

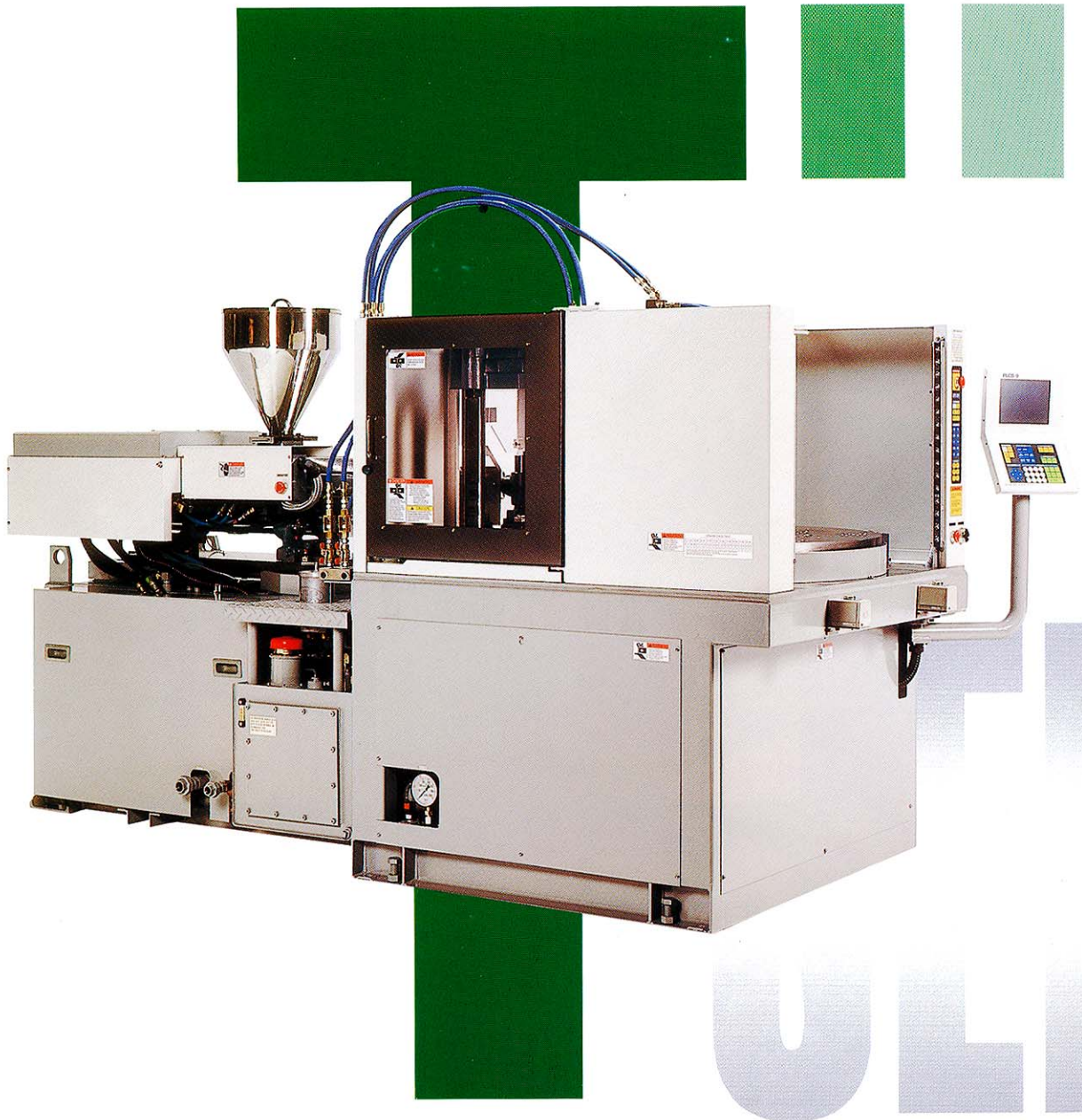
# SERIES

**Plastic Injection Molding Machine**



# Two-station Reversible Rotary Vertical

Employing TOYO's PLCS-9 controller, the TT series vertical molding machines are developed for precision molding with



The TT series are available in 55 tons, 90 tons and 150 tons. Major parts such as a screw, a heat barrel and electronic circuit boards are identical to the TOYO horizontal injection molding machines.



# al Injection Molding Machine

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nserts.



**TT-90HR2**

※This picture is including optional items.

The basic construction is two-station rotary table with a horizontal injection unit. The clamping mechanism is hydraulic with three tie-bar structure.

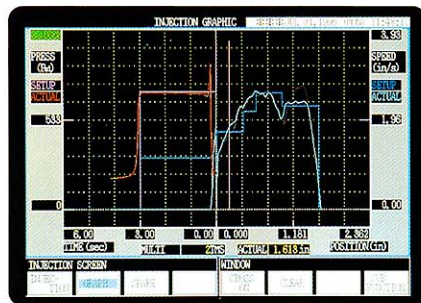


# The TT series employs TOYO's PLCS-9 controller as a standard option.

The PLCS-9 control system features a TFT"color LCD display through which the operator communicates with the machine. The monitoring system tracks over 87 machine parameters, including set up data storage facility.

## GRAPHIC SCREEN

The screen graphically compares your injection setups with the actual injection speed and pressure. In addition, metering (plasticating), mold opening and closing, and ejection are displayed.



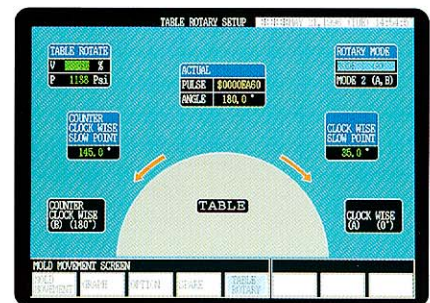
## MONITOR SCREEN

The control system constantly monitors all function of the machine, such as injection, screwback, mold movement, temperature, etc. Maximum and minimum settings are made on any parameter.



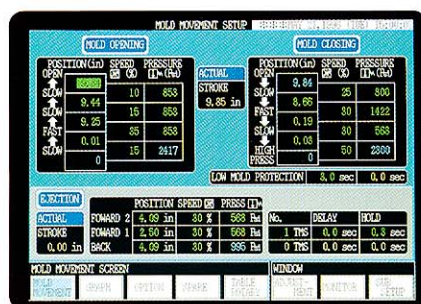
## TABLE ROTARY SETUP SCREEN

The table rotating speed and pressure can be controlled with this screen. The speeds are controlled in two steps, high and low.



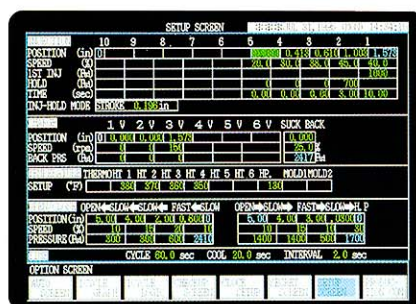
## MOLD MOVEMENT SETUP SCREEN

The mold opening/closing modes can be selected, either 3-step speed or 4-step speed. Two ejecting modes are available, either 1-step speed or 2-step speed.



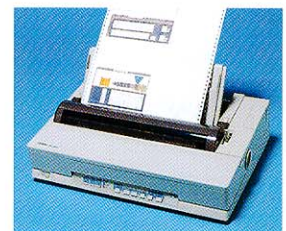
## SET UP SCREEN

You can set all of the key molding parameters on the single set up screen. It is not necessary to call up several pages as on other systems.



## PRINTER INTERFACE

Printer (optional) can be connected for taking a printout.

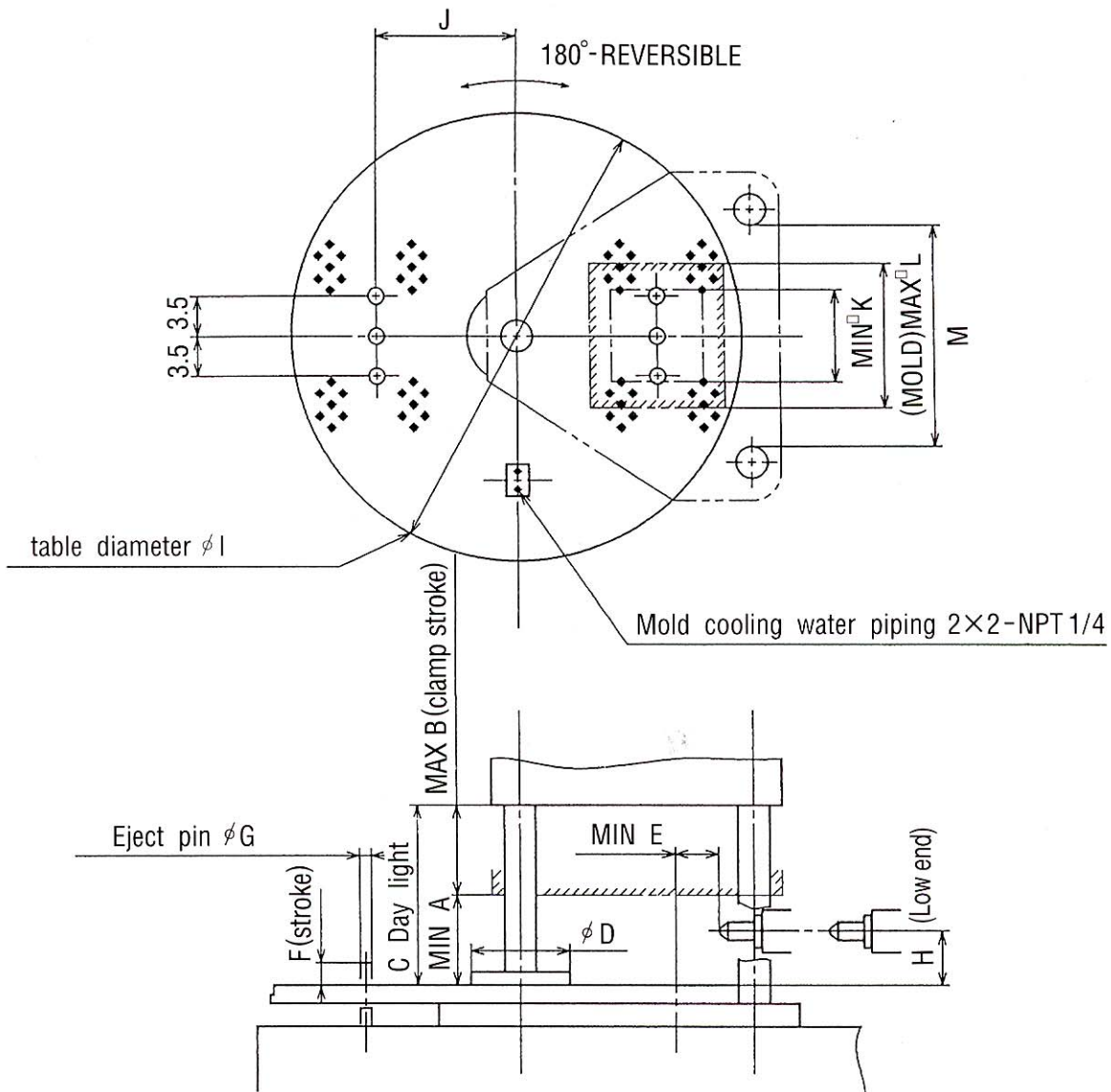


## DATA MEMORY CARD

The data memory card can store up to 128 mold setups.



# MOLD FITTING DIAGRAM



	A	B	C	D	E	F	G	H	I	J	K	L	M
TT-55HR2	7.87	9.84	17.71	6.77	3.80	2.00	1.00	5.20	43.30	13.58	8.00	13.78	21.06
TT-90HR2	7.87	9.84	17.71	7.28	4.72	2.00	1.00	5.20	48.03	14.96	10.00	15.55	23.03
TT-150HR2	9.84	11.02	20.86	8.27	4.72	2.95	1.00	5.90	54.53	16.73	10.00	18.00	25.20



## ▼Main Specifications

		TT-55HR2			TT-90HR2		
▼Injection Unit							
System	—		In-line screw			In-line screw	
Injection stroke	in		3.937			5.118	
Screw diameter	in		(1.10)	1.26	(1.42)	(1.26)	(1.42) 1.57
Nominal injection capacity	in³		(3.7)	4.9	(6.2)	(6.3)	(8.1) 9.9
※ Injection capacity (ps)	OZ		(2.0)	2.7	(3.4)	(3.5)	(4.4) 5.5
Injection rate	in³/sec	High pressure	(5.4)	7.1	(9.0)	(6.7)	(8.4) 10.4
		High velocity	(6.3)	8.3	(10.5)	(7.4)	(9.3) 11.5
Injection pressure	PSi	High pressure	(34,128)	28,767	(22,667)	(34,128)	(29,748) 24,088
		High velocity	(31,938)	24,458	(19,325)	(33,886)	(26,776) 21,686
Recovery rate (ps)	OZ/sec		(0.4)	0.5	(0.7)	(0.5)	(0.6) 0.7
Screw revolution	r.p.m.		10~350			10~320	
Nozzle pressing force	U.S.ton		2			2	
Hopper capacity	Gal		10.6			10.6	
Screw drive system	—		Hydraulic motor			Hydraulic motor	

## ▼Clamping Unit

Number of stations	—	2 [180°- REVERSIBLE]			2 [180°- REVERSIBLE]		
Clamping system	—	Vertically moving hydraulic system			Vertically moving hydraulic system		
Clamping force	U.S.ton	55			90		
Opening force	U.S.ton	5.9			7.5		
Clamping stroke	in	9.84			9.84		
Min. mold height	in	7.87			7.87		
Daylight	in	17.71			17.71		
Table diameter	in	43.3			48.03		
Ejector force	U.S.ton	3.5 [3-point ejecting]			4.5 [3-point ejecting]		
Ejector stroke	in	2.00			2.00		
Rotary table height	in	40.16			41.34		
Nozzle center height	in	5.2 [From table surface]			5.2 [From table surface]		
Max lower mold- half weight	lb	295×2 pcs			440×2 pcs		

## ▼Others

Heater capacity	kw	5.8			7.3		
Pump motor	kw	15.0			18.5		
Oil tank capacity	Gal	48.8			48.8		
Machine dim. (L×W×H)	in	125.3×53.6×79			133×58.3×83.5		
Machine weight	U.S.ton	4.2			5.7		

Specifications are subject to change without any legal obligation on the part of the manufacturer.  
Items in ( ) are optional. The figures marked (\*) vary according to molding conditions.

## ▼Standard Specifications

### ▼Injection

10-speed, 10-pressure programmable injection  
6-step programmable back pressure  
6-step programmable screw revolution  
Suck back system  
Cushion volume monitor  
Programmable automatic melt purge  
Changeover to holding pressure via position time,  
injection cylinder pressure (S-PPC)  
Hopper throat temperature control  
Nozzle height adjustment mechanism

### ▼Clamping

Hydraulic ejector (up to 9 times)  
Ejector stroke digital setup  
Safety system (area sensor)  
Low pressure mold protection system  
Mold temperature control piping for 220° F water

TT-150HR2		MEMO	▼Optional Extras
In-line screw			▼Injection
6.3			Spring-operated check nozzle
1.57	(1.81)		Hydraulic check nozzle
12.2	(16.2)		Wear-resistant screw and barrel
6.7	(8.8)		Accumulator-aided injection system (1)
9.0	(12.0)		Thermo-nozzle with melt temperature indication
—	—		Screw head for PVC material
27,971	(21,145)		Energy conservation type band heater
—	—		Vent screw and barrel assembly
0.8	(1.1)		Dedicated screw for specific material
15~285			Long nozzle
2.5			
14.5			▼Clamping
Hydraulic motor			Ejector during mold closing
2 [180°-REVERSIBLE]			Additional tapping for mold mounting
Vertically moving hydraulic system			Air blowing system
150			
9.3			▼Control
11.02			Printer
9.84			Extra 6 kw plug socket (230V, 2 pcs.)
20.87			Flash light
54.53			Hour meter
4.5 [3-point ejecting]			Suction filter clogging detection
2.95			Clamping force setting on screen (2)
47.05			
5.9 [From table surface]			▼Others
705×2 pce			Heat insulating plate fitted on die plates
8.65			Specific colors to customer's requirements
18.5			
60.8			
157×78.5×92			
7.3			
		Remark : option warked (1) and (2) cannot be fit together	

### ▼Control (PLCS-9)

TFT color LCD display  
All machine parameter entry through numerical key board  
Graphic display (injection, metering, mold movement, ejecting)  
Positive monitoring or temperatures, times, positions, screw revolutions, injection speeds, back pressures  
Numerical display of monitored data  
PID temperature control for barrel and hopper throat  
Hydraulic fluid temperature control system  
Hydraulic fluid heating up system  
One week heater on/off program  
Multi-counter covering cycle number, divided lot number, lot number, finish notice, start reject, continuous reject and record counting  
Self-diagnosis function  
Monitored data statistical analysis  
RS-232C interface  
Internal memory  
Swingable control panel

### ▼Others

Mold fittings  
Oil cleaner  
Hopper  
Installation rubber pad