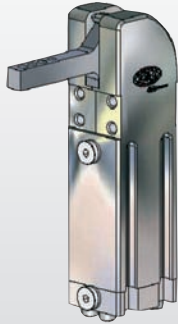


NEW

81L Series



page **14.12**










NEW

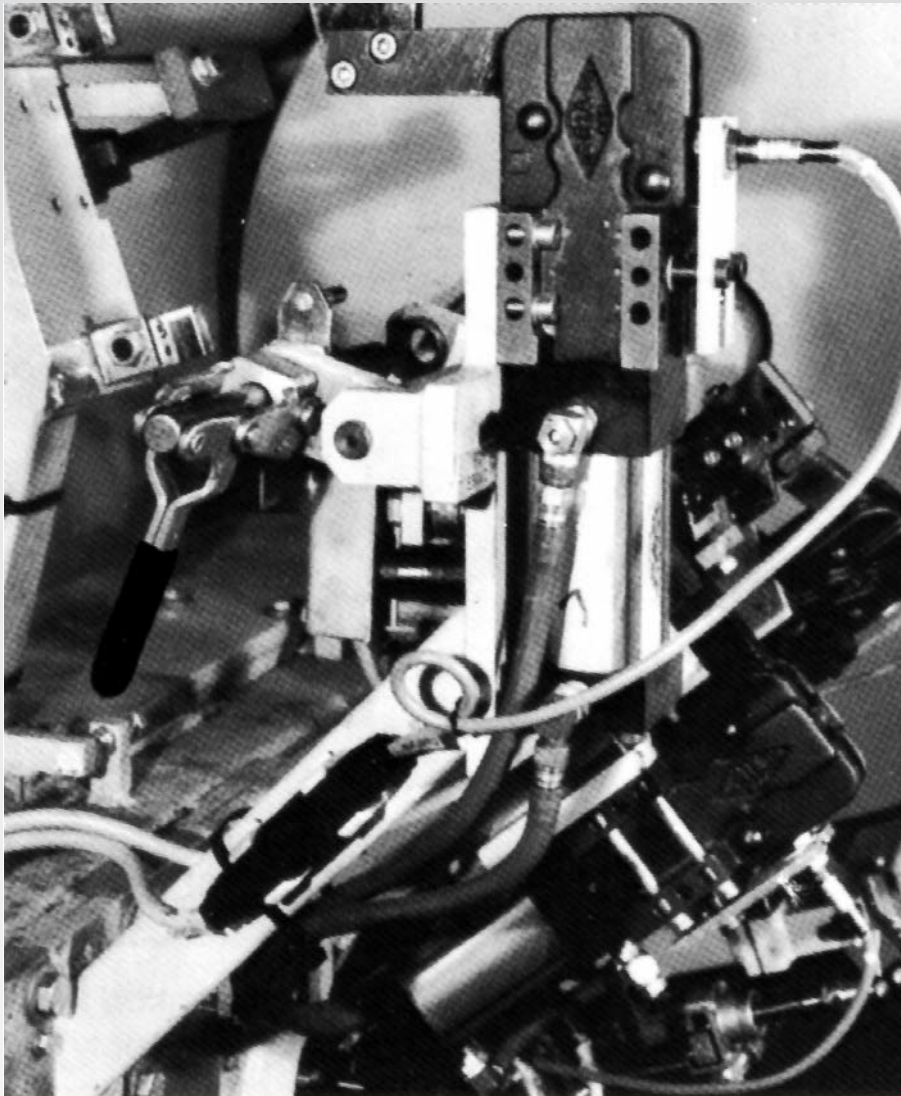
82L Series



page **14.18**

Product group - automation power clamps

	Model no.	Holding Capacity max. [lbs.]	Category	Page		Model no.	Holding Capacity max. [lbs.]	Category	Page
	840 841	1,500 1,500		14.4		82L25 82L30 82L40		Without manual handle	14.18
	860 861 890 891 1000 1001	3,000 3,000 5,000 5,000 10,000 10,000		14.6					
	863 864 893 894			14.8		82L25 82L32 82L40		With manual handle	14.30
	991-MRM 1091-MRM			14.10					
	81L12 81L16 81L20 81L25			14.12					



Heavy-duty power clamp 891 and Model 624 straight-line action clamp modified on a welding machine.

Models 840, 841

Designed for high production applications, these toggle action pneumatic clamps offer exceptional clamping forces and holding capacities – far greater than other clamps of similar size. And unlike most pneumatic toggle clamps, they do not require greater pressure to open than to close.

Of special importance in the design of the Series 840 is the oval cylinder. Because of the extremely narrow profile of these clamps, they can be used in cramped quarters or can be ganged closer together in multiple installations.

The even numbered models in this series feature a 180° clamping arm which travels to an over-center locked position parallel (180°) to the

clamp centerline. The corresponding odd numbered models have a 90° arm. The angular locked position of both versions is precisely controlled by the hardened steel insert. Clamp arms can be machined, drilled, cut off or welded to suit the application requirements.

Models 840 and 841 are tongue-mount clamps.

ALSO AVAILABLE

Switch Options Page 13.5

See accessories beginning on pages 9.1 and 13.1.

Magnetic Ring
Now A
Standard Feature

58400
Model 840



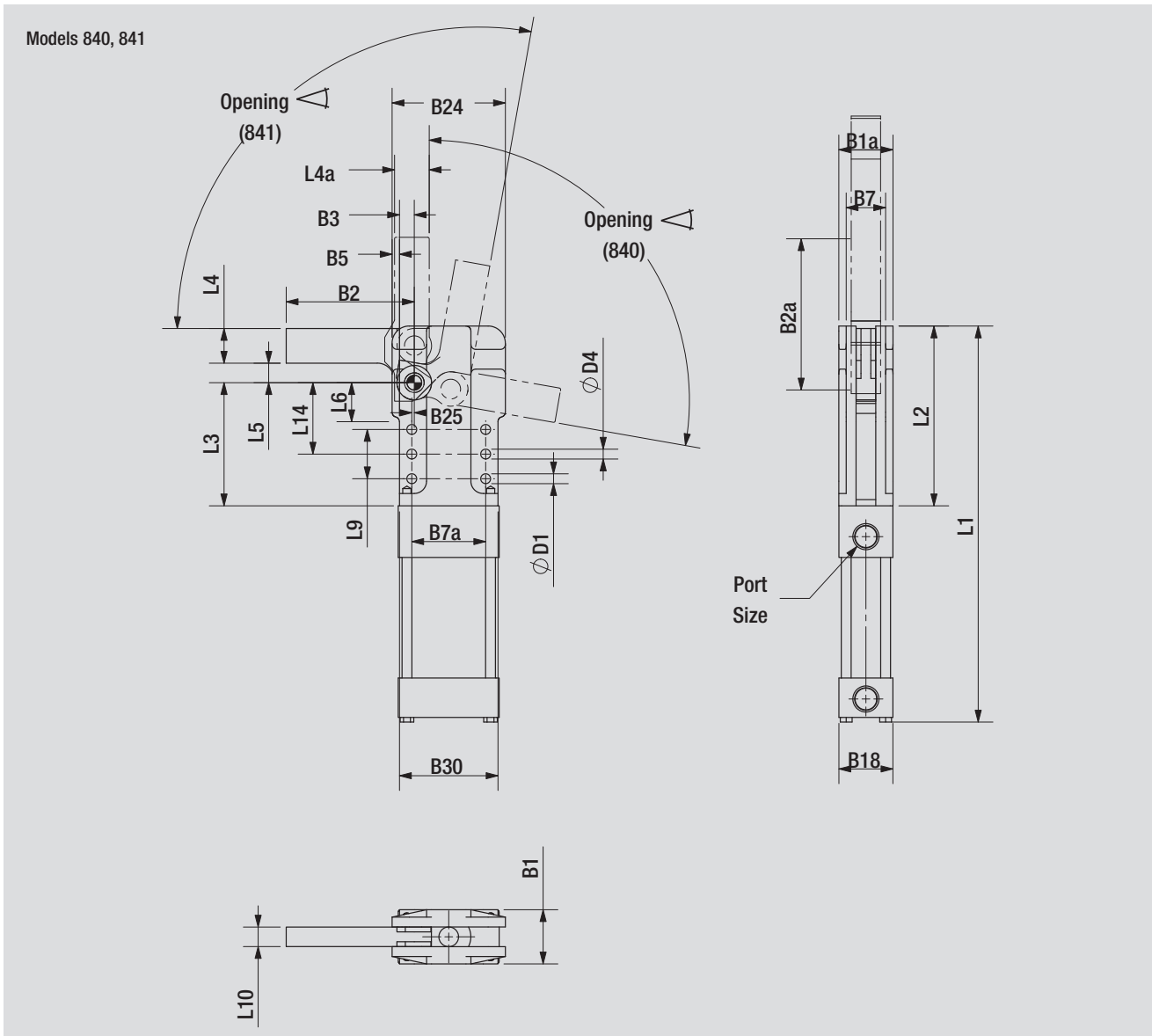
58410
Model 841



Model no.	Formula to Calculate Exerting Force
840 841	$\text{Exerting Force (lbs.)} = \frac{\text{Max. Clamp Arm} \times 12 \times \text{Line Pressure (PSI)}}{\text{Distance from Pivot Point to Clamping Point (in.)}}$

Model no.	Holding Torque max. [in. lbf.]	Clamping Torque @ 80 PSI [in. lbf.]	Piston – [in.]	Arm Position	Weight [lbs.]	Port Size NPT	B1	B1a	B2	B2a	B3	B5	B7	B7a	B18
840	4,500	960	1.50	100°	3.90	3/8	1.38	1.38	–	3.69	0.38	0.19	1.00	1.88	1.37
841	4,500	960	1.50	100°	4.25	3/8	1.38	1.38	3.25	–	0.38	0.19	1.00	1.88	1.37

Model no.	B24	B25	B30	øD1	øD4	L1	L2	L3	L4	L4a	L5	L6	L9	L10	L14
840	2.88	0.06	2.50	0.25	0.25	10.05	4.56	3.13	–	0.88	–	0.88	1.25	0.50	1.81
841	2.88	0.06	2.50	0.25	0.25	10.05	4.56	3.13	0.88	–	0.49	0.88	1.25	0.50	1.81



Spare parts

Model no.	Seal kit	Cylinder
840	8410400	840CYL
841	8410400	840CYL

Models 860, 861, 890, 891, 1000, 1001

■ Automation power clamp, heavy design

Application:

Clamping, holding, gripping and positioning of sheet metal and other parts in jigs and handling systems.

Key areas of application:

High production applications

Features:

- High holding capacities
- Long cycle life
- Mounting flexibility on all four sides
- Clamping arm in horizontal or vertical clamping position
- Toggle action mechanism

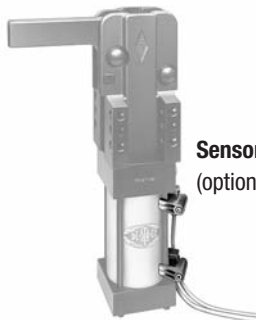
ALSO AVAILABLE	
Switch Options	Page 13.5
See accessories beginning on pages 9.1 and 13.1.	

Model no.	Formula to Calculate Exerting Force	
860 861	Max. Clamp Arm Exerting Force (lbs.)	$= \frac{31.25 \times \text{Line Pressure (PSI)}}{\text{Distance from Pivot Point to Clamping Point (in.)}}$
890 891	Max. Clamp Arm Exerting Force (lbs.)	$= \frac{67.5 \times \text{Line Pressure (PSI)}}{\text{Distance from Pivot Point to Clamping Point (in.)}}$
1000 1001	Max. Clamp Arm Exerting Force (lbs.)	$= \frac{150 \times \text{Line Pressure (PSI)}}{\text{Distance from Pivot Point to Clamping Point (in.)}}$

Magnetic Ring
Now A
Standard Feature



Model 861, 891 or 1001
(clamping arm in horizontal
clamping position)



Sensors
(optional)

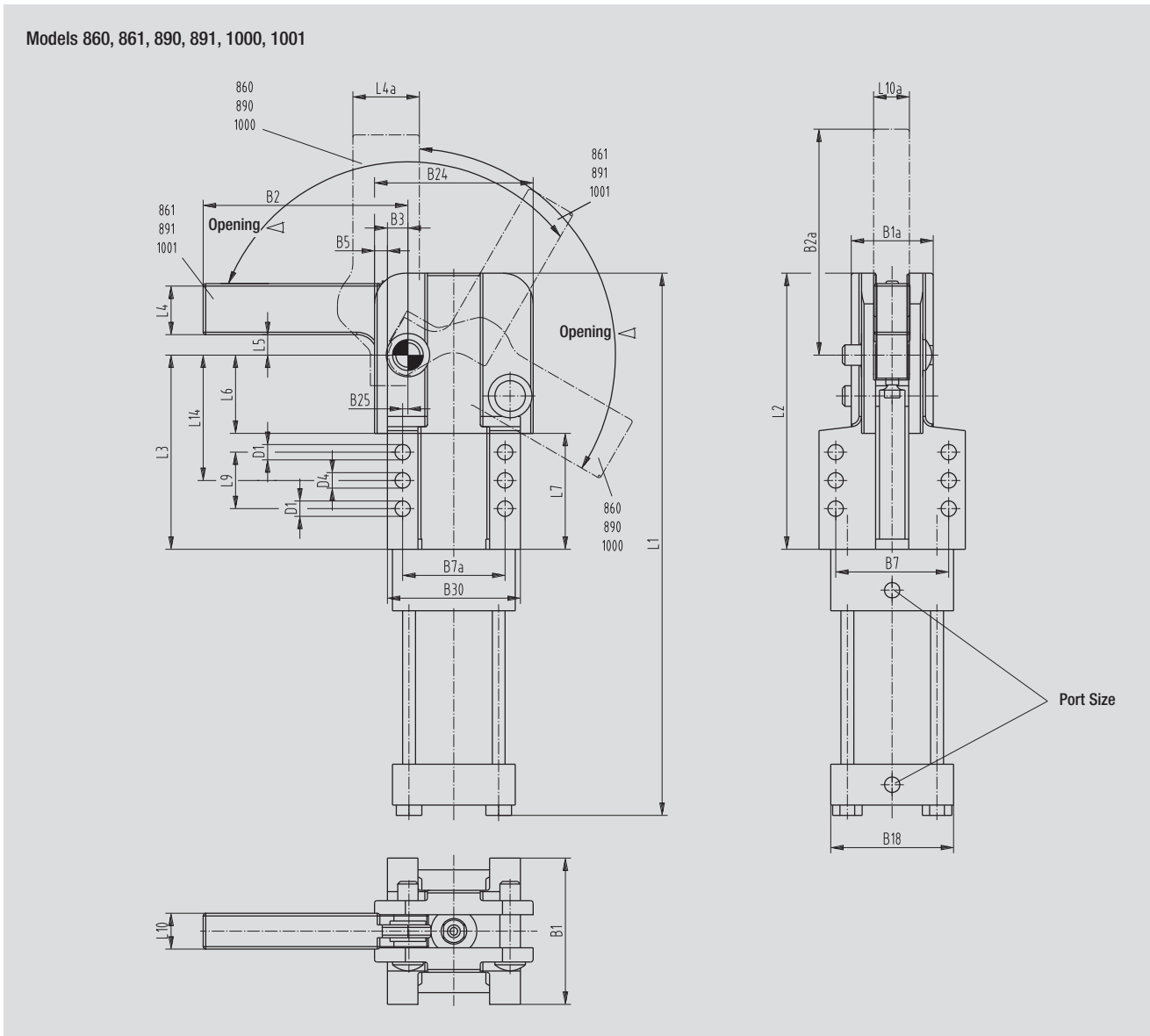


Model 860, 890 or 1000
(clamping arm in vertical
clamping position)

Technical data

Model no.	Holding Torque max. [in. lbf.]	Clamping Torque @ 80 PSI [in. lbf.]	Piston – [in.]	Arm Position	Weight [lbs.]	Port Size G	B1	B1a	B2	B2a	B3	B5	B7	B7a	B18
860	9,000	2,500	2.00	180°	8.75	3/8	2.94	1.75	–	5.44	0.41	0.25	2.31	2.19	2.50
861	9,000	2,500	2.00	90°	9.00	3/8	2.94	1.75	4.00	–	0.41	0.25	2.31	2.19	2.50
890	15,000	5,400	2.50	180°	13.00	3/8	3.56	2.00	–	6.57	0.50	0.31	2.76	2.50	3.00
891	15,000	5,400	2.50	90°	13.50	3/8	3.56	2.00	5.06	–	0.50	0.31	2.76	2.50	3.00
1000	30,000	12,000	3.25	180°	32.00	1/2	4.50	2.62	–	9.00	0.63	0.44	3.50	3.50	3.75
1001	30,000	12,000	3.25	90°	33.00	1/2	4.50	2.62	7.00	–	0.63	0.44	3.50	3.50	3.75

Model no.	B24	B25	B30	øD1	øD4	L1	L2	L3	L4	L4a	L5	L6	L7	L9	L10	L14
860	3.31	0.09	2.81	0.34	0.31	12.44	5.75	4.06	–	1.12	–	1.44	2.50	1.25	0.62	2.50
861	3.31	0.09	2.81	0.34	0.31	12.44	5.75	4.06	1.13	–	0.40	1.44	2.50	1.25	0.62	2.50
890	3.87	0.13	3.25	0.41	0.38	13.37	6.75	4.75	–	1.25	–	1.75	2.65	1.38	0.81	3.06
891	3.87	0.13	3.25	0.41	0.38	13.37	6.75	4.75	1.25	–	0.50	1.75	2.65	1.38	0.81	3.06
1000	5.38	0.13	4.50	0.53	0.50	17.51	9.25	6.25	–	1.75	–	2.25	3.96	2.00	1.00	3.75
1001	5.38	0.13	4.50	0.53	0.50	17.51	9.25	6.25	1.75	–	0.88	2.25	3.96	2.00	1.00	3.75



Information for machining of clamp arm: Steel 1.0726

Spare parts

Model no.	Seal kit	Cylinder
860	8610100	865133
861	8610100	865132
890	8910100	895133
891	8910100	895132
1000	10010100	1005134
1001	10010100	1005133

Models 863, 864, 893, 894

These power clamps have many unique features which make them ideal for use in hostile welding and machining environments.

- Linkage is completely enclosed to keep contaminants out.
- Clamp arm is offset, and it can be mounted on the left-side (L), right-side (R) or on both sides of the clamp (D).
- Over-center toggle-lock design for maximum reliability and clamping forces.
- Mounting surfaces allow blade mounting on either side of the clamp.
- Clamp arms are indexable and can be repositioned in 45° increments.
- Magnetic ring sensing options available.
- Clamp arm is weldable/machinable to suit any application.
- Must install supplied restrictor fittings before use.



58631
Model 863-L



58640
Model 864-D

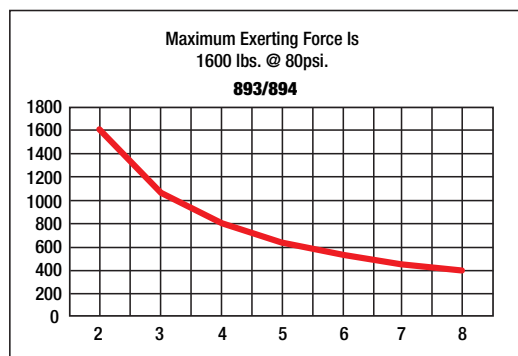
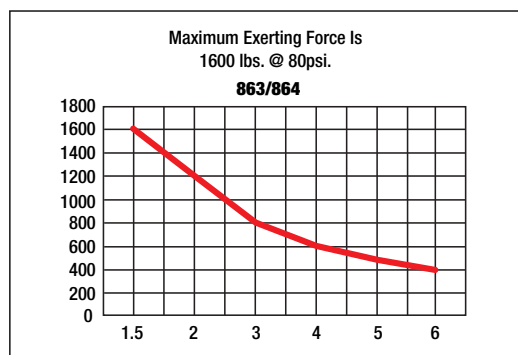
Magnetic Ring
Now A
Standard Feature

ALSO AVAILABLE

Switch Options Page 13.5

See accessories beginning pages 9.1 and 13.1

Model no.	Formula to Calculate Exerting Force	
863 864	Max. Clamp Arm Exerting Force (lbs.)	$= \frac{30 \times \text{Line Pressure (PSI)}}{\text{Distance from Pivot Point to Clamping Point (in.)}}$
893 894	Max. Clamp Arm Exerting Force (lbs.)	$= \frac{40 \times \text{Line Pressure (PSI)}}{\text{Distance from Pivot Point to Clamping Point (in.)}}$



58930
Model 893-D

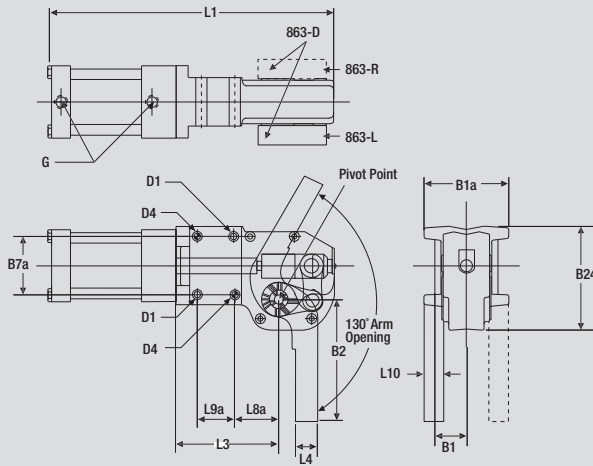


58932
Model 893-R

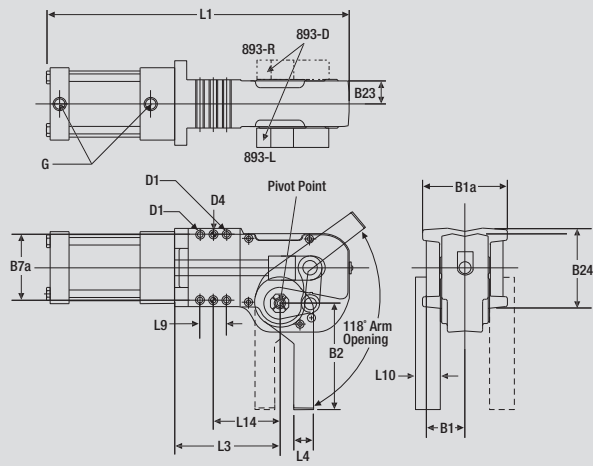
Technical data

Model no.	EDP no.	Weight	Arm Style	Arm Opening
863-D	58630	13.5 lbs.	90° DUAL	130°
863-L	58631	12.5 lbs.	90° L.H.	130°
863-R	58632	12.5 lbs.	90° R.H.	130°
864-D	58640	13.5 lbs.	180° DUAL	121°
864-L	58641	12.5 lbs.	180° L.H.	121°
864-R	58642	12.5 lbs.	180° R.H.	121°
893-D	58930	20.0 lbs.	90° DUAL	118°
893-L	58931	18.0 lbs.	90° L.H.	118°
893-R	58932	18.0 lbs.	90° R.H.	118°
894-D	58940	20.0 lbs.	180° DUAL	118°
894-L	58941	18.0 lbs.	180° L.H.	118°
894-R	58942	18.0 lbs.	180° R.H.	118°

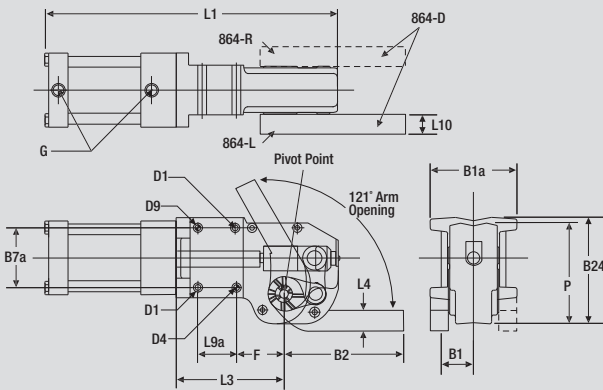
Model 863



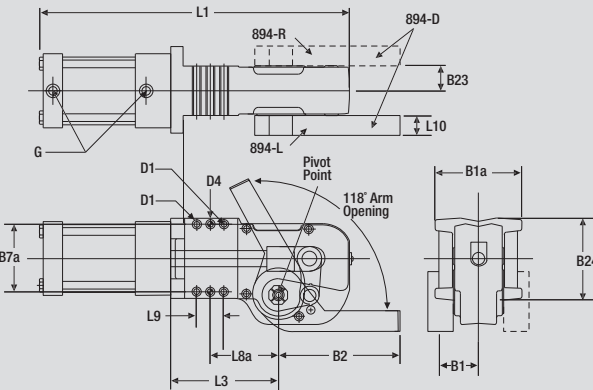
Model 893



Model 864



Model 894

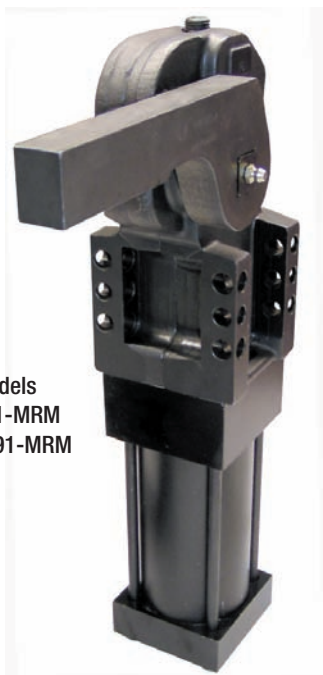


Model no.	B1	B1a	B2	B7a	B23	B24	D1	D4	G	L1	L3	L4	L8a	L9a	L10
863-D	1.31	2.50	5.00	1.77	—	3.64	3/8-16 (4)	0.37 (2)	3/8 NPT(2)	13.58	4.31	1.00	1.61	1.77	0.75
863-L	1.31	2.50	5.00	1.77	—	3.64	3/8-16 (4)	0.37 (2)	3/8 NPT(2)	13.58	4.31	1.00	1.61	1.77	0.75
863-R	1.31	2.50	5.00	1.77	—	3.64	3/8-16 (4)	0.37 (2)	3/8 NPT(2)	13.58	4.31	1.00	1.61	1.77	0.75
864-D	1.31	2.50	5.00	1.77	—	3.64	3/8-16 (4)	0.37 (2)	3/8 NPT(2)	13.58	4.31	1.00	1.61	1.77	0.75
864-L	1.31	2.50	5.00	1.77	—	3.64	3/8-16 (4)	0.37 (2)	3/8 NPT(2)	13.58	4.31	1.00	1.61	1.77	0.75
864-R	1.31	2.50	5.00	1.77	—	3.64	3/8-16 (4)	0.37 (2)	3/8 NPT(2)	13.58	4.31	1.00	1.61	1.77	0.75
893-D ▲	1.50	3.48	5.00	2.50	1.01	3.22	3/8-16 (8)	0.37 (2)	3/8 NPT(2)	14.60	4.86	1.00	3.00	1.38	1.00
893-L ▲	1.50	3.48	5.00	2.50	1.01	3.22	3/8-16 (8)	0.37 (2)	3/8 NPT(2)	14.60	4.86	1.00	3.00	1.38	1.00
893-R ▲	1.50	3.48	5.00	2.50	1.01	3.22	3/8-16 (8)	0.37 (2)	3/8 NPT(2)	14.60	4.86	1.00	3.00	1.38	1.00
894-D ▲	1.50	3.48	5.00	2.50	1.01	3.22	3/8-16 (8)	0.37 (2)	3/8 NPT(2)	14.60	4.86	1.00	3.00	1.38	1.00
894-L ▲	1.50	3.48	5.00	2.50	1.01	3.22	3/8-16 (8)	0.37 (2)	3/8 NPT(2)	14.60	4.86	1.00	3.00	1.38	1.00
894-R ▲	1.50	3.48	5.00	2.50	1.01	3.22	3/8-16 (8)	0.37 (2)	3/8 NPT(2)	14.60	4.86	1.00	3.00	1.38	1.00

▲ Available upon request, as are a number of other modifications Note: See pages 9.1 and 13.1 for accessories

Models 991-MRM, 1091-MRM

Extreme Temperature Pneumatic Clamps



Models
991-MRM
1091-MRM

These new, fully-enclosed high temperature power clamps are manufactured using proprietary coatings and extreme temperature grease and seals. This makes them ideal for rotary molding applications. With the clamps over-center toggle lock design, air lines can be disconnected, allowing the clamps to travel in and out of high temperature ovens while maintaining constant clamping pressure.

Features:

- Roller bearing used in high-stress loading points
- Over-center toggle lock mechanism
- Fully-enclosed mechanism packed with no melt, extreme temperature grease
- Extreme temperature polymer seals
- Totally enclosed clamp assembly

Benefits:

- Powerful holding and exerting forces
- Clamp remains locked when air pressure is lost or removed
- Specifically designed for rotary molding applications
- Capable of continuous exposure to 500° F and short exposure to 700° F ovens
- Retains lubrication while keeping out quench spray and other contaminants for reduced maintenance

Model no.	Weight	Arm Style*	Arm Opening
991-MRM ▲	18 lbs.	90° Dual	118°
1091-MRM ▲	33 lbs.	90° Dual	98°

▲ Available upon request

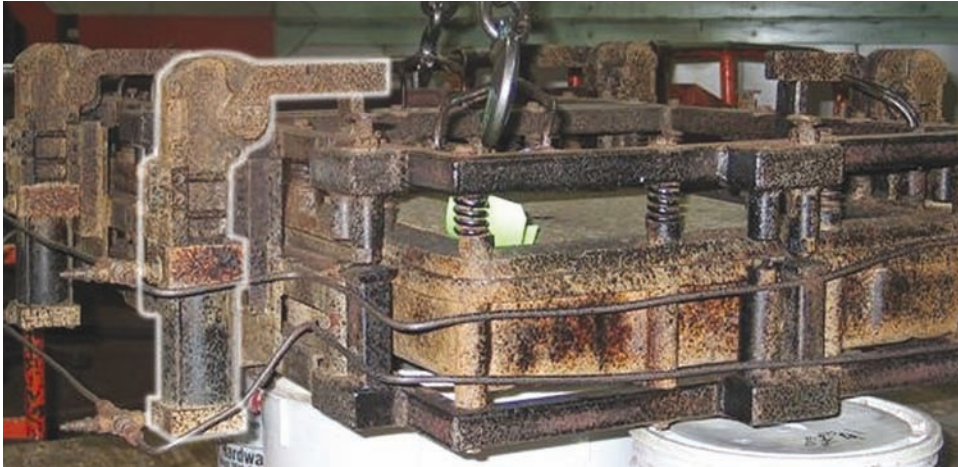
*Clamp arm can be positioned in 180° by removing the arm while the clamp is in the closed position – then adjusting arm to the 180° position

Model no.	Formula to Calculate Exerting Force
991-MRM ▲	Max. Clamp Arm Exerting Force (lbs.) = $\frac{40 \times \text{Line Pressure (PSI)}}{\text{Distance from Pivot Point to Clamping Point (in.)}}$
1091-MRM ▲	Max. Clamp Arm Exerting Force (lbs.) = $\frac{92.5 \times \text{Line Pressure (PSI)}}{\text{Distance from Pivot Point to Clamping Point (in.)}}$

▲ Available upon request

Models 991-MRM, 1091-MRM

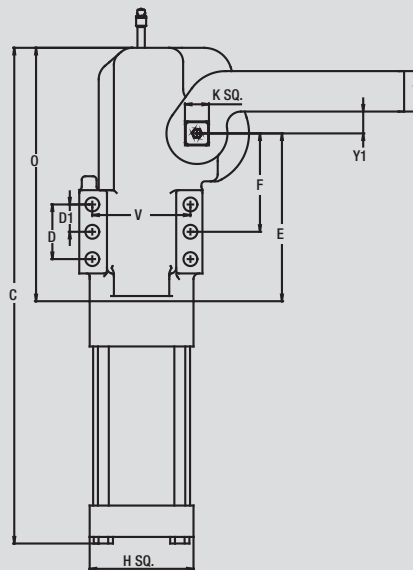
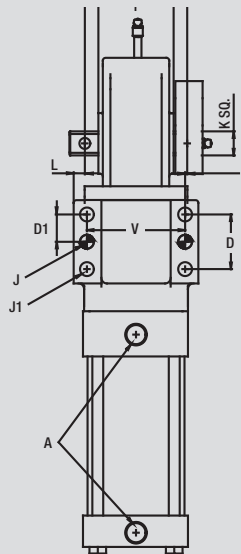
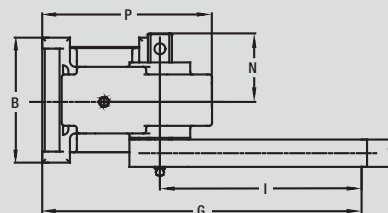
Extreme Temperature Pneumatic Clamps



991 MRM clamps (4) used to clamp two mold halves together.

Clamp to be lubed with extreme temperature grease once per month of clamp service using standard grease fitting

Models
991-MRM
1091-MRM



Model no.	A	B	C	D	D1	E	F	G	H	I	øJ	øJ1	K
991-MRM	3/8 G Port	86	376	35	17.5	123	76.2	225	76 Sq.	150	9.5	10.0	19
1091-MRM	1/2 G Port	116	448	51	25	153	90	293	95 Sq.	195	13	13.5	22

▲ Available upon request

Model no.	L	M	N	O	P	T	U	V	W	Y	Y1
991-MRM	10	70	43	183	104	49	65	70	20	33	20
1091-MRM	10.2	94	61	232	156	68	90	90	25	37	20

▲ Available upon request

Series 81L12, 81L16, 81L20, 81L25



- Automation power clamps, miniature design

Application:

Clamping, holding, gripping and positioning of metal sheets and other parts in jigs and handling systems.

Features:

- Compact design
- Long life cycle
- High holding torques

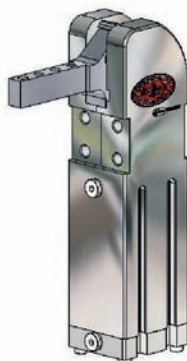
- Low weight (aluminium body)
- Four sizes, three cylinder-Ø
- Two mounting areas (front and rear)
- Toggle action mechanism
- The models can be quickly fitted with magnetic end position sensors.
- Model 81L20-101 interchangeable with 8820-2000000
- Model 81L25-101 interchangeable with 8825-1000000



81L12-10100



81L16-10100



81L20-10100



81L25-10100

Order code 81L..-2.....

Example Order no.

81L20 - 1 01 00

Models



81L12-10100



81L16-10100



81L20-10100



81L25-10100



81L12-14100



81L16-14100

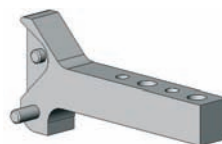


81L20-14100



81L25-14100

Base model

01 = clamping arm, horizontal
(120° standard-opening angle)41 = clamping arm, vertical
(90° standard-opening angle)

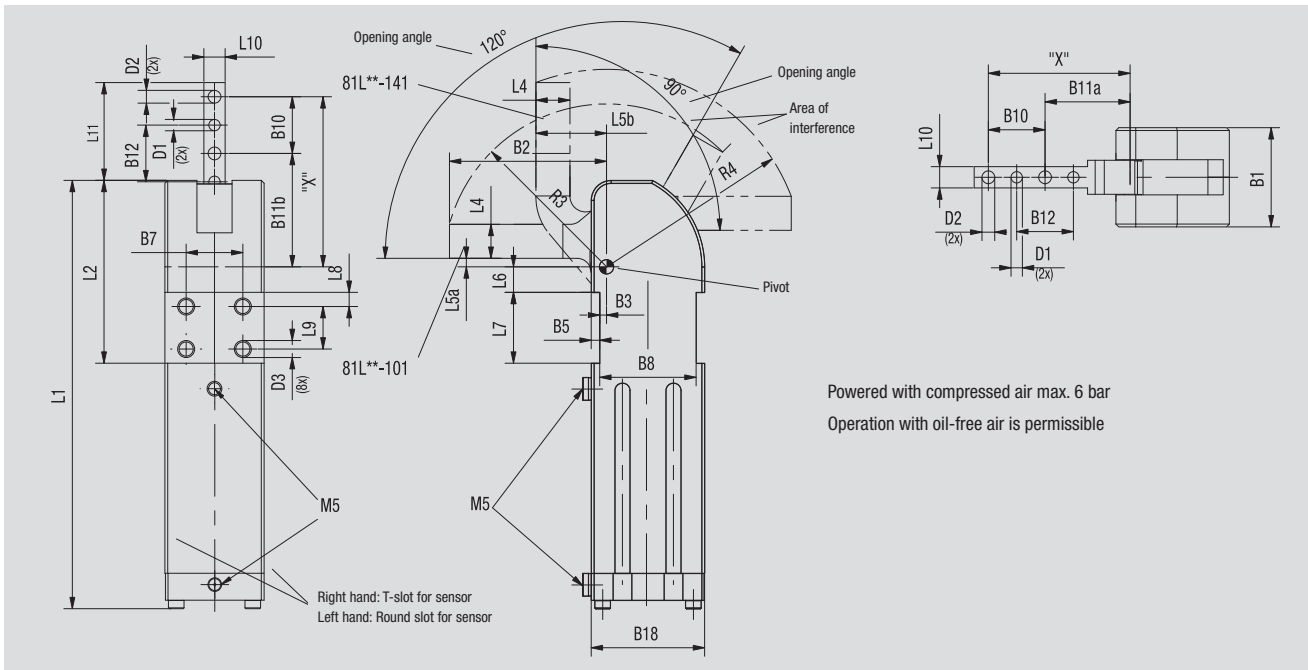
Clamping arms

00 =
Standard Design

Sensors

Model no.	Holding torque max. [in.-lbf.]	Clamping torque max. at 72 psig. [in.-lbf.]	Weight ~ [lbs.]	Air consumption per double stroke at 72 psig. [in ³]	Max. additional weight at clamp arm mounted in position "X" [lbs.]
81L12-101__	221	39	0.4	15.3	0.11
81L12-141__	177	39	0.4	15.3	0.11
81L16-101__	531	53	0.6	16.5	0.18
81L16-141__	354	57	0.6	15.9	0.18
81L20-101__	885	159	1.1	24.4	0.20
81L20-141__	708	150	1.1	21.4	0.20
81L25-101__	885	159	1.2	24.4	0.22
81L25-141__	708	150	1.2	21.4	0.22

All values shown are in metric





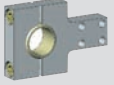
Powered with compressed air max. 6 bar
Operation with oil-free air is permissible

Technical data

Model no.	ØD1	ØD2	ØD3	B1	B2	B3	B5	B7	B8	B10	B11a	B11b	B12	B18	L1	L2	L4	L5a	L5b	L6	L7	L8	L9	L10	L11	R3	R4
	H7					±0,1	±0,2	±0,1	±0,1	±0,2					~						±0,1				~	~	
81L12-101/-141	3	3,3	M4x6	24	40	2,5	1,5	15	25	9	27	31,5	9	28	104	40,5	7	2,5	17,5	4,5	15	3	9	6	23,5	41	48
81L16-101/-141	3	4,3	M5x5	30	50	2	2	20	26	15	30	39,5	15	30	119	49,5	9	2,25	20,5	5,75	20	4	12	8	35,75	51	63
81L20-101/-141	4	4,5	M6x8	35	55,5	2,5	3	20	34	20	30,5	40	20	40	151	64,5	12	3	25	9	25	5	15	7,5	34,5	57,5	70
81L25-101/-141	4	6,5	M6x8	35	65,5	2,5	3	20	34	20	40,5	50	20	40	151	64,5	12	3	25	9	25	5	15	12	44,5	67	79

All dimensions shown are in metric (mm).

Accessories

Specification	Order no.	Comment
Position sensor 	SME-8F-DE	Sensor, 3 wire cable, 2,5 cm open end
Position sensor 	SME-8F-DE-S	Sensor, with cable, connector M8x1, 3-pin
Adaptor 	82ZB-004-1	Adaptor for mounting 81L20-1, 81L25-1 at tube system Ø25 mm

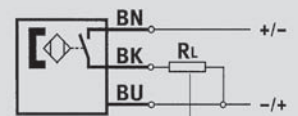
Additional sensors can be found on pages 13.2 and 13.3

Spare parts

Specification	Order no.	for clamp
Seal-Kit	81L12-1-00	81L12-1
	81L16-1-00	81L16-1
	81L20-1-00	81L20-1, 81L25-1

Pin assignment

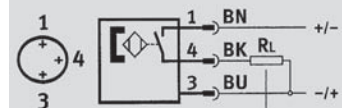
SME-8F-DE



10V ... max. 30 VAC/VDC
Max. 500 mA
Max. 10 W



SME-8F-DE-S



10V ... max. 30 VAC/VDC
Max. 500 mA
Max. 10 W



BN = Brown

BK = Black

BU = Blue

RL = Load