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WELDING AUTOMATION BOOK 04

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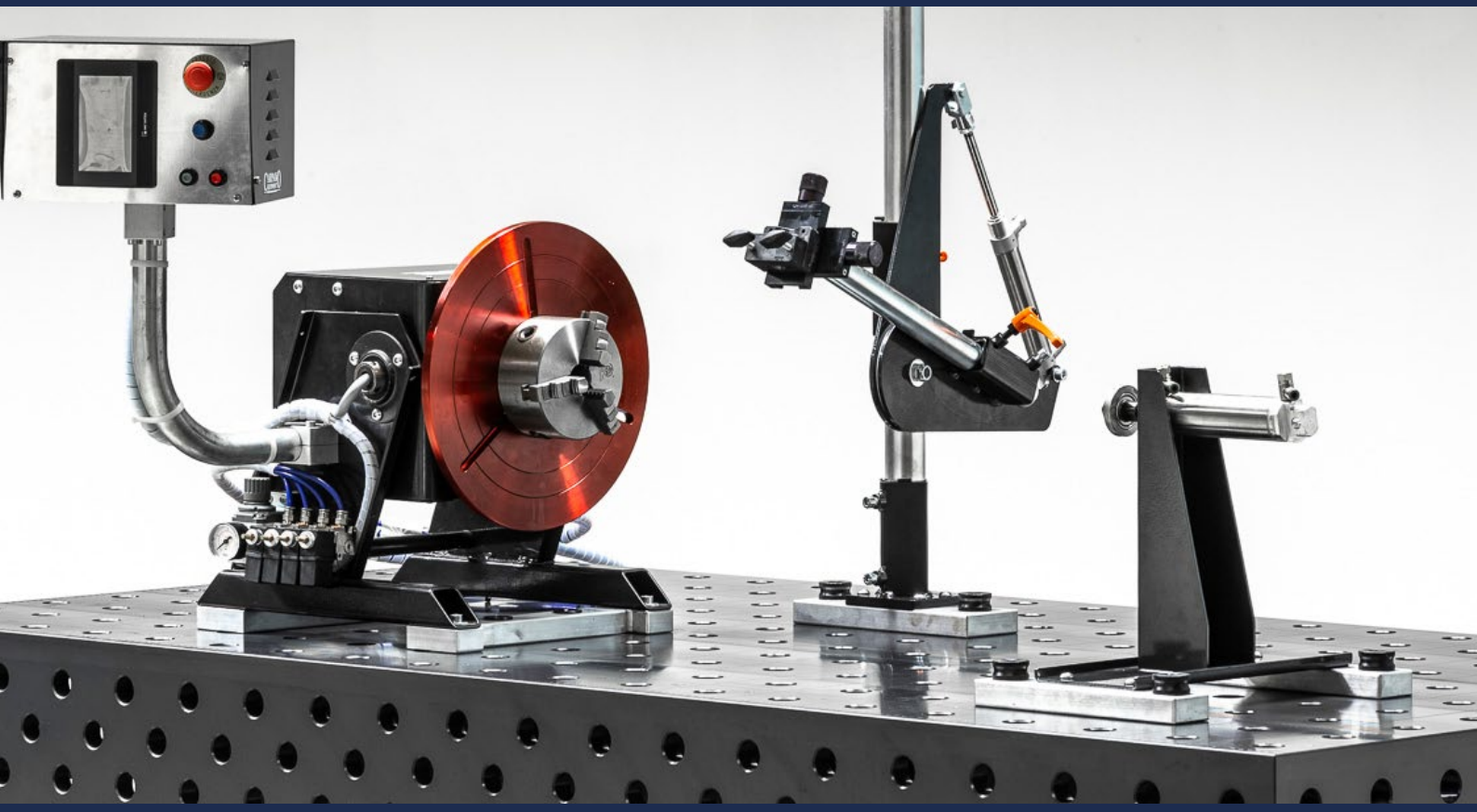
WELDING AUTOMATION BOOK04



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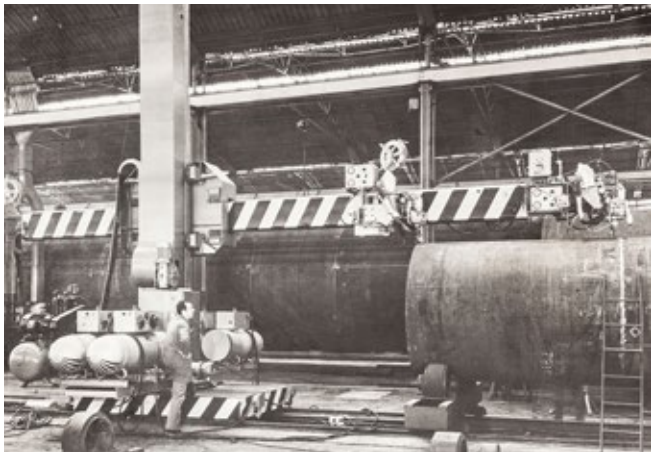
An updated version of this catalogue is always available inside our website

Ver. **01**/2023



WELDING AUTOMATION

CARPANO EQUIPMENT starts its activity in 1992 with theproduction of portable automation and complementary equipments.

Later on begins to manufacture the first manipulators in Aluminium by applying PLC to any single plant, despite its configuration and the axis to be handled determining, by this way, an exponential growth of its business.

A further increase is achieved with the purchasing in 2011 of PASSERINI's brand and projects, a historic manufacturer in the same field since 1962.
Now seated in Via del Legatore, in a factory of 3.500 mq, CARPANO EQUIPMENT commits itself every day to manufacture machines granting the customers:

- Quick pay-back
- Accurate process repeatability
- User-friendly
- Spare-parts availability and technical assistance even on older machines

The present catalogue shows the wide range of the standard products, splitted by types. In the second part then, there are significant examples of applications in several industrial fields.

For further details about specific products, would you kindly take a look to the most updated catalogues on our website **www.carpano.it.**

In case you should need more information, do not hesitate to get in touch with us directly: our skilled staff will be glad to help you in any possible way.

PASSERINI
AUTOMATING WELDING SINCE 1962

INDEX STANDARD PRODUCTS
STANDARD PRODUCTS

TECH REPORT

PORTABLE AUTOMATION

This section is dedicated to motorized carriages. Sturdy machines at first conceived for outdoor yards, then used also like plant accessories.

They are user-friendly and cheap, available in two versions: with guidance rail or without.

CARRIAGES ON RAIL WITH RACK & PINION TRANSMISSION, IN 3 MODELS:

- **Squirrel 2** handy and cheap
- **Squirrel 1** with automatic welding cycle and spot welding
- **S80** with integrated oscillator

CARRIAGES WITHOUT RAIL:

- **Spotty** with 4 wheels, two side supports, battery-operated
- **Wave** with 4 wheels and oscillator, two side supports, battery operated

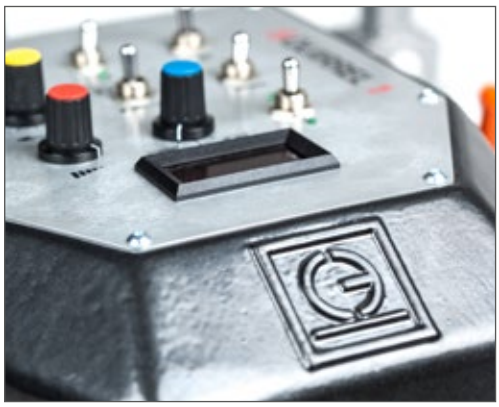
Spotty
with outside corner configuration

Squirrel
with oscillator for vertical welding

Wave
drift carriage with oscillator

SQUIRREL
ON RAIL, 3 DIFFERENT EXECUTIONS

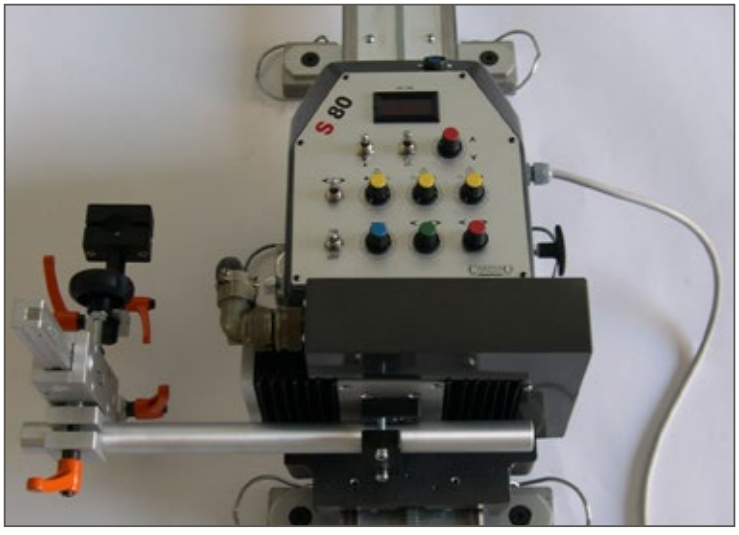
SQUIRREL: MOTORIZED CARRIAGES MOVING ON SEMI-RIGID RAIL.



The use of the rail allows to employ the carriage in any position: horizontal, flat, vertical and overhead. The semi-rigid rail can be used for both linear and circle welds on a minimum diameter of 6 m or greater.
The rails can be directly fixed on the work piece or on external structures, thanks to different fixtures like magnets or omega supports. Squirrel is available in 3 different executions, standard features are below specified together with the wide range of accessories designed to suit any job.

THE THREE DIFFERENT EXECUTIONS OF SQUIRREL HAVE THE SAME MECHANICAL FEATURES:

- Structure in aluminium casting
- Worm screw gear-motor and transmission with rack and pinion
- Clutch lever to release the pinion and to allow idle and quick re-positioning
- Feeding 230V 1-phase, 42/48V upon request



SQUIRREL
ON RAIL, 3 DIFFERENT EXECUTIONS

CESM2 - Squirrel 2

The simplest and cheapest model, provided of:

- Potentiometer to adjust the speed from 5 to 130 cm/min, other ranges upon request
- Switches forward-reverse, start-stop and on/off weld

CESM - Squirrel 1

It can automatically perform 2 work cycles, as it is provided of

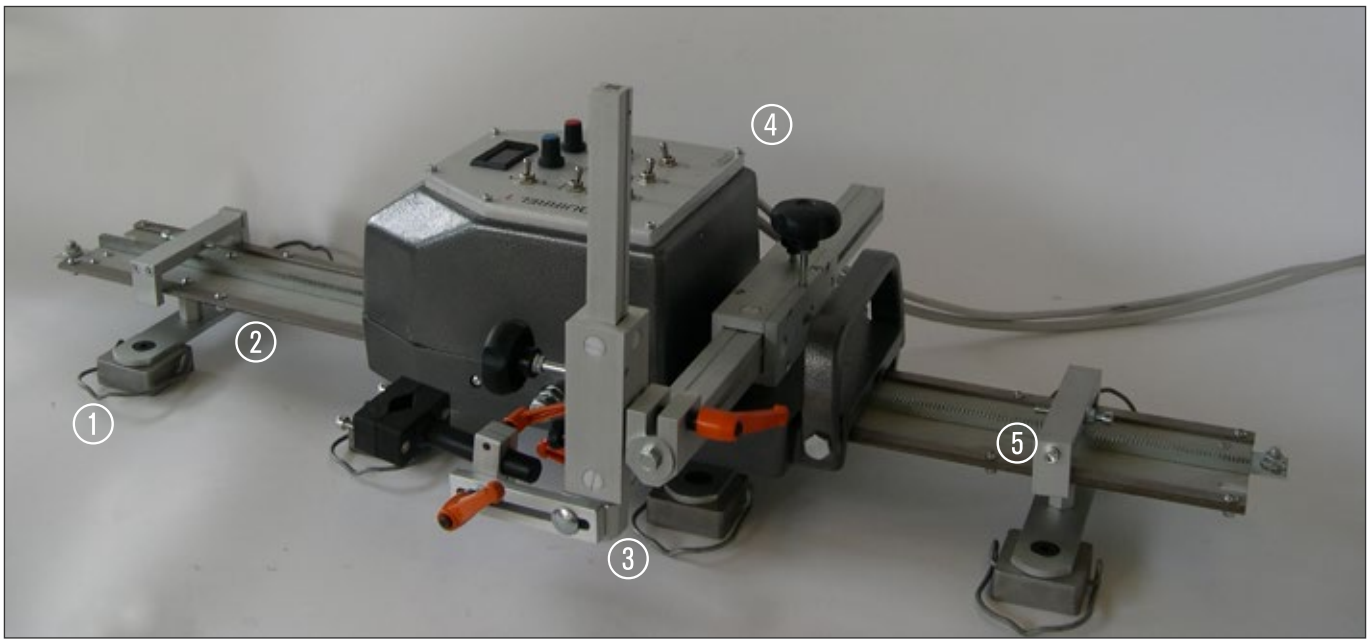
- Switch continuous / intermittent stitch welding.
- Speed setting from 5 to 130 cm/min.
- Weld stitch length setting from 0 to 99.9 cm.
- Idle length setting from 0 to 99.9 cm covered at fast speed 130 cm/min
- Display of welding speed, weld stitch length and idling length
- Switch to select fast return to zero or not
- Switch weld on/off for 2 torches
- Carriage start delay after arc ignition

S80 - Squirrel integrating an electronic oscillator

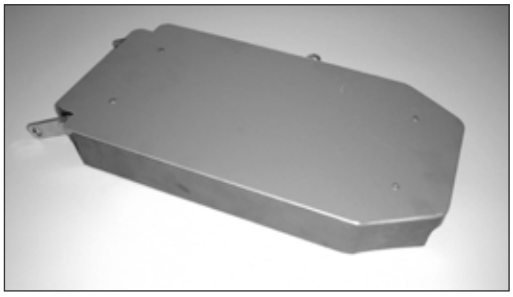
It combines the functions of the carriage with those of the electronic oscillator for filling thick joints or for hard facing:

- Speed adjuster 5 to 130 cm/min
- Switch forward-stop-reverse and weld on/off
- Torch oscillation: amplitude, frequency, centre and pause

SQUIRREL
ON RAIL, THE ACCESSORIES

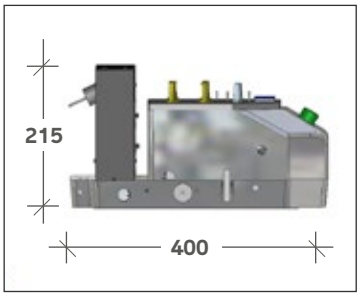


1.CECM: pair of magnets
2. CEBS: rail
3. CEBC: complete torch holder
4. CESM: Squirrel 1
5. CEFC: limit switch



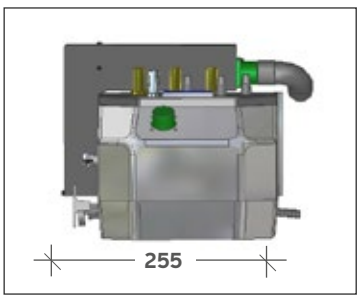
CENMS
Idle trailer towed by Squirrel and moving on the same semi-rigid rail. Meant for carrying the wire feeder, the fumes recovery inlet, etc. it is supplied complete with draft fittings.

CEFC
Pair of limit switches. It is supplied complete of signals to be fixed on the rail at the desired stop points..



CEBS rotaie semirigide
With high precision steel guides, it can be bent to a diameter of 6 m or greater, complete with rack, mounting holes and connectors for jointing other pieces.

- CEBS1 rail 1 m length
- CEBS2 rail 2 m length
- CEBS3 rail 3 m length



CECS
Support bracket complete with connections to the rail. It can be alternated with magnets to avoid any bending of the rail

CECV
Pair of suckers to be used on nonmagnetic materials, complete with pneumatic and mechanical connectors for vacuum plant.

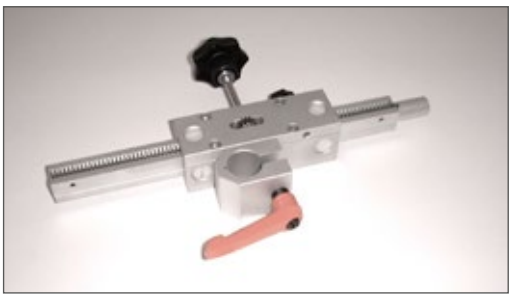
CECM
Pair of magnets, with attraction more than 100 kg, attraction face, complete with connectors and release levers.

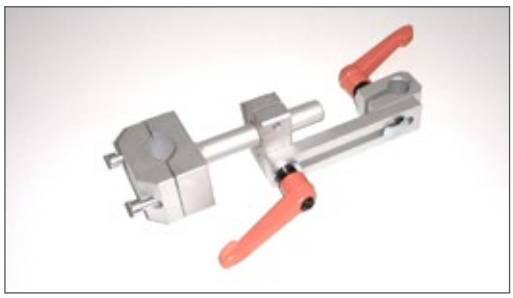
CEPV
High capacity vacuum pump complete with air filter and pneumatic connectors

CEPO
Omega aluminium profile to permanently fix the rail. Complete with appropriate holes and bolts. Available lengths:

CEPO1 1 m length
CEPO2 2 m length
CEPO3 3 m length

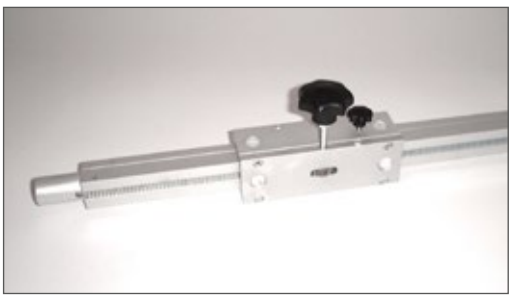
CEB20M
Boom retractable by rack & pinion through a 20x20 mm saddle and 300 mm stroke, it comes complete with clamp, friction dowels, bolts or extra clamp for connection to the twin boom





CEBT
Four axis torch holder.
It can be installed on CEB20M or on CEB30M

CEB30
Boom retractable by rack & pinion through a 30x30 mm saddle and 500 mm stroke, it comes complete with friction dowels and bolts



CETM
Mechanical probe for automatic adjustment of torch height.
It is supplied complete of torch holder and of clamp to fix it to CEB30M

CETMA
Mechanical probe for fillet joints. It automatically keeps constant the distance of the torch from the joint throat and is supplied complete of torch holder and of clamp to fix it to the CEB30M

SPOTTY

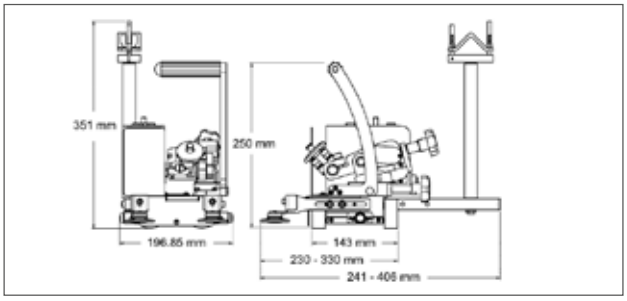
Carriage:	
Weight	6 kg without battery
Speed	from 3 to 95 cm/min
Torch holder	Ø from 15 to 19 mm
Wheels max temperature	70° C
Motor	DC with encoder
Transmission	4 drive wheels
Permanent magnet	with unlocking lever

Battery charger AL1820 CV	
Feeding	230 V - 50/60 Hz - 50 W
Recharge time	120 minuti circa
Weight	0,5 kg

Rechargeable battery:	
Li-Ion	4 Ah - 18V
Weight	0,6 kg

Self-aligning carriage

- The drive wheels can work on both flat and curved surfaces, with a minimum diameter of approx. 800 mm
- Guidance is provided by 2 castors that keep the carriage against a profile
- The battery operation allows you to work in safety and without connected wires
- It is possible to weld either continuously or in segments, by setting:
- Welding stretch length
- Length of the non-welding stretch, which is covered at maximum speed
- Total welding length in cm/min
- Possible times for crater formation or crater filling
- Are available accessories such as:
- Equipment for welding on outside corners
- On/off magnet for support of limit switches
- Additional batteries
- Its low cost and practicality of use allow a quick return on investment

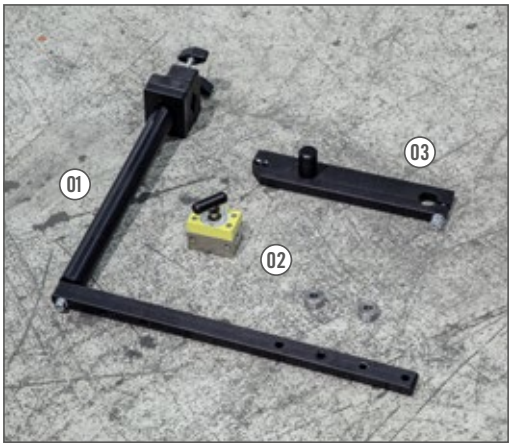


For corner inner welding, with drive wheels on the surface.
In this case, the vertical wall acts as a guide for the carriage.

For external corner welding, with drive wheels on the horizontal surface.
In this case, the vertical wall acts as a guide for the carriage.
For this application is required the SPT- ANG kit for external angle.

For external corner welding, with drive wheels on the vertical surface.
In this case, the horizontal wall acts as a guide for the carriage. This positioning is used when horizontal surface is thin.

For external corner welding, with drive wheels on curved surfaces.
Curved surface Ø min 800 mm.



The SPOTTY basic code includes:

01 Carriage complete with torch holder and limit switch
02 No. 1 Bosch rechargeable battery 18V Li-Ion, 4 Ah
03 No. 1 Bosch battery charger
04 Set of Allen keys for machine adjustments

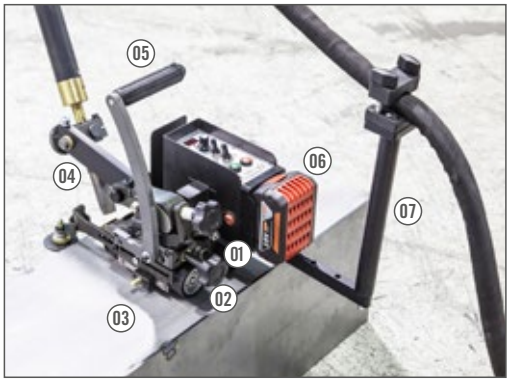
Optional accessories:

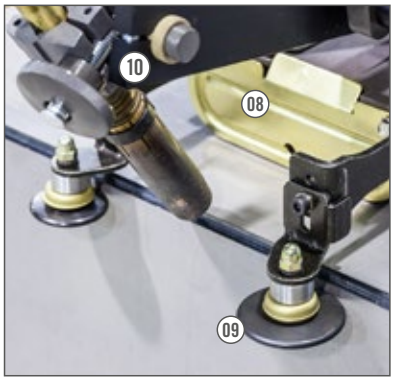
01 **SPT-PTC** Support for torch cable
02 **SPT-165** On/off magnet for limit switch
03 **SPT- ANG** External corners kit consisting of extension for torch holder and 2 wheel spacers

01 Multifunctional display indicates:
- Speed in cm/min
- Welding stretch length
- Non-welding stretch length
- Total weld length
- Starting delay after arc ignition
- Arc extinction delay after stop (crater filler)

02 Parameter adjustment knob
- Pressing switches between parameters
- Turning selects the value

03 Direction selector
04 Weld ON/OFF
05 Start
06 Stop
07 Power indicator light
08 Connector for torch contact





08 Protection for wheels from welding projections
09 Guide rollers
10 Spacer for outer corners (option)

01 Angular adjustment of the torch
02 Horizontal torch adjustment
03 Limit switch
04 Torch holder extension for external angles (option)
05 Handle with lock for permanent magnet
06 Battery
07 Holder for torch cable (option)

WAVE

WAVE - Carriage with oscillator	
Weight	8 kg with battery and oscillator
Carriage speed	3 to 88 cm/min
Oscillation speed	0 to 627 cm/min (with torch fixed 150 mm from the workpiece)
Oscillation amplitude	0 to 2.6 cm (with torch fixed 150 mm from the workpiece)
Oscillation pauses	from 0 to 9.9 sec.
Torch holder Ø	15 to 19 mm
Max. wheel temperature	200° C
Motor	DC motor with encoder
Transmission	4-wheel drive
Magnet	Permanent magnet with release lever

AL1820 CV battery charger:	
Power supply	230 V - 50/60 Hz - 50 W
Charging time approx.	120 minutes
Weight	0.5 kg

Rechargeable battery	
Li-Ion	4 Ah - 18V
AutonomY	6 h approx

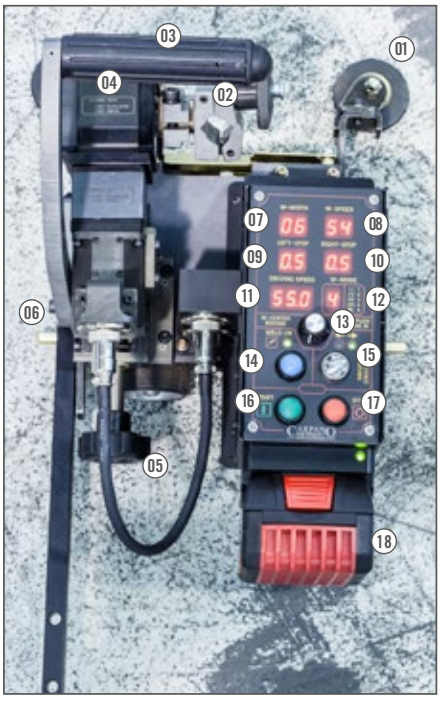
Self-aligning carriage with oscillator

- The Wave carriage has 4 drive wheels and a permanent magnet to ensure the grip of the wheels
- The magnets also allow it to work in a vertical or frontal position
- Thanks to its weight of only 8 kg and
- Its dimensions, it is extremely handy manoeuvrable and practical
- The drive wheels can work on both flat and curved surfaces, with a Ø minimum of approx. 800 mm
- Guidance is provided by 2 castors that keep the carriage adrift against a profile
- The battery allows to work safely and wirelessly connected
- The oscillator allows the selection of 5 different working modes
- There is a wireless remote control as optional accessory
- For vertical or frontal welding it is recommended to attach a safety cable

Available accessories

- On/off magnet for supporting the limit switches
- Additional batteries
- Support for torch cable
- Guides for end joints or circular joints

Its low cost and practicality of use allow a quick return on investment



01 Guide castors
02 Torch holder, for automatic torch Ø 15 to 19 mm
03 Carrying handle and magnet release
04 Oscillator
05 Oscillator transversal position adjustment
06 Limit switch
07 Oscillation amplitude display
08 Oscillation speed display
09 Left pause
10 Right pause
11 Forward speed
12 Oscillation mode: 5 different functions
a - linear welding without oscillation
b - carriage moves continuously during oscillations and pauses
c - the carriage moves during oscillations and stops during the pause
d - the carriage stops during oscillation and moves during the pause
e - the carriage stops while the torch swings away from it, while it moves when the torch swings towards it, the carriage stops during pause.
13 Multifunction knob
14 Weld/not weld button
15 Trolley direction forward/backward button
16 Start
17 Stop
18 Rechargeable battery 18V Li-Ion 4Ah

WAVE-Remote
Wireless control that can be purchased separately.
It effectively replicates the functions of the upper panel, but allows to vary each parameter without moving from one value to another by the multifunction knob.
The remote control is battery-operated, complete with its battery charger.
It has a small magnet that allows it to be placed on any sheet metal surface.

What does WAVE code include:

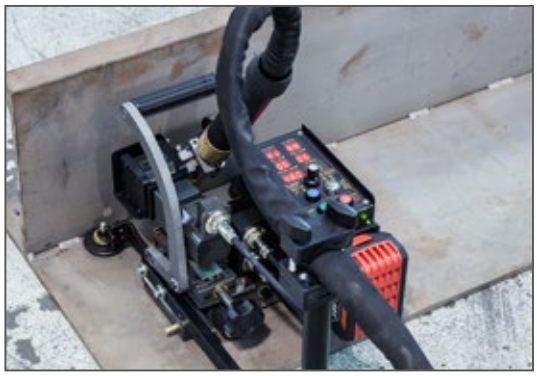
01 Chariot with oscillator
02 18V Li-Ion 4Ah rechargeable battery (for further batteries use the code SPT-18-4Ah)
03 AL 1820 CV battery charger
04 Allen keys set

What does WAVE-Remote code include:

05 Wireless remote control
06 Wireless remote control battery charger

Accessories

07 SPT-PTC torch cable support
08 SPT-165 ON/OFF magnet for operating the limit-switches
09 SPT-ANG extension arm for butt welding
10 SPT-ROT Kit for moving the chariot along rails



Corner inner welding with drive wheels on the horizontal plate of the workpiece.

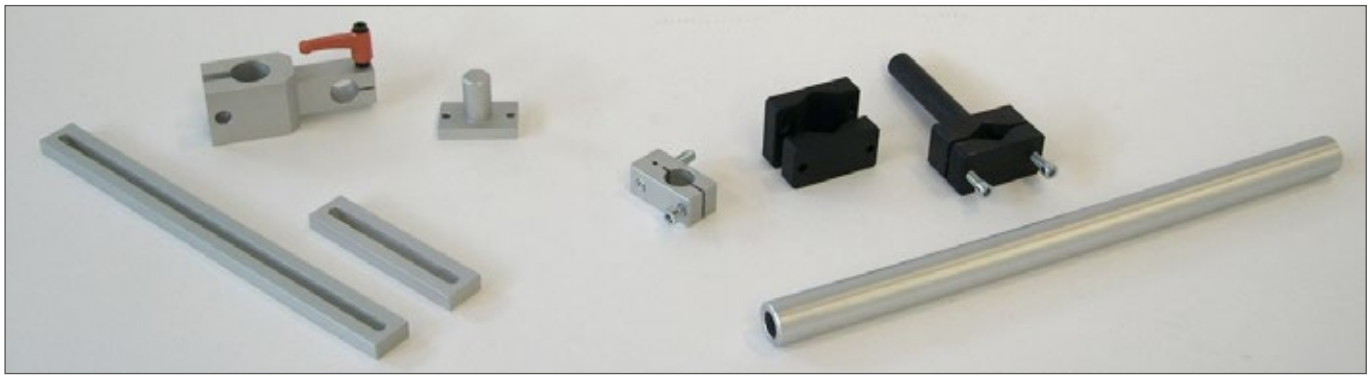
Vertical plate acts as a guide

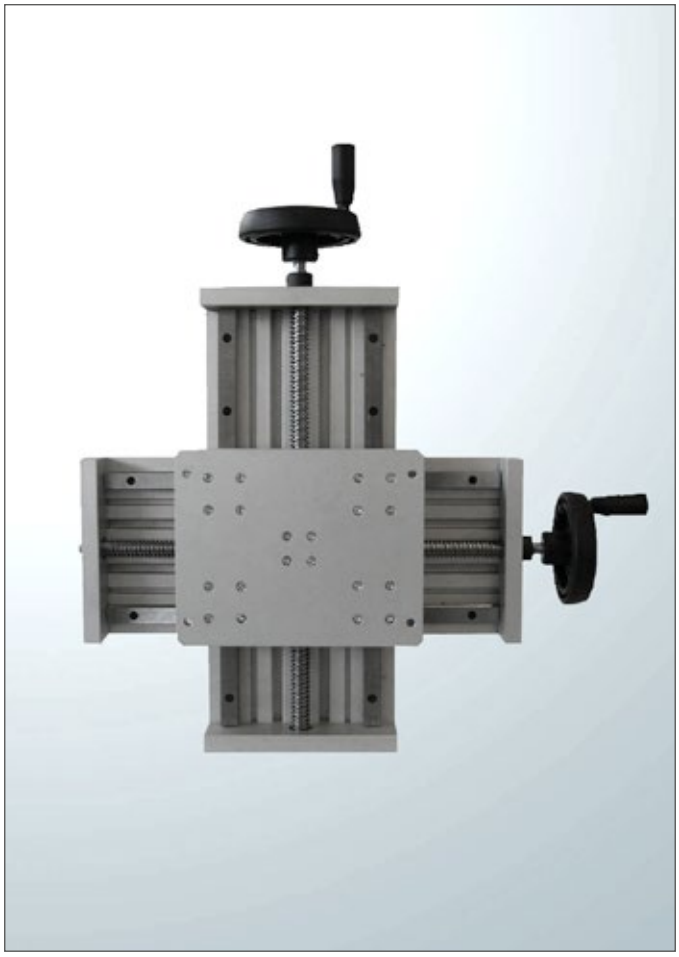
When welding in vertical position magnets and motor with encoder allow the chariot to go forward with precision.

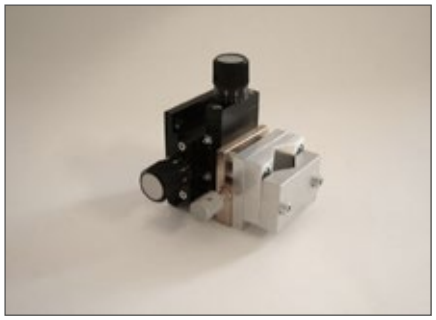
For safety reasons we suggest to tie the chariot
to a security cable.

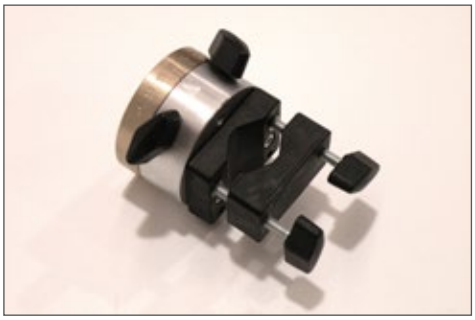
COMPLEMENTARY EQUIPMENT

This section is dedicated to a wide range of manual and motorized slides, as well as to oscillators, AVC, joint tracking systems, weld monitoring systems and many other fixtures to complete the automation and enhance productivity of welding and cutting plants.

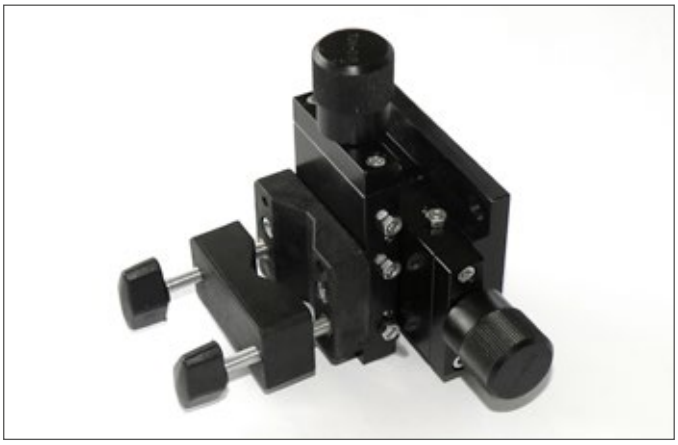


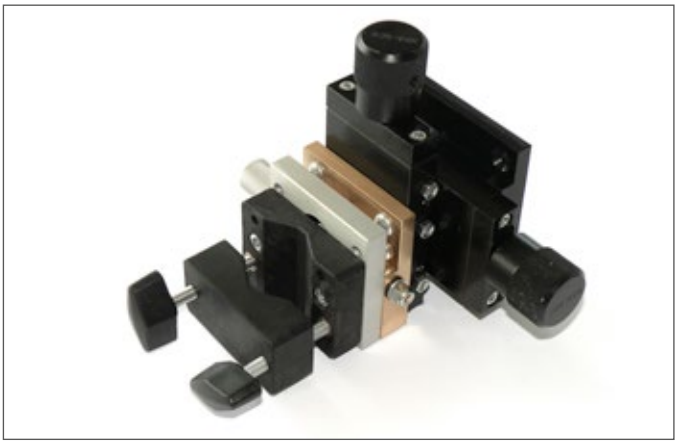


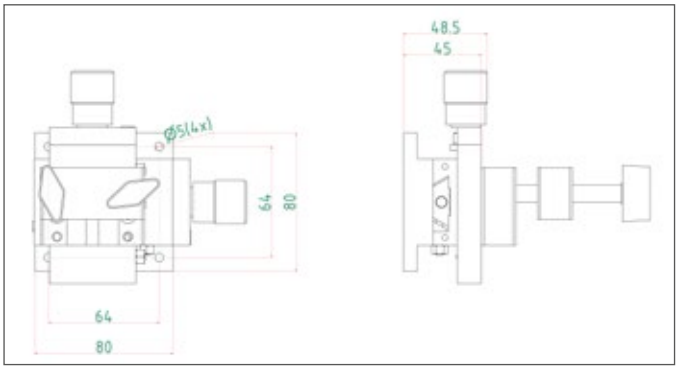


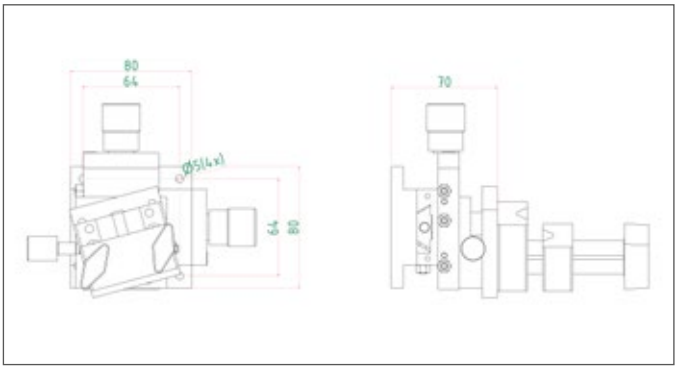


MANUAL SLIDES
MICROMETRIC SLIDES STROKE 50 MM
PAYLOAD 2 KG AT 50 MM









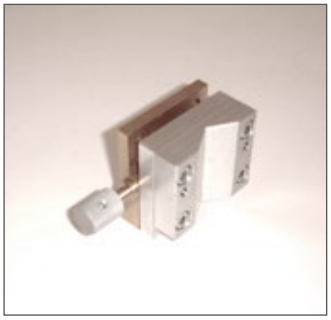
SM50/F, CROSS-SLIDE ASSEMBLY
consisting of:
- 2 slides SM50/1
- 1 flange SM/F
- 1 torch clamp SM/PT

SM50/FR, CROSS-SLIDE ASSEMBLY
consisting of:
- 2 slides SM50/1
- 1 flange SM/F
- 1 torch clamp SM/PT
- 1 rotating flange SM/FR

SM50/1, ONE-AXIS SLIDE, STROKE 50 MM
- Aluminium machined body,
- Brass slider and screw,
- Steel nut for a/m screw
- Grub screws to adjust floating

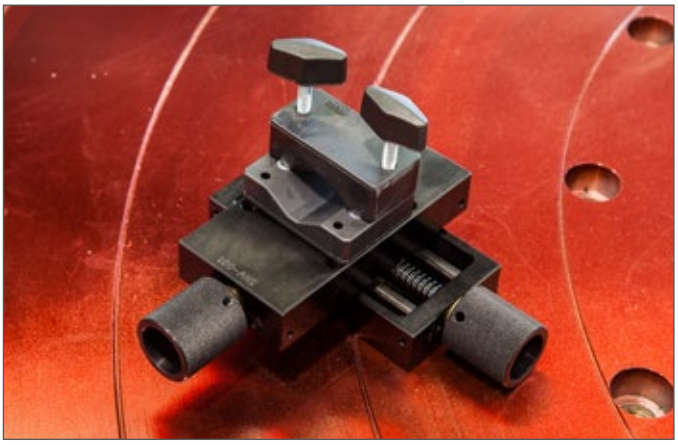
SM/PT torch clamp
Made of synthetic material, suitable for torch Ø 18 to 40 mm

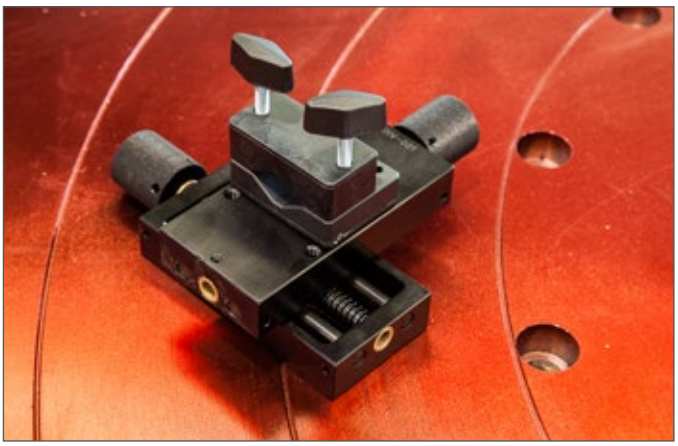
SM/FR rotating flange
complete with torch clamp



SM/F
flange complete with holes and bolts to be fixed to any structure

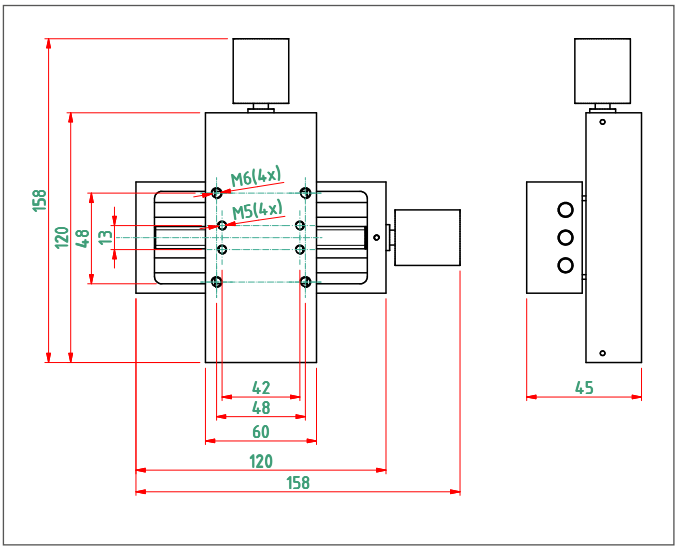
SM-60 MANUAL SLIDES
MICROMETRIC SLIDES STROKE 60MM PAYLOAD 4 KG AT 50 MM



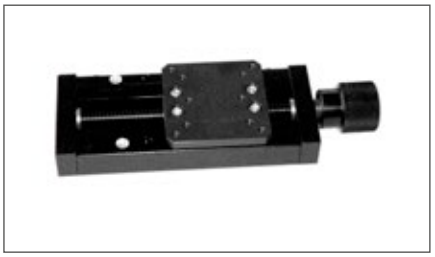


SM 60/2
Micrometric cross slide assembly with stroke 60x60 mm
- Aluminium machined body
- Steel trapezoidal screw Ø12, lead 3 mm, with brass nut
- Two steel axis with brass bushing
- Max load 4 kg, out 50 mm

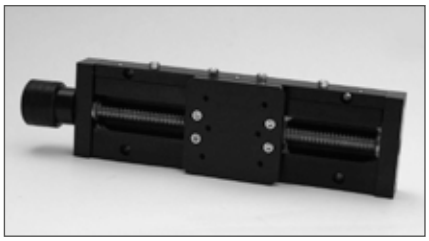
SM 60/F
Cross slide assembly with torch holder



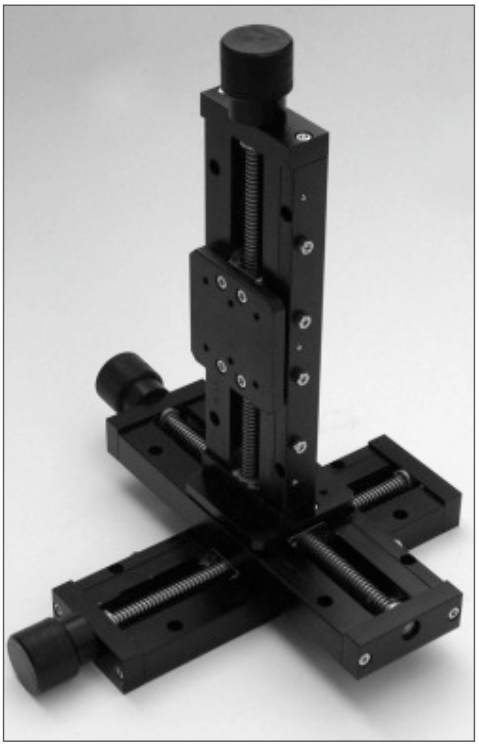
MANUAL SLIDES
MICROMETRIC SLIDES STROKE 80-160 MM PAYLOAD 10 KG AT 50 MM



SMMD 80-1 one-axis slide, stroke 80 mm
Aluminium machined body,
brass screw, bronze nut,
brass dovetail slider with adjuster,
knob in knurled aluminium



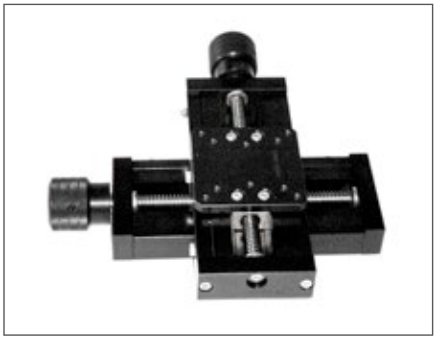
SMMD 160-1 one-axis slide, stroke 160 mm
Aluminium machined body,
steel screw, bronze nut,
brass dovetail slider with adjuster,
knob in knurled aluminium



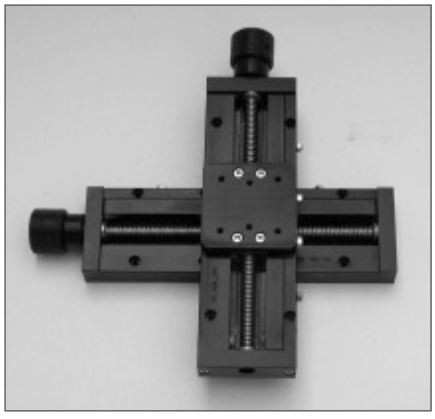
SMMD 160-3 three-axis slide assembly
consisting of 3 slides SMMD160-1,
strokes 160 x 160 x 160 mm

SMMD 80-3 three-axis slide assembly consisting of 3 slides SMMD80-1, strokes 80 x 80 x 80 mm

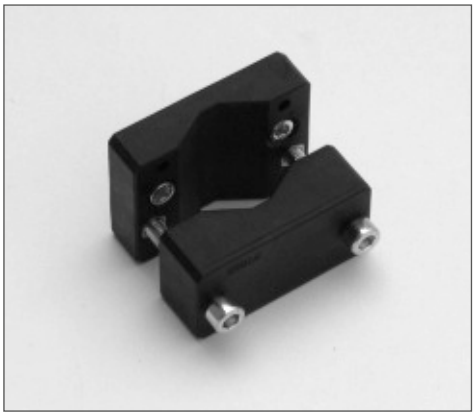
SMMD 80-2 cross-slide assembly
consisting of 2 slides SMMD80-1, strokes 80 x 80 mm



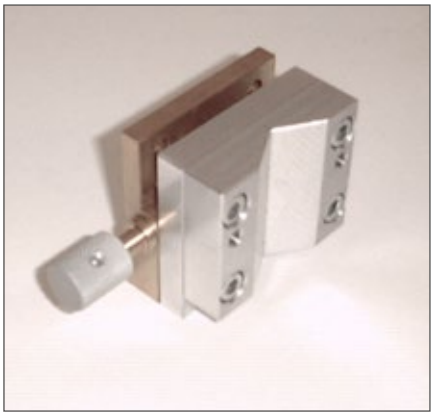
SMMD 160-2 cross-slide assembly
consisting of 2 slides SMMD160-1,
strokes 160 x 160 mm



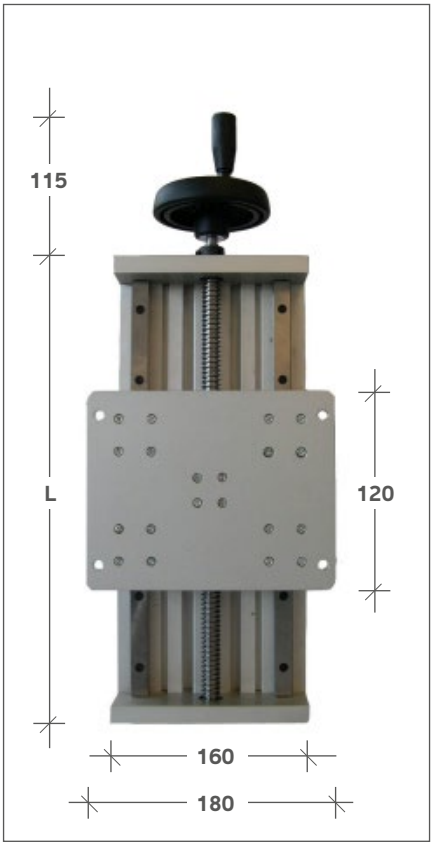
SMMD-PT , torch clamp
Made of synthetic material, suitable for torch Ø 18 to 40 mm, it can be fixed in horizontal or vertical position

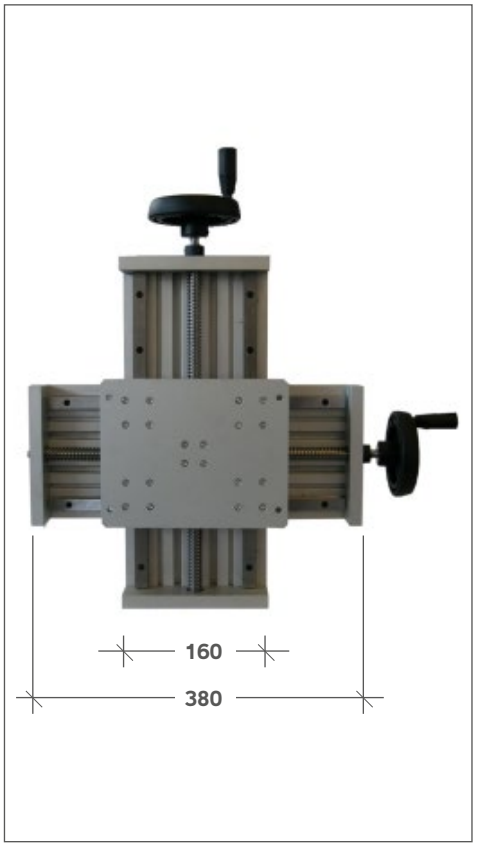


SM MD-FR rotating flange,
± 30°, with torch clamp



MANUAL SLIDES
STROKE 100, 190 OR 400 MM
PAYLOAD 60 KG AT 400 MM



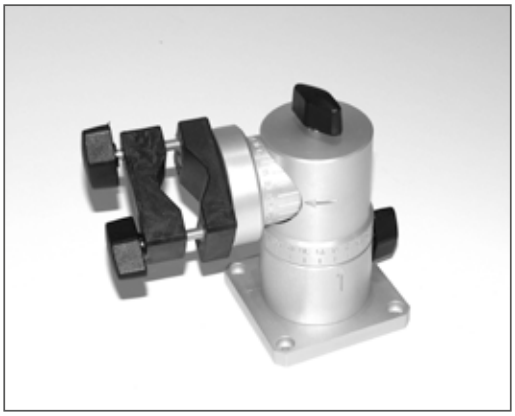


SM BIG is made of aluminium plates and profiles, it moves on linear precision ball guides driven by trapezoidal screw. Payload 60 kg at 0.4 m from face plate allows to combine it with other slides and makes it suitable for heavy duty jobs and SAW.

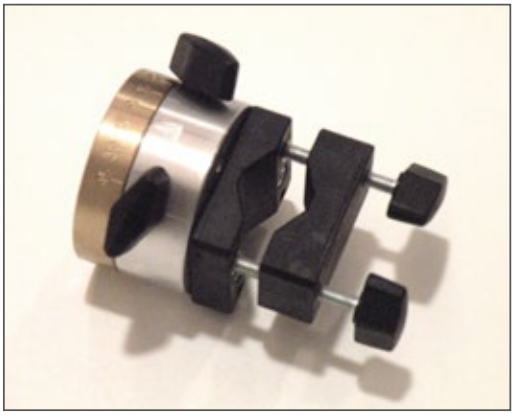
Available on stock with 190 mm stroke for immediate delivery, it can be supplied upon request with 100 or 400 mm strokes, either single axis or cross assembled.

SM BIG	100	190	400
L (mm)	290	380	590
Lx (mm)	55	70	170
Screw pitch (mm)	4	4	4
Weight (kg)	5,4	6,1	7,8

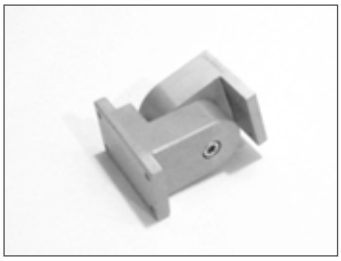
ACCESSORIES
TORCH HOLDERS AND POSITIONING ACCESSORIES



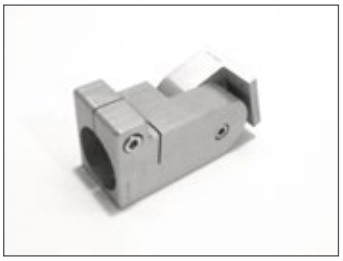
TWIN 2-axis rotating torch holder, 360° on both axis, with angle indication, clamp for torch Ø 18 to Ø 40 mm and brake to fixit in the right position.



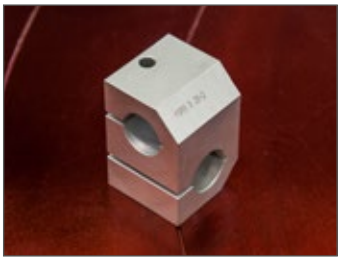
MONO 1-axis 360° rotating torch holder, with angle indication, clamp for torch from Ø 18 to Ø 40 mm and brake to fixit in the right position.



S8006.009 one-axis swivel 0° to 180°, with end flanges, payload 10 kg, ideal for MM MINI slides.

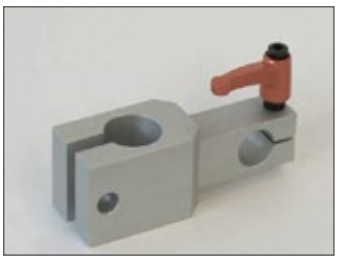


B150001+2 two-axis swivel with clamp for pipe Ø 60 mm and flange for fixing to slides MM MINI, payload 10 kg.



MORS.D.25 - cross clamp 2 x Ø25 at 90°

TUBO25 - Aluminium pipe Ø25 X 400 mm



CEBTM25V double support Ø18 and 25 mm.

CEBTM16 torch holder with support Ø16 for rack & pinion boom 20 x 20 mm CEB20M.

CEBTM25 torch holder with support Ø25 for rack & pinion boom 30 x 30 mm CEB30M.

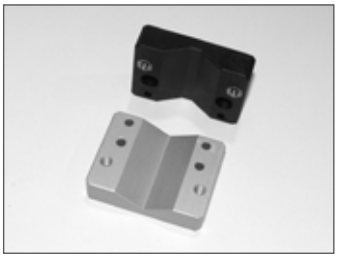
ACCESSORIES
TORCH HOLDERS AND POSITIONING ACCESSORIES

PT001 bracket with shaft Ø18 made up of synthetic material and machined for torch Ø 18 to 40 mm.

PT001AL bracket made up of aluminium to be combined with PT002AL or PT003AL.

PT002 bracket made up of synthetic material to be combined with PT001 or PT003.

PT002AL bracket made up of aluminium to be combined with PT001AL or PT003AL.



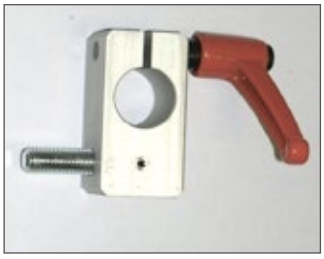
PT003 bracket made up of synthetic material to be combined with PT002.

PT003AL bracket made up of aluminium to be combined with PT002AL.

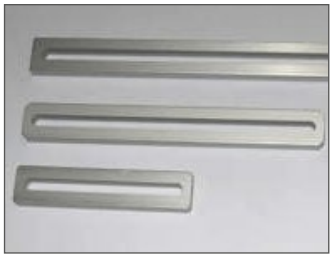
PT60 holder for torches Ø 30 to 60 mm, two fixing holes Ø6.5 mm spot - faced, centre distance 48 mm.

CEBTCN hinged torch holder for automatic torches Ø35 to 42 mm quick locking

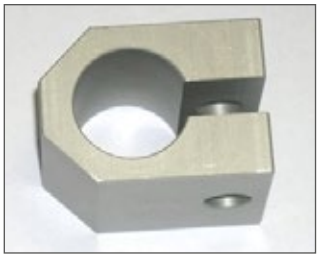
PER18 flange with shaft Ø18 mm and 2 holes Ø5.5, centre distance 41 mm.



MORD8
Ø18 mm clamp, with thread shaft M8 to connect PT001 to the slotted rod.

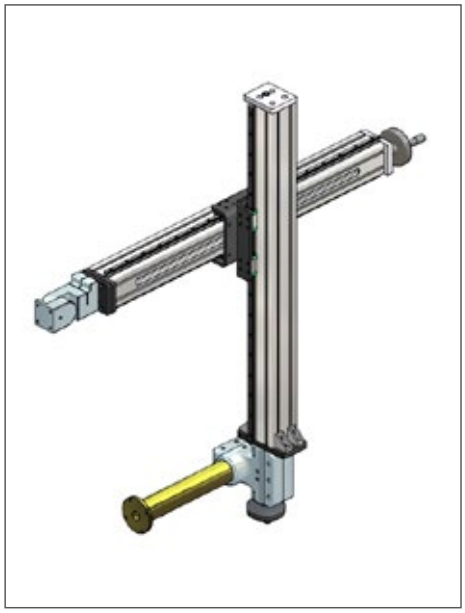


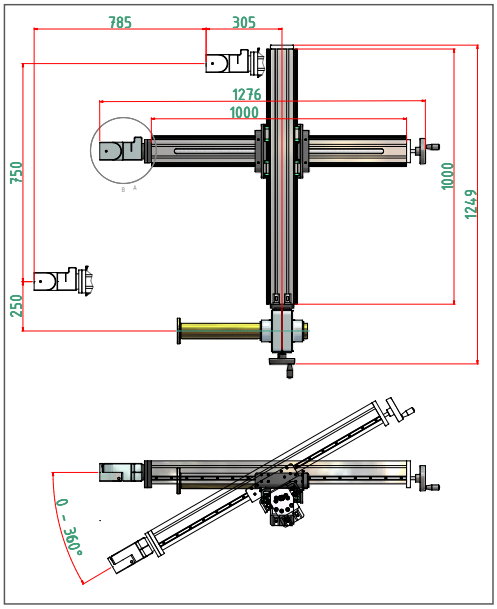
ROD, aluminium plate, with slot 8.5 mm, available in 3 lengths:
ASTA 115 mm
ASTA 200 mm
ASTA 300 mm



MORS.D.25 clamp Ø25 mm for connecting the rod to pipe

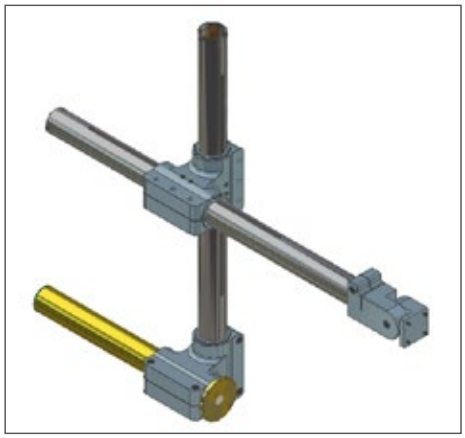
CROSS ARMS AND PNEUMATIC SLIDES

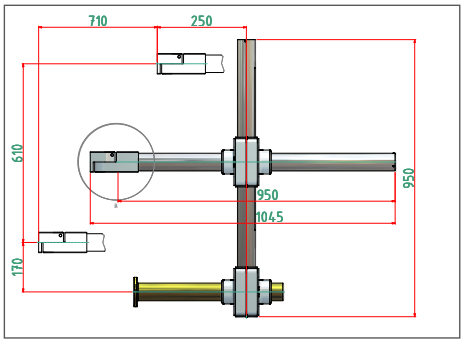


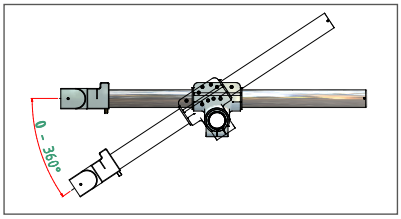


JD ARM oss arms assembly, both axis driven by hand wheel

- 2 clamps made in aluminium casting and machined.
- Horizontal tube Ø60x500 mm for connection to a table positioner or to other fixture.
- Strokes 750x750 mm, both axis made of aluminium profiles 90x90
- mm, moving on precision ball guides driven by trapezoidal screw and hand wheel.
- Horizontal arm end equiped with two-axis clamp for manual, motorized or pneumatic slides



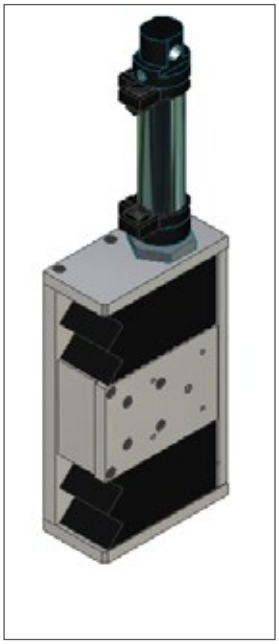




JD BB cross arms assembly, both axis without hand wheel drive

- 2 clamps made in aluminium casting and machined.
- Horizontal tube Ø60 x 500 mm for connection to table positioner.
- Vertical and horizontal tubes Ø60x900 mm.
- Horizontal tube end provided of two axis clamp for manual, motorized or pneumatic slides.

PNEUMATIC SLIDES



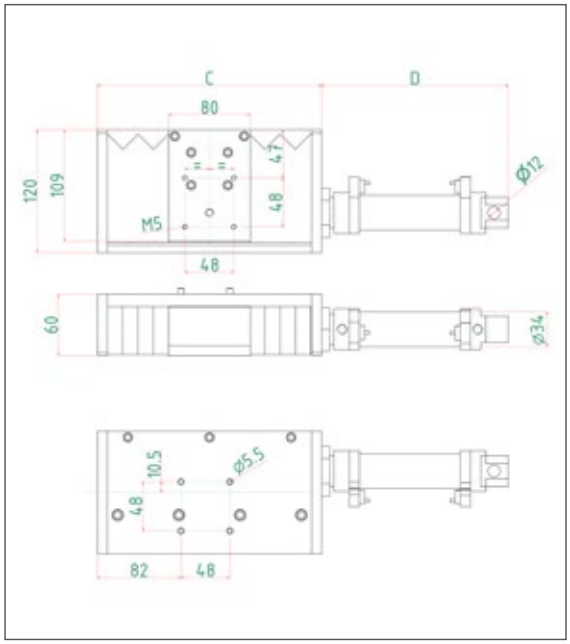
JD PNEUMO

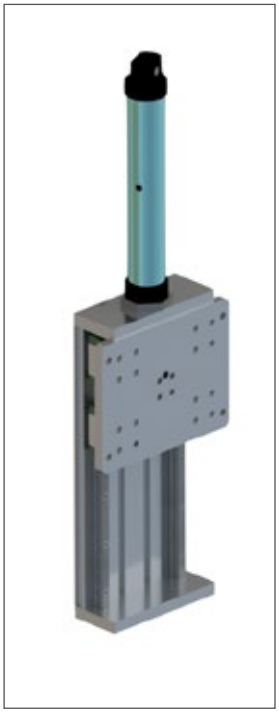
Peumatic slide for torch holding arm

- Aluminium machined body.
- Inductive limit switches.
- Ball bearing runner.
- Protection bellows.
- Pneumatic circuit to be housed inside the positioner, complete of pressure adjuster, manometer and solenoid valves.

JD PNEUMO 80 stroke 80 mm
- C=220 mm D=183 mm.

JD PNEUMO 180 stroke 180 mm
- C=320 mm D=283 mm.





SM BIG PNEUMO

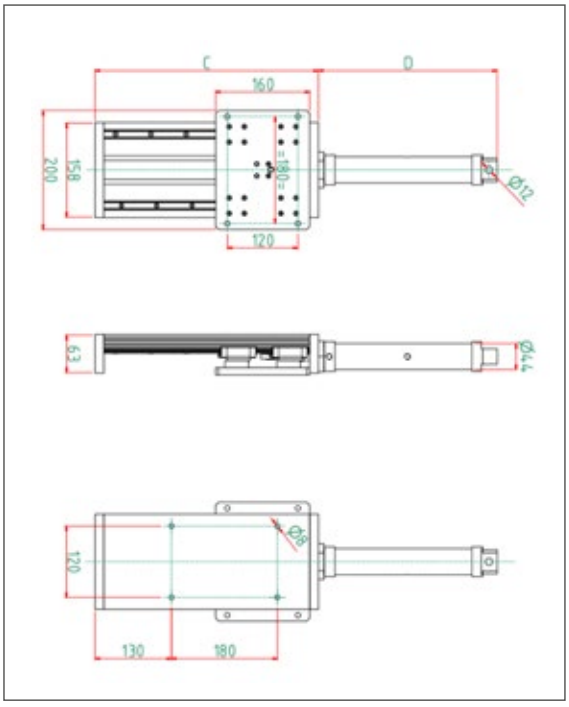
Peumatic slide for torch holding arm

- Aluminium machined body.
- Inductive limit switches.
- 4 ball bearing runners.
- Protection bellows.
- Pneumatic circuit to be housed inside the positioner, complete of pressure adjuster, manometer and solenoid valves.

BIG PNEUMO 100 stroke 100 mm
- C=280 mm D=214 mm.

BIG PNEUMO 190 stroke 190 mm
- C=380 mm D=304 mm.

BIG PNEUMO 400 stroke 400 mm
- C=580 mm D=514 mm.



Sliding Arm Pneumo
Sliding Arm Man

Sliding Arm is a torch support arm that can be supplied with or without pneumatic release.
The vertical and horizontal stroke is adjusted by means of a worm screw-crown-rack system.

Strokes other than those indicated in the dimensional tables can be supplied on request.

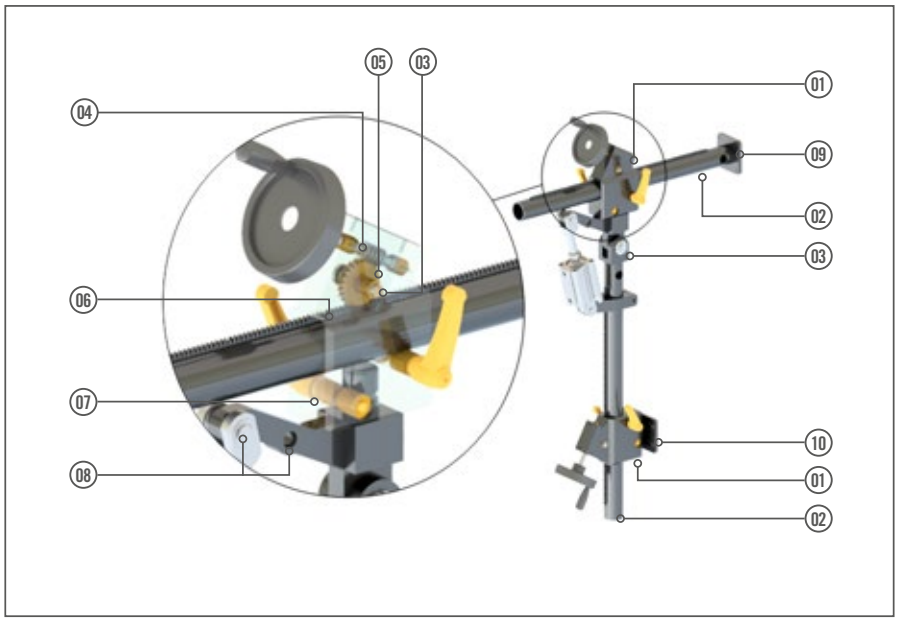
SLD-Pneumo version with pneumatic release

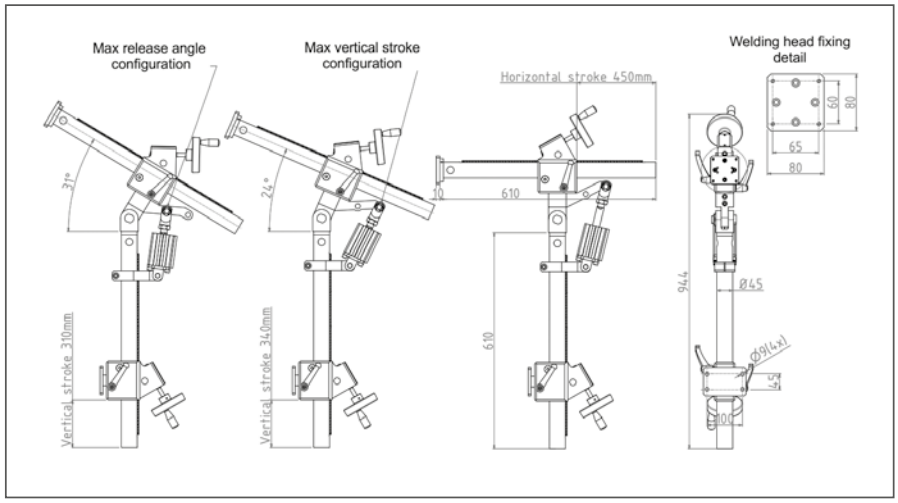
The code includes:
- Pneumatic cylinder for arm release
- Pneumatic circuit with:
  - . solenoid valve
  - . pressure reducer with indicator
  - . 2m hoses
  - . flow regulators on cylinder

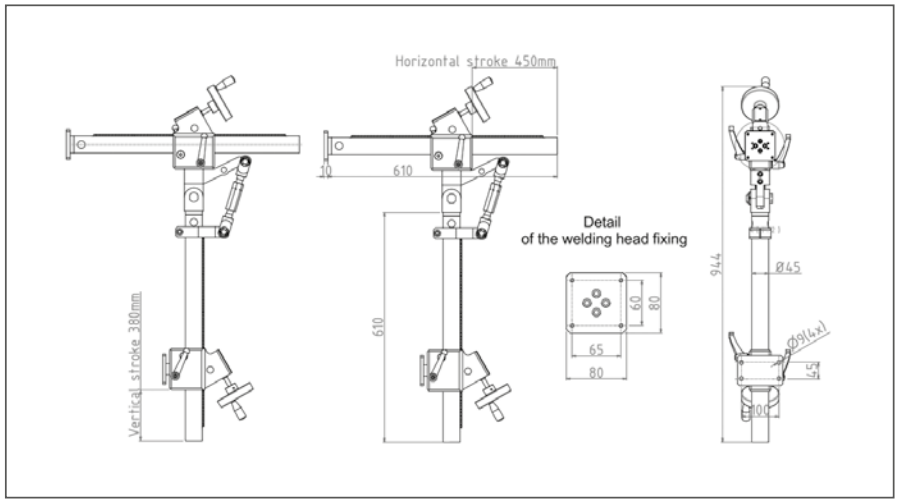
SLD-MAN version without pneumatic release

This version instead of the components relating pneumatics provides a tie rod for a fixed adjustment of the angle between the vertical axis and the horizontal axis.

SLD-PNEUMO VERSION WITH PNEUMATIC RELEASE







Technical features:

1. machined aluminum sliding blocks

2. vertical and horizontal pipe in burnished iron

3. steel pins with bronze bushings

4. hand wheel on steel worm screw

5. bronze crown

6. bronze helical toothed rack

7. brakes to block sliding, with brass threaded inserts and adjustable lever

8. cylinder fixing system adjustable in two positions for a greater / lesser release angle

9. flange for manual slides / torch holder fixing

10. flange to fix the arm to the positioner

MOTORIZED SLIDES
MM MINI, STROKES 80 TO 300 MM
PAYLOAD 10 KG

MOTORIZED SLIDES MM MINI ARE AVAILABLE WITH ONE AXIS OR IN CROSS ASSEMBLY EXECUTION, FEATURING:

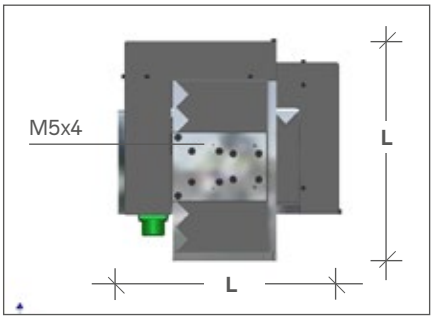
- Control panel feeding 230V 1-phase
- Remote control with joystick and speed adjuster
- Kit of connection cables 10 m
- Driven by ball screw and ball guides
- Protection bellow
- Torch holder PT002 and PT003

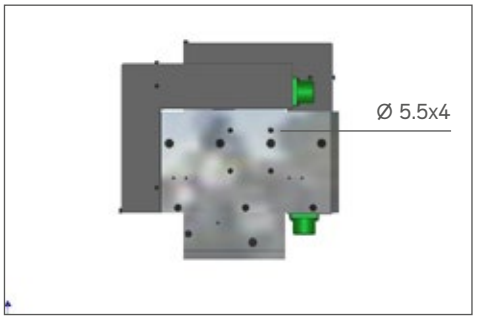
MM MINI – one axis stroke

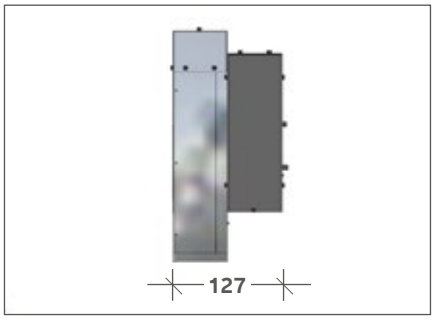
- MM MINI 80/1 80 mm
- MM MINI 180/1 180 mm
- MM MINI 250/1 250 mm
- MM MINI 300/1 300 mm

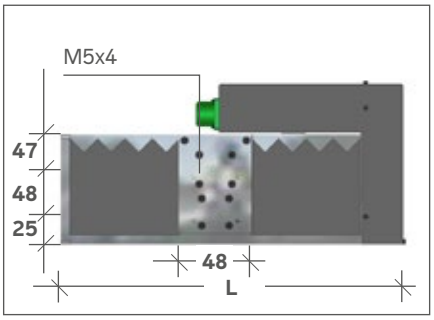
MM MINI – cross stroke

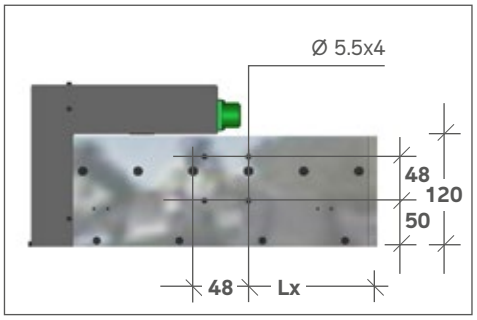
- MM MINI 80/2 80x80 mm
- MM MINI 180/2 180x180 mm
- MM MINI 250/2 250x250 mm
- MM MINI 300/2 300x300 mm

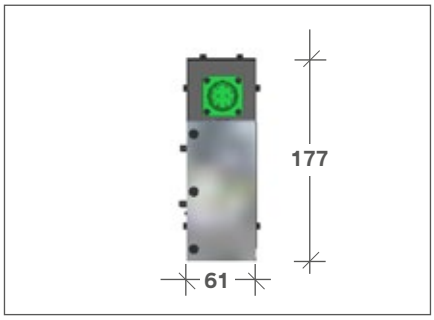




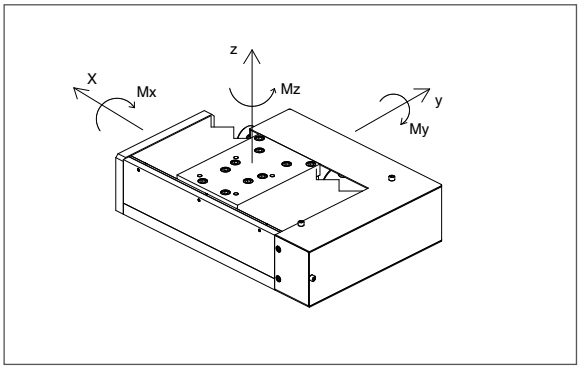








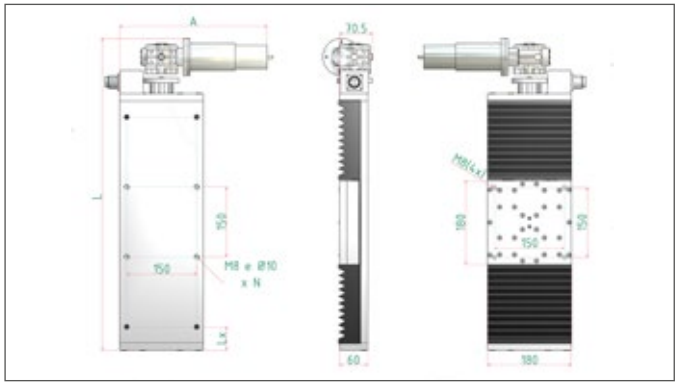
MM MINI	80	180	250	300
L (mm)	256	376	476	536
Lx (mm)	80	140	196	226
P motor power (W)	31	31	31	31
Payload (Kg)	10	10	10	10
Speed range (mm/min)	50/2300	50/2300	50/2300	50/2300
Mx (Kgm)	4	4	4	4
My (Kgm)	3	3	3	3
Mz (Kgm)	3	3	4	4

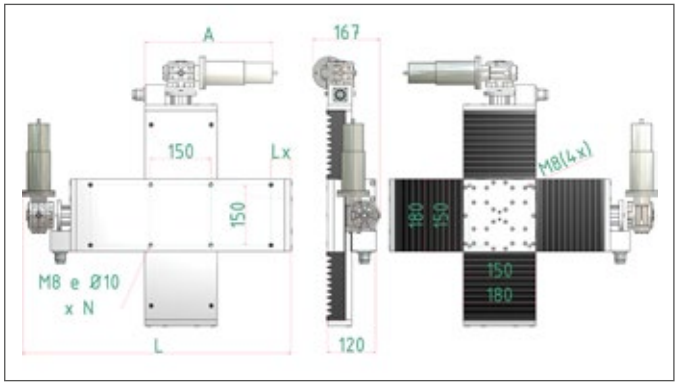


MOTORIZED SLIDES
MM MIDI, STROKES 100 TO 600 MM OR 150 KG (HD)

MOTORIZED SLIDES MM MIDI ARE AVAILABLE WITH ONE AXIS OR IN CROSS ASSEMBLY EXECUTION, FEATURING:

- Control panel feeding 230V 1-phase.
- Remote control with joystick and speed adjuster.
- Kit of connection cables 10 m.
- Driven by ball screw and ball guides.
- Protection bellow.
- DC motors with tacho generator, vertical axis of MIDI HD equipped with brake.



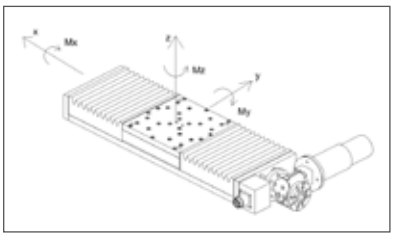


MM MIDI HD– one axis stroke

- MM MIDI 100/1 HD
- MM MIDI 150/1 HD
- MM MIDI 250/1 HD
- MM MIDI 400/1 HD
- MM MIDI 600/1 HD

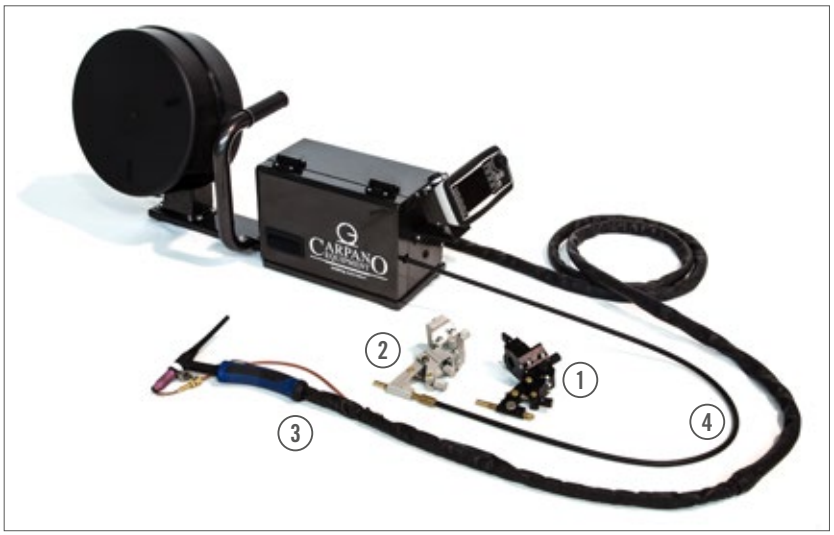
MM MIDI HD – cross stroke

- MM MIDI 100/2 HD
- MM MIDI 150/2 HD
- MM MIDI 250/2 HD
- MM MIDI 400/2 HD
- MM MIDI 600/2 HD



HD Slides	100 HD	150 HD	250 HD	400 HD	600 HD
L (mm)	490	550	665	890	1155
A (mm)	360	360	360	360	360
Lx (mm)	110	140	50	160	145
N Fixing holes	4	4	8	8	12
P Motor power (W)	350	350	350	350	350
Payload (Kg)	150	150	150	150	150
Speed range (mm/min)	50/1500	50/1500	50/1500	50/1500	50/1500
Mx (Kgm)	24	24	24	24	24
My (Kgm)	26	26	26	26	26
Mz (Kgm)	26	26	26	26	26
Weight (kg)	15,8	16,2	16,9	21,4	24,8

VPR-4WD
4 ROLLS COLD-WIRE FEEDER WITH DIGITAL CONTROL



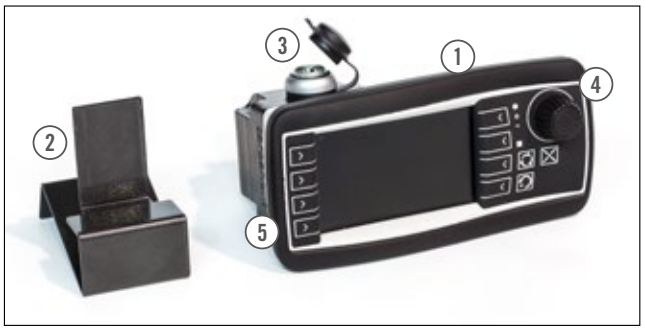
ACCESSORIES

1. 3D-WIRE, 3 axes wire adjuster
2. CEFF, 4 axes wire adjuster
3. Manual torch with cold wire kit
4. Steel sheath, up to 4m.

VPR-4WD IS A 4 WHEELS WIRE FEEDER with DC motor with encoder that can grant invariability and precision in wire feeding during TIG and Plasma processes either in “cold wire” mode or in “hot wire“ mode.

The product has been conceived for modular use so as to meet any possible need:

- Manual with torch to be hold with hands: in this case the wire feeder will manage all the job
- Automatic with wire feeder provided with programmable controller, but managed together with other equipments
- Automatic with wire feeder without its own programmable controller, but directly managed by the machine PLC.



Control panel description

1. VPR4.P001 Control panel
2. VPR4.013 Remote control support
3. USB door for software updates
4. Multifunction knob
5. Single function buttons

- Panel extension cable available : 5 and 10 m length

Components

1. VPR-4MOT gearmotor group
2. VPR-4RC control panel
3. VPR-4RCS panel support
4. VPR-4SUP transport frame
5. VPR-4BOB wire reel holder

AVC PLC ARC CONTROL
FOR TIG, PLASMA AND MIG

AVC PLC will grant several benefits to your welding :
- high uniformity and quality of welding/cutting
- considerable increasing of process speed
- great reduction of plant starting up and joint preparing time
- decreasing of consume of torches spare parts
- low-skilled operators required

Most frequent applications:
- on manipulators for circle tanks welding
- on seamers for longitudinal welding
- on turntable positioners and on lathes for pipes welding on pantograph
- on lathes for pipe cutting

Useful anyhow for any application in which torch changes its distance from work-piece during welding process.

With AVC PLC **Carpano Equipment** offers to its Customers a product provided with lots of features.

The same machine can be employed in each of the following welding processes:
- TIG DC
- Pulsed TIG, minimal frequency 2Hz
- TIG AC
- "Hot wire" TIG and "cold wire" TIG
- MIG and pulsed MIG

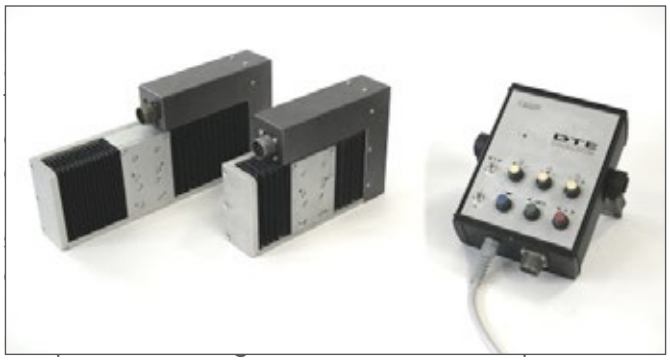
PLC allows integration with other systems such as:
- Oscillator
- Cold wire feeder
- Linear or rotating axes
- 3 axes max. In this case there are only one control panel and only one control box

AVC PLC can be coordinated with:
- Any kind of Carpano's motorized slide
- AI Power manipulators

AVCPLC80mini
01.Control box
02. Motorized slide MINI80
03. Remote control
04. 10m cable for standard slide. Other length upon request
05. 5m feeding cable
06. 1,5m nr. 2 cables for connection to power source

AVCPLC250MIDI
01. Control box
02. Motorized slide MIDI250
03. Remote control
04. 10m cable for standard slide. Other length upon request
05. 5m feeding cable
06. 1,5m nr. 2 cables for connection to power source

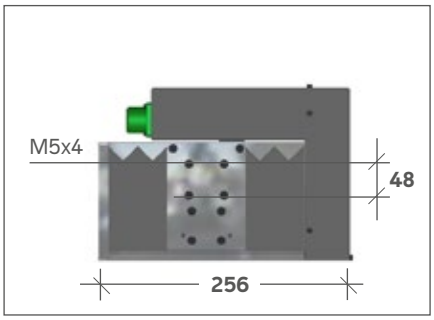
LINEAR OSCILLATOR
ELECTRONIC INVERSION MOTION AND ANALOGUE CONTROL

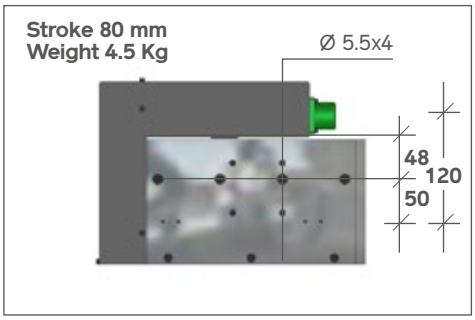


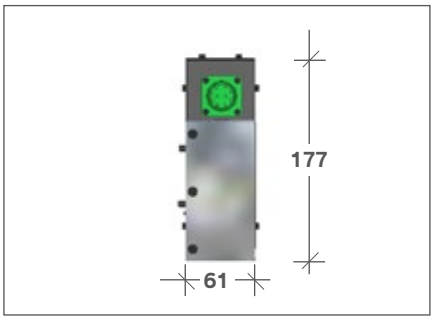
DTE 80/180

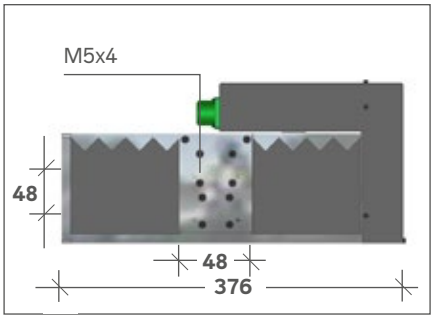
Linear oscillators with electronic inversion, stroke 80 or 180 mm.

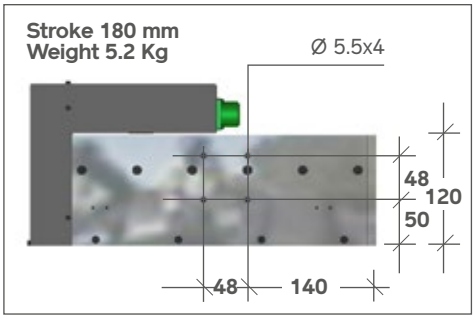
They allow to alternate the torch stroke direction and to adjust the oscillation amplitude, frequency, centreline and left / centre / right (l / c / r) dwells.
Effectively used for the filling of thick joints and for hard facing of wear parts of valves and of other fixtures ads well. Payload is 10 kg at 100 mm from face plate.
With protection bellow.

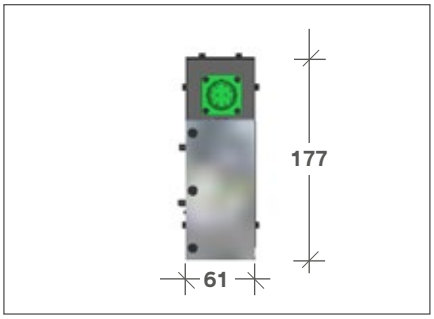












1. Start – Stop
2. Dwell left
3. Dwell centre
4. Dwell right
5. Line on/off
6. Amplitude
7. Speed
8. Oscillation centreline

TECHNICAL DATA	DTE 80	DTE 180
Feeding	230V 50-60 Hz	230V 50-60 Hz
Oscillation speed	20-2800 mm/min	20-2800 mm/min
Oscillation amplitude	0-30 mm	0-50 mm
Oscillation centreline	± 25 mm	± 60 mm
Dwell l / c / r	0-5 sec	0-5 sec
Controller dimensions	200x 82x169 mm	200x 82x169 mm
Controller weight	3 kg	3 kg
Connection cable	10 mt, or at request	10 mt, or at request
Payload	10 kg at 100 mm	10 kg at 100 mm

LINEAR OSCILLATOR
DTE PLC ELECTRONIC INVERSION MOTION AND DIGITAL CONTROL

DTE PLC features:

- Feeding 230V, 1-phase
- Motor power according to slide size

Remote control with 10 m cable and digital setting of:

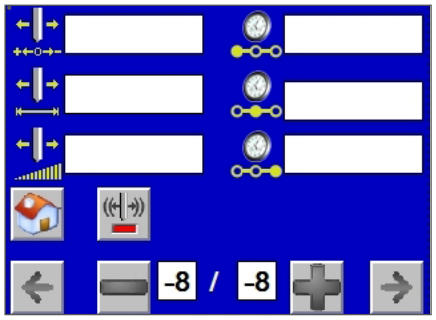
- Amplitude.
- Oscillation speed.
- Oscillation centreline.
- Dwell left / centre / right.
- Emergency cut-off.
- Start / stop push buttons.
- Push buttons for shifting oscillation centreline.
- Slide actuating the oscillation: see motorized slides MM MINI and MM MIDI.

The PLC installed on the remote control allows to record custom built functions and cycles. DTE PLC can be combined with any MM MINI and MM MIDI slide.

PLC control panel display

Besides basic functions, special functions can be associated such as:

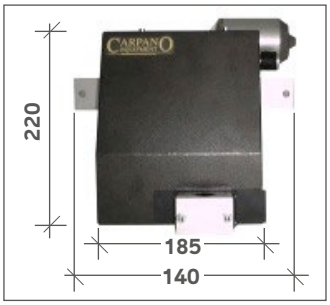
- Step or helical motion
- Recall of different data at each weld pass

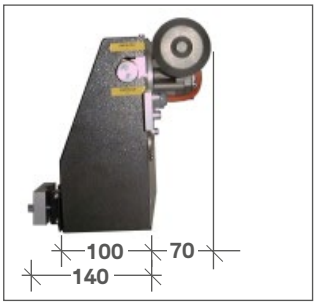


CEW2 - MECHANICAL LINEAR OSCILLATOR

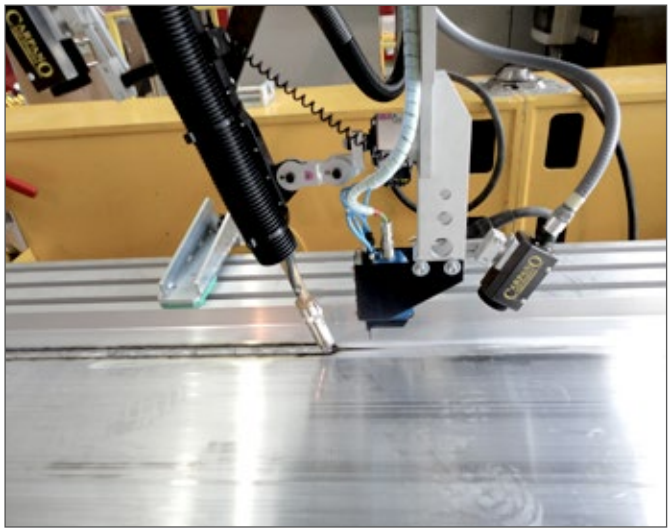
Features:

- Mechanical setting of amplitude 0 to 33 mm
- Oscillations 5 to 150 per minute
- Payload 6 kg at 100 mm from face plate





JOINT TRACKER
TATTILE IG, LASER IG LAS, TRACKER



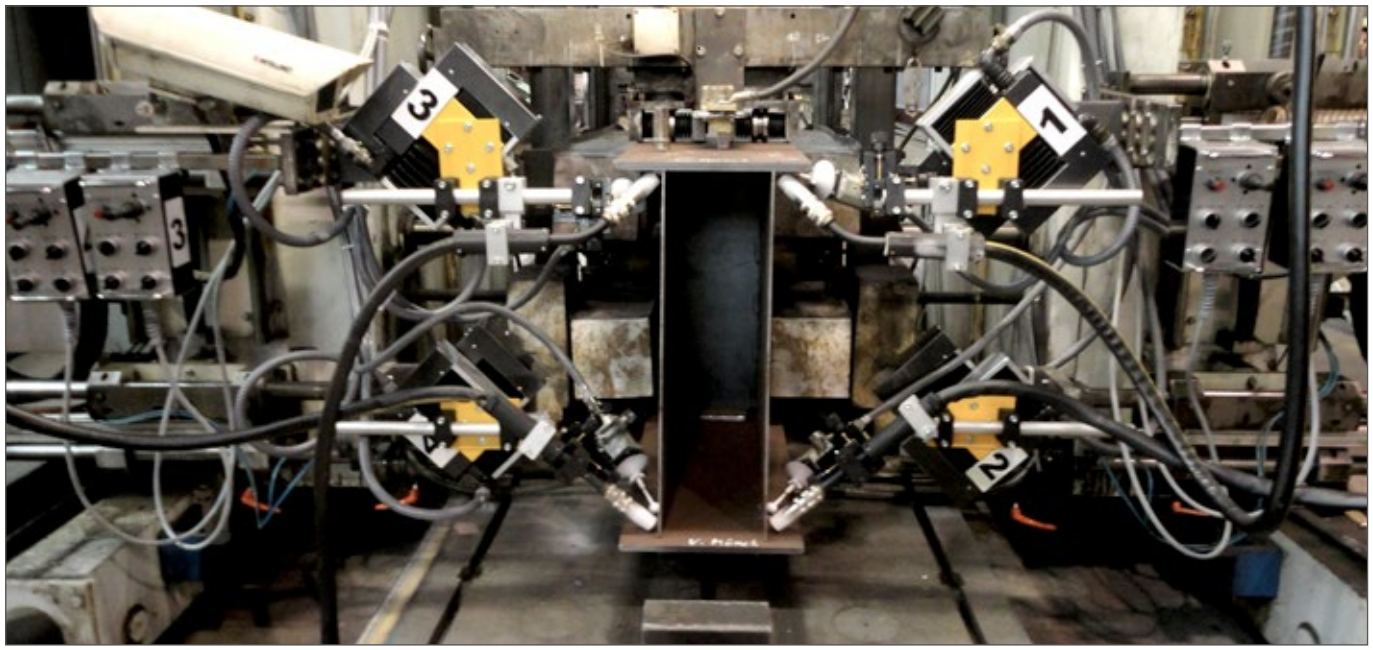
A WELDING PLANT CAN BE CONSIDERED AUTOMATED IF THE OPERATOR CAN BE RELIEVED FROM THE TASK OF CONTINUOUSLY ATTENDING THE PROCESS.

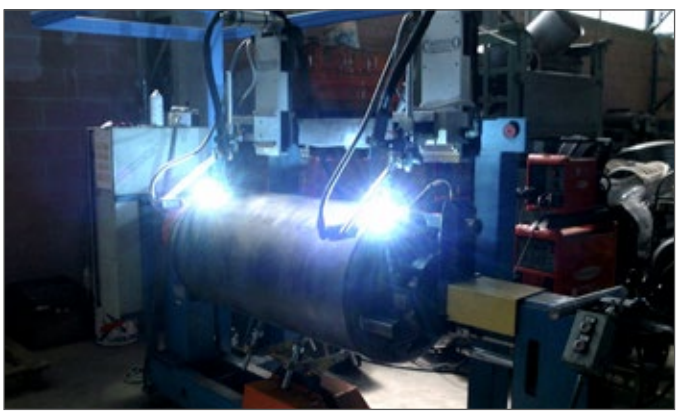
When the geometry of work pieces is irregular and/ or when welding heat input distorts them, joint tracking systems effectively solve these problems and enhance both the productivity of the plant and the quality of the joint as well.

Our range includes 3 models of joint tracking systems:

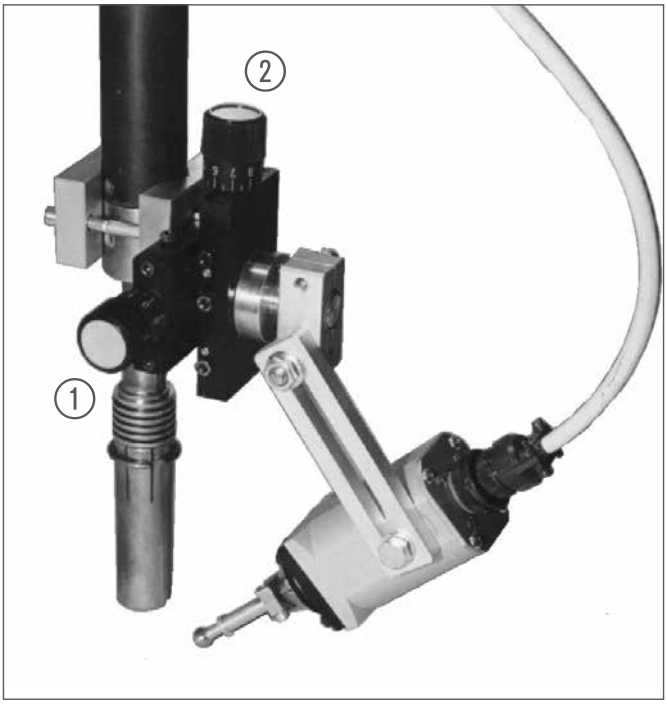
- IG, 2-axis, with tactile proportional probe.
- IG LAS, 1-or 2-axis, with one or two laser probes. TRACKER, the laser scanner.

See their standard features in the next pages.





IG, TACTILE JOINT TRACKER



1. Torch horizontal adjustment
2. Torch height adjustment

WORKING PRINCIPLE

IG tactile system constantly keeps the torch in touch with the joint and automatically performs precise tracking for any welding process.

After moving straight downwards, the probe shall automatically pursue its tracking start position moving in the direction left-centre-right that has been pre-set.

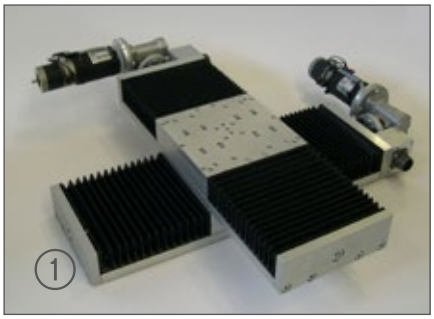
After reaching that position, whenever the probe senses a deviation greater than 0.2 mm, cross slides shall move and correct the torch at a speed proportional to the error the probe has detected.

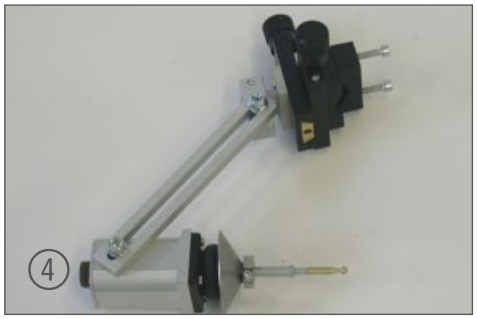
Single axis tracking can be performed by motorized slide or by side beam carriage and x/y tracking by motorized cross slides MM MICRO, MM MINI, MM MIDI, MM MIDI HD.

Essential condition for horizontal tracking is a 2 mm side wall, rebate or gap.

PLANT COMPOSITION:

1. One or more motorized slides.
2. Connecting cables length 10 m for the slides and for the probe
3. Control box.
4. Probe with manual cross slides.
5. Pendant with 10 m of cable. On demand all cables can have different lengths.





IG, TACTILE JOINT TRACKER

IG SYSTEM CAN BE COMBINED WITH 2 MODELS OF MOTORIZED SLIDES:

- **LT,** payload 10 kg at 100 mm from face plate, stroke 80 – 180 – 250 – 300 mm, generally used for MIG and TIG processes (MM MINI see slides).
- **HD,** payload 150 kg at 400 mm from face plate, stroke same as MD, suitable for SAW Twin or Tandem (see slides MM HD).

All a/m slides are made up of aluminium and machined, driven by ball screw and ball guides, provided of protection bellows and equipped with DC motors controlled by tacho generator or by encoder.

HD Vertical axis has got a more powerful motor with brake

Ordering code

IG tracking system ordering code depends from the motorized slides and it's combined with:

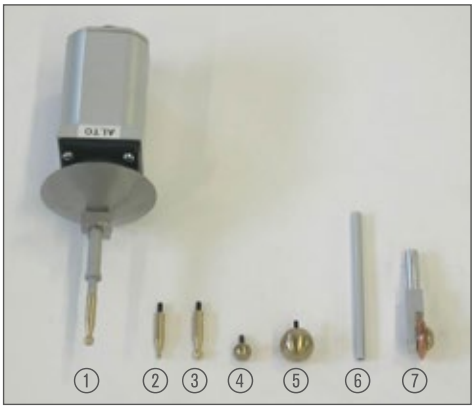
IG LT 80/2 identifies a 2-axis system with MM MINI slides stroke 80 x 80 mm

IG MINI 180/1 H identifies a 1-axis system with horizontal MM MINI slide stroke 180 mm

IG tactile probe

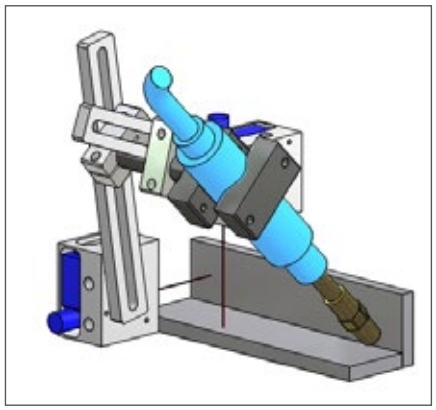
The probe is the most important component of the system and must be provided of a tip and of a finger whose the shape and length suit the joint geometry best:

1. IGS001 Complete probe
2. IGP03 Tip Ø 3 mm
3. IGP06 Tip Ø 6 mm
4. IGP10 Tip Ø 10 mm
5. IGP20 Tip Ø 20 mm
6. IGMT J002 Finger extension 100 mm
7. IGROT copper wheel tip
8. IGT.03-BR Joint made up of aluminium and bakelite for thermal insulation of the probe tip.

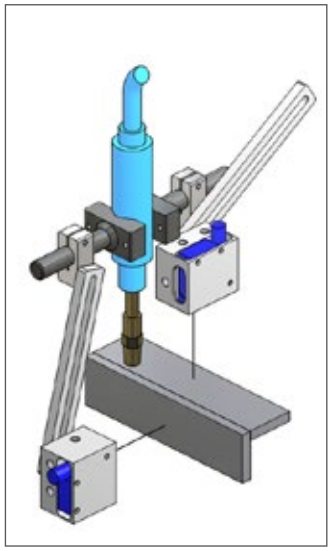


IG LAS, LASER JOINT TRACKER
FOR SUBMERGED ARC WELDING ONLY

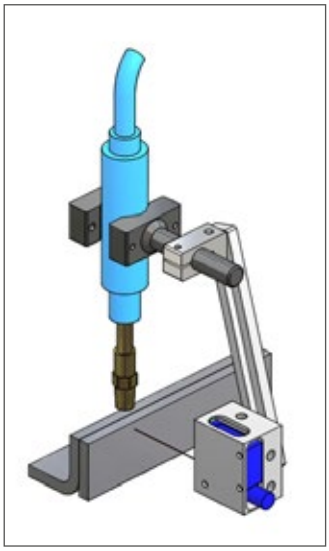
1- or 2-axis tracking system with mono-directional laser probes. A valid alternative to the tactile system for avoiding physical contact with the joint to be welded.



Corner inner welding with two sensors, for monitoring the two axes.



Corner welding with 2 sensors IG LAS.



Horizontal tracking with 1 sensor IG LAS

The laser sensor measures the distance from the joint accordingly to one direction. The measurement is proportional so that a correction at slow speed shall be delivered for small errors whereas greater errors shall be corrected at greater speed. Measurement ranges from 80 to 300 mm with a 0.3 mm precision.
The sensor body is made up of aluminium with the possibility of cooling whenever temperature is greater than 50C°. Each sensor is supplied with micrometric cross slides and connection bracket.

ORDERING CODE:
IG LAS, 1-axis and 2-axis tracking systems
consist of:

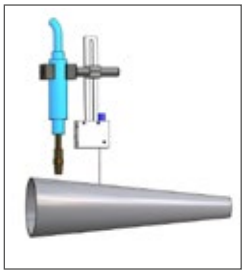
- Controller.
- Remote control with 10m cable (up to 40m upon request).
- 1 or 2 laser sensors, each one complete of micrometric cross slides and of connection bracket.
- 1 or 2 motorized slides MM MINI, MM MIDI, MM MIDI
- HD (take a look at page 36 of this catalogue).
- Kit of 10 m cables to connect the controller to the slides and to the sensors (up to 40 m upon request).

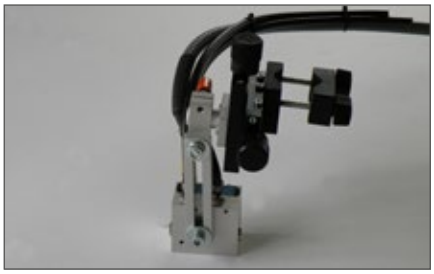
SOME EXAMPLES OF CODE BUILDING:
IG LAS HD 250/2 2 is a system consisting of 2 sensors and of HD motorized cross slides stroke 250x250 mm.

IG LAS LT 80/1 V is a system consisting of 1 sensor and of V (vertical) MM MINI motorized slide stroke 80 mm.

IG LAS LT 180/1 H è is a system consisting of 1 sensor and of H (horizontal) MM MINI motorized slide stroke180 mm.

IG LAS MD 600/2 is a system consisting of 2 sensors and of MM MIDI motorized cross slides stroke 600x600 mm.



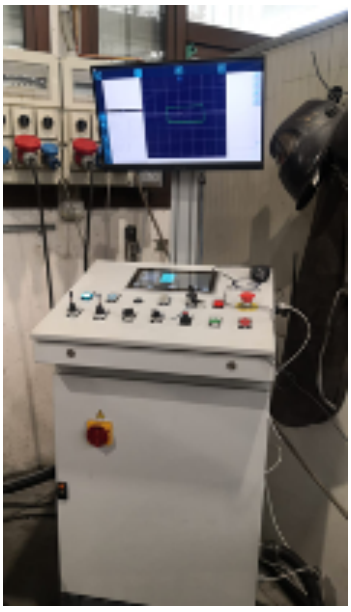


Vertical tracking with 1 sensor IG LAS on conical work pieces

TRACKER
2-AXIS LASER JOINT TRACKER

TRACKER: this sensor uses the principle of triangulation to perform continuous scans of the joint. Compared to the tactile system it allows you to follow joints with very small depths, down to 0.5 mm.

In addition, the device allows:
- Joint finder programme, automatic positioning on the joint.
- End-of-plate detection.
- Weld point detection.

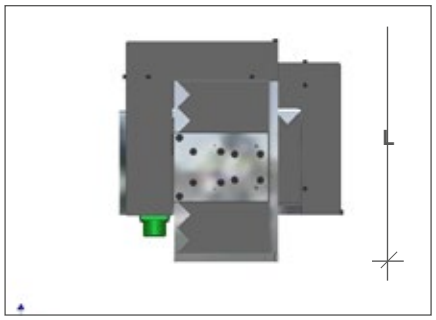


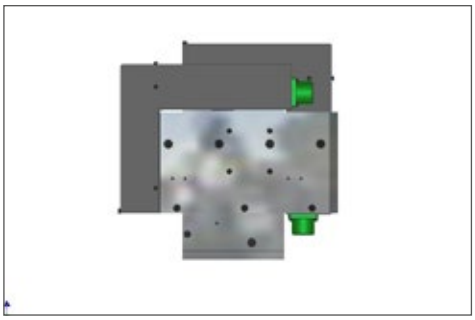
TECHNICAL DATA	TRACKER
Sensing field	mm 50
Sensing field depth	mm 70
Sensing field height	mm 65
Horizontal resolution	mm 0.05
Vertical resolution	mm 0.08
Hor. measurement precision	mm ±0.1
Vert. measurement precision	mm ±0.1
Weight of the sensor	kg 0.65 without cables
Cooling	by fluid flow or chilled air
Exercise temperature	°C - 40° to + 55°
Maximum cable length	m 50
Connection to controller	via Ethernet
Laser power	mW 30
Average wave length	mm 685 (660 to 699)
Camera frame rate	fps 25
Feeding	V/A 24 / 1.7 max.

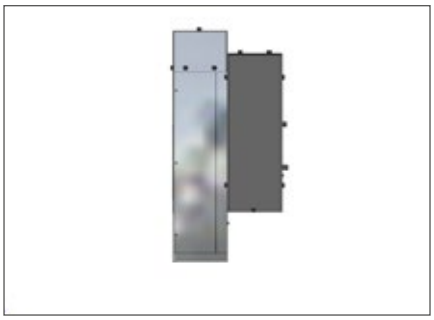
JOINT TRACKING SYSTEMS
THE SLIDES

MM MINI	80	180	250	300
L (mm)	256	376	476	536
Lx (mm)	80	140	196	226
P Motor power (W)	31	31	31	31
Payload (Kg)	10	10	10	10
Speed range (mm/min)	50/2300	50/2300	50/2300	50/2300
Mx (Kgm)	4	4	4	4
My (Kgm)	3	3	3	3
Mz (Kgm)	3	3	4	4
Weight (kg)	4,6	5,6	6,5	7

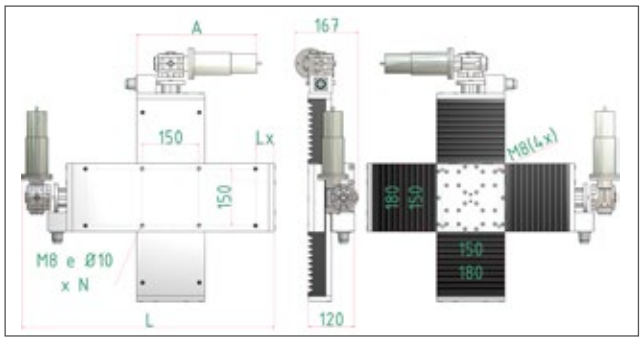
- Made of aluminium and machined
- Driven on single ball guide by ball screw
- With belt and pulley transmission
- DC motor with encoder and MIL connector
- PVC protection bellows
- Inductive limit switches

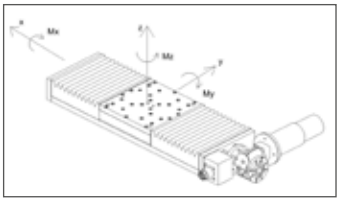






- Made of aluminium and machined
- Driven on two ball guides by ball screw and worm screw gearing
- DC motor with tacho generator and MIL connector
- PVC protection bellows
- Electro-mechanical limit switches



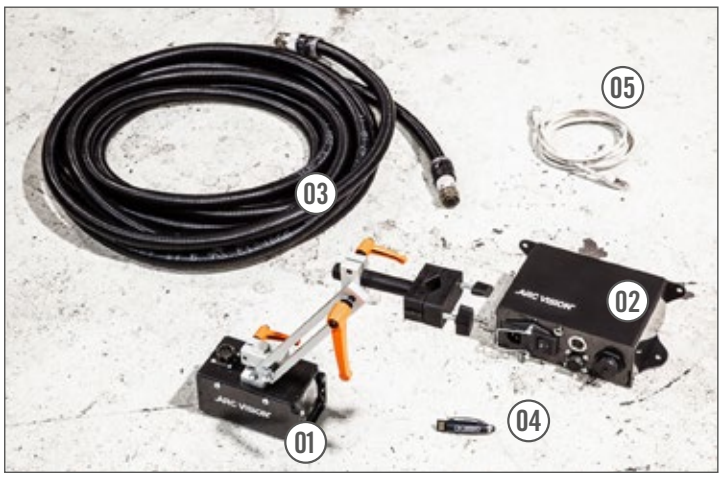


MM MIDI - HD	100 HD	150 HD	250 HD	400 HD	600 HD
L (mm)	490	550	665	890	1155
A (mm)	360	330	360	360	360
Lx (mm)	110	140	50	160	145
Fixing holes	4	4	8	8	12
Motor power (W)	350	350	350	350	350
Payload (Kg)	150	150	150	150	150
Speed range (mm/min)	50/1500	50/1500	50/1500	50/1500	50/1500
Mx (Kgm)	24	24	24	24	24
My (Kgm)	26	26	26	26	26
Mz (Kgm)	26	26	26	26	26
Weight (kg)	15,8	16,2	16,9	21,4	24,8

ARC VISION
WELDING CAMERA

Arc Vision is an industrial camera for monitoring automatic welding processes as:
MIG/MAG, TIG, Plasma and SAW

• Camera is located inside a strong aluminum casing and is available in two versions: without cooling system, for environment with temperature not higher than 50°C and with cooling system, for environment with temperature higher than 50°C.
• The product is supplied provided with software for Microsoft Windows platform.
• The software allows to control up to 4 cameras and to acquire images at the same time.
• 4 integrated leds allow the lighting of the area around the welding arc and get better the vision when arc is off.
• It is possible to set several programs of view with arc on and arc off. These programs can be recalled at will and while occurs the automatic transition from arc off to arc on.
• Images are recordable on memories internal or external to the PC



ARCV - Arc Vision System, consisting of:
01 Camera with adjustable and insulated support
02 Interface module for connection to PC and to feeding line
03 10m cable for connection between interface module and camera*
04 USB key containing arc vision software
05 2m ethernet cable for connection between interface module and PC

*On request are available also cables 5, 20 or 30 m long.
For other lengths, please call on our Offices.

ARC-V KIT: CONTROL KIT FOR ARC VISION

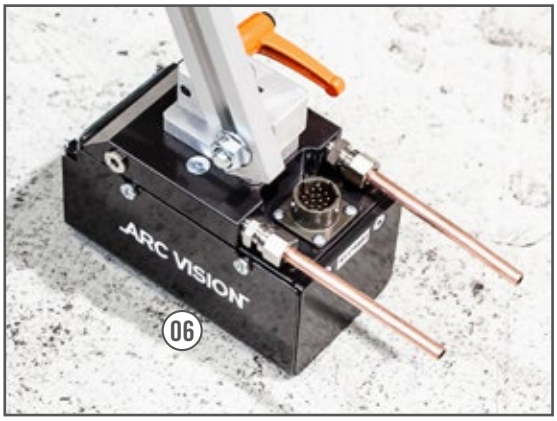
It consists of:

Fanless PC
- Intel I3 processor
- 4 GB Ram + 120 GB hard disk SSD
- Windows 10 and software for managing the camera already installed and ready to work

21” LCD touch monitor
- HDMI or serial cable for the connection between monitor and PC

A/m KIT is not necessary, Arc Vision can be connected to any computer provided with similar or better features
than ARCV-KIT, either desktop or notebook type.

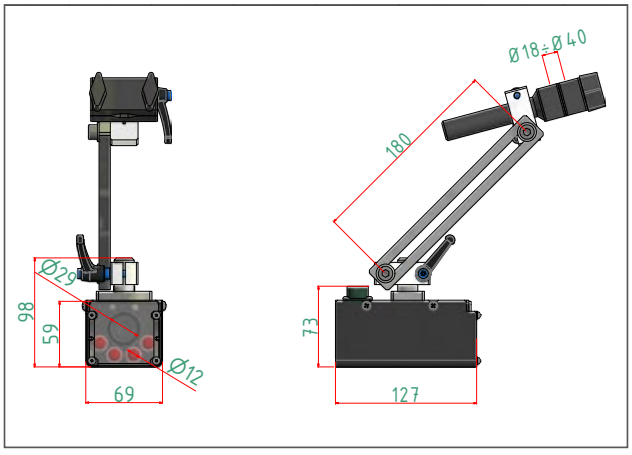
We do prefer the touch screen for practicality, but it is possible to use mouse and keyboard.

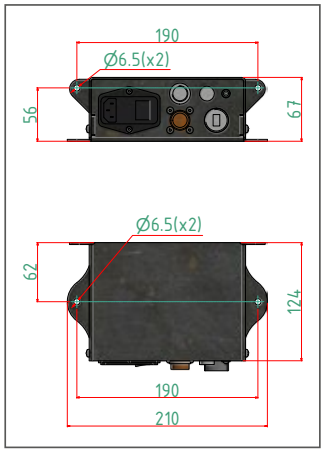


ARCV-W
Arc Vision System with cooling system, consisting of:
06 Camera with adjustable and insulated support and cooling plate
02 Interface module for connection to PC and to feeding line
03 10m cable for connection between interface module and camera*
04 USB key containing arc vision software
05 2m ethernet cable for connection between interface module and PC

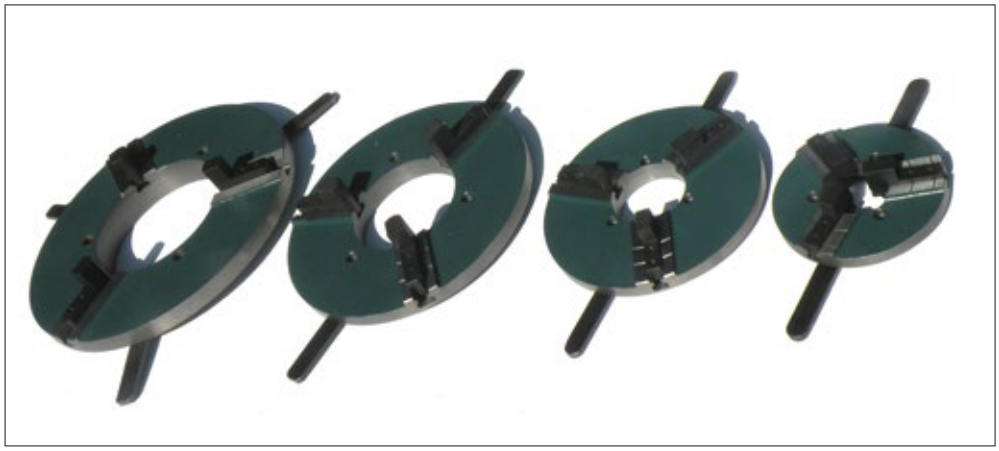
For environment with temperature higher than 50°C

* On request are available also cables 5, 20 or 30 m long.
For other lengths, please call on our Offices.



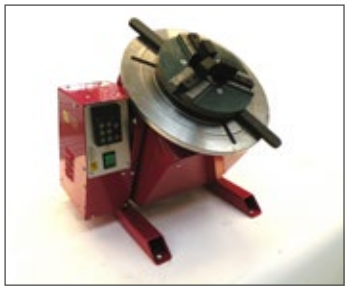


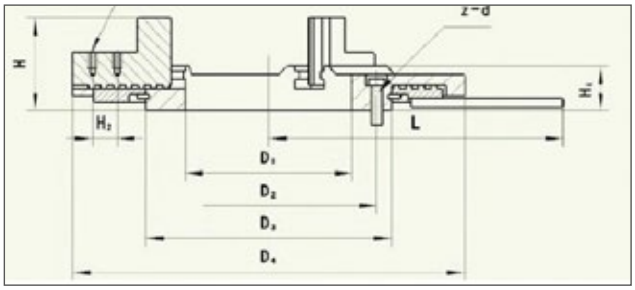
FAST CLAMPING KEYLESS CHUCKS

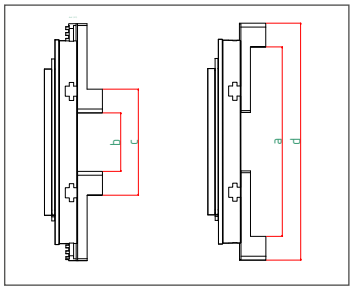


KEYLESS GRIP CHUCKS OUTSTANDING FEATURES ARE:

- Fast clamping / releasing by hand lever
- Small thickness and low weight
- Large hollow spindle Ø which makes them particularly suitable for pipe handling
- External bolting by means of 3 spot-faced and stepped holes 120°, which avoids troublesome and expensive flanges for connecting the chuck to the face plate positioner.





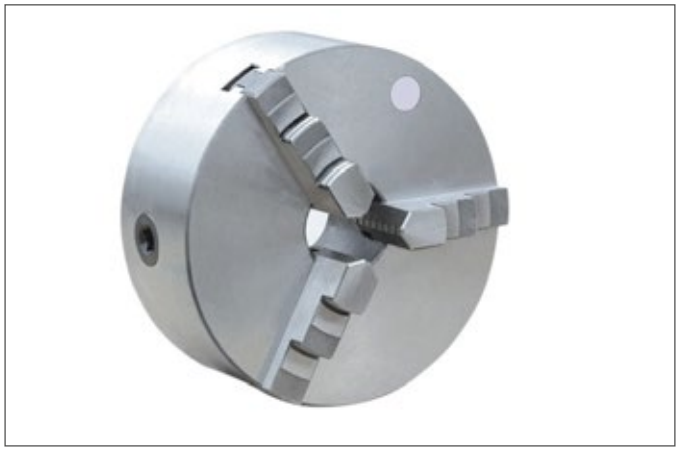


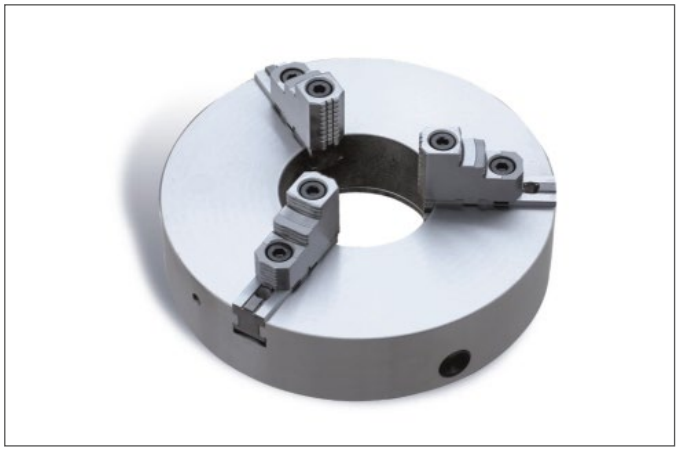
GRIP 200 installed on ONE

MODEL	GRIP 200	GRIP 300	GRIP 400	GRIP 500	GRIP 600	GRIP 750
D1	80	100	170	240	365	515
D2	100	120	220	280	400	542,5
D3	120	150	250	320	425	570
D4	200	300	400	500	600	750
H	67,5	67,5	95	110	170	170
H1	39	39	45	60	105	105
H2	21	21	25	25	40	40
L	200	240	300	350	425	500
Z-d1	6-M6	6-M6	6-M6	6-M6	6-M12	6-M12
Z-d	3-M8x35	3-M8x30	3-M10x40	3-M12x55	6-M12x110	6-M12x110
Weight Kg	5	12	23	41	78	115

MODEL	GRIP 200	GRIP 300	GRIP 400	GRIP 500	GRIP 600	GRIP 750
Gripping force	110-210	130-300	250-380	360-500	400-620	550-800
Clamping Ø range b	12-130	50-220	120-250	180-360	150-410	380-580
Clamping Ø range c	85-200	120-300	190-380	270-430	290-540	530-730
Clamping Ø range d	175-300	200-370	320-450	430-570	540-750	700-950

CONVENTIONAL CHUCKS





CHK-ST

SELF CENTERING CHUCK
with 3 jaws and hollow spindle

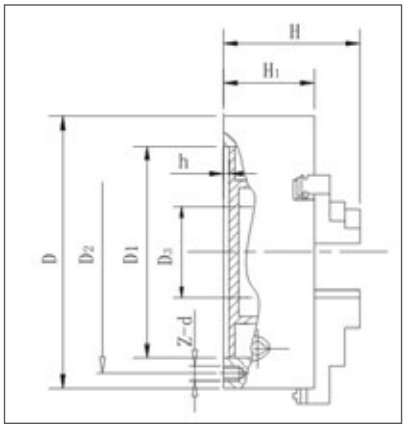
3 models are available with inner and outer jaws made up of one piece:

- Ø 80 mm
- Ø 125 mm
- Ø 200 mm

5 models are available with reversible jaws made of two pieces:

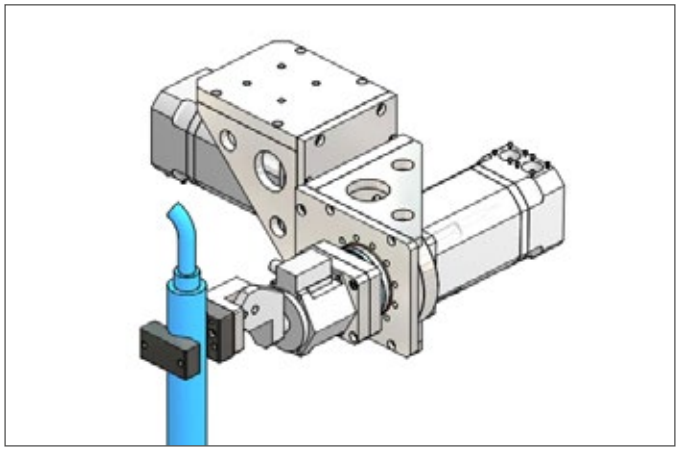
- Ø 250 mm
- Ø 315 mm
- Ø 400 mm
- Ø 500 mm
- Ø 630 mm

	INNER CLAMPING		OUTER CLAMPING
	chuck-on	chuck-off	chuck-on
CHUCK Ø	A-A1	B-B1	C-C1
80	2-22	25-70	22-63
125	2.5-40	38-125	38-110
200	4-85	65-200	65-200
250	6-110	80-250	90-250
315	6-200	75-340	90-380
400	15-210	120-400	120-400
500	25-280	150-500	150-500
630	50-350	170-630	170-630



CHK-ST	80	125	200	250	315	400	500	630
D	80	125	200	250	315	400	500	630
D1	55	95	165	206	260	340	440	560
D2	66	108	180	226	285	368	465	595
D3	16	30	65	80	100	130	200	260
h	3,5	3,5	5	5	6	6	6	8
Z-d	3-M6	3-M8	3-M10	3-M12	3-M16	3-M16	6-M16	6-M16
H	66	84	109	133	142,5	155,5	203	218
H1	50	58	60	80	90	100	115	130
Weight Kg	4	10	19	25	41	71	118	210

PRECISION AXES FOR TORCH ROTATING



SINGLE OR DUAL AXIS WRISTS: FOR THE PROGRAMMED TORCH POSITIONING

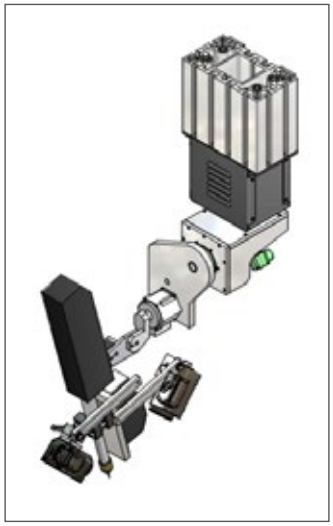
We use brushless motors with absolute encoders and zero-backlash cycloidal gearboxes, we are therefore able to to tilt the torch or the welding head with absolute precision, both in positioning and in interpolation.

An example of a 2-axis wrist installed at the boom end of a manipulator, to provide repositioning of the torch at different angles.

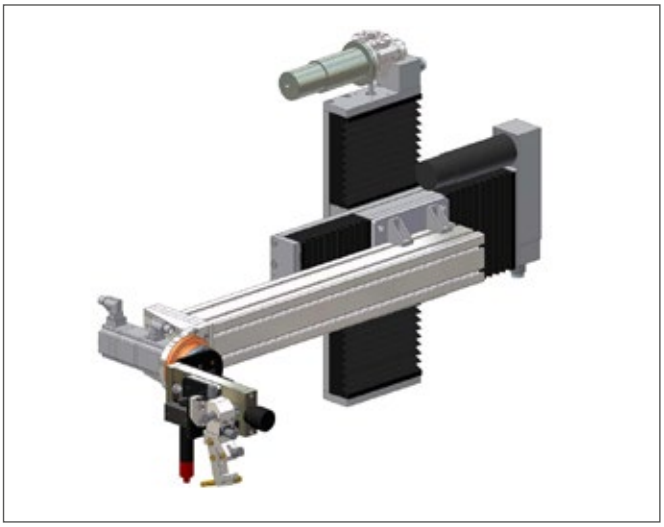
A 2-axis wrist allows to turn the torch 0° to 180° to allow welding in both directions and tilting it to 45° as well to perform longitudinal fillet welding, thus avoiding idle back strokes and manual setting of torch position.

Wrist payload allows carrying:

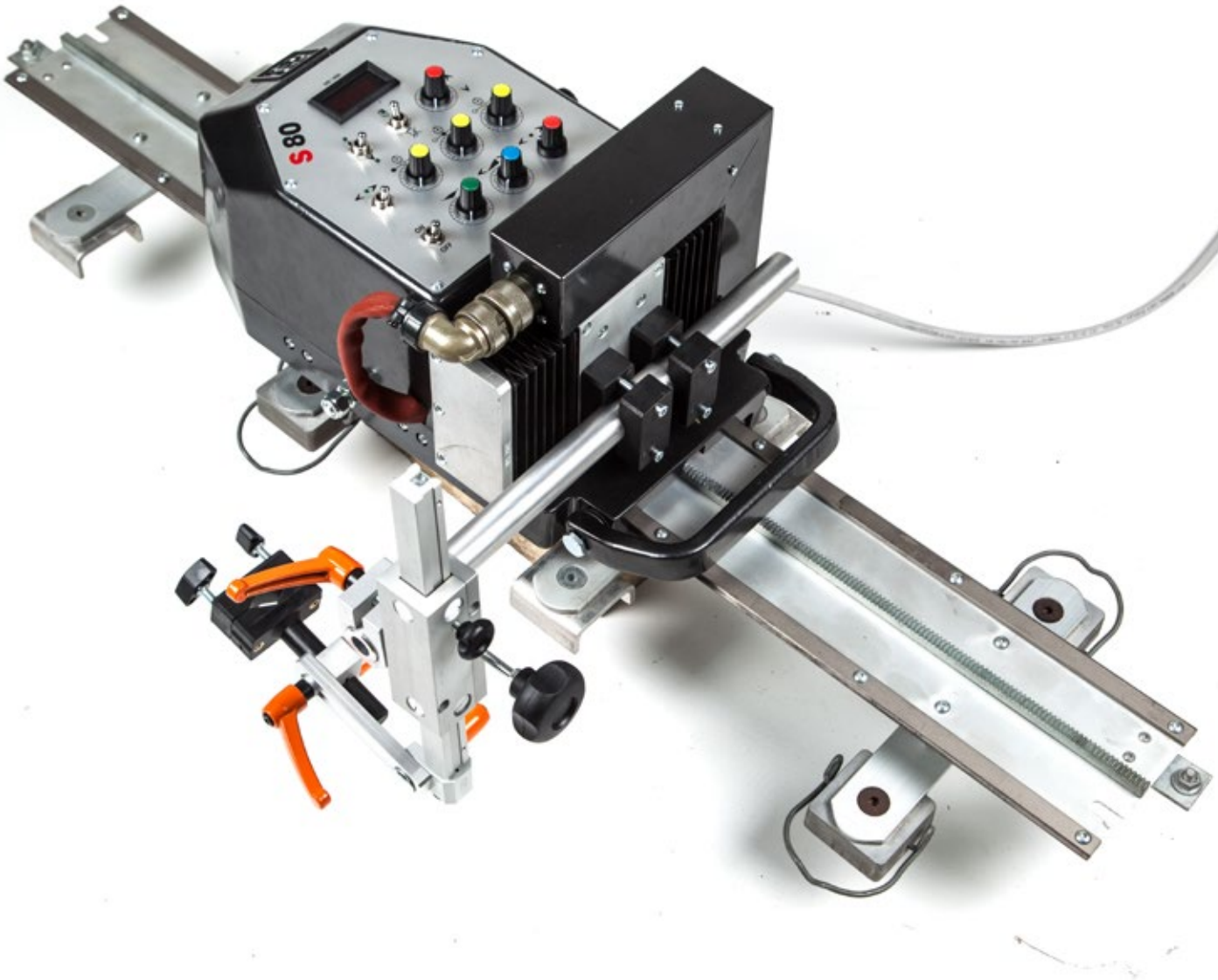
- A linear oscillator.
- An IG 2D tracking system.
- Two cameras installed ahead and downstream the welding.
- A torch anti-shock system.
- A vertical slide with AVC function.
- A torch tilt axis.



TIG cold wire application, allowing to modify the tilt angle of the torch at each welding pass.



S80 - SQUIRREL WITH OSCILLATOR



MANIPULATORS BEAM CARRIAGES GANTRIES

Endowed with complementary equipment, the extended range of manipulators, side beam carriages and gantries included in our manufacturing program provides customized plants all managed by PLC for fully automated work cycles.

THREE MANIPULATORS FAMILIES ARE AVAILABLE:

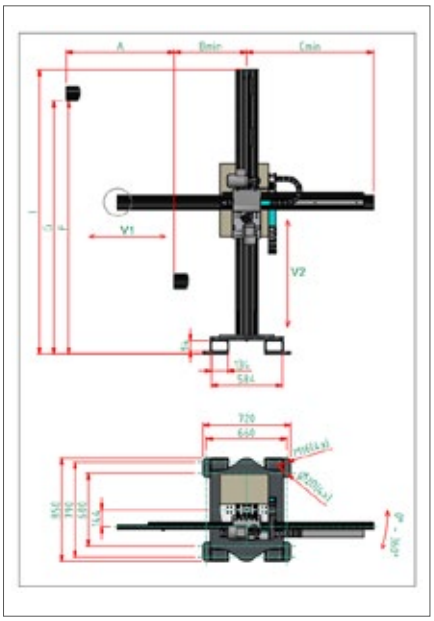
- AL Power, made up of aluminium profiles, whose axis, on request, can be directly integrated with AVC or joint-tracking functions. Strokes 1x1 m to 3x3 m.
- I Power, made up of steel, ball screw lift drive and ball bearings linear guides. Strokes 3x3 and 4x4 m.
- Passerini's, made up of steel, machined steel guides, lift drive by chain or screw. Strokes 2x2 m up to 10x10 m.

All models are available with fixed or motorized base, retractable or fixed boom.

AL POWER MICRO

MAIN FEATURES

- Manual rotation of the column.
- Column & boom made up of aluminium with ball berarings linear guides.
- Worm gear-motor with rack and pinion transmission.

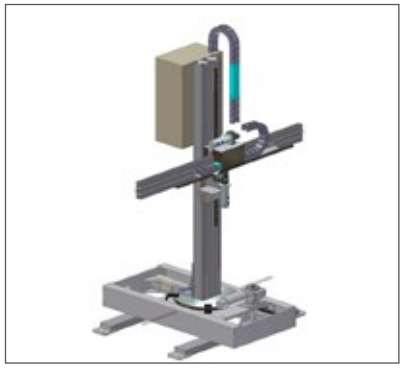


APMICRO-MAN

- Fixed base.
- Strokes 1x1 m or 1.5x1.5 m, both axis driven by hand wheel.

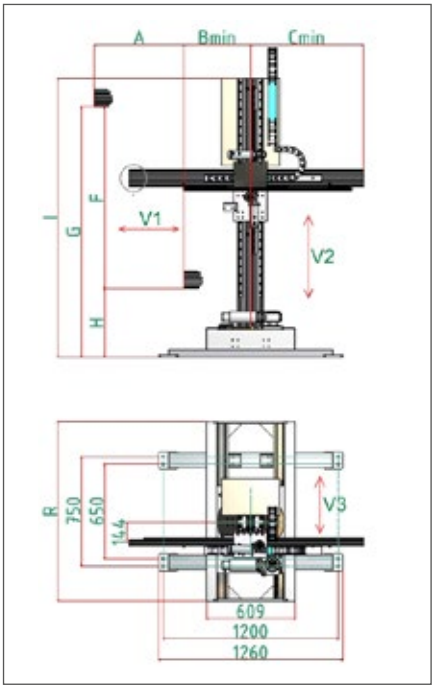
APMICRO-MOT

- Fixed base.
- Strokes 1x1 m or 1.5x1.5 m, both axis motorized.



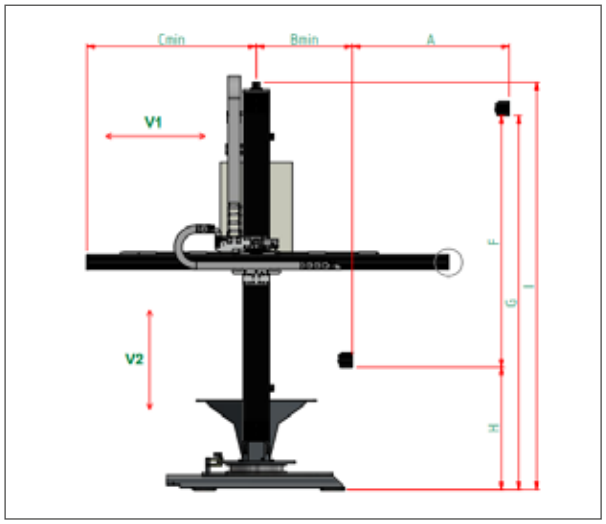
APMICRO-CM

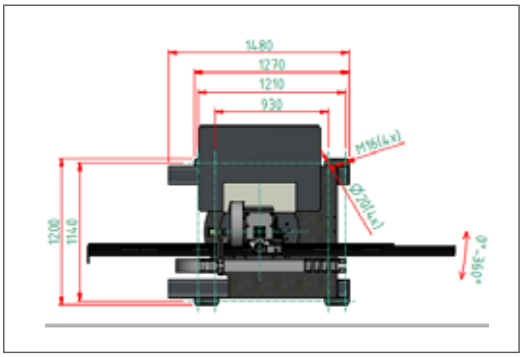
- Motorized base, base stroke on demand.
- Column and boom motorized, strokes 1x1 m or 1.5x1.5 m.



MODEL	u.m.	MAN/MOT 10	MAN/MOT 15	CM 10	CM15
A	m	1	1,5	1	1,5
V1 min/max	mm/min	50-1900	50-1900	50-1900	50-1900
B	mm	458	458	458	458
C	mm	142	142	142	142
F	mm	1000	1500	1000	1500
V2 min/max	mm/min	50-1900	50-1900	50-1900	50-1900
G	mm	1655	2155	1900	2400
H	mm	655	655	900	900
I	mm	1860	2360	1912	2412
V3 min/max	mm/min	-	-	50-1900	50-1900
R	mm	a richiesta	a richiesta	a richiesta	a richiesta
Weight	Kg	330	380		
Payload	Kg	40	20	40	20

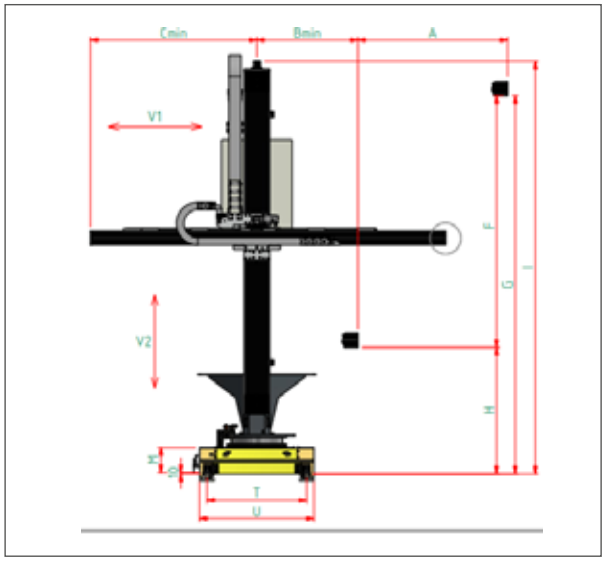
AL POWER MINI

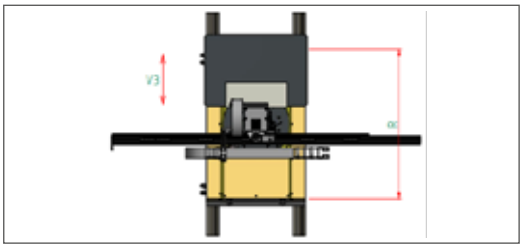




AP MN BF (AL POWER MINI FIXED BASE)

- Base plate with levelling feet
- Manual rotation of the column, incorporating power source holder
- Column made up of aluminium, section 220 x 120 mm with ball bearings linear guides and protection bellow
- Boom made of aluminium, section 120 x 80 mm, ball bearings linear guides, rack and pinion transmission
- Both vertical and horizontal axis driven by brushless motors and encoder





AP MN CM AL POWER MOTORIZED MINI BASE

- Motorized base in machined carpentry
- Brushless motor with encoder
- Limit switch and front and rear safety bumpers

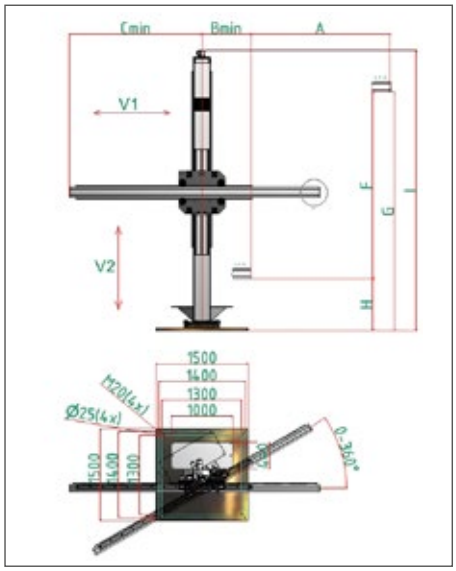
Others see BF version

MODEL	u.m.	MOT 15	MOT 20	CM 15	CM20
A	m	1,5	2	1,5	2
V1 min/max	mm/min	50-1900	50-1900	50-1900	50-1900
B	mm	610	610	610	610
C	mm	390	390	390	390
F	mm	1500	2000	1500	2000
V2 min/max	mm/min	50-900	50-900	50-900	50-900
G	mm	2270	2770	2370	2870
H	mm	770	770	870	870
I	mm	2286	3386	2990	3490
V3 min/max	mm/min	-	-	50-3000	50-3000
U	mm			970	970
T	mm			845	845
R	mm			1450	1450
Weight	Kg	650	700	770	820
Payload	Kg	40	40	40	40

AL POWER MIDI

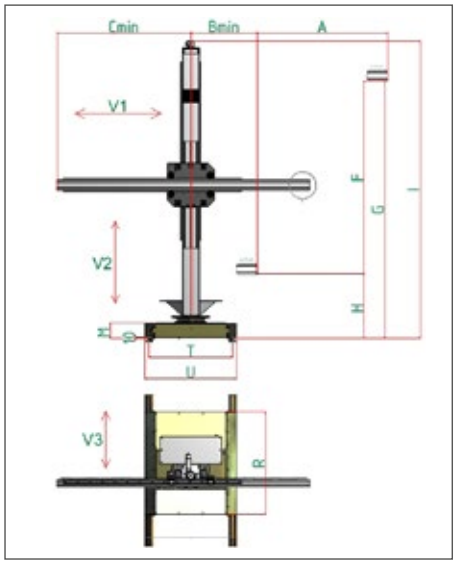
AP MD BF (AL POWER MIDI FIXED BASE)

- Steel base plate with levelling feet.
- Manual rotation of the column, incorporating power source holder.
- Column and boom made up of aluminium, with steel guides.
- Lift drive by ball screw, safety nut and protection bellow.
- Both vertical and horizontal axis driven by brushless motors and encoder.



AP MD CM (AL POWER MIDI MOTORIZED BASE)

- Motorized steel base
- Brushless motor and encoder
- Limit switches and safety front and rear bumpers
- Anti-overturning safety fixtures
- Other features: see AP MD BF



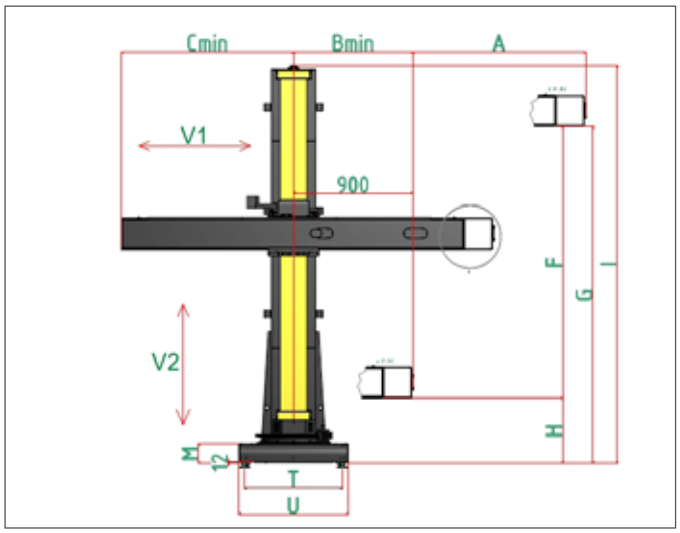
MODEL		AP MD BF 20	AP MD BF 30	AP MD CM 20	AP MD CM 30
A	m	2	3	2	3
V1 min/max	mm/min	- / 50-1900	- / 50-1900	50-1900	50-1900
B	mm	600	600	600	600
C	mm	400	400	400	400
F	mm	2000	3000	2000	3000
V2 min/max	mm/min	- / 50-1400	- / 50-1400	50-1400	50-1400
G	mm	2840	3840	3050	4050
H	mm	840	840	1050	1050
I	mm	3875	4875	4090	5090
V3 min/max	mm/min	-	-	50-2700	50-2700
U	mm			1470	1470
T	mm			1345	1345
R	mm			1655	1655
Weight	Kg	1200	1300	980	1080
Payload	Kg	100	100	100	100

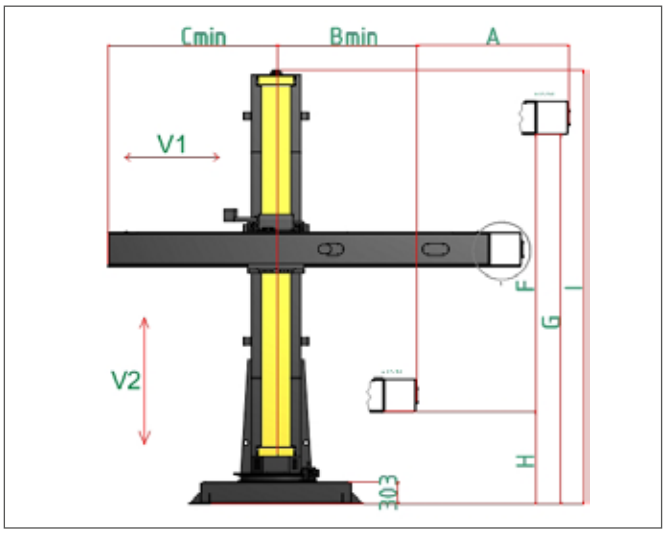
I-POWER

ALL STEEL MADE MANIPULATOR

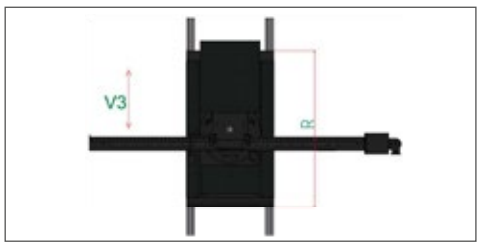
Boom lift by ball screw and anti-fall device safety nut.
Boom and lift traversing on ball linear guides.
AC drives with vector inverter or brushless motors for PLC application
Available with fixed or motorized base.

Strokes 3x3 m or 4x4 m





MODEL		IP BF 3x3	IP BF 4x4	IP CM 3x3	IP CM 4x4
A	m	3	4	3	4
V1 min/max	mm/min	200-2000	200-2000	200-2000	200-2000
B	mm	900	900	900	900
C	mm	565	565	565	565
F	mm	3000	4000	3000	4000
V2	mm/min	980	980	980	980
G	mm	3918	4918	4900	3900
H	mm	918	918	900	900
I	mm	4776	5718	4760	5760
V3 min/max	mm/min			300-3000	300-3000
U	mm			1616	1616
T	mm			1450	1450
R	mm			2900	2900
M	mm			285	285
D	mm	1620	2320		
E	mm	1540	2240		
L	mm	1400	2100		
Weight	Kg	1200	1300	980	1080
Payload	Kg	300	250	300	250



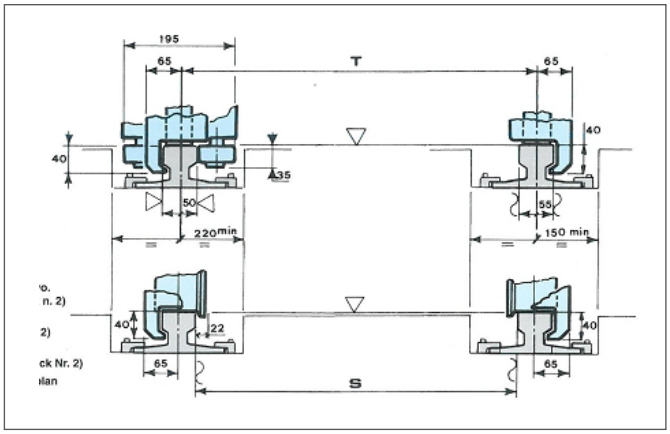
ZA-ZX-ZB-ZP-UD-UE-UF

PASSERINI MANUFACTURES MANIPULATORS SINCE 1962 AND, THANKS TO THEIR STURDY CONSTRUCTION AND GOOD QUALITY, MANY CUSTOMERS ARE STILL USING THE ORIGINAL ONE.

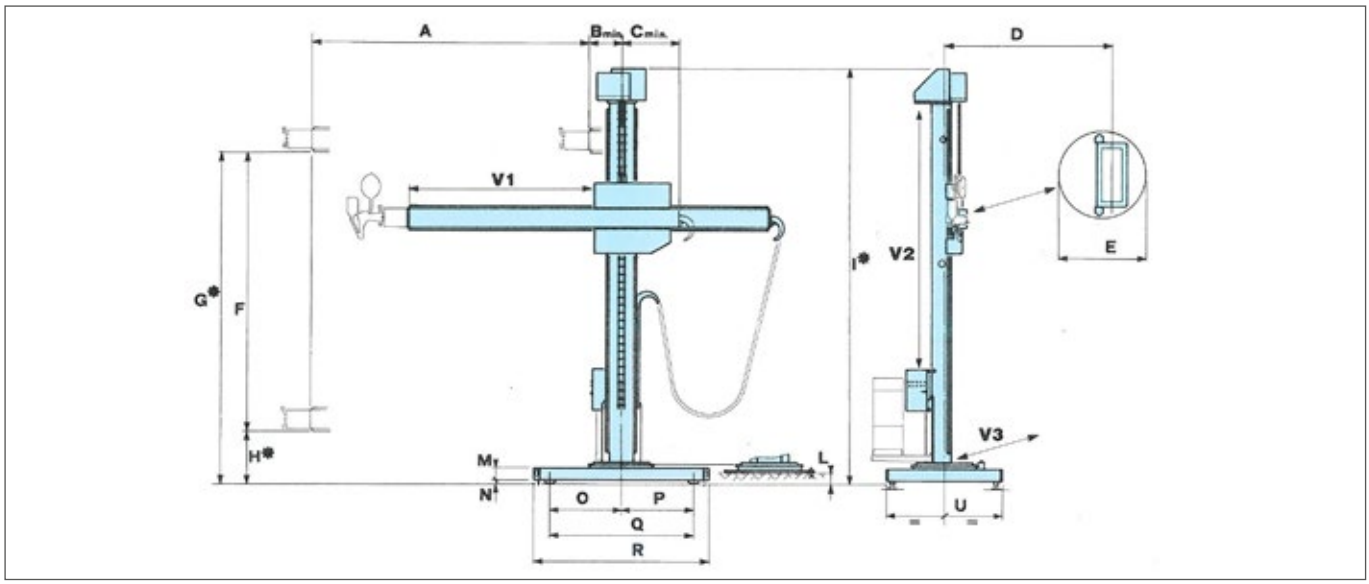
Still designed as the originals for heavy duty jobs, current models avail themselves of updated construction technologies and of top quality components, featuring:

- Steel structure with machined guides.
- Lift by screw, cable or chain with anti-fall device.
- Fit for Carpano's complementary equipment.
- Work cycle stepped by analogue interface or, on demand, by PLC or PLC.
- Upon request, all models can be equipped with welding machine and with its accessories.

Suggested rail foundation plan.
Rail A55 DIN 536 (Burback n° 2)



ZA-ZX-ZB-ZP-UD-UE-UF



MODEL	u.m.	ZA	ZX	ZB	ZP	UD	UE	UF
A min/max	m	1,5/3	1,5/4	2/6	2/8	2,5/10	3/10	4/10
F min/max	m	1,5/3	1,5/5	2/6,5	2/8	2,5/8,5	3/8,5	4/8,5
Type		**ZA30A30F**	**ZX40A50 F**	**ZB60A65 F**	**ZP80A80 F**	**UD90A85 F**	**UE10A85F**	**UF10A85F**
A	m	3	4	6	8	9	10	10
V1 min/max	mm/min	180/1800	180/1800	180/1800	180/1800	180/1800	180/1800	180/1800
B	mm	390	430	450	592	1020	1230	1230
C	mm	490	510	890	1068	1080	1230	1630
D	mm	198	200	258	364	481	790	790
E	mm	300	345	420	500	590	1250	1250
F	mt	3	5	6,5	8	8,5	8,5	8,5
V2	mm/min	1000	900	925	750	720	1000	1000
G	mm	3755	5716	7210	9000	9600	9605	9605
H	mm	755	716	710	1000	1100	1105	1105
I	mm	4688	6715	8580	10565	10954	11245	11545
L	mm	(300)	300	300	300	352	-	-
V3 min/max	mm/min	270/2700	300/3000	300/3000	300/3000	180/1800	180/1800	180/1800
M	mm	208	265	265	270	450	455	455
N	mm	14	20	20	12	40	45	45
O	mm	755	1100	1100	1110	2000	1800	1800
P	mm	545	1000	1000	930	1750	2150	2650
Q	mm	1300	2100	2100	2040	3750	3950	4450
R	mm	1650	2900	2900	2900	4850	4760	5340
S	mm	1300	1395	1395	1695	2445	2945	2945
T	mm	1345	1450	1450	1750	2500	3000	3000
U	mm	1470	1616	1616	1910	2775	3390	3390
Weight	Kg	2100	3400	5200	8940	14750	20470	24560
Payload*	Kg	130/160	170/220	180/250	180/250	220/350	420/620	940/1340

* at 0.5 m from one end face plate / total

FIXED BOOM MANIPULATORS

Manipulator for longitudinal SAW of beams:
- Motorized base.
- Fixed boom held at fixed height.
- Two motorized carriages (with the function of x joint tracking axis).
- Two motorized slides 1500mm stroke (diving-like mounting with the function of y joint tracking axis).
- Two IG tactile joint tracking systems.

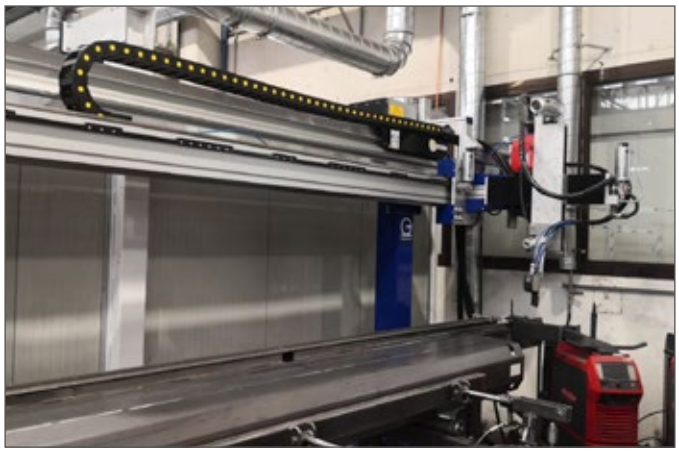
Welding equipment is a Submerged Arc.

ZP fixed boom, manipulator
Fixed boom, manipulator I Power for MIG welding of railway coach panels:
- Motorized base.
- Motorized boom lift.
- Two motorized carriages (with the function of x joint tracking axes).
- Two motorized slides (diving-like mounting) with the function of y joint tracking axes.
- Two transversal joists to support the welding heads
- Two laser joint trackers.

This machine is intended for welding of polygonal truncated conical poles.

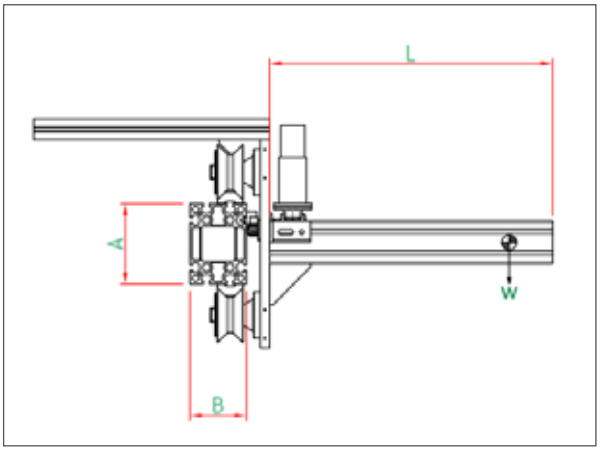
SIDE BEAM MOTORIZED CARRIAGES

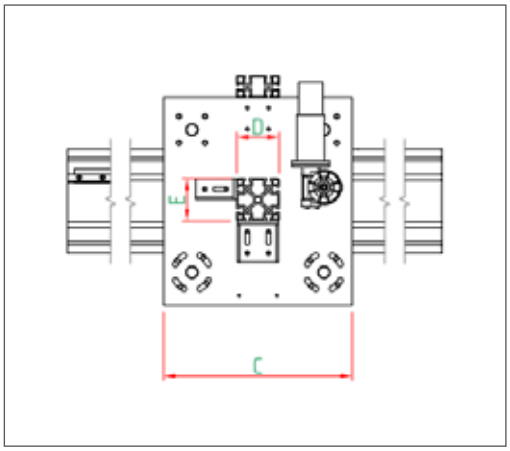
They share with AI Power manipulators accurate design, efficiency and top quality finishing. They can all be combined with our servo-mechanisms and coordinated with extra axis either vertical and/or transversal with according to carriage motion.



MIDI beam with 2D laser tracker, model TRACKER.

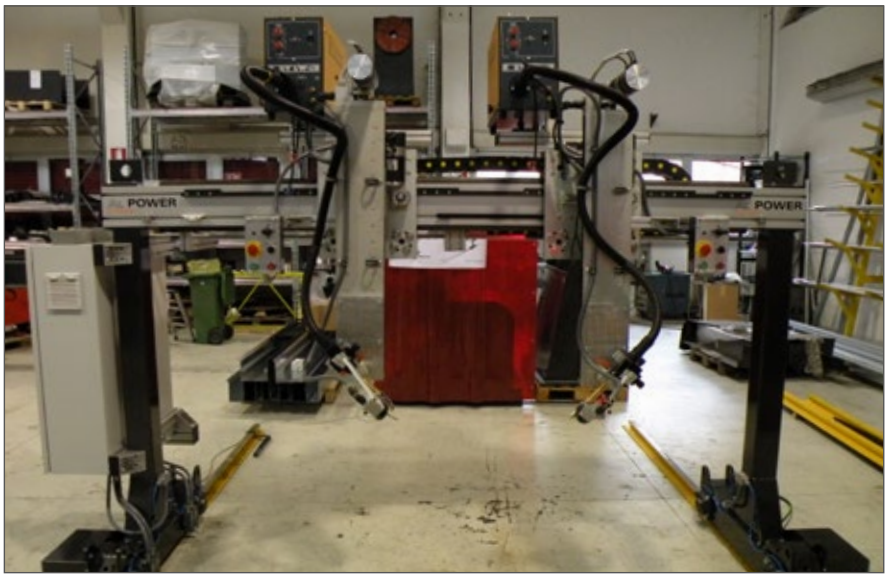
AP TM MIDI motorized side beam carriage, carrying a 2 m stroke diving boom (with the function of y joint tracking axis) in its lower end a transversal slide (with the function of x joint tracking axis) and a TSV 09-W camera are installed.
The wire drive and a manual slide are installed on the diving boom. The remote control cabinet incorporates also the video system monitor.

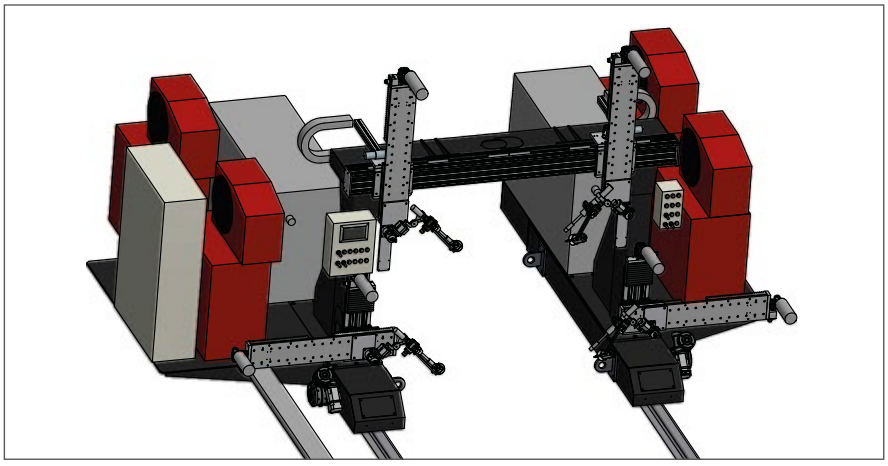




DATE	AP TM MINI	AP TM MIDI	AP TM MAXI
A	100	170	280
B	100	120	170
C	440	400	500
D	90	90	90
E	90	90	90
L	600	600	600
W a 500	50 Kg	100 kg	200 kg

GANTRIES





AP GANTRY LT, SUITABLE FOR CARRYING TWO MIG OR SAW HEADS, but without power sources on board.

Max. span: 4 m
Max. height of horizontal boom: 2 m
Max. stroke of diving booms: 600 mm

The picture shows the gantry used for welding of box beams, each head equipped with IG tactile joint tracking system.

The gantry moves on rails Burback 1, driven by two brushless motors with encoders and electronic synchronization. The base is provided of automatic safety anti-collision bumpers

AP GANTRY MD EQUIPPED WITH MIG HEADS FOR WELDING U PROFILES ON FLAT PANELS.

Both heads are provided of IG tactile joint tracking systems.
The gantry moves on rails Burback n° 2, driven by two brushless motors with encoders and electronic synchronization.

The base is provided of automatic safety anti-collision bumper and features platforms on both sides for housing:

- The operator with general control panel.
- Two power sources.
- Fumes aspirator.
- Two wire drums.

In order to optimize their distance from torches, MIG wire drives are installed on the opposite faces of side beam carriages.

GANTRIES

AP GANTRY HD FOR ALUMINIUM PANELS MIG WELDING OF.

The gantry base is driven by synchronized motors and it is provided of platforms on both sides for housing the operator control panel, two power sources, fumes and brush dust aspirators, two wire drums.

The horizontal boom is height adjustable and carries 4 diving booms, stroke 1.2 m, two for welding and two for brushing. Each welding head is handled by robot-like 2-axis wrists, is provided of laser joint tracking and of video systems.

TURNTABLES LATHES AND DOLLIES

From 0.1 to 100 tons.
This section offers our customers an impressive choice of standard solutions which can be combined with manipulators, rotators and all complementary equipments.

Besides standard drives and control modes, all models can be integrated into complex work cycles or specially fitted to handle any kind of work pieces.

THE RANGE

- 100 kg bench positioner
- 2-axis positioners with manual/motorized tilting, from 200 to 500 kg
- 2-axis positioners, from 0.2 to 50 ton
- 2-axis positioners with hydraulic tilt, from 20 to 100 Ton
- Through-Hole positioners, from 0.35 to 2 Ton
- Vertical fixed axis positioners, from 2.5 to 200 Ton
- Lathes, from 0.15 to 40Ton
- OAK Head-and-Tailstock positioners, from 3 to 6 Ton
- Three-Axis rotary and translating positioners, from 1 to 3.4 Ton
- Dollies, from 1 to 3 Ton

ONE - 100 KG BENCH POSITIONER

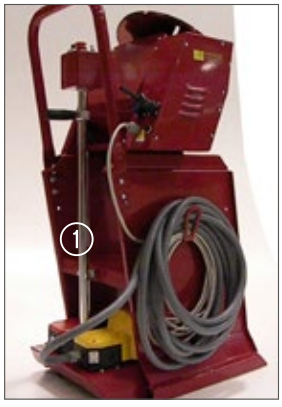
ONE BASE

- Table Ø 320 mm
- Weld ground 300 A
- Step less manual tilt 0° to 120°
- Rotation driven by AC servo-ventilated motor and vector inverter, with speed display in rpm

5 m cable remote control by foot-switches, incorporating:

- Emergency cut off
- 10-turn potentiometer
- On / off Switch weld
- Switch clockwise / counter clockwise rotation
- Switch speed adjusted / maximum
- Feeding 230V 50 Hz, auxiliaries 24V

ONE - SHUTTLE: Wheeled carriage on which ONE can be laid and carried.
Its base is provided with a large handle, of shelves for storing tools, of a side hook on which cables can be wound and of a clamp to hold ONE BASE remote control during transport.



ONE PLC

- Rotation driven by AC servo-ventilated motor and vector inverter

Control cabinet on swinging support incorporating:

- Speed monitor in rpm
- Emergency cut off with reset on the inverter panel
- 10-turn potentiometer
- Start/stop push buttons
- Clockwise/counter clockwise push buttons rotation
- On/off switch weld
- Adjusted/maximum switch speed
- IN/OUT (manual cycle) switch pneumatic tailstock
- ON/OFF (manual cycle) switch pneumatic torch holder tilt
- Setting on digital panel of overlap and of start delay in sec

ONE PLC WORK CYCLE

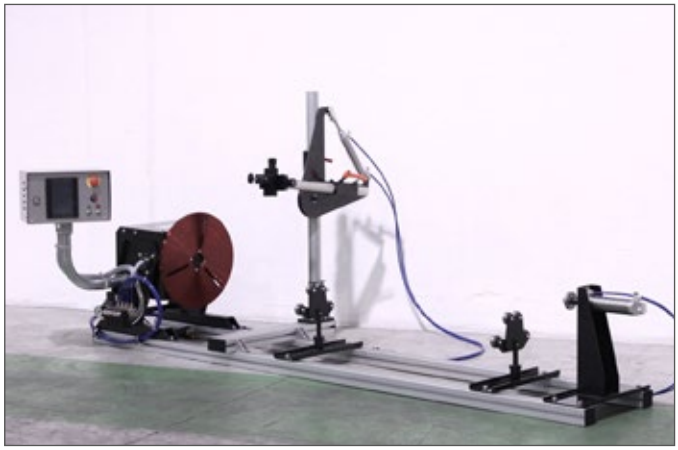
- Tailstock IN (manual)
- Automatic cycle start (optional: tailstock IN, after cycle start)
- Torch holder DOWN
- Arc strike and rotation start delay
- 360° rotation + x° overlapping
- Arc OFF
- Torch holder UP
- Rotation reset – x° to starting position
- Tailstock OUT (manual)

1. Clamp to hold the remote control
2. Wheels protected by cover-guard
3. Hook for cables

ONE - 100 KG BENCH POSITIONER

ONE SWAN

«Lathe-like» execution, where both pneumatic tailstock and torch holder can tilt together with the table.
Work piece maximum Ø 320 mm
Maximum distance in-between table faces 300 mm

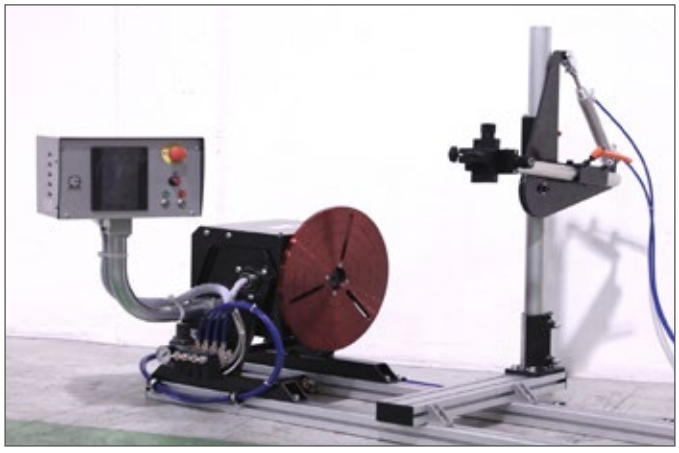


ONE LATHE

«Lathe-like» execution provided with pneumatic torch holder, dolly and pneumatic tailstock.
Work piece maximum weight 100 kg
Work piece maximum Ø 320 mm
Maximum distance in-between table faces 1500 mm

ONE ARM PNEUMO

Execution provided of pneumatic torch holder with 30° automatic tilt stroke, micrometric cross slides type SM50/2, installed on 600 mm aluminium base profiles.



ONE ARM

Execution provided of X / Y torch holder with SM50/2 micrometric cross slides, installed on 600 mm aluminium base profiles

TWO- 200 KG
MOTORIZED ROTATION, MANUAL TILTING

Turntable positioner with 200 Kg. maximum weight capacity, available with several different electronic controls. It can be equipped by a large range of optional devices for a semi-automatic or a fully automatic use

TWO BASE

- Driven by an AC servo-ventilated motor, managed by vector inverter, speed from 0,4 to 4 rpm.
- Rollo1-CD foot remote control with 5 m cable made up of :
  - Start and stop foot devices
  - Emergency stop push-button.
  - 10-turns potentiometer.
  - RPM digital tachograph.
  - On/off weld switch.
  - Clockwise/counterclockwise switch.
  - Adjustable/maximum speed switch.

TWO BASE DC

- DC motor with speedometer dynamo, managed by closed-loop electric drive, with adjustable speed from 0,1 to 4 rpm.
- Further optional devices as per ONE BASE model.

[*] These working cycles are obviously omitted in case the tailstock and/or the torch holder are not installed

TWO PLC

- AC servo-ventilated motor, managed by vector inverter, speed from 0,4 to 4 rpm.
- Control cabinet on adjustable support made up of :
  - RPM digital tachograph.
  - Emergency stop push-button with reset on the inverter panel.
  - 10 turns potenziometer.
  - Start / stop cycle push-button.
  - Clockwise/counterclockwise switch.
  - On/off weld switch.
  - Adjustable/maximum speed switch.
  - On/off pneumatic tailstock switch.
  - On/off tilting pneumatic torch holder switch.
  - Overlap and delayed start in seconds digital setting.

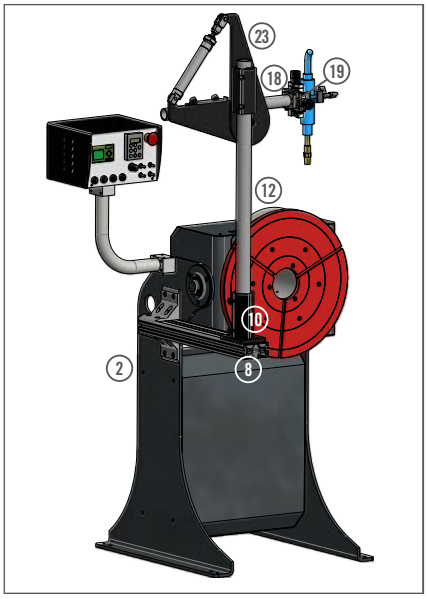
TWO PLC WORKING CYCLE

- Forward tailstock (by means of the a.m. switch) [*]
- Start cycle (Forward tailstock after starting cycle on request) [*]
- Tilting torch holder DOWN [*]
- Arc strike and delayed rotation start
- 360° rotation + x° overlapping
- OFF Arc
- Tilting torch holder UP [*]
- Reset – x° to the Start position
- Back Tailstock (by means of the a.m. switch)[*]

TWO PLC DC

- DC motor with speedometer dynamo, managed by closed-loop electric drive, with adjustable speed from 0,1 to 4 rpm
- Further optional devices as per ONE PLC model.

TWO- 200 KG
EXAMPLES OF POSSIBLE CONFIGURATIONS

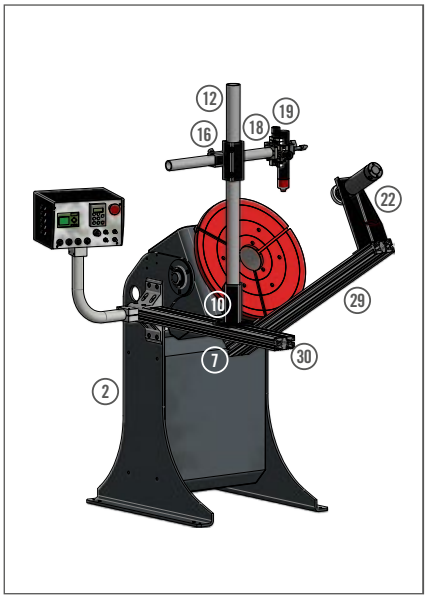


TWO PLC with TWO ARM Pneumo

Such configuration includes :

- Two PLC
- TWO ARM Pneumo torch-holder arm with pneumatic actuator

02	TWO PLC	200Kg tilting rotary table
08	ONE-2050	500mm (Al 40x80x500mm) crossbar with fixing brackets
10	ONE-2110	Vertical column base
12	ONE-3075	750mm vertical column
18	ONE-3040	400mm horizontal pipe
19	SM 50/2 + PT	Torch-holder with 50x50mm. cross micrometric slides
23	ONE-TL-100	ARM PNEUMO : 30° tilting arm

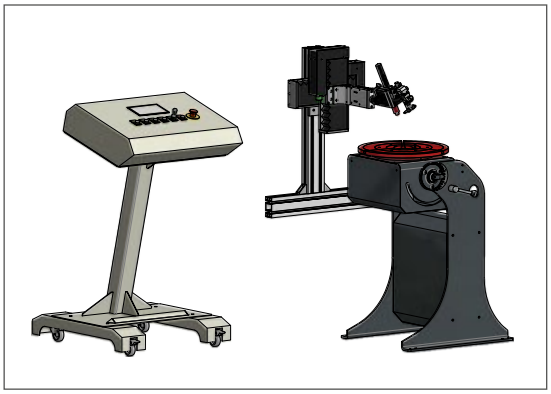


TWO PLC withTWO Swan and TWO ARM MAN

Such configuration includes:

- TWO PLC
- TWO ARM MAN torch-holder arm without pneumatic actuator
- TWO SWAN tailstock Assembly

02	TWO PLC	200Kg tilting rotary table positioner
07	ONE-033	Rail connection- pos. 29
10	ONE-2110	Vertical column base
12	ONE-3075	750mm. vertical column
16	ONE-2054	Cross connection for ø 40/35 mm. pipes with lock
18	ONE-3040	400mm horizontal pipe
19	SM50/2 + PT	Torch-holder with 50x50mm. cross micrometric slides
22	TWO-TS-075S	75mm. Stroke pneumatic tailstock
29	TWO-2085	850mm (Al 4 0x80x850mm) rail
30	TWO-2075	750mm (A l 40x80x750mm) rai l



Optional devices:

- Modem connection, for Remote-control or to update programs
- 4.0 Industry Package : for monitoring working parameters, off-line programming, OPC UA server to communicate with the production management system.

Fully automated TWO for multi-layer cold wire TIG circular welding:

- PLC with 7" Touch-sensitive screen Panel
- AVC control vertical slide
- Swinging control horizontal slide
- Cold wire managed by PLC
- PLC with welding torch JOB recall
- Possibility to enter at least 200 working programs, for each program it is possible to set the step number and for each step it is possible to set :
  - Ø of the item in mm.
  - Rotation delay
  - Overlap in mm
  - Arc Voltage in Volt
  - Swinging parameters : width, speed, center, pause left-center-right
  - Welding torch Job, with bus connection

THREE – 300 KG / FIVE - 500 KG
MANUAL OR MOTORIZED TILTING, HOLLOW SPINDLE

THREE & FIVE: AVAILABLE VERSIONS

BASE: motorized rotation, tilting manual hand-wheel

BR: motorized rotation by means of Brushless motor with encoder and tilting manual hand-wheel

MOT: motorized rotation and motorized tilting

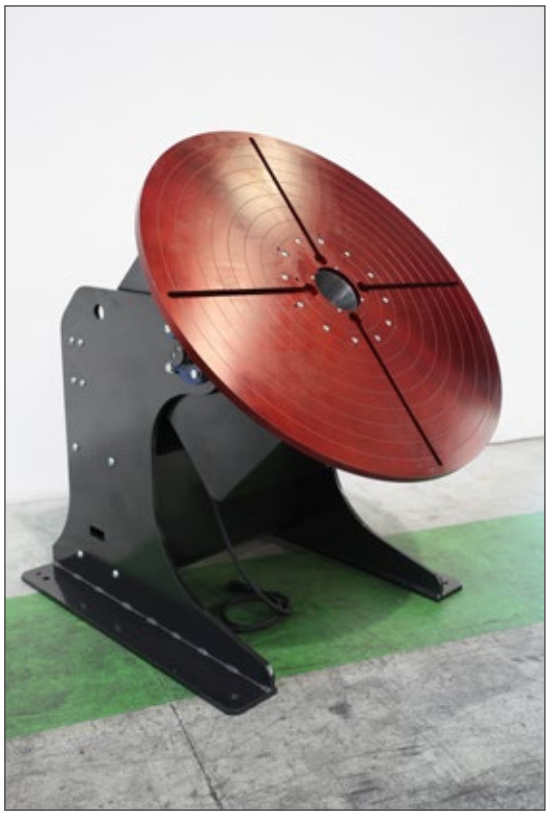
MOT BR: motorized rotation by means of Brushless motor with encoder and motorized tilting

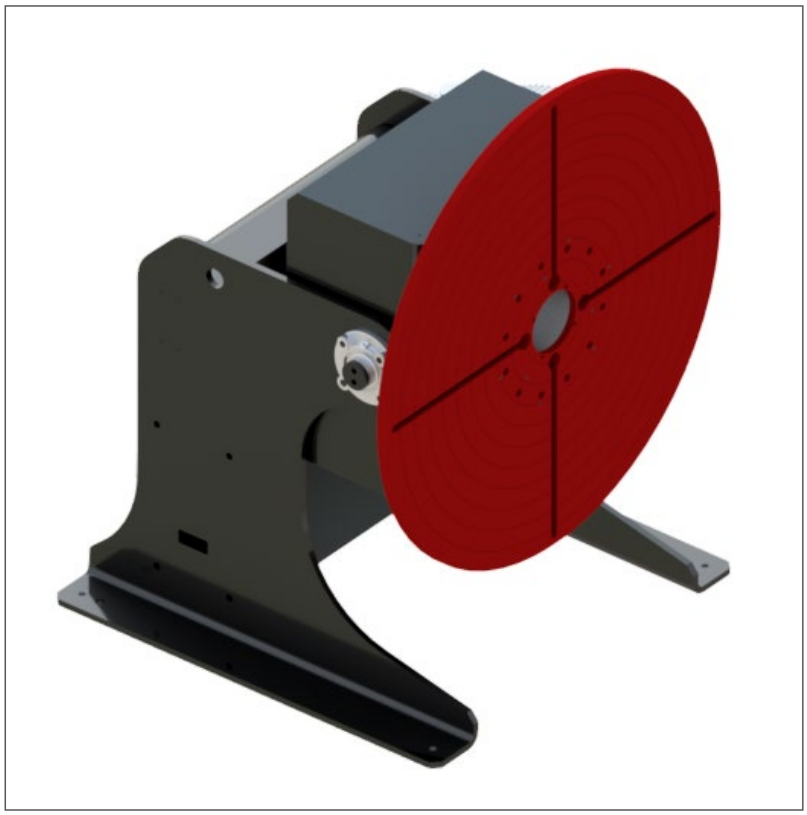
PLC OPTION: overlap control, delayed tilting and pneumatic arm management

MODEL	THREE	THREE BR	THREE MOT	THREE MOT BR
W-Max weight capacity	300 kg	300 kg	300 kg	300 kg
WxL-Tilting torque	55 kgm	55 kgm	55 kgm	55 kgm
WxR Rotation torque	20 kgm	20 kgm	20 kgm	20 kgm
Tilting	hand-wheel	hand-wheel	hand-wheel	Motorized
Weld ground	300 A	300 A	300 A	300 A
Rotation speed	0,4 - 4 rpm	0,04 - 4 rpm	0,4 - 4 rpm	0,04 - 4 rpm
Infeed	230V, single-phase	230V, single-phase	230V, single-phase	230V, single-phase
Remote control	Rollo1-CD	Rollo1-CD	Push-button pane	Push-button panel
Weight	230 Kg	230 Kg	235 Kg	235 Kg

MODELL	FIVE	FIVE BR	FIVE MOT	FIVE MOT BR
W-Max weight capacity	500 kg	500 kg	500 kg	500 kg
WxL-Tilting torque	100 kgm	100 kgm	100 kgm	100 kgm
WxR Rotation torque	65 kgm	65 kgm	65 kgm	65 kgm
Tilting	hand-wheel	hand-wheel	hand-wheel	Motorized
Weld ground	400 A	400 A	400 A	400 A
Rotation speed	0,2 - 2 rpm	0,02 - 2 rpm	0,2 - 2 rpm	0,02 - 2 rpm
Infeed	230V, single-phase	230V, single-phase	230V, single-phase	230V, single-phase
Remote control	Rollo1-CD	Rollo1-CD	Push-button pane	Push-button panel
Weight	415 Kg	415 Kg	440 Kg	440 Kg

TWELVE - 1200 KG / TWENTY -2000 KG
MANUAL OR MOTORIZED TILTING, HOLLOW SPINDLE





TWELVE & TWENTY: AVAILABLE VERSIONS

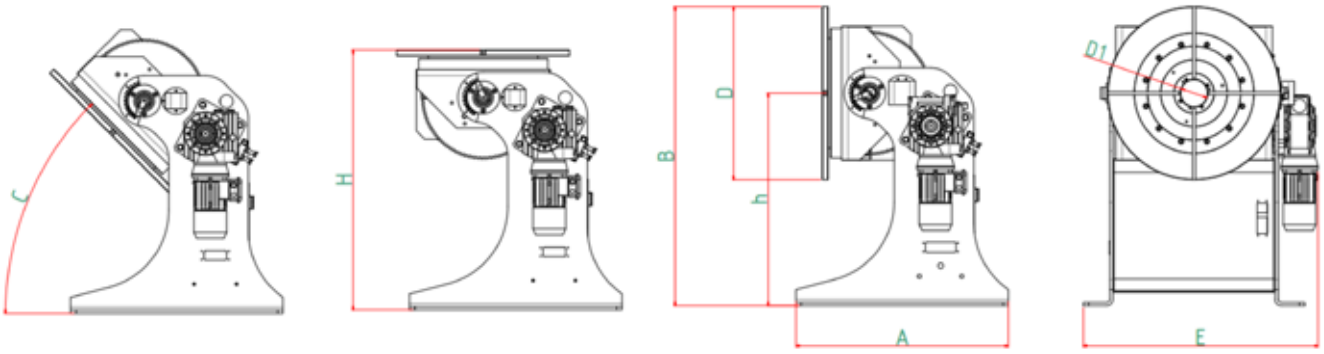
BASE: motorized rotation and motorized tilting

BR: motorized rotation by means of Brushless motor with encoder and motorized tilting

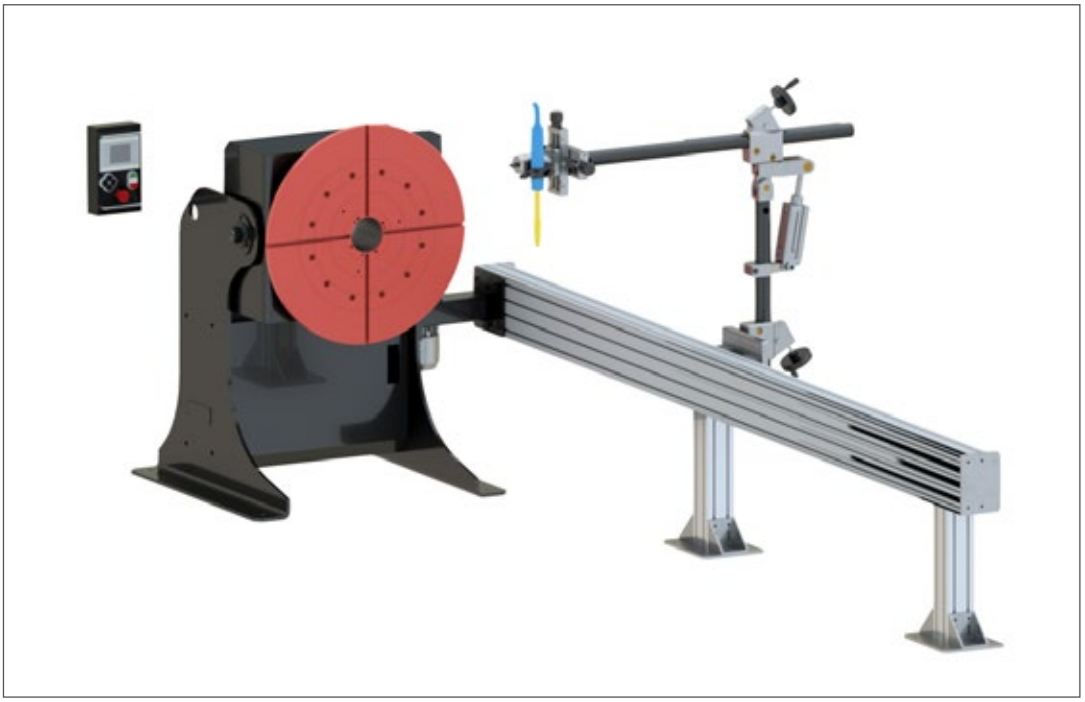
PLC OPTION: overlap control, delayed tilting and pneumatic arm management

MODEL	TWELVE	TWELVE BR	TWENTY	TWENTY BR
W-Max weight capacity	1200 kg	1200 kg	2000 kg	2000 kg
WxL-Tilting torque	310 kgm	310 kgm	510 kgm	510 kgm
WxR Rotation torque	150 kgm	150 kgm	200 kgm	200 kgm
Tilting	hand-wheel	hand-wheel	hand-wheel	Motorized
Weld ground	300 A	300 A	300 A	300 A
Rotation speed	0,16 - 1,6 rpm	0,05 - 1,6 rpm	0,1 - 1 rpm	0,01 - 1 rpm
Infeed	230V, single-phase	230V, single-phase	230V, single-phase	230V, single-phase
Remote control	Rollo1-CD	Rollo1-CD	Push-button pane	Push-button panel
Weight	530 Kg	530 Kg	980 Kg	980 Kg

PARAMETRIC DIMENSIONAL TABLE FROM THREE TO TWENTY 300 KG TO 2000 KG POSITIONERS



MODEL	THREE	FIVE	TWELVE	TWENTY
A	700	800	965	1115
B	1047	1122	1290	1500
C	0°-130°	0°-130°	0°-130°	0°-130°
D	500	650	900	1200
D1	105	102	132	152
E	736	874	1102	1284
h	797	797	840	900
H	919	975	1020	1106

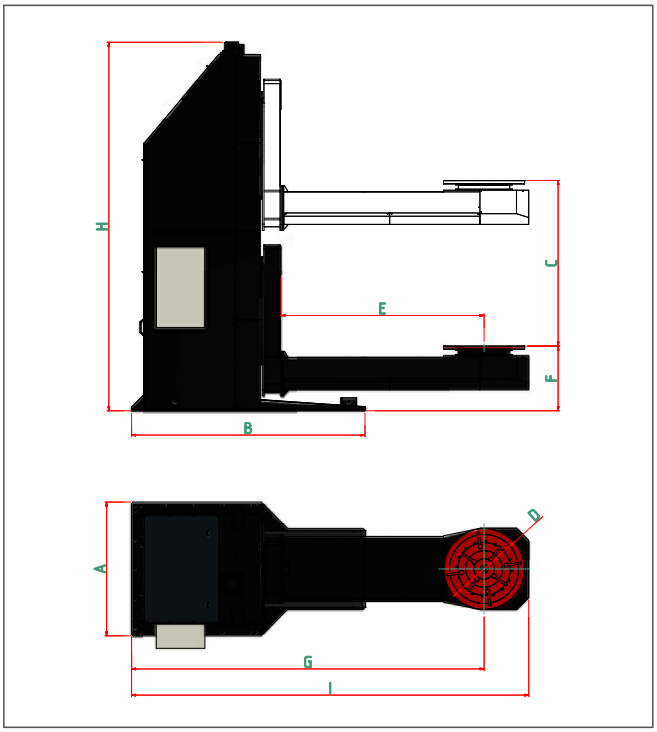


JD TRIPLE
3 AXIS, ORBIT AND ELEVATING

JDTRIPLE features motorized lift at fixed speed and two (orbit tilt and rotation) 90° axis. Lift is performed by ball screw with safety nut and the whole lift transmission is protected by bellows. Standard execution is equipped with AC motors at speed fixed or adjustable by vector inverter. Brushless motors with encoder can also be installed for CN control of movements and of positions.

- **W =** Payload Kg
- **W x L =** Tilting torque Kgm
- **W x R =** Rotation torque Kgm

MODEL	u.m.	JD TRIPLE 1	JD TRIPLE 3
W	kg	1000	3400
W x L	Kgm	550	1785
W x R	Kgm	160	545
A	mm	1350	1650
B	mm	2080	2885
C	mm	1700	2000
D	mm	600	1000
E	mm	2000	2500
F	mm	700	800
G	mm	3488	4349
H	mm	3918	4547
I	mm	3854	4900



FIVE 3D / TWELVE 3D
3-AXIS POSITIONERS WITH MOTORIZED TILTING

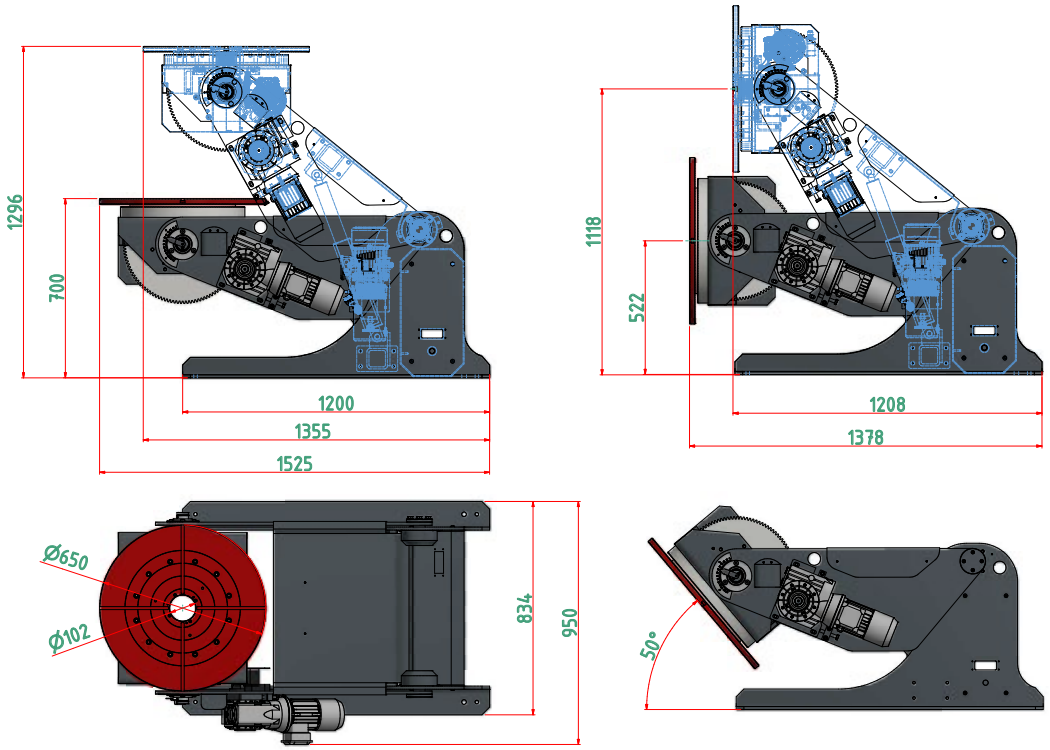
Each model has two versions:
- With AC rotation motor and a 1/10 range of adjustment of the speed.
- With brushless motor with encoder, which provides a 1/100 range of adjustment of the speed and greater precision

The other two axes are at a fixed speed:
- AC motor-driven tilting axis
- hydraulic elevation driven by control unit with AC motor

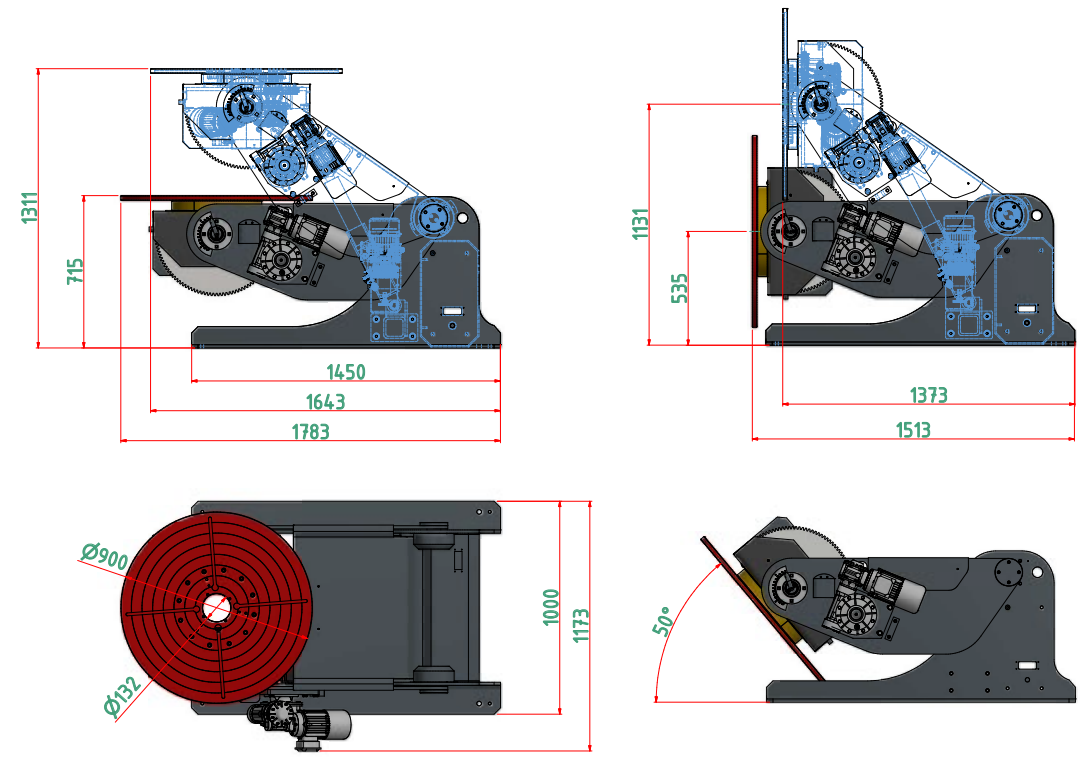
Model	FIVE-3D	FIVE-3D BR	TWELVE-3D	TWELVE-3D BR
Tilt	500 kg	500 kg	1200 kg	1200 kg
TorqueRotation	100 kgm	100 kgm	310 kgm	310 kgm
Torque Tilting	65 kgm	65 kgm	150 kgm	150 kgm
Tilting	0°<>130° motorized	0°<>130° motorized	0°<>130° motorized	0°<>130° motorized
Motor	AC	Brushless motor with encoder	AC	Brushless motor with encoder
Rotation gearings	Worm gear motor, pinion and slewing ring	Worm gear motor, pinion and slewing ring	Worm gear motor, pinion and slewing ring	Worm gear motor, pinion and slewing ring
Rotation speed	0.2<>2 rpm different speed range on request	0.02<>2 rpm different speed range on request	0.16<>1.6 rpm different speed range on request	0.02<>2 rpm different speed range on request
Table	Ø650 mm hollow spindle Ø100 mm	Ø650 mm hollow spindle Ø100 mm	Ø900 mm hollow spindle Ø130 mm	Ø900 mm hollow spindle Ø130 mm
Weight	About 550 kg	About 550 kg	About 850 kg	About 850 kg
Feeding	400V - 3 phases	400V - 3 phases	400V - 3 phases	400V - 3 phases
Power installed	1,5 kVA	1,5 kVA	1,8 kVA	1,8 kVA
Remote control pendant with 5m cable	- Rotation speed potentiometer - CW/CCW - Cont/Int rotation - BCKW/FW tilting - UP/DOWN elevation - Emergency - Welding ON/OFF	- Rotation speed potentiometer - CW/CCW - Cont/Int rotation - BCKW/FW tilting - UP/DOWN elevation - Emergency - Welding ON/OFF	- Rotation speed potentiometer - CW/CCW - Cont/Int rotation - BCKW/FW tilting - UP/DOWN elevation - Emergency - Welding ON/OFF	- Rotation speed potentiometer - CW/CCW - Cont/Int rotation - BCKW/FW tilting - UP/DOWN elevation - Emergency - Welding ON/OFF
Ground bearing	300 Amp @100%	300 Amp @100%	300 Amp @100%	300 Amp @100%
Elevation	double-acting hydraulic cylinder with non-return valve	double-acting hydraulic cylinder with non-return valve	double-acting hydraulic cylinder with non-return valve	double-acting hydraulic cylinder with non-return valve

FIVE 3D

Dimensional Data



TWELVE 3D



P and PE
2 and 3 AXIS, MOTORIZED TILT

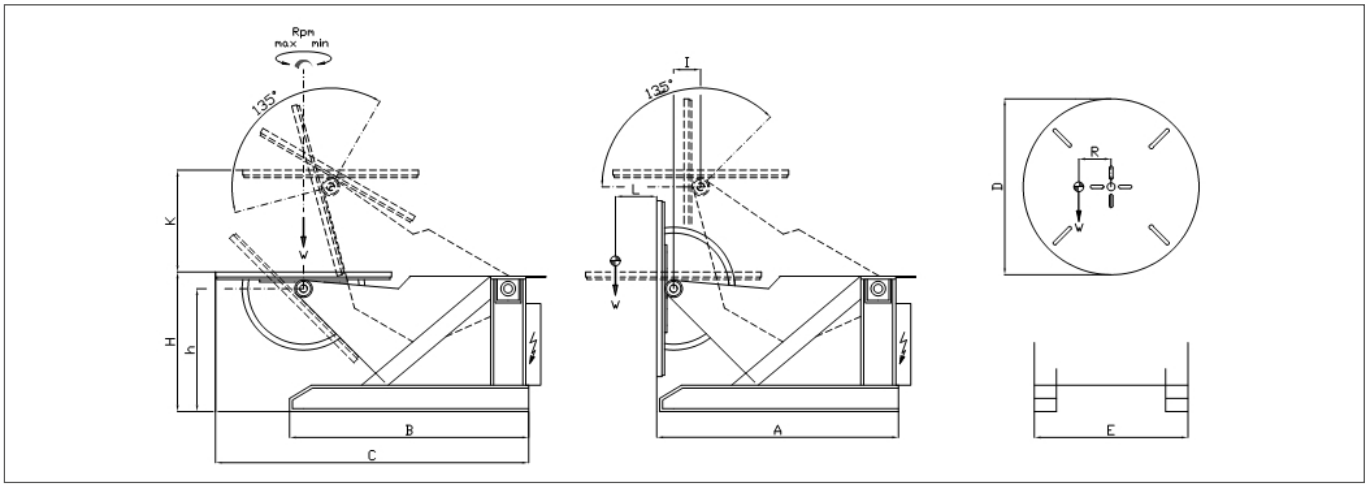
STANDARD FEATURES:

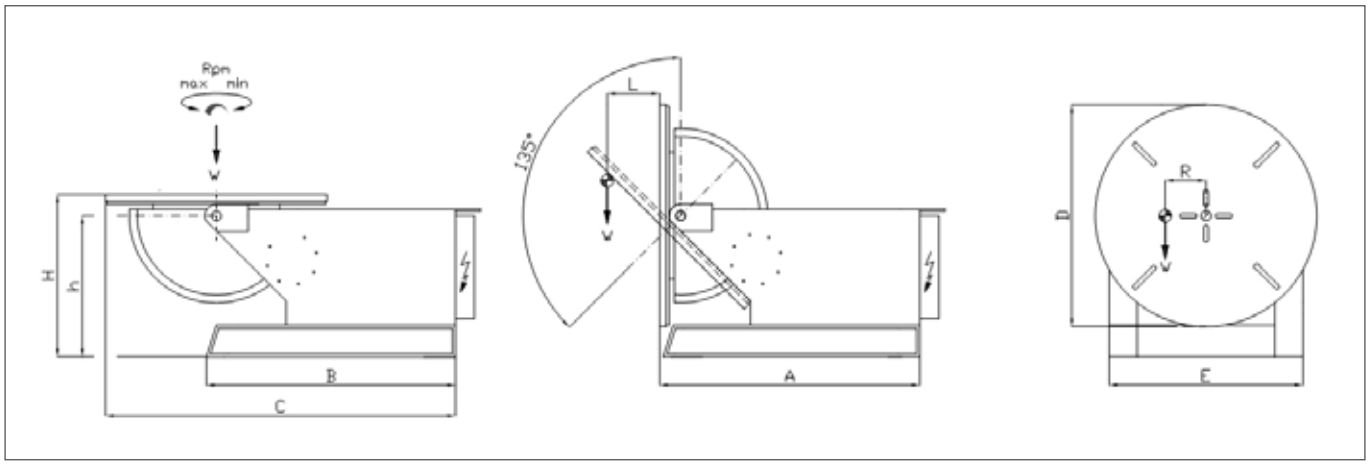
- Rotation driven by AC servo-ventilated motor and vector inverter
- Mechanical tilt at fixed speed
- Hydraulic lift (PE models only)
- Interface to automatic welding machine
- 24V remote control by push button set
- Weld ground 400 to 1200 A
- Feeding 400V 50 Hz

Optional features:

- Different speed ranges
- Different speed range ratios by brushless motor, with encoder for PLC incorporating one or more axis
- Different feeding
- Start delay, overlapping, etc.
- Self-centring chucks up to Ø 630 mm (see
- Complementary equipment)
- Digital tachometer

P and PE
2 and 3 AXIS, MOTORIZED TILT





W = Weight capacity Ton
W x L = Tilt torque Tonxm
W x R = Rotation torque Tonxm
E1, E2 = Standard speed range min/max rpm
A, B, C, D, h, H, K, I = Dimensions in mm
P = Machine weight Ton

POSITIONERS 2-AXIS (AC rotation, Mechanical Tilt 135°)

Model P

Type	W	WxL	WxR	E1E	E2E	A	B	C	D	E	h	H	P
P030	3	0,9	0,36	0,08/0,80	0,05/1,00	1144	1290	1630	1200	1070	752	856	1,4
P060	6	2,7	0,5	0,085/0,85	0,065/1,30	1560	1635	2130	1400	1160	890	1020	2,2
P125	12,5	5,5	1,2	0,05/0,50	0,045/0,90	1663	1700	2350	1700	1500	1000	1162	4,1
P250	25	10	1,7	0,03/0,33	0,025 /0,50	2165	2135	2900	1900	1660	1170	1385	5,5
P500	50	18	2,8	0,02/0,22	0,02 /0,40	2370	2350	3235	2200	1900	1350	1585	12

PPOSITIONERS 3-AXIS (AC rotation, Mechanical Tilt 135° - Hydraulic Lift)

Model PE

Type	W	WxL	WxR	E1E	E2E	A	B	C	D	E	h	H	K	I	P
PE030	3	0,9	0,36	0,08/0,80	0,05/1,00	1825	1950	2225	1200	1230	855	958	700	190	2,1
PE060	6	2,7	0,5	0,085/0,85	0,065/1,30	2225	2314	2630	1400	1382	1052	1184	900	260	3,5
PE125	12,5	5,5	1,2	0,05/0,50	0,045/0,90	2585	2335	3120	1700	1875	1125	1280	1000	250	6
PE250	25	10	1,7	0,03/0,33	0,025/0,50	3175	3000	3750	1900	2005	1065	1300	1000	235	8

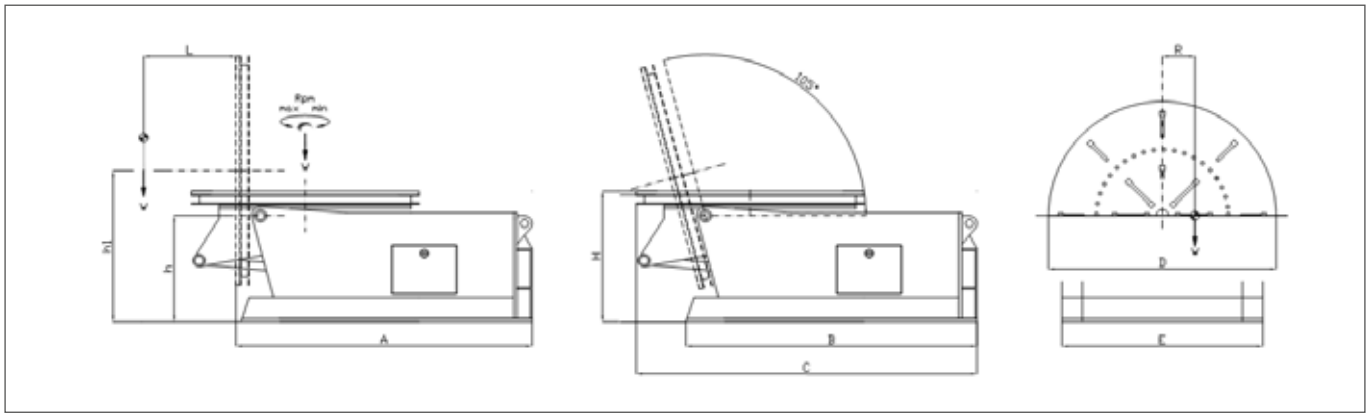
ET
HYDRAULIC TILT

STANDARD FEATURES:

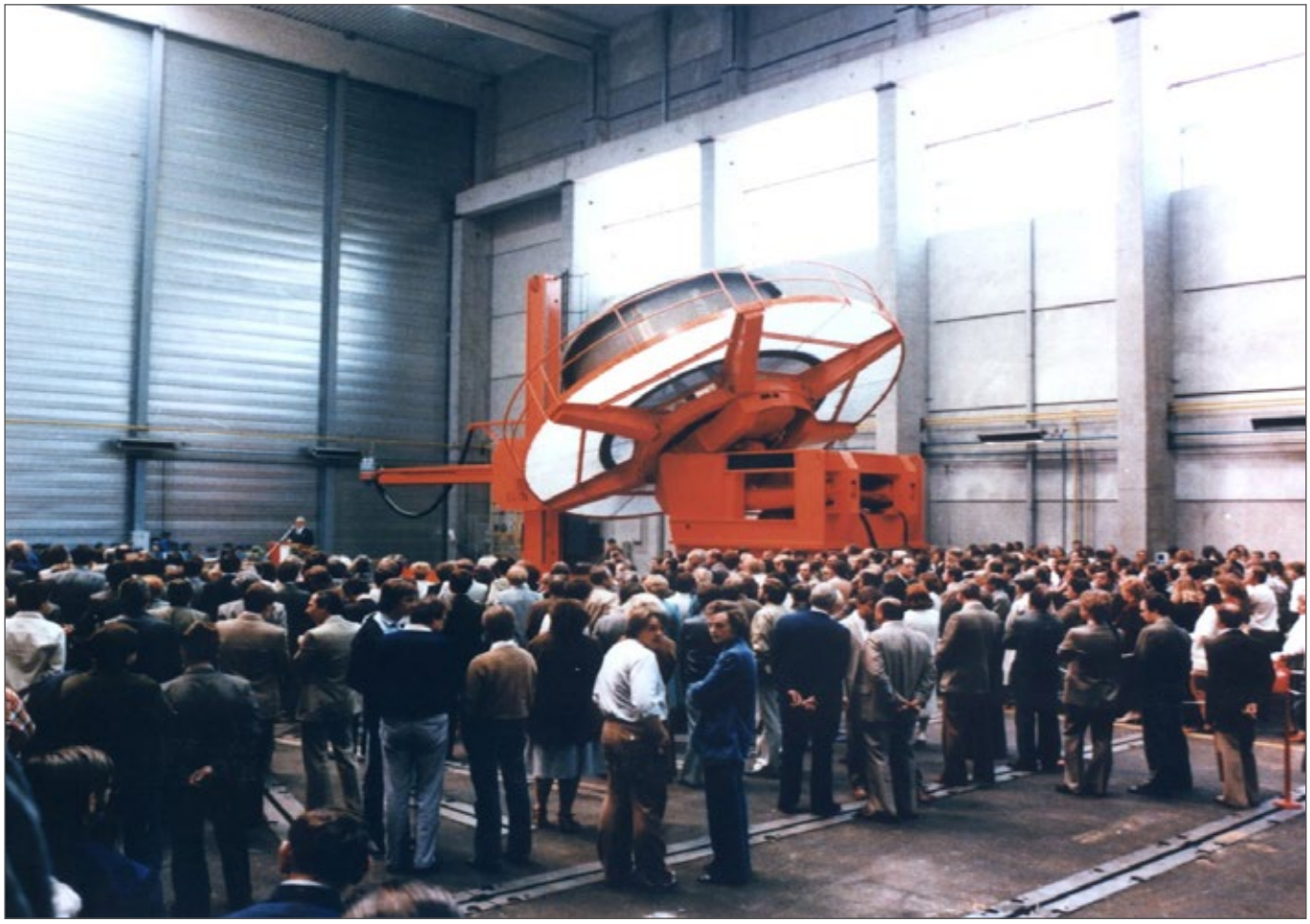
- Rotation driven by AC and vector inverter.
- Interface to automatic welding machine.
- 24V remote control by push button set.
- Weld ground 800 to 2200 A according to model.
- Feeding 400V 50 Hz.

Optional features:

- Different speed ranges.
- Different feeding.
- Digital tachometer.
- Wireless remote control.
- Arms to amplify table Ø up to 8 m.
- Frame without front feet.
- Elevation shelves.



PI and ET
2 AXIS, HYDRAULIC TILT



W = Weight capacity Ton
W x L = Tilt torque Tonxm
W x R = Rotation torque Tonxm

E1, E2 = Standard speed range min/max rpm
A, B, C, D, E, h, h1, H = Dimensions in mm
P = Machine weight Ton

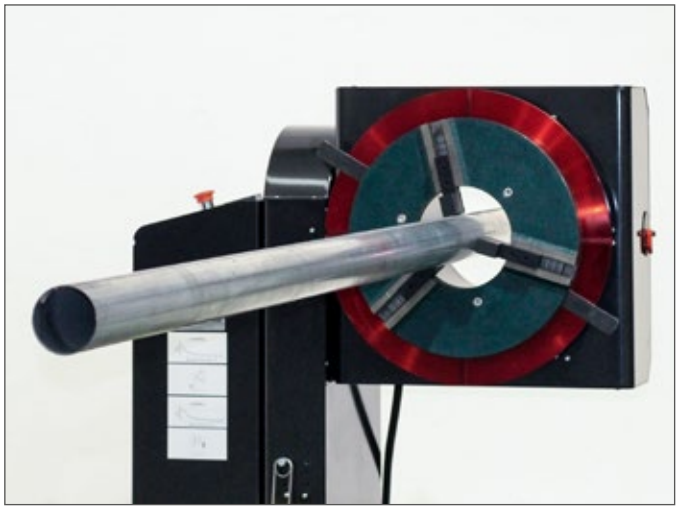
Tilt = 120° or 105° according to model

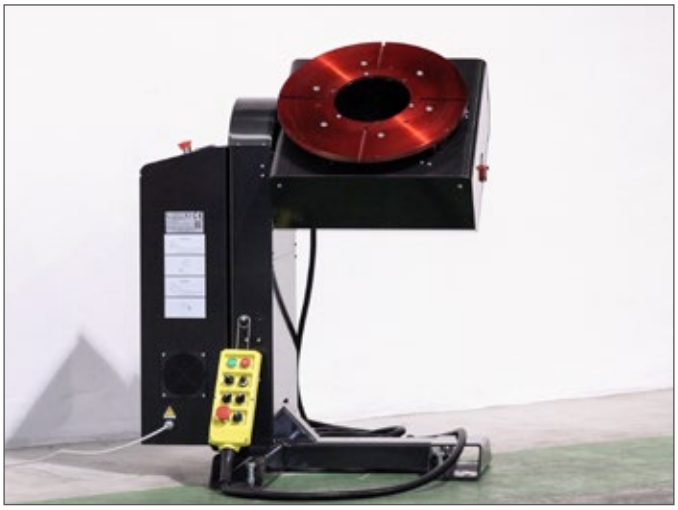
POSITIONERS 2-AXIS (AC rotation, Hydraulic Tilt)

Model ET

Type	W	WxL	WxR	E1	E2	A	B	C	D	E	h	h1	H	P
ET200	20	10	1,7	0,033/0,33	0,025/0,50	2660	2615	2975	2000	1800	1100	1450	1350	6
ET250	25	15	2,8	0,021/0,21	0,020 /0,30	3200	3350	4200	2500	2100	1350	1600	1350	13
ET400	40	30	6	0,021/0,21	0,020 /0,30	3400	3380	4050	2500	2400	1400	1800	1570	19
ET500	50	36	6,5	0,021/0,21	0,020 /0,30	3625	3595	4325	2800	2430	1400	1700	1600	20
ET600	60	45	7,5	0,021/0,21	0,020 /0,30	3625	3595	4325	2800	2470	1450	1800	1600	25
ET800	80	100	12	0,021/0,21	0,020 /0,30	3900	3780	4450	3700	2600	1750	2200	1850	33
ET1000	100	130	16	0,021/0,21	0,020 /0,30	4200	4180	4550	3700	2950	2100	2700	2500	41

HOLLOW SPINDLE



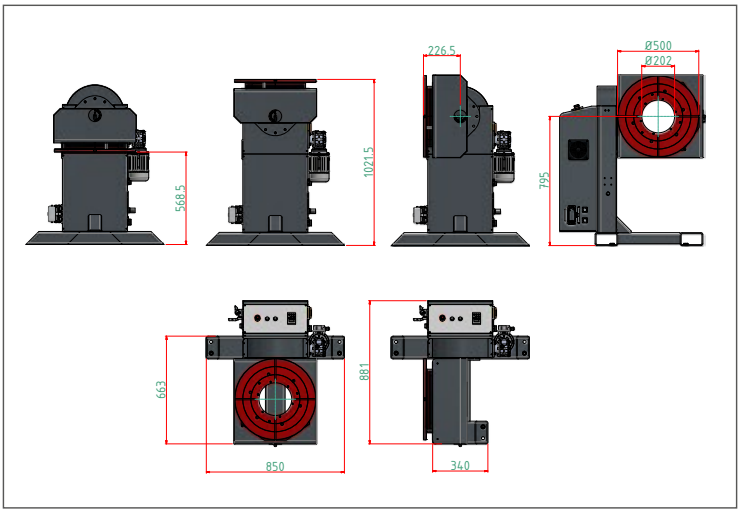


Model	THREE50	THREE50 BR
Capacity with table in flat position	350 kg	350 kg
Tilt torque	60 kgm	60 kgm
Rotation torque	25 kgm	25 kgm
Tilt torque	0°-180° driven at fixed speed	0°-180° driven at fixed speed
Rotation motor	AC	AC
Rotation transmission	Worm gear with pinion+slewing ring	Worm gear with pinion+slewing ring
Rotation speed	From 0,2 tp 2 rpm – other on request	From 0,02 to 2 rpm – other on request
Table	Ø500, hollow spindle Ø202 mm	Ø500, hollow spindle Ø202 mm
Weight	300 Kg	300 Kg
Feeding	230 V / 400 V 3-phases (on request)	230 V / 400 V 3-phases (on request)
Power	400 W	400 W
Remote control pendant	5m cable	5m cable
Ground bearing	300 Amp @ 100%	300 Amp @ 100%

THREE-50

WITH HOLLOW SPINDLE Ø202 MM

- Maximum load capacity 350 Kg
- Tilt torque 60 Kgm
- Rotation Torque 20 Kgm
- Hollow spindle Ø202 mm, on Ø500 mm table with 4 T-slots
- 0° - 180° tilting driven at 0.5 rpm fixed speed
- Rotation with variable speed motor
- Standard rotation speed from 0.2 to 2 rpm
- 400 A ground bearing
- Remote control pendant for manual controls
- 230 V 50-60 Hz feeding

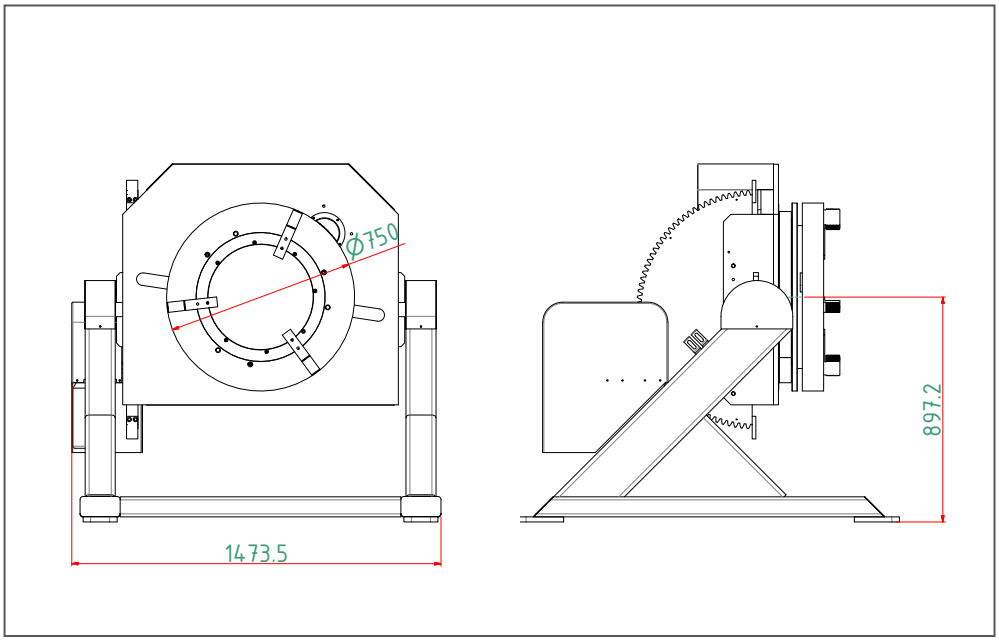


HOLLOW SPINDLE

JD10S400 JODA

WITH Ø400 MM HOLLOW SPINDLE

- Weight capacity 500 kg
- Tilt torque 200 kgm
- Rotation torque 100 kgm
- Table Ø 750 mm, four T radial slots stepped 90°
- Motorized tilt 0° to 135° by AC self-brake gearmotor
- Speed range 0.05 to 2 rpm driven by brushless and encoder
- Weld ground 400 A
- Remote control by push button set



HOLLOW SPINDLE

JDHE

HOLLOW SPINDLE Ø 200 OR 260 MM ELEVATING POSITIONER

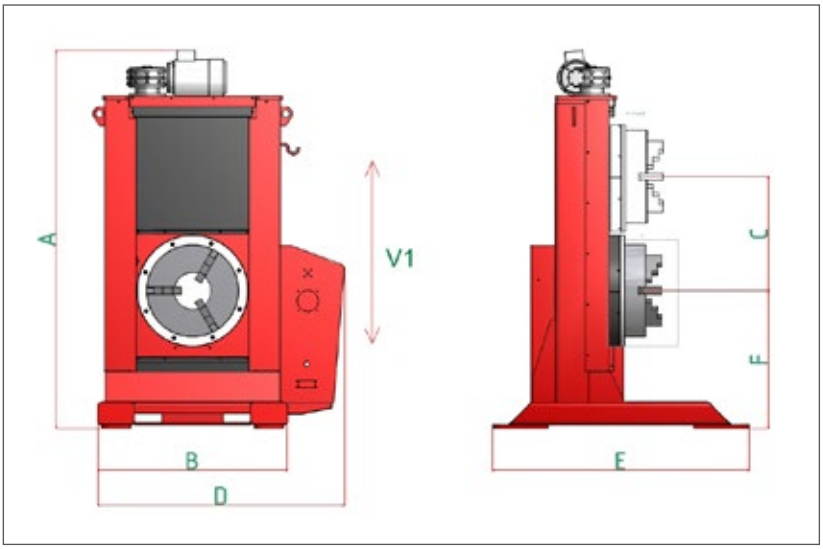
JDHE is a turn & lift table positioner specially designed for handling of pipes with elbows or T branches that can be laid on fixed height dollies as it's the table that moves up and down.

The hollow spindle (Ø 200 or 260 mm accordingly with the chuck installed) allows introducing the pipe through the rear side as well as observing welding through the inside of the pipe and feeding back-up gas

Lift transmission is protected by bellows.

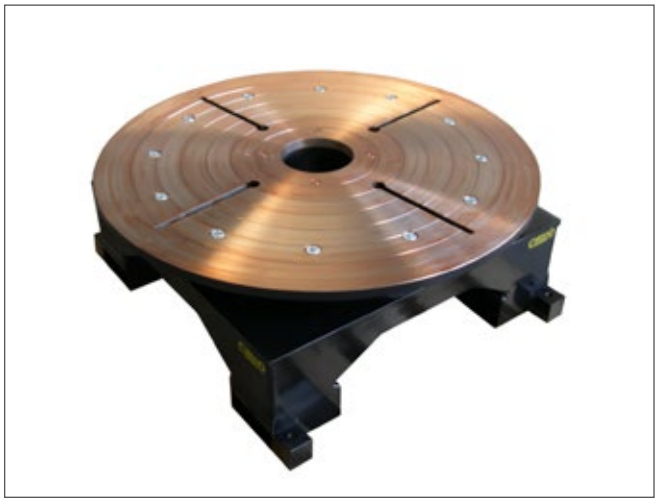
- **W =** Weight capacity
- **W x L =** Tilt torque
- **W x R =** Rotation torque
- **E1 =** Speed range min/max rpm (other ranges on demand)

MODEL	u.m.	JDHE1	JDHE2
W	kg	1000	2000
W x L	kgm	300	560
W x R	kgm	100	200
V1	mm/min	560	560
E1	rpm	0,2 – 10	0,05 – 2
A	mm	2055	2830
B	mm	1030	1120
C	mm	600	1000
D	mm	1338	1430
E	mm	1390	1400
F	mm	745	890

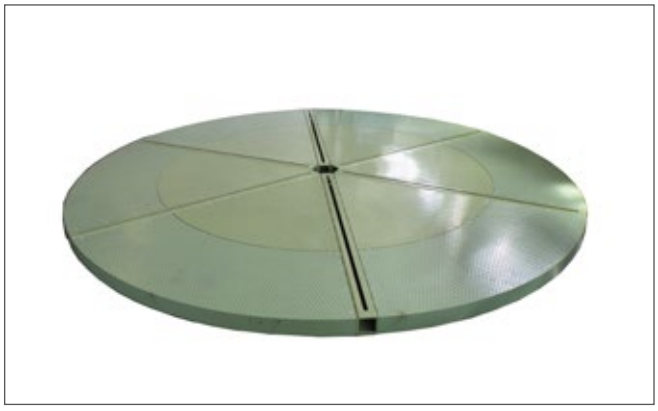


HORIZONTAL TURNTABLES

JDPL25



JDPL50 , incorporating electric cabinet and remote control



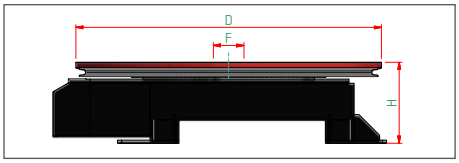
JDPL50 special execution with 6 extension arms
to Ø 4500 mm covered and connected by steel plate

STANDARD FEATURES:

- AC drive.
- Interface to automatic welding machine.
- Remote control (24V) by push button set.
- Weld ground 400A to 1200A according to model.
- Protection bellows (AE and FE only).
- Feeding 400V 50Hz (230V only JDPL25).

- **W =** Weight capacity
- **W x L =** Tilt torque
- **W x R =** Rotation torque
- **E1 =** Speed range min/max rpm (other ranges on demand)

HORIZONTAL TURNTABLES							
Tipo	**W**	**WxR**	**E1E**	**D**	**F**	**H**	**P**
JDPL25	2,5	0,15	0,065 /1,0	900	150	362	0,6
JDPL 50	5	0,35	0,065 /1,0	1500	150	400	0,9
JDPL 100	10	0,9	0,085 /1,2	1800	100	426	1,65
JDPL 150	15	0,9	0,065 /1,0	2000	500	426	1,65
AV 200	20	1,2	0,060 /0,9	1700	60	850	3
AV 300	30	1,7	0,033 /0,5	1900	85	880	4,3
AV 400	40	2,3	0,016 /0,25	1900	85	1020	5
AV 600	60	2,8	0,025 /0,40	2200	85	1155	7,5
AV 1000	100	4	0,013 /0,20	2200	85	1385	9
AV 2000	200	6	0,013 /0,20	2500	150	1585	12



OPTIONAL FEATURES

- Different speed ranges.
- Rotation PLC.
- Different feedings.
- Digital tachometer.
- Weld ground up to 2200A 100%.
- Larger table diameter.
- Extension arms up to 8 m diameter.
- Lower / greater height of table face.
- Rotary distributors for gas, fluid or compressed air through table hollow spindle.

JODA MICRO

1. Special cell execution

A sliding door with actinic glass automatically starts work cycle and the hood overhead can be connected to a fumes aspirator. Digital connection of PLC to power source allows ruling the whole process.
Rotation of both headstock and tailstock are motorized and synchronized, the tailstock being also provided of axial stroke driven by pneumatic cylinder, thus allowing the edge-to-edge welding without any stitching.

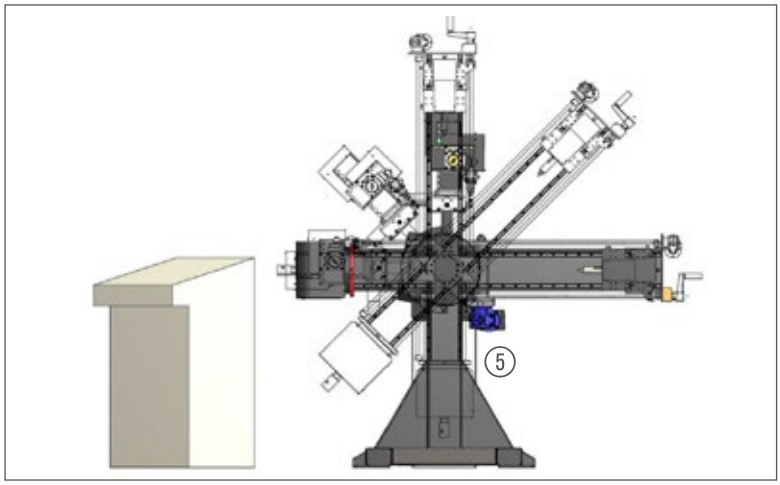
2. JODA MICRO with rotating fixture

JDMCR.ST Module allows rotating the whole assembly of headstock – beam – tailstock – torch holder without modifying the alignment of any component.

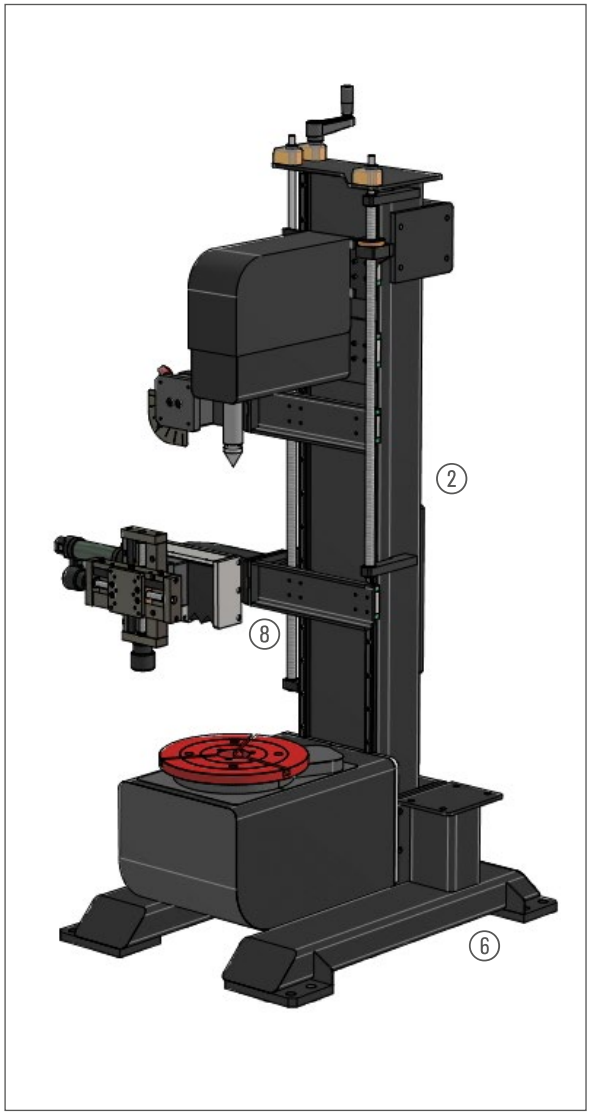
- **W =** Weight capacity
- **W x L =** Tilt torque
- **W x R =** Rotation torque

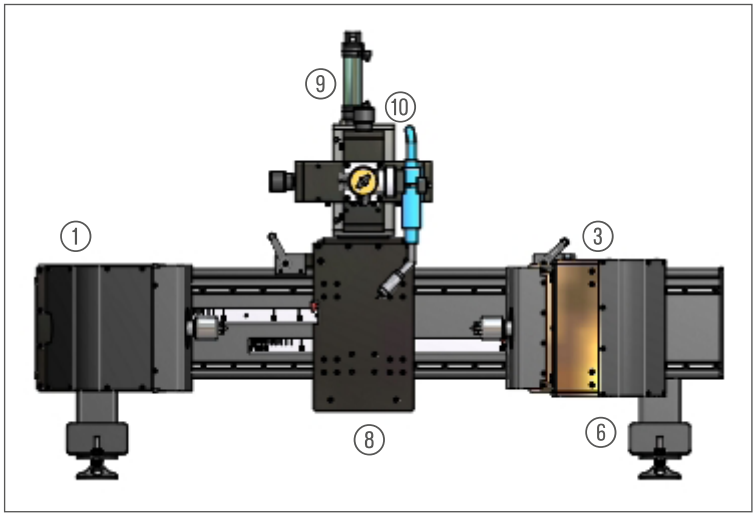
Picture aside:
JODA MICRO
without cell

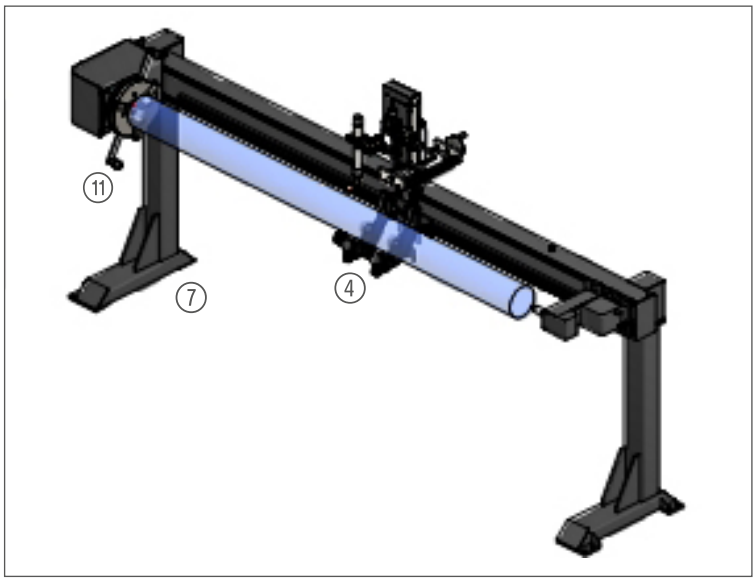
JODA MICRO



1. JDMCR.TM Headstock
2. JDMCR.B _ _ Beam
3. JDMCR.CP Tailstock
4. JDMCR.LS Dolly
5. JDMCR.ST Rotating support
6. JDMCR.P Pair of low feet
7. JDMCR.P1000 Pair of high feet
8. JDMCR.CR manual carriage. CRM motorized carriage
9. JD Pneumo 80 Pneumatic slide
10. Manual slides SM MINI 80/2 with
11. TWIN torch holder
12. Chuck Grip 300





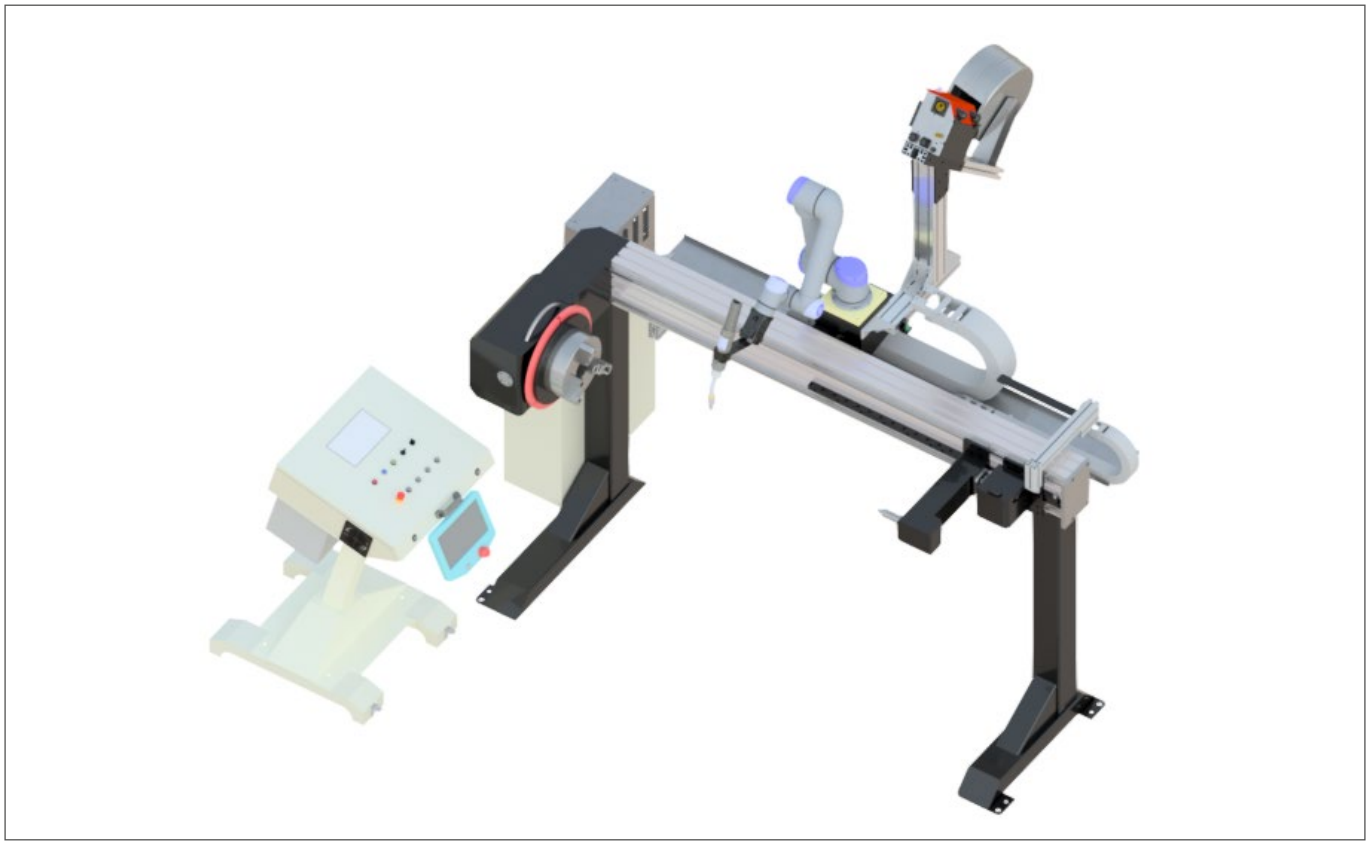


TWO LATHE

Small 150 kg capacity lathe featuring as follows:

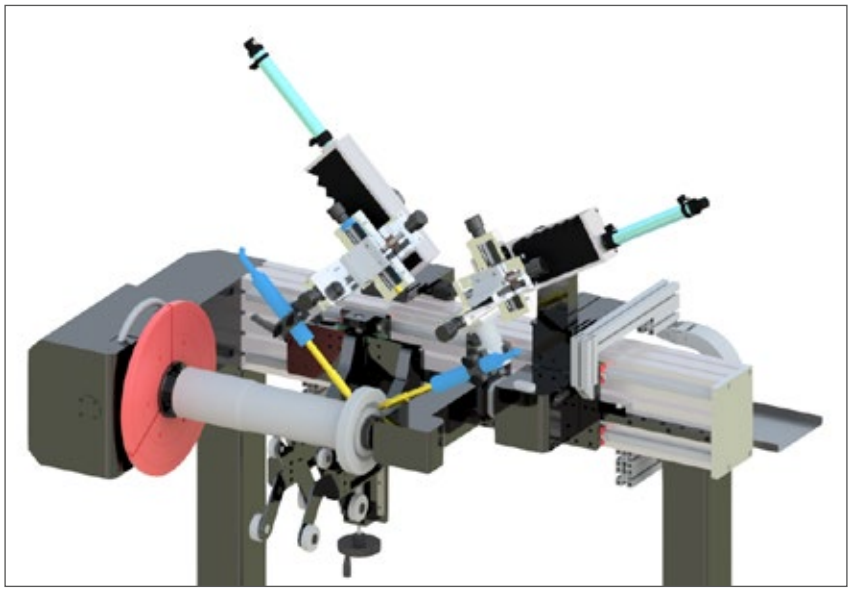
- Powered headstock
- Carpentry support feet
- Aluminum beam 220x120 mm, with RDS guides for tailstock and dolly
- Support channel and cable chain
- Powered headstock with Ø400 table with through-hole
- Ø80 mm, driven by Dc gear motor with encoder at the speed of 0.1 to 4 rpm, with 300 A ground bearing and rotation torque 7 kgm
- Pneumatic tailstock
- Idle dolly
- Carriage/s for support and handling the torch/es

MODEL	TWO LATHE
Capacity	150 kg
Rotation torque	7 kgm
Tilt torque	30 kgm
Motor	DC coon encoder
Rotation speed	0,4 - 4
Table diameter	400mm foro 80mm
Feeding	230V monofase
Ground bearing	300 A
Remote control	Pulsantiera
ø Max diameter	600 mm



TWO LATHE in special execution with COBOT UR5e and VPR-4WD cold wire feeding unit.

In this configuration there is total integration between the COBOT UR5e and the TWO LATHE.
From the programming pendant of the COBOT, it is in fact possible to program also the two axes of the lathe and the wire feeder as if they were a single machine



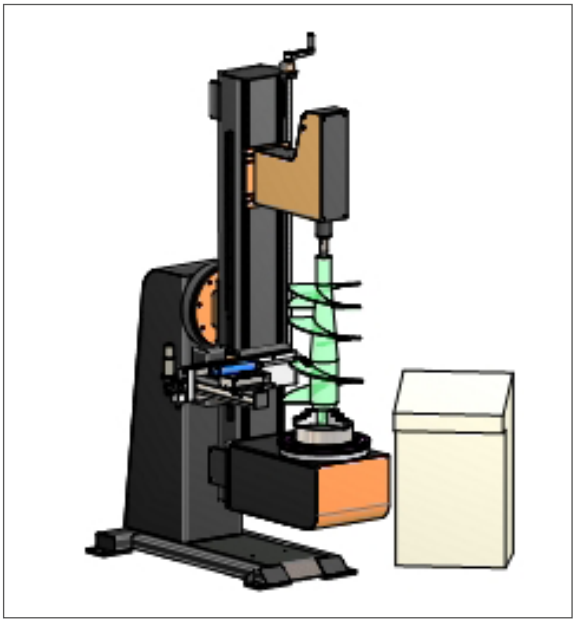
TWO LATHE for welding of flanges by two torches.

In this configuration, one welding head is solid with the tailstock, while the other is fixed on an independent sliding carriage.This will allow faster setup of the equipment according to the length of the workpiece.

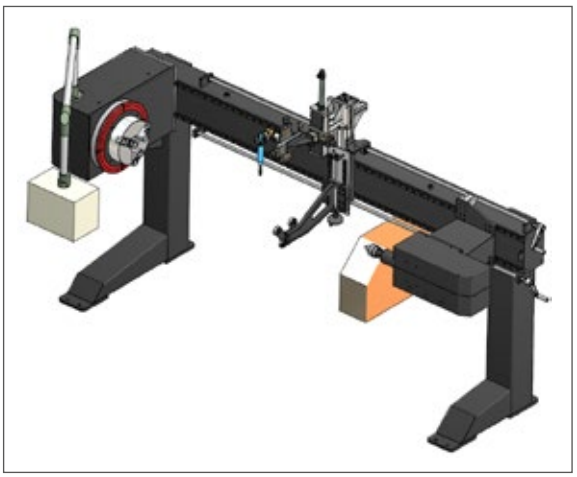
JODA MIDI

MODULES OF JODA MIDI LATHE CAN BE COMBINED TOGETHER AS WELL AS WITH ANY CARPANO'S ITEM OF COMPLEMENTARY EQUIPMENT SO AS TO DELIVER PLANTS SUITABLE FOR ANY NEED.

- Motorized headstock
- Pneumatic Tailstock with manual or motorized motion
- Feet for horizontal standing in fixed position , or alternatively support to rotate the lathe 0° to 90° to optimize weld angle
- One or two side beam torch carriages which can be equipped with manual, pneumatic or motorized slides as well as with height adjustable dollies
- 3-jaws self-centring chucks
- Manual, pneumatic or motorized slides with torch holder
- Beam lengths available from 1000 to 6000 mm
- Weight capacity 400 kg
- Maximum work piece Ø 900 mm

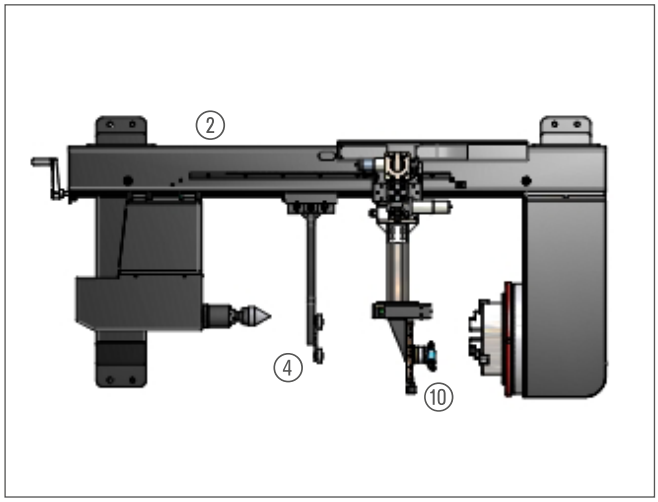


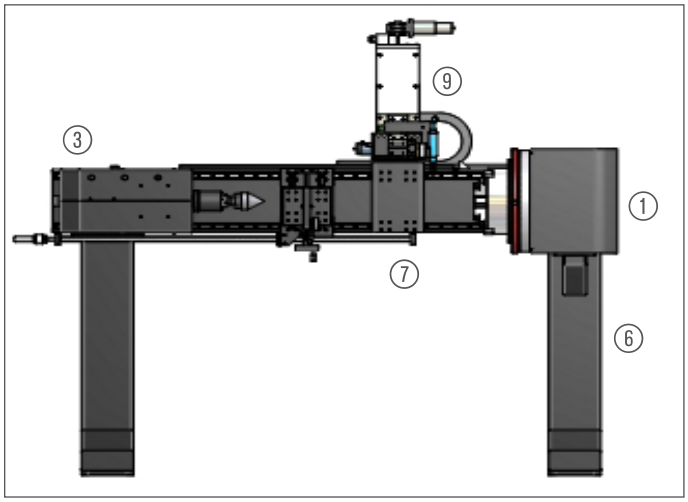
JODA MIDI lathe on -90° to + 45° rotating
support for hard facing of worm screws.
The torch carriage equipped with x/y motorized slides.
Remote control desk.



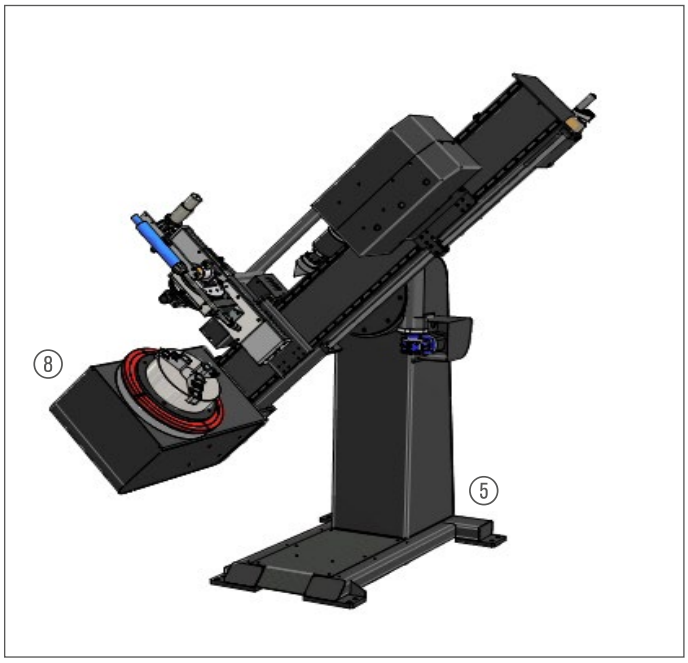
Joda MIDI lathe standing
horizontally, torch carriage with pneumatic
and manual slides.
Machine tool-like swivel
control pendant.

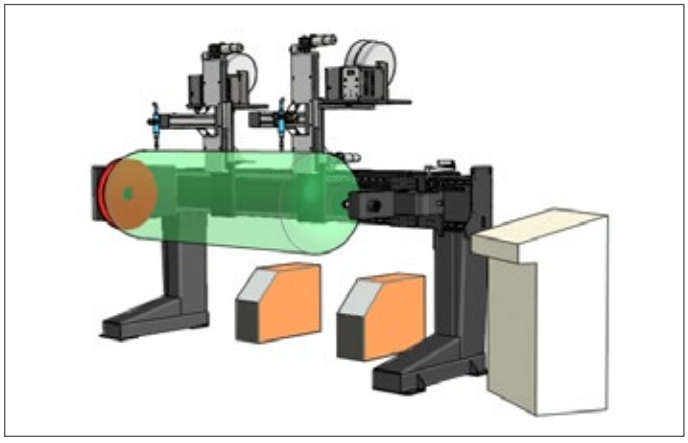
JODA MIDI





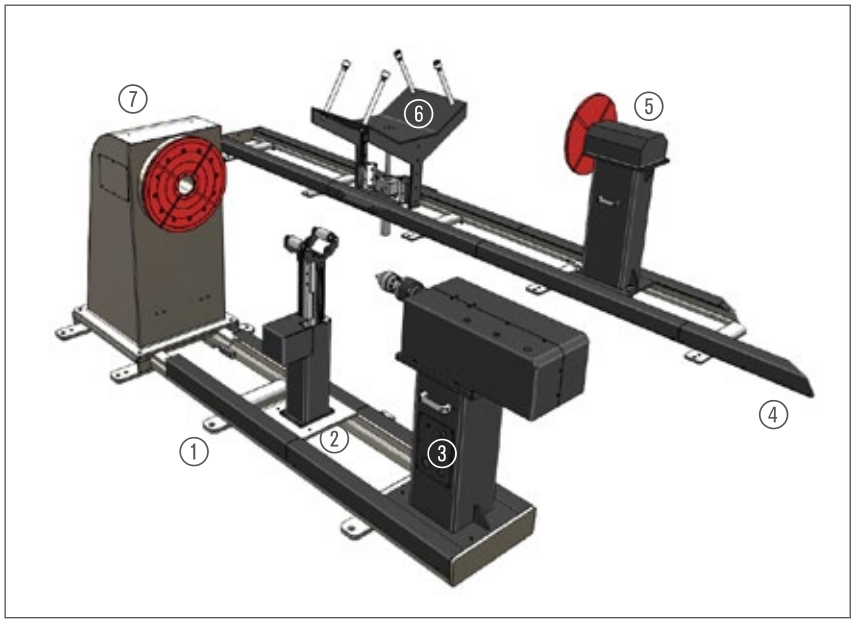
1. 1. JDMD.TM Headstock
2. 2. JDMD.B _ _ _ Beam
3. 3. JDMD.CP Tailstock
4. 4. JDMD.LS Dolly
5. 5. JDMD.ST Rotating support
6. 6. JDMD.P Pair of feet
7. 7. JDMD.CR Carriage (manual or motorized)
8. 8. CHK-ST-315A Chuck
9. 9. MM MIDI 250/1 Vertical motorized slide
10. 10. SM MIDI Manual slides





MIG welding of boiler bottoms.
Each JDMD.CR loaded with
its own wire feeder.
Remote control desk

JODA HORIZONTAL



1. JDR 2000/C
2. JD SE
3. JDHC and JDHCP
4. JDR 3000/C
5. JD TF
6. JD EL
7. JDTM – Joda Horizontal

MODULES OF JODA HORIZONTAL CAN BE COMBINED TOGETHER TO GET 3 SIZES:

JDH04, JDH10 and JDH20 each of which consists of:

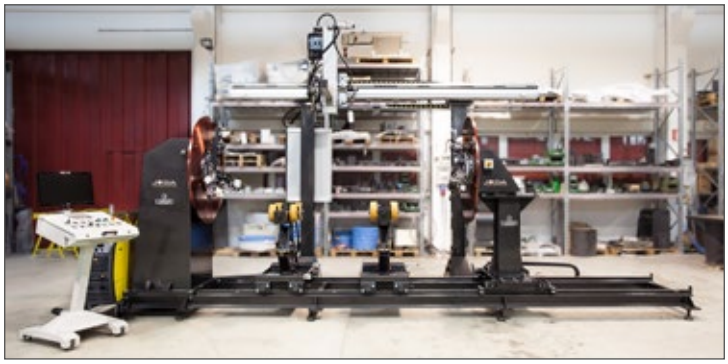
- Headstock JDTM
- Manual tailstock JDTF or pneumatic tailstocks JDHC or JDHCP
- Base JDR, with ball linear guides, covers and levelling screws, available in sections of 2 m (JDR 2000/C) or of 3 m (JDR 3000/C)
- Height adjustable dollies JDSE, JDEL and IPTRE to suit different diameters.

LATHE JDH04 CONSISTING OF:

- Headstock JDTM04 driven by brushless motor and encoder for PLC, equipped with CHK-ST-500A self centring chuck.
- Dollies JDSE height adjustable by rack and hand wheel, movable on the base by hand.
- Pneumatic tailstock JDHCP04 featuring axial stroke 150 mm, thrust 300 kg at 6 Bar, movable on the base by hand
- Base JDR 5000/C
- Remote control desk cabinet.

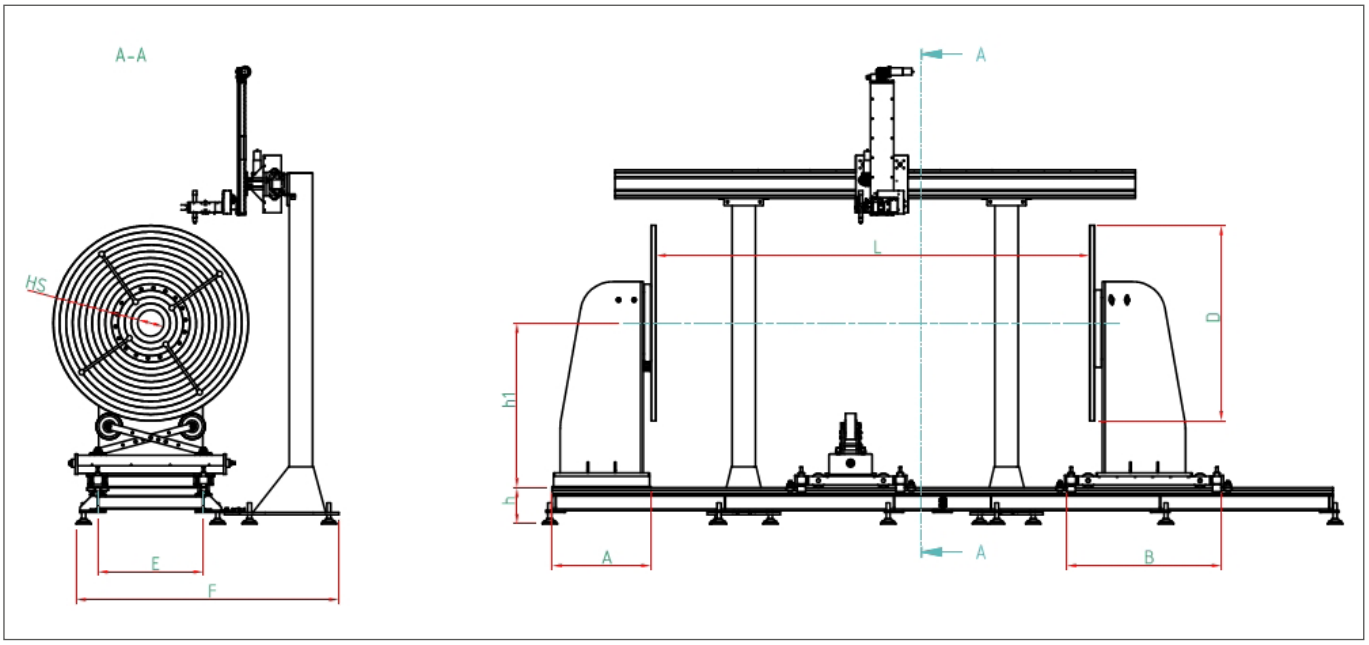
Overhead the lathe are installed different kinds of Carpano's complementary equipment.

JODA HORIZONTAL



STANDARD FEATURES

- Feeding 230V 1-phase or 400V
- 3-phase.
- Work cycle PLC [*5].
- Weld ground 400 A [*6].
- Remote control desk cabinet.



(*) ON REQUEST:

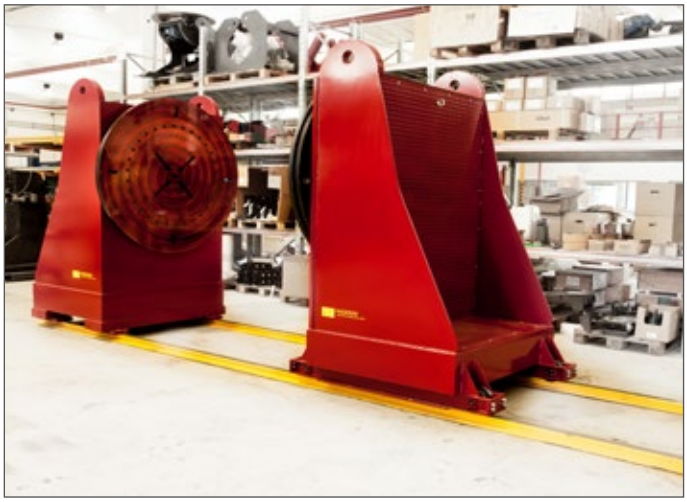
1. Different torque
2. Different speed range or drive
3. Pneumatic tailstock
4. Different diameter
5. Different work cycle (start delay, 360° + x° overlapping, back stroke -0°)
6. Up to 1000 A 100%
7. Different arrangements of control cabinet integrating video and joint tracking systems as well as installation of Carpano's Complementary equipment such as AVC, chucks, wire feeder...

W = Weight capacity kg
W x R = Rotation torque [*1]
W x K = Tilt torque kgm
E1/Be = Speed range min/max rpm / Brushless motor + encoder [*2]
L min/max = Distance in-between tables mm
D = Table diameter mm [*3]
HS = Hollow spindle diameter [*4]
A, B, E, F, h, h1 = Dimensions mm

Joda Horizontal

Type	W	W x R	W x K	E1 / Be	L	D	HS	A	B	E	F	h	h1
JDH04	400	60	200	0,05/2,0	1000 / 6000	500	100	760	850	810	1250	200	780
JDH10	1000	200	350	0,05/2,0	1000 / 6000	900	100	760	1000	810	1600	200	1020
JDH20	2000	300	500	0,01/0,5	1000 / 6000	1200	200	760	1190	810	2000	200	1260

AP + FF and AE + FE



STANDARD FEATURES

- AC drive
- Remote control (24V) by push button set
- Weld ground 400A to 1200A according to model
- Protection bellows (AE and FE only)
- Feeding 400V 50Hz

[*] OPTIONAL FEATURES

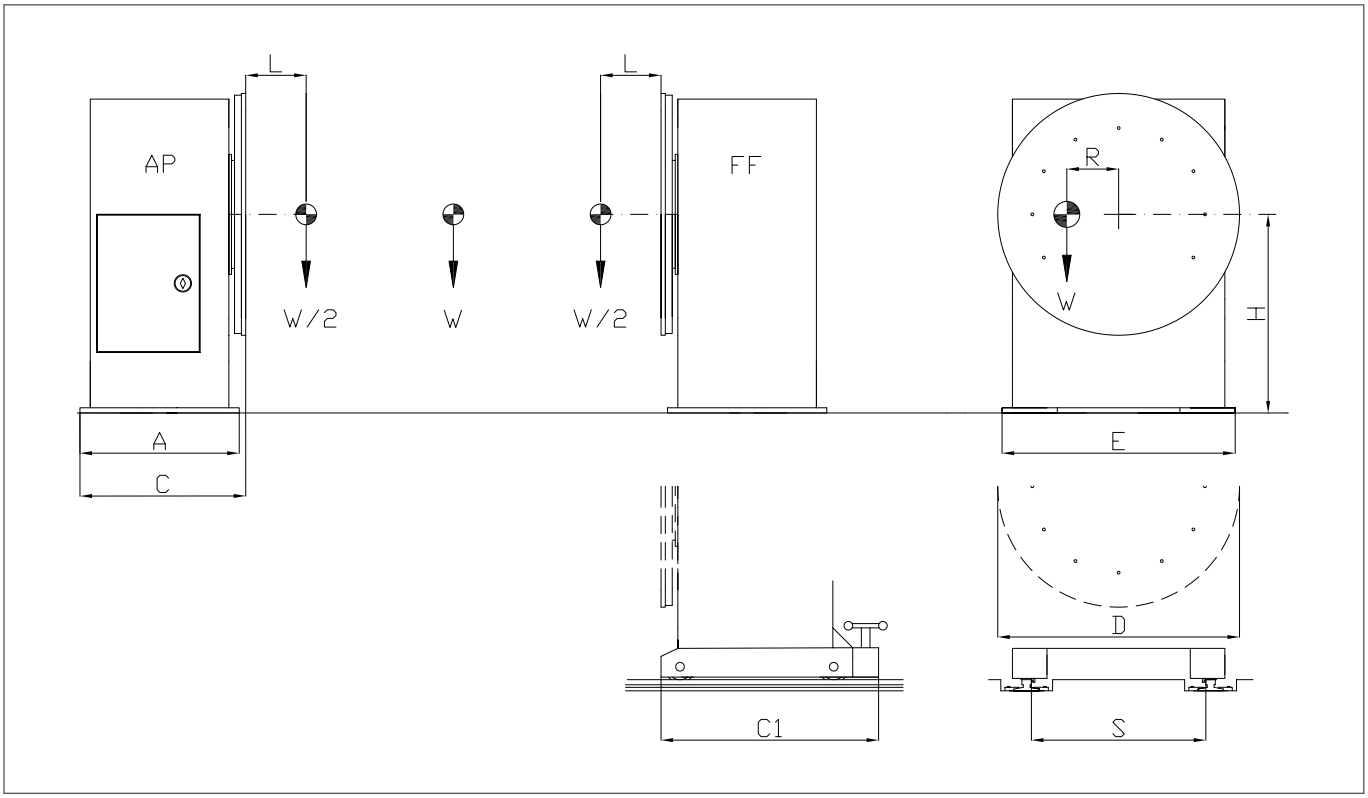
- Different speeds E1 and F1
- Different feedings
- Interface to automatic welding machine
- «Two-hands» remote control
- Wireless remote control
- Vertical stroke K up to 2200 mm
- Idle tailstock FF / FE mobile on rails with jaw brakes
- Idle tailstock FF with axial stroke driven by hydraulic cylinder
- Work piece clamping tools

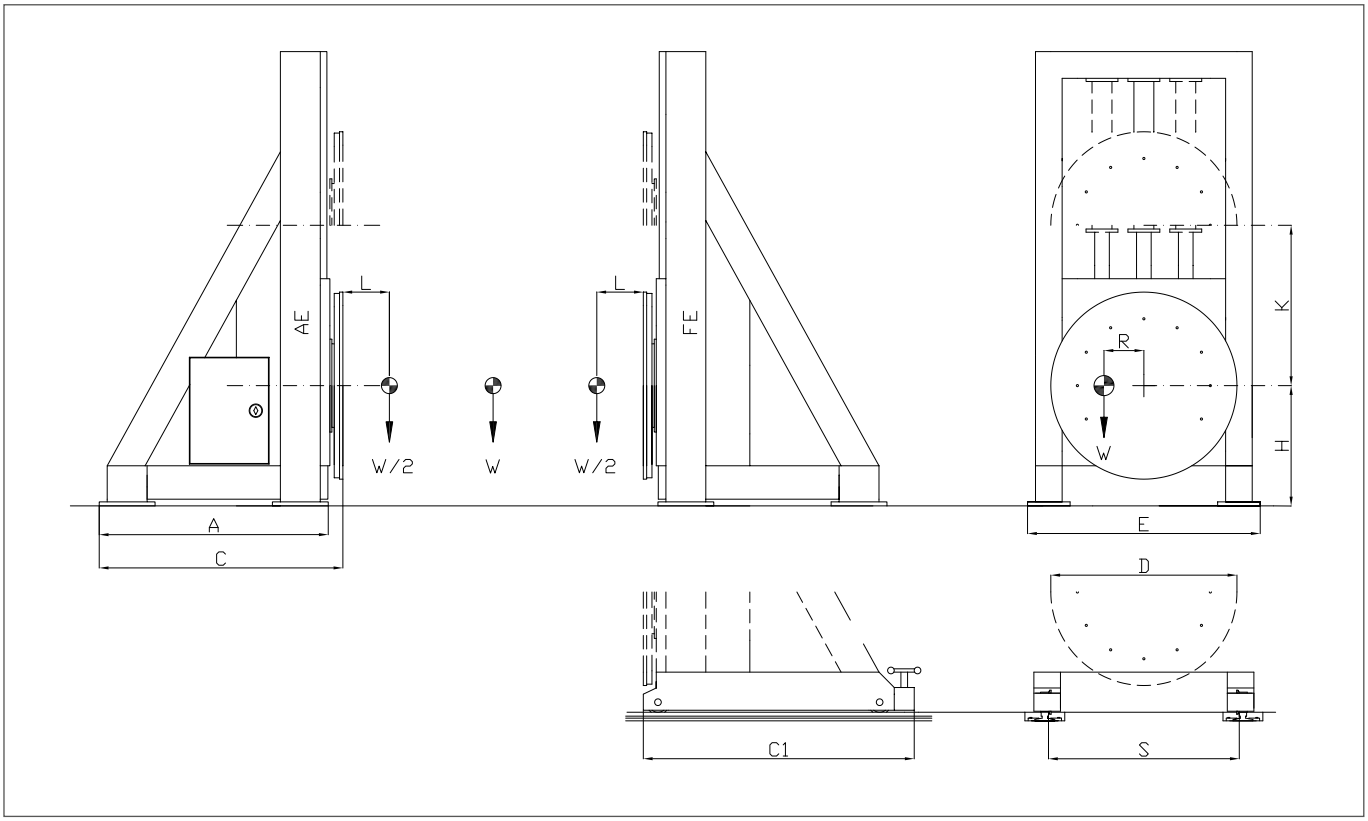
W = Weight capacity Ton
W/2 x L = Tilt torque Ton x m
W x R = Rotation torque Ton x m
E1 = Speed range min/max rpm
A, C, C1, D, E, H, K, S = Dimensions mm
P/AP, P/FF, P/AE, P/FE = Weight Ton

AP+FF: THE BIG LATHES														
Type	**W**	**W/2xL**	**WxR**	**E1**	**F1**	**A**	**C**	**C1**	**D**	**E**	**H**	**S**	**P/AP**	**P/FF**
AP020+FF020	4	0,4	0,15	0,05/0,5	0,5	600	660	1000	1000	1200	800	1000	0,7	0,6
AP050+FF050	10	1	0,4	0,05/0,5	0,5	680	875	1570	1200	1600	800	1000	1,9	1,5
AP100+FF100	20	3	0,8	0,05/0,5	0,5	800	1120	1640	1400	1700	1000	1000	3	2,2
AP200+FF200	40	6	1,2	0,05/0,5	0,5	1300	1630	2200	1700	1850	1200	1200	5	4

AE + FE (HEIGHT ADJUSTABLE)															
Type	**W**	**W/2xL**	**WxR**	**E1**	**F1**	**A**	**C**	**C1**	**D**	**E**	**H**	**K**	**S**	**P/AE**	**P/FE**
AE020+FE020	4	0,4	0,15	0,05/0,5	0,5	750	810	1150	1000	1300	800	750	1000	1,4	1,2
AE050+FE050	10	1	0,4	0,05/0,5	0,5	800	995	1690	1200	1700	800	1000	1000	3,4	2,36
AE100+FE100	20	3	0,8	0,05/0,5	0,5	1050	1370	1890	1400	1800	1000	1000	1000	5	3,7
AE200+FE200	40	6	1,2	0,05/0,5	0,5	1400	1730	2500	1700	1900	1200	1000	1200	9	7,2

AP + FF
and AE + FE

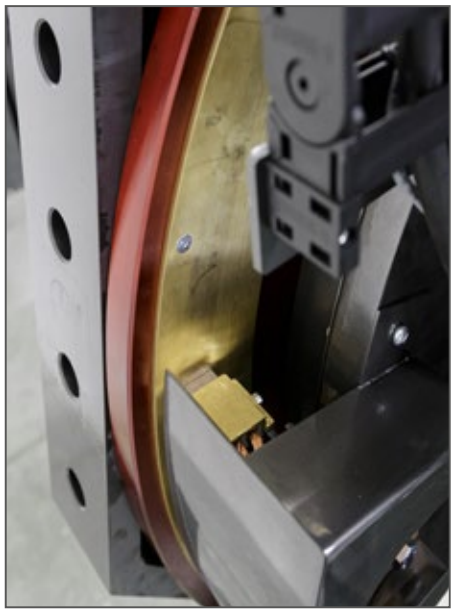




OAK
HEAD-AND-TAILSTOCK POSITIONER WITH AUTOMATIC ELEVATION

Oak is a new head and tailstock positioner with automatic elevation

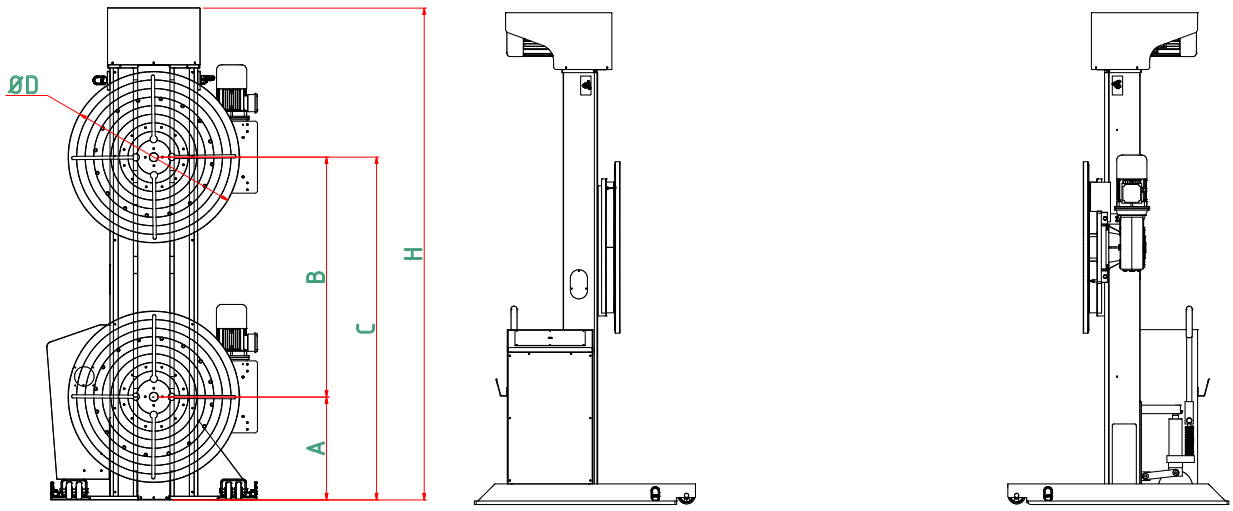
- The two columns are made of strong steel carpentry with steel guides and guidance bearings
- Elevation transmission consists in trapezoidal screw + nut screw
- Safety anti-fall system by safety nut screw and wear reading
- Rotation of headstock turntable is powered at variable speed, while the tailstock one is idle.
- On request it is possible to motorize and synchronize the rotation of both the tables.
- As option, it is available a remote control pendant with touch screen, by which you can program a positioning sequence



Both the columns are provided with ground bearing: carbon/graphite brushes are kept under pressure against a brass surface to prevent oxidation during inactivity. Ground bearings capacity is usually 400A @ 60%.
For different capacities, please, call on our Technical Office.

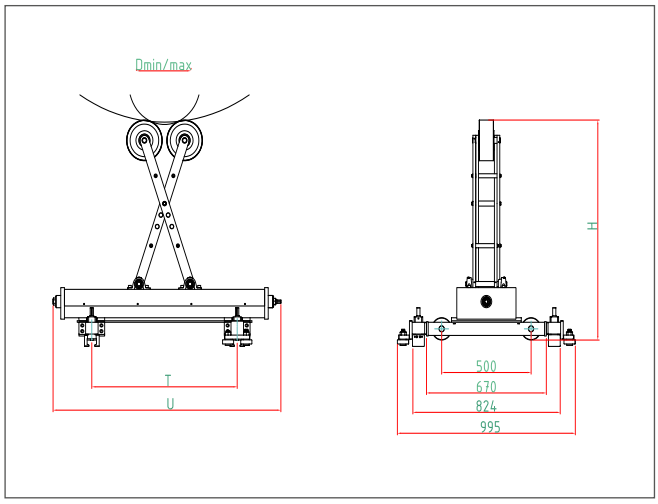
The movement of the two machines is particularly easy because of the manual lifting device, useful even when changing the sizes of the workpieces.

The shape of the bases also allows handling through the forks of a forklift.



Model	OAK3	OAK6
Weight	headstock: about 850 kg tailstock: about 800 kg	headstock: about 1300 kg tailstock: about 1200 kg
Max carrying capacity	3000 kg	6000 kg
Rotation speed	0.1 – 1 rpm	0.1 – 1 rpm
Rotation torque	260 kgm	500 kgm
Lifting speed	560 mm/min	450 mm/min
H – height of the machine	2675 mm	2870 mm
A – min. height of rotation axis	500 mm	600 mm
B – vertical stroke	1400 mm	1400 mm
C – max. height of rotation axis	1900 mm	2000 mm
D – table diameter	800 mm	1000 mm
Feeding voltage	400V 3-phases	400V 3-phases
Remote control pendant	24V – 10m cable	24V – 10m cable

IPTRE
IDLE ROLLS DOLLIES



IPTRE IS AN IDLE ROLLS HEIGHT ADJUSTABLE DOLLY

Effective and cheap solution for supporting pipes and driving their rotation either manually or in combined with motorized turntables.

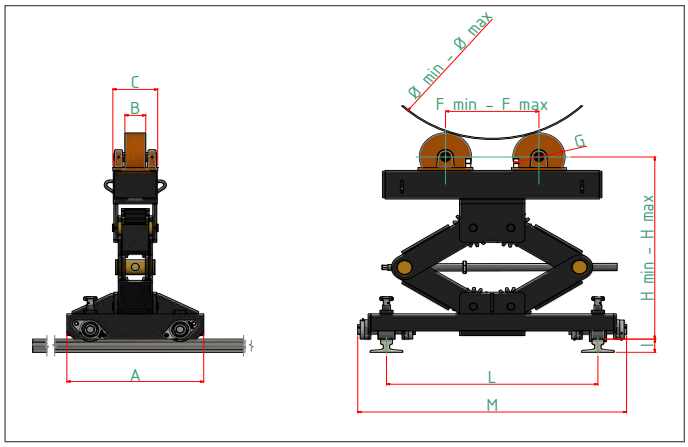
STANDARD FEATURES

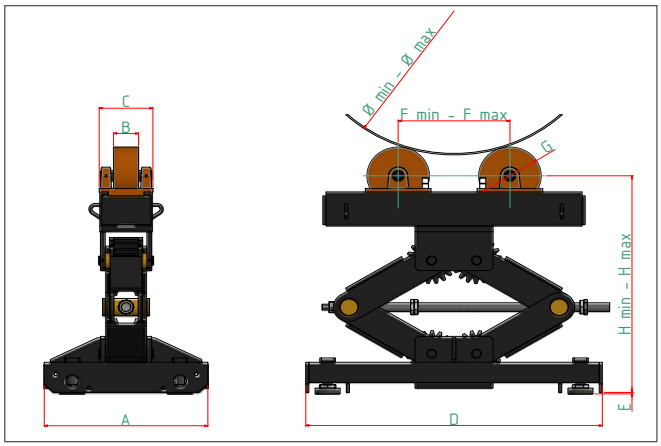
- Height adjustment by screw and hand wheel
- Two models available, payload 1000 or 1500 kg
- Stationary execution or with carriages to be easy moved on rails.

TECHNICAL DATA	IPTRE 10
Weight capacity	1000 Kg
Ø min - max	250 - 1250 mm
Polyurethane coated wheel Ø	250 mm
T (Different gauge upon request)	813 mm
U	1128 mm
H	993 mm

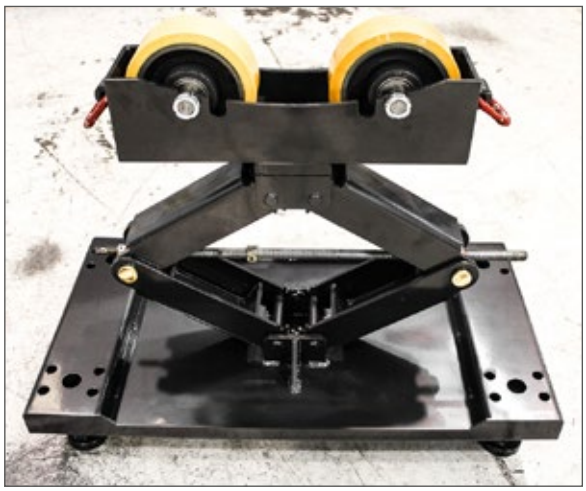
JACK
IDLE ROLLS DOLLIES

Jack 10 and **Jack 30** height adjustable dolly, stationary execution, standing on four levelling feet or on idle wheels easily moving on rails. Wheels have got variable wheel-base and can be supplied both in polyurethane PU (standard version) or in metal.





MODEL		JACK10	JACK30
W Max Capacity	kg	1000	3000
A	mm	500	524
B	mm	80	80
C	mm	132	168
D	mm	950	950
E max	mm	90	5
F min/max	mm	220/310	210/590
Ø min/max	mm	50/600	50/1200
G	mm	200	200
H min/max	mm	315/815	630/1030
I	mm	55	55
L	mm	810	810
M	mm	1030	1030
Wheels		poliurethan	poliurethan
Wheight*	kg	110/145	265/285



* With or without idle carriages

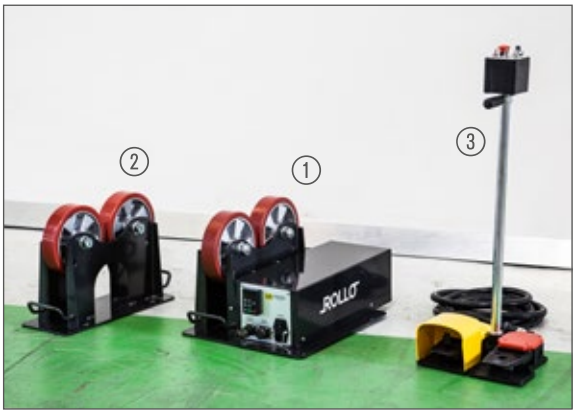
ROTATORS

From 1 to 460 tons (even more on request).
Besides standard rotators, unmatched for reliability, you can find bench-rolls, bi-motor, self-aligning and the new Fit-Up models which can be combined with other products of ours, mostly with manipolators, to give birth to complete plants controlled by a unique or by multiple check-points as well.

THE RANGE:

- ROLLO1: 1000 kg bench rotator.
- R025: 2500 kg rotator «the pipe fitter».
- OBY 3, 8 and 15: the bi-motor.
- Conventional rotators: 12.5 to 460 Ton/set.
- RB: self-aligning.
- Fit-Up models.

ROLLO
1 TON/SET



①

Rotator Model ROLLO is mainly designed for manual or semi-automatic welding of small and medium size pipes. However, provided as it is of interface to the welding machine and of digital display for speed monitoring located on the electric panel, it can be effectively used as well for automatic welding processes. Its rugged structure, that has been lightened as much as possible, features convenient handles as well as large bases allowing both drive and idle units to be laid on bench. Separate foot switches actuate rotation on/off whereas the potentiometer to adjust speed, the emergency cut-off push button as well as the switches weld on / off, speed direction and speed fast / adjust are all located on top of the remote control stand.

1. Drive unit ROLLO1-E1F

Weight capacity	0.5 Ton
Max turning capacity	1.0 Ton
Speed range	90 to 1350 mm/1'
Feeding	230V one-phase
Machine's weight	37 kg

2. Idle unit ROLLO1-NF

Weight capacity	0.5 Ton
Machine's weight	15 kg

Standard features

Set weight capacity	1.0 Ton
Wheels Ø	200 mm
Wheels width	50 mm
C-to-c wheels' distance	215 / 298 mm
Wheels coated with	polyurethane
Ø of work piece	20 to 800 mm

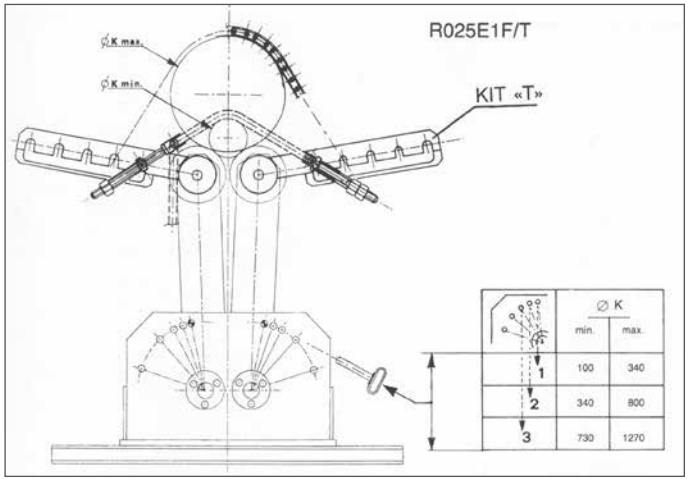
③

3. ROLLO1-CD

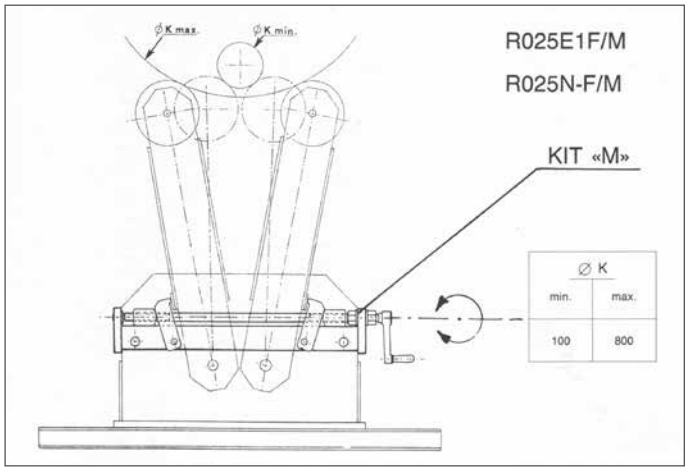
1. Emergency cut-off push button
2. Potentiometer 10-turns
3. Switch weld on / off
4. Switch rotation direction
5. Switch speed fast / adjust
6. Multi-function panel displaying speed in cm / min, emergency reset, inverter lay-out
7. Fuse
8. Main switch
9. Torch contact connector
10. Feeding cable 230V one-phase
11. Foot switch connector

R025 2.5 TON/SET «THE PIPE FITTER»

Model R025 is much more than a conventional rotator. It's a make-up system that allows to provide power and idle section with special fixtures that enable them to do jobs that a conventional rotator couldn't afford.
These fixtures can be installed either upon delivery of the new rotator (purchase order shall state the execution required) or later by purchasing the do-it-yourself kit of components



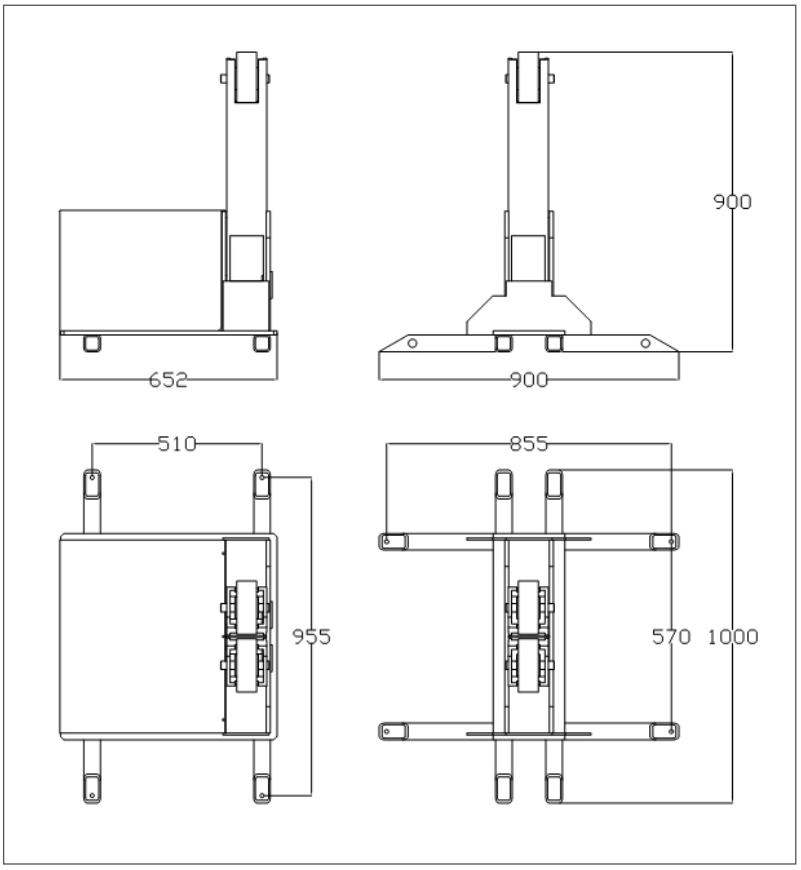
POWER SECTION EXECUTION R025E1F/T
type R025E1F + KIT T
In order to allow the welding of light weight pipes and/or of straight pipes with side branches or with elbows at their end, the power unit is equipped with a special device consisting of a roller chain, both ends of which are fixed to the extension arms and engaged into a simple tractive system for tightening the chain and exert on the pipe as much pressure as necessary to ensure smooth and precise rotation speed.
The extension arms as well as the chain are easily removable and the rotator can be reset to standard execution.



POWER SECTION EXECUTION R025E1F/M
type R025E1F + KIT M
IDLE SECTION EXECUTION R025N-F/M
type R025N-F + KIT M

Both sections can be equipped with a special fixture allowing stepless, symmetrical and simultaneous adjustment of rolls for pipe's diameter ranging from 100 to 800 mm. The adjustment is executed by hand wheel and it's allowed with no load laid on the rolls.
The power unit can be equipped with both kit "T" and "M" at the same time and, in that case, it's designated as R025E1F/T/M

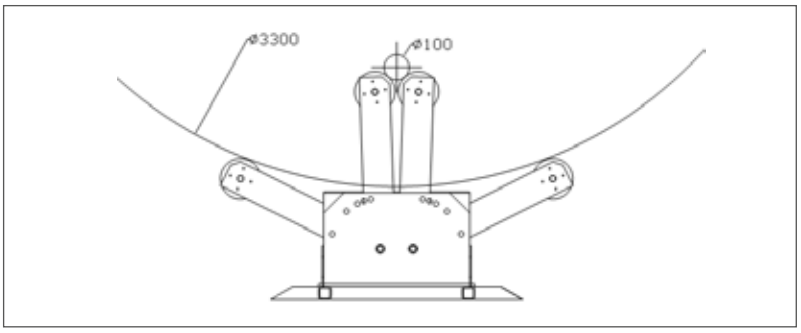
R025 2.5 TON/SET «THE PIPE FITTER»

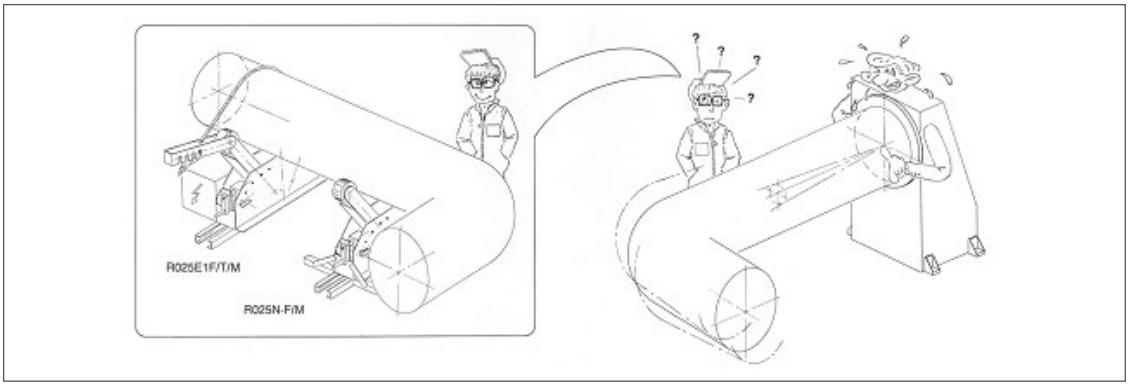


DRIVE UNIT	R025E1F
Speed range	114-1370 mm/'
Max drive capacity	2,5 Ton
Weight	190 kg
Feeding	230/400 50 Hz
Weight capacity	1,25 Ton

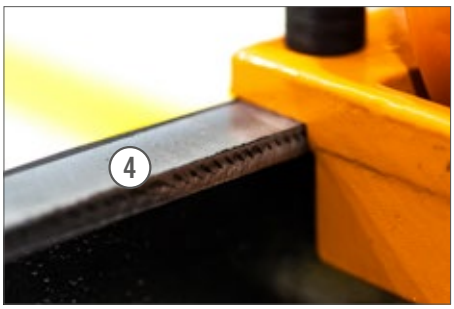
IDLE UNIT	R025N-F
Weight	105 kg
Weight capacity	1,25 Ton

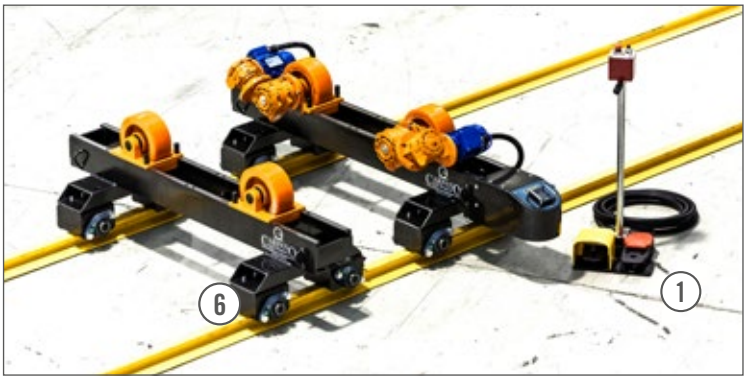
GENERAL DATA	
Weight capacity D+I	2,5 Ton
Rolls Ø	160 mm
Rolls width	50 mm
Rolls center-center	175 - 1245 mm
Rolls material	Polyurethane
Work piece Ø	100 - 3300 mm





OBY





OBY3, OBY8 and OBY15 are twin-motor rotators with capacities 3, 8 and 15ton/set respectively.
Their base consists of strong U profiles welded, machined and painted. Guides on which move rolls brackets are accurately machined to assure precision both on planarity and on rolls alignment.
Rolls consist of a cast iron hub coated with polyurethane (Pu). Both rolls of power unit are motorized, each of them driven by AC servo-ventilated gear-motor and both controlled by a vector inverter. Any crossbeam is provided with a Rollo1-CD electric cabinet or with a holding remote control. OBY.C3 moving on rails can be assembled on rotator units (Nr. 4 pc of OBY.C3 per unit) even after having bought OBY3, OBY8 and OBY15 stationary executions.

Available on request are also:
- synchronized power units
- higher speed
- brushless motors with encoder
- rolls made up of steel or coated either with rubber or HDNT

1. Rollo 1 - CD remote control with 5 m cable

2. In the OBY 3, the rolls wheelbase adjustment can be done at fixed steps by means of precision pins.

3. Both in the OBY8 and in the OBY15 the rolls wheelbase adjustment can be done by means of the right/left screw with a continuous hand-wheel movement.

4. Guides on which rolls brackets move are accurately machined to assure precision on planarity and on the alignment of rolls axles as well to minimize drifting of the vessel.

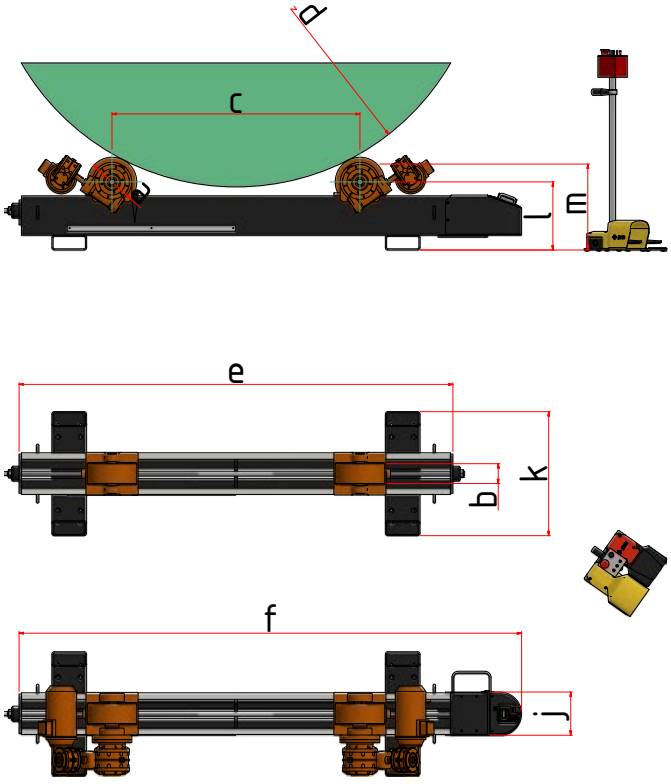
5. A scale shows the operator how to properly place the rolls wheelbase according to the vessel diameter.

6. OBY.C3 - Idle lorries to easily move on rails
Can be assembled to the rotator units (Nr. 4 pcs. of OBY.C3 per unit) even after having bought OBY3, OBY8 and OBY15 stationary executions.

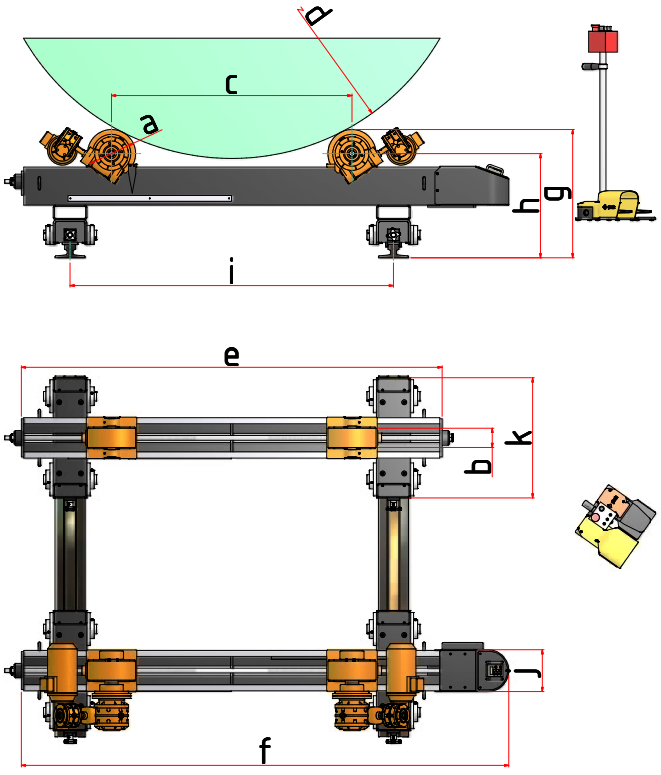
OBY 3 - 8 and 15 – Technical features

	OBY3	OBY8	OBY15
Unit weight capacity	1500 kg.	4000 kg	7500 kg
Wheelbase rolls	at steps	cont. adj.by screw	cont. adj. by screw
Rolls	Ø200x80 mm in Pu	Ø200x80 mm in Pu	Ø250x100 mm in Pu
Min / max vessel	200/3000 mm	200/3850mm	Ø250/4000 mm
Infeed	230V,single-phase	230V,single-phase	230 V,single-phase
Power installed	0,18 kW	0.36 kW	0.74 kW
Speed range	100 to 1000 mm/min	100 to 1000 mm/min	100 to 1000 mm/min
E1F Power unit weight	110 kg (150 kg+OBY.C3)	200 kg (240 kg+OBY.C3)	250 kg (290 kg+OBY.C3)
Idle unit weight	70 kg (110 kg+OBY.C3)	130 (170 kg+OBY.C3)	180 (220 kg +OBY.C3)

Stationary execution



On OBY.C3 carriages



OBY	a	b	c	d	e	f	g	h	j	k	i	l	m
OBY 3	200	80	210-1100	200-3000	1350	1627	494	394	174	500	945	235	335
OBY 8	200	80	210-1500	200-3850	1750	2027	534	434	174	500	1345	275	375
OBY15	250	100	290-1550	250-4000	1970	2266	594	469	212	500	1345	310	435

Dimensions in mm, weights in kg.

MODEL R
12.5 TON/SET to 460 TON/SET

1. Worm screw gearings coaxial to wheels are specially designed and built by PASSERINI so that:

- The diameter of the casing being smaller than the one of any commercial product, height Y results lower than any rotator of the same capacity built by competitors;
- Owing to the bronze crown and worm screw special executions, the torque is greater than the anyone else
- The case is made of cast iron or steel and not of aluminium as the one of common gearings;
- Thanks to the small height Y, the projection of load F falls on the wheel's bracket and doesn't stress the screw that adjusts the wheels' centre-to-centre distance.

2. Wheels are available:

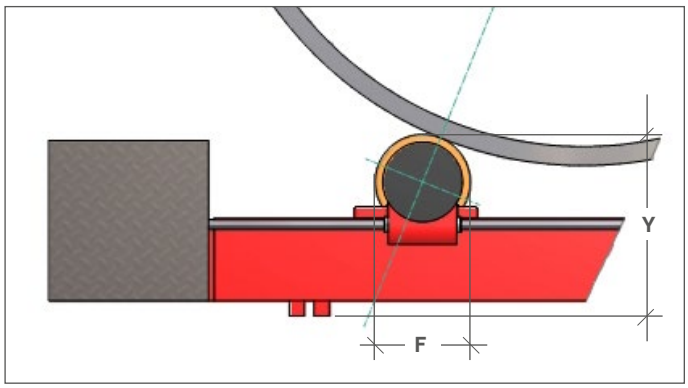
- Made of solid steel (superficially tempered upon request)
- Coated with rubber or with polyurethane
- Made of high density synthetic material

2a The polyurethane coating is laid on a toothed metal core in order to double the face contact and to prevent any breakaway of the polyurethane layer.

3. Drive wheels are mechanically synchronized by a transmission shaft and the motor is protected by a strong carter made of chequered steel plate

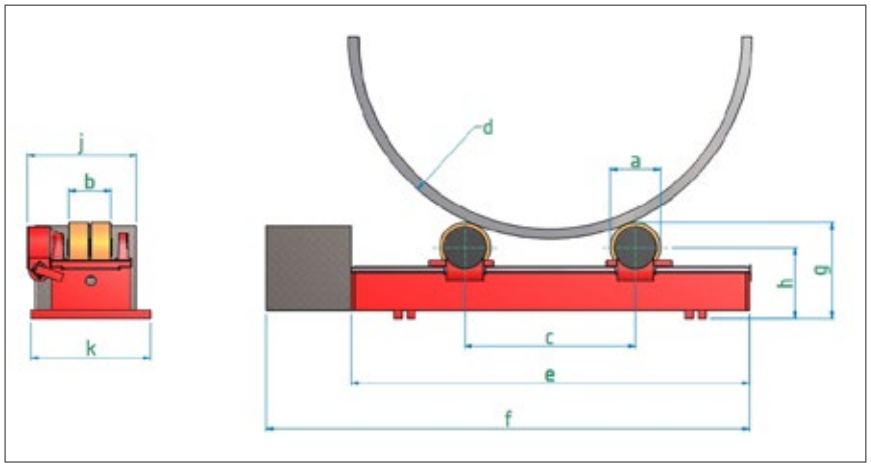
4. Frames are extremely robust and machined on their upper face

5. Lead screw to adjust centre-to-centre distance of wheels is made of one single piece without any in-between joint.



② a.

MODEL R
12.5 TON/SET to 70 TON/SET



STANDARD FEATURES

- DC or AC drives depending from the model
- Interface to automatic welder
- Remote control (24V) of all functions on portable pendant
- Centre-to-centre distance of wheels adjustable by screw
- Transmission statically and dynamically irreversible provided by worm screw gearings manufactured by us
- Feeding 230/400V 50 Hz

OPTIONS

- Different speed ranges
- Weight capacity up to 800 Ton/set
- Synchronization of 2 or more drive units
- Anti-drift systems
- Wheels made of solid HDN/T resistant to very high specific pressure
- Brushless motor with encoder and interface for plants highly automated
- Different feedings
- Lorries for traversing on rails with idle flanged wheels (with/without brakes) or motorized

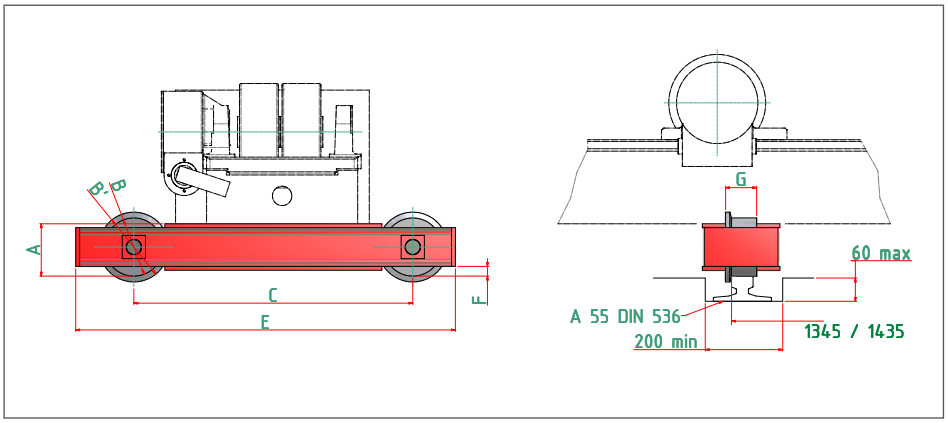
KEY OF READING

Material of rolls:
F = Polyurethane
A = Steel
G = Rubber
M = Mixed rubber/steel
CTR = Max. drive capacity (concentric tons)
P = Weight capacity
E1, E2, E3 = Minimum /maximum speed
W = Net weight

Drive		R125_G	R200_F	R300_F	R500_M	R07C_A	R07C_M
_ E1	mm/min	94-945	100-1000	100-1000	100-1000	85/850	85/850
_ E2	mm/min	170-1700	130-1300	170-1700	130-1300	130/1300	130/1300
_ E3	mm/min		200-2000				
CTR	Ton	18	30	45	90	100	100
C Condotta		R125N-G	R200N-F	R300N-F	R500N-M	R07CN-A	R07CN-M
P (1D+1C)	Ton	12,5	20	30	50	70	70
P (1D+2C)	Ton	18	30	45	70	100	100
P (1D+3C)	Ton				90		
Øa x b	mm	250x320	250x210	350x210	350x335	350x150	350x450
c min/max	mm	290/1540	290/1540	380/1850	412/1986	425/2167	425/2167
d min/max	mm	180/4000	180/4000	600/4700	700/5000	700/5000	700/5000
e	mm	1970	1970	2490	2640	2780	2780
f	mm	2690	2690	3360	3680	3810	3810
g	mm	477	477	513	542	605	605
h	mm	352	352	338	367	430	430
j	mm	500	755	950	1050	1050	1050
k	mm	700	590	620	750	750	1000
W D	Kg	520	550	1000	1300	2000	2200
W C	Kg	350	380	700	900	1400	1600

MODEL R
IDLE WHEEL LORRIES FOR ROTATORS FROM 12,5 TON/SET to 70 TON/SET

For model	R125	R200	R300	R500	R07C
Lorry Type	CR240U	CR488U	CR488U	CR488U	CR750U
A	135	135	135	135	135
B	150	150	150	150	150
B*	180	180	180	180	180
C	720	720	720	720	720
D	170	170	170	170	170
E	980	980	980	980	980
F	25	15	15	15	135
G	80	80	80	80	1250
Weight Kg.	70	120	120	120	160



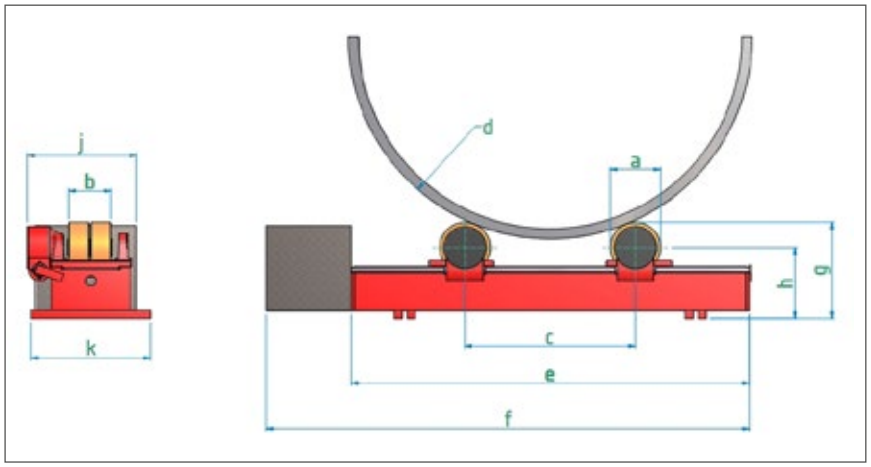
OPTIONS

- Shoe brakes on 2 wheels
- Jaw brakes on 2 wheels
- Motorized lorries (2WD and 4WD)
- Lorries for rotators with capacity greater than 70 Ton/set

ROTATORS WITH HYDRAULIC ADJUSTMENT OF THE UPPER ROLLER

Available for any set weight capacity and for any vessel diameter, besides allowing a better sharing of the load, their upper wheels can be handled by hydraulic jacks in order to perform butt to butt alignment of the vessel edges for tack welding.

MODEL R
100 TON/SET to 460 TON/SET



STANDARD FEATURES

- DC or AC drives depending from the model
- Interface to automatic welder
- Remote control (24V) of all functions on portable pendant
- Centre-to-centre distance of wheels adjustable by screw
- Transmission statically and dynamically irreversible provided by worm screw gearings manufactured by us
- Feeding 400V 50 Hz

OPTIONS

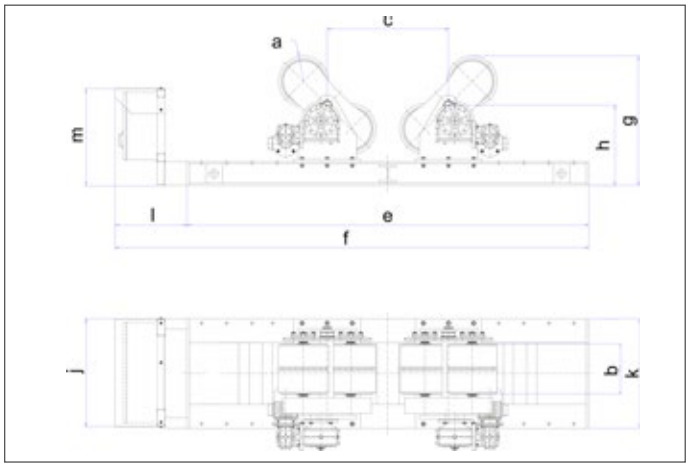
- Different speed ranges
- Weight capacity up to 800 Ton/set
- Synchronization of 2 or more drive units
- Anti-drift systems
- Wheels made of solid HDN/T resistant to very high specific pressure
- Brushless motor with encoder and interface for plants highly automated
- Different feedings
- Lorries for traversing on rails with idle flanged wheels (with/without brakes) or motorized

KEY OF READING

Material of rolls:
A = Steel
G = Rubber
M = Mixed rubber/steel
CTR = Max. drive capacity (concentric tons)
P = Weight capacity
E1, E2, E3 = Minimum /maximum speed
W = Net weight

D Drive Section		R10C	R14C_A	R14C_M	R20C_M	R23C_A	R35C_A	R46C_A
_ E1	mm/min	100/1000	60/600	60/600	70/700	70/700	70/700	70/700
_ E2	mm/min		78/780	78/780	85/850	85/850	85/850	85/1200
_ E3	mm/min		120/1200	120/1200	120/1200	120/1200	120/1200	
CTR	Ton	140	200	200	280	330	500	650
C Condotta		R10CN-A	R14CN-A	R14CN-M	R20CN-M	R23CN-A	R35CN-A	R46CN-A
P (1D+1C)	Ton	100	140	140	200	230	350	460
P (1D+2C)	Ton	140	200	200	280	330	500	650
Øa x b	mm	360x150	500x200	515x520	710x555	690x250	690x250	690x250
c min/max	mm	440/2650	610/2710	610/2710	810/2760	790/2740	790/2740	790/2740
d min/max	mm	700/6000	900/6000	900/6000	1300/6000	1300/6000	1300/6000	1300/6000
e	mm	4200	3490	3490	4040	4040	4040	4040
f	mm	4777	4520	4520	5315	5315	5315	5315
g	mm	669	745	755	1005	1034	1080	1140
h	mm	489	495	495	649	689	735	795
j	mm	856	1200	1200	1370	1275	1380	1420
k	mm	920	900	1000	1000	1200	1200	1200
W D	Kg	2400	2900	3400	7300	6700	8600	10400
W C	Kg	1600	2200	2700	5700	5200	6600	8100

SELF-ALIGNING



STANDARD FEATURES

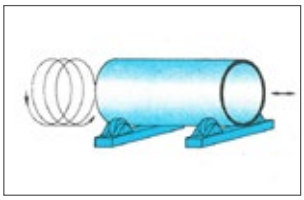
- Feeding 400V 50 Hz
- AC motors with vector inverter
- Chain or gear trasmission according to models
- 100% load carried by coated wheels
- Rolls adjustment stepped by holes and pins

OPTIONAL FEATURES

- Idle or motorized lorries for traversing on rails.

E1 = Speed range
P = Weight capacity on 4 wheels (upper and lower)
P/2 = Weight capacity on 2 wheels (lower wheels only)
d min/max = Vessel diameter (full load P)
d1 = Minimum vessel diameter (half load P/2)
W D = Weight drive unit
W C = Weight ilde unit

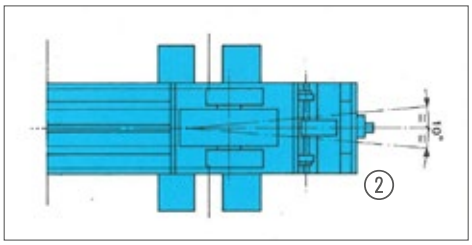
TYPE		RB60	RB120	RB200	RB300	RB500
E1	mm/min	120 -1200	100 - 1000	100 - 1000	100 - 1000	80 - 800
P	Ton	6	12	20	30	50
P/2	Ton	3	6	10	15	25
Øa x b	mm	250x150	300x150	320x250	400x300	500x300
c min/max	mm	210/1500	210/1500	290/1550	290/1550	290/1540
d min/max	mm	800/3000	800/4000	1000/4000	1250/4500	1500/5000
d1	mm	400	400	500	500	500
e	mm	2000	2060	2180	2350	2920
f	mm	2420	2610	2645	2850	3520
g min/max	mm	525/725	705/780	780/860	740/910	850/1070
h	mm	450	480	455	515	575
k	mm	600	700	900	950	1100
l	mm	630	750	920	1000	1140
m	mm	550	625	670	670	670
W D	Kg	510	650	1150	1350	2400
W C	Kg	360	450	850	1000	1600



ANTI-DRIFT SYSTEMS

Antidrift with bumper roller
An idle roller fixed to one or both the units prevents axial drift of the workpiece. (1)

Steered anti-drift, manual or automatic
Example of manually operated anti-drift: the system is applied to the idle unit, whose wheels are steered (2) to generate contrast to the drift of the workpiece.



Automatic anti-drift
An inductive or laser sensor detects drift and a jack electrohydraulically steers the basement of the idle unit.

SEAMERS

Apparently simple, the seamer is a rathe complicated machine that can perform severa different welding processes.

PLC can be applied to any different model.
The following pages just supply you some examples of possible configurations. Anyway ou skilled staff will be at your complete disposal to study with you customized machines finding ou the best possible solution to suit your needs.

Horizontal for external welding of pipes or flat sheet metal

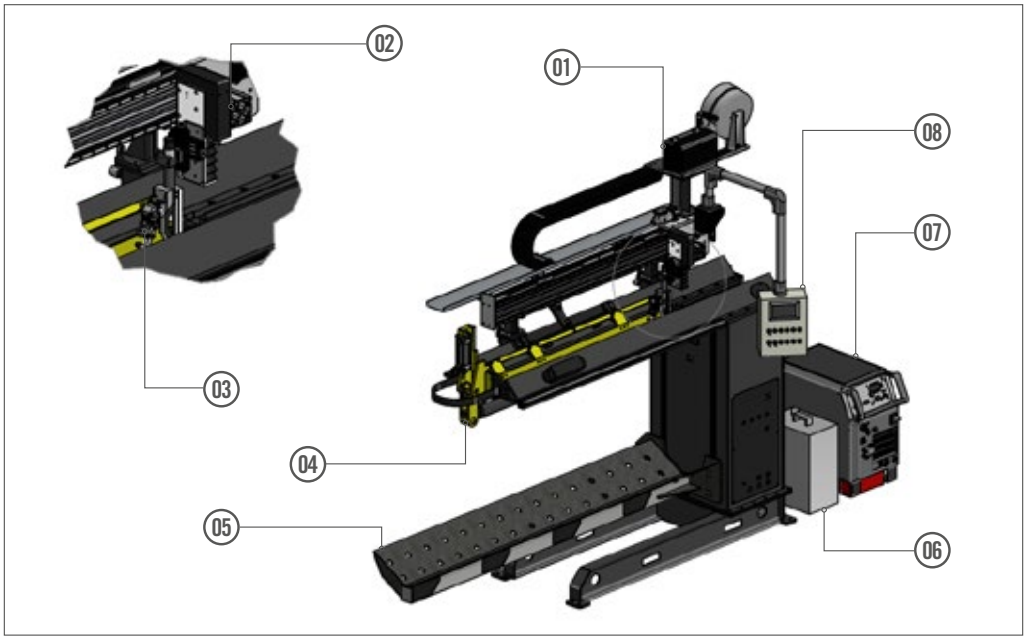
Horizontal for inner welding of pipes or flat sheet metal

Verticals, Meridian model
The positioning of the workpirece vertically, although the welding is more complex, allows easier handling of large-sized pipes.
Thus, you can weld Ø from 500 up to 12,000 mm

Welding heights are usually 1,500 or 2,000 mm

Meridiano 15 in the picture

Each welding seamer has its own specific customizations, below is an example of a seamer set up for TIG welding in cold wire

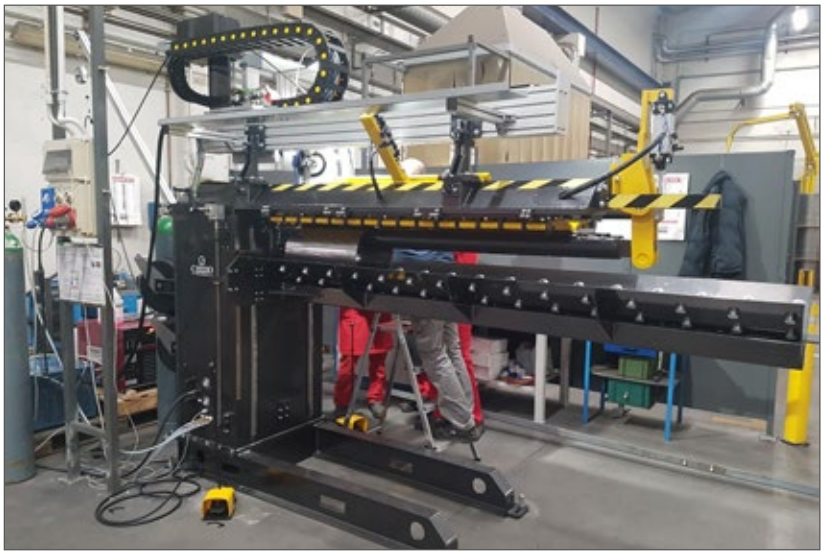


1. VPR-4WD cold wire feeder with controls integrated into the seamer HMI
2. AVC, for torch height control, recommended for TIG and Plasma welding on seamers with lengths greater than 1000 mm. Alternatively, a pneumatic slide is installed
3. CEFF wire guide slide
4. Pneumatic latch for bar closure
5. Saddle for easy entry and exit of the workpiece, with adjustable height
6. Chiller for copper bar and torch
7. Welding generator, which can also be connected via digital interface, to associate JOB of the generator to each PLC program
8. Control panel with 7" touch screen
    - Ability to store at least 200 different programs
    - For each program setting of:
        - Carriage and vertical slide rest position
        - Welding speed in mm/min, starting position and length
        - Starting and finishing ramp
        - Job of the welding machine
        - Wire feeder parameters: speed , start delay, wire return, start and arrival ramp, pulsed or continuous wire
        - AVC parameters: rest and start height, arc voltage, trip delay and rise

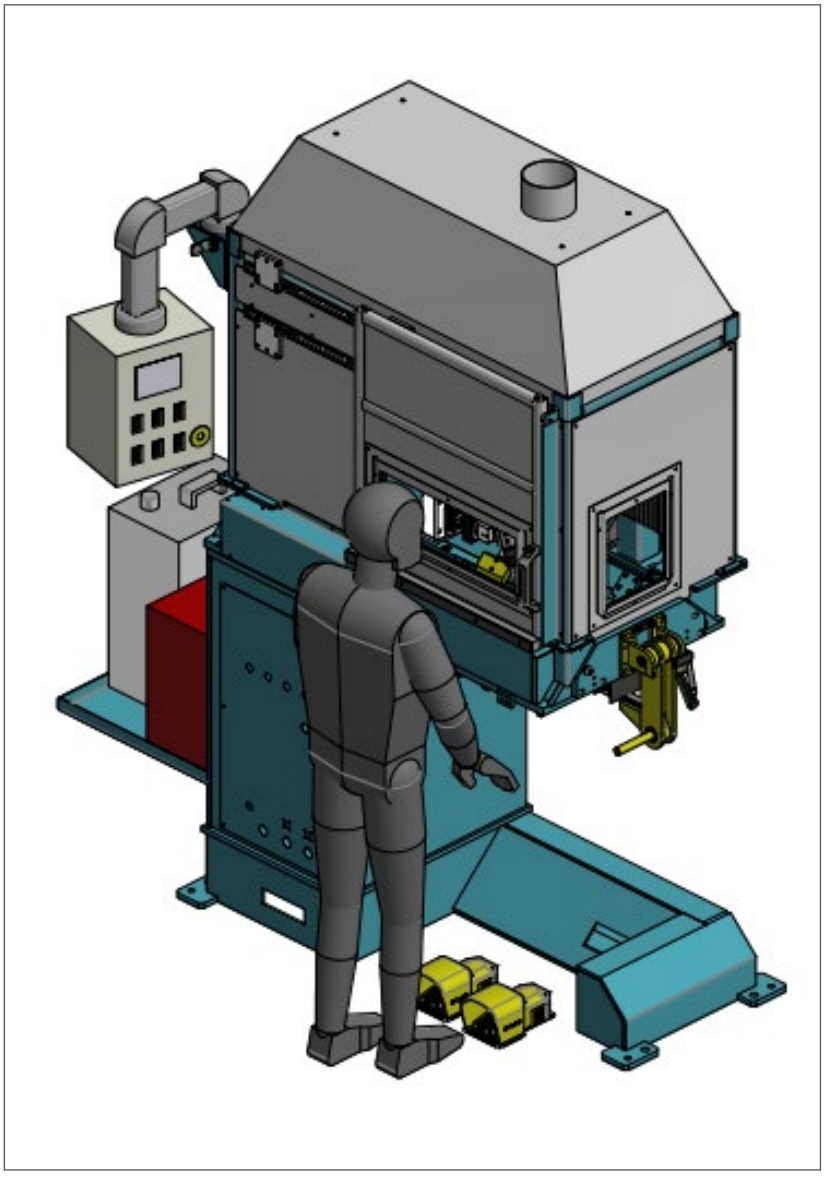
Important information to be able to make you an offer:

- External welding - internal welding - flat sheets
- Max length of pipe or sheet metal to be clamped
- Min and max thickness
- Material to be welded
- Desired welding process
- Bar with or without liquid cooling and with or without reverse gas

Some special executions



BP seamer with support saddle manually height adjustable.
The same can also be supplied with motorized adjustment.



BP seamer with a length of 0.5 m, in special execution with protective cabinet and fume hood.
Double inactinic glass for observation of the welding arc.

VERTICAL SEAMER 1500 or 2000 mm

STANDARD FEATURES

It's designed for automatic vertical seam welding of flat sheets or of cylinders Ø 500 mm or greater, thickness 0.8 to 3 mm without stitch welding, up to 10 mm with stitches, clamping lengths 1550 or 2050 mm.
Thanks to the robust structure of the mandrel, it doesn't need to install any AVC sensor.
After welding, a gear motor lifts the mandrel to allow unloading the job.

Description

- Base structure made of steel profiles and machined
- Steel mandrel with back-up copper bar
- Back-up copper bar fit for cooling (cooling unit not included)
- Back-up gas flow
- Pneumatic clamping by independent foot switches
- Side beam carriage driven by DC gear motor and rack&pinion transmission;
- The carriage is made of aluminium and it moves on linear ball bearing linear guides. On demand: wire feeder support
- 2-axis PLC cabinet with 5" touch screen complying with CE norms
- Pneumatic slide to release the torch after welding
- Cross slide (stroke 80 mm) for micrometric adjustment of the torch
- Centring jigs driven by pneumatic cylinders

Work cycle

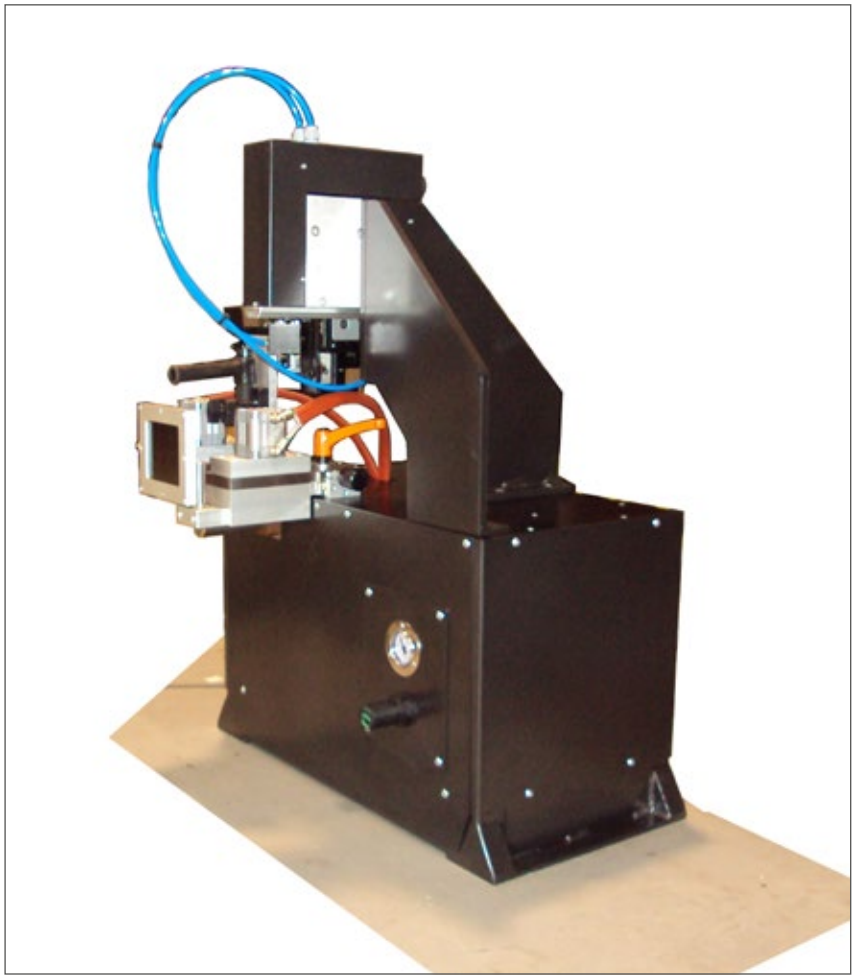
MANUAL work cycle:

- Positioning of the left edge
- Clamping of left edge
- Positioning of the right edge
- Clamping of right edge

AUTOMATIC work cycle:

- Carriage onward from home to weld start position
- Down stroke of pneumatic slide and arc ignition
- Start delay and cold wire start (if any)
- Welding to recorded weld end position
- Arc extinction and post gas time
- Upstroke of pneumatic slide
- Carriage backward to home position

PARALLELO DESK SEAMER

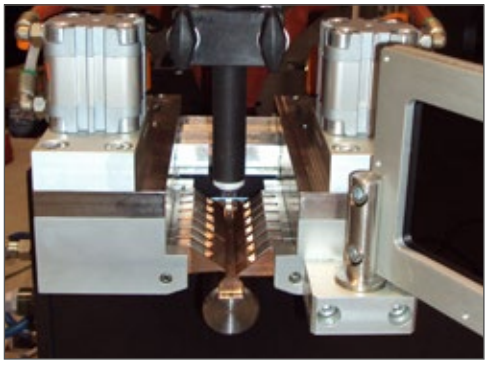


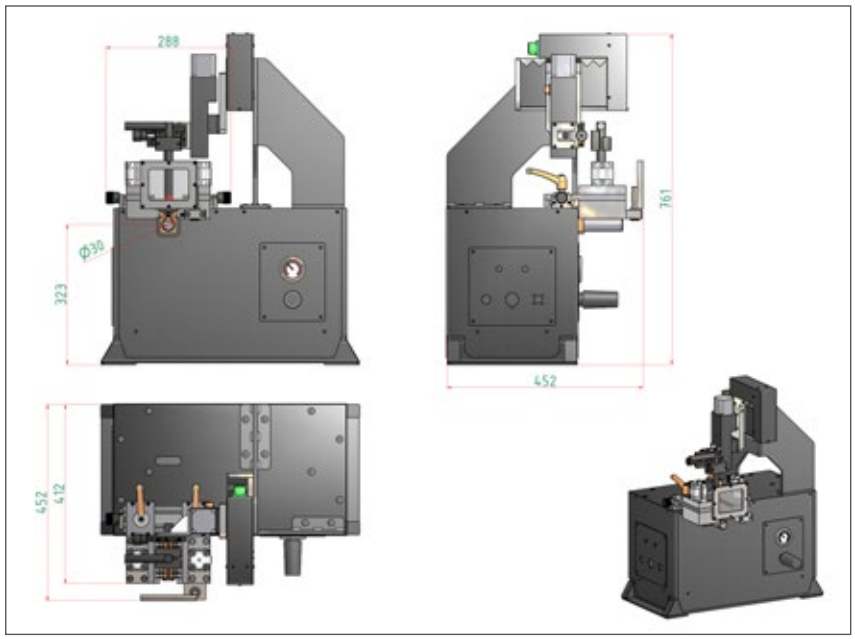
High precision for thin walls
Provided of pneumatic clamping fingers, it is suitable for vessel walls and for flat plates as thin as 0.2 mm.

Micrometric adjustment of fingers in-between distance is made by high precision slides.

Torch longitudinal traversing by MM MINI 180 motorized by DC motor with encoder and driven by ball screw on ball linear guides.

Torch up/down strokes by JD PNEUMO 80 pneumatic slide.





Work cycle stepped by PLC with 3.5" soft touch screen, which allows setting of:

- Weld start point.
- Weld longitudinal stroke mm.
- Speed mm/min.
- Start delay sec.
- Torch up stroke delay in sec.

PARALLELO DESK	
Ø min -max	35 - 300
L min - max	10 - 150
Thickness	0,2 - 3 mm
Gas back up	yes
Bar cooling	no
Feeding	230 V - 50 Hz
Working pressure	2 - 6 bar

TECH REPORT

The success of an automatic welding plant and its ability to be shortly paid back, does not depend at all on the initial costs, but mainly on its performances, efficiency, quality and work cycles repeatability.

For such reasons, Carpano during the last 20 years has always recommended his customers plants providing advanced process controls.

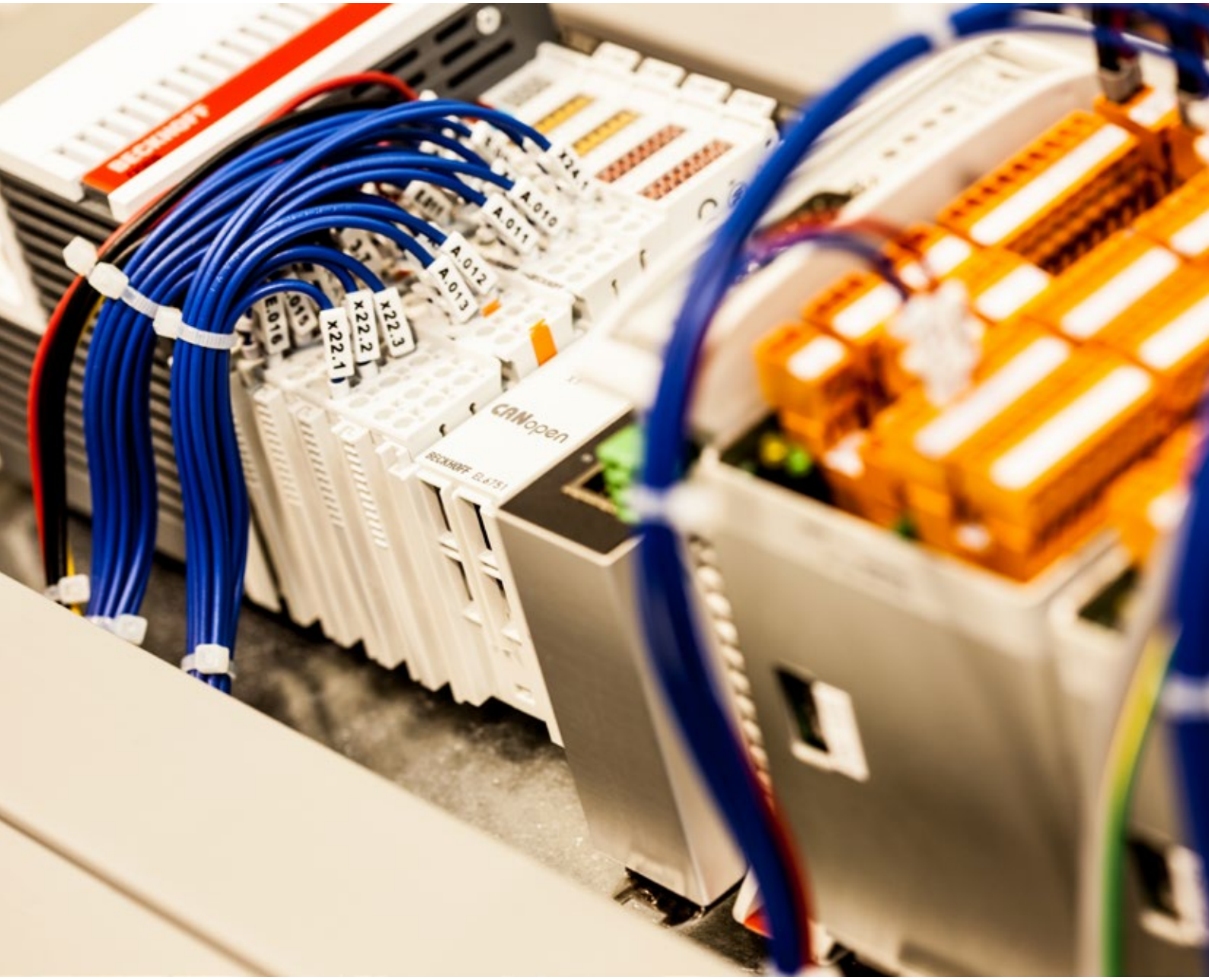
PLC

PLC (Programmable Logic Controller) is a programmable electronic device that is used to automate industrial and manufacturing processes. Because of its versatility, the PLC can be used to control metal welding accurately and reliably.

The advantages of using PLC in metal welding are many. First, it enables the control of the welding accurately and repeatably, ensuring higher quality of the final product. In addition, it can be used to constantly monitor the welding process and intervene in case of any problems or anomalies.

Finally, the use of PLC in welding activities allows the process to be automated, reducing the time of production and increasing its overall efficiency.

On the following pages you will find some examples of the applications implemented over the years.



TRANSPORTS
HIGH SPEED TRAIN

Plant for welding the frame and the roof of high speed trains.
A gantry moves on rails with a work volume of 66 m length x 4.5 m width x 1.2 m height.
Its crossbeam height is automatically adjustable and four motorized carriages are installed on it, each carriage equipped with diving boom stroke 1200 mm . The lower end of 2 diving booms is equipped with automatic MIG welding torches that are both provided of IG SCAN as well as of video systems and that are both handled by 2 – axis zero backlash robot wrists whereas automatic brushing machines are carried by the other pair of diving booms.

A 16-axis PLC allows the recording of countless jobs each of which including the brushing as well as the welding sequence
and parameters.

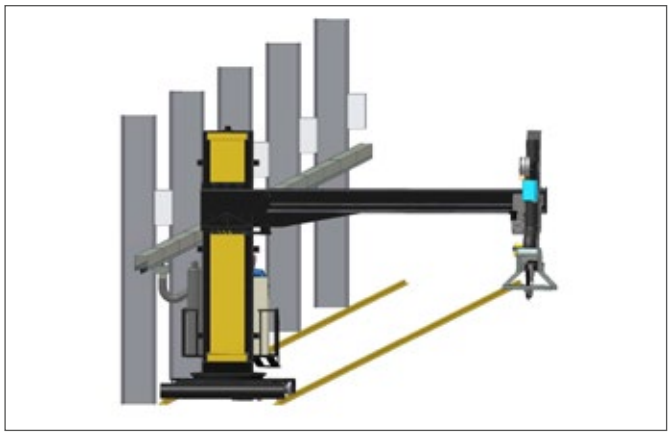
The height adjustment of the crossbeam allows to elevate it above the fixtures that overturn the job and to lower it back to its work position.

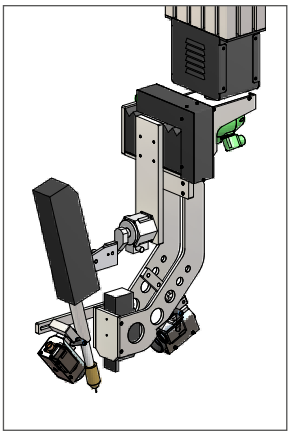
On the gantry motorized bases take place:

- MIG power sources with chillers
- Wire drums
- Fumes aspirator and ATEX dust recovery system
- Control cabinet with operator seat

TRANSPORTS
LOCAL TRAIN

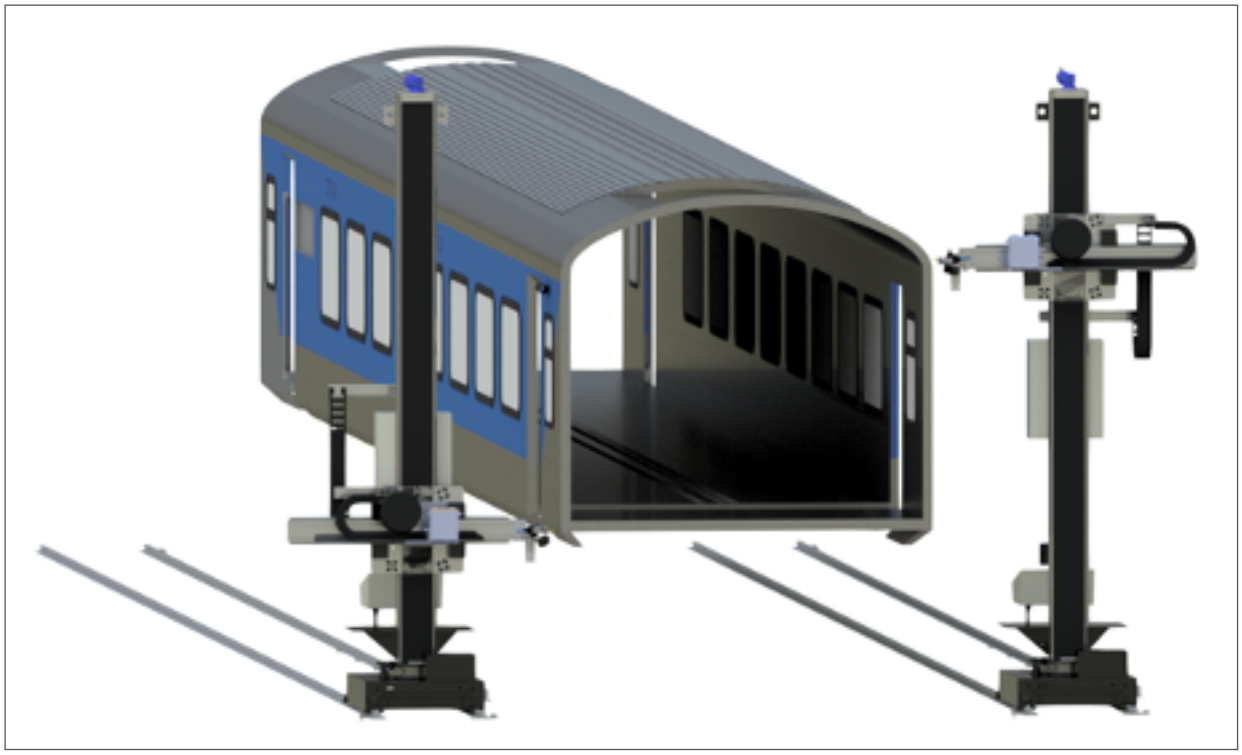
Plant for welding the frame and the roof of aluminium local trains.
A manipulator, with boom not retractable but height adjustable and with motorized base moving on rails and delivering a work volume of 60 m length x 4.5 m width x 1.2 m height. On the boom is installed one motorized carriage equipped with diving boom stroke 1200 mm, the lower end of which features the torch handling system consisting of a 2 – axis zero backlash robot wrist and of a linear oscillator. A 6-axis PLC allows the recording of countless jobs each of which including the welding sequence and parameters.





The core of the plant is the torch handling system consisting of 2 motorized rotational axis to set torch angle as well as of linear oscillator, torch anti–shock, wire push pull, two video and of IG SCAN joint-tracking systems.

TRANSPORTS
LOCAL TRAIN



Plant for manufacturing train coaches for local transport trains.
The line consists of two independent manipulators with three axes each.
Both manipulators are equipped with MIG/MAG welding head driven by tactile tracker and ARCV camera.

The tracker is integrated directly on the vertical and horizontal axes of the manipulator itself, while the movement of the carriage is driven by a brushless gear motor with absolute encoder.

This allows for overhead control of the axis on which the welds occur and the setting of various parameters including: the length of the joint sections, start and end of welding and welding speed.

Finally, the ARCV camera, through the special LEDs provided, allows the monitoring of the welding process and to record the images on internal or external pc memories.
Installed on the power source support are, in addition to the welding power source and chiller, the control panel with 7" PLC and the 21" camera monitor.

TRANSPORTS
COACH PANELS

Plant for welding the aluminium panels of train coach.
The manipulator, with not retractable but height adjustable boom, works on both left and right sides on jigs laid parallel to the track on which moves its motorized base.
On the boom one motorized carriage and a motorized vertical slide to deliver x/y axis of the IG tactile tracking system are installed. The wire feeder is housed on a/m carriage in order to have a short torch sheath, whereas power source with chiller and fumes aspirator are properly laid on the manipulator base.

The plant is very similar to the one described above but, in that case, the torch is equipped with IG 2D joint tracking system and can rotate to perform longitudinal and transversal welds.
The control panel hangs from the boom tip where the operator can stand and effectively survey and program the welding process.

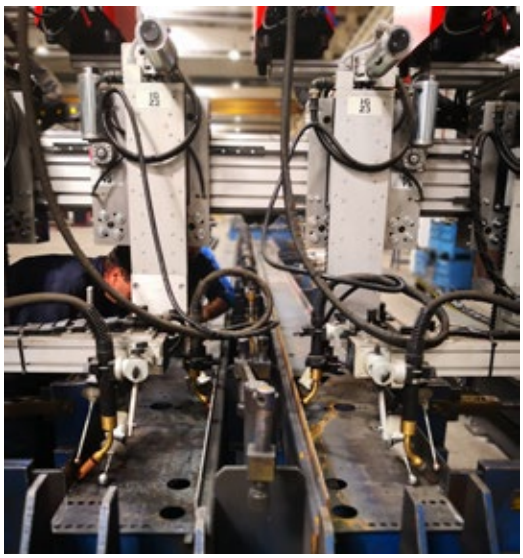
See picture above, a particular arrangement of weld ground made up of carbon brushes crawling on the rail and connecting the power source to the jigs that hold the job, which avoids the frequent replacement of ground cables and improves electrical conductivity

The welding head with TSV09 video and IG 2D laser tracking systems.

Control panel with a 10" soft touch screen and a 7" monitor for video system and MIG power source setting of parameters.

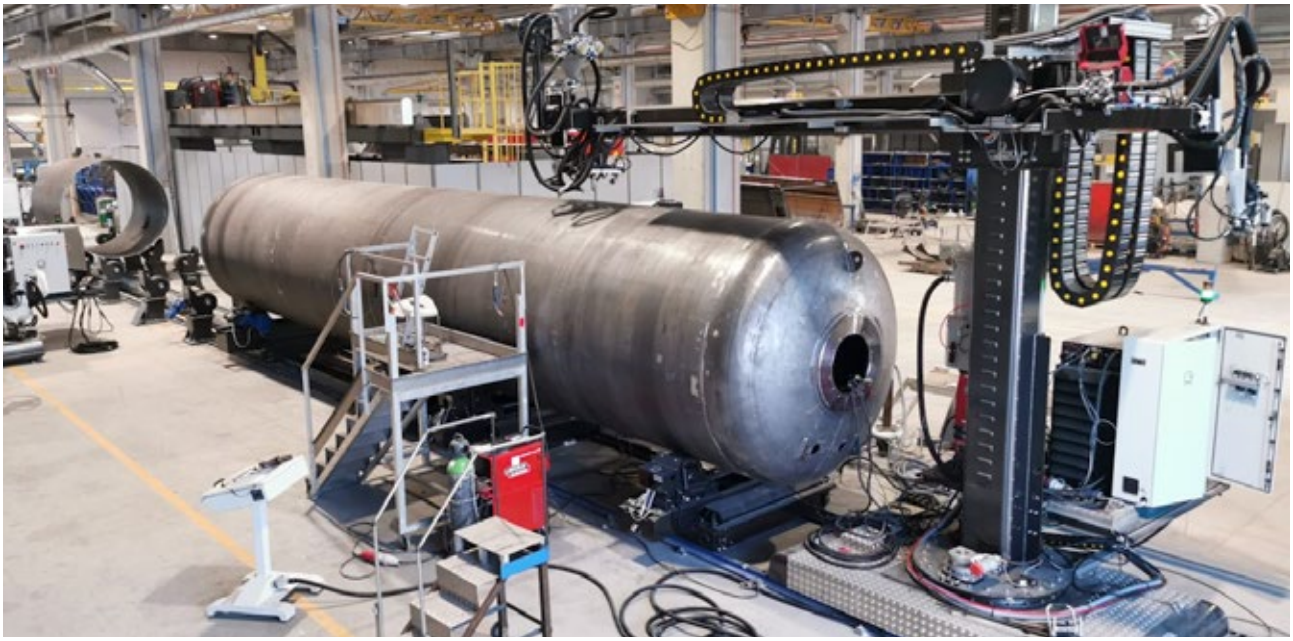
TRANSPORTS
VARIABLE-INERTIA BEAMS

Portal with four MIG/MAG heads for welding beams with variable cross-sections.
The peculiarity of this equipment lies in the motorized carriage drive mechanism. The advancement of the carriage on the tracks is in fact through a pinion-rack mechanism, while a system of ball bearings with a double shield keeps the carriage in guidance on the rails. This provides greater precision of movement in the direction of weld development, completely eliminating the risk of slippage of the carriage on the rails. In addition, the absolute encoder mounted directly on the pinion axis allows the carriage to travel a much greater distance without the need for zeroing and to achieve higher resolution on positioning.

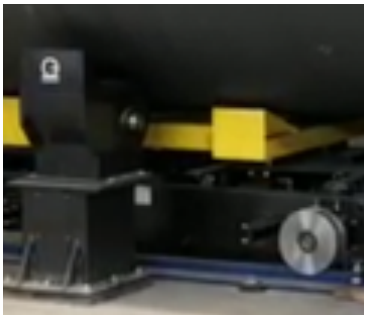


Each of the four welding heads is equipped with dual tactile ball-tip tracker. For each head, a probe drives a slide model MMMIDI in the vertical direction, while the other probe drives in the horizontal direction one of the carriages that move on the aluminum beam.

TRANSPORTS
LPG TANKS FOR CAR TRAILERS



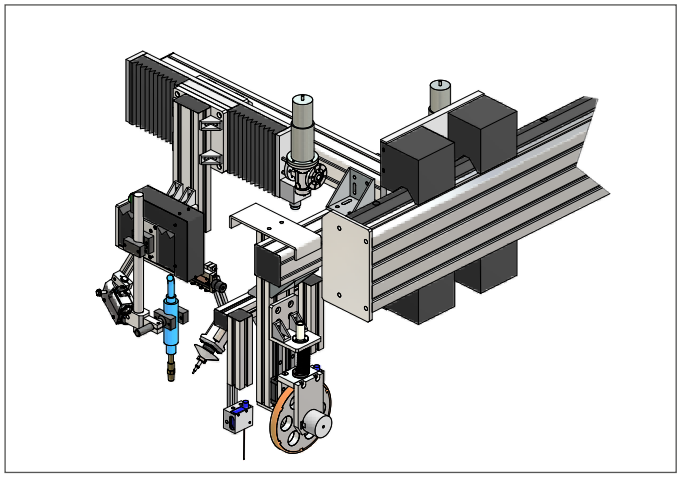
Plant for making pressure tanks for trucks consisting of ZX manipulators with motorized slewing ring for column rotation.
Each manipulator is complete with SAW head at the end of the arm for tank piece-tank piece and tank-bottom welding, and MIG/MAG head at the end of the arm for welding reinforcing bandages and wave-breakers. To align the various tank pieces that make up the tank, FIT-UP roller positioners have been installed that enable the adjustment of the height position of the rollers through independently operated hydraulic cylinders. The lifting and handling of the tanks between the various positions, consisting of single-wheel rollers, is done by means of carriages sliding on rails equipped with hydraulically operated V-shaped saddles. All the machines constituting the line are managed and coordinated by PLC.



TRANSPORTS
TRUCK ELLIPTICAL TANKS

MANIPULATOR AND ROTATOR FOR WELDING OF POLYCENTRIC TANKS

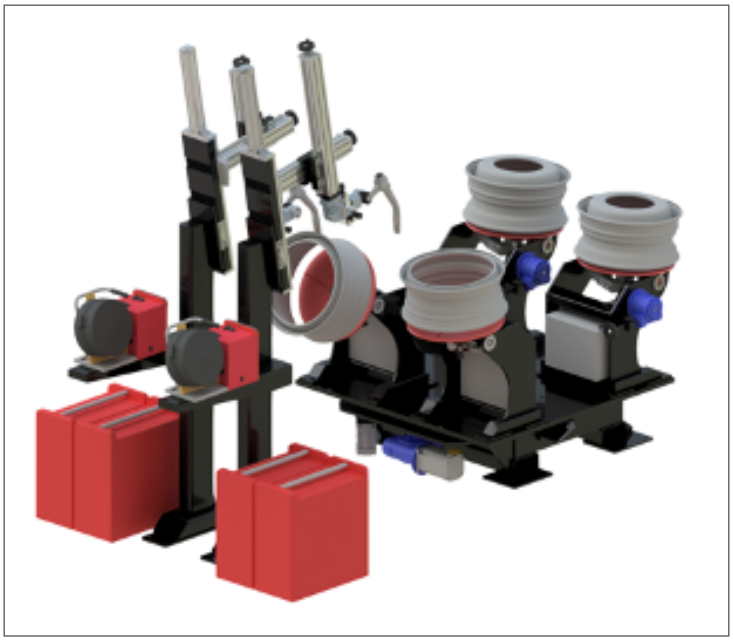
Manipulator for automatic MIG welding of elliptical and polycentric tanks laid on rotators incorporated into PLC work cycle.



On the boom a motorized carriage and a transversal motorized slide which are both serviced by an IG system for the purpose of tracking the joint, are installed.
A metric wheel measures the peripheral speed and 2 IG LAS probes move back and forth the carriage in maintain the torch on the top of the tank.
PLC picks up the metric wheel signal and automatically adjusts the rotator's speed.
The plant is complete of TSV 09 video system

The manipulator base houses the control panel from which the operator, by means of the video system, can effectively and safely survey the whole process without any need for unstable platforms and/or step ladders.
On the base are also laid the power source and the fumes aspirator.
As usually, the wire feeder is housed on the boom in order to have a sheath as short as possible.
On the 10" soft touch screen and via PLC countless programs can be recorded and played at any time.

TRANSPORTS



PLANT TO WELD WHEELS FOR INDUSTRIAL MACHINERIES.

The machine has got 2 stations : while 2 turntables are welding, the other 2 are loading/unloading.
Each table has got a max loading capacity of 200 kg, the 180° exchange takes place in about 6 seconds.
The 2 MIG welding heads are tandem, to increase both the dimensions of the welding bead and the speed.
The whole process is managed by PLC having got 10" touch panel. It allows to enter at least 200 working programs and includes the 4 welding devices as well, in CAN OPEN connection.
Remote connection via modem for tele-service.

WELDING OF WHEELS FOR MACHINERY EARTHMOVING

JD DOUBLE rotary table with a roto-tilting arm slaved to an APMIDI manipulator with a head in Submerged Arc Welding and flux recovery tank.

TRANSPORTS

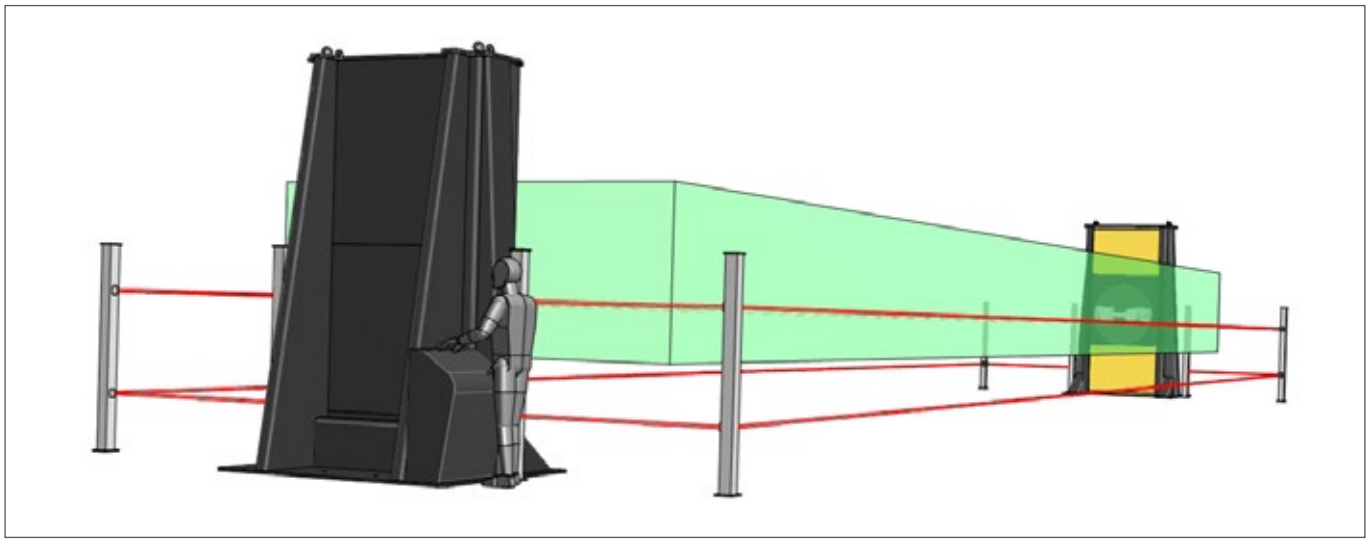
HEAD & TAILSTOCK AE + FE

Elevating Head and Tailstock AE + FE for handling truck frames.
In – between distance of tables 14 m, weight capacity 10 ton, vertical stroke 1500 mm driven by synchronized hydraulic cylinders.
To meet with the frame deflection, retractable jigs are installed on both the headstock and the tailstock tables.

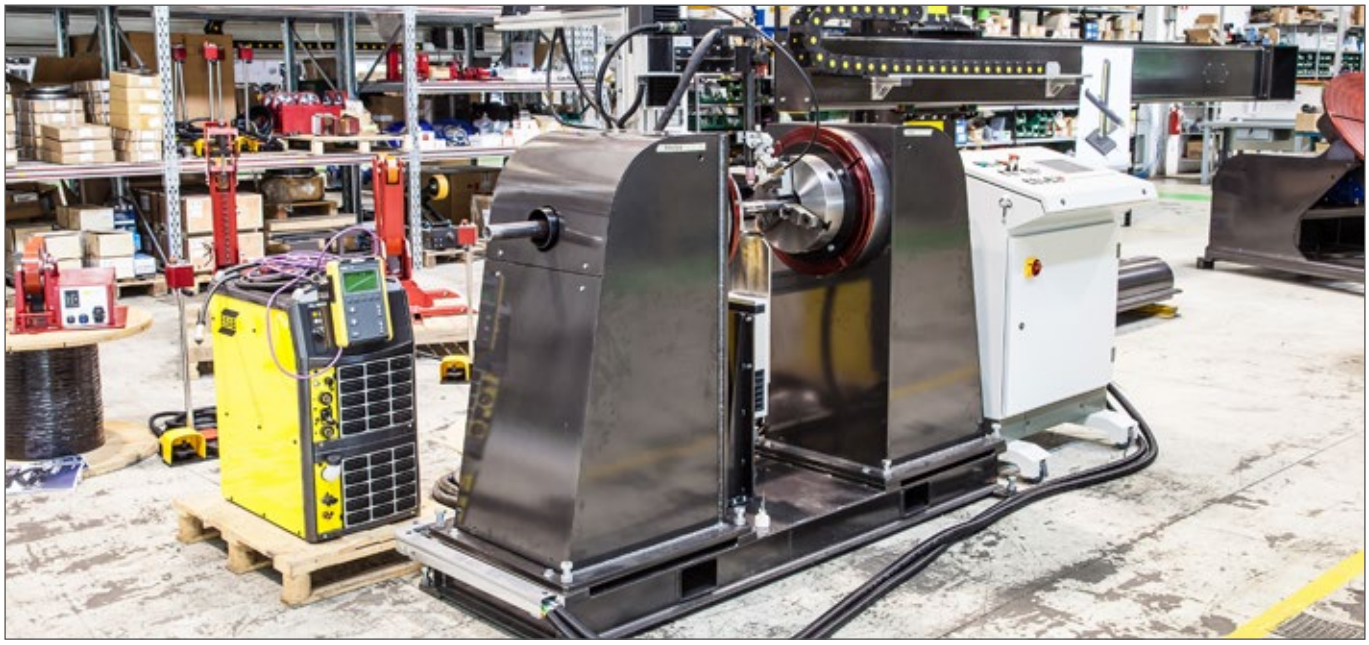
A peculiar feature is that both Headstock and Tailstock, provided of motorized base, move on rails laid transversal to the handling axis of the frame that is brought to load position and evacuated by a shuttle on optical guides.

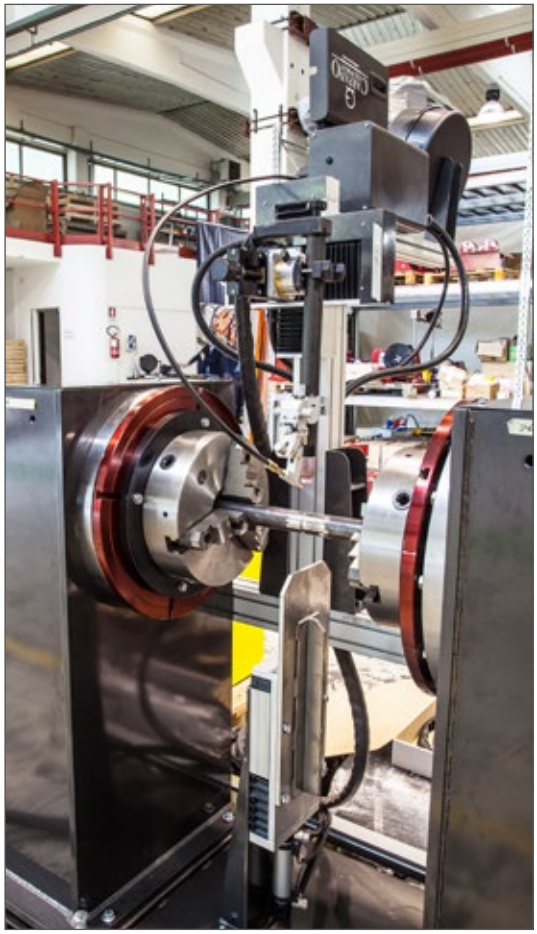
JDHE20, ELEVATING TURNTABLES SPECIAL EXECUTION

JDHE20 elevating Head and Tailstock, handling a jig on which is laid a train coach body.
In - between distance of tables about 25 m, weight capacity 20 Ton, job section 4000 x 1500 mm.



ENERGY
PLANT TO WELD PIPES





This plant has been studied on purpose to make pipes junctions
- Ø from 20 to 96 mm
- thickness from 2 to 4 mm
- Lenght from 12 to 60 m
- The welding process is : TIG cold-wire in single or multi-layer..

The 2 heads are both motorized and synchronized in electric axis, such feature allows not to fix the pipes in order to be able to accurately rotate them even if they reach 60m lenght.
Between the 2 heads there is an end-stroke with pneumatic clamp to position the first pipe, with great accuracy and precision under the welding torch.

The welding head is made up of:
- Vertical slide with AVC function
- Horizontal slide with swinging function
- VPR-4WD cold-wire feeder with CEFF slide

This plant is managed by a PLC with 10" HMI to:
- Enter al least 200 different working programs
- For each program it is possible to set up uncountable different steps
- For each step it is possible to set any parameter, welding programs included
- Connection to welding power unit by means of Profibus protocol.

ENERGY

WIND TOWERS

A manipulator mod. ZB60A50F, strokes (hor. x vert.) 6 x 5 m, on motorized base, equipped with SAW Tandem heads, is used both for prefabrication (longitudinal welding) of sections length 3 to 6 m and for the assembling of towers (circle welding) which are lined-up in 3 parallel rows on self-aligning rotators RB300.

The operator sits on the boom tip to survey the process though SAW heads are provided of IG tactile joint tracking system.
Power sources as well as flux feed and recovery systems are laid on the base, whereas 30 kg wire reels are installed at the rear end of the boom.

TURBO-ALTERNATORS

The turbo-alternator case is positioned into rings and laid on rotator mod. R60C, special execution, weight capacity 600 Ton/pair, steel wheels superficially hardened, Ø 1200 x 600mm width, tangent force delivered by motorized section 26 ton.

The wrong positioning of the case inside the rings, sometimes causes an axial drift of such an extent and drifting speed that can't be effectively opposed by the anti-drift automatic system installed on the idle section.Therefore, both drive and idle sections have been equipped with electronic probes that, when detecting the approach of rings to pre-set safety limits, automatically stop any activity.

Rotation can only be reactivated after a safety procedure and by means of a key switch.

ENERGY

BTC (Baku>Tiblisi>Cheyang) pipeline:
DJ yard at Yevlah Camp - Azerbaijan

PIPELINE

DJ «double joint» yard to double the progressing speed of pipelines © 30 to 50" which usually consist of cans 12 m length jointed at a maximum rate of 100 pc/day consequently delivering a pipeline onwards step of about 1.2 km /day.
The yard produces pipes 24m by coupling 12 m cans and joining them by MIG/SAW or MIG only multi - pass process in accordance with targeted production rate.
The 24m pipes are handled and conveyed to the different work stations normally distributed and laid on a surface of about 6000 m?, and finally brought to their final destination where, laid at the rate of 100 pc/day, heyll deliver a pipeline onwards stepping of 2.4 km/day.
The yard is equipped with motorized and idle rotator height adjustable sections, of biconical or «diabolo» roll motorized conveyors, of hydraulic side-unload fixtures and of C & B manipulators. The pipe handling is interlocked by safety systems and it's sequenced by desk control panels connected by walky-talkies.

The container has also inlets for connection of gas bottles to perform flame cutting.
The start-up time (from container closed to cutting operational) is about 40 minutes, that's as much the time it takes to pack back the whole and to close the container.

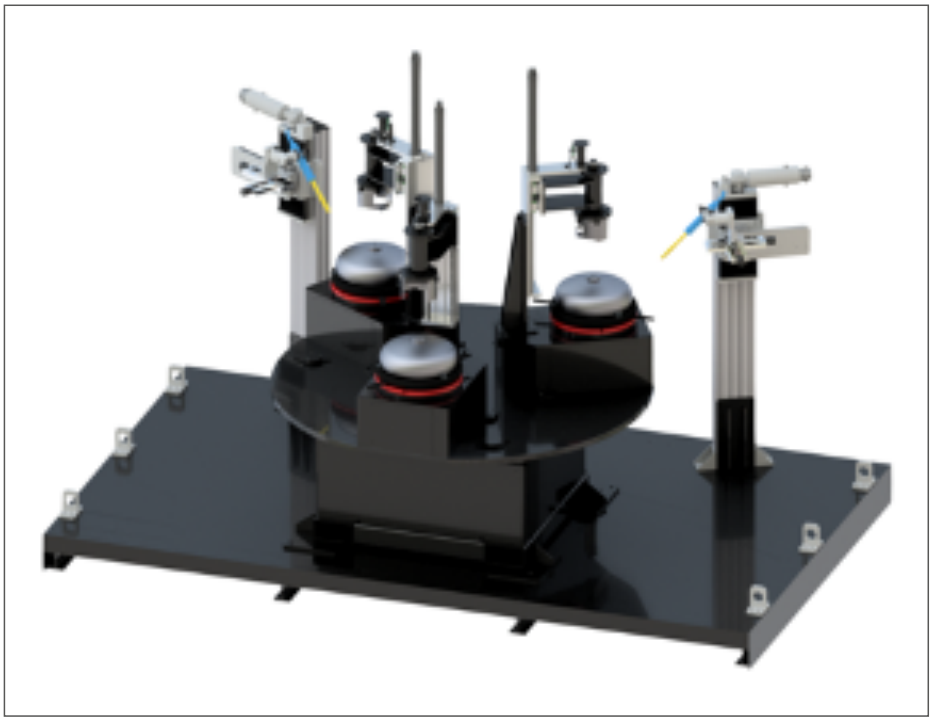
FIELD CUTTING WORKSHOP

The 20' container is provided with hinged walls and doors as well as of electric wirings for both industrial (Plasma cutting power source and fumes aspirator) and civil use (inside lighting with emergency lamps).

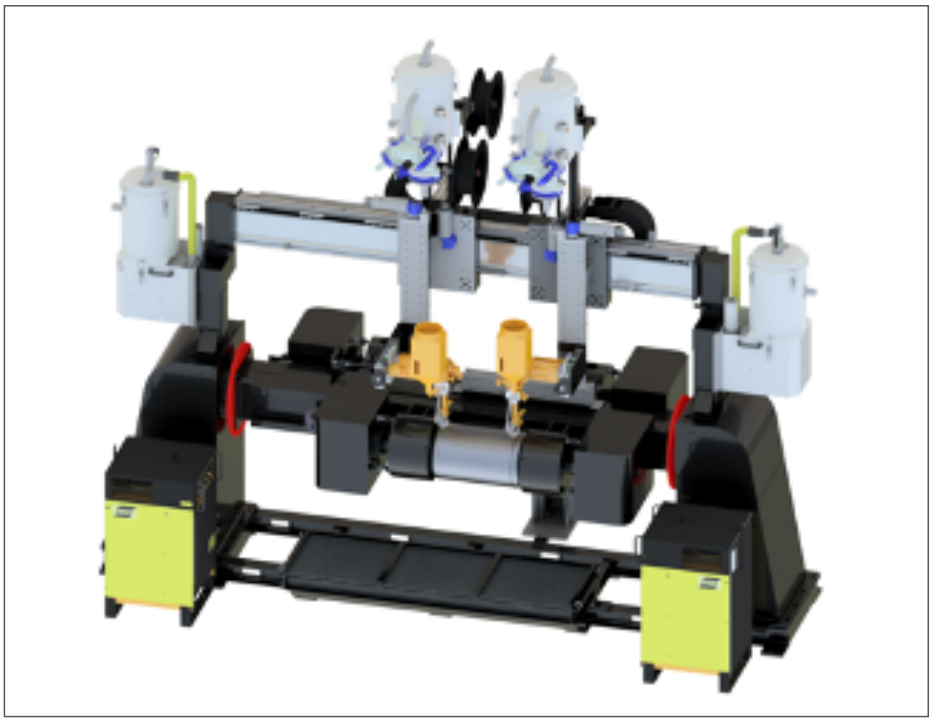
Inside the container are housed:

- The Plasma power source
- The manipulator with all the adjusters and fittings needed for setting the gun at straight or angle cutting
- The automatic pipe load on levers
- The rotator, weight capacity 11 ton, the idle section of which equipped with motorized lorry for automatic onward stepping of the pipe to cutting position
- 8 m track, 4 m fixed to the container floor and 4 m assembled in a frame to be laid outside with levelling shoes
- Desk control panel with display for monitoring the cut speed

ENERGY
PLANT FOR THE PRODUCTION OF CYLINDERS LPG FOR DOMESTIC USE



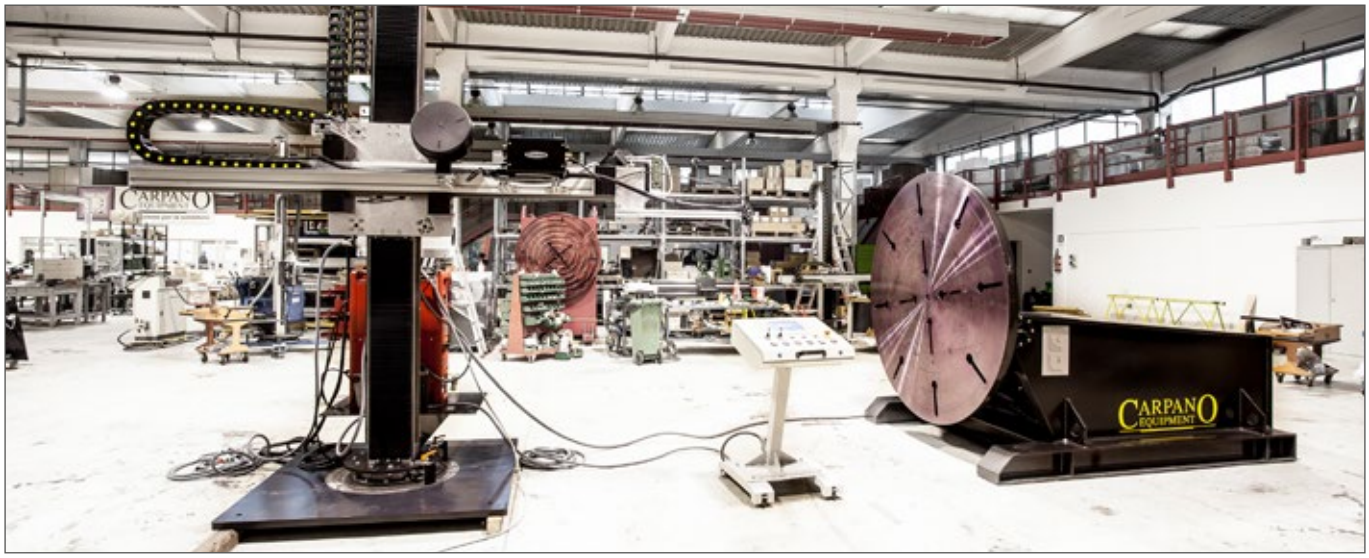
On the station here above is performed the MIG/MAG welding of the ferrule and of the handle to the upper bottom and then of the foot to the lower bottom. While the operator loads/unloads the workpiece on the front station, welding in masked time takes place on the two stations behind.



On the station here below is performed the SAW welding in TWIN ARC of the bottoms to the tank. Also in this case the loading/unloading takes place at the station behind the welding station with a significant advantage in terms of productivity of the plant.

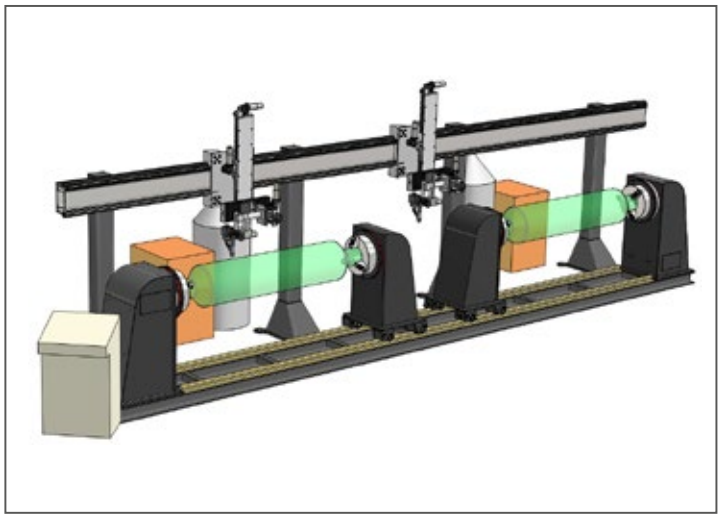
HARD FACING
PLANT FOR TIG HOT-WIRE HARD FACING

The plant has been studied on purpose for hard facing in TIG hot-wire on oil valves



It is made up of :

- 3x3 AI Power MIDI manipulator on a fixed base
- Swinging slide
- Feeder with 3D-Wire wire-adjuster
- AVC in the manipulator column
- PI200 20 ton. table positioner
- TIG for 500 amo torch power unit and 220 amp hot-wire power unit
- PLC to manage the work-cycle with Can open connection to the 2 power units
  - 10" touch-screen panel
  - Allows to enter at least 200 working programs
  - Possibility to choose between slalom or spiral motion programs
- Remote control for teleservice or for programs updating



SAW ON MILL ROLLS

The plant consists of a pair of lathes JDH10, the tailstock mobile on the base frame, both headstock and tailstock tables equipped with CHK - ST self - centring chucks, performing SAW hard facing of mill rolls by 2 heads installed overhead and equipped with DTE HD oscillators. SAW heads are installed on independent carriages which can work either on the same lathe or separately. PLC rules the whole process and allows to memorize countless jobs each of which including roll diameter, rotation speed and (for step hard facing mode) weaving amplitude and carriage side step or (for spiral mode) carriage speed and both start and end points.

HARD FACING

PTA HARD FACING ON EXTRUSION SCREWS

The lathe, made of sturdy and machined carpentry, consists of a drive head rotating on bearings with tapered rollers, a tailstock sliding manually on RDS guides and a motorized carriage sliding on RDS guides protected by bellows.

Installed on the carriage are a motorized vertical slide for adjusting the working diameter and a motorized horizontal slide with the function of an oscillator.

Finally, the working area is protected by an aluminum protective hood with inactinic glass for observation of the arc.

The entire process for PTA hard facing is managed by PLC with a touch panel of 10".

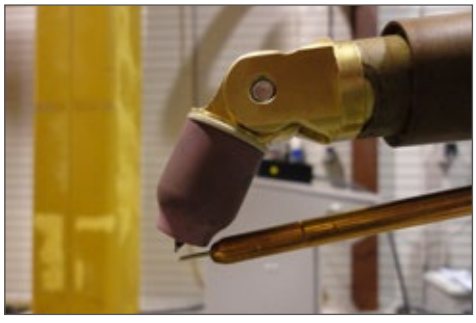
HARD FACING

MIG AND TIG COLD WIRE OR HOT WIRE CLADDING

Plant consisting of AI Power MIDI manipulator, PE030 positioner, DTE250 oscillator and panel with NC.
The plant is completed by a MIG and one TIG power source, cold wire and hot wire.
Also the welding power sources are controlled by the NC, with a digital connection.
The AVC system is integrated on the manipulator column.

The operator can create a variety of welding programs (at least 200) for each of which he can set up the entire production cycle
Both wire feeders are installed on the arm of the manipulator.

The picture on the left shows the special MIG torch, for entering into internal Ø up to 70 mm.

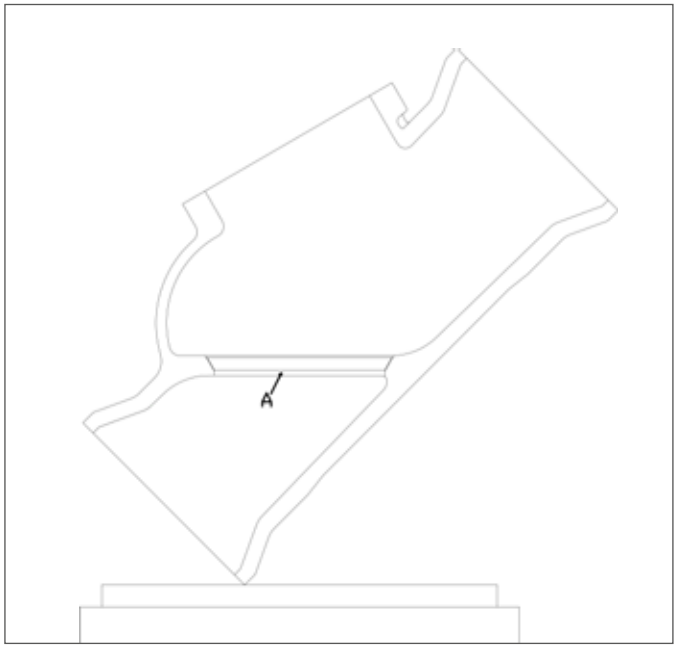


HARD FACING

VALVES

The plant is meant for internal hard facing of valves and it consists of:

- Manipulator with horizontal boom at fixed height but retractable stroke 2400 mm, the a/m boom tip equipped vertical motorized fixture stroke 2000mm with a 2–axis swivel support holding a DTEelectronic oscillator stroke 180 mm. The manipulator base plate is firmly secured to the floor.
- Turntable JODA PLANO 50
- Desk cabinet incorporating a 4-axis PLC to rule the whole process.



FOOD AND BEVERAGES
SAW WELDING OF POLYGONAL TRUNCATED CONICAL POLES

The plant consists of a fixed boom manipulator model ZP on motorized carriage. On the boom run two motorized carriages on which welding heads are installed.

Each welding head consists of two TANDEM SAW torches in TWIN ARC.
The particular ground bearing conduction pantograph system allows you to optimize the passage of high Amperage currents, typical of welding in submerged arc, while avoiding drafting along the tracks of large cross-section earth cables.

The R300 rotators are height adjustable, via a manually operated hydraulic cylinder, for allowing the weld bevel of the pieces with a truncated conical section to be level.

FOOD AND BEVERAGES
TANKS FOR ENOLOGICAL US

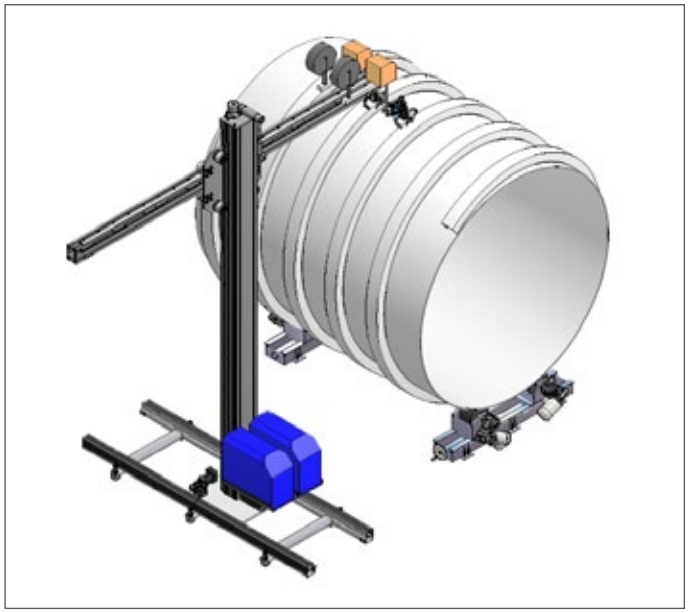
Joda Plano50 turntable with manipulator Al Power MINI 2.5x2 on fixed base with trans pallet.
On the boom are installed the VPR4WD cold wire feeder, the ARCV camera, the CEFF wire guide and the SCPWT27 gas shoe. The AVC is integrated into manipulator boom in order to compensate for the ellipticity of the workpiece. On the turntable a gas holder is installed to protect the weld from reverse.

Plant similar to the previous one but for larger tanks. In this case on the turntable is installed a manipulator for gas supply on joint reverse.
In addition to the protective gas shoe, the manipulator is equipped with a satin finishing machine for the satin finishing of the weld bead inside the tank.

FOOD AND BEVERAGES

PLASMA KEY HOLE WELDING OF COOLING CHANNELS (TANKS LAID ON TURNTABLE)

Plasma Key hole channels welding on thermal controlled stainless steel tanks laid on JODA PLANO special execution.
AI Power MIDI manipulator 3x3 features are:
- Base platform with levelling screws
- Laser IG SCAN system to track spiral channels



WELDING OF COOLING CHANNELS (TANKS LAID ON ROTATOR)

Channels MIG welding on thermal controlled tanks laid on twin motors rotator.
The AI Power MIDI manipulator is provided with a motorized base, driven on special rails by ball bearings linear guides, by rack & pinion transmission and controlled by IG tactile system to track spiral channels.

Two MIG wire feeders are installed at the boom end.

FOOD AND BEVERAGES

PLASMA KEY HOLE WELDING OF STAINLESS STEEL BEER TANKS

Plasma Key hole welding of stainless steel beer tanks laid on JODAPL special execution with cross beams to enlarge table diametor.

I Power manioulator features:

- Seam weld speed in mm/min
- Motorized base
- Motorized cross slides integrating the functions of AVC and oscillator
- Video svster with cameras monitoring tha process up & downstrear of the weld
- CNC extended to welding cower source

Overall view of the above plant showing it can perform front circle welds on tanks laid either on JODA PLANO rotators. Front vertical seam welds can also be performed as the I Power vertical stroke is driven by brushle motor and by ball screw on precision ball bearing linear guides thus delivering a smooth and constant motic

FOOD AND BEVERAGES

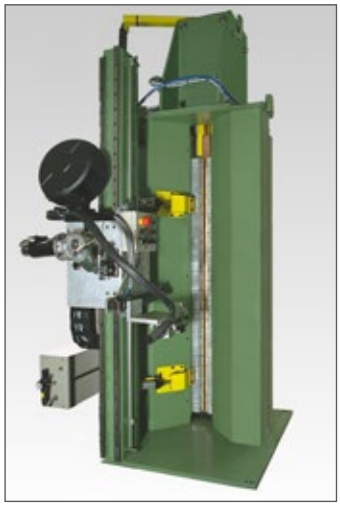
HORIZONTAL SEAMER FOR FOOD TANKS AND FOOD TANK PANELS

Seamer type BP3131D3, for PLASMA Key hole and cold wire welding, clamping driven by pneumatic hoses, copper bar provided of back-up gas and of chiller for both bar and torch cooling, motorized carriage with AVC slide.

PLC is incorporated into the electric cabinet and a swivel pendant integrates both the display and the soft touch keyboard to allow the recording of countless jobs, each one including:

- Seam weld speed in mm/min
- Seam weld length in mm
- Carriage delayed start in sec.
- Torch parking and weld start positions
- Arc length in V
- Tack weld cycle for wall thickness greater than 5 mm

Pressing machine to straighten welded panels of a maximum length of 3200 mm and 6 mm maximum thickness. The carriage moves at variable speed and the pressure wheel delivers a thrust of 4 ton on a tempered anvil. Front latch is manually operated with automatic safety device for stopping any activity in case it is not perfectly locked. A laser line helps to align weld seam to pressure wheel trajectory.



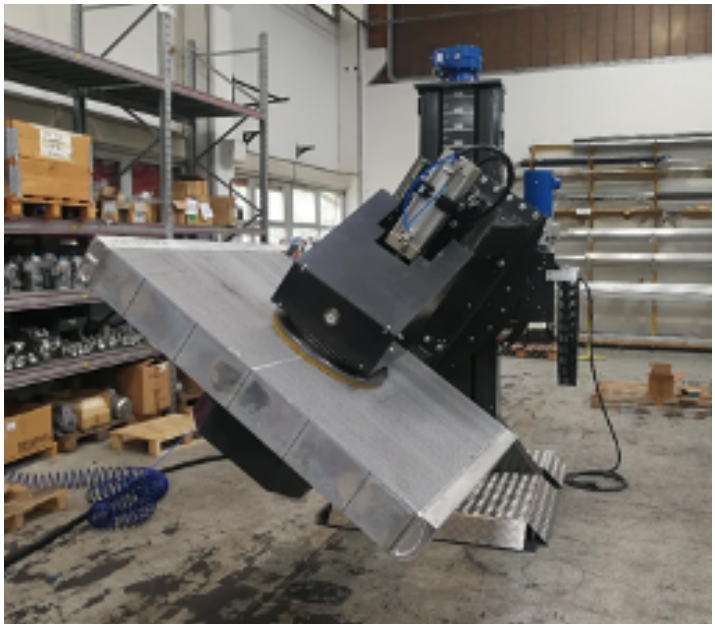
VERTICAL SEAMER

MERIDIANO is a seamer conceived for automatic vertical welding of cylinders Ø 500 mm or greater and up to 20 m, in this case it works in coordination with the plate bending machine. Its work cycle is manged by PLC.

OTHER APPLICATIONS

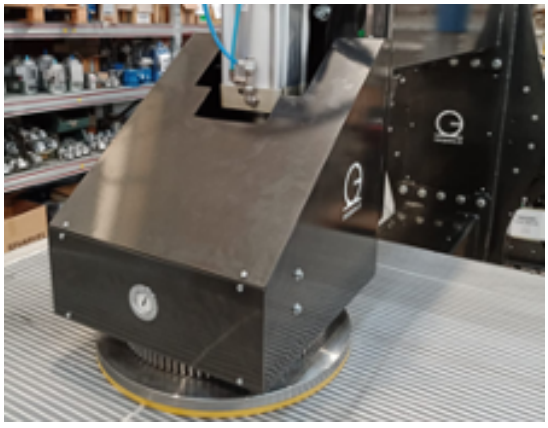
TRAIN AXLE

The JDTRIPLE positioner allows lifting,
the overturning and rotation of the mask on which the piece is fixed.
In this way the operator is able to arrange
the joints in the most correct position and to carry out welding comfortably.

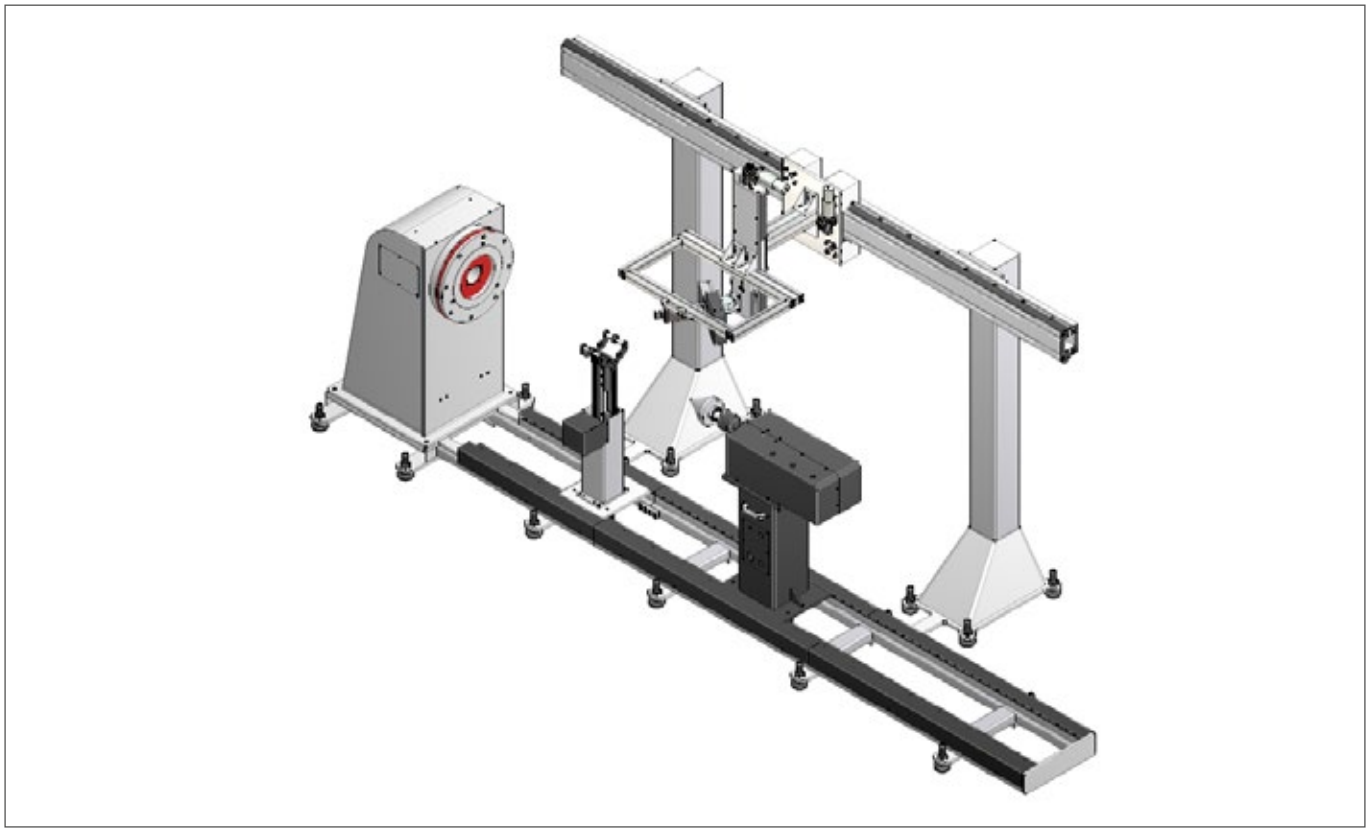


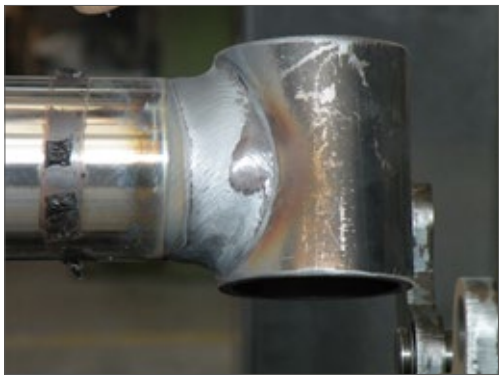
ALUMINUM RADIATORS

Machine similar to the previous one.
In this case, on the tilting boom is installed a pneumatic tailstock whose plate is covered in polyurethane to enable a solid grip (grip by friction) without damaging the surface of the radiators.



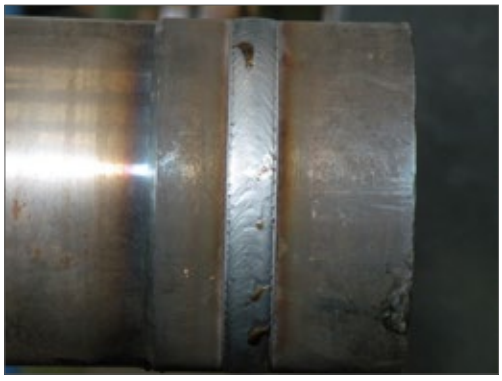
OTHER APPLICATIONS





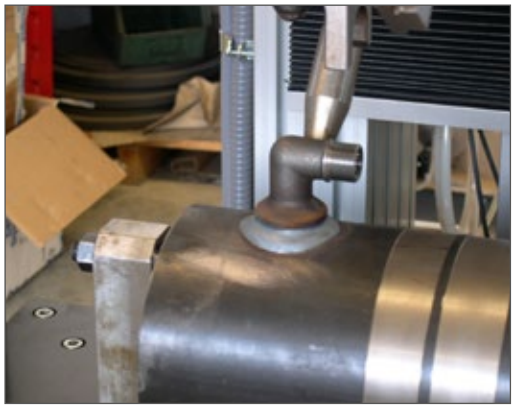
WELDING OF HYDRAULIC CYLINDERS

MIG welding of rods or bottoms on hydraulic cylinders made up of JODA Horizontal lathe with AP TM MIDI overhead beam, motorized vertical slide and oscillator.



PLC allows entering several programs and rules the whole process, including multi-pass welding in order to change at each revolution the torch position the rotation speed the oscillation and the welding parameters.

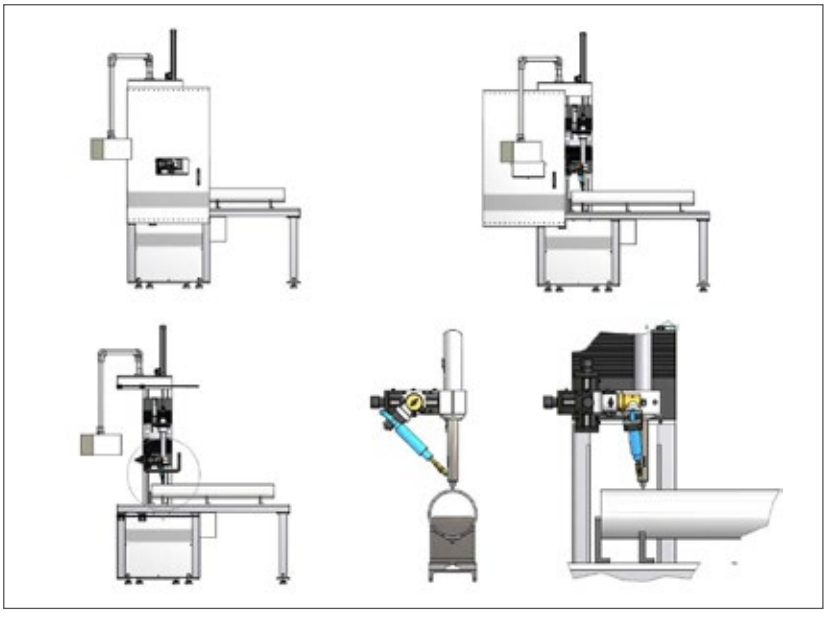
OTHER APPLICATIONS



Elbow inlet automatically kept in vertical position without any need for stitching prior to automatic welding.

WELDING OF NIPPLES AND OF ELBOW INLETS ON CYLINDERS

PLC coordinates 2 motorized axis in order to follow up the sinusoidal trajectory described by the intersection of the nipple and the cylinder.
A pneumatic fixture keeps the nipple in position without any need of stitching prior to automatic welding.
The setting up of the machine and its resetting to different jobs are extremely simple as PLC allows the recording of the cylinder the nipple diameters, the welding speed, the overlapping amplitude and start of delayed, etc.
The machine structure incorporates a sliding door to load/unload facilities and to segregating the welding process in order to protect the operator from the arc radiation and hot sparks.



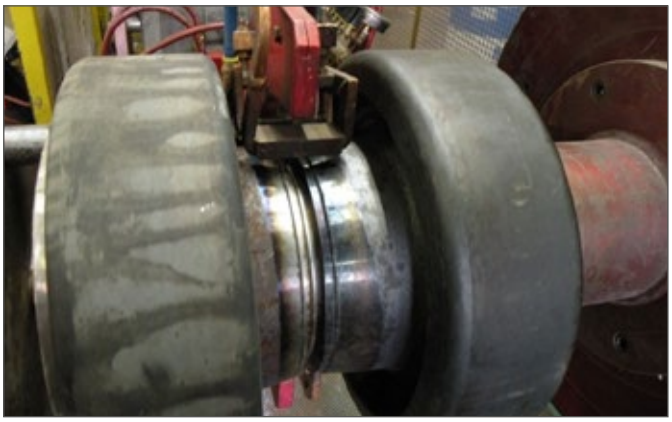
OTHER APPLICATIONS

WELDING OF TRACK STRETCH WHEELS

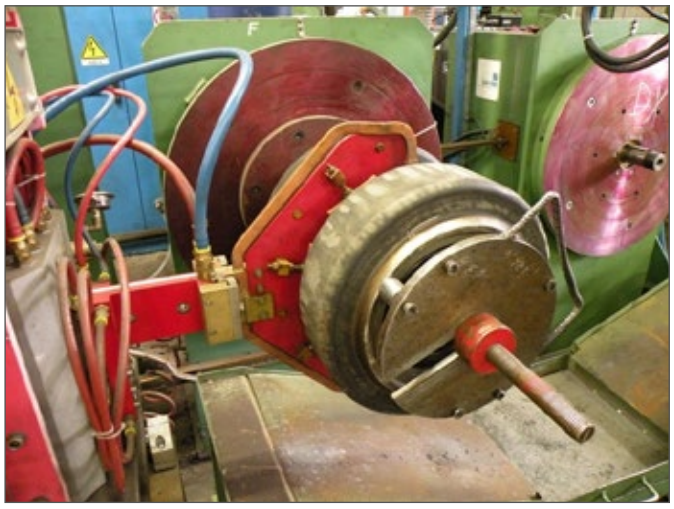
While carrying on SAW in one station, the other station aside performs pre–heating induction.
The desk cabinet incorporates PLC with a 10" soft touch screen and digital key-board for the recording of several programs, each of one including:

- Multi - pass parameters delivered at each revolution and at each second by power source 1000 AC / DC such as current and tension
- Torch position
- Rotation speed
- Oscillation

A/m data are all memorized in a file that can be transferred to any peripheral storage electronic device via USB port.



pre-heating joint prior to automatic welding.



Welded joint

Pre-heating
Pre-heating induction has been preferred being safer quicker and allowing a more precise control of the temperatures.

OTHER APPLICATIONS

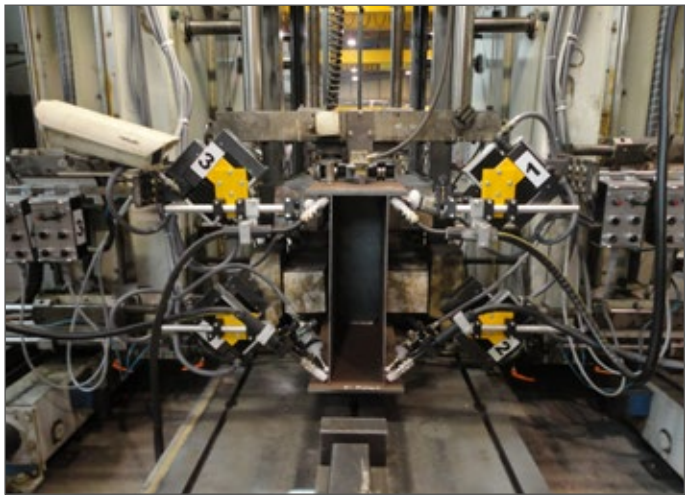
CRANE TELESCOPIC BOOMS WELDING

C&B manipulator AI Power MINI 2x2 on motorized base carries on MIG longitudinal welding of crane telescopic booms handled by a lathe that automatically positions the job at 90° steps.
Column and boom axis integrate IG joint tracking system.

WELDING OF CRANE TELESCOPIC BOOMS

MIG welding of telescopic booms is carried on by lathe JODA Horizontal with tailstock
movable on the base track and overhead beam AP TM MIDI on which a motorized carriage equipped with IG MD 400/2 joint tracking system, is installed PLC rules the whole process and automatically positions the job at 90° steps.

OTHER APPLICATIONS

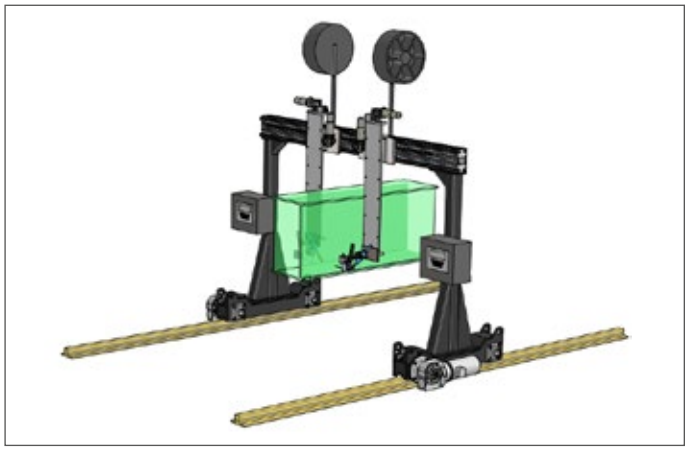


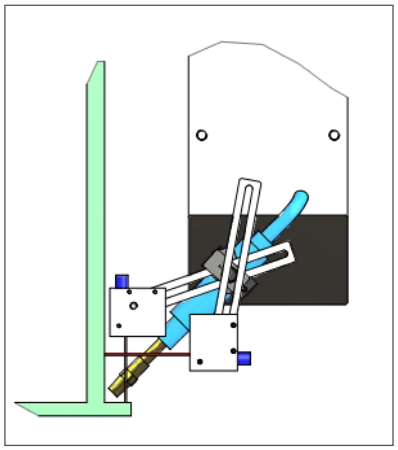
WELDING OF BOX BEAMS

4 longitudinal joints (2 fillet and 2 overhead) are simultaneously performed by MIG torches on box beams, each torch is equipped with IG LT 80/2 joint tracking system.

WELDING OF BOX BEAMS

2 MIG heads are installed on a gantry with synchro 2 WD motorized base.
Each torch is provided of IG LAS system that automatically tracks the joint via MM MIDI HD motorized vertical slide and motorized carriage traversing on the gantry horizontal beam.





CREDITS

Coordinamento generale/General Coordination
Carpano Equipment Srl

Progetto grafico/Graphic Layout
FabbricaFotoGrafica // Bologna

Contenuti/Contents by
Marketing Carpano

Stampa/Printing
DAB Group srl

WELDING AUTOMATION BOOK04

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CONDIZIONI GENERALI

1. SUPPLY OBLIGATION ARRANGEMENT

The following general terms of business are always to be considered applicable to every order made by the buyer. Therefore, any supply clause written by the buyer on his orders or any other document given to the seller, which may result to be conflicting with the present general conditions, will be considered not written. The buyer has to forward the orders to the seller in writing. The seller reserves the authority to accept telephone and verbal orders. The order is to be considered executed when the buyer receives the written acceptance of the same (order confirmation) bythe vendor or, in the absence thereof, automatically 15 days afterthe order receipt by the seller. All offers and prices are just an indication and are not binding. Therefore the seller considers himself to be bound only to what is declared in his order confirmations.

2. TERMS FOR DELIVERY

The delivery dates indicated by the seller as well as the ones written on the buyers' orders have to be considered just as an indication and are not binding and are subject to the punctual supply by the buyer of all the specifics, to the variations due to the availability of the goods with the suppliers or to reasons of force majeure: delays in the delivery due to said availability variations are not attributable to theseller, who is not in duty bound to the compensation for damages suffered by the buyer. Reasons of force majeure have also to be considered the accidents (industrial injury, disease, etc) and any other circumstances which may cause a totalor partial job reduction, as well as the lack of raw materials, troubles with transportation, etc. The seller reserves the authority to suspend the delivery of the goods if the buyer has not seen to the payment of the invoices relative toother supplies whose terms of payment are overdue. The goods are understood as being delivered for allintents and purposes to the buyer from the time they were picked up by the carrier or the buyer himself at the seller'swarehouse.

3. PAYMENT AND TERMS OF PAYMENT

The payments have to be made to the seller's domicile and in accordance with the established conditions. In the event of a delay, the due amounts of money will automatically imply the charge of interests based on the official discount rate plus 5 points. In the event of a non-payment, the buyer is to be considered in default without the necessity of any formal notice by the seller. The presence of possible faults and/or defects in the products does not excuse the buyer for suspending the payment of the invoices. Should the client suspend and/or delaythe payments, the seller may suspend the supplies,with the authority to consider the contract automatically terminated by rights and to demand for damages.

4. WARRANTY

CARPANO EQUIPMENT guarantees the products for a period of 24 months starting from the delivery date, for a daily work cycle of 8 hours. The warranty is intended ex works CARPANO EQUIPMENT. CARPANO EQUIPMENT guarantees the performance of its products in accordance with the instructions written inthe relative manuals. For the products based on job orders, the warranty is pertaining to the specifics agreed with the client.

5. VOID WARRANTY

In case of any tampering or unauthorized intervention the warranty shall be deemed void.

6. LIABILITY FOR DAMAGE

The seller's liability is limited only to the obligations above and it's expressly agreed that the seller does not accept any liability for damages resulting from any cause connected with the use and utilization of the sold products.
CARPANO EQUIPMENT is not responsible and for no reason whatsoever may the expenses be charged for:

- Machine downtime.
- Direct or in direct damage due to the non-operation of the equipment.
- Working hours spent to solve possible problems onthe equipment.

7. RESERVATION OF OWNERSHIP

Until the payment in full of any credit resulting from business relations has taken place, included any additional credit and until the payment of bills and cheques has been made, the property in the goods remains in the seller.

8. COMPETENT COURT

It's established that the court of Bologna will be the sole competent court for every dispute relative to this contract.

9. APPLICABLE LAWS

The applicable law is the Italian law.

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