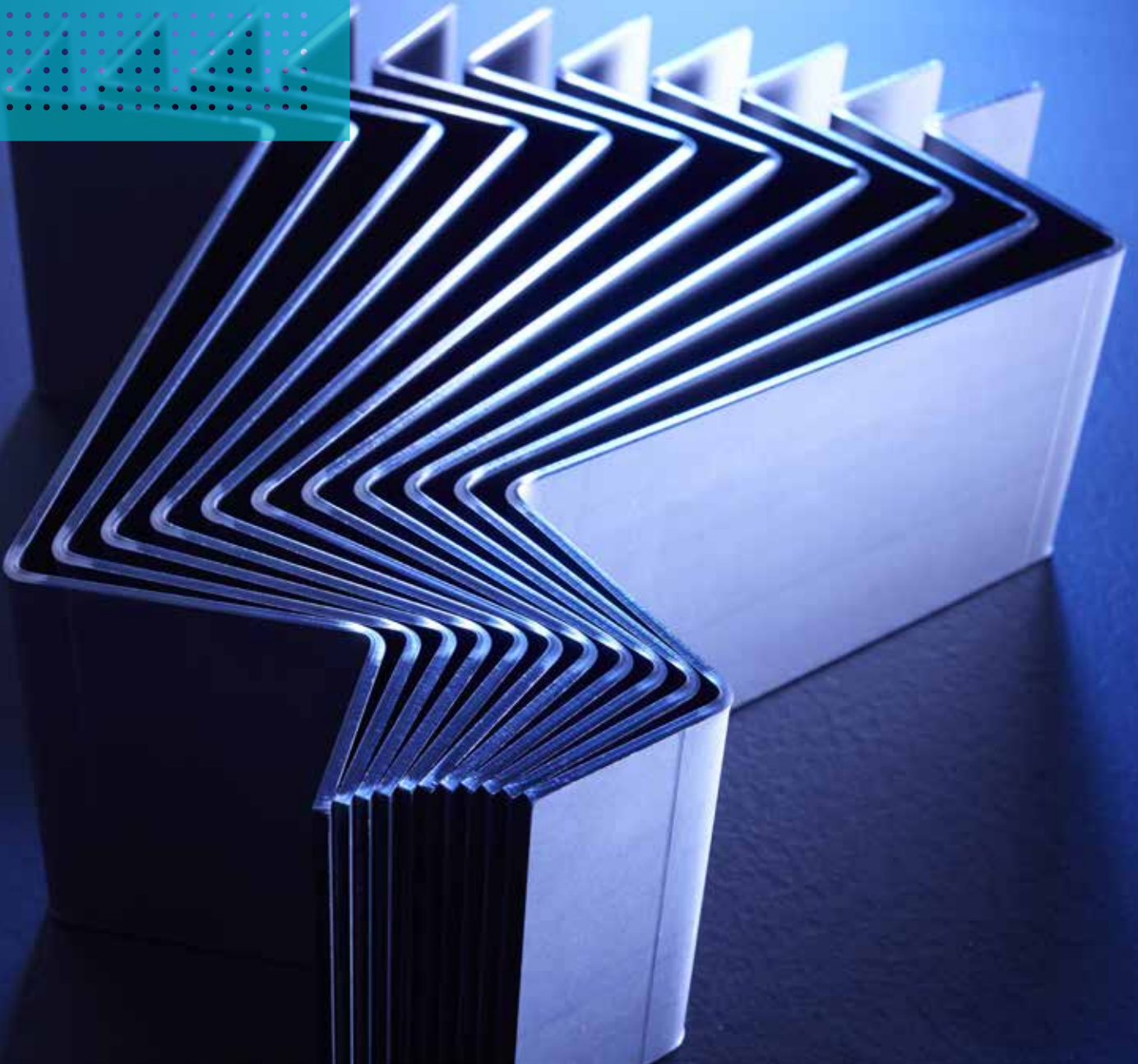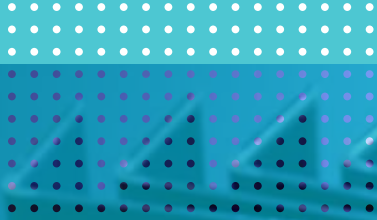*Hydraulic press brakes*

EASY-FORM® SERIES

THE ULTIMATE BENDING MACHINE

LVD

EASY-FORM®
SERIES

THE ULTIMATE BENDING MACHINE

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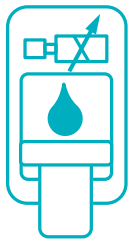
STATUS LIGHTING

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 tons 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.

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/punch position to ensure precise, consistent bending.

CNC CROWNING

The Easy-Form 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).
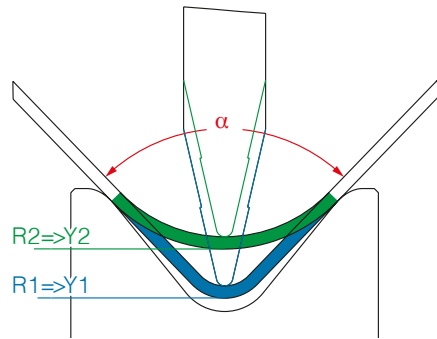

R2=>Y2
R1=>Y1

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.

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® 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 position of the ram/punch to achieve 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).
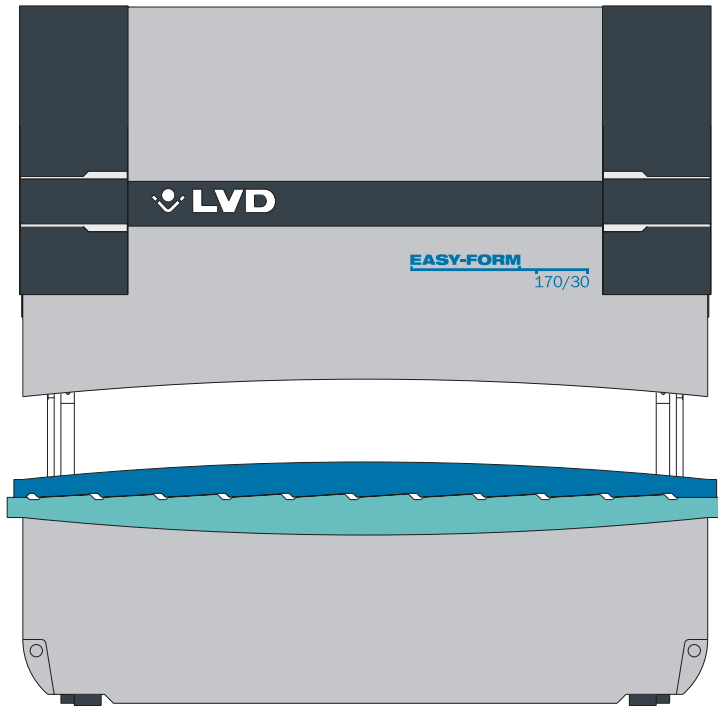
Fig. b

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.
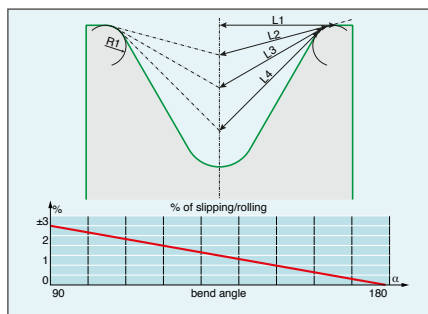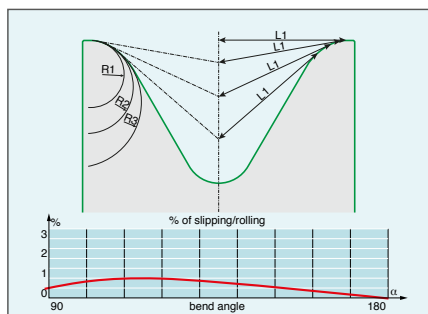
Normal radius

STONE radius

Fig. c

## STONE RADIUS

All LVD dies feature a progressive STONE radius on both sides of the V opening, that reduces friction between the material and the die to minimize part marking (Fig. c).

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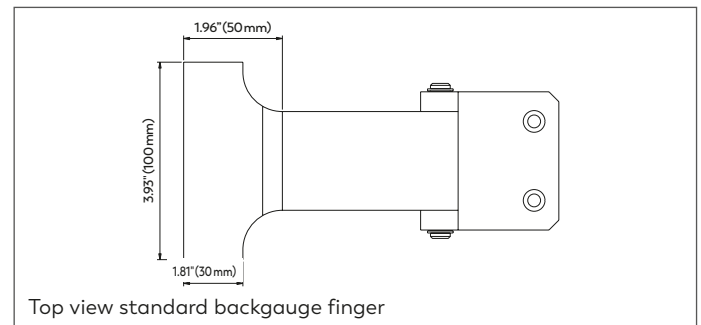· symmetric bending, even on longer parts
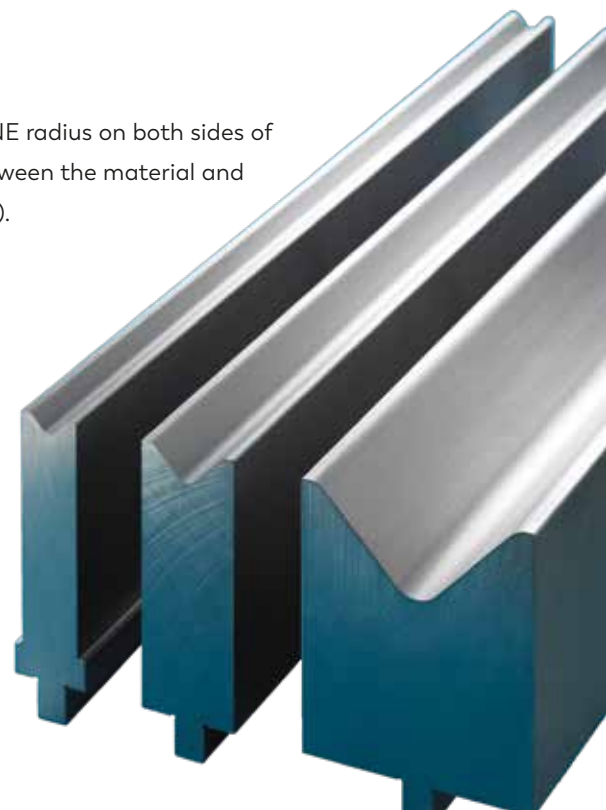
BACKGAUGE VERSATILITY

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 Easy-Form 6

Top view standard backgauge finger

Five-axis backgauge (X, R, Z1, Z2, X') on Easy-Form 9

Top view standard three-point gauging finger

Side view standard PPEB backgauge with three gauge positions. Allows gauging to 39.3" (1000 mm) with material support.
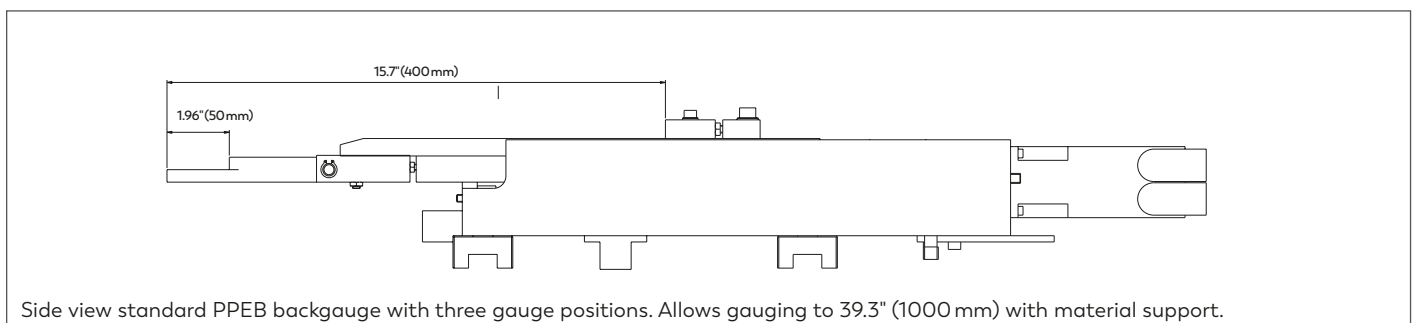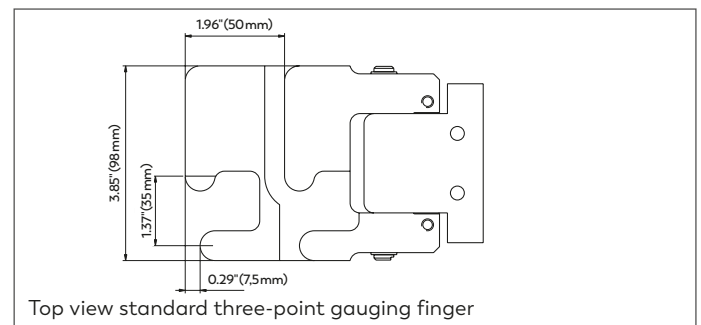
Six-axis modular backgauge (X1, R1, Z1, X2, R2, Z2) up to 400T on Easy-Form 9 (option)

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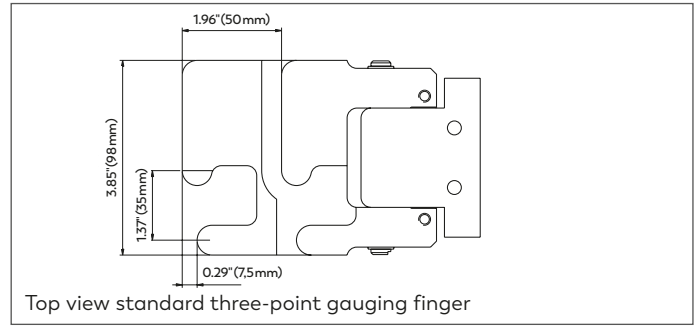
Six-axis back modular backgauge (X1, R1, Z1, X2, R2, Z2) for 500T and 640T

Top view medium fingers

Side view medium fingers
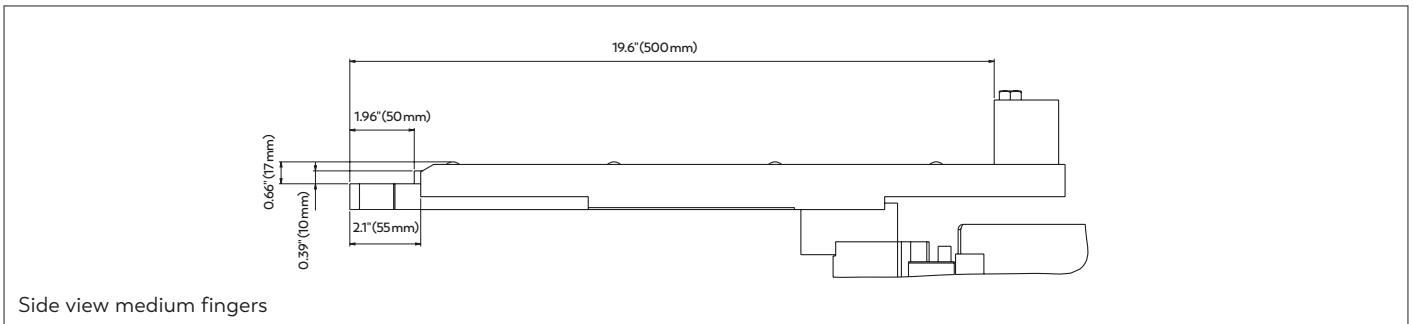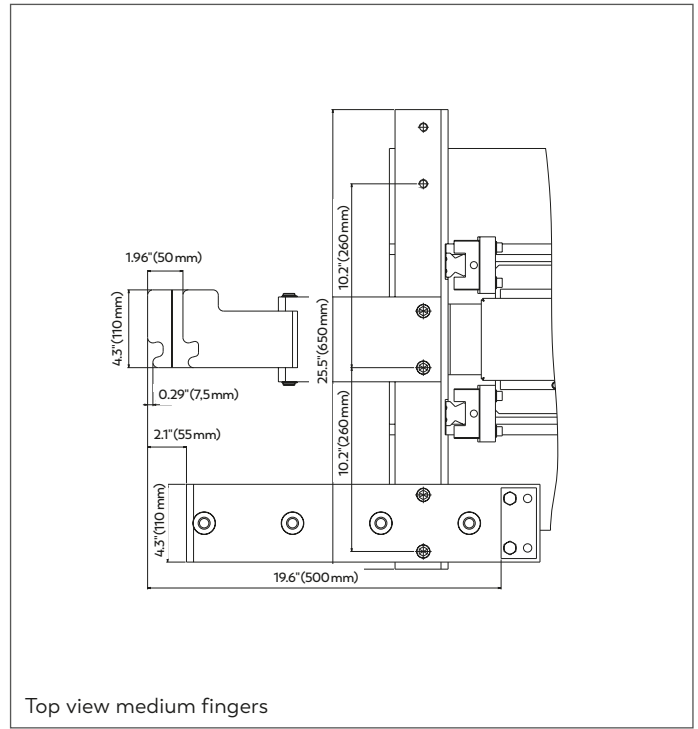
CONFIGURE YOUR PRESS BRAKE

Front and back LED work zone lighting, a second foot pedal, a barcode reader to automatically load bending programs and an electrical cabinet air conditioner are included in the standard Easy-Form machine.

Maximizing machine efficiency is the turbo hydraulic drive, a standard feature. This exclusive pump design regulates the flow rate to achieve optimal machine speed, avoiding unnecessary oil heating and energy waste. No energy is lost when the machine is holding the ram in position under pressure or when operating at low capacity.

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

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

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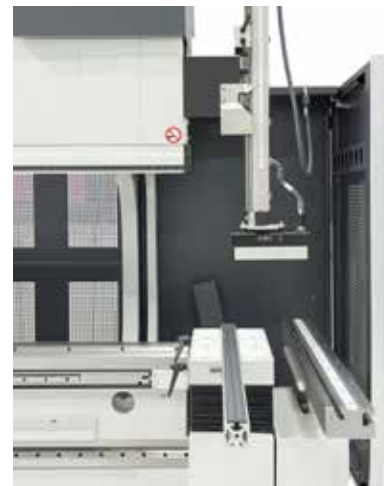
A parking zone is standard left/right.

Increase the table-ram/stroke/gap distance in 3.93" (100 mm) steps

Additional backgauge finger for gauging long parts

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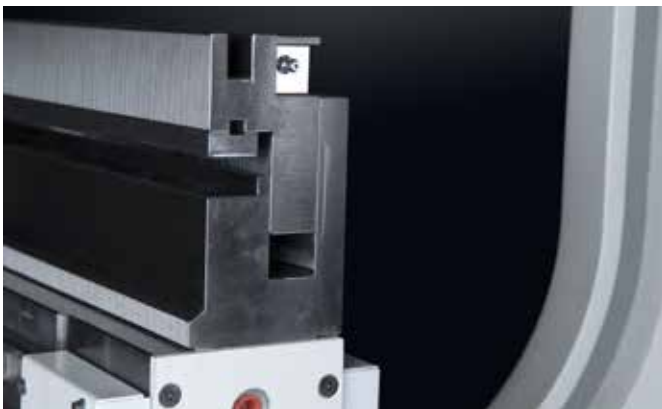
A hemming table for forming safety edges

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	110/30	110/40	110/42	135/30	135/40	135/42	170/30
Pressing force		ton	90	90	90	120	120	120	150	150	150	190
Working length	A	inch	59	78	98	120	157	168	120	157	168	120
Dist. betw. uprights	B	inch	41	61	80	102	124	150	102	124	150	102
Stroke	C	inch	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
Distance table/ram	E	inch	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7
Gap	D	inch	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7
Table width	F	inch	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
Approach speed*		inch/min	378	378	378	425	425	425	425	425	425	425
Working speed**		inch/min	54	54	54	52	52	52	52	52	52	59
Return speed		inch/min	472	472	472	472	472	472	472	472	472	472
Motor		HP	20	20	20	30	30	30	30	30	30	50
Oil		Gal	33	33	33	66	66	66	66	66	66	92
Weight		lbs.	12,125	13,230	14,340	20,950	24,255	26,460	20,950	24,255	26,460	24,255

Type			220/50	220/50^Plus	220/61	220/61^Plus	320/30	320/40	320/45	320/51	320/61	400/40
Pressing force		ton	240	240	240	240	350	350	350	350	350	440
Working length	A	inch	196	196	240	240	120	157	177	200	240	160
Dist. betw. uprights	B	inch	179	179	198	198	102	124	150	168	198	124
Stroke	C	inch	7.9	11.8	7.9	11.8	11.8	11.8	11.8	11.8	11.8	11.8
Distance table/ram	E	inch	15.7	22.4	15.7	22.4	22.4	22.4	22.4	22.4	22.4	22.4
Gap	D	inch	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7
Table width	F	inch	4.7	7.9	4.7	7.9	7.9	7.9	7.9	7.9	7.9	7.9
Approach speed*		inch/min	283	283	283	283	283	283	283	283	283	236
Working speed**		inch/min	50	50	50	50	33	33	33	33	33	26
Return speed		inch/min	472	472	472	472	307	307	307	307	307	283
Motor		HP	50	50	50	50	50	50	50	50	50	50
Oil		Gal	92	92	92	92	106	106	106	106	106	132
Weight		lbs.	45,205	46,305	51,820	52,920	46,305	50,715	56,230	63,945	79,380	66,590

*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 in increments of + 3.93" (100 mm).
Specifications subject to change without prior notice.
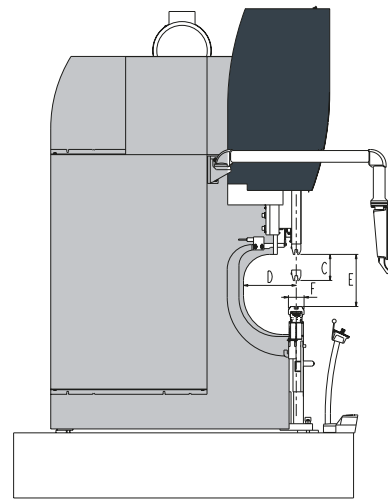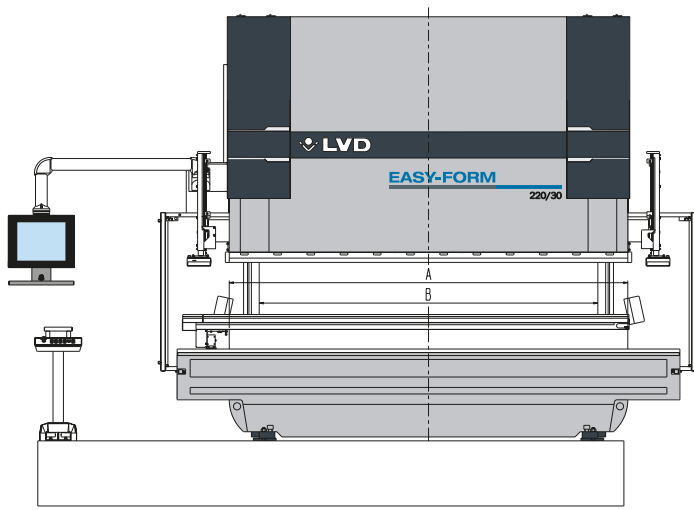
Type			170/40	170/42	170/50	220/30	220/30 Plus	220/40	220/40 Plus	220/42	220/42 Plus
Pressing force		ton	190	190	190	240	240	240	240	240	240
Working length	A	inch	157	168	196	120	120	157	157	168	168
Dist. betw. uprights	B	inch	124	150	179	102	102	124	124	150	150
Stroke	C	inch	7.9	7.9	7.9	7.9	11.8	7.9	11.8	7.9	11.8
Distance table/ram	E	inch	15.7	15.7	15.7	15.7	22.4	15.7	22.4	15.7	22.4
Gap	D	inch	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7
Table width	F	inch	4.7	4.7	4.7	4.7	7.9	4.7	7.9	4.7	7.9
Approach speed*		inch/min	425	425	425	283	283	283	283	283	283
Working speed**		inch/min	59	59	59	50	50	50	50	50	50
Return speed		inch/min	472	472	472	472	472	472	472	472	472
Motor		HP	50	50	50	50	50	50	50	50	50
Oil		Gal	92	92	92	92	92	92	92	92	92
Weight		lbs.	28,670	31,975	43,000	27,565	28,665	33,075	34,180	36,385	37,485

Type			400/45	400/51	400/61	500/40	500/45	500/61	640/45	640/61	640/80
Pressing force		ton	440	440	440	550	550	550	700	700	700
Working length	A	inch	180	200	240	160	177	240	177	240	315
Dist. betw. uprights	B	inch	150	168	198	124	148	198	148	198	277
Stroke	C	inch	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8
Distance table/ram	E	inch	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4
Gap	D	inch	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7
Table width	F	inch	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
Approach speed*		inch/min	236	236	236	236	236	236	212	212	212
Working speed**		inch/min	26	26	26	21	21	21	21	21	21
Return speed		inch/min	283	283	283	189	189	189	236	236	236
Motor		HP	50	50	50	50	50	50	75	75	75
Oil		Gal	132	132	132	172	172	172	225	225	225
Weight		lbs.	68,500	74,970	81,585	83,350	91,180	109,920	108,710	124,030	157,770

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-grade 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.

CADMAN-SDI

The Smart Drawing Importer allows fast CAD file import. CADMAN-SDI converts the file to OSM and stores it in the central database. All cost drivers are displayed and can be exported for making an accurate cost estimate.

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LVD North America is the trade name of the Sales & Service division of Strippit, Inc.

| LASER | PUNCH | BEND | INTEGRATE |