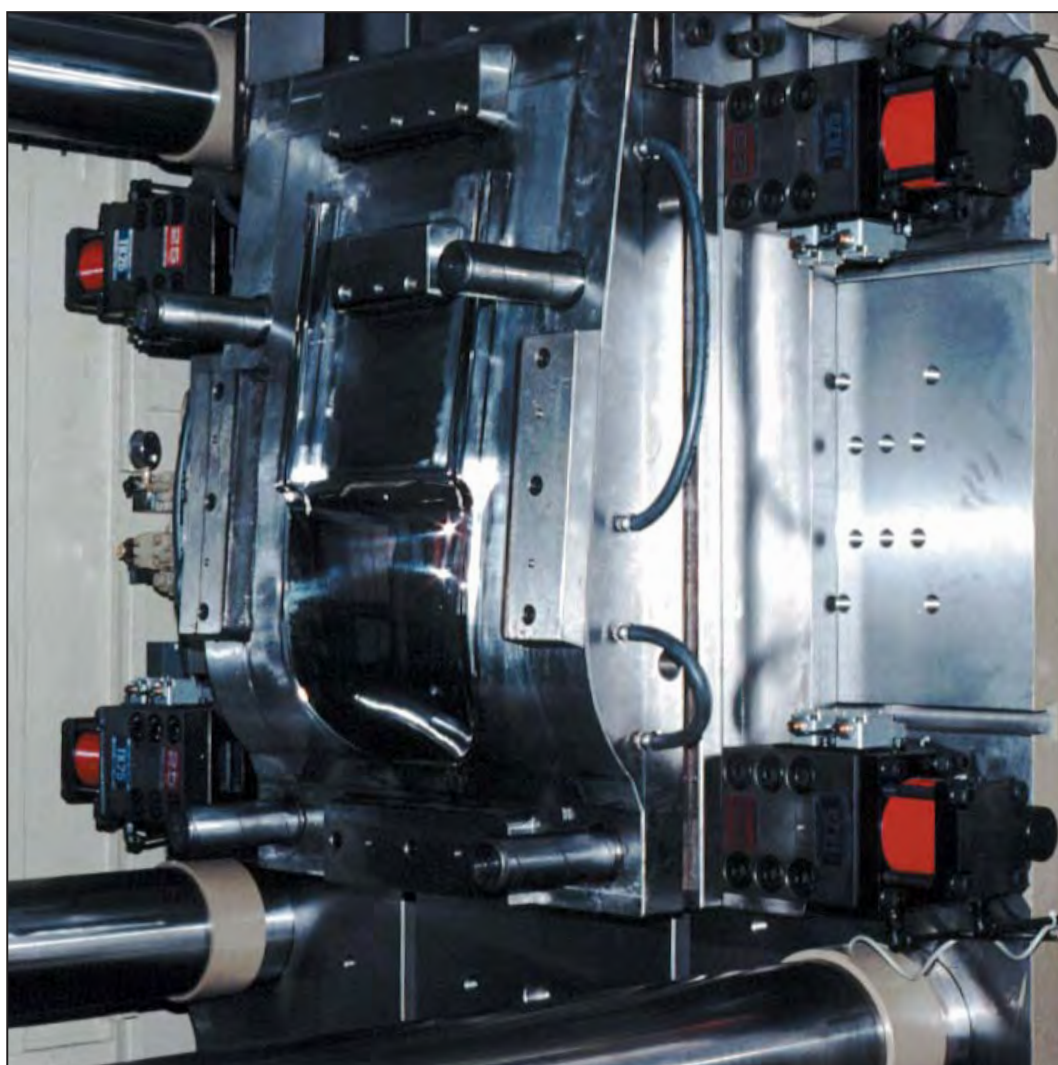


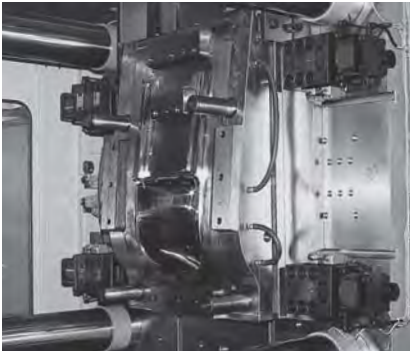
PASCAL MOLD-CHANGE SYSTEM



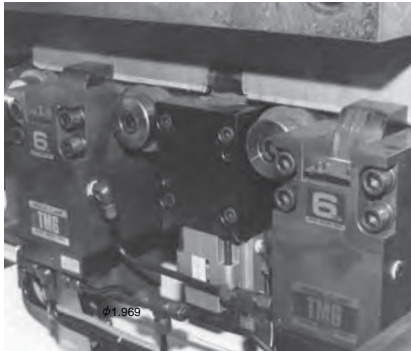
Pascal
corporation

www.pascaleng.co.jp

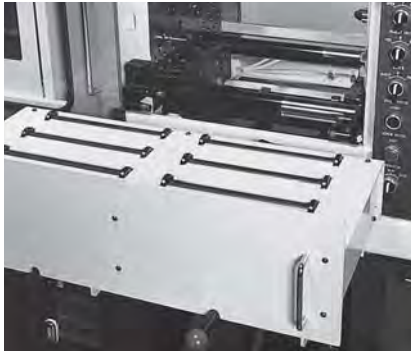
PASCAL QUICK MOLD CHANGE SYSTEM



system MKB



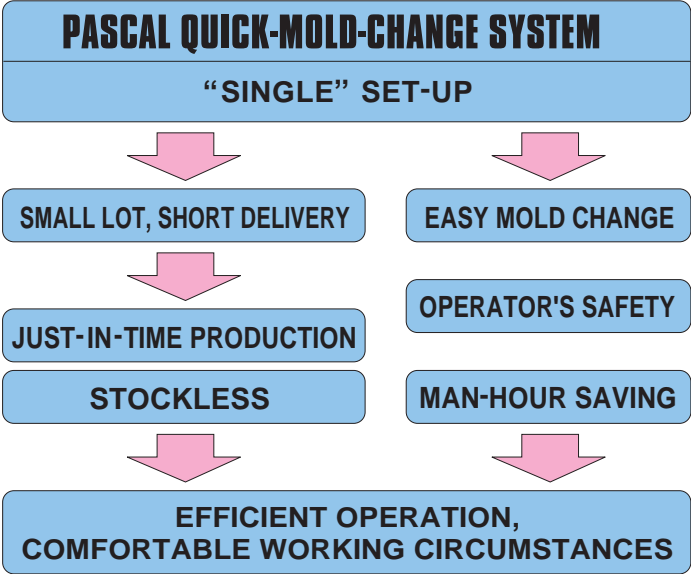
system MMH



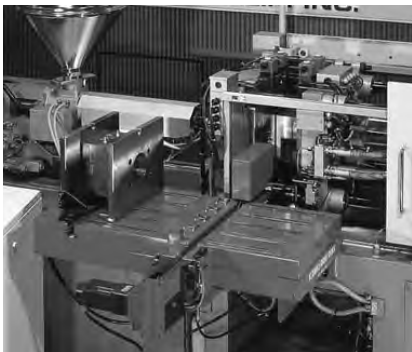
QMC-Small Size

It is a must for the injection molders that their plant operation be capable of compromising the needs of decreasing production lot and increasing variation of products, and at the same time shortening of delivery and lowering the production cost.

PASCAL offers its reliable, durable, unique and cost efficient Quick Mold Change System in accordance with individual system requirements and customer specific conditions.



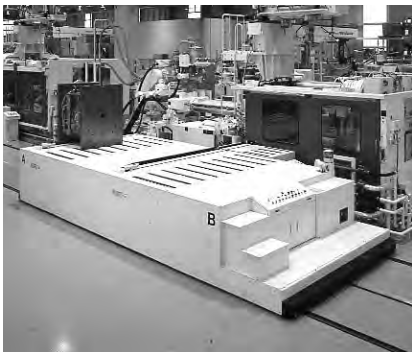
FOR INJECTION MOLDING MACHINE



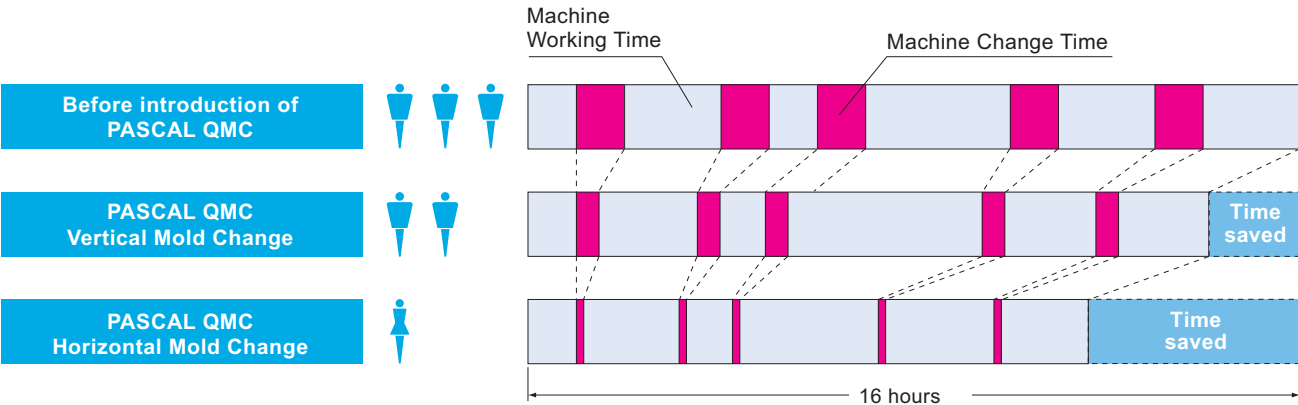
QMC-Small Size



QMC-Medium Size



QMC-Large Size



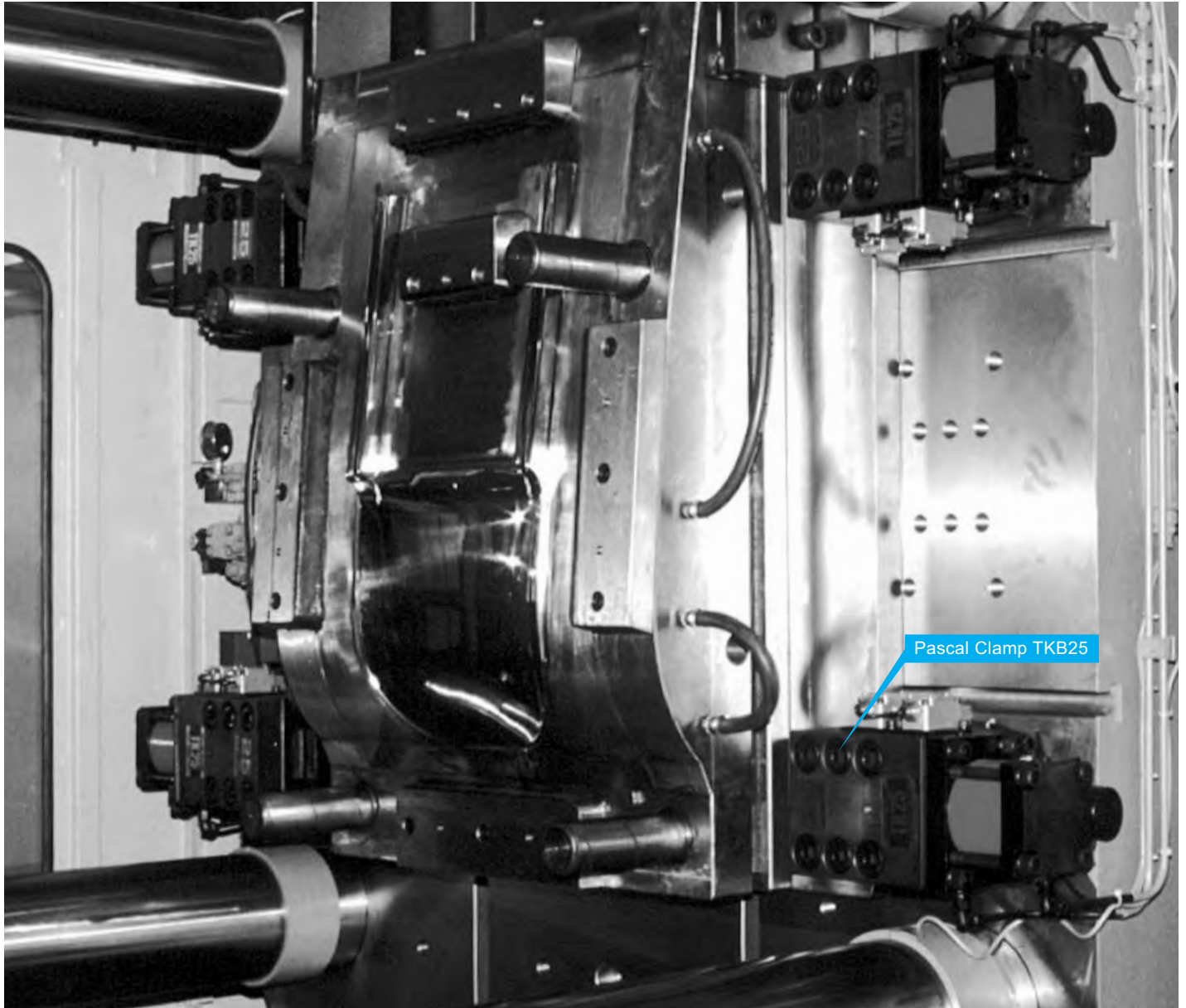
In the most successful cases :

PASCAL QMC Vertical reduced the mold change time from 60 minutes to 30 minutes.

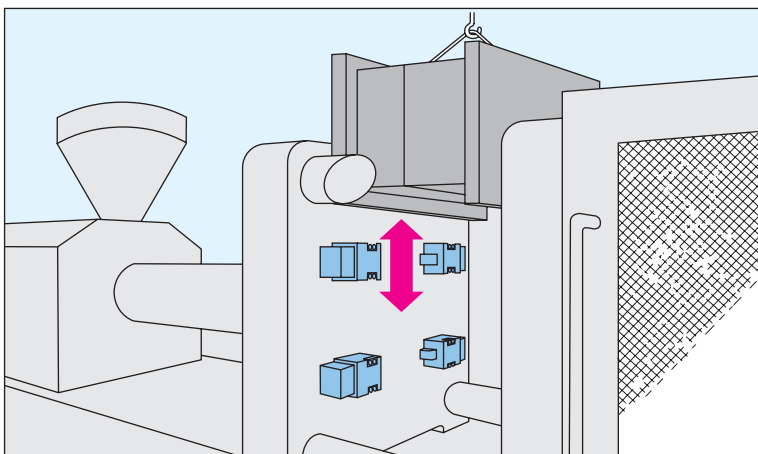
PASCAL QMC Horizontal further reduced the time down to 5 minutes.

In the line where the molds were replaced 5 times per day, eventually 30% of downtime was saved for other works. A total success is brought to the business from drastic cut of costs in time and man power.

PASCAL QUICK MOLD CHANGE SYSTEM PROMISES



Pascal Clamp TKB25



Traditional mold change operation needs skilled operators that are forced to work under hot and dangerous conditions.

PASCAL Quick Mold Change Systems can avoid this traditional problem. Operators can avoid tightening heavy bolts in narrow spaces, often between two platens. Operators can just press a button and fix the mold to the machine.

PASCAL Quick Mold Change System has continuously been adopted by many injection molders worldwide.

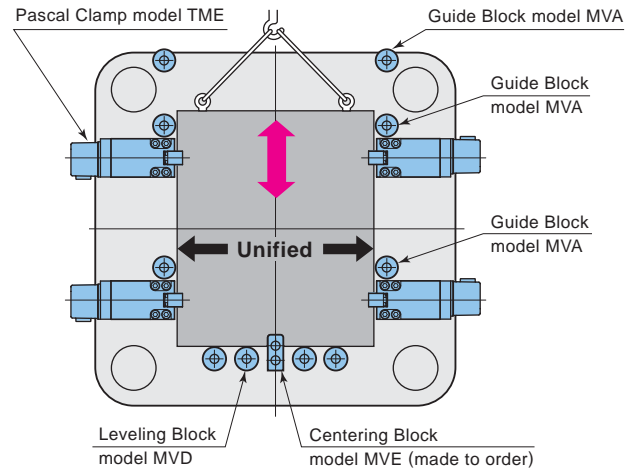
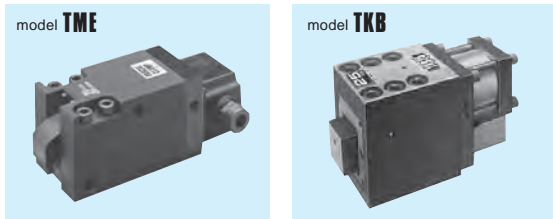
DRAMATIC INCREASE OF PRODUCTIVITY

PASCAL VERTICAL MOLD CHANGE

Vertical Mold Change by means of a crane is the simplest method and can be equipped with minimum investment cost.

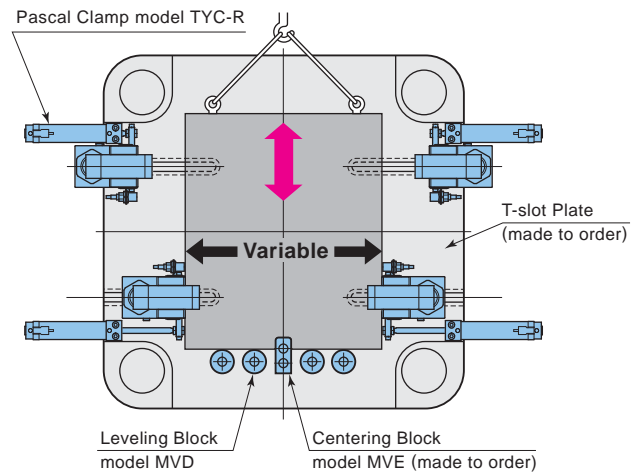
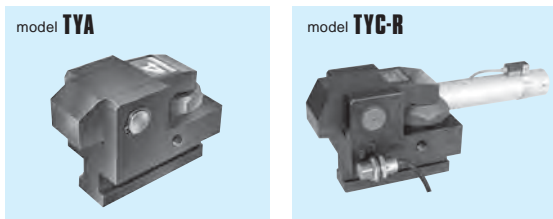
SYSTEM MME (MKB)

When the width of the molds is unified, system MME or MKB is applicable. Retracting lever clamp model TME is used for System MME, which is suitable for small to medium size injection molding machines. Model TKB is used for System MKB, which is good for large machines.



SYSTEM MYA (MYC)

When the width of the molds cannot be unified, system MYA or MYC is applicable. System MYA or MYC contains T-slotted plate to be fixed on to both platens and Pascal Auto-Slide clamp TYC-R or Pascal Manual-Slide clamp TYA respectively are installed.



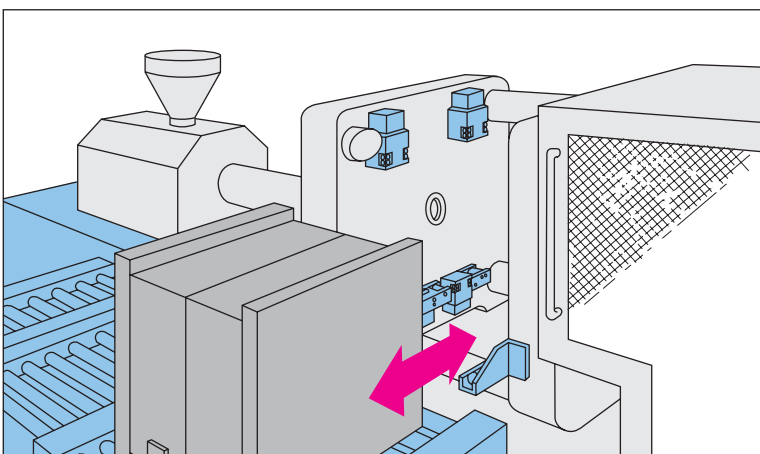
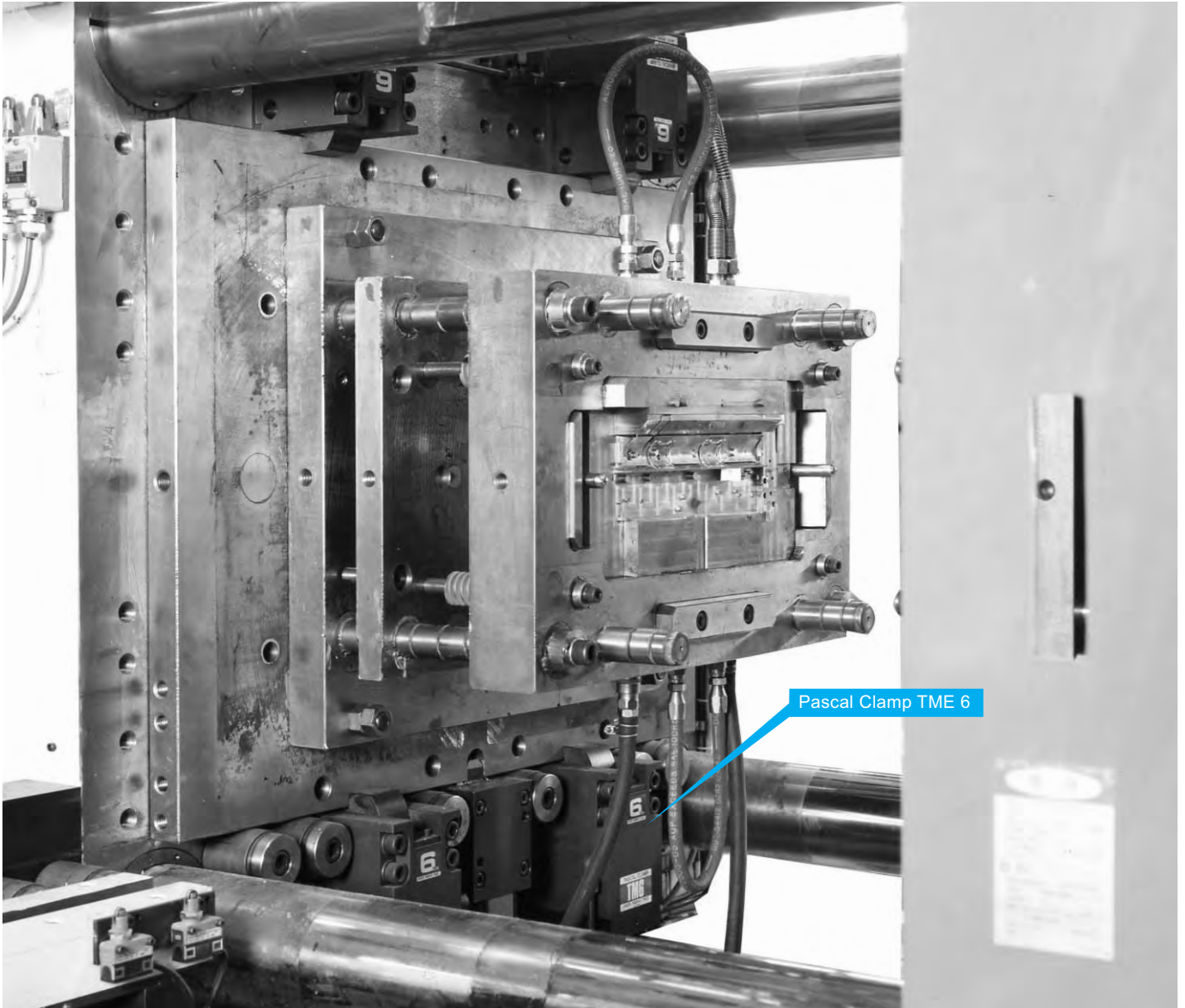
For the introduction of Pascal vertical mold change system, it is necessary to unify the thicknesses of the clamp plate as well as the U-cut for centering block of all the molds. When installing a T-slot plate, the decrease of daylight and the relocation of nozzle touch position should be minded.

SELECTION OF CLAMP SYSTEM

Injection Molding Machine		System MME · MKB (TME · TKB clamp)		System MYA · MYC (TYA · TYC clamp)				U-cut dimensions for centering		T-slot for System MYA(MYC)		
Mold clamping Force (US ton)	Mold opening Force (US ton)	Model × No.Req.	Applicable Control Unit	Model × No.Req.	Applicable Control Unit	Recommended T-slot dimensions (in)				m (in)	n (in)	
						a	b	d	j			
~ 55	4.4	TME1 × 8	HCMD-3CSSS-N	TYA 1 × 8	HCMD-2SSS-N	+0.020 0.709	+0.079 1.181	±0.008 0.709	+0.079 0.472	+0.004 1.181	1.181	
~ 110	8.8	TME2.5 × 8		TYA 2 × 8		+0.020 0.866	+0.118 1.457	±0.008 0.866	+0.079 0.630	+0.004 1.772	1.181	
~ 165	11.0	TME4 × 8		HCMD-33CSSS-N		TYA 4 × 8	+0.020 1.102	+0.157 1.811	±0.008 1.102	+0.079 0.787	+0.005 2.362	1.378
~ 220	17.6	TME6 × 8	HCEF-3CSSS-N	TYA 6 × 8	HCMD-22SSS-N	+0.020 1.260	+0.157 2.087	±0.008 1.102	+0.079 0.945	+0.006 3.937	1.575	If location ring is used for positioning, the centering block and U-cut are not necessary.
~ 386	27.7	TME10 × 8		TYA10 × 8		+0.020 1.260	+0.157 2.087	±0.008 1.102	+0.079 0.945	+0.006 3.937	1.575	
~ 606	44.1	TME16(TME10) × 8		TYA16 × 8		+0.020 1.260	+0.157 2.087	±0.008 1.102	+0.079 0.945	+0.006 3.937	1.575	
~ 716	70.1(44.1)	TME16(TKB16) × 8		TYA25 × 8		+0.020 1.260	+0.157 2.087	±0.008 1.102	+0.079 0.945	+0.006 3.937	1.575	
~ 937	70.1	TKB25 × 8				+0.020 1.260	+0.157 2.087	±0.008 1.102	+0.079 0.945	+0.006 3.937	1.575	
~1433	110.2	TKB40 × 8				+0.020 1.260	+0.157 2.087	±0.008 1.102	+0.079 0.945	+0.006 5.512	1.772	

※Above mold opening forces are for reference. Inquire the clamp selection, when the actual mold opening force is greater than above value.

PASCAL QUICK MOLD CHANGE SYSTEM PROMISES

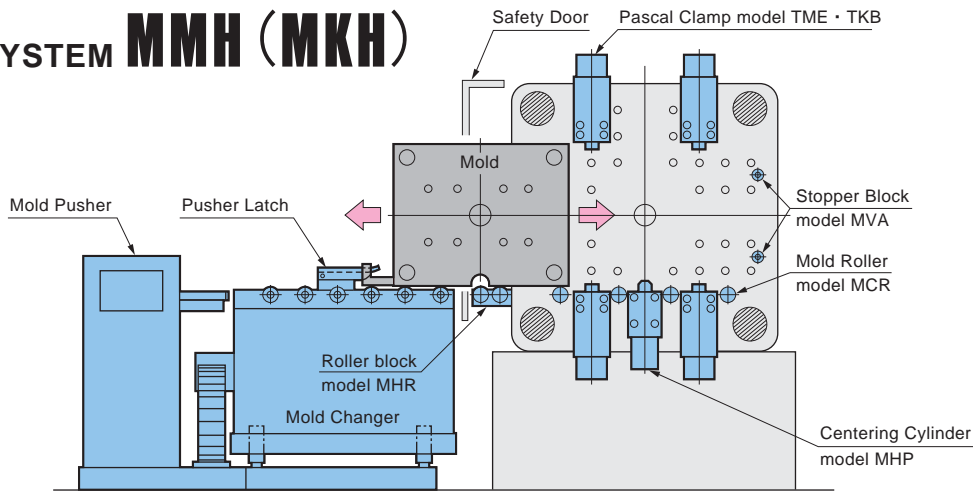


PASCAL Horizontal Mold Change System has been developed for quicker and safer mold changing operation than the Vertical Mold Change System. It can eliminate the use of the crane during mold change operation, this idle time or down time of injection machines due to crane availability can be omitted.

SUBSTANTIAL REDUCTION OF MACHINE DOWN-TIME

PASCAL HORIZONTAL MOLD CHANGE

SYSTEM MMH (MKH)



model **TME** (small-medium size machine)

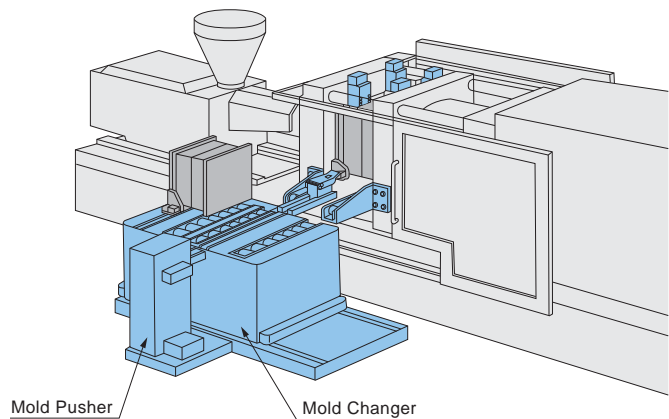
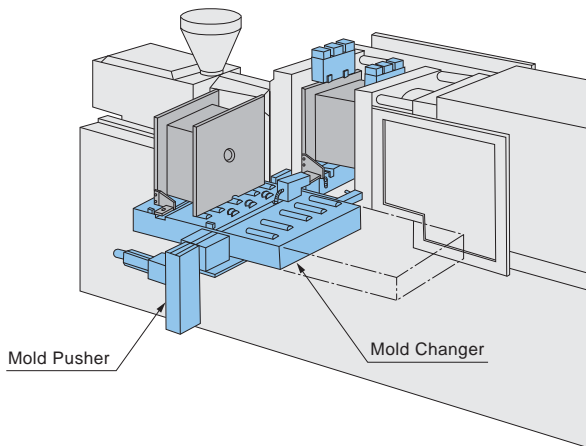


model **TKB** (Large size machine)



Small size Mold Change System

Medium-large size Mold Change System

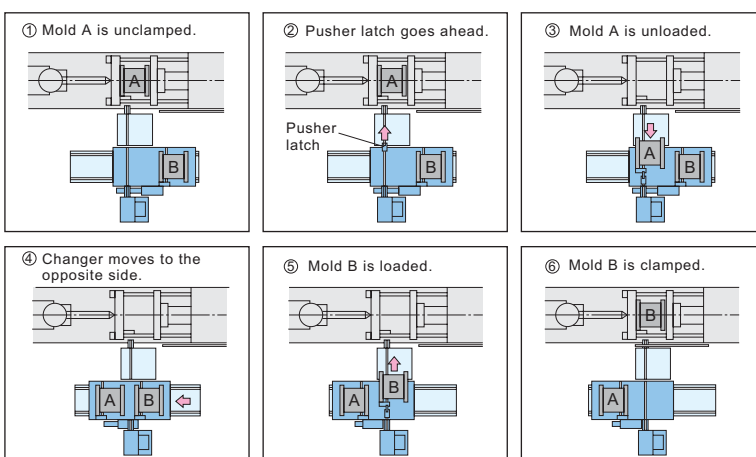


SELECTION OF CLAMP SYSTEM

Injection Molding Machine		System MMH · MKH (TME · TKB clamp)		Mold Roller	Centering Cylinder	U-cut dimensions		U-cut dimensions for centering	
Mold clamping Force (US ton)	Mold opening Force (US ton)	Model × No. Req.	Applicable Control Unit			m (in)	n (in)		
~ 55	4.4	TME1 × 8	HCMD-3CSS-N	MCR020K	MHP1	+0.004 0 1.181	1.024		
~ 110	11.0	TME2.5 × 8		MCR040K					
~ 220	17.6	TME4 × 8	HCMD-33CSS-N	MCR060K	MHP2	+0.004 0 1.772	1.260		
~ 386	27.7	TME6 × 8		MCR080K					
~ 496	44.1	TME10 × 8	HCEF-3CSS-N	MCR100K	MHP3	+0.004 0 2.362	1.496		
~ 606		TME16 (TME10) × 8		MCR120K					
~ 716	70.1(44.1)	TME16 (TKB16) × 8		MCR160K					
~ 937	70.1	TKB25 (TKB16) × 8		MCR180K	MHP4	+0.004 0 3.150	1.496		
~ 1102	110.2(70.1)	TKB25 × 8							
~ 1433	110.2	TKB25 × 8							
~ 2205	176.4	TKB40 × 8							
~ 2756									
~ 3307									

※Above mold opening forces are for reference. Inquire the clamp selection, when the actual mold opening force is greater than above value.

WIDE RANGE OF APPLICATIONS FROM PRECISION

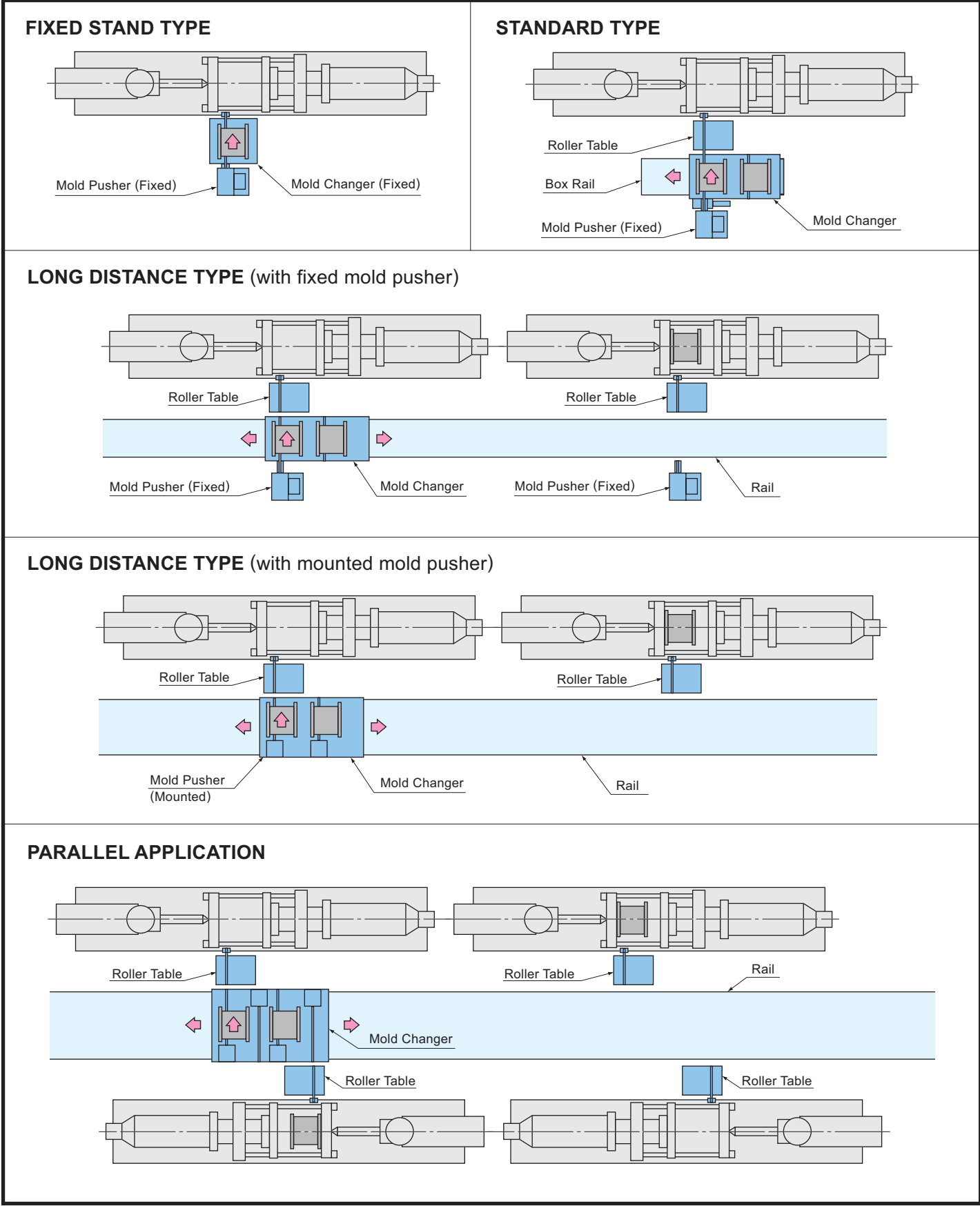


Introduction of **PASCAL** Horizontal Mold Change System leads to fully automated operation of injection molding plant.

PASCAL Mold Change System is equipped with a uniquely designed interlock system which allows unmanned operation.

INJECTION MOLDING TO LARGE AUTOMOBILE PARTS

TYPICAL SYSTEM LINE-UP



DATA FOR INQUIRY

PLEASE FILL IN THE BLANKS WHEN ORDERING

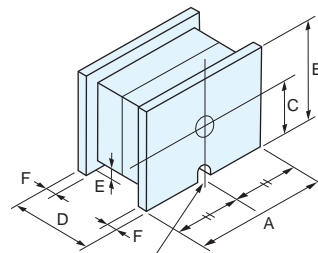
VERTICAL MOLD CHANGE SYSTEM MME · MKB · MYA · MYC

HORIZONTAL MOLD CHANGE SYSTEM MMH · MKH

1. INJECTION MOLDING MACHINE	MANUFACTURER/MODEL	<input type="checkbox"/> NEW <input type="checkbox"/> EXISTING
	NUMBER OF MACHINES	_____
	MOLD CLAMPING FORCE	_____
	MOLD OPENING FORCE	_____
	PLATEN DETAIL	<input type="checkbox"/> CATALOG <input type="checkbox"/> DRAWING <input type="checkbox"/> OTHER

2. MOLD DIMENSIONS

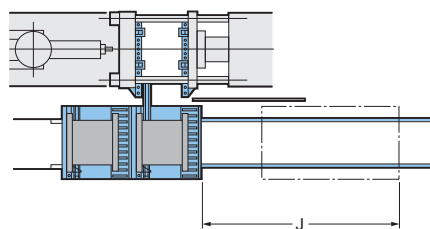
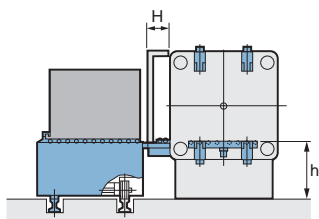
DIMENSIONS	A	MAX.	~ MIN.
	B	MAX.	~ MIN.
	C		
	D	MAX.	~ MIN.
	E	MIN.	
	F		
WEIGHT	MAX.		
U-CUT FOR CENTERING	<input type="checkbox"/> STANDARD <input type="checkbox"/> NON STANDARD		



U-Cut required only for stationary side
(see page 4 and 6)

3. MOLD CHANGER

_____ TYPE



LOADING ELEVATION	h = _____		
SPACE BETWEEN SAFETY GATE TO PLATEN EDGE	H = _____		
TRAVELING DISTANCE	J = _____		
OPERATION MODE	<input type="checkbox"/> SEMI-AUTOMATIC	<input type="checkbox"/> FULL-AUTOMATIC	
POWER SUPPLY	<input type="checkbox"/> CABLEVEYOR	<input type="checkbox"/> AUTO-REEL	
VOLTAGE	POWER	V	Hz
	CONTROL ^{SOL.} _{L.S.}	V	Hz
RESTRICTION TO INSTALLATION	_____		

4. REMARKS

AMBIENT TEMPERATURE NORMAL ELEVATED (_____ °F)

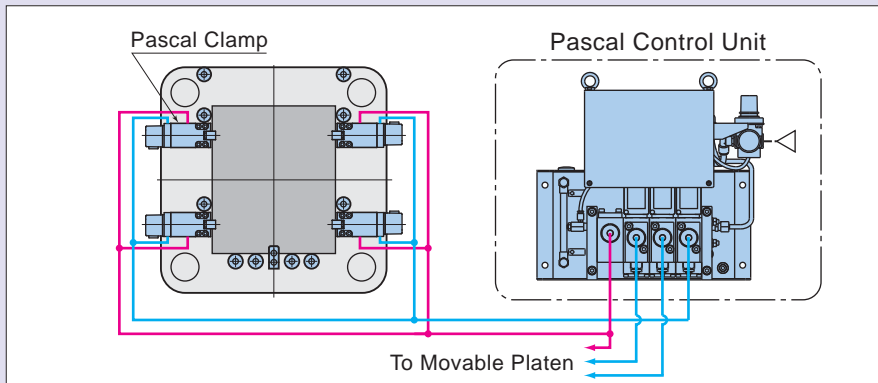
OTHER _____

PASCAL CLAMP SYSTEM

Pascal Quick Mold Change System consists of series of Pascal Clamps, proprietary designed true Non-Leak Valves, pressure relief valve to compensate thermal expansion of hydraulic fluids and air operated Pascal pump, all of which are specially developed for Quick Mold Change System of Injection Molding Machines.

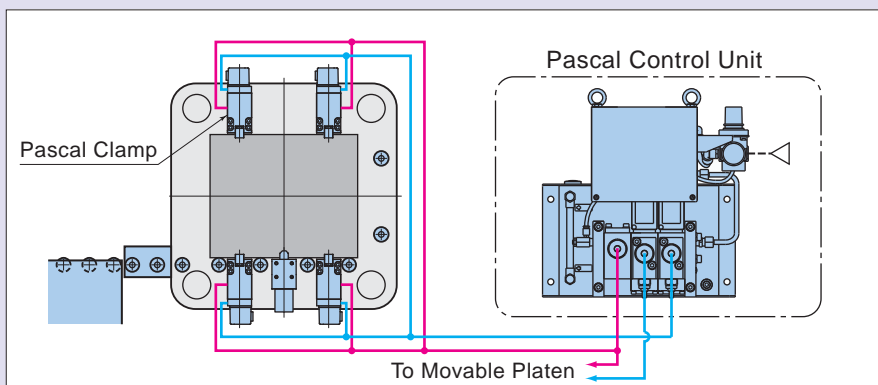
VERTICAL MOLD CHANGE SYSTEM

Basic clamping pattern with the centering block and guide blocks.



HORIZONTAL MOLD CHANGE SYSTEM

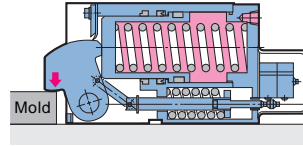
Basic clamping pattern with the centering cylinder and rollers in/out the molding machine for safety.



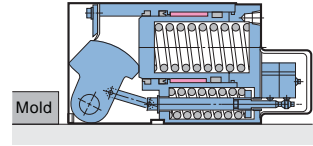
Model TME is a retractable lever type clamp and ensures sufficient mold holding force by a heavy duty spring even at the oil pressure failure.



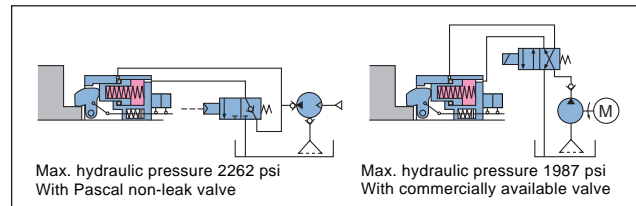
FIXED



UNFIXED



CIRCUIT DIAGRAM



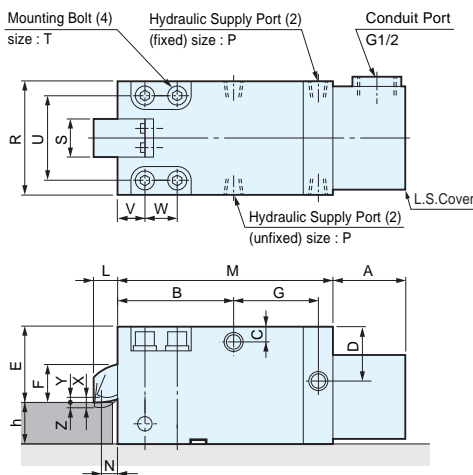
SPECIFICATIONS (TME size L - h dimension L,R : direction of conduit port N : NPT port)

MODEL		TME1L	TME2.5L	TME4L	TME6L	TME10L	TME16L
Fixing Force (US ton)	At Max. hydraulic pressure	1.1	2.7	4.4	6.9	11.0	17.6
Holding Force (US ton)	At Max. hydraulic pressure	1.1	2.7	4.4	6.9	11.0	17.6
	At no hydraulic pressure (0 psi)	0.055	0.11	0.17	0.27	0.44	0.66
Full Stroke : X	(in)	0.138	0.157	0.157	0.157	0.177	0.177
Fixing Stroke : Y	(in)	0.079	0.079	0.079	0.079	0.079	0.079
Safety Stroke : Z	(in)	0.059	0.079	0.079	0.079	0.098	0.098
Cylinder Capacity	Fixed (in ³)	0.92	2.50	5.61	9.95	18.19	28.68
	Unfixed ※ (in ³)	0.37	0.67	1.71	2.93	5.31	8.73
Weight	(lb)	6.6	13.2	19.8	34.2	66.1	121.3

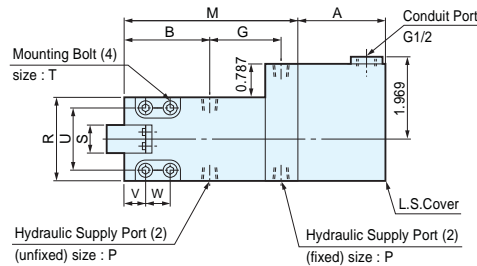
■ Proof pressure : 2973 psi ■ Working temperature range : 32~158°F

※ The hydraulic pressure required to unclamp is 420 psi.

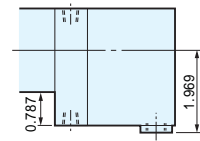
DIMENSIONS TME2.5~16L-hN



TME1L-hRN



TME1L-hLN



LIMIT SWITCH SPECIFICATION (YAMATAKE)

Limit Switch Model	BZ-2RD3000-T4-J	
Rated Voltage	AC250V	DC30V
Rated Current (Resistance Load)	15A	15A

(in)

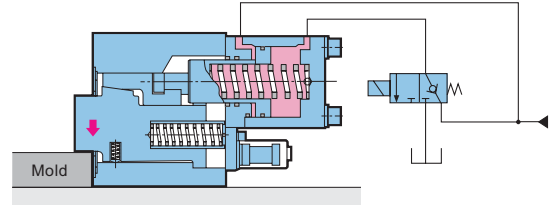
MODEL	E	F	G	L	M	N	R	S	U	V	W	T	h (※)	A	B	C	D	P
TME1 L	1.654	0.827	2.205	0.433	4.783	0.354	2.047	0.709	1.496	0.472	0.709	M 8	MIN.0.787	2.343	2.185	0.443	0.925	NPT1/8
TME2.5L	2.205	1.181	2.579	0.630	5.886	0.472	3.071	1.063	2.283	0.669	0.866	M10	MIN.1.181 (0.984)	2.343	2.913	0.591	1.220	NPT1/4
TME4 L	2.992	1.535	3.150	0.748	7.087	0.571	3.465	1.378	2.677	0.787	1.024	M12	MIN.1.181 (0.984)	2.343	3.504	0.787	1.535	NPT1/4
TME6 L	3.543	1.693	3.386	0.827	7.756	0.591	4.252	1.772	3.307	0.866	1.181	M14	MIN.1.378 (1.181)	2.343	3.898	0.945	1.890	NPT1/4
TME10 L	4.409	2.244	3.937	0.984	9.390	0.748	5.315	2.165	4.173	1.181	1.417	M18	MIN.1.575 (1.378)	2.520	4.764	1.201	2.402	NPT3/8
TME16 L	5.394	3.071	4.272	1.260	11.220	0.787	7.165	2.835	5.315	1.575	1.969	M24	MIN.1.575	2.697	6.161	1.516	2.441	NPT3/8

※ Dimensions h in parentheses are special specifications.

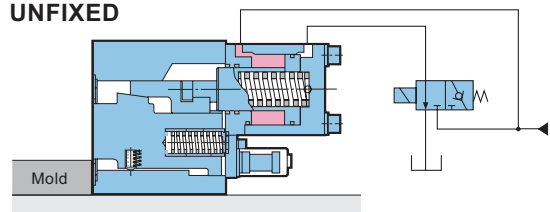
Model TKB is a retractable lever type clamp. The unique wedge construction ensures a strong holding force, even with oil pressure failure.



FIXED



UNFIXED

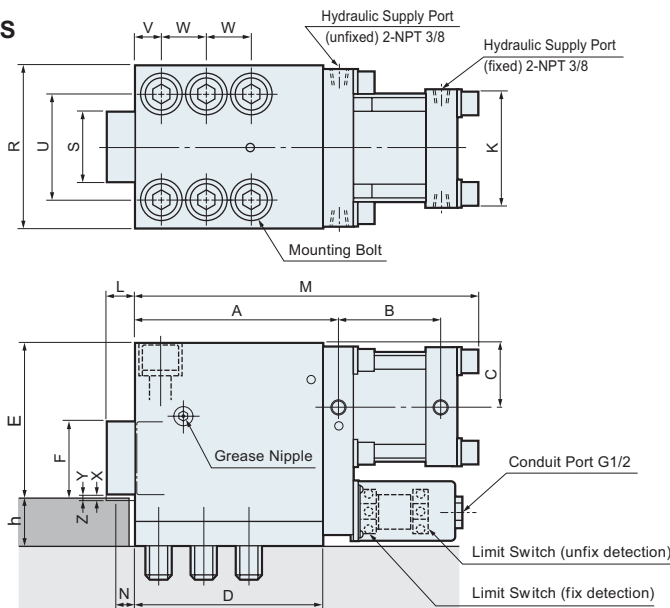


SPECIFICATIONS (TKB size — h dimension | N : NPT port)

MODEL		TKB16	TKB25	TKB40	TKB50
Fixing Force (US ton)	At hydraulic pressure 1987 psi	5.5	8.8	15.4	19.8
Holding Force (US ton)	At hydraulic pressure 1987 psi	17.6	27.6	44.1	55.1
	At no hydraulic pressure (0 psi)	2.2	3.3	5.5	9.9
Full Stroke : X	(in)	0.177	0.177	0.217	0.217
Fixing Stroke : Y	(in)	0.079	0.079	0.098	0.098
Safety Stroke : Z	(in)	0.098	0.098	0.118	0.118
Cylinder Capacity	Fixed (in ³)	17.33	28.07	52.42	87.14
	Unfixed (in ³)	10.56	16.90	30.94	56.81
Weight	(lb)	83.8	147.7	286.6	551.2

■ Proof pressure : 2973 psi ■ Working temperature range : 32~176°F

DIMENSIONS



LIMIT SWITCH SPECIFICATION (YAMATAKE)

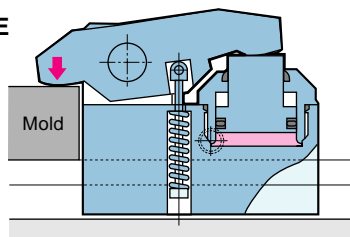
Limit Switch Model	BZ-2RD3000-T4-J	
Rated Voltage	AC250V	DC30V
Rated Current (Resistance Load)	15A	15A

MODEL	E	F	L	M	N	R	S	U	V	W	K	T	h	A	B	C	D
TKB16	5.512	2.953	1.295	12.205	0.787	5.709	2.559	3.858	0.866	1.535	4.134	M20	MIN.1.575	7.106	3.898	2.283	6.516
TKB25	6.693	3.228	1.287	14.508	0.787	6.890	2.992	4.646	1.063	1.929	5.039	M24	MIN.1.969	8.701	4.350	2.717	8.051
TKB40	7.874	3.898	1.496	17.091	0.984	8.465	3.543	5.709	1.260	2.362	6.102	M30	MIN.1.969	10.315	5.079	3.189	9.547
TKB50	10.827	5.315	1.701	21.768	1.181	10.630	4.528	7.480	1.575	3.150	7.756	M39	MIN.1.969	12.796	7.047	4.075	11.811

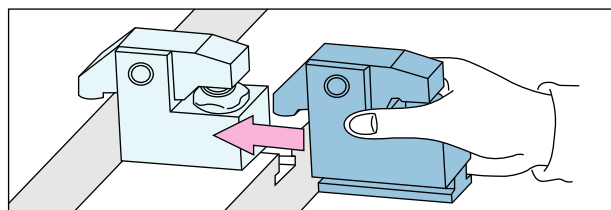
Model TYA is a lever clamp designed to be inserted to T-slot of platens. It has a large fixing force with shock-proof rigidity as well as long fixing stroke.



STRUCTURE



APPLICATION EXAMPLE



SPECIFICATIONS (TYA — N : NPT_port)

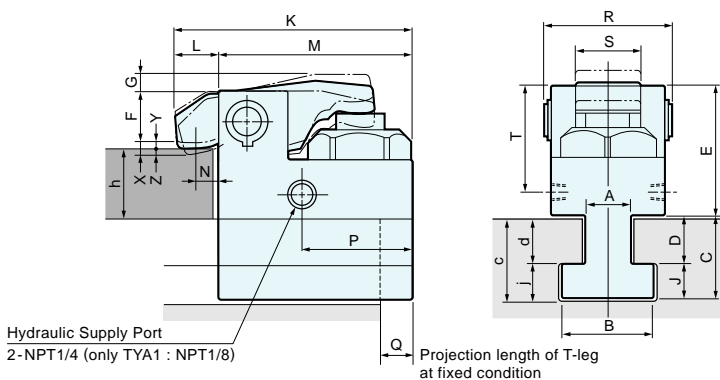
MODEL	TYA1	TYA2	TYA4	TYA6	TYA10	TYA16	TYA25
Fixing Force At hydraulic pressure 3553 psi (US ton)	1.1	2.2	4.4	6.9	11.0	17.6	27.6
Full Stroke : X (in)	0.236	0.276	0.276	0.315	0.315	0.315	0.315
Fixing Stroke : Y ※1 (in)	0.118	0.157	0.157	0.157	0.157	0.157	0.157
Safety Stroke : Z ※1 (in)	0.118	0.118	0.118	0.157	0.157	0.157	0.157
Cylinder Capacity At Full Stroke (in ³)	0.15	0.38	0.81	1.36	2.26	3.72	5.68
Weight ※2 (lb)	2.2	6.6	9.9	19.8	33.1	55.1	77.2

■Proof pressure : 5322 psi ■Working temperature range : 32~158°F(41~248°F by heat proof type)

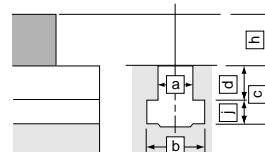
※1. Fixing stroke and safety stroke shown above are the standard, but they are subject to change depending on dimensions of mold and T-slot.

※2. Weight varies according to the dimension of T-leg as well as h.

DIMENSIONS



Specify T-slot dimensions (a, b, c, d, j) and clamping thickness (h) when ordering.



● About "d" dimension

1. When installing on existing machine, specify in 0.01" resolution for us to design.

2. When installing on new machine, you need to machine the platen with the machining tolerance of ± 0.01 ".

● Dimensions A, B, C, D, J shall be determined according to T-slot dimensions.

● When newly machining T-slot, it is recommended to apply the dimensions specified on page 4.

(in)

MODEL	F ※1	MAX.G	K	L	M	N	P	MAX.Q ※3	R	S	T	MIN.E	MIN.J	h=MIN.-MAX. ※2	MIN.a
TYA1	0.850 (0.984 ≤ h) 0.846 (0.787 ≤ h < 0.984) 1.043 (0.591 ≤ h < 0.787) 0.689 (1.280 ≤ h)	0.236	2.874	0.591	2.283	0.394	1.220	457	1.693	0.787	1.358	1.752	0.315	0.591~1.969	0.394
TYA2	0.886 (1.083 ≤ h < 1.280) 1.083 (0.886 ≤ h < 1.083) 1.083 (1.496 ≤ h)	0.394	3.976	0.709	3.268	0.492	1.614	559	2.283	1.102	1.693	2.126	0.374	0.886~1.969	0.492
TYA4	1.280 (1.299 ≤ h < 1.496) 1.476 (1.102 ≤ h < 1.299) 1.161 (1.890 ≤ h)	0.394	5.630	0.906	4.724	0.630	2.165	813	2.874	1.575	2.264	2.736	0.453	1.102~1.969	0.591
TYA6	1.555 (1.496 ≤ h < 1.890) 1.949 (1.102 ≤ h < 1.496) 1.772 (2.283 ≤ h)	0.394	6.417	1.181	5.236	0.787	2.008	914	3.661	1.969	2.697	3.209	0.591	1.102~2.362	0.748
TYA10	2.165 (1.890 ≤ h < 2.283) 2.559 (1.496 ≤ h < 1.890) 2.362 (2.677 ≤ h)	0.433	7.677	1.181	6.496	0.787	2.441	1143	4.094	2.165	3.819	4.213	0.669	1.496~2.756	0.906
TYA16	2.756 (2.283 ≤ h < 2.677) 3.150 (1.890 ≤ h < 2.283) 2.992 (3.465 ≤ h)	0.472	9.055	1.181	7.874	0.787	3.150	1397	4.921	2.362	4.724	5.197	0.787	1.890~3.150	1.063
TYA25	3.386 (3.071 ≤ h < 3.465) 3.780 (2.677 ≤ h < 3.071)	0.512	10.630	1.181	9.449	0.787	3.543	1753	6.102	2.835	6.142	6.614	0.906	2.677~3.150	1.260

※1. F will be decided according to the dimension of h (mold thickness). If h dimension is shorter than the minimum figure of F, the product will be treated as special type.

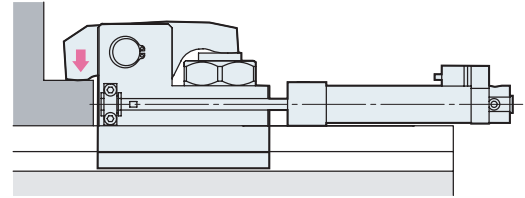
※2. If h dimension is larger than the maximum figure, the product will be also treated as special type.

※3. There are cases when the projection length of T-leg exceeding the Max. Q figure may be used according to the T-slot dimensions. In such case, ask us for details.

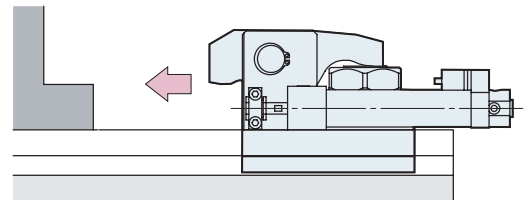
Model TYC-R is equipped with an automatic slider on top of model TYA. Clamp and unclamp can be very swiftly done in order to minimize the operation time.



FIXED



UNFIXED

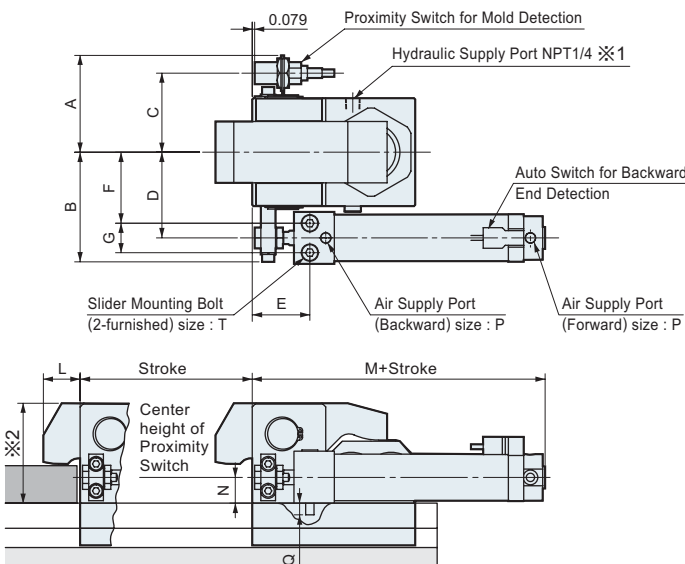


SPECIFICATIONS (TYC [size] R [Proximity switch symbol] - [sliding dimension] [L1,L2 : air cylinder position] [N : NPT port])

MODEL	TYC2R	TYC4R	TYC6R	TYC10R	TYC16R	TYC25R
Fixing Force At hydraulic pressure 3553 psi (US ton)	2.2	4.4	6.9	11.0	17.6	27.6
Sliding Stroke (in)	MAX.5.906		MAX.7.874	MAX.11.811		
Slider Driving Air Pressure (psi)	56.9~78.2					
Clamp Sliding Speed (ft/sec)	0.098~0.262 (Adjusted by speed controller)					
Weight ※ (lb)	7.7	11.0	22.0	35.3	57.3	83.8

■Proof pressure : 5322 psi ■Working temperature range : 32~158°F
 ※Weight varies according to the dimension of T-leg as well as h.

DIMENSIONS The drawings showing : At air cylinder position L1.



PROXIMITY SWITCH SPECIFICATIONS (OMRON)

Switch Symbol	E0	E1	E2
Switch Model	2-Wire DC※	3-Wire DC	2-Wire AC
	E2E-X7D1-N	E2E-X5E1	E2E-X5Y1
Supply Voltage	DC10~30V	DC10~40V	AC20~264V
Leakage Current	Max.0.8mA		Max.1.7mA
Current Consumption		Max.13mA	
Control Output (Switching Capacity)	3~100mA	200mA	5~300mA

Insulation vinyl cable length : 196.9" (Oil proof type, 0.000775 in²)
 Proximity switch shall be specified as per the symbol (E0, E1, E2).
 ※When using Pascal control box, 3-wire DC type (E1) shall be delivered.

AUTO SWITCH SPECIFICATION (SMC)

Switch Model	D-B54L		
Load Voltage	DC24V	AC100V	AC200V
Range of Load Current	5~50 mA	5~25 mA	5~12.5 mA

Insulation vinyl cable length : 118.1" (Oil proof type, 0.000465 in²)
 (in)

MODEL	A	B	C	D	E	F	G	L	M	N	T	Q	P
TYC 2R	2.185	2.508	1.634	1.909	1.673	1.555	0.709	0.709	4.350	0.709	M5 × 1.378	0.276	NPT1/8
TYC 4R	2.480	2.803	1.929	2.205	1.673	1.850	0.709	0.906	4.350	0.709	M5 × 1.378	0.276	NPT1/8
TYC 6R	2.874	3.591	2.323	2.756	1.850	2.283	0.945	1.181	4.764	0.709	M8 × 1.772	0.492	NPT1/8
TYC 10R	3.071	4.220	2.520	3.189	2.244	2.559	1.260	1.181	5.433	0.709	M10 × 2.165	0.492	NPT1/8
TYC 16R	3.465	4.614	2.913	3.583	2.244	2.953	1.260	1.181	5.433	0.709	M10 × 2.165	0.492	NPT1/8
TYC 25R	4.870	5.846	3.780	4.567	2.795	3.760	1.614	1.181	6.496	0.709	M12 × 2.756	0.689	NPT1/4

※1. The position of hydraulic port is subject to change. It should be confirmed on the approval drawing.
 ※2. For the detailed dimensions of clamp body, refer to the model TYA on previous page. Note that the height E may become different from model TYA's. You are requested to confirm on the approval drawing.

Model VSE is a valve unit containing the modules such as Pascal valve with special non-leak function, pressure relief valve and pressure switch, etc. Model VSE is particularly designed with its high reliability for the application in injection molding machines.



SPECIFICATIONS (VSE [Symbol]-3 [Circuit symbol] - N : NPT port)

MODEL		VSE [Symbol]-3CSSK-N
Hydraulic pressure (from injection molding machines)		1987(2262) psi
Set pressure of pressure switch (increase)		1276 psi
Maximum working pressure		2988 psi (at pilot air pressure 71 psi)
Orifice area	P → A	0.01953 in ²
	A → R	0.03007 in ²

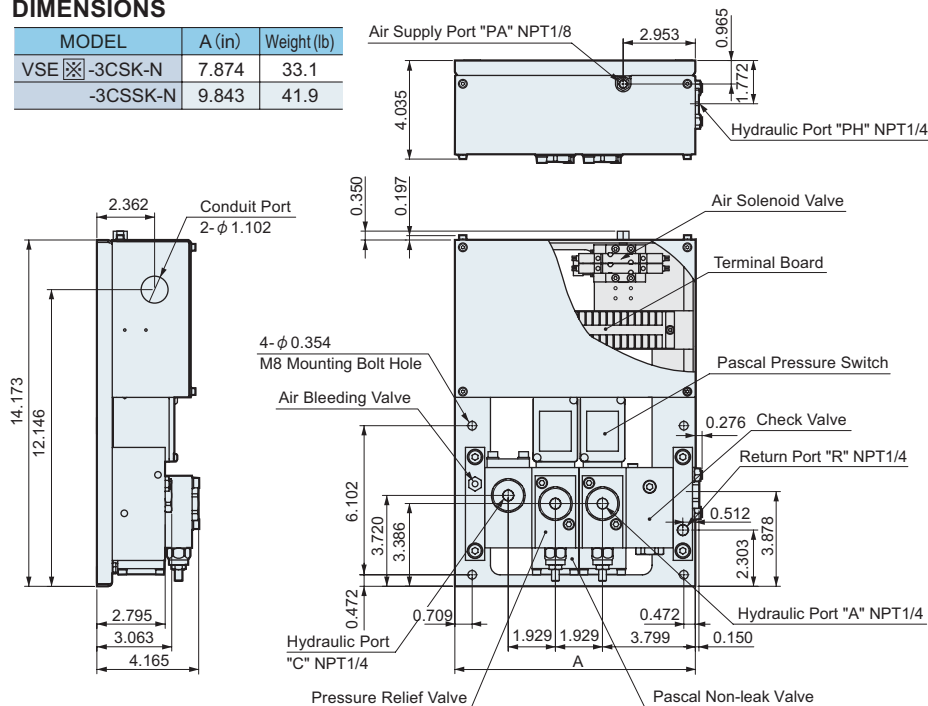
- Fluid used : ISO-VG32 equivalent mineral oil
- Working temperature range : 41~122°F
- When applying a Pascal pump as power source, model name becomes VSB [Symbol]-3 [Circuit symbol] - N : NPT port
- 2262 psi is when the clamp model TME is used.

[Symbol] Electrical power voltage shall be specified as per the following classifications.

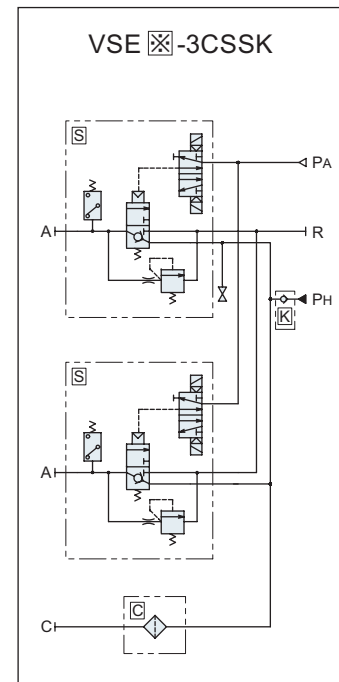
A	AC100V
B	AC200V
C	AC110V
D	DC 24V
E	AC220V

DIMENSIONS

MODEL	A (in)	Weight (lb)
VSE [Symbol]-3CSK-N	7.874	33.1
-3CSSK-N	9.843	41.9



CIRCUIT DIAGRAM



Hydraulic circuit specifications		Symbol
C port with inline filter		C
C port with pressure gauge for incoming pressure		Q
Pressure gauge for incoming pressure		E
C port with pressure switch for incoming pressure		H
Clamp circuit	Single solenoid (D circuit)	D
	Double solenoid (L circuit)	L
	D circuit with relief valve for excessive high pressure	X
	L circuit with relief valve for excessive high pressure	S
Check valve		K

For the detail of hydraulic circuit and options, ask us separately.

Pascal pump, non-leak valve, digital pressure gauge and relief valve are combined into this unit for the molding machine with no hydraulic supply. Power source is the factory air.

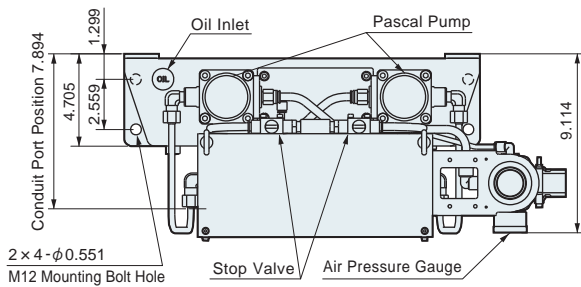


SPECIFICATIONS (HCMD - [Pump] [Circuit symbol] - [Option symbol] [N : NPT port])

MODEL	HCMD-2 SSS-N	HCMD-22 SSSS-N	HCMD-3 CSS-N	HCMD-33 CSS-N
Pascal Pump model	HPH6308(single)	HPH6308(twin)	HPH6310(single)	HPH6310(twin)
Discharge pressure	3553 psi		2262 psi	
Driving air pressure	68 psi		68 psi	
Discharge volume at no load	85 in ³ /min	170 in ³ /min	128 in ³ /min	256 in ³ /min
Tank capacity	HI-LEVEL 348 in ³ / LOW-LEVEL 98 in ³			
Clamp applications (example)	TYA10×8 units TYC10×8 units	TYA16×8 units TYC16×8 units	TME2.5×8 units	TME4×8 units

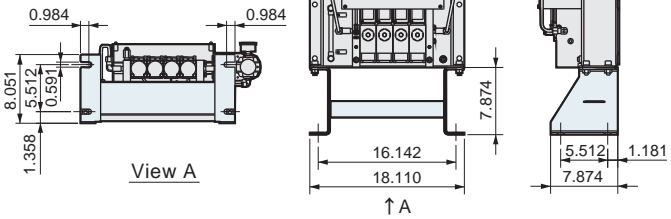
- Fluid used : ISO-VG32 equivalent mineral oil ■ Working temperature range : 41~122°F
- Air consumption rate : Max. 14.1 CFM. (single pump) MAX. 28.2 CFM. (twin pump)
- Electric power voltage : DC 24 V

DIMENSIONS

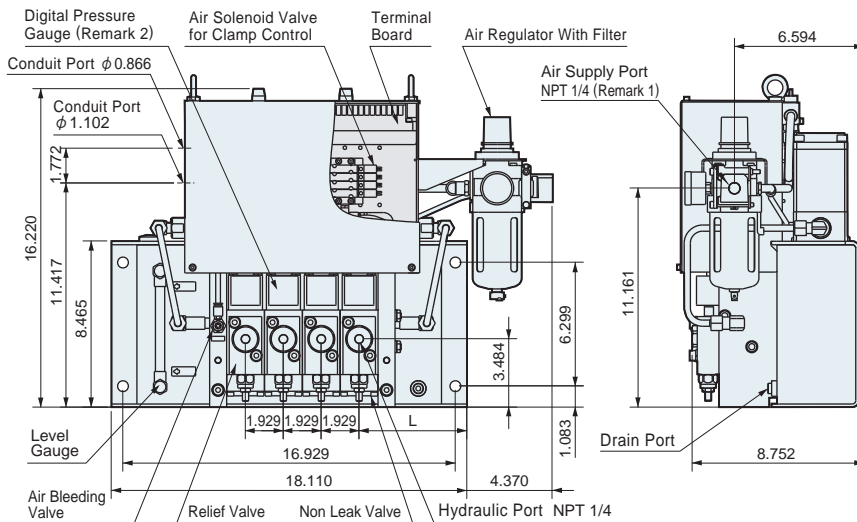


STAND (OPTION)

Model : ZPS-S4



Types of stand other than shown above are available on request.



Number of hydraulic circuit	L (in)	Weight (lb)※
1	8.386	61.7
2	7.421	70.5
3	6.457	77.2
4	5.492	86.0

※ : For the case of single pump.
6.6 lb to be added in case of twin pump.

Remark 1 : Piping diameter for single pump.
(NPT 3/8 for twin pump)

Remark 2 : Digital pressure gauge outputs 2 kinds of signals such as pressure increase and abnormal high pressure detection.

Drawing shown here is for 1 to 4 hydraulic circuits. For 5 or more circuits application, ask us for details.

Hydraulic circuit specifications		Symbol
C port with inline filter		C
C port with pressure gauge for incoming pressure		Q
Pressure gauge for incoming pressure		E
C port with pressure switch for incoming pressure		H
Clamp circuit	Single solenoid (D circuit)	D
	Double solenoid (L circuit)	L
	D circuit with relief valve for excessive high pressure	X
	L circuit with relief valve for excessive high pressure	S

Option	Symbol
Low oil level detection switch	L
2 station type air double solenoid valve for slider and mold positioning pin at platen	T

For the detail of hydraulic circuit and options, ask us separately.

Pascal pump, non-leak valve and relief valve are compactly integrated into this unit. Its compact design can fit in limited space of the machine and it is suitable for a small molding machine. Power source is the factory air.

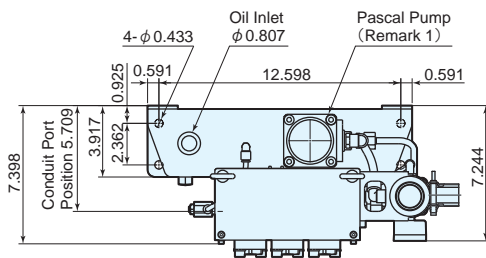


SPECIFICATIONS (HCS-D- Pump- Circuit symbol- Option symbol | N : NPT port)

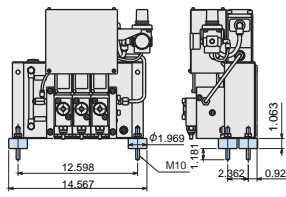
MODEL	HCSD-2SSS-N	HCSD-3CSS-N
Pascal Pump model	HPH6308	HPH6310
Discharge pressure	3553 psi	2262 psi
Driving air pressure	68 psi	68 psi
Discharge volume at no load	85 in ³ /min	128 in ³ /min
Pressure switch set pressure (increase)	2132 psi	1276 psi
Orifice area	P→A	0.01953 in ²
	A→R	0.0456 in ²
Tank volume	HIGH-LEVEL 226 in ³ / LOW-LEVEL 73 in ³	
Clamp application(example)	TYA 10x8 units	TME 2.5x8 units

- Fluid used : ISO-VG32 equivalent mineral oil
- Working temperature range : 41~122F
- Air consumption rate : Max. 14.1 CFM.
- Electric power voltage : DC24V

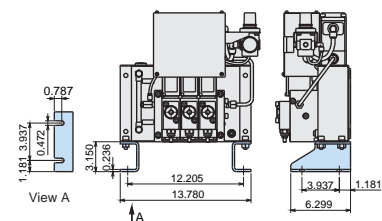
DIMENSIONS



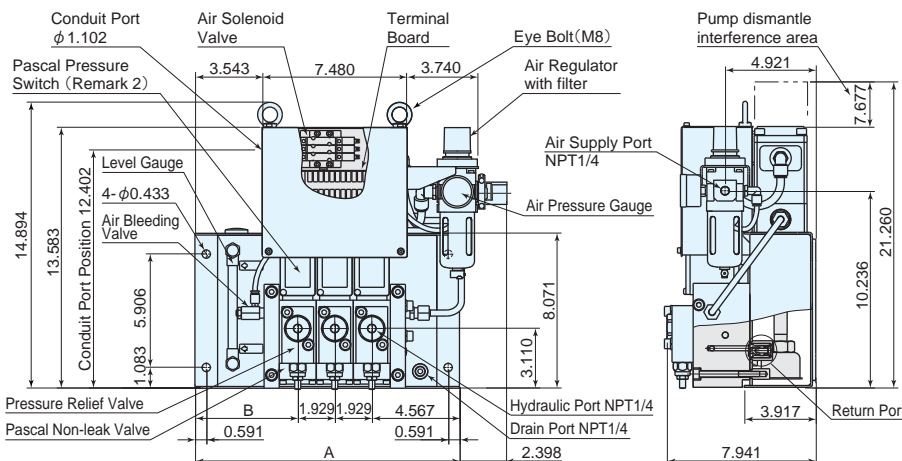
Antivibration Rubber (Option)
model ZPS-B5



Stand (Option)
model ZPS-S0



Types of stand other than shown above are available on request.



Number of hydraulic circuit	A (in)	B (in)	Weight (lb)
1	13.780	9.213	39.7
2	13.780	7.283	48.5
3	13.780	5.354	57.3
4	15.748	5.394	66.1

Remark 1 : Model HCS is equipped with only one pump. In case requiring two pump, choose model HCM.

Remark 2 : In case requiring the signal for abnormal high pressure detection, choose model HCM.

Remark 3 : In case of 5 or more hydraulic circuits, choose model HCM.

Drawing shown here is for 1 to 3 hydraulic circuits. For 4 circuits application, ask us for details.

Hydraulic circuit specifications		Symbol
C port with inline filter		C
C port with pressure gauge for incoming pressure		Q
Pressure gauge for incoming pressure		E
C port with pressure switch for incoming pressure		H
Clamp circuit	Single solenoid (D circuit)	D
	Double solenoid (L circuit)	L
	D circuit with relief valve for excessive high pressure	X
	L circuit with relief valve for excessive high pressure	S

Option	Symbol
Oil pressure gauge for each circuit	U

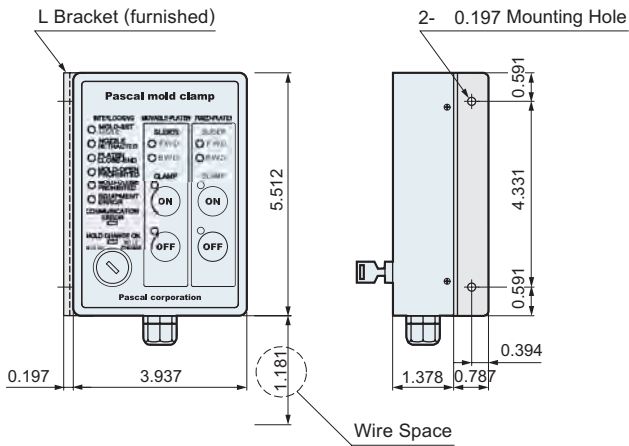
For the detail of hydraulic circuit and options, ask us separately.

User friendly control panels with compact body and clear indication. Model EST is the operation panel, and model ECT is the control box. Brackets other than shown below are available on request.

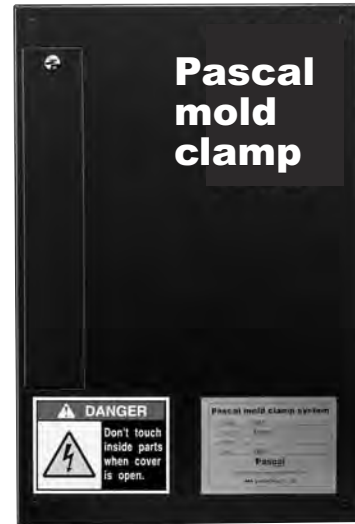
model **EST-AE-1** (Operation Panel : L Bracket Type)



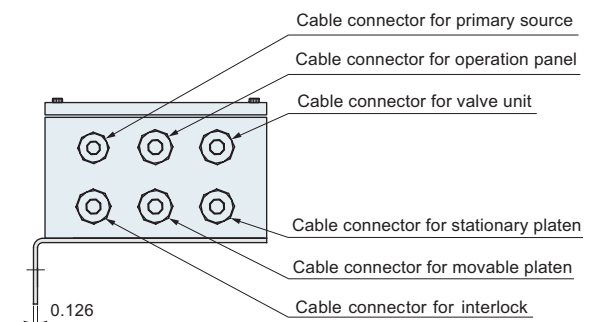
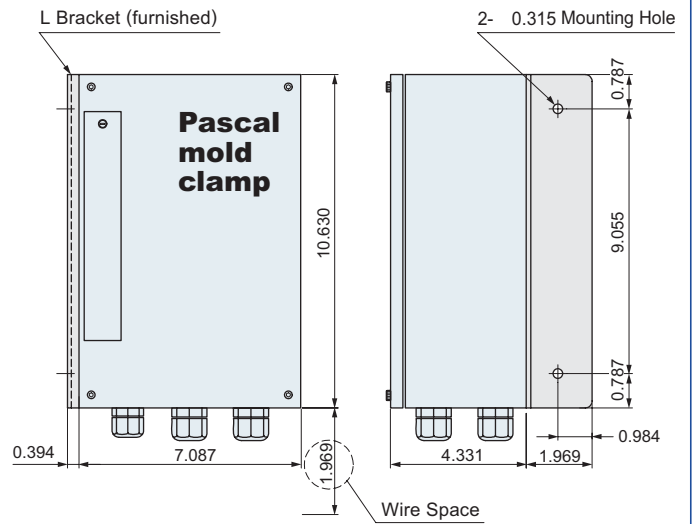
Weight 1.3 lb



model **ECT-AE-1** (Control Box : L Bracket Type)



Weight 8.8 lb



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