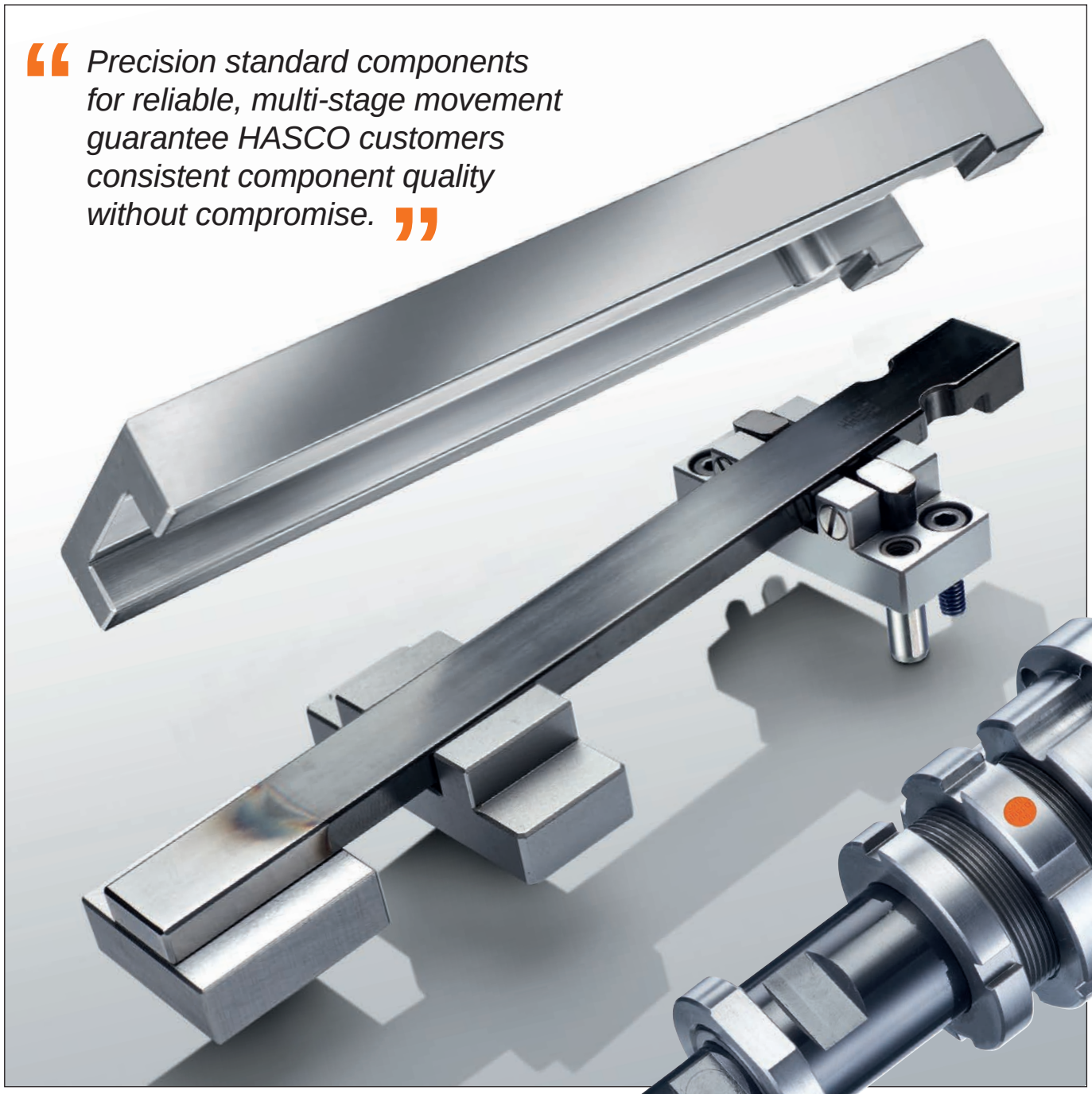
HASCO

Enabling with System.

Know how 2go

Multi-stage demoulding

“Precision standard components for reliable, multi-stage movement guarantee HASCO customers consistent component quality without compromise.”



Multi-stage demoulding

Multi-stage demoulding

This overview of the HASCO two-stage ejectors and latch locking units will facilitate the selection of the correct demoulding article for individual applications.

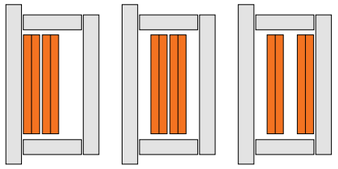
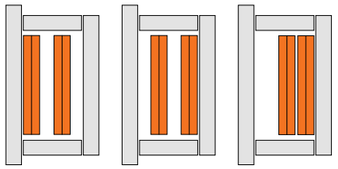
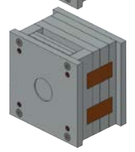
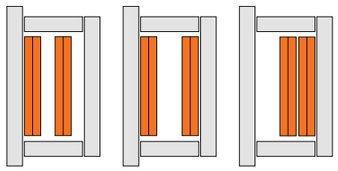
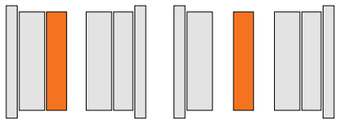
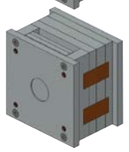
Different plate movement profiles and fields of application with corresponding technical data are shown here.

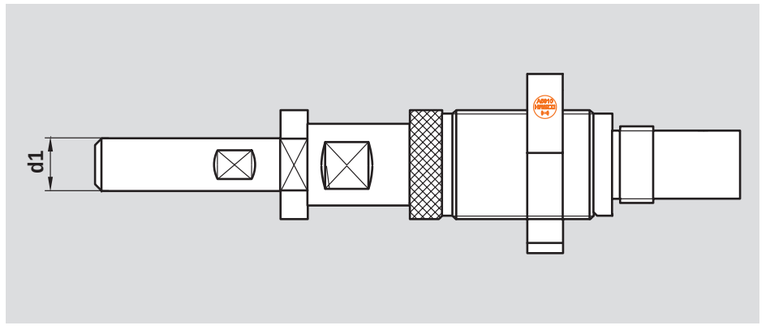
Detailed technical information is contained in the respective brochures on the two-stage ejectors and latch locking units.

The data for the dynamic and static forces are calculated values that can be significantly influenced by different application conditions.

Special Features

- Precision standard component for reliable motion control
- Optimised positive locking technique
- Easy assembly and adjustment
- Functional areas are DLC-coated
- Suitable for clean room application
- Extremely low friction coefficient
- Hard sliding surface
- Suitable for fast runners
- Partially double-sided locking

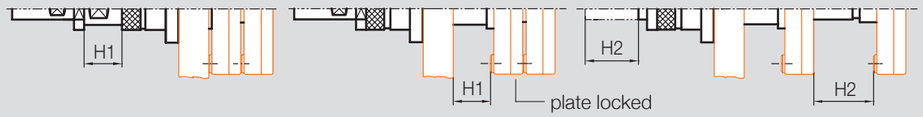
Movement	Mounting position	Product selection
Forward  The mould is open and the ejector sets "A" and "B" are in the starting position. The ejector sets travel along stroke "H1". Set "B" is in its final position. Ejector set "A" now travels along stroke "H2". When the mould closes, the sequence is reversed. *Application recommendation* Demoulding with stripper plate.	***central*** ***internal*** ***non central*** ***internal***	***Z169/...*** ***Z1691/...*** forward central internal **1 1** ***Z1697/...*** ***Z1780/...*** forward non central internal **1 2**
Backward  In the starting position, ejector sets "A" and "B" are a defined distance apart, namely "H2". Stroke 1 The ejector sets "A" and "B" travel along stroke "H1" together. Stroke 2 Ejector set "A" is in its final position. Set "B" travels along stroke "H2" and opens. When the mould closes, the sequence is reversed. *Application recommendation* Demoulding with internal slide movement in the top ejector set.	***central*** ***internal*** ***non central*** ***internal***  ***external***	***Z1695/...*** backward central internal **2 1** ***Z1698/...*** ***Z1782/...*** backward non central internal **2 2** ***Z1741/...*** ***Z17410/...*** backward non central external **2 3**
Single stroke  The given stroke 1 must travel completely. After the completion of stroke 1, the segments lock the plate and stroke 2 can begin. *Application recommendation* Applications where both strokes must travel separately, e.g. where undercuts are first relieved.	***central*** ***internal***	***Z1692/...*** Single stroke central internal **3 1**
Stripper plate  In the starting position, the mould is closed. The latch locking units are adjusted to stroke 1. When opening the mould, the stripper plate moves with it (stroke 1). With a stroke delay, the mould separation first opens and the stripper plate then moves with it by stroke 1. After stroke 1 has been completed, the mould separation opens.	***non central*** ***internal***  ***external***	***Z173/...*** ***Z1790/...*** Stripper plate non central internal **3 2** ***Z170/...*** ***Z171/...*** ***Z174/....*** ***Z1740/...*** ***Z17400/...*** Stripper plate non central external **3 3**

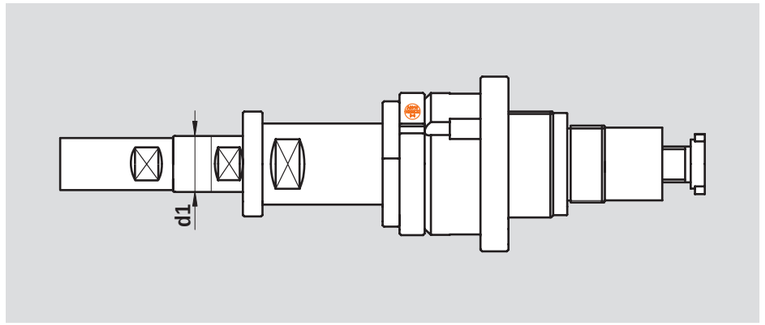


Z169/...		Mounting position	max. Mould size	Product selection d1	Product selection No.	Quantity	H1 min.	H1 max.	H2 min.	H2 max.	HV	Force [kN] stat.	Force [kN] dyn.
Two-stage ejector, DLC	forward	central internal	190 x 246	**16**	Z169/16	1	5	30	3	50	-	8	1,5
			246 x 396	**22**	22	1	6	40	4	70	-	15	3
			296 x 546	**30**	30	1	7	50	4	70	-	25	7
			346 x 596	**40**	40	1	7,5	60	5	80	-	50	10

Movement

stroke 1 = both
stroke 2 = front

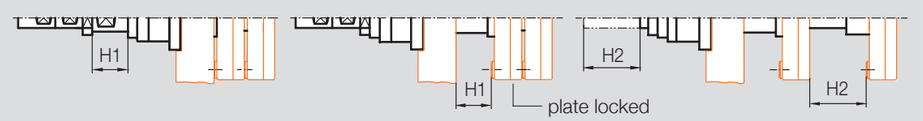


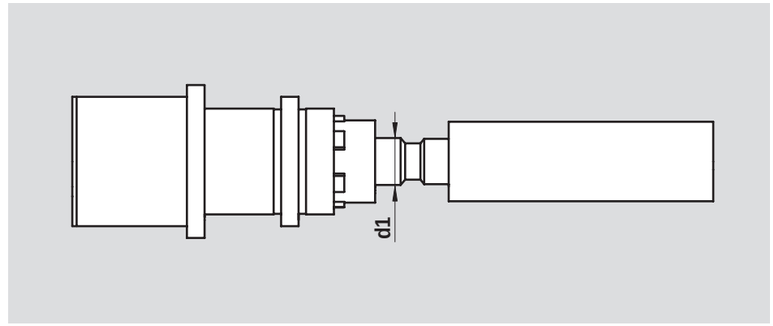


Z1691/...		Mounting position	max. Mould size	Product selection d1	Product selection No.	Quantity	H1 min.	H1 max.	H2 min.	H2 max.	HV	Force [kN] stat.	Force [kN] dyn.
Two-stage ejector, DLC	forward	central internal	156 x 196	**13**	Z1691/13	1	3	20	-	44	-	6	1
			196 x 296	**17**	17	1	4	30	-	65	-	10	2
			246 x 446	**22**	22	1	6	42	-	80	-	20	4
			296 x 596	**30**	30	1	10	60	-	95	-	35	8
			246 x 696	**40**	40	1	14	86	-	130	-	50	10
			446 x 896	**52**	52	1	18	110	-	180	-	85	17

Movement

stroke 1 = both
stroke 2 = front

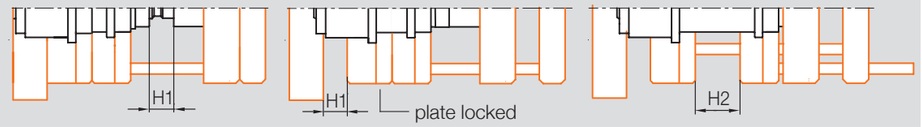


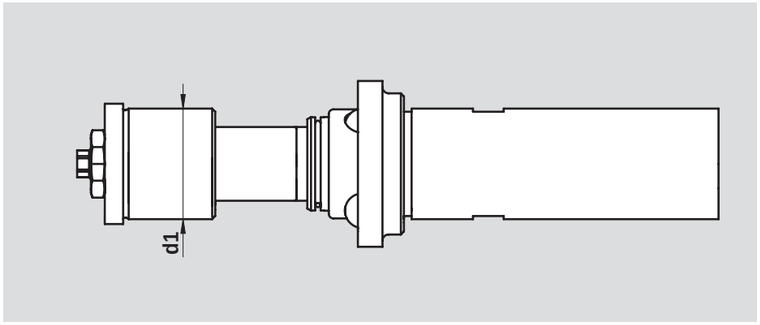


Z1697/...		Mounting position	max. Mould size	Product selection d1	Product selection No.	Quantity	H1 min.	H1 max.	H2 min.	H2 max.	HV	Force [kN] stat.	Force [kN] dyn.
Two-stage ejector, DLC	forward	non central internal	246 x 496	**16**	Z1697/16	2	6	76	3	76	-	8	0,8
			396 x 596			4							
			346 x 696	**20**	20	2	8	96	4	96	-	18	1,3
			496 x 696			4							
			396 x 796	**26**	26	2	10	130	5	130	-	28	2,3
			596 x 896			4							

Movement

stroke 1 = both
stroke 2 = front

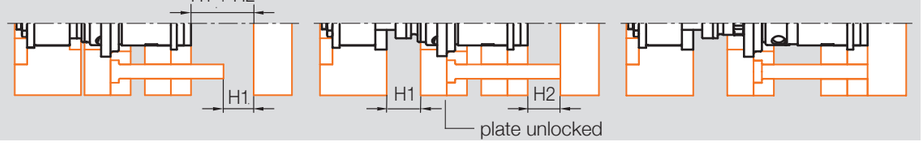


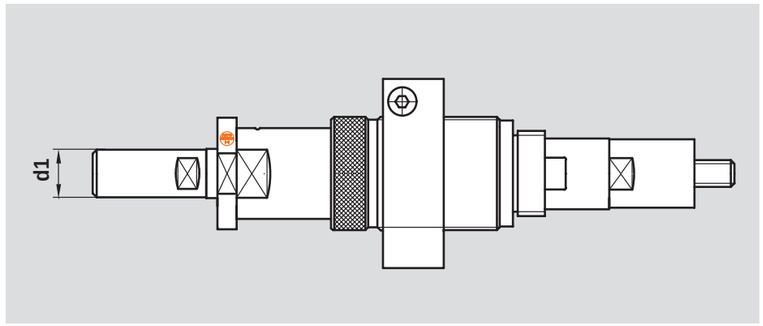


Z1780/...		Mounting position	max. Mould size	Product selection d1	Product selection No.	Quantity	H1 min.	H1 max.	H2 min.	H2 max.	HV	Force [kN] stat.	Force [kN] dyn.
Round latch unit, pulling system	forward	non central internal	296 x 596	**28**	Z1780/28x...	2	5	53	-	-	-	18	-
			596 x 596			4							
			446 x 896	**36**	36x...	2	5,5	101,5	-	-	-	40	-
			896 x 896			4							
			696 x 996	**48**	48x...	2	6,5	126,5	-	-	-	70	-
			996 x 996			4							

Movement

stroke 1 = both
stroke 2 = front

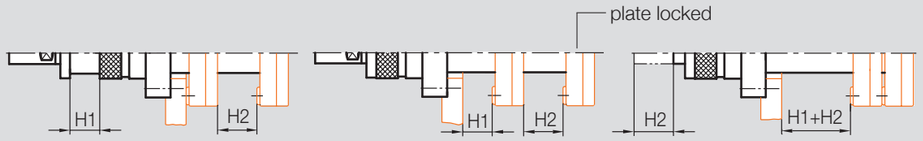




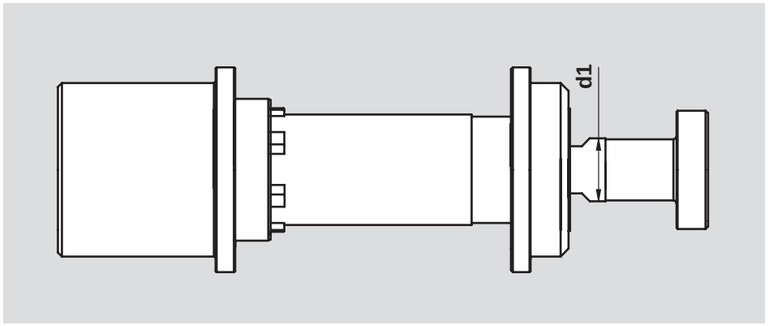
Z1695/...		Mounting position	max. Mould size	Product selection d1	Product selection No.	Quantity	H1 min.	H1 max.	H2 min.	H2 max.	HV	Force [kN] stat.	Force [kN] dyn.
Two-stage ejector, DLC	backward	central internal	246 x 396	**22**	Z1695/22	1	4	36	6	48	-	10	6
			296 x 446	**25**	25	1	5	50	8	60	-	20	7
			346 x 546	**32**	32	1	6	60	10	86	-	40	8,6

Movement

stroke 1 = both
stroke 2 = rear



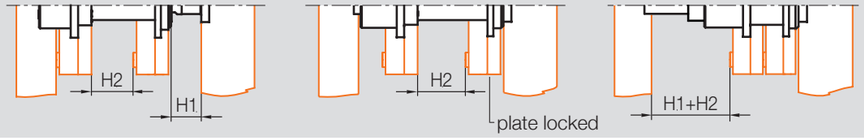
2.1



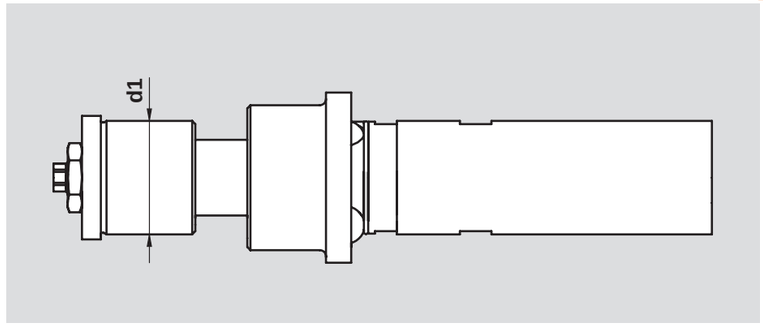
Z1698/...		Mounting position	max. Mould size	Product selection d1	Product selection No.	Quantity	H1 min.	H1 max.	H2 min.	H2 max.	HV	Force [kN] stat.	Force [kN] dyn.
Two-stage ejector, DLC	backward	non central internal	246 x 496	**16**	Z1698/16xH2	2	4	68	4	68	-	8	0,8
			396 x 596			4							
			346 x 696	**20**	20xH2	2	5	92	5	92	-	18	1,3
			496 x 696			4							
			396 x 796	**26**	26xH2	2	6	120	6	120	-	28	2,3
			596 x 896			4							

Movement

stroke 1 = both
stroke 2 = rear



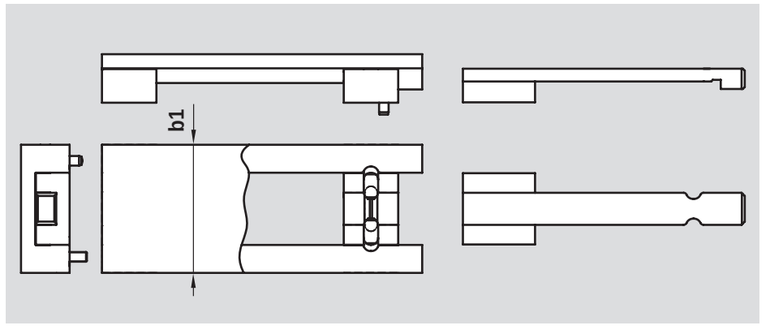
2.2



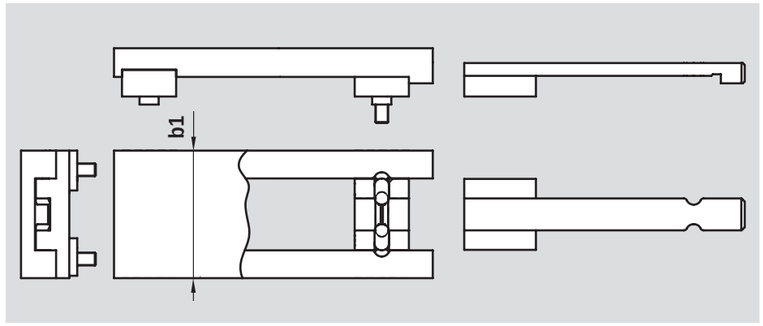
Z1782/...		Mounting position	max. Mould size	Product selection d1	Product selection No.	Quantity	H1 min.	H1 max.	H2 min.	H2 max.	HV	Force [kN] stat.	Force [kN] dyn.
Round latch unit, pushing system	backward	non central internal	296 x 596	**28**	Z1782/28x...	2	5	53	-	60	-	18	-
			596 x 596			4							
			446 x 896	**36**	36x...	2	5,5	101,5	-	60	-	40	-
			896 x 896			4							
			696 x 996	**48**	48x...	2	6,5	126,5	-	60	-	70	-
			996 x 996			4							

Movement

stroke 1 = both
stroke 2 = rear



Z1741/...		Mounting position	max. Mould size	Product selection b1	Product selection No.	Quantity	H1 min.	H1 max.	H2 min.	H2 max.	HV	Force [kN] stat.	Force [kN] dyn.
Latch locking unit, DLC	backward	non central external	246 x 446	50	Z1741/50x 90	2	4	90	-	-	-	16	-
			446 x 496			4							
			246 x 446		130	2		130	-	-	-		-
			446 x 496			4							
			346 x 796	80	80x117	2	5,5	117	-	-	-	27	-
			796 x 796			4							
			346 x 796		167	2		167	-	-	-		-
			796 x 796			4							
			546 x 996	100	100x145	2	7	145	-	-	-	48	-
			996 x 996			4							
			546 x 996		195	2		195	-	-	-		-
			996 x 996			4							

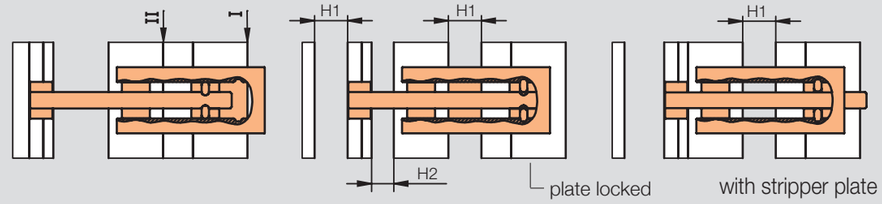


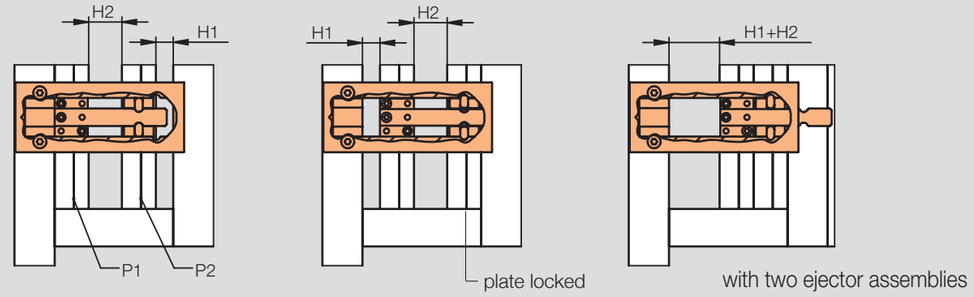
Z17410/...		Mounting position	max. Mould size	Product selection b1	Product selection No.	Quantity	H1 min.	H1 max.	H2 min.	H2 max.	HV	Force [kN] stat.	Force [kN] dyn.
Latch locking unit, DLC	backward	non central external	246 x 446	50	Z17410/50x 85	2	4	85	-	-	-	16	-
			446 x 496			4							
			246 x 446		125	2		125	-	-	-		-
			446 x 496			4							
			346 x 796	80	80x112	2	5,5	112	-	-	-	27	-
			796 x 796			4							
			346 x 796		162	2		162	-	-	-		-
			796 x 796			4							
			546 x 996	100	100x140	2	7	140	-	-	-	48	-
			996 x 996			4							
			546 x 996		190	2		190	-	-	-		-
			996 x 996			4							

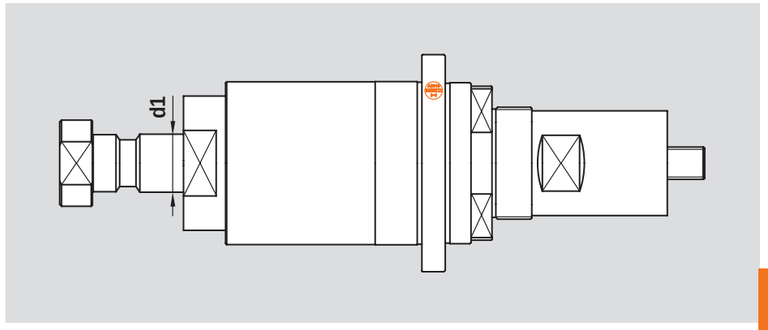
Z1741/...
Z17410/...

Movement

stroke 1 = both (P1 + P2)
stroke 2 = rear (P1)



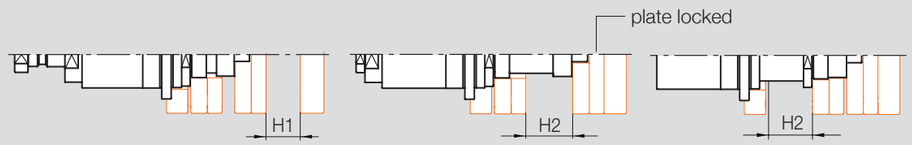


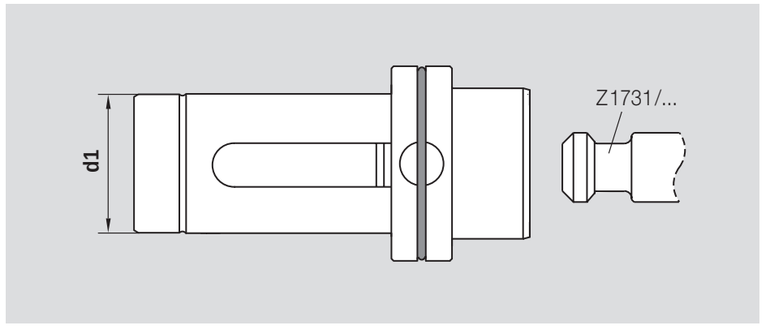


Z1692/...		Mounting position	max. Mould size	Product selection d1	Product selection No.	Quantity	H1 min.	H1 max.	H2 min.	H2 max.	HV	Force [kN] stat.	Force [kN] dyn.
Two-stage ejector, DLC	Single stroke	central internal	246 x 446	25	Z1692/25x45	1	4	45	4	45	-	30	3
			296 x 596	32	32x60	1	6	60	5	60	-	42	5
			346 x 796	40	40x80	1	8	80	6	80	-	55	7

Movement

stroke 1 = front
stroke 2 = rear

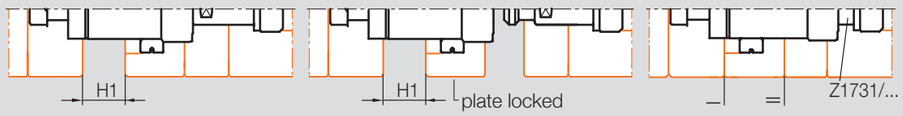


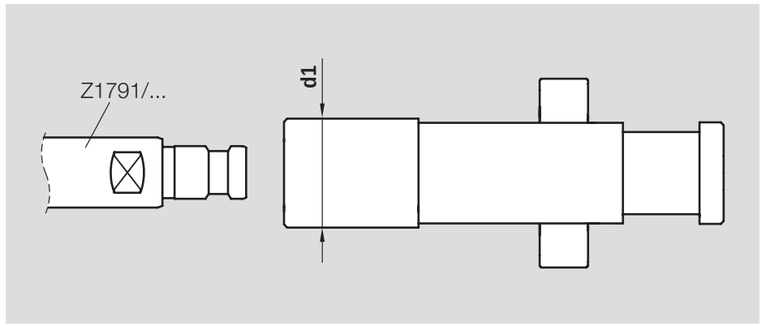


Z173/...		Mounting position	max. Mould size	Product selection d1	Product selection No.	Quantity	H1 min.	H1 max.	H2 min.	H2 max.	HV	Force [kN] stat.	Force [kN] dyn.
Round latch locking unit	Single stroke	non central internal	596 x 596	**32**	Z173/32x28	2	6	28	-	-	-	35	-
			696 x 996			4							
			596 x 596		56	2		56	-	-	-		-
			696 x 996			4							
			596 x 996	**38**	38x36	2	8	36	-	-	-	60	-
			996 x 996			4							
			596 x 996		71	2		71	-	-	-		-
			996 x 996			4							

Movement

stroke 1 = front
stroke 2 = rear

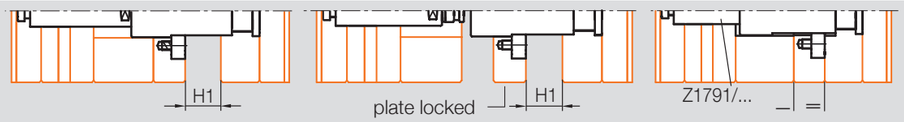


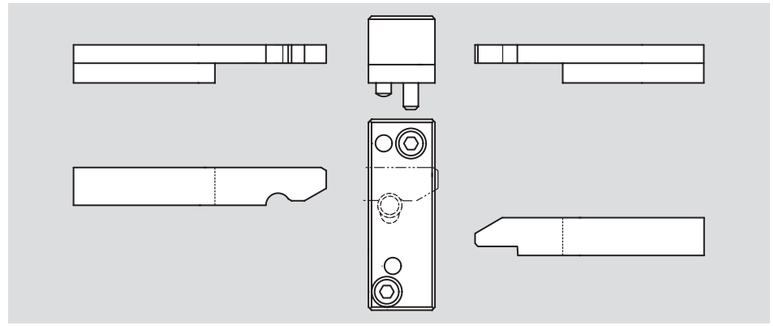


Z1790/...		Mounting position	max. Mould size	Product selection d1	Product selection No.	Quantity	H1 min.	H1 max.	H2 min.	H2 max.	HV	Force [kN] stat.	Force [kN] dyn.
Round latch locking unit	Single stroke	non central internal	156 x 196	**28**	Z1790/28x 55	2	5	55	-	-	-	2,5	0,25
			196 x 296			4							
			196 x 296	**34**	34x 76	2	6	76	-	-	-	5	0,5
			246 x 446			4							
			246 x 396	**45**	45x104	2	12	104	-	-	-	7,5	0,75
			246 x 796			4							
			246 x 446	**60**	60x130	2	15	130	-	-	-	10	1,3
			446 x 896			4							

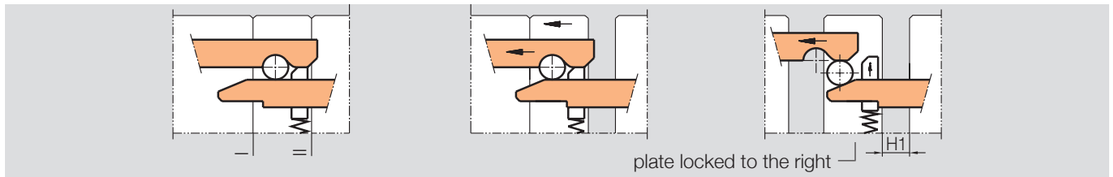
Movement

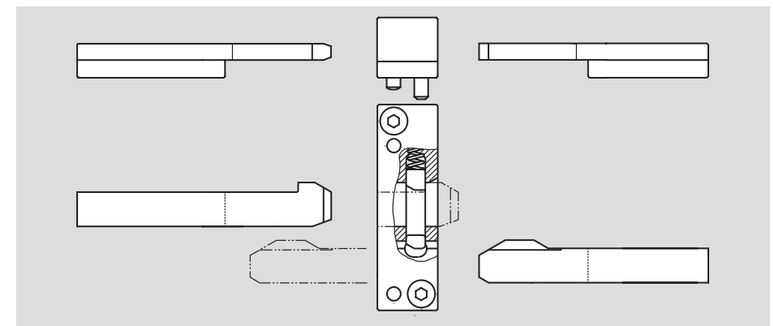
stroke 1 = front
stroke 2 = rear



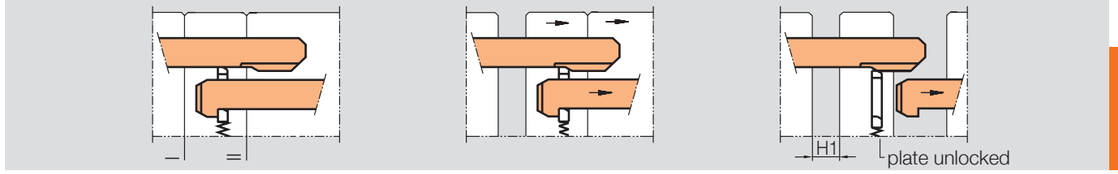


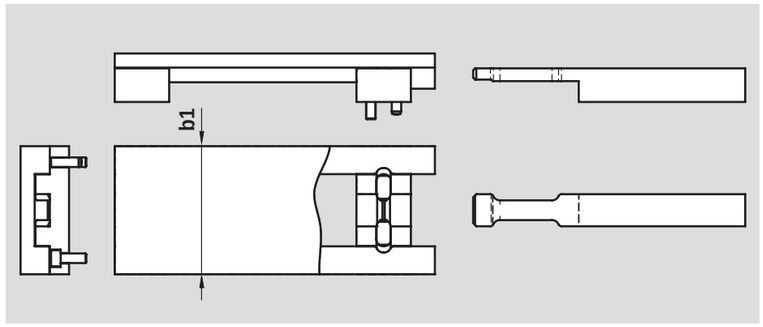
Z170/...		Mounting position	max. Mould size	Product selection Type	Product selection No.	Quantity	H1 min.	H1 max.	H2 min.	H2 max.	HV	Force [kN] stat.	Force [kN] dyn.
Latch locking device	Single stroke	non central external	246 x 396	**1**	Z170/1	2	5,5	80	-	-	-	8	-
						4							
			246 x 446	**2**	2	2	9,5	110	-	-	-	14	-
						4							
			296 x 596	**3**	3	2	10,5	190	-	-	-	24	-
						4							



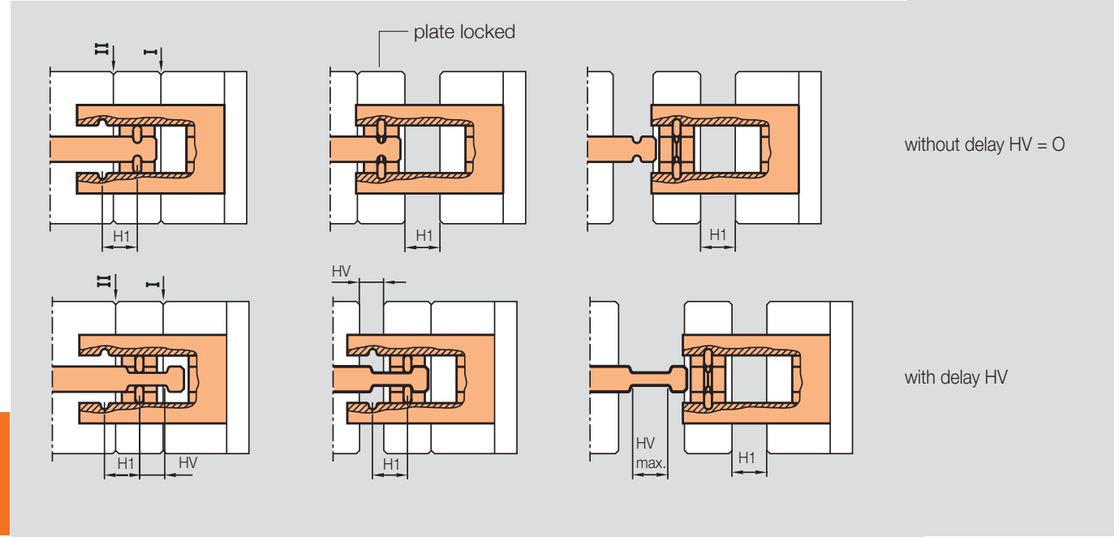


Z171/...		Mounting position	max. Mould size	Product selection Type	Product selection No.	Quantity	H1 min.	H1 max.	H2 min.	H2 max.	HV	Foce [kN] stat.	Foce [kN] dyn.
Latch locking unit, DLC	Single stroke	non central external	246 x 396	**1**	Z171/1	2	5,5	80	-	-	-	6,5	-
						4							
			346 x 546	**2**	2	2	7	110	-	-	-	15,5	-
						4							
			296 x 596	**3**	3	2	9	160	-	-	-	22	-
						4							





Z174/...		Mounting position	max. Mould size	Product selection b1	Product selection No.	Quantity	H1 min.	H1 max.	H2 min.	H2 max.	HV	Force [kN] stat.	Force [kN] dyn.
Latch locking unit, DLC	Single stroke	non central external	246 x 446	50	Z174/50x 90x 0	2	4	90	-	-	-	16	-
			446 x 496			4							
			246 x 446		20	2			-	-	20		
			446 x496			4							
			246 x446		50x130x 0	2		130	-	-	-		
			446 x496			4							
			246 x446		50	2			-	-	50		
			446 x496			4							
			346 x796	80	80x117x 0	2	5,5	117	-	-	.	27	-
			796 x796			4							
			346 x796		32	2			-	-	32		
			796 x796			4							
			346 x796		80x167x 0	2		167	-	-	-		
			796 x796			4							
			346 x796		75	2			-	-	75		
			796 x796			4							
			546 x996	100	100x145x 0	2	7	145	-	-	-	48	-
			996 x996			4							
			546 x996		50	2			-	-	50		
			996 x996			4							
			546 x996		100x195x 0	2		195	-	-	-		
			996 x996			4							
			546 x996		80	2			-	-	80		
			996 x996			4							



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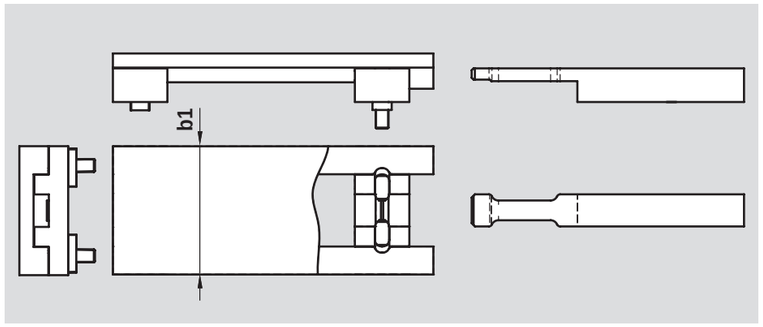
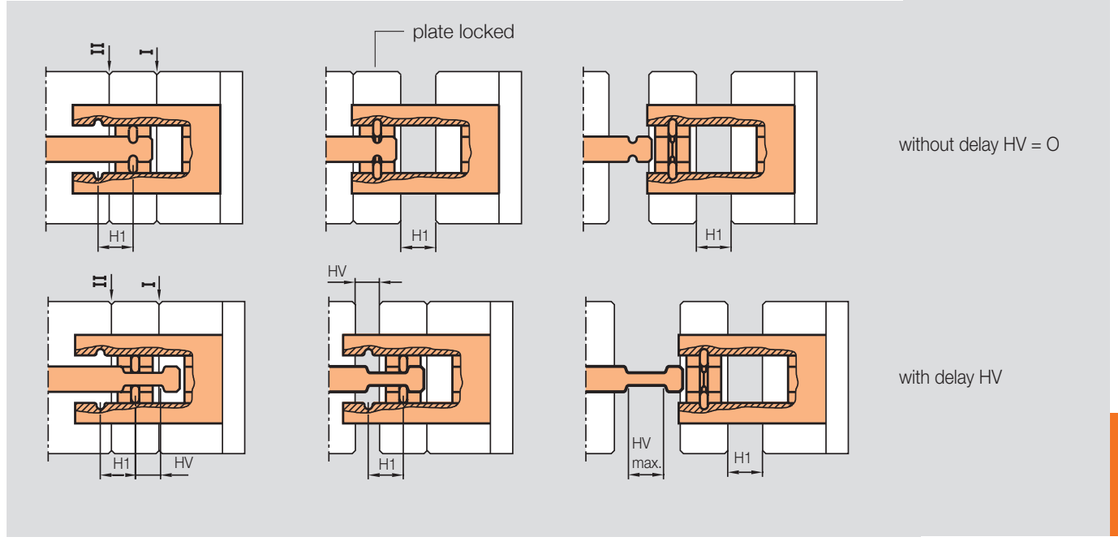


Z1740/...		Mounting position	max. Mould size	Product selection b1	Product selection No.	Quantity	H1 min.	H1 max.	H2 min.	H2 max.	HV	Force [kN] stat.	Force [kN] dyn.
Latch locking unit, DLC	Single stroke	non central external	246 x 446	50	Z174/50x 90x 0	2	4	85	-	-	-	16	-
			446 x 496			4							
			246 x 446		20	2			-	-	20		
			446 x496			4							
			246 x446		50x130x 0	2		125	-	-	-		
			446 x496			4							
			246 x446		50	2			-	-	50		
			446 x496			4							
			346 x796	80	80x117x 0	2	5,5	112	-	-	.	27	-
			796 x796			4							
			346 x796		32	2			-	-	32		
			796 x796			4							
			346 x796		80x167x 0	2		162	-	-	-		
			796 x796			4							
			346 x796		75	2			-	-	75		
			796 x796			4							
			546 x996	100	100x145x 0	2	7	140	-	-	-	48	-
			996 x996			4							
			546 x996		50	2			-	-	50		
			996 x996			4							
			546 x996		100x195x 0	2		190	-	-	-		
			996 x996			4							
			546 x996		80	2			-	-	80		
			996 x996			4							



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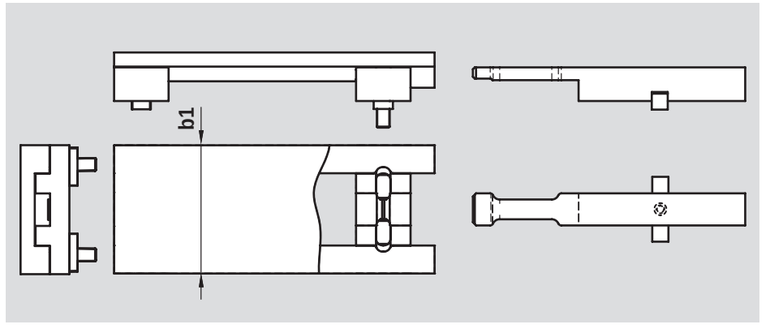
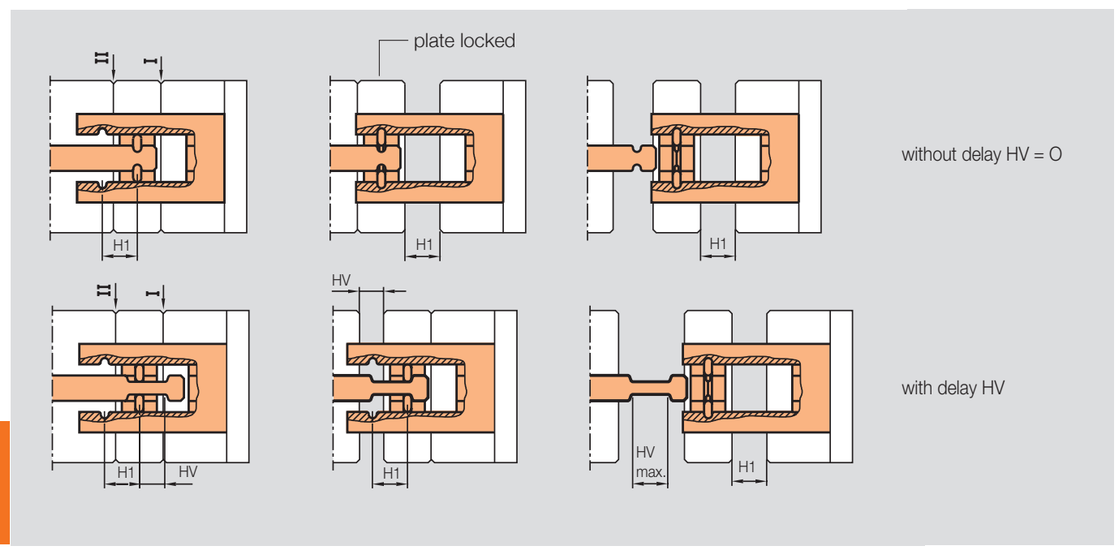


Z17400/...		Mounting position	max. Mould size	b1	Product selection No.	Quantity	H1 min.	H1 max.	H2 min.	H2 max.	HV	Force [kN] stat.	Force [kN] dyn.
Latch locking unit, DLC	Single stroke	non central external	246 x 446	50	Z17400/50x 85x 0	2	4	85	-	-	-	16	-
			446 x 496			4							
			246 x 446		20	2			-	-	20		
			446 x 496			4							
			246 x 446		50x125x 0	2		125	-	-	-		
			446 x 496			4							
			246 x 446		50	2			-	-	50		
			446 x 496			4							
			346 x 796	80	80x112x 0	2	5,5	112	-	-	.	27	-
			796 x 796			4							
			346 x 796		32	2			-	-	32		
			796 x 796			4							
			346 x 796		80x162x 0	2		162	-	-	-		
			796 x 796			4							
			346 x 796		75	2			-	-	75		
			796 x 796			4							
			546 x 996	100	100x140x 0	2	7	140	-	-	-	48	-
			996 x 996			4							
			546 x 996		50	2			-	-	50		
			996 x 996			4							
			546 x 996		100x190x 0	2		190	-	-	-		
			546 x 996			4							
			546 x 996		80	2			-	-	80		
			996 x 996			4							



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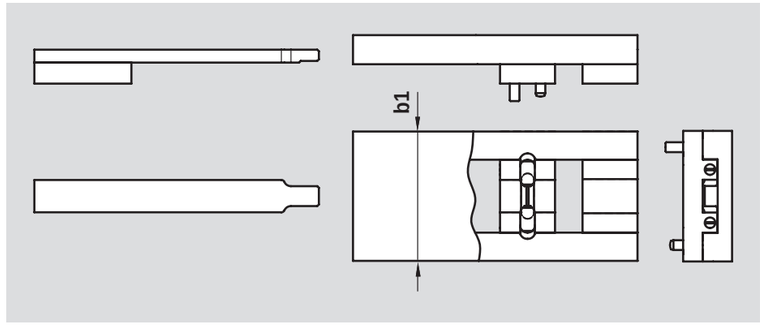
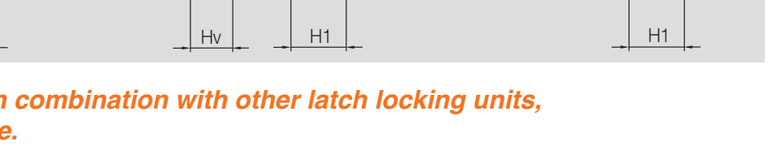
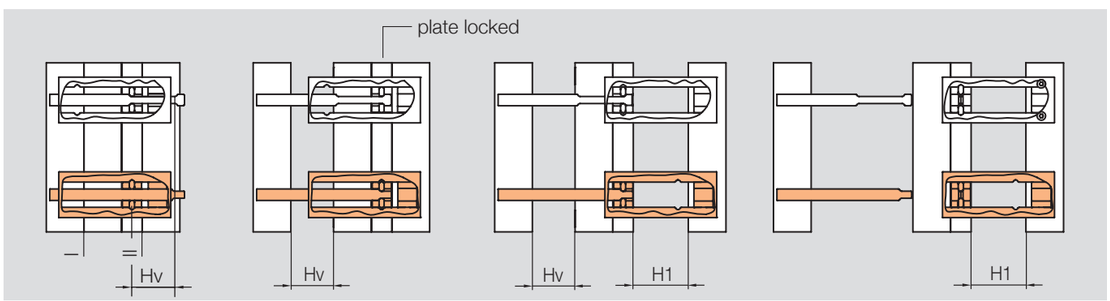


Z1742/...		Mounting position	max. Mould size	b1	Product selection No.	Quantity	H1 min.	H1 max.	H2 min.	H2 max.	HV	Force [kN] stat.	Force [kN] dyn.
Pawl lock, DLC	Single stroke	non central external	246 x 446	50	Z1742/50x 96	2	4	96	-	-	-	16	-
			446 x 496			4							
			346 x 796	80	80x111	2	5,5	111	-	-	-	27	-
			796 x 796			4							
			546 x 996	100	100x133	2	7	133	-	-	-	48	-
			996 x 996			4							



Z17420/...		Mounting position	max. Mould size	b1	Product selection No.	Quantity	H1 min.	H1 max.	H2 min.	H2 max.	HV	Force [kN] stat.	Force [kN] dyn.
Pawl lock, DLC	Single stroke	non central external	246 x 446	50	Z17420/50x 96	2	4	96	-	-	-	16	-
			446 x 496			4							
			346 x 796	80	80x111	2	5,5	111	-	-	-	27	-
			796 x 796			4							
			546 x 996	100	100x133	2	7	133	-	-	-	48	-
			996 x 996			4							



The safety catch enables, in combination with other latch locking units, a different movement profile.

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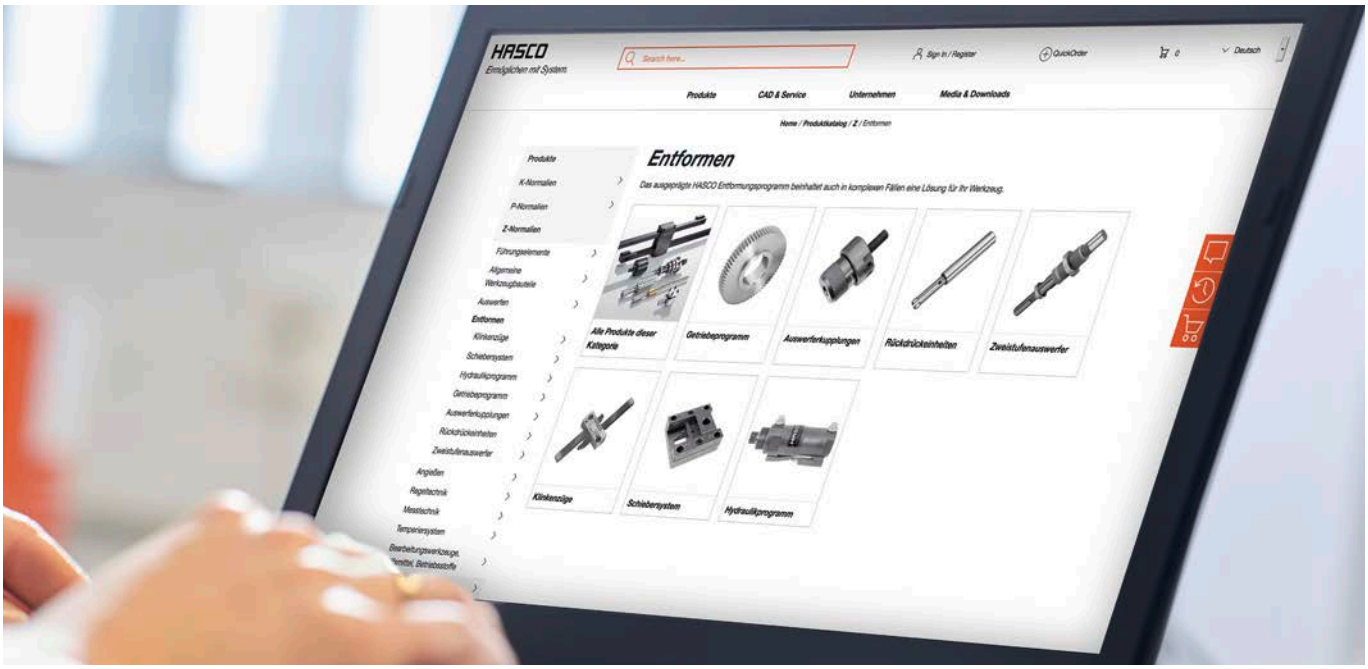

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