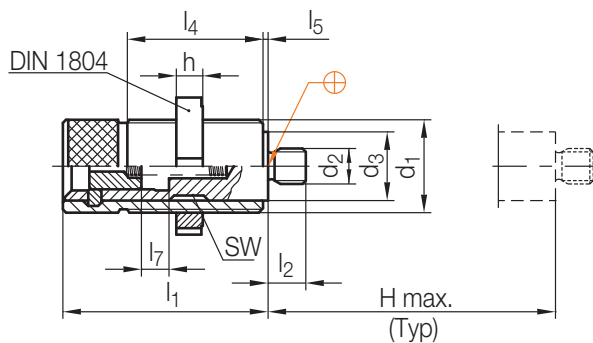


Z165/...

Rückzug-Führungsvorrichtung
 Guided ejector pull back device
 Système de rappel d'éjection



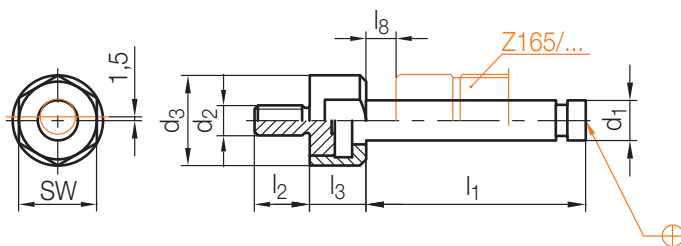
H = Hub / Stroke / Course

SW	h	d ₃	d ₁	d ₂	l ₄	l ₅	l ₇	l ₁	l ₂	H max.	Typ	Nr./No.
20	11	24	M32x1,5	M12x1	45	1	11,5	70	12	55	50	Z165/50
27	12	31	M42x1,5	M16x1,5	60	1	13,5	90	17	70	60	60
34	13	39	M50x1,5	M20x1,5	75	1	15,5	120	22	100	80	80

Z166/...

Ausstoßbolzen
 Ejector rod
 Tige d'éjection

Mat.: 1.5919

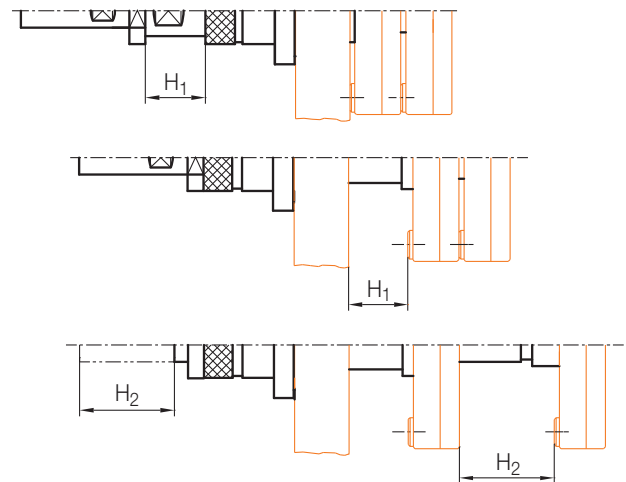
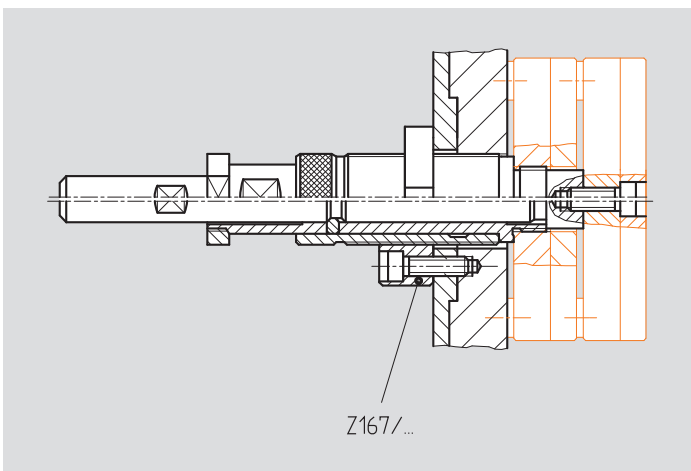
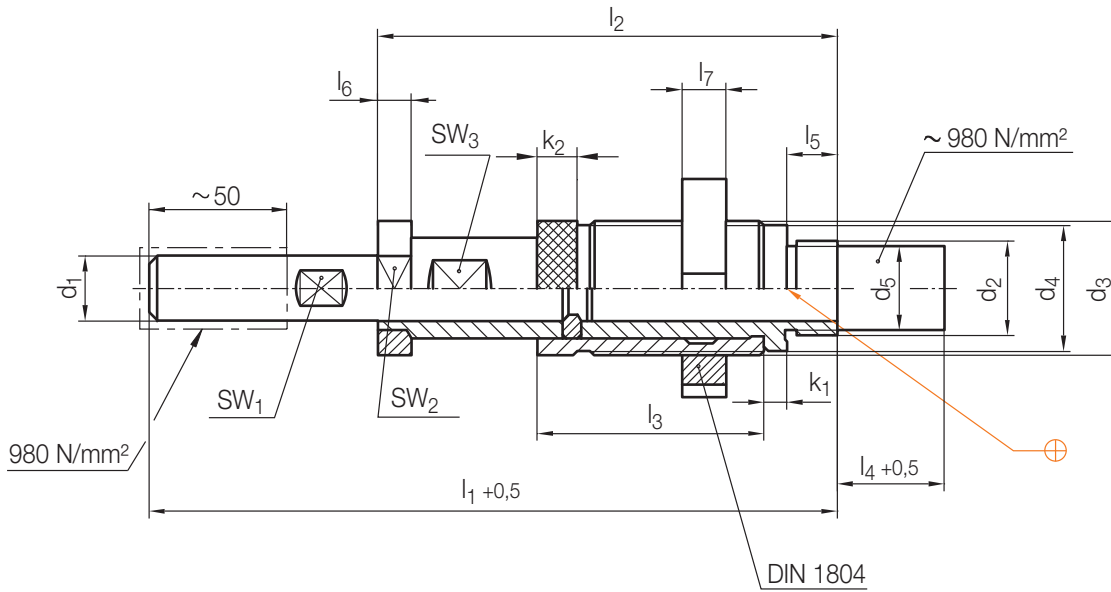


l ₁	l ₂	l ₃	l ₈	SW	d ₂	d ₁	d ₃	Typ	Nr./No.
87,5	22	22,5	12	32	M12	16	36	50	Z166/50
109	25	25	14	46	M16	21	50	60	60
132	30	27	4,5	55	M20	28	60	80	80

Z 169/...

Zweistufenauswerfer, zentraler Einbau
Two stage ejector, central mounting
Ejecteur bi-étagé, montage central

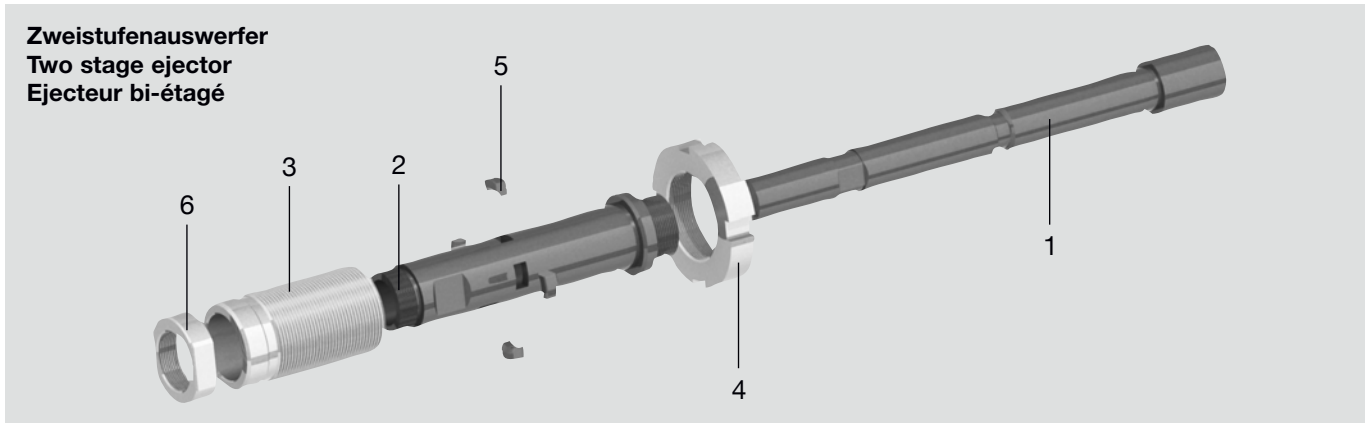
Funktionsflächen DLC beschichtet
Functional surfaces with DLC coating
Surfaces d'usure avec revêtement DLC





H = Hub / Stroke / Course

Neu / New / Nouveau

SW ₃	SW ₂	SW ₁	k ₂	k ₁	d ₄	d ₅	l ₇	l ₆	l ₅	l ₄	l ₃	l ₂	l ₁	d ₂	d ₃	H ₁		H ₂		d ₁	Nr./No.
																min.	max.	min.	max.		
20	28	13	8	5	30	20	11	9	11	26	56	112	164	M22x1	M32x1,5	5	30	3	50	16	Z 169/16
27	38	17	10	6	40	28	12		16	36	75	148	220	M30x1,5	M42x1,5	6	40	4	70	22	22
38	55	24		7	50	38	13	11	21	45	80	170	255	M40x1,5	M60x1,5	7	50			30	30
46	65	32	14	8	65	50	14	12	22		98	200	270	M52x1,5	M70x1,5	7,5	60	5	80	40	40



Pos.	Benennung	Designation	Désignation	Stück Quantity Pièce
1	Ausstoßbolzen	Ejector rod	Tige d'éjection	1
2	Schiebehülse	Sliding bush	Douille coulissante	1
3	Spannbuchse	Clamping sleeve	Douille de serrage	1
4	Nutmutter	Slotted nut	Ecrou à gorge	1
5	Segment	Segment	Segment	4 (6) 
6	Mutter	Nut	Ecrou	1

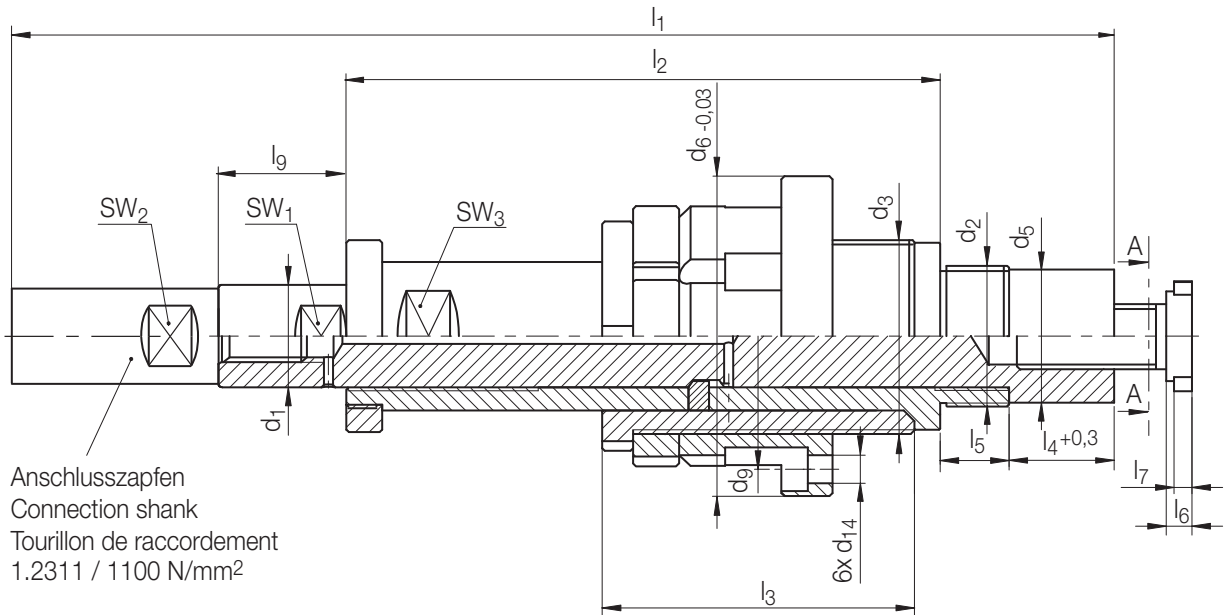
 = Verpackungseinheit / packing unit / unité d'emballage

Nr. / No.	1 Z 169 /...	2 Z 169 /...	3 Z 169 /...	4 Z 169 /...	5 Z 169 /...	6 Z 169 /...
Z 169 / 16	... 16 - 01 / E	... 16 - 02 / E	... 16 - 03 / E	... 16 - 04 / E	... 16 - 05 / E	... 16 - 06 / E
22	... 22 - 01 / E	... 22 - 02 / E	... 22 - 03 / E	... 22 - 04 / E	... 22 - 05 / E	... 22 - 06 / E
30	... 30 - 01 / E	... 30 - 02 / E	... 30 - 03 / E	... 30 - 04 / E	... 30 - 05 / E	... 30 - 06 / E
40	... 40 - 01 / E	... 40 - 02 / E	... 40 - 03 / E	... 40 - 04 / E	... 40 - 05 / E	... 40 - 06 / E

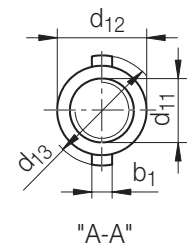
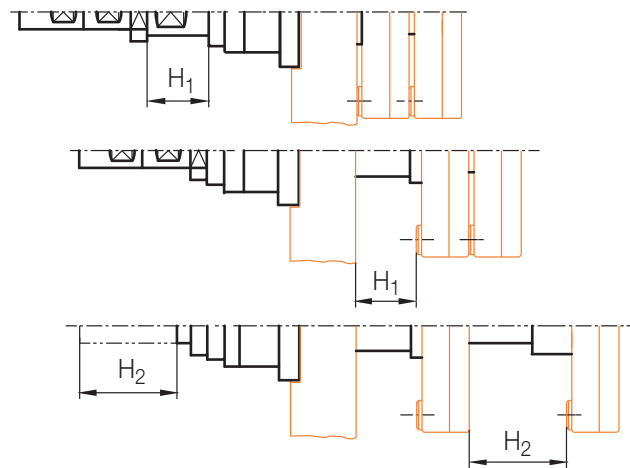
Z 1691/...

Zweistufenauswerfer, zentraler Einbau
 Two stage ejector, central mounting
 Ejecteur bi-étagé, montage central

Funktionsflächen DLC beschichtet
 Functional surfaces with DLC coating
 Surfaces d'usure avec revêtement DLC



Anschlusszapfen
 Connection shank
 Tourillon de raccordement
 1.2311 / 1100 N/mm²

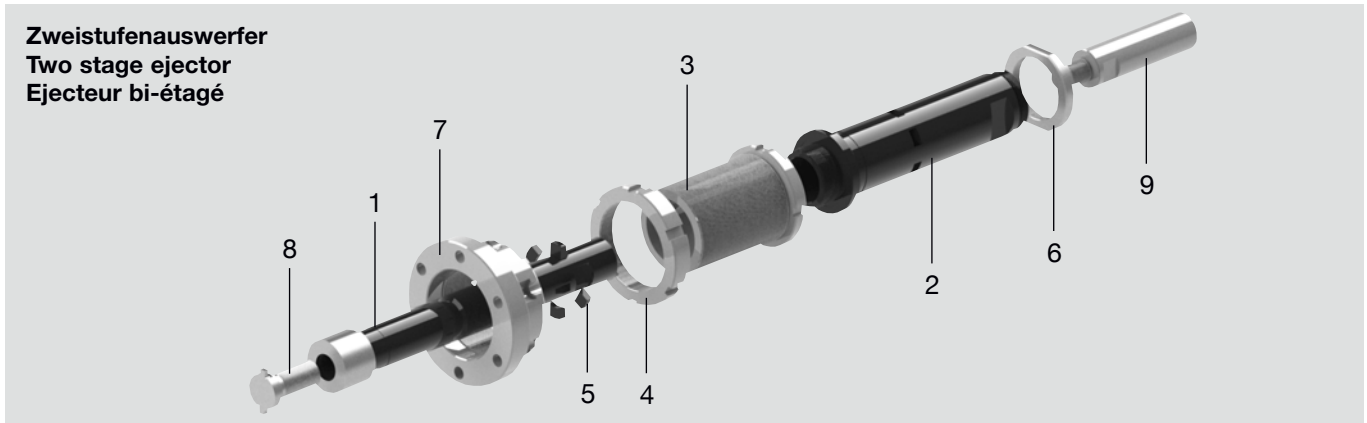


4

H = Hub / Stroke / Course

Neu / New / Nouveau

SW ₁	SW ₂	SW ₃	d ₂	d ₃	d ₅	d ₆	d ₉	d ₁₁	d ₁₂	d ₁₃	d ₁₄	b ₁	l ₁	l ₂	l ₃	l ₄	l ₅	l ₆	l ₇	l ₉	H ₁	H ₂ max.	d ₁	Nr./No.	
10	10	17	M20x1	M28x1,5	18,5	50	41,6	M 8x0,75	13,4	17,6	4,3	3,2	164	72	38,8	21	9	4	2,6	22	3- 20	44	13	Z1691/13	
13	12	21	M24x1,5	M35x1,25	22	60	48	M11x1	17,4	22	5,4	4	228	110	63		12	5	3,5	25	4- 30	65	17		
17	17	27	M30x1,5	M45x1,5	28	75	61	M14x1	21	27	6,5	5	270	131	74	17	17		6	4	30	6- 42	80	22	
24	22	36	M40x1,5	M60x1,5	38	100	82	M18x1	26	33	8,8	6	340	166	89	27			7	5	38	10- 60	95	30	
32	32	46	M55x1,5	M75x1,5	52	125	104	M25x1,5	35	43	11	8	470	232	122	41	27	10	7	50	14- 86	130	40		
41	41	65	M72x1,5	M98x2	69	150	128	M34x1,5	48	58	11	9	583	295	155	51	27	15	11	60	18-110	180	52		



Pos.	Benennung	Designation	Désignation	Stück Quantity Pièce
1	Ausstoßbolzen	Ejector rod	Tige d'éjection	1
2	Schiebehülse	Slide bush	Douille coulissante	1
3	Spannbuchse	Clamping sleeve	Douille de serrage	1
4	Nutmutter	Slotted nut	Ecrou à gorge	1
5	Segment	Segment	Segment	4 (6)
6	Mutter	Nut	Ecrou pour rainures en T	1
7	Flansch	Flange	Bride	1
8	Schraube	Screw	Vis en T à rainure en T	1
9	Anschlusszapfen	Connection shank	Tourillon de raccordement	1

4

= Verpackungseinheit / packing unit / unité d'emballage

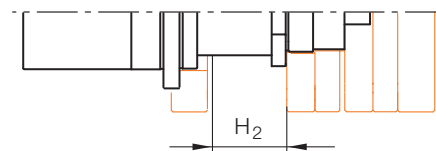
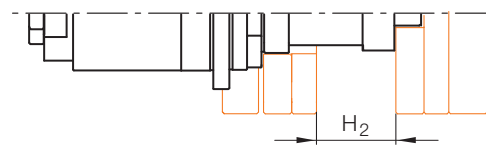
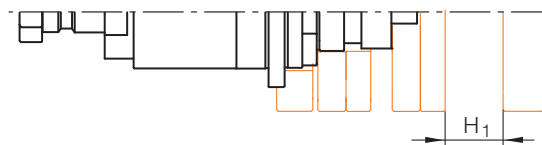
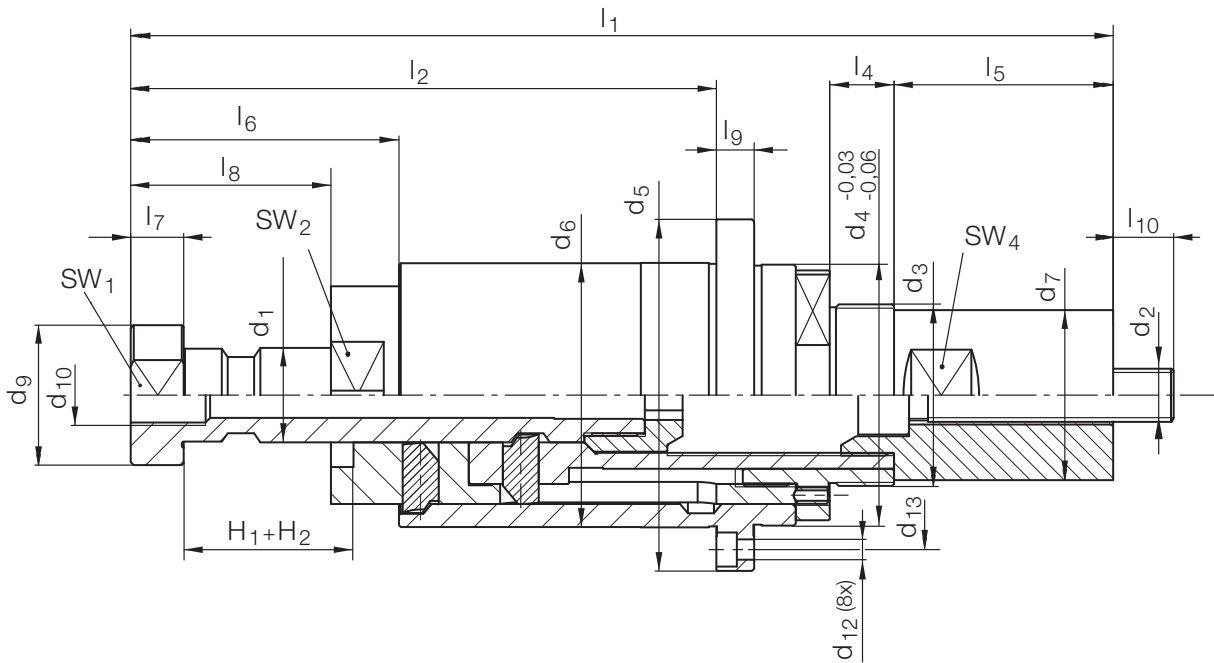
Nr./No.	1 Z 1691/...	2 Z 1691/...	3 Z 1691/...	4 Z 1691/...	5 Z 1691/...
Z 1691 / 13	... 13 - 01/E	... 13 - 02/E	... 13 - 03/E	... 13 - 04/E	... 13 - 05/E
17	... 17 - 01/E	... 17 - 02/E	... 17 - 03/E	... 17 - 04/E	... 17 - 05/E
22	... 22 - 01/E	... 22 - 02/E	... 22 - 03/E	... 22 - 04/E	... 22 - 05/E
30	... 30 - 01/E	... 30 - 02/E	... 30 - 03/E	... 30 - 04/E	... 30 - 05/E
40	... 40 - 01/E	... 40 - 02/E	... 40 - 03/E	... 40 - 04/E	... 40 - 05/E
52	... 52 - 01/E	... 52 - 02/E	... 52 - 03/E	... 52 - 04/E	... 52 - 05/E

Nr./No.	6 Z 1691/...	7 Z 1691/...	8 Z 1691/...	9 Z 1691/...
Z 1691 / 13	... 13 - 06/E	... 13 - 07/E	... 13 - 08/E	... 13 - 09/E
17	... 17 - 06/E	... 17 - 07/E	... 17 - 08/E	... 17 - 09/E
22	... 22 - 06/E	... 22 - 07/E	... 22 - 08/E	... 22 - 09/E
30	... 30 - 06/E	... 30 - 07/E	... 30 - 08/E	... 30 - 09/E
40	... 40 - 06/E	... 40 - 07/E	... 40 - 08/E	... 40 - 09/E
52	... 52 - 06/E	... 52 - 07/E	... 52 - 08/E	... 52 - 09/E

Z 1692 / ...

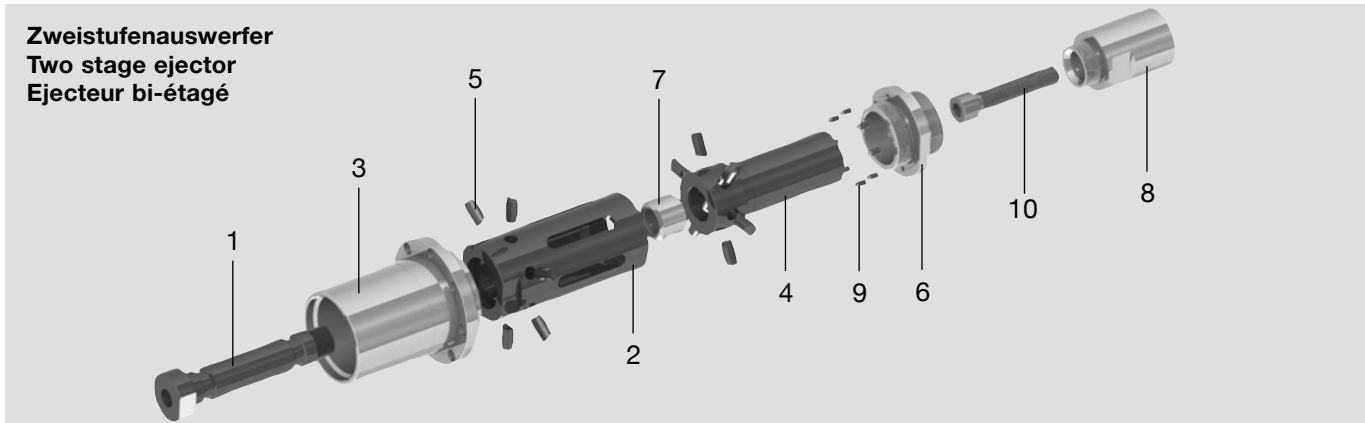
Zweistufenauswerfer, vorlaufend
Two-stage ejector, advancing
Ejecteur bi-étagé, en continu

Funktionsflächen DLC beschichtet
Functional surfaces with DLC coating
Surfaces d'usure avec revêtement DLC



Neu / New / Nouveau

SW ₁	SW ₂	SW ₄	d ₂	d ₃	d ₄	d ₅	d ₆	d ₇	d ₉	d ₁₀	d ₁₂	d ₁₃	l ₁	l ₂	l ₄	l ₅	l ₆	l ₇	l ₈	l ₉	l ₁₀	H ₂ max.	d ₁	H ₁	Nr./No.
32	50,2	38	M14x1	M48x1,5	69	93	70	45	37	M16	5,4	81	260	155	17	58	71	14	53	10	16	4 - 45	25	4 - 45	Z 1692/25x45
41	60,2	46	M18x1	M58x1,5	80	110	82	55	46	M16	6,4	95	325	198	17	80	89	15	68	12	25	5 - 60	32	6 - 60	32x60
50	80,2	65	M24x1,5	M76x1,5	106	140	108	73	56	M24	8,5	123	471	258	22	152	116	18	90	14	24	6 - 80	40	8 - 80	40x80



Pos.	Benennung	Designation	Désignation	Stück Quantity Pièce
1	Ausstoßbolzen	Ejector rod	Tige d'éjection	1
2	Schieberhülse	Slide bush	Douille coulissante	1
3	Spannbuchse	Clamping sleeve	Douille de serrage	1
4	Hülse	Sleeve	Tube de protection	1
5	Segment	Segment	Segment	12
6	Mutter	Nut	Ecrou pour rainures en T	1
7	Anschlag	Stop	Butée	1
8	Adapter	Adapter	Adaptateur	1
9	Madenschraube	Set screw	Vis sans tête	8
10	Schraube	Screw	Vis en T à rainure en T	1

= Verpackungseinheit / packing unit / unité d'emballage

Nr. / No.	1 Z 1692 /...	2 Z 1692 /...	3 Z 1692 /...	4 Z 1692 /...	5 Z 1692 /...
Z 1692 / 25	... 25 - 01 / E	... 25 - 02 / E	... 25 - 03 / E	... 25 - 04 / E	... 25 - 05 / E
32	... 32 - 01 / E	... 32 - 02 / E	... 32 - 03 / E	... 32 - 04 / E	... 32 - 05 / E
40	... 40 - 01 / E	... 40 - 02 / E	... 40 - 03 / E	... 40 - 04 / E	... 40 - 05 / E

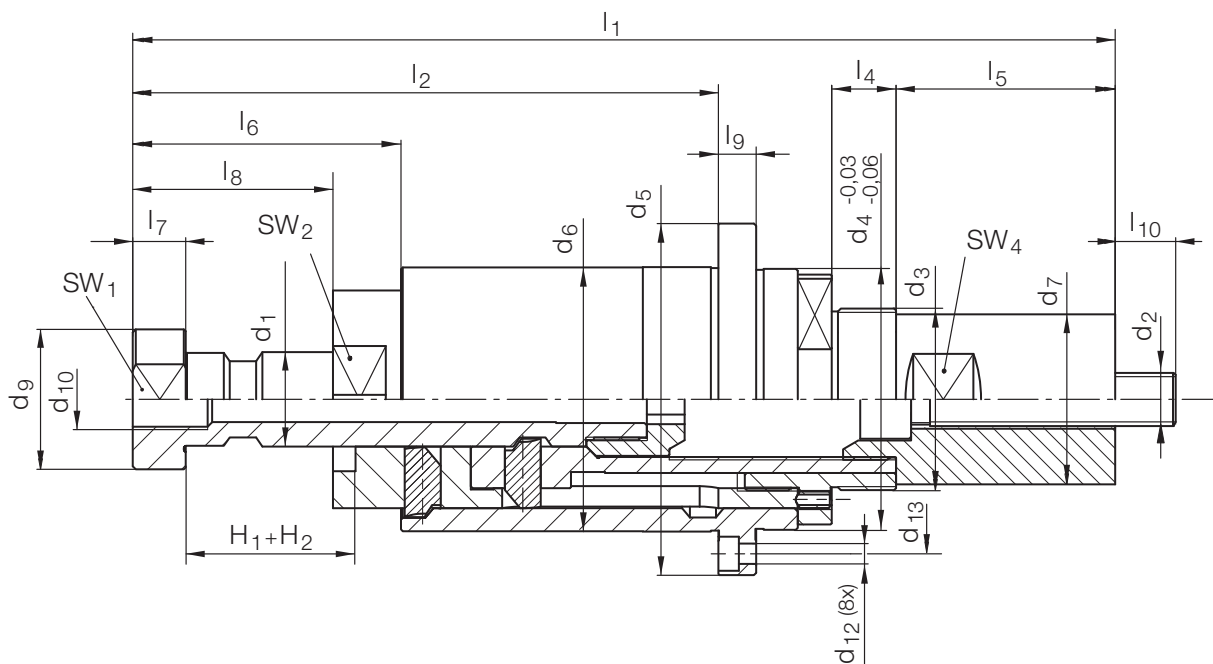
Nr. / No.	6 Z 1692 /...	7 Z 1692 /...	8 Z 1692 /...	9 Z 1692 /...	10 Z 1692 /...
Z 1692 / 25	... 25 - 06 / E	... 25 - 07 / E	... 25 - 08 / E	... 25 - 09 / E	... 25 - 10 / E
32	... 32 - 06 / E	... 32 - 07 / E	... 32 - 08 / E	... 32 - 09 / E	... 32 - 10 / E
40	... 40 - 06 / E	... 40 - 07 / E	... 40 - 08 / E	... 40 - 09 / E	... 40 - 10 / E

Bestellformular	Order form	Formulaire de commande
Firma / Company / Société: _____		
Zuständig / Contact / Responsable: _____		
Tel.: _____	Fax.: _____	Datum / Date: _____
<input type="checkbox"/> Bestellung / Order / Commande	Nr. / No.: _____	<input type="checkbox"/> Anfrage / Quotation / Demande

Z 1692 /.../S

Zweistufenauswerfer, vorlaufend
 Two-stage ejector, advancing
 Ejecteur bi-étagé, en continu

Funktionsflächen DLC beschichtet
 Functional surfaces with DLC coating
 Surfaces d'usure avec revêtement DLC



4

Alle Abmessungen sind identisch mit der Standardversion. Der Hub „H₁“ ist in mm-Schritten wählbar. Hierbei ist zu beachten, dass sich durch das kürzen von H₁, auch der Hub H₂ um das gleiche Maß verkürzt.

All dimensions are identical with the standard version. The stroke “H₁” can be selected in mm steps. Here, it must be ensured that when H₁ is shortened, the stroke H₂ is shortened to the same degree.

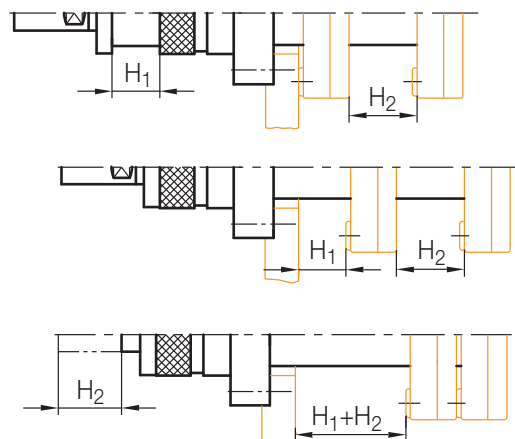
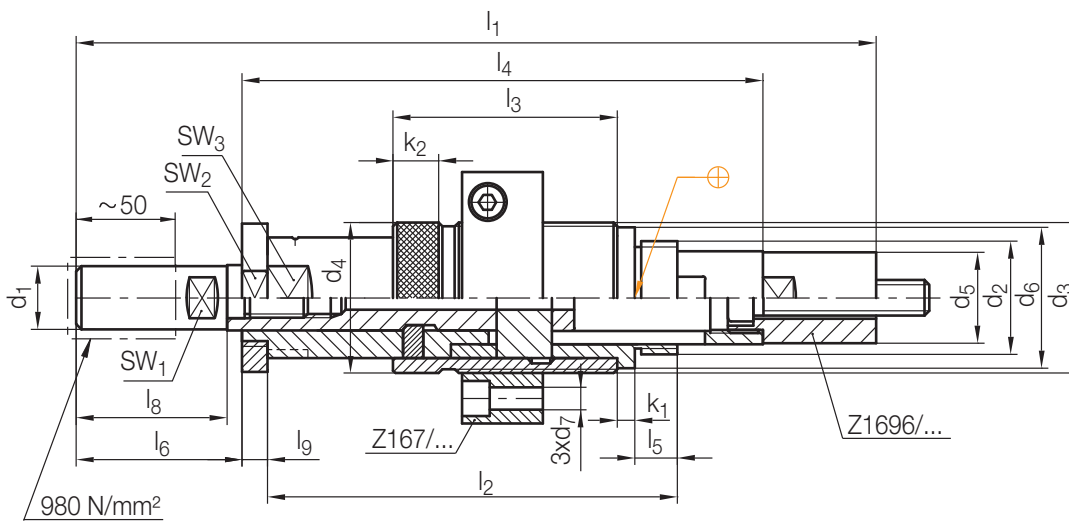
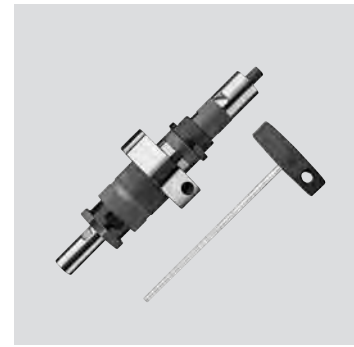
Toutes les dimensions sont identiques à la version standard. La course «H₁» peut être sélectionnée mm par mm. Dans ce cas, il faut prendre en compte que la course H₂ se raccourci d'autant.

Stck./Pc.	Typ	d ₁	H ₁	S
	Z 1692	/	x	/ S
		/	x	/ S
		/	x	/ S

Z 1695/...

Zweistufenauswerfer, zentraler Einbau
Two stage ejector, central mounting
Ejecteur bi-étagé, montage central

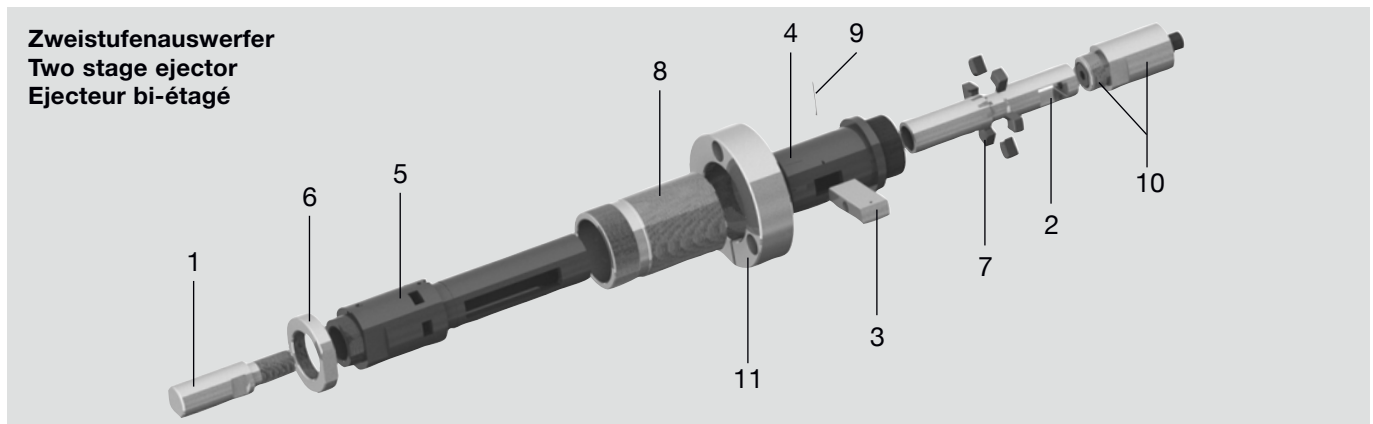
Funktionsflächen DLC beschichtet
Functional surfaces with DLC coating
Surfaces d'usure avec revêtement DLC



H = Hub / Stroke / Course

Neu / New / Nouveau

k ₂	k ₁	SW ₃	SW ₂	SW ₁	l ₉	l ₃	l ₆	l ₅	l ₄	l ₃	l ₂	l ₁	H ₂		H ₁		d ₇	d ₆	d ₅	d ₄	d ₃	d ₂	d ₁	Nr./No.
													min.	max.	min.	max.								
18	6	36	46	17	10	52	58	17	175	82	141	278	6	48	4	36	9	50	31,5	52	M52x1,5	M40x1,5	22	Z 1695/22
	7	41	55	19		60	66		207	89	163	329	8	60	5	50		56	36	60	M60x1,5	M45x1,5	25	25
16	8	50	65	27	12	82	102	22	257	106	196	430	10	86	6	60	11	70	44	72	M72x1,5	M55x1,5	32	32



Pos.	Benennung	Designation	Désignation	Stück Quantity Pièce
1	Ausstoßbolzen	Ejector rod	Tige d'éjection	1
2	Ausstoßbuchse	Ejector sleeve	Douille d'éjection	1
3	Brücke	Bridging piece	Pont	1
4	Schiebehülse, außen	Outer sliding bush	Douille coulissante, extérieure	1
5	Schiebehülse, innen	Inner sliding bush	Douille coulissante, intérieure	1
6	Mutter	Nut	Ecrou	1
7	Segment	Segment	Segment	6
8	Spannbuchse	Clamping sleeve	Douille de serrage	1
9	Stift	Dowel pin	Tige	1
10	Adapter mit Schraube	Adapter with screw	Adaptateur avec rondelle	1
11	Flansch	Flange	Rondelle	1

4

= Verpackungseinheit / packing unit / unité d'emballage

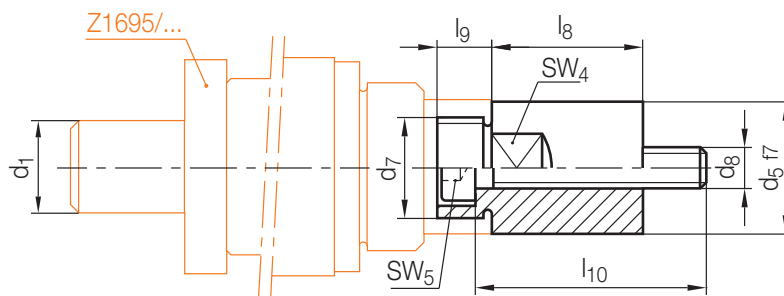
Nr./No.	1 Z 1695/...	2 Z 1695/...	3 Z 1695/...	4 Z 1695/...	5 Z 1695/...	6 Z 1695/...
Z 1695/22	... 22 - 01/E	... 22 - 02/E	... 22 - 03/E	... 22 - 04/E	... 22 - 05/E	... 22 - 06/E
25	... 25 - 01/E	... 25 - 02/E	... 25 - 03/E	... 25 - 04/E	... 25 - 05/E	... 25 - 06/E
32	... 32 - 01/E	... 32 - 02/E	... 32 - 03/E	... 32 - 04/E	... 32 - 05/E	... 32 - 06/E

Nr./No.	7 Z 1695/...	8 Z 1695/...	9 Z 1695/...	10 Z 1696/...	11 Z 167/...
Z 1695/22	... 22 - 07/E	... 22 - 08/E	... 22 - 09/E	... 22	... 52 x 1,5
25	... 25 - 07/E	... 25 - 08/E	... 25 - 09/E	... 25	... 60 x 1,5
32	... 32 - 07/E	... 32 - 08/E	... 32 - 09/E	... 32	... 72 x 1,5

Z 1696/...

Adapter
 Adapter
 Adaptateur

Mat.: 1.2312/1100 N/mm²



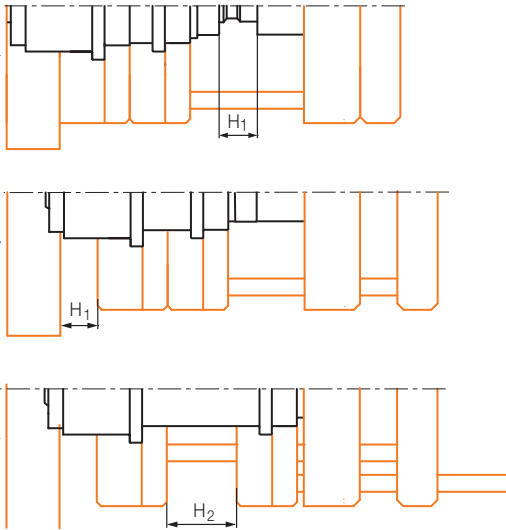
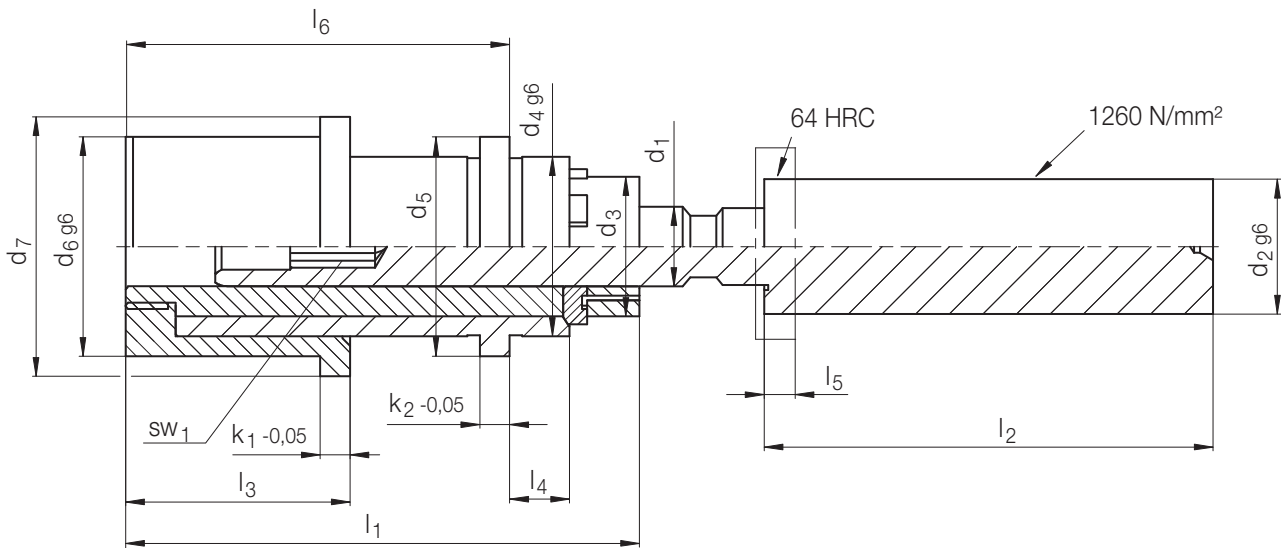
4

SW ₅	SW ₄	l ₁₀	l ₉	l ₈	d ₈	d ₇	d ₅	d ₁	Nr./No.
6	27	62	13	45	M12x1,25	M24x1,25 LH	31,5	22	Z 1696/22
8	32	78	14	56	M14x1,5	M28x1,25 LH	36	25	25
	36	100	16	71	M16x1,5	M34x1,25 LH	44	32	32

Z 1697/...

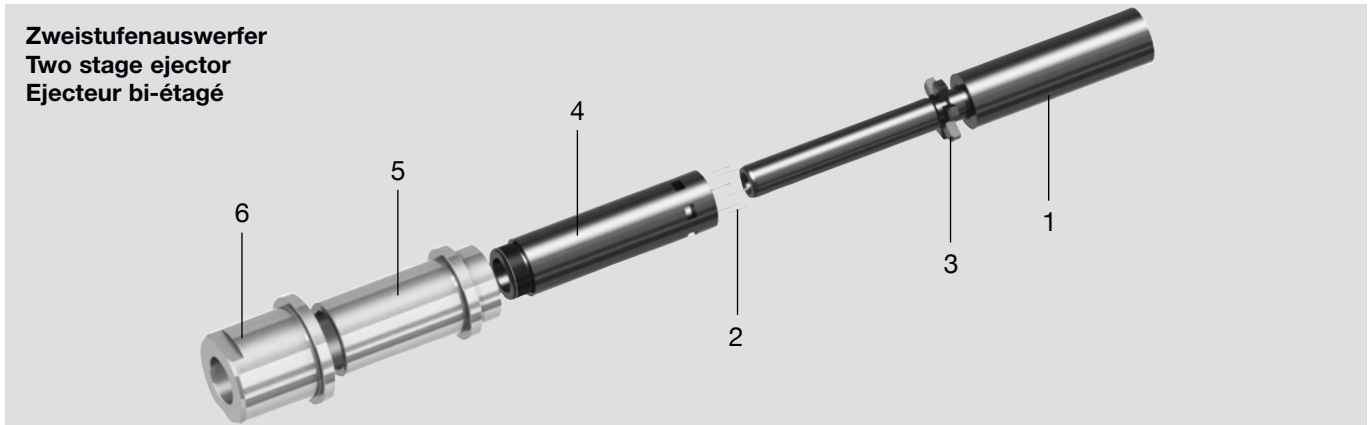
Zweistufenauswerfer, dezentraler Einbau
 Two stage ejector, off-center mounting
 Ejecteur bi-étagé, montage décentré


Funktionsflächen DLC beschichtet
 Functional surfaces with DLC coating
 Surfaces d'usure avec revêtement DLC




Neu / New / Nouveau

sw ₁	k ₂	k ₁	l ₆	l ₅	l ₄	l ₃	l ₂	l ₁	d ₇	d ₆	d ₅	d ₄	d ₃	d ₂	H ₁ min.	H ₁ max.	H ₂ min.	H ₂ max.	d ₁	Nr./No.
8	6	6	77	5	12	45	90	103	52	44	44	36	28	27	6	76	3	76	16	Z 1697 / 16
10	7	7	101	6	17	59	100	134	59	51	51	43	34	32	8	96	4	96	20	20
14	8	8	126	7	22	74	150	168	73	64	63	54	43	42	10	130	5	130	26	26



Pos.	Benennung	Designation	Désignation	Stück Quantity Pièce
1	Ausstoßbolzen	Ejector rod	Tige d'éjection	1
2	Stift	Dowel pin	Tige	6
3	Segment	Segment	Segment	6 
4	Schiebehülse	Sliding bush	Douille coulissante	1
5	Führungsbuchse	Guide bush	Bague de guidage	1
6	Flansch	Flange	Bride	1

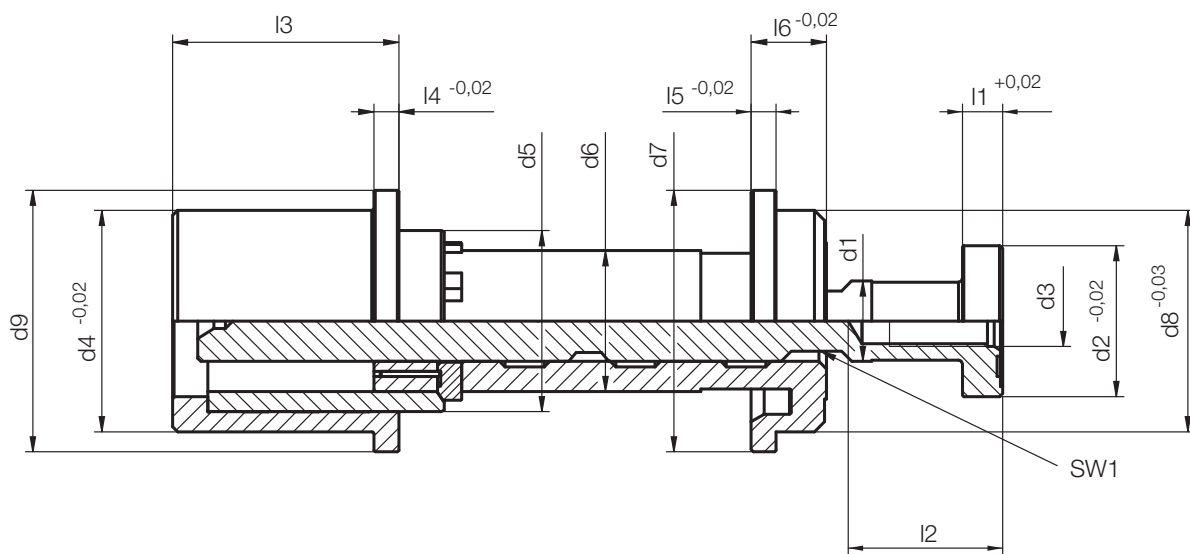
 = Verpackungseinheit / packing unit / unité d'emballage

Nr. / No.	1 Z 1697/...	2 Z 1697/...	3 Z 1697/...	4 Z 1697/...	5 Z 1697/...	6 Z 1697/...
Z 1697/16	... 16-01/E	... 16-02/E	... 16-03/E	... 16-04/E	... 16-05/E	... 16-06/E
20	... 20-01/E	... 20-02/E	... 20-03/E	... 20-04/E	... 20-05/E	... 20-06/E
26	... 26-01/E	... 26-02/E	... 26-03/E	... 26-04/E	... 26-05/E	... 26-06/E

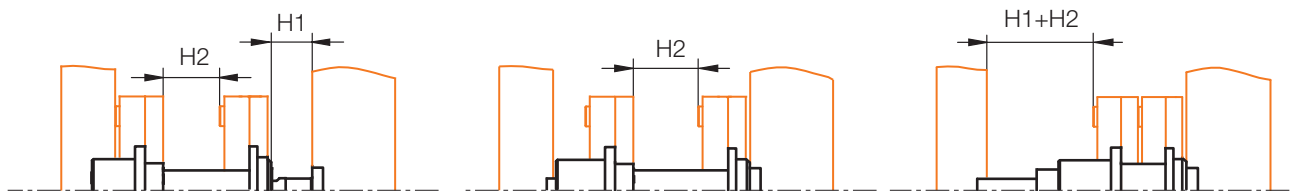
Z 1698/...

Zweistufenauswerfer
Two stage ejector
Ejecteur bi-étagé

Funktionsflächen DLC beschichtet
Functional surfaces with DLC coating
Surfaces d'usure avec revêtement DLC



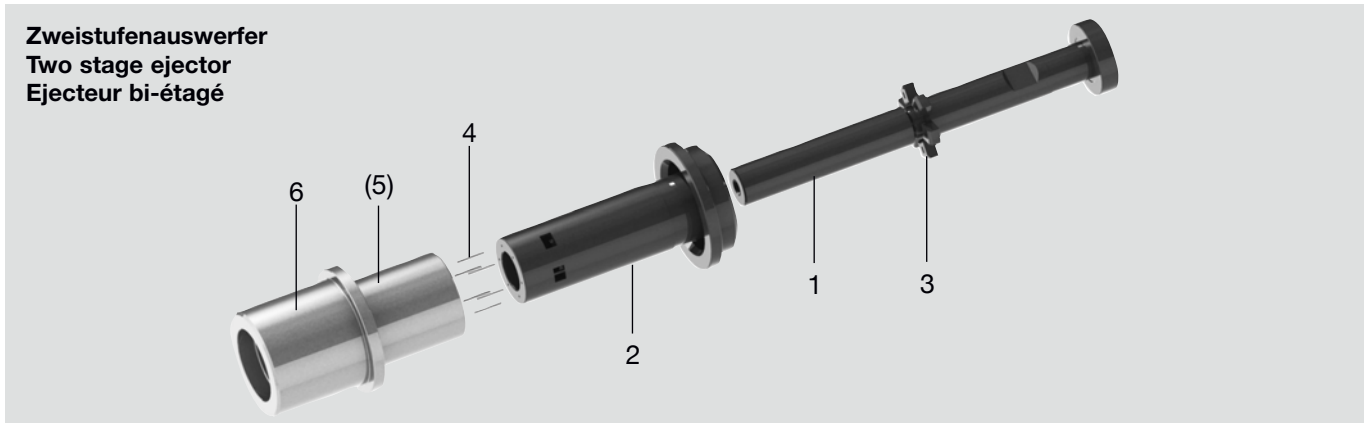
4



* = Die Bestellnummer ist mit dem benötigten Hub „H2“ zu ergänzen
Please complete the order No. by specifying the required stroke “H2”
Le numéro de commande doit être complété avec la course nécessaire « H2 »

Neu / New / Nouveau

sw1	l6	l5	l4	l3	l2	l1	d9	d8	d7	d6	d5	d4	d3	d2	H1		d1	H2*		Nr./No.
															min.	max.		min.	max.	
12	15	5	5	45	28	8	52	44	52	28	36	44	M10	31	4	68	16	4	68	Z 1698/16xH2
15	20	6	6	60	30	10	59	51	59	34	43	51	M12	34	5	92	20	5	92	20xH2
20	25	8	8	74	38	12	73	64	73	43	54	64	M16	44	6	120	26	6	120	26xH2



Pos.	Benennung	Designation	Désignation	Stück Quantity Pièce
1	Ausstoßbolzen	Ejector rod	Tige d'éjection	1
2	Schieberhülse, innen	Slide bush, inside	Douille coulissante, intérieure	1
3	Segment	Segment	Segment	6
4	Stift	Pin	Goupille	6
(5)	Schieberhülse, außen	Slide bush, outside	Douille coulissante, extérieure	1
6	Spannhülse	Clamping sleeve	Douille de serrage	1

= Verpackungseinheit / packing unit / unité d'emballage

Nr./No.	1 Z 1698/...	2 Z 1698/...	3 Z 1698/...	4 Z 1698/...	6 Z 1698/...
Z 1698/16	... 16-01/E	... 16-02/E	... 16-03/E	... 16-04/E	... 16-05/E
20	... 20-01/E	... 20-02/E	... 20-03/E	... 20-04/E	... 20-05/E
26	... 26-01/E	... 26-02/E	... 26-03/E	... 26-04/E	... 26-05/E

Pos. 5 (Schieberhülse, außen) ist nicht als Ersatzteil verfügbar

verklebte Hülse in Pos. 6
> Kundenspezifische Anfertigung

Pos. 5 (slide bush, outside) is not available as a spare part

adhesive-bonded sleeve under Item 6
> made to customer specifications

Pos. 5 (Douille coulissante, extérieure) n'est pas disponible en pièce détachée

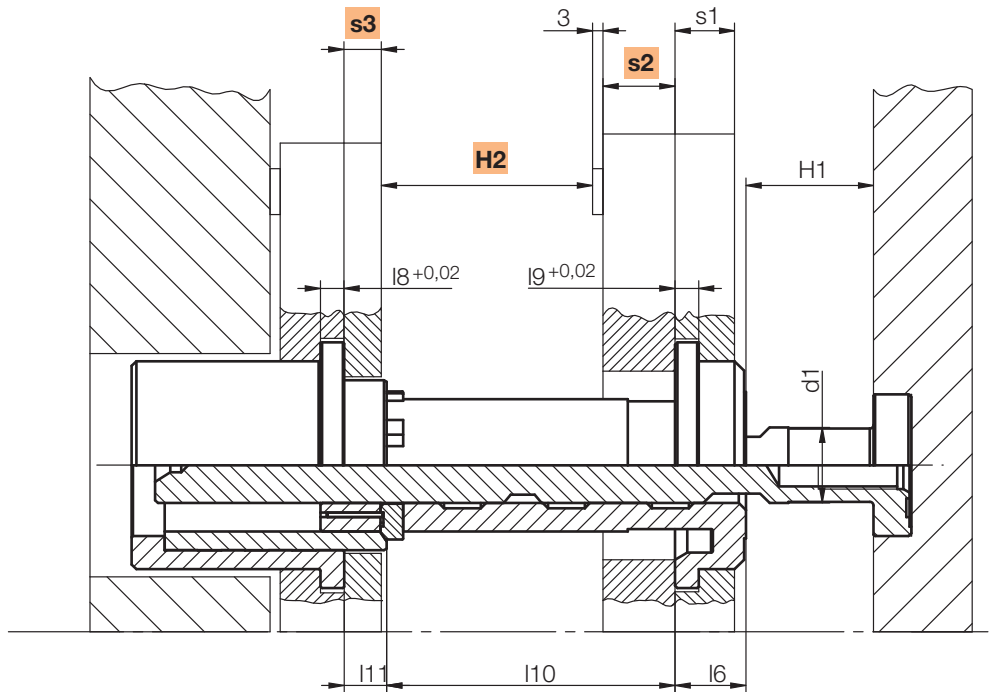
Douille pos.6 collée
> Réalisation spécifique

Bestellformular	Order form	Formulaire de commande
Firma/Company/Société : _____		
Zuständig/Contact/Responsable : _____		
Tel.: _____	Fax.: _____	Datum/Date : _____
<input type="checkbox"/> Bestellung/Order/Commande	Nr./No.: _____	<input type="checkbox"/> Anfrage/Quotation/Demande

Z 1698/...

Zweistufenauswerfer
Two-stage ejector
Ejecteur bi-étagé

Funktionsflächen DLC beschichtet
Functional surfaces with DLC coating
Surfaces d'usure avec revêtement DLC



■ Die benötigten Maße bitte ergänzen
Please complete the required dimensions
S.v.p. complétez les dimensions nécessaires

Nr./No	d1	H2 max.	H2	H1		l11 max.	l10	l9	l8	l6	s1 max.	s2	s3
				min.	max.								
Z 1698/16xH2	16	68		4	68	39	61	5	5	15	12		
20xH2	20	92		5	92	52	82	6	6	20	17		
26xH2	26	120		6	120	66	106	8	8	25	22		