



| ENG

AL POWER

Aluminum welding manipulators

carpano.it

AL POWER

Aluminum welding manipulators

Advantages

- Extruded aluminum frame
- Mechanical transmissions with low friction and low backlash
- DC motors with encoder or Brushless motors with encoder
- Drastic decrease in suspended weights, significant lowering of machine center of gravity resulting in a reduction of the support base area.
- Lowering of the moments of inertia of the system while moving
- Adjustable speeds for all axes from as early as 50 mm/min
- Smooth, backlash-free and micrometric movements even under heavy outreaches and loads
- Rigidity of the assembly due to less flexing of the extruded parts

Thanks to these features, it is therefore possible for us to directly equip the vertical and horizontal axes of the manipulators also with joint tracking systems or arc voltage controls, or to manage them by PLC.



We reserve the right of modifying the technical features of machinery as stated herein and we do not respond for any printing mistake.

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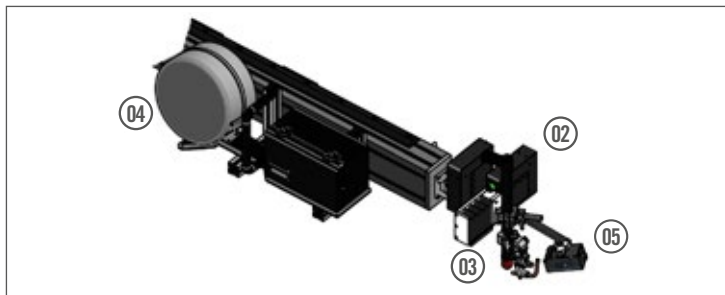
- The updated version is the one in our web site

Total integration

The Welding Manipulator is certainly a simple machine, but despite this it is hardly mass-produced as each user needs its own customization.

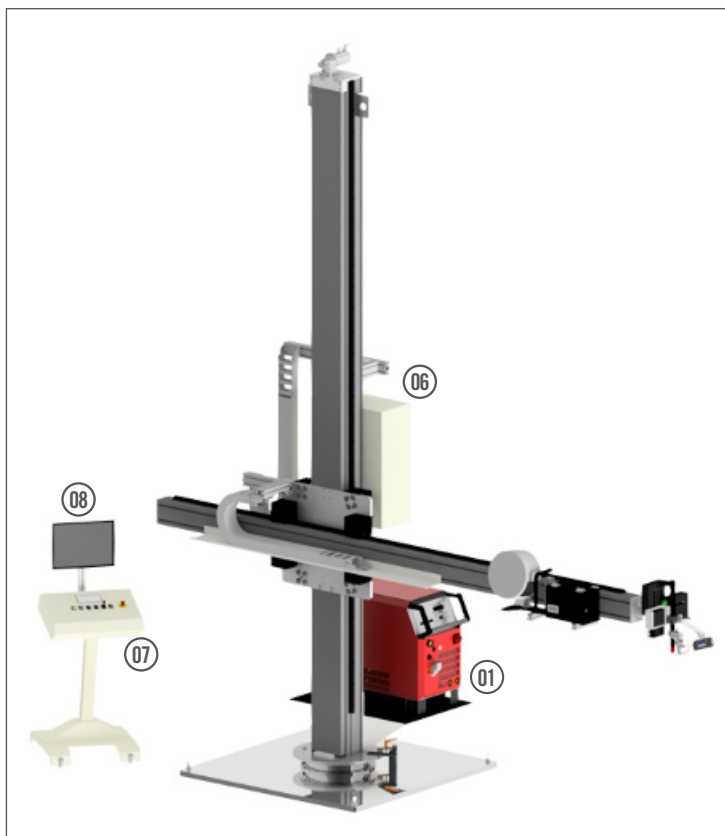
In this Carpano certainly succeeds in creating a machine that differs from the average market offering:

- All ancillary equipment such as motorized slides, oscillator, AVC, Tracker, cold wire feeder, manual slides are our own products and not bought from third parties.
- We are able to integrate all the axes of the manipulator and those of the ancillary equipment into a single plant and control panel.
- Particularly in the Al Power series, we can manage the axes at programmable quotes by PLC or by integrating AVC and joint tracking functions into them.
- We can Integrate the 90% of welding equipment into the system, as long as they have digital interfaces with communication protocols in: Can Open, Ethernet IP, Profibus, Ethercat ...
- We directly perform the installation and service phase
- Most of the times we equip the machine with modem for remote assistance or program update



Example of AP MIDI for TIG with cold wire:

1. TIG welding machine with digital interface
2. MM MINI cross slides for oscillation and AVC functions on swiveling support
3. Automatic TIG torch with CEFF wire guide
4. VPR-4WD cold wire feeder
5. Arc Vision camera
6. Main panel with modem for remote connection:
 - Ability to create work programs also associating the Job of the welding machine
 - In addition to manipulator controls, other functions will be manageable such as oscillation, Arc Voltage Control, wire feeding and camera operation
 - Ability to communicate with OPC UA Server
8. Touch screen monitor for Arc Vision camera



AL POWER Micro

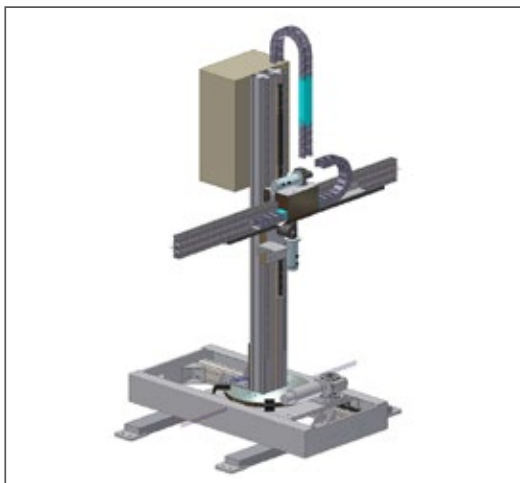


MAIN FEATURES:

- Linear ball guides
- Gearmotor with rack-and-pinion transmission on both axes fixed base to be laid on the floor or movable on rails, with flange for manual rotation of the column.
- Column and boom in aluminum extrusion with ball guides
- Boom saddle with ball runners
- Cables chain on both axes
- Due to loading reasons, it is not possible to install the wire feeder on the boom
- MAN version with manual movements by hand-wheels
- Base can be forklift or transpallet jacked

APMICRO-MAN

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



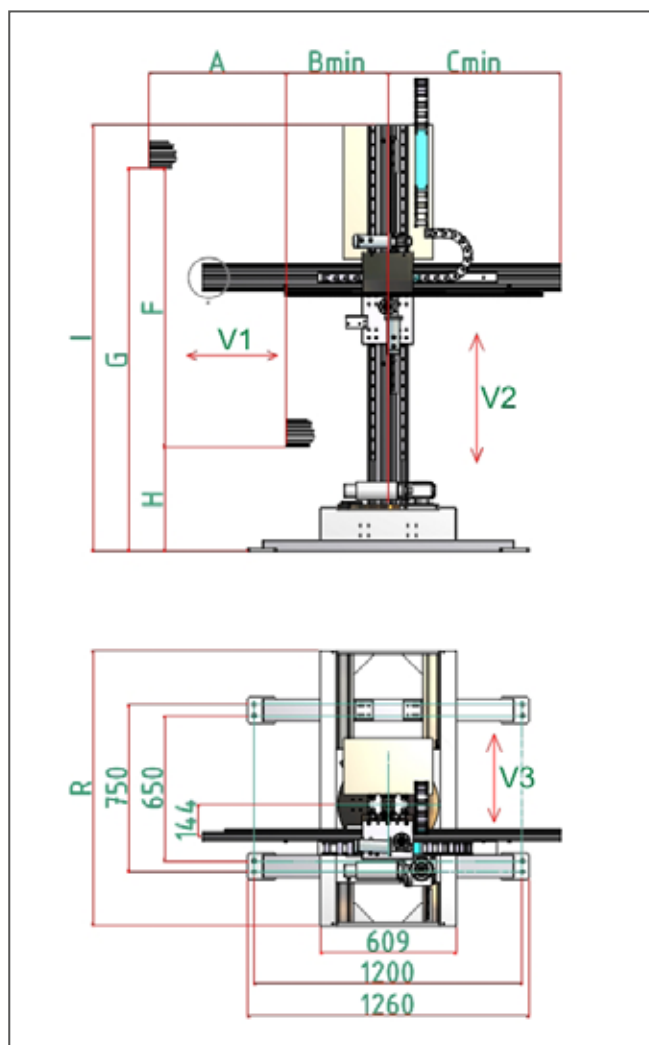
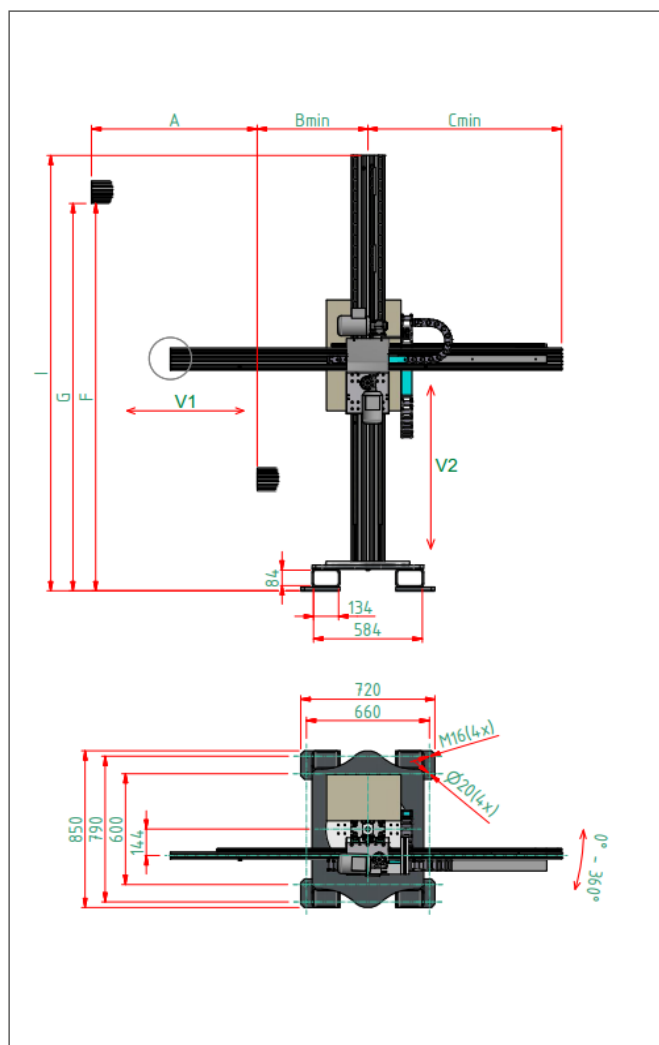
APMICRO-CM

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



APMICRO-MOT

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



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



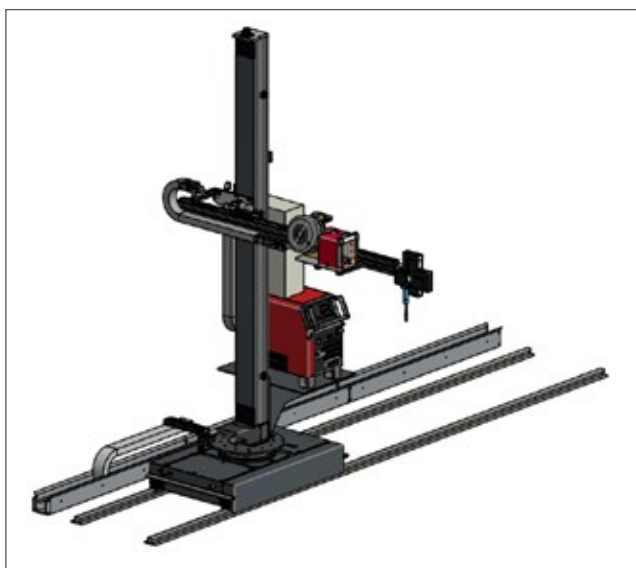
MAIN FEATURES

- Linear ball guides
- Gearmotors with rack-and-pinion transmission for the boom and ball screw + ball nut-screw transmission for the column
- Brushless motor with encoder on all the axes
- Fixed base to be laid on the floor or movable on rails, with flange for manual rotation of the column
- Column and boom made of aluminum extrusion with ball bearings guides
- Boom saddle with ball bearings carriages
- Cable chains on both axes
- Wire feeder housed on the boom
- Base can be forklift or transpallet jacked
- Optional base with integrated transpallet system, see picture beside

AI Power MINI
with base on integrated transpallet

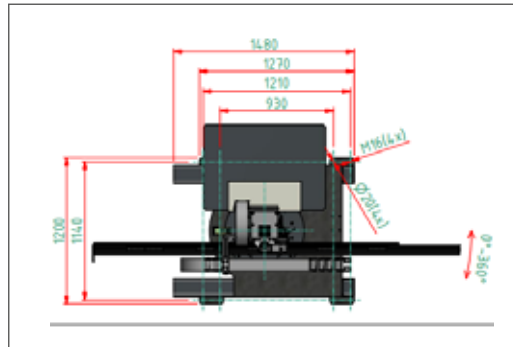
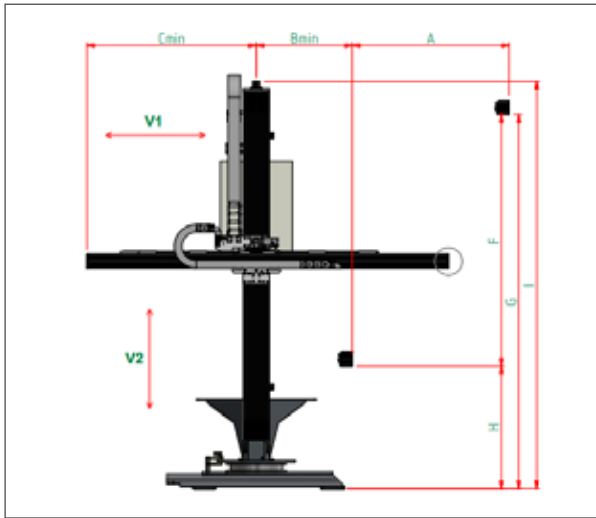


AI Power MINI
with fixed floor base



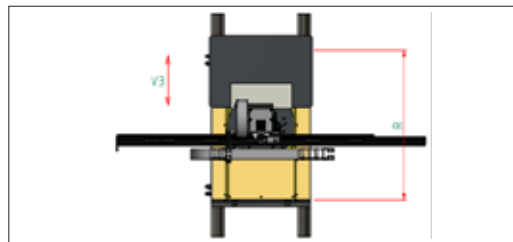
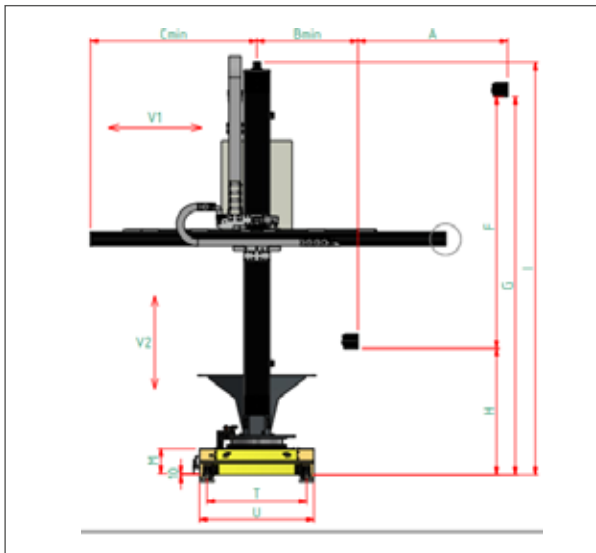
AI Power MINI
with motorized base on Burback rails

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 bellows
- 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



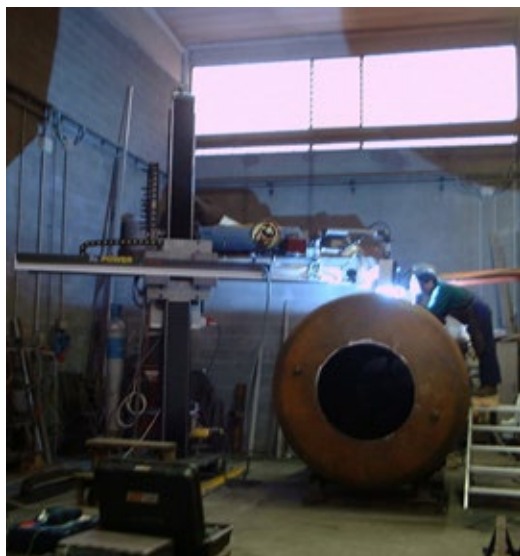
AP MN CM AL POWER MOTORIZED MINI BASE

- 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



MAIN FEATURES:

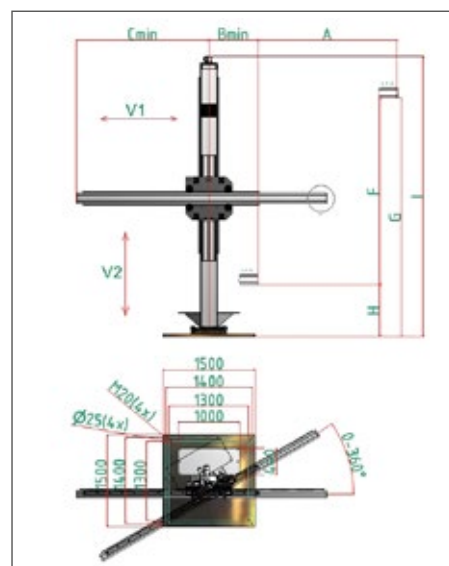
- Steel guides
- Gearmotors with rack-and-pinion transmission for the boom and ball screw + ball nut-screw transmission for the column
- Brushless motor with encoder on all the axes
- Fixed base to be laid on the floor or movable on rails, with flange for manual rotation of the column
- Column and boom made of aluminum extrusion with steel guides
- Boom saddle with V wheels
- Cable chains on both axes
- Wire feeder housed on the boom



AL POWER MIDI

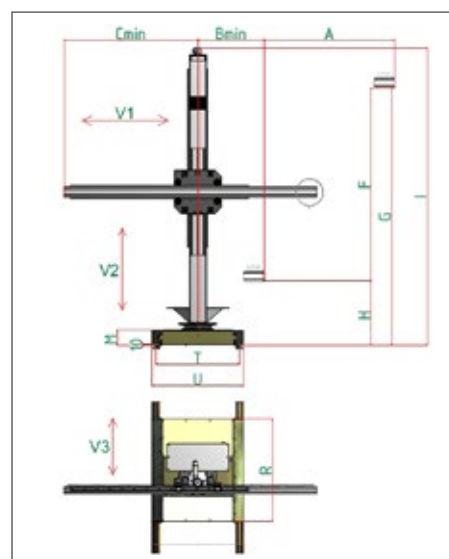
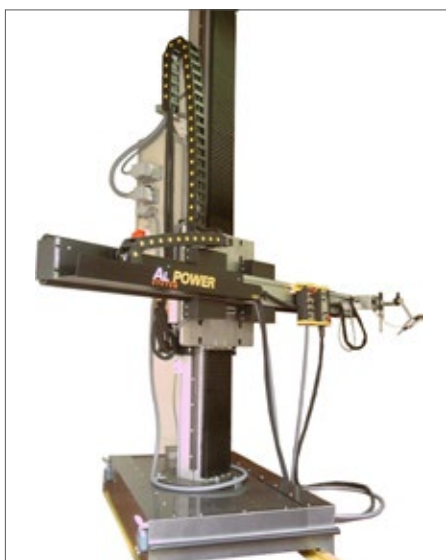
AP MD BF (AL POWER MIDI FIXED BASE)

- 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 bellows
- Both vertical and horizontal axis driven by brushless motors and encoder



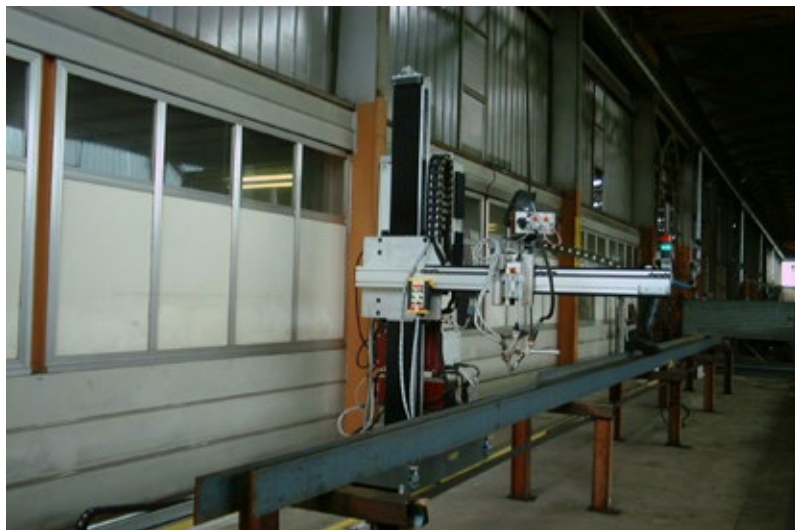
AP MD CM (AL POWER MIDI MOTORIZED BASE)

- 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

AL Power MIDI with fixed boom



Welding of truck spars

Fixed boom with sliding chariot and vertical slide driven by tactile probe



Welding of polycentric tanks

Manipulator integrated to rotators that constantly vary the rotation speed to keep constant the peripheral speed of the workpiece.
Joint tracking system and camera complete the system.



AI Power MIDI with Joda Plano

Welding of cooling channels on tanks

Manipulator integrated to Joda Plano turntable positioner, complete with laser tracker (TRACKER).

The tracker directly guides column and boom to cover the large difference in position.



GENERAL SUPPLY CONDITIONS

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) by the vendor or, in the absence thereof, automatically 15 days after the 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 the seller, 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 total or 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 to other supplies whose terms of payment are overdue. The goods are understood as being delivered for all intents and purposes to the buyer from the time they were picked up by the carrier or the buyer himself at the seller's warehouse.

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 delay the 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 in the 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 on the 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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