

SPECIFICATIONS

Clamping Unit	Toggle				
Clamping force	U.S. tons	82.5			
Clamp opening force	U.S. tons	11.44			
Clamp stroke (max.)	inches	11.81			
Mold height (min.-max.)	inches	5.91 x 14.96			
Daylight (min.-max.)	inches	5.91 x 26.77			
Platen size (HxV) (6)	inches	A - 20.07 x 21.73 B - 22.44 x 21.73			
Distance between tie-rods (HxV) (6)	inches	A - 13.58 x 13.58 B - 15.98 x 13.58			
Tie rod diameter	inches	2.36			
Hydraulic ejector force	tons	2.62			
Hydraulic ejector stroke	inches	5.11			
Injection Unit	240				
Shot size (1 + 4)	ounces	3.67	4.99	6.52	8.25
Injection capacity	cu. inches	6.90	9.39	12.26	15.52
Screw diameter	inches	1.181	1.378	1.575	1.772
Plasticizing capacity (max.)	lbs./hr.	149	218	273	269
Recovery rate	ozs./sec.	0.665	0.971	1.213	1.20
Injection rate at max. pressure (2 + 3)	cu. in./sec.	4.79	6.52	5.66	7.16
Injection rate (regenerative) (2 + 3)	cu. in./sec.	N/A	N/A	N/A	N/A
Injection velocity at max. pressure (2 + 3)	inches/sec.	4.37	4.37	2.90	2.90
Injection velocity (regenerative) (2 + 3)	inches/sec.	N/A			
Screw stroke	inches	6.299			
Injection pressure (max.)	p.s.i.	33,011	24,253	27,926	22,065
Injection pressure (regenerative)	p.s.i.	N/A			
Screw speed range (5)	rpm	25-344	25-344	25-274	25-274
Screw torque (5)	in./lbs.	3,089	3,089	3,089	4,452
Screw L/D ratio		20:1			
Nozzle stroke	inches	11.81			
Nozzle force	tons	4.86			
Hydraulics					
Pump capacity	gpm	17.70			
System pressure	p.s.i.	2,320			
Oil reservoir capacity	U.S. gal.	42			
Electrics					
Power supply (standard)	volt	230/460/575/3/60			
Total rated HP		20			
Number of heat control zones		3 + n	3 + n	3 + n	4 + n
Total heating wattage	kw	4.95	6.75	7.35	8.80
General					
Dry cycle performance	sec.	1.5			
Water requirements (max.)	gpm	6.0			
Machine dimensions (l.w.h.)	inches	167 x 58 x 72			
Machine weight	lbs.	7,900			
Hopper capacity	lbs.	175			

STANDARD EQUIPMENT

Clamp
SPI standard platen and K.O. pattern
Smooth, fast-acting double toggle
Multi-stroke hydraulic ejection, speed and pressure controlled with quick centre K.O. coupling
2 speeds opening & closing
Electrically gear-driven central mold height adjustment
Heavy tie-bars, large bearing surface area for moving platen
Water-cooled stationary platen
Central automatic lubrication with pressure system protection
Mechanical safety dropper with limit switch
Hydraulic, electric and electronic safety gate interlock
Divided safety gate
Low pressure mold protection with digital setting

Injection
20:1 L/D, nitrided barrel & screw
Non-return ring or ball check valve
Digital screw RPM indicator
3 injection speeds
Second stage injection pressure time and stroke dependant
Cold start protection
Rapid screw pulling from back
Discharge hopper chute with slide for hopper movement
Water-cooled feed throat with thermometer
Programs for sprue break, decompression, intrusion, back pressure and transition boost to hold

Hydraulics
Fully proportional linearized hydraulics
Variable displacement pump
10 micron pressure filtration with electrical dirt alarm
Filter magnet
Oil tank with temperature and level indicator
Selective readouts for all pressures
Oil prewarming system with high and low limit, L.E.D. temperature readout, electrical water valve and closed loop oil temperature control

Electric & Electronic
REPRO 4W control for digital setting of pressures, speeds, timers and strokes
Selectable manual, semi-automatic and fully automatic modes
Diagnostics with 18 L.E.D. alarm indicators
L.E.D. indicators for sequence, solenoids and position controls
Electronic temperature controls for barrel
Delay timers for plasticizing and sprue break
Cycle and hour counters
Separate controls for heat & drive
Circuit breakers i.p.o. fuses
Ventilated control panel
High energy-efficient, totally enclosed fan cooled motor(s)
Hydro approved (equivalent of C.S.A. and U.L.)

General
Conforms to latest O.S.H.A. standards
Easy access to motors, pumps & hydraulics
Large, open drop area for automation

Notes:
1. Based on styrene material.
2. Calculated
3. Can be increased with accumulator.
4. Realistic capacity (not calculated)
5. Can be increased.
6. Adjustable support under moving platen is standard with large platen.

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

OPTIONAL EQUIPMENT

Clamp
Hydromechanical coining system.
Manual or hydraulic quick mold mounting systems.
Automatic mold change system.
Extended tie-bars.
Closed loop clamp force control for automatic setting and correcting of tonnage.
Digital tonnage indicator.
Direct clamp force indicator.
Lube-free bushings and platen supports.
Mechanical stroke limiter.
Water-cooled, heated, insulated and nickel-plated platens.
Special K.O. and platen hole patterns.
Core pulls, unscrewing and indexing arrangements.
Air blow-off units with timer & valve.
Injection compression program.
Mold venting program.

Injection
Bi-metallic barrels.
Vented barrels.
Selective screws for specialized materials.
Special L/D or compression ratio screws.
Barrel & screw arrangements for Thermoset, L.I.M., Rubber, P.V.C. and Tylon.
Smaller or larger than standard selectable shot sizes.
Heaterless, filter, reverse taper and extra long nozzles.
Spring-loaded, hydraulic & pneumatic shut off nozzles.
Fully enclosed or insulated heatshield for barrel.
Screw anti-rotation device.

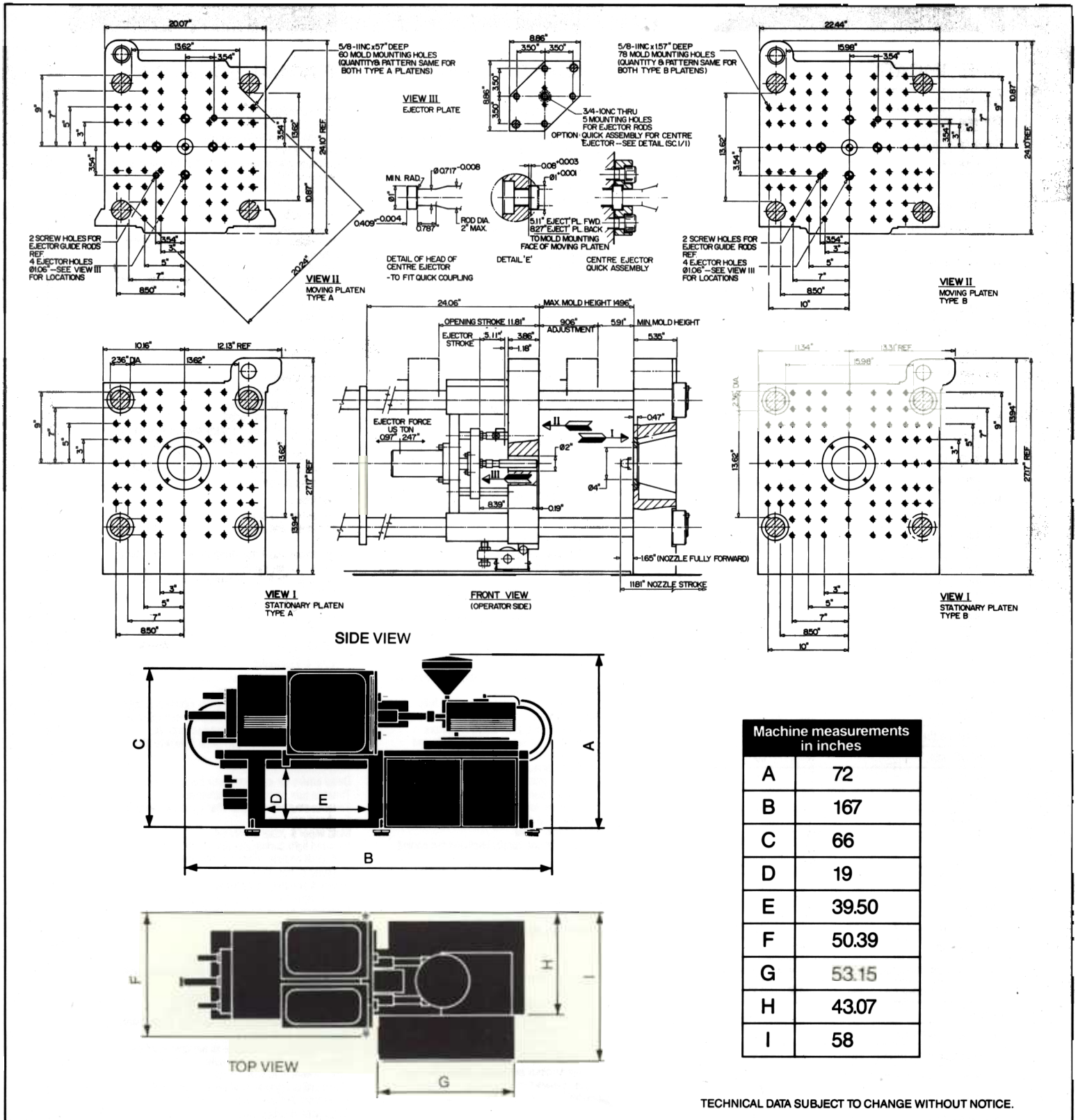
Hydraulics
Larger pump and motor for increased drive capacity.
Larger motor and extra pump for independent screw drive.
Larger motor and extra pump for K.O., unscrewing or core pull on the fly.
Accumulator for K.O., unscrewing or core pull on the fly.
Accumulator for faster injection.
Increased injection pressure.
High R.P.M. or high torque screw drive.
Fine reading and adjustment of back pressure.

Electric & Electronic
CC 80 Microcomputer total machine control with closed loop process control.
Micrograph, microplast, computer interface & printer.
EC 88 Microcomputer total machine control with proportional closed loop process control.
Bargraphs, microplast, computer interface and printer.
Host computer arrangement.
Delay timers for injection, suck back or other.
Timer to turn on heaters in advance.
Timer to shut off machine after cycle set point is reached.
Try Again program.
Mold wiper & robot programs.
Infra-red light curtain ejection control.
Additional heating zones for machine, mold, hot runner or hot sprue.
Heater & booster transformers.
Power capacitor, part start winding or Star Delta.
Ceramic or air-cooled heaterbands.
Selected process controls.

General
Machine levelling/vibration mounts.
Cooling-water distributor with flow indicators with or without thermometers.
Drawer-type and other hopper magnets.
Stainless steel hopper, purge shield, etc.
Double hopper with indexing for rapid resin change.
Quick barrel exchange.
Special painting of machine as per customer's specs.
Pneumatic operator safety gate.
Tool drawers in machine frame.
Alarm bell in addition to standard alarm light.
Recommended spare parts package.
Automated handling systems.
Some options may not be available on all machines.

Injection Molding Machine

ES 80



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