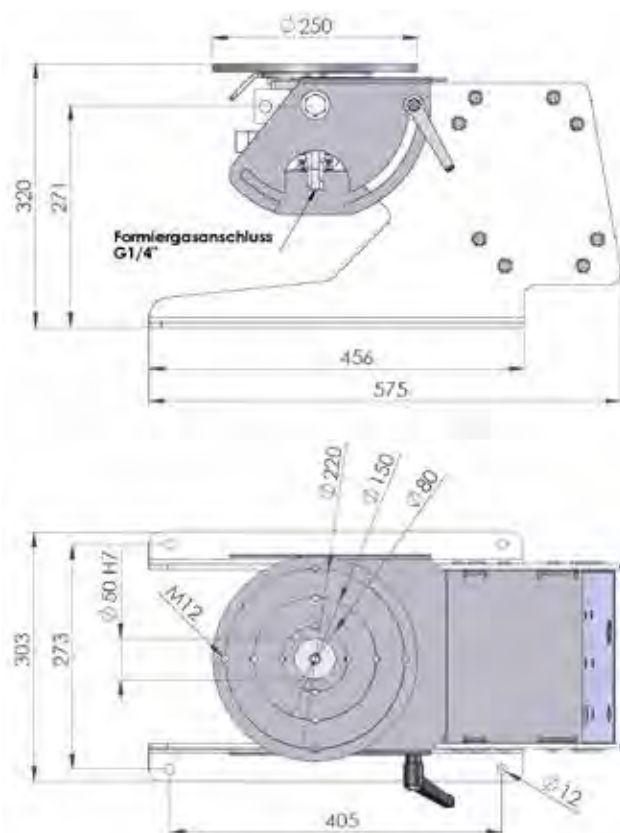
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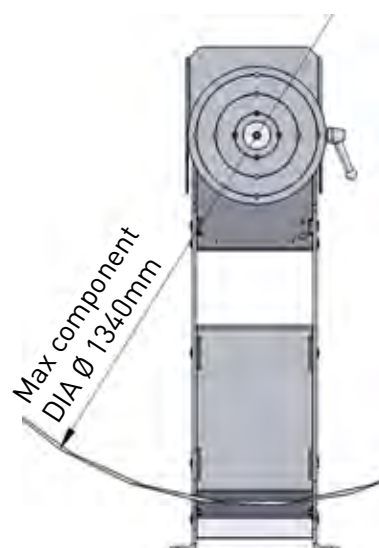
Welding Positioner D52/25 - D52/70
Table Height 320 mm and 800 mm

Dimensions D52 TH 320mm

Dimensions D52 TH 800mm

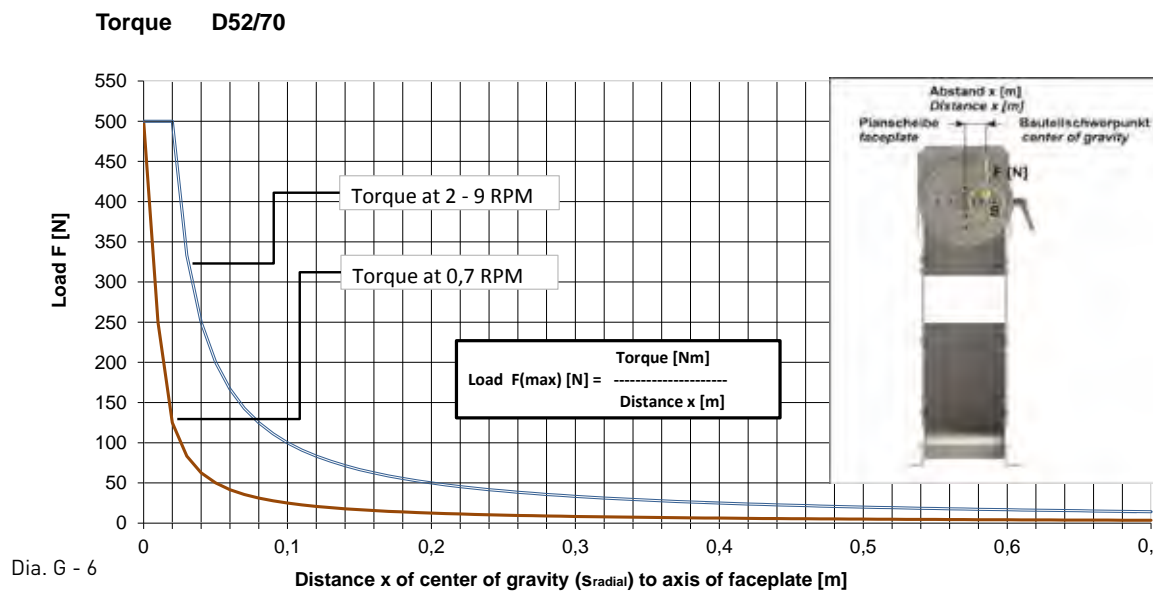
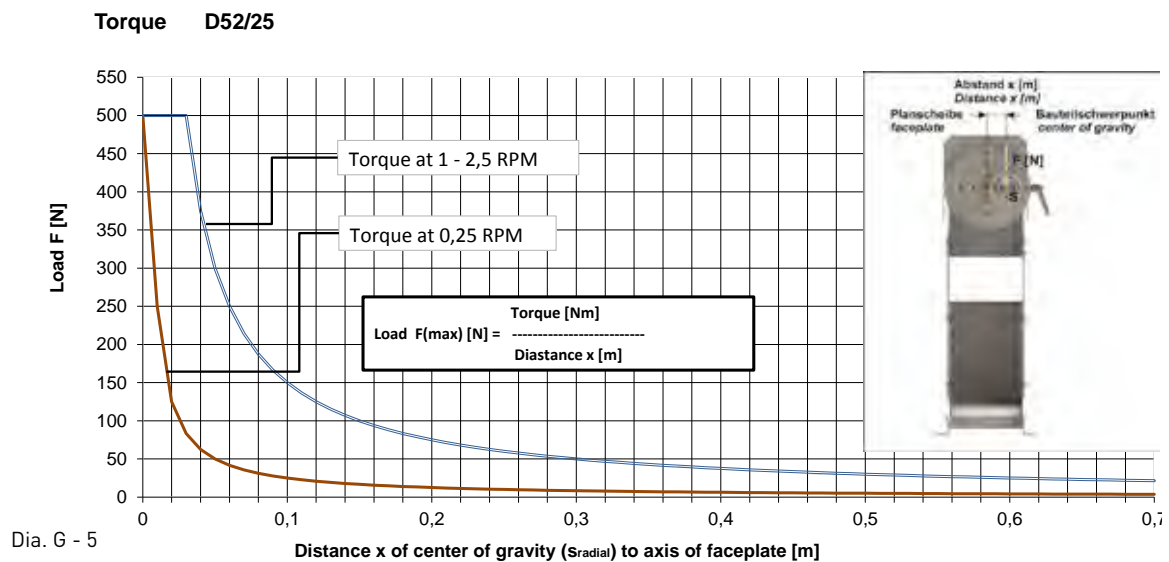
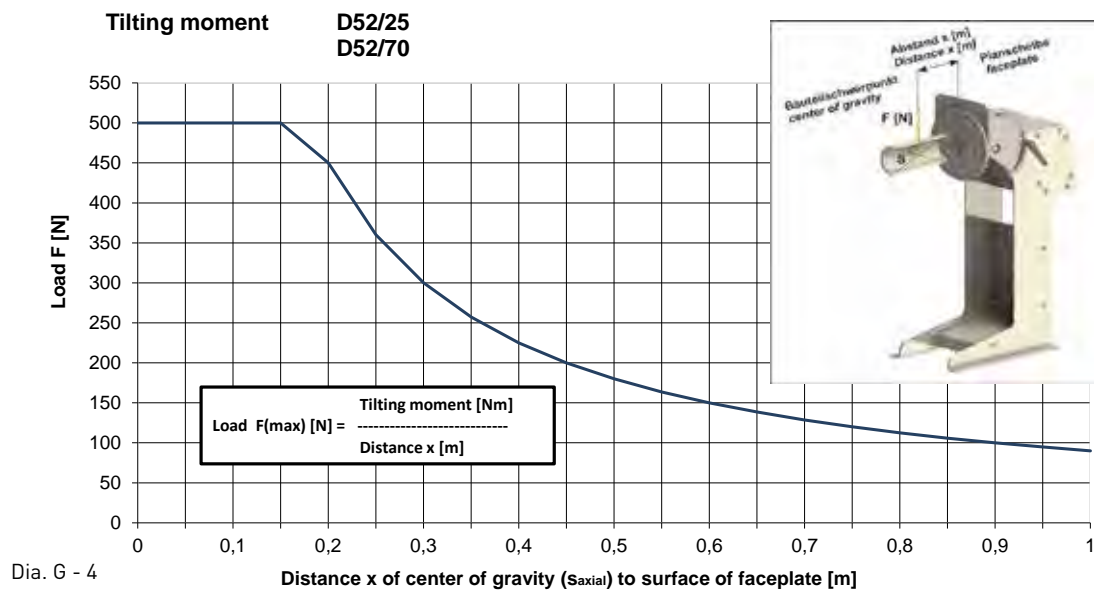


Dia. G - 2



Dia. G - 3

Welding Positioner D52/25 - D52/70 Table Height 320 mm and 800 mm



Welding Positioner D102 / D302 Table Height: 400 mm



Dia. G - 7

Technical Details:	D 102/60-400 D 102/150-400	D 302/60-400 D 302/150-400
Load Capacity (vertical)	100 kg/1,0 kN	100 kg/1,0 kN
RPM	0,1 - 10 min ⁻¹	0,05 - 5 min ⁻¹
Torque	15 - 50 Nm	30 - 100 Nm
Face Plate Dia	400 mm	400 mm
Groove - Face Plate (only spindle bore 60mm)	14 mm for M12	14 mm for M12
Table Height	400 mm	400 mm
Axle Height	320 mm	320 mm
Spindle Bore	60 mm 150 mm	60 mm 150 mm
Centralising Bore (Chuck or Jig Mount)	ø 78H7 3mm deep (60) ø 154H7 25mm deep (150)	ø 78H7 3mm deep (60) ø 154H7 25mm deep (150)
Tilting Angle Face Plate	135°	135°
Tilting Movement	manual lockable and detents engagement	manual lockable and detents engagement
Tilting Moment	130 Nm	130 Nm
Max Dia - ø	490 mm	490 mm
Current Collector	400A (34V) 80% ED	400A (34V) 80% ED
Mains Voltage	230V / 240V	230V / 240V
Frequency	50 / 60Hz	50 / 60Hz
Mains connection cable	3x2,5 mm ² , 5 m with Schuko plug	3x2,5 mm ² , 5 m with Schuko plug
Interface for external operation	Foot Switch, Hand and Foot Remote	Foot Switch, Hand and Foot Remote
Speed range	1:100	1:100
Limit switch overlap 360° + overlap length	Option	Option
Weight	65 kg	66 kg

The series **model D 102 and D 302** are welding positioners for welding with electrode, MIG-MAG TIG and Plasma as well as Plasma cutting. The two devices differ in torque and RPM range (see technical data).

The face plate has a diameter of 400 mm and can be locked by a lever, and tilted to any angle within the 135° range.

As standard, the turntables come delivered with a 60mm spindle bore with the option to increase this to 150mm. The spindle bore can be used when clamping long material in the chuck or jig, or for routing supply lines for compressed air/cooling fluid or for the supply of purging gas to the welding job. The face plate centralising bore has a Dia of 78mm (154mm with 150mm spindle bore) and is used for centralising jigs or chucks when mounting to the face plate.

The Rotation speed is steplessly adjustable. The drive is supplied by a 24 V DC-motor with worm gear. The welding positioners are equipped with a tachogen which ensure a constant RPM irrespective of loads subjected to the drive motor.

The control electronics are installed in a closed protective housing. The operating elements are arranged clearly visible on the front plate. The speed controller is electrically isolated from the mains and supplied with a voltage of 42 V.

The current collector is insulated and can be loaded with maximum of 400 A/34 V at 80% duty cycle.

Spindle bore 60 mm:

Welding positioner D 102/60-400
(table height 400 mm)
Article no. 117.766

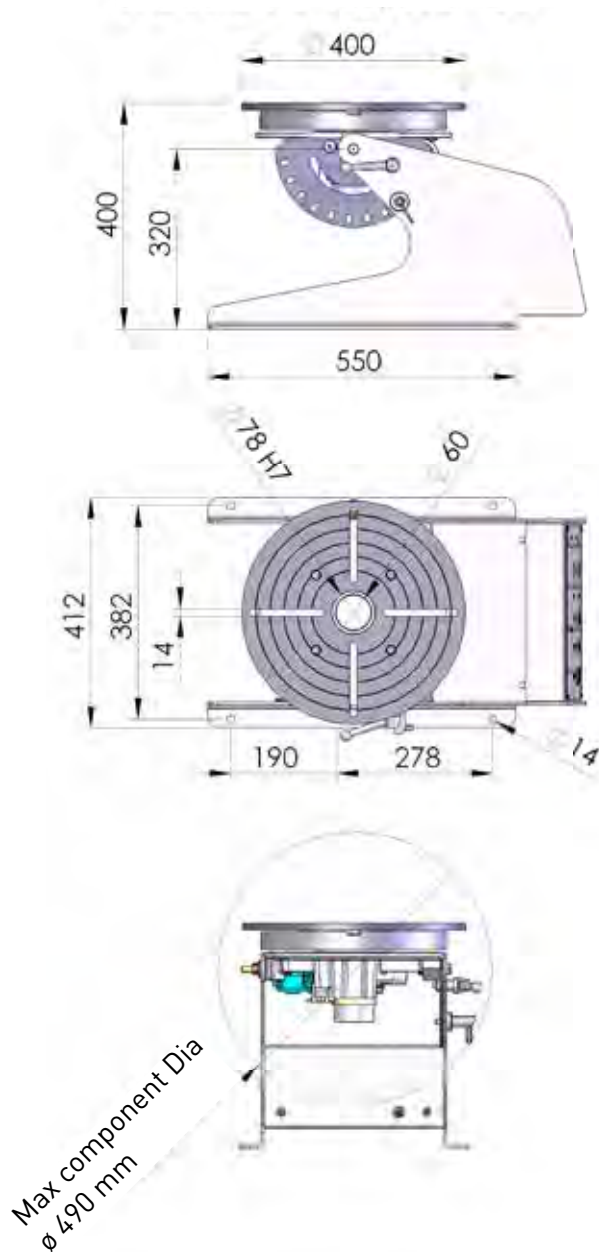
Welding positioner D 302/60-400
(table height 400 mm)
Article no. 117.768

Spindle bore 150 mm:

Welding positioner D 102/150-400
(table height 400 mm)
part no. 117.770

Welding positioner D 302/150-400
(table height 400 mm)
part no. 117.772

Dimensions D 102 / 302 - 60



Dia. G - 8

Optional Extras

Option: End Switch Overlap Facility

The advantage of this facility is that at the end of the overlap phase in automatic mode, the face plate automatically returns to the 360° position.

End Switch Overlap Facility

- for Turntables with Spindle Bore 60mm

part no. 116.912

- for Turntables with Spindle Bore 150mm

part no. 130.912

Option: D102 / D302:

optional left & right Programmsequence

Art.Nr. 141.798

Option: Current Collector

the collector can be loaded with maximum of 860A/34V at 80% duty cycle

attention:

- only for D102/302 with spindle bore Ø60mm

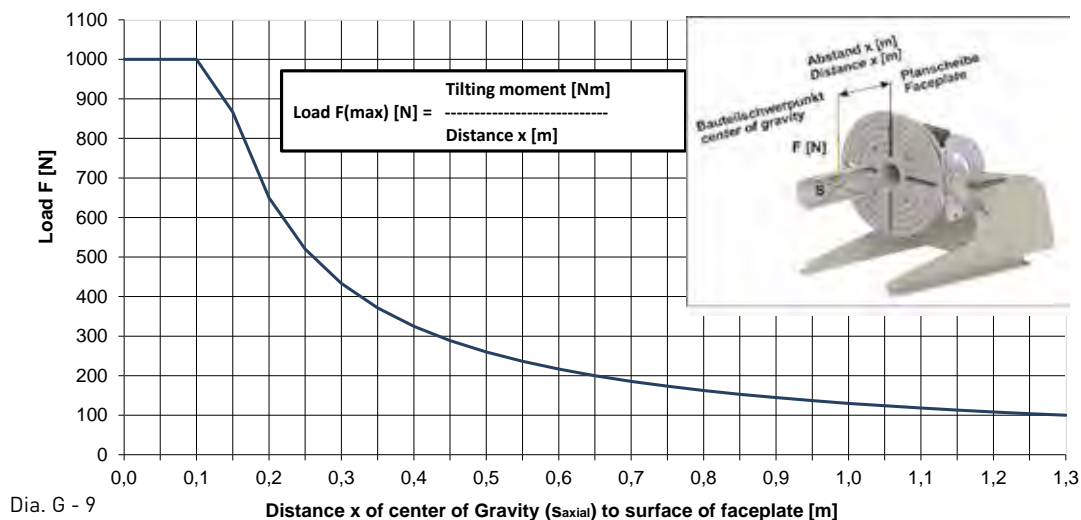
- this reduces the spindle bore to Ø50mm

Art.Nr.135.550

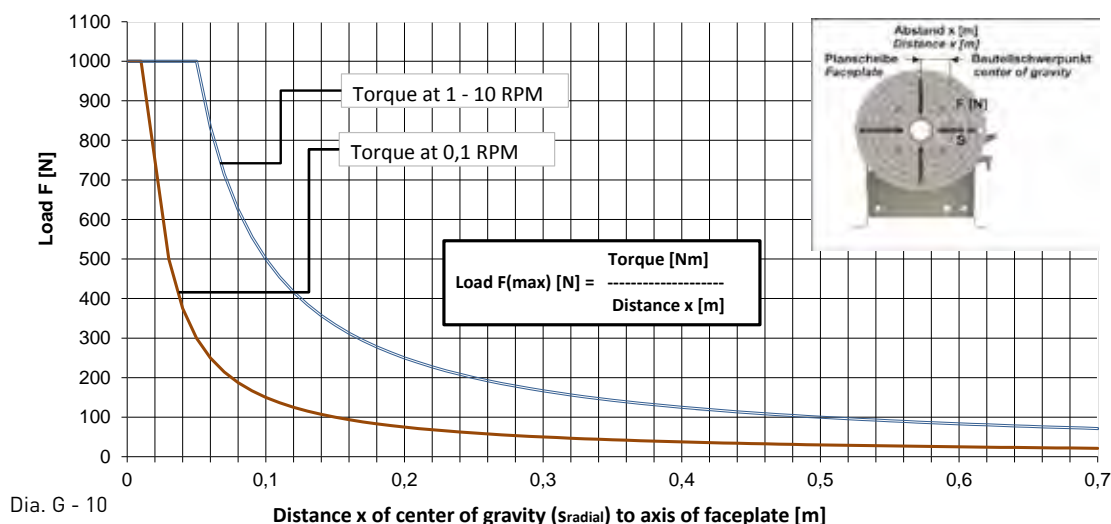
Controller and Functions

Main Switch:	Controller on/off
Control Lamp:	Controller on/off
Potentiometer:	RPM
Button:	Face plate left/right
	Foot switch on/off
	Foot remote on/off
Plug (10 pin):	Foot switch
	Remote control

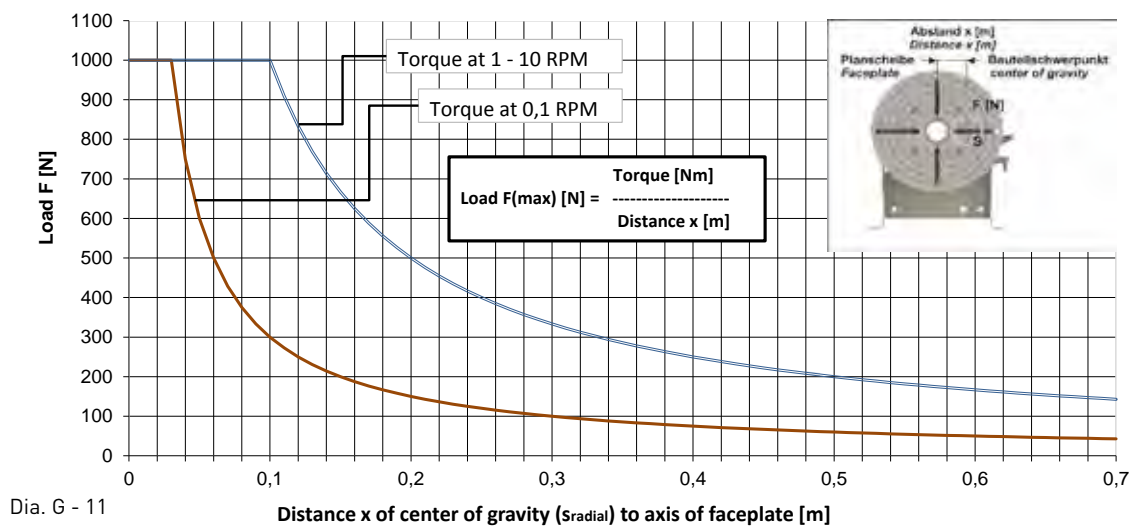
Tilting moment D102/60 - D102/150 D302/60 - D302/150



Torque D102/60 - D102/150



Torque D302/60 - D302/150





Dia. G - 12

Technical Details:	D 102/60-750 D 102/150-750	D 302/60-750 D 302/150-750
Load Capacity (vertical)	100 kg/1,0 kN	100 kg/1,0 kN
RPM	0,1 - 10 min ⁻¹	0,05 - 5 min ⁻¹
Torque	15 - 50 Nm	30 - 100 Nm
Face Plate Dia	400 mm	400 mm
Groove - Face Plate (only spindle bore 60mm)	14 mm for M12	14 mm for M12
Table Height	750 mm	750 mm
Axle Height	670 mm	670 mm
Spindle Bore	60 mm 150 mm	60 mm 150 mm
Centralising Bore (Chuck or Jig Mount)	ø 78H7 3mm deep (60) ø 154H7 25mm deep (150)	ø 78H7 3mm deep (60) ø 154H7 25mm deep (150)
Tilting Angle Face Plate	135°	135°
Tilting Movement	manual lockable and detents engagement	manual lockable and detents engagement
Tilting Moment	130 Nm	130 Nm
Max Dia - ø	1160 mm	1160 mm
Current Collector	400A (34V) 80% ED	400A (34V) 80% ED
Mains Voltage	230V / 240V	230V / 240V
Frequency	50 / 60Hz	50 / 60Hz
Mains connection cable	3x2,5 mm ² , 5 m with Schuko plug	3x2,5 mm ² , 5 m with Schuko plug
Interface for external operation	Foot Switch, Hand and Foot Remote	Foot Switch, Hand and Foot Remote
Speed range	1:100	1:100
Limit switch overlap 360° + overlap length	Option	Option
Weight	65 kg	66 kg

The product series model D 102 and D 302 are welding positioners for welding with electrode, MIG-MAG TIG and Plasma as well as Plasma cutting. The two devices differ in torque and RPM range (see technical data).

The face plate has a diameter of 400 mm and can be locked by a lever, and tilted to any angle within the 135° range.

As standard, the turntables come delivered with a 60mm spindle bore with the option to increase this to 150mm. The spindle bore can be used when clamping long material in the chuck or jig, or for routing supply lines for compressed air/cooling fluid or for the supply of purging gas to the welding job. The face plate centralising bore has a Dia of 78mm (154mm with 150mm spindle bore) and is used for centralising jigs or chucks when mounting to the face plate.

The Rotation speed is steplessly adjustable. The drive is supplied by a 24 V DC-motor with worm gear. The welding positioners are equipped with a Tacho Gen which ensure a constant RPM irrespective of loads subjected to the drive motor.

The control electronics are installed in a closed protective housing. The operating elements are arranged clearly visible on the front plate. The Speed controller is electrically isolated from the mains and supplied with a voltage of 42 V.

The current collector is insulated and can be loaded with maximum of 400 A/34 V at 80% duty cycle.

Spindle Bore 60 mm:

Welding positioner D 102/60-750
(table height 750 mm)
part no. 116.738

Welding positioner D 302/60-750
(table height 750 mm)
part no. 116.746

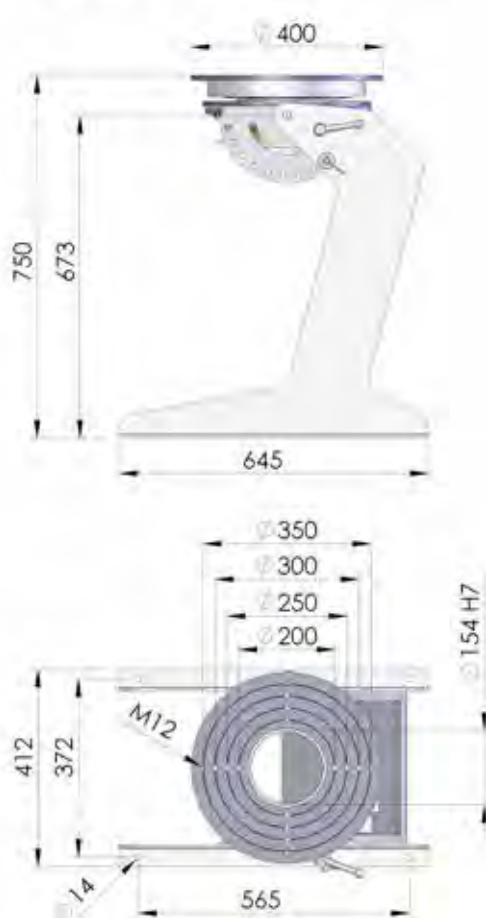
Spindle Bore 150 mm:

Welding positioner D 102/150-750
(table height 750 mm)
part no. 116.734

Welding positioner D 302/150-750
(table height 750 mm)
part no. 116.742

Welding Positioner D102 / D302
Table Height: 750 mm

Dimensions D 302 - 150



Optional Extras

Option: **End Switch Overlap Facility**

The advantage of this facility is that at the end of the overlap phase in automatic mode, the face plate automatically returns to the 360° position.

End Switch Overlap Facility

- for Turntables with Spindle Bore 60mm
part no. 116.912

- for Turntables with Spindle Bore 150mm
part no. 130.912

Option: **D102 / D302:**

optional left & right Programmsequence
Art.Nr. 141.798

Option: **Current Collector**

the collector can be loaded with maximum of 860A/34V
at 80% duty cycle
attention:

- only for D102/302 with spindle bore Ø60mm
- this reduces the spindle bore to Ø50mm

Art.Nr.135.550

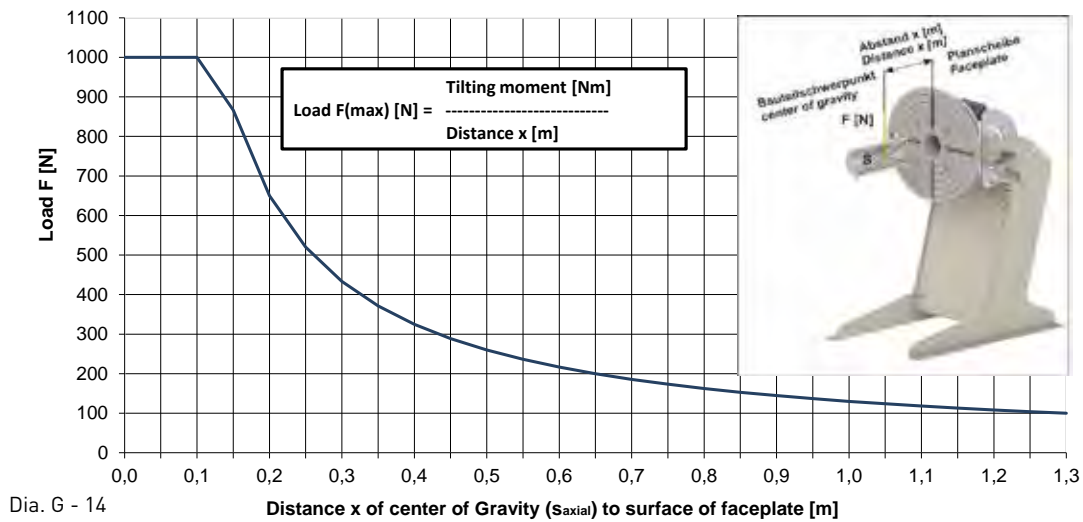
Controller and Functions

Main Switch:	Controller on/off
Control Lamp:	Controller on/off
Potentiometer:	RPM
Button:	Face plate left/right
	Foot switch on/off
	Foot remote on/off
Plug (10 pin):	Foot switch
	Remote control

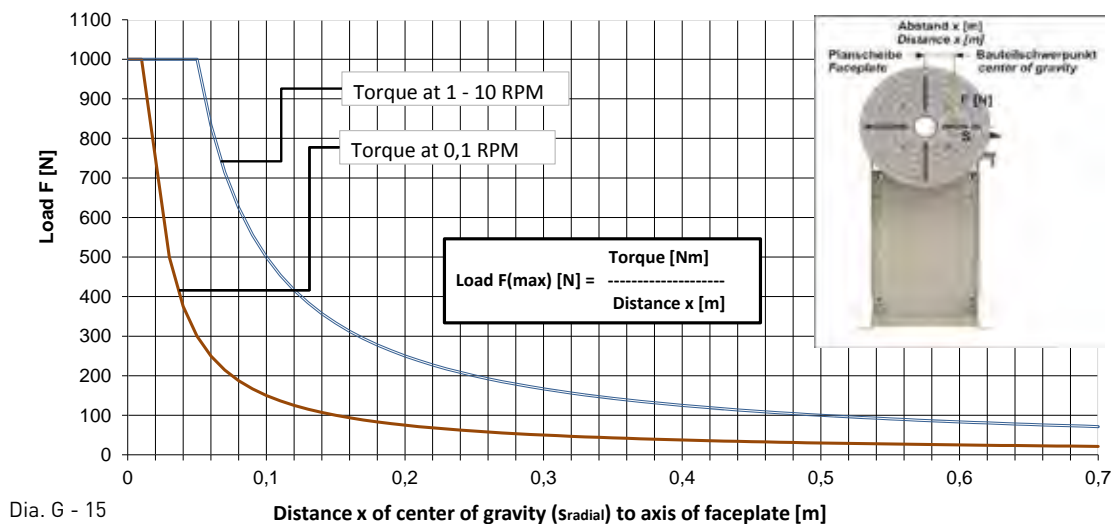


Dia. G - 13

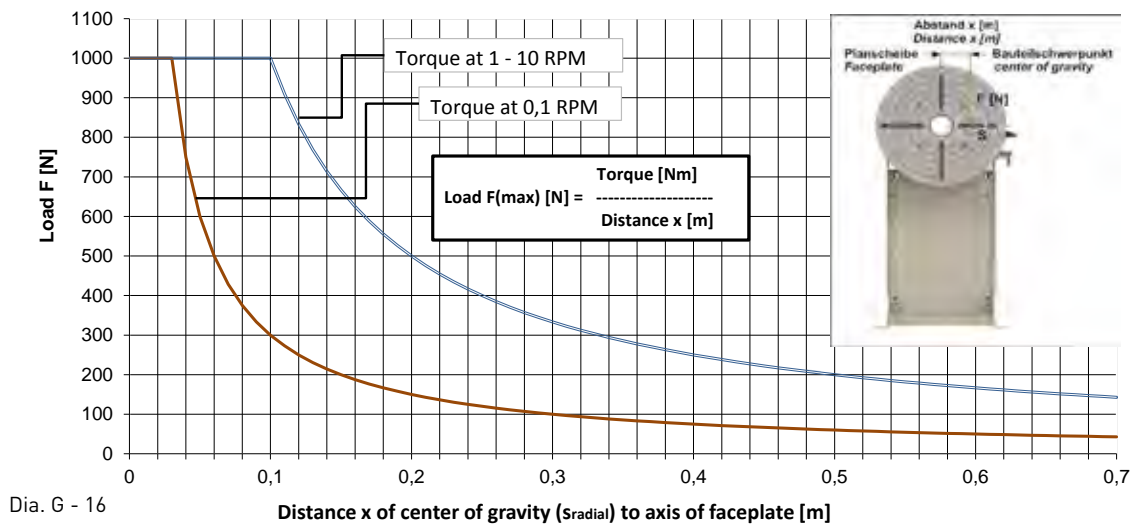
Tilting moment D102/60 - D102/150 D302/60 - D302/150

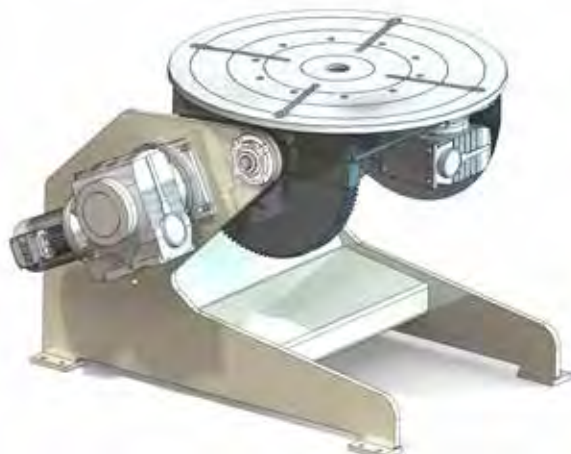


Torque D102/60 - D102/150



Torque D302/60 - D302/150





Dia. G - 17

The Turntables, model D 653 and model D 1003 are used for welding with electrode, MIG-MAG, TIG and Plasma as well as Plasma cutting.

The face plate has a diameter of 920 mm and can be pivoted from the horizontal to the vertical position using the integrated motor with worm drive gearbox (limit switches for horizontal and vertical position are installed).

The Spindle Bore has an internal diameter of 47,5 mm (D653) or 56 mm (D1003). The spindle bore can be used when clamping long material in the chuck or jig, or for routing supply lines for compressed air/cooling fluid or for the supply of purging gas to the welding job.

The face plate Centralising Bore (Chuck or Jig Mount) has a Dia of 64 mm and is used for centralising jigs or chucks when mounting to the face plate.

The Rotation speed is steplessly adjustable. The current collector is insulated and can be loaded with maximum current of 400 / 800 A.

The control electronics are mounted in a cabinet on the turntable frame. Due to using frequency variation technology, the three phase motor is constantly adjustable within the range 1:43,5 / 1:40.

The functions on/off, left/right and emergency stop can be controlled over an external remote.

Turntable model D 653
part no. 121.070

Turntable model D 1003
part no. 119.142

Option: End Switch Overlap Facility

The advantage of this facility is that at the end of the overlap phase in automatic mode, the face plate automatically returns to the 360° position.

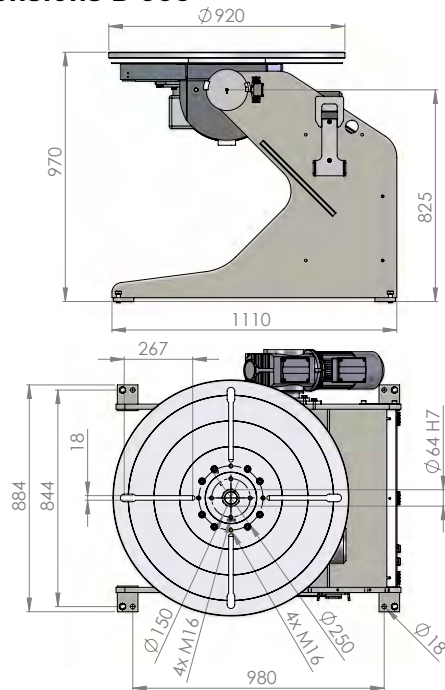
Turntable model D 653 with
End Switch Overlap Facility
part no. 121.071

Turntable model D 1003 / D 1004 with
End Switch Overlap Facility
part no. 119.143

Option D653 / D1003:
optional left & right Programmsequence
Art.Nr. 141.799

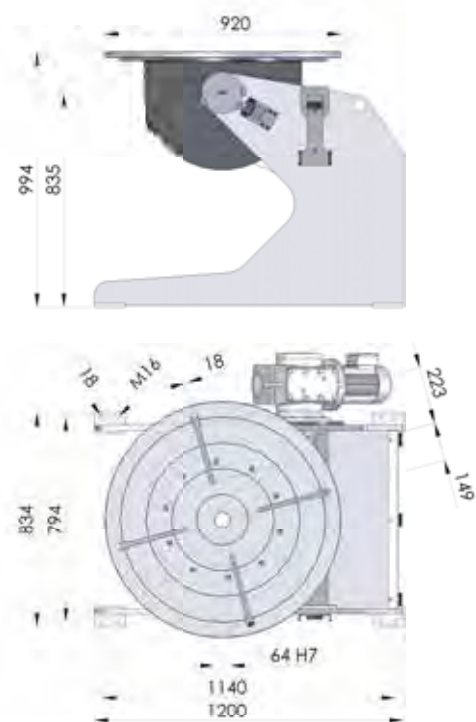
Technical Details:	D 653	D 1003
Article Nr	121.070	119.142
Load Capacity [vertical]	650 kg / 6,5 kN	1000 kg / 10kN
RPM	0,075 - 3,26 min ⁻¹	0,01 - 1,3 min ⁻¹
Torque	700 Nm	1025 Nm
Face Plate Dia	920 mm	920 mm
Groove - Face Plate	18 mm for M16	18 mm for M16
Table Height	970 mm	994 mm
Axle Height	825 mm	835 mm
Spindle Bore	47,5 mm	56 mm
Centralising Bore (Chuck or Jig Mount)	ø 64 H7 3mm deep	ø 64 H7 3mm deep
Tilting Angle Face Plate	135°	135°
Tilting Movement	motor driven	motor driven
Tilting Moment	1100 Nm	3000 Nm
Tilt Speed	4,4 °/sec	6,3 °/sec
MAX Rotating Dia	1400 mm	1400 mm
Current Collector	400 A	800 A
Mains Voltage	3 x 400 V	3 x 400 V
Frequency	50 / 60Hz	50 / 60Hz
Mains connection cable	5x2,5 mm ² , 5 m with CEE-Plug	5x2,5 mm ² , 5 m with CEE-Plug
Interface for external operation	Foot Switch, Hand and Foot Remote	Foot Switch, Hand and Foot Remote
Speed Range	1:43,5	1:130
Limit switch overlap 360° + overlap length	Option	Option
Weight	420 kg	550 kg

Dimensions D 653

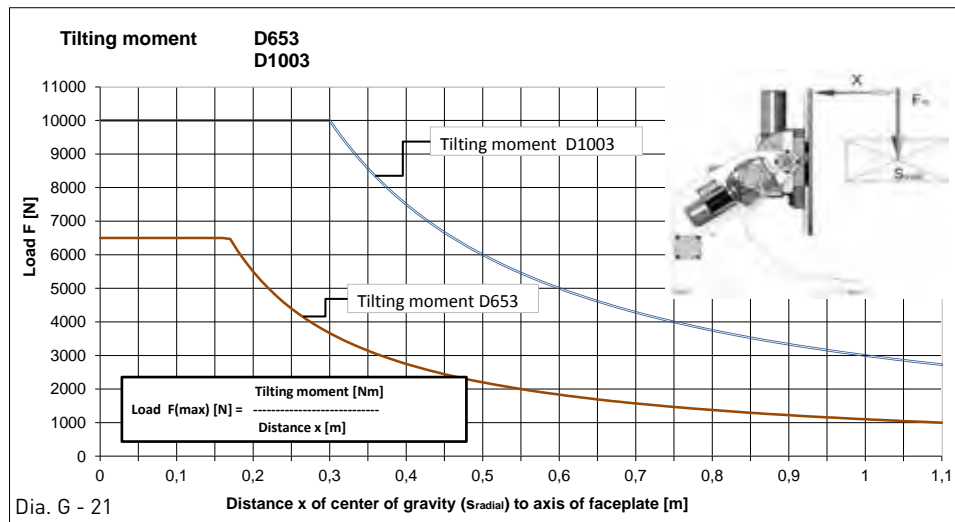
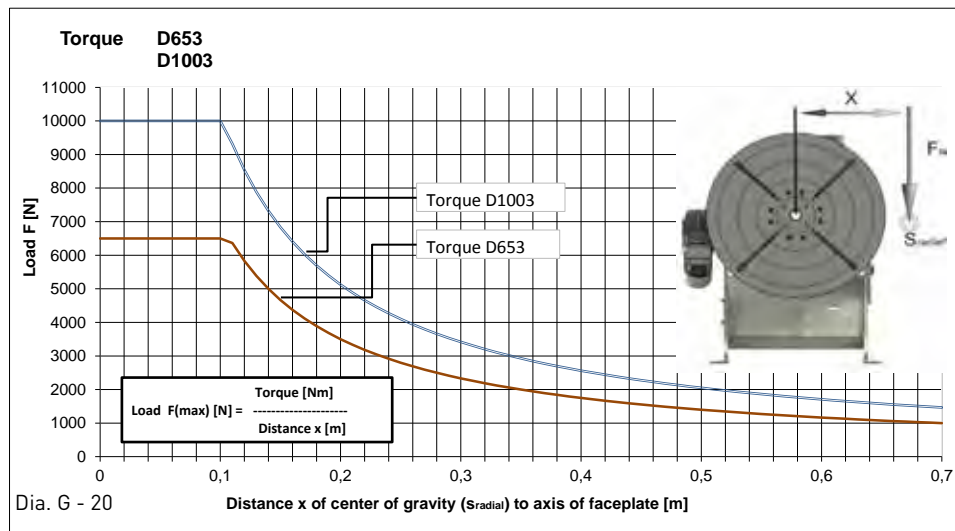


Dia. G - 18

Dimensions D 1003



Dia. G - 19



A
B
C
D
E
F
G
H
I
J
K
L

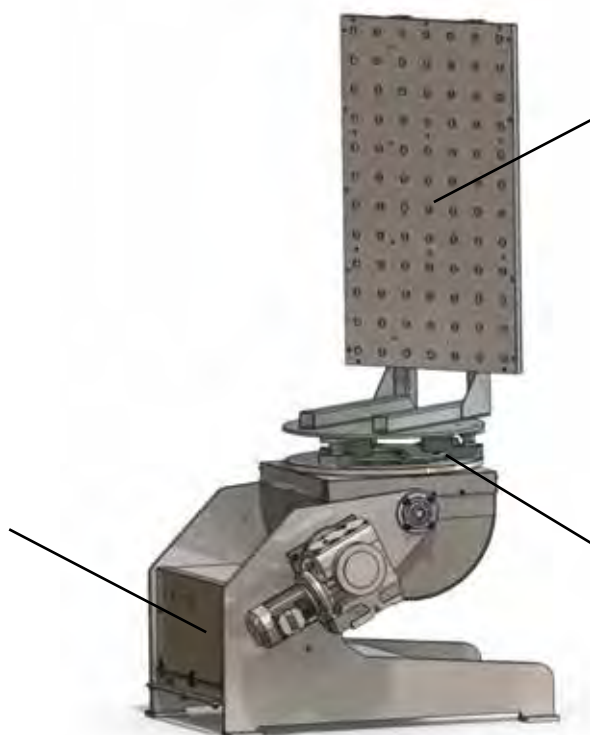


Circular welding units

Riegelsystem for The Welding Positioner D653 / D1003

G

Turntable D 1004
part no. 122.124



Clamping table outrigger for
Quick Fit Latching System
D1004
part no. 122.230

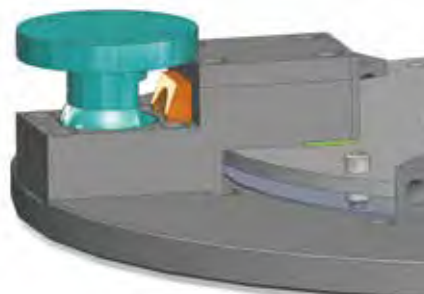
Face Plate with Quick Fit
Latching System
Patent-Nr. DE202009012300U1
part no. 122.102

Dia. G - 22

New in the model D563/D1003 series turntables is an exchangeable face plate equipped with our patented Quick Fit Latching System. With the Quick Fit Latching system, the face plate is quickly removed and replaced whilst maintaining 100% concentricity. This allows you to use a single turntable for different tasks involving various face plates, jig or chuck combinations (welding, cutting, spot welding, mounting work etc) whilst keeping change over times to a minimum.



Dia. G - 23



Dia. G - 24



Dia. G - 25

Bauserie / model	D5002
Technical Details:	
Load Capacity (vertical)	5000 kg / 50 kN
RPM	0,002 - 1,1 min-1
Torque	5000 Nm
Face Plate Dia	1000 mm
Groove - Face Plate	18 mm for M16
Table Height	1444 mm
Axle Height	1275 mm
Spindle Bore	60 mm
Centralising Bore (Chuck or Jig Mount)	ø 64H7 20 mm deep
Tilting Angle - Face Plate	135°
Tilting Movement	Hydraulic
Tilting Moment	31750 Nm
MAX Rotating Dia (without base extension)	2400 mm
MAX Rotating Dia (with base extension)	2000 mm
Current Collector	1200 A
Mains Voltage	3x400V
Frequency	50/Hz
Mains connection cable	5x4mm ² , 5m with CEE-Plug 32 A
Interface for external operation	Foot Switch, Hand and Foot Remote
Speed Control Range	1:550
Limit switch overlap 360° + overlap length	Option
Weight	approx 2200 kg

The Turntable, **model D5002** is used for welding with electrode, MIG-MAG, TIG and Plasma as well as Plasma cutting.

The face plate has a diameter of 1000mm and can be hydraulically pivoted from the vertical to horizontal position.

The Spindle Bore has an internal diameter of 60mm. The spindle bore can be used when clamping long material in the chuck or jig, or for routing supply lines for compressed air/cooling fluid or for the supply of purging gas to the welding job.

The face plate centralising bore (chuck or jig Mount) has a Dia of 64 mm and is used for centralising jigs or chucks when mounting to the face plate.

The Rotation speed is steplessly adjustable. The current collector is insulated and can be loaded with maximum current of 1200A.

The control electronics are mounted in a cabinet on the turntable frame. Due to using frequency variation technology, the three phase servo motor is constantly adjustable within the range 1:550.

The functions on/off, left/right and emergency stop can be controlled over an external remote.

Turntable model D5002
(without End Switch Overlap Facility)
part no. 137.748

Turntable model D5002
(with End Switch Overlap Facility)
part no. 137.749
Options D 5002

Option: End Switch Overlap Facility

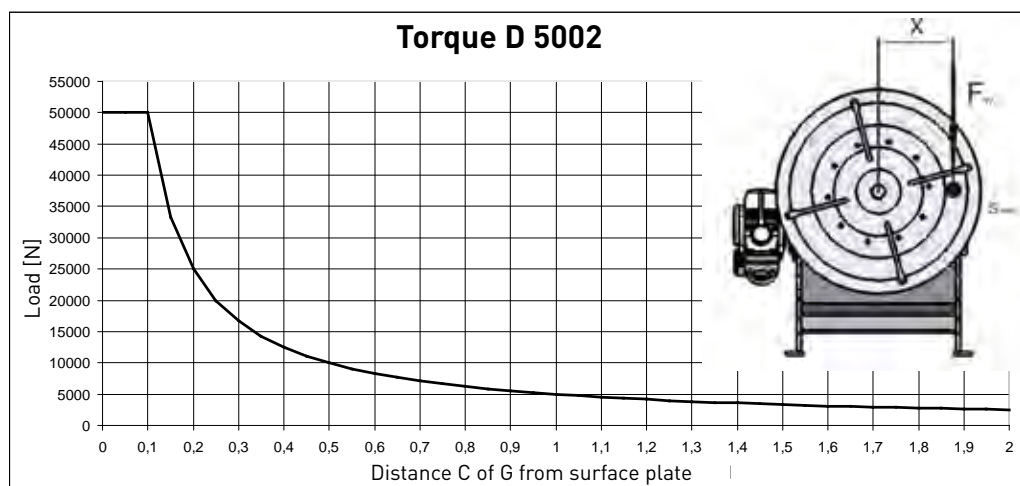
The advantage of this facility is that at the end of the overlap phase in automatic mode, the face plate automatically returns to the 360° position.

End Switch Overlap Facility D5002
part no. 126.242

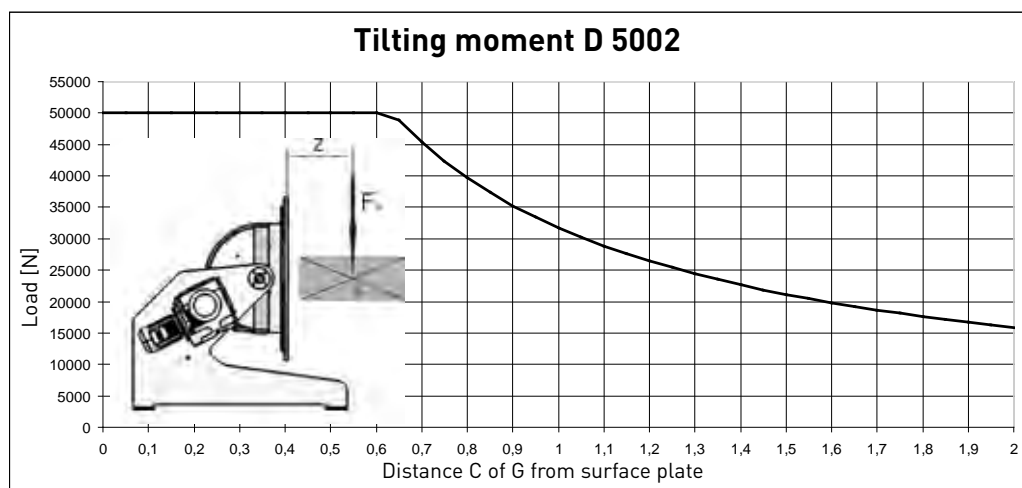
Option: Base extension

Base extension D 5002
part no. 133.530



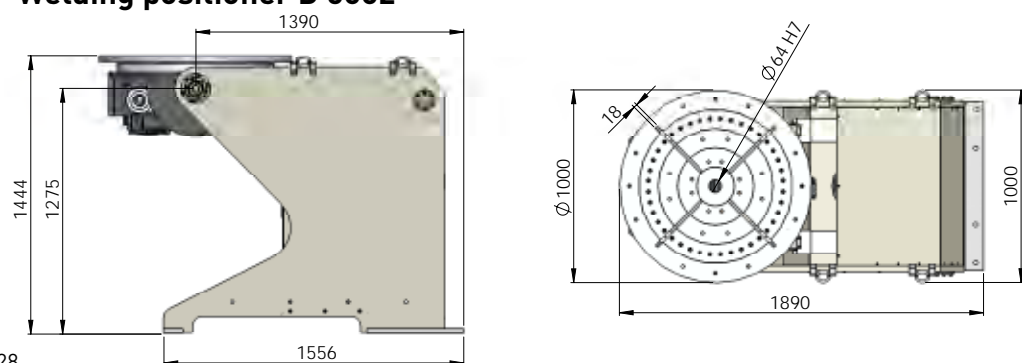


Dia. G - 26



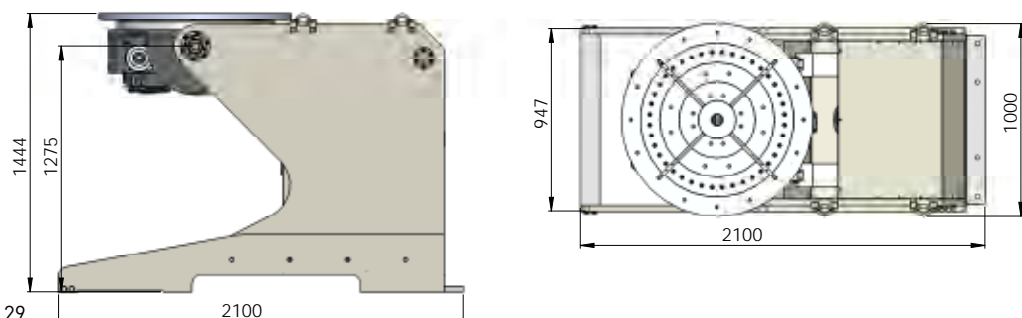
Dia. G - 27

Welding positioner D 5002

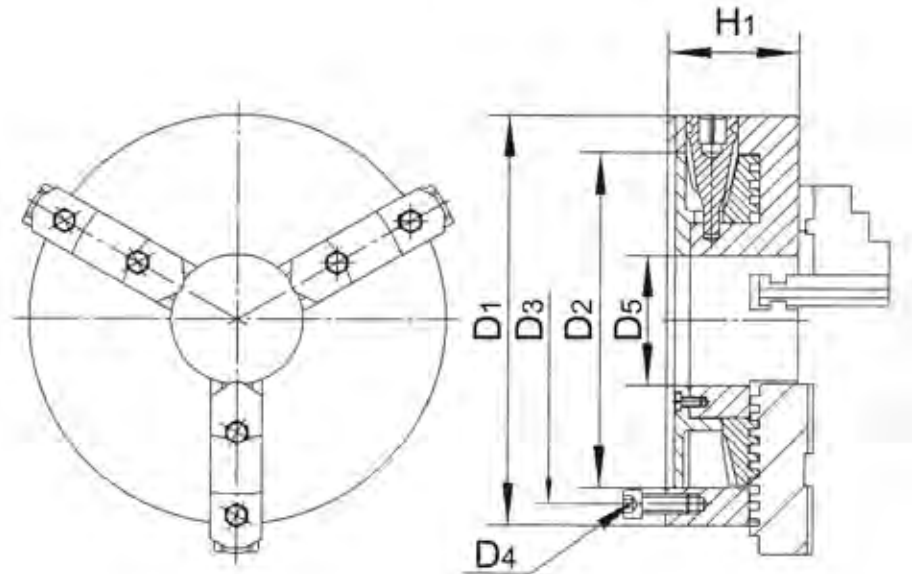


Dia. G - 28

Welding positioner D 5002 with base extension



Dia. G - 29



Dia. G - 30

Dimensions:		ME-DBS-125	ME-DBS-160	ME-DBS-200	ME-DBS-250	ME-DBS-315	ME-DBS-400
D1 (mm)		125	160	200	250	315	400
D2 (mm)		95	130	165	206	260	340
D3 (mm)		108	142	180	226	285	368
D4		3 x M8	3 x M8	3 x M10	3 x M12	3 x M16	3 x M16
D5 (mm)		30	45	65	80	100	130
H1 (mm)		78	95	109	120	154	202
Work Piece ø (mm)	min	3	4	4	6	8	14
	max	135	175	230	290	360°	460
Spindle Bore (mm)		30	40	65	80	100	138
Weight (kg)		4,6	9	15,3	26,5	42,7	71
Article-Nr.:		113.050	113.052	113.054	113.056	113.058	113.060
Pr. Gr.:		05	05	05	05	05	05

All chucks have a cylindrical central mounting face to DIN 6350 standards. Included with every chuck is a set of internal and external clamping jaws.

For mounting Chucks to face plates, various mounting flanges are available.

Mounting Flange Options:

Combination: Turntables - Chucks

Chucks:	ME-DBS-125	ME-DBS-160	ME-DBS-200	ME-DBS-250	ME-DBS-315	ME-DBS-400
for D 52	117.028	117.038	-	-	-	-
for D 101-301/60 for D 102-302/60	-	129.212	117.074	117.076	-	-
for D 101-301/150 for D 102-302/150	-	129.214	117.082	117.084	-	-
for D 653 for D 1003 for D 5002	-	-	-	-	125.184	125.610



Dia. G - 31

The base frame of the welding device is a steel structure. Two parallel guide tracks are mounted on the body of the device. The upper, obliquely arranged guide track is the mount for the torches. The guide track can be constructed with one or more chassis on which the welding heads are mounted. The chassis are easy to move by hand and can be clamped at any position along on the entire length of the track.

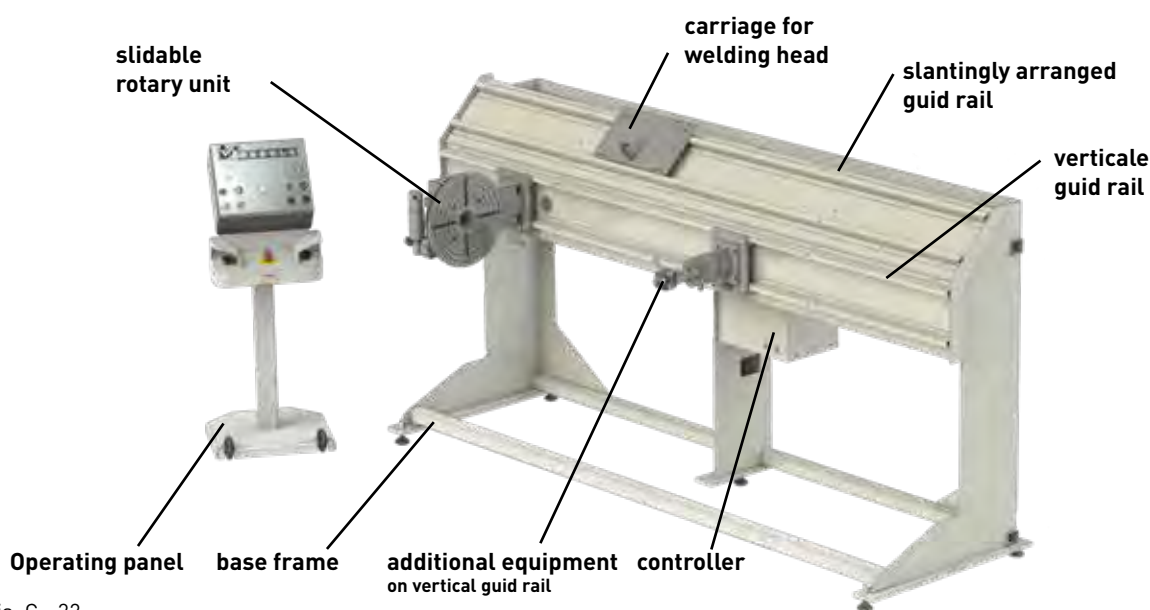
The second, vertical guide track serves to mount the fixtures for positioning and clamping the components. The rotary drive with the face plate is aligned with the center of the track and defines the axis height.

The turntable has a window of $\varnothing 60$ mm or $\varnothing 150$ mm. You can choose between two drive types. It is driven by a tachometer-controlled and speed-controlled gear motor. Optionally, the rotary drive can be equipped with an NC servo gear motor.

The system controls are mounted on the back of the machine frame. The system is operated from a freestanding console. The connection cable between the control cabinet and control panel is in a metal-sheathed hose.

technical specifications:




length basic chassis:	3.000 mm (On customer request, the length can be adjusted)
max. workpiece length:	1.900 mm
max. workpiece diameter:	400 mm




Dia. G - 32

Features

circular welding unit model Z-0019-584

selection welding process		
A	MIG/MAG	
B	TIG without KDZF	
C	TIG with KDZF	
D	TIG with KDZF PP	
E	Plasma without KDZF	
F	Plasma with KDZF	
G	Plasma with KDZF PP	




selection drive options						
	Load [kN]	Spindle Bore [mm]	height rotation axis [mm]	RPM [min ⁻¹]	Torque [Nm]	
H	1	60	1100	0,1 - 10	15 - 50	
I	1	60	1100	0,05 - 5	30 - 100	
J	1	150	1100	0,1 - 10	15 - 50	
K	1	150	1000	0,05 - 5	30 - 100	

selection 3 Jaw Chuck / Mounting Flange	
L	ME-DBS-160
M	ME-DBS-200
N	ME-DBS-250

3 Jaw Chuck Mounting Flange	ME-DBS-160	ME-DBS-200	ME-DBS-250
for D 102-302/60	129.212	117.074	117.076

selection torch feeding		
O	pneumatic	stroke 150 mm
P	motorized	Compound slide KS100 and tactile workpiece sensing

dimensions:	ME-DBS-160	ME-DBS-200	ME-DBS-250
D1 (mm)	160	200	250
D2 (mm)	130	165	206
D3 (mm)	142	180	226
D4	3 x M8	3 x M10	3 x M12
D5 (mm)	45	65	80
H1 (mm)	95	109	120
Work piece-ø (mm)	min 4 max 175	min 4 max 230	min 6 max 290
Spindle Bore (mm)	40	65	80
Weight (kg)	9	15,3	26,5
Article-No.:	113.052	113.054	113.056
Pr. Gr.:	05	05	05

selection additional equipment on vertical guide rail		
Q	Counter pressure stock pressure clamp at 4 bar: 750 N Pinolenhub: 150 mm clamp top (standard): 90° Ømax. 50 mm	
R	Workpiece prism for pre-positioning or. workpiece location before clamping	
S	Roller guidance for workpiece centering on the rotation axis	



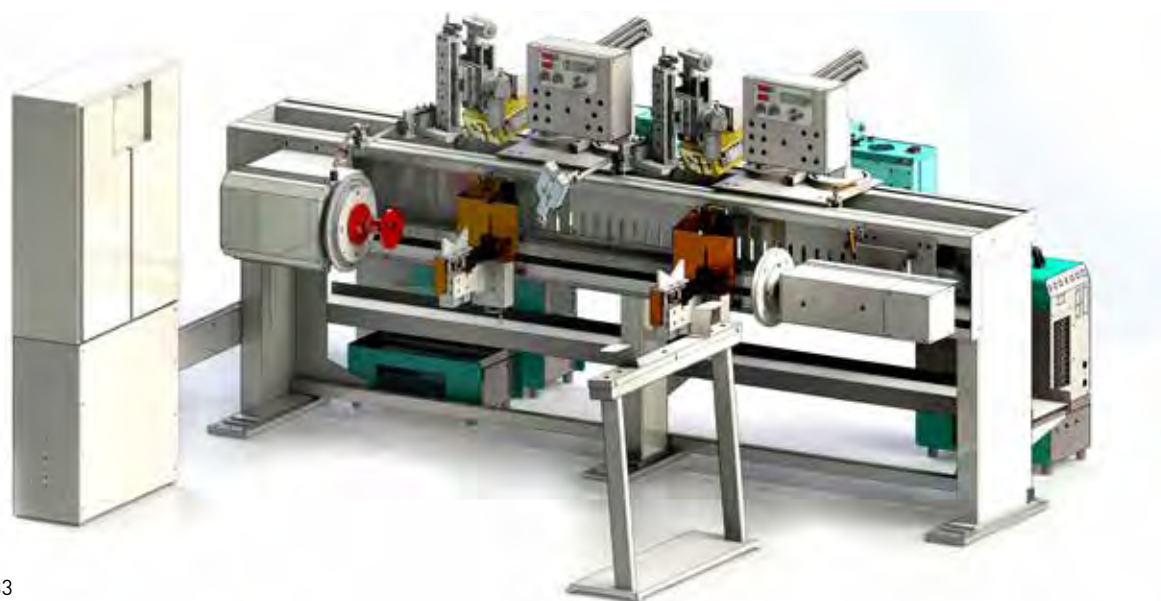
circular welding unit model Typ Z-0019-584
 Feature selection: Ex.: **D** - **I** - **L** - **O** - **2S**

A
B
C
D
E
F
G
H
I
J
K
L



Circular welding units
Circular welding unit model
Z-0019-584-1

G



Dia. G - 33

The circular welding unit consists of a rigid steel construction. The carriage for the welding head assembly and the carriage with counter pressure stock are mounted on guided rails. They can be smoothly moved and clamped by hand.

The welding head is moved pneumatically in welding position towards the component. The precise welding position is finely adjusted via three longitudinal slides.

The control panel is mounted in a cabinet on a carriage together with the welding head like this all so that all important controls are within easy reach for the operator.

Between the drive unit and counter pressure stock two V-supports are mounted on sliding carriages. The V-supports move pneumatically and can be adjusted vertically with a manual slide depending on the component's diameter.

The workpiece is clamped by tailstock with a detached two-hand control panel. The circular welding unit allows TIG- and / or MIG/MAG welding. Depending on requirements the weld can be detected by tactile sensor or by laser scanner. If the tactile sensor is used the hand cross slide has to be replaced by the cross slide KS100. When using the laser scanner the cross slide LS series is required.

This circular welding unit is used when welding in different positions and a quick repositioning is necessary.

Technical specifications:

workpiece:

max. workpiece weight: 100 kg
 max. workpiece-Ø: 320 mm
 max. face-wide
 (face plate - counter pressure stock: 1900 mm

control:

QMacs real time
 freely programmable welding cycles

Counter pressure stock:

pressure-clamp: max. 4 bar
 stroke: 150 mm

Drive unit:

drive: Servo drive
 executed by an NC axis
 revolution speed: till 10 min⁻¹
 face plate diameter: 400 mm

Control Q.MACS real time

The controller allows to create different machine programs for different welds and to save and load the programs in a Microsoft SQL Server Express database. These programs include welding parameters and motion parameters of the radial axis e.g. (the welding speed and the position data for welding start and end). The program can operate any quantity of instructions. Thus, a weld joint can be divided into several sections of different speeds and welding jobs and can be welded in one run. The creation and saving of programs is performed on a touch screen at the control cabinet. The control unit includes the full Q.MACS functionality. Thus, a complete documentation and monitoring of all welding joints and the possibility of assignment to serial numbers, part numbers or production orders, etc. is given. The energy and arc length of welding jobs can also be adjusted online manually at the control panel while a program is executed.



Dia. G - 34

Operation on cabinet with
Touch-Screen

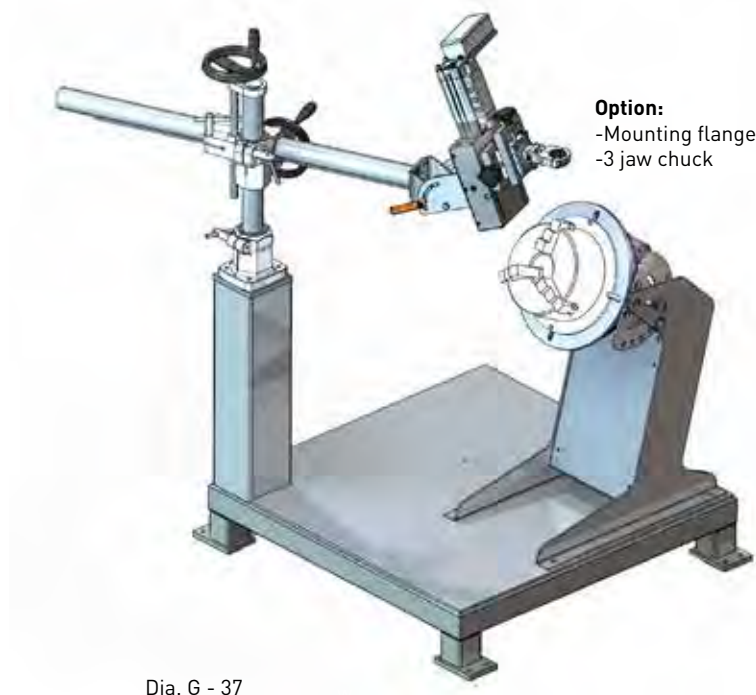
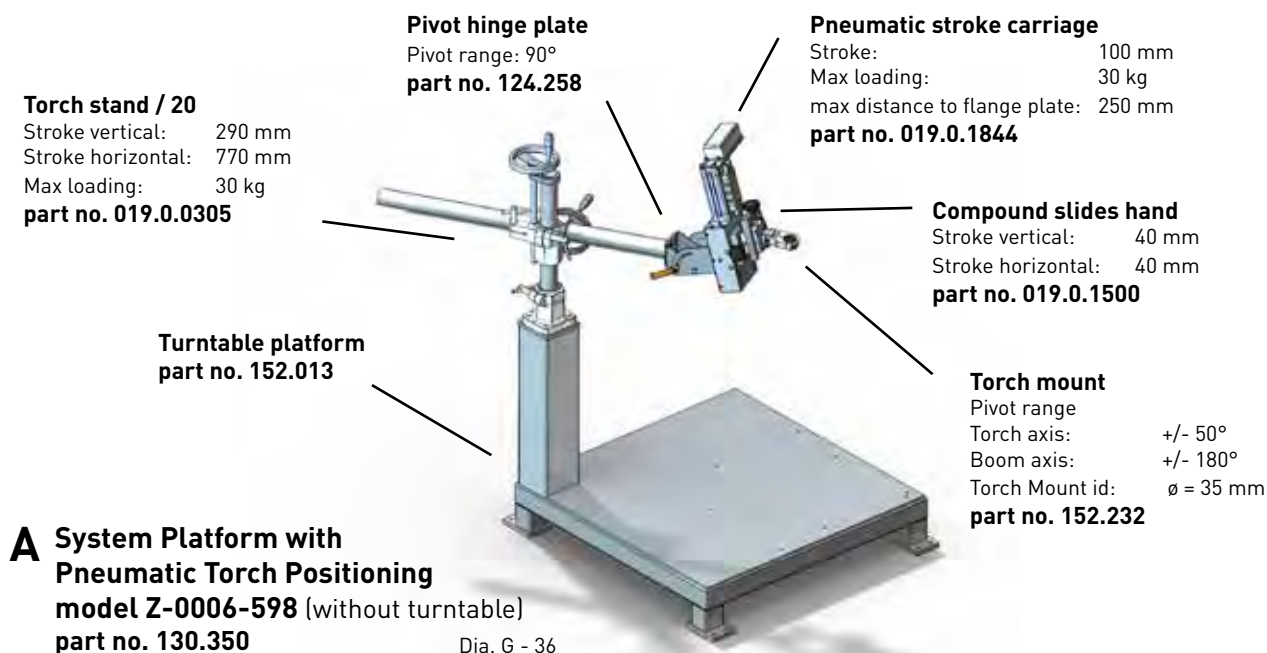


Dia. G - 35

Operation on welding head

Circular welding unit model Z-0019-584
Art.Nr. 139.492

**Circular welding unit model
Z-0006-598 (Pneumatic Torch
Positioner)**



C Turntable D 102-60
Load Capacity: 100 kg
Torque: 15 - 50 Nm
Tilting Moment: 130 Nm
RPM: 0,1 - 10 min⁻¹
Tilting Angle: 135°

D Turntable D 302-60
Load Capacity: 100 kg
Torque: 30 - 100 Nm
Tilting Moment: 130 Nm
RPM: 0,05 - 5 min⁻¹
Tilting Angle: 135°

AC

Circular welding unit model Z-0006-598 D102-60

- System platform model Z-0006-598
- D 102-60 **without** counter pressure spindle
- End switch overlap facility
- Controller model Z-0006-598
- **without** mounting flange and 3 jaw chuck

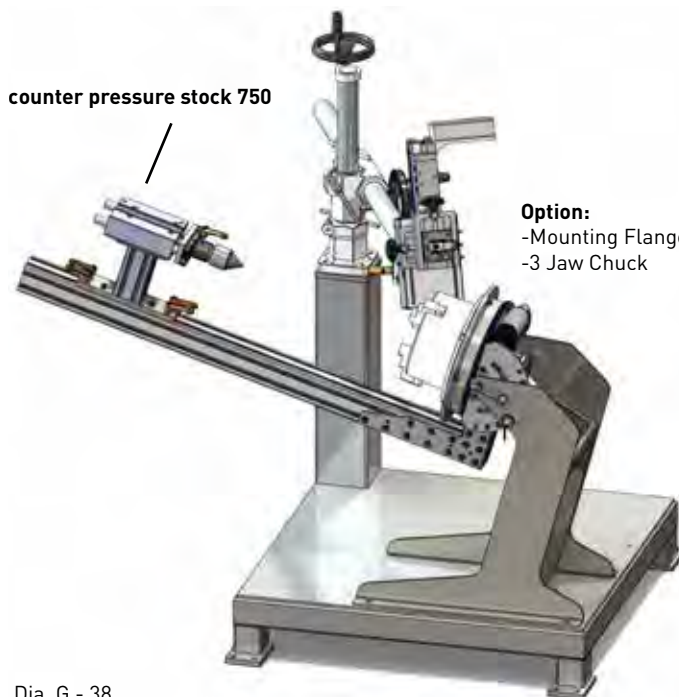
part no. 130.818-AC

AD

Circular welding unit model Z-0006-598 D302-60

- System platform model Z-0006-598
- D 302-60 **without** counter pressure spindle
- End switch overlap facility
- Controller model Z-0006-598
- **without** mounting flange and 3 jaw chuck

part no. 130.818-AD



Dia. G - 38

E Turntable D 102-60-P
 Load Capacity: 100 kg
 Torque: 15 - 50 Nm
 Tilting Moment: 130 Nm
 RPM: 0,1 - 10 min⁻¹
 Tilting Angle: 135°

F Turntable D 302-60-P
 Load Capacity: 100 kg
 Torque: 30 - 100 Nm
 Tilting Moment: 130 Nm
 RPM: 0,05 - 5 min⁻¹
 Tilting Angle: 135°

Max. distance between centres
Face plate <-> Counter pressure
spindle: 800 mm
Spindle height: 220 mm

AE

Circular welding unit model Z-0006-598 D102-60-P

- System platform model Z-0006-598
- D 102-60-P with counter pressure spindle and extension rail
- End Switch Overlap Facility
- Controller model Z-0006-598
- **without** mounting flange and 3 jaw chuck

part no. 130.818-AE

AF

Circular welding unit model Z-0006-598 D302-60-P

- System platform model Z-0006-598
- D 302-60-P with counter pressure spindle and extension rail
- End Switch Overlap Facility
- Controller model Z-0006-598
- **without** mounting flange and 3 jaw chuck

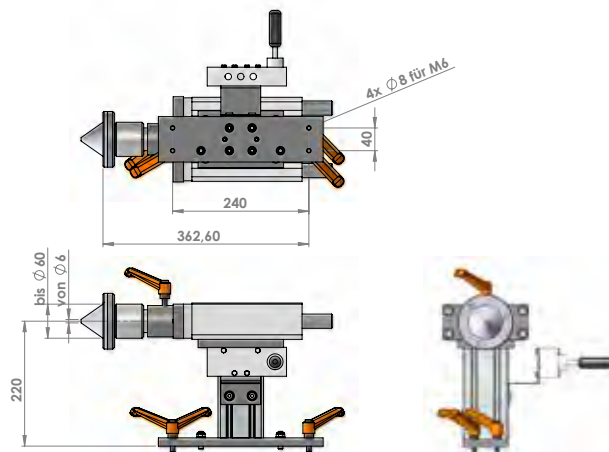
part no. 130.818-AF

Counter Pressure Stock 750

The tailstock consists of a glide block with locking lever, pressure cylinder with rotating center and a 4/3 way hand operated pneumatic valve. The Spindle height is available according to drive unit or turntable model.

Technical Details:

Pressure: 750 N at 4 bar Weight: approx. 30 kg
 Stroke: 150 mm Load capacity vertical: 225 N



Dia. G - 39

Counter Pressure Stock 750

Art. Nr. 130.984

Options for Circular welding unit model Z-0006-598

- Mounting Flange

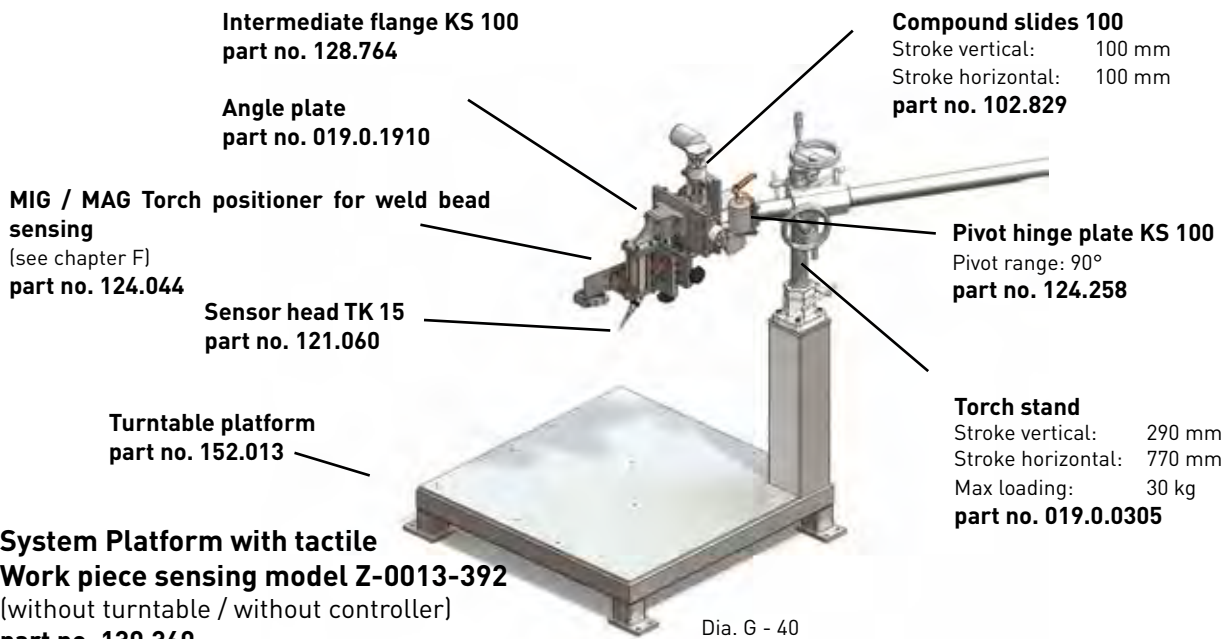
Chucks Mounting Flange	ME- DBS-160	ME- DBS-200	ME- DBS-250
for D 102-302/60	129.212	117.074	117.076

- 3 Jaw Chuck

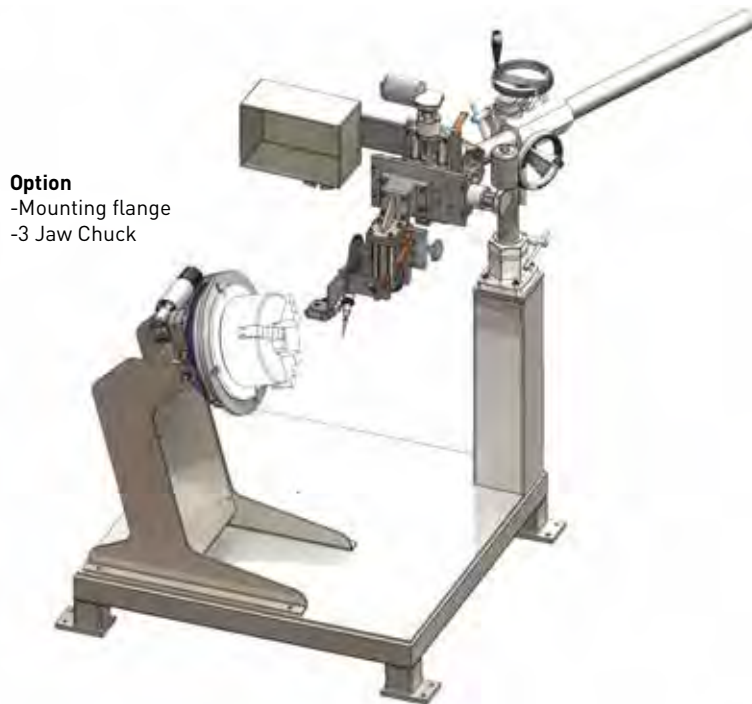
Dimensions:	ME- DBS-160	ME- DBS-200	ME- DBS-250
D1 (mm)	160	200	250
D2 (mm)	130	165	206
D3 (mm)	142	180	226
D4	3 x M8	3 x M10	3 x M12
D5 (mm)	45	65	80
H1 (mm)	95	109	120
Work Piece-ø(mm)	min 4	min 4	min 6
	max 175	max 230	max 290
Spindle Bore (mm)	40	65	80
Weight (kg)	9	15,3	26,5
Article-Nr.:	113.052	113.054	113.056
Pr. Gr.:	05	05	05



Circular welding unit model Z-0019-392 (tactile work piece sensing)



B System Platform with tactile Work piece sensing model Z-0013-392 (without turntable / without controller) part no. 130.360



Dia. G - 41

C Turntable D 102-60
Load Capacity: 100 kg
Torque: 15 - 50 Nm
Tilting Moment: 130 Nm
RPM: 0,1 - 10 min⁻¹
Tilting Angle: 135°

D Turntable D 302-60
Load Capacity: 100 kg
Torque: 30 - 100 Nm
Tilting Moment: 130 Nm
RPM: 0,05 - 5 min⁻¹
Tilting Angle: 135°

BC

Circular welding unit model Z-0019-392 D102-60

- System platform model Z-0019-392
- D 102-60 **without** counter pressure spindle
- End switch overlap facility
- Controller model Z-0019-392
- **without** mounting flange and 3 jaw chuck

part no. 130.826-BC

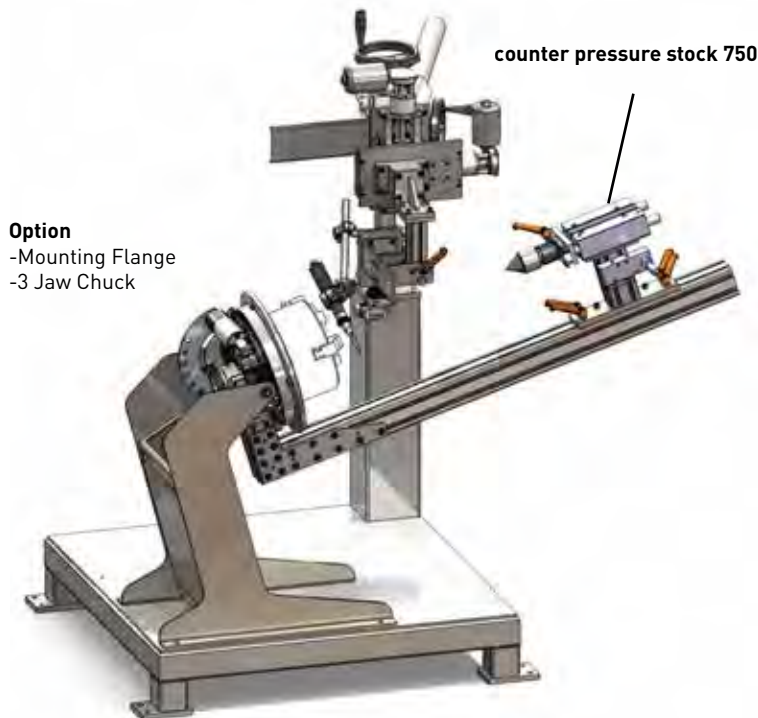
BD

Circular welding unit model Z-0019-392 D302-60

- System platform model Z-0019-392
- D 302-60 **without** counter pressure spindle
- End switch overlap facility
- Controller model Z-0019-392
- **without** mounting flange and 3 jaw chuck

part no. 130.826-BD

Circular welding unit model Z-0019-392 (tactile work piece sensing)



Option
-Mounting Flange
-3 Jaw Chuck

E Turntable D 102-60-P
Load Capacity: 100 kg
Torque: 15 - 50 Nm
Tilting Moment: 130 Nm
RPM: 0,1 - 10 min⁻¹
Tilting Angle: 135°

F Turntable D 302-60-P
Load Capacity: 100 kg
Torque: 30 - 100 Nm
Tilting Moment: 130 Nm
RPM: 0,05 - 5 min⁻¹
Tilting Angle: 135°

Max. distance between centres
Face plate <-> Counter pressure
spindle: 800 mm
Spindle height: 220 mm

Dia. G - 42

BE

Circular welding unit model Z-0019-392 D102-60-P

- System platform model Z-0019-392
- D 102-60-P with counter pressure spindle and extension rail
- End switch overlap facility
- Controller model Z-0019-392
- **without** mounting flange and 3 jaw chuck

part no. 130.826-BE

BF

Circular welding unit model Z-0019-392 D302-60-P

- System platform model Z-0013-392
- D 302-60-P with counter pressure spindle and extension rail
- End switch overlap facility
- Controller model Z-0013-392
- **without** mounting flange and 3 jaw chuck

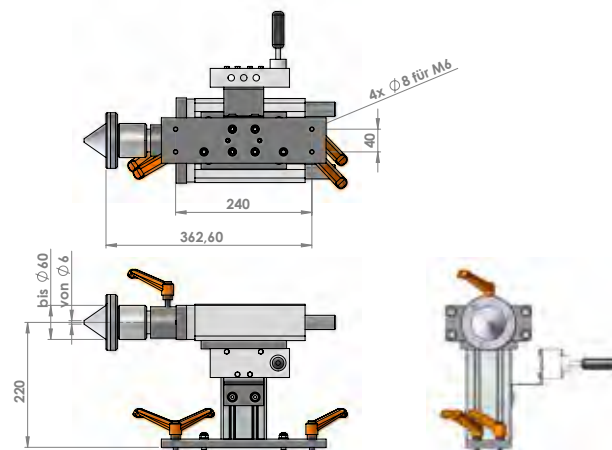
part no. 130.826-BF

Counter Pressure Stock 750

The tailstock consists of a glide block with locking lever, pressure cylinder with rotating center and a 4/3 way hand operated pneumatic valve. The Spindle height is available according to drive unit or turntable model.

Technical Details:

Pressure: 750 N at 4 bar Weight: approx. 30 kg
Stroke: 150 mm Load capacity vertical: 225 N



Dia. G - 43

Counter Pressure Stock 750

Art. Nr. 130.984

Options for Circular welding unit model Z-0006-598

- Mounting Flange

Chucks Mounting Flange	ME- DBS-160	ME- DBS-200	ME- DBS-250
for D 102-302/60	129.212	117.074	117.076

- 3 Jaw Chuck

Dimensions:	ME- DBS-160	ME- DBS-200	ME- DBS-250
D1 (mm)	160	200	250
D2 (mm)	130	165	206
D3 (mm)	142	180	226
D4	3 x M8	3 x M10	3 x M12
D5 (mm)	45	65	80
H1 (mm)	95	109	120
Work Piece-ø(mm)	min 4 max 175	min 4 max 230	min 6 max 290
Spindle Bore (mm)	40	65	80
Weight (kg)	9	15,3	26,5
Article-Nr.:	113.052	113.054	113.056
Pr. Gr.:	05	05	05



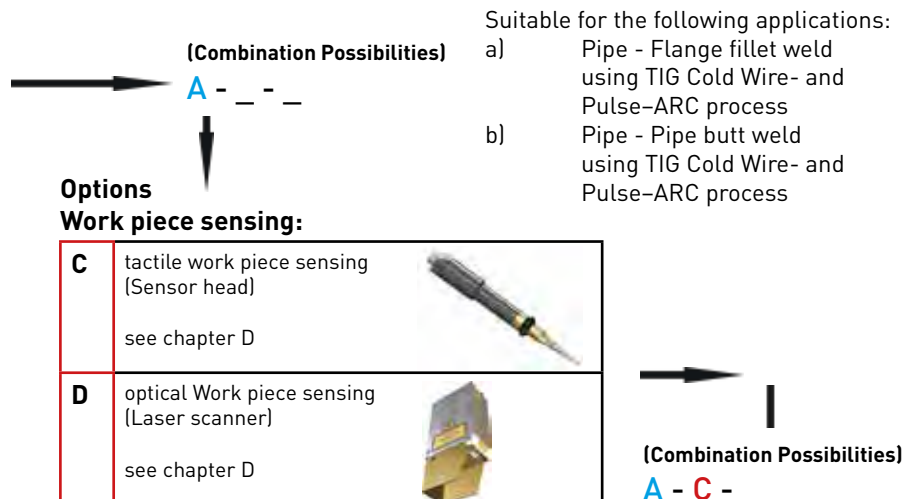
Circular welding unit model Z-0019-580

Options
Turntables

A	Turntable D653 with End Switch Overlap Facility -Control panel (180°adjustable) -Torch stand / 200 incl. wire feed unit platform -Pivot hinge plate for LS-Series -Compound slides LS-Series vertical LS 625.2 horizontal LS 425.2
B	-Turntable D 1003 with End Switch Overlap Facility -Control panel (180°adjustable) -Torch stand / 200 incl. wire feed unit platform -Pivot hinge plate for LS-series slides -Compound slides LS-Series vertical LS 625.2 horizontal LS 425.2

The Circular welding unit model Z-0019-580 is equipped with our turntables from the D653 and D1003 series with a flange fitting torch mount technology and work piece sensing system..




The motor driven compound slides from our LS 625.2 and 425.2 series (p. D-15) with sensor electronics, tactile sensor or laser scanner(p. D-16 / D-17) enables an automatic work piece tolerance compensation in the horizontal and vertical axis.



Suitable for the following applications:

- Pipe - Flange fillet weld using TIG Cold Wire- and Pulse-ARC process
- Pipe - Pipe butt weld using TIG Cold Wire- and Pulse-ARC process

Options
Welding Process:

E	-TIG -TIG KDZF -Plasma -Plasma KDZF	 
F	MIG / MAG	

(Combination Possibilities)

A - C - F

Circular welding unit
model Z-0019-580

part no. 130.862-ACF

Combination Possibilities.: A - C - F



Dia. G - 44

Options for Circular welding unit model Z-0019-580

- Mounting flange
- 3 jaw chuck

ME DBS-315

Mounting Flange (part no. 125.184) +
3 Jaw Chuck (part no. 113.058)

ME DBS-400

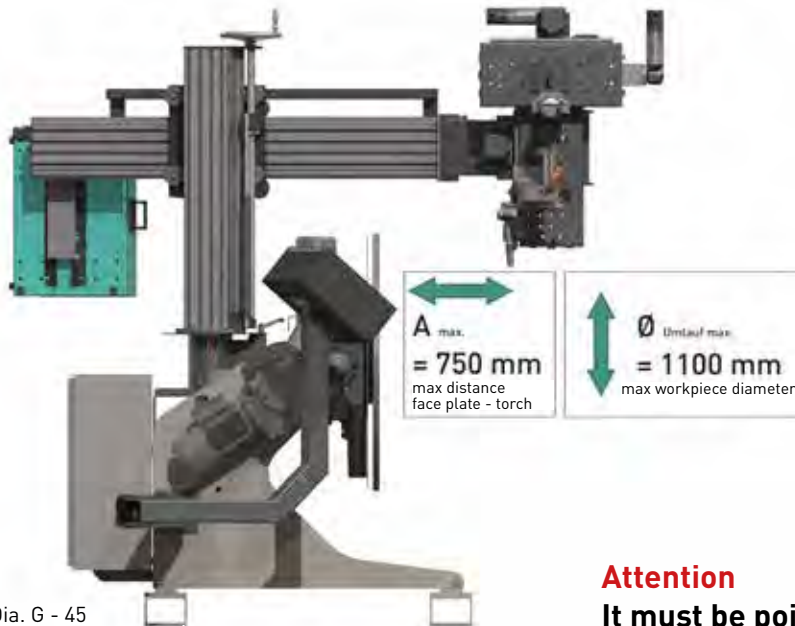
Mounting Flange (part no. 125.610) +
3 Jaw Chuck (part no. 113.060)

Option root purging:

For root purging in the TIG or Plasma process with forming gas, we carry a large range of accessories specially adapted to your requirements

Boom with Counter Pressure Stock 1200 (for circular welding unit model Z-0019-580)

Technical details circular welding unit model Z-0019-580



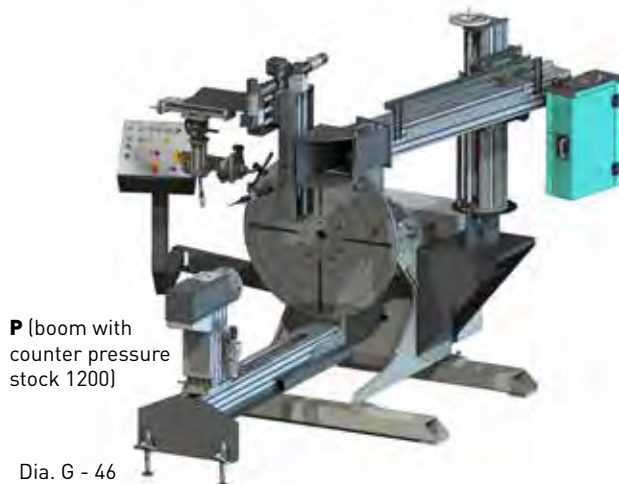
Dia. G - 45

	D 653	D 1003
Combination Possibilities	130.862 - A-__	130.862 - B-__
Load Capacity [vertical]	650 kg / 6,5 kN	1000 kg / 10kN
RPM	0,075 - 2,8 min ⁻¹	0,027 - 1,2 min ⁻¹
Torque	700 Nm	1025 Nm
Spindle Bore	47,5 mm	56 mm
Centralising Bore (Chuck or Jig Mount)	ø 64 H7 3mm deep	ø 64 H7 3mm deep
Tilting Angle Face Plate	135°	135°
Tilting Moment	1100 Nm	3000 Nm
Current Collector	400 A	800 A
Frequency	50 / 60Hz	50 / 60Hz
Speed Range	1:40	1:40
Limit switch overlap 360° + overlap length	included	included

Attention

It must be pointed out the max. tilting moment of D653 bzw D1003 (q.v. G-13)

Option: boom and counter pressure stock 1200 for circular welding unit model Z-0019-580



P (boom with counter pressure stock 1200)

Dia. G - 46

P boom with counter pressure stock 1200	Art.Nr. 141.826
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If the circular welding unit running with a turntable model D653 and boom, the tilting movement can not be used. Thus, the tilt function can be used, the boom has to be removed from the circular welding unit.

If the circular welding unit running with a turntable model D1003 and boom the tilting moment ist limited up to 1000 Nm. If the turntable will be used with full tilting moment the boom must be removed.

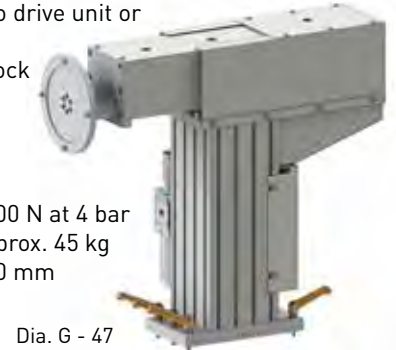
- boom length: 1500 mm (special lenght on request)
- MAX component lenth counter pressure stock: 900 mm
- MAX circulation-Ø: 950 mm

Counter Pressure Stock 1200

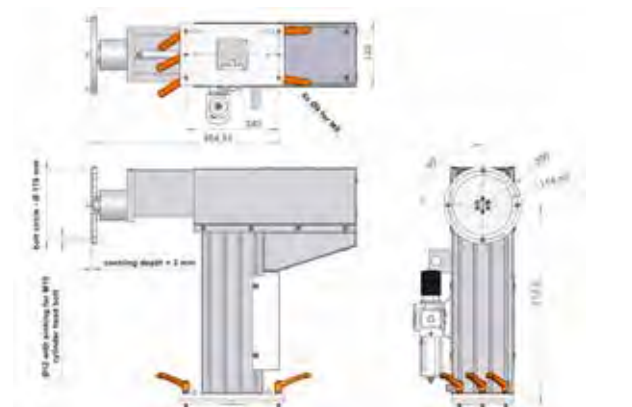
The tailstock consists of a glide block with locking lever and pressure cylinder with rotating center. The Spindle height is available according to drive unit or turntable model. The Counter Pressure Stock clamps with an foot switch.

Technical Details:

- Pressure: 1200 N at 4 bar
- Weight: approx. 45 kg
- Stroke: 150 mm



Dia. G - 47



Dia. G - 48

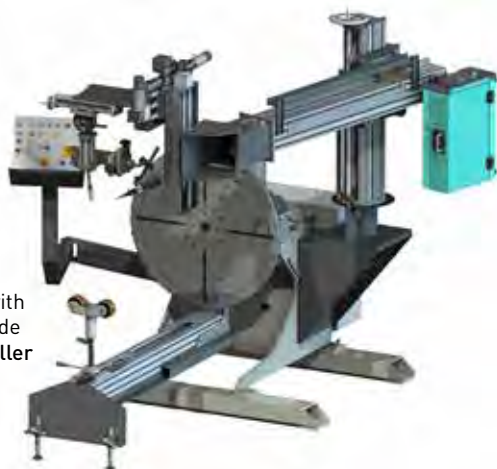
Counter Pressure Stock 1200

Art. Nr. 142.992

Boom with trestle (for circular welding unit model Z-0019-580)

Option: boom and trestle for circular welding unit model Z-0019-580

S (boom with trestle guide without roller supports)



Dia. G - 49

S	boom with trestle !roller supports must be ordered separately!	Art.Nr. 141.828
----------	---	-----------------

If the circular welding unit running with a turntable model D653 and boom, the tilting movement can not be used. Thus, the tilt function can be used, the boom has to be removed from the circular welding unit.

If the circular welding unit running with a turntable model D1003 and boom the tilting moment is limited up to 1000 Nm. If the turntable will be used with full tilting moment the boom must be removed.

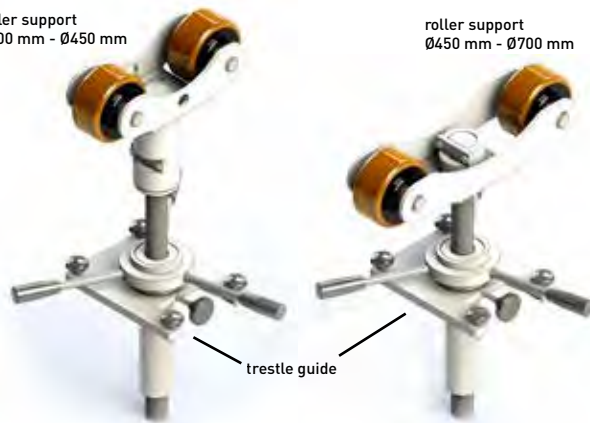
- boom length: 1500 mm
(special length on request)
- MAX component length counter pressure stock: -
- MAX circulation-Ø: 950 mm

Trestle

The trestle consists of a trestle guide and a roller support. The trestle guide consists of a glide block and four clamp screws. The trestle can be adjusted vertically by a spindle. Using the roller support from Figure G-42 tubes with a diameter of 200 mm - 450 mm can be placed. With the roller support from Figure G-43 tubes with a diameter of 450 mm - 700 mm can be placed.

roller support
Ø200 mm - Ø450 mm

roller support
Ø450 mm - Ø700 mm



Dia. G - 50

Dia. G - 51

Trestle guide (height adjustable)

Art. Nr. 138.718

Trestle guide roller support for tubes Ø200 - Ø450 mm

Art.Nr. 138.690

Trestle guide roller support for tubes Ø 450 - Ø700 mm

Art.Nr. 138.694

Option boom extension (only in conjunction with option boom)

(for circular welding unit model Z-0019-580)



Dia. G - 52

If the circular welding unit is used with boom extension, the tilting movement can not be used.

The tilt function can be used only after disassembly of the boom and boom extension.

!!! Attention !!!

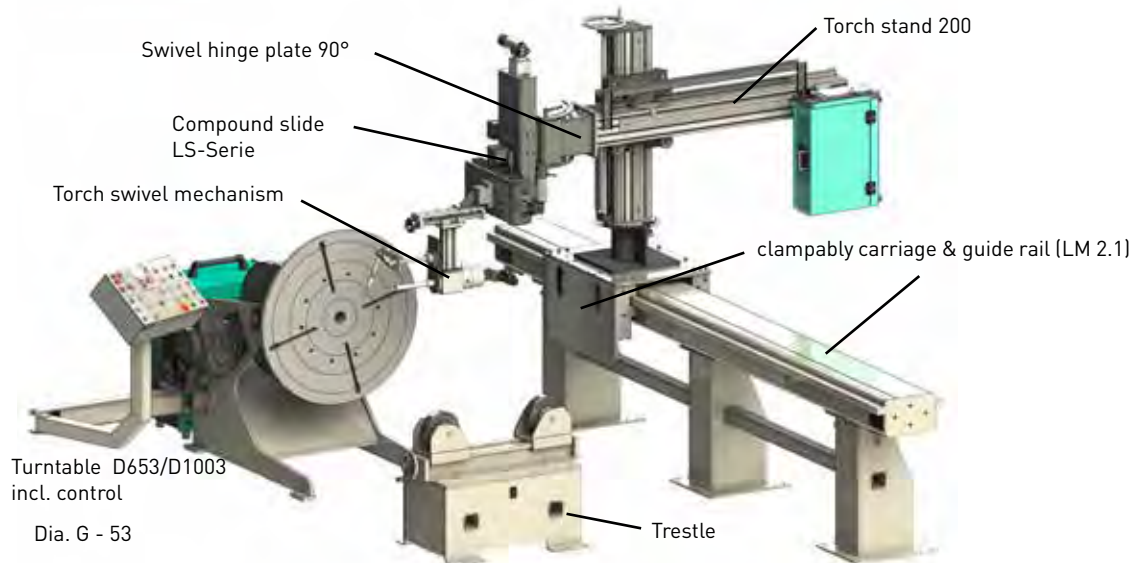
The turntable can not be tilted with mounted boom extension!

- Boom extension length: 1500 mm
- Boom Overall length: 3000 mm
- MAX workpiece length (counter pressure stock 1200): 2400 mm
- MAX swing: 950 mm

Boom extension 1500 mm

for counter pressure stock 1200 or trestle (circular welding unit model Z-0019-580)

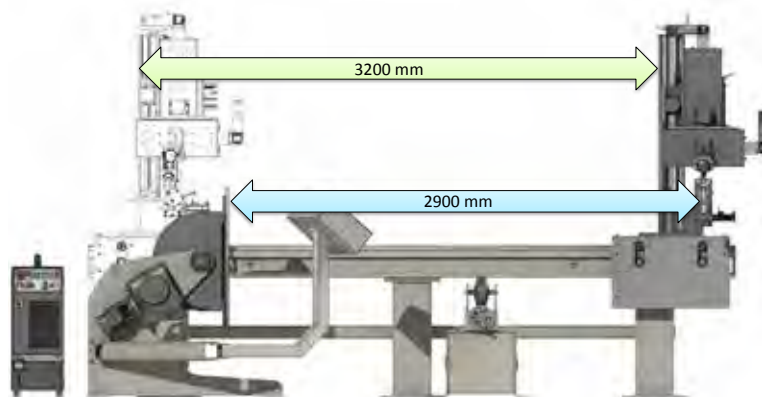
Art. Nr. 144.842



The circumferential welding system is used for welding of pipes with flanges with several root and capping runs by automatic repositioning of the welding torch.

Turntable model D653 or D1003 can be used as rotation unit. The components are braced with a three-jaw chuck on the turntable faceplate and launched a support frame with adjustable hard rubber rollers. The trestle can be centrally adjusted with a hand wheel and clamped depending on the part diameter. Pipes can be clamped with an external diameter of not more than 1400 mm.

The guide rail is mounted parallel to the turntable. Guide rail and carriage are made of series LM 2.1. The carriage can be moved and clamped on the guide rail. The maximum displacement of the carriage is 3200 mm.



Dia. G - 54

Torch stand/200 and swivel hinge plate 90° are manually placed horizontal and vertically approximately in welding position. The torch is pulled up via touchscreen by a motor to the position of the first root pass and then set the inclination of the welding torch.

The compound slide and the torch swivel mechanism device are three controlled axes.

The torch is set using a gauge on the burner pivot axis. The workpiece structure and the welding parameters are entered and programmed on the Panel PC.

The burner swiveling device is activated and programmed on the control panel on the PC.

The swivel range is 180° total. In the illustrated state, the burner swiveling device is at 0°. The swivel range is from -90° to + 90°.



Dia. G - 55

Circular welding unit model Z-0039-512
Art. Nr. 147.410

Circumferential weld device model Z-0039-692



Dia. G - 56

double circumferential device Typ Z-0039-692

Technical details:

General

Weight:	approx. 1.900 kg
Width:	approx. 2.400 mm
Length:	approx. 3.200 mm
Height:	approx. 2.450 mm

max. weldment data

\varnothing_{\max}	= 350 mm
L_{\max}	= 1000 mm
m_{\max}	= 50 kg



Rotary unit

Component length (max.):	1000 mm
Component diameter (max.):	\varnothing 350 mm
Face Plate Dia:	400 mm
RPM face plate:	0,1 – 10 min ⁻¹ (Option: 0,05 - 5 min ⁻¹)
Load capacity:	1000 N
Torque:	15 – 50 Nm
Groove - face plate:	14 mm / M12-T-Nut
Spindle bore:	60 mm
Centralising bore:	\varnothing 78H7 3,0 mm tief
Current collector:	860 A

Counter pressure stock

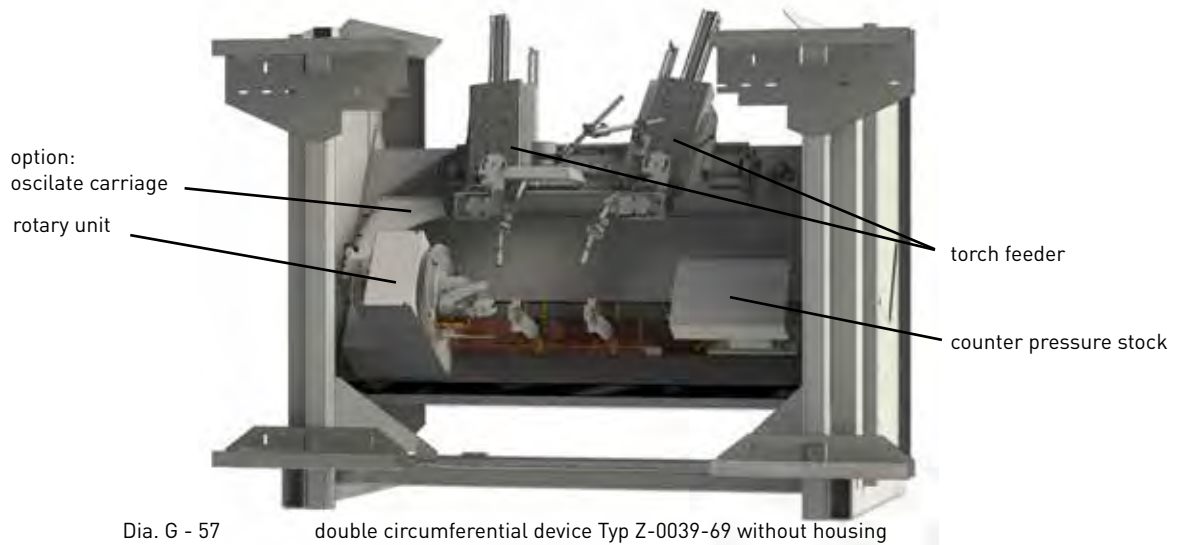
Load:	323 till 568 N
Pressure clamp:	reduced to 500 N
Positioning:	component-based unplugged /infinitely variable, clamped
Stroke:	150 mm

Torch feed

Pneumatic stroke carriage:	250 mm
Compound Slide, Hand [x-y-direction]:	40 mm

Options:

- **Oscillate carriage** (oscillate stroke of oscillate carriage: +/- 50 mm)
- **Seam tracking**
- **Welding fume extraction system**



The double circumferential weld device is intended for fully automated welding using the MIG/MAG welding technique. If required, the machine can be converted to the TIG welding process. Power sources for both welding heads are easily accessible on the back of the machine frame.

The components have to be inserted and removed by hand. The welding torch move pneumatically into the welding position and the welding wire is fed automatically. The machine can weld two circumferential welds simultaneously or only one circumferential weld.

Optionally, an oblique weld can be welded with the oscillate carriage.



The components are clamped against the turntable by a tailstock. To facilitate insertion of the components, two V-supports are mounted between tailstock and rotary unit on which the components are placed before clamping. Pipes with an outer diameter of max. 350 mm and a length of max. 1000 mm can be clamped.

As an option, a suction hood can be fitted for each welding head. The hoods can be connected to a central or mobile vacuum system.

A cycle in automatic mode

In automatic mode, the welding parts are inserted, the protective door closed by hand and the start button pressed to begin the welding process.

1. Open the safety door
2. Insert welding components
3. Close sliding protection door
3. Press start (door is locked and green indicator light flashes until the end of the process)
5. Workpiece is clamped
6. Torch is forwarded
7. Arc ignited
8. Turntable turns to welding end (360 ° + overlap length)
9. Arc is extinguished and turntable rotates back to starting position
10. Workpiece is decamped.
11. Torch is returned
12. Door is unlocked and can be opened manually
13. Component can be removed
14. Next cycle can begin

A
B
C
D
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G
H
I
J
K
L



Circular welding units

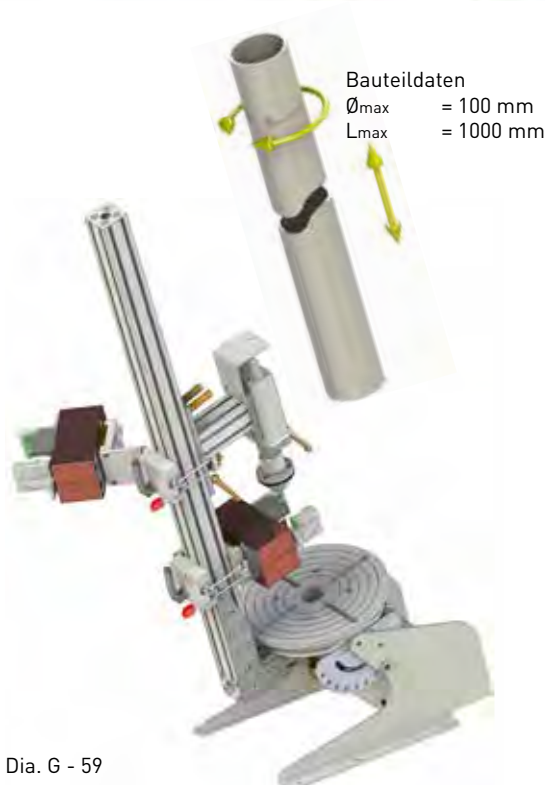
G

Double circumferential weld device model Z-0033-981



Dia. G - 58

A fully automated welding is achieved with the double circumferential weld device model Z-0033-981 with the welding process MIG / MAG. The parts are fed and discharged manually. The welding torch moved pneumatically into position and the welding wire runs automatically. The machine consists of two welding cells A & B, it is carried out alternately in cell A and B. While cell A is equipped with welding parts in cell B started the fully mechanized welding. When the protection door is closed after loading the cell A, the welding starts automatically. While welded in cell A, cell B can be unloaded and loaded again.



Dia. G - 59

It is welded on a turntable model D102 / D302 with 60 mm or 150 mm medium passage with boom and Pinole 750.

The welded parts are clamped centrally on the turntable with a corresponding component device. Before and during welding the welded parts are centered vertically by center clamping fixture and counter pressure stock 750.

Technical Details:	D 102/60-400 D 102/150-400	D 302/60-400 D 302/150-400
Load Capacity (vertical)	100 kg/1,0 kN	100 kg/1,0 kN
RPM	0,1 - 10 min-1	0,05 - 5 min-1
Torque	15 - 50 Nm	30 - 100 Nm
Face Plate Dia	400 mm	400 mm
Tilting Moment	130 Nm	130 Nm
max. swing	390 mm	390 mm
Current Collector	860A (34V) 80% ED	860A (34V) 80% ED
Speed range	1:100	1:100

more technical details q.v. G-6



Dia. G - 60

The TCP-point of the machine torch ROB 505 W is manually adjusted in the extended pneumatic Stroke Carriage.

The pneumatic lifting is retracted for loading the welding cell.

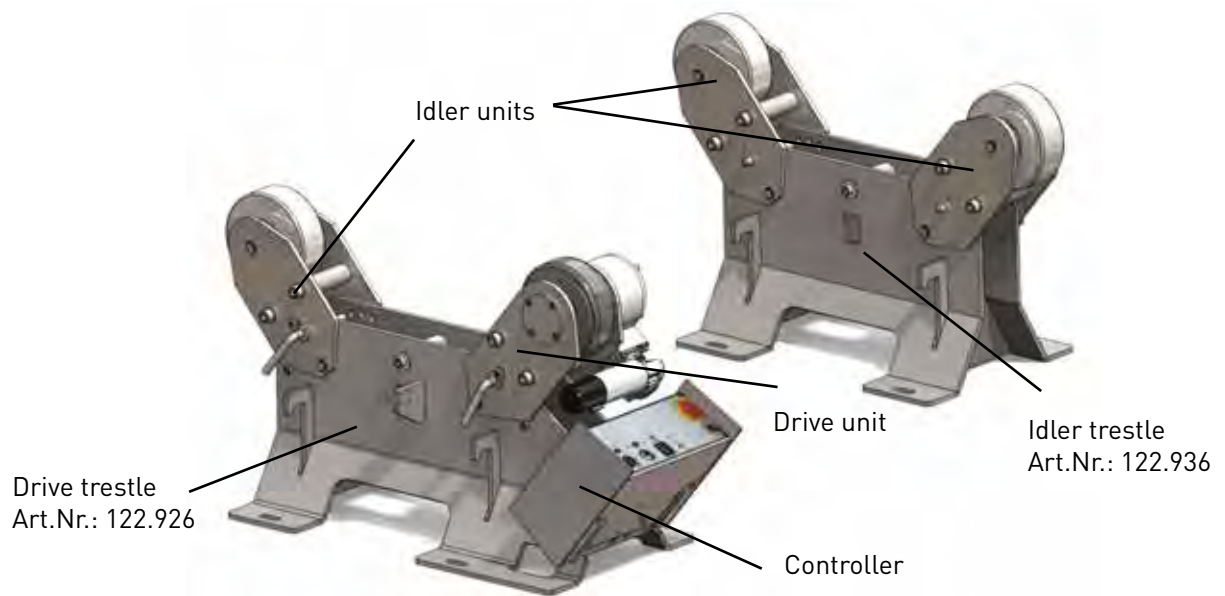
The pneumatic Stroke Carriage advanced automatically then the arc ignites and at the end the turntable turns 360 ° + overlapping after closing the protection door.

Double circumferential weld device model Z-0033-981 Art. Nr. 139.828

As an option the machine can equipped with

Q.MACS - Quality Management Analysis Control System

Further information in chapter J on page J-4



Dia. G - 61

The **Roller trestle unit model R 1003/1** consists of

- a) **1 Drive trestle with controller and**
- b) **1 Idler trestle**

The roller trestle unit model R1003/1 can be used to rotate components with a Dia range from 50 to 2000mm, and support a weight of up to 1000 kg.

The roller arms pivot on the main trestle frame, and can be adjusted in steps of 20° into three positions and fixed using the bolt pins.

The RPM is adjustable (stepless) and the drive is through a tacho gen controlled DC motor with worm drive gearbox.

The RPM governor and motor are electrically isolated from the mains over a transformer. Supply voltage is 42 volt.

The controller is mounted on the drive trestle with free view and access of all user functions.

Roller Trestle Unit model R 1003/1

consisting of:

Drive trestle with 1 drive unit and controller, 1 idler unit

Idler trestle with 2 idler units

part no. 122.940

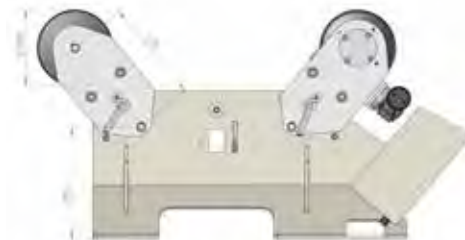
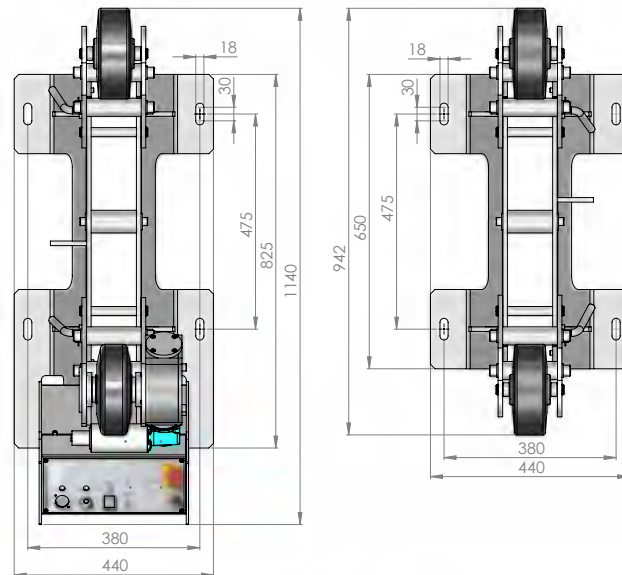
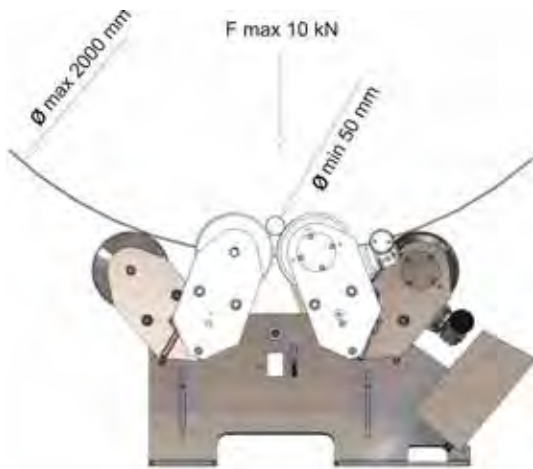
Single components:

Drive trestle model R1003/1

1 Drive unit with tacho gen and controller and 1 idler unit
part no. 122.926

Idler trestle model R 1003/1

with 2 idler units
part no. 122.936



Dia. G - 63

Dia. G - 62

Technical Details

Connection cable:	5 m
Supply voltage:	230 V / 50 Hz
Drive roller Dia:	Ø 200 mm
Load Capacity (vertical)	
Drive trestle + Idler trestle:	10 kN
Torque at drive roller:	100 Nm
RPM range at Drive roller:	0,17 - 2,56 min ⁻¹
Weight:	84 kg
Rotation speed (at Ø 200):	10 - 160 cm/min
Work piece Dia range:	Ø 50 - 2000 mm

User Controls

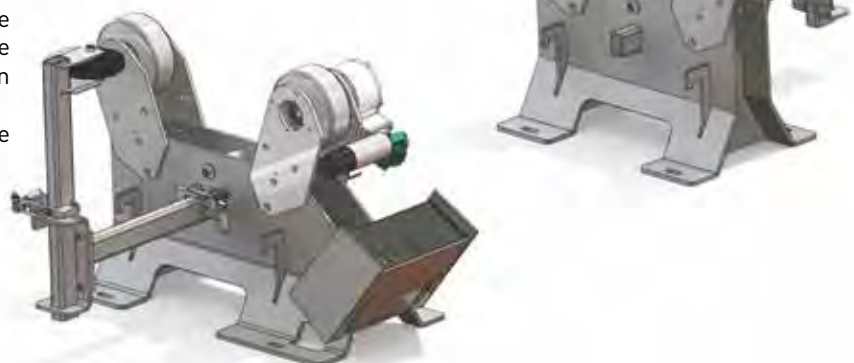
Main Switch:	Controller On/Off-control lamp
Potentiometer:	RPM
Switch:	Hand / Automatic-Remote switch
Switch:	Rotation left/right
Button:	Start
Button:	Stop
Ratchet button:	Emergency stop

Option:

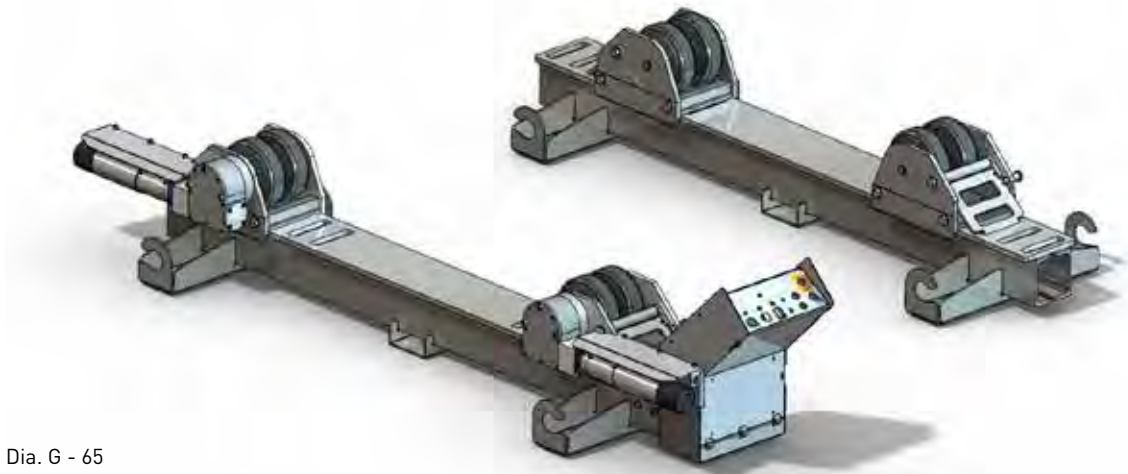
Anti-Drift Roller for Drive and Idler Trestle part no. 126.590

The anti-drift rollers are used to eliminate axial drift of components during rotation on the roller trestles. They are fixed into the trestles (drive and idler) using a manual clamping device.

The anti-drift rollers are adjustable (axial adjustment into or out of the trestle frame) to allow adaptations in length to the components mounted. Maximum distance between trestle frame and anti-drift roller is 650mm.



Dia. G - 64



Dia. G - 65

Roller Trestle Unit R 3002/2

The roller trestle unit model R 3002/2 consists of a drive trestle with twin synchronised drive motors, Idler trestle and controller. The drive and idler trestle rollers are fully adjustable to allow for a large range of component diameters..

The rollers are adjusted using the slots manufactured into the trestle rails and lockable.

The rollers are equipped with a wear resistant, elastic polyurethane coating.

The RPM is adjustable (stepless) and the drive is through tachometer controlled DC motors with worm drive gearboxes.

The RPM governor and motors are electrically isolated from the mains over a transformer. Supply voltage is 42 volt.

Roller Trestle Unit model R 3002/2

consisting of:

Drive trestle with twin, RPM adjustable (stepless), synchronised, tachometer monitored drive motors, controller and idler trestle

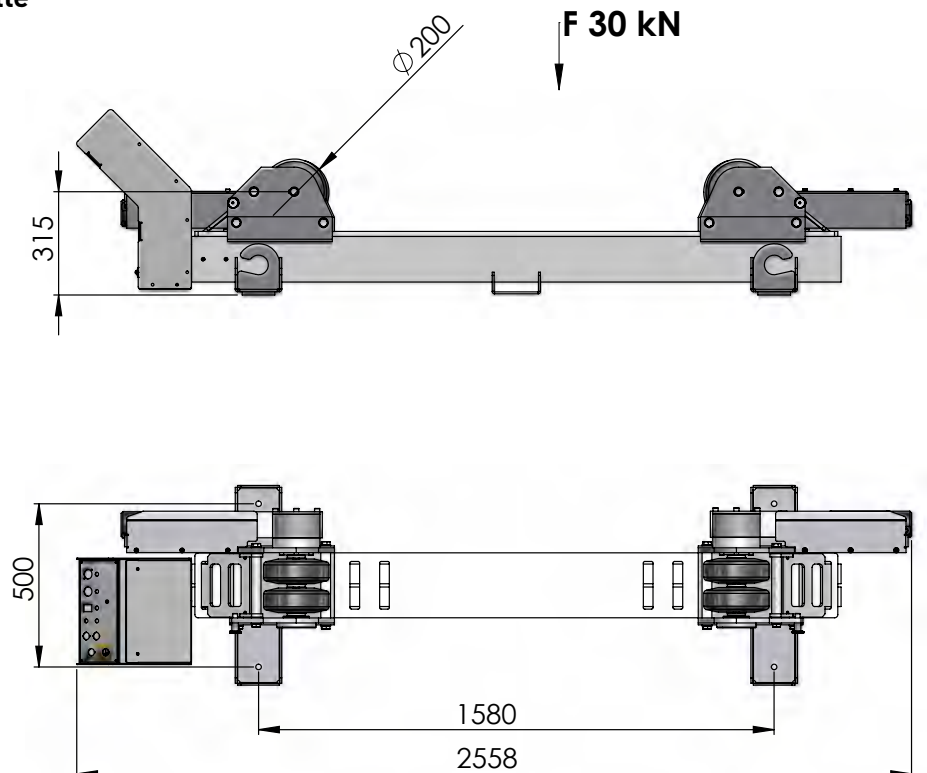
part no. 116.948

Single components:

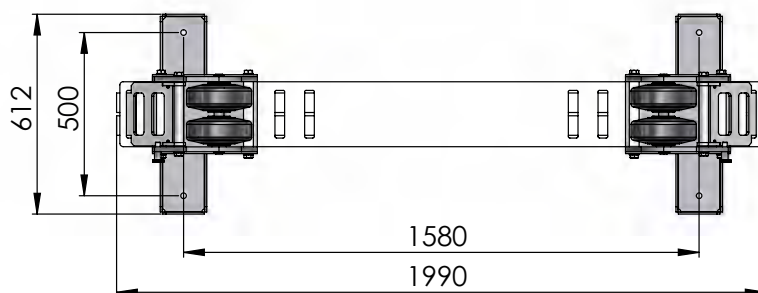
Drive trestle model R 3002/2
part no. 131.656

Idler trestle model R 3002/2
part no. 116.951

Drive Trestle



Idler Trestle

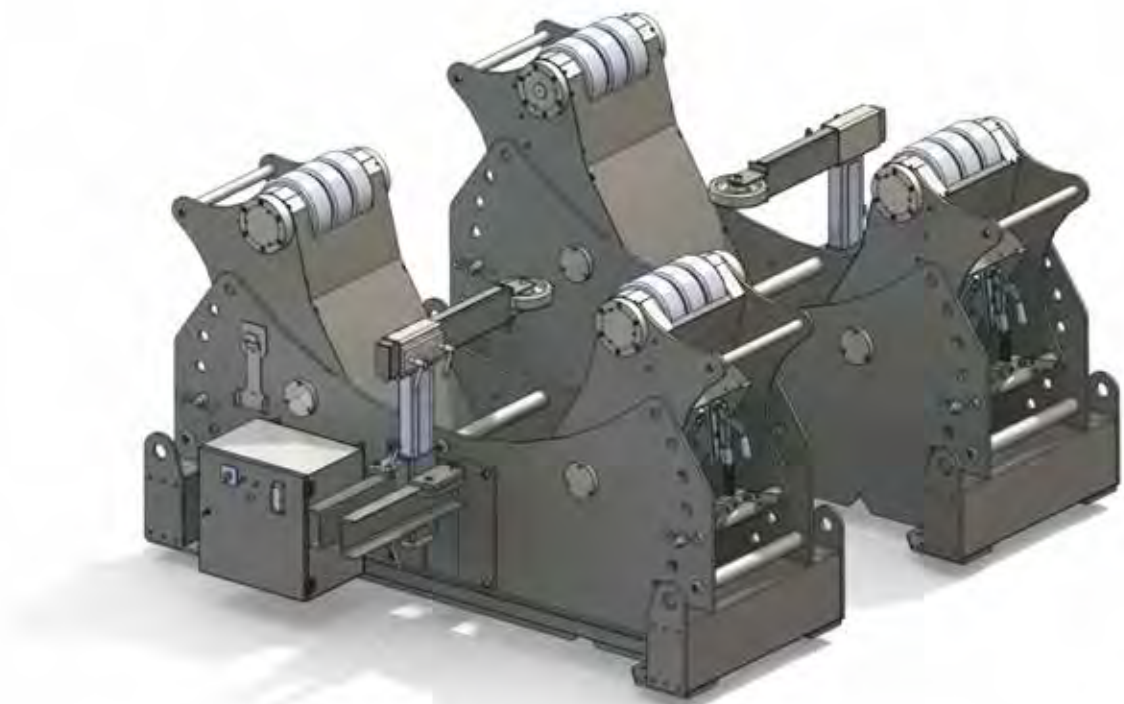


Dia. G - 66

Technical Details:

Max loading of drive and idler trestle:	30.000 N
RPM range:	0,17 - 2,47 min ⁻¹
Rotation speed:	10 - 155 cm/min
Torque:	2 x 100 Nm
Supply voltage:	230 V 50 Hz
Weight:	225 kg
Work piece Dia:	min. 200 mm max. 4000 mm

Roller block rotating system model R 16000



Dia. G - 67

The roller trestle unit R16000 consists of a drive trestle complete with controller and an idler trestle. The drive trestle consist of a complete welded frame with an integrated roller adjustment arm system and twin drive motors with worm model gearboxes, with the idler trestle being similar in construction but without drive motors.

The roller adjustment arms sit on pivot bearings and are set using pin bolts between the arm and roller block frame.

The rollers are equipped with a wear resistant, elastic polyurethane coating.

The drive is over 2 synchronized 3 phase gearbox motors equipped with vector controlled frequency converters and a control range of 1:40.

The external remote unit is plugged into the control cabinet which is mounted on the drive trestle.

Roller Trestle Unit model R 16000

consisting of:

**Drive trestle with intergrated controller, and idler trestle
part no. 119644**

Single components:

Drive trestle model R 16000
part no. 119480

Idler trestle model R 16000
part no. 119640



Dia. G - 68

Option: Anti-Drift Roller

Used to eliminate axial drift of components during rotation on the roller trestles.



Dia. G - 69

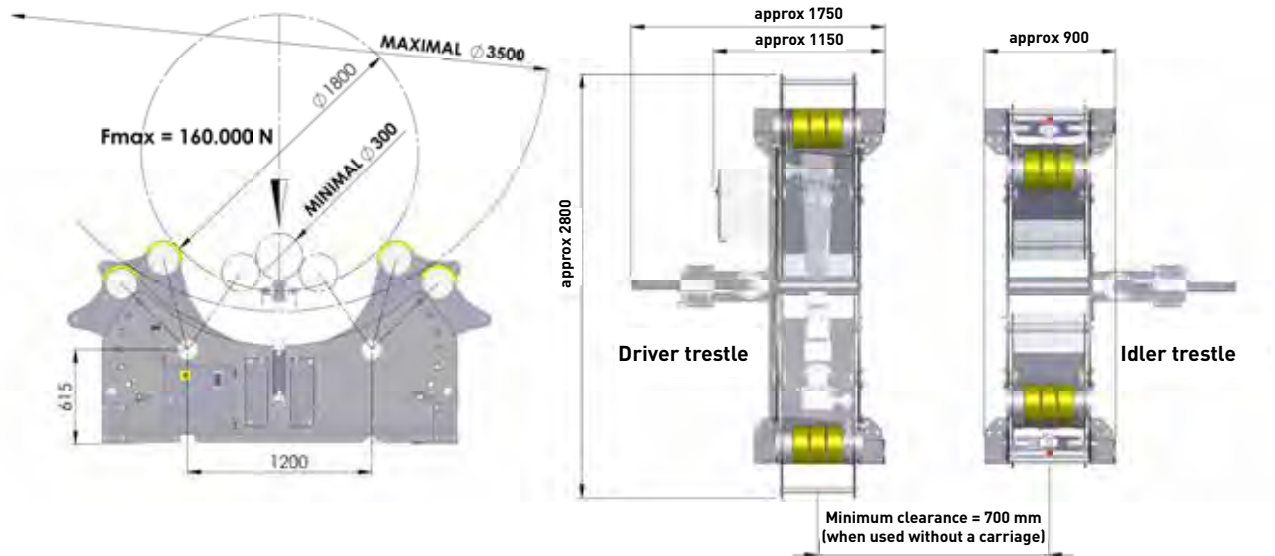
Adjustment of the roller arms to work piece diameter using the installed pin bolts.



Dia. G - 70

External Remote Functions:

Potentiometer: RPM
 Switch: Rotation left/right
 Button: Start
 Button: Stop
 Button: Fast gear
 Ratchet button: Emergency stop



Dia. G - 71

Primary:

Voltage:	3 x 400 V/N/PE
Continuous Current:	1,5 A
Max Current:	3 A
Frequency:	50 Hz
Insulation Class:	H
Cooling model:	E
Main Switch:	3-phase
Switch:	Hand - Remote Switch
Switch:	Remote Control off - Remote Control
Plug (10 pin):	for Hand remote, Foot Switch, Remote Switch or Foot Remote
Switch:	Right- Left
Push Button:	High speed gear
Push Button:	Start
Push Button:	Stop
Ratchet Button:	Emergency Stop
Speed control:	Potentiometer, 10 stage stepless
Mains connection cable:	5 x 2,5 mm ² , 5 m long, with CEE- Plug
Max loading:	16 000 kg
Torque at wheel:	15 kN
Rotation Speed:	0,11 – 4,84 m/min
Roller Width:	320 mm
Roller Dia:	250 mm [3 Rollers]
Weight Drive unit:	1500 kg
Weight Idler unit:	1300 kg
Norm:	EN 60974-1 / VDE 0544/Teil 1 EN 292-1 / EN 292-2



Circular welding units

G

Price list

Page	Description	PrGr	Part no.	Price/€
G-3	Welding Positioner 50 kg			
	Welding positioner Type D 52/25 (Table height 320mm)	05	117.406	2.080,00
	Welding positioner Type D 52/70 (Table height 320mm)	05	117.408	2.130,00
	Welding positioner Type D 52/25 (Table height 800mm)	05	117.410	2.198,00
	Welding positioner Type D 52/70 (Table height 800mm)	05	117.412	2.252,00
G-6	Welding Positioner 100 kg (Table height 400 mm) with Tacho generator			
	Welding positioner Type D 102-60 (Table height 400 mm)	05	117.766	2.720,00
	Welding positioner Type D 302-60 (Table height 400 mm)	05	117.768	2.950,00
	Welding positioner Type D 102 -150 (Table height 400mm)	05	117.770	4.826,00
	Welding positioner Type D302-150 (Table height 400 mm)	05	117.772	4.988,00
G-9	Welding Positioner 100 kg (Table height 750 mm) with Tacho generator			
	Welding positioner Type D 102-60 (Table height 750mm)	05	116.738	2.790,00
	Welding positioner Type D 302-60 (Table height 750mm)	05	116.746	2.990,00
	Welding positioner Type D 102 -150 (Table height 750 mm)	05	116.734	4.850,00
	Welding positioner Type D302-150 (Table height 750mm)	05	116.742	4.990,00
	Options for D 102/302			
	End switch overlap facility, 2-stage for Welding positioner Types D 102-60 und D 302-60	05	116.912	580,00
	End switch overlap facility, 2-stage for Welding positioner Types D 102-150 und D 302-150	05	130.912	580,00
	Option: D 102/D 302 programm sequence left and right	07	141.798	1.990,00
G-12	Welding Positioner 650kg/1000kg			
	Welding Positioner D 653 without end switch overlap facility	31	121.070	15.295,00
	Welding Positioner D 653 with end switch overlap facility	31	121.071	17.205,00



Circular welding units

Price list



Page	Description	PrGr	Part no.	Price/€
	Welding positioner model D 1003 without end switch overlap facility	31	119.142	17.800,00
	Welding positioner model D 1003 with end switch overlap facility	31	119.143	19.450,00
G-12	Option: D 653/D 1003 programm sequence left and right	07	141.799	1.990,00
G-14	Quik Fit Latching System for D 653/D 1003 Face Plate with Quick Fit Latching System	31	122.102	2.253,00
G-15	Welding Positioner 5000kg Welding Table Model D 5002 without end switch overlap facility	31	137.748	38.500,00
	Welding Table Model D 5002 with end switch overlap facility	31	137.749	39.500,00
	base extension (without floor fixing capability) for welding positioner model D 5002	31	133.530	1.290,00
G-17	Three Jaw Chuck Three Jaw Chuck Type ME-DBS-125	05	113.050	229,00
	Three Jaw Chuck Type ME-DBS-160	05	113.052	249,00
	Three Jaw Chuck Type ME-DBS-200	05	113.054	299,00
	Three Jaw Chuck Type ME-DBS-250	05	113.056	399,00
	Three Jaw Chuck Type ME-DBS-315	05	113.058	635,00
	Three Jaw Chuck Type ME-DBS-400	05	113.060	1.099,00
	Mounting Flange ME-DBS-125 to D 52	05	117.028	244,00
	Mounting Flange ME-DBS-160 to D 52	05	117.038	255,00
	Mounting Flange ME-DBS-160 to D 102 D 102/60 and D 302/60	05	129.212	255,00
	Mounting Flange ME-DBS-160 to D 102/150 and D 302/150	05	129.214	255,00
	Mounting Flange ME-DBS-200 to D 102/60 and D 302/60	05	117.074	255,00
	Mounting Flange ME-DBS-200 to D 102/150 and D 302/150	05	117.082	266,00



Circular welding units

G

Price list

Page	Description	PrGr	Part no.	Price/€
	Mounting Flange ME-DBS-250 to D 102/60 and D 302/60	05	117.076	338,00
	Mounting Flange ME-DBS-250 to D 102/150 and D 302/150	05	117.084	349,00
	Mounting Flange ME-DBS-315 to D 653 / D 1003 / D 5001	05	125.184	790,00
	Mounting Flange ME-DBS-400 to D 653 / D 1003 / D 5001	05	125.610	1.001,00
G-20	Circular Welding Unit model Z-0019-584	31	139.492	
	Circular Welding Unit model Z-0006-598 with pneumatic torch positioning without counter pressure stock			
	Circular welding unit model Z-0006-598 mark AC	31	130.818	6.190,00
	Circular welding unit model Z-0006-598 mark AD	31	130.818	6.390,00
G-23	with counter pressure stock			
	Circular welding unit model Z-0006-598 mark AE	31	130.818	8.690,00
	Circular welding unit model Z-0006-598 mark AF	31	130.818	8.890,00
G-23	Counter pressure stock 750 for turntables D 102-60-P / D 302-60-P	05	130.984	2.755,00
	Circular Welding Unit model Z-0019-392 with tactile workpiece sensing without counter pressure stock			
	circular welding unit model Z-0019-392 - mark BC with turntable D 102-60 and and tactile workpiece sensin (without mounting flange, three Jaw Chuck)	31	130.826	
	circular welding unit model Z-0019-392 - mark BD with turntable D 302-60 and and tactile workpiece sensin (without mounting flange, three Jaw Chuck)	31	130.826	
G-25	with counter pressure stock			
	circular welding unit model Z-0019-392 - mark BE with turntable D 102-60-P, counter pressure stock and tactile workpiece sensing (without mounting flange, three Jaw Chuck)	31	130.826	
	circular welding unit model Z-0019-392 - mark BE with turntable D 302-60-P, counter pressure stock and tactile workpiece sensing (without mounting flange, three Jaw Chuck)	31	130.826	

Page	Description	PrGr	Part no.	Price/€
G-25	Counter pressure stock 750 for turntables D 102-60-P / D 302-60-P	05	130.984	2.755,00
G-17	Option: Three Jaw Chuck			
G-26	Circular Welding Unit model Z-0019-580 with tactile workpiece sensing			
	circular welding unit model Z-0019-580 - mark ACE with turntable D 653, tactile workpiece sensing, TIG-/Plasma-torch-clamp	31	130.862	
	circular welding unit model Z-0019-580 - mark ACF with turntable D 653, tactile workpiece sensing, MIG/MAG-torch-clamp	31	130.862	
	circular welding unit model Z-0019-580 - mark BCE with turntable D 1003, tactile workpiece sensing, TIG-/Plasma-torch-clamp	31	130.862	
	circular welding unit model Z-0019-580 - mark BCF with turntable D 1003, tactile workpiece sensing, MIG/MAG-torch-clamp	31	130.862	
G-26	Circular Welding Unit model Z-0019-580 with optical workpiece sensing (laserscanner)			
	circular welding unit model Z-0019-580 - mark ADE with turntable D 653, optical workpiece sensing, TIG-/Plasma-torch-clamp	31	130.862	
	circular welding unit model Z-0019-580 - mark ADF with turntable D 653, optical workpiece sensing, MIG/MAG-torch-clamp	31	130.862	
	circular welding unit model Z-0019-580 - mark BDE with turntable D 1003, optical workpiece sensing, TIG-/Plasma-torch-clamp	31	130.862	
	circular welding unit model Z-0019-580 - mark BDF with turntable D 1003, optical workpiece sensing, MIG/MAG-torch-clamp	31	130.862	
	Options for Circular Welding Unit Typ Z-0019-580			
G-27	boom 1500mm with - counter pressure stock 1200 - double leg support	31	141.826	
G-27	counter pressure stock 1200 for turntable D 653/D 1003	32	142.992	9.300,00
G-28	boom 1500mm with - trestle guide (support must be ordered separately) - double leg support	05	141.828	
G-28	Trestle guide (height adjustable) for circular welding unit model Z-0019-580	31	138.718	
G-28	Trestle guide support for tubes Ø200 mm - Ø450 mm	31	138.690	



Circular welding units

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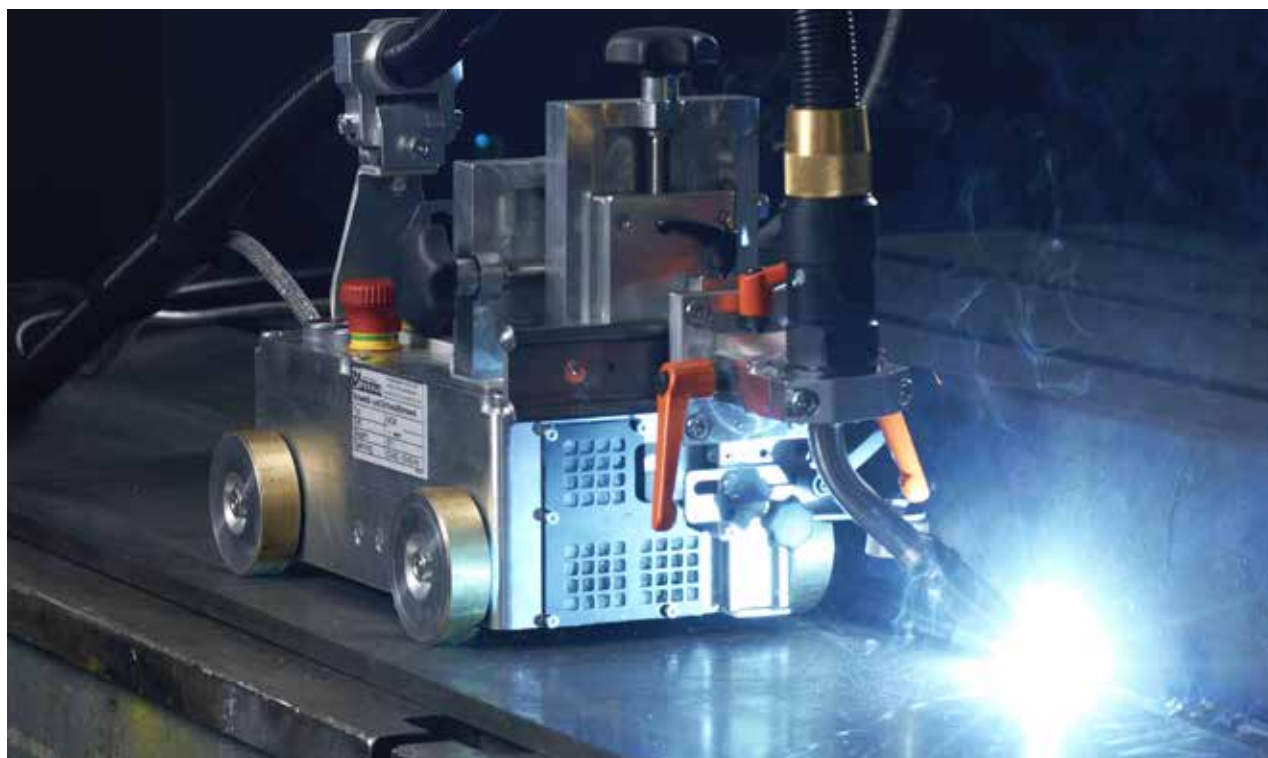
Price list

Page	Description	PrGr	Part no.	Price/€
G-28	Trestle guide support for tubes Ø450 mm - Ø700 mm	31	138.698	
G-17	Option: Three Jaw Chuck			
G-33	Roller trestle unit Type R 1003/1	05	122.940	7.625,00
	Drive trestle R 1003/1	05	122.926	5.930,00
	Idler trestle R 1003/1	05	122.936	1.695,00
G-34	Anti-Drift Roller pair R 1003/1	05	126.590	1.095,00
G-35	Roller trestle unit Type R 3002/2 with twin drive	31	116.948	15.730,00
	Drive trestle Type R 3002/2 with controller	31	116.950	12.534,00
	Idler trestle R 3002/2	31	116.951	3.196,00
	Anti-Drift Roller assembly R 3002/2	31	138.381	1.190,00
G-37	Roller trestle unit Type R 16000	31	119.644	
	Drive trestle R 16000	31	119.480	
	Idler trestle R 16000 Roller trestle unit Type R 16000 max. 16 tons	31	119.640	
	Anti-Drift Roller assembly R 16000 complete	31	120.846	
	All prices per piece or 1m. Changes reserved.			

Longitudinal Welding Systems

Welding and Cutting Carriage, Mobile, model WCM	H-2
Welding Carriage, model F100LA / F100TK	H-5
Carriages/Guide Rails LM 1.0	H-8
Linear Modul ME LM 2.1	H-9
Motorised / Clamping Carriages model LM 2.1	H-10
Guide rails LM 2.1	H-11
Guide Rail and Energy Packet Supports	H-12
Slotted bar and end switch cams	H-13
Longitudinal Welding Bank model 121.426	H-14
Support and Carrier System	H-15
Longitudinal welding and Clamping Banks model ME 1501-F / ME 2001-F / ME 3001-F / ME 4001-F	H-16
Horizontal Welding, Support and Carrier System model Z-0003-647	H-20
Horizontal Welding, Support and Carrier System model 3243	H-24
Price list	H-28

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Dia. H - 1

The welding and cutting carriage, mobile, type WCM is a flexible and very effective welding carriage. Designed for the MIG/MAG, TIG welding and plasma cutting processes. Various torches and torch mounts can be fitted depending on the process employed.

Through adjustment of the contact guide rollers, welding in both directions of travel is possible.

The carriage can be equipped with a remote control and mount enabling current and voltage correction separate from the welding power source

Technical description:

Weight:	18,9 kg
Dimensions L x W x H:	approx 610 x 280 x 325 mm
Tractive force (carriage):	50 N
Travel speed:	15 – 800 cm/min
Drive:	Heat resistant rollers (quad drive) with magnetic attracting system
Tracking guide:	Horizontal contact rollers (adjustable between 2mm - 40mm)
Torch positioning:	Manual Vertical: 40 mm Horizontal: 120 mm
Voltage:	42 V/AC
Continuous Current /	1 A
Max Current:	5,9 A
Frequency:	50/60 Hz
Plug (10 pin):	for voltage supply and the signals for welding on, arc O.K, emergency stop



Welding Torch Mount:

The WCM is equipped as standard with the torch mount- **part no. 152.232** (s.D-5), and is suitable for the MIG/MAG robot and machine torch type ROB 505 W 45° - **part no. 118.480** (max. inter-connecting lead length 4 m; equipped for wires \varnothing 0,8 - \varnothing 1,0 - \varnothing 1,2) or alternatively with the push-pull wire feed system type DV-PP-30 - **part no. 110.900** (inter-connecting lead length 8 m - max. 12 m).

Power Supply:

The WCM works with a 42v power supply and is authorised for work within containers and enclosed spaces. When used in conjunction with a Merkle welding power source, the power supply comes from the power source. This brings the benefit of the travel signal (supplied over an I relay in the power source) for the WCM then being activated once the welding arc is activated and the weld pool is present.

Power supply and automation connection for WCM mounted in the Merkle welding power source part no. 132.532

If the WCM is to be used with any other welding power source except from Merkle, we can supply a suitable external power transformer (See Price list, Power Supply WCM Welding and Cutting Carriage).

External power supply for WCM (Power supply external for other welding power sources) part no. 132.533

User Controls:

Switch:	Forwards/Reverse/Adjust
Speed:	Potentiometer - stepless adjustment
Push Button Start:	Welding run start
Push Button Stopp:	Welding run stop
Emergency Stop:	Welding run end



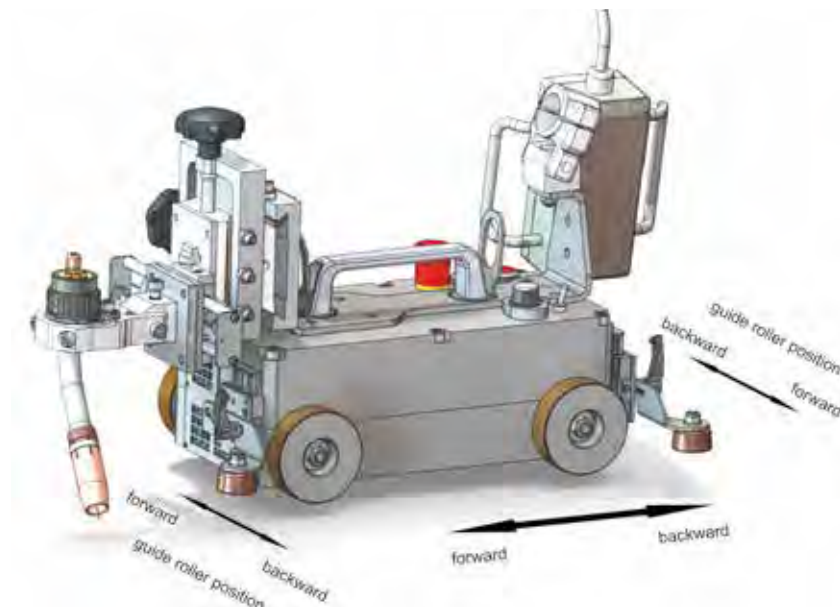
Dia. H - 2



Dia. H - 3



Dia. H - 4



Dia. H - 5

Welding and Cutting Carriage Mobile, model WCM part no. 132.224

Welding and Cutting Carriage, Mobile, model WCM

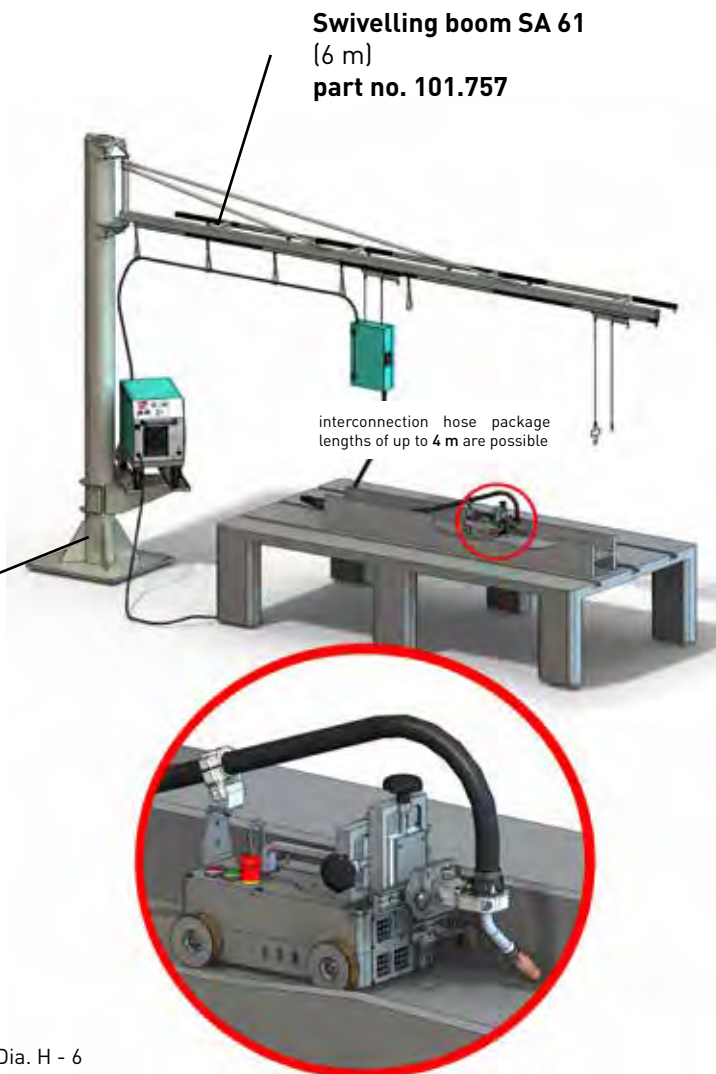
Examples of use A:

Depending on the area of application, a combination of carriage and swivelling support arm/boom is possible. The wire feed unit is suspended on a roller carriage running on the boom, and an automatic towing of wire feeder and the interconnecting hose package is then enabled.

If the WCM is used in conjunction with the MIG/MAG Robot- and Machine-Welding torch model ROB 505 W and a wire feed case, then the maximum possible torch packet length is **4 m**.

Column for Swivelling Support Arm/Boom including machine platform (without swivelling boom)
part no. 150.661

MIG/MAG Robot and Machine Welding Torch water cooled
Model ROB 505 W / 45° bent
part no. 118.480



Examples of use B:

On occasions when the carriage is used in conjunction with a push-pull torch, interconnection hose package lengths of up to 12 m are possible.





Dia. H - 8

The mobile carriages are, due to the low investment costs, ideally suited for small series production and thanks to their compact dimensions perfectly suitable for components of one meter in length or more. The flexible and robust carriages can be used for MIG/MAG, TIG and Plasma welding as well as for cutting work. The Merkle carriages can be equipped with the appropriate torches depending on the welding process or cutting job.

The carriages are equipped with 4 driven solid rubber wheels and a steerable axle. This ensures that it remains exactly in the pre-determined track. The speed is continuously adjustable. The devices work completely without rails, so that the timeconsuming assembly and alignment of guide rails is not needed. Due to the motor being equipped with a tacho generator a constant speed is ensured even under changing loads. The robust aluminum housing has a high mechanical load for rough conditions on the construction site or in factory halls. Two transport handles ensure the mobility of the carriages.

The carriage F100LA has an optical laser scanning tracking system, the F100TK is equipped with a mechanical tracer pin. Quick-adjustable torch holders provide a maximum flexibility in positioning the torch.

Produktvorteile

- Equipped with optical laser sensor (F100LA) or mechanical tracer pin tracking (F100TK)
- Free running - without guide rails
- Maximum flexibility due to numerous adjustment options in all operating axis With 4 heat resistant
- With 4 heat resistant rubber wheels and protected chassis
- Continuous speed adjustment 0.1–5.5 m/min
- Constant drive controlled via tacho generator
- Perfect for components of one meter in length or more

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**Welding Carriage, model
F100LA / F100TK**

Technische Daten:

Voltage:	42 V/AC, 50/60 Hz
Contin. / maximum current:	1,0 A / 5,9 A
Cooling:	AF
Travel speed:	von 0,1 bis 5,5 m/min, continuous regulation
Weight:	approx. 68 kg
Dimensions L x W x H:	approx. 600 x 710 x 470 mm
drive torque:	320 N
Drive system:	heat resistant wheels (quad drive) with optional magnetic adhesion device
Tracking:	automatically, by electrically controlled steering wheels
Torch adjustment:	automatically, by cross slide - actuated by signals from the tactile sensor or laser sensor head. Fine adjustment of the torch with a cross slide. Vertical / horizontal adjustment: 40 mm
Plug 10-pin:	for Merkle MRC40 and additional signals: speed, welding on/off, emergency stop

Controls of welding carriage:

Simulation mode I<0:	on / off
Starting position:	cross slide & steering drives mid-position
Seam tracking:	on / of
Control Signal:	weld seam detected
Taster:	backward
Taster:	forward
Taster laser system:	laser-system shut down



Dia. H - 9

Remote control MRC-40:

The remote control is equipped with two magnets.
The parameters of the power source can be set and
the welding process can be started.

Taster start:	start weld process
Taster stop:	stop weld process
carriage speed:	infinitely adjustable by potentiometer
Emergency stop switch	



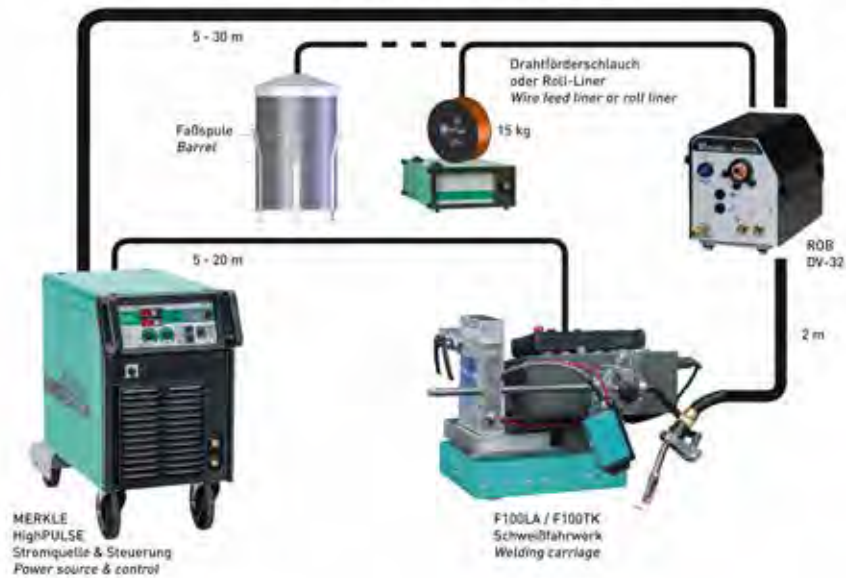
Dia. H - 10

Version 1: Standard Drahtvorschub – standard wire feeder



Dia. H - 11

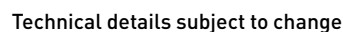
Version 1: Mit ROB DV-32 – with ROB DV-32

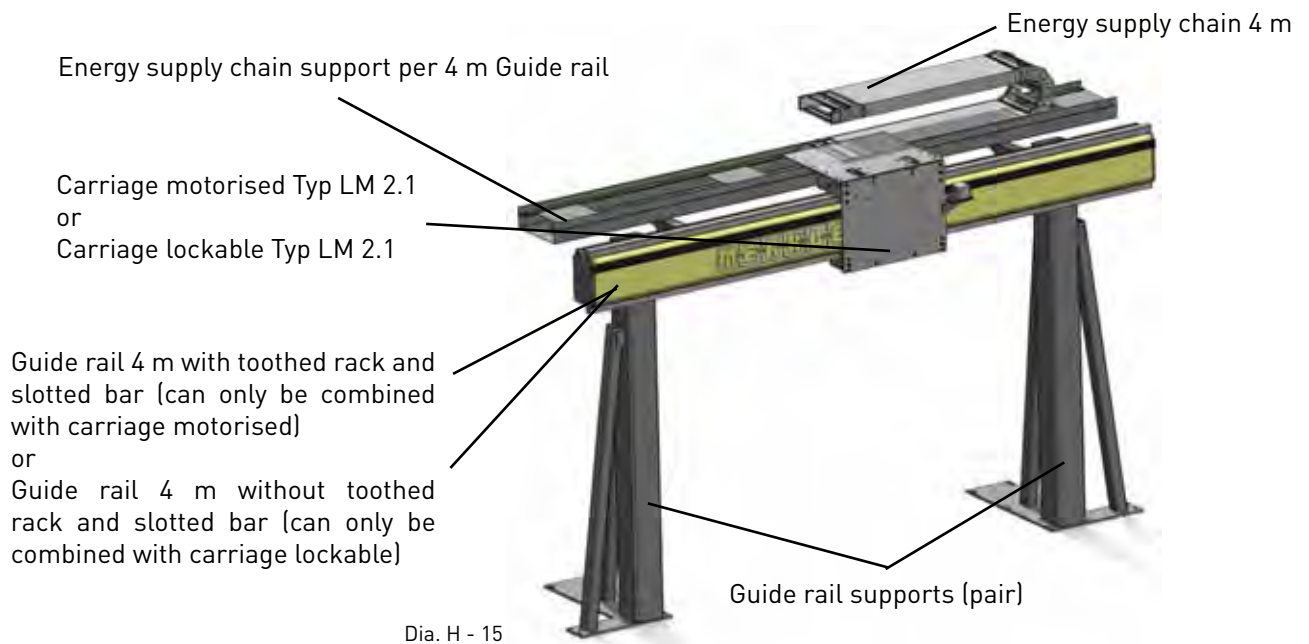


Dia. H - 12

Welding carriage F100LA (with remote control)
with laser sensor tracking, control electronics
incl. remote control MRC-40
Art. Nr. 157.270

Welding carriage F100TK (with remote control)
with tracer pin tracking, control electronics
incl. remote control MRC-40
Art. Nr. 157.268





Linearmodul 2.1 part no. : 119.680

The linear module model ME LM 2.1 is equipped with the following automation components:

1x	Guide rail supports (pair)	part no. 124.548
1x	Energy supply chain support per 4 m guide rails	part no. 124.578
1x	Energy supply chain for 4m guide rails	part no. 124.584
1x	Guide rails with Toothed rack and Slotted bar	part no. 119.498
	or Guide rails without Toothed rack and Slotted bar	part no. 121.946
1x	Carriage motorised model LM 2.1	part no. 119.662
	or Carriage lockable model LM 2.1	part no. 121.958
1x	Controller for Carriage motorised model LM 2.1 (Chapter D)	part no. 019.0.0908



Linear module model ME LM 2.1 extended by 4m

The linear module model ME LM 2.1 (extended by 4m) is equipped with the following automation components:

1x	Guide rail supports (pair)	part no. 124.548
1x	Guide rail clamps for extending rail length in 4m units	part no. 102.775
2x	Energy supply chain support per 4 m Guide rail	part no. 124.578
1x	Energy supply chain for 4 m Guide rails	part no. 124.584
1x	Energy supply chain extension per 4m guide rail extension	part no. 124.586
2x	Guide rails / -without Toothed rack, without Slotted bar	part no. 119.498 / 121.946
1x	Carriage motorised / lockable model LM 2.1	part no. 119.662 / 121.958
1x	Controller for Carriage motorised model LM 2.1 (Chapter D)	part no. 019.0.0908

Motorised / Clamping Carriages model LM 2.1

The Carriages type LM 2.1 are designed for the attachment of MIG/MAG, TIG, Plasma and SAW machine welding heads to enable longitudinal welding. They are suitable for use in the horizontal or vertical positions and the carriage guides are constructed from high precision bearing rollers.

The C form entailed in the carriage construction allows a multi-directional support of the carriage and a very stable guided setup

The carriage drive is through a 42 volt DC motor with Tacho generator. A specially designed drive system ensures a play free, form fitting and robust drive of the carriage.

A multiple limit switch is fitted as standard. Connections to the switching cabinet are through plugged connectors. Mounting of the controller can take place directly on the carriage, or through using an extension lead, placed in any accessible position on the linear module.

The controller E 012 (chapter D11) is required to control the motorised carriages.

Carriage motorised model LM2.1



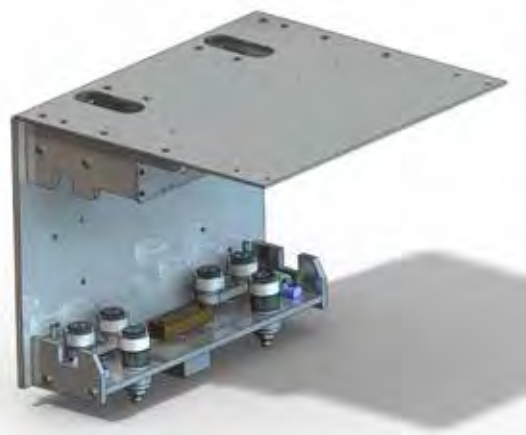
Dia. H - 17

Technical description:

Supply voltage:	230V/50 Hz
Travel speed:	6 - 600 cm/min
High speed return:	600 cm/min
Tractive force:	760 N
Weight:	approx. 145 kg
Max loading:	
Vertical to guide rail:	350 Nm
Parallel to guide rail:	1000 Nm

Carriage motorised model LM 2.1
part no. 119.662

Carriage non motorised model LM2.1 (lockable)



Dia. H - 18

Technical description:

Weight:	approx. 130 kg
Max loading:	
Vertical to guide rail:	350 Nm
Parallel to guide rail:	1000 Nm

The lockable carriage (part no. 121.958) is used as a stationary (lockable) mounting platform on the guide rails. It has the same dimensions and flange drilling pattern as the motorised carriage (part no. 119.662). The lockable carriage is delivered without limit switches and drive motor.

Carriage non motorised model LM 2.1
(lockable)
part no. 121.958

Guide rails LM 2.1

The guide rails are designed for use with: **Carriage motorised part no. 119.662**
Carriage lockable part no. 121.958

The guide rails are of a massive construction and possess a high longitudinal and torsional rigidity. All mounting surfaces for guide strips, slot bars, toothed racks etc. are machined to a high level of precision. The toothed rack (Art.Nr 019.0.2301) and slot bar (quad) are fitted as standard. Should it be intended to join guide rails together, then a joint preparation at the joint ends is required.

Technical description:

Length of the Guide rails: 4,00 m

Support width: 3,00 m

Structural values:

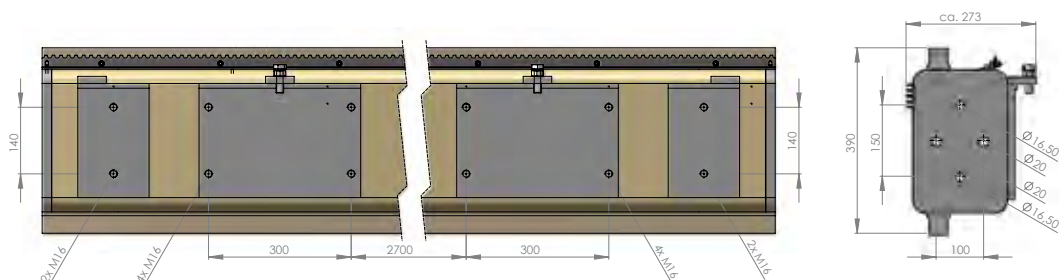
Moment of inertia xx-Axis 11.110 cm⁴
 Resisting torque xx-Axis 741 cm³

Moment of inertia yy-Axis 5969 cm⁴
 Resisting torque yy-Axis 597 cm³

**Guide rails (4 m)
 part no. 119.498**

**Guide rails (4 m)
 without Toothed rack
 without Slotted bar
 part no. 121.964**

The guide rails are designed to be used with our guide rail supports. To construct a basis module, a pair of supports are required.

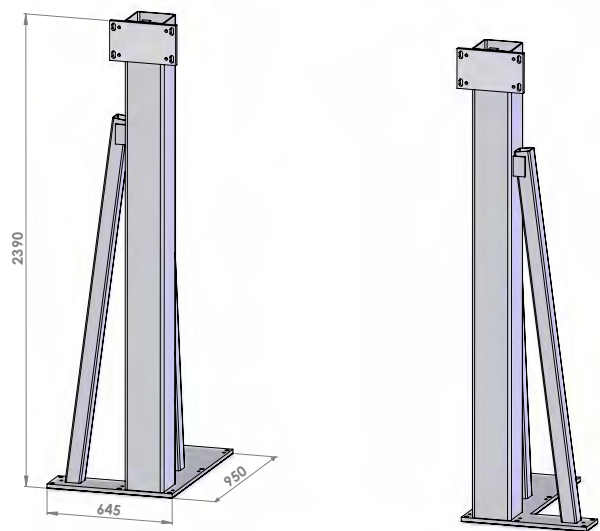


Dia. H - 19

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Guide rail supports (pair)
(consists of left and right handed supports)
part no. 124.548



Dia. H - 20

Suitable for guide rails:
- LM 1.0
- LM 2.1

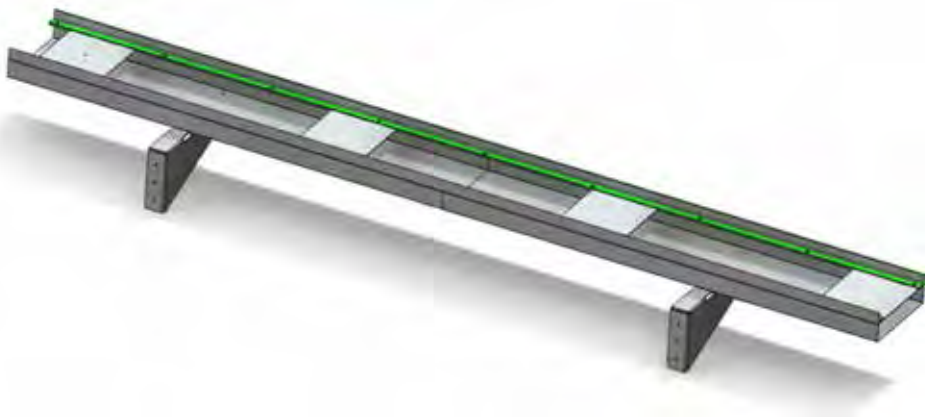
Guide rail supports for 4m extensions
(Support to be positioned at the guide rail junction)
part no. 102.775



Dia. H - 21

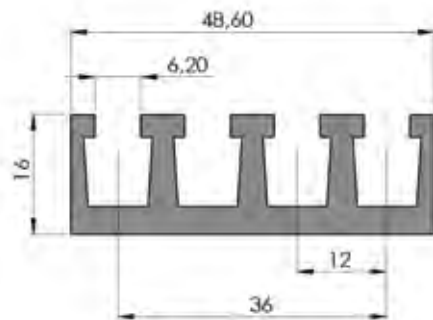
Suitable for guide rails:
-LM 1.0
-LM 2.1

Energy supply chain support per 4m guide rail
part no. 124.578



Energy supply chain for 4m guide rail
part no. 124.584

Energy supply chain extension for 4m guide rail extension
part no. 124.586

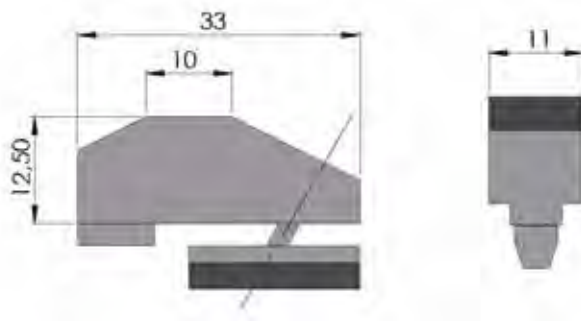


Slotted bar - quad

Un-drilled, 3000 mm long

Slotted bar - quad
part no. 019.0.2301

Dia. H - 22



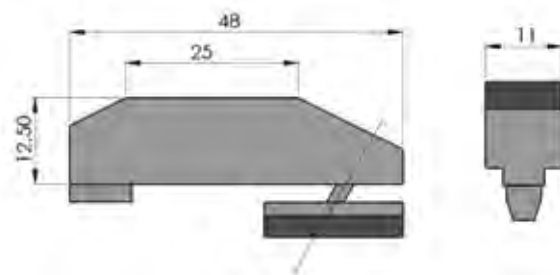
End switch-Cam 10 mm

For activating short impulses during the working cycle

Suitable for:
- Guide rails LM 1.0 & 2.1
- LS-Series longitudinal slides

Dia. H - 23

Norm-solid steel-Cam 10 mm
part no. 019.0.0800



End switch-Cam 25 mm

For switching impulses at end positions (longer cam surface takes stopping distance into account)

Suitable for:
- Guide rails LM 1.0 & 2.1
- LS-Series longitudinal slides

Dia. H - 24

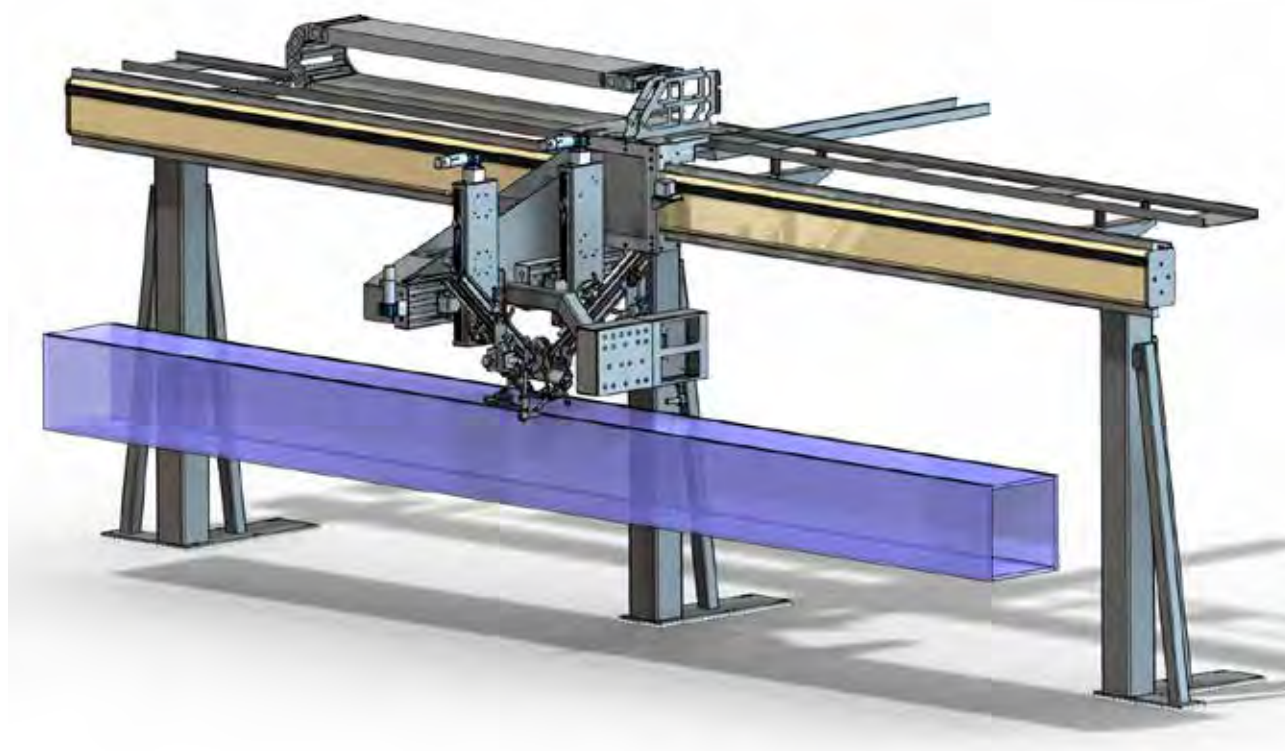
Norm-solid steel-Cam 25 mm
part no. 102.719

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Longitudinal Welding Systems
Longitudinal Welding Bank model
121.426

H

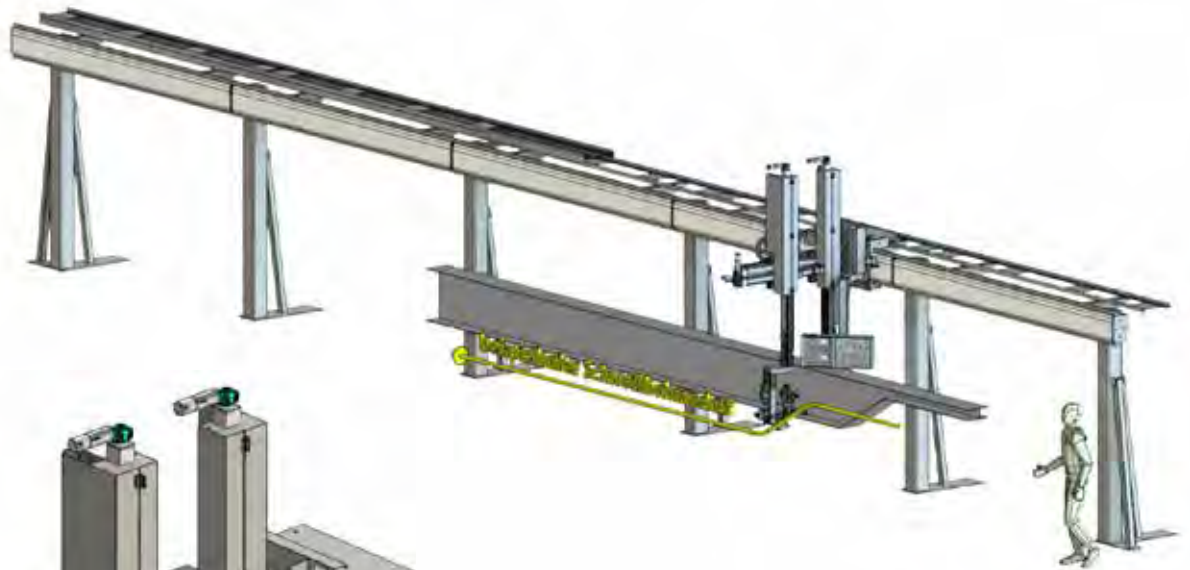


Dia. H - 25

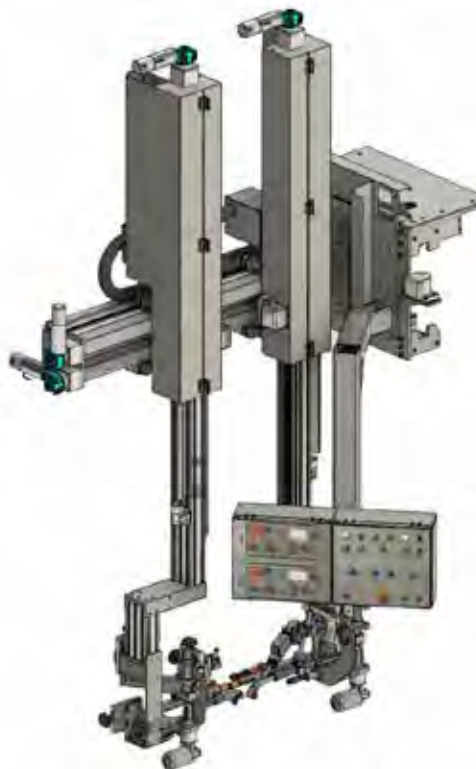
The Longitudinal Welding Bank model 121.426 comes equipped with the following automation components:

1x	Guide rail supports (pair)	part no. 124.548
1x	Guide rail supports for 4m extensions	part no. 102.775
2x	Guide rails 4m (extendable in 4m lengths)	part no. 119.498
1x	Carriage ME LM 2.1	part no. 119.662
2x	Energy supply chain support per 4m Guide rail	part no. 124.578
1x	Energy supply chain for 4m Guide rails	part no. 124.584
1x	Energy supply chain extension for each 4m guide rail extension	part no. 124.586
1x	Welding head outrigger	part no. 121.428
2x	Compound slide LS-Series Combination of: -LS 750.2 -LS 625 .2	part no. 121.246 part no. 151.920
2x	MIG/MAG torch positioner for tactile sensing (without tactile sensor and machine welding torch)	part no. 124.044
2x	Tactile sensor TK15	part no. 121.060
2x	Swivel unit for torch positioning with sensing mount	part no. 121.274

Longitudinal Welding Bank
part no. 121.426

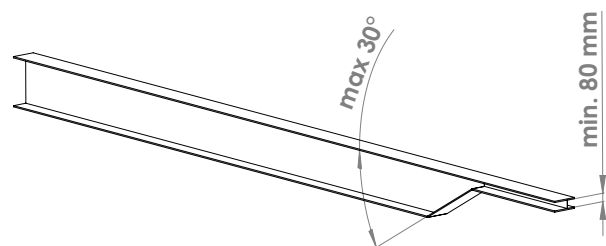


Dia. H - 26 Automatic horizontal beam welding system 20m



Dia. H - 27 Welding head

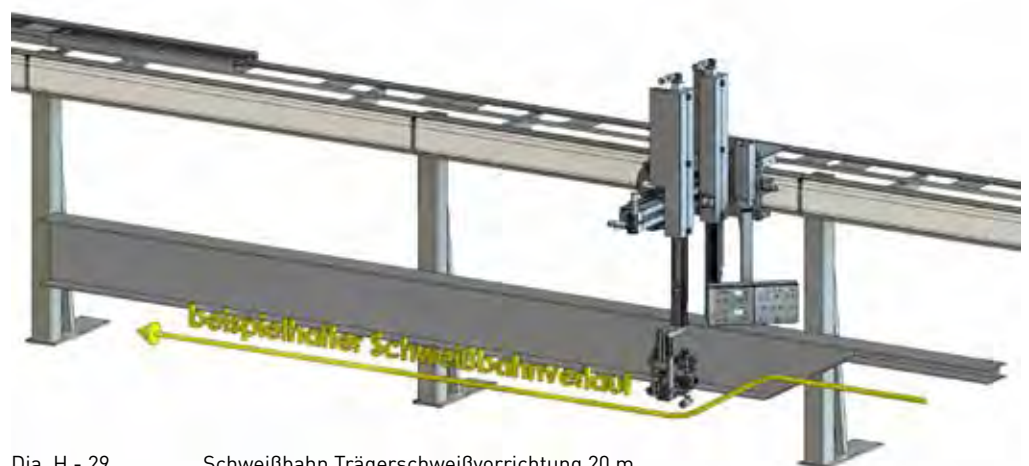
Shown is a 20m long horizontal beam welding system. This system allows simultaneous double sided parallel welding on vertical standing T / double T section beams, and features a highly efficient contour and gradient sensing system. Irrespective of pre-fabricated holes, stamp-outs or slits in the vertical plate, our sensor system guarantees a constant, uninterrupted welding torch guidance and positioning, paired with ease of use.



Dia. H - 28 Beam specifications

The sensor driven welding heads allow an automatically controlled torch to work piece distance over the whole length of the beam to be welded.

Each welding head is also equipped with a motorised, sensor driven, rotating torch mount, enabling perfect torch angle positioning during the welding process in accordance with the longitudinal gradient of contoured or swan neck beams.



Dia. H - 29 Schweißbahn Trägerschweißvorrichtung 20 m

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Longitudinal Welding Systems
Longitudinal welding and Clamping
Banks model ME 1501-F / ME 2001-F /
ME 3001-F / ME 4001-F

H



Dia. H - 30
- F model ME - 1501



Dia. H - 31
- F model ME - 2001 - F / 3001



Dia. H - 32 model ME - 2001 - F

Merkle welding machines and automation have been designed, developed and constructed since 1964 at our headquarters in Kötz

The longitudinal welding and clamping banks model ME 1501-F, ME 2001-F, ME 3001-F and ME 4001-F are produced as standard with a welding stroke of 1500, 2000, 3000 and 4000 mm. (see technical description)

The systems are of a massive steel construction. The transportation of the welding head is through horizontal motor driven carriages which are constructed to be free of all play on high precision guides.



Dia. H - 33



Dia. H - 34

The design of the pneumatic and electrical systems allows a full integration into the machine construction without increasing constructional dimensions or space requirements

The clamping system for sheets, plates and pipes is constructed using many single clamping jaws which are precision mounted, and centrally operated using the installed electro-pneumatic system. The operation of the system is achieved using 2 foot switches.



Dia. H - 35



Dia. H - 36

The standard longitudinal welding and clamping banks consist of components 1 - 6:

Pos. 1 Central clamping jaw positioning.
Both rows of clamping jaws can be adjusted at individual intervals to suit differing material thicknesses.



Dia. H - 37

Pos. 2 The systems are equipped with 2 electro pneumatic material limit stops. One stop is mounted at the welding start position, the second is mounted on the carriage and therefore always set to the length of the material to be welded. Both material limit stops are designed to be suitable for butt and gap welds.



Dia. H - 38

Pos. 3 Automatic turnbuckle
The lower, and both upper braces are adjusted using an electrical turnbuckle and 2 button controller. Once in position, the braces are pneumatically locked.



Dia. H - 39

Pos. 4 The mounting brace, used for mounting the material to be welded, is height adjustable. This allows differing material thicknesses to be offered up to the clamping bed. The adjustment of the mounting brace to allow for differing material thicknesses is performed by Merkle.



Dia. H - 40



Dia. H - 41

Pos. 5 Automatic vertical torch positioning



Dia. H - 42

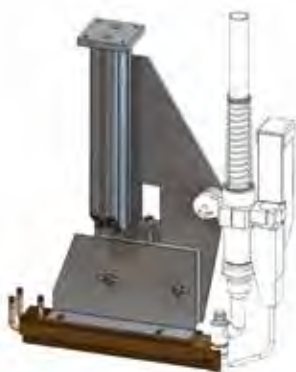
Pos. 6 SPS-Controller

The SPS controller comes fully integrated with the bank's electrical system and is mounted directly to the motorised carriage



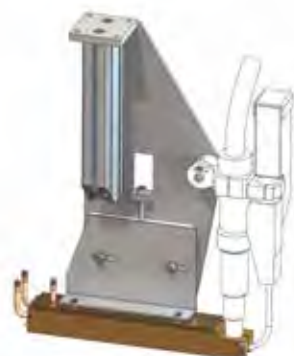
Dia. H - 43

Pos. 7 Purging gas unit for cover pass



Dia. H - 44

Purging gas unit for the cover pass suitable for TIG (**Chapter F-2**)



Dia. H - 45

Purging gas unit for the cover pass suitable for PLASMA (**Chapter F-3**)

Pos. 8 Workpiece Scissor-lift System



Dia. H - 46

Hydraulic scissor lift system suitable for positioning pipe segments up to 800mm

1. **Longitudinal welding bank model
Z-0003647**

Die welding system consists of:

- The welding power source
- The fume extraction system
- The full electrics package

mounted in compact form on the carriage.



Dia. H - 47

Machine framework

The machine framework is of solid steel construction designed for the mounting of guide rails and carriages. The high stability of the guide rails is achieved through cross strutting the individual mounting columns to form an extremely stable construction.

The guide rails can be lengthened in the Z-Axis in 5,8 m segments.



Dia. H - 48

Carriage and Guide Rails

The motorised carriage assumes the function of positioning and transporting the welding torch in the z-axis.

The guide rails are available in made to measure lengths to suit your purpose and material dimensions. The motorised carriage is designed to support 1 x torch positioner in the form of a compound slide.

Technical Description:

Welding portal

Travel speed. vertical:	0,7 m/min
Travel speed. horizontal:	10 m/min (limited)

Torch positioner on Boom

Travel speed. horizontal:	4,5 m/min
Vertical stroke:	1300 mm
Horizontal stroke:	2500 mm

The compound slide for the x and y axis, and the motorised carriage, are both steplessly adjustable and programmable to suit the required welding/travel speeds. The axes can be controlled using analog signals or using a bus interface.

The possibility also exists to mount a second compound slide to the main carriage (large version) using the LS series torch positioning components.



Dia. H - 49

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2. Welding head control

The sensor controller type E 062 coordinates the movement of the compound slide (consisting of two LS Series motorised slides) using signals gained from the weld tracking sensor. (chapter D-17)

Using the joystick it is possible to manually adjust the slide position (up/down, left/right) when set to manual mode. When set to automatic mode, the weld tracking sensor assumes overriding control of the slide movement.
The integrated potentiometer enable a stepless adjustment of the motor RPM and slide speed.(used to set the reaction speed of the slide caused by the weld sensor signal)
The RPM Controller and drive motor are electrically isolated from the main supply voltage.

The main slide and the welding head can be adjusted using a wireless controller to give approximate positioning.



Dia. H - 50



Dia. H - 51

3. Welding technology

Our HighPULSE-Line consists of Synergic PulseARC-welding power sources which are especially designed for the interface with Robots and SPS controllers. Based on modern and highly efficient, high performance 100kHz Inverter power modules and 32 bit high speed processors.
The HighPULSE 550 RS used with this system can be controlled over an analogue interface or over a bus system.

Controller

The controller is mounted directly to the carriage. The logic controller is the S7 from Siemens.
The following functions can be operated using the controller

Main Switch with control lamp:	On/Off
Potentiometer:	Travel speed of the vertical slide
Potentiometer:	Travel speed of the horizontal slide
Switch 1:	Pre-load left or right
Switch 2:	Hand/Automatic
2 step Joystick:	Motorised slide fast/slow up/down - right/left
Ratchet Switch:	Emergency stop



Dia. H - 52

4. Fume Extractor System (Optional)

The fume extraction sytem is a„source point“ system, and extraction takes place directly at the end of the welding torch.
The extractor unit (500 m³/h) is mounted on the motorised carriage bridge and travels together with the carriage.
Filter cleaning is automatic.

5. Camera + Q.MACS – Quality Management Analysis Control Software (Optional)

Using the integrated camera system, the user has the possibility to visually monitor the welding process. This is especially useful for welds that would normally be difficult to reach or see. In combination with our Q.MACS system, a monitoring and recording of all welding parameters is possible, parallel to the visual monitoring.

Merkle Q.MACS

Our newest software is capable of monitoring, controlling and recording all welding parameters, whilst simultaneously providing values for machine time, arc-on time, wire and gas consumption to name just a few functions, and this also with multiple robots welding one component simultaneously. Online and offline monitoring with practically unlimited network capabilities round off the currently best automation software on the market. (s.J-4)

Dia. H - 53



Dia. H - 55



Dia. H - 54



Dia. H - 56



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Application

Due to our extensive experience in machine construction and especially the longitudinal machine technology (we have produced and constantly improved this machine over decades) we are in possession of a great deal of know-how in this area. This construction offers you an economical solution for the MIG/MAG and PulseARC welding of longitudinal beams and assemblies.

You can weld beams possessing different profiles with fillet or butt weld preparation. The beams can be in the form of double T with swan neck construction (such as in the construction of trailer beds) as well as box profile as used in machine and crane construction.



Dia. H - 57

Machine frame

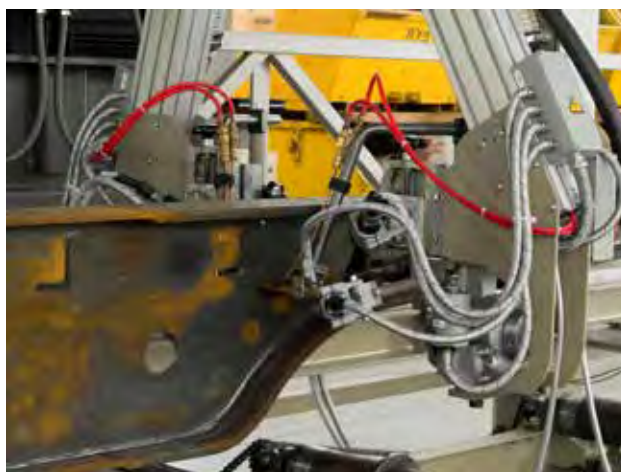
The machine frame is manufactured from solid steel and fully welded to form a stable construction to enable the mounting of the work piece. The work piece is clamped to the cross members using the clamping devices. The machine bed consists of single elements which are screwed together allowing the machine bed to be extended. Lateral stability is achieved by cross strutting the segment components.

Carriage und Guide rails

The carriage is constructed to accept two welding/sensing mounts, and is also suitably constructed to accept two large wire spool systems. Because of the widely spaced drive rollers, the carriage is very stable and the drive very accurate. The drive is achieved using a steplessly adjustable motor with gearbox, and is transmitted over a coupling clutch to the precision machined toothed rack and guide rails. The guide rails consist of an upper and lower rail. Both rails are precision machined and extendable in length. The carriage is also equipped with a high speed return function with a travel speed of up to 20m/min which guarantees a minimum arc off time between welding cycles.

Sensing and torch mount units

The units consist of two LS series compound slides mounted to the carriage. Both units operate independently of each other and each is equipped with a welding torch mount. The guides are equipped with recirculating ball bearing bushes, and are driven over a low wear and maintenance free ball bearing spindle/lead screw. The spindles and shafts are protected from ingress of dirt, spatter and foreign particles. The torch mounts are rotatable allowing an optimal torch positioning, especially useful when welding on cranked components.



Dia. H - 58



Weld bead sensing

The carriage is equipped with two slotted bar outrigger to which are mount motorised compound slides from our LS series. Weld bead sensing is achieved over sensors which send signals over the sensing controller and move the motorised slides in the vertical and horizontal axis.

Controller

The controller (Siemens SPS S7) and power supplies for the motors are mounted in a free standing switch cabinet. The switch cabinet is mounted on the carriage platform, and travels along with the carriage. The operating panel is mounted easily accessible on the carriage, and is used to operate the following functions:

- Automatic/manual modes
- speed control
- Fast return
- Emergency stop

The power and media supplies are routed over the energy supply chain directly from the source to the switch cabinet

Welding heads

The welding system is equipped with two welding heads.

Each welding head consists of the following components:

Vertical slide:

Drive for the vertical axis consists of:

Motor and gearbox, mounting flange, ball bearing spindle and drive nut, coupling clutch, 4 quadrant controller and spring tube covers for shafts and spindles

- Stroke: 420 mm
- Stroke speed: 2900 mm/min
- Drive: DC motor with brake and tacho generator
- Speed regulation range: 1:100

Horizontal slide:

Drive for the horizontal axis consists of:

Motor and gearbox, mounting flange, ball bearing spindle and drive nut, coupling clutch, 4 quadrant controller and spring tube covers for shafts and spindles

- Stroke: 660 mm
- Stroke speed: 1000 mm/min
- Drive: DC Motor
- Speed regulation range: 1:100

Pivot axis:

- Pivot range : +/- 30° (limit switch)
- Pivot speed: 4,2° - 54° /s

Torch mount:

- Clamp Dia Ø 35 mm

Sensor mount- X - axis sensing:

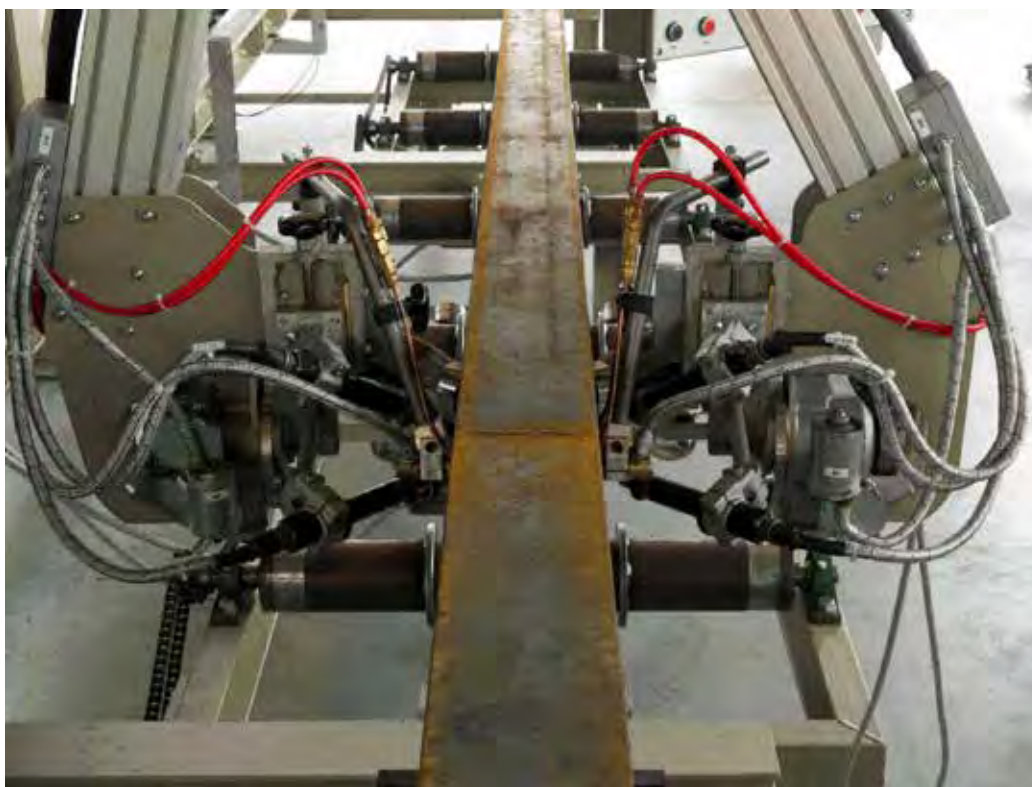
- Fine adjustment X- Axis +/- 20 mm

Sensor mount- Y - axis sensing:

- Fine adjustment Y-Axis +/- 20 mm

The system is constructed for workpiece control up to a maxim of 30° workpiece inclination.

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Dia. H - 59

1.) Mode of operation

The workpiece to be longitudinally welded is pre tacked and mounted into the system and adjusted to the machine bed. Using the user interface panel, the welding heads 1 + 2 are roughly positioned.

The positioning of the welding heads is now fine-tuned and the welding activated.

At the end of the welding cycle, the system can be stopped manually, over limit switches or through NC control signals (optional)

The welding carriage now automatically returns (in high speed mode) to the weld start position ready for the next welding cycle.

The automatic torch positioning takes place over the tactile weld bead tracking system.

The system can be delivered suitable for web plates in the

- a) Horizontal
- b) Vertical

positions.

2.) Welding Technology

Our HighPULSE-Line consists of Synergic PulseARC-welding power sources which are especially designed for the interface with Robots and SPS controllers. Based on modern and highly efficient, high performance 100kHz Inverter power modules and 32 bit high speed processors.

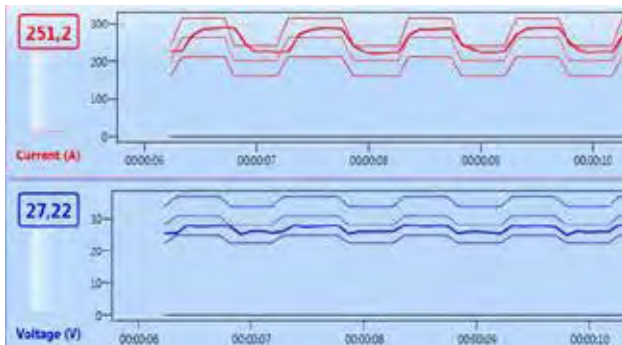
The HighPULSE 550 RS used with this system can be controlled over an analogue interface or over a bus system.



Dia. H - 60

3. Q.MACS – Quality Management Analysis Control Software (Optional)

Our newest software is capable of monitoring, controlling and recording all welding parameters, whilst simultaneously providing values for machine time, Arc-on time, wire and gas consumption to name just a few functions, and this also with multiple robots welding one component simultaneously. Online and offline monitoring with practically unlimited network capabilities round off the currently best automation software on the market.



Dia. H - 61



Dia. H - 62

4. Fume extractor system (Optional)

The fume extraction system for both welding torches is a „source point“ system, and extraction takes place directly at the end of the welding torch.

The extractor unit (500 m³/h) is mounted on the motorised carriage bridge and travels together with the carriage.

Filter cleaning is automatic.



Dia. H - 63

5. Beam delivery system (Optional)

The beams are transported into the welding area over rollers. To stabilise the beams laterally, guide rollers mounted on roller arms are used. For final positioning onto the welding bed a hydraulic lifting station is employed.



Dia. H - 64



Price list

Page	Description	PrGr	Part no.	Price/€
H-2	Welding and cutting carriage, mobile model WCM Welding and cutting carriage, mobile model WCM	31	132.224	4.290,00
	Power supply INTERNAL for the Merkle welding power source (retrofit) Power supply and automation connection for WCM, installed in the Merkle welding power source, 10 pin plug. : Welding ON, ARC OK, Emergency Stop and 42 V AC	31	132.532	251,00
	Connection Cable Welding and cutting carriage 15m power source -> WCM , 15m with 10 pin plug	31	132.528	169,00
	Connection Cable Welding and cutting carriage 20m power source -> WCM, 20m with 10 pin plug	31	132.530	219,00
	Power supply EXTERNAL for other welding power sources External power supply for WCM with 5m control cable between automation connector welding power source and external power suppl, and 5m control cable between external power supply and WCM	31	132.533	525,00
H-4	Optional Equipment for WCM (not included in scope of delivery) Examples of use A			
	Torch body ROB 505 W, 45°	11	118.480	560,00
	Gas nozzle d=16 mm ROB 505 W high performance variant push and screw fixing, nickel plated for water jacket 123.328	52	123.332	21,50
	Hose assembly up to 4 m, ROB 505 W (only for WCM)	11	133.770	590,00
H-4	Examples of use B Equipment package B, complete for WCM, consists of : -MIG/MAG robot and Machine welding torch Type ROB 505 W 45° anlgd -High performance gas nozzle 16mm, push and screw fixing -Wire feed system DV-PP-30 -Hose package 8m (only for WCM and PP)	09	133.768	8.980,00
	Torch body ROB 505 W, 45°	11	118.480	560,00
	Gas nozzle d=16 mm ROB 505 W high performance variant push and screw fixing, nickel plated for water jacket 123.328	52	123.332	21,50



Price list

Page	Description	PrGr	Part no.	Price/€
	Wire feed unit DV-PP 30 for ROB-W-PP with 4 roller drive	11	110.900	2.415,00
	Hose assembly up to 8 m, ROB 505 W (only for WCM and PP)	11	133.772	780,00
H-8	Welding carriage model F100LA/TK Welding carriage F100TK (with remote control) with tracer pin tracking, control electronics incl. remote control MRC-40	31	157.268	21.740,00
	Welding carriage F100LA (with remote control) with laser sensor tracking, control electronics incl. remote control MRC-40	31	157.270	45.150,00
H-8	Carriage/Guide rails model LM 1.0 Motorised carriage model LM 1.0	31	151.194	1.890,00
	Guide rail LM 1.0 (2m)	31	151.218	
	Guide rail LM 1.0 (4m)	31	123.596	
	Guide rail LM 1.0 (6m)	31	124.088	
	Longitudinal carriage with Guide rail LM 1.0 (2m)	31	151.221	4.230,00
	Longitudinal carriage with Guide rail LM 1.0 (4m)	31	123.598	
	Longitudinal carriage with Guide rail LM 1.0 (6m)	31	124.090	8.570,00
H-9	Linear module ME LM 2.1	31	119.680	9.755,00
H-10	Motorised carriage model LM 2.1	31	119.662	5.290,00
D-11	Controller Type E012 for LS series slides and longitudinal carriages	05	130.062	1.900,00
H-10	Carriage without motor model LM 2.1 (lockable)	31	121.958	4.765,00
H-11	Guide rail type LM 2.1 (4m), WITH toothed rack and slotted bar	31	119.498	4.850,00
H-11	Guide rail type LM 2.1 (4m), WITHOUT toothed rack and slotted bar	31	121.964	4.380,00
H-12	Guide rail supports (pair) for Guide rails LM 1.0 / LM 2.1	31	124.548	2.390,00
H-12	Guide rail support for extension (per 4m) for Guide rails LM 1.0 / LM 2.1	31	102.775	887,00
H-12	Energy supply chain support (high) per 4m guide rail without communication cables entry model LM2.1	31	124.578	695,00
H-12	Energy supply chain for 4m guide rails ME - LM 2.1	31	124.584	738,00
H-12	Energy supply chain for 4m guide rails ME - LM 2.1 for one piece Guide rail extension	31	124.586	
H-13	Slotted bar - quad Type NLA 12.4, un-drilled	32	019.0.2301	



Price list

Page	Description	PrGr	Part no.	Price/€
H-13	Norm-solid Steel-Cam 10mm, NT 10.33 S	32	019.0.0800	28,00
H-13	Norm-solid Steel-Cam 25mm NT 25.48 S	32	102.719	35,00
H-16	Longitudinal welding device ME-1501-F standard (WITHOUT copper backing rail, WITHOUT torch holder, WITHOUT controller) Included: <ul style="list-style-type: none">- Central clamping control- Automatic material stops- Automatic turnbuckle- Automatic vertical torch positioning	31	117.798	44.450,00
	Technical Data: Clamp pressure at 4 bar: 95,24 kN Welding travel: 1500 mm Spar diameter: 160 mm Work size: min. Ø: 170 mm / max. Ø: 850 mm Torch mounts			
F-2	Torch positioning, manual for MIG/MAG torches	31	123.926	169,00
F-3	Welding head mount without purging for Plasma and TIG	31	124.040	167,00
	TIG welding head mount with gas tow shoe for up to 1.5 mm material thickness	31	151.351	1.120,00
F-3	TIG welding head mount with gas tow shoe for more than 1.5 mm material thickness	31	122.916	1.120,00
F-4	Plasma welding head mount with gas tow shoe PM 400 W with cold wire	31	121.648	1.354,00
	Weld backing rail for ME-1501-F: Weld backing rail with copper insert version for MIG/Pulse - ME-1501-F for up to 1,5mm material thickness	31	117.816	1.720,00
	Weld backing rail with copper insert version for MIG/Pulse - ME-1501-F for 1.5 mm to 5 mm material thickness	31	137.682	1.720,00
	Weld backing rail with shield gas device version for TIG welding, ME-1501-F for up to 1.5 mm material thickness	31	137.728	2.080,00
	Weld backing rail with shield gas device version for TIG welding - ME-1501-F for more than 1.5mm material thickness	31	137.730	2.080,00
	Weld backing rail with shield gas device version for Plasma, ME-1501-F	31	117.834	2.650,00



Price list

Page	Description	PrGr	Part no.	Price/€
	Controller			
	Controller for longitudinal welding system using end switch cam ME-1501/2001/3001-F/4001-F	31	134.564	13.470,00
	Controller for longitudinal welding system CPS500 programmable process controlled drive control ME-1501-F/2001-F/3001-F/4001-F	31	139.930	21.955,00
	NC-Controller for longitudinal welding system (EtherCAT programmable process controlled drive control ME-1501-F/2001-F/3001-F/4001-F	31	147.954	23.950,00
	Options:			
	Optional support beam ME-1501-F for different work pieces	31	111.280	
	Water cooling set ME-1501-F for the Mounting support and weld backing rail	31	111.336	
	Water cooling unit Type WK 325	46	113.786	
	Connection socket WK, 6-pin. for TIG 300 DC LT 240 AC/DC, HighPULSE RS, HighTIG RS	46	103.675	
H-16	Longitudinal welding bank ME-2001-F standard (WITHOUT copper backing rail, WITHOUT torch holder, WITHOUT controller) Included: - Central clamping control - Automatic material stops - Automatic turnbuckle - Automatic vertical torch positioning	31	117.800	56.900,00
	Technical Data: Clamp pressure at 4 bar: 127 kN Welding travel: 2000mm Spar diameter: 180 mm Work size: diameter min.: 190 mm diameter max.: 850 mm			
	Torch mounts			
F-2	Torch positioning, manual for MIG/MAG torches	31	123.926	169,00
F-3	Welding head mount without purging for Plasma and TIG	31	124.040	167,00
	TIG welding head mount with gas tow shoe for up to 1.5 mm material thickness	31	151.351	1.120,00



Longitudinal Welding Systems

H

Price list

Page	Description	PrGr	Part no.	Price/€
F-3	TIG welding head mount with gas tow shoe for more than 1.5 mm material thickness	31	122.916	1.120,00
F-4	Plasma welding head mount with gas tow shoe PM 400 W with cold wire	31	121.648	1.354,00
	Weld backing rail for ME-2001-F:			
	Weld backing rail with copper insert version for MIG/Pulse, ME-2001-F	31	117.818	2.320,00
	Weld backing rail with shield gas device version for TIG welding, ME-2001-F for up to 1.5 mm material thickness	31	117.830	2.810,00
	Weld backing rail with shield gas device version for TIG welding, ME-2001-F for more than 1.5mm material thickness	31	134.618	2.810,00
	Weld backing rail with shield gas device version for Plasma, ME-2001-F	31	121.908	3.590,00
	Controller			
	Controller for longitudinal welding system using end switch cam ME-1501/2001/3001-F/4001-F	31	134.564	13.470,00
	Controller for longitudinal welding system CPS500 programmable process controlled drive control ME-1501-F/2001-F/3001-F/4001-F	31	139.930	21.955,00
	NC-Controller for longitudinal welding system (EtherCAT) programmable process controlled drive control ME-1501-F/2001-F/3001-F/4001-F	31	147.954	23.950,00
	Options:			
	Optional support beam ME-2001-F for different work pieces	31	111.282	
	Water cooling set ME-2000-F for the Mounting support and weld backing rail	31	111.338	
	Water cooling unit Type WK 325 Water cooling unit WK 325 incl. water pressure control	46	113.786	
	Connection socket WK, 6-pin. for TIG 300 DC LT 240 AC/DC, HighPULSE RS, HighTIG RS	46	103.675	
	Hydraulic scissor lift system suitable for positioning pipe segments up to 800mm	31	152.311	

Price list

Page	Description	PrGr	Part no.	Price/€
H-16	Longitudinal welding device ME-3001-F standard (WITHOUT copper backing rail, WITHOUT torch holder, WITHOUT controller) Included: <ul style="list-style-type: none"> - Central clamping control - Automatic material stops - Automatic turnbuckle - Automatic vertical torch positioning 	31	117.802	
	Technical Data: Clamp pressure at 4 bar: 190,5 kN Welding Travel: 3000 mm Spar diameter: 260 mm Work Size: diameter min.: 270 mm diameter max.: 850 mm Torch mounts			
F-2	Torch positioning, manual for MIG/MAG torches	31	123.926	
F-3	Welding head mount without purging for Plasma and TIG	31	124.040	
	TIG welding head mount with gas tow shoe for up to 1.5 mm material thickness	31	151.351	
F-3	TIG welding head mount with gas tow shoe for more than 1.5 mm material thickness	31	122.916	
F-4	Plasma welding head mount with gas tow shoe PM 400 W with cold wire	31	121.648	
	Weld backing rail for ME-3001-F: Weld backing rail with copper insert version for MIG/Pulse, ME-3001-F	31	117.820	
	Weld backing rail with VA insert version for MAG/Pulse, ME-3001-F for ALU sheets over 1.5mm to 3mm material thickness	31	136.818	
	Weld backing rail with shield gas device version for TIG welding, ME-3001-F for up to 1.5mm material thickness	31	117.832	
	Weld backing rail with shield gas device version for TIG welding, ME-3001-F for more than 1.5mm material thickness	31	134.620	
	Weld backing rail with shield gas device version for Plasma, ME-3001-F	31	117.838	



Price list

Page	Description	PrGr	Part no.	Price/€
	Controller			
	Controller for longitudinal welding system using end switch cam ME-1501/2001/3001-F/4001-F	31	134.564	
	Controller for longitudinal welding system CPS500 programmable process controlled drive control ME-1501-F/2001-F/3001-F/4001-F	31	139.930	
	NC-Controller for longitudinal welding system (EtherCAT programmable process controlled drive control ME-1501-F/2001-F/3001-F/4001-F	31	147.954	
	Options:			
	Optional support beam ME-3001-F for different work pieces	31	111.284	
	Water cooling set ME-3001-F for the Mounting support and weld backing rail	31	111.340	
	Water cooling unit Type WK 325	46	113.786	
	Connection socket WK, 6-pin. for TIG 300 DC LT 240 AC/DC, HighPULSE RS, HighTIG RS	46	103.675	
	Hydraulic scissor lift system suitable for poistioning pipe segments up to 800mm	31	152.311	
	Longitudinal welding device ME-4001-F standard, (WITHOUT copper backing rail, WITHOUT torch holder, WITHOUT controller) Included: - Central clamping control - Automatic material stops - Automatic turnbuckle - Automatic vertical torch positioning	31	127.468	
	Technical Data: Clamp pressure at 4 bar: 190,5 kN Welding Travel: 4000 mm Spar diameter: 260 mm Work Size: min. Ø: 270 mm / max. Ø: 850 mm			
	Torch mounts			
F-2	Torch positioning, manual for MIG/MAG torches	31	123.926	
F-3	Welding head mount without purging for Plasma and TIG	31	124.040	
	TIG welding head mount with gas tow shoe for up to 1.5 mm material thickness	31	151.351	
F-3	TIG welding head mount with gas tow shoe for more than 1.5 mm material thickness	31	122.916	



Price list

Page	Description	PrGr	Part no.	Price/€
F-4	Plasma welding head mount with gas tow shoe PM 400 W with cold wire	31	121.648	
	Weld backing rail for ME-4001-F: Weld backing rail with copper insert version for MIG/Pulse, ME-4001-F	31	144.800	
	Weld backing rail with VA insert version for MIG/Pulse, ME-4001-F for ALU sheets over 1.5mm to 3mm material thickness	31	144.802	
	Weld backing rail with shield gas device version for TIG welding, ME-4001-F for up to 1.5 mm material thickness	31	144.804	
	Weld backing rail with shield gas device version for TIG welding, ME-4001-F for more than 1.5mm material thickness	31	144.806	
	Weld backing rail with shield gas device version for Plasma, ME-4001-F	31	144.808	
	Controller Controller for longitudinal welding system using end switch cam ME-1501/2001/3001-F/4001-F	31	134.564	
	Controller for longitudinal welding system CPS500 programmable process controlled drive control ME-1501-F/2001-F/3001-F/4001-F	31	139.930	
	NC-Controller for longitudinal welding system (EtherCAT programmable process controlled drive control ME-1501-F/2001-F/3001-F/4001-F	31	147.954	
	Options: Optional support beam ME-4001-F for different work pieces	31	111.285	
	Water cooling set ME-4001-F for the Mounting support and weld backing rail	31	111.341	
	Water cooling unit Type WK 325	46	113.786	
	Connection socket WK, 6-pin. for TIG 300 DC LT 240 AC/DC, HighPULSE RS, HighTIG RS	46	103.675	
	Hydraulic scissor lift system suitable for poistioning pipe segments up to 800mm	31	152.311	
	All Prices per piece or 1m. / Changes reserved.			

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notes:



Foot Switch/Remote, Hand Remote

Foot Switch single/double	I-2
Hand Remote	I-3
Price List	I-4



Dia. I - 2

Foot switch single

The single foot switch is suitable for switching on/off welding positioners and drive units.

The connecting cable is 3 m long and is fitted with plugs.

Weight: 0.9 kg

Foot switch single, 3m cable
part no. 019.0.2900



Dia. I - 3

Foot switch double

The double foot switch is suitable for switching on/off and switching welding positioners and reversing the direction of rotation on turntables.

The connecting cable is 3 m long and is fitted with plugs.

Weight: 1.2 kg

Foot switch double, 3m cable
part no. 019.0.2901



Dia. I - 1

Foot Remote Controller

The foot remote controller is suitable for switching on/off as well as controlling the speed of welding positioners, drive units or for current control of TIG and Plasma power sources.

The connecting cable is 5m or 8 m long.

The controller potentiometer has a resistance of 10 k Ω .

Weight: 2.2 kg

Foot Remote Controller, 5 m cable
Article no. 019.0.3000

Foot Remote Controller, 8 m cable
part no. 019.0.2999



Dia. I - 4

Manual Remote Controller

The manual remote controller is intended for speed control of welding positioners, drive units. The cable is 4 m or 8 m long.

The controller potentiometer has a resistance of 10 k Ω .

Weight: approximately 1.5 kg

Manual Remote Controller, 4 m cable part no. 013.01059

Manual Remote Controller, 8 m cable part no. 013.01060



Dia. I - 5

Manual Remote Controller

The manual remote controller is intended for the TIG- Welding Units and MMA/Stick Electrode Welding Units.

In the case bottom a magnetic holder is integrated for rapid attachment of the controller.

With a tilt switch the polarity can be switched (only MobiARC 282 cel \pm).

The connection cable is standard 5 m long and can be plugged.

weight: 2,5 kg

Manual Remote Controller 5 m cable with plug Art.Nr. 123.791

Extension to 1 m cable Art.Nr. 117.540



Foot Switch/Remote, Hand Remote

Price List

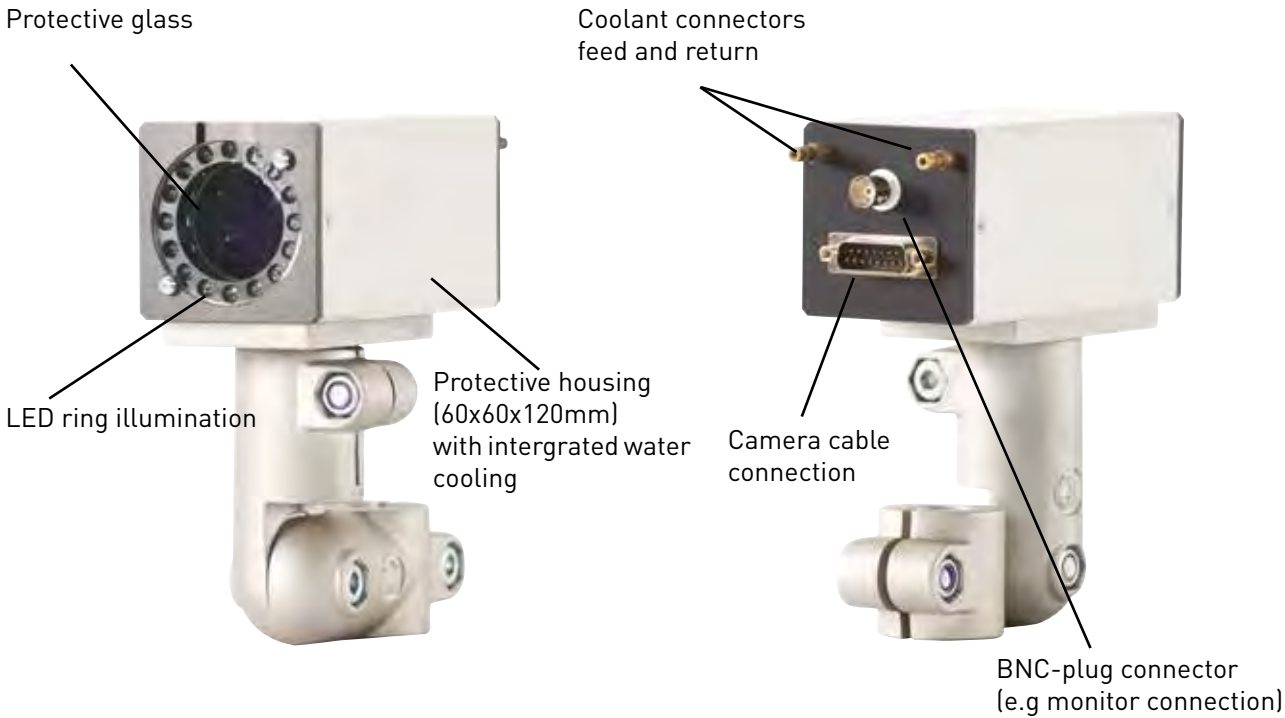
Page	Description	PrGr	Part no.	Price/€
I-2	Foot Switch Foot switch single, 3 m cable	05	019.0.2900	225,00
	Foot switch double, 3 m cable	05	019.0.2901	396,00
I-2	Foot Remote Foot remote with 5 m cable and 10 pin plug	46	019.0.3000	530,00
	Foot remote with 8 m cable and 10 pin plug	46	019.0.2999	540,00
I-3	Hand Remote Hand remote 4m with 10 pin plug	46	013.0.1059	257,00
	Hand remote 8m with 10 pin plug	46	013.0.1060	280,00
	Hand remote control MFR-10, 5 m with 10 pin plug, with magnetic foot incl. switch for polarity change (only MobiARC 284 cel +-)	46	123.791	350,00
	Special cable for external user panel, Remote, ProJOB-PPC, suitable for trailing (per 1m), 5 x 2 x 0,34	17	117.540	34,50
	All prices per piece or 1m. Changes reserved.			



Weld Seam Monitoring Systems

Camera with illumination and water cooling	J-2
Q.MACS - Quality Management Analysis Control System	J-4
Price list	J-6

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Dia. J - 1

Optical weld seam monitoring

- The camera system is designed to be used for monitoring the position and adjustment of the welding head during and after the welding phase. Depending on your camera mounting and distance to work piece limitations, a proximity lense with appropriate focus area is required. The proximity lense +2 is fitted as standard.

With proximity lense	Distance from work piece to front edge of the camera
+1	45...75 cm
+2	30...45 cm
+3	22...30 cm
+4	16...22 cm
- The complete system consists of the camera, the user panel and the camera cable.
- All functions and adjustments (zoom, focus illumination, saving of settings etc) are carried out using the user panel
- Various settings can be saved using the 3 intergrated memory slots.
 E.g.
 Memory slot 1 -> Settings before welding
 Memory slot 2 -> Settings during the welding phase
 Memory slot 3 -> Setting Nr 2 during welding (zoom etc)
- Maximum distance between camera and user panel is 50M.
- To protect the camera from excessive heat, water cooling of the housing is possible.
- The camera sytem uses a 12.1" TFT colour display for optical monitoring of the welding torch before, during and after the welding phase.



Control Panel

Using the control panel it is possible to adjust and select illumination, contrast and focus quickly and easily, before, during and after the welding phase.

Three memory slots are available for saving the settings that you use regularly.

The DIM selector (top right) is used to control the grey filter so that light intensity during welding (also when a memory slot is selected) is always correctly adjusted.

Dia. J - 2



Dia. J - 3

Camera shot of a MIG/MAG welding process



Dia. J - 4

Camera shot of the Tig cold-wire welding process

Camera cable 5 m	(drag chain-compatible)	part no. 128.444
Camera cable 10 m	(drag chain-compatible)	part no. 128.446
Camera cable 20 m	(drag chain-compatible)	part no. 128.448
Camera cable 30 m	(drag chain-compatible)	part no. 128.450
Camera cable 40 m	(drag chain-compatible)	part no. 128.452
Camera cable 50 m	(drag chain-compatible)	part no. 128.454

Camera without camera cable	part no. 128.424
Camera with illumination and cooling connections incl external control panel, power supply transformer + cable, +2 proximity lense	

TFT Monitor 12,1" with mini front plate RAL 9005 24V DC	part no. 118.780
--	------------------

Camera system complete with Monitor and Camera cable 5 m	part no. 128.456
Camera with illumination and cooling connections incl external control panel, power supply transformer + cable, +2 proximity lense, 5m cable without cooling system	

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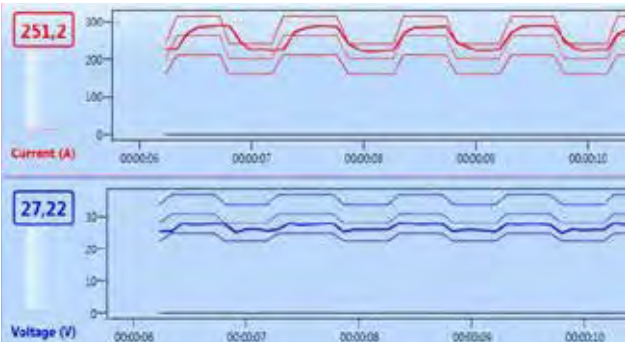
Q.MACS - Quality Management Analysis Control System

Control, documentation, analysis and job management!

Our new Q.MACS software can be used for the measurement, recording and analysis of all welding parameters as well as the real time adherence to pre-set welding parameter limits. A comprehensive range of functions for the job-management are also available. The software can be used as a stand-alone solution for single machines and is also fully network capable.

The Q.MACS function overview:

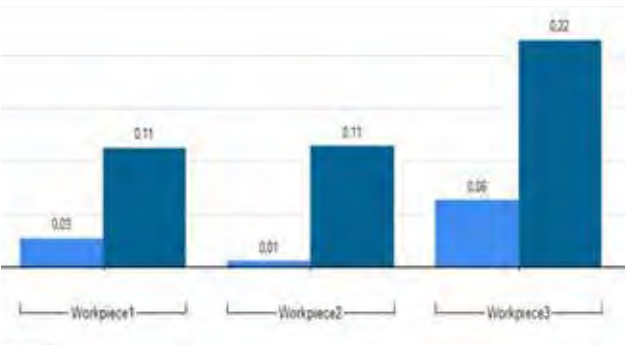
- Recording of welding data:**
The measured parameters are displayed as colored lines on the screen, on prints or as saved data.



- Real time weld parameter monitoring:**
Limits for all welding parameters can be pre-programmed. Should a parameter be shown to go outside of the pre-programmed limits, this is recorded and displayed.



- Welding data analysis:**
The values for welding time, machine use, wire and gas use are automatically recorded and are immediately available.

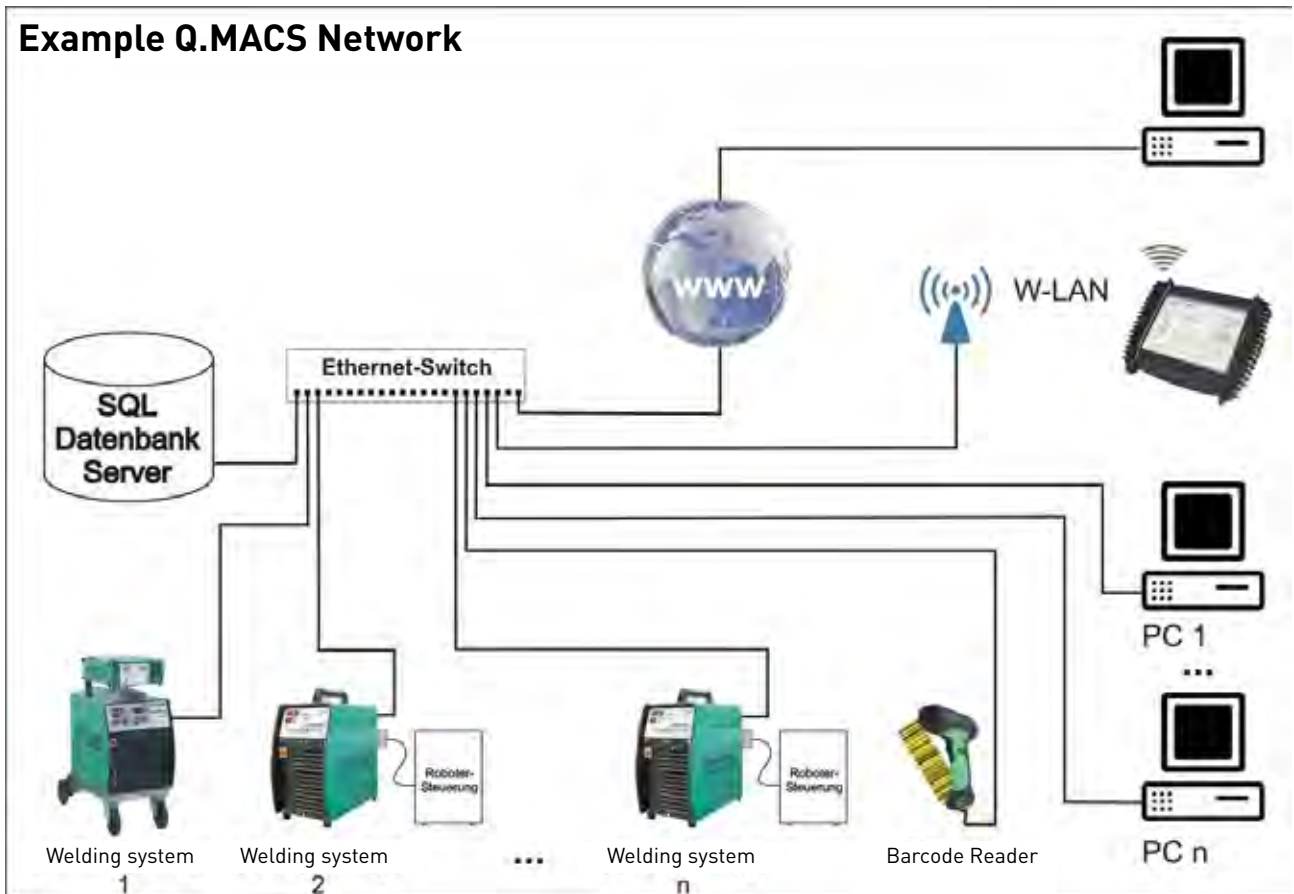


- Job creation and management:**
A comprehensive range of functions are available for the programming and administration of Jobs as well as an intelligent management system are available in online and offline modes.





Example Q.MACS Network



An unlimited number of welding machines and computers can be connected over a standard ethernet network.

Additional input terminals or barcode readers for the collation of component data are also networked. A connection to the analysis and operation mask is also possible over standard W-LAN or internet connections



Price list

Page	Description	PrGr	Part no.	Price/€
J-2	Optical weld seam monitoring Camera without camera cable, with illumination and cooling connections, external control panel, power supply transformer +cable, and +2 proximity lense	05	128.424	
J-3	TFT Monitor 12,1" with mini front plate RAL9005 24V DC	05	118.780	
	Camera cable 5m, drag chain compatible	05	128.444	
	Camera system complete with monitor and camera cable 5m TFT-Monitor 12,1", illumination and colling connections, external control panel, power supply transformer +cable without cooling system	05	128.456	
	Water cooling unit Type WK 325	46	113.786	
	Connection socket WK, 6-pin. for TIG 300 DC LT 240 AC/DC, HighPULSE RS, HighTIG RS	46	103.675	
	Camera cable Camera cable 10m, drag chain compatible	05	128.446	
	Schleppkettentauglich	05	128.448	
	Camera cable 30m, drag chain compatible	05	128.450	
	Camera cable 40m, drag chain compatible	05	128.452	
	Camera cable 50m, drag chain compatible	05	128.454	
	All prices per 1 piece or 1m. Changes reserved.			



Oscillation devices

Oscillation Device PG 1.0

K-2

Linear Oscillation Device LPG 1.2

K-3

Price list

K-4

The **Controller for the Oscillation Device PG 1.0 model E 024** is connected over a control cable directly with the oscillation device. The RPM controller and DC motor with monitoring are electrically isolated from the input voltage and supplied with 42V over a transformer.

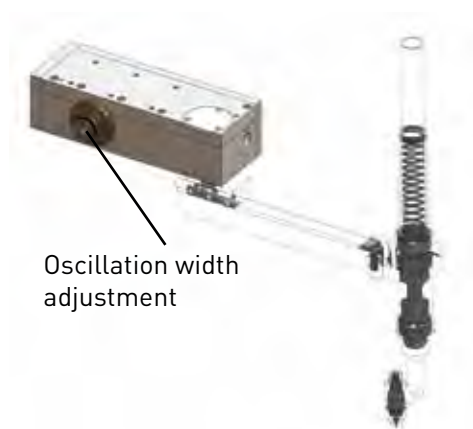
User Panel and Functions:

Main switch with control lamp:	On/Off
Potentiometer:	Oscillation speed
Switch:	Hand/Automatic
Connection voltage:	230-240V / 50-60Hz
Weight:	11,7 kg
Power cable:	5 m, 3x2,5 mm ² with Schuko plug
Connection cable to Oscillation device:	1,5 m with connectors



Dia. K - 1

Controller E 024 for Oscillation Device PG 1.0 part no. 122.870



Dia. K - 2 PG1.0 with TM 450 W



Dia. K - 3 PG 1.0 with PM 400 W

Technical Details

Oscillation width: (at a distance of 250mm between oscillator axis and torch tip)	0 to +/- 20 mm (steplessly adjustable in oscillation mode)
Hole dimensions/pattern:	M8 (60 x 60 mm)
Weight:	6,5 kg

The Oscillation device is suitable for TIG and MIG/MAG torches.

Oscillation Device PG 1.0 part no. 122.142

Linear Oscillation Device LPG 1.2

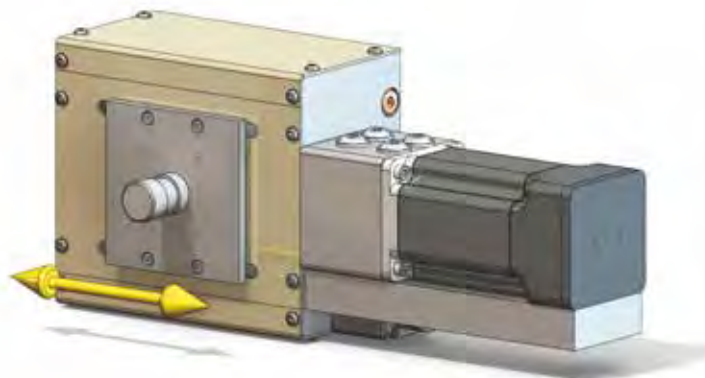
The **controller for the Oscillation device LPG 1.1 model E 023** is connected over a control cable directly with the oscillation device. The RPM controller and DC motor are electrically isolated from the input voltage and supplied with 24V DC over a transformer.



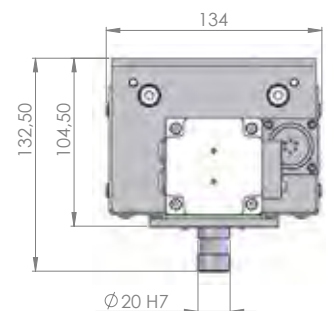
User panel and functions:

Main switch with control lamp:	On/Off
Potentiometer:	-Oscillation speed -End position dwell time -Oscillation stroke: -28 to - 2 mm -Oscillation stroke: + 2 to + 28 mm
Switch:	Hand/Automatic
Connection voltage:	230-240V / 50-60Hz
Weight:	7 kg
Power cable:	5 m, 3x2,5 mm ² with Schuko plug
Connection cable to Oscillation device:	1,5 m with connectors

**Controller E 023 for
Linear Oscillation Device LPG 1.x
part no. 119.944**



Dia. K - 5

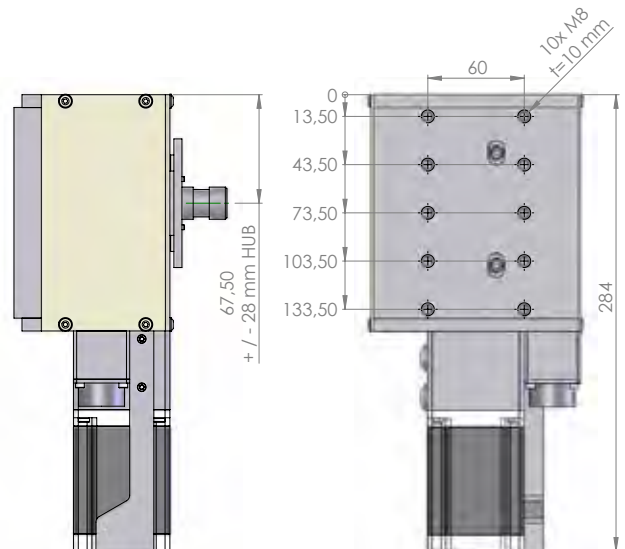


Technical details

Oscillation stroke:	from +/- 2 mm to +/- 28 mm
Oscillation speed:	0 - 40 mm/s
Hole dimensions and pattern:	M8 (60 x 60 mm 40 x 40 mm)
Weight:	7 kg

The Oscillation device is suitable for TIG and MIG/MAG torches.

Compatible torch clamps (Chapter D)
part no. 019.0.0201
part no. 152.232



Dia. K - 6

**Linear oscillation device LPG 1.2
part no. 127.064**



Oscillation Devices

Price list

K

Page	Description	PrGr	Part no.	Price/€
K-2	Oscillation device PG Controller Type E 024 for PG 1.0	05	122.870	1.730,00
	Oscillation device PG 1.0	05	122.142	3.131,00
K-3	Linear oscillation device LPG Controller Type E 023 for linear oscillation device LPG	05	119.944	2.980,00
	Linear oscilaation device	05	127.064	4.387,00
	All prices per 1 piece or 1m. Changes reserved.			



Robot systems

InLINE 200 PP

L-2

Sample layout A

L-3

Sample layout B

L-4



Dia. L - 1



Dia. L - 2

Technical data:

Wire feed speed:	25 m/min
Traction power:	43 N
Turning angle range of robot axis 6:	endless
Weight of gear:	2,7 kg
Weight incl. torch, adapter and housing:	ca. 5,4 kg
Water cooled:	yes
Gas cooled:	yes
Wire diameter steel:	0,8 / 1,0 / 1,2 / 1,4 / 1,6 [mm]
Wire diameter aluminium:	0,8 / 1,0 / 1,2 / 1,4 / 1,6 [mm]
Dimensions of gear without housing and adapter:	Ø = 58 mm L = 198 mm

The InLINE 200 PP HW wire feeder can be adapted to all standard robots. It works as a push pull system in combination with a Merkle robot wire feeder system. A separat motor controller inside the welding machin is required for the operation of the InLINE 200 PP. In addition a slip ring is required when the InLINE 200 PP on a endless rotary torch system is operated.

Adapter flanges for the most robots

Hose assembly, water cooled for the most robots

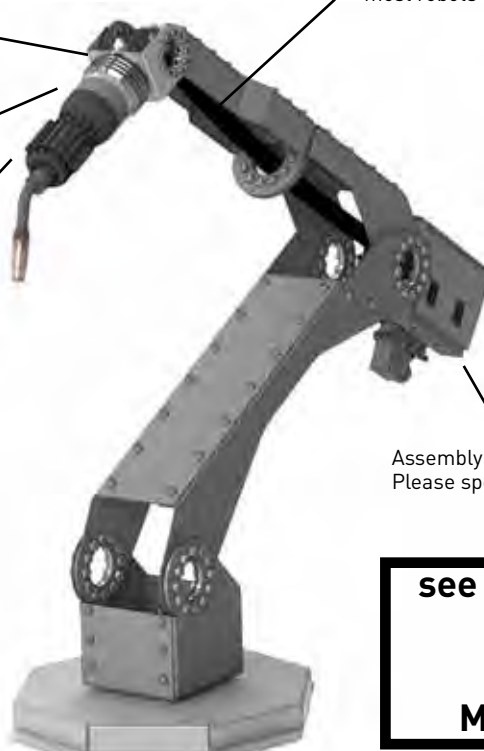
Crash sensor, safety-off device
for InLINE 200 PP HW
(integrated inside InLINE housing)

InLINE 200 PP HW
without crash sensor, safety-off device

The following torch heads can be mounted:
ROB 505 W, straight
ROB 505 W, 22° bent
ROB 505 W, 45° bent

Merkle robot wire
feeder system

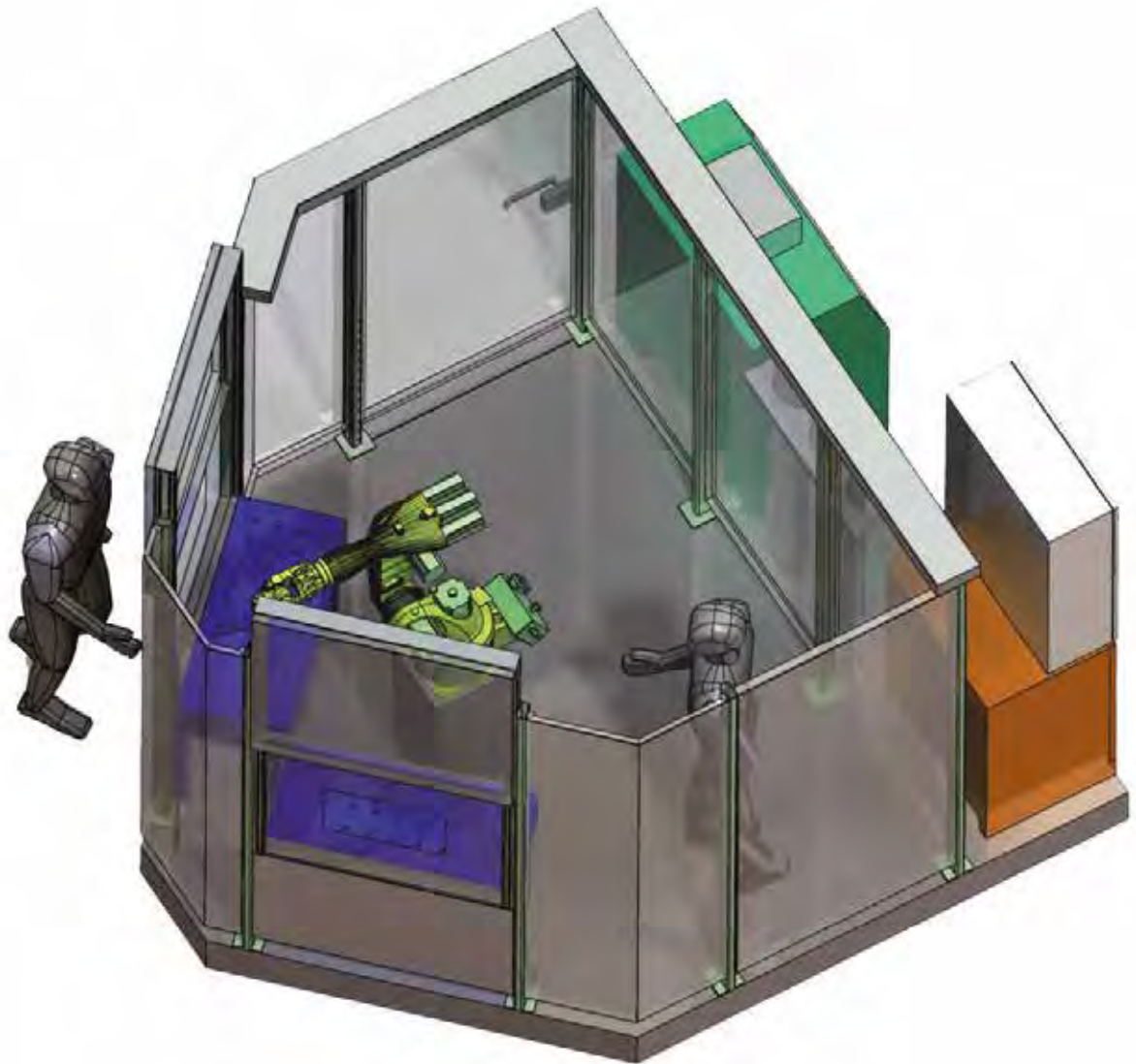
Assembly device for ROB DV-26 HW
Please specify robot model



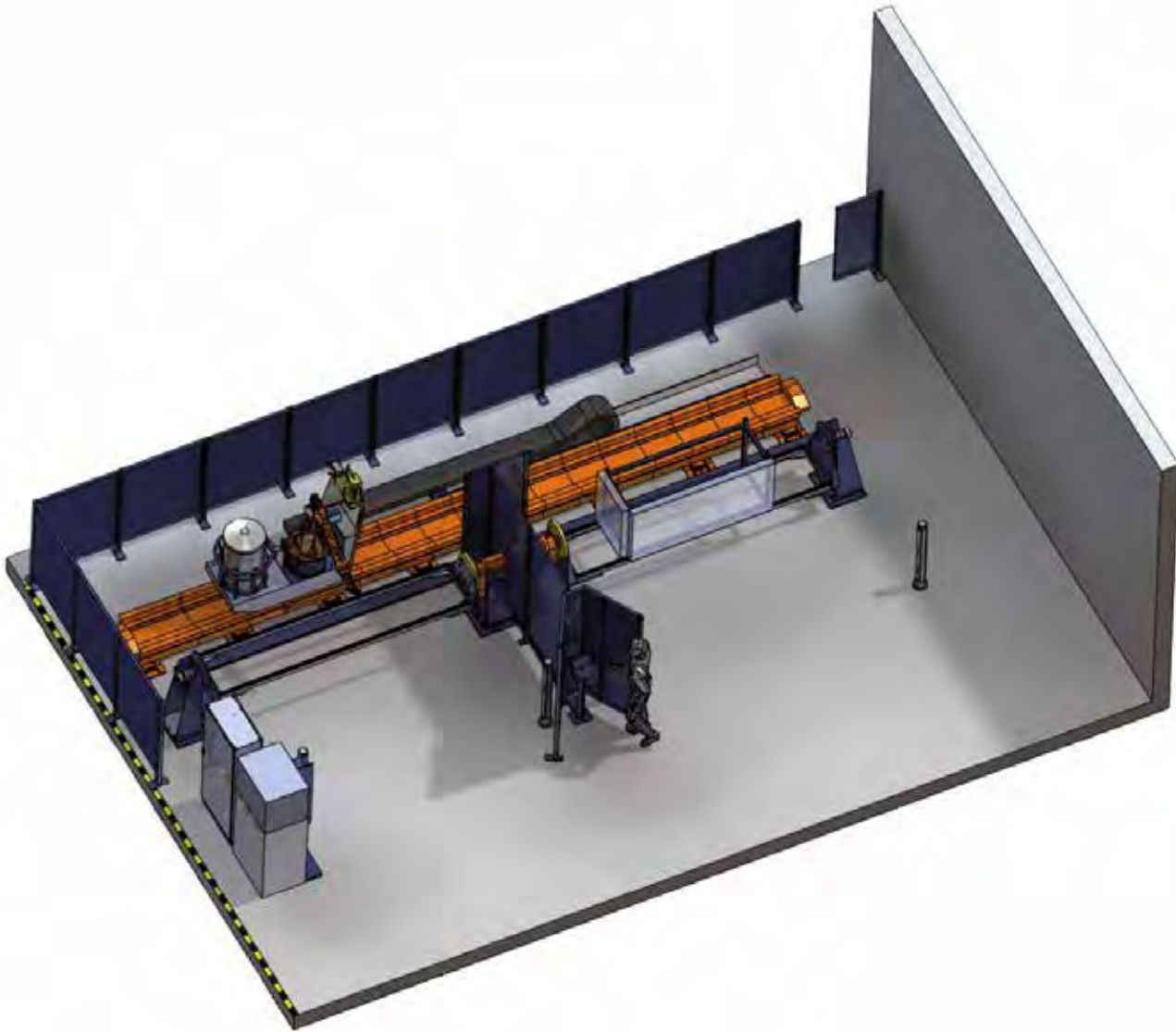
InLINE 200 PP HW
part no. 136.854

Dia. L - 3

see Merkle catalog
chapter
MIG / MAG
Machine torch



Dia. L - 4



Dia. L - 5

**In collaboration with our
Robot manufacturers and system partners,
we offer complete solutions
for your automation**

Appendix

Terms and conditions for installation, customer service, sale and delivery

Questionnaire automation/mechanisation of welding tasks



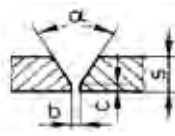
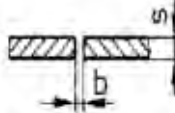
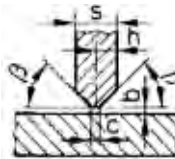

Terms and conditions for installation, customer service, sale and delivery

The terms and conditions for sale and delivery as well as for installation and customer service for fully and partially automated systems can be found on our homepage:

<http://www.merkle.de/en/general-business-terms.html>

Company: _____ Contact person: _____ Street/PO Box: _____ Toen/pc: _____ Tel.-Nr.: _____ Fax-Nr.: _____ E-Mail: _____	Date: _____ Subsidiary: _____ Contact person: _____ PLZ / Ort: _____ Tel.-Nr.: _____ Fax-Nr.: _____ E-Mail: _____
---	---

Welding process: <input type="checkbox"/> MIG/MAG <input type="checkbox"/> TIG Cold-wire <input type="checkbox"/> Plasma Cold-wire	Filler material_(To DIN): _____ _____ _____	Component material_(To DIN): _____ _____ _____
Protecting gas_(To): _____ _____ _____	Purging: <input type="checkbox"/> Yes <input type="checkbox"/> No Purging gas_(To DIN): _____	Weld backing: <input type="checkbox"/> Yes <input type="checkbox"/> No _____ _____

Weld preparation[SNV]:			
<input type="checkbox"/>		a: b: c: s:	Diagram SNV <input type="checkbox"/>
<input type="checkbox"/>		b: s:	Short description: _____ _____ _____ _____ _____ _____ _____
<input type="checkbox"/>		s: h: b: b: c:	
<input type="checkbox"/>		a: b: h: s:	
Docs: <input type="checkbox"/> Diagram <input type="checkbox"/> Pictures <input type="checkbox"/> tech definition <input type="checkbox"/> Test components			

