

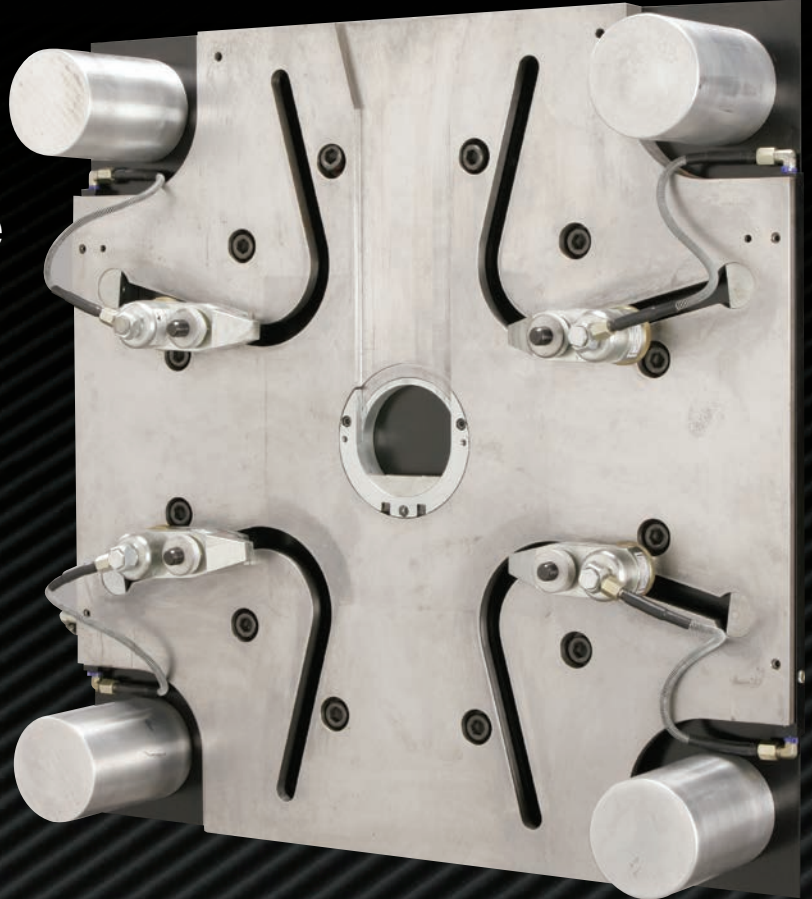
QUICK MOLD CHANGE

HYDRA-JAWS™

Variable Quick Mold Change

HYDRA-LATCH™

Quick Knockout Systems



ADDING A NEW DIMENSION TO
MACHINE PRODUCTIVITY!

UPGRADE MACHINE
PERFORMANCE & PROFITABILITY!

UPGRADE TO PFA!



pfa-inc.com



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Located just North of Milwaukee, Wisconsin, PFA is an ISO 9001:2000 Registered leader in the design and manufacture of Quick Mold Change Systems (QMC), Specialty Injection Mold Components, Specialty Industrial Cylinders, Quick Die Change Systems (QDC), Multi-Slide Die Casting Solutions, and Robotic Automation End-Effectors.

- **KOR-LOK™ Side-Action Systems** and **DIE-LOK™ Multislide Systems** for pre-loading and locking moveable cores on injection molds and die cast dies, provide improved part quality, speed and performance over traditional cam pin and toggle methods.
- **SWITCHMAX™** Connectivity components integrate various “on mold” sensors (relay, mechanical, and proximity DC) into a single signal interface common on most injection molding machines. LED indication also assists operators. No more complex wiring – just plug & play.
- **Modular Automation** products allow the coupling of Grippers, Gripper Pads (GP), Compliance Devices (RCC) and Crash Protection (OPD) into a simple and integrated robotic end-effector solution.
- **Self-Locking and Braking Cylinders** hold large loads many times that of standard cylinders, even with pressure removed, making them ideal for a wide variety of industrial applications, where large load capacity or loss of air scenarios demand greater performance and simplicity.

Our staff is committed to providing you with the best possible products and service. PFA offers a wide array of standard products plus custom solutions for especially challenging applications. Contact us with your needs. We will be glad to serve you!

HOW TO SELECT YOUR SYSTEM USING THIS CATALOG



Thank you for your interest in PFA's Quick Mold Change and Quick Change Knockout Systems. To better assist you in selecting the correct combination of subsystems and supporting options, follow this step-by-step guide which walks you through the process and references the appropriate section of the catalog for more detailed information.

The catalog is separated into 3 main sections:

- Hydra-Jaws™ Quick Mold Change Clamps & Plates page 4**
- Hydra-Latch™ Quick Knockouts . . . page 6**
- Power Control Modules page 8**

The type of mold change system, knockout system or combination affects the selection of the Power Control Module. Because application requirements may vary from our standard offering, PFA routinely provides custom modifications to meet unique arrangements. Consult a PFA representative for assistance and a free application review.

STEP-BY-STEP GUIDE:

1. Measure and record the following parameters:

Press Name/Style/Model: _____

Press Size (tonnage): _____

Maximum Mold Size (horiz & vert): _____

Maximum Mold Weight: _____

Platen Size (horiz & vert): _____

2. Review standard Hydra-Jaws™ QMC systems (page 5) for mold weight per platen, platen size match and clamp height. Select the desired standard system or consult PFA for recommendations.

Record System Part Number: _____

Note: Most systems match standard hole patterns for plate mounting. If your system is not standard, metric, etc., it may require customization. Please contact a PFA representative.

3. **KNOCKOUT SYSTEM** - Proceed to "Selecting a Knockout System" (page 6). Return when finished.

KO System Part No: _____

proceed to step 4.

If Hydra-Jaws™ only, proceed to step 5.

4. **COMBINATION SYSTEM** - A three zone Power Control Module is needed to support the combined arrangement. Select the 3-Zone 130 Series controller - 130R-HM-KO (page 8). *proceed to step 6.*

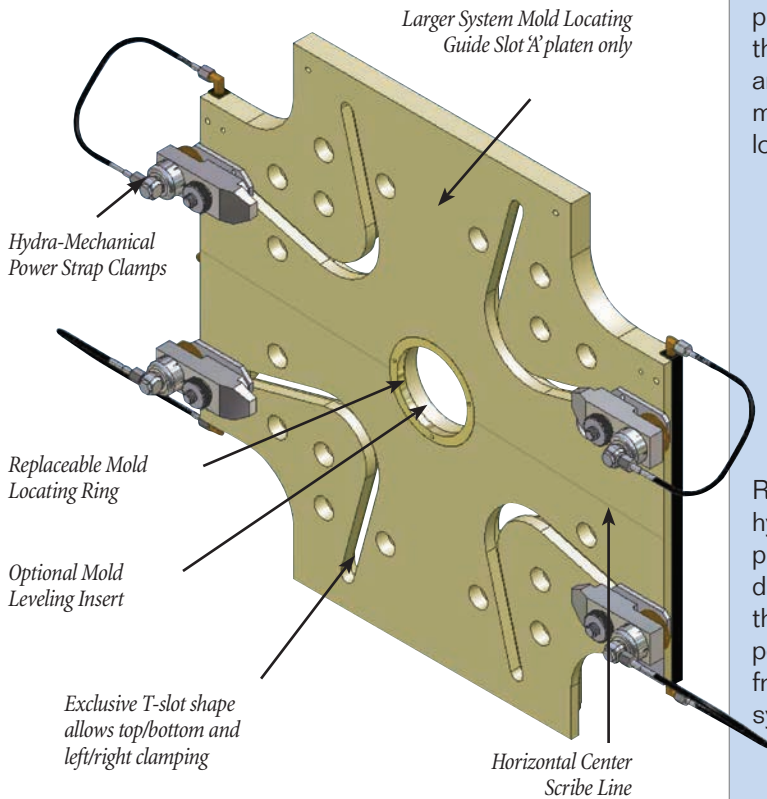
5. **HYDRA-JAWS™ ONLY** - A two zone Power Control Module is needed for a Hydra-Jaws™ only arrangement. Select the 2-Zone 120 or 125 Series controller (120R-HM or 125C-HM) (pages 9-10). *proceed to step 6.*

6. Get a Quote and Order System - Have a PFA Application Specialist review your selection, request a quotation, including any special requirements and place the order. PFA will confirm the order and ship date.

COMPLETE VARIABLE QUICK MOLD CHANGE SOLUTION **HYDRA-JAWS™**

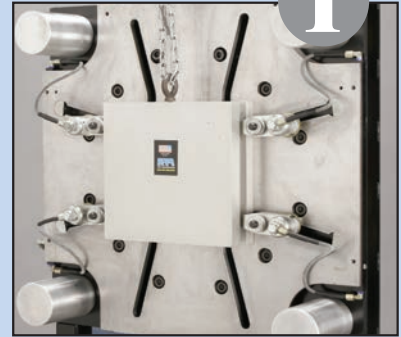
Hydra-Jaws™ systems are shipped prepared for easy installation. Simply bolt the platen plates onto the machine's platens, install manifolds, place clamps in slots and connect hoses and you're ready for production.

Once the Hydra-Jaws™ Hydra-Mechanical clamps are moved into position hydraulic pressure is applied creating high clamping forces. During production, the clamps are mechanically locked and require no hydraulic pressure. This combination allows you to enjoy both the power and speed of hydraulic clamping and the security of mechanical locks.

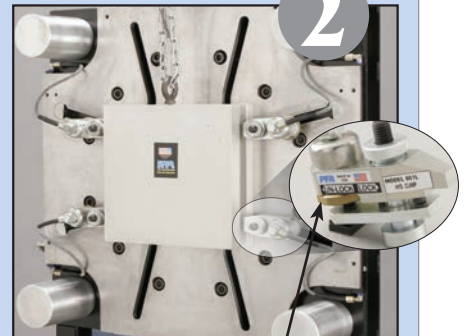


*'A' Platen mounted plate shown.
'B' platen mounted plate incorporates clearance holes for KO bars*

1
Locate the mold using the Mold Locating Guide Slot and close the moving platen. Move the clamps into position for clamping.



2
Apply hydraulic pressure to the clamps and set the mechanical locks.



Mechanical Lock

3
Release the hydraulic pressure and disconnect the hydraulic power supply from the system.



SELECTING YOUR SYSTEM



All systems provide adjustability for mold size, clamping plate thickness and left/right or top/bottom clamping. SPI standards for platen bolt patterns and knockout patterns apply. Fixed 'A' side plates are equipped with center locating hole and optional guide slot leveling feature available on nearly all sizes. Clamping force is based on 5,000 psi hydraulic pressure typically provided by PFA's Power Control Module. Custom clamp ranges, larger clamps for larger mold weights, and/or custom plates and higher clamping forces are available.

1 BROWSE STANDARD PFA CONFIGURATIONS

Typical Max. Mold Weight*** (per platen)	System Style part no.	Typical Press Size tons	DIMENSIONAL DATA					System Thickness per platen	Locating Ring Diameter	Nominal Clamping Height/Range	Clamping Force lbs./clamp	Clamp Weight
			Plate Size**		Tie Bar Clearance**		Guide Slot					
			H	V	X	Y						
6,000 lbs. (3,500 lbs.)	J8661	50-400	18	18	10	10	N/A	1 1/4"	4"	1.00 / 3/4"-1 1/4"	3,500	5 lbs.
			21	20	12	10	N/A			1.25 / 1"-1 1/2"		
			23	21	13	11	OPT			1.50 / 1 1/4"-1 3/4"		
			25	23	15	11 1/2	OPT			*		
			27	25	16	13	OPT					
			30	30	18	18	STD					
			33	33	18	18	STD					
			36	36	20	20	STD					
10,000 lbs. (6,000 lbs.)	J8825**	450-750	40+**	40+**	-	-	STD	1 1/4"	4"	1.00 / 7/8"-1 3/4"	8,000	12 lbs.
			48	48	28	28	STD			1.25 / 1 1/8"-2"		
			53	53	33	33	STD			1.50 / 1 3/8"-2 1/4"		
			55+**	55+**	-	-	STD			*		
25,000 lbs. (15,000 lbs.)	J8835**	800-1,800	55+**	55+**	-	-	STD	1 5/8"	4"	2.00 / 1 1/4"-2 1/2"	17,000	35 lbs.
										*		
50,000 lbs. (30,000 lbs.)	J8980**	2,000+	55+**	55+**	-	-	STD	2 1/8"	5"	1.75 / 1 1/2"-2"	35,000	45 lbs.

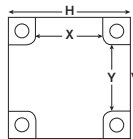
*Other clamp heights available.

**Plates for systems are often made to order, please contact a PFA representative for assistance.

***Typical Max. Mold Weight is based on rated weight per platen with a typical 60/40% weight split. Per platen ratings are based on historic ratings for typical molds with typical (low) opening forces. Molds not evenly divided must be sized on a per platen basis using the heaviest half. As some mold applications may involve larger than typical opening forces or other forces on the clamps, clamp size should be checked and selected based on the most demanding mold application for the press and in accordance with the customers in plant clamp force guidelines.

2 IDENTIFY YOUR SYSTEM PART NUMBER

Choose system style from above to create system part number.



System Style	Clamp Height	HV	XY	Bolt Size
<i>Pull from chart above</i>	<i>Select Nominal for given range</i>	<i>Horizontal x Vertical</i>	<i>Inner plate dimensions</i>	<i>5/8-11 3/4-10</i>
J8661	1.50	2725	1613	3/4-10

Part No: **J8661-1.50-2725-1613-3/4-10**

3 CHOOSE A POWER CONTROL MODULE

See page 3 or 8 for more information.

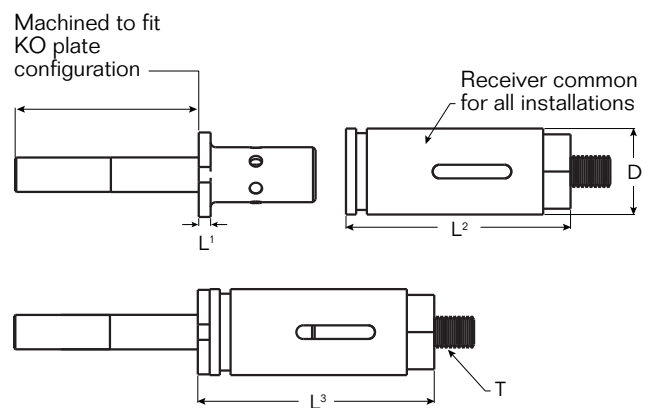
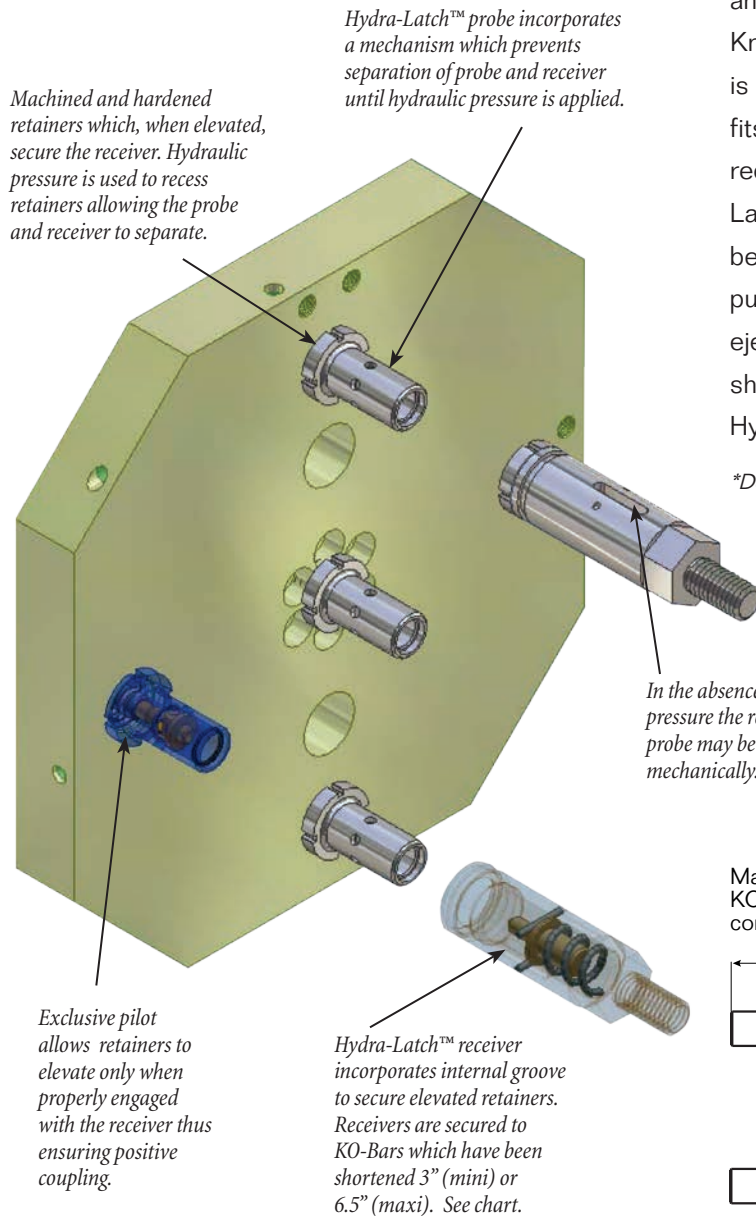
4 GET A QUOTE AND ORDER SYSTEM

Have a PFA Application Specialist review your selection, request a quotation and place the order.

ZERO MOLD MODIFICATION KO BAR QUICK CONNECT/DISCONNECT SYSTEM HYDRA-LATCH™

A Quick Mold Change system is not complete without an efficient means of connecting and disconnecting Knockout Bars (KO Bars). The Hydra-Latch™ KO System is it! Hydra-Latch™ is durable, compact, innovative and fits practically every machine. No mold modification required. An important reason for choosing Hydra-Latch™ is its easy installation and flexibility. It can fit between tie bars, avoid interference from KO plate push/pull pistons and can be installed without loss of ejection stroke*. Existing KO Bars are utilized after being shortened, drilled and tapped to accommodate the Hydra-Latch™ Receivers.

*Does not apply to front mounted manifolds.



KO Pattern Arrangement	Probe Style	'D' Diameter	L ¹	L ²	L ³	'T' Threads Std.
Center to 4" x 16"	1" Mini	1.00"	.204	2.796	3.000	1/2" - 13
6" x 28" and Up	2" Maxi	2.00"	.276	5.224	6.500	3/4" - 10

SELECTING YOUR SYSTEM



1 BROWSE STANDARD PFA CONFIGURATIONS

Model No.	MLRM04A	MLRM08A	MLRM12A	MLFM01E	MLFM05E	MXRM28A	MXRM40A	MXRM56A
Probe Style	1" Mini	1" Mini	1" Mini	1" Mini	1" Mini	2" Maxi	2" Maxi	2" Maxi
No. of Probes	4	8	12	1	5	8	8	8
Knockout Pattern	7" x 7"	4" x 16"	7" x 7" or 4" x 16"	Center Only	Center or 7" x 7"	6" x 28"	10" x 40"	16" x 56"
Knockout Bars (Receivers)	2 Horizontal or Vertical	4 Horizontal or Vertical	4 2 Inner or 4 Outer Horizontal or Vertical	1 Center	2 1 Center or 2 Outer Horizontal or Vertical	4 Horizontal or Vertical	4 Horizontal or Vertical	4 Horizontal or Vertical
Manifold Configuration	4 Single Square Rear Mounted	4 Dual Rectangle Rear Mounted	4 Triple T- or U-Shaped Rear Mounted	1 Single Square Front Mounted	1 Quint X-Shaped Front Mounted	4 Dual Rectangle Rear Mounted	4 Dual Rectangle Rear Mounted	4 Dual Rectangle Rear Mounted

2 IDENTIFY YOUR SYSTEM PART NUMBER

Example: 2" KO Plate thickness and 9/16 hole diameter with a 7" x 7" + 4" x 16" hole pattern guides off axis.

Results: Expand/drill holes to 19/32" (.592") for clearance.

T-shaped manifolds are used when the KO plate guide rods are off axis.

Model No.	KO Plate Thickness	Probe Shaft Diameter	Manifold Configuration
<i>Pull from chart above</i>	<i>If plate thickness is not uniform, custom spacers may be required. Call for details.</i>	<i>KO Hole Dia. minus .030" (.562" minimum)</i>	<i>S = Square R = Rectangle T = T-Shaped U = U-Shaped X = X-Shaped</i>
MLRM12A	2000	562	4T

Part No: **MLRM12A-2500562-4T**

3 CHOOSE A POWER CONTROL MODULE

See page 3 or 8 for more information.

4 GET A QUOTE AND ORDER SYSTEM

Have a PFA Application Specialist review your selection, request a quotation and place the order.

HYDRAULIC POWER FOR HYDRA-JAWS™ AND HYDRA-LATCH™

POWER & CONTROL MODULES

Hydraulic Power and Control Modules are made in a variety of configurations to optimize all QMC applications. From single valve (zone) carryables to multi-zone units we've got just what you need to get the job done.

- Hydra-Mechanical clamps are hydraulically actuated and mechanically locked during molding operations and need to be re-pressurized in order for the mechanical locks to be released. The HM feature provides a booster to make unlocking simple and easy.
- HYDRA-LATCH™ ONLY - Choose a single hydraulic circuit (1 zone) carryable module for convenient use and storage. Great for single or multiple systems.
- HYDRA-JAWS™ ONLY - Choose a two hydraulic circuit (2 zone) carryable or roll-around module for greater fluid volume and convenience. (Typically one hydraulic circuit is connected to the 'A' platen and the other to the 'B' platen to power hydraulic clamps).
- HYDRA-JAWS™ AND HYDRA-LATCH™ COMBINATION - Choose a three hydraulic circuit (3 zone) module when hydraulic clamping and KO Bar quick connect/disconnect systems are used.

MODEL CONFIGURATION OPTIONS

C	Carriable
R	Roll-Around
HM	Hydra-Mechanical Clamps
KO	Knockout Bar Connect/Disconnect System

COMMON SPECIFICATIONS

Air inlet pressure 150 psi maximum/
70 psi minimum recommended

Oil temperature range of 50°-120°F

All hydraulic circuit/hose fittings are JIC 37 flare
7/16 thread

Air filter/regulator is pre-set to approximately
70 psi for 5,000 psi hydraulic pressure output
to the clamps

Second regulator is adjustable to select hydraulic
pressure in the range of 1,000-5,000 psi

0-10,000 psi gauges for each circuit except
electrically actuated module (not shown)

Hydraulic valves are low friction with metal to
metal seals and a check valves to isolate each
hydraulic circuit

Enclosures are made of steel and can be easily
opened to make regulator setting changes

*See page 3 "How to Select Your System" for assistance in
selecting which system is best for your application.*



105C-KO

ONE ZONE ONE HYDRAULIC CIRCUIT

This module is most often used as a carryable unit to power Hydra-Latch™ Quick KO Bar Connect/Disconnect systems located on several machines. This module may also be fixed mounted (105S-KO) for dedicated use on a specific machine.

Weight	25 lbs.
Reservoir Capacity	2 1/2 qts.
Dimensions	14" L x 9" W x 11" H



125C-HM

TWO ZONE TWO HYDRAULIC CIRCUITS

This carryable (125C-HM) module is most often used to supply hydraulic power to mold clamps which are mechanically locked during molding operations. Two circuits are available, one each for the 'A' and 'B' platens. This module can also be placed on a stationary mount for dedicated operation on a specific machine (125S-HM).

Weight	46 lbs.
Reservoir Capacity	2 1/2 qts.
Dimensions	14" L x 9" W x 11" H



120R-HM

TWO ZONE TWO HYDRAULIC CIRCUITS

This module is most often used to supply hydraulic power to mold clamps which are mechanically locked during molding operations. Two circuits are available, one each for the 'A' and 'B' platens. The module is placed on a pedestal attached to a base with easy rolling casters. This module can also be placed on a customer supplied mount (120S-HM) or a shelf bracket (120B-HM).

Weight	
Cabinet	55 lbs.
Total	105 lbs.
Reservoir Capacity	4 1/2 qts.
Dimensions	
Cabinet	21" L x 10" W x 16" H
Pedestal/ Base with casters	34"



130R-HM-KO

THREE ZONE THREE HYDRAULIC CIRCUITS

This module is most often used to supply hydraulic power to mold clamps which are mechanically locked during molding operations. Two circuits are available, one each for the 'A' and 'B' platens. A third hydraulic circuit is added to supply hydraulic pressure to Hydra-Latch™ KO Bar Quick Connect/Disconnect Systems. The module is placed on a pedestal attached to a base with easy rolling casters. This module can also be placed on a customer supplied mount (130S-HM) or a shelf bracket (130B-HM).

Weight	
Cabinet	60 lbs.
Total	110 lbs.
Reservoir Capacity	4 1/2 qts.
Dimensions	
Cabinet	21" L x 10" W x 16" H
Pedestal/ Base with casters	34"

HYDRA-JAWS™ CLAMPS



835L CLAMP



212L CLAMP



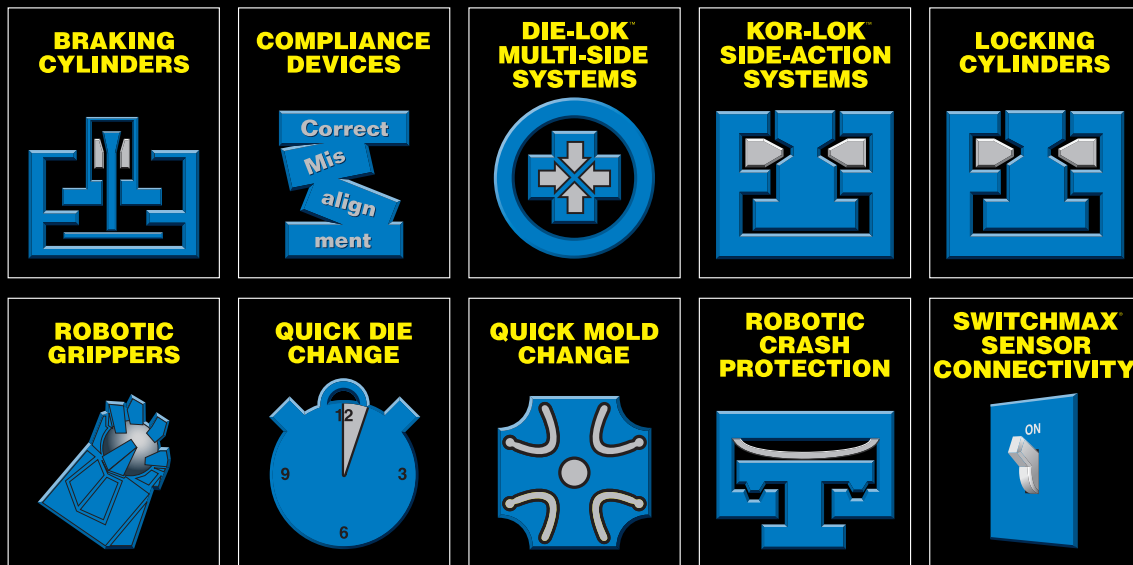
661L CLAMP



980 CLAMP



825L CLAMP



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YOUR LOCAL PFA REPRESENTATIVE:

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