

# **Ω OMEGA 3 Colour**

Three Colour Injection Moulding Machine  
150 to 550 Ton



Energy Saving  
Upto 40%



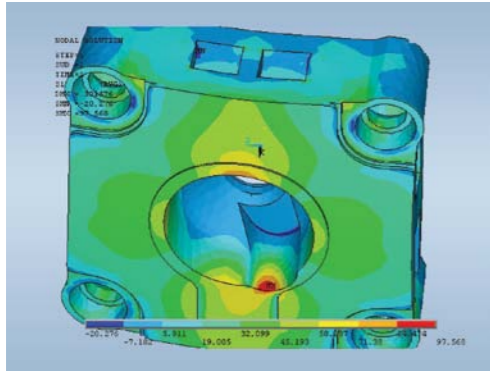
AC Drive  
(Optional)

## **Three Colour Marble Effect**



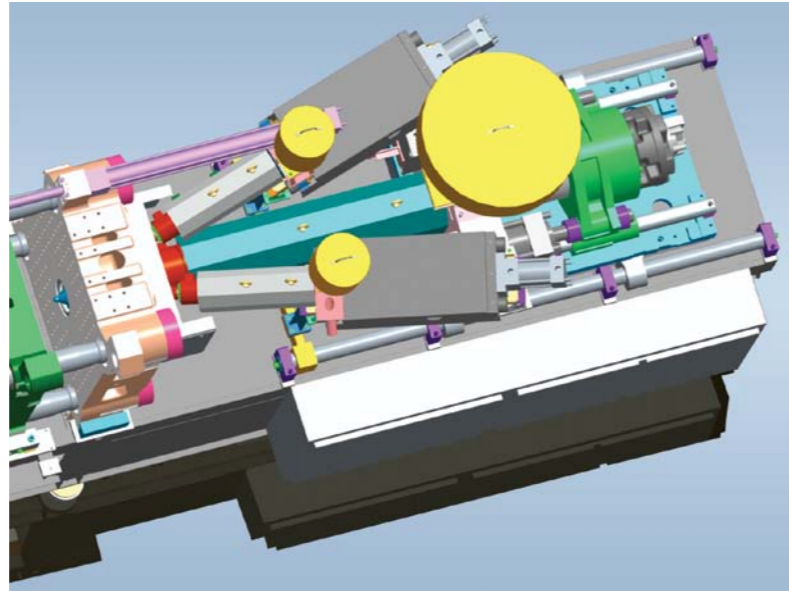
- ◆ Special Screw for Fast Colour Change
- ◆ Precise Design & Pattern Formation
- ◆ Multi-Sequence Setting
- ◆ Auxiliary Unit Material fed at the Nozzle

The OMEGA 3 Colour Series is Fully Hydraulic Direct Locking Ram Type Machine.

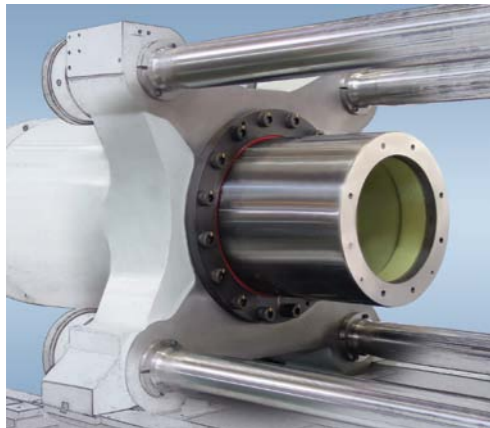


### Finite Element Analysis (FEA) for Machine Components

- Provides Maximum Strength to Weight Ratio

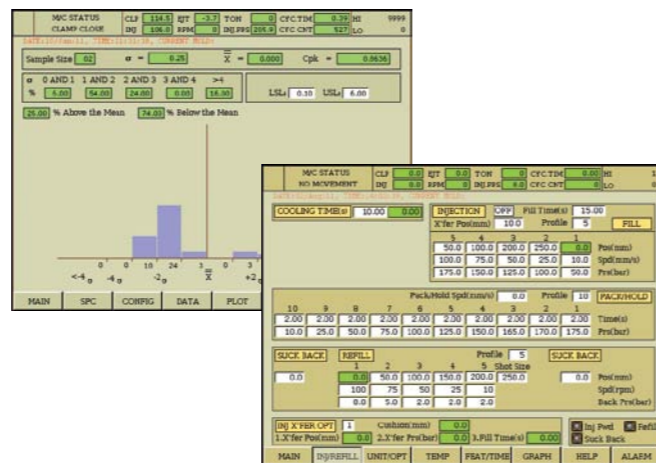


Top View - Injection unit



### Mono Seal & No Piston Rings

- Long Life of Sealing System
- Ease of Maintenance



### Additional Control Features

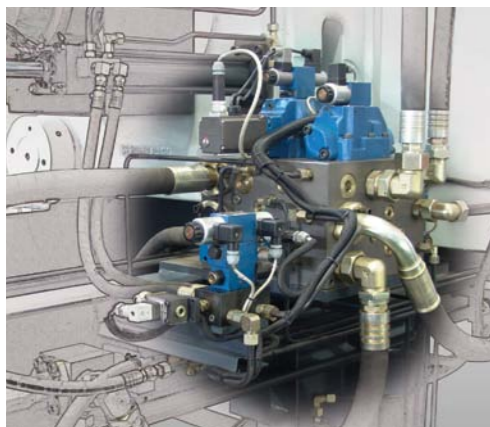
- Parameter Entry in Absolute Values
- User Customized Menu
- On Board I/O Diagnosis
- Mould Data Storage - 80 Nos.

### Hydraulic Valves Mounted Close to Actuators

- Fast Response From Actuator to Control Unit

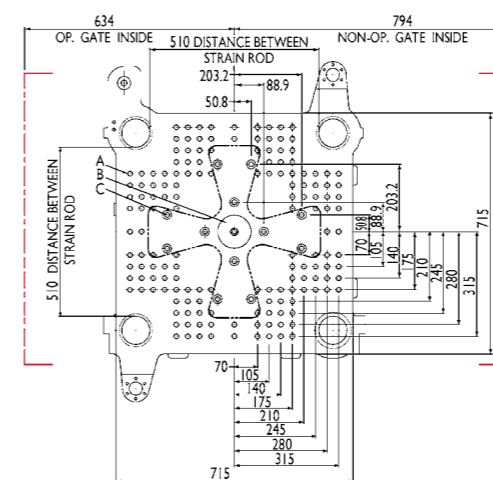
### More Use of Hoses

- Quieter Machine Operation



## Technical Specifications

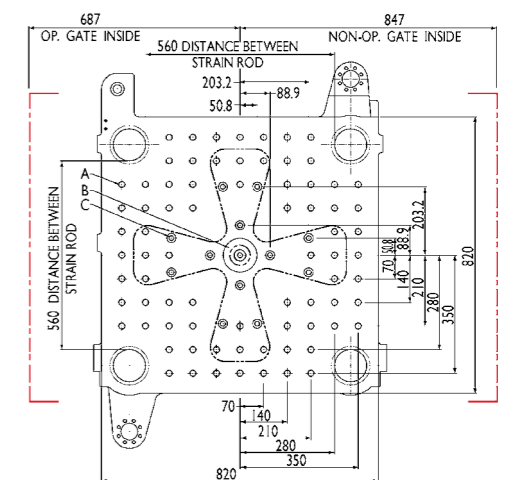
MODEL	OMEGA 150 - 3C				OMEGA 200 - 3C				
INTERNATIONAL SIZE	1500 - 610	180	180	2000 - 940	180	180			
POWER PACK	30 HP		25 HP		40 HP		25 HP		
INJECTION UNIT	UNIT	PRIMARY UNIT		AUX UNIT 1	AUX UNIT 2	PRIMARY UNIT		AUX UNIT 1	AUX UNIT 2
		A45	B45	B28	B28	A50	B50	B28	B28
INJECTION CAPACITY MAX. (GPPS)	gm	303	374	84	84	467	565	84	84
THEORETICAL DISPLACEMENT	cc	318	393	88	88	491	594	88	88
INJECTION PRESSURE	bar	1900	1539	2067	2067	1900	1570	2067	2067
INJECTION RATE	cc/sec	181	224	62	62	236	285	62	62
INJECTION SCREW STROKE	mm	200	200	110	110	250	250	110	110
SCREW DIAMETER	mm	45	50	32	32	50	55	32	32
SCREW L/D RATIO		22.2	20	20	20	22	20	20	20
SCREW SPEED	rpm	323	323	208	208	289	289	208	208
SCREW TORQUE	Nm	930	930	374	374	1305	1305	374	374
PLASTICIZING RATE (GPPS)	gm/sec	30	41	8	8	35	45	8	8
PLASTICIZING RATE (BARRIER SCREW)	gm/sec	36	48	-	-	-	-	-	-
NO. OF PYROMETER (BARREL+NOZZLE)		3+1		3+1		3+1		3+1	
TOTAL HEAT CAPACITY	kW	15		6.4		19.6		6.4	
<b>CLAMP UNIT</b>									
CLAMP FORCE	ton	150				200			
CLAMP STROKE	mm	625				750			
MAXIMUM DAYLIGHT	mm	825				950			
MINIMUM MOULD HEIGHT	mm	200				200			
PLATEN SIZE (H x V)	mm	715 x 715				820 x 820			
DISTANCE BETWEEN TIE ROD	mm	510 x 510				560 x 560			
TIE ROD DIAMETER	mm	85				95			
EJECTOR STROKE	mm	160				160			
EJECTOR FORCE	ton	4.5				7.5			
MOULD WEIGHT CAPACITY	kg	1050				1450			
<b>GENERAL</b>									
ELECTRIC MOTOR	kW (HP)	22 (30)		18.5 (25)		30 (40)		18.5 (25)	
TOTAL OIL TANK CAPACITY	ltr	405		240		425		240	
WATER REQUIREMENT (Inlet temp. 29°C)	lpm	90		100		80		110	
CONNECTED LOAD	kW	68.3				80.9			
MACHINE DIMENSION (L x W x H)	m	6.30 x 1.82 x 2.32				-			
MACHINE WEIGHT	kg	9800				12700			



OMEGA 150 - 3C

ALL DIMENSIONS ARE IN MM

- A M16x40 DEEP (156 HOLES ON MOVING PLATEN)  
M16x40 DEEP (176 HOLES ON STATIONARY PLATEN)
- B MOVING PLATEN : Ø 100.0 THRU BORE K/O BAR CENTER HOLE M16x40 MM DEEP  
STATIONARY PLATEN : Ø 160.0 (+0.04/0.00) WITH LOCATING RING,  
Ø 175.0 (+0.04/0.00) WITHOUT LOCATING RING
- C Ø 27.0 THRU, (12) HOLES & K/O BAR HOLES M16x40 DEEP (12) NOS

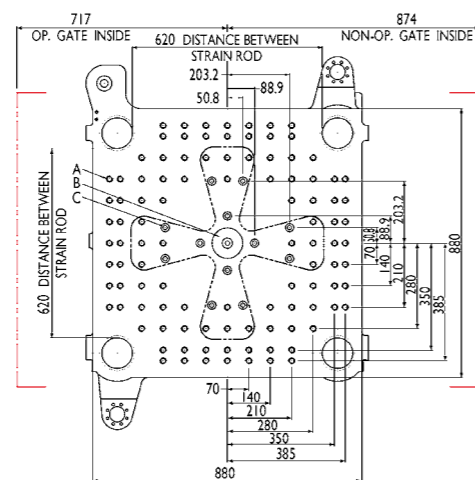


OMEGA 200 - 3C

- A M20x50 DEEP (76 HOLES ON MOVING PLATEN)  
M20x50 DEEP (84 HOLES ON STATIONARY PLATEN)
- B MOVING PLATEN : Ø 100.0 THRU BORE K/O BAR CENTER HOLE M16x40 MM DEEP  
STATIONARY PLATEN : Ø 160.0 (+0.04/0.00) WITH LOCATING RING,  
Ø 175.0 (+0.04/0.00) WITHOUT LOCATING RING
- C Ø 27.0 THRU, (12) HOLES & K/O BAR HOLES M16x40 DEEP (12) NOS

**Three Colour Injection Moulding Machine**

MODEL		OMEGA 250 - 3C			
INTERNATIONAL SIZE		2500 - 1190		180	180
POWER PACK		50 HP		25 HP	
INJECTION UNIT	UNIT	PRIMARY UNIT		AUX UNIT 1	AUX UNIT 2
		A55	B55	B28	B28
INJECTION CAPACITY MAX. (GPPS)	gm	588	821	84	84
THEORETICAL DISPLACEMENT	cc	618	863	88	88
INJECTION PRESSURE	bar	1918	1373	2067	2067
INJECTION RATE	cc/sec	250	349	62	62
INJECTION SCREW STROKE	mm	260	260	110	110
SCREW DIAMETER	mm	55	65	32	32
SCREW L/D RATIO		23.6	20	20	20
SCREW SPEED	rpm	229	229	208	208
SCREW TORQUE	Nm	1852	1852	374	374
PLASTICIZING RATE (GPPS)	gm/sec	35	56	8	8
PLASTICIZING RATE (BARRIER SCREW)	gm/sec	41	65	-	-
NO. OF PYROMETER (BARREL+NOZZLE)		3+1		3+1	
TOTAL HEAT CAPACITY	kW	23.7		6.4	
CLAMP UNIT					
CLAMP FORCE	ton	250			
CLAMP STROKE	mm	830			
MAXIMUM DAYLIGHT	mm	1080			
MINIMUM MOULD HEIGHT	mm	250			
PLATEN SIZE (H x V)	mm	880 x 880			
DISTANCE BETWEEN TIE ROD	mm	620 x 620			
TIE ROD DIAMETER	mm	100			
EJECTOR STROKE	mm	160			
EJECTOR FORCE	ton	7.5			
MOULD WEIGHT CAPACITY	kg	1680			
GENERAL					
ELECTRIC MOTOR	kW (HP)	37 (50)		18.5 (25)	
TOTAL OIL TANK CAPACITY	ltr	655		240	
WATER REQUIREMENT (Inlet temp. 29°C)	lpm	130		110	
CONNECTED LOAD	kW	92			
MACHINE DIMENSION (L x W x H)	m	7.2 x 1.83 x 2.66			
MACHINE WEIGHT	kg	15700			

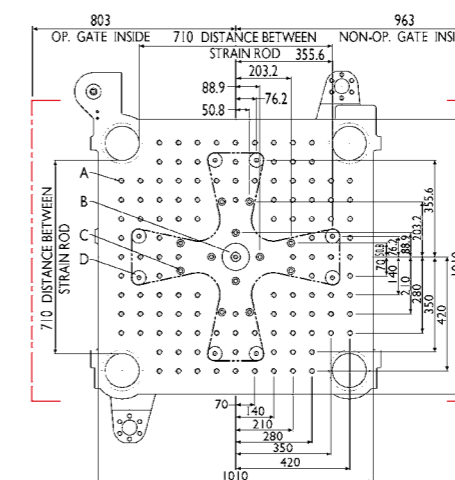


**OMEGA 250 - 3C**

- A M20x50 DEEP (104 HOLES ON MOVING PLATEN)  
M20x50 DEEP (112 HOLES ON STATIONARY PLATEN)
- B MOVING PLATEN :  $\phi$  100.0 THRU BORE K/O BAR CENTER HOLE M16x40 MM DEEP  
STATIONARY PLATEN :  $\phi$  160.0 (+0.04/0.00) WITH LOCATING RING,  
 $\phi$  175.0 (+0.04/0.00) WITHOUT LOCATING RING
- C  $\phi$  27.0 THRU, (12) HOLES & K/O BAR HOLES M16x40 DEEP (12) NOS

ALL DIMENSIONS ARE IN MM

MODEL		OMEGA 350 - 3C			
INTERNATIONAL SIZE		3500 - 2350		220	220
POWER PACK		60 HP		30 HP	
INJECTION UNIT	UNIT	PRIMARY UNIT		AUX UNIT 1	AUX UNIT 2
		A 70	B70	B32	B32
INJECTION CAPACITY MAX. (GPPS)	gm	1172	1530	126	126
THEORETICAL DISPLACEMENT	cc	1232	1608	132	132
INJECTION PRESSURE	bar	1909	1462	1633	1633
INJECTION RATE	cc/sec	351	458	109	109
INJECTION SCREW STROKE	mm	320	320	130	130
SCREW DIAMETER	mm	70	80	36	36
SCREW L/D RATIO		22.9	20	20	20
SCREW SPEED	rpm	170	170	288	288
SCREW TORQUE	Nm	3347	3347	374	374
PLASTICIZING RATE (GPPS)	gm/sec	48	66	17	17
PLASTICIZING RATE (BARRIER SCREW)	gm/sec	-	-	-	-
NO. OF PYROMETER (BARREL+NOZZLE)		3+1		3+1	
TOTAL HEAT CAPACITY	kW	33		7.3	
CLAMP UNIT					
CLAMP FORCE	ton	350			
CLAMP STROKE	mm	1060			
MAXIMUM DAYLIGHT	mm	1360 / 1660*			
MINIMUM MOULD HEIGHT	mm	300 / 600*			
PLATEN SIZE (H x V)	mm	1010 x 1010			
DISTANCE BETWEEN TIE ROD	mm	710 x 710			
TIE ROD DIAMETER	mm	125			
EJECTOR STROKE	mm	200			
EJECTOR FORCE	ton	7.5			
MOULD WEIGHT CAPACITY	kg	2900			
GENERAL					
ELECTRIC MOTOR	kW (HP)	45 (60)		22 (30)	
TOTAL OIL TANK CAPACITY	ltr	905		305	
WATER REQUIREMENT (Inlet temp. 29°C)	lpm	130		90	
CONNECTED LOAD	kW	114.6			
MACHINE DIMENSION (L x W x H)	m	8.68 x 2.02 x 2.73			
MACHINE WEIGHT	kg	19300			



**OMEGA 350 - 3C**

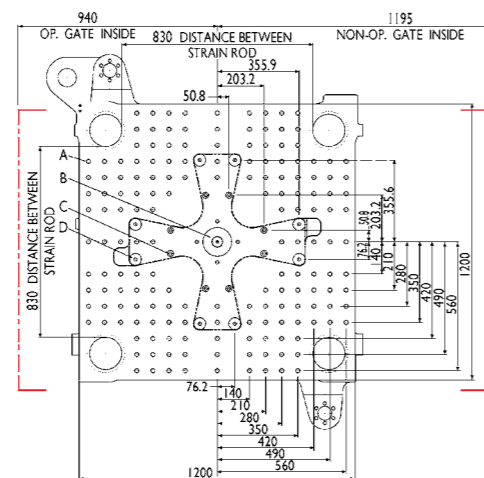
- A M20x50 DEEP (116 HOLES ON MOVING PLATEN)  
M20x50 DEEP (120 HOLES ON STATIONARY PLATEN)
- B MOVING PLATEN :  $\phi$  100.0 THRU BORE K/O BAR CENTER HOLE M16x40 MM DEEP  
STATIONARY PLATEN :  $\phi$  160.0 (+0.04/0.00) WITH LOCATING RING,  
 $\phi$  200.0 (+0.04/0.00) WITHOUT LOCATING RING
- C  $\phi$  27.0 THRU, (12) HOLES & K/O BAR HOLES M16x40 DEEP (20) NOS
- D  $\phi$  52.40 THRU, (8) HOLES

ALL DIMENSIONS ARE IN MM

\* With Ram Spacer

Three Colour Injection Moulding Machine

MODEL		OMEGA 450 - 3C			
INTERNATIONAL SIZE		4500 - 3340		450	450
POWER PACK		75 HP		40 HP	
INJECTION UNIT	UNIT	PRIMARY UNIT		AUX UNIT 1	AUX UNIT 2
		A80	B80	B40	B40
INJECTION CAPACITY MAX. (GPPS)	gm	1722	2179	227	227
THEORETICAL DISPLACEMENT	cc	1810	2290	239	239
INJECTION PRESSURE	bar	1843	1456	1899	1899
INJECTION RATE	cc/sec	492	623	118	118
INJECTION SCREW STROKE	mm	360	360	150	150
SCREW DIAMETER	mm	80	90	45	45
SCREW L/D RATIO		22.5	20	20	20
SCREW SPEED	rpm	153	153	181	181
SCREW TORQUE	Nm	4875	4875	1078	1078
PLASTICIZING RATE (GPPS)	gm/sec	59	79	20	20
PLASTICIZING RATE (BARRIER SCREW)	gm/sec	72	96	-	-
NO. OF PYROMETER (BARREL + NOZZLE)		4+1		3+1	
TOTAL HEAT CAPACITY	kW	42.8		12.2	
CLAMP UNIT					
CLAMP FORCE	ton	450			
CLAMP STROKE	mm	1100			
MAXIMUM DAYLIGHT	mm	1500			
MINIMUM MOULD HEIGHT	mm	400			
PLATEN SIZE (H x V)	mm	1200 x 1200			
DISTANCE BETWEEN TIE ROD	mm	830 x 830			
TIE ROD DIAMETER	mm	140			
EJECTOR STROKE	mm	200			
EJECTOR FORCE	ton	11.5			
MOULD WEIGHT CAPACITY	kg	4800			
GENERAL					
ELECTRIC MOTOR	kW (HP)	55 (75)		30 (40)	
TOTAL OIL TANK CAPACITY	ltr	1160		420	
WATER REQUIREMENT (Inlet temp. 29°C)	lpm	150		90	
CONNECTED LOAD	kW	152.2			
MACHINE DIMENSION (L x W x H)	m	8.93 x 2.3 x 2.96			
MACHINE WEIGHT	kg	26500			

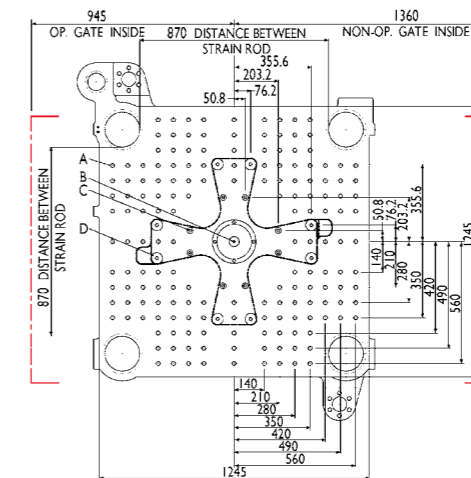


ALL DIMENSIONS ARE IN MM

OMEGA 450 - 3C

- A M20x50 DEEP (168 HOLES ON BOTH PLATENS)
- B MOVING PLATEN : Ø 125.0 THRU BORE K/O BAR CENTER HOLE M24x40 MM DEEP  
STATIONARY PLATEN : Ø 160.0 (+0.040/0.00) WITH LOCATING RING,  
Ø 200.0 (+0.046/-0.00) WITHOUT LOCATING RING
- C Ø 27.0 THRU, (8) HOLES & K/O BAR HOLES M16x40 DEEP (20) NOS
- D Ø 52.4 THRU, (8) HOLES

MODEL		OMEGA 550 - 3C		
INTERNATIONAL SIZE		5500 - 4850		1080
POWER PACK		75 HP		50 HP
INJECTION UNIT	UNIT	PRIMARY UNIT		AUX UNIT 1
		B90	B50	B50
INJECTION CAPACITY MAX. (GPPS)	gm	2989	565	565
THEORETICAL DISPLACEMENT	cc	3142	594	594
INJECTION PRESSURE	bar	1544	1820	1820
INJECTION RATE	cc/sec	545	163	163
INJECTION SCREW STROKE	mm	400	250	250
SCREW DIAMETER	mm	100	55	55
SCREW L/D RATIO		20	20	20
SCREW SPEED	rpm	108	198	198
SCREW TORQUE	Nm	6631	1248	1248
PLASTICIZING RATE (GPPS)	gm/sec	72	32	32
PLASTICIZING RATE (BARRIER SCREW)	gm/sec	86	37	37
NO. OF PYROMETER (BARREL + NOZZLE)		4+1		3+1
TOTAL HEAT CAPACITY	kW	54		20.4
CLAMP UNIT				
CLAMP FORCE	ton	550		
CLAMP STROKE	mm	1140		
MAXIMUM DAYLIGHT	mm	1676		
MINIMUM MOULD HEIGHT	mm	536		
PLATEN SIZE (H x V)	mm	1245 x 1245		
DISTANCE BETWEEN TIE ROD	mm	870 x 870		
TIE ROD DIAMETER	mm	160		
EJECTOR STROKE	mm	200		
EJECTOR FORCE	ton	12		
MOULD WEIGHT CAPACITY	kg	7060		
GENERAL				
ELECTRIC MOTOR	kW (HP)	55 (75)		37 (50)
TOTAL OIL TANK CAPACITY	ltr	1375		-
WATER REQUIREMENT (Inlet temp. 29°C)	lpm	150		-
CONNECTED LOAD	kW	179.8		186.8
MACHINE DIMENSION (L x W x H)	m	--		
MACHINE WEIGHT	kg	37300		



ALL DIMENSIONS ARE IN MM

OMEGA 550 - 3C

- A M20x50 DEEP (168 HOLES ON BOTH PLATENS)
- B MOVING PLATEN : Ø 160.0 THRU BORE & Ø 200x15 DEEP C'BORE K/O BAR CENTER HOLE M24 THRU  
STATIONARY PLATEN : Ø 160.0 (+0.063/0.00) WITH LOCATING RING,  
Ø 265.0 (+0.052/0.00) WITHOUT LOCATING RING
- C Ø 27.0 THRU, (8) HOLES & K/O BAR HOLES M16x40 DEEP (20) NOS
- D Ø 52.4 THRU, (8) HOLES

## Three Colour Injection Moulding Machine

### Design Advantages & Features

#### CLAMP

- Hollow Headless Ram with Mono Seal & No Piston Rings
- Large Prefill Designed for Fast Tonnage Build-up
- Rapid Traverse Cylinders
- Conical Strain Rod Nuts & Controlled Stress on Tie Rods
- Adjustable moving Platen Skates
- Rigid Cast Platens with FEAs
- Adjustable Pressure setting of Closing & Opening Stage
- Proportional Speed Control with 5 Closing & 5 Opening Speed
- Adjustable 2 Stage Mould Safety Pressure & 1 Stage Speed
- Position Based Ramping for Accurate Position Switching - Precise Speed & Pressure Control
- Linear Position Transducer for Accurate Clamp Position Control
- Sensitive Mould Protection with Try Again Circuit
- Stage Wise Actual Time Display
- Insert Moulding Program

#### EJECTOR

- Knock-Out Bar
- 2 Stage Programmable Ejector Forward Profile with Soft Eject
- Ejector Speed & Pressure adjustable on Screen
- Linear Transducer for Ejector Position
- Pulsating Ejector Strokes upto 9 Pulses
- Intermediate Retract Set Point
- Ejector Stay Forward & Forward Dwell Timer

#### INJECTION

- Fully balanced & Proven MILACRON Auxiliary Injection Units Design - Maintains Centre of Gravity
- Multi Sequence Setting of Patterns through Screen
- 6 Stage Injection Velocity & 15 Stage Injection Pressure Profile for Primary Units
- 2 Different options of Operation of the Auxiliary Units - Pulses with 1 Stage Injection Speed & Pressure - 10 Stage Injection with Separate Speed & Delay Time
- 5 Stage Screw Speed & 5 Stage Back Pressure Control (Setting) through Screen for Primary Units
- Dedicated RPM & Back Pressure setting for Auxiliary Units
- Digital setting of Extruder RPM & Digital Read out of Actual RPM
- Wide Choice of Injection Units with A-B Screw / Barrel Combinations
- Nozzle Contact Force by Pressure Switch
- Switch Over from Fill to Pack based on Position or Time
- Linear Transducer for Injection Units for Precise Design & Pattern
- Injection Decompression Before / After Refilling or Both
- Semi-Auto Purge, Cold Slug removal & Intrusion Moulding Programs
- Chequered Plate below Purge Area
- Sprue Break with Timer
- Injection start, Suck-back & Melt Decompression - Delay Timer
- Graphically Adjustable Alarm Bands for Injection Pressure

#### TEMPERATURE CONTROL

- Actual Current Display of Heating Zones
- Heater Failure & Thermocouple Failure Detection
- Accurate PID Temperature Control settable on Screen
- Feed Throat Temperature Indication
- Auto Heat Startup & Shutdown

- Heat Standby after set number of Cycles
- Soak Timer for Cold Start Protection
- High / Low Temperature Alarm
- Set & Actual Temperature Data with Bar Graph

#### CONTROLS

- 22 Parameter Monitoring for last 1000 cycles with Graphics
- 10.4" TFT Color Display with Alpha - Numeric Keypad
- Actual Injection Speed & Pressure Graph Display
- 80 Mould Data Storage
- Configurable Multilevel Password with Operator's Name
- Graphically Presentation of Hourly Production
- Customized Setup Menu
- High / Low Limit Display for Each Adjustable Parameter
- I / O diagnosis - Analog & Digital
- Timer Precision in 0.01 Second
- Change Log Menu: logs last 100 Set Points Changes with Time & Date
- Statistical Process Control (SPC) with Graphics
- Process Mode: Functions with its Co-functions on a Single Key Press
- Note Pad & Maintenance Scheduling
- Freely Programmable Smart Outputs
- Over View Screen with Graphical Display of Machine Functions
- Soft Keys for Fast Access of Select Menus
- Auto shut down
- Visual & Audible Alarm
- 1000 Alarm History with Date & Time Log
- Printer Interface with USB Port

#### HYDRAULICS

- Multiple Pump with PQ circuit
- Dedicated Power Pack for Auxiliary Units
- Pump & Motor slide out from Base for Ease of Maintenance
- Ergonomic Hydraulic Layout for Easy Approach
- Valves Placed near Actuators for Rapid Response
- Pre-Heating Circuit for Hydraulic Oil
- Low Oil Level Audible Alarm & Motor Shut Down
- Continuous Oil Filtration with 10 Micron Filter
- Audible Alarm for Filter Clogging

#### AVAILABLE OPTIONS

- Air Ejection
- Hydraulic Core pull
- Feed Throat Temperature Control
- Oil Temperature Control
- Part Drop Detect for Single Cavity
- Water Battery with Temperature Indicator
- Water Manifolds
- Robot Interface (SPI / EUROMAP)
- Ejector on Fly
- T-slot Platens
- Extended Daylight with Ram Spacer
- Eject Retract Limit Switch Verification
- Insulated Heater Band
- Bimetallic Barrel & Hardened / Coated Screw
- AC Variable Frequency Drive

All specifications reflect average values based on typical machine layouts. Actual figures will vary depending on final machine configuration. Performance specifications are based on theoretical data. Photograph may show attachments or accessories, which may not be part of the standard scope of supply. Due to continual improvements, specifications & some components are subject to change without notice.

## FERROMATIK MILACRON INDIA PVT. LTD.

(Formerly known as Cincinnati Milacron Ltd.)

93/2 & 94/1, Phase-I,  
G.I.D.C. Vatva,  
Ahmedabad - 382 445,  
India.

Phone : +91-79-2589 0081, 2589 0133, 2583 0063  
Fax : +91-79-2583 0125  
E-mail : salesfmi@milacron.com  
Website : www.milacronindia.com



**NEW DELHI** +91-11-4630 1114/15/16 **MUMBAI** +91-22 4005 5459/60/61/62/66 **CHENNAI** +91-44-2378 3648 **KOLKATA** +91-33-2282 2593/2909  
**HYDERABAD** +91-40-2340 2159/60 **BANGALORE** +91-80-2340 8984/85 **CHANDIGARH** +91-172-508 6633 **PUNE** +91-20-3049 0990/91  
**VAPI** +91-260-246 5150 **COIMBATORE** +91-89398 88192 **KERALA** +91-94477 21221