

FBD-NT Press Brake Machine Description

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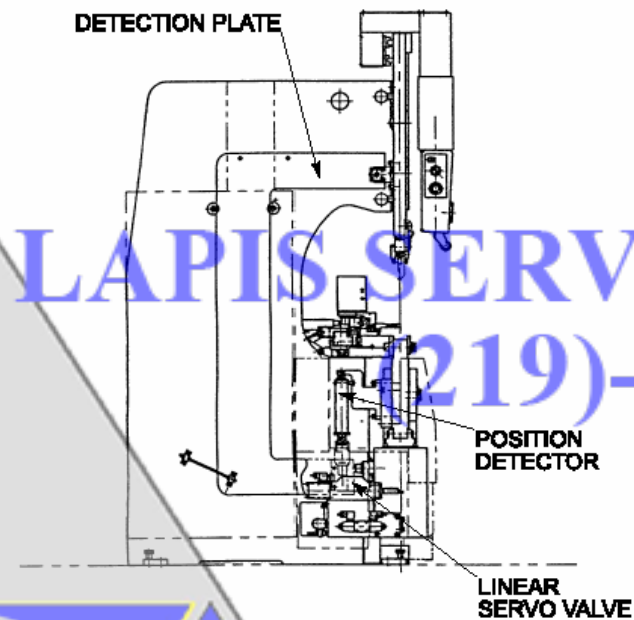


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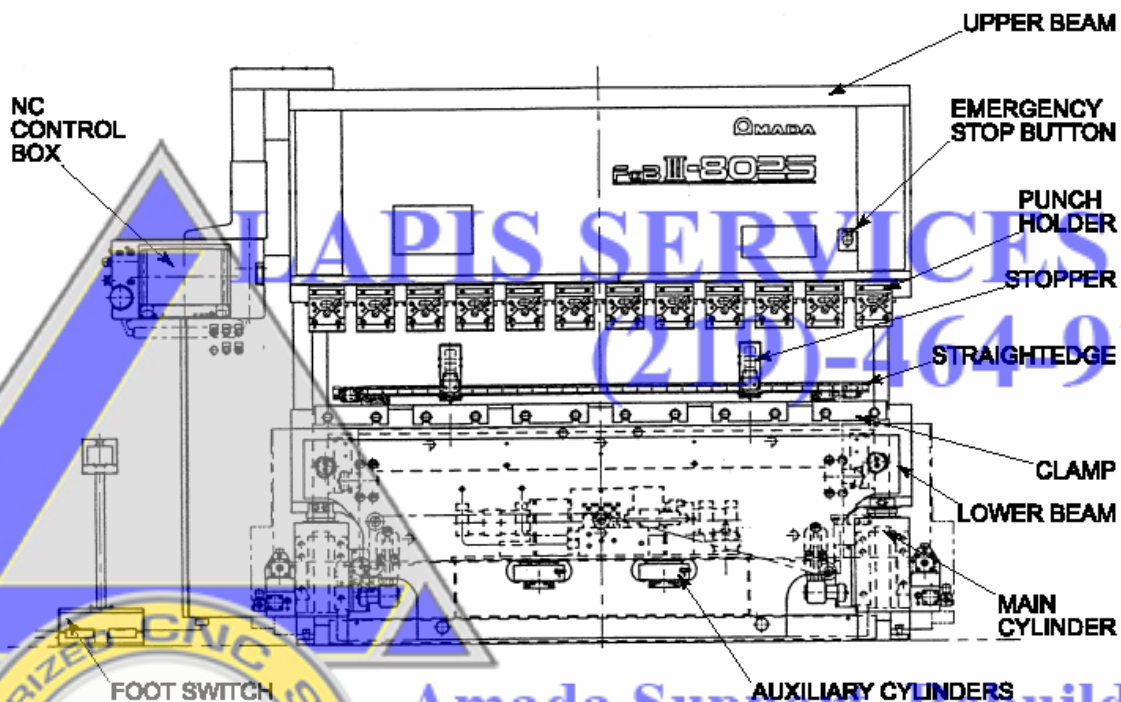
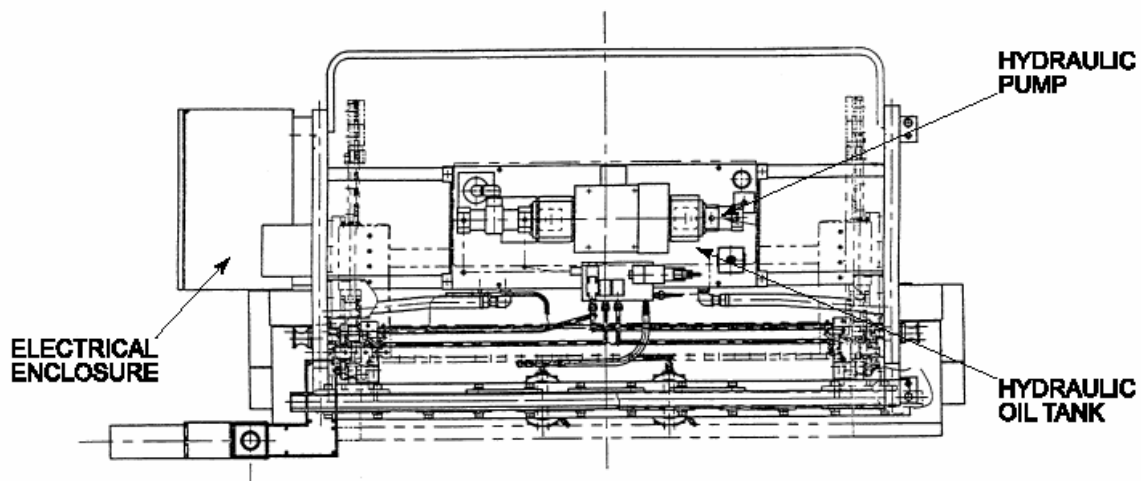
GENERAL VIEW OF MACHINE

NOTE

- This drawing shows the general view of the FBDIII-8025NT.



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FUNCTIONS

This machine is a press brake whose lower beam is hydraulically raised by the linear servo valves at the right and left sides. The UP and DOWN foot pedals are pressed to move up and down the lower beam. The punches are mounted in the punch holders attached to the upper beam, and the dies and die holders are mounted on the lower beam. The worksheet is laid over the dies, supported by hand, and bent by raising the lower beam onto the punches. The bend angle of the worksheet depends on the clearance between the dies and punches. The lower beam is moved up and down by the main cylinders installed on the right and left sides. The auxiliary cylinders are installed at the center of the lower beam to prevent a long worksheet from being bent with a greater angle toward the center (or to keep the clearance between the upper and lower beams uniform in the longitudinal direction). The bend angle is finely adjusted by the right and left linear servo valves, which can also be controlled independently to tilt the lower beam. This tilting function allows the difference in the bend angle between the right and left sides of the worksheet to be compensated for and the worksheet to be offset bent (or bent off the center of the machine). The worksheet can also be pushed against the stoppers of the backgauge to determine its bend position. The machine can be operated from the NC control box.

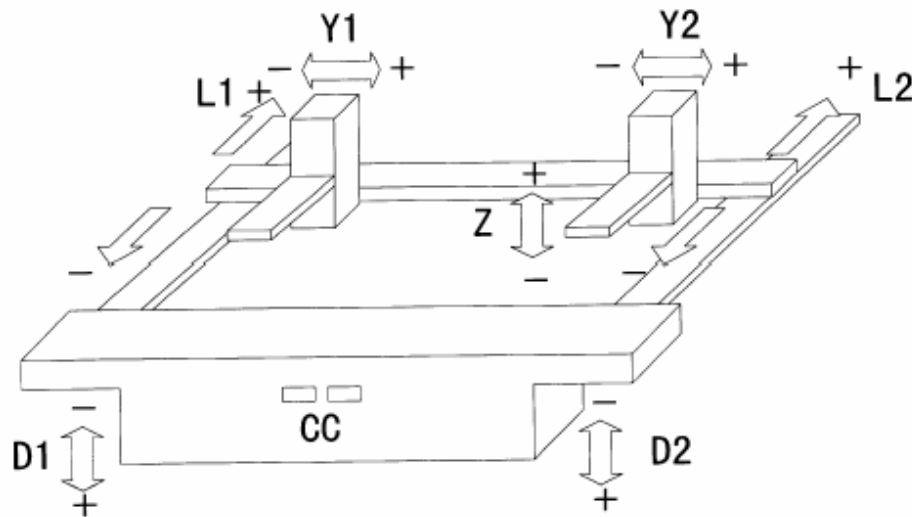


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Coordinate system of axes

Basically, the machine is controlled by the D1, D2, L1, L2, Y1, Y2 and Z axes and CC value.

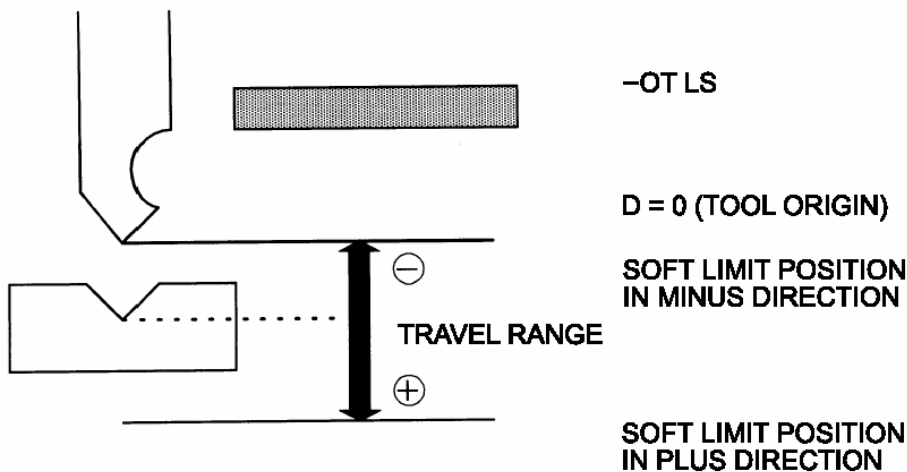


- D1 axis: Axis along which the left main cylinder of the lower beam moves up and down
- D2 axis: Axis along which the right main cylinder of the lower beam moves up and down
- L1 axis: Axis along which the backgauge moves back and forth on the left ball screw
- L2 axis: Axis along which the backgauge moves back and forth on the right ball screw
- Y1 axis: Axis along which the left backgauge moves left and right
- Y2 axis: Axis along which the right backgauge moves left and right
- Z axis: Axis along which the backgauge moves up and down
- CC value: Pressure of the auxiliary cylinders in the lower beam

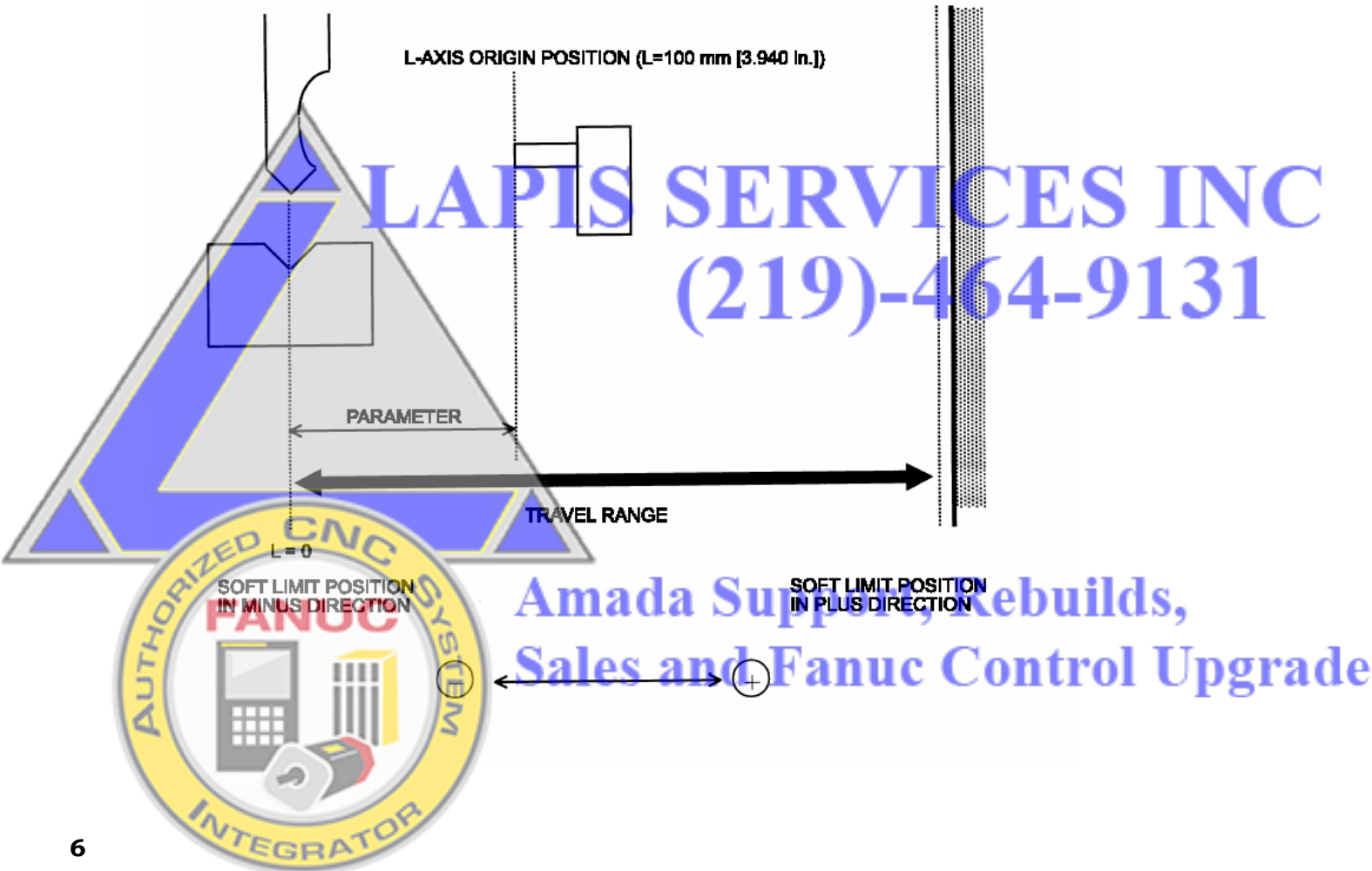


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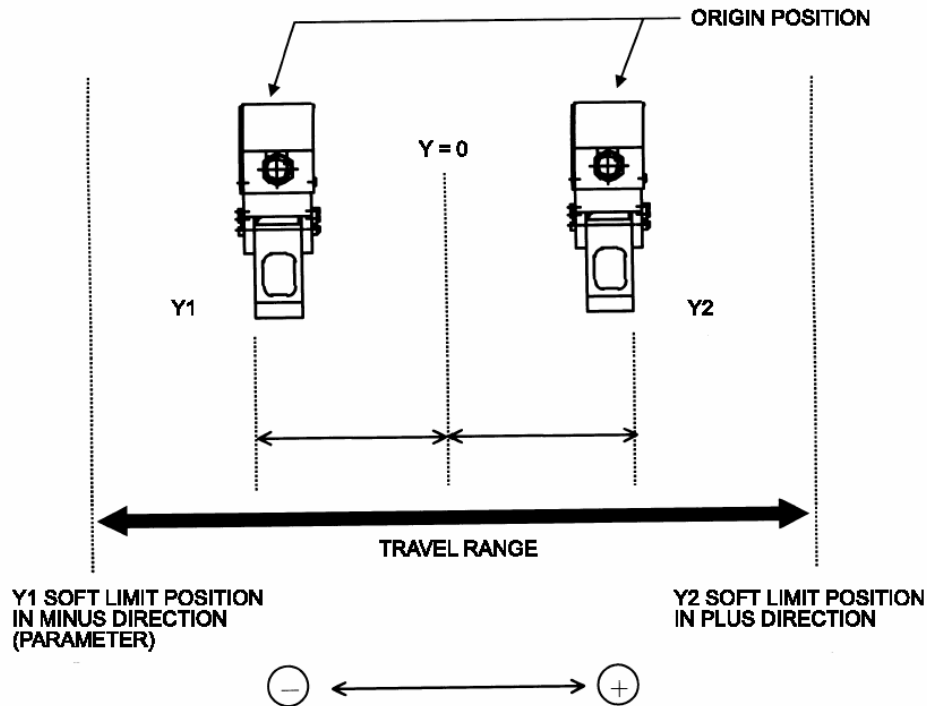
D-axis (D1, D2)



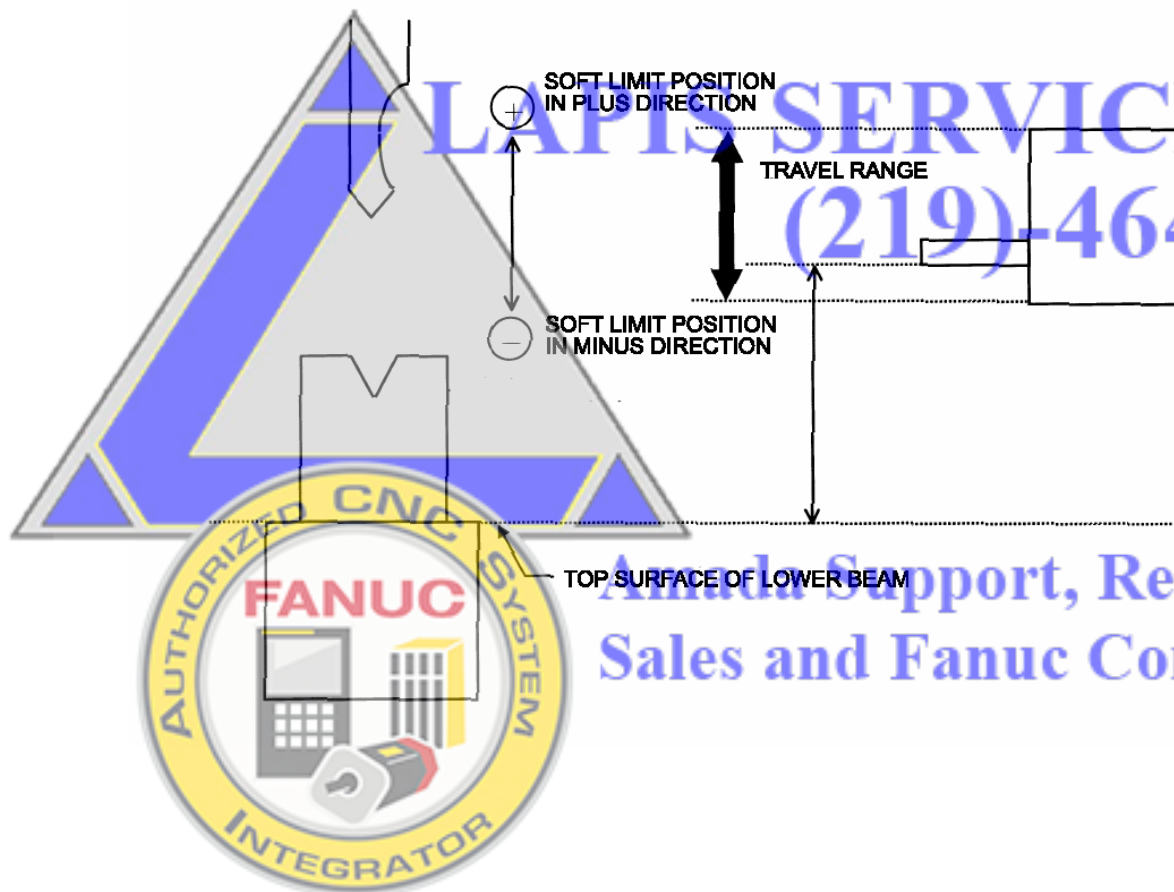
L-axis (L1, L2)



Y-axis (Y1, Y2)



Z-axis



SPECIFICATIONS

Machine

Model		FBD III 3512	FBD III 5012	FBD III 5020	FBD III 8020	FBD III 8025	FBD III 1025	FBD III 1030	FBD III 1253
Maximum bend length	mm (in.)	1200 (47.28)	1200 (47.28)	2000 (78.80)	2000 (78.80)	2500 (98.48)	2500 (98.48)	3000 (118.20)	3000 (118.20)
Tonnage capacity	metric tons (US tons)	35 (39)	50 (55)	50 (55)	80 (88)	80 (88)	100 (110)	100 (110)	125 (138)
Vertical stroke of lower beam	mm (in.)	150 (5.91)							
Rising speed of lower beam at 50/60 Hz	mm/sec (in./sec)	77/90 (3.03/3.55)							
Bending speed of lower beam at 50/60 Hz	mm/sec (in./sec)	8/9 (0.31/0.35)							
Lowering speed of lower beam	mm/sec (in./sec)	90* (3.54)							
Number of main cylinders (Number of auxiliary cylinders)		2 (2)							
Hydraulic pump motor output	kW (HP)	5.5 (7.5)	7.5 (10)	7.5 (10)	7.5 (10)	7.5 (10)	11 (15)	11 (15)	11 (15)
Hydraulic unit tank capacity	liters (US gal)	90 (23.7)	90 (23.7)	70 (18.4)	70 (18.4)	70 (18.4)	90 (23.7)	90 (23.7)	90 (23.7)
Machine weight	metric tons (US tons)	3.0 (3.3)	3.2 (3.5)	4.0 (4.4)	5.0 (5.5)	6.2 (6.8)	6.5 (7.2)	7.6 (8.4)	8.8 (9.7)

* When the temperature of the hydraulic oil is low, the lowering speed of the lower beam is reduced to 60 mm/sec (2.36 in./sec) to prevent the machine from malfunctioning. When the hydraulic oil returns to the normal temperature, the lowering speed of the lower beam returns to 90 mm/sec (3.54 in./sec).

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Numerical controls

Position command method		Incremental
Number of control axes		Simultaneous 8-axis automatic operation (D1, D2, L1, L2, Y1, Y2, Z1, Z2)
Least input increment	D-axis	0.001 mm (0.0001 in.)
	L-axis	0.01 mm (0.001 in.)
Storage tools		Stored as AMADA standard tools
Display method		14.1" color LCD
Feeding speed	D-axis	1 to 8 mm/sec (0.039 to 3.03 in./sec)
	L-axis	30000 mm/min (1181.10 in./min)
Movable range	D-axis	0 to 150.00 mm/sec (0 to 5.9055 in.)
	L-axis	2 to 501 mm (0.081 to 19.678 in.), -OT, +OT soft LS
Power		200/230/400/460 V
Environment	Temperature	0 to 40°C (32 to 104°F) when operating
	Humidity	75% (relative humidity), non-condensing

LIST OF STANDARD NC FUNCTIONS

- Offset bending
- Automatic calculation
- Angle compensation
- Playback function
- Pullback function
- All set input
- Idle timer
- Slowdown timer
- Multiple lower limits (stepless)
- Backgauge operation selection (automatic)
- Elongation compensation value table
- Angle compensation value table
- Quantity setup
- Stroke counter
- Clock function
- Integrating timer
- Tool allowable pressure check function
- Optional input
- Elongation compensation function



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Accessories for voltage change

400/460V

Model	3512	5012	5020	8020	8025	1025	1030	1253
Circuit breaker	BU-ES B 3030L	BU-ESB3050L				BU-ESB3070L		
Motor circuit breaker	BU-ES B 3020L	BU-ESB3040L						
Thermal relay	TR-2N/3 (9-13A)	TR-3N/3 (12-18A)				TR-3N/3 (18-26A)		
Fuse	ATQ15							
Varistor kit	ERZC14DK102U							
Safety cover	BU-CFHA							
Cable	100mm × 1				150mm×2			

200/230V

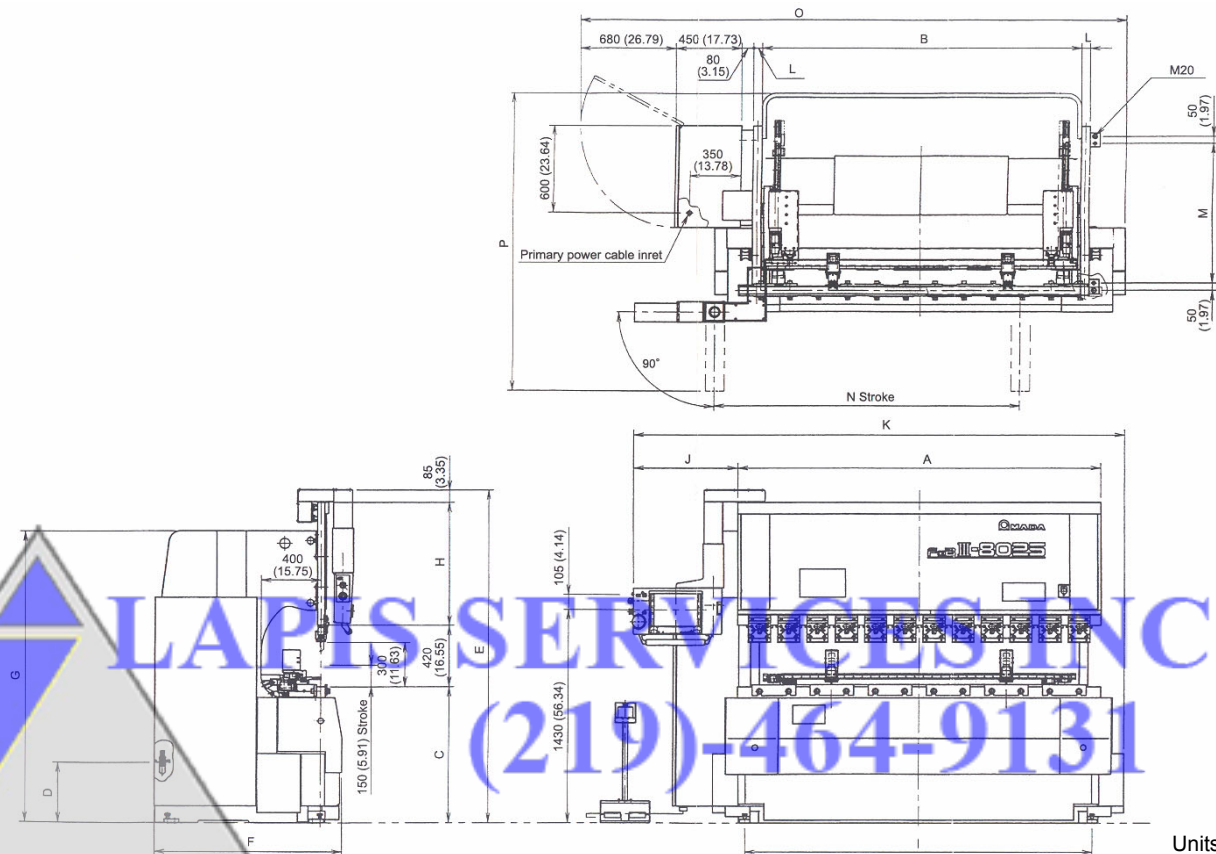
Model	3512	5012	5020	8020	8025	1025	1030	1253
Circuit breaker	BU-ES B 3050L	BU-ESB3100L				BU-ESB3125L		
Motor circuit breaker	BU-EC A 3030L	BU-ECA3050L				BU-ECA3070L		
Thermal relay	TR-3N/3 (18-26A)	TR-3N/3 (24-36A)				TR-3N/3 (34-50A)		
Fuse	ATQ30							
Varistor kit	ERZC14DK471U							
Safety cover	BU-CFHA							
Cable	100mm × 2				350mm×1			

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Dimensions of machine



Units = inch

Model	Beam Length	Frame Distance	Lower Beam Height		Overall Height	Depth	Frame Height	Upper Beam Height	Level Bold Distance		Overall Width	Frame Thickness	Anchor Bolt Distance	Stroke		
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
3512	47.28	40.19	34.87	-	77.03	49.25	72.7	22.06	46.1	24.43	80.38	1.58	36.25	31.52	101.26	78.41
5012	47.28	40.19	34.87	-	77.03	49.25	72.5	22.06	46.1	24.82	80.38	1.58	36.25	31.52	101.26	78.41
5020	78.8	66.98	34.87	-	83.73	49.25	72.5	28.76	72.89	27.97	112.69	1.58	36.25	58.31	128.05	78.21
8020	78.8	66.98	37.04	-	88.06	50.63	79.39	30.73	74.47	27.97	113.48	2.36	37.04	58.31	129.63	81.17
8025	98.5	86.68	37.04	-	90.62	50.63	79.39	33.49	94.17	27.97	133.18	2.36	37.04	82.74	149.33	81.17
1025	98.5	86.68	37.04	-	92.59	56.15	81.36	34.28	94.17	27.97	113.18	2.36	42.36	82.74	149.33	81.17
1030	118.2	106.38	37.04	-	96.53	56.15	81.36	39.4	113.87	27.97	152.68	2.36	42.36	102.44	169.03	81.17
1253	118.2	106.38	37.04	-	96.53	58.9	83.33	39.4	113.87	27.97	153.86	2.36	43.34	102.44	169.82	81.76



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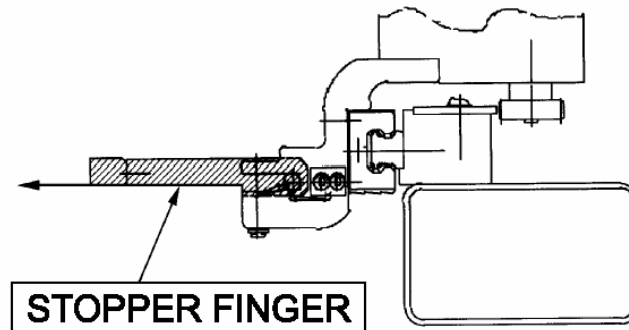


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BACKGAUGE

One-touch stopper fingers

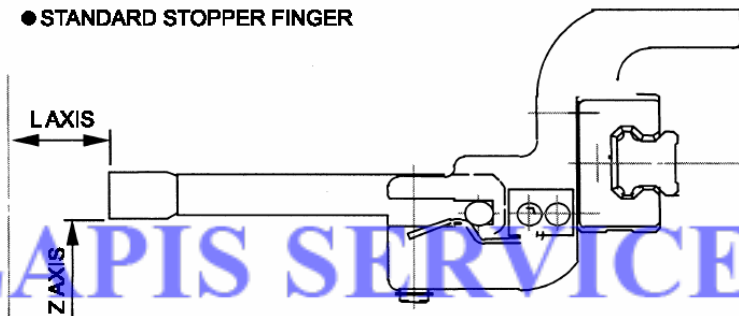
The stopper fingers can be changed by one-touch. Change the stopper fingers to suit the shape of work, etc.



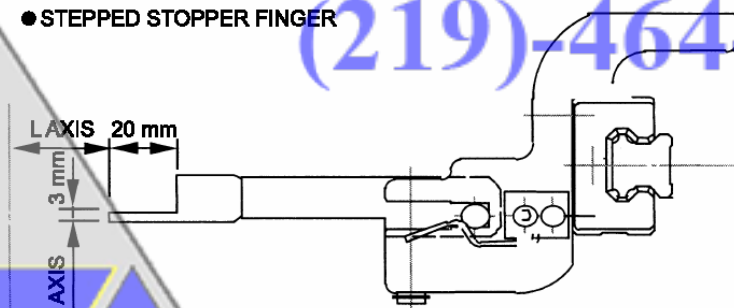
For changing the stopper fingers, refer to “Installing stopper fingers” in Part II, Installation.

The end positions and the NC displays of the standard stopper fingers and stepped stopper fingers are as shown below.

● STANDARD STOPPER FINGER

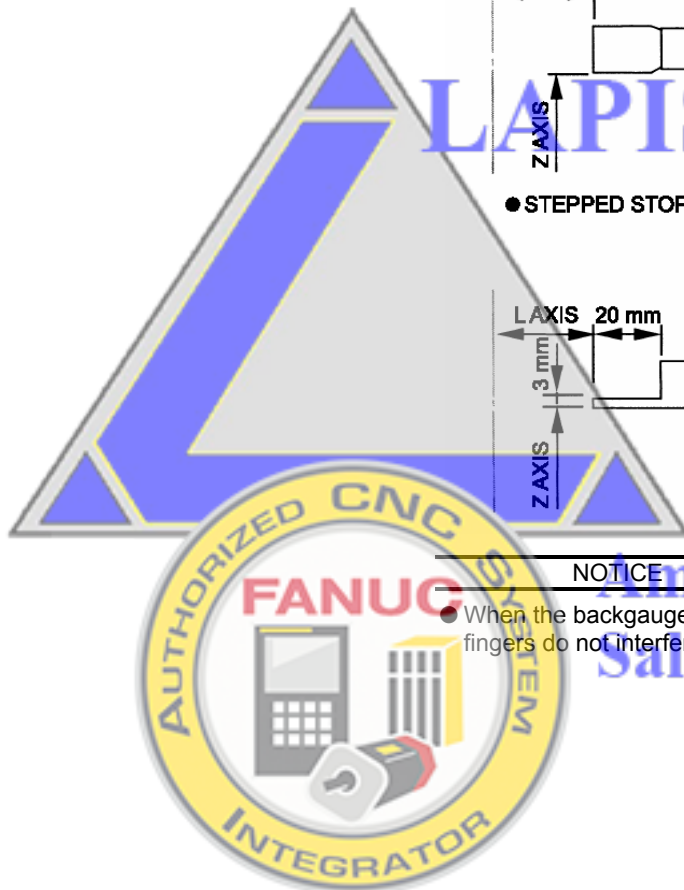


● STEPPED STOPPER FINGER



NOTICE

- When the backgauge is to be used close to the punches, take care so that the stopper fingers do not interfere with the punches that move as the worksheet is bent.



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Worksheet overhang

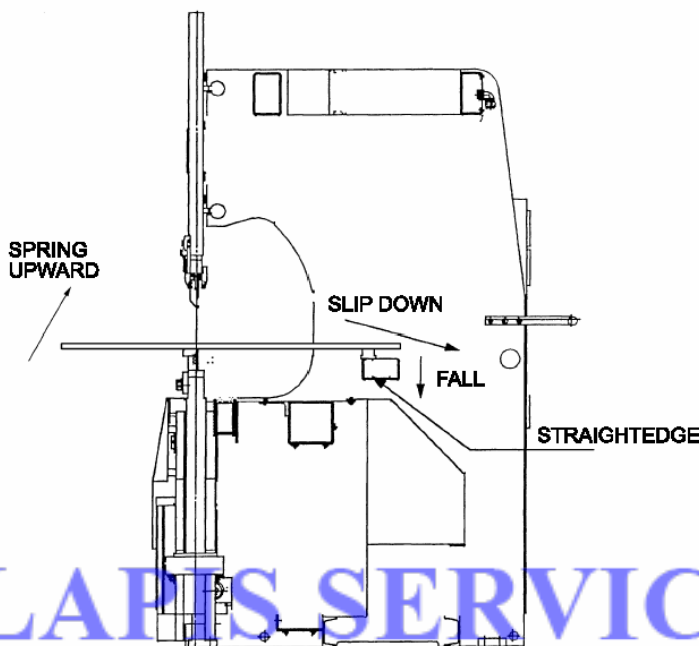
The backgauge can place a worksheet on the straightedge.

Load capacity: 20 kg.

Gently place the worksheet on the straightedge so that no shock is applied to the straightedge.

NOTICE

- When the weight of the worksheet exceeds its load capacity, the straightedge may drop down. In such a case, the worksheet may spring upward or slip downward as shown below. Be sure that the worksheet weight does not exceed the straightedge load capacity.



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