MILACRON®

THE eQ-SERIES

50-650 TON

THE eQ-SERIES

HIGH PRECISION ELECTRIC INJECTION MOLDING

INGENUITY, DEDICATION AND EXPERIENCE
eQ-SERIES gives you the flexibility to handle more applications. eQ-SERIES's movements are entirely controlled by servo drives. This not only results in maximized acceleration, but it ensures ultimate accuracy and exceptional reliability across all processes as well as highly precise motion, position and pressure control.

RELIABILITY AND REPEATABILITY FOR HIGH PRECISION ELECTRIC INJECTION MOLDING

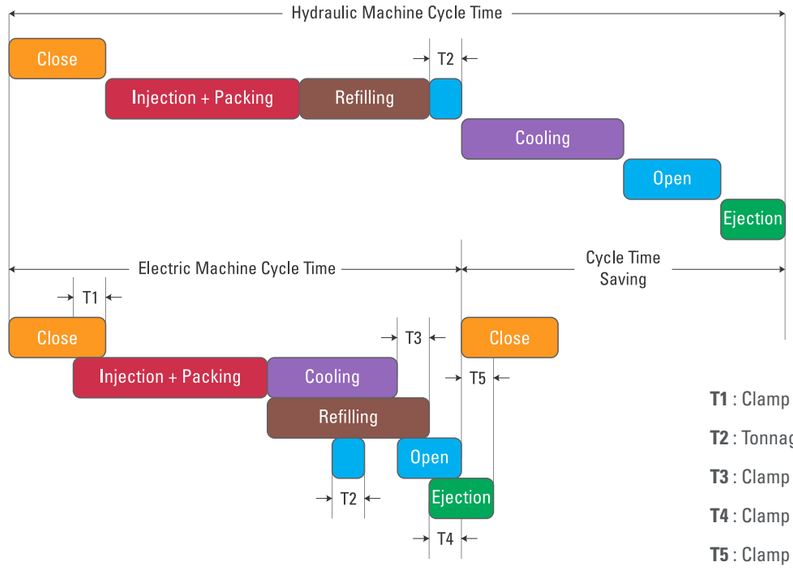
- Large Tie Bar spacing and highly sensitive mold safety
- Moving platen on LM guideway
- Simplfied programming of freely configurable cores
- Very low maintenance costs – proven design and product optimization result in maximum machine uptime, fewer components, and less wear

SERVO TECHNOLOGY MAKES THE DIFFERENCE

The latest generation servo drives are designed for handling fast acceleration and short time peak current. The feeding of energy back to the power supply optimizes energy consumption.

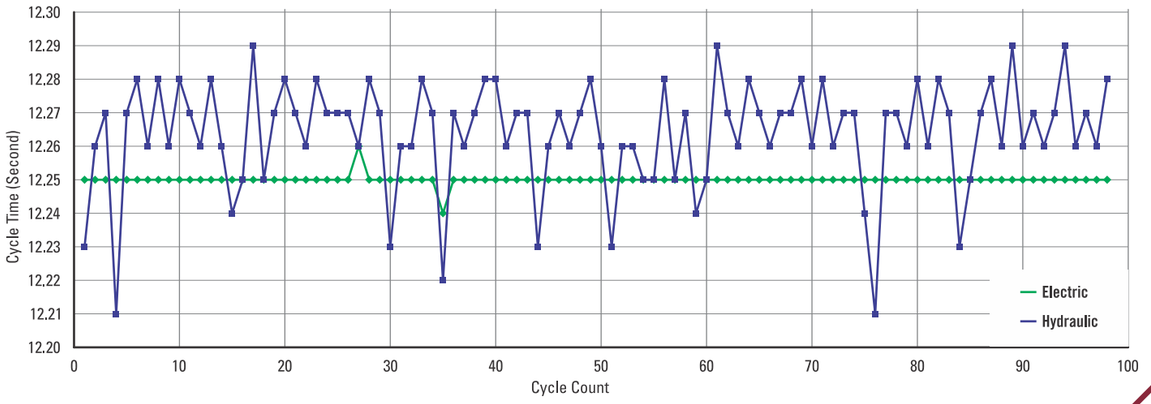
CYCLE TIME SAVINGS

Optimize your cycle time using simple pre-injection function. Typical cycle reduction of 0.3 – 0.7 seconds.



T1 : Clamp Tonnage & Pre-Injection
T2 : Tonnage Breakaway
T3 : Clamp Open & Refilling (NSOV / Mold gate)
T4 : Clamp Open & Ejector Forward
T5 : Clamp Close & Ejector Retract

UNMATCHED REPRODUCIBILITY



THE eQ-SERIES

IMPROVED CLAMP DESIGN

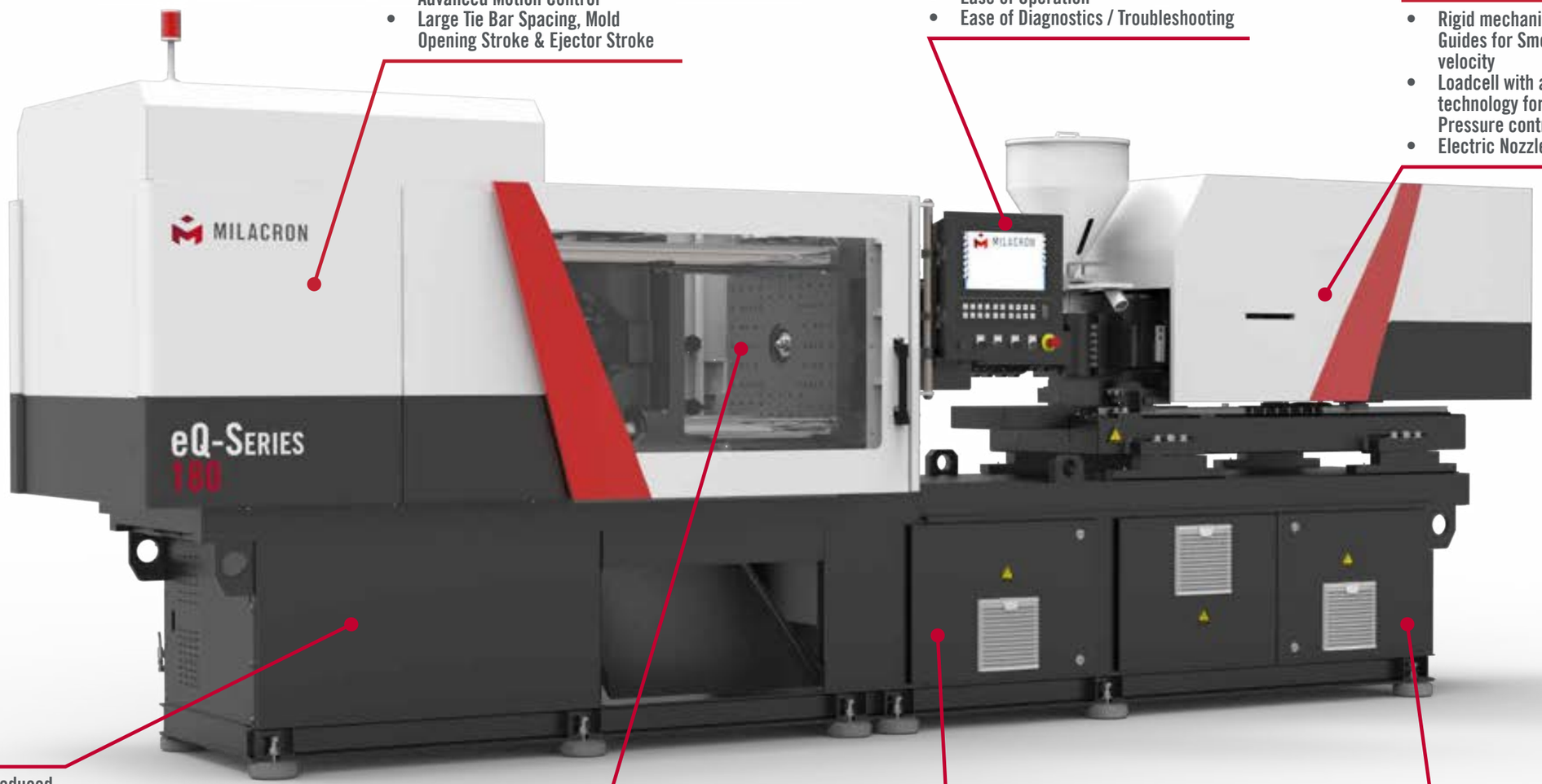
- Fast and Smooth Mold movements through Improved Toggle kinematics, Linear Guides and Advanced Motion Control
- Large Tie Bar Spacing, Mold Opening Stroke & Ejector Stroke

HIGH PERFORMANCE CONTROL

- Reliability
- Flexibility
- Ease of Operation
- Ease of Diagnostics / Troubleshooting

STRONG & STABLE INJECTION UNIT

- Rigid mechanical structure and Linear Guides for Smooth and Precise Injection velocity
- Loadcell with advanced Strain technology for precise Injection & Back Pressure control
- Electric Nozzle Holding Force



STRONG AND STABLE

- Rigid Base design with reduced deflection
- High Performance and Long-life Anti-Vibration mounts

ADVANCED MOLD PROTECTION

- Advanced Mold Safety
- Advanced Mold Ejector Pin Safety
- Ejector Motor with Mechanical Brake to Hold Ejector Spring in Position

ENERGY EFFICIENT

- Low Power Consumption through Regenerative Servo drive technology
- Advanced Motion technology for Fast and Precise Performance

IMPROVED ELECTRIC DRIVE AND SAFETY FEATURES

- Surge Suppressors provided as Standard
- Inbuilt Line Filters & Inductors to reduce harmonics

PROVIDING THE HIGHEST PERFORMANCE, PRECISION AND FLEXIBILITY.

Injection Unit Specifications

IU	55	120	300	450	630	970	1540	2290	3470
eQ-SERIES 50									
eQ-SERIES 80									
eQ-SERIES 110									
eQ-SERIES 150									
eQ-SERIES 180									
eQ-SERIES 230									
eQ-SERIES 280									
eQ-SERIES 350									
eQ-SERIES 450									
eQ-SERIES 550									
eQ-SERIES 650									

Clamp Specifications

MODEL	TONNAGE	PLATEN SIZE (H X V)	TIE BAR SPACING (H X V)	MAX DAYLIGHT	MIN/MAX MOLD THICKNESS
	tons	mm	mm	mm	mm
eQ-SERIES 50	50	540 X 500	370 X 330	680	150 / 410
eQ-SERIES 80	80	600 X 580	420 X 400	810	150 / 480
eQ-SERIES 110	110	690 x 645	480 x 435	900	150 / 520
eQ-SERIES 150	150	780 x 740	550 x 510	1060	200 / 600
eQ-SERIES 180	180	810 x 770	575 x 525	1100	200 / 600
eQ-SERIES 230	230	920 x 820	660 x 560	1260	200 / 710
eQ-SERIES 280	280	990 x 940	710 x 660	1400	250 / 750
eQ-SERIES 350	350	1120 x 1035	810 x 725	1520	300 / 800
eQ-SERIES 450	450	1245 x 1200	875 x 830	1670	350 / 820
eQ-SERIES 550	550	1330 x 1300	1000 x 900	1820	400 / 900
eQ-SERIES 650	650	1550 x 1370	1190 x 1020	2100	450 / 1100

CLAMPING UNIT

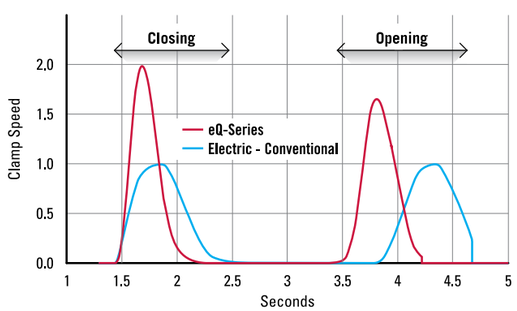
The all new clamp system on the eQ-series has been mounted on the LM guideways which provide precise movement with no frictional losses. The clamp system has higher mold weight carrying capacity, enhanced parallelism and squareness.

- Wide platen and tie bar spacing for greater flexibility
- Clamp designed for uniform force distribution minimizing platen deflection and reducing mold flash tendency
- Automatic Die Height adjustment for accurate tonnage setting
- Standard Core software provides flexibility to customer in configuring special sequences; Various options of portable hydraulic power units available.
- Water systems available to increase cooling efficiency and higher productivity
- Mold Guard & Eject Guard reduces risk of damaging delicate and expensive molds. Tonnage drop feature helps reduce cycle time by releasing tonnage parallel to cooling.
- Anti-fretting Mold clamping design*
- Improved toggle clamp for increasing productivity with reduced vibrations*

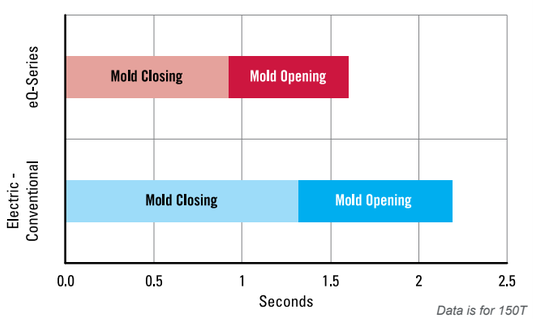
Smooth & Fast movement of Clamp

Better performance than conventional Electric Injection Molding machines.

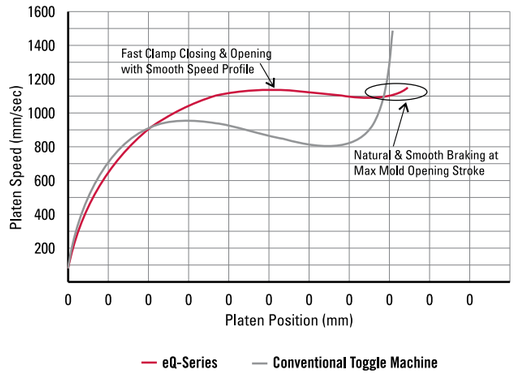
UPTO 2X CLAMP SPEED



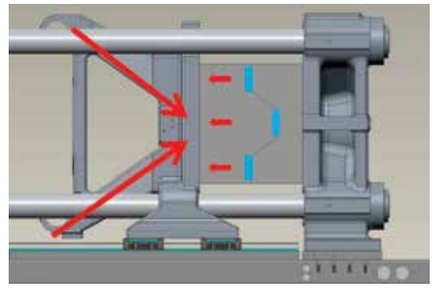
UPTO 25% FASTER CLAMP CYCLE TIME



FAST & SMOOTH MOLD CLOSING / OPENING SPEED

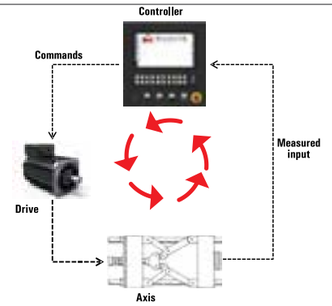


CLAMP UNIT ON LM GUIDEWAYS



The moving platen design is improved for centrally applied force on the mold thereby ensuring uniform load distribution across the mold face and reduces platen deformation at the center.

Auto Clamp Force control (option)



- The clamp force tends to change due to thermal expansion. "Auto Clamp force control" feature helps to reduce clamp force deviation by correcting force due to external factors like Mold thickness/temperature..etc.
- **Benefits:**
  - Automatically maintain Constant & Accurate Clamp Force by dynamically compensating the variation in Clamp Force due to thermal expansion of Molds.
  - Long service life of mold and machine
  - Reduce energy consumption.

* Patent Pending

INJECTION UNIT

High performance injection motors

- Servo motors / drives optimized to deliver optimum performance with power.
- Reduced melt stress (70%)

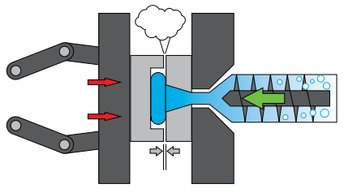
High performance injection unit

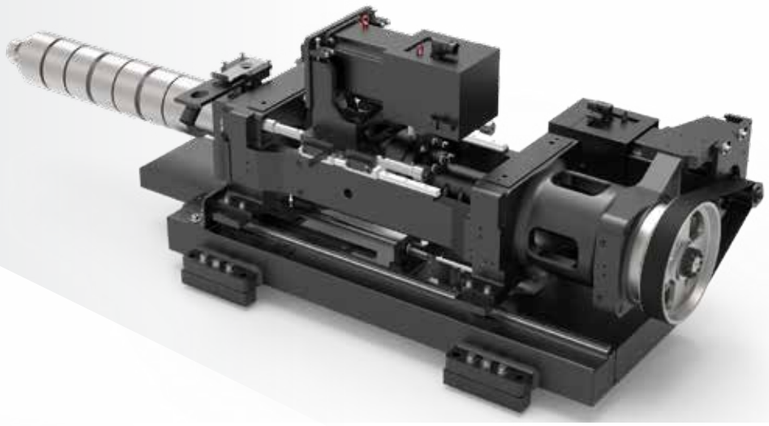
- Fast & accurate injection pressure control with 500 sampling every second
- Selectable dynamics of Injection supports special applications & improves component life
- Hydraulic sled unit* for higher nozzle contact force requirement in packaging application
- 25% Increased Injection Speed with reduced pressure possible

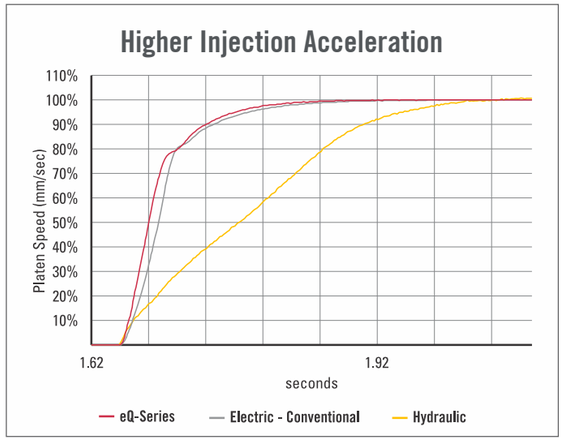
Pre-Injection

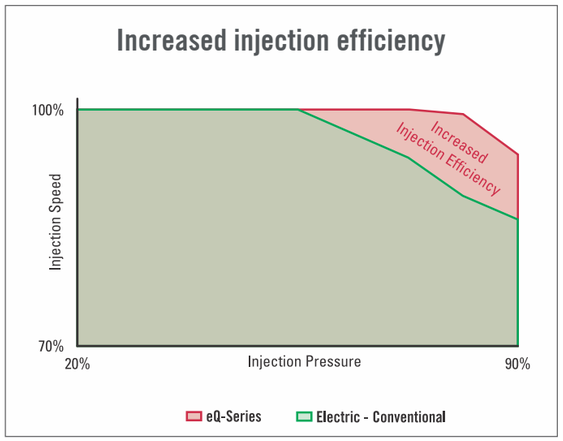
eQ-SERIES's Pre-Injection feature enables the start of injection based on partial tonnage (selectable) built up.

- Enhanced mold venting is controlled by injection timing and also available based on pressure or clamp tonnage feedback
- Instant cycle time reduction by overlapping of injection and tonnage build and/or clamp force decompression during cooling stage

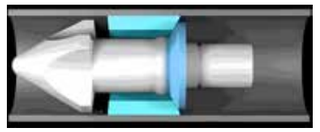








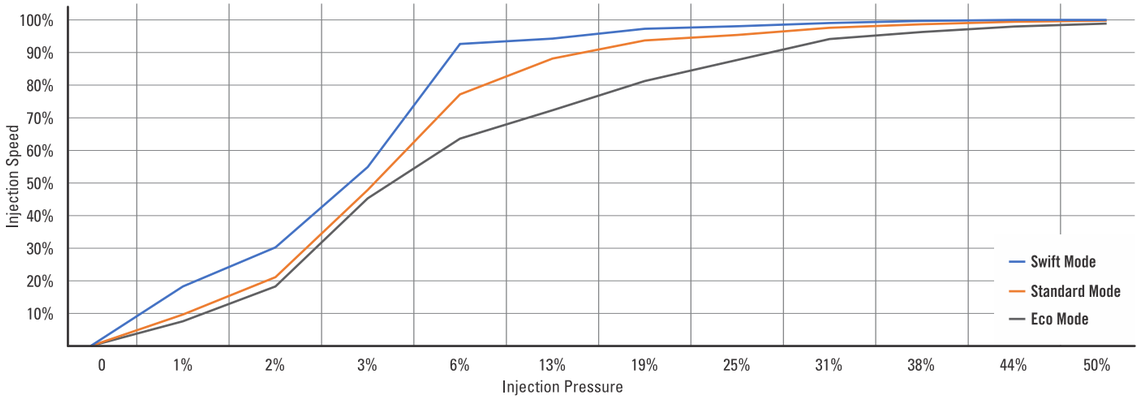
PSSV (Precise Sealing of Seat & Valve)



- PSSV helps to inhibit drooling & preventing back flow by Accurate ring close.
- **Benefits:**
  Less requirement of rear decompression
  Product weight stabilisation
  Very simple setting for complex process

* Standard Feature for CE Machines

FLEXIBLE MACHINE



PROTECT YOUR VALUABLE MOLDS

MOLD SAFETY SYSTEM

The Mold is one of the most critical parts of the injection molding process. The all new eQ-Series machines takes care of your mold with Mold Safety as a standard feature. It's a closed loop control process which senses presence of left over article from the last process cycle or any foreign article in between the core & the cavity. It's a continuous monitoring system. The control records & analyses the data after every process cycle.

MAXIMUM MOLD AND EJECTOR PROTECTION

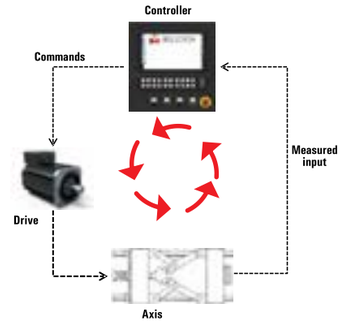
eQ-SERIES Mold and Ejector Protection provides the best mold protection on the market.

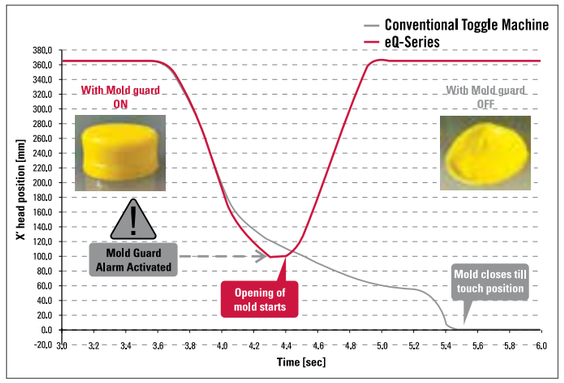
RELIABLE PROTECTION AT NO COST TO SPEED

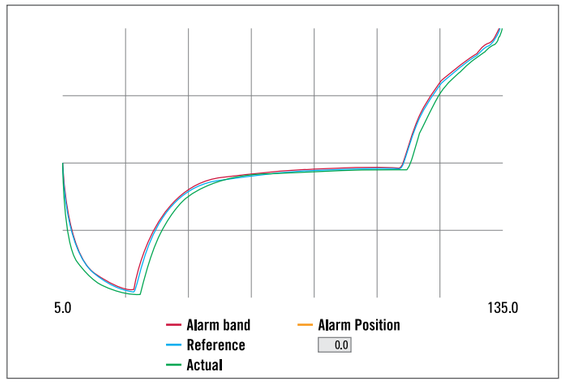
This kind of high-speed responsiveness is provided by its electric drives and superior motion control technology. Clamp tolerances are also programmable across the entire mold movement.

YOUR BENEFITS WITH EQ-SERIES MOLD AND EJECTOR PROTECTION:

- Protects your mold from damage
- Minimal repair costs
- Reduces costly downtime
- Very easy set-up – just turn on and set sensitivity level





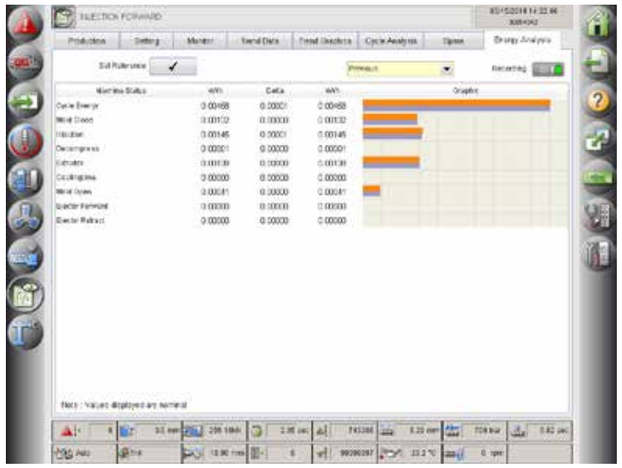


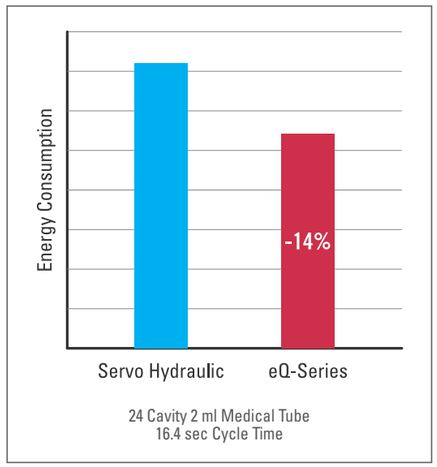
LOW ENERGY CONSUMPTION

Milacron's superior servo technology and intelligent energy recovery reduces eQ-SERIES's energy consumption by 50-70% compared to hydraulic machines. eQ-SERIES's regenerative power recovery system stores energy during motor braking and makes it available for other motions.

POWER CONSUMPTION BREAKTHROUGHS

Power consumption of each function is recorded. The excess energy fed back from motor is also monitored. The insulated heaters bands prevents loss of energy in form of heat.





24 Cavity 2 ml Medical Tube
16.4 sec Cycle Time

Energy Saving up to 50–70%
Compared to Hydraulic Machines

SMALLER FOOTPRINT. INTEGRATED POWERPACK*

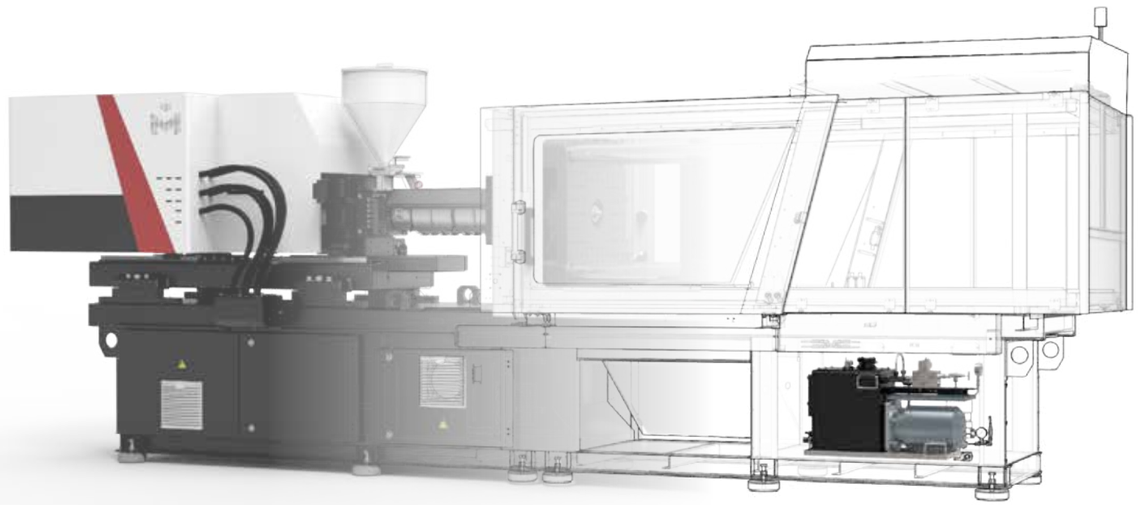
The eQ-SERIES comes equipped with powerpack inside the base of the machine. This reduces the overall footprint of the machine and the need to invest in an additional external powerpack.

Benefits

- Space Saving
- Pre-configured / Integrated with machine capability
- Leakfree / Low noise design

Application

- Core pull
- High ejector force
- High nozzle contact force



* Optional

VERSATILE MACHINERY FOR ALL APPLICATIONS

With models capable of exerting clamping forces from 50 to 650 tons, eQ-SERIES is ideally suited to a diverse range of straightforward as well as sophisticated injection molding tasks. Offering huge versatility, eQ-SERIES's unique strength is the freedom it provides you to produce almost anything using just one machine – whether that be delicate items such as thick wall camera lenses, micro medical and thin wall packaging products, that require high levels of dynamic force to produce. Thanks to its high level of specification, even standard eQ-SERIES machines can be used to produce specialized items.

THIN WALL MOLDING

MULTI COMPONENT MOLDING

PRECISE MOLDING

PRECISE MOLDING

AUTOMOTIVE INDUSTRY

With a host of functions designed specifically to resolve the issues – such as gas venting or variations in plasticizing time and volume – that can impact the production of automotive parts eQ-SERIES is ideally suited the large-scale manufacture of automotive parts. eQ-SERIES will continue producing flawless parts over the long term, delivering excellent cycle times and requiring minimum maintenance. Repeatability is also in a class of its own, with the machine delivering exactly the same quality after multiple cycles as it did on the first shot. What is more, because production runs in the automotive industry change frequently, eQ-SERIES comes with the widest range of available screw sizes, providing you with the power to adapt and enjoy outstanding versatility from a single machine.

Ultimate flexibility

The eQ-SERIES allows molders the maximum amount of application flexibility with its increased daylight option and easily interchangeable barrels and screws. The eQ-SERIES also provides extreme repeatability when moving molds from machine to machine even when changing models or tonnages.

Capability to integrate additional axis

By using servo motors and drives, the eQ-SERIES can fully integrate multiple additional axis all through one control. The eQ-SERIES has the capability to easily integrate and maintain precise control and movement repeatability.

eQ-SERIES can be fully integrated with other axis (like cores, both hydraulic and electric) resulting in integration with machine control.

Optimal networking using Euromap 77 & M-Powered

M-Powered integrates all Injection Molding Machines from Milacron to a single platform for performance management.

Euromap 77 are quality information management systems for globalized and larger scale of molding plants.

- Central production monitoring
- Process data capture & extraction
- Machine status visualization
- Customised reports

MEDICAL INDUSTRY

Quality, reliability and repeatability are critical to the production of medical products. eQ-SERIES has highly sensitive pre-injection process to resolve any issue related to processing of medical grade plastics.

Integrated hot runner control

This allows the machine operator to control the processing parameters from the machine control thereby providing ease of operation.

Historical traceability

Given the nature of medical products, acquiring and processing data is critical. To make this easy eQ-SERIES is available with smart features – such as M-Powered & Euromap 77 OPC designed to capture and store data on a central server and provide complete part traceability.

Enhanced processing information

Just what you need for setting up, validation and on-going monitoring.

- Reference data curve storage
- Quality control outputs
- Multiple curve display
- Optional multiple cavity pressure interface with external signal transfer
- Process data download during operation to External USB device / Network location.
- Available 0-10Vdc for multiple parameters
- Custom Signal capability to interface with automation

Dimensional Accuracy

The product output from the eQ-SERIES is always consistent in terms of weight and dimensions, two things that matter the most in the medical industry.

PACKAGING

eQ-SERIES offers solutions for maximum productivity in the packaging market. Whether it's sparkling clear, durable, or thin-walled parts, the eQ-SERIES can deliver rapid and precise injection and mold movements. The standard pre-injection function allows for faster injection times without vent burning and decompression of clamp force while in the cooling phase. Demanding process capabilities include in-mold-labeling, servo unscrewing for caps or multi-component technology. With the high acceleration injection, instantaneous transition and the high response servo-motor control, eQ-SERIES maintains superior shot weight control.

Heavy-duty injection units for faster cycle times

The production of components for the packaging industry often demand machines that are capable to achieve cycle times less than 5 sec. to produce closures and food containers. eQ-SERIES has a proven injection unit to achieve this.

Increase the quality of your optical parts

For packaging parts, control of the mold temperature is critical for surface quality. Integrating this functionality into the control saves time and helps prevent errors.
Consistent molding is enabled by the clamp and ejector compression function.

Screw variation and flexibility

Milacron offers a variety of different screw and barrel materials specifically designed to fit your application.

Wide Tie Bar Spacing

The eQ-SERIES is able to accommodate wider molds for various packaging applications. This is due to the industry best Tie-Bar spacing provided on the clamp. The clamp also has higher mold weight carrying capacity than the old generation machines.

FEATURES

CLAMP	
5 Operator adjustable closing & opening speeds	●
Tonnage Display on screen	●
All parameters set in Physical / Absolute values	●
Mould safety speed and force adjustable	●
Position based accel/decel	●
Clamp position read out	●
Open Loop Auto die height adjust (toggle)	●
Moving Platen on Linear Guides and Grease Free Tie Bars	●
Clamp try again	●
Clamp Force Decompression during Cooling	●
Grease Collection Tray below Toggle Area and Moving Platen	●
Euromap Mould Mounting Holes pattern	●
Euromap 18 Robot mounting on Stationary Platen	●
Extended Daylight	○
Extra Shoe for Stack Mould on LM guide	○
Auto Clamp Force Control	○
T-Slot with tapped Holes	○
JIS Mould Mounting	○
JIS ejector	○
Quick change ejector coupling (Centre Ejector)	○
Pneumatic Jam Bar	○
Robot Mounting as per SPI	○
De-Humidification covers	○
Actual Tonnage Display on Screen via Strain Sensor	○

EXTRUDER	
Digital set extruder speed (RPM)	●
Digital read out actual RPM	●
Close Loop speed (RPM) control	●
5 Extruder RPM steps - refilling cycle	●
Close Loop Back Pressure control	●
5 Back pressure steps	●

EJECTOR	
Ejector position read out	●
Close Loop Speed control	●
Intermediate retract setpoint	●
Adjustable forward/retract speed	●
2 Forward speeds (Separate speeds for 2nd pulse & 3-9 pulses i.e. 2 more speeds)	●
2 Retract speeds	●
9 Ejector pulses	●
Parellel Ejection (Eject on Fly)	●
Ejector Stay Forward with Gate Open via Ejector Motor with Brake	●
SPI Knock out Bar for Multipoint Ejection	●
Center Ejector Rod With Side Ejector Pins (4 +1) upto 450T	●
High Ejector Force	○
Eject Retract verification by Limit Switch	○

INJECTION	
Close Loop Velocity	●
20 Configurable velocity steps (10 - Fill & 10- Pack/Hold)	●
Close Loop Pressure control	●
10 - Fill pressure steps	●
10 Configurable packing/hold pressure steps	●
Transfer Ti = Time; Po = Position; Pr. = Pressure	●
Delayed start of plasticizing function	●
Thermocouple breakage monitoring	●
All parameters set in Physical / Absolute values	●
Injection Position readout	●
Injection pressure on screen by Loadcell	●
Cold Start Protection	●
Injection decompression before/after/both	●
Insulated Ceramic Heaters for energy saving	●
Injection on Linear Guides for fast speed and smooth movement	●
Nitrided GPPS Screw, Barrel and Nonreturn valve	●
Electric Injection unit Movement and Nozzle Holding Force	●
Sliding Hopper with magnet	●
PSSV	●
Pneumatic Shut Off Nozzle	○
Wear Resistant (Bi-Metalic) Barrel	○
Wear Resistant Feedscrew	○
Special TSV	○
High Temperature Heaters	○
Extended nozzle tip & Heaters	○
High Speed Injection	○
Longer Holding Time	○
High Nozzle Contact Force with Hydraulic Sled	○

TIMERS	
Overall cycle timer	●
Injection delay timer	●
Injection timer	●
Injection pack/hold	●
Cool timer	●
Extruder delay timer	●
Extruder Overrun timer	●
Sled retract delay timer	●
Sprue break with timer	●
Clamp open dwell timer	●
Ejector forward & retract delay timer	●
Decompression Before & After Delay Timer	●
Timer precision - 0.01 Sec	●
Weekday Timer	●

TEMPERATURE CONTROL	
PID control nozzle	●
PID control all barrel zones	●
High/ low temperature alarms	●
Feed Throat Temperature Control	●
Auto Heat Start Programme	●
Heater Failure Detection & Monitoring on screen	●

● - Standard Feature ○ - Optional Feature

* Features not available on all models.

FEATURES

CONTROL & SOFTWARE	
15.6" FHD Multi-Touch Capacitive Display (MOSAIC G3 Control)	●
20 function keys with LEDs	●
Actual Injection Speed & Pressure Graph Display	●
30 Parameter monitoring for last 3000 cycles	●
500 Mold data storage	●
High / Low Limit Display for Each Adjustable Parameter	●
I/O diagnosis - Analog & Digital	●
Manual in PDF format for help	●
Overview Menu for Easy access of all axis parameters	●
Choice of Multiple Languages	●
Unit Selection (Metric or English)	●
Data Protection with four level of access	●
Graphical Representation of last 48 Hours Production	●
Daily Production Data of last 1 Year	●
Graphical Representation of Cycle Analysis	●
Energy Consumption analysis for each axis (Energy display in kWH for every cycle on MMI)	●
Automatic Reporting of Process Data, Alarms, Change log (USB or Network location)	●
Change Log Menu:logs last 3000 Set Points Changes with Time/Date & User	●
3000 Alarms History with Date & Time Log	●
Process Mode:Functions with its Co-functions on a Single Key Press	●
Note Pad	●
Freely Programmable Smart Outputs & Inputs (total 3 inputs and outputs)	●
Freely Configurable Cores, Ejector & Air	●
4 User Configurable actual parameters for ease of monitoring for operator	●
Soft Keys for selection of Cores, Air & Mold Gates to operate in Set/Manual Mode	●
Favorite Page - Select frequently used pages & operate from single page	●
Graphical adjustment of Clamp & Extruder Speeds & Pressure	●
Graphical display of Actual Zone Temperature of last 30 mins.	●
Filtering of Alarm - Helps in quick analysis of specific alarm	●
Filtering & sort of Changelog - Helps in quick review / analysis of parameter changes	●
Configurable FlyOut area for viewing frequently used Monitoring Pages	●
No Page more than two click away	●
Auto shut down	●
Visual & Audible Alarm	●
Set point and actual values shown as absolute values	●
Pausibility check on values entered	●
Data saving in USB-Mold Data, Change log, Trend Data, Log book, Alarm History, Screen Shot	●
Shift wise Production Counter	●
Servo Motor / Drive diagnostic screen	●
Semi Auto Purge	●
Cold slug removal by extruder/ Injection	●
Intrusion Molding	●
Insert Molding	●
Freely Programmable Core pull Sequence	●
Sprue break with Limit Switch	●
2 free editing cores are controlled by the robot / Std EM 67	●
Pre-Injection (Injection along with Clamp force build up)	●
Parallel operation for mould movement, ejector and plasticizing	●

CONTROL & SOFTWARE	
Mold Guard	●
Ejector Guard	●
Injection Acceleration Control Auto Modes	●
Automatic log off	●
Shift based Production Counter	●
Logbook Reading of Controller on screen	●
Robot Interface (SPI & Euromap -12 & -67)	○
Good / Defective Part Signal	○
Gas Assist injection Interface	○

ELECTRICS	
Electrics - 415V, 50Hz, 3-Phase	●
Servo Motor & Regenerative Drive for Clamp, Ejector, Injection and Extruder	●
Semi Auto Push Button	●
Hour Meter on electrical panel	●
Power on Push button present on control cabinet left door to reset control supply aftermachine power supply failure or clearance of fault in voltage monitor relay.	●
UV/OV monitoring Relay-Voltage monitor relay	●
Surge suppressor device	●
Electrical unscrewing	○
Extra Power Supply	○
Neutral Free Electric Panel	○
AC for Panel	○

HYDRAULIC, AIR & WATER	
Hydraulic Core	○
Hydraulic MGO	○
Pneumatic MGO	○
Hydraulic Unscrewing	○
Air Ejection	○
Manual Air eject (Up to 8 stage)	○
Water Manifold 4/5/7 Stack	○
Water Battery 4/5/7 Stack	○
Water saver valve for mold/pulse cooling	○

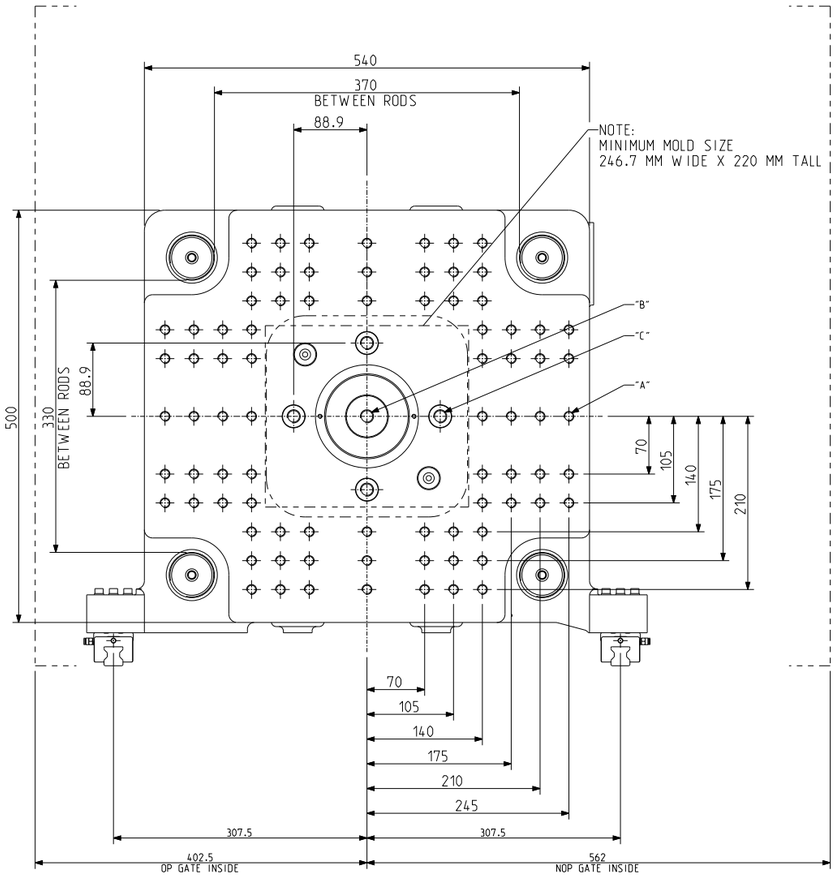
ADDITIONAL FEATURES	
Centralized Automatic Lubrication	●
High Performance Levelling pads	●
CE Safeties	○
Food Grade Grease	
Multi Component	○

● - Standard Feature ○ - Optional Feature

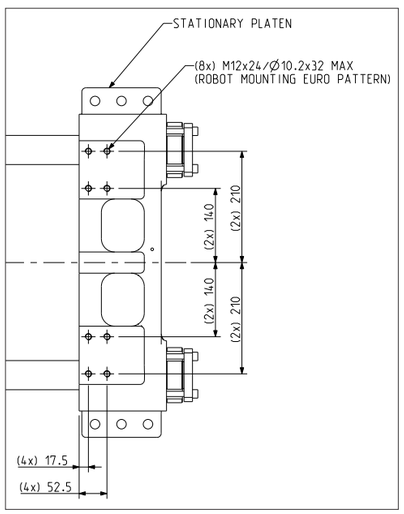
* Features not available on all models.

THE eQ-SERIES
TONNAGE: 50

Injection Unit 55, 120
TECHNICAL SPECIFICATIONS



MOVING PLATEN

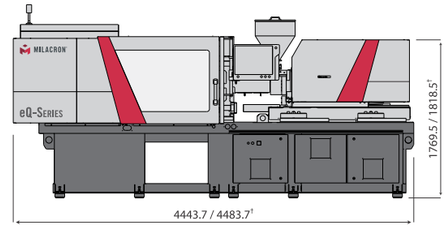


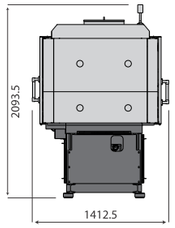
ALL DIMENSIONS ARE IN MM

A M12X24 (82) PLACES ON BOTH PLATEN

B MOVING PLATEN: Ø50(+0.025/-0.0) THRU BORE,
K/O BAR CENTRE HOLE M16 THRU.
STATIONARY PLATEN:
Ø100(+0.035/-0.0) WITH LOCATING RING,
Ø125(+0.04/-0.0) x 10(+0.15/-0.0) DEEP, WITHOUT LOCATING RING.

C Ø27 THRU, (4) HOLES IN MOVING PLATEN,
K/O BAR M16 THRU (4) HOLES.





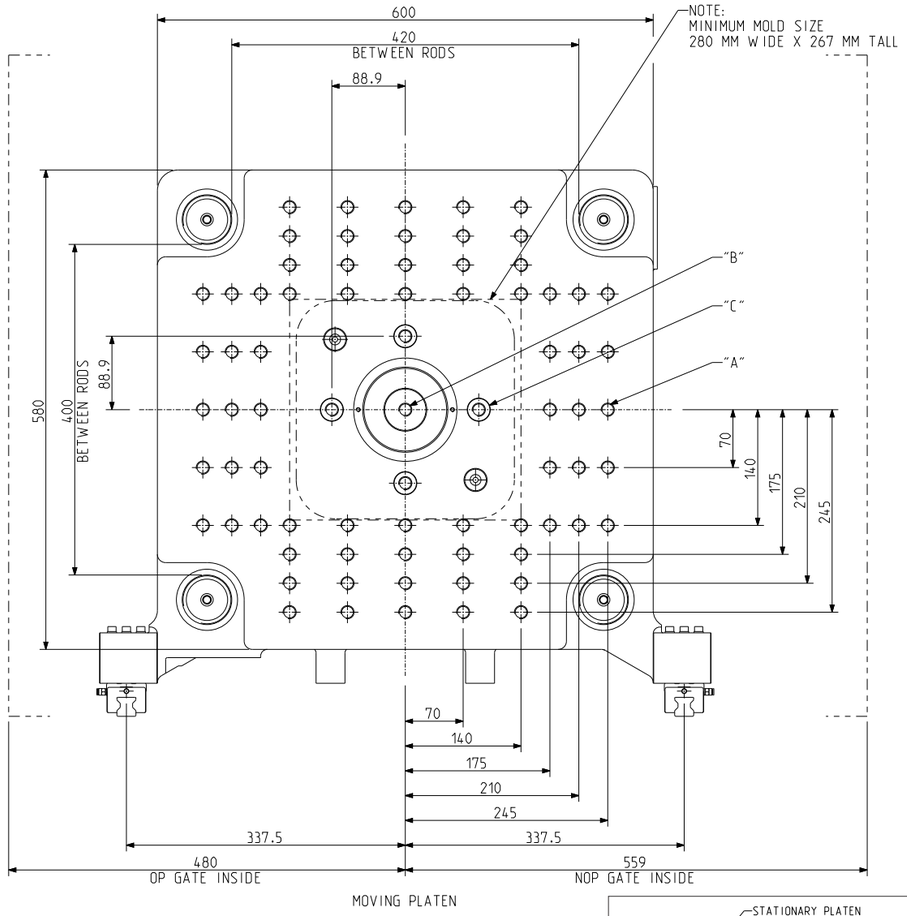
†IU 55 / 120

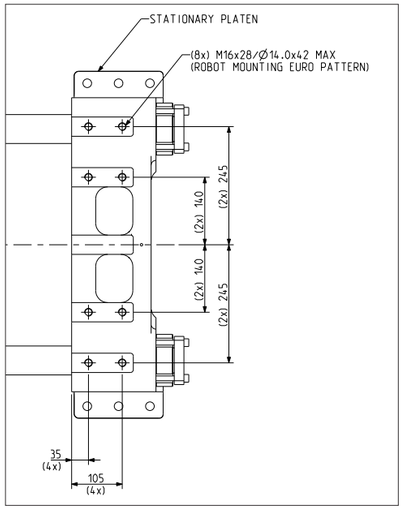
eQ-Series 50	UNIT	55 (11)	55			120		
	METRIC	AA'	A'	A	B	A'	A	B
INJECTION UNIT SPECIFICATIONS								
INJECTION CAPACITY MAX. (GPPS)	gms	6	18	23	28	29	56	81
THEORETICAL DISPLACEMENT	cc	6	19	24	29	31	59	85
INJECTION PRESSURE MAX.	bar	1800	2500	2345	1940	2445	2016	1400
INJECTION RATE (STD) *	cc/sec	29	51	64	77	52	98	142
INJECTION SPEED (STD)	mm/sec	200	200	200	200	200	200	200
INJECTION RATE (HIGH) * ^	cc/sec	50	89	112	135	90	172	248
INJECTION SPEED (HIGH)	mm/sec	350	350	350	350	350	350	350
INJECTION SCREW STROKE	mm	42	75	75	75	120	120	120
SCREW DIAMETER	mm	14	18	20	22	18	25	30
SCREW L/D RATIO		18.1	22	21	19	20	20	20
SCREW SPEED	rpm	400	400	400	400	400	400	400
SCREW TORQUE	NM	145	145	145	145	175	175	175
PLASTICIZING RATE (GP SCREW) *	gm/sec	0.89	2.5	4.0	5.0	2.6	6	10
PLASTICIZING RATE (BARRIER SCREW) *	gm/sec	-	-	-	-	-	-	-
NOZZLE HOLDING FORCE	kN	15	15			25		
NO.OF PYROMETERS (BARREL+NOZZLE)		3+1	3+1			3+1		
TOTAL HEAT CAPACITY	kW	2.8	4.9	4.9	4.9	4.6	5.5	7.0
CLAMP UNIT SPECIFICATIONS								
CLAMP FORCE	Ton	50				50		
CLAMP STROKE	mm	270				270		
MAXIMUM DAYLIGHT **	mm	680				680		
MINIMUM MOULD HEIGHT #	mm	150				150		
MAXIMUM MOULD HEIGHT **	mm	410				410		
PLATEN SIZE (H X V)	mm	540 X 500				540 x 500		
DISTANCE BETWEEN TIE ROD	mm	370 X 330				370 X 330		
TIE ROD DIAMETER	mm	55				55		
EJECTOR STROKE	mm	100				100		
EJECTOR FORCE	Ton	3				3		
MOULD WEIGHT CAPACITY (STAT. / MOVING)	kg	600 (350 / 250)				600 (350 / 250)		
DRY CYCLE TIME (EUROMAP 6) ***	sec-mm	1.38 - 259				1.38 - 259		
GENERAL								
TOTAL CONNECTED LOAD	kW	6.5	7.5	7.5	7.5	10	11	12
MACHINE DIMENSION (L X W X H)	m	4.4 x 1.4 x 2.1				4.5 x 1.4 x 2.1		
MACHINE WEIGHT	kg	4300				4400		

* WITH OPEN NOZZLE | # THIS WILL INCREASE IN CASE OF 1) EXTRA MOULD SHOE & 2) MORE THAN 150 EDL ^ OPTIONAL
** T-SLOT OPTION : DIMENSIONS WILL BE REDUCE BY 50 MM
***BREAKAWAY AND TONNAGE DECOMPRESSION TIMES ARE NOT INCLUDED IN DRY CYCLE TIME
Total connected load is the approximate power utilization in a production environment. It will be lower than the Total installed power.
Machine dimensions and specifications are subject to change. Values are for reference only. These values are for standard machine power.
All Machine dimensions are with retracted Injection Unit.

THE eQ-SERIES
TONNAGE: 80

Injection Unit 120, 300
TECHNICAL SPECIFICATIONS



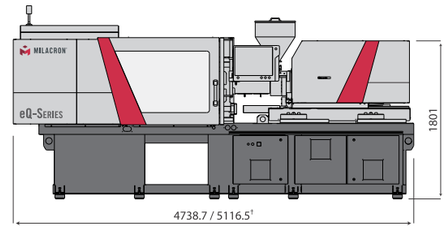


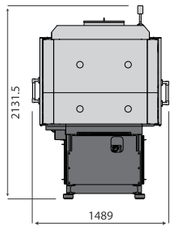
ALL DIMENSIONS ARE IN MM

A M16X32 (70) PLACES ON BOTH PLATEN

B MOVING PLATEN: Ø50(+0.025/-0.0) THRU BORE,
K/O BAR CENTRE HOLE M16 THRU.
STATIONARY PLATEN:
Ø100(+0.035/-0.0) WITH LOCATING RING,
Ø125(+0.04/-0.0) x 10(+0.15/-0.0) DEEP, WITHOUT LOCATING RING.

C Ø27 THRU, (4) HOLES IN MOVING PLATEN,
K/O BAR M16 THRU (4) HOLES.





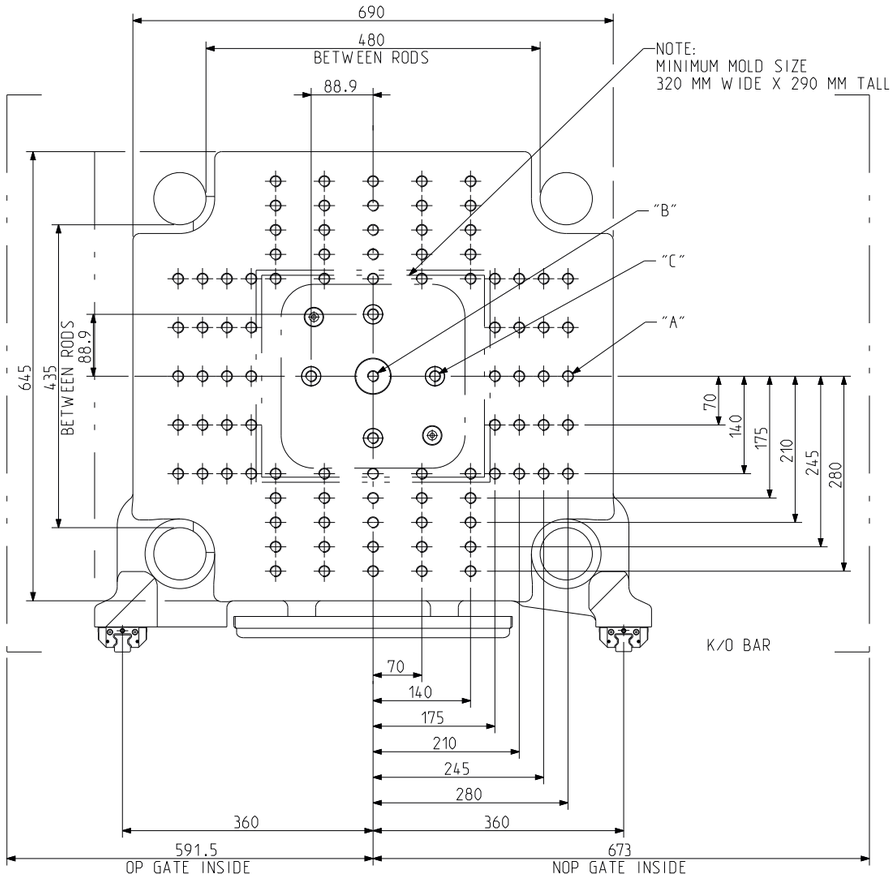
†IU 120 / 300

eQ-Series 80	UNIT	120			300		
	METRIC	A'	A	B	A'	A	B
INJECTION UNIT SPECIFICATIONS							
INJECTION CAPACITY MAX. (GPPS)	gms	29	56	81	108	146	191
THEORETICAL DISPLACEMENT	cc	31	59	85	113	154	201
INJECTION PRESSURE MAX.	bar	2444	2016	1400	2510	1958	1499
INJECTION RATE (STD) *	cc/sec	52	98	142	141	193	251
INJECTION SPEED (STD)	mm/sec	200	200	200	200	200	200
INJECTION RATE (HIGH) * ^	cc/sec	90	172	248	247	337	440
INJECTION SPEED (HIGH)	mm/sec	350	350	350	350	350	350
INJECTION SCREW STROKE	mm	120	120	120	160	160	160
SCREW DIAMETER	mm	18	25	30	30	35	40
SCREW L/D RATIO		20	20	20	26.6	22.9	20
SCREW SPEED	rpm	400	400	400	400	400	400
SCREW TORQUE	NM	175	175	175	350	350	350
PLASTICIZING RATE (GP SCREW) *	gm/sec	2.6	6	10	11	17	20
PLASTICIZING RATE (BARRIER SCREW) *	gm/sec	-	-	-	-	24	32
NOZZLE HOLDING FORCE	kN	25			25		
NO.OF PYROMETERS (BARREL+NOZZLE)		3+1			4+1		
TOTAL HEAT CAPACITY	kW	4.6	5.5	7.0	9		
CLAMP UNIT SPECIFICATIONS							
CLAMP FORCE	Ton	80			80		
CLAMP STROKE	mm	330			330		
MAXIMUM DAYLIGHT **	mm	810			810		
MINIMUM MOULD HEIGHT ᶠ	mm	150			150		
MAXIMUM MOULD HEIGHT **	mm	480			480		
PLATEN SIZE (H X V)	mm	600 X 580			600 X 580		
DISTANCE BETWEEN TIE ROD	mm	420 X 400			420 X 400		
TIE ROD DIAMETER	mm	60			60		
EJECTOR STROKE	mm	100			100		
EJECTOR FORCE	Ton	3			3		
MOULD WEIGHT CAPACITY (STAT. / MOVING)	kg	950 (550 / 400)			950 (550 / 400)		
DRY CYCLE TIME (EUROMAP 6) ***	sec-mm	1.45 - 294			1.45 - 294		
GENERAL							
TOTAL CONNECTED LOAD	kW	9	10	11	14.8		
MACHINE DIMENSION (L X W X H)	m	4.7 x 1.5 x 2.1			5.1 x 1.5 x 2.1		
MACHINE WEIGHT	kg	4900			5100		

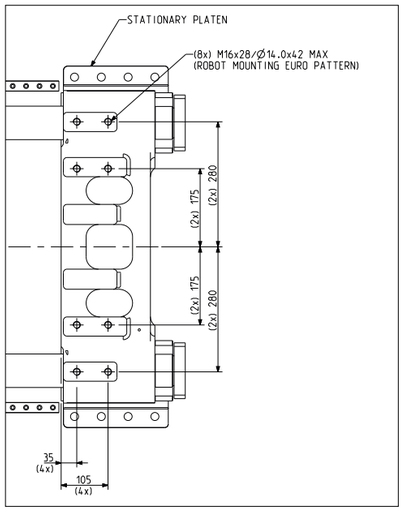
* WITH OPEN NOZZLE | ᶠ THIS WILL INCREASE IN CASE OF 1) EXTRA MOULD SHOE & 2) MORE THAN 200 EDL ^ OPTIONAL
** T-SLOT OPTION : DIMENSIONS WILL BE REDUCE BY 50 MM
***BREAKAWAY AND TONNAGE DECOMPRESSION TIMES ARE NOT INCLUDED IN DRY CYCLE TIME
Total connected load is the approximate power utilization in a production environment. It will be lower than the Total installed power.
Machine dimensions and specifications are subject to change. Values are for reference only. These values are for standard machine power.
All Machine dimensions are with retracted Injection Unit.

THE eQ-SERIES
TONNAGE: 110

Injection Unit 120, 300, 450
TECHNICAL SPECIFICATIONS



MOVING PLATEN

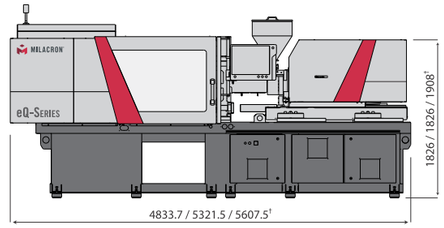


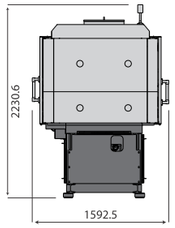
ALL DIMENSIONS ARE IN MM

A M16X32 (90) PLACES ON BOTH PLATEN

B MOVING PLATEN: Ø50(+0.025/-0.0) THRU BORE,
K/0 BAR CENTRE HOLE M16 THRU
STATIONARY PLATEN:
Ø100(+0.035/-0.0) WITH LOCATING RING,
Ø125(+0.04/-0.0) x 10(+0.15/-0.0) DEEP, WITHOUT LOCATING RING

C Ø27 THRU, (4) HOLES IN MOVING PLATEN,
K/O BAR M16 THRU (4) HOLES





[1]IU 120 / 300 / 450

eQ-Series 110	UNIT	120			300			450		
	METRIC	A'	A	B	A'	A	B	A'	A	B
INJECTION UNIT SPECIFICATIONS										
INJECTION CAPACITY MAX. (GPPS)	gms	29	56	81	108	146	191	165	215	272
THEORETICAL DISPLACEMENT	cc	31	59	85	113	154	201	173	226	286
INJECTION PRESSURE MAX.	bar	2444	2016	1400	2510	1958	1499	2443	1984	1568
INJECTION RATE (STD) *	cc/sec	52	98	142	141	193	251	168	220	278
INJECTION SPEED (STD)	mm/sec	200	200	200	200	200	200	175	175	175
INJECTION RATE (HIGH) * ^	cc/sec	90	172	248	247	337	440	336	439	556
INJECTION SPEED (HIGH)	mm/sec	350	350	350	350	350	350	350	350	350
INJECTION SCREW STROKE	mm	120	120	120	160	160	160	180	180	180
SCREW DIAMETER	mm	18	25	30	30	35	40	35	40	45
SCREW L/D RATIO		20	20	20	26.6	22.9	20	25.7	22.2	20
SCREW SPEED	rpm	400	400	400	400	400	400	400	400	400
SCREW TORQUE	NM	175	175	175	350	350	350	550	550	550
PLASTICIZING RATE (GP SCREW) *	gm/sec	2.6	6	10	11	17	20	18	25	34
PLASTICIZING RATE (BARRIER SCREW) *	gm/sec	-	-	-	-	24	32	24	33	44
NOZZLE HOLDING FORCE	kN	25			25			25		
NO.OF PYROMETERS (BARREL+NOZZLE)		3+1			4+1			4+1		
TOTAL HEAT CAPACITY	kW	4.6	5.5	7.0	9			11.3		
CLAMP UNIT SPECIFICATIONS										
CLAMP FORCE	Ton	110			110			110		
CLAMP STROKE	mm	380			380			380		
MAXIMUM DAYLIGHT	mm	900			900			900		
MINIMUM MOULD HEIGHT ♯	mm	150			150			150		
MAXIMUM MOULD HEIGHT	mm	520			520			520		
PLATEN SIZE (H X V)	mm	690 X 645			690 X 645			690 X 645		
DISTANCE BETWEEN TIE ROD	mm	480 X 435			480 X 435			480 X 435		
TIE ROD DIAMETER	mm	75			75			75		
EJECTOR STROKE	mm	140			140			140		
EJECTOR FORCE	Ton	3.2			3.2			3.2		
MOULD WEIGHT CAPACITY (STAT. / MOVING)	kg	1540 (770 / 770)			1540 (770 / 770)			1540 (770 / 770)		
DRY CYCLE TIME (EUROMAP 6) ***	sec-mm	1.50 - 336			1.50 - 336			1.50 - 336		
GENERAL										
TOTAL CONNECTED LOAD	kW	10	11	12	14.8			18		
MACHINE DIMENSION (L X W X H)	m	4.8 x 1.6 x 2.2			5.3 x 1.6 x 2.2			5.6 x 1.6 x 2.2		
MACHINE WEIGHT	kg	5500			5700			6200		

* WITH OPEN NOZZLE

^ OPTIONAL

♯ THIS WILL INCREASE IN CASE OF 1) EXTRA MOULD SHOE & 2) MORE THAN 250 EDL

***BREAKAWAY AND TONNAGE DECOMPRESSION TIMES ARE NOT INCLUDED IN DRY CYCLE TIME

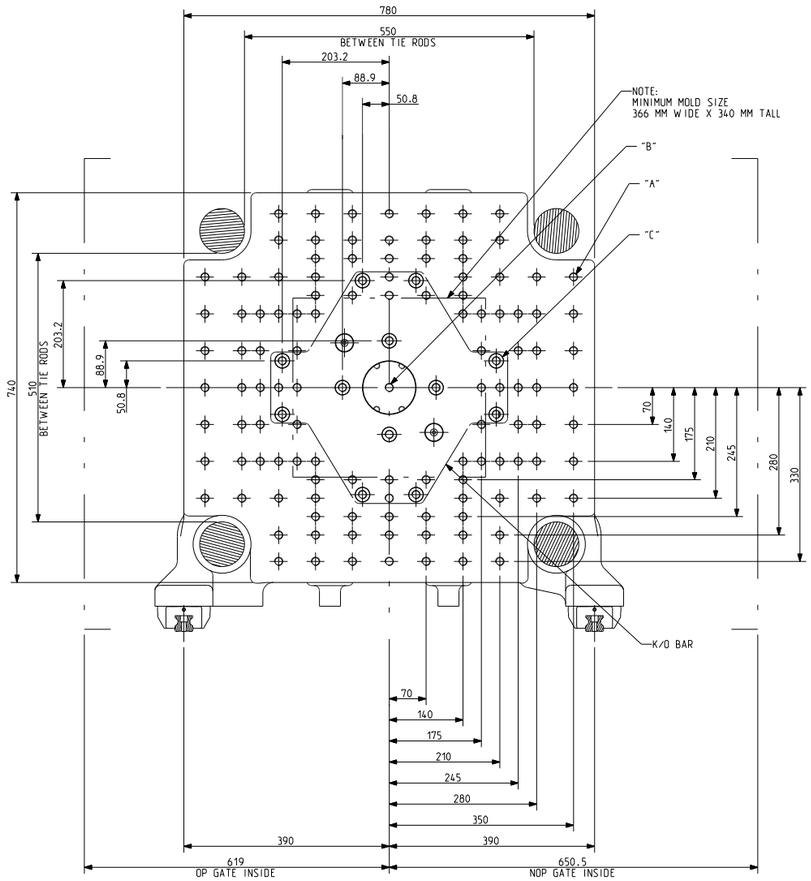
Total connected load is the approximate power utilization in a production environment. It will be lower than the Total installed power.

Machine dimensions and specifications are subject to change. Values are for reference only. These values are for standard machine power.

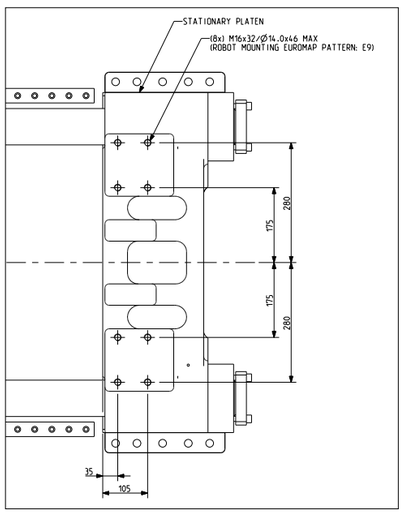
All Machine dimensions are with retracted Injection Unit.

THE eQ-SERIES
TONNAGE: 150

Injection Unit 300, 450, 630
TECHNICAL SPECIFICATIONS



MOVING PLATEN

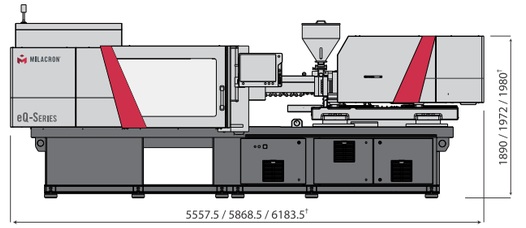


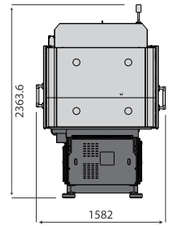
ALL DIMENSIONS ARE IN MM

A MOVING PLATEN: M16X32 DEEP (116) PLACES,
STATIONARY PLATEN: M16X32 DEEP (116) PLACES.

B MOVING PLATEN: Ø100(+0.035/-0.0) THRU BORE,
K/O BAR CENTRE HOLE M16x40 DEEP.
STATIONARY PLATEN:
Ø125(+0.04/-0.0) WITH LOCATING RING,
Ø160(+0.04/-0.0) x 10(+0.15/-0.0) DEEP, WITHOUT LOCATING RING.

C Ø27 THRU, (12) HOLES IN MOVING PLATEN,
K/O BAR M16x40 DEEP (12) HOLES





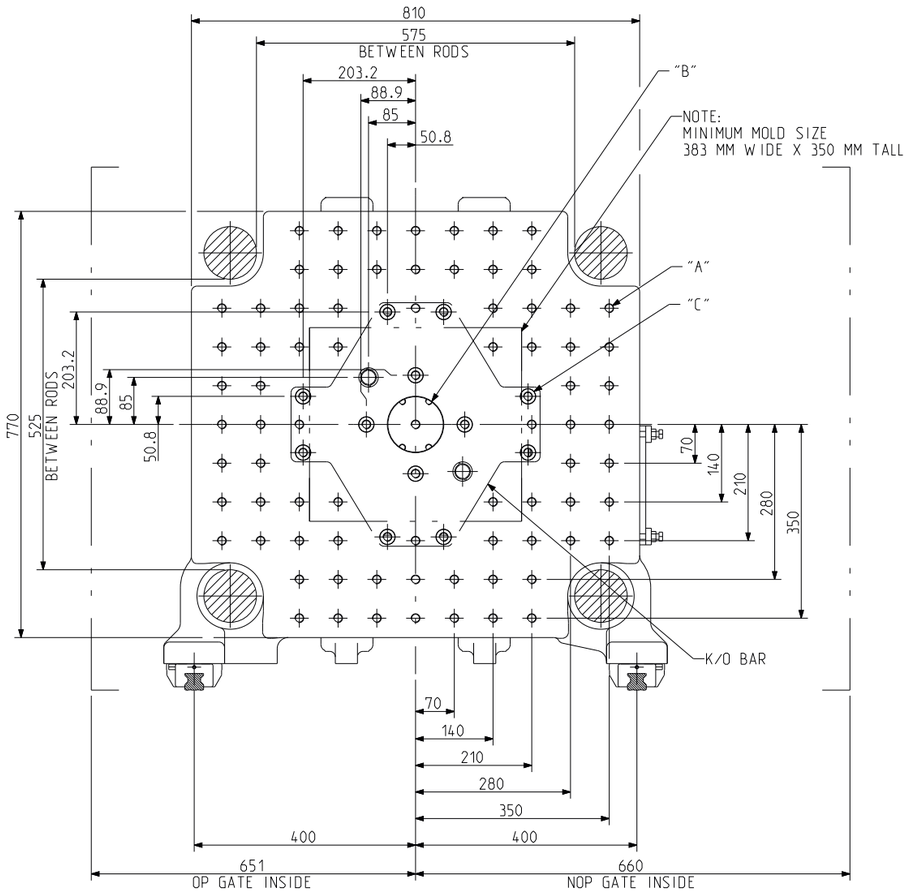
†IU 300 / 450 / 630

eQ-Series 150	UNIT	300			450			630		
	METRIC	A'	A	B	A'	A	B	A'	A	B
INJECTION UNIT SPECIFICATIONS										
INJECTION CAPACITY MAX. (GPPS)	gms	108	146	191	165	215	272	239	303	374
THEORETICAL DISPLACEMENT	cc	113	154	201	173	226	286	251	318	393
INJECTION PRESSURE MAX.	bar	2510	1958	1499	2443	1984	1568	2492	1969	1595
INJECTION RATE (STD) *	cc/sec	141	193	251	168	220	278	220	278	344
INJECTION SPEED (STD)	mm/sec	200	200	200	175	175	175	175	175	175
INJECTION RATE (HIGH) * ^	cc/sec	247	337	440	336	439	556	415	525	648
INJECTION SPEED (HIGH)	mm/sec	350	350	350	350	350	350	330	330	330
INJECTION SCREW STROKE	mm	160	160	160	180	180	180	200	200	200
SCREW DIAMETER	mm	30	35	40	35	40	45	40	45	50
SCREW L/D RATIO		26.6	22.9	20	25.7	22.2	20	25	22.2	20
SCREW SPEED	rpm	400	400	400	400	400	400	400	400	400
SCREW TORQUE	NM	350	350	350	550	550	550	700	700	700
PLASTICIZING RATE (GP SCREW) *	gm/sec	11	17	20	18	25	34	25	34	45
PLASTICIZING RATE (BARRIER SCREW) *	gm/sec	-	24	32	24	33	44	32	49	67
NOZZLE HOLDING FORCE	kN	25			25			25		
NO.OF PYROMETERS (BARREL+NOZZLE)		4+1			4+1			4+1		
TOTAL HEAT CAPACITY	kW	9			11.3			15.7		
CLAMP UNIT SPECIFICATIONS										
CLAMP FORCE	Ton	150			150			150		
CLAMP STROKE	mm	460			460			460		
MAXIMUM DAYLIGHT	mm	1060			1060			1060		
MINIMUM MOULD HEIGHT #	mm	200			200			200		
MAXIMUM MOULD HEIGHT	mm	600			600			600		
PLATEN SIZE (H X V)	mm	780 X 740			780 X 740			780 X 740		
DISTANCE BETWEEN TIE ROD	mm	550 X 510			550 X 510			550 X 510		
TIE ROD DIAMETER	mm	85			85			85		
EJECTOR STROKE	mm	160			160			160		
EJECTOR FORCE	Ton	4			4			4		
MOULD WEIGHT CAPACITY (STAT. / MOVING)	kg	2300 (1100 / 1200)			2300 (1100 / 1200)			2300 (1100 / 1200)		
DRY CYCLE TIME (EUROMAP 6) ***	sec-mm	1.55 - 385			1.55 - 385			1.55 - 385		
GENERAL										
TOTAL CONNECTED LOAD	kW	14.8			18			25		
MACHINE DIMENSION (L X W X H)	m	5.6 x 1.6 x 2.4			5.9 x 1.6 x 2.4			6.2 x 1.6 x 2.4		
MACHINE WEIGHT	kg	7000			7500			7800		

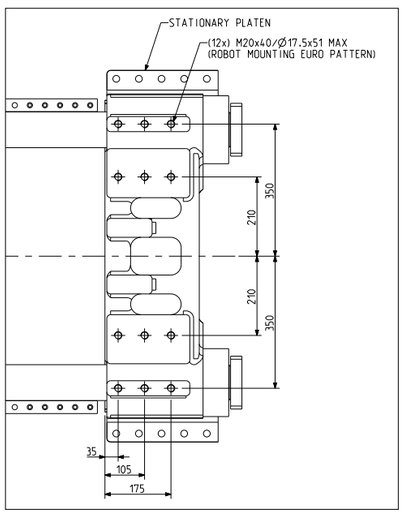
* WITH OPEN NOZZLE
^ OPTIONAL
# THIS WILL INCREASE IN CASE OF 1) EXTRA MOULD SHOE & 2) MORE THAN 300 EDL
***BREAKAWAY AND TONNAGE DECOMPRESSION TIMES ARE NOT INCLUDED IN DRY CYCLE TIME
Total connected load is the approximate power utilization in a production environment. It will be lower than the Total installed power.
Machine dimensions and specifications are subject to change. Values are for reference only. These values are for standard machine power.
All Machine dimensions are with retracted Injection Unit.

THE eQ-SERIES
TONNAGE: 180

Injection Unit 450, 630, 970
TECHNICAL SPECIFICATIONS



MOVING PLATEN

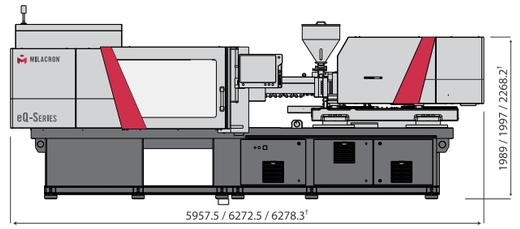


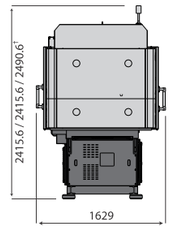
ALL DIMENSIONS ARE IN MM

A MOVING PLATEN: M16X32 (76) PLACES,
STATIONARY PLATEN: M16X32 DEEP (84) PLACES

B MOVING PLATEN: Ø100(+0.035/-0.0) THRU BORE,
K/0 BAR CENTRE HOLE M16X40 DEEP
STATIONARY PLATEN:
Ø125(+0.04/-0.0) WITH LOCATING RING,
Ø160(+0.04/-0.0) X 10(+0.15/-0.0) DEEP, WITHOUT LOCATING RING

C Ø27 THRU, (12) HOLES IN MOVING PLATEN
K/O BAR M16X40 THRU (12) HOLES





†IU 450 / 630 / 970

eQ-Series 180	UNIT	450			630			970		
	METRIC	A'	A	B	A'	A	B	A'	A	B
INJECTION UNIT SPECIFICATIONS										
INJECTION CAPACITY MAX. (GPPS)	gms	165	215	272	239	303	374	363	448	646
THEORETICAL DISPLACEMENT	cc	173	226	286	251	318	393	382	471	679
INJECTION PRESSURE MAX.	bar	2443	1984	1568	2492	1969	1595	2249	2057	1428
INJECTION RATE (STD) *	cc/sec	168	220	278	220	278	344	279	343	495
INJECTION SPEED (STD)	mm/sec	175	175	175	175	175	175	175	175	175
INJECTION RATE (HIGH) * ^	cc/sec	336	439	556	415	525	648	525	648	934
INJECTION SPEED (HIGH)	mm/sec	350	350	350	330	330	330	330	330	330
INJECTION SCREW STROKE	mm	180	180	180	200	200	200	240	240	240
SCREW DIAMETER	mm	35	40	45	40	45	50	45	50	60
SCREW L/D RATIO		25.7	22.2	20	25	22.2	20	26.7	24	20
SCREW SPEED	rpm	400	400	400	400	400	400	350	350	320
SCREW TORQUE	NM	550	550	550	700	700	700	1100	1100	1100
PLASTICIZING RATE (GP SCREW) *	gm/sec	18	25	34	25	34	45	30	39	58
PLASTICIZING RATE (BARRIER SCREW) *	gm/sec	24	33	44	32	49	67	39	53	74
NOZZLE HOLDING FORCE	kN	25			25			30		
NO.OF PYROMETERS (BARREL+NOZZLE)		4+1			4+1			4+1		
TOTAL HEAT CAPACITY	kW	11.3			15.7			16.9		
CLAMP UNIT SPECIFICATIONS										
CLAMP FORCE	Ton	180			180			180		
CLAMP STROKE	mm	500			500			500		
MAXIMUM DAYLIGHT	mm	1100			1100			1100		
MINIMUM MOULD HEIGHT ♯	mm	200			200			200		
MAXIMUM MOULD HEIGHT	mm	600			600			600		
PLATEN SIZE (H X V)	mm	810 x 770			810 x 770			810 x 770		
DISTANCE BETWEEN TIE ROD	mm	575 x 525			575 x 525			575 x 525		
TIE ROD DIAMETER	mm	95			95			95		
EJECTOR STROKE	mm	160			160			160		
EJECTOR FORCE	Ton	4			4			4		
MOULD WEIGHT CAPACITY (STAT. / MOVING)	kg	2500 (1200 / 1300)			2500 (1200 / 1300)			2500 (1200 / 1300)		
DRY CYCLE TIME (EUROMAP 6) ***	sec-mm	1.68 - 402			1.68 - 402			1.68 - 402		
GENERAL										
TOTAL CONNECTED LOAD	kW	18			25			31		
MACHINE DIMENSION (L X W X H)	m	6.0 x 1.6 x 2.4			6.3 x 1.6 x 2.4			6.3 x 1.6 x 2.5		
MACHINE WEIGHT	kg	8200			8500			9700		

* WITH OPEN NOZZLE ^ OPTIONAL

♯ THIS WILL INCREASE IN CASE OF 1) EXTRA MOULD SHOE & 2) MORE THAN 300 EDL

***BREAKAWAY AND TONNAGE DECOMPRESSION TIMES ARE NOT INCLUDED IN DRY CYCLE TIME

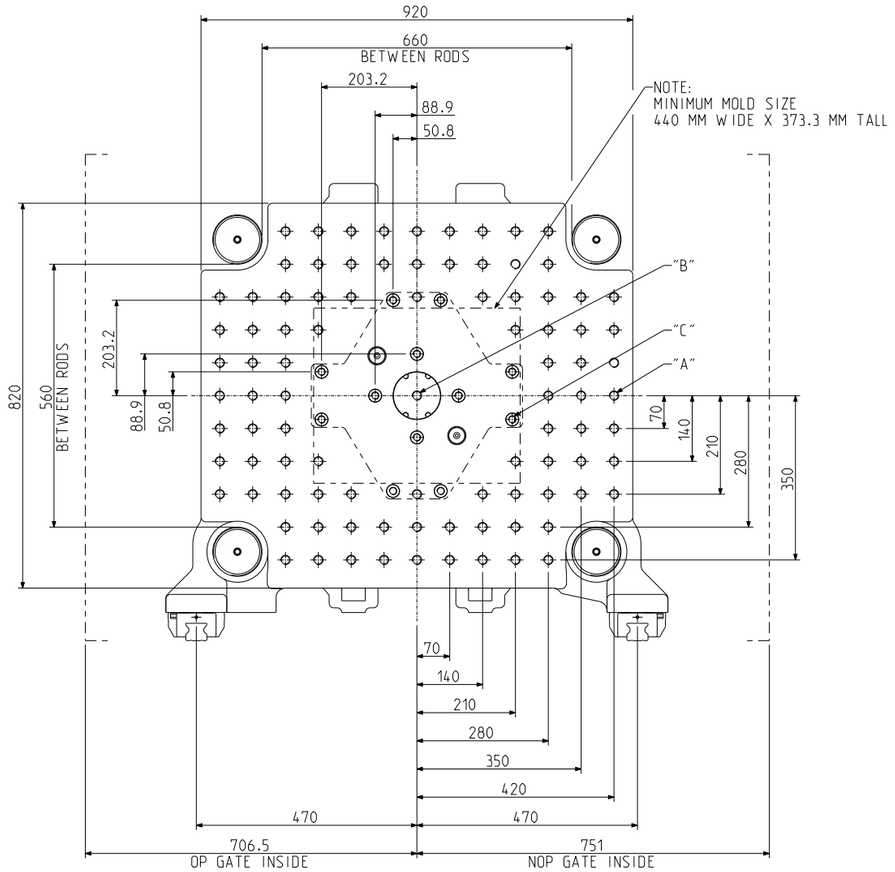
Total connected load is the approximate power utilization in a production environment. It will be lower than the Total installed power.

Machine dimensions and specifications are subject to change. Values are for reference only. These values are for standard machine power.

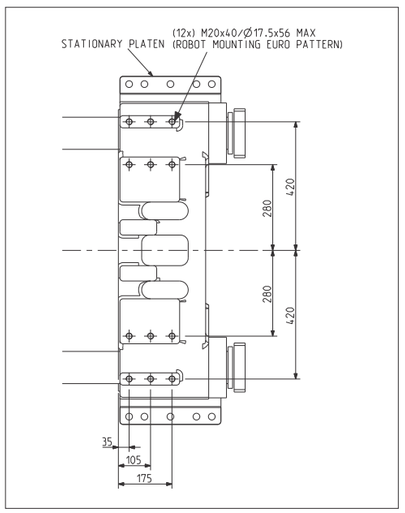
All Machine dimensions are with retracted Injection Unit.

THE eQ-SERIES
TONNAGE: 230

Injection Unit 450, 630, 970
TECHNICAL SPECIFICATIONS



MOVING PLATEN

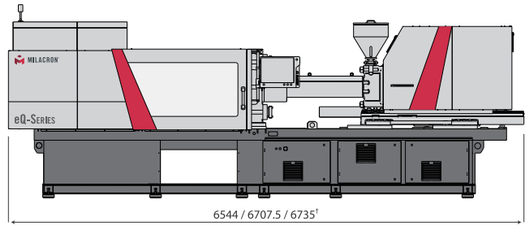


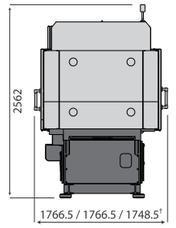
ALL DIMENSIONS ARE IN MM

A MOVING PLATEN: M20X45 (92) PLACES,
STATIONARY PLATEN: M20X45 DEEP (96) PLACES

B MOVING PLATEN: Ø100(+0.035/-0.0) THRU BORE,
K/0 BAR CENTRE HOLE M20X50 DEEP
STATIONARY PLATEN:
Ø125(+0.04/-0.0) WITH LOCATING RING,
Ø160(+0.04/-0.0) X 10(+0.15/-0.0) DEEP, WITHOUT LOCATING RING

C Ø27 THRU, (12) HOLES IN MOVING PLATEN
K/O BAR M16X40 THRU (12) HOLES





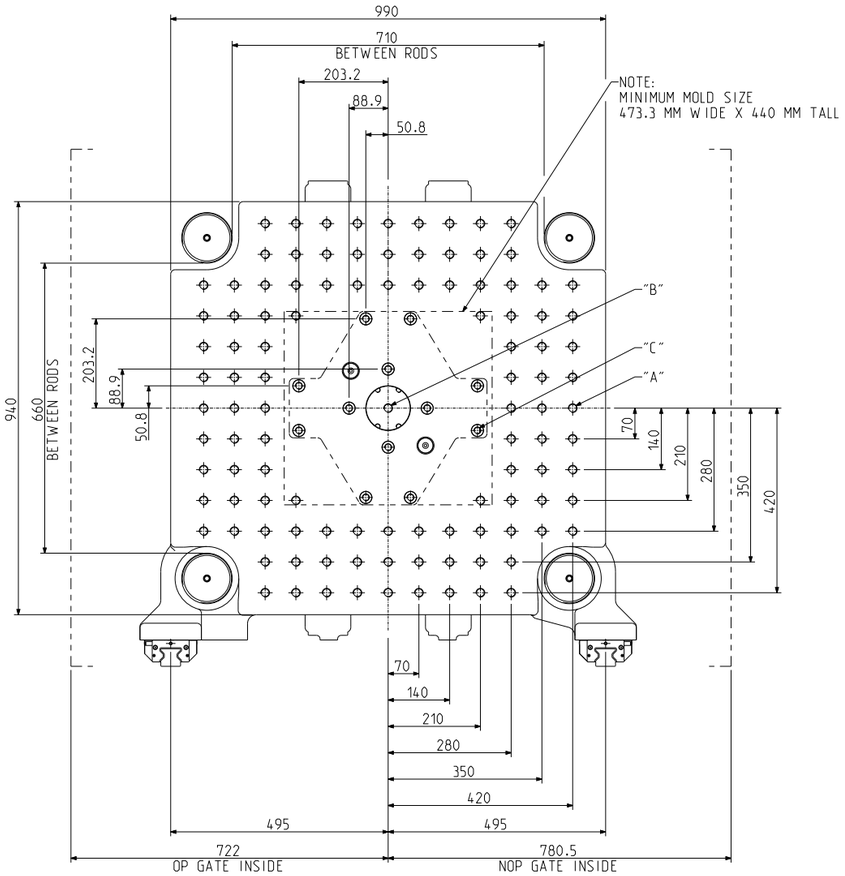
†IU 450 / 630 / 970

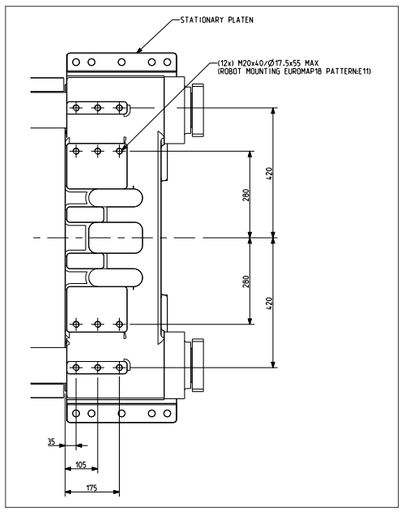
eQ-Series 230	UNIT	450			630			970		
	METRIC	A'	A	B	A'	A	B	A'	A	B
INJECTION UNIT SPECIFICATIONS										
INJECTION CAPACITY MAX. (GPPS)	gms	165	215	272	239	303	374	363	448	646
THEORETICAL DISPLACEMENT	cc	173	226	286	251	318	393	382	471	679
INJECTION PRESSURE MAX.	bar	2443	1984	1568	2492	1969	1595	2249	2057	1428
INJECTION RATE (STD) *	cc/sec	168	220	278	220	278	344	279	343	495
INJECTION SPEED (STD)	mm/sec	175	175	175	175	175	175	175	175	175
INJECTION RATE (HIGH) * ^	cc/sec	336	439	556	415	525	648	525	648	934
INJECTION SPEED (HIGH)	mm/sec	350	350	350	330	330	330	330	330	330
INJECTION SCREW STROKE	mm	180	180	180	200	200	200	240	240	240
SCREW DIAMETER	mm	35	40	45	40	45	50	45	50	60
SCREW L/D RATIO		25.7	22.2	20	25	22.2	20	26.7	24	20
SCREW SPEED	rpm	400	400	400	400	400	400	350	350	320
SCREW TORQUE	NM	550	550	550	700	700	700	1100	1100	1100
PLASTICIZING RATE (GP SCREW) *	gm/sec	18	25	34	25	34	45	30	39	58
PLASTICIZING RATE (BARRIER SCREW) *	gm/sec	24	33	44	32	49	67	39	53	74
NOZZLE HOLDING FORCE	kN	25			25			30		
NO.OF PYROMETERS (BARREL+NOZZLE)		4+1			4+1			4+1		
TOTAL HEAT CAPACITY	kW	11.3			15.7			16.9		
CLAMP UNIT SPECIFICATIONS										
CLAMP FORCE	Ton	230			230			230		
CLAMP STROKE	mm	550			550			550		
MAXIMUM DAYLIGHT	mm	1260			1260			1260		
MINIMUM MOULD HEIGHT ᶠ	mm	200			200			200		
MAXIMUM MOULD HEIGHT	mm	710			710			710		
PLATEN SIZE (H X V)	mm	920 x 820			920 x 820			920 x 820		
DISTANCE BETWEEN TIE ROD	mm	660 x 560			660 x 560			660 x 560		
TIE ROD DIAMETER	mm	105			105			105		
EJECTOR STROKE	mm	180			180			180		
EJECTOR FORCE	Ton	6.0			6.0			6.0		
MOULD WEIGHT CAPACITY (STAT. / MOVING)	kg	3200 (1500 / 1700)			3200 (1500 / 1700)			3200 (1500 / 1700)		
DRY CYCLE TIME (EUROMAP 6) ***	sec-mm	1.88 - 462			1.88 - 462			1.88 - 462		
GENERAL										
TOTAL CONNECTED LOAD	kW	19			25			33		
MACHINE DIMENSION (L X W X H)	m	6.5 x 1.8 x 2.6			6.7 x 1.8 x 2.6			6.7 x 1.8 x 2.6		
MACHINE WEIGHT	kg	10500			10800			12000		

* WITH OPEN NOZZLE
^ OPTIONAL
ᶠ THIS WILL INCREASE IN CASE OF 1) EXTRA MOULD SHOE & 2) MORE THAN 400 EDL
***BREAKAWAY AND TONNAGE DECOMPRESSION TIMES ARE NOT INCLUDED IN DRY CYCLE TIME
Total connected load is the approximate power utilization in a production environment. It will be lower than the Total installed power.
Machine dimensions and specifications are subject to change. Values are for reference only. These values are for standard machine power.
All Machine dimensions are with retracted Injection Unit.

THE eQ-SERIES
TONNAGE: 280

Injection Unit 630, 970, 1540
TECHNICAL SPECIFICATIONS



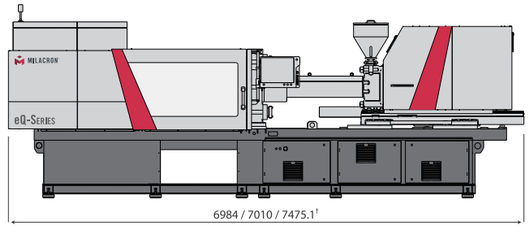


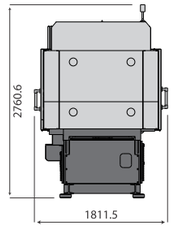
ALL DIMENSIONS ARE IN MM

A M20X45 (108) PLACES ON BOTH PLATEN

B MOVING PLATEN: Ø100(+0.035/-0.0) THRU BORE,
K/0 BAR CENTRE HOLE M20X50 THRU
STATIONARY PLATEN:
Ø125(+0.04/-0.0) WITH LOCATING RING,
Ø160(+0.04/-0.0) x 10(+0.15/-0.0) DEEP, WITHOUT LOCATING RING

C Ø27 THRU, (12) HOLES IN MOVING PLATEN
K/O BAR M16X40 THRU (12) HOLES





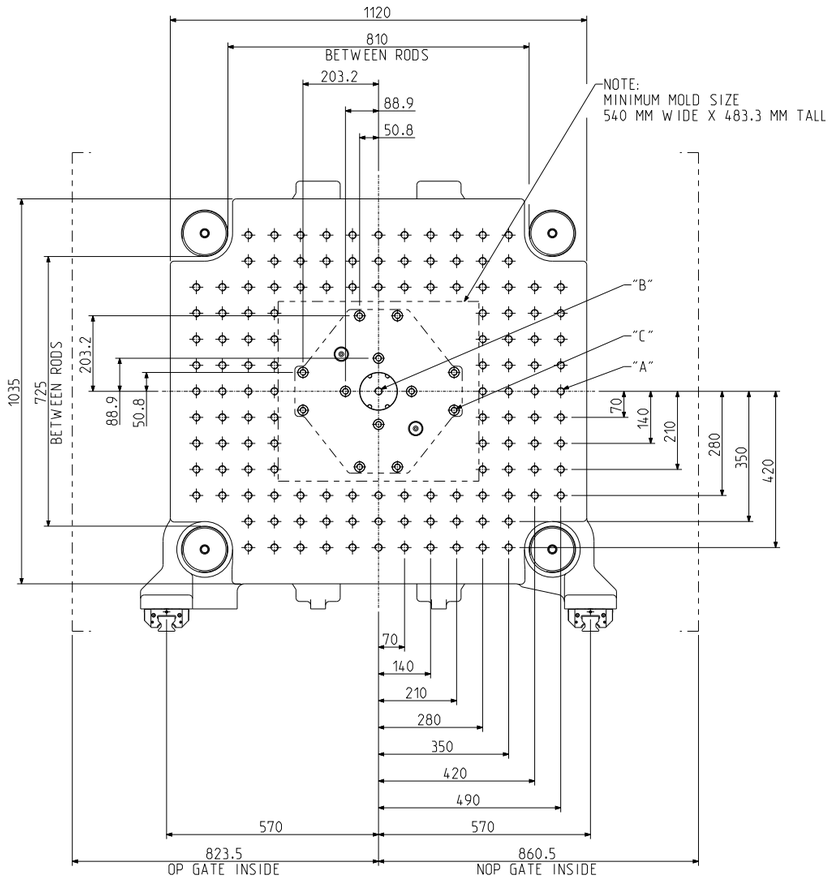
†IU 630 / 970 / 1540

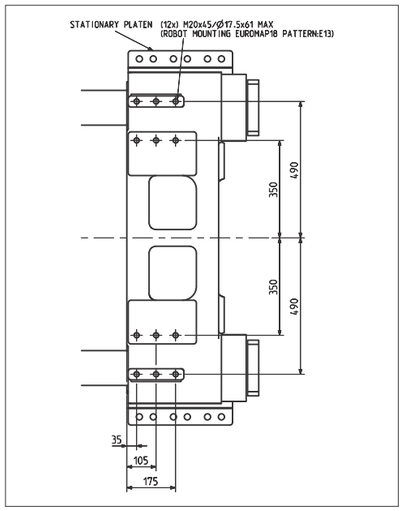
eQ-Series 280	UNIT	630			970			1540		
	METRIC	A'	A	B	A'	A	B	A'	A	B
INJECTION UNIT SPECIFICATIONS										
INJECTION CAPACITY MAX. (GPPS)	gms	239	303	374	363	448	646	523	753	1025
THEORETICAL DISPLACEMENT	cc	251	318	393	382	471	679	550	792	1078
INJECTION PRESSURE MAX.	bar	2492	1969	1595	2249	2057	1428	2236	1941	1426
INJECTION RATE (STD) *	cc/sec	220	278	344	279	343	495	314	453	616
INJECTION SPEED (STD)	mm/sec	175	175	175	175	175	175	160	160	160
INJECTION RATE (HIGH) * ^	cc/sec	415	525	648	525	648	934	589	849	1155
INJECTION SPEED (HIGH)	mm/sec	330	330	330	330	330	330	300	300	300
INJECTION SCREW STROKE	mm	200	200	200	240	240	240	280	280	280
SCREW DIAMETER	mm	40	45	50	45	50	60	50	60	70
SCREW L/D RATIO		25	22.2	20	26.7	24	20	28	23.3	20
SCREW SPEED	rpm	400	400	400	350	350	320	350	320	275
SCREW TORQUE	NM	700	700	700	1100	1100	1100	1600	1600	1600
PLASTICIZING RATE (GP SCREW) *	gm/sec	25	34	45	30	39	58	40	58	77
PLASTICIZING RATE (BARRIER SCREW) *	gm/sec	32	49	67	39	53	74	52	74	101
NOZZLE HOLDING FORCE	kN	25			30			30		
NO.OF PYROMETERS (BARREL+NOZZLE)		4+1			4+1			5+1		
TOTAL HEAT CAPACITY	kW	15.7			16.9			24.9		
CLAMP UNIT SPECIFICATIONS										
CLAMP FORCE	Ton	280			280			280		
CLAMP STROKE	mm	650			650			650		
MAXIMUM DAYLIGHT	mm	1400			1400			1400		
MINIMUM MOULD HEIGHT #	mm	250			250			250		
MAXIMUM MOULD HEIGHT	mm	750			750			750		
PLATEN SIZE (H X V)	mm	990 x 940			990 x 940			990 x 940		
DISTANCE BETWEEN TIE ROD	mm	710 x 660			710 x 660			710 x 660		
TIE ROD DIAMETER	mm	115			115			115		
EJECTOR STROKE	mm	180			180			180		
EJECTOR FORCE	Ton	6.0			6.0			6.0		
MOULD WEIGHT CAPACITY (STAT. / MOVING)	kg	4400 (1900 / 2500)			4400 (1900 / 2500)			4400 (1900 / 2500)		
DRY CYCLE TIME (EUROMAP 6) ***	sec-mm	2.00 - 497			2.00 - 497			2.00 - 497		
GENERAL										
TOTAL CONNECTED LOAD	kW	25			34			44		
MACHINE DIMENSION (L X W X H)	m	7.0 x 1.8 x 2.8			7.0 x 1.8 x 2.8			7.5 x 1.8 x 2.8		
MACHINE WEIGHT	kg	12300			14200			14700		

* WITH OPEN NOZZLE
^ OPTIONAL
# THIS WILL INCREASE IN CASE OF 1) EXTRA MOULD SHOE & 2) MORE THAN 400 EDL
***BREAKAWAY AND TONNAGE DECOMPRESSION TIMES ARE NOT INCLUDED IN DRY CYCLE TIME
Total connected load is the approximate power utilization in a production environment. It will be lower than the Total installed power.
Machine dimensions and specifications are subject to change. Values are for reference only. These values are for standard machine power.
All Machine dimensions are with retracted Injection Unit.

THE eQ-SERIES
TONNAGE: 350

Injection Unit 970, 1540, 2290
TECHNICAL SPECIFICATIONS



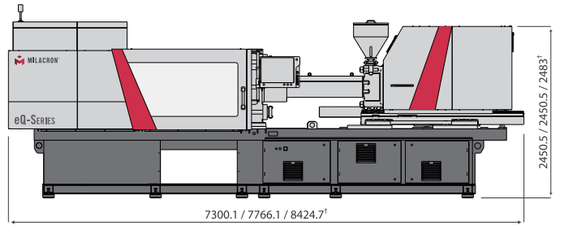


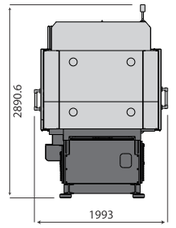
ALL DIMENSIONS ARE IN MM

A M20X45 (130) PLACES ON BOTH PLATEN

B MOVING PLATEN: Ø100(+0.035/-0.0) THRU BORE,
K/0 BAR CENTRE HOLE M20X45 THRU
STATIONARY PLATEN:
Ø160(+0.040/-0.0) WITH LOCATING RING,
Ø200(+0.046/-0.0) x 10(+0.15/-0.0) DEEP, WITHOUT LOCATING RING

C Ø27 THRU, (12) HOLES IN MOVING PLATEN
K/O BAR M16X45 THRU (12) HOLES





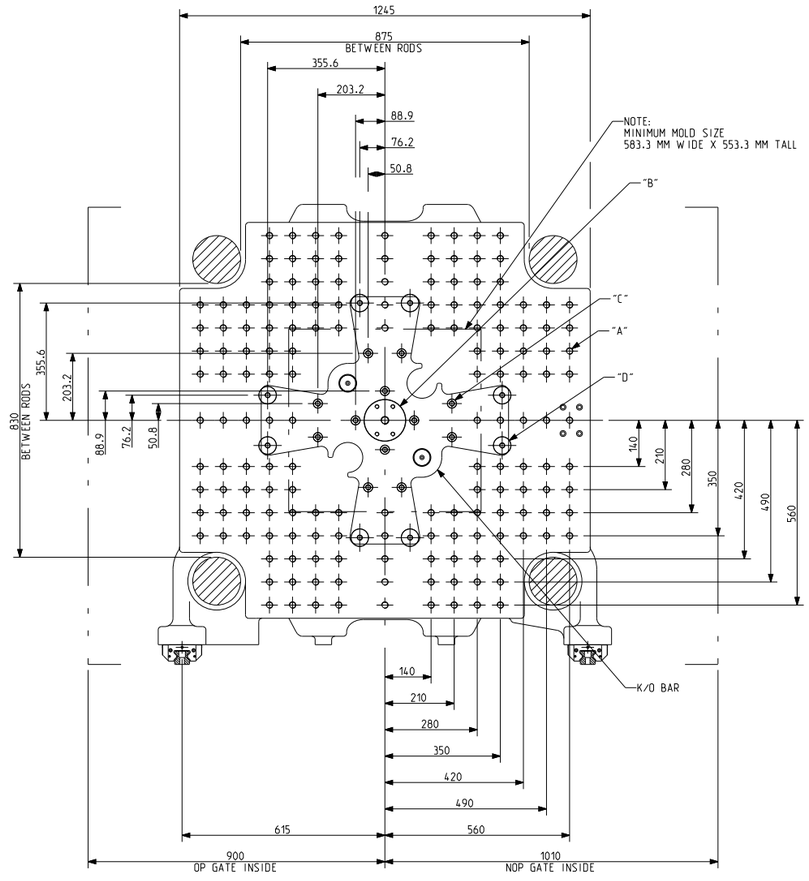
†IU 970 / 1540 / 2290

eQ-Series 350	UNIT	970			1540			2290		
	METRIC	A'	A	B	A'	A	B	A'	A	B
INJECTION UNIT SPECIFICATIONS										
INJECTION CAPACITY MAX. (GPPS)	gms	363	448	646	523	753	1025	861	1172	1530
THEORETICAL DISPLACEMENT	cc	382	471	679	550	792	1078	905	1232	1608
INJECTION PRESSURE MAX.	bar	2249	2057	1428	2236	1941	1426	2238	1856	1421
INJECTION RATE (STD) *	cc/sec	279	343	495	314	453	616	424	578	754
INJECTION SPEED (STD)	mm/sec	175	175	175	160	160	160	150	150	150
INJECTION RATE (HIGH) * ^	cc/sec	525	648	934	589	849	1155	792	1078	1407
INJECTION SPEED (HIGH)	mm/sec	330	330	330	300	300	300	280	280	280
INJECTION SCREW STROKE	mm	240	240	240	280	280	280	320	320	320
SCREW DIAMETER	mm	45	50	60	50	60	70	60	70	80
SCREW L/D RATIO		26.7	24	20	28	23.3	20	26.7	22.9	20
SCREW SPEED	rpm	350	350	320	350	320	275	300	275	240
SCREW TORQUE	NM	1100	1100	1100	1600	1600	1600	2600	2600	2600
PLASTICIZING RATE (GP SCREW) *	gm/sec	30	39	58	40	58	77	54	77	93
PLASTICIZING RATE (BARRIER SCREW) *	gm/sec	39	53	74	52	74	101	69	101	118
NOZZLE HOLDING FORCE	kN	30			30			40		
NO.OF PYROMETERS (BARREL+NOZZLE)		4+1			5+1			5+1		
TOTAL HEAT CAPACITY	kW	16.9			24.9			39.6		
CLAMP UNIT SPECIFICATIONS										
CLAMP FORCE	Ton	350			350			350		
CLAMP STROKE	mm	720			720			720		
MAXIMUM DAYLIGHT	mm	1520			1520			1520		
MINIMUM MOULD HEIGHT #	mm	300			300			300		
MAXIMUM MOULD HEIGHT	mm	800			800			800		
PLATEN SIZE (H X V)	mm	1120 x 1035			1120 x 1035			1120 x 1035		
DISTANCE BETWEEN TIE ROD	mm	810 x 725			810 x 725			810 x 725		
TIE ROD DIAMETER	mm	125			125			125		
EJECTOR STROKE	mm	200			200			200		
EJECTOR FORCE	Ton	7.5			7.5			7.5		
MOULD WEIGHT CAPACITY (STAT. / MOVING)	kg	6000 (2700 / 3300)			6000 (2700 / 3300)			6000 (2700 / 3300)		
DRY CYCLE TIME (EUROMAP 6) ***	sec-mm	2.12 - 567			2.12 - 567			2.12 - 567		
GENERAL										
TOTAL CONNECTED LOAD	kW	35			45			58		
MACHINE DIMENSION (L X W X H)	m	7.3 x 2.0 x 2.9			7.8 x 2.0 x 2.9			8.4 x 2.0 x 2.9		
MACHINE WEIGHT	kg	17500			18000			18250		

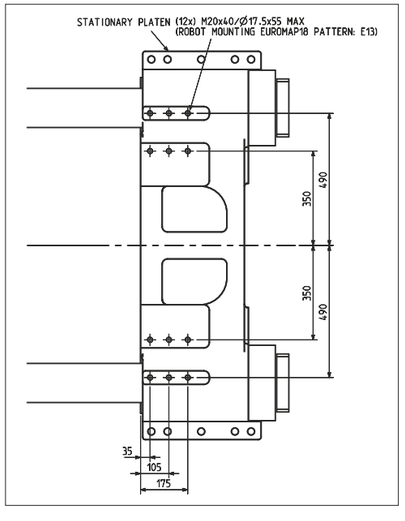
* WITH OPEN NOZZLE
^ OPTIONAL
# THIS WILL INCREASE IN CASE OF 1) EXTRA MOULD SHOE & 2) MORE THAN 250 EDL
***BREAKAWAY AND TONNAGE DECOMPRESSION TIMES ARE NOT INCLUDED IN DRY CYCLE TIME
Total connected load is the approximate power utilization in a production environment. It will be lower than the Total installed power.
Machine dimensions and specifications are subject to change. Values are for reference only. These values are for standard machine power.
All Machine dimensions are with retracted Injection Unit.

THE eQ-SERIES
TONNAGE: 450

Injection Unit 1540, 2290, 3470
TECHNICAL SPECIFICATIONS



MOVING PLATEN



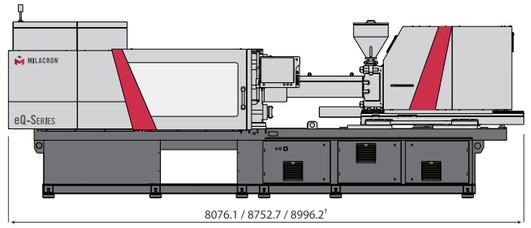
ALL DIMENSIONS ARE IN MM

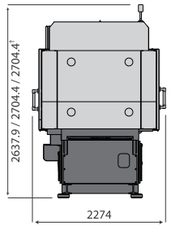
A M20X45 (164) PLACES ON BOTH PLATEN

B MOVING PLATEN: Ø125(+0.04/-0.0) THRU BORE,
K/0 BAR CENTRE HOLE M24X43 THRU
STATIONARY PLATEN:
Ø160(+0.040/-0.0) WITH LOCATING RING,
Ø200(+0.046/-0.0) x 10(+0.15/-0.0) DEEP, WITHOUT LOCATING RING

C Ø27 THRU, (12) HOLES IN MOVING PLATEN
K/O BAR M16X40 THRU (20) HOLES

D Ø52.4 THRU (8) HOLES





†IU 1540 / 2290 / 3470

eQ-Series 450	UNIT	1540			2290			3470		
	METRIC	A'	A	B	A'	A	B	A'	A	B
INJECTION UNIT SPECIFICATIONS										
INJECTION CAPACITY MAX. (GPPS)	gms	523	753	1025	861	1172	1530	1318	1722	2179
THEORETICAL DISPLACEMENT	cc	550	792	1078	905	1232	1608	1385	1810	2290
INJECTION PRESSURE MAX.	bar	2236	1941	1426	2238	1856	1421	2289	1917	1515
INJECTION RATE (STD) *	cc/sec	314	453	616	424	578	754	577	754	954
INJECTION SPEED (STD)	mm/sec	160	160	160	150	150	150	150	150	150
INJECTION RATE (HIGH) * ^	cc/sec	589	849	1155	792	1078	1407	962	1257	1590
INJECTION SPEED (HIGH)	mm/sec	300	300	300	280	280	280	250	250	250
INJECTION SCREW STROKE	mm	280	280	280	320	320	320	360	360	360
SCREW DIAMETER	mm	50	60	70	60	70	80	70	80	90
SCREW L/D RATIO		28	23.3	20	26.7	22.9	20	25.7	22.5	20
SCREW SPEED	rpm	350	320	275	300	275	240	215	215	215
SCREW TORQUE	NM	1600	1600	1600	2600	2600	2600	3000	3000	3000
PLASTICIZING RATE (GP SCREW) *	gm/sec	40	58	77	54	77	93	60	83	111
PLASTICIZING RATE (BARRIER SCREW) *	gm/sec	52	74	101	69	101	118	78	107	142
NOZZLE HOLDING FORCE	kN	30			40			40		
NO.OF PYROMETERS (BARREL+NOZZLE)		5+1			5+1			5+1		
TOTAL HEAT CAPACITY	kW	24.9			39.6			39.6		
CLAMP UNIT SPECIFICATIONS										
CLAMP FORCE	Ton	450			450			450		
CLAMP STROKE	mm	850			850			850		
MAXIMUM DAYLIGHT	mm	1670			1670			1670		
MINIMUM MOULD HEIGHT ᶠ	mm	350			350			350		
MAXIMUM MOULD HEIGHT	mm	820			820			820		
PLATEN SIZE (H X V)	mm	1245 x 1200			1245 x 1200			1245 x 1200		
DISTANCE BETWEEN TIE ROD	mm	875 x 830			875 x 830			875 x 830		
TIE ROD DIAMETER	mm	145			145			145		
EJECTOR STROKE	mm	230			230			230		
EJECTOR FORCE	Ton	10			10			10		
MOULD WEIGHT CAPACITY (STAT. / MOVING)	kg	8000 (4000 / 4000)			8000 (4000 / 4000)			8000 (4000 / 4000)		
DRY CYCLE TIME (EUROMAP 6) ***	sec-mm	2.32 - 612			2.32 - 612			2.32 - 612		
GENERAL										
TOTAL CONNECTED LOAD	kW	52			63			70		
MACHINE DIMENSION (L X W X H)	m	8.0 x 2.2 x 2.6			8.7 x 2.2 x 2.7			9.0 x 2.2 x 2.7		
MACHINE WEIGHT	kg	24500			26000			27600		

* WITH OPEN NOZZLE ^ OPTIONAL

ᶠ THIS WILL INCREASE IN CASE OF 1) EXTRA MOULD SHOE & 2) MORE THAN 350 EDL

***BREAKAWAY AND TONNAGE DECOMPRESSION TIMES ARE NOT INCLUDED IN DRY CYCLE TIME

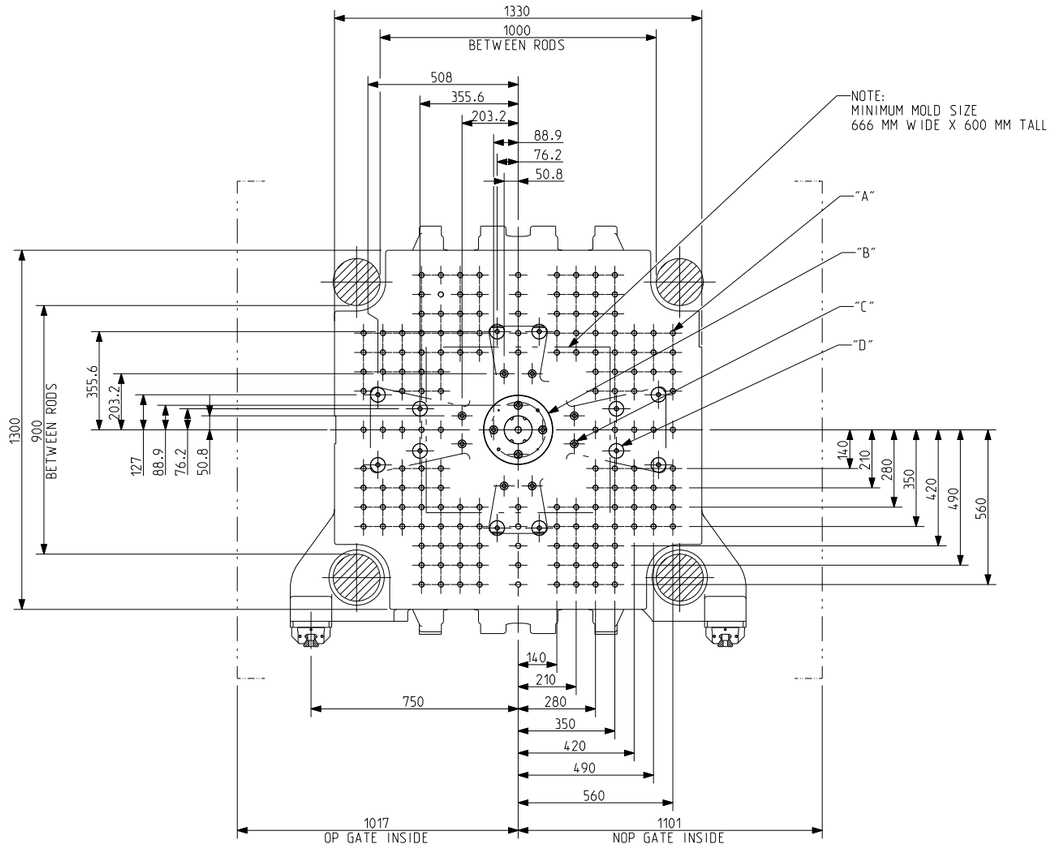
Total connected load is the approximate power utilization in a production environment. It will be lower than the Total installed power.

Machine dimensions and specifications are subject to change. Values are for reference only. These values are for standard machine power.

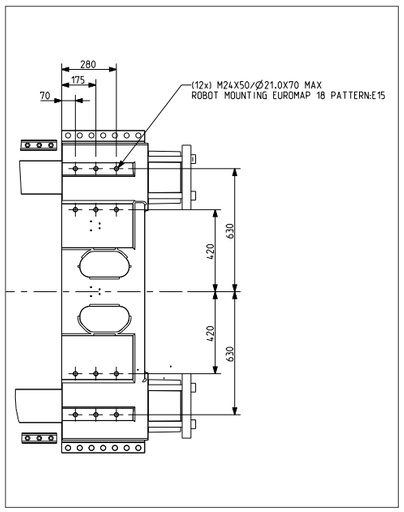
All Machine dimensions are with retracted Injection Unit.

THE eQ-SERIES
TONNAGE: 550

Injection Unit 2290, 3470
TECHNICAL SPECIFICATIONS



MOVING PLATEN



ALL DIMENSIONS ARE IN MM

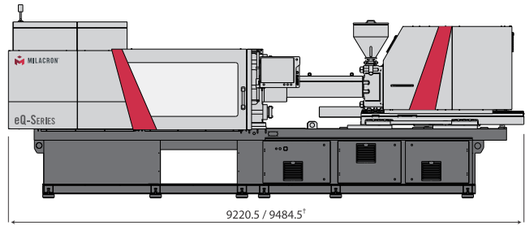
A MOVING PLATEN: (160x) M20x50,
STATIONARY PLATEN: (164x) M20x50

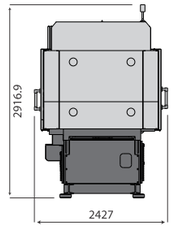
B MOVING PLATEN:
Ø100(+0.035/-0.0) WITH LOCATING RING,
Ø250(+0.046/-0.0) x 20.07(+0.08/-0.0) DEEP, WITHOUT LOCATING RING.
K/O BAR CENTER HOLE M24 THRU.

STATIONARY PLATEN:
Ø160(+0.040/-0.0) WITH LOCATING RING,
Ø250(+0.046/-0.0) x 20.07(+0.08/-0.0) DEEP, WITHOUT LOCATING RING.

C MOVING PLATEN: (12x) Ø27 THRU
K/O BAR: (12x) M16 THRU

D MOVING PLATEN: (12x) Ø52.4 THRU
K/O BAR: (12x) M16 THRU





†IU 2290 / 3470

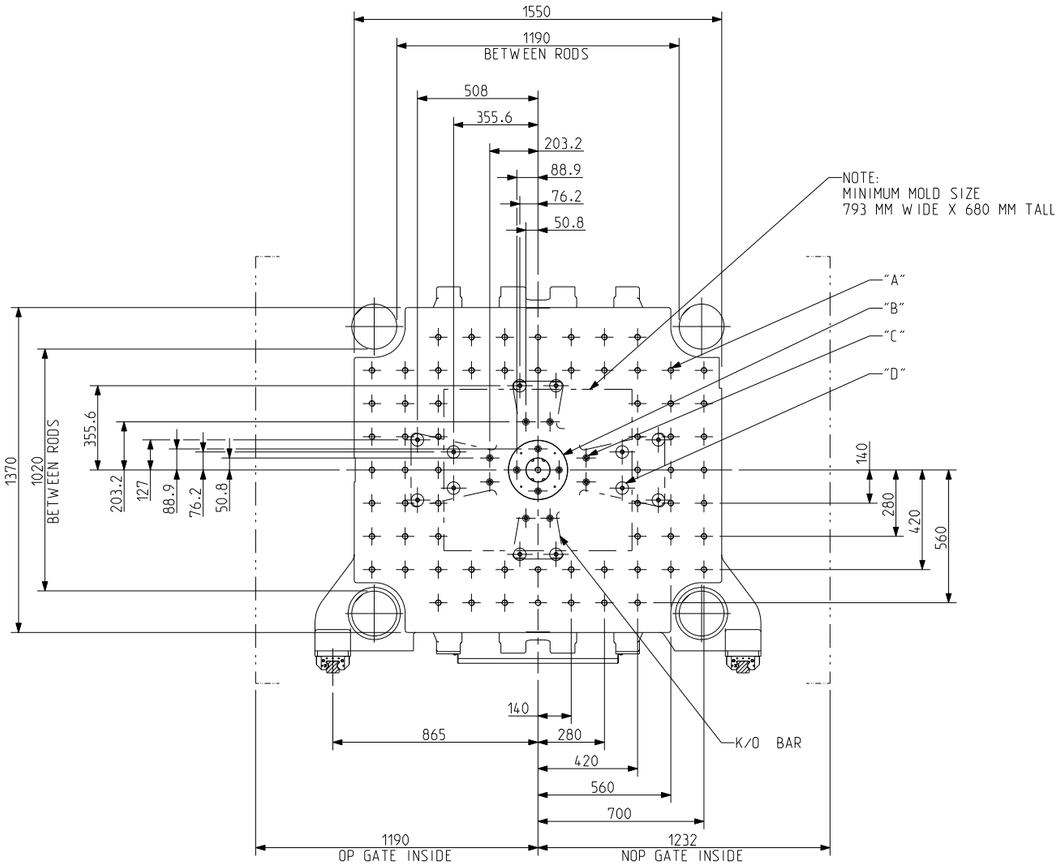
eQ-Series 550	UNIT	2290			3470		
	METRIC	A'	A	B	A'	A	B
INJECTION UNIT SPECIFICATIONS							
INJECTION CAPACITY MAX. (GPPS)	gms	861	1172	1530	1318	1722	2179
THEORETICAL DISPLACEMENT	cc	905	1232	1608	1385	1810	2290
INJECTION PRESSURE MAX.	bar	2238	1856	1421	2289	1917	1515
INJECTION RATE (STD) *	cc/sec	424	578	754	577	754	954
INJECTION SPEED (STD)	mm/sec	150	150	150	150	150	150
INJECTION RATE (HIGH) * ^	cc/sec	792	1078	1407	962	1257	1590
INJECTION SPEED (HIGH)	mm/sec	280	280	280	250	250	250
INJECTION SCREW STROKE	mm	320	320	320	360	360	360
SCREW DIAMETER	mm	60	70	80	70	80	90
SCREW L/D RATIO		26.7	22.9	20	25.7	22.5	20
SCREW SPEED	rpm	300	275	240	215	215	215
SCREW TORQUE	NM	2600	2600	2600	3000	3000	3000
PLASTICIZING RATE (GP SCREW) *	gm/sec	54	77	93	60	83	111
PLASTICIZING RATE (BARRIER SCREW) *	gm/sec	69	101	118	78	107	142
NOZZLE HOLDING FORCE	kN	40			40		
NO.OF PYROMETERS (BARREL+NOZZLE)		5+1			5+1		
TOTAL HEAT CAPACITY	kW	39.6			39.6		
CLAMP UNIT SPECIFICATIONS							
CLAMP FORCE	Ton	550			550		
CLAMP STROKE	mm	920			920		
MAXIMUM DAYLIGHT	mm	1820			1820		
MINIMUM MOULD HEIGHT ♯	mm	400			400		
MAXIMUM MOULD HEIGHT	mm	900			900		
PLATEN SIZE (H X V)	mm	1330 x 1300			1330 x 1300		
DISTANCE BETWEEN TIE ROD	mm	1000 x 900			1000 x 900		
TIE ROD DIAMETER	mm	170			170		
EJECTOR STROKE	mm	230			230		
EJECTOR FORCE	Ton	12			12		
MOULD WEIGHT CAPACITY (STAT. / MOVING)	kg	9650 (4150 / 5500)			9650 (4150 / 5500)		
GENERAL							
TOTAL CONNECTED LOAD	kW	68			82		
MACHINE DIMENSION (L X W X H)	m	9.2 x 2.4 x 2.9			9.5 x 2.4 x 2.9		
MACHINE WEIGHT	kg	32000			33000		

* WITH OPEN NOZZLE
^ OPTIONAL
♯ THIS WILL INCREASE IN CASE OF 1) EXTRA MOULD SHOE & 2) MORE THAN 500 EDL

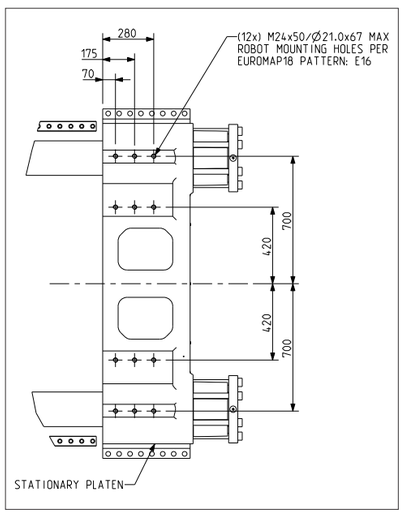
Total connected load is the approximate power utilization in a production environment. It will be lower than the Total installed power.
Machine dimensions and specifications are subject to change. Values are for reference only. These values are for standard machine power.
All Machine dimensions are with retracted Injection Unit.

THE eQ-SERIES
TONNAGE: 650

Injection Unit 2290, 3470
TECHNICAL SPECIFICATIONS



MOVING PLATEN



ALL DIMENSIONS ARE IN MM

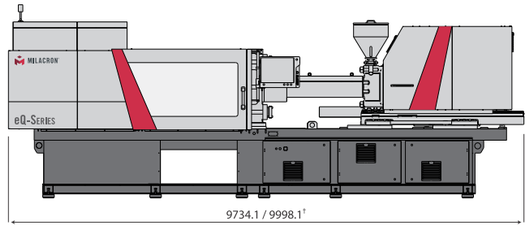
A (66x) M24x50 DEEP ON BOTH PLATEN.

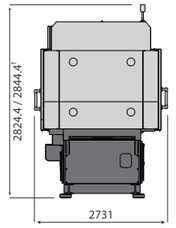
B MOVING PLATEN:
Ø100(+0.035/-0.0) WITH LOCATING RING,
Ø250(+0.046/-0.0) x 20.07(+0.08/-0.0) DEEP, WITHOUT LOCATING RING.
K/O BAR CENTER HOLE M24 THRU.

STATIONARY PLATEN:
Ø160(+0.040/-0.0) WITH LOCATING RING,
Ø250(+0.046/-0.0) x 20.07(+0.08/-0.0) DEEP, WITHOUT LOCATING RING.

C MOVING PLATEN: (12x) Ø27 THRU
K/O BAR: (12x) M16 THRU

D MOVING PLATEN: (12x) Ø52.4 THRU
K/O BAR: (12x) M16 THRU



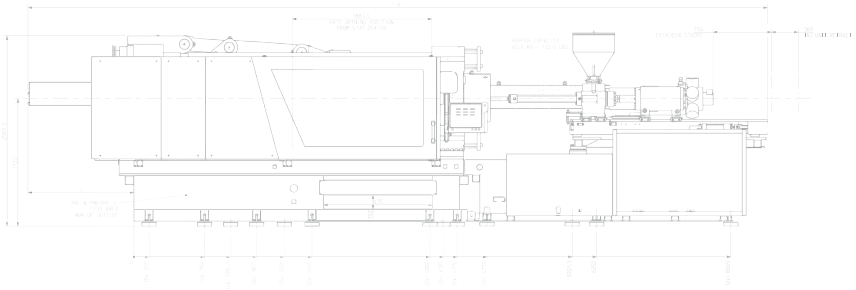


†IU 2290 / 3470

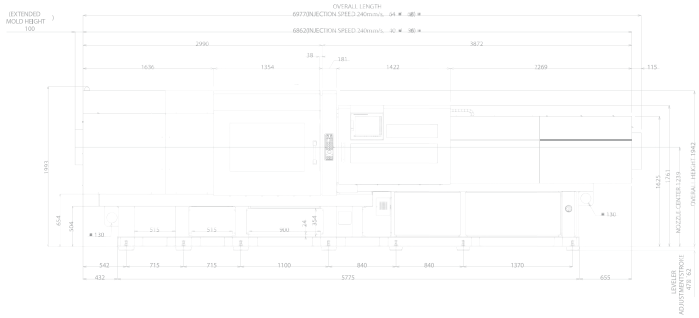
eQ-Series 650	UNIT	2290			3470		
	METRIC	A'	A	B	A'	A	B
INJECTION UNIT SPECIFICATIONS							
INJECTION CAPACITY MAX. (GPPS)	gms	861	1172	1530	1318	1722	2179
THEORETICAL DISPLACEMENT	cc	905	1232	1608	1385	1810	2290
INJECTION PRESSURE MAX.	bar	2238	1856	1421	2289	1917	1515
INJECTION RATE (STD) *	cc/sec	424	578	754	577	754	954
INJECTION SPEED (STD)	mm/sec	150	150	150	150	150	150
INJECTION RATE (HIGH) * ^	cc/sec	792	1078	1407	962	1257	1590
INJECTION SPEED (HIGH)	mm/sec	280	280	280	250	250	250
INJECTION SCREW STROKE	mm	320	320	320	360	360	360
SCREW DIAMETER	mm	60	70	80	70	80	90
SCREW L/D RATIO		26.7	22.9	20	25.7	22.5	20
SCREW SPEED	rpm	300	275	240	215	215	215
SCREW TORQUE	NM	2600	2600	2600	3000	3000	3000
PLASTICIZING RATE (GP SCREW) *	gm/sec	54	77	93	60	83	111
PLASTICIZING RATE (BARRIER SCREW) *	gm/sec	69	101	118	78	107	142
NOZZLE HOLDING FORCE	kN	40			40		
NO.OF PYROMETERS (BARREL+NOZZLE)		5+1			5+1		
TOTAL HEAT CAPACITY	kW	39.6			39.6		
CLAMP UNIT SPECIFICATIONS							
CLAMP FORCE	Ton	650			650		
CLAMP STROKE	mm	1000			1000		
MAXIMUM DAYLIGHT	mm	2100			2100		
MINIMUM MOULD HEIGHT #	mm	450			450		
MAXIMUM MOULD HEIGHT	mm	1100			1100		
PLATEN SIZE (H X V)	mm	1550 x 1370			1550 x 1370		
DISTANCE BETWEEN TIE ROD	mm	1190 x 1020			1190 x 1020		
TIE ROD DIAMETER	mm	190			190		
EJECTOR STROKE	mm	230			230		
EJECTOR FORCE	Ton	12			12		
MOULD WEIGHT CAPACITY (STAT. / MOVING)	kg	14000 (6000 / 8000)			14000 (6000 / 8000)		
GENERAL							
TOTAL CONNECTED LOAD	kW	68			82		
MACHINE DIMENSION (L X W X H)	m	9.7 x 2.7 x 2.8			10.0 x 2.7 x 2.8		
MACHINE WEIGHT	kg	38700			39800		

* WITH OPEN NOZZLE
^ OPTIONAL
# THIS WILL INCREASE IN CASE OF 1) EXTRA MOULD SHOE & 2) MORE THAN 500 EDL

Total connected load is the approximate power utilization in a production environment. It will be lower than the Total installed power.
Machine dimensions and specifications are subject to change. Values are for reference only. These values are for standard machine power.
All Machine dimensions are with retracted Injection Unit.



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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