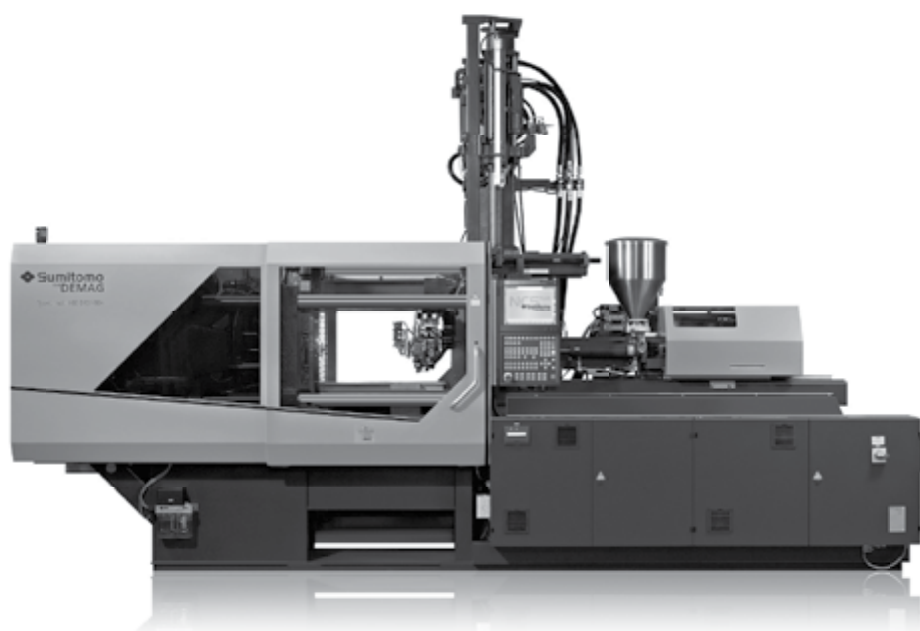


# Systemec multi highly flexible

**Technical description**  
An addition to the Systemec basic machine



## MODULARITY:

Designed on the basic Systec machine 120/470, 160/520, 210/580 420/820, 500/920, 650/1020 and 800/1120. First injection unit horizontal (H), second injection unit in vertical (V) , “Backpack” (R) or L-position.

IU	EE1 (H)	EE2 (V)	EE2 (R)	EE2 (L)
120t	200/310/430	35**/80/200	-	-
160t	310/430/600	35**/80/200/430	80/200	80/200/430
210t	430/600/840	35**/80/200/430	80/200	80/200/430
280t	600/840/1450	35**/80/200/430	80/200	80/200/430
350t	600/840/1450	35**/80/200/430	200/430	80/200/430
420t	840/1450/2300	35**/80/200/430/600**	80**/200/430/600**	80**/200/430
500t	2300/3300/6400	200**/430**/600**	430/600	430/600
650t	3300/6400/9500	200**/430**/600**	430/600	430/600
800t	6400/9500	200**/430**/600**	430/600	430/600
1000t	6400/9500	200**/430**/600**	430**/600**	430**/600**

\*\* On request

## Systec Multi - Technical equipment

### Standard machine

The Systec Multi is based on the standard machine in Performance configuration level. Therewith the following options are included in the standard machine:

- WA 109 - Pump combination for parallel movements (also for EE2)
- WA 131 - Injection with servo valve (also for EE2)
- WA 211 - Mould height increased
- WA 219 - Ejection movement with control valve
- ZE 293 - Active mould protection
- ZE 386 - Nozzle movement with control valve (also for EE2)
- ZE 445 - Flexible movements CU
- ZE 446 - Flexible movements IU

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.

The shown specifications reflect the state at the time of printing. 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.

Injection Unit		35			80			200		
Screw diameter	mm	14	18	22	18	22	25	25	30	35
L/D ratio		20	20	20	20	20	20	20	20	20
Injection pressure (up to 400°C)	bar	2755	2346	1570	2868	2061	1596	2800	1995	1466
Cylinder head volume, max.	cm <sup>3</sup>	14	23	34	23	42	54	61	106	144
Max. shot weight (PS)	g	12	20	30	20	37	48	54	94	128
Rate of injection (PS)-Systec 120, 160, 210	cm <sup>3</sup> /s	37	61	92	68	101	130	72	104	142
Rate of injection (PS)-Systec 420	cm <sup>3</sup> /s	37	61	92	68	101	130	112	161	219
Plasticising (PS)-Systec 120, 160, 210										
Motor 1 (at 120bar)	g/s	2	6	10	6	9	16	11	18	24
Motor 2 (at 120bar)	g/s	2	6	10	5	8	13	8	14	19
Plasticising (PS)-Systec 420										
Motor 1 (at 120bar)	g/s	2	6	10	6	9	16	15	25	35
Motor 2 (at 120bar)	g/s	2	6	10	5	8	13	12	20	28
Max. screw stroke	mm	90	90	90	90	110	110	125	150	150
Electrical output plasticising unit	kW	4	5	5,1	5	5,1	5,7	5,7	8,3	9,4
Nozzle sealing	kN	30			30			30		
Hopper capacity	l	20			20			20		
Net weight										
EEV module	kg	500			600			650		
EER module	kg	850			850			950		
EER module	kg	950			950			1000		

For multi-mode-operation refer to the values of the standard pump IU1 (WA105) of the standard machine. For all other dimensions besides the total height (H) please refer to the the appropriate clamping units of the technical description of the Systec.

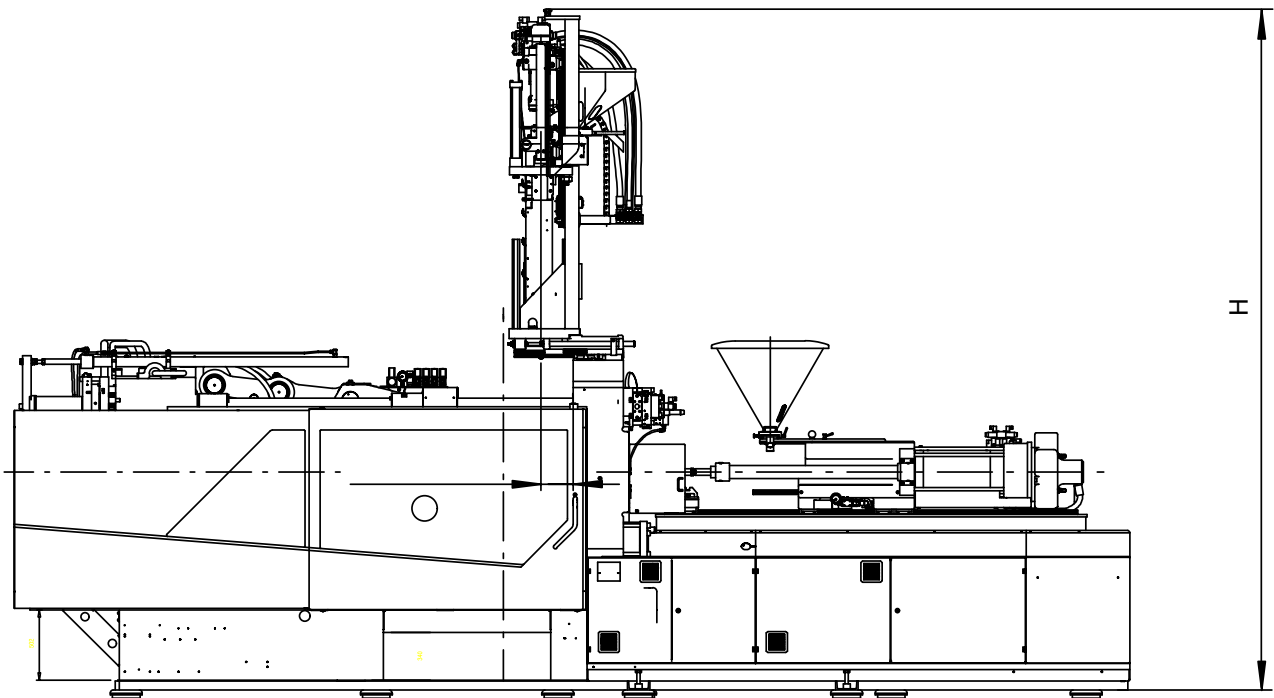
Injection Unit		430			600		
Screw diameter	mm	35	40	45	40	45	50
L/D ratio		20	20	20	20	20	20
Injection pressure (up to 400°C)	bar	2644	2025	1600	2423	1914	1550
Cylinder head volume, max.	cm <sup>3</sup>	168	231	293	231	323	399
Max. shot weight (PS)	g	153	210	266	210	294	363
Rate of injection (PS)-Systec 120, 160, 210	cm <sup>3</sup> /s	77	101	127	-	-	-
Rate of injection (PS)-Systec 420	cm <sup>3</sup> /s	122	159	201	-	-	-
Rate of injection (PS)-Systec 500, 650, 800	cm <sup>3</sup> /s	158	206	260	172	218	269
Plasticising (PS)-Systec 120, 160, 210	cm <sup>3</sup> /s						
Motor 1 (at 120bar)	g/s	18	26	32	-	-	-
Motor 2 (at 120bar)	g/s	14	21	26	-	-	-
Plasticising (PS)-Systec 420							
Motor 1 (at 120bar)	g/s	28	41	51	-	-	-
Motor 2 (at 120bar)	g/s	22	33	41	-	-	-
Plasticising (PS)-Systec 500, 650, 800							
Motor 1 (at 120bar)	g/s	28	41	52	23	29	42
Motor 2 (at 120bar)	g/s	22	33	42	18	23	33
Max. screw stroke	mm	195	184	184	184	203	203
Electrical output plasticising unit	kW	9,4	11,1	11,3	11,1	11,3	15,7
Nozzle sealing	kN	30			30		
Hopper capacity	l	20			20		
Net weight							
EEV module	kg	800			-		
EER module	kg	1250			1350		
EER module	kg	1700			1800		

For multi-mode operation refer to the values of the standard pump IU1 (WA105) of the standard machine. For all other dimensions besides the total height (H) please refer to the the appropriate clamping units of the technical description of the Systec.

## Heights of the V-Unit

		Height (H) in [mm] <sup>+</sup>		
SE \ EEV	80	200	430	
120	3266	SC30:3486 SC35:3606		
160	3456	3785	4136	
210	3530	3859	4210	
420	3885	4214	4565	

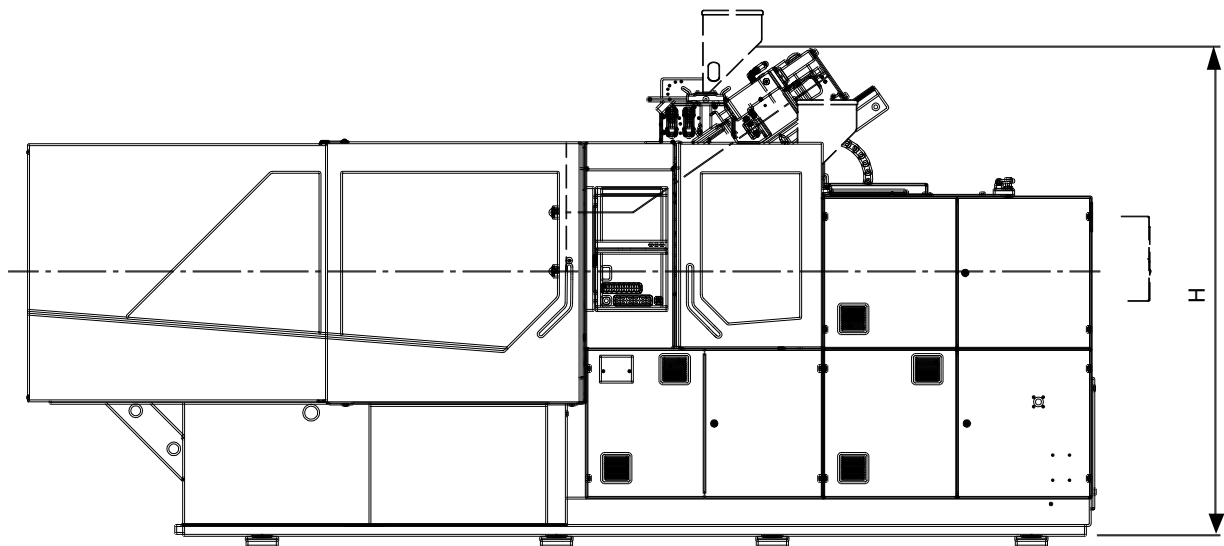
<sup>+</sup> all measures without base (64mm - 97mm)



## Heights of the R-Unit

		Heights (H) in [mm] †			
SE \ EER	80	200	430	600	
160	2800	2800	-	-	
210	2850	2850	-	-	
420	-	3050	3300	-	
500	-	-	3300	3600	
650	-	-	3300	3600	
800	-	-	3300	3600	

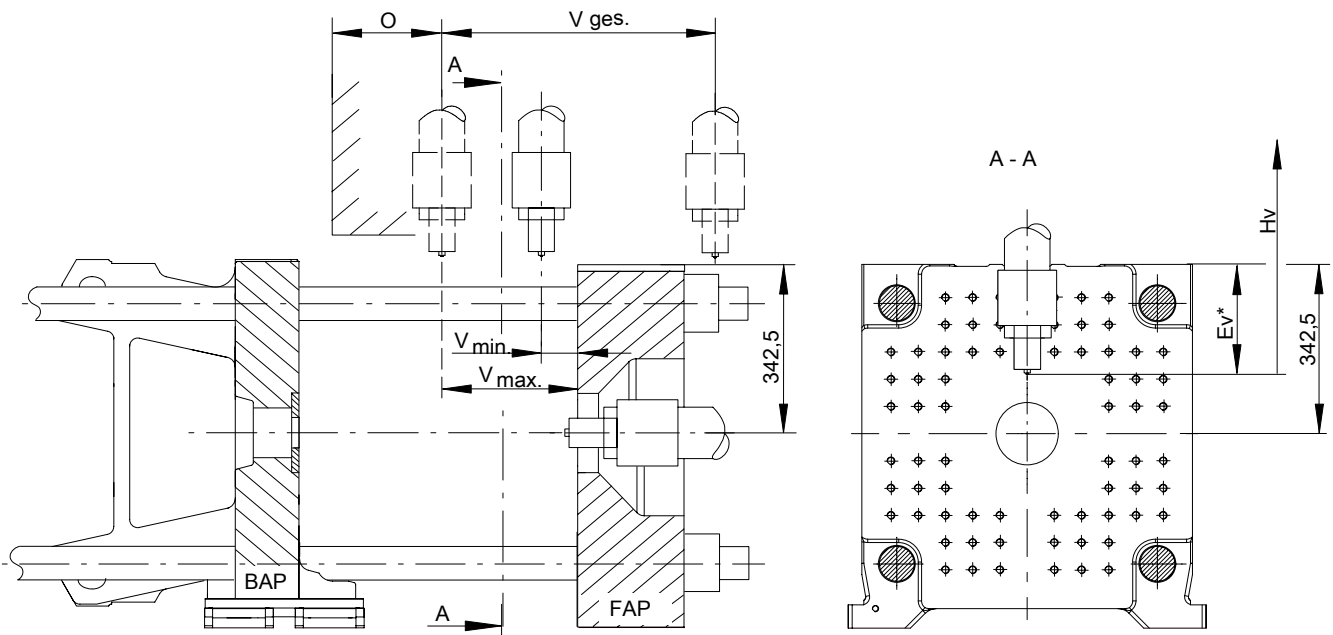
† all measures without base (64mm - 97mm)



## Range of nozzle adjustment for EEV units

Type of machine	Systec 120/470						
EEV	SC-Ø [mm]	EV * [mm]	HV [mm]	Vmin [mm]	Vmax [mm]	Vges [mm]	O [mm]
35v	14	95	340	90	315	525	210
	18	225					
	22	300					
80v	18	130	345	90	315	525	210
	22	205					
	25	265					
200v	25	210	480	90	315	525	210
	30	340					
	35	360					

\* all measures for WA650 (standard open nozzle) only



$V_{min.}$  = min. distance to fixed platen  
 $V_{max.}$  = max. distance to fixed platen  
 $V_{ges.}$  = total range of adjustment  
 O = Space restrictions

EV = dipping depth  
 Hv = nozzle stroke  
 B = upper edge of fixed platen to axle of injection

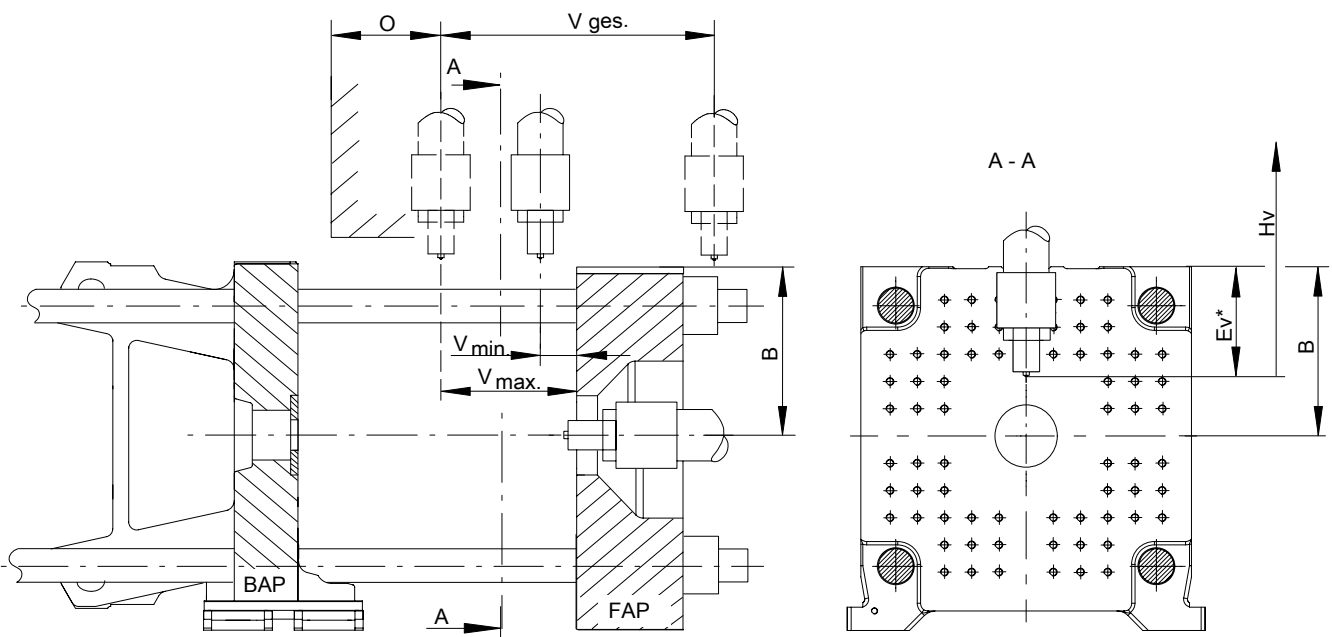
## Range of nozzle adjustment for EEV units

Type of machine	Systec 160/520 - 1000/1400						
EEV	SC-Ø [mm]	EV * [mm]	HV [mm]	Vmin [mm]	Vmax [mm]	Vges [mm]	O [mm]
35v	14	210	505	90	230	430	210
	18	340					
	22	360					
80v	18	245	505	90	230	430	210
	22	315					
	25	380					
200v	25	190	505	90	230	430	210
	30	315					
	35	340					
430v	35	180	470	90	230	430	230
	40	295		100			
	45	310					
600v	40	130	470	90	230	430	230
	45	290		100			
	50	415					

\* all measures for WA650 (standard open nozzle) only

### Take note modularity

Type of machine	Systec 160/520	Systec 210/580	Systec 280/630	Systec 350/720	Systec 420/820	Systec 500/920	Systec 650/1020	Systec 800/1120	Systec 1000/1400
B [mm]	390	435	480	530	605	665	735	810	835



$V_{min.}$  = min. distance to fixed platen  
 $V_{max.}$  = max. distance to fixed platen  
 $V_{ges.}$  = total range of adjustment  
 $O$  = Space restrictions

$EV$  = dipping depth  
 $Hv$  = nozzle stroke  
 $B$  = upper edge of fixed platen to axle of injection



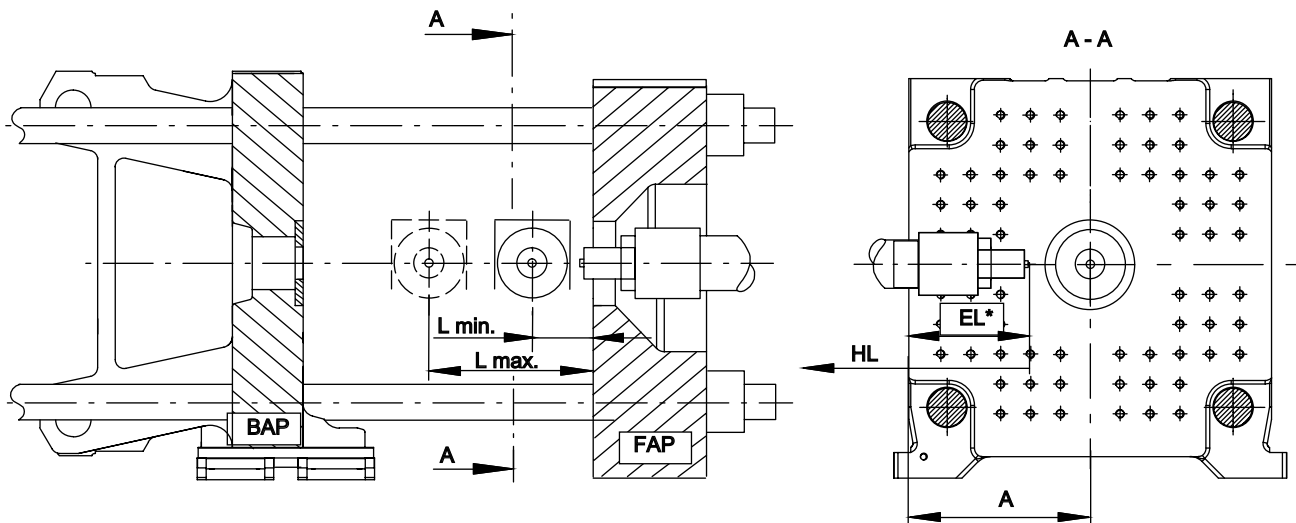
## Range of nozzle adjustment for EEL units

Type of machine	Systec 160/520 - 1000/1400				
EEL	SC-Ø [mm]	EL * [mm]	HL [mm]	Lmin [mm]	Lmax [mm]
80I	18	160	550	85	300
	22	230			
	25	290			
200I	25	290	550	85	300
	30	410		95	
	35	455			
430I	35	210	300	95	300
	40	300			
	45	300			
600I	40	220	400	95	400
	45	360			
	50	360			

\* all measures for WA650 (standard open nozzle) only

**Take note modularity**

Type of machine	Systec 160/520	Systec 210/580	Systec 280/580	Systec 350/620	Systec 420/820	Systec 500/920	Systec 650/1020	Systec 800/1120	Systec 1000/1400
A [mm]	335	420	475	520	600	660	725	810	975



L min. = min. distance to fixed platen  
L max. = max. distance to fixed platen

EL = dipping depth  
HL = nozzle stroke  
A = upper edge of fixed platen to axle of injection

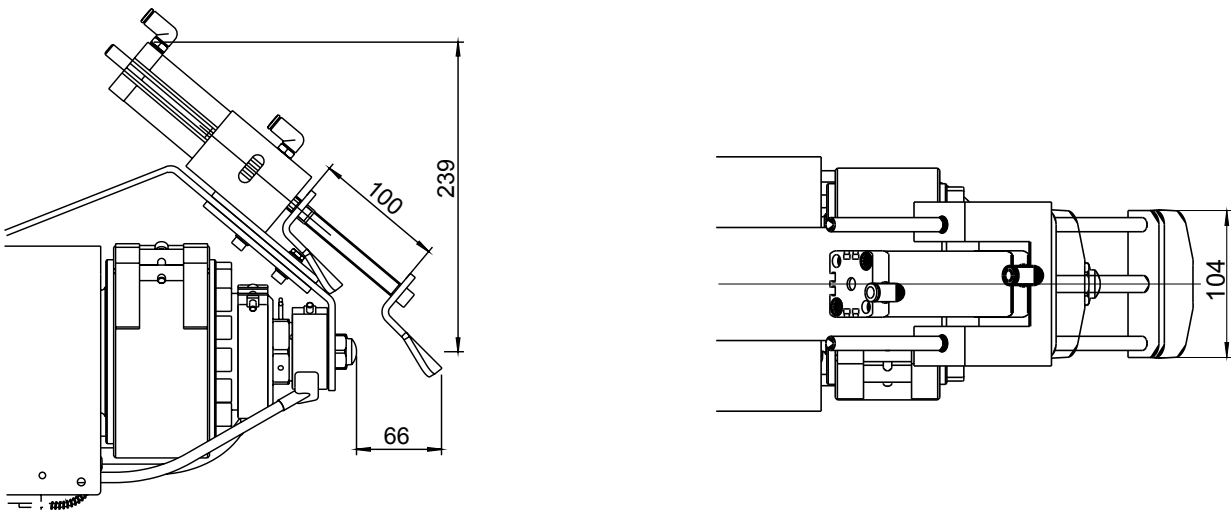
## Nozzle seal EEL

To avoid injuries of the operating personnel, according to EN 201, injection units in L-position must not be able to inject molten plastic while the operator side safety gate of the mould area is opened.

### Standard:

Our standard solution moves a deflection plate in front of the nozzle.

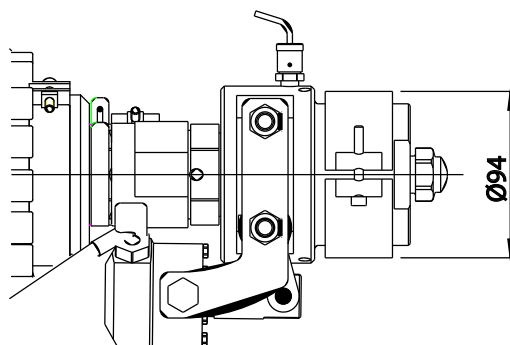
To open the operator side safety gate the L-injection unit must be retracted and the deflection plate must be activated. It is not possible to open the safety gate with contacting nozzle.



### Option (SO):

Opening the operator side safety gate with nozzle contact is only possible with a safety-shut-off nozzle. The shut off-nozzle is approx. 140mm longer than the SVO.

Not qualified for glass fibre reinforced plastics.

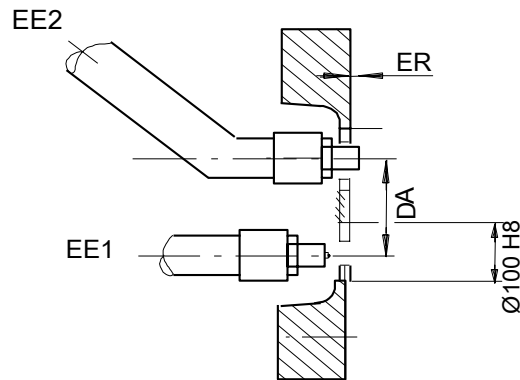


## Range of nozzle adjustment for the EER units

EER	SC-Ø [mm]	ER * [mm]	160t	210t	280t	350t	420t	500t	650t	800t	1000t
80	18	20	X	X	X	X	X**	-	-	-	-
	22										
	25										
200	25	20	X	X	X	X	X	-	-	-	-
	30										
	35										
430	35	20	-	-	X	X	X	X	X	X	X**
	40										
	45										
600	40	20	-	-	-	-	X**	X	X	X	X**
	45										
	50										

\* all measures for SVO only

\*\*on request

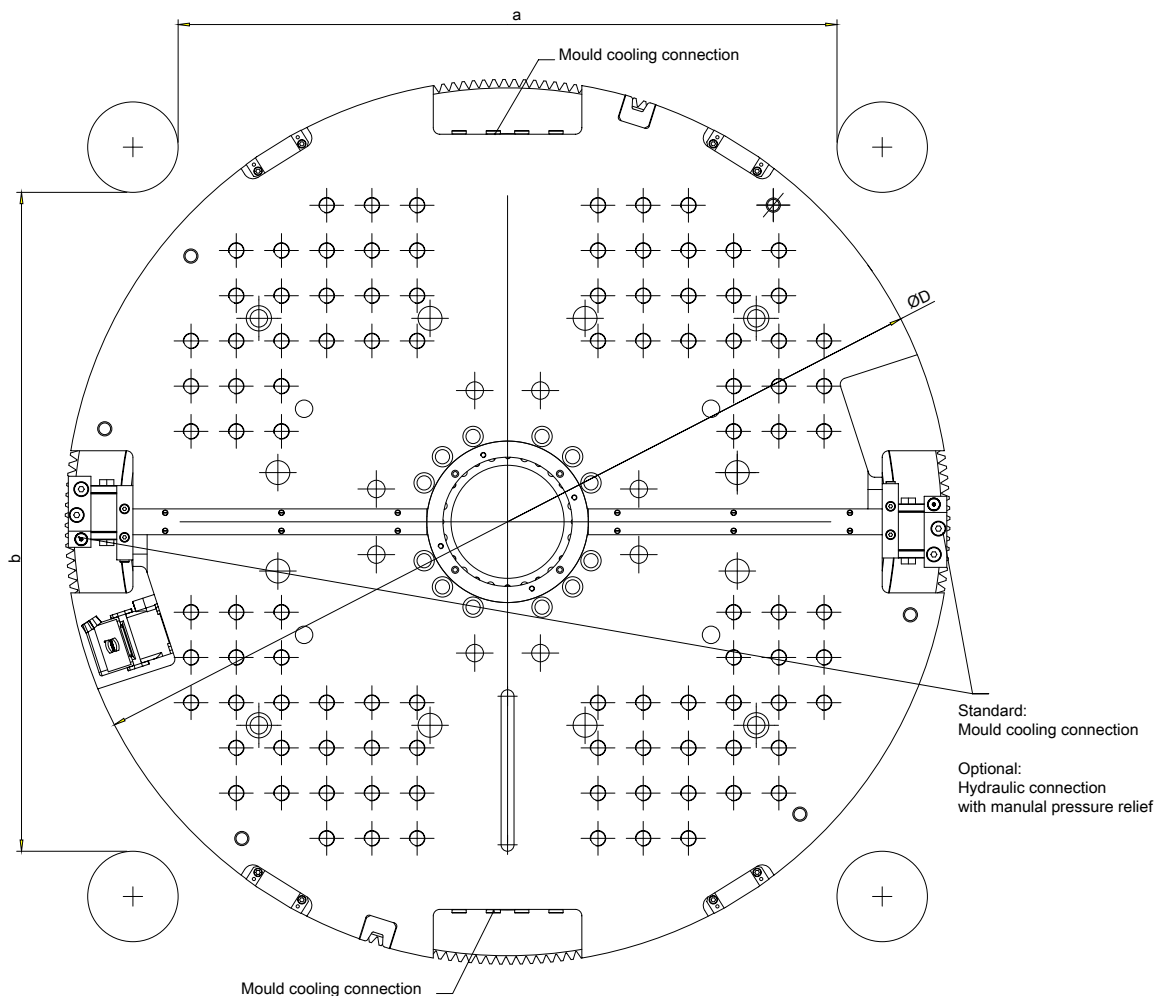


$D_A$  depending of the screw diameter (SC-Ø) of EE1

SC-Ø EE1		$D_A$ [mm]	
		Systemec 120 - 420	Systemec 500 - 800
30	Nozzle centre-to-centre distance $D_A$ 160mm convertible $D_A$ 150mm		
35			
40			
45			
50			
60	Nozzle centre-to-centre distance $D_A$ 160mm		300
70			
80			
95	-		
110			
130			

## Integrated turntable - hydraulic

Size of machine		420	500	650	800	1000	1300/1500	2000
Distance between tie bars a x b	mm	820x820	920x920	1020x1020	1120x1120	1400/1120	1500x1250	1800x1500
<b>Geometry / Weights</b>								
Thickness of turntable with sliding disk	mm	120	120	125	130	145	170	220
Diameter of turn table D	mm	1170	1170	1370	1510	1700	1900	2250
Max. permissible mould weight on movable platen	Kg	3000	4400	5400	6700	8200	10100	11500
<b>Media transmission</b>								
Max. media temperature (rotary distributor)		120 °C						
6 water circuits		Standard	Standard	Standard	Standard	-	-	-
8 water circuits		-	-	-	-	Standard	Standard	Standard
4 water circuits, 2 core pullers		on request	on request	on request	on request	-	-	-
6 water circuits, 2 core pullers		-	-	-	-	on request	on request	on request
4 water circuits, 4 core pullers		-	-	-	-	on request	on request	on request
Water tubing (max. 90°C)		Standard						
Water tubing (max. 120°C)		on request						





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



Sumitomo (SHI) Demag Plastics Machinery GmbH  
 info-dpde@dpg.com  
 www.sumitomo-shi-demag.eu