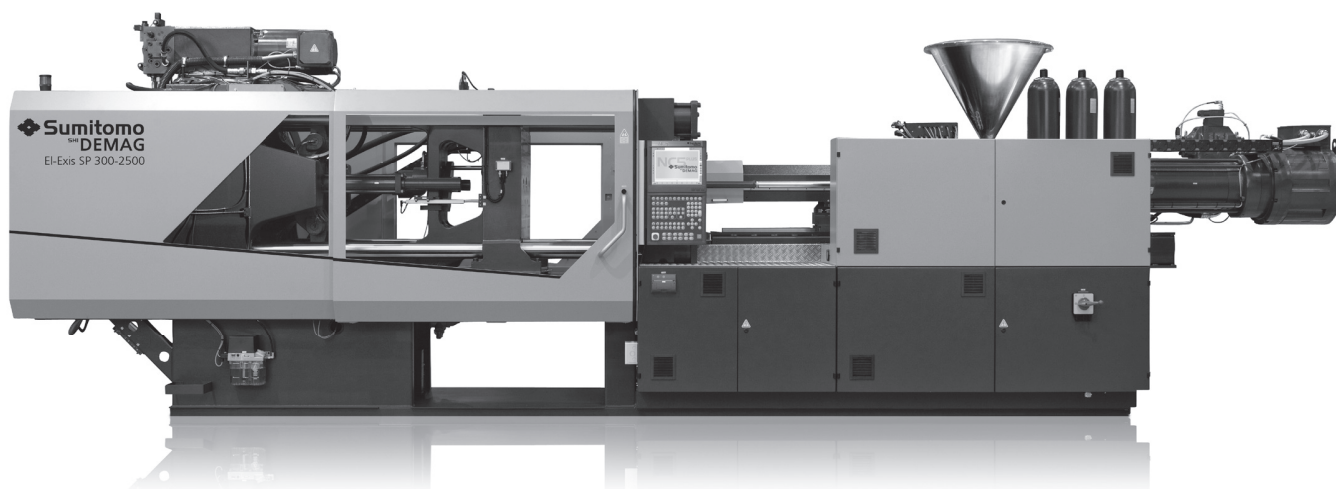


El-Exis SP incredibly fast

Technical description



Technical Data EI-Exis SP 450/920-2500

Sumitomo (SHI) Demag	
Model description	
International size description	
Clamping unit	
Clamping Force / Locking Force	[kN]
Max. mould opening stroke	[mm]
Mould height Min./WA211	[mm]
Max./enlarged mould height	[mm]
Daylight between platens max./enl.	[mm]
Mould platen (h x v)	[mm]
Distance between tie bars (h x v)	[mm]
Min. permissible mould diameter (k)	[mm]
Max mould weight / mov./ fixed	[kg]
Ejection stroke std./enlarged	[mm]
Ejection / Retraction force	[kN]
Injection unit	
Screw diameter	[mm]
Screw geometry	
L/D ratio	
Spec. injection pressure (up to 400°C)	[bar]
Cylinder head volume, max.	[cm³]
Max. shot weight (PS, PE*)	[g]
Max. rate of injection	
> With accumulator	[cm³/s]
Plasticising rate (PS, PE*)	[g/s]
Max. screw stroke	[mm]
Max. dist. nozz. retract/auto mode ³⁾	[mm]
Max. dist. nozz. retr./auto mode ZE372 ⁴⁾	[mm]
Max. nozzle dipping depth (WA650)	[mm]
Nozzle sealing force	[kN]
Number of heating zones	
General data	
Oil tank capacity ⁵⁾	[ltr.]
Installed electrical rating	
> Pump ⁶⁾	[~kW]
> Electric screw drive (WA313)	[~kW]
> Capacity clamp unit ⁷⁾	[~kW]
> Heating capacity of screw cylinder ⁷⁾	[~kW]
> Total capacity	[~kW]
Dry cycle time (Euromap 6) ⁸⁾	[s-mm]
Dry cycles with unlocking time	[s-mm]
Net weight (without oil) ⁹⁾	[~kg]
Transport dimensions (l x w x h)	[~m]
Electric drive projection max. (h)	[mm]

EI-Exis SP 450/920		
EI-Exis SP 450/920-2500		
4500-2500		
450/920		
4500/4950		
850		
360		
880/1110		
1730/1960		
1300x1300		
920x920		
420		
8700 ¹⁾ /4305/6700		
200		
106/46		
2500		
60		70
special ²⁾		special ²⁾
25		25
2420		2074
891		1212
650*		885*
2827		3848
88*		126*
	315	
895/704		541/541
1000/809		646/646
	20	
	110	
6		6
450/920-2500		
760		
45		
71		
83,7		
28,6		32,9
229,8		234,1
1,55-644		
1,80-644		
21153/6510/27663 ¹⁰⁾		
4,60/4,88 ¹¹⁾ x2,36/2,29 ¹¹⁾ x2,89		
0/616		75/616

The shown specifications reflect the state at the time of printing and refer to the standard configuration. We reserve the right to modify specifications.

Plasticising rate depends on processing conditions and material employed.

Electrical power supply refers to the standard configuration of the machine.

These parameters are based on a mains voltage 400 V. A deviating mains voltage will affect the machine parameters.

1) Increased mould weights for stack moulds on demand

2) Shear and mixing unit

3) Only valid for open nozzles (WA650). Carriage travel is shortened with shut-off or extended nozzles

4) Only valid for open nozzles (SVO). Carriage travel is shortened with shut-off or extended nozzles

5) First filling / operating

6) WA109

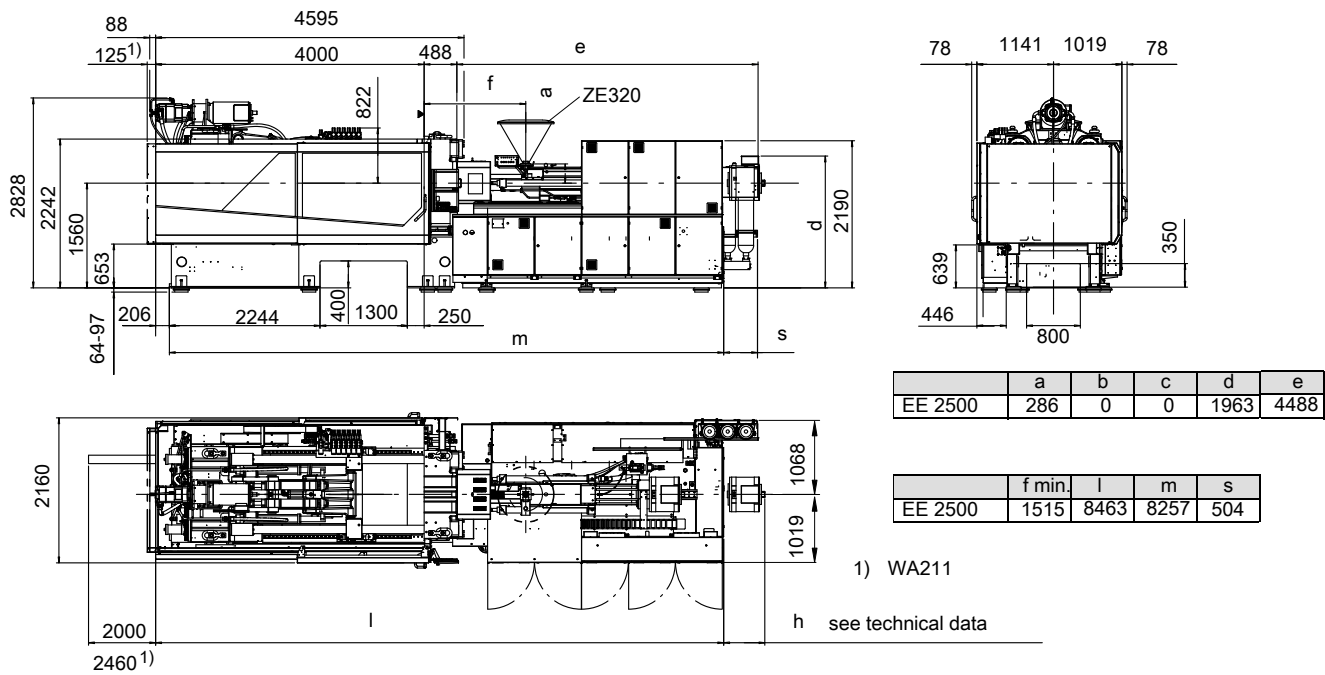
7) Parallel movement of all axis possible

8) Standard/twin pump (WA109)

9) The net weight of the machine may vary depending on equipment

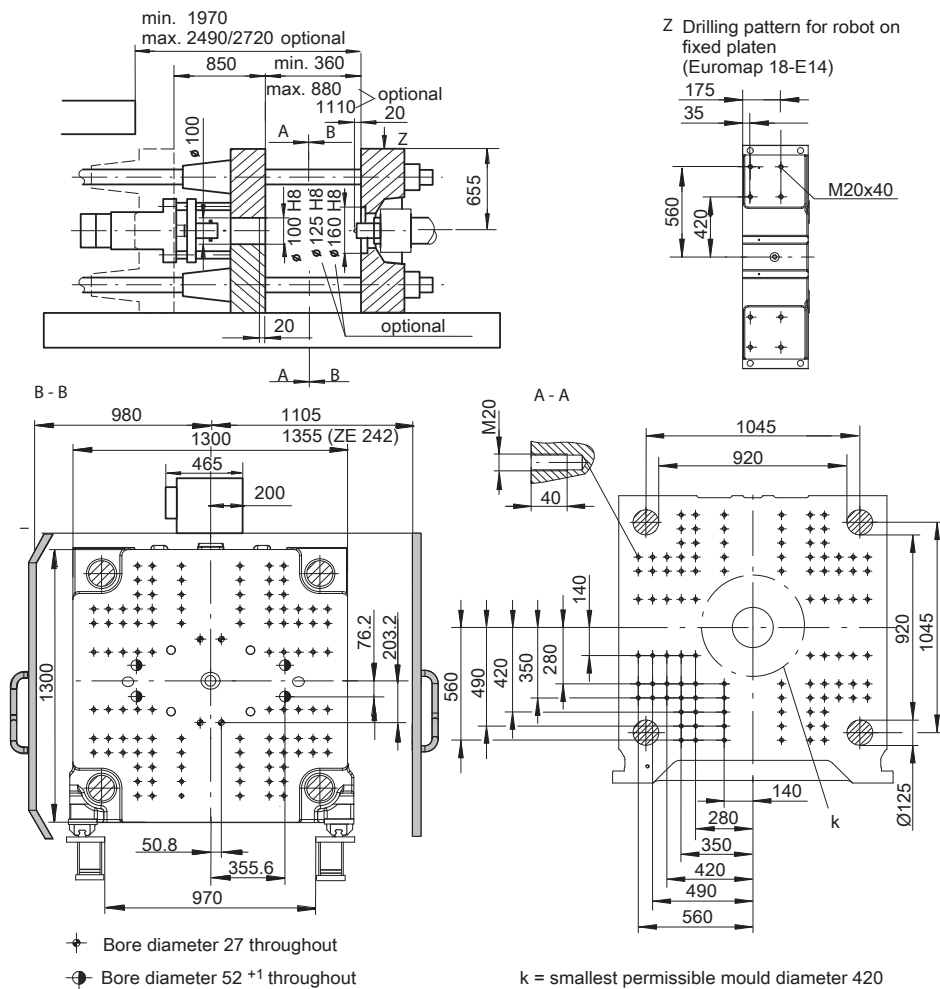
10) CU/IIU/total

11) CU/IIU

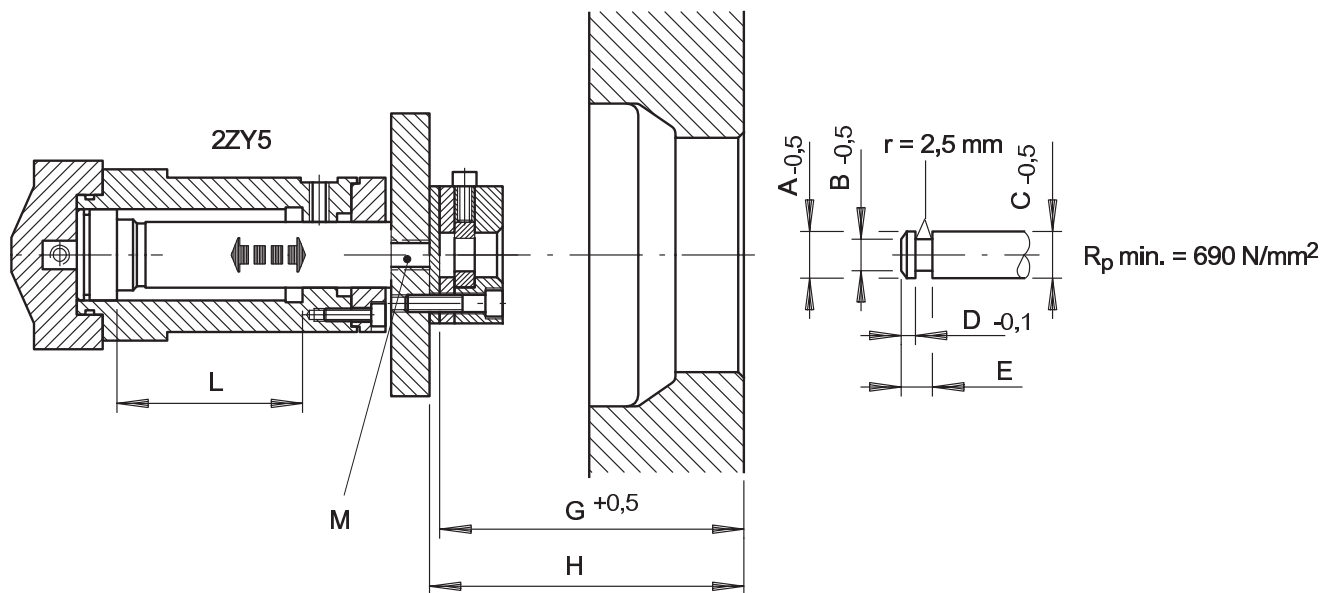


- Fixed platen
- a Material interface upper edge
- b Projection of injection unit support
- c Lower edge of injection unit support
- d Terminal box upper edge
- e Length of injection unit

- f Minimum distance mould platen to hopper centre
- h Max. motor projection
- l Length of machine without projections b, h or s
- m Length of machine bed
- s Hydraulic accumulator projection



Ejector - connector dimensions EL-EXIS SP



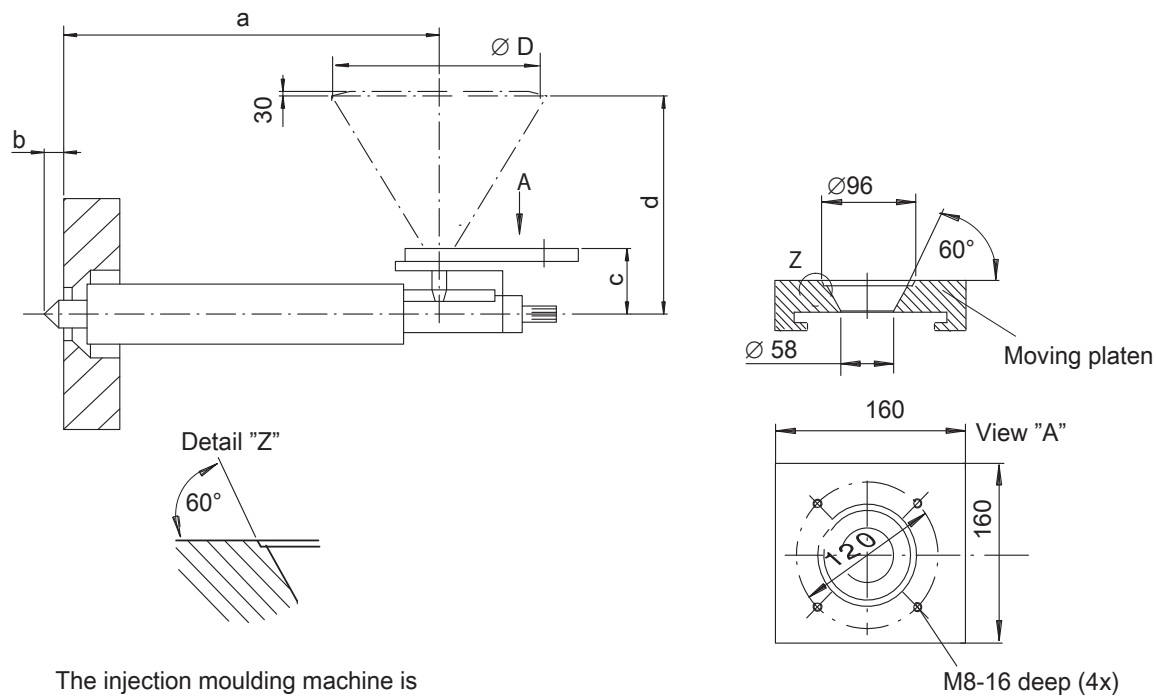
Ejector - connecting dimensions

Type of machine	Dimensions (mm)								
	A	B	C	D	E	G	H	L	M
El-Exis SP 150/500	24.5	14	24.5	7.8	20	327	335	100	M16x30
El-Exis SP 200/560	44.5	26	44.5	9.5	26	395	405	140	M16x35
El-Exis SP 250/630	44.5	26	44.5	9.5	26	435	445	140	M20x35
El-Exis SP 300/720	44.5	26	44.5	9.5	26	515	525	150	M20x35
El-Exis SP 350/820	44.5	26	44.5	9.5	26	572	582	180	M24x50
El-Exis SP 420/820	44.5	26	44.5	9.5	26	572	582	180	M24x50
El-Exis SP 450/920	44.5	26	44.5	9.5	26	600	610	200	M24x50
El-Exis SP 580/1020	44.5	26	44.5	9.5	26	655 (645*)	665 (655*)	220 (200*)	M24x50
El-Exis SP 750/1120	44.5	26	44.5	9.5	26	755.5	765	270 (200*)	M24x50

Coupling zone of ejector rods not hardened

*ZE2192

Connection dimensions for material conveyor EI-Exis SP IU475.....2500



The injection moulding machine is shown with ZE 320, material hopper

Injection unit	diameter [mm]	Dimension a [mm] with SVO		Dimension [mm]		
		a	b	c	d	D
EE 475	35	1039	20	212	732	723
	40	1185	20			
EE 675	40	1185	20	212	732	723
	45	1338	20			
EE 920	45	1338	20	222	742	723
	50	1489	20			
EE 1600	50	1485	20	257	877	825
	60	1770	20			
EE 2500	60	2064	20	287	907	825
	70	2064	20			

Equipment EI-Exis SP 150 ... 750

Clamping unit	150 ... 420	450 ... 750
2 - Short-lengtht 5-point double toggle clamping unit	●	●
22 - Ejector coupling to DPG	●	●
24 - Tie bars of clamping unit chromed	●	●
27 - Upper tiebar on non-operator side retractable	-	-
41 - Central ejector with multi-stroke and stroke, pressure and speed programmable	-	-
43 - Short/long stroke ejector	●	●
46 - Disforming clamping unit free prammable; movements parallel	●	●
94 - Five-stagedmould clamping- and four-staged mould-opening sequence	●	●
203 - Reduced centering diameter on fixed platen	●	●
2031 - Fixed mould mounting platen reinforced	○	○
204 - Mould mounting dimensions in accordance to Euromap, without side ejector plate	●	●
205 - Mould mounting dimensions in accordance to Euromap, with side ejector plate	○	○
207 - Mould mounting dimensions similar to SPI	○	○
2091 - Mould mounting dimensions similar to JIS	○	○
210 - Standard mould height	●	●
211 - Extended mould height	○	○
215 - Mould and ejector movements only when safety gate closed	●	●
2171 - Operating when safety gate is open on non-operator side	○	○
219 - Ejector programmable for simultaneous operation with mould movement	●	●
2192 - Reinforced ejector	○	-
224ff - 1-6 pneumatik 5/2 directional valves, mounted to moving or fixed platen and freely programmable	○	○
228 - Central service unit for pneumatic valves	○	○
229ff - Core puller with 1-6 circuits over proportional valve on mov. platen; Q-independent programmable; with unlockable check-valves against core-moving; incl. Manual pressure relief for core-puller 1-6 circuits on movable platen over one common valve	○	○
237 - Additional ports for 2 core pullers on fixed mould platen	○	○
242 - Cover widened on non-operator side	○	○
243 - Blow through for mould cooling lines; manual	○	○
244ff - Cooling water controller 4, 8, 12 circuits with temperature gauge	○	○
252 - Shut-off mould cooling, time programmable	●	●
282+283 - Pneumatical core puller 1 or 2-circuit via b/w valve on the movable platen including tubing	○	○
261 - Automatic mould height adjustment	○	○
18 - Moving platen supported by linear guides on machine base	●	●
264 - Manual clamping mechanism for tiebar retraction	○	○
266ff - Hot runner control (number of zones depending on machine size, max. 24)	○	○
275 - Hydraulic control for hot runner nozzles	○	○
276 - Pneumatic hot runner shut off control; 1x 5/2 directional valve	○	○
290 - Clamp force control with indication	●	●
293 - activeQ: Active mould safety via sensor with mould movement	●	●
2931 - ActiveQ: Active mould safety via sensor with mould movement \"mould open!\"	○	○
295 - Additional manual adjustable control button mould-open-position	○	○
299 - Central grease lubrication manual		
2991 - Central grease lubrication automatic	○	○

● Basic equipment

○ Additional price

The shown specifications reflect the state at the time of printing and refer to the standard configuration. We reserve the right to modify specifications.

Clamping unit		
92 - Regulated parameter for injection speed, pressure, ram pressure and screw speed programmable via profile	○	○
300 - Injection unit horizontal	●	●
313 - Electrical screw motor, frequency-controlled	●	●
320 - Hopper	○	○
322 - Hopper shutoff with emptying capability (with drill pattern for material conveyor)	●	●
341 - Temperature of funnel-zone-cooling regulated; maximum temperature 90°C tolerance	●	●
343 - Injection limitation profile (traverse with 10 stabilization points) with time monitoring	○	○
350 - Holding pressure switchover depending on hydraulic pressure with maximum value recording and pressure recording	●	●
352ff - Holding pressure switchover depending on cavity pressure with pressure recording for 1, 2, 4 pressure taker	○	○
357 - Holding pressure switchover over extern exit	○	○
355 - Back pressure programmable over screw-back stroke, polygon over 6 stabilisation points	●	●
370 - Melt temperature measuring (only for open nozzles)	○	○
372 - carriage position prepared for snorkel of stack molds		
380 - Nozzle sealing force with closed mould, programmable	●	●
385 - Nozzle system residual pressure with open mould , programmable	●	●
386 - Nozzle movement parallel to closing movement	●	●
388 - Screw position-controlled high speed	●	●
411 - Start injection stroke-dependent to mould movement and nozzle-system pressure over complete cycle	●	●

Electrical system	150 ... 420	450 ... 750
110 - Supply voltage 400 V+/-10 %/ 50 Hz; 3 Ph + N + PE	●	●
111-117 - Specific national supply voltage	○	○
121 - Separate power supply for both drive and heating	●	●
160 - Single-phase 230 V/50 Hz/ 10 A socket in specific national version, defeatable over main switch	●	●
1601 - Socket CEE 3Ph/400V/16A, defeatable over main switch	○	○
1602 - Socket CEE 3Ph/400V/32A, defeatable over main switch	○	○
161ff - Socket combination integrated, country-specific	○	○
186 - Digital and wearfree stroke measuring system ultrasonic, respectively high-resolution rotary sensors for injection and injection unit movement, clamp and ejector movement	●	●
4921 - Integrated mesuring of energy consumption and the costs per piece (activeEcon)	○	○

Functions	150 ... 420	450 ... 750
413 - Simultaneous stamping control	○	○
420 - Process data entry (PDE) with 100 % monitoring and statistics with graphics for of process parameters	●	●
421 - Extended intern saving option for PDE-data, mould-records and journal entry	○	○
422 - Overlay of parameters of consecutive cycles in multiple graphs on one screen for a convenient evaluation of the process stability	●	●
424 - Pallet control; uses 2 seperate to ordering programmable input/output	○	○
425 - Storing program for extern storage of statistic data	●	●
427 - Temperatur reduction over switchpoint with timing in manual mode activatable	●	●
428 - Dry cycle without heat via program switch	●	●
429 - Preselection part counter forstartup reject parts after every break of automatic-mode	●	●

Functions	150 ... 420	450 ... 750
430 - Start up program in 3 stages; including back pressure	●	●
440 - Switch-on program / switch-off program with purging	●	●
445 - Flexible movement sequence for the injection unit without/with multiple movements from ejector and core pullers	●	●
446 - Flexible movement of the injection unit	●	●
460 -Printer program for automatic printing of screens, change report, alarms, and process data	○	○
461 - Change reason	●	●
462 - Event journal	○	○
471 - factory data capture integrated in machine control	○	○
480 - Help function; integrated control indication over control	●	●
481 - Additional operating language	○	○
486 - Ergosupport: program for faster fault recognition on basic setting/process optimisation and for extended monitoring of process sequence and deviations	○	○
488 - Service page	●	●
489 - Analysis of cycle time	●	●
493 - Two freely programmable sides	●	●
494 - Additional two freely programable sides	○	○
495 - Integration of extern user interfaces in operator panel with VNC-client (Active Remote)	○	○

Interfaces	150 ... 420	450 ... 750
450 - Inputs / outputs freely programmable; 3 inputs and 3 outputs	○	○
454 - Inputs / outputs freely programmable; 6 inputs and 6 outputs	○	○
510 - Socket for second nozzle heater band	○	○
523 - 50-pin handling device interface conf. to Euromap 67 (VDMA)	○	○
529 - Interface for handling device, version Asia	○	○
528 - Adapter cable for Euromap 67 (50-pole) to Euromap 12 (32-pole) and SPI AN-116 (32-pole)	○	○
532 - Additional controller nozzle 1 circuit	○	○
540 - Interfaces for ejector limit switch in mould, side action with LS and product detection	○	○
541 - Interface for mould protection (ejector plate safety)	●	●
542 - Interface for component ejection monitoring	○	○
544 - Interface for mould safety, side core safety mechanism	○	○
546 - Interface for screw-back unit	○	○
555 - Interface for mould temperature indication, 2 circuits	○	○
552 - CAN-Bus interface for temperature controllers (2 or 4 circuits), Demag-specific signal	○	○
556 - 20 mA interface (TTY-V24) for up to 6 units temperature controllers	○	○
562 - Interface machine status	○	○
563 - Data interface for main computer systems to Euromap 63 and SPI AN-142	○	○
571 - WC5 - DPG World Connect; Remote maintenance and control of the machine	●	●

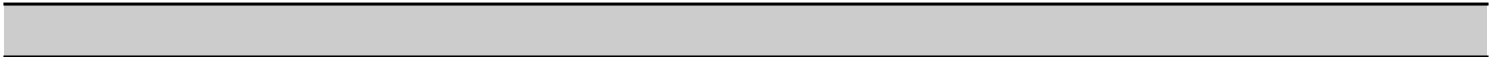
General	150 ... 420	450 ... 750
10 - Injection moulding machine with CE-declaration of conformity (without periphery and automation), safety devices according to EN201 USA: machine and safety devices according to ANSI	●	●
12 - Main memory for: fast injection speed, core-, ejector- and injection unit movement	●	●
14 - Oil pre-heating	●	●
15 - Ports for external oil cleaning	●	●

General	150 ... 420	450 ... 750
17 - Two staged filter control	●	●
23 - Clamp force adjustable at Ergocontrol control, including indication of actual valve	●	●
50 - Interface for handling device, mechanical according to VDMA 24466/Euromap 18	●	●
52 - Fault indication: free allocable output	●	●
67 - DPG-Interface mechanic (drilling pattern) for material conveyor	●	●
71 - USB-Device	●	●
80 - Interface for extern printer (hardcopy)	●	●
95 - Machine setup modus (reduced speed)	●	●
96 - Alarm management (alarms + indications)	●	●
97 - Setpoint entry switch-over to physical values (bar, cm ³ , mm/s)	●	●
98 - Process control	●	●
122 - Increase of machine bed of 100 mm	○	-
123 - Kill switch on operator side	●	●
126 - Data display colored	●	●
135 - Oil cooling (cooling water supply up to 25°C)	●	●
137 - Integrated oil cleaning unit for microfibre bypass filtration	●	●
139 - Water supply for mould- and machine-cooling separated	●	●
136 - Oil cooling unit with increased cooling capacity	●	●
170 - Fault indication by flashing lamp	●	●
171 - Fault indication by acoustic alarm	●	●
180 - Anti-vibration mounts	●	●
705 - QS-switch with control; 2 directions	●	●
790 - Integrated printer including driver software	●	●
802 - ErgoCheck: Dokumentation of machine operative readiness locally	●	●
870 - PC-program for visualisation mould records	●	●

Plastification	150 ... 420	450 ... 750
60 - Cylinder change manual	●	●
61 - Central connector for cylinder heating and thermo sensor	●	●
68 - Operating range of screw cylinder up to 400°C	●	●
65 - Each temperature control circuit with setpoint deviation control and thermocouple break protection; barrel operating temperatures up to 450°C, with pressure limitation above 400°C	●	●
66 - Fast cylinder change with main plugs für heating and thermo indicator and with automatic cylinder detection	●	●
601 - Energy-saving thermal insulation of the plasticizing	○	○
610 - Wear and corrosion resistant universal thermoplastic screw, nitrided barrel	●	●
611ff - High-performance plastication unit; customised	●	●
640 - Flow back barrier, three-part ring-version	●	●
642 - Flow back barrier, ball-version	○	○
650 - Open nozzle	●	●
665 - Pneumatic shut off nozzle incl. control	●	●

All data and information in this prospectus have been compiled with great care. However, we are unable to guarantee its correctness. Furthermore we indicate that individual illustrations and information may deviate from the actual delivery condition of the machine.

This image shows a single page of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. At the very top, there is a solid grey header bar. The rest of the page is white with thin, light-grey horizontal lines. There is no handwriting or other markings on the page.



A series of horizontal lines for writing notes, starting below the grey bar and extending to the bottom of the page.

Practical values of melt correction factor for use in calculation of shot weight for some common plastics.	
Material	Melt correction factor
HD-PE	0,75
LD-PE	0,73
PP	0,73
PS	0,91
SB	0,91
ABS	0,91
SAN	0,91
PA	0,93
PA 6 +30 % GF	1,14
PC	0,97
PC/ABS	0,94
PMMA	0,97
POM	1,15
PET	1,08
PBT	1,08
CA	1,03
CAB	0,98
PVC-w	1,05
PVC-h	1,15
shot weight = melt correction faktor x swept volume	
The melt correction faktor takes into account the change in volume at process temperature and also includes a factor for the flow characteristics of the shut off device on the end of the screw.	

Certified according to VDA 6.4



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