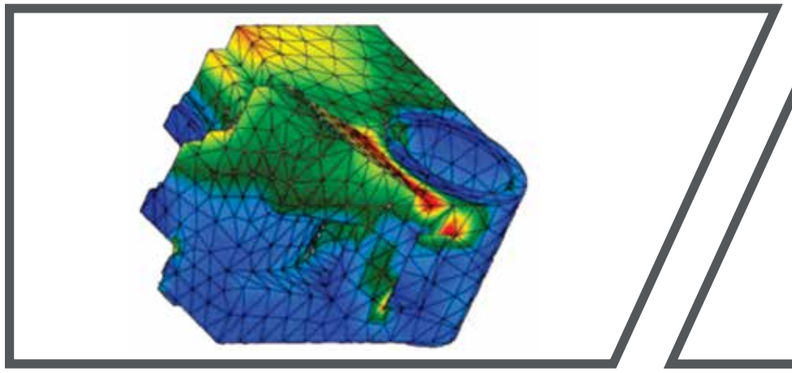
THE OMEGA SERVO 3C

MILACRON®

150-910 TON

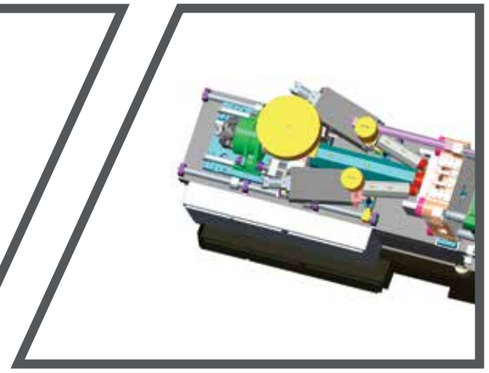
THE OMEGA SERVO 3C

The OMEGA 3 Colour Series is fully hydraulic, direct-locking ram type machine.

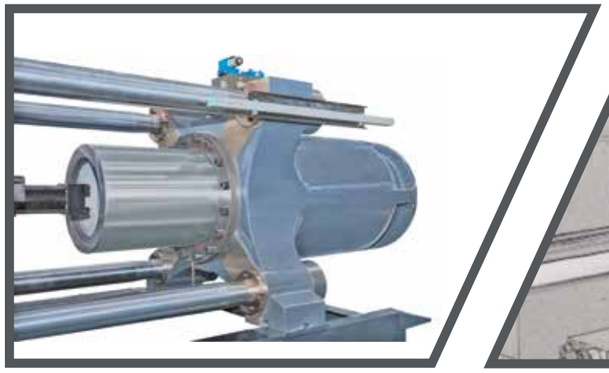


Finite Element Analysis (FEA) for Machine Components

- Provides Maximum Strength to Weight Ratio

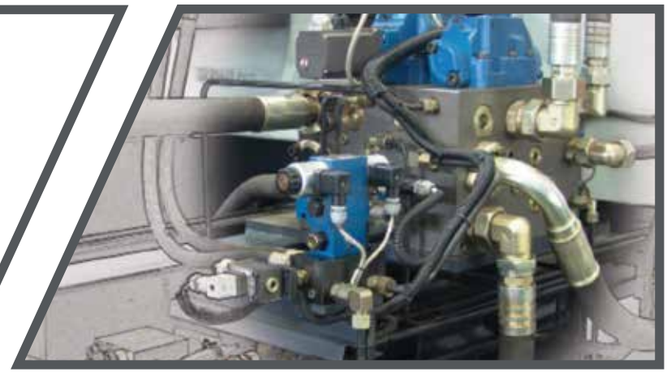


Top View - Injection unit



Mono Seal & No Piston Rings

- Long Life of Sealing System
- Ease of Maintenance

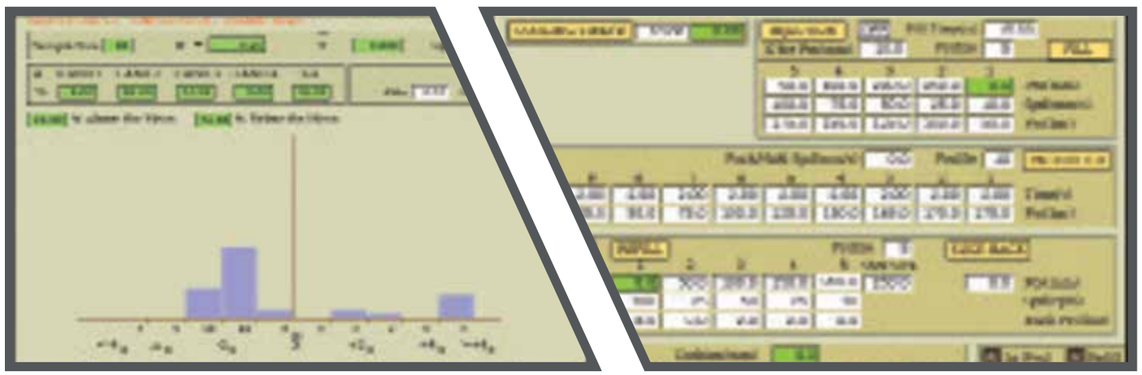


Hydraulic Valves Mounted Close to Actuators

- Fast Response From Actuator to Control Unit

More Use of Hoses

- Quieter Machine Operation



Additional Control Features

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

Servo Motor The New Edge Technology

Energy Saving
Up to 50%

Replacement of Standard Induction Motor with Servo Motor

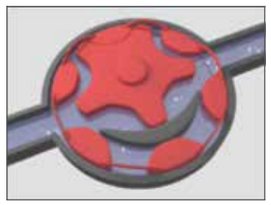
Reduced Heat Generaton

- Only Delivers Hydraulic Oil as it is Needed
- Reduced Heat Generation in Hydraulic Oil
- Results in Longer Life for Hyraulic Components & Enhanced oil Life
- Heat Load on Factory & Cooling Water Consumption is Reduced
- Influence of Oil Temperature on Machine Repeatability is reduced
- Improves Cycle Precision & Repeatability

Servo Motor

- Improved Repeatability
  - Closed Loop System
- Reduced Energy Consumption
  - Servo Motor RPM can Vary From 0 to 3000
- Increased Accuracy & Precision
  - Rotation can be Controlled to a Fraction of a Degree
- High Response
  - Reduced System Inertia
- Noise Reduction
  - Quit Gear Pump
  - Variable Speed Operations When Required

Internal Gear Pump



- Reduced Sensitivity to Contamination
- Increased Reliability and Lower Maintenance Costs
  - Only 2 Moving Parts
  - No Internal Wear Parts
  - Lower Cost Spare Parts
- Bidirectional Pump for Fast Response in Pressure Control
- Pump is stopped intermittently during the cycle
- Constant & Non-Pulsating Discharge Regardless of Pressure Condition
- Low Operating Noise

Servo Motor

(3 Phase Synchronous Motor with Permanent Magnets)

Standard Induction Motor

(3 Phase Asynchronous Motor)

STANDARD 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 FEA
Adjustable Pressure setting of Closing & Opening Stage
Proportional Speed Control with 5 Closing & 5 Opening Speed
Adjustable 2 Stage Mold 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 Mold Protection with Try Again Circuit
Stage-Wise Actual Time Display
Insert Molding Program

INJECTION
Fully balanced & Proven MILACRON Auxiliary Injection Unit 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 for the 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 readout 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 both Injection Units for Precise Design & Pattern
Injection Decompression Before/ After Refilling or Both
Semi-Auto Purge, Cold Slug removal & Intrusion Molding 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
Insulated Heater Band
Heat Standby after set number of cycles
Soak Timer for Cold Start Protection
High / Low Temperature Alarm
Set & Actual Temperature Data with Bar Graph
Insulated Heater Band

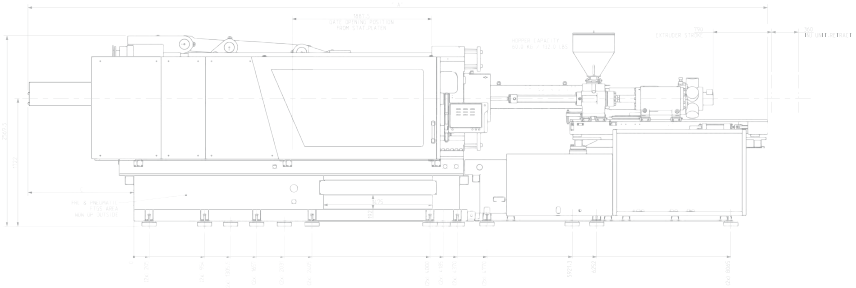
EJECTOR
Knock-Out Bar
2 Stage Programmable Ejector Forward Profile with Soft Eject
Ejector Speed & Pressure adjustable on Screen
Linear Transducer for Ejector Position
Pulsating Ejector Strokes upto 9 Pulses
Intermediate Retract Set Point
Ejector Stay Forward & Forward Dwell Timer
Ejector on Fly (550 to 910 T)

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 Mold Data Storage
Configurable Multilevel Password with Operator's Name
Graphical 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 Seconds
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
Overview Screen with Graphical Display of Machine Functions
Soft Keys for Fast Access to Select Menus
Auto shut down
Visual & Audible Alarm
1000 Alarm History with Date & Time Log
Printer Interface with USB Port
Axis-wise Graphical Cycle time Analysis
Batch Counter with option to turn off the motor
Mold data / Process data / Change log saving to External USB device

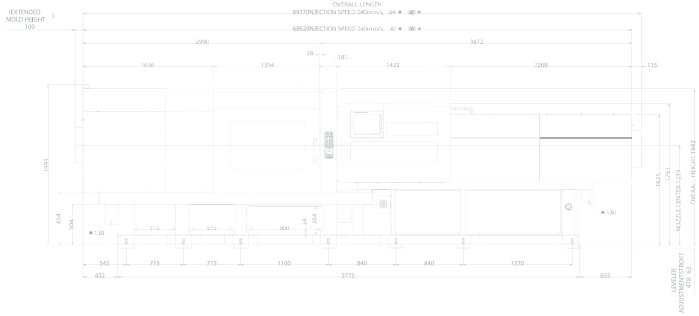
AVAILABLE OPTIONS
Hydraulic Core Pull
Feed Throat Temperature Control
Oil Temperature Control
Part Drop Detect for Single Cavity
Water Battery with Temperature Indicator
Water Manifolds
Robot Interface (SPI / EUROMAP)
Ejector on Fly (100 to 450T)
T-slot Platens (150-350 Ton)
Extended Daylight with Ram Spacer
Air Ejection
Eject Retract Limit Switch Verification
Bimetallic Barrel & Hardened / Coated Screw

STANDARD FEATURES

HYDRAULICS
Servo Motor Driven Pump
Dedicated Power Pack for Auxiliary Units
Ergonomic Hydraulic Layout for Easy Approach
Valves Placed near Actuators for Rapid Response
Pre-Healing Circuit for Hydraulic Oil
Low Oil Level Audible Alarm & Motor Shut Down
Continuous Oil Filtration with 10 Micron Filter
Audible Alarm for Filter Clogging



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.



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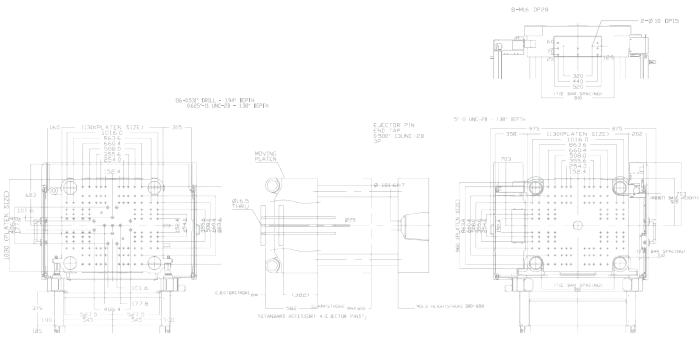
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