Product catalogue 2006/2007

Sales division welding technology

Fronius

PERFECT WELDING

VarioStar 1500 / 2500 / 3100

Processes

MIG/MAG welding

Recommended areas of use

Maintenance and repair
Metal & portal construction, fitters's shops and smithies

Recommended base metals

Constructional steels
Ferritic / austenitic CrNi steels
Duplex steels
Aluminium materials

Standard equipment

2-roller drive
Wire-inching without gas or current
S-mark, CE-mark
Overtemperature protection
2-step mode, 4-step mode
Intermittent welding
Manual mode
Spot-welding
Soft-start
Wire coil mounting D 200, D 300
Large dimensioned wheels

Options

Gas pre-heating socket 42 V / 230 V
Rubber mat
Polarity reversal
Holding device for gas bottles, wide
Plastic handle for VST
Current rush limiter
Thermostat-controlled fan
Isolation wire coil, adapter wire coil

Power source			VST 1500	VST 2500		VST 3100	
Mains voltage +/–10 %		50/60 Hz	230 V	3 x 230 V / 400 V		3 x 230 V / 400 V	
Cos phi			0,89	0,95		0,95	
Welding current range			30 – 140 A	25 – 250 A		20 – 310 A	
Welding current at	10 min / 40° C	18 % d.c.	140 A	27 % d.c.	250 A	30 % d.c.	310 A
	10 min / 40° C	60 % d.c.	70 A	60 % d.c.	160 A	60 % d.c.	190 A
	10 min / 40° C	100 % d.c.	55 A	100 % d.c.	130 A	100 % d.c.	140 A
Switch steps			6	10		15	
Open-circuit voltage			34 V	38 V		46 V	
Operating voltage			15,5 – 21 V	15,3 – 26,5 V		15 – 29,5 V	
Protection class			IP 21	IP 21		IP 21	
Dimension l x w x h	inch		31.50 x 14.96 x 26.77	31.50 x 14.96 x 26.77		31.50 x 14.96 x 26.77	
	mm		800 x 380 x 680	800 x 380 x 680		800 x 380 x 680	
Weight			133.38 lbs. / 60,5 kg	163.14 lbs. / 74 kg		202.83 lbs. / 92 kg	

VarioSynergic 3400 / 3400-2 / 4000 / 4000-2 / 5000 / 5000-2

Processes

MIG/MAG welding

Recommended base metals

Constructional steels
Ferritic / austenitic CrNi steels
Duplex steels
Aluminium materials

Recommended areas of use

Construction of plant, containers, machinery, structural steel
Automobile and allied vendor industries
Construction of special vehicles and construction machinery
Construction of rail vehicles & rolling stock
Shipbuilding and offshore engineering

Standard equipment

4-roller drive
Automatic cooling-unit cut-out
Soft-start
Wire-inching without gas or current
Automatic burn-back control
Gas-test button
Generator-compatible
Program mode
Synergic mode
S-mark, CE-mark
Thermostat-controlled fan
Overtemperature protection
2-step mode, 4-step mode
Intermittent welding
Manual mode
Spot-welding
Wire coil adapter
Volt- / Amperemeter
Large dimensioned wheels
Wire coil mounting D200, D300

Options

Gas pre-heating socket 230 V / 42 V
Rubber mat
Crane-hoisting lugs
PullMig mode
Hosepack holder
Current regulation+stop+revolutions control (automatic mode)
Intermediate wirefeeder
Double head
Rotary table or VR-mounting
Human mounting
Polarity reversal
Calibrationdocument

Power source		**VS 3400 / 3400-2**	**VS 4000 / 4000-2**	**VS 5000 / 5000-2**
Mains voltage clampable +/–10 %	50 / 60 Hz	3 x 230 V / 400 V	3 x 230 V / 400 V	3 x 230 V / 400 V
Cos phi		(340 A) 0,95	(400 A) 0,94	(500 A) 0,95
Welding current range		10 – 340 A	30 – 400 A	35 – 500 A
Welding current at	10 min/40° C 30 % d.c.	–	–	500 A
	10 min/40° C 35 % d.c.	340 A	400 A	–
	10 min/40° C 40 % d.c.	300 A	–	–
	10 min/40° C 60 % d.c.	260 A	290 A	360 A
	10 min/40° C 100 % d.c.	200 A	220 A	280 A
Open-circuit voltage		45 V	51 V	54 V
Operating voltage		14,5 – 31,0 V	15,5 – 34,0 V	15,8 – 39,0 V
Welding-programm locations		2 x 7	3 x 7	4 x 7
Protection class		IP 23	IP 23	IP 23
Dimension l x w x h	inch	35.04 x 18.11 x 37.20	35.04 x 18.11 x 37.20	35.04 x 18.11 x 37.20
	mm	890 x 460 x 945	890 x 460 x 945	890 x 460 x 945
Weight		306.44 lbs. / 139 kg	325.18 lbs. / 147,5 kg	343.92 lbs. / 156 kg

Wire feed unit		**VR 3000**	**VR 3300**
Wire Ø	inch	0.03 – 0.06	0.03 – 0.06
	mm	0,8 – 1,6	0,8 – 1,6
Wire feed speed		0 – 708,66 inch/min	0 – 708,66 inch/min
		0 – 18 m/min	0 – 18 m/min
Dimension l x w x h	inch	24.41 x 11.42 x 16.54	24.41 x 11.42 x 17.32
	mm	620 x 290 x 420	600 x 260 x 440
Weight		35.27 lbs. / 16 kg	28.99 lbs. / 13 kg

Only for VS 3400-2, VS 4000-2 and VS 5000-2

Cooling unit		**FK 3000 R**
Cooling capacity (25° C) Q = 1l/min		505 W
Throughput		0.79 gal/min / 3,0 l/min
Coolant volume		1.45 gal. / 5,5 l
Protection class		IP 23
Dimension l x w x h	inch	8.46 x 9.45 x 18.90
	mm	215 x 240 x 480
Weight (without coolant)		24.24 lbs. / 11 kg

TransSynergic
4000 / 4000 C / 5000 / 5000 C

Processes
MIG/MAG welding
MIG brazing
TIG-DC (C-version)
Manual electrode (MMA) welding (C-version)
Arc-air gouging (TS 5000 C)

Recommended base metals
Constructional steels
Coated constructional steels
Ferritic / austenitic CrNi steels
Duplex steels
Nickel-based materials
Aluminium materials

Recommended areas of use
Automobile and allied vendor industries
Construction of special vehicles and construction machinery
Construction of plant, containers, machinery, structural steel
Robot welding
Construction of rail vehicles & rolling stock
Shipbuilding and offshore engineering

Options
Remote control unit
User-defined function button
Touch-down ignition
PullMig mode
Robot interface
“Human” hosepack boom
Keylock switch (C-version)
Welding programs from databank
Spatter-free ignition SFI
Rate-of-flow watchdog for torch cooling
SynchroPulse
JobExplorer / WIN RCU
Weld Process Data
Calibrationdocument
Special step mode

Standard equipment
2-/4-roller drive
Automatic cooling-unit cut-out
Wire-inching without gas or current
Earth leakage monitoring
Automatic burn-back control
Gas-test button
Job mode (C-version)
Manual-welding (C-version)
Synergic mode
S-mark, CE-mark
Thermostat-controlled fan
UpDown control from torch
Overtemperature protection
2-step mode, 4-step mode
Spot-welding
Aluminium welding start-up
Digital Display
Wire coil adapter

Power source			TS 4000 C TS 4000	TS 4000 MV C TS 4000 MV	TS 5000 C TS 5000	TS 5000 MV C TS 5000 MV
Mains voltage	+/–10 % (400V) 50/60 Hz		3 x 400 V	3 x 200 – 240 V 3 x 380 – 460 V	3 x 400 V	3 x 200 – 240 V 3 x 380 – 460 V
Cos phi			0,99 (400 A)	0,99 (400 A)	0,99 (500 A)	0,99 (500 A)
Welding current range			3 – 400 A	3 – 400 A	3 – 500 A	3 – 500 A
Welding current at	10 min/(25° C) 40° C	35 % d.c.		400 A		500 A
	10 min/(25° C) 40° C	40 % d.c.			500 A	
	10 min/(25° C) 40° C	60 % (75 %) d.c.	365 A (400 A)	365 A	450 A (500 A)	450 A
	10 min/(25° C) 40° C	100 % d.c.	320 A (365 A)	300 A	360 A (420 A)	320 A
Open-circuit voltage			70 V	68 – 78 V	68 V	68 – 78 V
Operating voltage			14,2 – 34,0 V	14,2 – 34,0 V	14,2 – 39,0 V	14,2 – 39,0 V
Protection class			IP 23	IP 23	IP 23	IP 23
Dimension l x w x h		inch	24.61 x 11.42 x 18.70	24.61 x 11.42 x 18.70	24.61 x 11.42 x 18.70	24.61 x 11.42 x 18.70
		mm	625 x 290 x 475	625 x 290 x 475	625 x 290 x 475	625 x 290 x 475
Weight			77.60 lbs. / 35,2 kg	77.60 lbs. / 35,2 kg	78.48 lbs. / 35,6 kg	78.48 lbs. / 35,6 kg

Wire feed unit		VR 2000	VR 4000	VR 7000
Wire Ø	inch	0.03 – 0.06	0.03 – 0.06	0.03 – 0.06
	mm	0,8 – 1,6	0,8 – 1,6	0,8 – 1,6
Wire feed speed	inch/min	19.69 – 866.14	19.69 – 866.14	19.69 – 866.14
	m/min	0,5 – 22	0,5 – 22	0,5 – 22
Weight		19.84 lbs. / 9 kg	35.27 lbs. / 16 kg	39.68 lbs. / 18 kg
Dimension l x w x h	inch	20.47 x 12.60 x 8.46	25.59 x 11.42 x 16.14	25.20 x 10.24 x 16.93
	mm	520 x 320 x 215	650 x 290 x 410	640 x 260 x 430

Cooling unit		FK 4000*	FK 4000 R
Cooling capacity (25° C) Q = 1l/min		1120 W	1360 W
Max. throughput		0.42 gal./min / 1,6 l/min	0.92 gal./min / 3,5 l/min
Coolant volume		1.45 gal. / 5,5 l	1.45 gal. / 5,5 l
Weight (without coolant)		31.09 lbs. / 14,1 kg	35.94 lbs. / 16,3 kg
Protection class		IP 23	IP 23
Dimension l x w x h	inch	27.56 x 11.02 x 9.84	27.56 x 11.02 x 9.84
	mm	700 x 280 x 250	700 x 280 x 250

* recommended to max. 5m connection hose pack and with low duty circle.

TransPulsSynergic 2700 / 2700 TIG / 2700 Duo / 2700 Duo TIG

Processes

MIG/MAG welding
MIG/MAG pulsed arc welding
MIG brazing
TIG-DC
Manual electrode (MMA) welding

Recommended areas of use

Automobile and allied vendor industries
Maintenance and repair
Construction of plant, containers, machinery, structural steel
Construction of rail vehicles & rolling stock

Recommended base metals

Constructional steels
Coated constructional steels
Ferritic / austenitic CrNi steels
Duplex steels
Nickel-based materials
Aluminium materials
Special materials

Standard equipment

4-roller drive
Automatic cooling-unit cut-out
User-defined function button
Wire-inching without gas or current
Earth leakage monitoring
Automatic burn-back control
Gas-test button
Job mode
Synergic mode
S-mark, CE-mark
Thermostat-controlled fan
UpDown control from torch
Overtemperature protection
2-step mode, 4-step mode
Manual-/Spot-welding
Aluminium welding start-up
Digital display
Wire coil adapter

Options

Remote control unit
PullMig mode
Keylock switch
Welding programs from databank
Spatter-free ignition SFI
Rate-of-flow watchdog for torch cooling
SynchroPulse
JobExplorer / WIN RCU
Special step mode
Calibrationdocument

Power source				TPS 2700		TPS 2700 MV
Mains voltage		50/60 Hz	+/–15 %	3 x 400 V	+/–10 %	3 x 200 – 240 V/3 x 380 – 460 V
Cos phi 270 A				0,99		0,99
Welding current range				3 – 270 A		3 – 270 A
Welding current at	10 min/40° C	40 % d.c.		270 A		270 A
	10 min/40° C (25°)	60 % d.c.		210 A		210 A (270 A)
	10 min/40° C (25°)	100 % d.c.		170 A		170 A (210 A)
Open-circuit voltage				50 V		50 V
Operating voltage				14,2 – 27,5 V		14,2 – 27,5 V
Protection class				IP 23		IP 23
Dimension l x w x h	inch			24.61 x 11.42 x 18.90		24.61 x 11.42 x 18.90
	mm			625 x 290 x 480		625 x 290 x 480
Weight				60.63 lbs. / 27,5 kg		60.63 lbs. / 27,5 kg

Cooling unit		FK 4000	FK 4000 R
Cooling capacity (25° C) Q = 1l/min		1120 W	1360 W
Max. throughput		0.42 gal/min / 1,6 l/min	0.92 gal/min / 3,5 l/min
Coolant volume		1.45 gal / 5,5 l	1.45 gal / 5,5 l
Weight (without coolant)		31.09 lbs. / 14,1 kg	35.94 lbs. / 16,3 kg
Protection class		IP 23	IP 23
Dimension l x w x h	inch	27.56 x 11.02 x 9.84	27.56 x 11.02 x 9.84
	mm	700 x 280 x 250	700 x 280 x 250

TransPulsSynergic 3200 / 4000 / 5000

Processes
MIG welding
MIG/MAG pulsed arc welding
MIG brazing
TIG-DC
Manual electrode (MMA) welding
Arc-air gouging (TPS 5000)

Recommended base metals
Constructional steels
Coated constructional steels
Ferritic / austenitic CrNi steels
Duplex steels
Nickel-based materials
Aluminium materials
Special materials
Copper materials (TPS 5000)
Special materials (TPS 5000)

Recommended areas of use
Automobile and allied vendor industries
Construction of special vehicles and construction machinery
Maintenance and repair
Construction of plant, containers, machinery, structural steel
Robot welding
Industry plant & pipeline construction, site-erection firms
Construction of rail vehicles & rolling stock
Shipbuilding and offshore engineering

Standard equipment
2-/4-roller drive
Automatic cooling-unit cut-out
Wire-inching without gas or current
Earth leakage monitoring
Automatic burn-back control
Gas-test button
Job mode
Manual welding
Synergic mode
S-mark, CE-mark
Thermostat-controlled fan
UpDown control from torch
Overtemperature protection
2-step mode, 4-step mode
Manual-/Spot-welding
Aluminium welding start-up
Digital display
Wire coil adapter

Options
Remote control
PullMig mode
Robot interface
“Human” hosepack boom
Keylock switch
Welding programs from databank
Spatter-free ignition SFI
SynchroPulse
JobExplorer / WIN RCU
Weld Process Data
Special step mode
Calibrationdocument

Power source			TPS 3200	TPS 3200 MV	TPS 4000	TPS 4000 MV	TPS 5000	TPS 5000 MV
Mains voltage +/–10 %	50/60 Hz		+/– 15 % 3 x 400 V	3 x 200 – 240 V 3 x 380 – 460 V	+/– 15 % 3 x 400 V	3 x 200 – 240 V 3 x 380 – 460 V	+/– 15 % 3 x 400 V	3 x 200 – 240 V 3 x 380 – 460 V
Cos phi			0,99 (320 A)	0,99 (320 A)	0,99 (400 A)	0,99 (400 A)	0,99 (500 A)	0,99 (500 A)
Welding current range			3 – 320 A	3 – 320 A	3-400 A	3-400 A	3-500 A	3-500 A
Welding current at	10 min/40° C	40 % d.c.	320 A	320 A		400 A	500 A	500 A
	10 min/40° C	50 % d.c.			400 A			
	10 min/40° C	60 % d.c.			365 A	365 A	450 A	450 A
	10 min/40° C (25°)	100 % d.c.	210 A	190 A	320 A (365 A)	300 A	360 A (450 A)	320 A
Open-circuit voltage			70 V	70 V	68 – 78 V	68 – 78 V	68 – 78 V	68 – 78 V
Operating voltage			14,2 – 30,0 V	14,2 – 30 V	14,2 – 34,0 V	14,2 – 34,0 V	14,2 – 39,0 V	14,2 – 39,0 V
Protection class			IP 23	IP 23	IP 23	IP 23	IP 23	IP 23
Weight			76.28 lbs. / 34,6 kg	76.28 lbs. / 34,6 kg	77.61 lbs. / 35,2 kg	77.61 lbs. / 35,2 kg	78.48 lbs. / 35,6 kg	78.48 lbs. / 35,6 kg
Dimension l x w x h		inch	24.61 x 11.42 x 18.70	24.61 x 11.42 x 18.70	24.61 x 11.42 x 18.70	24.61 x 11.42 x 18.70	24.61 x 11.42 x 18.70	24.61 x 11.42 x 18.70
		mm	625 x 290 x 475	625 x 290 x 475	625 x 290 x 475	625 x 290 x 475	625 x 290 x 475	625 x 290 x 475

Wire feed unit		VR 2000	VR 4000	VR 4000 Yard	VR 7000
Wire Ø		0.03 – 0.06 inch	0.03 – 0.06 inch	0.03 – 0.06 inch	0.03 – 0.06 inch
		0,8 – 1,6 mm	0,8 – 1,6 mm	0,8 – 1,6 mm	0,8 – 1,6 mm
Wire feed speed		19.69 – 866.14 inch/min	19.69 – 866.14 inch/min	19.69 – 866.14 inch/min	19.69 – 866.14 inch/min
		0,5 – 22 m/min	0,5 – 22 m/min	0,5 – 22 m/min	0,5 – 22 m/min
Weight		19.84 lbs. / 9 kg	35.27 lbs. / 16 kg	24.69 lbs. / 11,2 kg	38.58 lbs. / 17,5 kg
Dimension l x w x h	inch	20.47 x 12.60 x 8.46	25.59 x 11.42 x 16.14	24.02 x 8.72 x 15.75	25.20 x 10.24 x 16.93
	mm	520 x 320 x 215	650 x 290 x 410	610 x 210 x 400	640 x 260 x 430

Cooling unit		FK 4000	FK 4000 R
Cooling capacity (25° C) Q = 1l/min		1120 W	1360 W
Max. throughput		0.42 gal./min / 1,6 l/min	0.92 gal./min / 3,5 l/min
Coolant volume		1.45 gal. / 5,5 l	1.45 gal. / 5,5 l
Weight (without coolant)		31.09 lbs. / 14,1 kg	35.94 lbs. / 16,3 kg
Protection class		IP 23	IP 23
Dimension l x w x h	inch	27.56 x 11.02 x 9.84	27.56 x 11.02 x 9.84
	mm	700 x 280 x 250	700 x 280 x 250

Time 5000 Digital

Processes

MIG/MAG welding
MIG/MAG pulsed arc welding
MAG high performance welding
MIG brazing
TIG-DC
Manual electrode (MMA) welding, arc-air gouging

Recommended areas of use

Automobile and allied vendor industries
Construction of plant, containers, machinery, structural steel
Construction of rail vehicles & rolling stock
Construction machinery
Pipeline construction
Shipbuilding and offshore engineering

Recommended base metals

Constructional steels
Coated constructional steels
Ferritic / austenitic CrNi steels
Duplex steels
Nickel-based materials
Aluminium materials
Special materials

Standard equipment

4-roller drive
Automatic cooling-unit cut-out
Function buttons
Wire-inching without gas or current
Earth leakage monitoring
Automatic burn-back control
Gas-test button
Job mode
Synergic mode
S-mark, CE-mark
Thermostat-controlled fan
UpDown control from torch
Overtemperature protection
2-step mode, 4-step mode
Manual-/Spot-welding
Aluminium welding start-up
Digital display
Wire coil adapter
Special welding programs

Options

Remote control
PullMig mode
Keylock switch
Welding programs from databank
Spatter-free ignition SFI
Rate-of-flow watchdog for torch cooling
SynchroPulse
Documentation of data
Special step mode
Calibration document

Power source		Time 5000 Digital
Mains voltage	50/60 Hz	+/–10 % 3 x 400 – 460 V
Cos phi		0,99 (500 A)
Welding current range HL / MIG/MAG		4 – 400 A / 3 – 500 A
Welding current at	10 min/25° C 100 % d.c.	400 A
Open-circuit voltage		70 V
Operating voltage		28 – 48 V
Protection class		IP 23
Dimension l x w x h		24.61 x 11.42 x 18.90 inch / 625 x 290 x 480 mm
Weight		79.37 lbs. / 36 kg

Wire feed units	VR 4000-30 Time
Wire Ø	0.03 – 0,06 inch / 0,8 – 1,6 mm
Wire feed speed	20 – 1180 ipm / 0,5 – 30 m/min
Dimension l x w x h	25.59 x 11.42 x 16.14 inch / 650 x 290 x 410 mm

Human 4000

The mounting for hose pack HUMAN 4000 compensates with its gas pressure cylinder the weight of the torch hose pack.
Therefore the torch seems to be nearly weightless, damages of the hose pack can be avoided extensively.

Checkliste

no additional wider carriage necessary
load reduction fine adjustable
can be adapted to the torch length
integrated torch mounting
range of action can be adjusted
fourfold adjustable
also suitable for Pull-Mig torches
protection of hose pack by means of bend protection chain

Hose pack		Human 4000
Weight		28.88 lbs. / 13,1 kg
Range of action in 6 steps adjustable		min. 72.83 inch / 1,85 m
		max. 102.36 inch / 2,60 m
Slope range from horizontal		+ 75 °
		– 45 °

AL2300 / 3000 / 4000
Standard, Up/Down, JobMaster

Processes
MIG/MAG welding
MIG brazing

Recommended base metals
Constructional steels
Coated constructional steels
Ferritic / austenitic CrNi steels
Aluminium materials
Magnesium materials

Recommended areas of use
Automobile and allied vendor industries
Construction of chemical plants
Maintenance and repair

Standard equipment
Steel inner liner for steel wire
Torch-neck 45°
Spatter protection, with high thermal stability
Contact tube, CuCrZr alloy
Coaxial cable
Rubber anti-kink feature at machine and torch end

Options
Combination inner liner for Al and CrNi wires
Contact tubes with centre bore for Al wire
Top-mounted torch trigger
Special lengths of hose pack 1,5 – 6,0 m (with 35 mm² power cable if more than 4,5m)
Contact tip mounting tool

Standard equipment - Jobmaster only
Integrated remote control
Frequency parameter recall
Parameter correction mode
Recall function for operating points and jobs
Digital parameter display

Technical Data acc. to EN 60974-7 Gascooled	Welding current at CO_2	Welding current at $ArCO_2$	Duty cycle	Wire Ø inch/mm	Weight lbs./kg
AL2300	230 A	200 A	40 %	0.02 – 0.04 / 0,6 – 1,0	2.09 / 0,950
AL3000	300 A	250 A	40 %	0.03 – 0.05 / 0,8 – 1,2	2.43 / 1,100
AL4000	400 A	350 A	40 %	0.04 – 0.06 / 1,0 – 1,6	2.98 / 1,350
AL2300 JobMaster					2.31 / 1,050
AL3000 JobMaster					2.65 / 1,200
AL4000 JobMaster					3.20 / 1,450

AW2500 / 4000 / 5000 / 7000
Standard, Up/Down, JobMaster

Processes
MIG/MAG welding
MIG/MAG pulsed arc welding
MIG brazing

Recommended base metals
Constructional steels
Coated constructional steels
Ferritic / austenitic CrNi steels
Duplex steels
Nickel-based materials
Aluminium materials
Magnesium materials
Copper materials

Recommended areas of use
Construction of plant, containers, machinery, structural steel
Automobile and allied vendor industries
Construction of special vehicles and construction machinery
Construction of chemical plants
Maintenance and repair
Construction of rail vehicles & rolling stock
Shipbuilding and offshore engineering

Standard equipment
Steel inner liner for steel wire
Torch-neck 45°
Spatter protection, with high thermal stability
Contact tube, CuCrZr alloy
Forced contacting arrangement for welding-wire
Swirl-free gas-flow – no loss of gas
Swivel-mounted protective hose
Rubber anti-kink feature at machine and torch end

Options
Combination inner liner for Al and CrNi wires
Contact tubes with centre bore for Al wire
Top-mounted torch trigger
Special lengths of hose pack 1,5 – 6,0 m (with 35 mm² power cable if more than 4,5m)
Contact tip mounting tool

Standard equipment - Jobmaster only
Integrated remote control
Frequency parameter recall
Parameter correction mode
Recall function for operating points and jobs
Digital parameter display

AW2500 / 4000 / 5000 / 7000
Standard, Up/Down, JobMaster

Technical Data acc. to EN 60974-7 Watercooled	Welding current at CO_2	Welding current at $ArCO_2$	Duty cycle	Wire Ø inch/mm	Weight lbs./kg
AW2500	250 A	220 A	100 %	0.02 – 0.05 / 0,6 – 1,2	2.43 / 1,100
AW4000	400 A	350 A	100 %	0.03 – 0.05 / 0,8 – 1,2	2.65 / 1,200
AW5000	500 A	400 A	100 %	0.04 – 0.06 / 1,0 – 1,6	3.09 / 1,400
AW7000	700 A	550 A	100 %	0.04 – 0.06 / 1,0 – 1,6	3.64 / 1,650
AW2500 JobMaster					2.53 / 1,150
AW4000 JobMaster					2.75 / 1,250
AW5000 JobMaster					3.19 / 1,450
AW7000 JobMaster					3.74 / 1,700

Multilock-System

Processes

MIG/MAG welding
MIG/MAG pulsed arc welding with watercooled torches
MIG brazing

Recommended base metals

Constructional steels
Coated constructional steels
Ferritic / austenitic CrNi steels
Duplex steels
Nickel-based materials
Aluminium materials
Magnesium materials
Copper materials

Recommended areas of use

Construction of plant, containers, machinery, structural steel
Automobile and allied vendor industries
Construction of special vehicles and construction machinery
Construction of chemical plants
Maintenance and repair
Construction of rail vehicles & rolling stock
Shipbuilding and offshore engineering

Standard equipment

Torch body

Spatter protection, with high thermal stability
Forced contacting arrangement for welding-wire
Torch neck rotates through 360°

Hose pack

Steel inner liner for steel wire
Swivel-mounted protective hose
Coaxial cable at gascooled welding torch
Rubber anti-kink feature at machine and torch end

Options

Torch body

Contact tubes with centre bore for Al wire
Contact tube, CuCrZr alloy
Special torch body bend with
standard length 0° – 50°
with special length 50° – 90°
Special lengths up to max. 1200 mm, for more than 500 mm a support is necessary!
Contact tip mounting tool

Hose pack

Combi inner liner for Al and CrNi wires
Top-mounted torch trigger at standard hose pack
Special lengths 1,5 – 6,0 m gascooled: with 35 mm^2 power cable if more than 4,5 m

Technical Data acc. to EN 60974-7 Gascooled	Welding current at CO_2	Welding current at $ArCO_2$	Duty cycle	Wire Ø inch/mm	Weight lbs./kg
AL2300	230 A	200 A	40 %	0,6 – 1,0	0,295
AL3000	300 A	250 A	40 %	0,8 – 1,2	0,350
AL4000	400 A	350 A	40 %	1,0 – 1,6	0,435
Hosepack	400 A	350 A	40 %	0,6 – 1,6	1,050*
Watercooled					
AW2500	250 A	220 A	100 %	0,6 – 1,2	0,295
AW4000	400 A	350 A	100 %	0,8 – 1,2	0,350
AW5000	500 A	400 A	100 %	1,0 – 1,6	0,435
AW7000	700 A	550 A	100 %	1,0 – 1,6	0,390
AW332	250 A	200 A	60 %	0,8 – 1,2	0,260
AW335	250 A	200 A	60 %	0,8 – 1,2	0,390
Time 701	–	700 A	100 %	1,0 – 1,6	–
Hosepack	500 A	400 A	100 %	0,6 – 1,6	1,200*

* *(without torch body)*

Time / Time Multilock / AW5000 Time / AW7000 Time

Processes

MIG/MAG welding
MIG/MAG pulsed arc welding
MIG/MAG high-performance welding
MIG brazing

Recommended base metals

Constructional steels
Coated constructional steel
Ferritic / austenitic CrNi steels
Duplex steels
Nickel-based materials
Aluminium materials

Recommended areas of use

Construction of plant, containers, machinery, structural steel
Automobile and allied vendor industries
Construction of special vehicles and construction machinery
Construction of chemical plants
Maintenance and repair
Construction of rail vehicles & rolling stock
Shipbuilding and offshore engineering

Standard equipment

Steel inner liner for steel wire
Torch-neck 45° (except automatic welding torch 30°)
Spatter protection, with high thermal stability
Contact tube, CuCrZr alloy (AW5000 Time, AW7000 Time, AW7000 K4 Time)
Forced contacting arrangement for welding wire (AW5000 Time, AW7000 Time, AW7000 K4 Time)
Swivel-mounted protective hose
Rubber anti-kink feature at machine and torch end

Options

Combination inner liner for Al and CrNi wires
Contact tubes with centre bore for Al wire
Top-mounted torch trigger at standard torch
Special length of hose pack 1,5 – 6,0 m
Contact tip mounting tool

Technical Data acc. to EN 60974-7 Watercooled	Welding current at $ArCO_2$	Duty cycle	Wire Ø inch/mm	Weight lbs./kg
Time manual welding torch	700 A	100 %	0.04 – 0.06 / 1,0 – 1,6	3.97 / 1,800
Time automatic welding torch	700 A	100 %	0.04 – 0.06 / 1,0 – 1,6	5.29 / 2,400
Time Multilock	700 A	100 %	0.04 – 0.06 / 1,0 – 1,6	–
AW5000 Z Time manual welding torch	400 A	100 %	0.04 – 0.06 / 1,0 – 1,6	3.31 / 1,500
AW7000 Z Time manual welding torch	700 A	100 %	0.04 – 0.06 / 1,0 – 1,6	3.75 / 1,700

K4 smoke extractor torches

Processes

MIG/MAG welding
MIG/MAG pulsed arc welding with watercooled torches
MIG brazing

Recommended base metals

Constructional steels
Coated constructional steel
Ferritic / austenitic CrNi steels
Duplex steels
Nickel-based materials
Aluminium materials
Magnesium materials
Copper materials

Recommended areas of use

Construction of plant, containers, machinery, structural steel
Automobile and allied vendor industries
Construction of special vehicles and construction machinery
Construction of chemical plants
Maintenance and repair
Construction of rail vehicles & rolling stock
Shipbuilding and offshore engineering

Standard equipment

Steel inner liner for steel wire
Airflow regulator with single-hand control
Torch-neck 45°
Spatter protection, with high thermal stability
Contact tube, CuCrZr alloy
Extraction nozzle
Swivel-mounted extractor torch
Gascooled welding torch: Fabric protective hose 1,3 m
Coaxial cable
Rubber anti-kink feature at machine end
Swivel-mounted protective hose
Watercooled welding torch: Swirl-free gas-flow – no loss of gas
Leather protective hose at torch end
Forced contacting arrangement for welding-wire

Options

Combination inner liner for Al and CrNi wires
Contact tubes with centre bore for Al wire
Up/Down-, JobMaster function
Top-mounted torch trigger at standard hose pack
Special length of hose pack 1,5 – 6,0 m, gascooled: with 35 mm^2 power cable if more than 4,5 m
Leather protective hose
Contact tip mounting tool

K4 smoke extractor torches

Technical Data acc. to EN 60974-7 Gascooled	Welding current at CO_2	 $ArCO_2$	Duty cycle	Wire Ø inch/mm	Weight lbs./kg
AL2300 K4	230 A	200 A	40 %	0.02 – 0.04 / 0,6 – 1,0	3.31 / 1,500
AL3000 K4	300 A	250 A	40 %	0.03 – 0.05 / 0,8 – 1,2	4.19 / 1,900
AL4000 K4	400 A	350 A	40 %	0.04 – 0.06 / 1,0 – 1,5	4.63 / 2,100
Watercooled					
AW2500 K4	250 A	220 A	100 %	0.02 – 0.05 / 0,6 – 1,2	3.53 /1,600
AW4000 K4	400 A	330 A	100 %	0.03 – 0.05 / 0,8 – 1,2	4.41 / 2,000
AW5000 K4	500 A	400 A	100 %	0.04 – 0.06 / 1,0 – 1,6	4.85 / 2,200
AW7000 K4 Time	–	700 A	100 %	0.04 – 0.06 / 1,0 – 1,6	–
Time 701 K4	–	700 A	100 %	0.04 – 0.06 / 1,0 – 1,6	–
Aspirated air volume	50 – 100m³/h at 5.000 – 20.000 Pa low pressure				

PullMig hose packs
PullMig JobMaster hose packs

Processes

MIG/MAG welding
MIG/MAG pulsed arc welding with watercooled torches
MIG brazing

Recommended base metals

Constructional steels
Coated constructional steel
Ferritic / austenitic CrNi steels
Duplex steels
Nickel-based materials
Aluminium materials
Magnesium materials
Copper materials

Recommended areas of use

Construction of plant, containers, machinery, structural steel
Automobile and allied vendor industries
Construction of special vehicles and construction machinery
Construction of chemical plants
Maintenance and repair
Construction of rail vehicles & rolling stock
Shipbuilding and offshore engineering

Options

Torch body

Contact tubes with centre bore for Al wire
Contact tube, CuCrZr alloy
Special torch body bend with standard length 0° – 50° with special length 50° – 90°
Special lengths up to max. 1200 mm, for more than 500 mm a support is necessary!
Contact tip mounting tool

Hose pack

Steel inner liner for steel wire
Toothed drive and pressure rollers 1,6 mm
Special lengths gascooled 3,5 – 10,0 m (with 35 mm² power cable if more than 4,5 m), watercooled: 3,5 m – 16 m

Standard equipment

Torch body

Spatter protection, with high thermal stability
Forced contacting arrangement for welding-wire
Torch neck rotates through 360°

Hose pack

Graphit innerliner ø 2,5 mm
Continuously adjustable power
Powerfull gear-motor unit

Toothed drive and pressure rollers ø 0,8 – 1,2 mm
Bronze innerliner diameter 2,0 mm for Multilock torch body
Swivel-mounted protective hose
Coaxial cable at gascooled welding torch
Rubber anti-kink feature at machine and torch end

Standard equipment - Jobmaster only

Integrated remote control
Frequency parameter recall
Parameter correction mode
Recall function for operating points and jobs
Digital parameter display

Technical Data acc. to EN 60974-7 Gascooled	Welding current at CO_2	 $ArCO_2$	Duty cycle	Wire Ø inch/mm	Weight lbs./kg
AL2300	230 A	200 A	40 %	0.03 – 0.04 / 0,8 – 1,0	0.65 / 0,295
AL3000	300 A	250 A	40 %	0.03 – 0.05 / 0,8 – 1,2	0.77 / 0,350
AL4000	400 A	350 A	40 %	0.04 – 0.06 / 1,0 – 1,6	0.96 / 0,435
Hose pack	330 A	280 A	40 %	0.03 – 0.06 / 0,8 – 1,6	4.96 / 2,250*
Hose pack JobMaster	330 A	280 A	40 %	0.03 – 0.06 / 0,8 – 1,6	4.96 / 2,250*
Watercooled					
AW2500	250 A	220 A	100 %	0.03 – 0.05 / 0,8 – 1,2	0.65 / 0,295
AW4000	400 A	350 A	100 %	0.03 – 0.05 / 0,8 – 1,2	0.77 / 0,350
AW5000	500 A	400 A	100 %	0.04 – 0.06 / 1,0 – 1,6	0.96 / 0,435
AW7000	700 A	550 A	100 %	0.04 – 0.06 / 1,0 – 1,6	0.86 / 0,390
AW332	250 A	200 A	60 %	0.03 – 0.05 / 0,8 – 1,2	0.57 / 0,260
AW335	250 A	200 A	60 %	0.03 – 0.05 / 0,8 – 1,2	0.86 / 0,390
Time 701	–	700 A	100 %	0.04 – 0.06 / 1,0 – 1,6	–
Hose pack	330 A	280 A	100 %	0.03 – 0.06 / 0,8 – 1,6	4.74 / 2,150*
Hose pack JobMaster	330 A	280 A	40 %	0.03 – 0.06 / 0,8 – 1,6	4.74 / 2,150*

** (without torch body)*

PT Drive

Processes

MIG/MAG welding
MIG/MAG pulsed arc welding
MIG brazing

Recommended base metals

Constructional steels
Coated constructional steel
Ferritic / austenitic CrNi steels
Duplex steels
Nickel-based materials
Aluminium materials
Magnesium materials
Copper materials

Recommended areas of use

Construction of plant, containers, machinery, structural steel
Automobile and allied vendor industries
Construction of special vehicles and construction machinery
Construction of chemical plants
Maintenance and repair
Construction of rail vehicles & rolling stock
Shipbuilding and offshore engineering

Standard equipment

Torch body

Spatter protection, with high thermal stability
Forced contacting arrangement for welding-wire
Torch neck rotates through 360°

Hose pack

Graphit innerliner ø 2,5 mm for Al- and CrNi-wire
Planetary drive for wire Ø 0,8 – 1,6 mm
Continuously adjustable power
Bronze innerliner diameter 2,0 mm for Multilock torch body

Options

Torch body

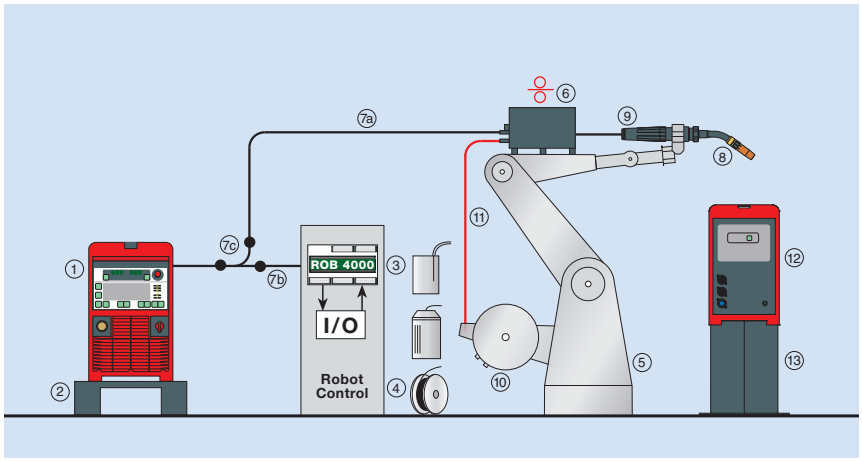
Contact tubes with centre bore for Al wire
Contact tube, CuCrZr alloy
Special torch body bend with
standard length 0° – 50°
with special length 50° – 90°
Special lengths up to max. 1200 mm, for more than 500 mm a support is necessary!
Contact tip mounting tool

Hose pack

Steel inner liner for steel wire
Special lengths 3,5 – 8,0 m (gascooled: with 35 mm^2 power cable if more than 4,5 m)
Basic kits

Technical Data acc. to EN 60974-7	Welding current at		Duty cycle	Wire	Weight
Gascooled	**CO_2**	**$ArCO_2$**		**Ø inch/mm**	**lbs./kg**
AL2300	230 A	200 A	40 %	0.02 – 0.04 / 0,6 – 1,0	0.65 / 0,295
AL3000	300 A	250 A	40 %	0.03 – 0.05 / 0,8 – 1,2	0.77 / 0,350
AL4000	400 A	350 A	40 %	0.04 – 0.06 / 1,0 – 1,6	0.96 / 0,435
PT Drive hose pack	330 A	280 A	40 %	0.03 – 0.06 / 0,8 – 1,6	3.75 / 1,700
Watercooled					
AW2500	250 A	220 A	100 %	0.02 – 0.05 / 0,6 – 1,2	0.65 / 0,295
AW4000	400 A	350 A	100 %	0.03 – 0.05 / 0,8 – 1,2	0.77 / 0,350
AW5000	500 A	400 A	100 %	0.04 – 0.06 / 1,0 – 1,6	0.96 / 0,435
AW7000	700 A	550 A	100 %	0.04 – 0.06 / 1,0 – 1,6	0.86 / 0,390
AW332	250 A	200 A	60 %	0.03 – 0.05 / 0,8 – 1,2	0.57 / 0,260
AW335	250 A	200 A	60 %	0.03 – 0.05 / 0,8 – 1,2	0.96 / 0,390
AW701	–	700 A	100 %	0.04 – 0.06 / 1,0 – 1,6	–
PT Drive hose pack	500 A	400 A	100 %	0.03 – 0.06 / 0,8 – 1,6	3.53 / 1,600

Robot power sources and recommended interface-types

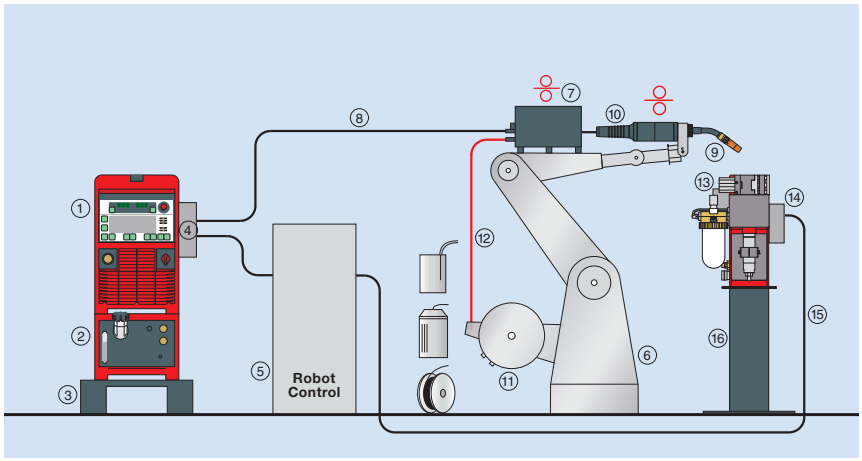


TPS 3200 / Rob 4000 Set / Push / Cleaner

Basic equipment with standard I/O Interface (Rob 4000) for Synergic mode for TS/TPS 3200/4000/5000

Processes

MIG/MAG welding
MIG/MAG pulsed arc welding
MIG brazing



TPS 5000 Fieldbus Set PushPull / Reamer

High End equipment with fieldbus interface (Interbus D-sub) for TS/TPS 4000/5000

Processes

MIG/MAG welding
MIG/MAG pulsed arc welding
MIG brazing

Robot wire feed unit VR 1500-22

Wire feed unit	VR 1500-22
Wire-Ø	0.03 – 0.06 inch / 0,8 – 1,6 mm
Wire feed speed	19.69 – 866.14 inch/min / 0,5 – 22 m/min
Protection class	IP 21
Dimension l x w x h	15.94 x 8.19 x 8.07 inch / 405 x 208 x 205 mm
Weight (without options)	15.43 lbs. / 7 kg
Weight (with options)	24.25 lbs. / 11 kg

Picture: VR 1500-22 incl. option cover (4,100,257) and incl. VR-mounting (4,100,295)

TransPulsSynergic 3200 CMT / 4000 CMT / 5000 CMT

Technical data, standard equipment and options of the power source see page 8 TransPulsSynergic 3200 / 4000 / 5000.

Processes

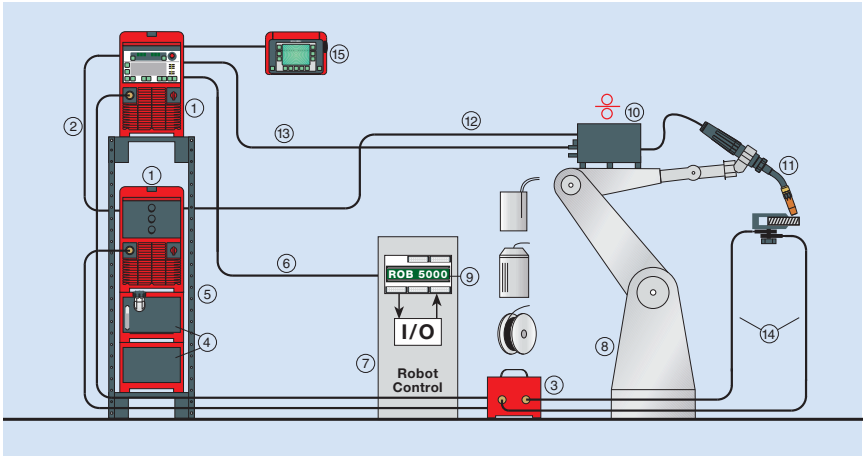
CMT-brazing
CMT-welding
MIG/MAG welding
MIG/MAG pulsed arc welding
MIG brazing

Recommended areas of use

Automobile and allied vendor industries
Construction of special vehicles and construction machinery
Construction of plant, containers, machinery, structural steel
Robot welding
Construction of rail vehicles & rolling stock

Recommended base metals

Constructional steels
Coated constructional steels
Ferritic / austenitic CrNi steels
Duplex steels
Nickel-based materials
Aluminium materials
Special materials
Magnesium materials
Copper materials



TransPulsSynergic 7200 / 9000 TransSynergic 7200 / 9000

Processes

MIG/MAG impulse high performance welding
MIG/MAG standard high performance welding
MIG/MAG high performance welding for filled wire up to 3,2mm
MIG/MAG high performance welding for flat wire

Standard equipment

2-/4-roller drive
Wire-inching without gas or current
Earth leakage monitoring
Automatic burn-back control
Gas-test button
Job mode (depending on Interface)
Manual mode (depending on Interface)
Synergic mode
Rate-of-flow watchdog for torch cooling (FK 9000)
Thermostat for torch cooling (FK 9000)
S-mark, CE-mark
Thermostat-controlled fan
Overtemperature protection
2-step mode, special 2-step mode
Spot-welding
Aluminium welding start-up
Digital display
Current-flow signal
Touch Sense Mode (with welding wire)
External program- / job selection

Options

Remote control
PullMig mode
Robot interface fieldbus
Gas sensor
Keylock switch
Welding programs from databank
Spatter-free ignition SFI
SynchroPulse
Weld Process Data
JobExplorer / WIN RCU
Wire coil adapter
Service modul
Intermediate wirefeeder
Twin-head control
Upgrades by add-on modules
Flat wire equipment
Calibrationdocument

Recommended base metals

Constructional steels
Coated constructional steels
Ferritic / austenitic CrNi steels
Duplex steels
Nickel-based materials
Special materials
Magnesium materials
Copper materials

Recommended areas of use

for automatical applications
- Construction of plant, containers, machinery, structural steel
- Automobile and allied vendor industries
- Construction of special vehicles and construction machinery
- Maintenance and repair
- Pipeline construction
- Construction of rail vehicles & rolling stock
- Shipbuilding and offshore engineering

TransPulsSynergic 7200
TransSynergic 7200

Power source		TPS 7200	TPS 7200 MV	TPS 9000	TPS 9000 MV
Mains voltage	+/–15 % (400 V) 50/60 Hz	2 Zul. 3 x 400 V	2 Zul. 3 x 230/400/460 V	2 Zul. 3 x 400 V	2 Zul. 3 x 230/400/460 V
Mains fuse			(200 – 240 V) 2 x 63 A		(200 – 240 V) 2 x 63 A
slow		2 x 35 A	(380 – 460 V) 2 x 35 A	2 x 35 A	(380 – 460 V) 2 x 35 A
Cos phi		0,99	0,99	0,99	0,99
Welding current range		6 – 720 A	6 – 720 A	6 – 900 A	6 – 900 A
Welding current at 10 min/(25° C) 40° C	60 % d.c.	(720 A) 720 A	(720 A) 720 A	(900 A) 900 A	(900 A) 900 A
10 min/(25° C) 40° C	100 % d.c.	(720 A) 640 A	(720 A) 640 A	(900 A) 720 A	(900 A) 720 A
Open-circuit voltage		70 – 80 V	70 – 80 V	70 – 80 V	70 – 80 V
Operating voltage (MIG/MAG)		14,2 – 34,0 V	14,2 – 34,0 V	14,2 – 44,0 V	14,2 – 44,0 V
Protection class		IP 23	IP 23	IP 23	IP 23
Weight		156.52 lbs. / 71 kg	156.52 lbs. / 71 kg	158.73 lbs. / 72 kg	158.73 lbs. / 72 kg
Dimension l x w x h	inch	2 x (24.63 x 11.43 x 18.72)	2 x (24.63 x 11.43 x 18.72)	2 x (24.63 x 11.43 x 18.72)	2 x (24.63 x 11.43 x 18.72)
	mm	2 x (625 x 290 x 480)	2 x (625 x 290 x 480)	2 x (625 x 290 x 480)	2 x (625 x 290 x 480)

Wire feed unit De-reeler device		VR 1500-11 VR 1530-11	VR 1500-12 VR 1530-12	VR 1500-30 VR 1530-30	VR 1500-22 VR 1530-22
Wire-Ø	inch	.030 – 1/8	.030 – 1/8	.030 – 1/16	.030 – 1/16
	mm	0,8 – 3,2	0,8 – 3,2	0,8 – 1,6	0,8 – 1,6
Wire feed		20 – 433 ipm	20 – 472 ipm	20 – 1180 ipm	20 – 866 ipm
speed		0,5 – 11 m/min	0,5 – 12 m/min	0,5 – 30 m/min	0,5 – 22 m/min
Torque		11 Nm	21,6 Nm	3,7 Nm	4 Nm
Weight		17.6 lbs. / 8 kg	22 lbs. / 10 kg	17.6 lbs. / 8 kg	15.4 lbs. / 7 kg
Dimension l x w x h	inch	15.3 x 8.0 x 10.2	15.3 x 8.0 x 10.2	15.3 x 8.0 x 10.2	15.3 x 8.1 x 8.0
	mm	390 x 205 x 260	390 x 205 x 260	390 x 205 x 260	390 x 208 x 205

Wire feed unit		VR 7000-11	VR 7000-22	VR 7000-30
Wire-Ø	inch	.030 – 1/8	.030 – 1/16	.030 – 1/16
	mm	0,8 – 3,2	0,8 – 1,6	0,8 – 1,6
Wire feed speed		20 – 433 ipm	20 – 866 ipm	20 – 1180 ipm
		0,5 – 11 m/min	0,5 – 22 m/min	0,5 – 30 m/min
Torque		11 Nm	4 Nm	3,7 Nm
Weight		39.6 lbs. / 18 kg	38.5 lbs. / 17,5 kg	39.6 lbs. / 18 kg
Dimension l x w x h	inch	25.1 x 10.2 x 16.9	25.1 x 10.2 x 16.9	25.1 x 10.2 x 16.9
	mm	640 x 260 x 430	640 x 260 x 430	640 x 260 x 430

Cooling unit		FK 6000	FK 9000-R
Cooling capacity (25° C) Q = 1l/min		1770 W	1700 W
Max. Throughput		3,5 l/min	5 l/min
Coolant volume		2.3 gal / 9 l	2.3 gal / 9 l
Weight (without coolant)		48.5 lbs. / 22 kg	61.7 lbs. / 28 kg
Protection class		IP 23	IP 23
Dimension l x w x h	inch	27.55 x 11.41 x 18.70	27.55 x 11.41 x 18.70
	mm	700 x 290 x 475	700 x 290 x 475

TimeTwin Digital 4000 / 5000 / 7200 / 9000

Processes

MIG/MAG
tandem impulse high performance welding
MIG/MAG
tandem-standard high performance welding
MIG/MAG tandem impulse welding
MIG/MAG tandem standard welding
MIG/MAG standard brazing

Recommended base metals

Constructional steels
Coated constructional steels
Ferritic / austenitic CrNi steels
Duplex steels
Nickel-based materials
Special materials

Recommended areas of use

for automatical applications
- Construction of plant, containers, machinery, structural steel
- Automobile and allied vendor industries
- Construction of special vehicles and construction machinery
- Maintenance and repair
- Pipeline construction
- Construction of rail vehicles & rolling stock
- Shipbuilding and offshore engineering

Options

Remote control
PullMig mode
Robot interface fieldbus
Gas sensor
Keylock switch
Welding programs from databank
Spatter-free ignition SFI
SynchroPuls
Weld Process Data
JobExplorer / WIN RCU
Wire coil adapter
Service module
Intermediate wirefeeder
Twin-head control
Upgrades by add-on modules
Solutions for robot-systems
Calibrationdocument

Standard equipment

2-/4-roller drive
Wire-inching without gas or current
Earth leakage monitoring
Automatic burn-back control
Gas-test button
Rate-of-flow watchdog for torch cooling (FK 9000)
Thermostat for torch cooling (FK 9000)
S-mark, CE-mark
Thermostat-controlled fan
Overtemperature protection
2-step mode, special 2-step mode
Spot-welding
Aluminium welding start-up
Digital display
Current-flow signal
Synergic- / Job- / Manual mode
Touch Sense Mode
External program- / job selection

Power source		Time Twin Digital 4000	Time Twin Digital 5000	Time Twin Digital 7200	Time Twin Digital 9000
Mains voltage	+/–15 % (400 V) 50/60 Hz	2 cables 3 x 400 V	2 cables 3 x 400 V	3 x 400 V	3 x 400 V
Mains fuse slow		2 x 35 A	2 x 35 A	2 x 35 A	2 x 35 A
Cos phi		0,99	0,99	0,99	0,99
Welding current range		2 x 400 A	2 x 500 A	2 x 720 A	2 x 900 A
Welding current at	10 min/40° C 40 % d.c.	–	2 x 500 A	–	–
	10 min/40° C 50 % d.c.	2 x 400 A		–	–
	10 min/40° C 60 % d.c.	2 x 365 A	2 x 450 A	2 x 720 A	2 x 900 A
	10 min/(25° C) 40° C 100 % d.c.	(2 x 400 A) 2 x 320 A	(2 x 450 A) 2 x 360 A	2 x 640 A	2 x 720 A
Open-circuit voltage		2 x 70 – 80 V	2 x 70 – 80 V	2 x 70 – 80 V	2 x 70 – 80 V
Operating voltage (MIG/MAG)		2 x 14,2 – 34,0 V	2 x 14,2 – 44,0 V	2 x 14,2 – 34,0 V	2 x 14,2 – 44,0 V
Protection class		IP 23	IP 23	IP 23	IP 23
Weight		2 x 77.6 lbs. / 2 x 35,2 kg	2 x 78.4 lbs. / 2 x 35,6 kg	4 x 77.6 lbs. / 4 x 35,2 kg	4 x 78.4 lbs. / 4 x 35,6 kg
Dimension l x w x h	inch	2 x (24.63 x 11.43 x 18.72)	2 x (24.63 x 11.43 x 18.72)	2 x (24.63 x 11.43 x 18.72)	2 x (24.63 x 11.43 x 18.72)
	mm	2 x (625 x 290 x 480)	2 x (625 x 290 x 480)	2 x (625 x 290 x 480)	2 x (625 x 290 x 480)

Wire feed unit		VR 1500-30	VR 1500-22	VR 7000-30
Wire-Ø		.030 – 1/16"	.030 – 1/8"	.030 – 1/16"
		0,8 – 1,6 mm	0,8 – 3,2 mm	0,8 – 1,6 mm
Wire feed speed		20 – 1180 ipm	20 – 472 ipm	20 – 1180 ipm
		0,5 – 30 m/min	0,5 – 12 m/min	0,5 – 30 m/min
Torque		3,7 Nm	4,0 Nm	3,7 Nm
Weight		17.6 lbs. / 8 kg	15.4 lbs. / 7 kg	39.6 lbs. / 18 kg
Dimension l x w x h	inch	15.3 x 8.0 x 10.2	15.3 x 8.1 x 8.0	25.1 x 10.2 x 16.9
	mm	390 x 205 x 260	390 x 208 x 205	640 x 260 x 430

Cooling unit		FK 6000	FK 9000-R
Cooling capacity at Q = 1l/min		1150 W	1100 W
Max. Throughput		3,5 l/min	1.32 gal / 5,0 l/min
Coolant volume		2.3 gal / 9 l	2.3 gal / 9 l
Weight (without coolant)		48.50 lbs. / 22 kg	61.73 lbs. / 28 kg
Protection class		IP 23	IP 23
Dimension l x w x h	inch	27.55 x 11.41 x 18.70	27.55 x 11.41 x 18.70
	mm	700 x 290 x 475	700 x 290 x 475

Multilock automatic hose packs
Robacta automatic hose packs

Processes

MIG/MAG pulsed arc welding with watercooled torches
MIG brazing

Recommended base metals

Constructional steels
Coated constructional steel
Ferritic / austenitic CrNi steels
Duplex steels
Nickel-based materials
Aluminium materials
Copper materials

Recommended areas of use

Construction of plant, containers, machinery, structural steel
Automobile and allied vendor industries
Construction of special vehicles and construction machinery
Construction of chemical plants
Maintenance and repair
Construction of rail vehicles & rolling stock
Shipbuilding and offshore engineering

Standard equipment

Multilock torch body
Spatter protection, with high thermal stability
Forced contacting arrangement for welding-wire
Torch neck rotates through 360°

Multilock robot hose pack
Automatic tube diameter 44 mm at F and F++ connection
Automatic tube diameter 38 mm at Euro connection
Steel inner liner for steel wire
Coaxial cable at gascooled welding torch
Rubber anti-kink feature at machine end

Robacta torch body
Insulation sleeve at watercooled welding torch
Insulated gas nozzle at gascooled welding torch
Contact tube, CuCrZr alloy
Forced contacting arrangement for welding-wire
Torch body bend 0°, 22°, 36°, 45°

Robacta robot hose pack
Automatic tube diameter 38 mm
Steel inner liner for steel wire
Wirefeed FWD button
Separate gas and blow-out lines
Swirl-free gas-flow – no loss of gas
UV, temp. and ozone-resistant rubber fabric hoses
Rubber anti-kink feature at machine end

Options

Multilock torch body
Contact tubes with centre bore for Al wire
Contact tube, CuCrZr alloy
Special torch body bend with 0° – 50° special lengths up to max. 1200 mm, for more than 500 mm a support is necessary!
Contact tip mounting tool

Multilock robot hose pack
Combi inner liner for Al and CrNi wires
Special lengths 1,0 – 6,0 m (gascooled: with 35 mm² power cable if more than 4,5 m)
Blow-out line

Robacta torch body
Contact tubes with centre bore for Al wire
Special torch body bend with 0° – 50°
Special lengths up to max. 500 mm

Robacta robot hose pack
Combi inner liner for Al and CrNi wires
Special lengths 1,0 – 6,0 m
Holding- and adjusting clamp (only with reducing sleeve)
Reducing sleeve
Blow-out line

Technical Data acc. to EN 60974-7 Multilock robot hose packs	Welding current at CO_2	 $ArCO_2$	Duty cycle	Wire Ø inch/mm	Weight lbs./kg
Gascooled	400 A	350 A	40 %	0.03 – 0.06 / 0,8 – 1,6	3.86 / 1,750*
Watercooled	500 A	400 A	100 %	0.03 – 0.06 / 0,8 – 1,6	3.64 / 1,650*
Robacta Robot hose packs	**Welding current**		**Duty cycle**	**Wire Ø inch/mm**	**Weight lbs./kg**
Watercooled	700 A		100 %	0.03 – 0.06 / 0,8 – 1,6	3.75 / 1,700*

* *(without torch body)*

Technical data Multilock torch bodies *page 11,* Robacta torch bodies *page 21.*

Robacta 280 / 300 / 400 / 500 / 5000 / 700 / 700 Time / MTG 2500 / MTG 4000

Processes

MIG/MAG welding
MIG/MAG pulsed arc welding with watercooled torches
MIG/MAG high-performance welding
MIG brazing

Recommended base metals

Constructional steels
Coated constructional steel
Ferritic / austenitic CrNi steels
Duplex steels
Nickel-based materials
Copper materials

Recommended areas of use

Construction of plant, containers, machinery, structural steel
Automobile and allied vendor industries
Construction of special vehicles and construction machinery
Construction of chemical plants
Maintenance and repair
Construction of rail vehicles & rolling stock
Shipbuilding and offshore engineering

Standard equipment

Multilock Torch body

Insulation sleeve at watercooled welding torch
Insulated gas nozzle at gascooled welding torch
Contact tube, CuCrZr alloy
Forced contacting arrangement for welding-wire (watercooled torches)
Precision TCP ± 0,5 mm

Hose pack

Steel inner liner for steel wire
Wirefeed FWD button (watercooled torches)
Separate gas and blow-out lines
Swirl-free gas-flow – no loss of gas
UV, temp. and ozone-resistant rubber fabric hoses
Seam-tracking line in the hose pack (only at the gascooled hose pack)
Rubber anti-kink feature at machine and torch end (watercooled torches)

Options

Torch body

Contact tubes with centre bore for Al wire
Special lengths up to max. 500 mm
Examination- and correction device
Seam-tracking line
Contact tip mounting tool
Wrench for RA-union nut

Hose pack

Combi inner liner for Al and CrNi wires
Holding- and adjusting clamp
Extractor set
Seam-tracking line in the hose pack (only at the watercooled hose pack)
Special lengths 1,0 – 4,5 m
Corrugated hose

Technical Data acc. to EN 60974-7 Torch body, watercooled	Welding current	Duty cycle	Wire Ø inch/mm	Weight lbs./kg
Robacta280	280 A	100 %	0.03 – 0.05 / 0,8 – 1,2	1.15 / 0,520
Robacta300	350 A	100 %	0.03 – 0.05 / 0,8 – 1,2	1.14 / 0,515
Robacta400	400 A	100 %	0.03 – 0.05 / 0,8 – 1,2	1.11 / 0,505
Robacta500	500 A	100 %	0.03 – 0.06 / 0,8 – 1,6	1.29 / 0,585
Robacta5000	500 A	100 %	0.03 – 0.06 / 0,8 – 1,6	1.29 / 0,585
Robacta700	700 A	100 %	0.04 – 0.06 / 1,0 – 1,6	1.27 / 0,575
Robacta700 Time	700 A	100 %	0.04 – 0.06 / 1,0 – 1,6	1.31 / 0,595
Hose pack	700 A	100 %	0.03 – 0.06 / 0,8 – 1,6	4.19 / 1,900*

** (without torch body)*

Technical Data acc. to EN 60974-7 Gascooled	Welding current at CO_2	 $ArCO_2$	Duty cycle	Wire Ø inch/mm	Weight lbs./kg
Robacta MTG 2500	250 A	200 A	60 %	0.03 – 0.05 / 0,8 – 1,2	1.10 / 0,500
Robacta MTG 4000	400 A	320 A	60 %	0.03 – 0.05 / 0,8 – 1,2	1.32 / 0,600
Hose pack	400 A	320 A	60 %	0.03 – 0.05 / 0,8 – 1,2	3.97 / 1,800

Robacta Drive / Robacta Drive with external wire feed hose / Laser hotwire / Robacta Drive CMT

Processes

CMT welding
CMT-Pulsmix welding
CMT brazing
CMT standard welding
MIG/MAG pulsed arc welding
MIG/MAG brazing
Laser hotwire

Recommended areas of use

Construction of plant, containers, machinery, structural steel
Automobile and allied vendor industry
Construction of special vehicles and construction machinery
Construction of chemical plants
Construction of rail vehicles & rolling stock
Shipbuilding / Offshore

Standard equipment Robacta Drive + Robacta Drive CMT

Torch body
Insulating sleeve
Forced contacting arrangement
Precision TCP 0,5mm
Driving unit
Wirefeed FWD/BACK button
Gas test button
Self centering pressure-roll
Display for press-on force-adjustment

Hose pack
Graphit inner liner 2,5mm
Separate gas and blow out lines
Swirl free gas flow - no loss of gas
UV, temp and ozone resistant rubber fabric hoses

Recommended base metals

Construcional steels
Coated and galvanised steels
Ferritic/austenitic CrNi steels
Duplex steels
Aluminium materials
Magnesium materials
Copper materials

Driving unit Robacta Drive

DC-servomotor with digital encoder
Toothed drive and pressure rollers

Options Robacta Drive

External wire feed hose
All robacta torch bodies (page)
Laser hotwire supply
Special lengths 1,0 to 10 m

Options Robacta Drive + Robacta Drive CMT

Torch body
Special lengths up to 500mm
Forced contacting arrangement for welding-wire
Seam tracking line
Contact tip mounting tool
Wrench for RA union nut
Driving unit
Holding and adjusting clamp
Extractor set
Seam tracking line

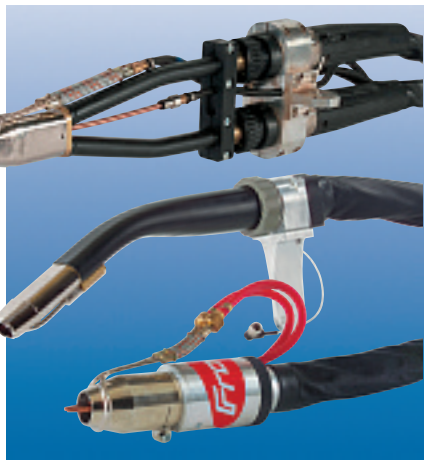
Driving unit Robacta Drive CMT

AC-direct drive for highdynamic wire feeding
Signal LED for statusdisplay
External wire feed hose only
Demountable hose pack

Options Robacta Drive CMT

Wire buffer
Recommended Robacta torch bodies
RA300/500/5000 (0°, 22°, 36°)
Special lengths 4,25 to 8,25m

Technische Daten nach EN 60974-7 Robacta Drive	Welding current	Duty cycle	Wire Ø inch/mm	Weight lbs./kg
Robacta Drive*	500 A	100%	0.03 – 0.07 / 0,8 – 2,0	5.07 / 2,300
Robacta Drive CMT*	360 A	100%	0.03 – 0.06 / 0,8 – 1,6	4.85 / 2,200



Robacta Twin 900 / Compact / Pipe Torch

Processes

MIG/MAG welding
MIG/MAG pulsed arc welding
MIG/MAG high-performance welding
MIG brazing

Recommended base metals

Duplex steels

Recommended areas of use

Construction of plant, containers, machinery, structural steel
Automobile and allied vendor industries
Construction of special vehicles and construction machinery
Construction of chemical plants
Maintenance and repair
Construction of rail vehicles & rolling stock
Shipbuilding and offshore engineering

Standard equipment

Torch body

Contact tube "industrial" with centre bore at Robacta Twin 900
Contact tube "industrial" at Robacta Twin Compact
Wire electrodes insulated from one another
Spatter protection, with high thermal stability
Forced contacting arrangement for welding wire
Precision TCP ± 0,5mm
Seam tracking line at Robacta Twin Compact
Integrated blow out line

Hose pack

Steel inner liner for steel wire
Wirefeed FWD button at Robacta Twin 900
Separate gas and blow-out lines
Swirl-free gas-flow - no loss of gas
UV, temp and ozone-resistant rubber fabric hoses
Rubber anti-kink feature at machine and torch end
Holding clamp mounted
Seam tracking line at Robacta Twin Compact

Options

Torch body

Contact tip mounting tool
Wrench for RA union-nut
Torque spanner for RA Twin Compact

Hose pack

Combi inner liner for Al and CrNi wires
Special lengths 1,1-4,5m

Technical Data acc. to EN 60974-7 Watercooled	Welding current	Duty cycle	Wire Ø inch/mm	Weight lbs./kg
Robacta Twin 900	900 A	100 %	0.05 – 0.06 / 1,2 – 1,6	3.31 / 1,500
Hose pack	900 A	100 %	0.05 – 0.06 / 1,2 – 1,6	8.82 / 4,000
Robacta Twin Compact	900 A	100 %	0.05 / 1,2	3.75 / 1,700
Hose pack Twin Compact	900 A	100 %	0.05 / 1,2	3.31 / 1,500
Pipe Torch	300 A	100 %	0.04 / 1,0	8.15 / 3,700

Robacta TC 1000*)

Processes

Electromagnetic and touchless cleaning of MIG/MAG robot torches

Recommended base metals

Constructional steels
Coated constructional steel

Recommended areas of use

Construction of plant, containers, machinery, structural steel
Automobile and allied vendor industries
Construction of special vehicles and construction machinery
Construction of rail vehicles & rolling stock
Shipbuilding and offshore engineering

Standard equipment

Completely remote-controllable
Galvanic separated control
Constant, defined cleaning efficiency
Control of cleaning efficiency
Quick-stop function
Cooling liquid sensor (Robacta TC 1000 / Twin)
Overtemperature protection
CE-mark
Liquid reservoir (Robacta TC 1000 / Twin)
Discharge coil
Control with Standard I/O
Electrolyte spraying system

Options

Autotrafo Robacta TC 1000
Wire cutter
Interface for fieldbus connection
Compressed air blow out 16 bar

Robacta TC 1000*)

Cleaning station			Robacta TC 1000 / Robacta TC 1000 Twin	Robacta TC 1000 ext.
Mains voltage	+/–15 %	50/60 Hz	230 V	230 V
Rated power			180 W	180 W
Compressed air supply			6 bar	–
Min. cycle time			45 sec	45 sec
Discharging current			1500 A	1500 A
Discharging voltage			270 V DC	270 V DC
Coolant reservoir capacity			0.20 gal / 0,75 l	–
Protection class			IP 21	IP 21
Dimension l x w x h		inch	12.99 x 9.84 x 16.61	12.99 x 9.84 x 16.61
		mm	330 x 250 x 422	330 x 250 x 422
Weight (without coolant)			28.66 lbs. / 13 kg	25.35 lbs. / 11,5 kg

Robacta Reamer / Alu Edition
Robacta Reamer Twin

Processes

Mechanical cleaning of
MIG/MAG robot torches

Recommended base metals

Ferritic / austenitic CrNi steels
Duplex steels
Nickel-based materials
Aluminium materials
Magnesium materials
Copper materials
Special materials

Recommended areas of use

Construction of plant, containers, machinery, structural steel
Automobile and allied vendor industries
Construction of special vehicles and construction machinery
Construction of chemical plants
Robot welding
Maintenance and repair
Construction of rail vehicles & rolling stock
Shipbuilding and offshore engineering

Standard equipment

Completely remote-controllable
Pneumatic program run
Wire cutter (Robacta Reamer Twin)
Gas nozzle mounting
Button for manual cleaning
Equal milling- and spray-in position
Spray-in amount adjustable
Constant spray-in time
360° mountable
CE-mark

Options

Mounting socket
Interface for fieldbus connection

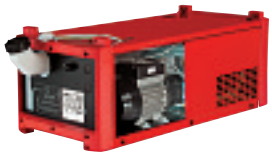
Cleaning station		Robacta Reamer	Robacta Reamer Alu	Robacta Reamer Twin
Supply voltage		+24 VDC	+24 VDC	+24 VDC
Rated power		3,2 W	3,2 W	6 W
Cycle time		3 – 5 sec	3 – 5 sec	max. 7,5 sec
Air consumption		max. 6 bar at 7 l/sec	max. 6 bar at 7 l/sec	max. 6 bar at 7 l/sec
Tank coolant capacity		0.07 gal / 0,25 l	–	0.07 gal / 0,25 l
Dimension l x w x h	inch	9.45 x 6.50 x 13.39	7.09 x 6.50 x 11.02	12.80 x 8.66 x 13.78
	mm	240 x 165 x 340	180 x 165 x 280	325 x 220 x 350
Weight		22.05 lbs. / 10 kg	19.84 lbs. / 9 kg	37.48 lbs. / 17 kg

Cooling units MIG/MAG

FK 3000 R

FK 4000

FK 4000-R FC



FK 6000

FK 9000 R

Cooling units MIG/MAG

		FK3000-R without cooling liquid 4,045,887,630 / **FK3000-R** 4,045,887	**FK4000** 4,045,836	**FK4000** without cooling liquid 4,045,836,630	**FK4000-R** 4,045,837	**FK4000-R** without cooling liquid 4,045,837,631	**FK4000-R FC** 4,045,837,632	**FK4000 ROB (UL-/CSA)** 4,045,837,633	**FK4000-R US (UL-/CSA)** 4,045,837,800	**FK6000** 4,045,947	**FK6000 Pipe (UL-/CSA)** 4,045,947,810	**FK9000-R (UL-/CSA)** 4,045,906	**FK 9000-R US (UL-/CSA)** 4,045,906,800	**FK9000-R Pipe (UL-/CSA)** 4,045,906,810
VarioSynergic 3400 / 3400-2 / 4000 / 4000-2 / 5000 / 5000-2		●												
TS 4000 / 4000 C / 4000 Remote			●	●	●	●	●	●		●		●		
TS 4000 C (UL-/CSA) / 4000 Remote (UL-/CSA)									●				●	
TS 5000 / 5000 C / 5000 Remote			●	●	●	●	●	●		●		●		
TS 5000 C (UL-/CSA) / 5000 Remote (UL-/CSA)									●				●	
TPS 2700 / 2700 Alu / 2700 TIG / 2700 Duo / 2700 Duo TIG / 2700 CrNi			●	●	●	●	●	●				●		
TPS 2700 (UL-/CSA)									●					
TPS 3200 / 3200 Remote / 3200CrNi			●	●	●	●	●	●						
TPS 3200 Pipe											●			●
TPS 3200 (UL-/CSA) / 3200 Remote (UL-/CSA)									●				●	
TPS 4000 / 4000 Remote / 4000 CrNi					●	●	●	●		●		●		
TPS 4000 (UL-/CSA) / 4000 Remote (UL-/CSA)									●				●	
TPS 5000 / 5000 Remote					●	●	●	●		●		●		
TPS 5000 (UL-/CSA) / Remote (UL-/CSA)									●				●	
TPS 3200 CMT / 3200 CMT MV			●	●	●	●	●	●						
TPS 3200 CMT MV Remote (UL-/CSA)									●					
TPS 4000 CMT / 4000 CMT MV					●	●	●	●		●		●		
TPS 4000 CMT MV Remote (UL-/CSA)									●				●	
TPS 5000 CMT / 5000 CMT MV					●	●	●	●		●		●		
TPS 5000 CMT MV Remote (UL-/CSA)									●				●	
TIME 5000 Digital					●	●	●	●		●		●		
Options														
I-Kit Autotrafo FK4000-R 200V-460V (for MV)	4,100,225				●	●	●	●						
I-Kit Autotrafo FK9000-R 200V-460V 50/60HZ (for MV) (only factory installation)	4,100,388											●		
I-Kit Water flow control FK4000-R (for FK4000 till max. 5m connectin hose pack)	4,100,214		●	●	●	●								
I-Kit Thermal guard FK4000 (only factory installation)	4,100,215		●	●	●	●	●		●					
I-Kit Cooling unit FK4000 Duo	4,100,390				●	●	●	●	●					
I-Kit Water flow control FK6000 Pipe	4,100,484										●			
Torch-cooling liquid 5l	40,0009,0046	●	●	●	●	●	●	●	●	●	●	●	●	●
Torch-cooling liquid 30l	40,0009,0075	●	●	●	●	●	●	●	●	●	●	●	●	●
Torch-cooling liquid Pipe 5l	40,0009,0079										●			●
Equipment														
Thermal guard			Opt.	Opt.	Opt.	Opt.	Opt.	X	Opt.			X	X	X
Water flow control			Opt.	Opt.	Opt.	Opt.	X		X	X	Opt.	X	X	X
Flow sensor								X						
Water filter			Opt.	Opt.	Opt.	Opt.	X	X	X	X	X	X	X	X
Multivoltage (Autotrafo)			Opt.	Opt.	Opt.	Opt.	Opt.	Opt.	X		X	Opt.	X	X
Rotation pump		X	X	X	X	X	X		X			X	X	
Magnetic connected rotation pump								X		X	X			X
50/60 Hz - capable		X	X	X	X	X	X	X	X	X	X	Opt.	X	X
5l Torchcooling liquid		X	X		X		X	X	X			X	X	

Carriages for MIG/MAG

Carriage PickUp 	Carriage Everywhere 	Set podium digital machines 
VR carriage Caddy 	Carriage Trabant 	Carriage Trabant with 4 swivel rollers 

Carriages for MIG/MAG

		Carriage PickUp 4,045,839	Carriage Everywhere 4,045,868	Podium digit. machines 4,045,881	Caddy VR3000/3300 4,001,552	Trabant VR4000/7000 4,045,845	Trabant VR4000/7000 (4 swivel rollers) 4,045,866
Power sources							
TS 4000 / 4000 C / 4000 Remote		●	●	●			
TS 5000 / 5000 C / 5000 Remote		●	●	●			
TPS 2700		●	●	●			
TPS 3200 / 3200 Remote / 3200CrNi / 3200 Pipe / 3200 CMT		●	●	●			
TPS 4000 / 4000 Remote / 4000 CrNi / 4000 CMT		●	●	●			
TPS 5000 / 5000 Remote / 5000 CMT		●	●	●			
TIME 5000 Digital		●	●	●			
Wire feed units							
VR 4000			●			●	●
VR 7000			●			●	●
VR 3000/ VR 3300			●		●		
Options							
Transport handles Carriage PickUp (only with feeder swivel mount 4,100,218)	4,001,577	X					
Bottle mounting plate Duo	4,045,858	X					
Crane-transport PickUp	4,045,865	X					
I-Kit wheel brake podium PickUp	4,100,321	X					
I-Kit PickUp strengthening (for TPS2700)	4,100,391	X					
Feeder swivel mount	4,100,218	X					
Extension for Trabant mounting	4,001,585	X					
I-Kit Feeder swivel mount podium for VR4000/7000	4,100,380			X			
I-Kit Feeder swivel mount central for double podium for VR4000/7000	4,100,381			X			
I-Kit wheel brake podium	4,100,340			X			
I-Kit crane hoisting for double podium for digital machines (transport of two screwed podium)	4,100,364			X			

TransTig 1600 / 1700

Processes

TIG-DC
Manual electrode (MMA) welding

Recommended base metals

Constructional steels
Ferritic / austenitic CrNi steels
Duplex steels
Nickel-based materials
Magnesium materials
Copper materials
Special materials

Recommended areas of use

Construction of chemical plants
Maintenance and repair
Construction of plant, containers, machinery, structural steel
Industry plant & pipeline construction, site-erection firms

Standard equipment

Touch-down ignition / HF switch-selectable
Remote-controllable
Generator-compatible
Security code
S-mark, CE-mark
Thermostat-controlled fan
Carrying strap
UpDown control from torch
Overtemperature protection
2-step mode, 4-step mode
Digital display

Options

Remote control unit
Calibrationdocument

Power source		TT 1600	TT 1700
Mains voltage +15 /–20 %	50/60 Hz	1 x 230 V	1 x 230 V
Cos phi		0,99 (160 A)	0,99 (120 A)
Welding current range	TIG	2 – 160 A	2 – 170 A
	EL	2 – 140 A	2 – 140 A
Welding current TIG	10 min/40° C 35 % d.c.	160 A	170 A
	10 min/40° C 100 % d.c.	110 A	120 A
	10 min/25° C 100 % d.c.	130 A	150 A
Open-circuit voltage		45 V	92 V
Operating voltage	TIG	10,1 – 16,4 V	10,1 – 16,8 V
	EL	20,1 – 25,6 V	20,1 – 25,6 V
Protection class		IP 23	IP 23
Dimension l x w x h	inch	16.93 x 7.09 x 11.02	16.93 x 7.09 x 11.02
	mm	430 x 180 x 280	430 x 180 x 280
Weight		18.52 lbs. / 8,4 kg	19.62 lbs. / 8,9 kg

TransTig 2200 / 2200 Job

Processes

TIG-DC
Manual electrode (MMA) welding

Recommended base metals

Constructional steels
Nickel-based materials
Magnesium materials
Copper materials
Special materials

Recommended areas of use

Construction of plant, containers, machinery, structural steel
Automobile and allied vendor industries
Construction of chemical plants
Maintenance and repair
Robot welding
Industry plant & pipeline construction, site-erection firms

Standard equipment

Automatic cooling-unit cut-out
Touch-down ignition / HF switch-selectable
Gas-test button
Generator-compatible
Job mode
S-mark, CE-mark
Thermostat-controlled fan
Carrying strap
UpDown control from torch
Overtemperature protection
2-step mode, 4-step mode
Spot-welding / Puls mode
Digital display
Compatible for bus-system
TAC – special tack mode
Earth leakage monitoring

Options

Remote-controllable
Robot Interface, digital
TIG JobMaster
Calibrationdocument

Power source		TT 2200
Mains voltage	–20 % / +15 %	230 V
Cos phi		0,99
Welding current range	TIG	3 – 220 A
	Electrode	10 – 180 A
Welding current at	10 min/40° C 40 % d.c.	220 A
	10 min/40° C 60 % d.c.	180 A
	10 min/40° C 100 % d.c.	150 A
Open-circuit voltage		84 V
Operating voltage	TIG	10,1 – 18,8 V
	Electrode	20,4 – 27,2 V
Protection class		IP 23
Dimension l x w x h	inch	19.09 x 7.28 x 15.35
	mm	485 x 180 x 390
Weight		37.04 lbs. / 16,8 kg

Cooling unit		FK 2200
Cooling capacity Q = max. +40° C		570 W
Max. throughput		0.79 gal/min / 3,0 l/min
Coolant volume		0.40 gal / 1,5 l
Protection class		IP 23
Dimension l x w x h	inch	21.26 x 7.09 x 7.09
	mm	540 x 180 x 180
Weight (without coolant)		14.55 lbs. / 6,6 kg

TransTig 2600 / 2600 Cel / 3000

Processes

TIG-DC
Manual electrode (MMA) welding, CEL compatible

Recommended base metals

Constructional steels
Ferritic / austenitic CrNi steels
Duplex steels
Nickel-based materials
Magnesium materials
Copper materials
Special materials

Recommended areas of use

Automobile and allied vendor industries
Construction of chemical plants
Construction of plant, containers, machinery, structural steel
Industry plant & pipeline construction, site-erection firms
Construction of rail vehicles & rolling stock
Shipbuilding and offshore engineering

Standard equipment

Automatic cooling-unit cut-out
Touch-down ignition / HF switch-selectable
Remote-controllable
Gas-test button
Generator-compatible
Security code
S-mark, CE-mark
Thermostat-controlled fan
Carrying strap
UpDown control from torch
Overtemperature protection
2-step mode, 4-step mode
Digital display

Options

Remote control unit
Ar/He switchover
Printer interface (RS 232)
Earth leakage monitoring
Robot interface
Current-flow signal
Job mode
Calibrationdocument

Power source			TT 2600	TT 2600 Cel	TT 3000
Mains voltage +15 % / –20 % 50/60 Hz			3 x 400 V	3 x 400 V	3 x 400 V
Cos phi 1			0,99	0,99 (260 A)	0,99
Welding current range stepless		DC	3 – 260 A	3 – 260 A	3 – 300 A
Welding current at	10 min/40° C	60 % d.c.	260 A	260 A	–
	10 min/40° C	100 % d.c.	220 A	230 A	260 A
	10 min/40° C	65 % d.c.	–	–	300 A
Efficiency 150 A			89 %	89 %	89 %
Open-circuit voltage			83 V	80 V	83 V
Operating voltage	TIG		10,1 – 20,4 V	10,1 – 20,4 V	10,1 – 22 V
	EL		20,1 – 30,4 V	20,1 – 30,4 V	20,1 – 32 V
Protection class			IP 23	IP 23	IP 23
Dimension l x w x h	inch		24.61 x 9.84 x 18.90	24.61 x 9.84 x 18.90	24.61 x 9.84 x 18.90
	mm		625 x 250 x 480	625 x 250 x 480	625 x 250 x 480
Weight			61.73 lbs. / 28 kg	61.73 lbs. / 28 kg	61.73 lbs. / 28 kg

Cooling unit		FK 2601	FK 2601-R 50/60 Hz
Cooling capacity at 40° C		750 W	510 W
Throughput		0.42 gal/min / 1,6 l/min	0.79 gal/min / 3,0 l/min
Coolant volume		1.45 gal / 5,5 l	1.45 gal / 5,5 l
Weight without coolant		24.25 lbs. / 11 kg	28.66 lbs. / 13 kg
Dimension l x w x h	inch	21.56 x 9.84 x 9.84	21.56 x 9.84 x 9.84
	mm	700 x 250 x 250	700 x 250 x 250

TransTig 4000 / 5000 / 4000 Job / 5000 Job

Processes
TIG-DC
Manual electrode (MMA) welding

Recommended base metals
Constructional steels
Ferritic / austenitic CrNi steels
Duplex steels
Nickel-based materials
Magnesium materials
Copper materials
Special materials

Recommended areas of use
Automobile and allied vendor industries
Construction of chemical plants
Construction of plant, containers, machinery, structural steel
Robot welding
Industry plant & pipeline construction, site-erection firms
Construction of rail vehicles
Shipbuilding and offshore engineering

Options
Remote-controllable
Robot interface
TIG JobMaster
Calibration document
Rate-of-flow watchdog for torch cooling

Standard equipment
Automatic cooling-unit cut-out
Touch-down ignition / HF switch-selectable
Gas-test button
Generator-compatible
Job mode (only for TT 4000 / 5000 Job)
S-mark, CE-mark
Thermostat-controlled fan
UpDown control from torch
Overtemperature protection
2-step mode, 4-step mode
Spot-welding / Puls mode
Digital display
TAC – special tack mode
Compatible for bus-system
Earth leakage monitoring

Power source				TT 4000 (Job)	TT 4000 (Job) MV	TT 5000 (Job)	TT 5000 (Job) MV
Mains voltage	+/–10 %	50/60 Hz		+/–15 % 3 x 400 V	3 x 220 – 240 V	+/–15 % 3 x 400 V	3 x 220 – 240 V
					3 x 380 – 460 V		3 x 380 – 460 V
Cos phi				0,99 (400 A)	0,99 (400 A)	0,99 (500 A)	0,99 (500 A)
Welding current range			TIG	3 – 400 A	3 – 400 A	3 – 500 A	3 – 500 A
			Electrode	10 – 400 A	10 – 400 A	10 – 500 A	10 – 500 A
Welding current at	10 min/40° C	45 % d.c.		–	–	500 A	500 A
	10 min/40° C	50 % d.c.		400 A	400 A	–	–
	10 min/40° C	60 % d.c.		365 A	365 A	450 A	450 A
	10 min/40° C	100 % d.c.		310 A	310 A	350 A	350 A
Open-circuit voltage				86 V	86 V	86 V	86 V
Operating voltage			TIG	10,1 – 26,0 V	10,1 – 26,0 V	10,1 – 30,0 V	10,1 – 30,0 V
			Electrode	20,4 – 36,0 V	20,4 – 36,0 V	20,4 – 40,0 V	20,4 – 40,0 V
Protection class				IP 23	IP 23	IP 23	IP 23
Dimension l x w x h			inch	24.61 x 11.42 x 18.70	24.61 x 11.42 x 18.70	24.61 x 11.42 x 18.70	24.61 x 11.42 x 18.70
			mm	625 x 290 x 475	625 x 290 x 475	625 x 290 x 475	625 x 290 x 475
Weight				87.74 lbs. / 39,8 kg	87.74 lbs. / 39,8 kg	87.52 lbs. / 39,7 kg	87.52 lbs. / 39,7 kg

MagicWave® 1700 / 2200 / 1700 Job / 2200 Job

Processes
TIG-DC
TIG-AC/DC
Manual electrode (MMA) welding

Recommended base metals
Constructional steels
Nickel-based materials
Aluminium materials
Magnesium materials
Special materials

Recommended areas of use
Construction of plant, containers, machinery, structural steel
Automobile and allied vendor industries
Construction of chemical plants
Aerospace industry
Robot welding
Industry plant & pipeline construction, site-erection firms

Standard equipment
Automatic cap-shaping
Automatic cooling-unit cut-out
Touch-down ignition / HF switch-selectable
Gas-test button
Generator-compatible
Job mode
Polarity reversal
S-mark, CE-mark
Thermostat-controlled fan
Carrying strap
Carrying handle (MW 2200)
UpDown control from torch
Overtemperature protection
2-step mode, 4-step mode
Spot-welding / Puls mode
Digital display
TAC – special tack mode
Quiet arc, due to fuzzy logic
Earth leakage monitoring
Compatible for bus-system

Options
Remote-controllable
Robot interface
TIG JobMaster
Calibrationdocument

Power source		MW 1700	MW 2200
Mains voltage		–20 % / +15 % 230 V	– 20 % / +15 % 230 V
Cos phi		0,99	0,99
Welding current range	TIG	3 – 170 A	3 – 220 A
	Electrode	10 – 140 A	10 – 180 A
Welding current at	10 min/40° C 35 % d.c.	170 A	220 A
	10 min/40° C 60 % d.c.	130 A	170 A
	10 min/40° C 100 % d.c.	100 A	150 A
Open-circuit voltage		88 V	88 V
Operating voltage	TIG	10,1 – 16,8 V	10,1 – 18,8 V
	Electrode	20,4 – 25,6 V	20,4 – 27,2 V
Protection class		IP 23	IP 23
Dimension l x w x h	inch	19.09 x 7.09 x 13.54	19.09 x 7.09 x 15.35
	mm	485 x 180 x 344	485 x 180 x 390
Weight		33.07 lbs. / 15 kg	38.36 lbs. / 17,4 kg

Cooling unit		FK 2200
Cooling capacity Q = max. +40° C		570 W
Max. Throughput		0.79 gal/min / 3,0 l/min
Coolant volume		0.40 gal / 1,5 l
Protection class		IP 23
Dimension l x w x h	inch	21.26 x 7.09 x 7.09
	mm	540 x 180 x 180
Weight (without coolant)		14.55 lbs. / 6,6 kg

MagicWave® 2600 / 2600 Cel / 3000 Fuzzy

Processes

TIG-DC
TIG-AC/DC
Manual electrode (MMA) welding, CEL compatible
Electrochemical cleaning

Recommended base metals

Constructional steels
Nickel-based materials
Aluminium materials
Magnesium materials
Special materials

Recommended areas of use

Automobile and allied vendor industries
Construction of chemical plants
Construction of plant, containers, machinery, structural steel
Robot welding
Industry plant & pipeline construction, site-erection firms
Construction of rail vehicles & rolling stock
Shipbuilding and offshore engineering

Standard equipment

Automatic cap-shaping
Automatic cooling-unit cut-out
Touch-down ignition / HF switch-selectable
Gas-test button
Generator-compatible
Quiet arc, due to fuzzy logic
Polarity reversal
Security code
S-mark, CE-mark
Thermostat-controlled fan
Carrying strap
UpDown control from torch
Overtemperature protection
2-step mode, 4-step mode
Digital display

Options

Remote control unit
Ar/He switchover
Printer interface (RS 232)
Earth leakage monitoring
Robot interface
Job mode
MagicCleaner Set
Calibrationdocument

Power source		MW 2600 Fuzzy	MW 2600 Cel	MW 3000 Fuzzy
Mains voltage +15 % / –20 % 50/60 Hz		3 x 400 V 50/60 Hz	3 x 400 V 50/60 Hz	3 x 400 V 50/60 Hz
Cos phi 1		0,99	0,99	0,99 (150 A)
				0,99 (300 A)
Welding current range	AC	5 – 260 A	5 – 260 A	5 – 300 A
stepless	DC	3 – 260 A	3 – 260 A	3 – 300 A
Welding current at	10 min/40° C 40 % d.c.	260 A (50 % d.c.)	260 A	–
	10 min/40° C 60 % d.c.	240 A	180 A	300 A
	10 min/40° C 100 % d.c.	185 A	145 A	260 A
Open-circuit voltage		56 V	80 V	56 V
Operating voltage	TIG	10,1 – 20,4 V	10,1 – 20,4 V	10,1 – 22 V
	EL	20,1 – 30,4 V	20,1 – 30,4 V	20,1 – 32 V
Protection class		IP 23	IP 23	IP 23
Dimension l x w x h	inch	24.61 x 11.42 x 18.90	24.61 x 11.42 x 18.90	24.61 x 11.42 x 18.90
	mm	625 x 290 x 480	625 x 290 x 480	625 x 290 x 480
Weight		72.75 lbs. / 33 kg	66.14 lbs. / 30 kg	74.96 lbs. / 34 kg

Cooling unit		FK 2600	FK 2600-R 50/60 Hz
Cooling capacity at 40° C		570 W	570 W
Throughput		0.42 gal/min / 1,6 l/min	0.79 gal/min / 3,0 l/min
Coolant volume		1.45 gal / 5,5 l	1.45 gal / 5,5 l
Protection class		IP 23	IP 23
Weight without coolant		24.25 lbs. / 11 kg	28.66 lbs. / 13 kg
Dimension l x w x h	inch	24.61 x 11.42 x 9.06	24.61 x 11.42 x 9.06
	mm	625 x 290 x 230	625 x 290 x 230

MagicWave® 4000 / 5000 / 4000 Job / 5000 Job

Processes
TIG-DC
TIG-AC/DC
Manual electrode (MMA) welding

Recommended base metals
Constructional steels
Nickel-based materials
Aluminium materials
Magnesium materials
Special materials

Recommended areas of use
Automobile and allied vendor industries
Construction of chemical plants
Construction of plant, containers, machinery, structural steel
Robot welding
Industry plant & pipeline construction, site-erection firms
Construction of rail vehicles
Shipbuilding and offshore engineering

Standard equipment
Automatic cap-shaping
Automatic cooling-unit cut-out
Touch-down ignition / HF switch-selectable
Gas-test button
Generator-compatible
Job mode (only for MW 4000 / 5000 Job)
Polarity reversal
S-mark, CE-mark
Thermostat-controlled fan
UpDown control from torch
Overtemperature protection
2-step mode, 4-step mode
Spot-welding / Puls mode
Digital display
TAC – special tack mode
Quiet arc, due to fuzzy logic
Earth leakage monitoring
Compatible for bus-system

Options
Remote-controllable
Robot interface
TIG JobMaster
Calibration document
Rate-of-flow watchdog for torch cooling

Power source			MW 4000 (Job)	MW 4000 (Job) MV	MW 5000 (Job)	MW 5000 (Job) MV
Mains voltage +/–10 % 50/60 Hz			+/–15 % 3 x 400 V	3 x 220 – 240 V	+/–15 % 3 x 400 V	3 x 220 – 240 V
				3 x 380 – 460 V		3 x 380 – 460 V
Cos phi			0,99 (400 A)	0,99 (400 A)	0,99 (500 A)	0,99 (500 A)
Welding current range		TIG	3 – 400 A	3 – 400 A	3 – 500 A	3 – 500 A
		EL	10 – 400 A	10 – 400 A	10 – 440 A	10 – 440 A
Welding current at	10 min/40° C 40 % d.c.		–	–	500 A	500 A
	10 min/40° C 45 % d.c.		400 A	400 A	–	–
	10 min/40° C 60 % d.c.		365 A	365 A	440 A	440 A
	10 min/40° C 100 % d.c.		310 A	310 A	350 A	350 A
Open-circuit voltage			86 V	86 V	86 V	86 V
Operating voltage		TIG	10,1 – 26,0 V	10,1 – 26,0 V	10,1 – 30,0 V	10,1 – 30,0 V
		EL	20,4 – 36,0 V	20,4 – 36,0 V	20,4 – 37,6 V	20,4 – 37,6 V
Protection class			IP 23	IP 23	IP 23	IP 23
Dimension l x w x h		inch	24.61 x 11.42 x 27.76	24.61 x 11.42 x 27.76	24.61 x 11.42 x 27.76	24.61 x 11.42 x 27.76
		mm	625 x 290 x 705	625 x 290 x 705	625 x 290 x 705	625 x 290 x 705
Weight			128.31 lbs. / 58,2 kg	128.31 lbs. / 58,2 kg	128.31 lbs. / 58,2 kg	128.31 lbs. / 58,2 kg

MagicCleaner®

Processes

Electrochemical cleaning
Electrochemical polishing / burnishing
Electrochemical labelling / printing

Recommended base metals

Ferritic / austenitic CrNi steels
Copper materials

Recommended areas of use

Construction of chemical plants
Maintenance and repair
Industry plant & pipeline construction, site-erection firms

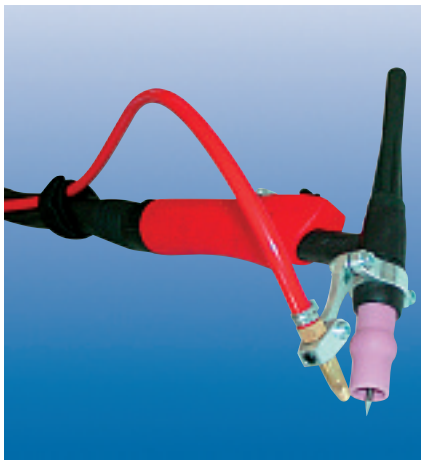
Standard equipment

Cleaning current is continuously adjustable
Electrolyte feed is continuously adjustable
Adjustable current waveform (AC/DC)
Short-circuit detection and cut-out
Generator-compatible
CE mark

Options

MagicCleaner printing set
Mains voltage 110V - 115V, 50/60Hz

Power source		Stand Alone
Mains voltage +/–15 %		230 V 50/60 Hz
Rated power		300 W
Cleaning current range		5 – 20 A
Open-circuit voltage		17 V
Operating voltage		5 – 17 V
Throughput		0.07 – 0.58 gal/h / 0,27 – 2,2 l/h
Cleaning agent volume		0.40 gal / 1,5 l
Protection class		IP 23
Dimension l x w x h	inch	16.93 x 7.09 x 11.02
	mm	430 x 180 x 280
Weight		11.02 lbs. / 5 kg



TIG cold wire welding with external start/stop for KD

Processes

TIG AC/DC
TIG coldwire

Recommended base metals

Constructional steels
Coated constructional steels
Ferritic / austenitic CrNi steels
Duplex steels
Nickel-based materials
Aluminium materials
Magnesium materials
Copper materials
Special materials

Recommended areas of use

Automobile and allied vendor industries
Construction of special vehicles and construction machinery
Construction of chemical plants
Aerospace industry
Construction of plant, containers, machinery, structural steel
Construction of rail vehicles & rolling stock
Shipbuilding and offshore engineering
Industry plant & pipeline construction, site-erection firms

Standard equipment wire feeder unit KD 4010

Wire feeder unit 4 rolls / Z / 1,2T
Closed wire spool cover for spool 300 mm up to 20kg
Mains cable 5m with plug

Functions

- Pot for wire speed regulation
- Display wire feed speed on pot from 30 – 999 cm/min
- Flip switch for addressing internal / external
- Pot for wire retract length
- Flip switch for wire inching forward / backward
- Pot for wire speed inching
- Flip switch for continous- / interval mode
- Pot for interval time
- Pot for break time
- Interface for external addressing 0 – 10 Volt
- Automatic start KD 4010, if welding power source in main current (I-kit robot interface is necessary)
- Synchron pulsing (max. 5 Hz), in combination with Fronius welding power source (I-kit robot interface and remote control unit TR 50 MC is necessary)

Options and accessories

I-kit motorplate 4 rolls / Z / 1,2 T (15 – 500 cm/min)
System-Controller FPA 2003 / FPA 9000
I-kit robot interface
Remote control unit
Manual TIG torch with Up/Down
Manual TIG torch with pot for wire feed speed
Coldwire guide for manual torch 4m
Coldwire guide 3m KD (automatic mode)
Cable 5m with manual start-stop button
FWH wire holder and adjustment devices
Calibrationdocument

Technical data	KD 4010
Wire feed speed	30 – 999 cm/min
Gear	49 : 1
Dimension l x w x h	625 x 250 x 300 mm
Weight	17,5 kg
Mains voltage / frequency	230 V / 50 – 60 Hz

TTG1600A / 2200A / 2600A / AL1500 / PL10

Processes
TIG-DC
TIG-AC/DC

Recommended base metals
Ferritic / austenitic CrNi steels
Aluminium materials
Magnesium materials

Standard equipment
Plug-on gas nozzle system
Torch body rotates through 60°
Easy-to-use rocker switch
Swivel-mounted protective hose with corrugated hose
UV and ozone-resistant protective hose
Gas nozzle, tungsten electrode, torch cap long
Anti-kink feature at machine and torch end

Recommended areas of use
Automobile and allied vendor industries
Construction of chemical plants
Maintenance and repair
Pipeline construction
Structural steel

Options
Flexible leather protection hose L = 0,7 mm
Gas lenses
P-system (screw-on gas nozzle)
Fabric-reinforced protection hose
Special lengths of hose pack 1,0 – 16,0 m
KD-feeding for TTG2200
Adapter for old machines

Technical Data acc. to EN 60974-7 Gascooled	Welding current at AC	DC	Duty cycle	Electrode Ø inch/mm	Weight lbs./kg
TTG1600A	120 A	160 A	35 %	0.040 – 1/8 / 1,0 – 3,2	1.43 / 0,650
TTG2200A	180 A	220 A	35 %	0.040 – 0.157 / 1,0 – 4,0	2.11 / 0,960
TTG2200-TCS	-	160 A	35 %	0.040 – 0.157 / 1,0 – 4,0	1.25 / 0,570
TTG2600A	220 A	260 A	35 %	1/6 – 0.251 / 1,6 – 6,4	2.6 / 1,200
AL1500	-	150 A	35 %	0.04 – 1/8 / 1,0 – 3,2	0.99 / 0,450
PL10	60 A	80 A	40 %	0.04 – 2.4 / 1,0 – 2,4	1.21 / 0,550

TTW3000A / 4000A / 5000A / PW18

Processes
TIG-DC
TIG-AC/DC

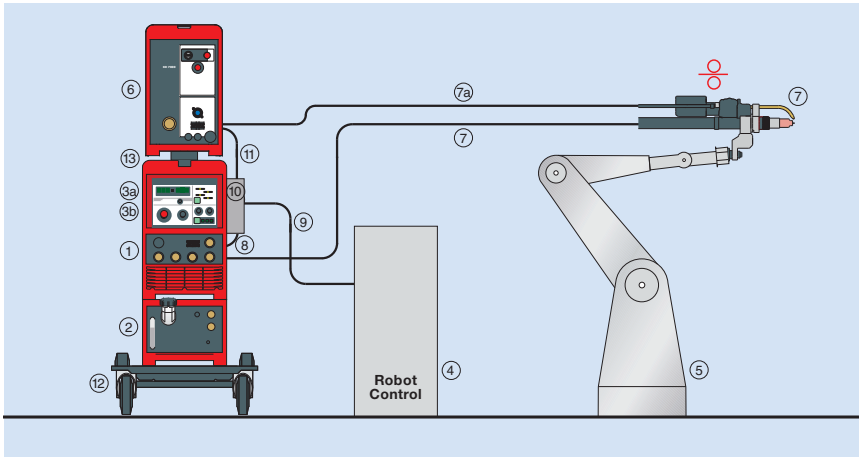
Recommended base metals
Ferritic / austenitic CrNi steels
Duplex steels
Nickel-based materials
Aluminium materials
Magnesium materials
Copper materials

Standard equipment
Plug-on gas nozzle system
Torch body rotates through 60°
Easy-to-use rocker switch
Swivel-mounted protective hose with corrugated hose
UV and ozone-resistant protective hose
Gas nozzle, tungsten electrode, torch cap long
Anti-kink feature at machine and torch end

Recommended areas of use
Construction of plant, containers, machinery, structural steel
Automobile and allied vendor industries
Construction of special vehicles and construction machinery
Construction of chemical plants
Maintenance and repair
Pipeline construction
Construction of rail vehicles & rolling stock
Shipbuilding and offshore engineering

Options
Flexible leather protection hose L = 0,7 mm
Gas lenses
P-system (screw-on gas nozzle)
Fabric-reinforced protection hose
Special lengths of hose pack 1,0 – 16,0 m
KD-feeding for TTW4000
Adapter for old machines

Technical Data acc. to EN 60974-7 Watercooled	Welding current at AC	DC	Duty cycle	Electrode Ø inch/mm	Weight lbs./kg
TTW3000A	250 A	300 A	60 %	0.040 – 1/8 / 1,0 – 3,2	1.65 / 0,750
TTW4000A	350 A	400 A	60 %	0.040 – 0.157 / 1,0 – 4,0	2.11 / 0,960
TTW5000A	400 A	500 A	60 %	0.06 – 0.25 / 1,6 – 6,4	2.17 / 0,985
PW18	140 A	180 A	60 %	0.04 – 0.09 / 1,0 – 2,4	1.32 / 0,600



Robotset MW 3000 with cold wire feeding PushPull

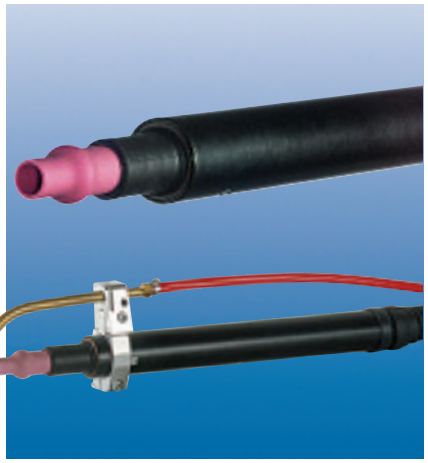
Processes
TIG AC/DC
TIG cold wire

Recommended base metals
Constructional steels
Coated constructional steels
Ferritic / austenitic CrNi steels
Duplex steels
Nickel-based materials
Aluminium materials
Magnesium materials
Copper materials
Special materials

Recommended areas of use
Automobile and allied vendor industries
Construction of special vehicles and construction machinery
Construction of chemical plants
Aerospace industry
Construction of plant, containers, machinery, structural steel
Construction of rail vehicles & rolling stock
Shipbuilding and offshore engineering

Standard equipment
4-roller drive
Automatic cap-shaping
Automatic cooling-unit cut-out
Touch-down ignition / HF switch-selectable
Wire-inching without gas or current
Energy-saving inverter technology
Upgrades by add-on modules
Remote-controllable
Gas-test button
Quiet arc, due to fuzzy logic
Microprocessor control
Robot interface analogue
Security code
Current-flow signal
S-mark, CE-mark
Thermostat-controlled fan
Overtemperatur protection
Automatic cold wire retract

Options
Earth leakage monitoring
Job mode
Calibrationdocument
PullMig mode, Robacta Drive



Automatic welding torches TTG2200A-M, TTW4000A-M extension hose packs

Processes
TIG-DC
TIG-AC/DC

Recommended base metals
Ferritic / austenitic CrNi steels
Duplex steels (watercooled torches)
Nickel-based materials (watercooled torches)
Aluminium materials
Magnesium materials
Copper materials (watercooled torches)

Recommended areas of use
Construction of plant, containers, machinery, structural steel
Automobile and allied vendor industries
Construction of special vehicles and construction machinery
Construction of chemical plants
Maintenance and repair
Pipeline construction
Construction of rail vehicles & rolling stock
Shipbuilding and offshore engineering

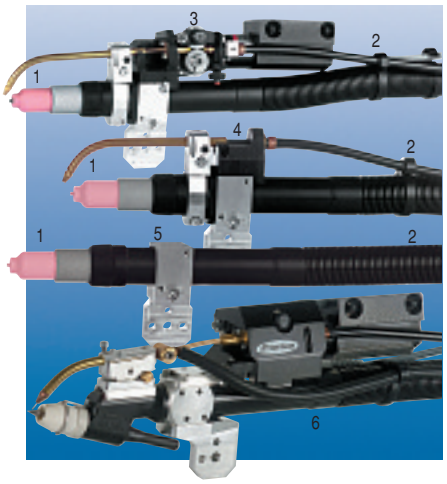
Standard equipment
TIG automatic welding torch
Screw-on or plug-on gas nozzle system
UV and ozone-resistant protective hose
Automatic tube diameter 32 mm
Reducer ring from ø 32 mm to ø 35 mm
Anti-kink feature at machine- and torch end

Extension hose pack
UV and ozone-resistant protective hose
Anti-kink feature at machine and torch end
Leather clip

Options
TIG automatic welding torch
Gas lenses
Cold wire feeding like for TIG robot torches

Extension hose pack
Fabric-reinforced protection hose
Special lengths of hose pack 1,0 – 20 m

Technical Data acc. to EN 60974-7	Welding current at		Duty cycle	Electrode	Weight
Gascooled	AC	DC		Ø inch/mm	lbs./kg
TTG2200A-M	180 A	220 A	35 %	0.040 – 0.157 / 1,0 – 4,0	2.2 / 1,000
TTG2200P-M	180 A	220 A	35 %	0.040 – 0.157 / 1,0 – 4,0	2.2 / 1,000
Watercooled					
TTW4000A-M	350 A	400 A	60 %	0.040 – 0.157 / 1,0 – 4,0	2.2 / 1,000
TTW4000P-M	350 A	400 A	60 %	0.040 – 0.157 / 1,0 – 4,0	2.2 / 1,000



Robot welding torches

Processes

TIG-DC
TIG-AC/DC

Recommended base metals

Ferritic / austenitic CrNi steels
Duplex steels
Nickel-based materials
Aluminium materials
Magnesium materials
Copper materials

Recommended areas of use

Construction of plant, containers, machinery, structural steel
Automobile and allied vendor industries
Construction of special vehicles and construction machinery
Construction of chemical plants
Maintenance and repair
Pipeline construction
Construction of rail vehicles & rolling stock
Shipbuilding and offshore engineering

Standard equipment

Torch head
Screw-on gas nozzle system
Gas lens

Hose pack
Automatic tube diameter 32 mm
UV- and ozone-resistant protective hose pack

Coldwire feeding Push:
3 x 90° mountable
Wire feeder tube rotatable
Holding clamp
Teflon inner liner 0,8 – 1,2

Coldwire feeding Pull:
Wire feed speed 0 – 11 m/min
Graphit innerliner ø 2,5 mm for Al- and CrNi-wire
3 x 90° mountable
Wire feeder tube rotatable
Holding clamp
Exact speed regulation assured by digital encoder
Toothed drive and pressure rollers
Wirefeed FWD/BACK button

Options

TIG robot automatic hose pack
Adjusting device for torch head
Special lengths 1,0 – 16m
Holding clamp for TIG RO without KD-feeding
Basic kit for TIG RO KD-Drive
Wearing parts cold wire feeding Pull
Wire feed speed 0 – 5 m/min
or 0 – 22 m/min

Technical Data acc. to EN 60974-7	Welding current at AC	DC	Duty cycle	Electrode Ø inch/mm	Weight lbs./kg
Hose pack	400 A	400 A	60 %	0.040 – 0.157 / 1,0 – 4,0	2.60 / 1,200
Torch head	400 A	400 A	60 %	0.040 – 0.157 / 1,0 – 4,0	0.58 / 0,263
Robacta KD Drive					6.61 / 3,000

WTU
307 / 457 / 657

Processes

TIG-DC
Manual electrode (MMA) welding

Recommended base metals

Constructional steels
Ferritic / austenitic CrNi steels
Duplex steels

Recommended areas of use

Construction of special vehicles and construction machinery
Construction of plant, containers, machinery, structural steel
Construction of rail vehicles & rolling stock

Standard equipment

Anti-stick function (WTU 457, 657)
Generator-compatible
Crane-hoisting lugs (WTU 457, 657)
S-mark, CE-mark
Overtemperature protection
Arc force (WTU 307)

Options

Remote control unit
Digital display, (Calibrationdocument)

Power source		WTU 307	WTU 457	WTU 657
Mains voltage +/–10 %	50/60 Hz	3 x 230 / 400 V	3 x 230 / 400 / 500 V	3 x 230 / 400 / 500 V
Cos phi		0,88 (300 A)	0,75 (450 A)	0,85 (650 A)
Welding current at	35 % d.c.	300 A	450 A	650 A
	60 % d.c.	230 A	340 A	490 A
	100 % d.c.	180 A	260 A	380 A
Welding current range		5 – 300 A	5 – 450 A	5 – 650 A
Open-circuit voltage		5 V	75 V	75 V
Operating voltage		20 – 32 V	20 – 38 V	20 – 44 V
Protection class		IP 23	IP 23	IP 23
Dimension l x w x h	inch	26.77 x 17.72 x 21.65	39.17 x 29.13 x 25.79	39.17 x 29.13 x 25.79
	mm	680 x 450 x 550	995 x 740 x 655	995 x 740 x 655
Weight		209.44 lbs. / 95 kg	487.22 lbs. / 221,5 kg	590.84 lbs. / 268 kg

TransPocket 1100 / 1200 / 1500 / 1500 RC / 1500 TIG

Processes
TIG-DC
Manual electrode (MMA) welding
Cel-compatible

Recommended base metals
Constructional steels
Ferritic / austenitic CrNi steels
Duplex steels
Aluminium materials

Recommended areas of use
Construction of chemical plants
Maintenance and repair
Construction of plant, containers, machinery, structural steel
Industry plant & pipeline construction, site-erection firms

Option
Remote control unit

Standard equipment
Generator compatible
S-mark, CE-mark
Anti-Stick function
Automatic gas post-flow (dep. on welding current – TIG-version)
Touch-down ignition (except TP 1100)
Energy-saving inverter technology
V-down-compatible welding of CEL electrodes (except TP 1400 MV)
Remote-controllable (RC version)
Thermostat-controlled fan
Carrying strap
Overtemperature protection
Dust filter (except TP 1100/1400MV)

Power source		TP 1100	TP 1200	TP 1400 MV	TP 1500
Mains voltage ± 15 %	50/60 Hz	230 V	230 V	230/115 V	230 V
Cos phi		0,99	0,85	0,99	0,99
Welding current range stepless		10 – 110 A	10 – 120 A	5 – 140 A	10 – 150 A
Welding current at 230 V	10 min/40° C 35 % d.c.	110 A 20 % d.c.	-	110 A	140 A
	10 min/40° C 100 % d.c.	60 A	40 A	80 A	80 A
Open-circuit voltage		105 V	105 V	93 V	92 V
Operating voltage		20,4 – 24,4 V	20,4 – 24,8 V	20 – 38,5 V	20,4 – 25,6 V
Protection class		IP 23	IP 23	IP 23	IP 23
Dimension l x w x h	inch	10.43 x 4.33 x 7.87	10.43 x 4.33 x 7.87	12.82 x 4.33 x 7.87	12.40 x 4.33 x 7.87
	mm	265 x 110 x 200	265 x 110 x 200	312 x 110 x 200	315 x 110 x 200
Weight		8.16 lbs. / 3,7 kg	8.16 lbs. / 3,7 kg	9.92 lbs. / 4,5 kg	10.36 lbs. / 4,7 kg (RC)
	TP 1500 TIG				10.58 lbs. / 4,8 kg (TIG)

TransPocket 2000

Processes
TIG-DC
Manual electrode (MMA) welding

Recommended areas of use
Construction of chemical plants
Maintenance and repair
Construction of plant, containers, machinery, structural steel
Industry plant & pipeline construction, site-erection firms

Recommended base metals
Constructional steels
Ferritic / austenitic CrNi steels
Duplex steels

Standard equipment
Anti-stick function
Generator-compatible
S-mark, CE-mark
Thermostat-controlled fan
Carrying strap
Overtemperature protection
Arc force
Hot-Start

Option
Remote control unit

Power source		TP 2000
Mains voltage ± 20 % 50/60 Hz		3 x 400 V
Cos phi		0,99
Welding current range stepless		20 – 200 A
Welding current at	10 min/40° C 40 % d.c.	200 A
	10 min/40° C 100 % d.c.	130 A
Open-circuit voltage		90 V
Operating voltage		20,8 – 28 V
Protection class		IP 23
Dimension l x w x h	inch	16.93 x 7.09 x 11.02
	mm	430 x 180 x 280
Weight		23.15 lbs. / 10,5 kg

TransPocket 2500 / 3500

Processes

Manual electrode (MMA) welding
TIG-DC
Cel-capable

Recommended base metals

Constructional steels
Ferritic / austenitic CrNi steels
Duplex-steels
Aluminium materials

Recommended areas of use

Construction of chemical plants
Maintencance and repair
Construction of plant, containers, machinery, structural steel
Industry plant & pipeline construction
Site erection firms

Standard equipment

Generator compatible
S-mark, CE-mark
Anti-Stick Function
Automatic post flow
(depending on welding current - TIG-Version)
Touch-down ignition
Energy-saving inverter technology
Capability of vertical down welding
Remote controllable (TIG Version)
Thermostat-controlled fan
Carrying strap
Overtemperature protection
Dust filter
Hot-Start
Soft-Start
Dynamic

Options

Remote control unit
Calibration document (TP3500 Comfort)

Power source		TP 2500	TP 2500 MV	TP 3500	TP 3500 MV
Mains voltage +/- 10%	50/60 Hz	3 x 380 – 460 V	3 x 200 – 240 V	3 x 380 – 460 V	3 x 200 – 240 V
			3 x 380 – 460 V		3 x 380 – 460 V
Cos phi		0,99	0,99	0,99	0,99
Welding current range stepless		10 – 250 A	10 – 250 A	10 – 350 A	10 – 350 A
Welding current at 10 min/40° C 35 % d.c.		250 A	250 A	350 A	350 A
Open-circuit voltage		90 V	90 V	90 V	90 V
Operating voltage		20,4 – 30 V	20,4 – 30 V	20,4 – 34 V	20,4 – 34 V
Protection class		IP 23	IP 23	IP 23	IP 23
Dimension l x w x h	inch	16,93 x 7,09 x 12,60	16,93 x 7,09 x 12,60	19,29 x 7,48 x 15,35	19,29 x 7,48 x 15,35
	mm	430 x 180 x 320	430 x 180 x 320	490 x 190 x 390	490 x 190 x 390
Weight		27.56 lbs. / 12,5 kg	29.76 lbs. / 13,5 kg	39.68 lbs. / 18 kg	39.68 lbs. / 18 kg

TransPocket 4000 Cel / 5000 Cel

Processes

TIG-DC
Manual electrode (MMA) welding
Arc-air gouging

Recommended base metals

Constructional steels
Ferritic / austenitic CrNi steels
Aluminium materials

Recommended areas of use

Shipbuilding and offshore engineering
Maintenance and repair
Industry plant & pipeline construction, site-erection firms

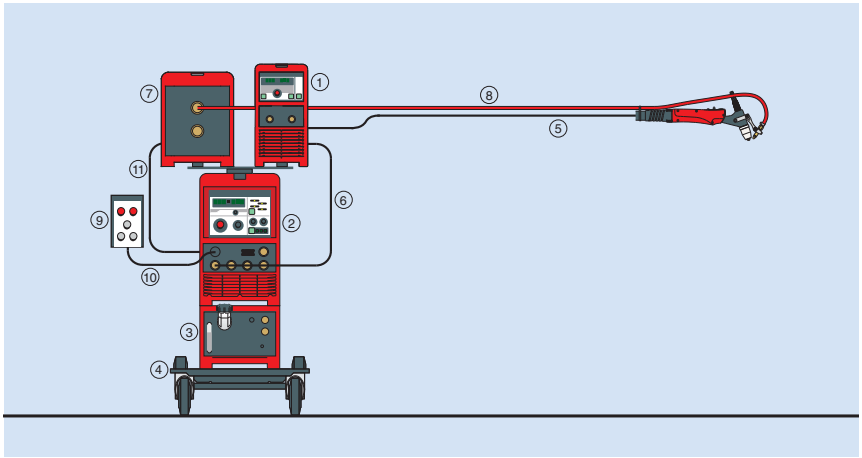
Standard equipment

Generator compatible (except MV)
Microprocessor control
S-mark, CE-mark
Digital welding process control
Earth leakage monitoring
V-down-compatible welding of CEL electrodes
Remote-controllable
Thermostat-controlled fan
Overtemperature protection

Options

Wireless remote control unit
Keylock switch
Remote control unit
Anti-stick function
Calibrationdocument

Power source		TP 4000 Cel	TP 4000 Cel MV	TP 5000 Cel	TP 5000 Cel MV
Mains voltage	50/60 Hz	± 15 % 3 x 400 V	± 10 % 3 x 200 – 240 V	± 15 % 3 x 400 V	± 10 % 3 x 200 – 240 V
			3 x 380 – 460 V		3 x 380 – 460 V
Cos phi		0,99	0,99	0,99	0,99
Welding current range	Electrode	10 – 380 A	10 – 380 A	10 – 480 A	10 – 480 A
	TIG	10 – 380 A	10 – 380 A	10 – 480 A	10 – 480 A
Welding current at	10 min/40° C 40 % d.c.	380 A	380 A	480 A	480 A
	10 min/40° C 60 % d.c.	360 A	360 A	415 A	415 A
	10 min/40° C 100 % d.c.	320 A	320 A	360 A	340 A
Open-circuit voltage		95 V	95 V	95 V	95 V
Operating voltage	Electrode	20,4 – 35,2 V	20,4 – 35,2 V	20,4 – 39,2 V	20,4 – 39,2 V
	TIG	14,5 – 33 V	14,5 – 33 V	14,5 – 38 V	14,5 – 38 V
Protection class		IP 23	IP 23	IP 23	IP 23
Dimension l x w x h	inch	24.61 x 11.42 x 18.70	24.61 x 11.42 x 18.70	24.61 x 11.42 x 18.70	24.61 x 11.42 x 18.70
	mm	625 x 290 x 475	652 x 290 x 475	625 x 290 x 475	625 x 290 x 475
Weight		79.59 lbs. / 36,1 kg	88.18 lbs. / 40 kg	81.57 lbs. / 37 kg	89.29 lbs. / 40,5 kg



Plasma welding

Processes

SoftPlasma, PlasmaKeyhole, Plasma brazing (DC mode)

Recommended base metals

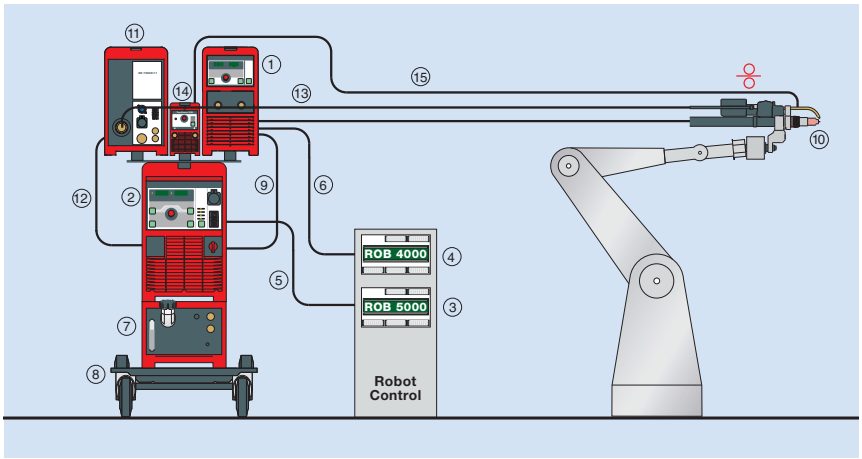
Stainless steel
Conctructional steel
Nickel-based materials
Aluminium materials
Titanium
Copper materials

Recommended areas of use

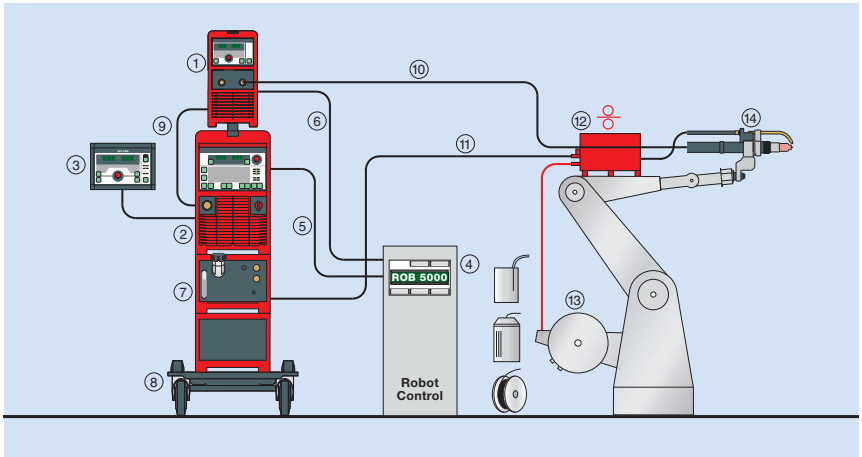
Construction of plant, containers, machinery, structural steel
Automobile and allied vendor industries
Construction of special vehicles and construction machinery
Construction of rail vehicles & rolling stock

Standard equipment PlasmaModule 10	Options and accessories
Gas check button	Digital welding power source MIG/MAG
Stepless adjustable pilot current (acc. to type of torch)	TIG power source
	Robot interface
Digital indication of amps of pilot current	Plasma torch
Digital indication of plasma gas quantity	Hot wire
Touchless ignition of pilot arc	Coldwire feeder unit
Preselection of addressing (internal/external)	Push Pull system (not for manual welding)
Mountable on carriage	Water recooler

Technical data		PlasmaModule 10
Mains voltage +15 % 50/60 Hz		230 V
Mains fuse slow		16 A
Open-circuit voltage		88 V
Operating voltage		10 – 16 V
Protection class		IP 23
Pilot current range		3 – 30 A
Plasmagas control		0.078 – 2.64 gal/min / 0,3 – 10,0 l/min
Dimension l x w x h	inch	19.9 x 7.1 x 13.6
	mm	505 x 180 x 344
Weight		31.2 lbs. / 14,2 kg

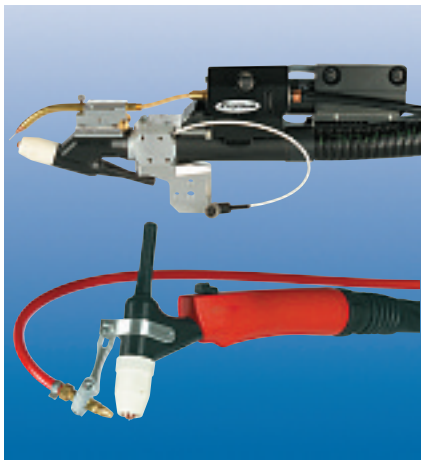


SoftPlasma welding at robot in combination with TT power source



PlasmaKeyhole welding at robot or mechanized in combination with TS welding source

Plasma welding torch PTW 1500



Standard equipment Robacta PTW 1500
UV and ozone-resistant protective hose
Fix defined TCP with alu-square-fastening bolt 4 x 90° mountable
Holding bracket
Adjust gauge for tungsten electrode to plasma nozzle ø2,5mm
Standard equipment cold wire feeding Push (Robacta Plasma KD)
Locking rocker for defined cold wire feeding-position
Wire feeding tube swivel mounted
Copper wire tube for hot wire applications ø1,2mm
Combi inner liner 1,2

Processes
Plasma DC negative pole

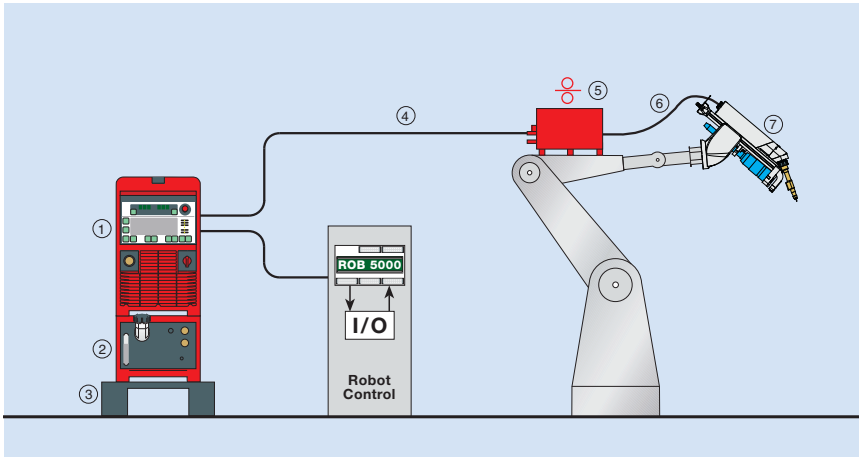
Recommended base metals
Ferritic / austenitic CrNi steels
Duplex steels
Nickel-based materials
Aluminium materials
Titan tantalum zirconium

Recommended areas of use
Aerospace industry
Construction of plant, containers, machinery, structural steel
Automobile and allied vendor industries
Construction of special vehicles and construction machinery
Construction of chemical plants
Maintenance and repair
Pipeline construction

Standard equipment cold wire feeding Pull (Robacta Plasma KD Drive)
Wire feed speed 0-11 m/min
Exact speed regulation assured by digital encoder
Wirefeed FWD/BACK button
Locking rocker for defined cold wire feeding-position
Wire feeder tube rotatable
Graphit inner liner
Standard equipment hot wire
Drive rollers made of plastic
Leather hose 3,0m with hook and look fastener
Standard equipment Plasma manual torch
Swivel-mounted protective hose
UV- and ozone-resistant protective hose
Flexible leather protection hose 0,7m
Anti-kink feature at machine and torch end
Easy-to-use rocker switch

Options
Adjusting device for Plasma nozzle ø1,5mm
Basic kit for Robacta Plasma KD-Drive
Special lengths up to 8,0 m
Spare parts set
Adaptor TT/MW (G/F) - F gas ext.
Adaptor hose pack
Extension holding clamp / 120mm /140mm/160mm
Holding clamp mounting
Options Plasma manual torch
Fabric-reinforced protection hose
KD-feeding external
Special lengths of hose pack up to 8,0 m

Technical Data acc. to EN 60974-7 Watercooled	Welding current range of performance	Duty cycle	Plasma nozzles Ø inch/mm	Weight lbs./kg
PTW 1500	3 – 150 A	100 %	0.06 – 0.12 / 1,5 – 3,0	2.43 / 1,100



LaserHybrid

Processes

MIG/MAG pulsed arc welding
LaserHybrid welding
Laser welding
LaserHotwire brazing
Laser brazing

Recommended base metals

Constructional steels
Ferritic / austenitic CrNi steels
Duplex steels
Aluminium materials
Magnesium materials
Special materials
Zinc-plated sheet metal

Recommended areas of use

Construction of plant, containers, machinery, structural steel
Automobile and allied vendor industries
Aerospace industry
Construction of rail vehicles & rolling stock

Standard equipment

4-roller drive
Wire-inching without gas or current
Gas-test button
S-mark, CE-mark
Protective glass changer
Collision unit (+/–0,05 mm)
Adjustment unit for Arc / Laser 360 mm (x, y, z nonius)
Crossjet with integrated exhaust duct
Mirror inverted mounting
Precision torch (+/–0,05 mm)

Options

Holder for optic
Profi wire feeder rolls (grounded)
Holding device for different torches
Precision contact tips
Plug-in, watercooled gas nozzle, lockable
Precision wire guide innerliner
Guide nozzle
Calibrationdocument
Software Laser brazing CC/CV
Roboter Interface Feldbus
Gas sensor
SynchroPuls

LaserHybrid head

Weight (without optical system)	41.89 lbs. / 19 kg
Dimension l x w x h	30.30 x 6.26 x 16.37 inch / 769,5 x 159 x 415,7 mm
Current-carrying capacity max. (100 % d.c.)	250 A

Laser Coldwire & Hotwire

Process

Laser welding
Laser hotwire-brazing (hotwire)
Laser-brazing (coldwire)

Recommended base metals

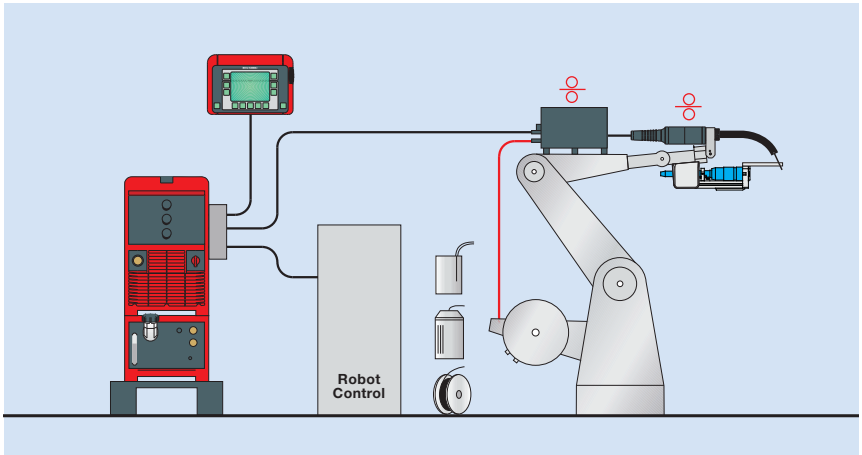
Ferritic / austenitic CrNi steels
Duplex-steels
Special materials
Zinc-plated plate metal

Recommended areas of use

Construction of plant, containers, machinery, structural steel
Automobile and allied vendor industries
Aerospace industry
Construction of rail vehicles & rolling stock

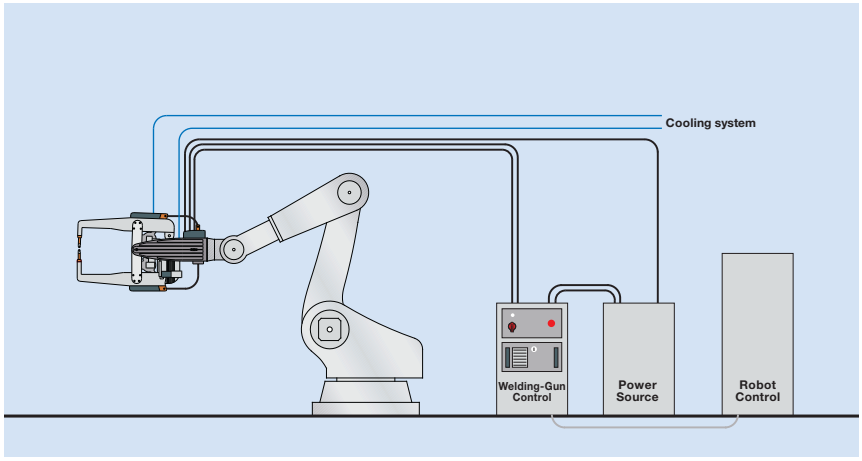
Standard equipment

4-roller drive
Wire-inching without gas or current
Gas test button
S-mark, CE-mark



Laser Hotwire

DeltaSpot



Process

Resistance spot welding

Recommended base metals

Aluminium materials
Galvanised sheets
Organic coated plates
High strength steels
Advanced high strength steels
Mild steels

Recommended areas of use

Automobile and allied vendor industries
White good industry
Construction of plant, containers, machinery and structural steel

Options

Robot comunication
Control visualisation

Standard equipment for the recommended configuration

The power source is not included in the standard equipment
Gun body X500
Servoelectrical main drive
Servoelectrical Gun balance
Drive unit process band
Store unit process band
Medium frequency transformer
Gun-control (can be used as control of the power source)

Technical information Welding gun

Rated power at 50% ED (Medium frequency)	77 kVA
Gun force (X500)	5 KN
Gun weight (X500)	220,46 lbs. / ca. 100 kg

Technical information Gun control

Mains voltage	230 V
Nominal current	16 A

TransCut 300

Process

Plasma cutting with liquid operating agent

Recommended base metals

Mild steels
CrNi steels
Aluminium materials

Recommended areas of use

Site-erection firms
Climatisation and ventilation construction
Carriage construction
Maintenance and repair
Industry plant & Pipeline construction
Boiler and container construction
Metal- and portal construction, locksmithery and smith's shop

Standard equipment

Generator compatible
Energy-saving inverter technology
Contact ignition
Regenerative torch-cooling-system
Closed liquid system
Liquid level sensor for operating agent
Thermostat controlled fan
Overtemperature protection
Carrying strap
S-mark, CE-mark

Option

Tracking Set

Power source		TransCut 300
Mains voltage + 10 % / - 15 %		230 V
Mains fuse		16 A
Cos phi		0,99
Cutting current range		16 – 30 A
Cutting current at	10 min / 40 °C 35 % d.c.	30 A
	10 min / 40 °C 100 % d.c.	16 A
Recommended material thickness		0.31 inch / 8 mm
Rough-cut capacity		0.47 inch / 12 mm
Operating time per tank		3 h
Tank capacity		0.40 gal / 1,5 l
Protection class		IP23
Dimension l x b x h	inch	18.11 x 7.09 x 10.83
	mm	460 x 180 x 275
Weight (with Plasmas-cutting-torch)		30.42 lbs. / 13,8 kg

Control units FCU and remote controls FRC

Tilting turntables FTT 10 / 40 / 150 / 300

From 10 up to 300 kgs

Recommended areas of use

Universal use for all welding process and positioning of workpiece

Options

Control unit FCU-10
Control unit FCU-20
Control unit FCU-50
Foot switch FRC-1 (start-stop) with cable 3 m
Foot switch FRC-2 (start-stop-speed) with cable 3 m
Foot switch FRC-3 (start-stop-selection direction) with cable 3 m
Foot switch FRC-5 (start-stop-selection direction-roll speed) with cable 3 m
Chucks FGC, FSG, FMC
Mounting sets for chucks
I-kit welding current transfer 800 A
Acutating cam for segment welding
Special gear box

Standard equipment

Stepless tilting range +/–90°
Constant rotation speed
AC-motor
Welding current transfer 400 A/ 50mm²
Prepared for segment welding (FTT 40 / 150 / 300)
Hollow shaft (FTT 150 / 300)
Lifting facility for hook-in
Limit switch function 360 ° (rotation unit)
Faceplate machined for clamp chucks
Protection-housing (tilting- / rotation unit)
Base

Technical data		FTT 10/MA	FTT 40/MA	FTT 150/MA	FTT 300/MO
Max. loading capacity horizontal		10 kg	40 kg	150 kg	300 kg
Diameter faceplate / thickness		240 mm / 10 mm	350 mm / 16 mm	450 mm / 16 mm	630 mm / 16 mm
Working height horizontal		352 mm	540 mm	643 mm	758 mm
Speed		1,0 – 11,0 rpm	1,5 – 11,0 rpm	0,8 – 6,0 rpm	0,4 – 3,0 rpm
Tilting range via tooth segment (+/–90°)		Clamp lever	Crank	Crank	AC motor
Backlash		1,2°	1,2°	1,2°	1,2°
Max. welding current transfer		400 A	400 A	400 A	400 A
Mains voltage / frequency		230 V / 50 – 60 Hz	230 V / 50 – 60 Hz	230 V / 50 – 60 Hz	400 (230) V / 50 – 60 Hz
Hollow shaft diameter		none	none	28 mm	30 mm
Net weight		15 kg	85 kg	120 kg	180 kg
Max. load capacity/torque	[rotating: M =G.g.e = const.] [tilting: M =G.g.a = const.]	10 Nm	20 Nm	73 Nm	147 Nm


FTT 3000/MO

Tilting turntables FTT 380 / 750 / 1500 (Type MA)

Tables (manual tilting) from 380 up to 1500 kg with remote control unit

Tilting turntables FTT 750 up to FTT 70000 (Type MO)

Tables (motorized tilting) from 750 up to 70000 kg with remote control unit

Recommended areas of use

Universal use for all welding-processes and positioning of workpieces

Standard equipment

Fabricated frame of mild steel plate and channel section material

Stepless tilting range 0-135° (manual/MA or motorized/MO)

Stepless adjusting of rotation speed

Table rotation by AC motor controlled by inverter unit, through worm reduction gears and spur gears

Table supported on large diameter crossroll bearing

Machine cut precision gearing for smooth rotation of table

Table tilting by crank through worm reduction and steel spur gear (MA)

Tilt by AC geared motor (MO) fitted w. fail-safe electro-magnetic brake

Cam operated limit switch's to prevent overrun and fixed tilting speed

Faceplate with concentric circular markings and machine with slots for rapid centering and clamping

Control unit with main switch

Remote control with cable

Functions

- Switch rotation left-stop-right
- Button tilting up-down (MO)
- Potentiometer for rotation speed
- Emergency-stop

Options

I-kit limit switch 360° and actuating cam for rotation unit

I-kit encoder

Control unit FCU-20

Control unit FCU-50

Foot switch FRC-1 (start-stop) with cable 3 m

Foot switch FRC-2 (start-stop-speed) with cable 3 m

Foot switch FRC-3 (start-stop-selection direction) with cable 3 m

Foot switch FRC-5 (start-stop-selection direction-roll speed) w. cable 3 m

Chucks FGC, FSG, FMC

Mounting sets for chucks

Rotation tables FRT 50/HS125/H/V, FRT 150/HS125/H/V

Turntable horizontal/vertical with hollow shaft

Recommended areas of use

Universal use for all welding-process and positioning of workpieces

Options and accessories

Control unit FCU-10
Control unit FCU-20
Control unit FCU-50
Foot switch FRC-1 (start-stop) with cable 3 m
Foot switch FRC-2 (start-stop-speed) with cable 3 m
Foot switch FRC-3 (start-stop-selection direction) with cable 3 m
Foot switch FRC-5 (start-stop-direction-roll speed)
Chucks FGC, FSG, FMC
Mounting sets for chucks
I-kit current transfer 800 A
Actuating cam for segment welding
Special gear box
Encoder
Base

Standard equipment

Constant speed control
AC-motor
Welding current transfer 400 A/ 50mm²
Prepared for segment welding
Hollow shaft 125 mm
Limit switch function 360°
Faceplate machined for clamp chucks
Protection-housing (rotation device)

Technical data	FRT 50/HS125/H/V	FRT 150/HS125/H/V
Max. load capacity	50 kg	150 kg
Diameter faceplate/ thickness	450/16mm	450/16 mm
Slots	3 x 120°	3 x 120°
Faceplate (slots and holes)	DIN 6350	DIN 6350
Drive	AC Motor	AC Motor
Speed range	0,9-7,0 rpm	0,3-6,0 rpm
DImensions		
• A	340 mm	542 mm
• B	540 mm	710 mm
• C	590 mm	490 mm
• D	571 mm	481 mm
• E	315 mm	432 mm
• F	450 mm	450 mm
Backlash on faceplate max.	1,2 °	0,25 °
Max. current transfer	400 A	400 A
Mains voltage/ frequency	230 V / 50-60 Hz	230 V / 50-60 Hz
Hollow shaft inside-diameter	125 mm	125 mm
Net weight	90 kg	145 kg


FRT 2000/H

Rotation tables FRT 1000/H - 2000/H - 5000/H – 10000/H

Horizontal turntables for 1000 up to 10000 kg with remote control unit

Options

I-kit limit switch 360° and actuating cam for rotation unit
I-kit encoder
Control unit FCU-20
Control unit FCU-50
Foot switch FRC-1 (start-stop) with cable 3 m
Foot switch FRC-2 (start-stop-speed) with cable 3 m
Foot switch FRC-3 (start-stop-selection direction) with cable 3 m
Foot switch FRC-5 (start-stop-selection direction-roll speed) with cable 3 m
Chucks FGC, FSG, FMC
Mounting sets for chucks

Recommended areas of use

Universal use for all welding-processes and positioning of workpieces

Standard equipment

Stepless adjusting of rotation speed
Table rotation by AC motor controlled by inverter unit, through worm reduction gears and spur gears
Table supported on large diameter crossroll bearing
Faceplate with concentric circular markings and machine with slots
Control unit with main switch and emergency-stop
Remote control unit with cable

Functions
- Switch rotation left-stop-right
- Potentiometer for rotation speed

Technical data	FRT 1000/H	FRT 2000/H	FRT 5000/H	FRT 10000/H
Max. load capacity horizontal	1000 kg	2000 kg	5000 kg	10000 kg
Drive	AC motor	AC motor	AC motor	AC motor
Rotation speed	0,08 – 2,0 rpm	0,06 – 1,5 rpm	0,06 – 1,5 rpm	0,04 – 1,00 rpm
Max. rotation torque	1500 Nm	3000 Nm	7500 Nm	15000 Nm
T-slots for bolts	M16	M16	M16	M16
• rated eccentricity	150 mm	150 mm	150 mm	150 mm
• diameter faceplate	1000 mm	1100 mm	1200 mm	1300 mm
• working height	300 mm	310 mm	320 mm	330 mm
Remote control unit with cable	3 m	3 m	3 m	3 m
Mains cable with plug	included	included	included	included
Mains voltage/ frequency	230 V / 1 / 50 Hz	230 V / 1 / 50 Hz	230 V / 1 / 50 Hz	230 V / 1 / 50 Hz
Max. welding current transfer	400 A	400 A	600 A	600 A
Net weight turntable	300 kg	350 kg	400 kg	480 kg

Rotator unit FRU 1000 (Type CR)

For 2000 kgs

Recommended areas of use

For turning and positioning of workpieces (vessels, tanks, pipes, ...)

Options

Control unit FCU-10
Foot switch FRC-1 (start-stop) with cable 3 m
Foot switch FRC-2 (start-stop-speed) with cable 3 m
Foot switch FRC-3 (start-stop-selection direction) with cable 3 m
Foot switch FRC-5 (start-stop-selection direction-roll speed) with cable 3 m
Earth connection endless rotating

Standard equipment

Wheel driven motorized section
Idler section
Polyurethane rolls
AC-motor with frequency transformer
HF-compliant
Quick adjust via mounting-bolt
Lift-facilities to hook-in
Machine feet adjustable

Technical data	FRU 1000/D50-3000/CR/Drive	FRU 1000/D50-3000/CR/Idler
Max. loading capacity per section	1000 kg	1000 kg
Quantity of driven wheels	1	
Min. - max. outside-diameter	50 – 3000 mm	50 – 3000 mm
Rotation speed	16 – 260 cm/min	
Quantity of wheels per section	2	2
Wheel-diameter/ -width	200 mm / 50 mm	200 mm / 50 mm
Net weight per section	77 kg	55 kg

FRU 20000/CR/Drive
FRU 20000/CR/Idler

Rotator units FRU (Type CR)

From 3000 kg up to 100000 kg with remote control unit

Recommended areas of use

For rotation and positioning of workpieces/ vessels in the range of machine-, container- and pipe-construction

Options

I-kit tachogenerator for speed indicator
I-kit encoder
I-kit anti-creep function to prevent axial movement of workpiece
Earth connection endless rotating
Drive sections synchronized controlled
Driving vehicle (DV-MO motorized/DV-MA manual)
Rail A 55
Interface 0-10 Volt

Standard equipment

Four interchangeable reduction gearbox connecting shafts to permit adjustment of rollers across frames to suit varying diameters.
Manual adjustment of rollers across frames (no leadscrew)
Robust fabricated all steel frames planed on top and underneath faces to give accurate alignment of rollers. Each section equipped with two rollers having steel centers with interchangeable solid polyurethane tyres, mounted on machined steel axles carried in sealed heavy duty bearings. Drive Section equipped with 20:1 ratio inverter controlled
AC motors and reduction gearing with dynamic braking, giving variable speed drive (standard speed range 75 mm - 1500 mm per minute).
Inverter control panel attached to main frame houses mains isolator, overload fuses and emergency-stop pushbutton.
Machine painted in Red (RAL 3020)
Motors to have Class F insulation.
Control cabinet to IP54 dustproof regulations.
Equipment suitable for operation at maximum ambient temperature 50°C, maximum humidity 85%, and maximum height above sea level 1.000m
Remote control unit with cable 8 m

Functions
- Button for rotation forward-stop-reverse
- Potentiometer for stepless adjusting of rotation speed
- Emergency-stop

FRU 25000/VP/Drive
FRU 25000/VP/Idler

Rotator units FRU (Type VP – self-aligning)

From 3000 up to 50000 kg with remote control unit

Recommended areas of use

For turning and positioning of workpieces in the range of machine-, container- and pipe-construction

Options

I-kit tachogenerator for speed indicator
I-kit encoder
I-kit anti-creep function to prevent axial movement of workpiece
Earth connection endless rotating
Drive sections synchronized controlled
Driving vehicle (DV-MO motorized/DV-MA manual)
Rail A 55
Interface 0-10 Volt

Standard equipment

Self-Aligning Rotator Units (type VP) follow the well established reputation of their static counter-parts for ease of use and reliability. Like their counter-parts they provide an economical and practical platform for all cylindrical vessel rotating problems.

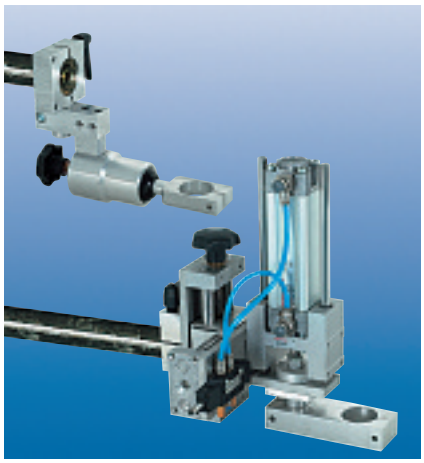
Their patented and unique designs allow the rollers to automatically align themselves to any workpiece, without any form of manual adjustment and irrespective of irregularity in the shape of the circular workpiece. This exceptional facility not only saves time, but in ensuring that the item being worked on remains central to the rotator frames.

Clutches incorporated in top rollers of Drive Section to prevent damage to variable speed rotation through hydrostatic variator or inverter control.

FRU VP types are all bogie-mounted to carry vessels of various lengths, and to allow for traversing motorized (option) or manually (option), in addition to rotation at the work site. The "low loading" bogie design integral to the rotator construction ensures that unlike standard bogies, their closeness to the ground eliminates the risk of excess vessel load heights. Robust, all-steel construction inverter controlled traversing (option) and rotation at welding speeds. All rollers of the Drive Section positively driven. Clutches incorporated in top rollers of the Drive Section to prevent damage to transmission during loading. On unloading easy-pivot roller brackets operate in reverse, moving to their resting position, ready to take next piece. Idler Section can incorporate manual or electric anti-creep feature to restrict vessel "creep" to +/- 1 mm (option).

Mains cable with plug
Remote control unit with cable 8 m

Functions
- Switch for rotation forward-stop-reverse
- Potentiometer for stepless adjusting of rotation speed
- Switch for drive forward-stop-reverse with fix speed (option)
- Emergency-stop



Stand brackets FSB 230-270 FSB 730-770

Small column and boom

Recommended areas of use

Manual torch adjusting / positioning

Options

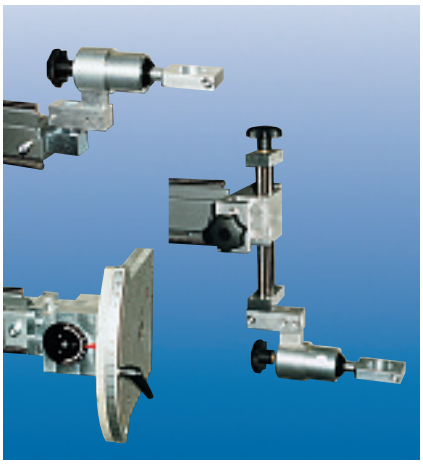
FSU 4/SR360°/ML15/D50 swivel unit
Plug 30/L45
FTH 4 torch holder for machine torch inside-ø 30 / 44,2 mm
FSU 7 ball joint and FTH torch holder
Mounting plate
FPT pneumatic torch movement

Standard equipment

Modular system / construction
High precision positioning
Easy assembly, high stability
Galvanized guiding tube
Self-locking trapezoid-threaded spindle
2 handwheels for exact positioning of travel axes
3 clamping levers for fixing of the guiding tube
Tiltable vertical axis (360°)
Fixation element / base

Technical data	FSB 230-270	FSB 730-770
Max. load capacity	15 kg	15 kg
Tilting range vertical and horizontal	360°	360°
Net weight	14,5 kg	21 kg
Way vertical	230 mm	730 mm
Way horizontal	270 mm	770 mm
Diameter column	50 mm	50 mm
Diameter boom	60 mm	60 mm


FTU 1500-1000/ML25



Tripod units
FTU 1000-1000
FTU 1500-1000
FTU 2000-1500

Column and boom motorized motion

Recommended areas of use

Tripod unit for motorized positioning of the torch and for mechanized welding (MIG-MAG) via one of the travel-axis

Standard equipment

HF-compliant
Constant speed
AC-motor
Vertical axis – belt drive
Horizontal axis – rack and pinion drive
Linear guides
Limit switch function
Lift facilities to hook-in

Options

Control unit FCU-30 incl. remote control FRC-30
I-kit welding step axis FCU-30 ((in combination with FCU-20/ FCU-50)
Control unit FCU-60 (for positioning and mechanized welding)
Remote control FRC-30 with cable 3,5 m
Slewing ring 600 manual
FRF 1600 three point base
Uptake wire feeder unit
Ball joint FSU 7 with FTH torch holder
Mounting set
Supports FGU
Uptake wire feeder unit

Technical data	FTU 1000-1000	FTU 1500-1000	FTU 2000-1500
Max. dynamical loading capacity	30 kg	25 kg	20 kg
Speed horizontal	0,15 – 1,15 m/min	0,15 – 1,15 m/min	0,15 – 1,15 m/min
Speed vertical	0,13 – 1,00 m/min	0,13 – 1,00 m/min	0,13 – 1,00 m/min
Way vertical	1000 mm	1500 mm	2000 mm
Way horizontal	1000 mm	1000 mm	1500 mm
Mains voltage / frequency	230 V / 50 – 60 Hz	230 V / 50 – 60 Hz	230 V / 50 – 60 Hz
Net weight	95 kg	105 kg	125 kg


FCB 2400-3000/ML170/DV-MO

Column and boom FCB

Medium-Duty column and boom mountable on stationary base or vehicle

Recommended areas of use

Column and boom for motorized positioning of a compound slide system FCS or weld head for internal and external welding

Options

Plateform for control unit, power sources
Mounting plates
Brackets suitable for weld torch
Encoder-system for weld axis
Driving vehicle motorized (DV-MO) or manual (DV-MA)
Rail-system

Standard equipment

Column rotating on crossroll bearing to enable the boom to be moved manual through 360° manual rotation
Column dimensions 250 x 320 mm
Mounted on all rigid fabricated base complete with machined guideways for elevation of boom carriage
Robust fabricated steel boom carriage counter-balanced and fitted with an anti-fall safety device
Carriage raised and lowered by electric motor fitted with electro-magnetic brake through rack and pinion
Boom machined accurately throughout it's length and mounted in adjustable guide rollers running in totally enclosed bearings, giving vibrationless movement of mounted devices and mounted on a fixed base
Boom dimensions 80 x 230 mm
Horizontal traverse of boom through an inverter controlled variable speed AC-motor
Hosepack carrier and cable management
Lift facilities to hook-in
Electric cabinet mounted at base of column (forward/ stop/ reverse/ 2x speed pot. one for each direction/ raise/ lower/ emergency stop)
Remote control unit (forward/ stop/ reverse/ raise/ lower/ emergency stop) with cable 8 m
Mains cable 10 m without plug


FCB 3000-4000/ML420

Column and boom FCB Heavy-Duty

Heavy-Duty unit - column and boom mountable on stationary base or under motorized carriage

Recommended areas of use

Column and boom for motorized positioning of a compound slide system FCS or weld head for internal and external welding

Options

Plateform for control unit, power sources
Mounting plates
Brackets suitable for weld torch
Encoder-system for weld axis
Driving vehicle motorized (DV-MO) or manual (DV-MA)
Rail-system

Standard equipment

Column rotating on crossroll bearing to enable the boom to be moved
manual through 360°
Column dimensions 412 x 540 mm
Mounted on all rigid fabricated base complete with machined guideways
for elevation of boom carriage
Robust fabricated steel boom carriage counter-balanced and fitted with
safety device against counterbalance wire rope breakage
Carriage raised and lowered by electric motor fitted with electro-magnetic
brake through rack and pinion
Boom machined accurately throughout it's length and mounted in adjust-
able guide rollers running in totally enclosed bearings, giving vibrationless
movement of mounted devices and mounted on a fixed base
Boom dimensions 220 x 390 mm
Hosepack carrier and cable management
Lift facilities to hook-in
Electric cabinet mounted at base of column (forward/ stop/ reverse/
2x speed pot. one for each direction/ raise/ lower/ emergency stop)
Remote control unit (forward/ stop/ reverse/ raise/ lower/ emergency stop)
with cable 8 m
Mains cable 10 m without plug

Technical data	FCB 3000-4000	FCB 4000-5000	FCB 5000-6000	FCB 5000-4000
Max. loading capacity end of boom	420 kg	420 kg	420 kg	420 kg
Speed horizontal	10-200 cm/min	10-200 cm/min	10-200 cm/min	10-200 cm/min
Speed vertical	200 cm/min	200 cm/min	200 cm/min	200 cm/min
Travel vertical	3000 mm	4000 mm	5000 mm	5000 mm
Travel horizontal	4000 mm	5000 mm	6000 mm	4000 mm
Mains voltage/ frequency	3 x 415 V / 60 Hz	3 x 415 V / 60 Hz	3 x 415 V / 60 Hz	3 x 415 V / 60 Hz
Net weight	5600 kg	6050 kg	6500 kg	6000 kg

Driving vehicle FDV 10

Carriage with remote control unit

Recommended areas of use

For mechanized welding of longitudinal welds (MIG-MAG)

Options

FRR reducer rings for torch holder

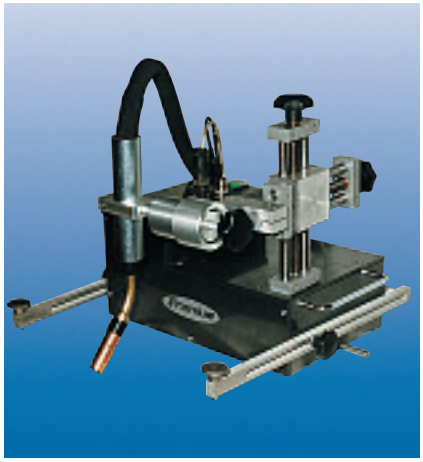
Standard equipment

Compact design
4-wheel drive via stepper motor
Steel wheels with rubber (O-rings)
Welding seam tracking with adjustable guide rolls
Microprozessor controlled
Limit switch function in both directions
Manual cross joint 75 x 50 mm

Torch holder (swivelling and rotatable inside-dia. 38 mm)
Remote control unit FCU-RC (LCD-display / 2-lines) w. cable 800mm
Language selection with LED-display

Functions FCU-RC
- Value up-down
- Weld length
- Rapid speed length
- Ending current time
- Welding on-off (2-step mode)
- Segment on-off
- Direction left-right
- Stop drive / welding / segment

Technical data	FDV 10
Max. loading capacity	10 kg
Welding position	horizontal
Welding process	MIG-MAG
Welding signal	2-step mode
Drive	stepper motor
Speed	100 – 1500 mm/min
Power supply	external box
Mains voltage / frequency	230 V / 50 – 60 Hz
Power consumption	50 VA
Control voltage	24 V DC
Mains cable with plug	10 m
Control line – motor	5 m
Control line – power source (Tuchel)	3 m
Track width	185 mm
Dimension l x w x h	380 x 240 x 800 mm
Net weight vehicle	14 kg



Driving vehicles FDV 25

Carriage

Recommended areas of use

For mechanized welding of longitudinal welds (MIG-MAG)

Options

Remote control unit FRC-40 with cable 3 m
Uptake for remote control unit
FGU 4 spindle cross joint
Plug 30/L45
Mounting set
FSU 7/SR360° ball joint aluminium with FTH torch holder
FRR reducer rings for torch holder

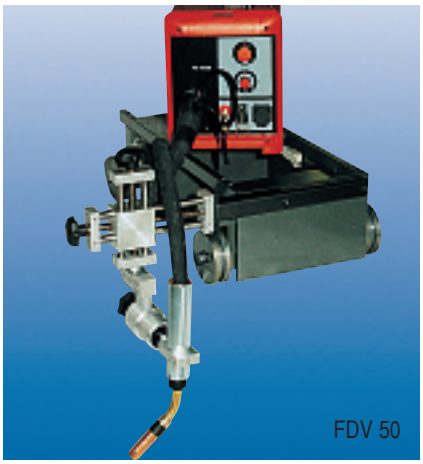
Standard equipment

Compact design
4-wheel drive via stepper motor
Wheels with vulcanised rubber
Perfect track reliability
Welding seam tracking with adjustable guide rolls

Integrated way measurement system
Power supply and PLC integrated in vehicle
Limit switch function in both directions

Technical data	
Max. loading capacity FDV 25	25 kg
Welding position	horizontal
Welding process	MIG-MAG
Welding signal	2- / 4-step mode
Drive	stepper motor
Speed	10 – 2400 mm/min
Power supply	integrated in vehicle
Mains voltage / frequency	230 V / 50 – 60 Hz

	FDV 25
Power consumption	180 VA
Control voltage	24 V DC
Mains cable with plug	12 m
Control line – power source (Tuchel)	10 m
Track width	240 mm
Dimension FDV 25 l x w x h	515 x 275 x 220 mm
Net weight vehicle FDV 25	19,5 kg


FDV 50


FDV 80

Driving vehicles FDV 50 / FDV 80

Carriage

Recommended areas of use

For mechanized welding of longitudinal welds (MIG-MAG)

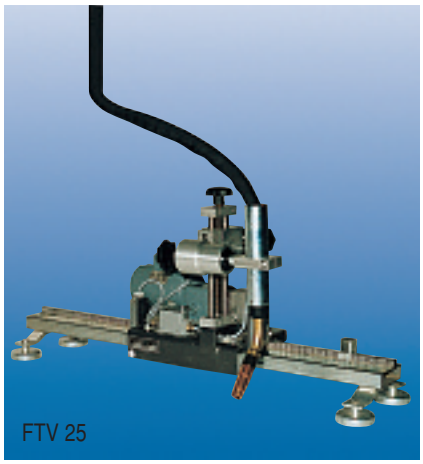
Options

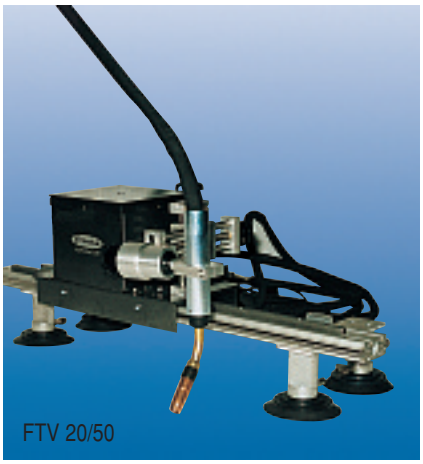
Remote control unit FRC-9 with cable 3 m (FDV 50)
Remote control unit FRC-40 with cable 3 m (FDV 80)
Uptake for remote control unit
Mechanical seam tracking system (FDV 40)
Torch holder and adjustment devices
FRR reducer rings for torch holder
Customized wheels
Rail system
I-kit limit switch function
Adjustable guide rolls
Twin holder for two wire feeders

Standard equipment

Robust, compact and modular design
Perfect track reliability
Power supply and PLC integrated in vehicle
Robust frame and adequate uptake for wire feeder
Motor coupling (FDV 50)
Viscose damper for constant drive (FDV 80)
Integrated way measurement-system (FDV 80)
4 pcs. lift facilities to hook-in (FDV 80)

Technical data	FDV 50	FDV 80
Max. loading capacity	50 kg	80 kg
Welding position	horizontal	horizontal
Welding process	MIG-MAG	MIG-MAG
Welding signal	2-step mode	2-step / 4-step mode
Drive	AC motor (2-wheel drive)	stepper motor (4-wheel drive)
Wheels	steel wheels with groove	with polyurethane-surface
Speed	10 – 2400 mm/min	10 – 3000 mm/min
Power supply	integrated in vehicle	integrated in vehicle
Mains voltage / frequency	230 V / 50 – 60 Hz	230 V / 50 – 60 Hz
Power consumption	180 VA	300 VA
Control voltage	24 V DC	24 V DC
Mains cable with plug	5 m	12 m
Control line – motor	3,5 m	integrated
Control line – power source (Tuchel)	6,5 m	10 m
Track width	370 mm	380 mm
Dimension l x w x h	790 x 433 x 345 mm	803 x 450 x 390 mm
Net weight vehicle	41 kg	70 kg


FTV 25


FTV 20/50

Tracking vehicles FTV 20 / FTV 25 / FTV 50

Carriage

Recommended areas of use

For mechanized welding of longitudinal welds (MIG-MAG) in PA-position (FTV 20/ FTV 25) and in PA-, PC-, PG-, PF-position (FTV 50)

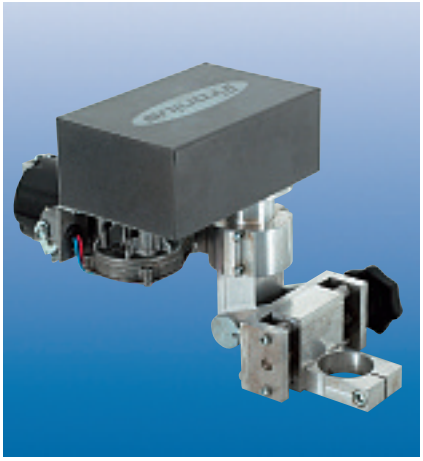
Standard equipment

Compact design
4x maintenance-free linear guide rolls
Rack and pinion drive
Limit switch function

Options

Remote control unit FRC-9 with cable 3 m (FTV 25)
Remote control unit FRC-40 with cable 3 m (FTV 20/ FTV 50)
Uptake for remote control unit
FGU 4 spindle cross joint way manual 140 x 75 mm
Plug 30/L45
FSU 7/SR360° ball joint aluminium and FTH torch holder
FRR reducer rings for torch holder
Uptake wire feeder
Rail-system with toothed rack
Cable management system
Track connector (rail to rail)
Actuating cam
Mounting system for rails
Vacuum-equipment complete

Technical data	FTV 20	FTV 25	FTV 50
Max. loading capacity	20 kg	25 kg	50 kg
Welding position	PA	PA	PA, PC, PG, PF
Welding process	MIG-MAG / TIG / PLASMA	MIG-MAG	MIG-MAG / TIG / PLASMA
Welding signal	2- / 4-step mode	2-step mode	2- / 4-step mode
Drive	stepper motor	AC motor	stepper motor (electromag. brake)
Speed	10 – 1800 mm/min	10 – 1800 mm/min	10 – 1800 mm/min
Power supply	integrated in vehicle	external box	integrated in vehicle
Mains voltage / frequency	230 V / 50 – 60 Hz	230 V / 50 – 60 Hz	230 V / 50 – 60 Hz
Power consumption	180 VA	180 VA	300 VA
Control voltage	24 V DC	24 V DC	24 V DC
Mains cable with plug	12 m	5 m	12 m
Control line – motor	integrated	3,5 m	integrated
Control line – limit switch	integrated	3,5 m	integrated
Control line – power source (Tuchel)	10 m	6,5 m	10 m
Dimension l x w x h	440 x 230 x 260 mm	520 x 320 x 210 mm	440 x 230 x 375 mm
Net weight vehicle	18 kg	15,4 kg	25 kg



Oscillation-system

Control unit FCU-11 with oscillation FOU 40

Recommended area of use

Control unit for oscillation unit FOU 40 in combination with MIG-MAG welding

Standard equipment FCU-11

EMV compatible
HF-compliant
Compact design
Mains cable 5m with plug
Control line 3,5 m to FCU-11
Designed for external start-stop

Functions
• Main switch on-off
• Potentiometer for oscillation speed

Standard equipment FOU 40/ML5/R

Mechanical oscillation unit with swivelling bracket dia. 30 mm
Oscillation movement radial
DC-motor
0-150 strokes/min (step less regulation)
Rotating and swivelling uptake for support
Torch amplitude adjustable (way +/- 20 mm)
Torch holder FTH 10 for inside-dia 44,2 mm

Options

FRR reducer rings for torch holder

Technical data	FCU-11
Mains voltage	230 V/ 50-60 Hz
Protection class	IP 23
Power consumption	350 VA
Dimensions l x w x h	220 x 120 x 160 mm
Net weight	4 kg

Technical data	FOU 40/ML5/R
Max. loading capacity	5 kg
Oscillation width	5-50 mm
Torch positioning	manual via handwheel – support
Motor	24 V DC
Abmessung l x w x h	320 x 240 x 230 mm
Net weight	8 kg

Oscillation-system

Control unit FCU-12 with oscillation units
FOU 50/FOU 100

Recommended areas of use

Linear drive- and oscillation axis for all welding processes

Options

Uptake FOU/1 (vertical or horizontal mountable dia. 30 mm)
Mounting plates
Torch holders and swivel units according to torch type
FRR reducer rings for torch holder
Control unit FCU-12 or remote control version FRC-12/cable 3 m
System-Controller FPA 2003/FPA 9000
Connection lines

Standard equipment FCU-12

Touchscreen-display for easy navigation/ parameter input
Graphical user interface
Multifunction-wheel for selecting and adjusting parameters
also while automatic program sequence is running
Internal memory for 50 programs
Designed for external start-stop
EMC-compatible
HF-compliant
Compact design

Functions:
- Main switch on-off
- Button start-stop
- Button for fine positioning
- Selector switch oscillation unit on-off
- Multifunction-potentiometer for setting parameters

Parameters:
- Oscillation speed/ oscillation path
- Dwell time (left/right)
- Start delay
- Offset
- Start up delay
- Language selection

Standard equipment FOU 50/ FOU 100

Compact protected design
Stepper motor drive
Exact positioning
Recirculating ball screw and precision linear guides

Technical data	FCU-12
Mains voltage/ frequency	230 V/ 50-60 Hz
Mains fuse	1,6 A
Power consumption	350 VA
Dimensions l x w x h	350 x 235 x 160 mm
Weight	7 kg

Technical data	FOU 50/ ML 5	FOU 100/ ML 5	FOU 50/ ML 10	FOU 100/ ML 10
Max. load capacity	5 kg	5 kg	10 kg	10 kg
Welding process	MIG-MAG/ TIG/ Plasma	MIG-MAG/ TIG/ Plasma	MIG-MAG/ TIG/ Plasma	MIG-MAG/ TIG/ Plasma
Control voltage	42 V DC	42 V DC	42 V DC	42 V DC
Power consumption	80 VA	80 VA	80 VA	80 VA
Max. frequency (strokes/ min)	100 bei 15mm way	100 bei 15 mm way	100 bei 15mm way	100 bei 15 mm way
	125 bei 7,5 mm way		125 bei 7,5 mm way	
Amplitude	+/ - 25 mm	+/ - 50 mm	+/ - 25 mm	+/ - 50 mm
Dimensions l x w x h	160 x 145 x 140 mm	230 x 150 x 80 mm	160 x 145 x 140 mm	230 x 150 x 80 mm
Net weight	3,5 kg	4 kg	4 kg	4,5 kg

Orbital system-controller FPA 2020 AC/DC

Orbital welding power source with integrated microprocessor-controller

Processes

TIG welding AC/DC with or without filler wire

Accessories

Earth cable, gas hose
Carriage with console and tool box PickUp
Gas pressure regulator
Closed and open weld heads with or without filler wire
Adaptor cable for MW weld heads
Hosepack extension
Manual TIG torch
USB-stick
Printer paper

Recommended areas of use

Fronius Process Automation - FPA System-Controller are universal and functional with orbital weld heads useable for tube-tube/ tube-flange/ tube-tube sheet welding

- Microelectronics
- Pharmacy/ Biochemical Industry
- Food Industry
- Climate Technology
- Aeronautics/ Aerospace
- Heat Exchangers

Standard equipment

FPA 2020 Orbital Controller
Remote control unit FPA 2020-RC with cable 10 m
Integrated inverter 200 A, single phase
Integrated water cooling
Mains cable 2,5 m with plug
Small, compact and transportable
Mountable on carriage
Integrated gas and water flow control
Simple programming via intuitive menue
Touch-screen operation with graphical process-visualisation
Language selection

Display during weld cycle:
- Welding currrent (A)
- Arc Voltage (V)
- Torch position (degree)
- Welding speed (cm/min)
- Wire feed speed (cm/min)

Programming welding parameter
- Internal memory (200 programs)
- 3 special tack programs with up to 20 tack points
- 10 sectors/ program free definable

Additional memory of programs on USB-stick
Creation of backup on USB-stick
Addressing torch rotation axis and wire axis
SynergicMode (Material, pipe outside diameter, wall thickness, gas, ..)
Auto-Diagnose-System (Error-Code)

Optimum control of weld process via remote control unit
FPA 2020-RC remote control with cable 9 m

Functions on remote control:
- Selection of program
- Start/stop with slope, immediate weld stop
- Emergency-stop
- Manual positioning of axes
- Manual wire inching (forward/reverse)
- Parameter adjusting during welding (on the fly)
- Test button for shielding- and on-off purging gas

1 pc. USB-stick (512 MB)
Welding data-documentation
Installed printer

Technical data

Microprocessor-control	Addressing welding parameter	Duty cycle (%)	200 A (10 min/ 40° C) 40% DC
	Addressing torch rotation axis		180 A (10 min/ 40° C) 50% DC
	Addressing wire feeder unit		125 A (10 min/ 40° C) 100% DC
	Addessing USB-stick	Cooling power	570 W
	Addressing printer	Throughput	min. 0,2 l/min
Operating voltage	10-18 V	Max. pump pressure	4,5 bar
Open-circuit voltage	88 V	Coolant volume	ca. 1,5 l
Mains fuse	16 A	Isolation class	F
Mains cable	2,5 m	Protection class	IP 23
Mains voltage 1 phase	230 V/ 50-60 Hz	Dimensions l x w x h	625 x 290 x 480 mm
Cos phi	0,99	Net weight w.o. rem. control unit	35 kg
Welding current stepless AC/DC	3-200 A		

Orbital system-controller FPA 2003

Orbital system-controller (PLC)

Processes

TIG welding DC or AC / DC

Recommended areas of use

Fronius process automation –
FPA system-controller are universal and functional with orbital weld heads useable for tube-tube / tube-flange / tube-tubesheet welding

- Microelectronics
- Pharmacy / biochemistry
- Food industry
- Climate technology
- Aeronautics / aerospace
- Chemical industry
- Shipbuilding
- Energy / boilers
- Power stations
- Heat exchangers
- Measurement sensors
- Tank manufacturers

Options and accessories FPA 2003 Analogue

Addressing wire feeder
I-kit printer (data-documentation/ printout)
I-kit compactflash (data-documentation/ recording/ -transfer)
Addressing Arc Voltage Control – AVC (MU IV, TS)
Addressing torch oscillation – OSC (MU IV)
Addressing arc length control – AVC (Polycar)
Addressing torch oscillation – OSC (Polycar)
Addressing hotwire power source
Software “FPA MANAGER” for on-/ offline mode (data-docu/ archiv.)
Remote diagnosis via modem
Connection lines
Welding power source
Orbital weld heads
Uptake remote control unit

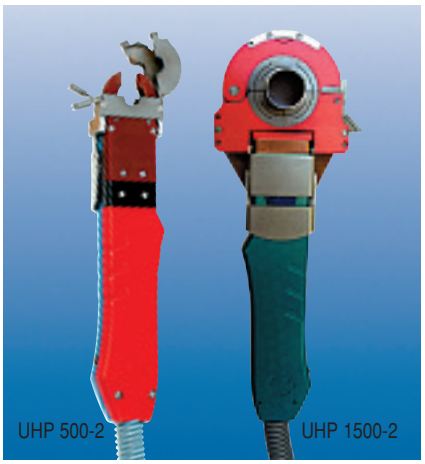
Standard equipment FPA 2003 Analogue

FPA 2003 Orbital system-controller (PLC)
Powerful CPU and software
Hardware and software-modularity (open system)
High operation reliability
Multitasking operating system
Compatible with standard welding power sources
Mains cable 2,5 m with plug
Mountable on carriage
Ease of programming
Optimum control of process
Internal memory of 200 programs
Free definable parameter records for each sector
Up to 9 sectors per weld seam (360°)
Total addressing / control of all parameters local with remote control
FPA 2003-RC remote control (programmable) with 10 m cable
Addressing welding power source parameter
Addressing torch rotation axis
Addressing purging gas
Remote control with display (8 lines / 20 digits)
36 membrane function keys (high intensity LED's)
Language selection
Auto-diagnose-system (error log for rapid error analysis)
Protection-cover

Technical data

Mains fuse	4 A
Mains voltage single phase	230 V 50/60 Hz
Operating temperature	0 – 50° C
Dimension FPA 2003 l x w x h	600 x 380 x 220 mm
Net weight FPA 2003	ca. 16,5 kg

Description housing rem. contr.	impact-resistant plastic housing flame retardance UL94V-0
Remote control - display	8 lines / 20 digis
Degree of protection	IP 62
Dimensions remote control l x w x h	280 x 180 x 100 mm
Net weight remote control	0,7 kg



Closed chamber weld heads UHP 250-2 / UHP 500-2 / UHP 1500-2

Welding of tube to tube joints

Processes

TIG welding
Flush joint welding without filler wire

Recommended base metals

Stainless steel
Titanium
Inconel
etc.

Recommended areas of use

Special for welding of thin-walled tubes (tube outer diameter 1,6 up to 33,7 mm) in High-Purity-Industries
UHP 250-2 up to wall-thickness of max. 1,0 mm
UHP 500-2 up to wall-thickness of max. 1,5 mm
UHP 1500-2 up to wall-thickness of max. 2,5 mm

- Microelectronics
- Pharmacy / biochemical Industry
- Food industry
- Aerospace / aeronautics
- Heat exchangers
- Measurement sensors

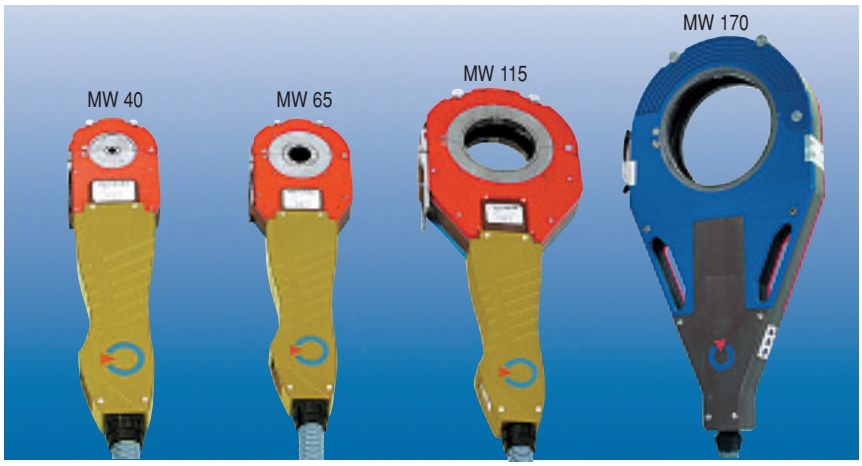
Standard equipment

Closed chamber weld head with hosepack 5,5 m
Sturdy construction, featuring reduced dimensions
Protection chamber for gas covering to avoid coloration
Compact design for use in areas with limited access
Non-symmetrical design allows welding of fitting featuring reduced straight sections
Titanium tube clamps for optimum hold and positioning
Modular system for welding of tube to fitting
Special gas arrival to avoid particle emissions
Air-cooled
High-precision drive unit
Modular cassette-/ clamping insert-system
Transport case

Accessories

Clamping inserts (titanium) for one tube outer-diameter
Clamping cassettes for one tube outer-diameter
Special clamping inserts or cassettes for micro-fittings

Technical data	Tube outer-diameter	Dimensions					
		A	B	C	D	E	F
UHP 250-2	1,6 up to 6,35 mm	31,6 mm	257,0 mm	11,9 mm	5,60 mm	22,3 mm	27,8 mm
UHP 500-2	3,0 up to 12,70 mm	51,3 mm	261,0 mm	12,0 mm	5,70 mm	23,0 mm	25,4 mm
UHP 1500-2	6,0 up to 33,70 mm	92,0 mm	291,0 mm	29,5 mm	14,75 mm	–	32,5 mm



Closed chamber weld heads MW 40 / MW 65 / MW 115 / MW 170

Welding of tube to tube joints

Processes

TIG welding DC respectively AC/DC
Flush joint welding without filler wire

Recommended base metals

Stainless steel
Titanium
Inconel
Aluminium (limited)
etc.

Recommended areas of use

Special for welding of thin-walled tubes and high productivity applications
(tube outer-diameter 6,0 up to 170,0 mm)

- Microelectronics
- Pharmacy / biochemical industry
- Food industry
- Aerospace / aeronautics
- Heat exchangers
- Measurement sensors

Standard equipment

Closed chamber weld head with hosepack 5,5 m
Protection chamber for gas covering to avoid coloration
Compact design for use in areas with limited access
“Flex” Titanium tube clamps for optimum hold and positioning
Special gas arrival to avoid particle emissions
Consistent high quality welding due to water cooling
DC-motor drive with encoder-system (vibration free drive)
Modular clamping insert-system (quick change)
Transport case
Viewport for weld joint inspection
Control buttons integrated in handle of weld head

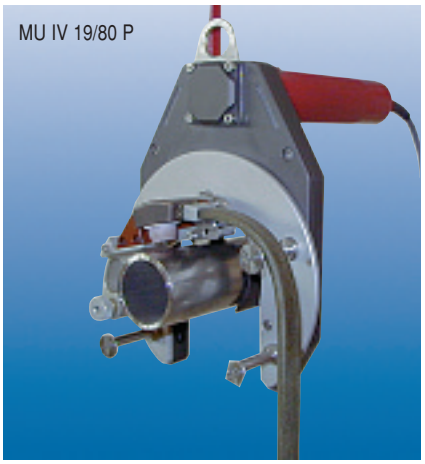
- Out of weld cycle (rotation movement, gas and water-circuit test)
- During weld cycle (start cycle, downslope, stop)

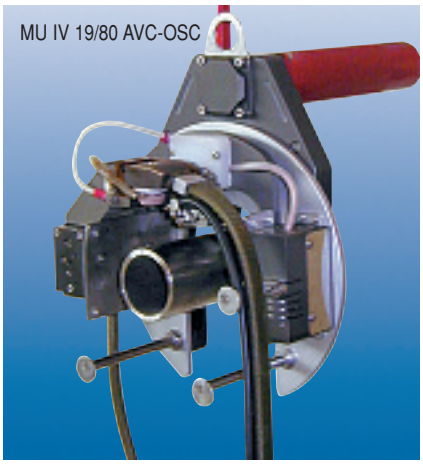
Accessories

Clamping inserts (titanium) for one tube outer-diameter
Special designed clamping inserts
Adapter for clamping inserts of previous MW model
Offset electrode holder (tubes with reduced straight length)
Shield for one tube outer-diameter (tube-elbow)
Extension hosepack

Technical data	Tube outer-diameter	Dimensions					
		A	B	C	C*	D	E
MW 40	6,00 up to 40,00 mm	100 mm	430 mm	38,0 mm	38,0 mm	19,0 mm	50 mm
MW 65	12,00 up to 65,00 mm	126 mm	458 mm	38,0 mm	57,5 mm	19,0 mm	63 mm
MW 115	25,00 up to 115,00 mm	200 mm	547 mm	46,0 mm	68,0 mm	23,0 mm	100 mm
MW 170	80,00 up to 170,00 mm	290 mm	580 mm	63,0 mm	63,0 mm	31,5 mm	145 mm

C* width with adapter and clamping inserts of previous MW model


MU IV 19/80 P


MU IV 19/80 AVC-OSC

Open weld heads MU IV P / MU IV with AVC-OSC

Welding of tube to tube joints

Processes

TIG welding with or without filler wire
Welding of multi-pass with filler wire in combination with arc length control (AVC) and torch oscillation (OSC)

Recommended base metals

Steel
Stainless steel
Titanium
Inconel
Aluminium
etc.

Recommended areas of use

Special for welding of thin-walled and thick-walled tubes / pipes
(tube / pipe outer-diameter 8 up to 275 mm)

- Pharmacy / biochemical industry
- Food industry
- Aerospace / aeronautics
- Chemical industry
- Shipbuilding
- Energy / boilers
- Power plants

Standard equipment

Open weld head with hosepack 9 m
Stepless adjustable centering- / clamping system
Mechanical side adjustment (electrode) +/– 2,5 mm (MU IV P)
Simple adaptation to different tube geometries
Torch tiltable 0° up to 45° (flange)
Button clutch for rotation axis and manual turnable for rapid cable unwind (MU IV 195)
Modular design (wire feeder-, AVC-, OSC-unit)
Mechanical height tracking (MU IV P)
2-axes wire adjustment device and wire liner (MU IV AVC-OSC)
High duty cycle due to water cooling
Transport case

Options and accessories

Integrated (mounted) wire feeder with wire spool 100 mm
External wire feeder KD 4000 with wire spool 300 mm / 20 kg
Adapter-set for connecting wire guide
Connection line 9 m KD 4000 to controller
2-axes wire adjustment device and wire inliner (MU IV P)
Motorized cross-slide-system (AVC- and OSC-slides) for arc lenght control and torch oscillation
Hosepack-extension
Angle gear box for tilting the motor (90° / 180°)
Flange-kit
Balancer
Gas draigs for purging

Technical data MU IV P	Tube outer-diameter	Dimensions A	B	C	D	E
MU IV 8/28	8 up to 28 mm	116 mm	16,0 mm	5 mm	96,0 mm	70,0 mm
MU IV 8/38	8 up to 38 mm	126 mm	16,0 mm	5 mm	96,0 mm	72,0 mm
MU IV 19/64	19 up to 64 mm	155 mm	16,0 mm	5 mm	98,0 mm	93,0 mm
MU IV 19/80	19 up to 80 mm	172 mm	16,0 mm	5 mm	97,0 mm	103,0 mm
MU IV 19/104	19 up to 104 mm	204 mm	16,0 mm	5 mm	90,0 mm	121,5 mm
MU IV 25/115	25 up to 115 mm	215 mm	16,0 mm	5 mm	101,0 mm	148,0 mm
MU IV 25/128	25 up to 128 mm	240 mm	16,0 mm	5 mm	99,0 mm	173,0 mm
MU IV 76/195	76 up to 195 mm	410 mm	30,5 mm	14 mm	158,5 mm	208,0 mm
MU IV 101/245	101 up to 245 mm	470 mm	30,5 mm	14 mm	174,5 mm	254,0 mm
MU IV 114/275	114 up to 275 mm	500 mm	30,5 mm	14 mm	172,5 mm	276,0 mm

Technical data MU IV AVC-OSC	Tube- outer-diameter	Dimensions A	B	Ca/Cb	D	E
MU IV 8/38	8 up to 38 mm	142 mm	23 mm	20 mm	150 mm	72,0 mm
MU IV 19/64	19 up to 64 mm	184 mm	16 mm	20 mm	136 mm	93,0 mm
MU IV 19/80	19 up to 80 mm	200 mm	16 mm	20 mm	136 mm	103,0 mm
MU IV 30/104	30 up to 104 mm	222 mm	16 mm	20 mm	140 mm	121,5 mm
MU IV 25/115	25 up to 115 mm	235 mm	16 mm	20 mm	139 mm	148,0 mm
MU IV 42/128	42 up to 128 mm	340 mm	16 mm	20 mm	134 mm	173,0 mm
MU IV 76/195	76 up to 195 mm	410 mm	16 mm	20 mm	165 mm	208,0 mm
MU IV 101/245	101 up to 245 mm	500 mm	16 mm	20 mm	179 mm	254,0 mm
MU IV 114/275	114 up to 275 mm	530 mm	16 mm	20 mm	179 mm	276,0 mm

Wire feeder unit KD 4000

Wire feeder Orbital for external addressing

Recommended areas of use

Wire feeder for mechanized orbital coldwire TIG welding

Standard equipment

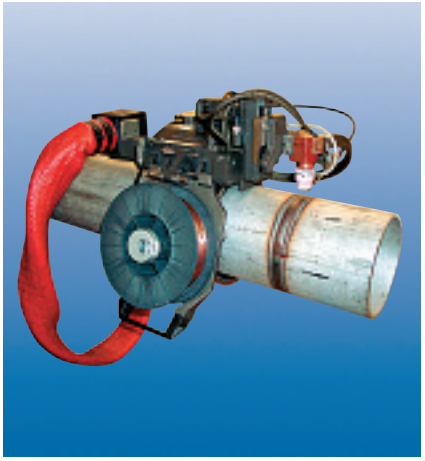
Wire feeder unit
External addressing wire speed via interface
4 rolls for wire diameter 0,8 mm (trapezoid-groove)
Closed wire spool cover for 300 mm / 15 kg
Protection cover motorplate
Handle

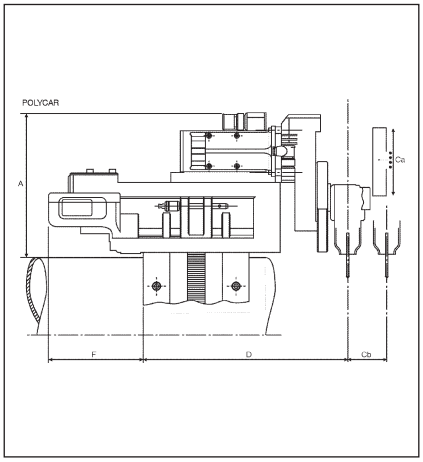
Accessories

System-Controller FPA 2000 / 2003
Connection line 9 m KD 4000 to controller
2-axes wire adjustment device and wire liner dia. 0,8 mm
TIG power sources

Technical data

Motor	42 V/DC
Wire feeder sped	10 – 750 cm/min
Motor power consumption	146 W
Gear	49:1
Dimensions l x w x h	625 x 250 x 300 mm
Weight	14 kg





Orbital tracking vehicle Polycar 60

Welding of pipe to pipe joints

Processes

TIG welding DC, AC/DC with filler wire (cold- / hotwire)

Multi pass with filler wire in combination with arc length control (AVC) and torch oscillation (OSC)

Recommended base metals

Steel
Stainless steel
Titanium
Inconel
Aluminium
etc.

Recommended areas of use

Flexible and adaptable tracking vehicle for all welding tasks on welding of pipe constructions from tube outer-diameter 114 mm

- Chemical industry
- Shipbuilding
- Power plant construction

Standard equipment

Orbital tracking vehicle with hosepack 15 m
High duty cycle due to water cooling
Integrated wire feeder 5 rolls 0,8 (trapezoid-groove)
Special 2-axes wire holder and adjustment device
Cold- / hotwire liner
Uptake torch and tilting device with scale +/–45°
Using a position based on integrated pulse generator rotation and an encoder coordinates the weld cycle. Current and wire are synchronised relative to the position of the electrode on the tube. Closed loop feedback regulates the travel speed and wire feed rates to a close tolerance
Motorized cross-slide-system (AVC- and OSC-slide) for arc length control and torch oscillation
Simple adaptation to different tube geometries
Transport case

Accessories

Precise guide ring
Rail-system
2" or 4" distance-feet for guide ring and rail
Camera-System
Hosepack-extension
Purging gas drag
Installation-kit MIG-MAG (machine torch)

Technical data		Polycar 60
Tube outer-diameter		from 114 mm
Max. wall-thickness of tube		30 mm
Welding process		TIG coldwire / TIG hotwire
Dimensions	• A (min. space around tube)	180/150 mm
	• Ca (AVC - travel way)	60/30 mm
	• Cb (OSC - travel way)	30,0 mm
	• D (min. straight length)	232,0 mm
	• F (clearance from guide ring)	107,5 mm
Drive motor-slides (AVC/OSC)		stepper motor
AVC-axis speed range		10 – 500 mm/min
OSC-axis speed range		20 – 1000 mm/min
Tilting range torch		+/– 45° C
Max. welding current		300 A
Diameter electrode		2,4 mm (standard) / 3,2 / 4,0 mm
Drive rotation		DC motor
Drive speed rotation		20 – 400 mm/min
Integrated wire spool		100/200 mm
Drive wire feeder		DC motor
Wire feeder speed – coldwire		95 – 2800 mm/min
Wire feeder speed – hotwire		360 – 7800 mm/min
Wire diameter		0,8 mm (standard) / 1,0 / 1,2 mm
Net weight orbital driving vehicle		9 kg


MIG/MAG


WIG

Orbital tracking vehicle Polycar MP (MULTIPROCESS)

Welding of pipe to pipe joints

Processes

TIG welding DC, AC/DC with filler wire (cold- / hotwire)
Multi pass with filler wire in combination with arc length control (AVC) and torch oscillation (OSC)
MIG-MAG welding

Recommended base metals

Steel
Stainless steel
Titanium
Inconel
Aluminium
etc.

Recommended areas of use

Flexible and adaptable tracking vehicle for all welding tasks on welding of pipe constructions from tube outer-diameter 168 mm

- Chemical industry
- Shipbuilding
- Power plant construction

Standard equipment

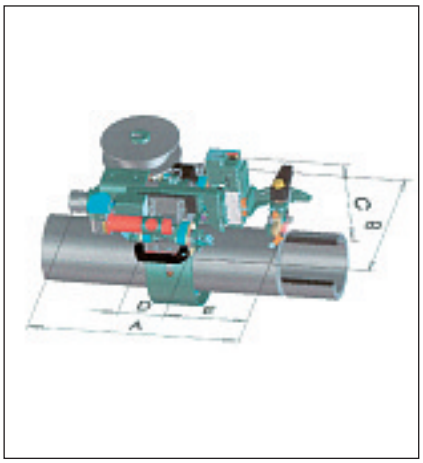
4 wheel drive
Torch bracket and tilting device with scale
Motorized cross-slide for torch motion AVC/SOM, OSC
Motorized slide for torch angle motion (MIG-MAG)
Integrated encoder for speed regulation and synchronization of weld parameters according to real torch position
Integrated wire feeder and machine torch 400 A (TIG)
Hosepack 15 m
Simple adaption to different tube geometries
Storage case

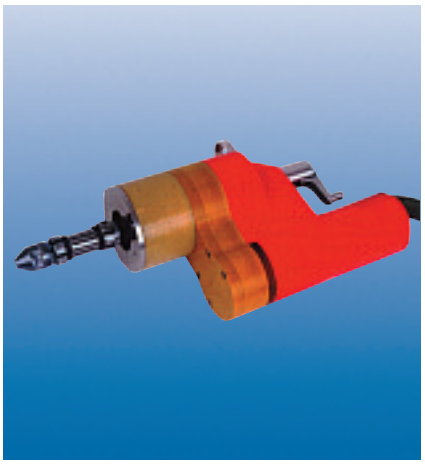
Accessories

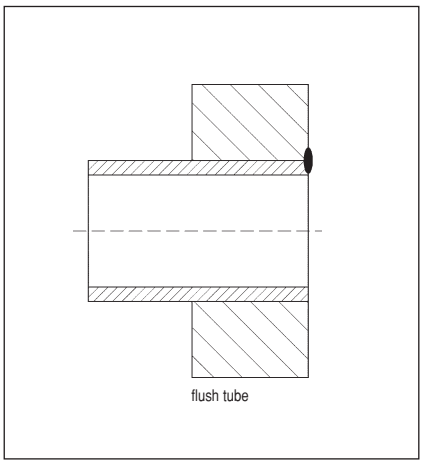
Precise guide ring
System-Controller FPA 2003
Power source set TIG, MIG-MAG
Camera-System
Hosepack-extension
Purging gas drag

Technical data		Polycar MP
Tube outer-diameter		from 168 mm
Welding process		MIG-MAG / TIG / TIG coldwire / hotwire
Welding direction TIG / MIG-MAG		360° / 360° (2 x 180° vertical down or vertical up)
Dimensions	• A	550 mm
	• B	450 mm
	• C	270 mm
	• D	120 mm
	• E (MIG-MAG)	255 mm
	• E (TIG cold- / hotwire)	215 mm
Drive motor-slides (AVC / SOM / OSC)		Stepper motor
AVC-axis stroke / max. speed (TIG)		69 mm / 2500 mm/min
SOM-axis stroke / max. speed (MIG-MAG)		50 mm / 2500 mm/min
OSC-axis stroke / max. speed		69 mm / 2500 mm/min
Torch inclination longitudinal motorized MIG-MAG		+/–35° / 100°/min
Torch tilting longitudinal TIG / MIG-MAG manual		0° / –20°
Torch tilting lateral TIG manual		+/–35°
Max. welding current TIG		400 A
Drive rotation with bracket		DC-Motor
Speed range with / without welding		30 – 1000 / 30 – 2000 mm/min
Wire feeder on board (TIG)		ø 200 mm / 5kg
Drive wire feeder		DC Motor
Wire feed speed MIG-MAG		7,9 m/min
Wire feed speed TIG-hotwire		7,9 m/min
Wire feed speed TIG		2,8 m/min
Wire diameter TIG		0,8 / 0,9 / 1,0 / 1,2 mm
Wire diameter MIG-MAG		0,8 / 1,0 / 1,2 / 1,4 / 1,6 mm
Net weight Polycar MP (excl. wire spool)		ca. 16 kg

Dimensions







Closed weld head TS 25

Welding of tube to tubesheet joints

Processes

TIG welding without filler wire

Recommended base metals

Stainless steel
Titanium
Inconel
etc.

Standard equipment

Closed weld head with hosepack 9 m
Small, light and very compact
Lever for fixing and opening of the clamping- / positioning-system
Modular design
Front ring and shielding gas chamber
Centering spindle for centering mandrel
Transport case

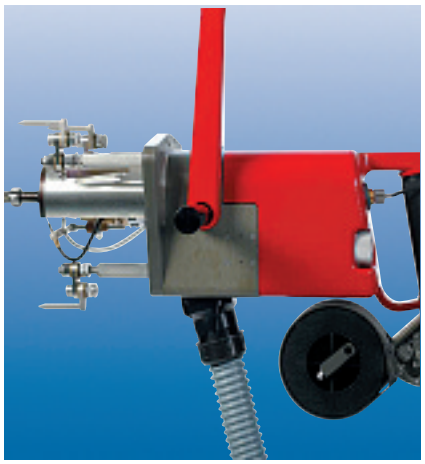
Accessories

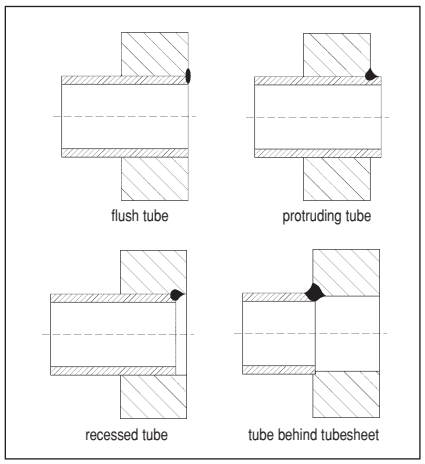
Expandable mandrel for one tube inside-diameter
Customized clamp system (monobloc-system)

Recommended areas of use

Special for welding of flush tubes (highly oxidisable materials) on tube-sheet (from tube inside-dia. 10,0 mm up to tube outside-dia. 25,4 mm)
Tube / tube sheet: max. 1 mm recessed / max. 0,5 mm protruding
• Pharmacy / Biochemical Industry
• Food Industry

Technical data	TS 25
Tube inside-diameter	from 10,0 mm (diameter 7,0 mm up to 10 mm on request)
Tube outside-diameter	up to 25,4 mm
Welding current	100 A (d.c. 20%)
Torch cooling	water cooled
Net weight	1,5 kg





Open weld head TS 2000

Welding of tube to tubesheet joints

Processes

TIG welding with or without filler wire

Recommended base metals

Steel
Stainless steel
Titanium
Inconel
Aluminium
etc.

Recommended areas of use

Weld head for welding tube to tubesheet
(from tube inside-diameter 10,5 mm up to tube outer-diameter 60 mm)
for high duty cycle
Tube / tubesheet: max. 2 mm recessed / max. 13 mm protuding
• Energy technology
• Heat exchangers

Standard equipment

Open weld head with hosepack 9 m
Manual regulation distance electrode to tubesheet
Version – TS 2000 without wire feeder (compatible for KD 4000)
Version – TS 2000 with wire feeder on board (spool dia. 100 mm)
Motorized arc length control – AVC
Version – TS 2000-AVC without wire feeder (compatible for KD 4000)
Version – TS 2000-AVC and wire feeder on board
Wire guide, wire inliner and adjustment
Adjustable three point support
Swivelling handle for balancer
Modular design
Consistent high quality welding due to water cooling
Continuous rotating torch (current, water, gas, ...)
Transport case

Accessories

Spindle suitable to mandrel
Mandrel for one tube inside-diameter
Torch- / electrode holder applicated to your request
Pneumatic clamping system for one tube inside-diameter
Shielding gas chamber (Titanium)
Inside / – internal special torch (for welding tube behind tubesheet)
Components for adaptation of pneumatic clamping system
Balancer

Technical data	TS 2000
Tube inside-diameter	from 10,5 mm
Tube outer-diameter	up to 60 mm
Welding current	200 A
Torch cooling	water cooled
AVC (optional) – travel way	10 mm
Wire feeder (optional)	on board (spool dia. 100 mm/1,5 kg) / external (spool dia. 300 mm/20 kg)
Wire diameter	0,8 mm (standard)/1,0 mm
Net weight	5,6 kg (without wire feeder)
Net weight	11 kg (with wire feeder on board and pneum. clamp system)

Tubesheet welder FTW 35-118

Welding of tube to tubesheet joints

Process

Welding process MIG-MAG

Recommended base metals

Steel
Aluminium
etc..

Recommended areas of use

Special for welding of tube to tubesheet in horizontal welding position PA of thick-walled tubes (tube inside-diameter 35 up to 118 mm)

- Tank- / container construction
- Boilers

Necessary accessories

Remote control unit FRC-40 with cable 3 m
Mandrel FTW/D35,0- 40,0/ L117/PA
Mandrel FTW/D40,5- 45,0/ L117/PA
Mandrel FTW/D45,5- 50,0/ L117/PA
Mandrel FTW/D50,5- 55,0/ L117/PA
Mandrel FTW/D55,5- 60,5/ L117/PA
Mandrel FTW/D60,6- 80,5/ L152/PA
Mandrel FTW/D80,6-108,0/ L197/PA
Mandrel FTW/D90,6-118,0/ L197/PA
Customized mandrels
FRR reducer rings for torch holder
Support ring for fillet weld

Standard equipment

Handle
Hand wheel for fixing mandrel
Support horizontal 130 mm for manual torch positioning
Support horizontal 25 mm for manual torch positioning
Distance foot
Swivel unit with torch holder diameter 44,2 mm
Spindle
Hosepack holder and cable support

Technical data	FTW 35-118
Tube inside-diameter	35 – 118 mm
Welding position	PA / PG on request
Welding process	MIG-MAG / TIG on request
Welding signal	2- / 4-step mode
Drive	stepper motor
Speed	1,0 – 6,0 rpm
Dimensions	
• A	890 mm
• B	max. 445 mm
• C	250 mm
• D	130 mm
• E	25 mm
• F (mandrel 35,0 – 60,5)	117 mm
• F (mandrel 60,6 – 80,5)	152 mm
• F (mandrel 80,6 – 118,0)	197 mm
Net weight without mandrel	12,4 kg

Technical data	Control box FCU-FTW
Mains switch	on-off
Mains voltage / frequency	230 V / 50 – 60 Hz
Power consumption	300 VA
Control voltage	24 V DC
Mains cable with plug	5 m
Control line FTW 35 – 118	3 m
Control line power source (Tuchel)	5 m
Net weight FCU-FTW	9,7 kg

Vizor 1000 Professional
Vizor 1000 Standard

General features

Automatic darkening due to LCD-technology
Solar-driven technology
Permanent UV-IR-Radiation protection
Adjustable distance betweel cartridge and eyes
Adjustable helmet inclination
Height and diameter adjustable head band
Simple and quick changing of the front cover lens
2 spare-front cover lenses per set

Recommended Areas of use:

Service and Repair,
Metalbuilding
Construction of plant, containers, machinery, structural steel
Automotive and allied vendor industries,
Robot welding,
Construction of special vehicles,

Vizor 1000 recommended areas of use

MIG/MAG (standard and pulsed arc welding)
TIG (AC-DC)
MMA welding
Plasma welding
Grinding

Adjustable parameters

Opening speed adjustment
Stepless Shade level adjustment from 5-13
Sensitivity adjustment
Grinding mode
Sensor slide

Vizor 1000 Standard areas of use

MIG/Mag
MMA welding

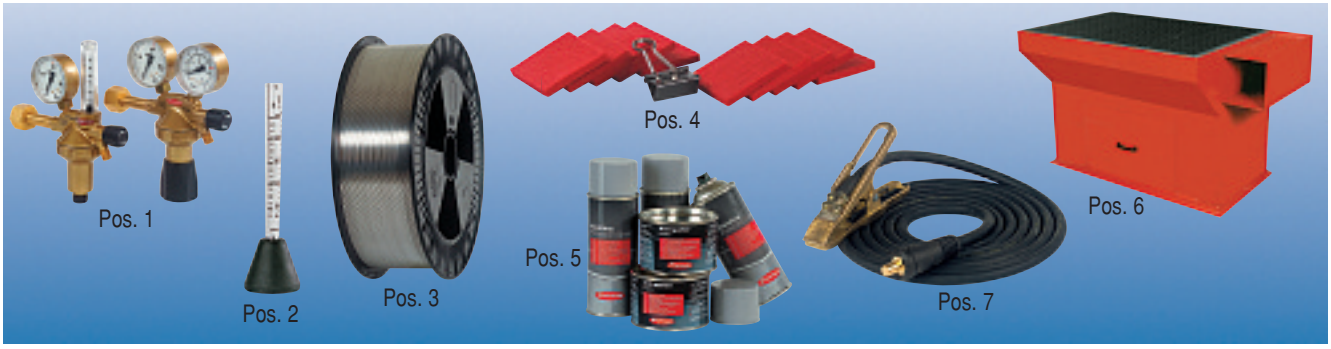
Adjustable parameters

Shade level adjustment 10/11
Sensor slide

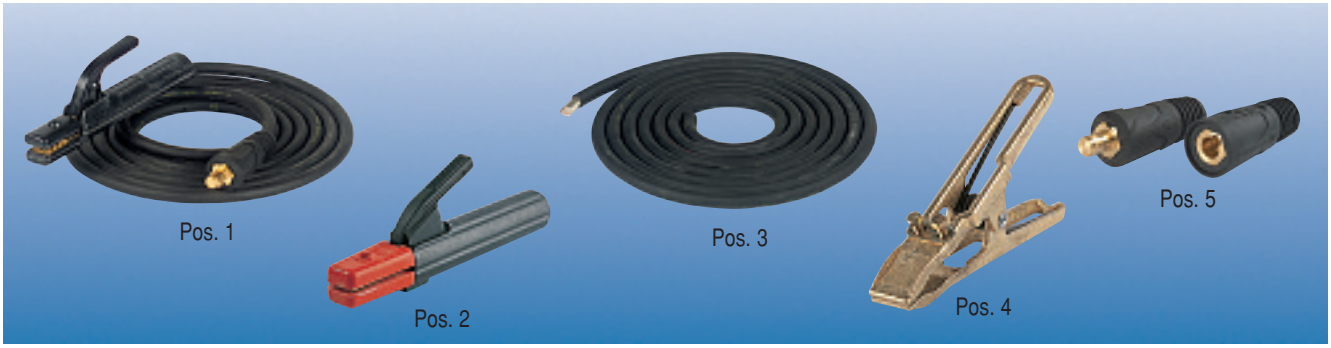
	Vizor 1000 Professional	Vizor 1000 Standard
Type of cartridge	Automatic switch-over between 4/5-9, 4/9-13	Automatic switch-over between 4/10, 4/11
Switching time light / dark	0,3 msec. at 25°C	0,4 msec. at 25°C
Switching time dark / light	0,1 - ,035 sec. (fast pos.) 0,3 – 0,6 sec. (slow pos.)	0,2 – 0,3 sec.
Application temperature	- 10°C - +70°C	- 10°C - +70°C
Energy supply	Solar cells	Solar cells
Weight	1.26 lbs / 572 g	1.23 lbs / 560 g
Cartridge size	3.54 x 4.33 x 0.28 inch / 90 x 110 x 7 mm	3.54 x 4.33 x 0.28 inch / 90 x 110 x 7 mm

International welding accessories

International welding accessories



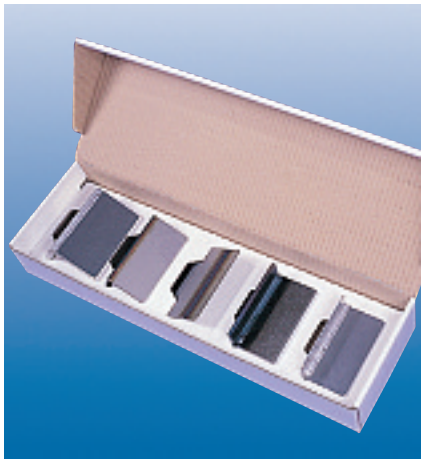
International welding accessories



Teachware Set

Recommended areas of use

Technical colleges
Technical universities
Further education
Training workshops



Welding samples steel / aluminium / chrome nickel

preserved
insribed
punched
single packed
5 pcs. – packing acc. picture

Fronius Collection

Area of use

Welding technology
Building suites
Leisure time

Equipment

UV-resistand
Permanent flame-retardant
Highly functional
Fashionable

Quality

65 % cotton, 35 % polyester
Tested after EN 470-1, EN 531 A, B1, C1, E1 as well as EN 533 Index 3
ÖKOTEX 100 tested
Impregnation guarantees 40 laundries with 95° C at multicolor parts with 60° C

Calibration system

Area of use	Standard equipment
Calibration of welding machine	Cooling unit FK 4000R
Static load	Adapter set
Testing & inspection	Measurement outputs short-circuit-proof
Use on the spot	Temperature and water-flow monitoring
DC and AC machines	Over-temperature indication
Any pulsed waveforms	3 mains socket with mains filter for powering external measuring devices
TIG, MIG/MAG and manual electrode	U/I display (mean value)

Calibration system

Mains voltage +/- 15 %		230 V
Accuracy of measurement outputs	Current	± 0,5 % of measured value (w/o offset)
	Voltage	± 0,5 % of measured value
Resistance range in 20mΩ-steps		0 – 300 mΩ
Max. perm. load on resistors		20 kW for 30 sec./max. 500 A
Max. perm. input voltage		113 V peak
Weight (with cooling unit)		116 lbs. / 53 kg
Dimensions with cooling unit l x w x h		24 x 11 x 27 inch / 625 x 290 x 710 mm

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