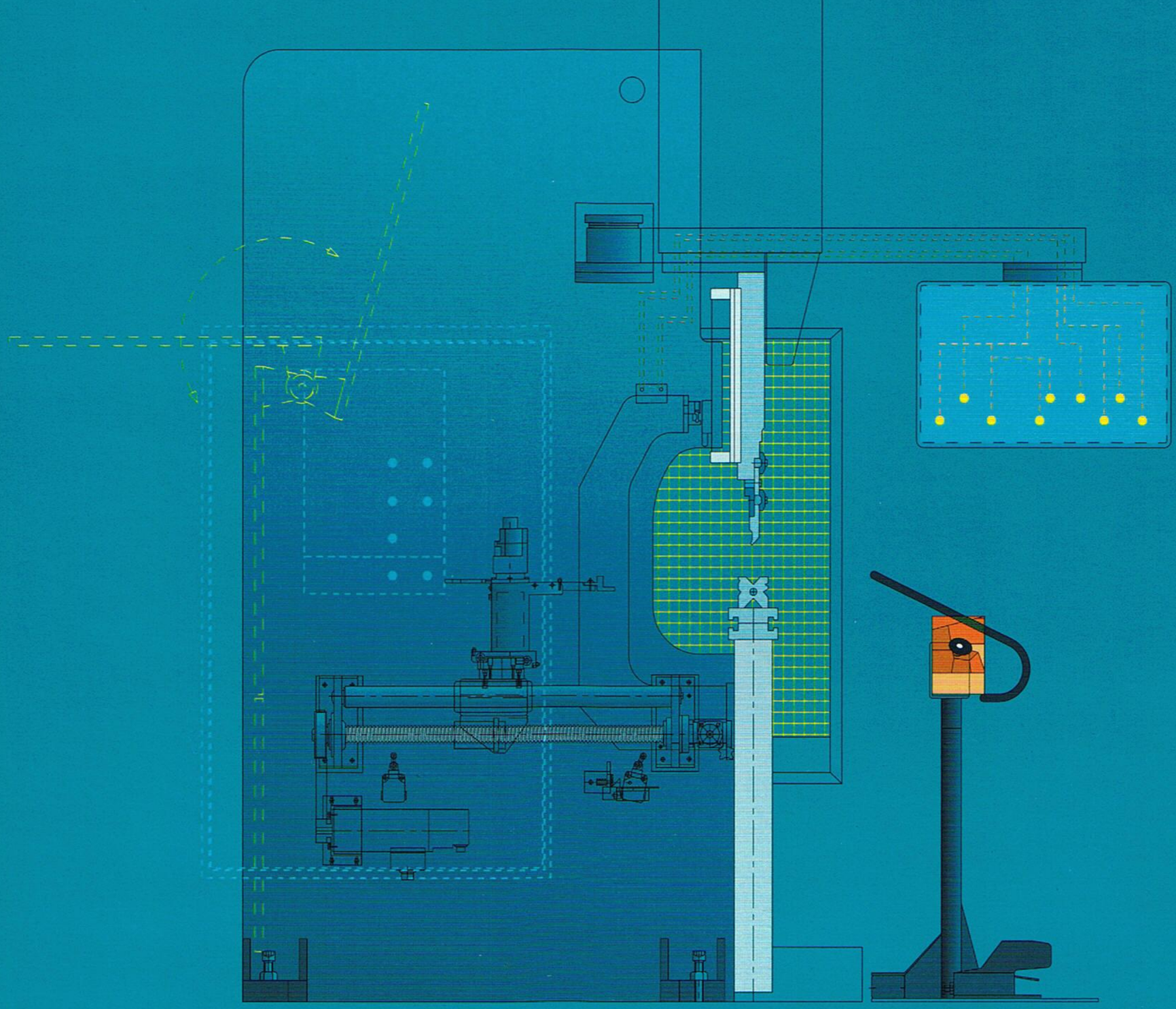
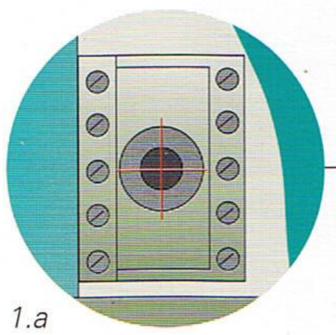
hydraulic downstroking press brakes | QIH



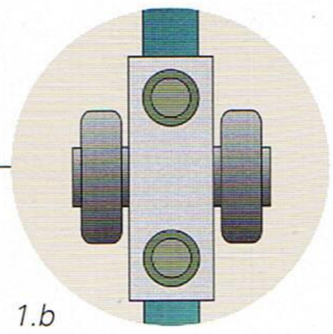
innovation works

hydraulic downstroking press brakes | *QIH*

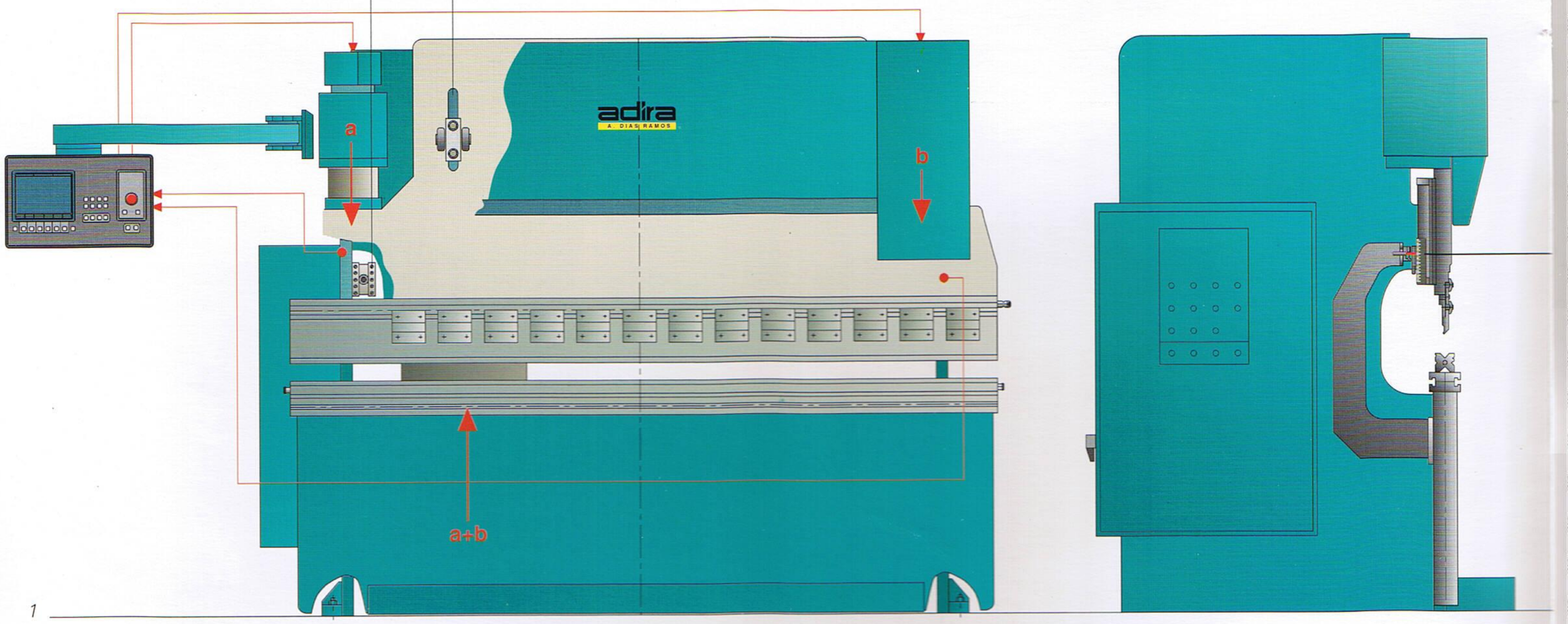
The Adira QIH hydraulic press brakes are of downstroking type, with a full electronic / / hydraulic control both for the ram parallelism (hydraulic synchronization) and for the bending depth (bending angle).
To maintain a proper alignment between upper and lower tools, a four point guiding system (1a and 1b) is used. The system was designed to allow for the programming of a ram tilting (required for tapered bendings)



1.a



1.b



1

SIMPLICITY

In all press brakes the guiding and the fixing of the beams is paramount to keep the parallelism and the alignment between the bending tooling.
In its QIH machines, ADIRA uses a four point guiding system to maintain a proper alignment between upper and lower tools. Also the system was designed to allow for the programming of a ram tilting (ram out of parallel) for tapered bendings.
The guiding system is simple, efficient, accurate, self-lubricated and requires very little maintenance.
The parallelism and the bending depth control on QIH series is controlled by a dedicated DNC.
A high precision measuring system, using two (2) linear encoders (glass scales) is located on both ram ends, and is directly connected to the DNC (1c).

The bending depth adjustment can be used, even under load over the plate, to correct the bending angle. A simple turning on a knob (QIH with DNC 50 and remote teaching box), or a simple touch on the DNC key, contributes to any coarse or fine adjustment (0.01mm increments). A great repeatability (0.01 mm) is then ensured on the set point. The control system takes care of both the parallelism and the bending depth even with off-center load.
As the DNC has tooling library capability, a simple taping of the material thickness, length, properties, required bending angle and the available tooling set allows for the automatic calculation of the required stopping point and tonnage, offering an extra tooling protection against overload.

ACCURACY

The quality of a bend is determined by the accuracy and consistency of the bending angle through the length of the bent part. Also this accuracy is related to the penetration of the punch in the die.
A small variation of this penetration will cause major changes in the angle along the bent part. Variation that can be caused by lack of repeatability of the stopping point and by the amount of deflection of the beams.
QIH press brakes have the frame, bed and ram amply dimensioned to keep deflection to an absolute minimum.
This together with the adjustable punch-holders supplied for minor compensation of beam deflections or future tooling wear (2.a), contributes to a long term consistent and accurate bending without need to shim the tooling. For extra angle consistency

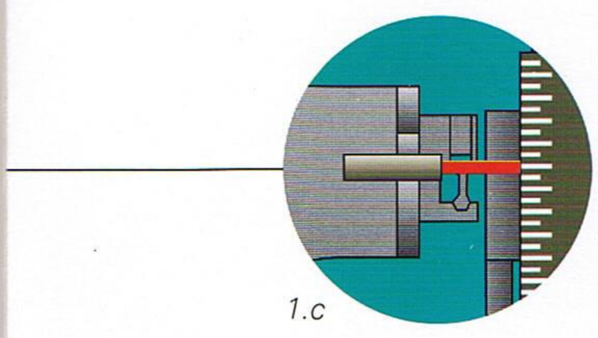
without causing any guiding stresses. The guiding system is self-lubricated and requires very little maintenance.
The parallelism of the ram and its repetitive stopping under bending depth (better than 0.01mm) is ensured by a DNC control acting over two servo-valves according to the information of the position of both beam ends transmitted by means of two high precision linear encoders. As the servo system reacts immediately to make all necessary corrections, either off-center bending or bending depth (bending angle) adjustment under load is possible.
According to the equipment included on the machine we can define two QIH series:

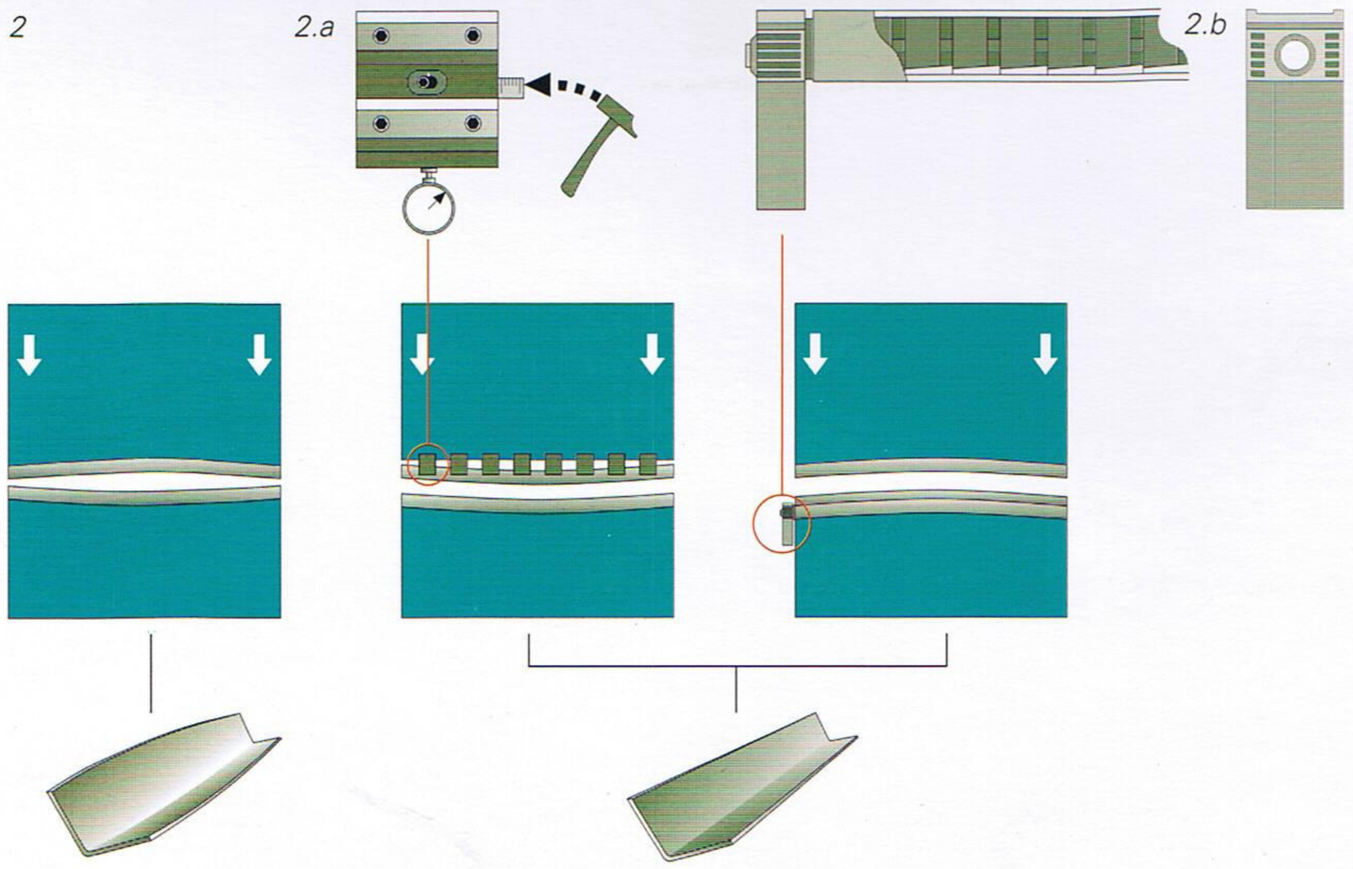
QIH

The machine takes a DNC 50 series Cybelec control, fitted on a pendant arm, completed by a remote teaching box (3) to supervise the movable beam axes Y1 and Y2 (other axes are optional);

QIH (DNC)

The machine takes a DNC 70 series Cybelec control, fitted on a pendant arm, which controls, as standard, four axes: Y1 and Y2 (movable beam axes), X axis (for the servo driven back gauge - ball screw type - - supplied as standard) and R axis (for the back gauge bar control on height).





RELIABILITY / FLEXIBILITY

requirements, mainly when bending a great variety of thicknesses, a crowning device with central adjustment connected to the DNC (2.b), fitted on the table, can be supplied as an option.
The repetitive stopping under bending depth (better than 0.01 mm) is ensured by the DNC which acting over two servo-valves, fully controls the beams parallelism and machine stopping position, according to the required value read in the linear encoders associated to the movable beam and permanently connected to the DNC (1).
The encoders are fitted in a separate C frame, reading the relative position between beams (tooling), making the stopping point almost independent of the hydraulic pressure, oil temperature, load location, frame distortion, etc.

The complete hydraulic system is mounted at the top rear of the machine with a correct distribution of the manifold blocks, properly designed and positioned at the top of the cylinders.
This arrangement requiring less piping, the inclusion of an on-line high cleaning pressure filter and the use of simple, reliable and lubricated for life guiding system, free the machine from frequent maintenance operations.
The possibility of the bending angle programming, the adjustment of the bending depth under load, and the use of a complete range of universal precision tooling ensures extra flexibility of the work.

The machines are also prepared to receive at any time a second operator´s station as an option – highly recommended when the machine is operated by more than one person.
An optional bending follower (26) can be also recommended when bending long or wide steel plates.

NUMERICAL CONTROLS



3

Cybelec DNC 50

Two axes / Three axes control:

Y1 / Y2 (Standard) · For the ram parallelism and bending depth control.

The control has capacity for 225 sequences distributed by up to 90 programmes.

- Tooling library for 20 punches and 30 dies;
- Direct programming of the bending angle.
- Relative / absolute X axis programming;
- Teach-in mode by means of portable control box (optional).

X. (Optional) · For the automatic back gauge positioning. The back gauge is supplied with 2 gauge fingers (gauge heads on option);

Cybelec DNC 70

Multi-Axes control (up to 6 axes):

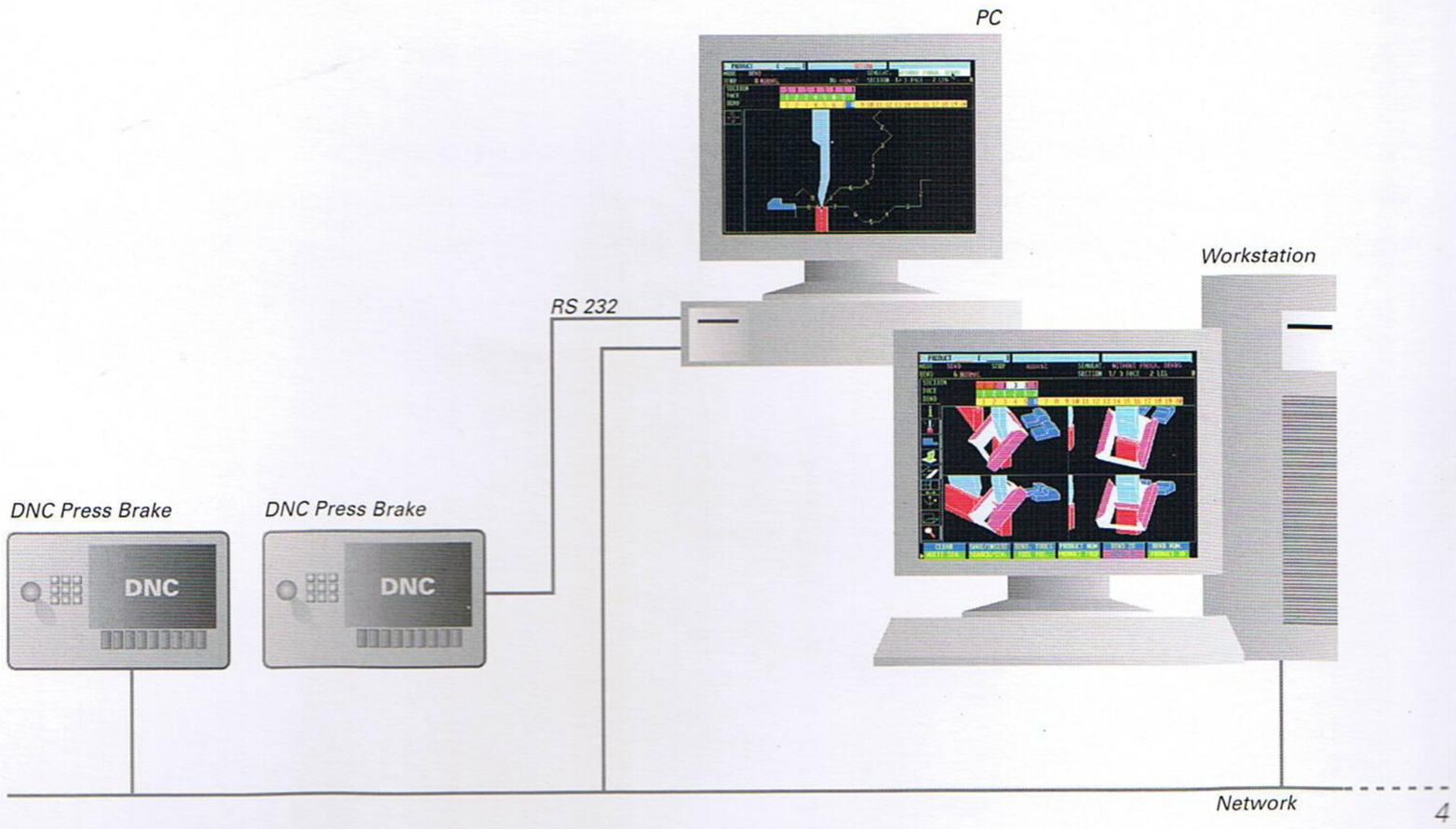
X- X1 / X2 · For the automatic back gauge positioning;

Y1 / Y2 · For the ram parallelism and bending depth control;

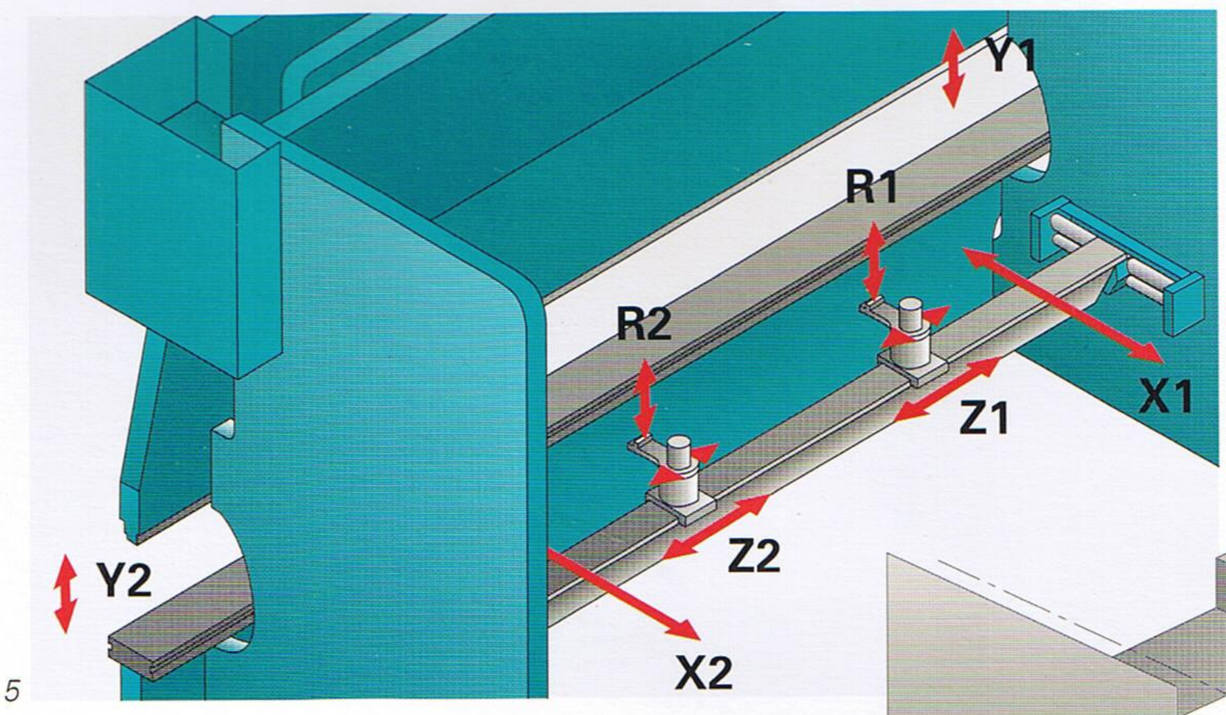
R- R1 / R2 · Control on height of the gauge bar or of the gauge heads, instead of the standard fingers / gauge heads.

Z1 / Z2 · Position of the gauge heads along the gauge bar.

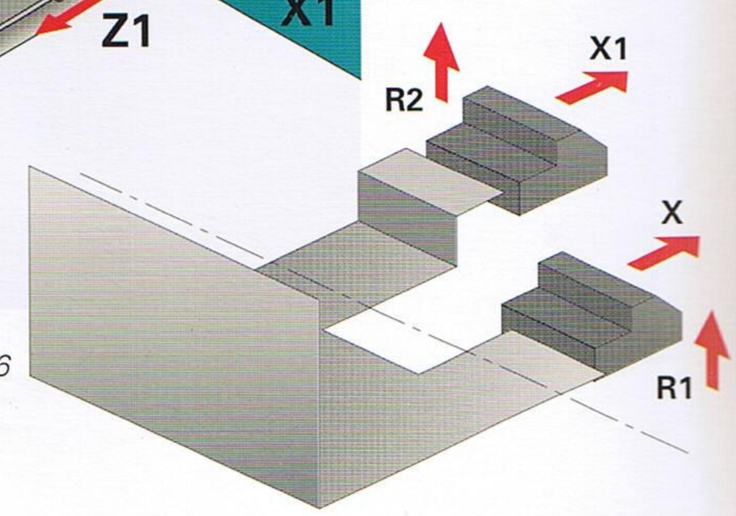
The control has a programmable memory for 336 sequences distributed up to a similar number of programmes;



4



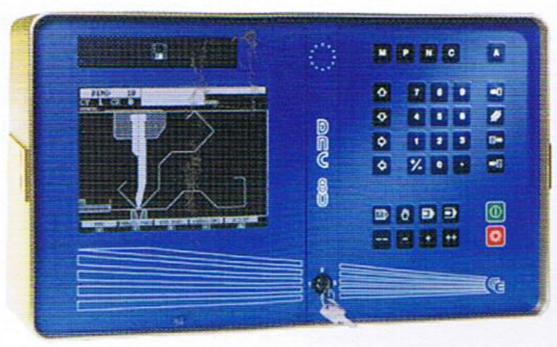
5



6



7



8



9

- Tooling library for 20 punches and 30 dies;
- Direct programming of the bending angle;
- Relative / absolute X axis programming;
- Automatic bend allowance compensation;
- Repetition of similar sequences;
- RS 232C link;
- Expanded memory through SRAM plug-in cards.

Cybelec DNC 80

Multi-axes 2 dim. monochrome graphic control (up to 6 axes)

In addition to standard equipment with DNC 70, the DNC 80 also has as standard:

. 2D tooling display;
. 2D bending display and simulation;
. Compatible with 3D programmes;
. Floppy disk drive 3,5";
. Printer port;
. High capacity main memory.

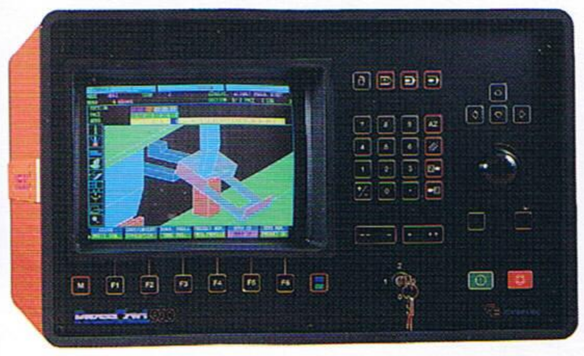
Cybelec DNC 800

Multi-axes 2D colour graphic control (up to 8 axes):

Differs from DNC 70 on:

- 2 D tooling display;
- 2 D bending display and simulation;
- Compatibility with 3 D programmes;
- 3.5" storing diskette;
- High capacity permanent memory.

11



10

Cybelec DNC 900

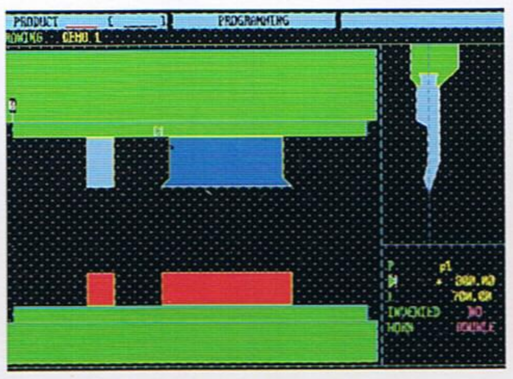
Multi-axes 3 D colour graphic control (up to 8 axes):

Differs from DNC 800 on:

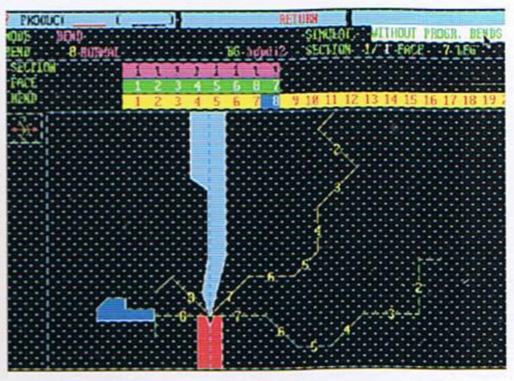
- 2D / 3D tooling display;
- 2D / 3D bending display and simulation.



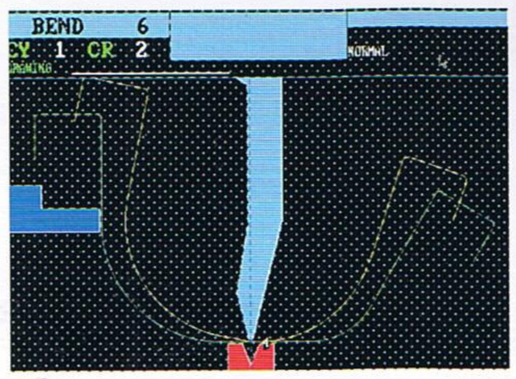
12 · DNC 800 and 900



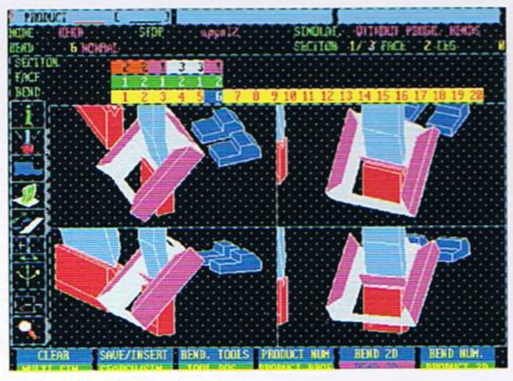
13 · DNC 800 and 900



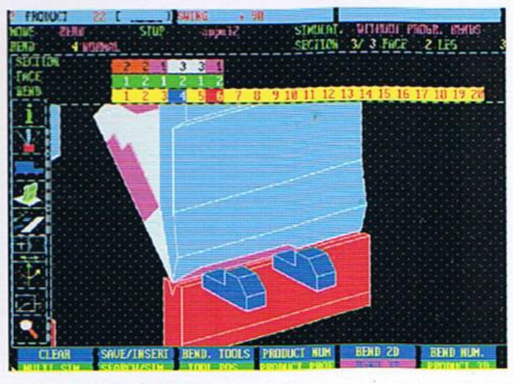
14 · DNC 800 and 900



15 · DNC 800 and 900



16 · DNC 900



17 · DNC 900

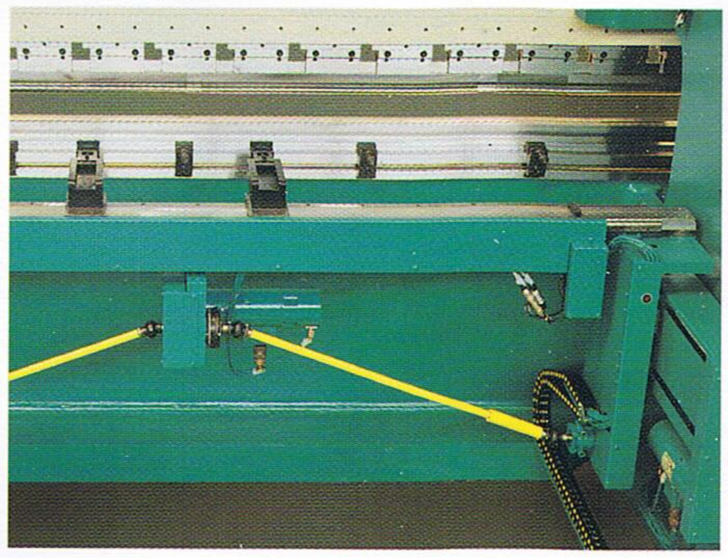
STANDARD / OPTIONAL EQUIPMENT

	QIH	QIH (DNC)
Movable beams with a sturdy four point mechanical self-lubricated guiding system	●	●
Double protection (electronic and electrical) against excessive tilting	●	●
Interchangeable wide bed fixed by bolts	●	●
Full electronic-hydraulic synchronism of the ram (axes Y1 and Y2)	●	●
Electronic-hydraulic stopping of the ram within 0.01mm (0.0004")	●	●
Bending depth adjustable even under load by a knob	○	○
Bending depth adjustable even under load by the DNC	●	●
Easy follow up of the bending adjustment through the throats	●	●
Full programming of the bending angle	●	●
Programming of the ram tilting (Y1≠Y2)	●	●
Pre-programming of a tooling library (20 punches and 30 dies)	●	●
Programming of the bending/return speeds (10-100%)	●	●
Hydraulic cylinders honed and hard chromed for maximum durability	●	●
Inch and semi-automatic modes of operation	●	●
Tonnage calculation/programming by DNC	●	●
Set of manual adjusted back gauges	●	—
Power driven back gauge programmable by DNC	○	—
Stop fingers / back gauge heads	○	●
Numerically controlled back gauge (X + R)	○	●
Multi-axes numerically controlled back gauge	—	○
Set of simple front supports/gauges	○	○
Front support arms (short or long) with several stops	○	○
Complete set of tooling (punch and corresponding adjustable holders and multi-vee four way die)	●	●
Quick tooling clamping (punch or die)	○	○
Special tooling	○	○
Tandem machines (two or more individual machines operating together)	○	○
Bending Follower	—	○
Safety CE standards CB or BI versions	○	○
NUMERICAL CONTROLS		
Cybelec DNC 50 control	●	—
Cybelec DNC 50 control and remote teaching box	○	—
Cybelec DNC 70 control	○	●
Cybelec DNC 80 2D monochrome	○	○
Cybelec DNC 800 2D colour graphic control	—	○
Cybelec DNC 900 3D colour graphic control	—	○
AVAILABLE BACK GAUGES		
QIH with DNC50 and regular screws		
Speed ..... 30 mm/s		
Travel ..... 500 mm	●	—
Ball screws spindles		
Speed: QIH with DNC 50 ..... 120 mm/s	○	—
QIH / QIH (DNC) ..... 400 mm/s	○	●
Travel: Up to QIH-175 ..... 630 mm	○	●
Over QIH-220 ..... 1000 mm	○	●
Multi-axes back gauge (optional on QIH / DNC)		
X1 axis (QIH) (21):		
Speed ..... 30 mm/s		
Travel ..... ±100 mm	—	○
X - X1 / X2 axes (20):		
Speed ..... 400 mm/s	—	○
Travel: Up to QIH-175 ..... 630 mm*	—	○
Over QIH-220 ..... 1000 mm	—	○
R axis (18):		
Speed ..... 75 mm/s		
Travel ..... 200 mm	—	○
R1 / R2 axes (20):		
Speed ..... 40 mm/s		
Travel ..... 110 mm	—	○
Z- Z1 / Z2 axes (20, 21):		
Speed ..... 800 mm/s		
Travel – according to the machine length	—	○

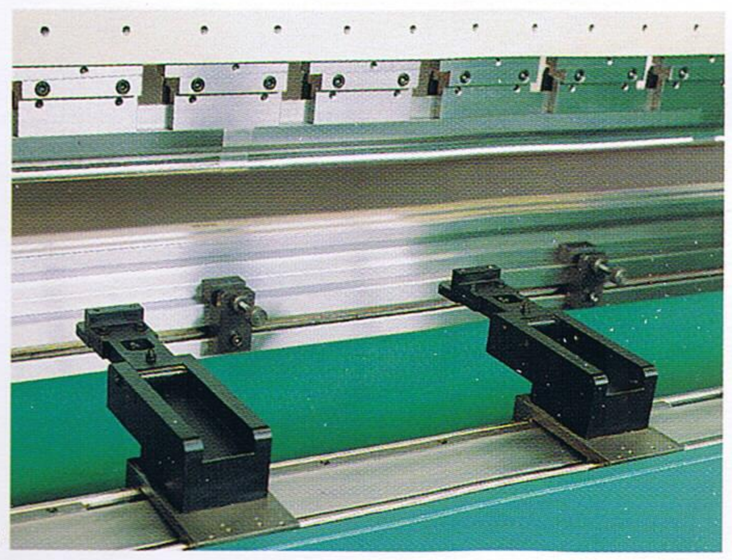
● Standard ○ Optional — Not Available

* 1000mm available on QIH-17560 and machines over 200 tons

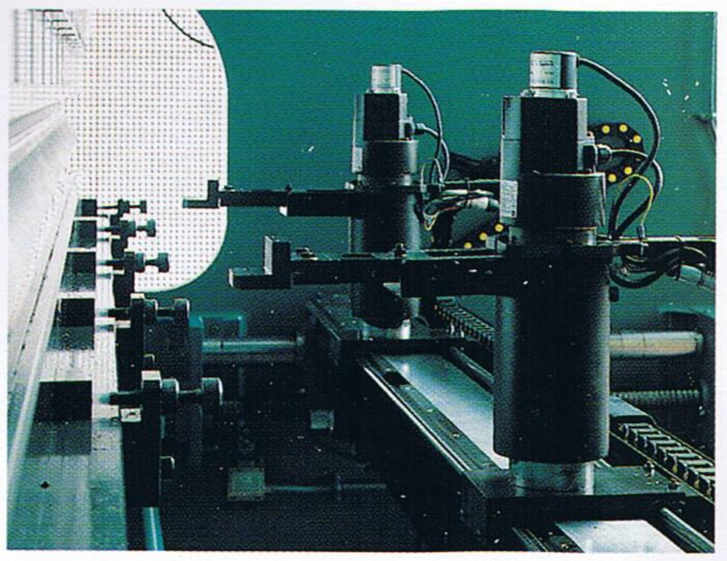
MAIN ACCESSORIES



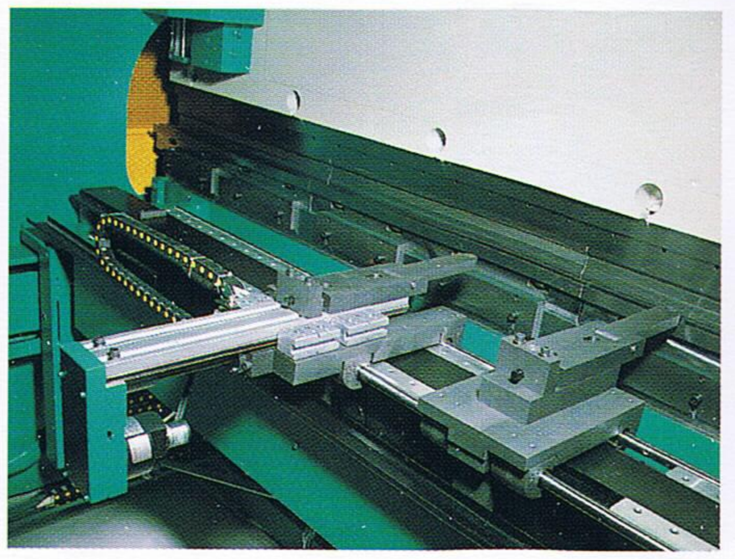
18



19



20



21

18

Back Gauge . For the flange size setting, the machine can be supplied optionally with a multi-axes DNC controlled back gauge (X, R, Z1+Z2).

19, 20, 21

Gauge Heads . The gauge bar on the DNC back gauge options can receive either simple gauge fingers – R axis (19) – or motorized ones (DNC controlled axes R1+R2 (20)).

22

QIH 4506090 . Machine with horns (extension for the bed and ram) up to 9m.

Model	Max. Capacity *kN*	Working Length *mm*	Distance Between Housings *mm*	Max. Stroke *mm*	Throat Depth *mm*	Max. Open Height *mm*	Length *mm*	Width *mm*	Height *mm*	Working Height *mm*	Distance Below Floor *mm*	Approx. Weight *kg*	Motor Power *kW*	Approach Speed *mm/s*	Working Speed *mm/s*	Return Speed *mm/s*
7025	700	2500	2050	100	280	310	2900	1660	2300	840	-	5500	4	100	8.0	100
7025*	700	2500	2050	220	410	400	2950	1660	2670	840	-	6000	4	100	8.0	100
7030	700	3050	2550	100	280	310	3450	1660	2300	840	-	7500	4	100	8.0	100
7030*	700	3050	2550	220	410	400	3450	1660	2300	840	-	8000	4	100	8.0	100
11025	1100	2500	2050	120	320	320	2900	1660	2300	940	-	8000	7.5	100	9.5	80
11030	1100	3050	2550	120	320	320	3450	1750	2500	940	-	9000	7.5	100	9.5	80
11030*	1100	3050	2550	220	410	400	3500	1950	2700	940	-	10000	7.5	100	9.5	80
11040	1100	4000	3150	120	320	320	4400	1750	2600	940	-	11000	7.5	100	9.5	80
17530	1750	3050	2550	200	320	400	3450	1850	2950	930	-	12000	15	100	9.5	100
17540	1750	4000	3150	200	320	400	4400	1850	3050	930	-	15000	15	100	9.5	100
17560	1750	6100	5100	200	320	400	6550	1850	4450	930	1200	21000	15	100	9.5	100
22030	2200	3050	2550	200	320	440	3450	2000	3600	850	700	13000	15	100	8.0	90
22040	2200	4000	3150	200	320	440	4400	2000	3900	850	900	16000	15	100	8.0	90
22060	2200	6100	5100	200	320	440	6550	2000	4000	850	1000	26000	15	100	8.0	90
27530	2750	3050	2550	200	320	440	3450	2000	3700	850	800	15000	15	80	8.0	100
27540	2750	4000	3150	200	320	440	4400	2000	3900	850	900	17000	15	80	8.0	100
27560	2750	6100	5100	200	320	440	6550	2000	4200	850	1200	32000	15	80	8.0	100
35040	3500	4000	3150	250	400	530	4400	2300	4300	900	1000	23000	30	80	10.0	100
35050	3500	5000	4100	250	400	530	5450	2300	4700	900	1250	33000	30	80	10.0	100
35060	3500	6100	5100	250	400	530	6550	2300	4800	900	1500	38000	30	80	10.0	100
45040	4500	4000	3150	250	400	530	4400	2350	4500	900	1000	28000	30	70	8.5	70
45060	4500	6100	5100	250	400	530	6550	2350	5000	900	1500	45000	30	70	8.5	70
55040	5500	4000	3150	300	400	600	4400	2600	4900	900	1100	34000	30	70	8.0	70
55060	5500	6100	5100	300	400	600	6550	2600	5400	900	1600	56000	30	70	8.0	70
70060	7000	6100	5100	300	400	600	6550	2700	5700	800	1600	70000	37	60	8.0	75
100060	10000	6100	5100	300	400	700	6550	2900	5950	800	1750	90000	45	60	6.0	75

*** optional - L versions**

All data are approximate • Specifications of models pictured may vary from standard ones from country to country • Design and specifications subject to change without notice

The equivalent sound level is lower than 85 dB (A) in any of the models.
The peak sound pressure is lower than 130dB in any of the models.

Safety · Comprehensive press brake operator training programs which include safety instructions are your best protection against employee injury which, in addition to the human cost of bodily injury and poor morale, significantly increase your operating expenses. However, operator safety programs must be supplemented by press brakes which are safe to operate. **Adira** press brakes have been designed with the operator's safety in mind. **Adira** press brakes offer **additional features**, which can be purchased to enhance the safety of your operators; see CE standards on CB and BI versions (26 and 27).

adira
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EMPRESA CERTIFICADA

APCER
CERTIFICADO Nº 94/137

SISTEMA PORTUGUÊS
DA QUALIDADE

N.P. E.N. ISO 9002

DC/MAP - C - 123 - I - 98/05