1960®

Seravesi

THE PLATE ROLL FATHER

OUR STRENGHT ...THE EXPERIENCE

Our milestons

1960 Mr SERAVESI open the company

1964 First complete bodied plate bending machine with electrical control panel

1972 TATA STEEL purchase a 3 rolls plate bending machine 5000x50 (still working)

1975 First hydraulic 3500x90 mm 3 rolls pyramidal plate bending machine sold to AT&F Inc. USA (still working)

1976 First 6 meters plate bending machine

1978 First Variable Geometry plate bending machine in ALL OVER THE WORLD

1980 HYUNDAI purchase a 3 rolls pyramidal plate bending machine 4000x110

1982 DAEWOO purchase 3 rolls pyramidal plate bending machine 4000x160

1998 Giant 3 rolls variable geometry 3000x180 sold in Italy

2004 First variable geometry plate bending machine for the WIND TOWER business

2007 TATA STEEL purchase a second machine, a variable geometry 3000x80 plate bending machine

2010 Our 50 ANNIVERSARY ad a second giant machine 4000x190 again for AT&F Inc USA

NOWADAYS Seravesi is a modern company that relies on the new technologies for the design and production of the machines

1960 ® Seravesi

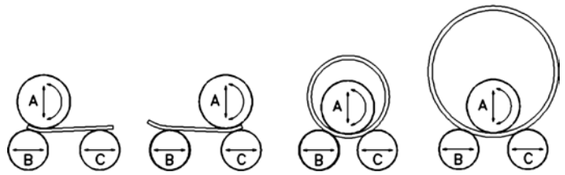
3 ROLLS PLATE BENDING MACHINE

E79

The E79 is a hydraulic 3 roll plate bending machine composed of bottom rolls on horizontal axes and a top motorised roll with hydraulic vertical movement.
The E79 series bending machines are available with a capacity from 25mm to 300mm and roll length from 1000mm to 6000mm.

The E79's key features

- **BENDING** of medium and large thicknesses (recommended from 25 mm to 300mm). It is the ideal machine due to its particular design because it has reduced sizes and a shorter straight section compared to the four rolls, and thanks to the tilt of all three rolls, there is the possibility to perform even complex conical processes, in a much easier way than with four rolls.
- The **PRE-BENDING** obtained is excellent thanks to the high push of the top roll which is used in this phase as a bending press.
- **REVOLUTION** of its geometry: In fact, the bottom rolls move horizontally and are independent from one another with variable pitch, whilst the motorised top roll moves vertically.
- **VERSATILE:** increasing the distance between the bottom rolls very thick plates can be bent, whilst decreasing the distance it is possible to bend thin plates and so create tubes with a small diameter. Having a roll plate bending machine with variable axes is like having two machines in one.
- **INDEPENDENT** the movement of the three rolls easily allows the creation of cones. The bottom rolls and top roll can tilt independently up to 2°.
- **SAFE** for the safety of the operators, we made it possible, thanks to its particular geometry, that the plate stays in a horizontal position during every work phase. Furthermore, the machine is set up with an emergency stop push button to immediately stop its movement.
- **SIMPLE** to use and maintain thanks to easy accessibility of the hydraulic parts and the diagnostics on the control panel, that are always within reach of the operator.
- **DIMENSIONS** small and compact in comparison to other bending machines that do not require the foundation pit up to a certain size.



How to use it

1. Insert the plate between the rolls.
2. Move rolls B & C horizontally so that roll B is under roll A.
3. Move roll A downwards so that the pre-bending is carried out.
4. Repeat the step for the other side of the plate.
5. Position the rolls in the standard pyramid position and close the tube.

Alternatively

1. Insert the plate between the rolls.
2. Move rolls B & C horizontally so that roll B is under roll A.
3. Move roll A downwards so that the pre-bending is carried out.
4. Position the rolls in the standard pyramid position and start the bending phase.
5. Repeat the step on the other side of the plate for the second pre-bending.

STRUCTURE of the E79 (CE certified bending machine)

- **Crossbeams** made of electro-welded steel, subjected to normalising heat treatment.
- The supporting **frames** of the rolls' movement cylinders are made of electro-welded steel and are subjected to normalising heat treatment.

3 ROLLS PLATE BENDING MACHINE WITH VARIABLE GEOMETRY SERIES E 79 TECHNICAL SPECIFICATION

CAPACITY CALCULATED WITH PLATE YIELD POINT 260 N/mm²

SERIES	MODELL	TABLE WIDTH (mm)	Ø TOP ROLL (mm)	Ø BOTTOM ROLLS (mm)	PRE-PINCHING x 1,5 TR	PRE-PINCHING x 5 TR	ROLLING x 1,5 TR	ROLLING x 5 TR	WEIGHT (TON)	Kw
E 79	1634	1600	340	310	26	30	41	44	12	30
E 79	1638	1600	380	330	36	40	48	52	16	35
E 79	1649	1600	490	440	50	55	65	72	23	45
E 79	1653	1600	530	450	75	80	83	93	33	60
E 79	1658	1600	580	470	92	102	99	109	48	80
E 79	1665	1600	650	520	120	135	127	142	78	90
E 79	1675	1600	750	610	145	155	152	170	70	150
E 79	2136	2100	360	320	24	28	36	39	14	30
E 79	2140	2100	400	350	32	36	44	48	18	35
E 79	2151	2100	510	460	45	50	58	63	30	45
E 79	2155	2100	550	470	64	69	73	80	39	60
E 79	2160	2100	600	490	75	82	86	95	61	80
E 79	2168	2100	680	550	100	110	115	123	75	90
E 79	2177	2100	770	630	125	140	138	153	81	150
E 79	2638	2600	380	330	22	26	33	36	15	30
E 79	2642	2600	420	370	28	32	40	44	20	35
E 79	2653	2600	530	480	40	45	52	57	34	45
E 79	2657	2600	570	490	54	60	67	72	43	60
E 79	2662	2600	620	510	65	70	78	85	63	80
E 79	2672	2600	720	620	90	96	100	110	86	90
E 79	2679	2600	790	650	105	117	125	137	90	150
E 79	3140	3100	400	350	20	24	29	33	17	30
E 79	3145	3100	450	390	24	30	36	40	21	35
E 79	3155	3100	550	490	35	40	48	53	36	45
E 79	3162	3100	620	520	48	52	61	67	48	60
E 79	3167	3100	670	560	60	65	71	78	65	80
E 79	3175	3100	750	640	80	85	93	101	95	90
E 79	3185	3100	850	680	100	108	115	126	120	150
E 79	3642	3600	420	370	18	21	27	31	19	30
E 79	3646	3600	460	410	21	25	33	38	24	35
E 79	3656	3600	560	510	30	35	45	50	41	45
E 79	3664	3600	640	540	42	47	56	62	54	60
E 79	3669	3600	690	580	52	57	66	73	72	80
E 79	3677	3600	770	650	70	76	87	95	92	90
E 79	3684	3600	840	700	88	92	108	117	135	150
E 79	4144	4100	440	390	15	18	24	28	21	30
E 79	4148	4100	480	430	18	22	30	36	27	35
E 79	4158	4100	580	530	28	32	42	46	46	45
E 79	4166	4100	660	580	40	45	52	58	60	60
E 79	4171	4100	710	600	46	52	62	69	81	80
E 79	4179	4100	790	680	65	70	81	88	100	90
E 79	4188	4100	880	730	80	85	102	109	148	150

- **Rolls** made of forged and tempered special alloy steel or carbon steel.
  - Upper motorised roll with epicyclic reduction gear and hydraulic motor.
  - Side rolls with automatic brake system to prevent the plate from slipping;
- Linear **potentiometers** fitted on each roll (two on each roll) that allow electronic control of parallelism between rolls.
- Radial **bearings** fitted on all rolls, self-aligning as double row SKF or FAG branded barrel bearings.
- **Two pumps** or up to six for the bigger sizes for maximum linear and rotational thrust. Having a system with more pumps always produces simultaneous movements, including the possibility of both rotating and pressing up to the maximum capacity. In the event of pump failure, the machine can also be operated even if the performance is reduced.
- The **cylinders** are made of alloy steel and carbon steel with a chrome-plated rod and use seals from the primary brands.
- **Hydraulic control unit** consisting of: motor pump unit, electro valves, pressure relief valves which guarantee overload protection.
- Hydraulic opening **handles** to allow the produced tube removal in horizontal position.
- Automatic centralised **lubrication system** with a pump which has an autonomous tank, programmable from the touch panel.
  Siemens, ABB, Telemecanique, Moeller **electrical system**. It consists of a mobile console control panel connected to the machine with low voltage and a general cabinet where there are all of the other electrical components, as well as the machine control PLC SIEMENS S7.
- Independent SIEMENS KTP1200 PN control **Touch Panel** with a 12" touch screen colour display. By changing pages it is possible to see on the display the position, the balance of the rolls, to setup and read the tilting of the rolls, to set their speed (two rotation speeds), the diagnostic functions and machine alarm.
- **Modem** to remotely control the PLC in the event of software changes and resolution of machine faults.
- Air or water **cooling** system for hydraulic oil.

Optional accessories

- Normalising, induction hardening treatment and surface grinding of rolls
- Device for cone bending
- Hydraulic arm bar for plate alignment
- Hydraulic side arm for plate support
- Hydraulic side arm with double articulation plate support
- Hydraulic side arm with double articulation plate support, complete with hydraulic pistons for handling the tube.
- Hydraulic central overhead plate support
- Motorisation of bottom rolls
- Plate conveyor
- NC control with Siemens TP 1200 Comfort 12" Touch Panel
- Hot- forming package up to 1000°

• Bigger sizez available on request.

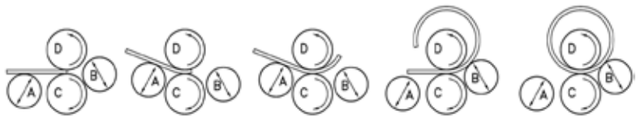
4 ROLLS PLATE BENDING MACHINE

RI72

The RI72 is an hydraulically operated 4 roll plate bending machine with double pre-bending. The rolls have a linear movement along bronze guides. The RI72 series bending machines are available with a capacity from 25mm to 300mm and roll length from 1000mm to 6000mm.

The RI72's key features

- **PRE-BENDING** is perfect with a minimum straight section (3-4 times shorter than planetary "PSG" technology) due to the high power force of the cylinders on the bottom rolls, that thanks to the linear motion are fitted directly under the rolls and do not use any system of levers.
- Positioning **PRECISION** of the rolls maintained over time thanks to the linear guide system. The bottom rolls are guided within the structure of the machine, eliminating the possibility of clearance due to machine wear and tear, contrary to what happens on machines with a planetary (PSG")/lever system.
- **CANCELLATION** of the sliding friction of rolls, ensured by a system of lubricated bronze guides.
- **PARALLELISM** of bottom rolls perfectly assured by a system that uses a two linear potentiometer for each roll. The rolls are independently adjustable and tilt easily to allow for the execution of cone bending.
- **ROBUSTNESS** is characterised by solid structural steelwork and linear structures.
- **SPEED and RELIABILITY** of high quality work
- **EASY** to use and maintain thanks to easy accessibility of the hydraulic parts and the diagnostics on the control panel, that are always within reach of the operator.



How to use it

1. Insert the plate between the rolls
2. Align the plate with the side roll (angled)
3. Clamp the plate between roll D and C
4. Create the pre-bending using roll A
5. Continue with forming the required diameter of plate between the rolls using both roll A and roll B.
6. Create the second pre-blending using roll B.

STRUCTURE of the RI72 (CE certified bending machine)

- **Crossbeams** made of electro-welded steel, subjected to normalising heat treatment.
- The supporting **frames** of the rolls' movement cylinders are made of electro-welded steel, subjected to normalising heat treatment
- **Rolls** in special carbon steel (C45 or C50) subjected to thermal hardening treatment.
  - Two rolls are motorised with no. 2 epicyclic reduction gears and no. 2 hydraulic motors for their rotation.
  - The side rolls and bottom roll have independent positioning movement by means of the hydraulic cylinders.
  - Side rolls are electronically tilted (controlled by the PLC) for the production of conical plates.
  - Movement of side and bottom rolls with a straight guide system
  - The rotation system of the rolls consists of two hydraulic motors coupled with two epicyclic reduction gears, directly fitted on the rolls.
- Automatic **speed/pressure balance** between the upper roll and bottom rolls;
- Linear **potentiometers** fitted on each roll (two on each roll) that allow electronic control of parallelism between rolls.
- Radial **bearings** fitted on all rolls, self-aligning as double row SKF or FAG branded bearings
- **Two pumps or up to six** for the bigger sizes for maximum linear and rotational thrust. Having a system with more pumps always produces simultaneous movements, including the possibility of both rotating and pressing up to the maximum capacity, and in the event of pump failure, the machine can also be operated, even if the performance is reduced.
- The **cylinders** are made of alloy steel and carbon steel with a chrome-plated rod and use seals from the primary brands.
- **Hydraulic control unit** consisting of: motor pump unit, electro valves, pressure relief valves which guarantee overload protection.
- Hydraulic opening **handle** to allow the produced tube removal in horizontal position.
- Automatic centralised **lubrication system** with a pump which has an autonomous tank, programmable from the touch panel. Siemens, ABB, Telemecanique, Moeller electrical system. It consists of a mobile console control panel connected to the machine with low voltage and a general cabinet where there are all of the other electrical components, as well as the machine control PLC SIEMENS S7.
- Independent SIEMENS KTP1200 PN control **Touch Panel** with a 12" touch screen colour display. By changing pages it is possible to see on the display the position, the balance of the rolls, to setup and read the tilting of the rolls, to set their speed (two rotation speeds), the diagnostic functions and machine alarm.
- **Modem** to remotely control the PLC in case of software changes and resolution of machine faults.
- **Heat exchanger** for the hydraulic oil;

Optional accessories

- Normalising, induction hardening treatment and surface grinding of the rolls
- Device for cone bending
- Hydraulic side arm for plate support
- Hydraulic side arm with double articulation plate support
- Hydraulic side arm with double articulation plate support, complete with hydraulic pistons for handling the tube.
- Hydraulic overhead plate support
- Motorisation of side rolls
- Plate conveyor
- NC control with 12" Siemens TP 1200 Comfort Touch Panel
- CNC Siemens TP 1200 Comfort 15" Touch Panel with parametric programming and plate data input, for the automatic production of cylindrical, elliptical and polycentric shells.
- Hot-forming package up to 1000°

4 ROLLS PLATE BENDING MACHINE SERIES RI 72 TECHNICAL SPECIFICATION

CAPACITY CALCULATED WITH PLATE YIELD POINT 260 N/mm²

SERIES	MODELL	TABLE WIDTH (mm)	Ø TOP ROLL (mm)	Ø CENTRAL ROLL (mm)	Ø LATERAL ROLLS (mm)	PRE-PINCHING x 1,5 TR	PRE-PINCHING x 5 TR	ROLLING x 1,5 TR	ROLLING x 5 TR	WEIGHT (TON)	kW
RI 72	2139	2100	390	340	260	28	32	32	37	16	35
RI 72	2141	2100	410	370	300	33	38	38	43	20	40
RI 72	2149	2100	490	420	360	45	50	50	60	27	50
RI 72	2154	2100	540	480	410	65	70	70	73	34	65
RI 72	2161	2100	610	490	450	75	80	80	85	40	85
RI 72	2171	2100	710	550	510	100	112	112	120	67	100
RI 72	2180	2100	800	620	600	120	130	130	140	85	160
RI 72	2641	2600	410	370	280	22	27	27	34	19	35
RI 72	2643	2600	430	400	320	28	32	32	40	24	40
RI 72	2651	2600	510	440	380	40	45	45	54	34	50
RI 72	2656	2600	560	500	430	55	60	60	65	42	65
RI 72	2663	2600	630	520	480	65	71	71	76	50	85
RI 72	2674	2600	740	580	540	90	95	95	108	84	100
RI 72	2682	2600	820	640	620	105	115	115	128	100	160
RI 72	3143	3100	430	390	300	20	25	25	32	22	35
RI 72	3145	3100	450	420	340	25	30	30	37	28	40
RI 72	3155	3100	550	460	400	35	40	40	50	40	50
RI 72	3160	3100	600	520	450	45	50	50	60	50	65
RI 72	3170	3100	700	540	500	55	60	60	70	60	85
RI 72	3176	3100	760	620	570	75	80	80	90	100	100
RI 72	3184	3100	840	660	640	90	100	100	120	120	160
RI 72	3645	3600	450	410	320	18	21	21	30	26	35
RI 72	3647	3600	470	440	360	22	27	27	34	33	40
RI 72	3655	3600	550	480	420	30	35	35	47	47	50
RI 72	3660	3600	600	540	470	40	45	45	57	58	65
RI 72	3667	3600	670	560	520	52	57	57	67	70	85
RI 72	3678	3600	780	650	590	70	75	75	94	117	100
RI 72	3686	3600	860	680	660	80	90	90	110	140	160
RI 72	4147	4100	470	430	340	15	18	18	28	30	35
RI 72	4150	4100	500	460	380	20	25	25	32	38	40
RI 72	4157	4100	570	500	440	28	32	32	44	54	50
RI 72	4162	4100	620	560	490	38	43	43	55	67	65
RI 72	4170	4100	700	580	540	45	50	50	63	80	85
RI 72	4180	4100	800	660	610	65	70	70	88	134	100
RI 72	4188	4100	880	700	680	72	80	80	104	160	160

• Bigger sizez available on request.

FLANGING MACHINES

HSM

The HSM are fully hydraulic machines, that complete the production of dished ends and are used for bending flanges on flat, dished, conical, elliptical, semi-elliptical or torispherical ends.
With the addition of the hot-working package it is possible to use the machine to obtain hot formed dished ends.
Flanging machines range from 12mm to 50mm thickness for cold forming and up to 100mm when using the hot forming process.

Key HSM's features

- **REDUCTION** of tolerances thanks to the rigid structure and the precision of the machine's moving parts and the sophisticated hydraulic system that uses proportional valves and variable displacement pumps.
- The **PRECISE** roll movement and positioning guarantees smooth, even surfaces, free from machining marks.
- **HIGH PRODUCTIVITY** and ease of use.

STRUCTURE of the HSM (CE certified flanging machines)

- Upper and lower **crossbeam** and main body of the machine made of electro-welded steel plates, subjected to normalising heat treatment.
- Bottom-holder **carriage** which supports the bottom that runs along recirculating ball bearing bushes.
- **Movement** of the hydraulic bottom-holder carriage which supports the bottom with recirculating ball screws.
- **Shaping and forming rolls** forged and tempered 42CrMo4 alloy special steel.
- **Motorised shaping roller** via epicyclic reduction gear and hydraulic motor, or with electric motor in the event of electric and tilting motorisation.
- Linear **potentiometers** mounted on each cylinder that allow electronic control of all cylinders.
- The **cylinders** are made of alloy steel and carbon steel with a chrome-plated rod and use seals from the primary brands.
- **Hydraulic control unit** consisting of: motor pump unit, electro valves, pressure relief valves which guarantee overload protection.
- **Variable displacement pumps** for infinitely variable rotation of the forming roll.
- **Bearings** mounted on the main shaft of the SKF or FAG forming roll.
- Automatic centralised **lubrication system** with pump having an autonomous tank, programmable from the control panel.
  Siemens, ABB, Telemecanique, Moeller **electrical system**. It consists of a fixed-console control panel on the right side of the machine for a perfect view of the (lit) work area connected to the machine with low voltage and a general cabinet where other electrical components are fitted, among which the machine control PLC SIEMENS S7.

FLANGING MACHINES TECHNICAL HSM SPECIFICATION SERIES HSM

SERIES	MODELL	MAX THICKNESS (*)	MAX BLAN DIAMETER	NIM BLANC DIAMETER	MIN BLANC DIAMETER WITH ADDITIONAL DEVICE (**)	MAX KNUKLE RADIOUS	MIN KNUKLE RADIOUS	WEIGHT KG	KW
HSM	12x2000	12	2000	900	400	250	20	12500	40
HSM	12x3000	12	3000	900	400	250	20	14000	40
HSM	12x4000	12	4000	900	400	250	20	15800	40
HSM	16x2000	16	2000	1000	500	300	20	14300	52
HSM	16x3000	16	3000	1000	500	300	20	15900	52
HSM	16x4000	16	4000	1000	500	300	20	17600	52
HSM	16x5000	16	5000	1000	500	300	20	19000	52
HSM	16x6000	16	6000	1000	500	300	20	23000	52
HSM	22x3000	22	3000	1150	700	500	30	18000	80
HSM	22x4000	22	4000	1150	700	500	30	21000	80
HSM	22x5000	22	5000	1150	700	500	30	24600	80
HSM	22x6000	22	6000	1150	700	500	30	27900	80
HSM	25x3000	25	3000	1250	800	600	40	24000	110
HSM	25x4000	25	4000	1250	800	600	40	28300	110
HSM	25x5000	25	5000	1250	800	600	40	31900	110
HSM	25x6000	25	6000	1250	800	600	40	35000	110
HSM	32x3000	32	3000	1500	900	800	50	30000	130
HSM	32x4000	32	4000	1500	900	800	50	35800	130
HSM	32x5000	32	5000	1500	900	800	50	38200	130
HSM	32x6000	32	6000	1500	900	800	50	42000	130
HSM	32x7000	32	7000	1500	900	800	50	45800	130
HSM	36x4000	36	4000	1500	1000	800	50	38000	150
HSM	36x5000	36	5000	1500	1000	800	50	42000	150
HSM	36x6000	36	6000	1500	1000	800	50	46300	150
HSM	36x7000	36	7000	1500	1000	800	50	51000	150
HSM	40x4000	40	4000	1700	1200	900	100	44000	190
HSM	40x5000	40	5000	1700	1200	900	100	47900	190
HSM	40x6000	40	6000	1700	1200	900	100	54000	190
HSM	40x7000	40	7000	1700	1200	900	100	59000	190
HSM	45x4000	45	4000	1900	1300	1000	120	52800	240
HSM	45x5000	45	5000	1900	1300	1000	120	57480	240
HSM	45x6000	45	6000	1900	1300	1000	120	64800	240
HSM	45x7000	45	7000	1900	1300	1000	120	70800	240
HSM	50x4000	50	4000	2000	1500	1200	120	63360	290
HSM	50x5000	50	5000	2000	1500	1200	120	68976	290
HSM	50x6000	50	6000	2000	1500	1200	120	77760	290
HSM	50x7000	50	7000	2000	1500	1200	120	84960	290

(*) refer to mild steel with yiel point of 260 N/mm² (**) the minimum diameter is not refere to the maximum machine capacity thcikness
The suitable data in the chart are indicative not bound. According to specific Customer reqeust, 1960 Seravesi will suggest the right machine size
1960Seravesi srl maintains continuosly a politic improvement, therefore we reserve the right to bring changes to satisfy your application

- SIEMENS KTP1200 PN control **Touch Panel** with a 12" touch screen colour display. By changing pages it is possible to see on the display the position of shaping and formingrolls, to read and set the position of the bottom-holder end carriage which supports the bottom, to manage their infinitely variable rotation speed, diagnostic functions and machine alarm.
- **Modem** to remotely control the PLC in the event of software changes and resolution of machine faults.
- Air or water **cooling** system for hydraulic oil.

HYDRAULIC PRESSES

These are hydraulic fixed or mobile gantry machines with powerful fixed or mobile hydraulic units.

Key features of presses

- **VERSATILE** Depending on the accessories that are installed, they can be used for different tasks such as forming dishes ends, corrugated panels and complex shapes or straightening plates and welded structures.
- **RELIABLE** Thanks to their particular construction concept, the existing forces are not unloaded on the fastening screws of the mechanical parts but rather on specially sized pins based on the machine's power. The particular construction of both the upper and lower crossbar means that the seat of the cylinder lies on the neutral axis to avoid any points subjected to high stress.
- **EASY** to maintain thanks to easy accessibility of the electrical and hydraulic parts and thanks to diagnostics in the control panel that is always at the operator's fingertips.

STRUCTURE of PRESSES (CE certified presses)

- Our presses consist of a low **basement**, two side uprights and the upper crossbar where the hydraulic cylinder and hydraulic control unit are found. For presses with low-tonnage push, the structure is a monolithic one.
- **The lower level** is equipped with T slots for direct fixing both the moulds of the basement and the moulding, also equipped with T slots.
- **The metal structures of the basement,** the uprights and the crossbar are made of plates of different electro-welded thicknesses, subjected to stress relieving heat treatment to remove stress due to welding and sandblasting treatment with pre-coating.
- **Hydraulic control unit** consisting of: motor pump unit, electro valves, pressure relief valves which guarantee overload protection. The unit is positioned above the upper crossbar and is connected directly by means of special pre-filled valves to the hydraulic cylinder.
- Siemens, ABB, Telemecanique, Moeller **electrical system**. It consists of a movable or flag console control panel, connected to the machine with low voltage and a general cabinet where there are installed all of the electrical components, as well as the machine control PLC SIEMENS S7.
- Linear **potentiometer** mounted on the cylinder to read the position and manage the pressing programme.
- SIEMENS KTP1200 PN independent control **Touch Panel** with 12" touch screen colour display. By changing pages it is possible to see on the display the position of the cylinder, to set its rate of descent and ascent, to set its working pressure and the diagnostic functions and the machine alarm. If there is the automatic MFB manipulator, it displays also all of the axis and the diagnostics.
- **Modem** to remotely control the PLC in case of software changes and resolution of machine faults.
- **Hydraulic cylinder:** the special design of the cylinder ensures rapid descent without the maximum use of electric power. The cylinder is equipped with 2 or 4 guide columns to prevent rotation of the rod and ensure maximum rigidity during its whole stroke.

Optional accessories

Depending on the type of process, the press can be equipped with:
- Moulds for dishing
- Stamps
- V moulds with different angles
- "Bend" moulds with different radii
- Motorised or idle roll moulds
- "Turbo boost" package to increase the number of cycles per minute.

DISHING MACHINES TECHNICAL SPECIFICATION SERIES PCF

SERIES	MODELL	MAX FORCE ton	MAX BLAN DIAMETER mm	FAST SPEED m/min	WORKING SPEED cm/min	FIXED LOWER DIE HOLDER	MOBILE UPPER DIE HOLDER	DISTAANCE BETWEEN UPRIGHTS	PISTON STROKE mm	WEIGHT KG	KW
PCF	200x2000	200	2000	9	110	750x750	750x500	2200	400	12700	20
PCF	200x3000	200	3000	9	110	750x750	750x500	3200	400	15000	20
PCF	200x4000	200	4000	9	110	750x750	750x500	4200	400	18500	20
PCF	300x2000	300	2000	9	110	850x850	800x550	2200	500	19500	31
PCF	300x3000	300	3000	9	110	850x850	800x550	3200	500	23000	31
PCF	300x4000	300	4000	9	110	850x850	800x550	4200	500	26000	31
PCF	300x5000	300	5000	9	110	850x850	800x550	5200	500	29500	31
PCF	300x6000	300	6000	9	110	850x850	800x550	6200	500	33500	31
PCF	400x3000	400	3000	9	110	1000x1000	850x600	3200	600	30000	38
PCF	400x4000	400	4000	9	110	1000x1000	850x600	4200	600	35000	38
PCF	400x5000	400	5000	9	110	1000x1000	850x600	5200	600	39500	38
PCF	400x6000	400	6000	9	110	1000x1000	850x600	6200	600	45000	38
PCF	600x4000	600	4000	9	110	1100x1100	950x750	4200	700	54000	58
PCF	600x5000	600	5000	9	110	1100x1100	950x750	5200	700	58500	58
PCF	600x6000	600	6000	9	110	1100x1100	950x750	6200	700	63000	58
PCF	600x7000	600	7000	9	110	1100x1100	950x750	7200	700	69000	58
PCF	600x8000	600	8000	9	110	1100x1100	950x750	8200	700	75000	58
PCF	800x4000	800	4000	9	110	1200x1200	1000x800	4200	1000	70000	74
PCF	800x5000	800	5000	9	110	1200x1200	1000x800	5200	1000	79000	74
PCF	800x6000	800	6000	9	110	1200x1200	1000x800	6200	1000	84000	74
PCF	800x7000	800	7000	9	110	1200x1200	1000x800	7200	1000	93500	74
PCF	800x8000	800	8000	9	110	1200x1200	1000x800	8200	1000	102000	74
PCF	800x9000	800	8000	9	110	1200x1200	1000x800	9200	1000	110000	74
PCF	1000x5000	1000	5000	9	110	1400x1400	1100x900	5200	1000	87500	110
PCF	1000x6000	1000	6000	9	110	1400x1400	1100x900	6200	1000	98000	110
PCF	1000x7000	1000	7000	9	110	1400x1400	1100x900	7200	1000	105000	110
PCF	1000x8000	1000	8000	9	110	1400x1400	1100x900	8200	1000	112000	110
PCF	1000x9000	1000	9000	9	110	1400x1400	1100x900	9200	1000	132000	110
PCF	1500x5000	1500	5000	9	110	1600x1600	1200x1000	5200	1200	118500	150
PCF	1500x6000	1500	6000	9	110	1600x1600	1200x1000	6200	1200	126000	150
PCF	1500x7000	1500	7000	9	110	1600x1600	1200x1000	7200	1200	140250	150
PCF	1500x8000	1500	8000	9	110	1600x1600	1200x1000	8200	1200	153000	150
PCF	1500x9000	1500	9000	9	110	1600x1600	1200x1000	9200	1200	162000	150
PCF	2000x5000	2000	5000	9	110	1900x1900	1400x1200	5200	1300	142000	190
PCF	2000x6000	2000	6000	9	110	1900x1900	1400x1200	6200	1300	151200	190
PCF	2000x7000	2000	7000	9	110	1900x1900	1400x1200	7200	1300	168300	190
PCF	2000x8000	2000	8000	9	110	1900x1900	1400x1200	8200	1300	183600	190
PCF	2000x9000	2000	9000	9	110	1900x1900	1400x1200	9200	1300	198000	190

The suitable data in the chart are indicative not bound. According to specific Customer reqeust, 1960 Seravesi will suggest the right combination of press and manipulator

1960Seravesi srl maintains continuosly a politic improvement, therefore we reserve the right to bring changes to satisfy your application

PPM

MOBILE GANTRY PRESSES WITH MOBILE CYLINDER

This press model is used for:
- Flattening large thickness and sized plates
- Straightening forged bars
- Straightening long electro-welded structures

The main characteristic of these machines is that the pressing unit, instead of having a fixed position, is mounted on a special carriage that allows for a longitudinal movement on the bottom bench. Even the uprights moves longitudinally along the entire length of the lower bench which remains fixed.
The movement of the pillar is done with the use of epicyclic reduction gears and a hydraulic motor that allow the pillar to slide along the rails.
To prevent deformation of the moving parts of the gantry, in the pressing phase the pillar unloads the force on special guides positioned horizontally on the mainbench.

PCM

FIXED GANTRY PRESS WITH MOBILE CYLINDER

This press model is used for:
- Forming complex parts
- Forming corrugated plates

The main characteristic of these machines is that the pressing group, instead of having a fixed position, is mounted on a special carriage that allows for a longitudinal movement.

PCF

FIXED GANTRY PRESS WITH FIXED CYLINDER

This press model is used for:
- Producing dished ends
- Forming complex parts

MANIPULATOR

MFB

Manipulators are hydraulic machines, auxiliary to fixed gantry presses and are used for forming dished ends.
The manipulator is synchronised with the movement of the press cylinder. These movements of the manipulator's arms and carriage can be simultaneous or single.
Starting from flat plate disks, by carrying out a logical sequence of movements, they set up cycles for the execution of dished ends. This cycle is called the curved cycle.
The delivery capacity of the available manipulators ranges from 1,500kg to 24,000kg.

The MFB's key features

- **TOLERANCE** of heavy duty work thanks to the machine's solid structure.
- **EASE** of processing and individual operator control, as all of the controls are found on a control console both on the press and the manipulator. The controls are low voltage (24 VAC) and reduced to the essential.
- **DECREASE** in production time and INCREASE in the rate of production cycles due to the innovative design of the press' push cylinder and the manipulator's sophisticated hydraulic and electronic systems.

STRUCTURE of the MFB (CE certified manipulators)

- **Manipulator structure** made of electro-welded steel plates, subjected to normalising heat treatment.
- **No. 2** motorised **rolls** mounted on the rear arms for disk rotation through the epicyclic reduction gears and hydraulic motor.
- **Front arm with idle wheel**, adjustable upon request up to 75°
- The **cylinders** are made of alloy steel and carbon steel with a chrome-plated rod and use seals from the primary brands.
- Linear **potentiometers** mounted on each arm that allow electronic control of all manipulator axes.
- **Hydraulic pumps** powered by electric motors
- Pre-set **meter**
- For the angle of rotation
- For the number of presses in the various positions
- **Electrical system** fully integrated with that of the press
- **Hydraulic control unit** consisting of: motor pump unit, electro valves, pressure relief valves which guarantee overload protection.

HYDRAULIC MANIPULATOR TECHNICAL SPECIFICATION SERIES MFB

SERIES	MODELL	COMBINED AUTOMATIC MANIPUALTOR SERIES	MODELL	MAX LOAD Kg	MIN BLANC DIAMETER mm	Kw
PCF	200x2000	MFB	1,5 T	1500	800	10
PCF	200x3000	MFB	1,5 T	1500	800	10
PCF	200x4000	MFB	1,5 T	1500	800	10
PCF	300x2000	MFB	3 T	3000	1200	14
PCF	300x3000	MFB	3 T	3000	1200	14
PCF	300x4000	MFB	3 T	3000	1200	14
PCF	300x5000	MFB	3 T	3000	1200	14
PCF	300x6000	MFB	3 T	3000	1200	14
PCF	400x3000	MFB	5 T	5000	1500	20
PCF	400x4000	MFB	5 T	5000	1500	20
PCF	400x5000	MFB	5 T	5000	1500	20
PCF	400x6000	MFB	5 T	5000	1500	20
PCF	600x4000	MFB	7 T	7000	1700	26
PCF	600x5000	MFB	7 T	7000	1700	26
PCF	600x6000	MFB	7 T	7000	1700	26
PCF	600x7000	MFB	7 T	7000	1700	26
PCF	600x8000	MFB	7 T	7000	1700	26
PCF	800x4000	MFB	10 T	10000	1800	34
PCF	800x5000	MFB	10 T	10000	1800	34
PCF	800x6000	MFB	10 T	10000	1800	34
PCF	800x7000	MFB	10 T	10000	1800	34
PCF	800x8000	MFB	10 T	10000	1800	34
PCF	800x9000	MFB	10 T	10000	1800	34
PCF	1000x5000	MFB	12 T	12000	1800	40
PCF	1000x6000	MFB	12 T	12000	1800	40
PCF	1000x7000	MFB	12 T	12000	1800	40
PCF	1000x8000	MFB	12 T	12000	1800	40
PCF	1000x9000	MFB	12 T	12000	1800	40
PCF	1500x5000	MFB	16 T	16000	1800	52
PCF	1500x6000	MFB	16 T	16000	1800	52
PCF	1500x7000	MFB	16 T	16000	1800	52
PCF	1500x8000	MFB	16 T	16000	1800	52
PCF	1500x9000	MFB	16 T	16000	1800	52
PCF	2000x5000	MFB	20 T	20000	2000	65
PCF	2000x6000	MFB	20 T	20000	2000	65
PCF	2000x7000	MFB	20 T	20000	2000	65
PCF	2000x8000	MFB	20 T	20000	2000	65
PCF	2000x9000	MFB	20 T	20000	2000	65

SPECIAL MACHINES

We design and build special machines to meet specific customer requests.

Complete system for pipe production

- Loading system for packed plates,
- Plate conveyor and introduction into the bending machine,
- Plate bending machine of 6 or 8 metres with a pre-tension plate roll
- Finished tube unloading system
- Tube conveyor to the pre-bending station
- Pre-bending machine

Vertical tank system

- Coil station with tiltable table for an easy coil loading
- Straightening machine to remove the memory to the uncoiled plate
- Plate bending machine
- Vertical cutting station with plasma cutting
- Vertical welding station with welding machine (TIG-MIG-PLASMA)

ABOUT US

How we work

Our business structure is strongly inclined towards the needs of our customers, always aiming at creating, from the very beginning, a relationship of trust and credibility.
According to our long experience, the customer will:

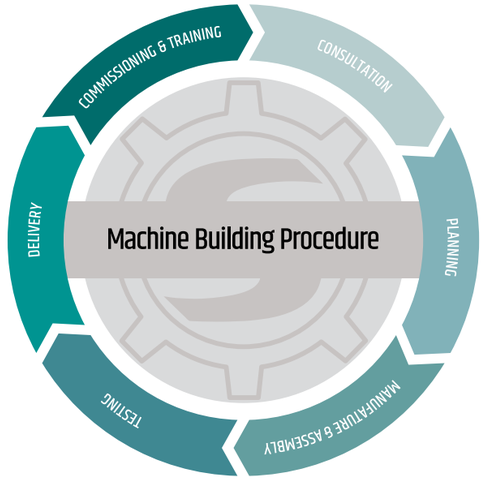
- Receive valid initial advice during the sales offer phase that will guarantee purchasing the right machinery, suitable to the customer's needs.
- Be informed about the preparation of machinery purchased.
- Be certain of choosing the best product that allows increasing productivity.
- Get timely support and assistance in the event of downtime of the machine.

After sales

When one is ready to purchase a machine, paying utmost attention to the after sales service offered will be necessary.
For this reason, 1960 Seravesi made its after sales service one of its strong points, guaranteeing an immediate assessment of the most convenient and appropriate solution for every type of problem, ensuring efficiency and timely responses.

HOW WE WORK

- offering a 24 hours a day assistance service, throughout the national and international area, for both new and used machinery of any brand. This service is also able to satisfy any request for spare parts for all types of machines of any brand.
- the customer assistance service offered is carried out by highly qualified and specialised technicians, able to perform quick and efficient interventions at your location.
- we also offer a scheduled maintenance service, in compliance with applicable law, which allows a reliable and constant control on machinery by identifying, in advance, the conditions of wear and anticipating the risk of inconvenient downtimes, ensuring value and safety.
- 1960 Seravesi agents around the world were recruited also by sharing the Company's philosophy, so they convey the same standards of quality.



Maintenance programs

For our customers we can offer 3 different kind of preventive maintenace programs.

GOLD PACKAGE | **SILVER PACKAGE** | **BRONZE PACKAGE**

WHY CHOOSE 1960 Seravesi?

• Choosing a 1960 Seravesi machine means having invested in an honest company that respects the hard work of each person and, with great effort, aims to give the best to its customers.

• Choosing the after sales service of 1960 Seravesi means taking care of your investment, relying on constant support, optimising costs thanks to a customised service and always benefitting of a valuable aid to help you make an optimal use of your machine.

Operational Headquarter

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