

# ES55

## SPECIFICATIONS

Clamping Unit	Hydraulic		
Clamping force	U.S. tons	55	
Clamp opening force	U.S. tons	2.5	
Clamp stroke (max.)	inches	12.99	
Mold height (min.-max.)	inches	5.91	
Daylight (min.-max.)	inches	5.91 - 18.9	
Platen size (HxV)	inches	Standard A- 16.93 x 16.93 Extended B- N/A	
Distance between tie rods (HxV)	inches	Standard A- 12.01 x 12.01 Extended B- N/A	
Tie rod diameter	inches	1.97	
Hydraulic ejector force	tons	2.8	
Hydraulic ejector stroke	inches	3.94	
<b>Injection Unit</b>			
<b>200</b>			
Screw diameter	mm	25	30 35
Screw diameter	inches	0.984	1.181 1.378
Shot size (1 + 4)	ounces	2.22	3.21 4.37
Injection capacity	cu. inches	4.21	6.10 8.24
Plasticizing capacity (max.)	lbs./hr.	126	166.5 222.75
Recovery rate (1)	ozs./sec.	0.56	0.74 0.99
Injection rate at max. pressure (3)	cu. in./sec.	3.9	5.6 7.7
Injection rate (regenerative) (3)	cu. in./sec.	5.9	8.6 11.6
Injection velocity at max. pressure (3)	inches/sec.	5.13	
Injection velocity (regenerative) (3)	inches/sec.	7.81	
Screw stroke	inches	5.51	
Injection pressure (max.) (4)	p.s.i.	34800	31973 23490
Injection pressure (regenerative)	p.s.i.	30276	21025 15443
Screw speed range (4)	rpm	25-480	25-480 25-480
Screw torque (4)	ft.-lbs.	166	166 166
Screw L/D ratio		24 : 1	20 : 1 17.1 : 1
Nozzle stroke	inches	7.87	
Nozzle force	tons	3.1	
<b>Hydraulics</b>			
Pump capacity	gpm	16	
System pressure	p.s.i.	2900	
Oil reservoir capacity	U.S. gal	41	
<b>Electrics</b>			
Power supply (standard)	volts	230 / 460 / 575 / 3 / 60	
Total rated horse power	HP	20	
Number of heat control zones		3 + N	3 + N 3 + N
Total heating wattage	kw	4.4	4.4 4.4
<b>General</b>			
Dry cycle performance (5)	sec.	1.5	
Water requirements (max.)	gpm	6	
Machine dimensions (l.w. h.)	inches	135 x 48 x 84	
Machine weight	lbs.	6549	
Hopper capacity	lbs.	44	

**General Notes:** Machines available with different shot sizes upon request. Increased injection pressure available on certain models. N/A = not applicable, O/R = on request

## STANDARD EQUIPMENT

**Clamp**  
SPI standard mold mounting platen and K.O. pattern  
Multi-stroke hydraulic ejection, speed and pressure controlled with quick center K.O. coupling  
Mechanical Safety Dropbar  
3 Speeds opening and closing  
Hydraulic, electric and electronic safety gate interlocks  
Low pressure hydraulic mold protection with monitoring  
Water-cooled stationary platen

**Injection**  
Nitrided barrel and screw  
Non-return ring or ball check valve  
Direct screw drive via Hydromotor  
Injection unit swivel  
Quick Barrel Change  
Digital screw RPM indicator  
Gold Start Protection  
Water-cooled feed throat with thermometer  
Discharge hopper chute with slide for hopper movement  
10 injection speeds  
10-step holding pressure profile  
Holding pressure time-, stroke-, hydraulic pressure-, and mold cavity pressure dependent (load amplifier not included)  
5-step screw speed  
5-step back pressure profile  
Digital injection monitoring  
Automatic cushion monitoring and correction  
Programs for sprue break, decompression, intrusion, back pressure and transition boost to hold

**Hydraulics**  
Fully proportional, linearized hydraulics  
Variable displacement pump pressure and speed controlled  
Micron level high pressure filtration with electrical dirt alarm  
Filter magnet  
Oil tank with oil level indicator  
Selective read-outs for all pressures  
Oil prewarming system with high and low limit, L.E.D. temperature read-out, electrical water valve and closed loop oil temperature control

**Electric & Electronics**  
EC88 Microcomputer, closed loop control via proportional valve  
Selectable manual, semi-automatic and fully automatic modes  
Patented linearization program  
Digital display of all actual values  
Monitoring, alarm, and diagnostic systems  
Cycle Time Analysis  
Separate controls for heat and drive  
Automatic barrel temperature reduction program  
Display of current switchover point  
Potentiometric position control for clamp, ejection, injection and nozzle  
Current action display  
Sealed hour counter  
Automatic screen shut-off  
Printer connection via V24 interface  
Ventilated control panel  
Circuit breakers I.p.o fuses  
Energy-efficient, fan-cooled motors  
Hydro approved

**General**  
Conforms to latest O.S.H.A. standards  
Easy access to motors, pumps and hydraulics  
Ergonomic design for operator ease and safety  
Large open drop area for automation

- Notes:** 1. Based on styrene material  
2. Calculated  
3. Can be increased with accumulator  
4. Can be increased  
5. Per Euromap 6 Standard

## OPTIONAL EQUIPMENT

**Clamp**  
Power assisted safety gate  
Core pulls, unscrewing and indexing arrangements  
Air blow-off units with timer and valve  
Manual or hydraulic quick mold mount systems  
Auto mold change systems  
Extended tie bars  
Digital clamp force indicator  
Direct clamp force indicator  
Water-cooled, heated, insulated and nickel-plated platens  
Special knock out and platen hole patterns

**Injection**  
Bi-metallic barrels  
Vented barrels  
High performance screws for specialized plastics  
Special L/D or compression ratio screws  
Barrel & Screw Arrangements for Thermoset, L.I.M., Rubber, P.V.C., and Teflon  
Smaller or larger than standard shot sizes  
Screw anti-rotation device  
Heater bands with increased heating capacity  
Ceramic or air-cooled heaterbands  
Heaterless, filter, reverse taper and longer nozzles  
Spring-loaded, hydraulic and pneumatic shut-off nozzles  
Fully enclosed or insulated heat shield for barrel

**Hydraulics**  
Servo valve for injection ram control  
Larger pump and motor for increased drive capacity  
Larger motor and extra pump for independent screw drive  
Larger motor and extra pump for K.O., unscrewing or core pull on the fly  
Accumulator for K.O., unscrewing or core pull on the fly  
Accumulator for faster injection  
Increased injection pressure  
High RPM or high torque screw drive

**Electric & Electronics**  
CC90 Microcomputer total machine control with closed loop process control  
Micrograp, Microplast, Microflow, Microtemp Packages  
Quality Documentation Package  
Quality Data Statistics Package (SPC & SPOC programs)  
Delay timers for injection, suck back or other  
Timer to turn heaters on in advance  
Timer to shut down machine after cycle set point is reached  
24 hour, 7 day timer  
Try-Again Program  
Mold wiper and robot programs  
Infra-red light curtain and photocell ejection controls  
Interface to central/host computer and handling systems  
Special programs for venting, pre-injection, P.V.C., etc.  
Mold Cavity switchover device with pressure transducer  
Additional heating zones for machine, mold, hot runner or hot sprue  
Heater and booster transformers  
Power Capacitor, part start winding or Star Delta  
Printer  
External floppy disk drive (for EC88)

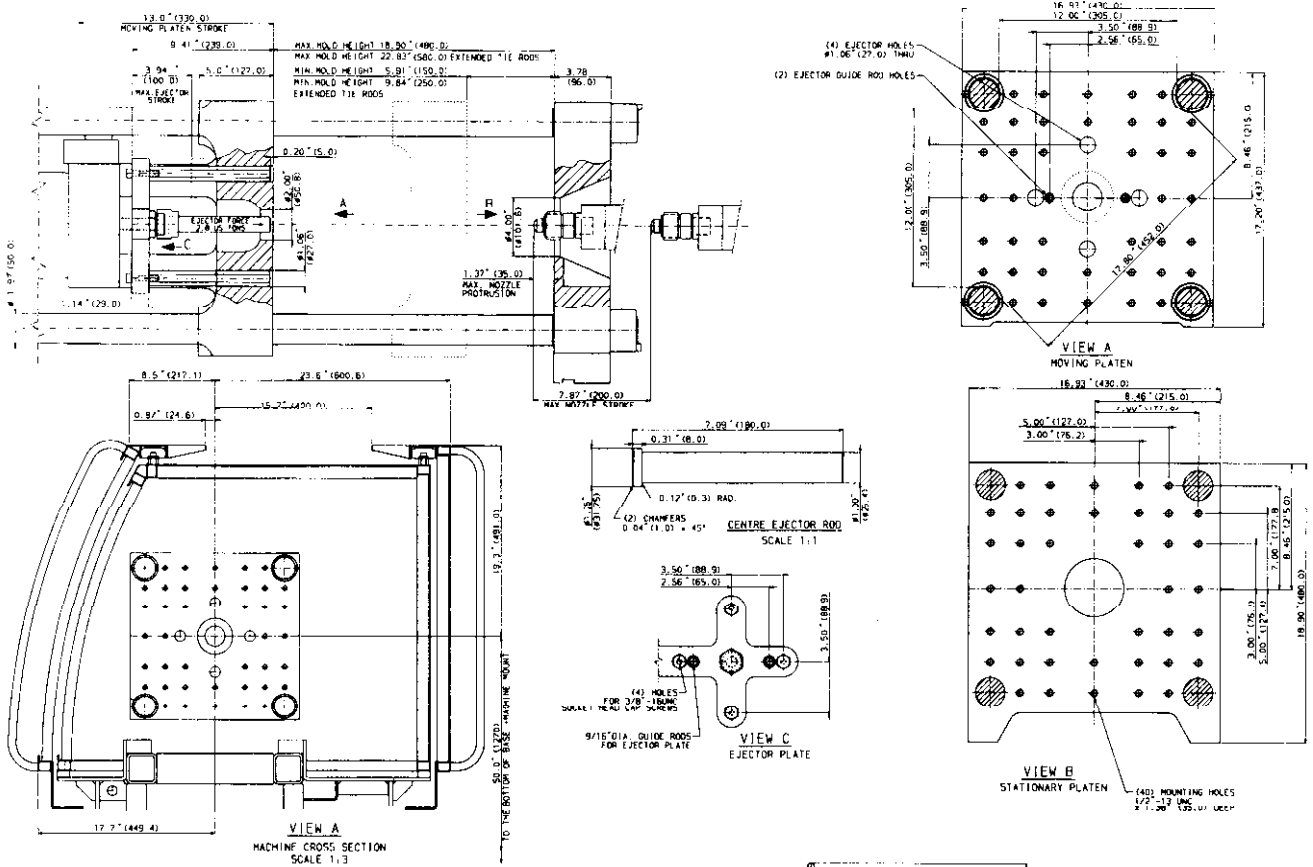
**General**  
Machine leveling/vibration mounts  
Cooling water distributor with flow indication (with or without thermometers)  
Drawer-type and other hopper magnets  
Stainless steel hopper, purge shield, etc.  
Special painting of machine to customer's specs  
Alarm bell in addition to alarm light  
Recommended Spare Parts Package  
Automated handling systems and Robots

Some options may not be available on all machines

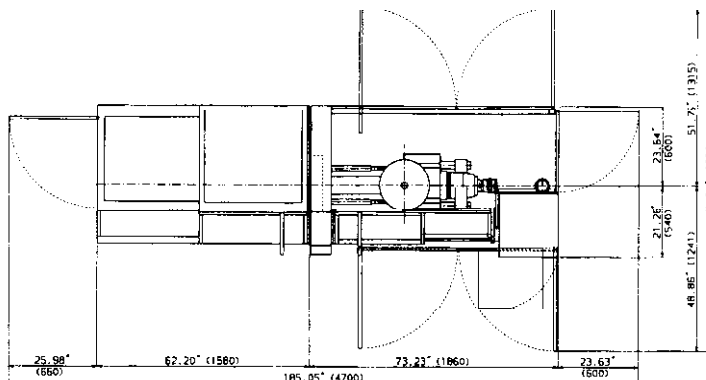
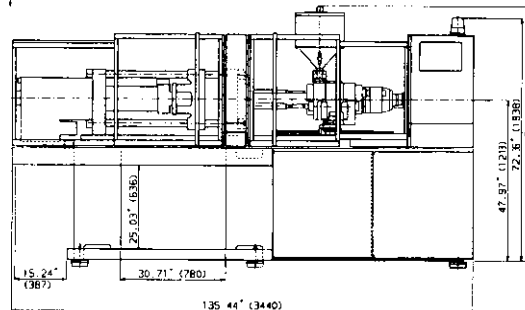
ISSUED NOVEMBER 1991

# Injection Molding Machine

# ES55



NOTES:  
1) DIMENSIONS ARE SYMMETRICAL ABOUT CENTRE LINES UNLESS OTHERWISE SPECIFIED.  
2) DIMENSIONS SHOWN IN BRACKETS (---) ARE IN MILLIMETERS.  
3) TECHNICAL DATA SUBJECT TO CHANGE WITHOUT NOTICE.



ALL DIMENSIONS IN INCHES

TECHNICAL DATA SUBJECT TO CHANGE WITHOUT NOTICE.

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