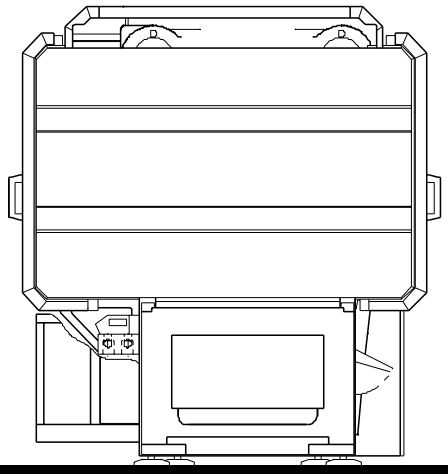

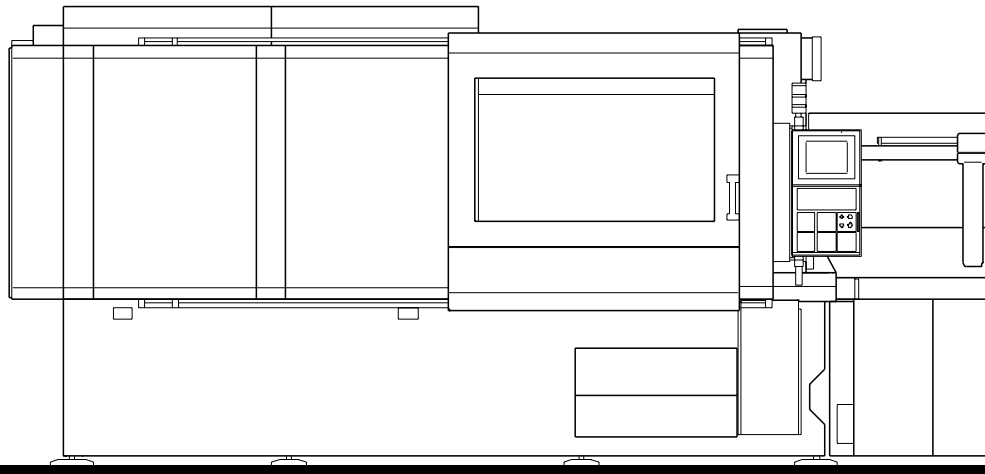

ALLROUNDER 820 S

Technical data

Tie bar distance: 820 x 820 mm

Clamping force: 4000 kN

Injection units (according to EUROMAP): 2100, 3200, 4600

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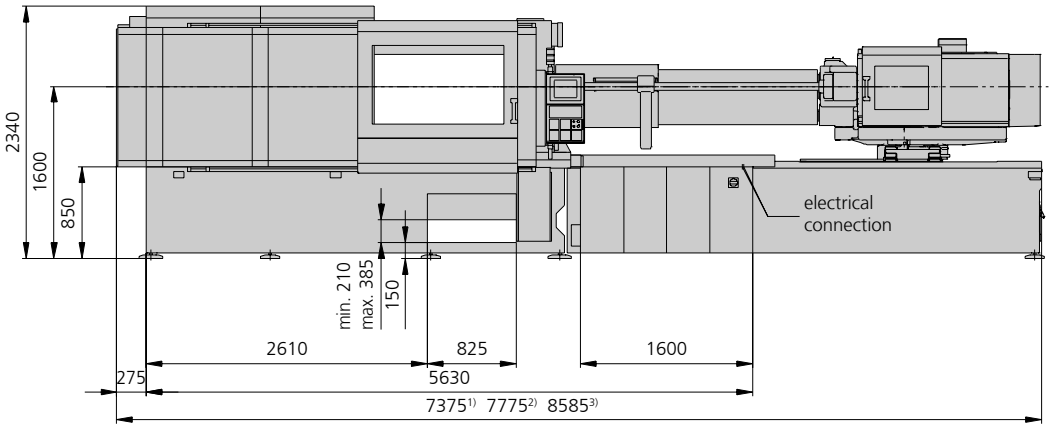
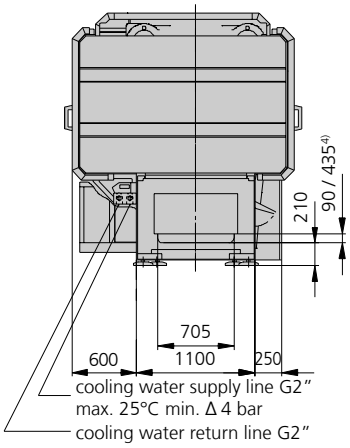
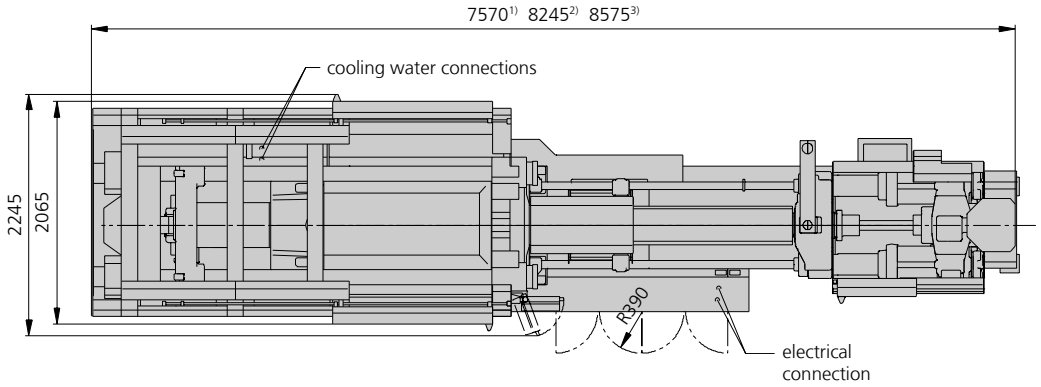






1) Dimension applies to injection unit 2100
2) Dimension applies to injection unit 3200
3) Dimension applies to injection unit 4600
4) Dimension only valid in conjunction with conveyor belt

Technical data | 820 S

Machine model			820 S	820 S	820 S
EUROMAP size indication[1]			4000-2100	4000-3200	4000-4600
Clamping unit					
Clamping force	max.	kN	4000	4000	4000
Closing force	max.	kN	150	150	150
Opening force / increased	max.	kN	100 / 800	100 / 800	100 / 800
Opening stroke	max.	mm	700	700	700
Mould height	min.	mm	350-850	350-850	350-850
Daylight	max.	mm	1050-1550	1050-1550	1050-1550
Distance between tie bars		mm	820 x 820	820 x 820	820 x 820
Platen size (hor. x vert.)		mm	1171 x 1171	1171 x 1171	1171 x 1171
Weight of mov. mould half	max.	kg	5000	5000	5000
Ejector force	max.	kN	100	100	100
Ejector stroke	max.	mm	250	250	250
Hydraulics, drive, general					
Drive power of the hydraulic pump		kW	55	55	75
Dry cycle time for opening stroke[5]		s-mm	3,7-574 (2,6-574)	3,7-574 (2,6-574)	3,7-574 (2,6-574)
Total connected load[2]		kW	89	96	129
Colour: plastic coated, structure light grey / mint green / canary yellow					
Control cabinet					
Safety standard according to			DIN EN 60204	DIN EN 60204	DIN EN 60204
Socket combination (1 single phase, 1 three-phase)			1 x 16 A	1 x 16 A	1 x 16 A
Injection unit			2100	3200	4600
Screw diameter		mm	60 / 70 / 80	70 / 80 / 90	80 / 90 / 100
Effective screw length		L/D	23 / 20 / 17,5	23 / 20 / 18	22,5 / 20 / 18
Screw stroke	max.	mm	280	320	360
Calculated injection volume	max.	cm^3	792 / 1078 / 1407	1232 / 1608 / 2036	1810 / 2290 / 2827
Shot weight	max.	g PS	723 / 984 / 1286	1125 / 1469 / 1860	1653 / 2092 / 2583
Material throughput[6]	max.	kg/h PS	125 / 145 / 175	185 / 215 / 250	255 / 295 / 330
	max.	kg/h PA 6.6	62 / 74 / 88	93 / 110 / 125	130 / 150 / 170
Injection pressure[4]	max.	bar	2500 / 2000 / 1530	2500 / 2000 / 1580	2500 / 2000 / 1620
Injection flow[4]	max.	cm^3/s	290 / 394 / 514	290 / 380 / 482	310 / 392 / 484
Injection flow with accumulator	max.	cm^3/s	1132 / 1540 / 2012	1188 / 1552 / 1964	1264 / 1600 / 1976
Back pressure positive / negative	max.	bar	350 / 200	350 / 200	350 / 200
Circumferential screw speed	max.	m/min	56 / 65 / 75	47 / 54 / 61	38 / 43 / 48
Screw torque	max.	Nm	2140 / 2500 / 2550	3140 / 3510 / 3510	4400 / 4950 / 5000
Nozzle contact force	max.	kN	110	110	110
Nozzle retraction stroke	max.	mm	600	600	700
Installed cylinder heating power / heating zones		kW	30,3 / 7	37,3 / 7	49,8 / 8
Installed nozzle heating power		kW	1,1	1,1	1,1
Horizontal injection position	max.	mm	---	---	---
Machine dimensions and weights of the basic machine					
Oil capacity		l	490	590	790
Net weight		kg	21000	22500	24600
Electrical connection (pre-fused)[2]	motor + heating	A	200	200	---
Electrical connection (pre-fused)[2][3]	motor	A	125	125	160
	heating	A	50	63	80

1) 1st figure: clamping force (kN), 2nd figure: max. dosage volume (cm^3) x max. injection pressure (kbar)
2) Values refer to 400 V/50 Hz. The load is symmetrically distributed on three phases. The specified value applies to the basic machine.
   One or two separate supply lines can be connected as an option (motor + controller/heating). Through options the connection value can be higher
3) Certain combinations of additional machine equipment can make two separate supply lines absolutely necessary
4) A combination of max. injection pressure and max injection flow (max. injection capacity) can be mutually exclusive, depending on the equipment-related motor output
5) According to EUROMAP for the basic machine (values in brackets apply to hydraulic accumulator technology)
6) Deviations are possible depending upon process settings and material type

The shown specifications reflect the state at the time of printing. In the interest of a continuous development of our products, we reserve the right to modify specifications.

Control system and control cabinet

■ SELOGICA direct control system (touchscreen user interface for direct data access)
■ Available in different language versions
■ Language change
■ Cycle sequence programming with symbols
■ Cycle step display in sequence diagram
○ Cycle time diagram
■ Swivelling monitor unit, central on the operator's side, with colour monitor
■ Process graphics for injection speed, screw stroke and injection pressure
■ Quality assurance program with fault evaluation and monitoring chart
■ Optimisation and user help, follow-up functions at program end, for freely programmable parameter pages, selectable units
■ Modular control cabinet design with self-recognition of plug in circuit board system
■ Operating modes:
- Set up
- Freely programmed test run
- Reconfiguration
- Automatic purging and dosing
○ Equipment for switch-over to holding pressure via injection pressure, material pressure with different pressure transducers, or via external switch over signal
■ Data record management via Compact Flash
■ Visual warning signal (warning lamp)
○ Visual / audible warning signal (flashing light / siren)
■ Printer interface for hard copy, data record and quality protocol
○ Interfaces for: PC keyboard, plotter, robotic system according to EUROMAP 12 or 67, part weighing scale, optical barrier, host processor, AQC, ALLROUNDER@web, colouring unit, LSR dosing system, INJESTER, container change, wiper unit (brush), THERMOLIFT, hot runner control unit and temperature control units for moulds and cylinder
■ Socket combination 1 CEE, 1 Schuko 230 V
○ Socket combination 1 CEE, 1 Schuko or 3 CEE, 3 Schuko 230 V with external supply line
○ 1 additional heating regulation circuit for the nozzle
○ Electric heating regulation circuits for moulds (adaptive) (3, 6, 9, 12, 15, 18); mould heating fused at 10 A
○ Fuses for mould heating 16 A
○ 4 or 8 freely programmable inputs / outputs
○ Core pull programs in many versions integrated in the SELOGICA control system
○ Special processes such as injection coining, mould venting, variotherm temperature control, intrusion, marbling
○ Monitoring: Freely-programmable position monitoring
○ Many individual options for special processes

Machine base and hydraulic system

■ Free standing machine base on anti-vibration pads
■ Ergonomic protection cover with free access to mould and nozzle
■ Space for peripheral devices within floor space
■ The hydraulic system operates with two energy-saving variable displacement pumps and a servo valve for pressure and speed regulation
○ Hydraulic accumulator technology for high speeds and simultaneous movements. All axes are servo-regulated
○ ARBURG energy saving system AES (rpm changeable for hydraulic pump drive)
■ Minimum oil volume, oil change interval every 20,000 hours
■ Monitoring of oil level, oil temperature and oil filter contamination
■ Mechanical regulation of hydraulic oil temperature
■ Electronic regulation of hydraulic oil temperature. Display and monitoring via screen
■ Hydraulic oil preheating program to reduce start-up time
■ Separate, continuous oil circulation for additional cooling and filtration
■ Manually adjustable, machine-related cooling water circuits with 5 free manually adjustable mould connections
■ Programmable, machine-related cooling water circuits each with 2 free manually adjustable mould connections on the fixed and movable mould platen
○ 7 or 9 free cooling water circuits, manually adjustable
○ 4 or 6 free manually adjustable cooling water circuits each on the fixed and/or movable mould platen
○ 1 or 2 central shut-off valves for cooling water (supply and/or return)
○ Conveyor belt (electrically driven), height-adjustable in three steps, can be integrated into the machine base

Clamping unit

■ Compact, fully hydraulic clamping system
■ Automatic mould height adjustment to accommodate various minimum mould heights, adjustment travel directly programmable via the SELOGICA controller
○ Distance between the set-up platen manually adjustable, to accommodate the minimum mould installation height
○ Opening stroke increased to 850 mm
■ Vertical support of the movable mould platens
■ Movement profiles for the mould clamping unit are programmable and regulated. They are driven using two-circuit pump technology (Technology stage 2 - servo-regulated). The closing pressure is regulated. Simultaneous movement of nozzle and ejector is possible
○ Movement profiles for the mould clamping unit are programmable and regulated and are achieved via pressure accumulators. The locking pressure is servo-regulated. Extended simultaneous movements are possible
■ Closing and opening profiles are 4-stage programmable
■ Intermediate stop possible when closing and opening
■ Regulated hydraulic mould protection with monitoring of mould protection time. Follow-up functions: Open or stop after 1 or 2 activations of mould protection
○ Extended mould protection (e.g. for spring loaded moulds). Freely-programmable start and end
■ Automatic ramp control during switch-over to a lower speed and during stopping of a movement function
■ Hydraulic ejector with quick release coupling is integrated into the clamping system
■ Hydraulic ejector: Forces and speeds, multiple stroke (up to 10) and ejector advanced at program end are programmable
○ Hydraulic ejector for simultaneous movements regulated with servo valve
■ Mould monitoring via ejector platen safety switch
○ Hydraulic core pulls with rapid connect coupling on the movable mould platen
○ Hydraulic core pull movement profiles programmable and regulated
○ Core holding pressure manually adjustable
○ Hydraulic core pull, simultaneous movements regulated

○ Unscrewing units for threaded cores with one or two directions of rotation for mounting on the mould, time or stroke controlled
■ Attachment option for robotic handling device
■ Enlarged guarding on opposite side to the operating side, open-top
○ Power-operated safety gate, programmable opening time
○ Mould blow unit with pressure relief valve)
○ Mechanical mould closing protection

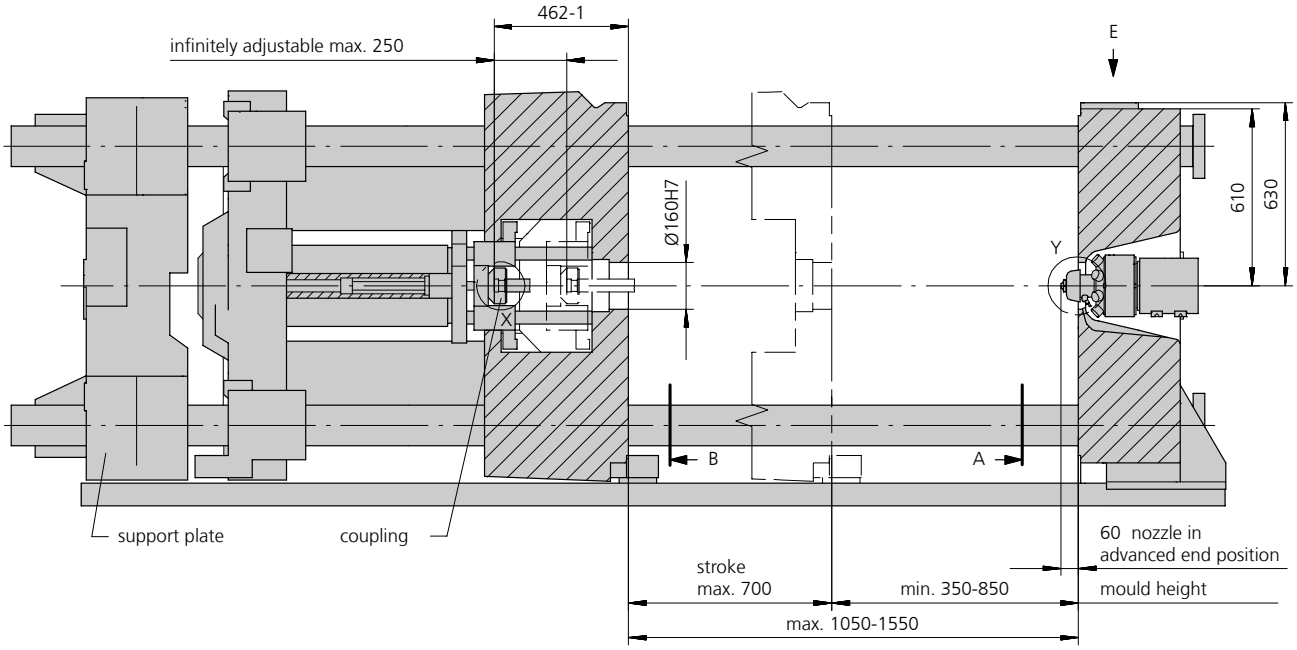
Injection unit
■ Central injection unit, can be re-positioned and swivelled as a complete assembly
■ Plasticising module with universal screw, central coupling and adaptive temperature regulation, available in different diameters
■ Thermoplastic cylinder with universal screw in wear resistant execution
○ Thermoplastic cylinder complete with very high wear resistant equipment
○ Thermoplast screws for special applications, e.g. self-dyeing (mixing section), PVC (shear-sensitive), POM, PA (semi-crystalline)
■ Programmable nozzle speeds (advance 2, retract 1 stage) and advance and retract delay
■ Monitored nozzle contact
■ Continuous nozzle contact during the complete cycle
■ Programmable nozzle contact force
○ Regulated nozzle contact force
■ Regulated injection speed profile, 5 steps programmable with injection delay
○ Hydraulic accumulator technology for very fast injection
○ Position-regulated screw (forced movement of injection axis)
○ Injection process control with external sensor
■ Measurement, display and monitoring of the injection time, switchover volume and switchover pressure
■ Switch over to holding pressure as a volume or time dependent function
■ Material cushion monitoring
■ Holding pressure profile regulated via polygon with 10 base points
■ Programmable delay times for all movements
■ Screw circumferential speed display
■ Positively and negatively programmable back pressure
■ Dosage time display with programmable dosage time monitoring
■ Dosage possible before or after nozzle retraction
■ Material decompression with programmable decompression speed
○ Dosage with electro-mechanical servo drive, energy-saving
■ Open nozzle with screw-in tip
○ Needle type shut off nozzle, spring force actuated
○ Needle type shut off nozzle, hydraulically actuated
■ Zone-dependent monitoring of heating circuits for continuity, short circuit and defective sensors
■ Temperature monitoring with release tolerance range and zone-dependent monitoring tolerance
○ Automatic temperature sink can be selected on error or after automatic switch off
■ Granulate feed zone temperature programmable and regulated with monitoring

Extended functions
■ Extended monitoring of the mechanical sequence of mould and machine for complex applications
■ Extended drive movements: Increase in number of movement stages, intermediate stop functions and extended locking force program
■ Production control with nominal temperature value control, programmable alarm cycles, programmable switch-on / switch-off sequences as well as time-controlled automatic switch-on/ off in second programming level for follow-up batch

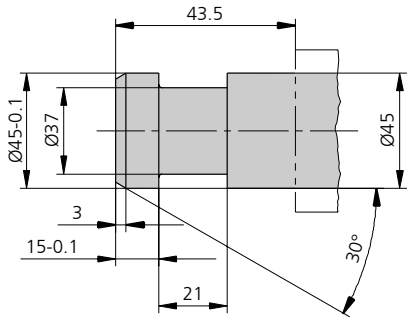
Regulated parameters
■ Control cabinet temperature
■ Hydraulic oil temperature
■ Plasticising cylinder temperature (adaptive)
■ Screw rotation speed
■ Injection flow or injection speed
■ Holding pressure
■ Movements and force of mould, nozzle and ejector
■ Ramp control sequence for mould, ejector and nozzle end position
■ Back pressure
○ Electrical mould heating circuits (adaptive)
○ Internal cavity pressure or screw chamber pressure (external sensor)
○ Nozzle contact force
○ Screw position
■ Granulate feed zone temperature
○ Ejection force for simultaneous movements

ARBURG robotic systems
○ MULTILIFT H: robotic system operating horizontally from the rear of the machine with servo-electric Z-axis (other axes driven pneumatically)
○ MULTILIFT V: versatile robotic system operating vertically from above with three servo-electrically driven axes (longitudinal and transverse installation possible)
○ MULTILIFT V SELECT: pre-configured robotic system operating vertically from above with three servo-electrically driven axes

■ Basic machine
○ Options

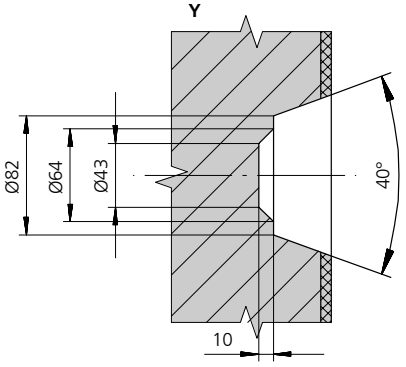


X



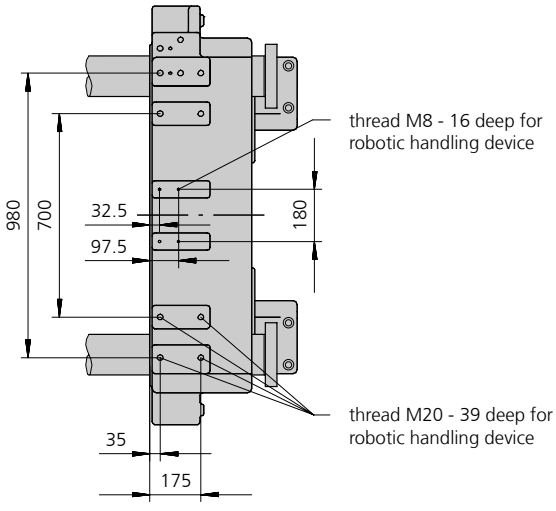
ejector bolt

Y



counter bore in the mould required
only for short sprue

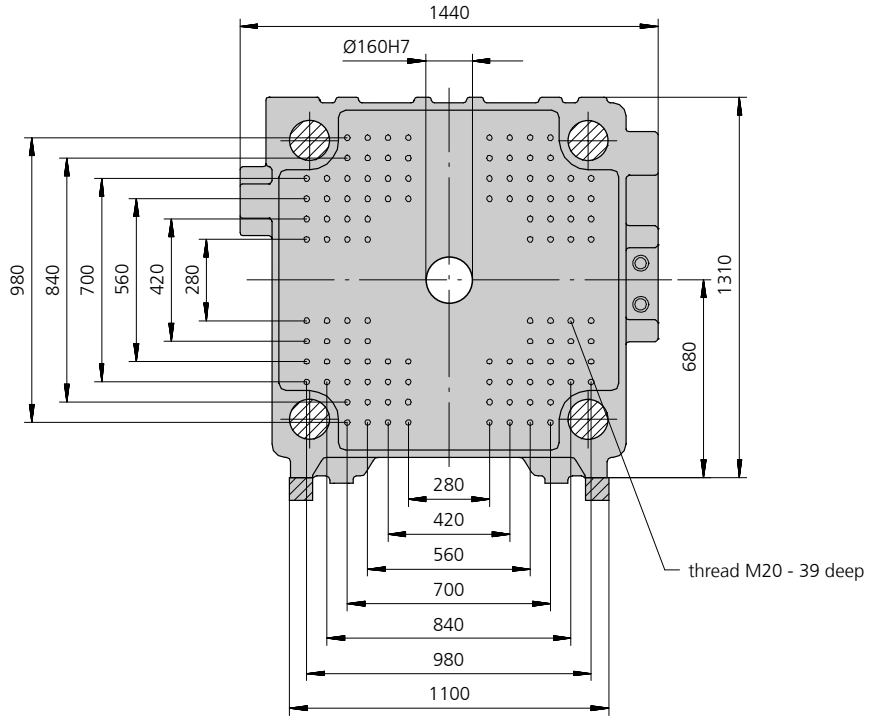
View E



Dimensions for thermoset moulds on request

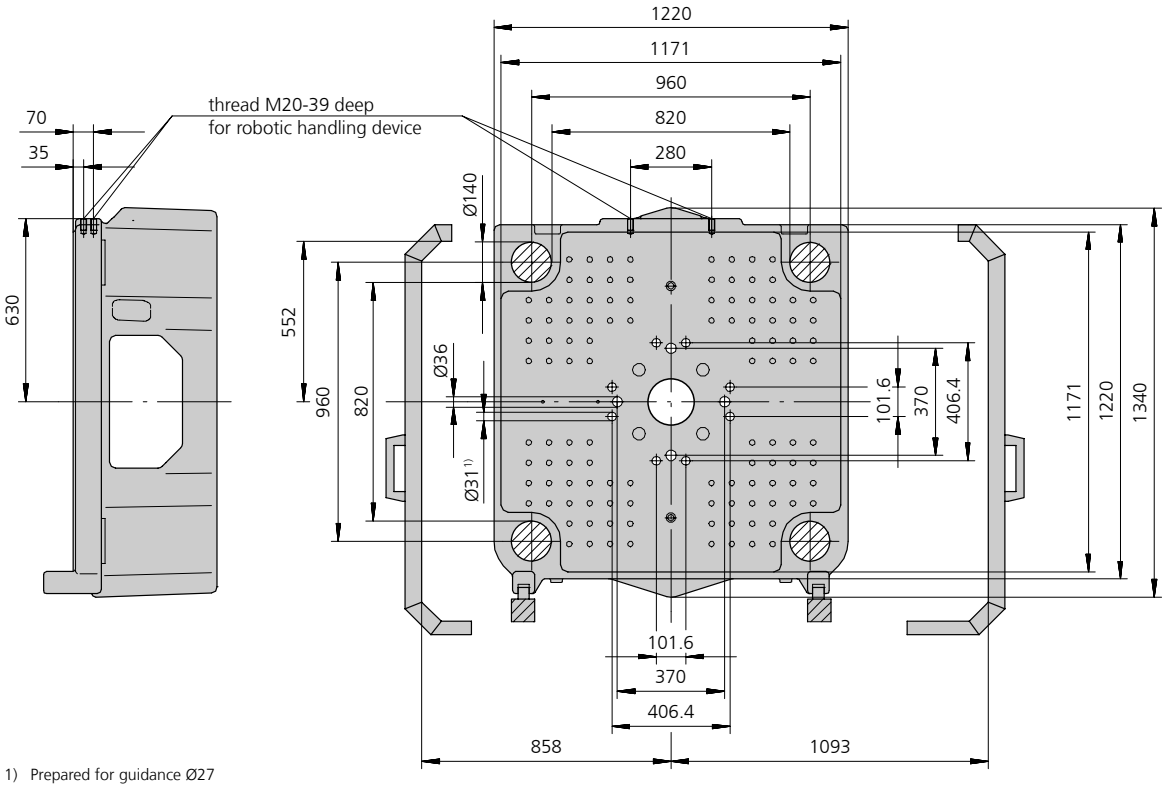
Fixed platen

View A



Movable platen

View B



1) Prepared for guidance Ø27

Maximum theoretical shot weights for the most important injection moulding materials (in grams)										
Injection units according to EUROMAP		**2100**			**3200**			**4600**		
Screw diameter	mm	60	70	80	70	80	90	80	90	100
Polystyrene	PS	723	984	1286	1125	1469	1860	1653	2092	2583
Styrene heteropolymerizates	SB	707	962	1256	1099	1436	1817	1615	2044	2523
	SAN, ABS[1)]	693	943	1231	1077	1407	1781	1583	2003	2473
Cellulose acetate	CA[1)]	814	1108	1447	1266	1654	2093	1860	2354	2907
Celluloseacetobutyrate	CAB[1)]	757	1030	1346	1177	1538	1946	1730	2189	2703
Polymethyl methacrylate	PMMA	747	1017	1329	1163	1518	1922	1708	2162	2669
Polyphenylene ether, mod.	PPE	671	914	1194	1044	1364	1726	1535	1942	2398
Polycarbonate	PC	760	1034	1351	1182	1544	1954	1737	2199	2714
Polysulphone	PSU	785	1069	1396	1222	1596	2019	1795	2272	2805
Polyamides	PA 6.6, PA 6[1)]	719	978	1278	1118	1461	1848	1643	2080	2568
	PA 6.10, PA 11[1)]	671	914	1194	1044	1364	1726	1535	1942	2398
Polyoximethylene (Polyacetal)	POM	893	1215	1588	1389	1814	2296	2041	2583	3189
Polyethylene terephthalate	PET	861	1172	1531	1340	1750	2215	1969	2492	3076
Polyethylene	PE-LD	546	744	971	850	1110	1405	1249	1580	1951
	PE-HD	564	768	1003	877	1146	1450	1289	1632	2015
Polypropylene	PP	576	784	1025	897	1171	1482	1317	1667	2058
Fluorpolymerides	FEP, PFA, PCTFE[1)]	1157	1575	2058	1800	2352	2976	2646	3348	4134
	ETFE	1015	1382	1805	1579	2063	2611	2321	2937	3626
Polyvinyl chloride	PVC-U	874	1190	1554	1360	1776	2247	1998	2528	3121
	PVC-P[1)]	808	1099	1436	1256	1641	2076	1846	2336	2884

1) average value

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