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- Photographs of machines and details may differ from actual products.
- Specifications subject to change without notice for performance improvement.

Sumitomo SHI DEMAG

SE-EV-A-SHR

Ultra High Speed and Ultra High Response Injection Molding Machine

Lineup

- SE50EV-A-SHR (500kN)
- SE100EV-A-SHR (1000kN)
- SE130EV-A-SHR (1300kN)
- SE180EV-A-SHR (1800kN)
- SE220EV-A-SHR (2200kN)
- SE280EV-A-SHR (2800kN)
- SE350EV-A-SHR (3500kN)
- SE450EV-A-SHR (4500kN)

Our products have acquired ISO9001 certification.

www.shi.co.jp/plastics/

B026EN02-2203JD

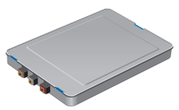
Sumitomo Heavy Industries, Ltd.

Towards products that require large projected areas, thin-walls, high precision, and multiple cavities

Examples of products

Communication equipment housing

Speaker cone



Automotive battery part

Medical component

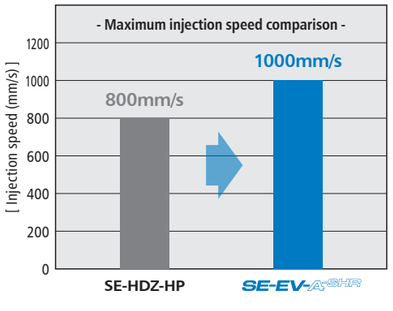
Light guide plate

Can be achieved by improving filling speed and through high response acceleration and deceleration

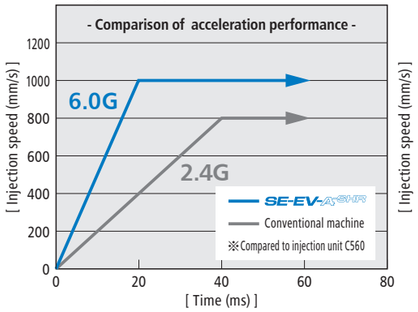
SHR solution

By shortening the screw stroke required to reach the setting speed, the followability relative to the set conditions is improved. Since the deceleration capabilities are also similarly improved, it is possible to maintain high fill speeds until right before the target position. This helps minimize molding defects seen in thin-walled molding.

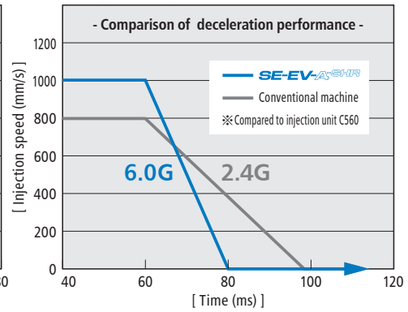
Fast speed filling



High response acceleration

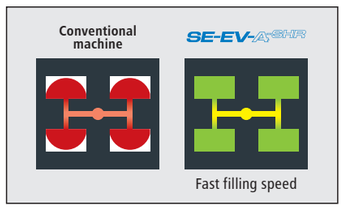


High response deceleration



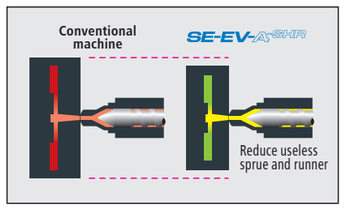
Effects Multiple cavities

With enhanced injection speed, before the melt flow solidifies, the narrow cavity can be filled.



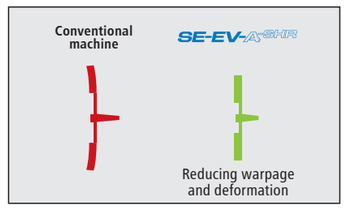
Effects Shorten the sprue and the runner

Because the target speed range is reached in a shorter time, the sprue and runner sizes can be reduced.



Effects Reducing warpage and deformation

With improved deceleration capability, it can maintain high speed until right before the target position. Warpage and deformation can be reduced.



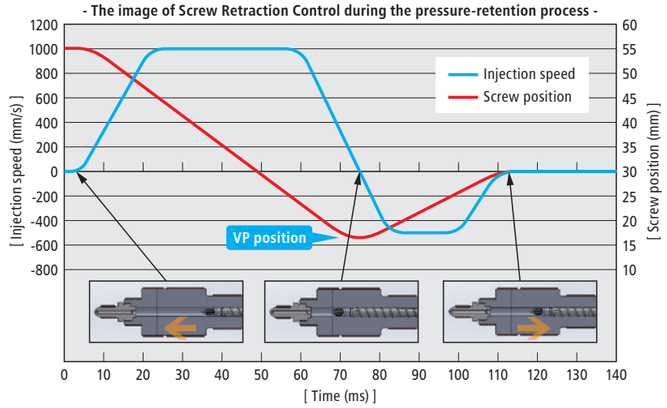
Reducing molding defects

Screw Retraction Control during the pressure-retention process

Pulling the screw after the VP position to control the flow front (flow tip). As the pressure is reduced, it is possible to optimize thickness and reduce Flash near the gate.

PAT. pend. in Japan

- The image of Screw Retraction Control during the pressure-retention process -

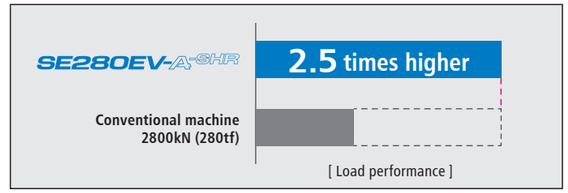


Increase load performance by 2.5 times

Clamp motor

It can withstand higher loads and supports a wider range of molding products.

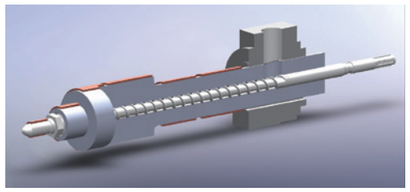
- Load performance comparison -



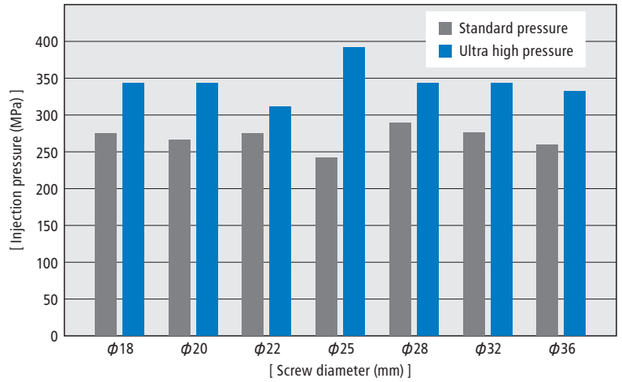
Broad line-up

Ultra high pressure screw unit

The extra high pressure screw has a 30% increase in maximum injection pressure compared to the standard specification. Line-up from ϕ 18 to ϕ 36.



- Screw line-up -



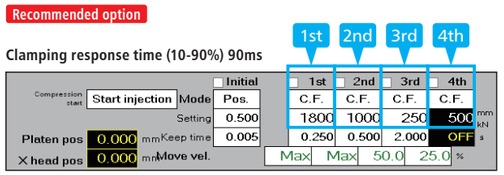
Refined multiple stages control

Compression molding

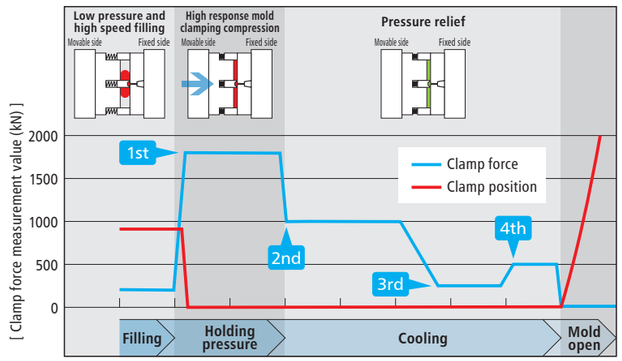
It's capable of utilizing multi stage settings for both position and clamp force to best match the thin-walled or thick-walled products. Adjusting for warpage or proper product release as well as reducing birefringence to increase product quality and productivity is possible.

Recommended option

Clamping response time (10-90%) 90ms



- The image of the compression molding operation -



Main Specifications

Item	Unit	SE50EV-A-SHR	SE100EV-A-SHR
■Clamp unit			
Clamp system		Double toggle (5 points)	Double toggle (5 points)
Clamp force max.	kN	500	1000
Clearance between tie bars (W x H)	mm	360 x 360	460 x 460
Platen size (W x H)	mm	500 x 500	650 x 650
Daylight	mm	600	800
(When mold thickness extension 50 mm is selected)		(650)	(850)
(When mold thickness extension 100 mm is selected)		—	(900)
Mold opening stroke	mm	250	350
Platen speed max.	mm/s	1200	1200
(When high response high load compression device is selected)		—	—
Mold thickness (Min. - Max.)	mm	160〜350	180〜450
(When mold thickness extension 50 mm is selected)		(160〜400)	(180〜500)
(When mold thickness extension 100 mm is selected)		—	(180〜550)
Locating ring diameter	mm	ϕ60	ϕ100
(When ϕ60 locating ring is selected)		—	—
Ejector system		Motor driven type (5 points)	Motor driven type (5 points)
Ejector force	kN	21	32
(When ejector compression device is selected)		(49)	(49)
(When ejector force power up is selected)		—	(59)
Ejector speed max.	mm/s	333	333
(When ejector compression device is selected)		(250)	(333)
(When ejector force power up is selected)		—	(333)
Ejector stroke	mm	70	100
(When ejector stroke extension is selected)		(100)	(150)
(When ejector compression device is selected)		(60)	(80)
(When ejector force power up is selected)		—	(80)

■Injection unit

Plasticizing capacity		C65				C110						C360				
		S				S						M				
Screw spec		Ultra high pressure spec	Standard pressure spec			Ultra high pressure spec			Standard pressure spec			Ultra high pressure spec	Standard pressure spec			
Screw diameter	mm	18	18	20	22	18	20	22	22	25	28	25	28	28	32	36
Injection pressure max. *1,*2	MPa	343	274	265	220	343	343	311	274	241	192	392	343	289	275	218
Holding pressure max. *1,*2	MPa	274	219	212	176	274	274	248	219	192	153	313	274	231	220	174
Theoretical injection capacity	cm^3	18	18	22	27	25	31	38	38	49	61	49	61	61	80	101
Injection mass (GPPS)	g	17	17	21	26	24	30	36	36	47	59	47	59	59	77	97
Plasticizing rate *3,*4	kg/h	7	10	13	18	7	10	13	18	26	37	18	26	37	53	76
Injection rate	cm^3/s	254	254	314	380	254	314	380	380	490	615	490	615	615	804	1017
Screw stroke	mm	70				100						100				
Injection speed max.	mm/s	1000				1000						1000				
Screw rotating speed max.	min^{-1}	400				400						400				
Number of temperature control zone		4	4		5	4	4	5	5	5	5	5	5	5	5	5
Heater capacity	kW	3.7	3.2	3.6	3.9	3.7	4.0	4.2	3.8	4.2	4.8	6.2	7.0	6.5	7.5	8.4
Nozzle contact force	kN	14				14						43				
Injection unit moving stroke	mm	250				230〜320						320				
Protrusion	mm	30				30						30	45			
Hopper capacity (When the standard hopper selected)	L	(15)				(15)						(30)				

■Machine dimensions and mass

Machine dimensions (L x W x H) *5	mm	3682 x 1113 x 1575	4568 x 1226 x 1691	4718 x 1226 x 1691
(When mold thickness extension 50 mm is selected)		(3732 x 1113 x 1575)	(4668 x 1226 x 1691)	(4818 x 1226 x 1691)
(When mold thickness extension 100 mm is selected)		—	(4668 x 1226 x 1691)	(4818 x 1226 x 1691)
(When high response compression molding for LGP is selected)		—	—	—
Machine mass	t	2.9	4.4	4.6

*1 The max. injection pressure and max. hold pressure are calculated values and represent machine output, not resin pressure.
*2 The max. injection pressure and max. hold pressure are not sustained pressure levels.
*3 The plasticizing rate is shown for a machine equipped with SD Screw.
*4 50% of the value in the table is the threshold value when the SL Screw is selected.
*5 The total length of the machine is to the front end of the injection unit when mounting the screw of the smallest diameter.

- Specifications are subject to change without notice for performance improvement.
- The mass of the machine may vary depending on what options are installed.

Item	Unit	SE130EV-A-SHR	SE180EV-A-SHR
■Clamp unit			
Clamp system		Double toggle (5 points)	Double toggle (5 points)
Clamp force max.	kN	1300	1800
Clearance between tie bars (W x H)	mm	510 x 510	560 x 560
Platen size (W x H)	mm	720 x 720	800 x 795
Daylight	mm	850	950
(When mold thickness extension 50 mm is selected)		(900)	(1000)
(When mold thickness extension 100 mm is selected)		(950)	(1050)
Mold opening stroke	mm	400	450
Platen speed max.	mm/s	1200	1200
(When high response high load compression device is selected)		—	(1200)
Mold thickness (Min. - Max.)	mm	180〜450	200〜500
(When mold thickness extension 50 mm is selected)		(180〜500)	(200〜550)
(When mold thickness extension 100 mm is selected)		(180〜550)	(200〜600)
Locating ring diameter	mm	ϕ100	ϕ100
(When ϕ60 locating ring is selected)		—	(ϕ60)
Ejector system		Motor driven type (5 points)	Motor driven type (5 points)
Ejector force	kN	32	45
(When ejector compression device is selected)		(49)	(49)
(When ejector force power up is selected)		(59)	(59)
Ejector speed max.	mm/s	333	333
(When ejector compression device is selected)		(333)	(333)
(When ejector force power up is selected)		(333)	(333)
Ejector stroke	mm	100	120
(When ejector stroke extension is selected)		(150)	(150)
(When ejector compression device is selected)		(80)	(100)
(When ejector force power up is selected)		(80)	(100)

■Injection unit

Plasticizing capacity		C360					C360					C560				
		M					M					M				
Screw spec		Ultra high pressure spec		Standard pressure spec			Ultra high pressure spec		Standard pressure spec			Ultra high pressure spec		Standard pressure spec		
Screw diameter	mm	25	28	28	32	36	25	28	28	32	36	32	36	36	40	45
Injection pressure max. *1,*2	MPa	392	343	289	275	218	392	343	289	275	218	343	332	259	269	223
Holding pressure max. *1,*2	MPa	313	274	231	220	174	313	274	231	220	174	274	265	207	215	178
Theoretical injection capacity	cm^3	49	61	61	80	101	49	61	61	80	101	128	162	162	201	254
Injection mass (GPPS)	g	47	59	59	77	97	47	59	59	77	97	123	156	156	193	244
Plasticizing rate *3,*4	kg/h	18	26	37	53	76	18	26	37	53	76	37	53	76	101	136
Injection rate	cm^3/s	490	615	615	804	1017	490	615	615	804	1017	804	1017	1017	1256	1590
Screw stroke	mm	100					100					160				
Injection speed max.	mm/s	1000					1000					1000				
Screw rotating speed max.	min^{-1}	400					400					400				
Number of temperature control zone		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Heater capacity	kW	6.2	7.0	6.5	7.5	8.4	6.2	7.0	6.6	7.6	8.5	7.9	8.4	8.5	10.3	11.5
Nozzle contact force	kN	43					43					43				
Injection unit moving stroke	mm	240〜335					350〜380					380				
Protrusion	mm	30		45			30		45			30		65		
Hopper capacity (When the standard hopper selected)	L	(30)					(30)					(50)				

■Machine dimensions and mass

Machine dimensions (L x W x H) *5	mm	4836 x 1326 x 1750	5198 x 1396 x 1831	5555 x 1396 x 1831
(When mold thickness extension 50 mm is selected)		(4936 x 1326 x 1750)	(5298 x 1396 x 1831)	(5655 x 1396 x 1831)
(When mold thickness extension 100 mm is selected)		(4936 x 1326 x 1750)	(5298 x 1396 x 1831)	(5655 x 1396 x 1831)
(When high response compression molding for LGP is selected)		—	(5658 x 1396 x 1831)	—
Machine mass	t	5.5	7.1	7.5

Main Specifications

■Clamp unit

Item	Unit	SE220EV-A-SHR	SE280EV-A-SHR
Clamp system		Double toggle (5 points)	Double toggle (5 points)
Clamp force max.	kN	2200	2800
Clearance between tie bars (W x H)	mm	660 x 660	730 x 730
Platen size (W x H)	mm	930 x 930	1020 x 1020
Daylight	mm	1175	1275
(When mold thickness extension 100 mm is selected)		(1275)	(1375)
(When mold thickness extension 200 mm is selected)		(1375)	(1475)
Mold opening stroke	mm	575	625
Platen speed max.	mm/s	1349	1298
(When high response high load compression device is selected)		(1079)	(1032)
Mold thickness (Min. - Max.)	mm	200～600	300～650
(When mold thickness extension 100 mm is selected)		(200～700)	(300～750)
(When mold thickness extension 200 mm is selected)		(200～800)	(300～850)
Locating ring diameter	mm	ϕ100	ϕ100
Ejector ejection points		13 points	13 points
Ejector force	kN	60	60
(When ejector force power up is selected)		(100)	(100)
Ejector speed max.	mm/s	267	267
Ejector stroke	mm	220	220
Mold weight max.	kg	2800	3800
(Moving side max.)		(1850)	(2500)

■Injection unit

Plasticizing capacity		C560					C560				
		M					M				
Screw spec		Ultra high pressure spec		Standard pressure spec			Ultra high pressure spec		Standard pressure spec		
Screw diameter	mm	32	36	36	40	45	32	36	36	40	45
Injection pressure max. *1,*2	MPa	343	332	259	269	223	343	332	259	269	223
Holding pressure max. *1,*2	MPa	274	266	207	215	178	274	266	207	215	178
Theoretical injection capacity	cm^3	128	162	162	201	254	128	162	162	201	254
Injection mass (GPPS)	g	123	156	156	193	244	123	156	156	193	244
Plasticizing rate *3	kg/h	37	53	76	101	136	37	53	76	101	136
Injection rate	cm^3/s	804	1017	1017	1256	1590	804	1017	1017	1256	1590
Screw stroke	mm	160					160				
Injection speed max.	mm/s	1000					1000				
Screw rotating speed max.	min^{-1}	400					400				
Number of temperature control zone		5	6	5			5	6	5		
Heater capacity	kW	7.9	8.4	8.5	10.3	11.5	7.9	8.4	8.5	10.3	11.5
Nozzle contact force	kN	43					43				
Injection unit moving stroke	mm	395					420				
Protrusion	mm	30		65			30		65		
Hopper capacity (When the standard hopper selected)	L	(50)					(50)				

■Machine dimensions and mass

Machine dimensions (L x W x H) *4	mm	6466 x 1832 x 2025	7236 x 1972 x 2059
(When mold thickness extension 100 mm is selected)		(6566 x 1832 x 2025)	(7336 x 1972 x 2059)
(When mold thickness extension 200 mm is selected)		(6666 x 1832 x 2025)	(7436 x 1972 x 2059)
(Toggle upper dust cover [fixed type] selected)		(6466 x 1832 x 2100)	(7236 x 1972 x 2145)
(Toggle upper dust cover [sliding type] selected)		(6466 x 1832 x 2245)	(7236 x 1972 x 2285)
(Safety door wide expansion selected)		(6466 x 1932 x 2025)	(7236 x 2072 x 2059)
(High response and Heavy duty Compression Molding selected)		(6566 x 1832 x 2025)	(7336 x 1972 x 2059)
Machine mass	t	11.8	14.5

*1 The max. injection pressure and max. hold pressure are calculated values and represent machine output, not resin pressure.
*2 The max. injection pressure and max. hold pressure are not sustained pressure levels.
*3 The plasticizing rate is shown for a machine equipped with SD Screw.
*4 The total length of the machine is to the front end of the injection unit when mounting the screw of the smallest diameter.

- Specifications are subject to change without notice for performance improvement.
- The mass of the machine may vary depending on what options are installed.

■Clamp unit

Item	Unit	SE350EV-A-SHR	SE450EV-A-SHR
Clamp system		Double toggle (5 points)	Double toggle (5 points)
Clamp force max.	kN	3500	4500
Clearance between tie bars (W x H)	mm	830 x 830	920 x 920
Platen size (W x H)	mm	1140 x 1140	1300 x 1300
Daylight	mm	1425	1625
(When mold thickness extension 100 mm is selected)		(1525)	(1725)
(When mold thickness extension 200 mm is selected)		(1625)	(1825)
Mold opening stroke	mm	725	825
Platen speed max.	mm/s	1346	1109
(When high response high load compression device is selected)		(1032)	(1109)
Mold thickness (Min. - Max.)	mm	350～700	350～800
(When mold thickness extension 100 mm is selected)		(350～800)	(350～900)
(When mold thickness extension 200 mm is selected)		(350～900)	(350～1000)
Locating ring diameter	mm	ϕ100	ϕ100
Ejector ejection points		13 points	21 points
Ejector force	kN	60	100
(When ejector force power up is selected)		(100)	(150)
Ejector speed max.	mm/s	267	267
Ejector stroke	mm	220	220
Mold weight max.	kg	5200	7500
(Moving side max.)		(3450)	(5000)

■Injection unit

Plasticizing capacity		C560					C560				
		M					M				
Screw spec		Ultra high pressure spec		Standard pressure spec			Ultra high pressure spec		Standard pressure spec		
Screw diameter	mm	32	36	36	40	45	32	36	36	40	45
Injection pressure max. *1,*2	MPa	343	332	259	269	223	343	332	259	269	223
Holding pressure max. *1,*2	MPa	274	266	207	215	178	274	266	207	215	178
Theoretical injection capacity	cm^3	128	162	162	201	254	128	162	162	201	254
Injection mass (GPPS)	g	123	156	156	193	244	123	156	156	193	244
Plasticizing rate *3	kg/h	37	53	76	101	136	37	53	76	101	136
Injection rate	cm^3/s	804	1017	1017	1256	1590	804	1017	1017	1256	1590
Screw stroke	mm	160					160				
Injection speed max.	mm/s	1000					1000				
Screw rotating speed max.	min^{-1}	400					400				
Number of temperature control zone		5	6	5			5	6	5		
Heater capacity	kW	7.9	8.4	8.5	10.3	11.5	7.9	8.4	8.5	10.3	11.5
Nozzle contact force	kN	43					43				
Injection unit moving stroke	mm	450					495				
Protrusion	mm	30		65			30		65		
Hopper capacity (When the standard hopper selected)	L	(50)					(50)				

■Machine dimensions and mass

Machine dimensions (L x W x H) *4	mm	7446 x 2072 x 2192	8361 x 2252 x 2292
(When mold thickness extension 100 mm is selected)		(7546 x 2072 x 2192)	(8461 x 2252 x 2292)
(When mold thickness extension 200 mm is selected)		(7646 x 2072 x 2192)	(8561 x 2252 x 2292)
(Toggle upper dust cover [fixed type] selected)		(7446 x 2072 x 2225)	(8361 x 2252 x 2330)
(Toggle upper dust cover [sliding type] selected)		(7446 x 2072 x 2375)	(8361 x 2252 x 2465)
(Safety door wide expansion selected)		(7446 x 2172 x 2192)	(8361 x 2352 x 2292)
(High response and Heavy duty Compression Molding selected)		(7686 x 2072 x 2192)	(8571 x 2252 x 2292)
Machine mass	t	16.5	23.7