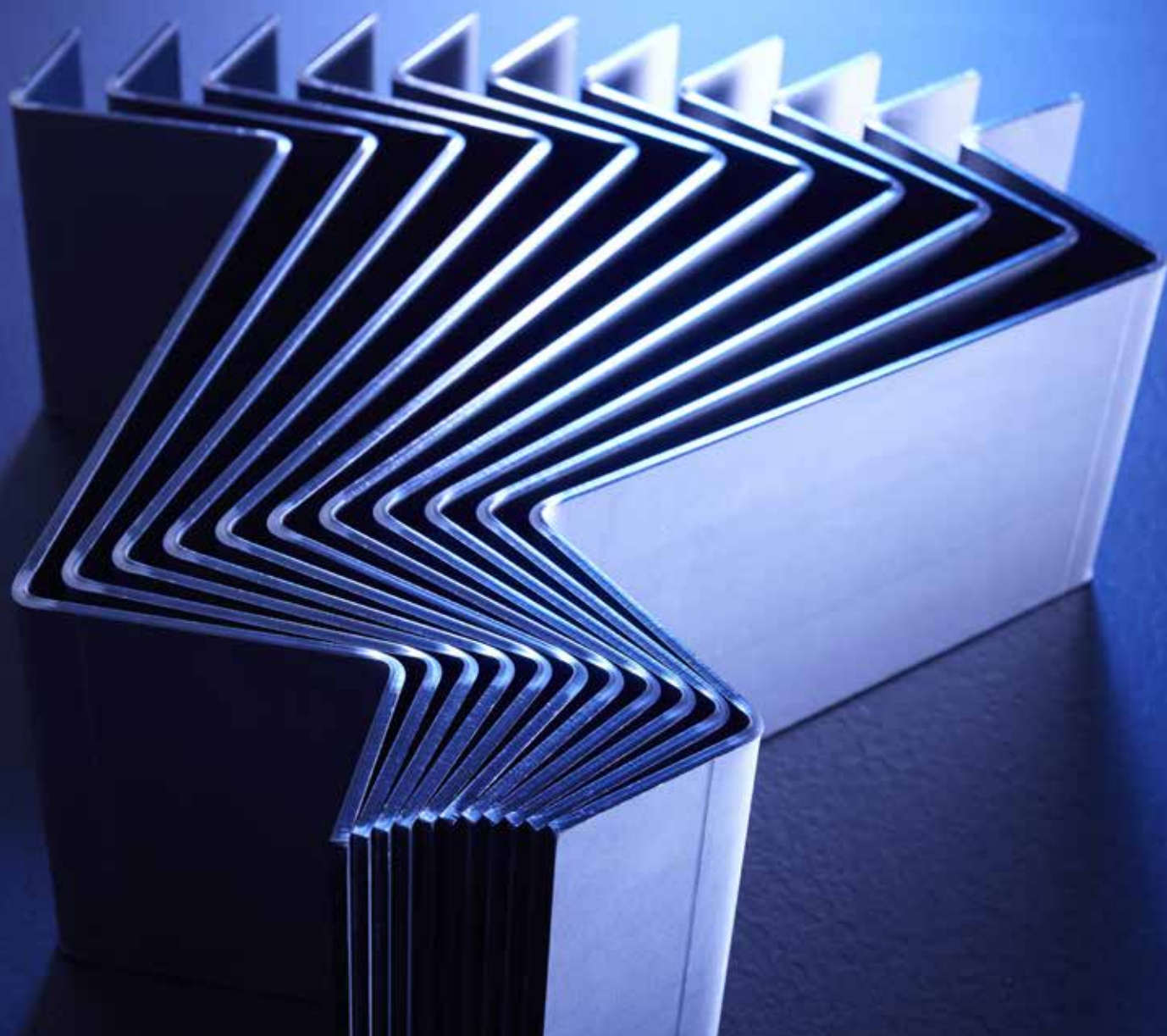*Hydraulic*
press brakes

EASY-FORM® SERIES

THE ULTIMATE BENDING MACHINE

LVD

EASY-FORM® SERIES

THE ULTIMATE BENDING MACHINE

The Easy-Form®/PPEB Series are smart, highly accurate bending machines through the integration of advanced technology and software.

STATUS LIGHTING

LED lights indicate the machine status.

INTUITIVE CONTROL

The 19" TOUCH-B control is user-friendly and makes full use of the machine's bending capabilities.

SERVO-CONTROLLED HYDRAULIC SYSTEM

The hydraulic components are machined in-house to a high standard from a solid steel billet. The hardened steel pistons are precisely finished and micropolished for a lifetime of trouble-free service.

RIGID FRAME DESIGN

Easy-Form® models up to 400 ton/4m have a one-piece welded frame that can be installed at floor level. Longer bed lengths and higher pressing forces may require modified floor arrangements.

OPTIONAL LED WORK ZONE LIGHTING SYSTEM

The backgauge and front work zone areas are illuminated for improved visibility.
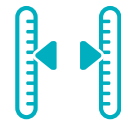
EASY-FORM® LASER ADAPTIVE BENDING

LVD's patented in-process angle monitoring system adapts in real-time the ram position to ensure precise, consistent bending.

CNC CROWNING

At LVD each individual PPEB press brake is equipped with an in-house developed and machined, tailor-made V-axis crowning system.

LINEAR ENCODERS

Bed-referenced linear encoders ensure precise control of the upper beam position and repeatability.

BACKGAUGE

The 2-, 5- or 6-axis backgauge is automatically positioned for optimum bending results.

ACCURATE BENDING

LINEAR ENCODERS

Referenced encoders are connected to the bed in such a way that deformation during bending does not influence the positioning accuracy of the ram (Y1, Y2).

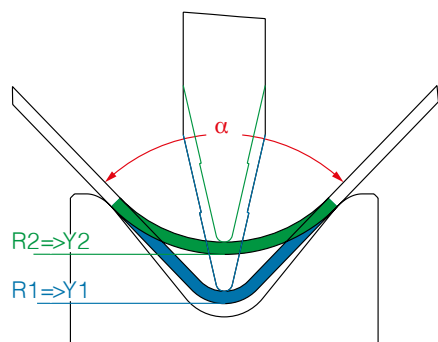*Fig. a*

EASY-FORM® LASER (EFL) ADAPTIVE BENDING SYSTEM

EFL guarantees the desired angle from the first bending operation. The angle measuring system consists of two laser scanners located on the front and back of the table below the die mounting surface.

The unique aspect of EFL is that it uses V-die reference instead of sheet reference. EFL rapidly measures up to 100 samples per second between the die and the sheet. The scanners are linked to the CADMAN-B database containing a tooling library and proven bending results.

As the bending sequence of the press brake is initiated, the EFL system transmits the digital information in real time to the CNC control unit, which processes it and immediately adjusts the depth to obtain the correct angle. The bending process is not interrupted, and no production time is lost.

The unique design of the Easy-Form® Laser system allows the machine to adapt to material variations such as sheet thickness, strain hardening and grain direction, automatically compensating for any changes (Fig. a).
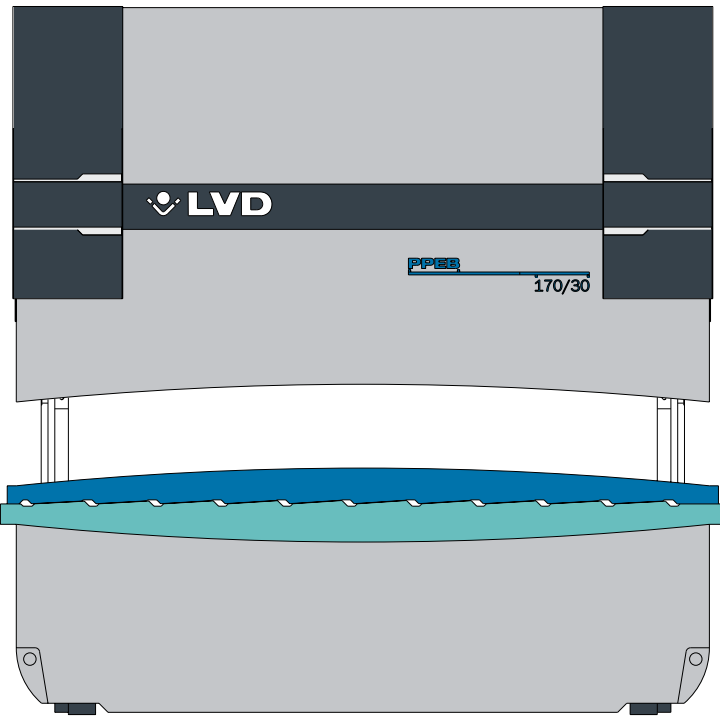
Fig. b

CNC CROWNING

Sheet thickness, bend length, die opening and tensile strength data are entered into the TOUCH-B control to determine the amount of crowning required to compensate for bed and ram deflection. LVD's proprietary design creates a perfect curve by using accurately machined contact wedges (Fig. b) that are moved against each other under servo control.

The crowning device is tailor-made for each individual machine. The associated components are machined and finished following the geometrical measurement between the ram and lower frame.
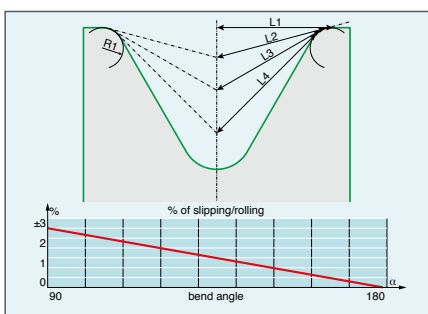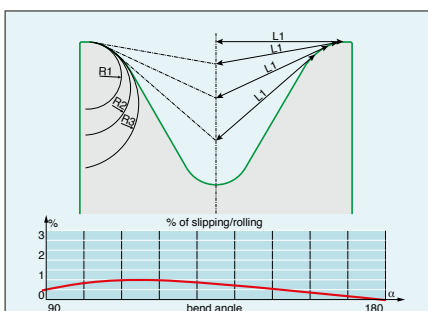

Normal radius

STONE radius

Fig. c

STONE RADIUS

LVD's STONE tooling is produced with a progressive radius on both sides of the V-opening, allowing the material to flow into the die more evenly and with minimal friction (Fig. c).
STONE Tooling also provides:

· reduced tool wear
· tool interchangeability
· reduced residue on stainless steel
· improved material control
· reduced tonnage requirements
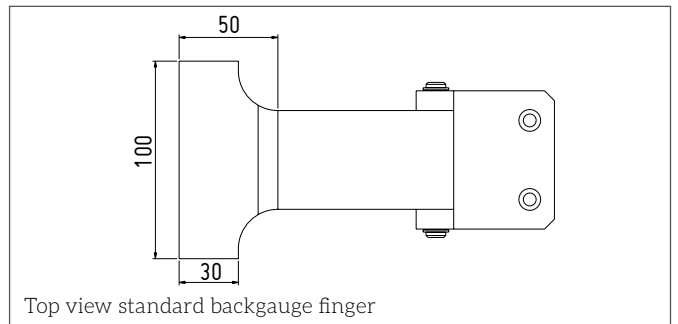· symmetric bending, even on longer parts
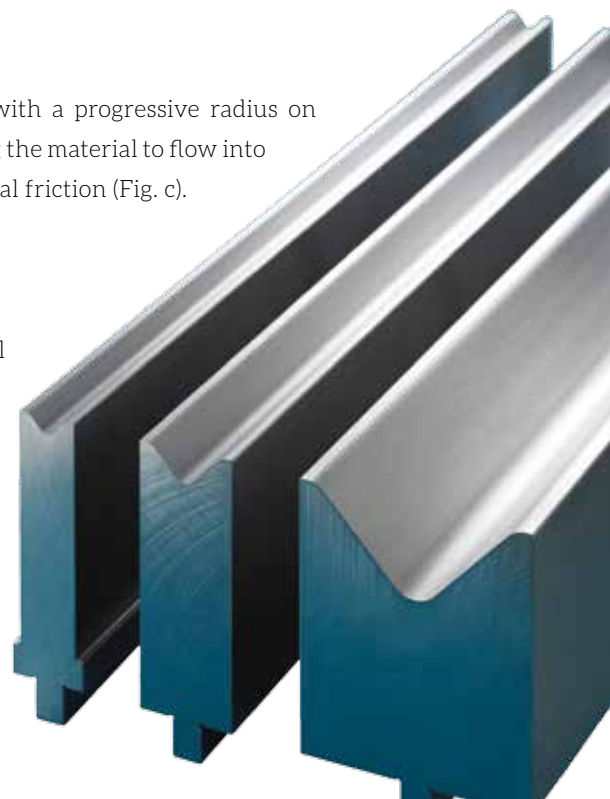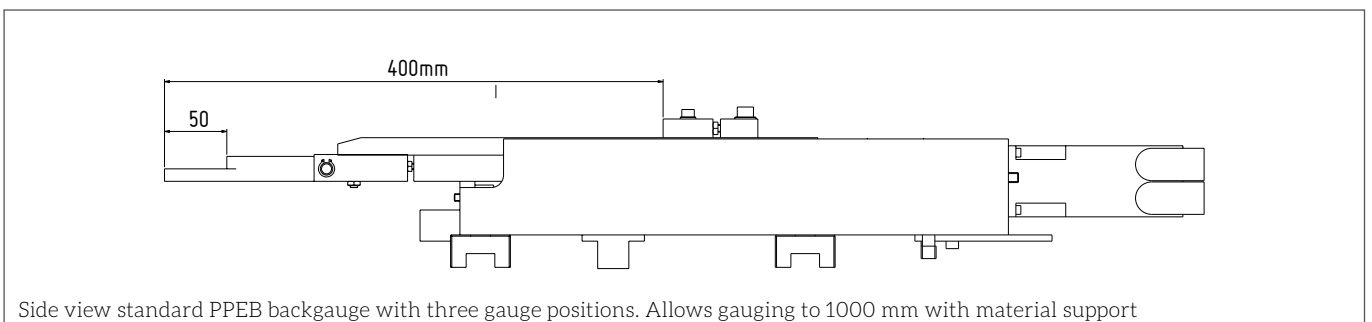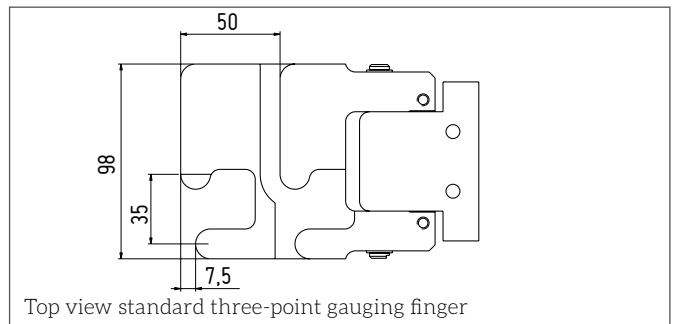
BACKGAUGE VERSATILITY

The backgauge ensures correct positioning of the workpiece in the machine, reducing overall cycle time and increasing productivity. LVD's backgauge systems offer the ultimate in flexibility in the production of both parallel and non-parallel flanges. The three-point gauge fingers allow automatic calculation and setting of both the backgauge and side stop positions for accurate part production.

Programming with LVD's CADMAN® software enables feasibility checks prior to production. The database information is automatically used to achieve precise flange lengths the first time. You can determine the exact position of the backgauge, no modifications are necessary throughout production.
The range starts from a basic two-axis backgauge up to a full multiaxis system:

Standard two-axis backgauge (X, R) with manual Z-axis on PPEB-5

Top view standard backgauge finger

Five-axis backgauge (X, R, Z1, Z2, X') on Easy-Form®/PPEB-8

Top view standard three-point gauging finger

Side view standard PPEB backgauge with three gauge positions. Allows gauging to 1000 mm with material support

Six-axis modular backgauge (X1, R1, Z1, X2, R2, Z2) up to 400T on PPEB-8 and Easy-Form® (option)

Top view standard three-point gauging finger
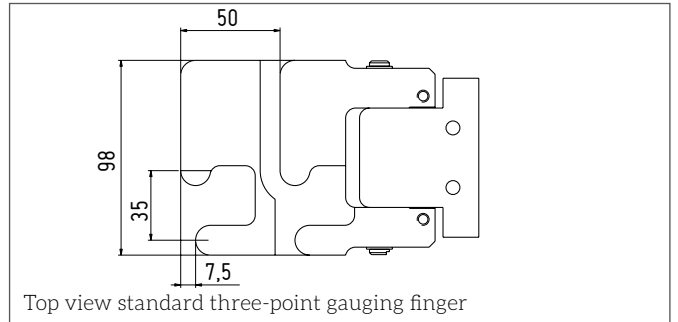
Six-axis back modular backgauge (X1, R1, Z1, X2, R2, Z2) for 500T and 640T

Top view medium fingers

Side view medium fingers
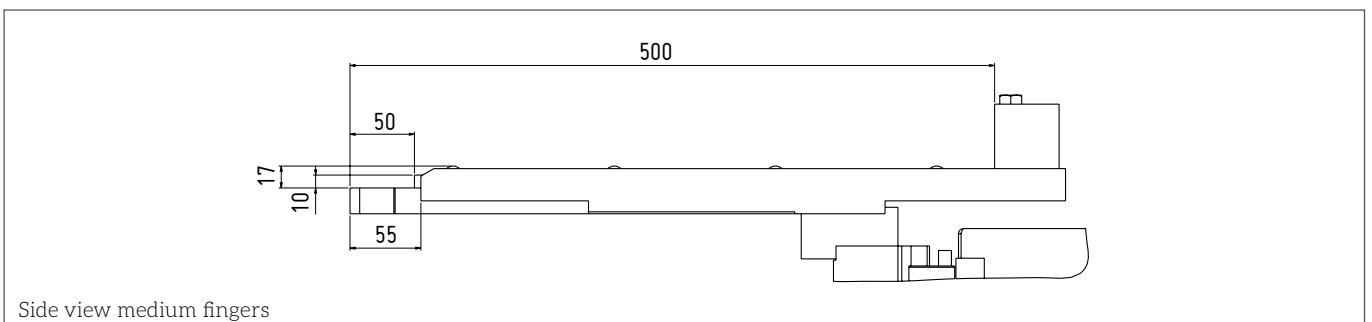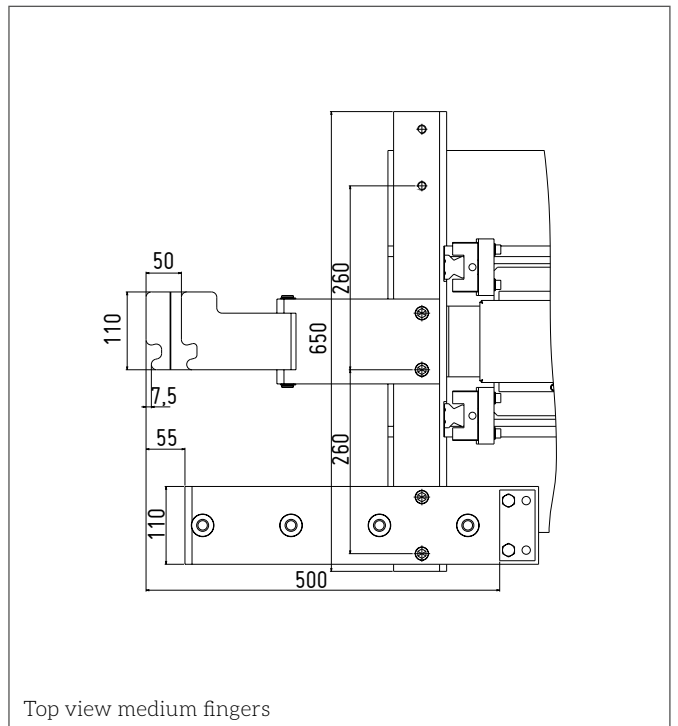
CONFIGURE YOUR PRESS BRAKE

Numerous options are available to increase output on your press brake: quick-acting hydraulic clamping on ram/on table, hardened clamping, increased distance table-ram/stroke of the ram, increased gap, second foot pedal, laser safety of the bending line, interface for robot connection, bar code reader, and more.

Front supports on guide rails allow quick positioning along the entire length

Two programmable sheet followers
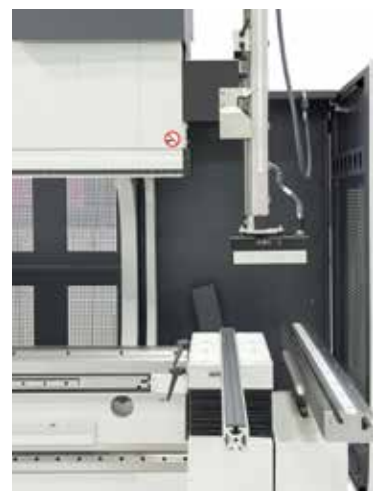
A parking zone is standard left/right

Increase the table-ram/stroke/gap distance in 100 mm steps
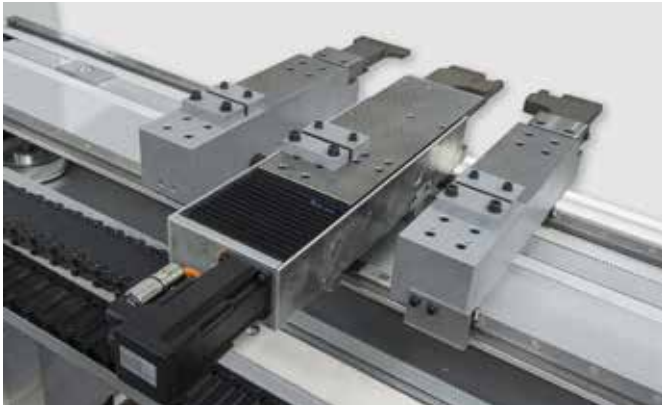
Additional backgauge finger for gauging long parts

Backgauge finger with electric contact for robotic bending
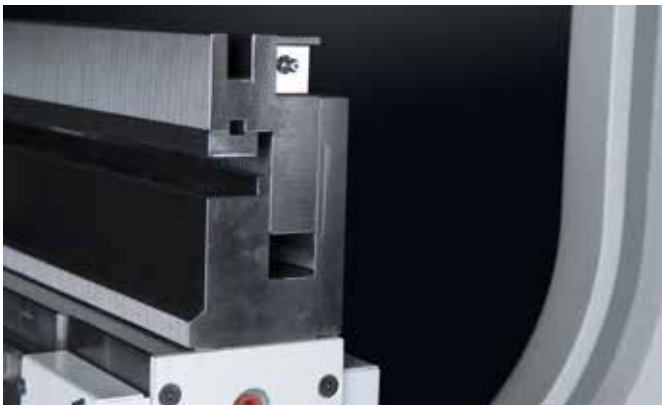
A hemming table for forming safety edges

Lazersafe safety system

Tandem operation: Synchronized operation of two machines with a single master CNC control or independent operation of each machine with separate control, available with dissimilar tonnage and lengths in tandem configuration.

TECHNICAL SPECIFICATIONS

| Type			80/15	80/20	80/25	80/Turbo	110/30	110/40	110/42	110/turbo	135/30	135/40
Pressing force		kN	800	800	800	800	1.100	1.100	1.100	1.100	1.350	1.350
Pressure		bar	290	290	290	290	245	245	245	245	290	290
Working length	A	mm	1.500	2.000	2.500		3.050	4.000	4.270		3.050	4.000
Dist. betw. uprights	B	mm	1.050	1.550	2.050		2.600	3.150	3.820		2.600	3.150
Stroke	C	mm	200	200	200		200	200	200		200	200
Distance table/ram	E	mm	400	400	400		400	400	400		400	400
Gap	D	mm	400	400	400		400	400	400		400	400
Table width	F	mm	120	120	120		120	120	120		120	120
Max. load table		kN/m	2.000	2.000	2.000		2.000	2.000	2.000		2.000	2.000
Working height		mm	970	970	970		970	970	970		970	970
Approach speed*		mm/s	130	130	130	160	130	130	130	180	130	130
Working speed**		mm/s	13	13	13	22	12	12	12	22	12	12
Return speed		mm/s	140	140	140	200	115	115	115	200	115	115
Motor		kW	11	11	11	15	15	15	15	22	15	15
Weight		kg	5.500	6.000	6.500		9.500	11.000	12.000		9.500	11.000
Oil tank		L	125	125	125	125	250	250	250		250	250

Type			135/42	135/turbo	170/30	170/40	170/42	170/51	170/turbo	220/30	220/30 Plus	220/40	220/40 Plus
Pressing force		kN	1.350	1.350	1.700	1.700	1.700	1.700	1.700	2.200	2.200	2.200	2.200
Pressure		bar	290	290	285	285	285	285	285	285	285	285	285
Working length	A	mm	4.270		3.050	4.000	4.270	5.100		3.050	3.050	4.000	4.000
Dist. betw. uprights	B	mm	3.820		2.600	3.150	3.820	4.550		2.600	2.600	3.150	3.150
Stroke	C	mm	200		200	200	200	200		200	300	200	300
Distance table/ram	E	mm	400		400	400	400	400		400	570	400	570
Gap	D	mm	400		400	400	400	400		400	400	400	400
Table width	F	mm	120		120	120	120	120		120	200	120	200
Max. load table		kN/m	2.000		2.000	2.000	2.000	2.000		2.000	2.500	2.000	2.500
Working height		mm	970		970	970	970	1.020		970	1.000	970	1.000
Approach speed*		mm/s	130	180	130	130	130	130	180	120	120	120	120
Working speed**		mm/s	12	22	15	15	15	15	22	21	21	21	21
Return speed		mm/s	115	200	160	160	160	160	200	200	200	200	200
Motor		kW	15	22	22	22	22	22	37	37	37	37	37
Weight		kg	12.000		11.000	13.000	14.500	19.500		12.500	13.000	15.000	15.500
Oil tank		L	250	250	350	350	350	350		350	350	350	350

*For CE-countries only if the machine is equipped with an optional safety system. ** For CE-countries working speed is limited to safety norm.*
Different combinations of stroke and daylight are available in our standard range by steps of +100 mm.
Specifications subject to change without prior notice.
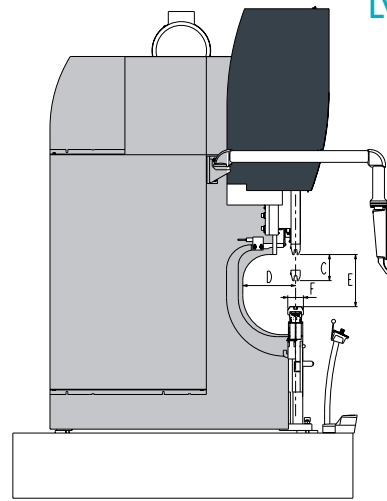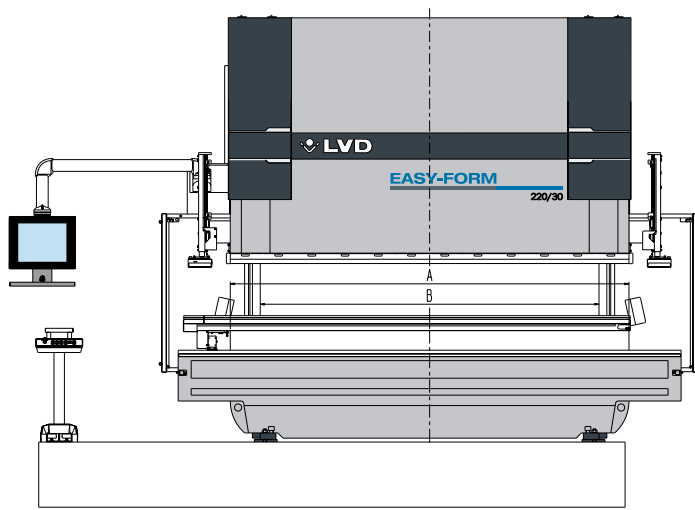
Type			220/42	220/42 Plus	220/51	220/51 Plus	220/61	220/61 Plus	320/30	320/40	320/45	320/51	320/61
Pressing force		kN	2.200	2.200	2.200	2.200	2.200	2.200	3.200	3.200	3.200	3.200	3.200
Pressure		bar	285	285	285	285	285	285	285	285	285	285	285
Working length	A	mm	4.270	4.270	5.100	5.100	6.100	6.100	3.050	4.000	4.500	5.100	6.100
Dist. betw. uprights	B	mm	3.820	3.820	4.550	4.550	5.050	5.050	2.600	3.150	3.820	4.270	5.050
Stroke	C	mm	200	300	200	300	200	300	300	300	300	300	300
Distance table/ram	E	mm	400	570	400	570	400	570	570	570	570	570	570
Gap	D	mm	400	400	400	400	400	400	400	400	400	400	400
Table width	F	mm	120	200	120	200	120	200	200	200	200	200	200
Max. load table		kN/m	2.000	2.500	2.000	2.500	2.000	2.500	2.500	2.500	2.500	2.500	2.500
Working height		mm	970	1.000	1.025	1.055	1.025	1.055	1.000	1.000	1.000	1.035	1.165
Approach speed*		mm/s	120	120	120	120	120	120	120	120	120	120	120
Working speed**		mm/s	21	21	21	21	21	21	14	14	14	14	14
Return speed		mm/s	200	200	200	200	200	200	130	130	130	130	130
Motor		kW	37	37	37	37	37	37	37	37	37	37	37
Weight		kg	16.500	17.000	20.500	21.000	23.500	24.000	21.000	23.000	25.500	29.000	36.000
Oil tank		L	350	350	350	350	350	350	400	400	400	400	400

Type			400/40	400/45	400/51	400/61	500/40	500/45	500/51	500/61	640/45	640/61	640/80
Pressing force		kN	4.000	4.000	4.000	4.000	5.000	5.000	5.000	5.000	6.400	6.400	6.400
Pressure		bar	290	290	290	290	290	290	290	290	290	290	290
Working length	A	mm	4.000	4.500	5.100	6.100	4.000	4.500	5.100	6.100	4.500	6.100	8.000
Dist. betw. uprights	B	mm	3.150	3.820	4.270	5.050	3.150	3.760	4.050	5.050	3.760	5.050	7.050
Stroke	C	mm	300	300	300	300	300	300	300	300	300	300	300
Distance table/ram	E	mm	570	570	570	570	570	570	570	570	570	570	570
Gap	D	mm	400	400	400	400	400	400	400	400	400	400	400
Table width	F	mm	200	200	200	200	200	200	200	200	200	200	200
Max. load table		kN/m	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500
Working height		mm	970	970	970	970	970	970	970	970	970	970	970
Approach speed*		mm/s	100	100	100	100	100	100	100	100	90	90	90
Working speed**		mm/s	11	11	11	11	9	9	9	9	9	9	9
Return speed		mm/s	120	120	120	120	80	80	80	80	100	100	100
Motor		kW	37	37	37	37	37	37	37	37	55	55	55
Weight		kg	30.500	32.000	34.000	37.000	39.400	42.200	43.820	49.420	49.300	57.000	71.550
Oil tank		L	500	500	500	500	650	650	650	650	850	850	850

SOFTWARE INTEGRATION

LVD's database-driven *CADMAN® Suite software* integrates sheet metalworking processes, production control, communication and management. It provides users real-time data to make informed choices, enabling optimized programming and maximized throughput in the workshop.

CADMAN-JOB

CADMAN-JOB connects the front office intakes and processing of orders with the shop floor operations. The software creates or imports production orders from an ERP system allowing users to generate production jobs for bending.
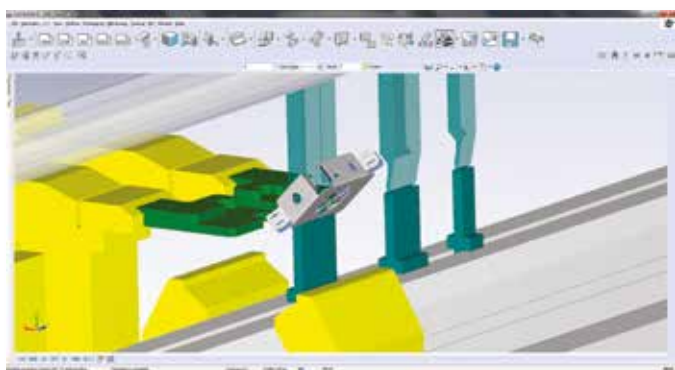
CADMAN-B

After importing a 3D CAD part, CADMAN-B automatically defines inclined, parallel and multi-bends, as well as hemming and preliminary bends. The module can visualize the complete bend process with start to finish collision detection, gauge positions and tool setups.

TOUCH-B control

The speed and simplicity of touch screen technology is combined with the power of a CNC control. TOUCH-B works with the centralized CADMAN database, is compatible with CADMAN-JOB and CADMAN-B and has access to LVD's customer support helpdesk.

TOUCH-i4

TOUCH-i4 is an industrial strength Windows-based tablet that provides an overview of the entire fabrication workshop. It collects real-time information from your LVD machine(s) powered by the centralized CADMAN database.

LASER

PUNCH

BEND

INTEGRATE