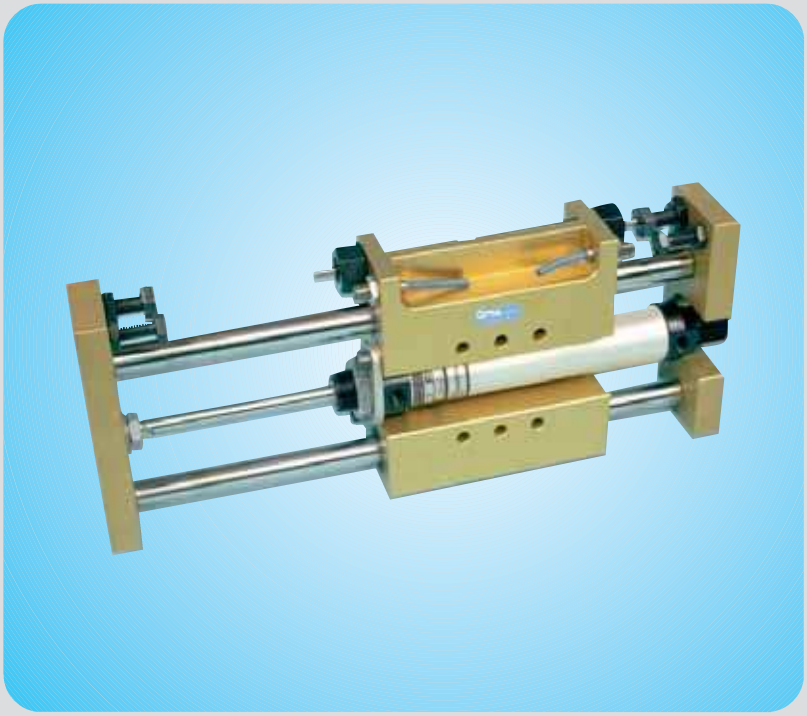
OMiL Gripping systems and automation

Pneumatic linear actuator - series AL with cylinder ISO
Pneumatischer Linearantrieb – Serie AL mit zylinder ISO



Technische Eigenschatften:

- Betriebsdruck: 2…8 bar
- Wiederholgenauigkeit: 0.05 mm mit einstellbarem Hub
- Betriebstemperaturbereich von 5°C bis 60°C
- Antrieb: durch Zylinder ISO 6431-6432
- Gehäuse: hartbeschichtete AluminiumLegierung
- Material der Funktionsteile: einsatzgehärteter Stahl
- Schiebetüren : Kugelbuchsen
- Betätigung : pneumatisch durch gefilterte Luft (10µm), trocken oder geölt
- Instandhaltung: Wartungsfrei bis zu 2 Millionen Schaltspielen
- Geschwindigkeit ohne Belastung: 0,1 bis 0,5 m/s für AL 08-20…0,5 bis 0,7 m/s für AL 25-30
- Zubehör: Zylinder ISO, Stoßdämpfer
- Schutzart IP54
- 24 Monate Garantie

Technical data:

- Range of operating pressure: 2 ...8 bar
- Accuracy repeability: 0.05 mm (with adjustable stroke)
- Operating temperature: 5°C to 60°C
- Operating system: through cylinder ISO 6431-6432
- Housing material: high tensile hard-coated aluminium alloy
- Material of functional parts: treated and ground steels
- Sliding: linear bearing
- Actuation: compressed air filtered (10µm), dry or lubricated
- Maintenance: no maintenance required for the first 2 million cycles
- Speed no load:
  AL 08-20 0,6 at 0,8 m/s
  AL 25-30 0,5 at 0,7 m/s
- Accessories: cylinder ISO, shock absorbers
- Rating IP54
- Warranty 24 months

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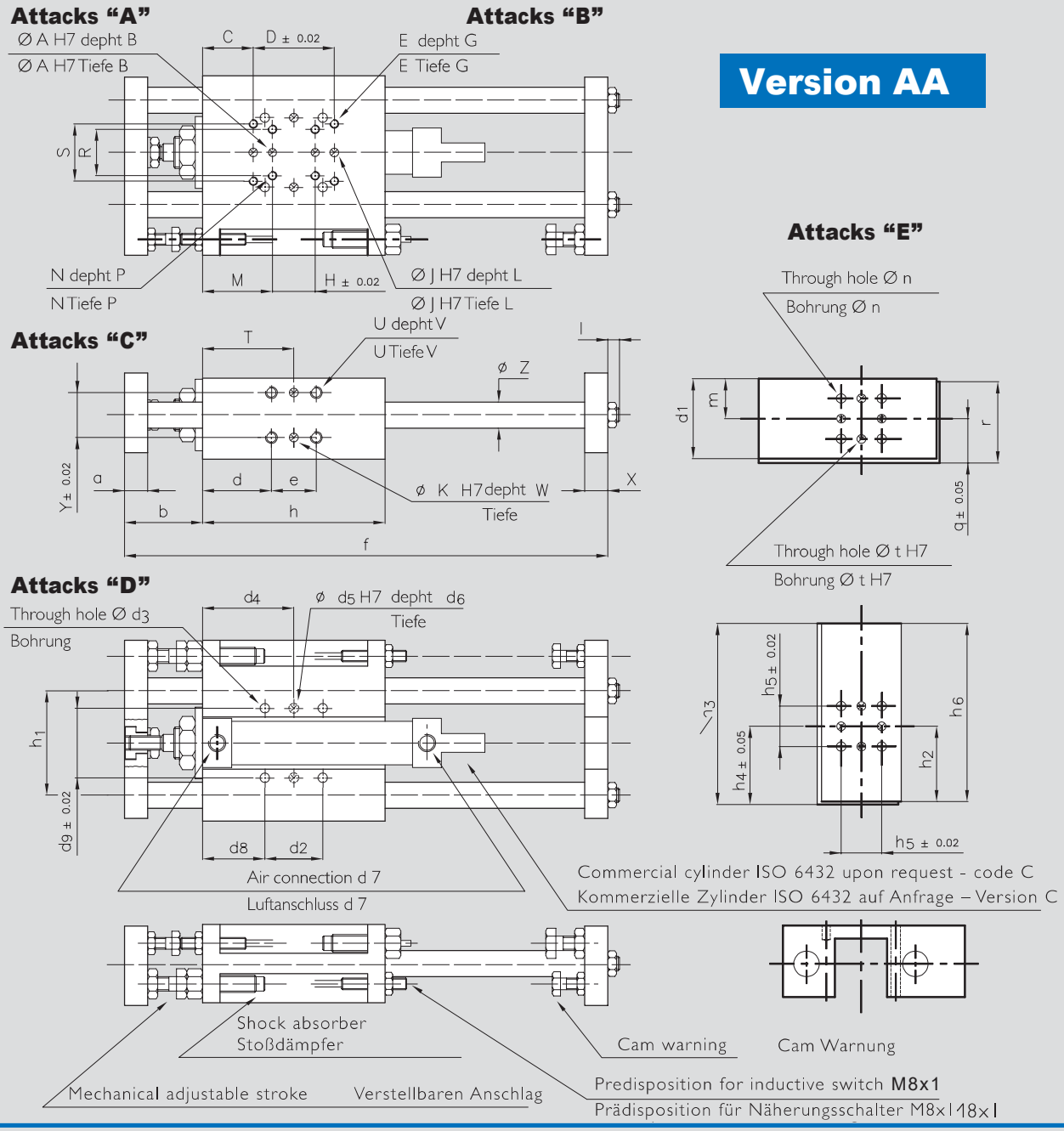
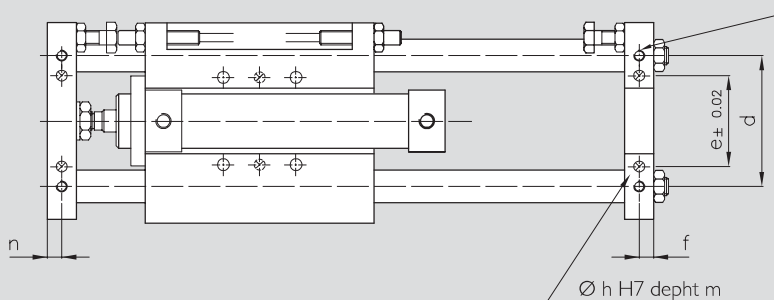


Attacks on lower base - cod. CA

Angriffe auf die niedrigeren Basis – vers. CA



Type / Typ	a	b	d	e	f	h	m	n
AL 08	M5	10	50	32	5.5	5	8	5.5
AL 12	M6	12	60	40	7	6	10	7
AL 16	M8	16	80	56	8	8	14	8

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Pneumatic linear actuator - series AL with cylinder ISO
Pneumatischer Linearantrieb – Serie AL mit zylinder ISO

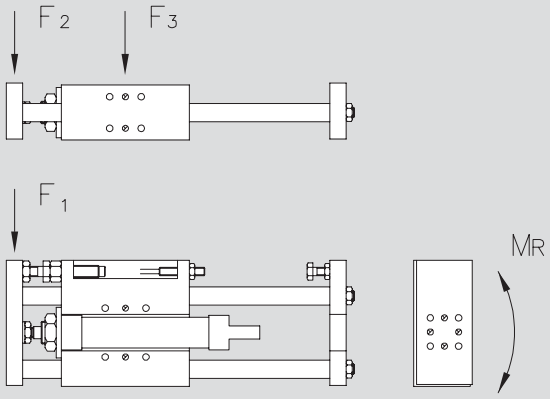
Type / Typ	A	B	C	D	E	G	H	J	L	M	N	P	R	S	T	U	V	Z	Y	X	K	W	a
AL 08	/	/	/	/	/	/	/	/	/	/	/	/	/	/	40	M6	12	8	28	11	6	12	11
AL 12	5	7	/	/	/	/	34	/	/	33	M5	7	22	/	50	M6	14	12	28	14	6	12	14
AL 16	6	9	33	54	M6	9	40	6	9	40	M6	9	26	40	60	M8	16	16	31	16	8	16	16

Type / Typ	b	d	e	h	l	m	n	q	r	t	d_1	d_2	d_3	d_4	d_5	d_6	d_7	d_8	d_9	h_1	h_2	h_3	h_4
AL 08	41	26	28	80	6	21	5.5	19	38	5	39	22	5.5	40	5	8	M5	29	34	50	34	86	35
AL 12	48	36	28	100	9	23	6.5	23	44	6	45	26	6.5	50	6	10	1/8G	37	40	60	42	102	43
AL 16	54	44.5	31	120	9	24	7	27	49	6	50	40	6.5	60	6	10	1/8G	40	54	80	55	129	56

Type / Typ	h_5	h_6	Shock absorber / Stoßdämpfer	Max energy (Nm) / Max Energieaufnahme (Nm)		Effective mass / Effektive Masse
AL 08	22	85	M10 stroke 6	for cycle 2.8	for hour 13500	1.8 - 5.5
AL 12	28	101	M10 stroke 6	for cycle 2.8	for hour 13500	3.6 - 13.6
AL 16	28	128	M12 stroke 10	for cycle 8	for hour 26000	10 - 38

Type / Typ	Diameter cylinder bore / Kolben-durch-messer	Push force at 6 bar / Druck bei 6 bar	Pull force a 6 bar / Zug bei 6 bar
AL 8	16	104	87
AL 12	20	170	140
AL 16	25	267	220

Type / Typ	stroke / Hub	25	50	80	100	125	160	200	MR
AL 08	f	187	212	242	/	/	/	/	2
	F_1 (N)	20	9	2	/	/	/	/	
	mass	1	1	1.1	/	/	/	/	
AL 12	f	221	246	276	296	321	356	/	4
	F_1 (N)	160	80	50	40	30	20	/	
	mass	1.9	2	2	2.1	2.1	2.3	/	
AL 16	f	253	278	308	328	353	388	428	6
	F_1 (N)	430	220	140	110	80	70	50	
	mass	3.2	3.3	3.4	3.5	3.6	3.7	3.9	

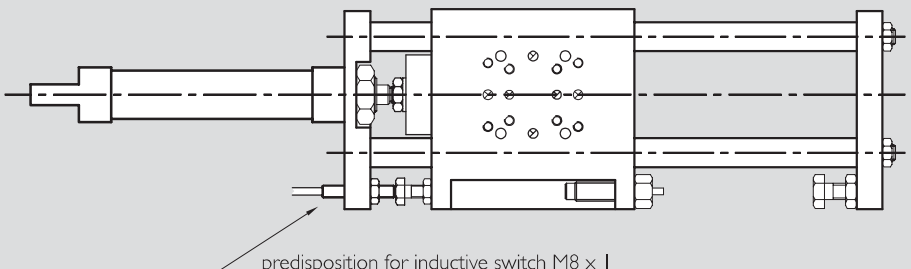


Note:
- mass in Kg including shock absorber and cylinder
- standard strokes
  AL 08 : 50 - 80
  AL 16 : 50 - 80 - 100
  AL 20 : 50 - 80 - 100 -160
- Load in N:
  $F_3 = F_1 \times 1.35$
  $F_2 = F_1 \times 0.8$

Note:
- Masse in Kg einschließlich Stoßdämpfer und Zylinder
- Hub
  AL 08 : 50 - 80
  AL 16 : 50 - 80 - 100
  AL 20 : 50 - 80 - 100 -160
- Belastung in N:
  $F_3 = F_1 \times 1.35$
  $F_2 = F_1 \times 0.8$

Version with external cylinder - cod. CE

Version mit Außenzylinder – Version CE



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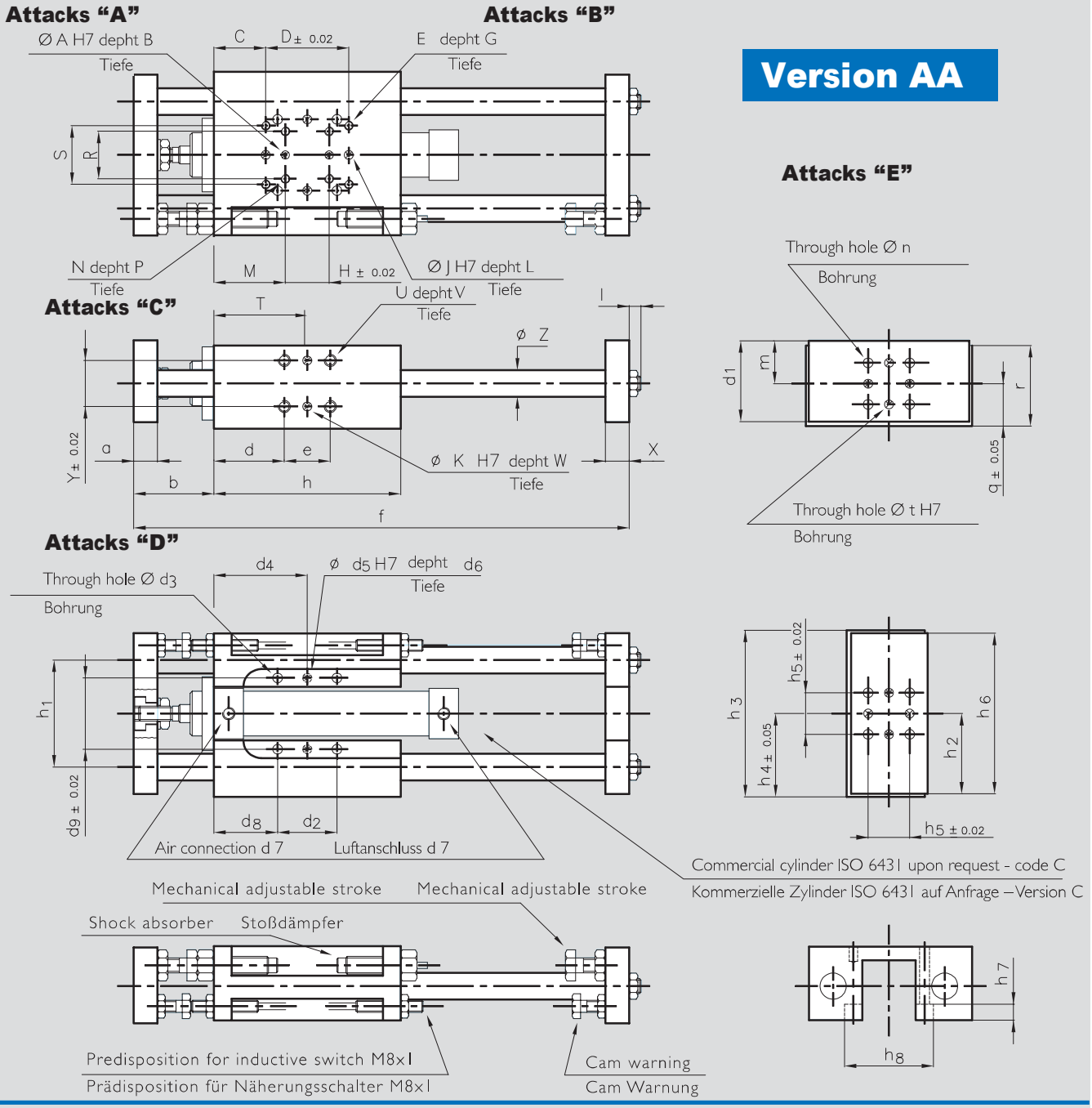
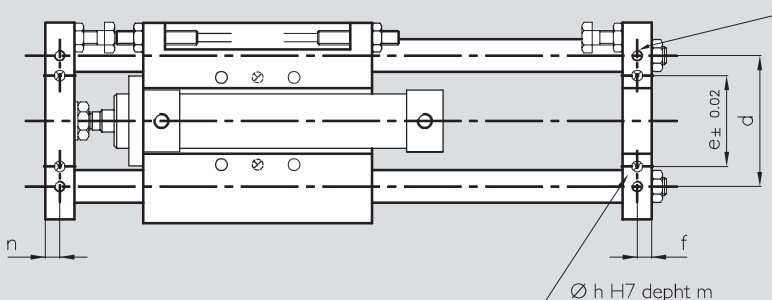


Attacks on lower base - cod. CA

Angriffe auf die niedrigeren Basis – version CA



Type / Typ	a	b	d	e	f	h	m	n
AL 20	M8	16	100	76	7	8	16	9
AL 25	M10	18	110	80	7	10	18	9
AL 30	M12	20	130	100	9	12	20	11

OMiL Gripping systems and automation

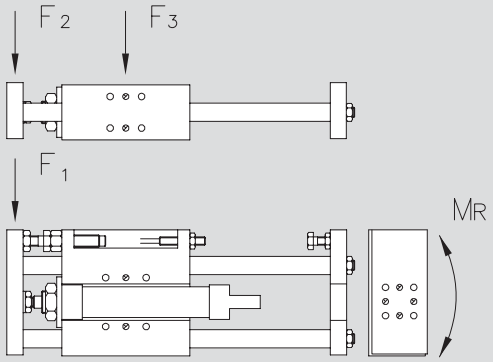
Pneumatic linear actuator - series AL with cylinder ISO
Pneumatischer Linearantrieb – Serie AL mit zylinder ISO

Type / Typ	A	B	C	D	E	G	H	J	L	M	N	P	R	S	T	U	V	Z	Y	X	K	W	a
AL 20	6	12	37	70	M8	12	54	8	12	45	M6	12	40	42	72	M8	16	20	44	14	8	16	18
AL 25	8	15	/	/	/	/	70	/	/	50	M8	15	42	/	85	M8	18	25	44	14	8	18	18
AL 30	15	15	/	/	/	/	70	/	/	64	M8	15	42	/	99	M10	20	30	60	18	10	20	22

Type / Typ	b	d	e	h	l	m	n	q	r	t	d_1	d_2	d_3	d_4	d_5	d_6	d_7	d_8	d_9	h_1	h_2	h_3	h_4
AL 20	54	50	44	144	10	30	8.5	40	68	8	69	42	9	72	8	16	1/8G	51	70	100	68	138	69
AL 25	60	63	44	170	12	35	9	45	78	8	79	42	9	85	8	16	1/4G	64	70	110	78	158	79
AL 30	74	69	60	198	14	41	9	55	94	8	95	48	11	99	10	20	1/4G	75	86	130	93	188	94

Type / Typ	h_5	h_6	h_7	h_8	Shock absorber / Stoßdämpfer	Max energy (Nm) / Max Energieaufnahme (Nm)		Effective mass / Effektive Masse
AL 20	31	136	13	84	M14 stroke 16	for cycle 21	for hour 34000	23 - 102
AL 25	44	156	14	88	M20 stroke 19	for cycle 33	for hour 45000	32 - 204
AL 30	44	186	17	104	M25 stroke 25	for cycle 73	for hour 68000	68 - 408

Type / Typ	Diameter cylinder bore / Kolben-durch-messer	Push force at 6 bar (N) / Druck bei 6 bar	Pull force at 6 bar (N) / Zug bei 6 bar	MR (Nm) / MR (Nm)
AL 20	32	482	415	9
AL 25	40	753	633	18
AL 30	50	1178	990	30

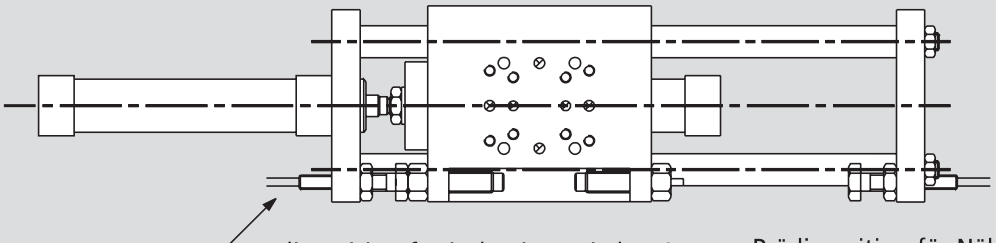


Type / Typ	stroke / Hub	50	80	100	160	200	250	320	400	500
AL 20	f	298	328	348	408	448	498	568	/	/
	F_1 (N)	400	260	200	160	100	85	70	/	/
	mass	5.6	5.8	6	6.4	6.7	7	7.6	/	/
AL 25	f	336	366	386	446	486	536	606	686	786
	F_1 (N)	700	440	340	230	180	140	120	85	80
	mass	9.2	9.6	9.8	10.4	10.9	11.4	12.1	13.1	14.2
AL 30	f	/	422	442	502	542	592	662	742	842
	F_1 (N)	/	700	500	360	290	230	200	150	135
	mass	/	15.2	15.5	16.5	17.2	18	19.2	20.5	22.2

Note:
- mass in Kg including shock absorber and cylinder
- standard strokes
  AL 20 : 80-100-160-200
  AL 25 : 80-100-160-200
  AL 30 : 80-100-160-200
- Load in N:
  $F_3 = F_1 \times 1.35$
  $F_2 = F_1 \times 0.8$

Note:
- Masse in Kg einschließlich Stoßdämpfer und Zylinder
- Hub
  AL 20 : 80-100-160-200
  AL 25 : 80-100-160-200
  AL 30 : 80-100-160-200-
- Belastung in N:
  $F_3 = F_1 \times 1.35$
  $F_2 = F_1 \times 0.8$

Version with external cylinder - cod. CE
Version mit Außenzylinder – Version CE



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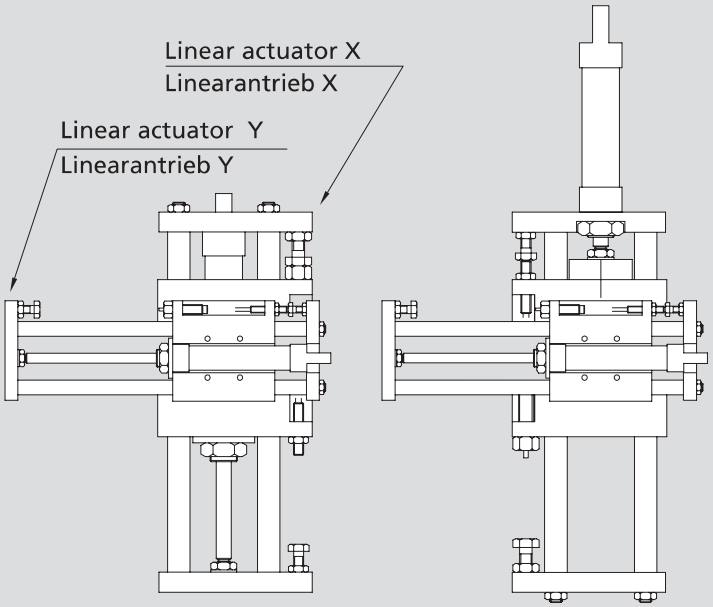
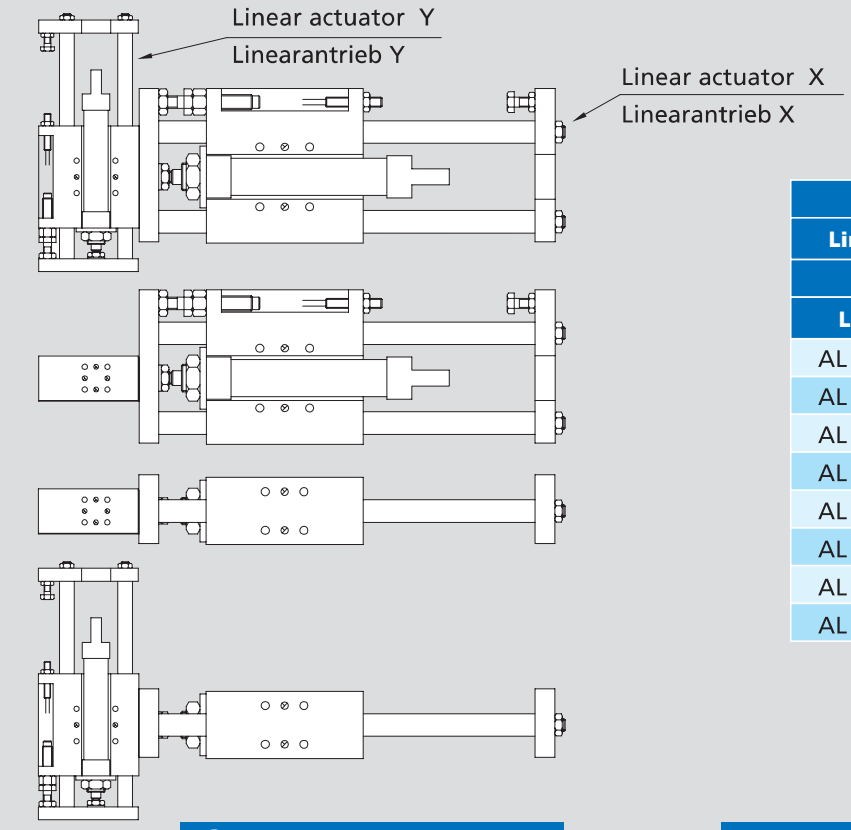


COMBINATIONS ACHIEVABLE	
Linear actuator X	**Linear actuator Y**
Kombinationen realisierbar	
Linearantrieb X	**Linearantrieb Y**
AL 12 (attack A)	AL 08 (attack D)
AL 16 (attack A)	AL 12 (attack D)
AL 16 (attack B)	AL 16 (attack D)
AL 20 (attack A)	AL 16 (attack D)
AL 20 (attack B)	AL 20 (attack D)
AL 25 (attack A)	AL 20 (attack D)
AL 25 (attack B)	AL 25 (attack D)
AL 30 (attack A)	AL 20 (attack D)
AL 30 (attack A)	AL 25 (attack D)



COMBINATIONS ACHIEVABLE	
Linear actuator X	**Linear actuator Y**
Kombinationen realisierbar	
Linearantrieb X	**Linearantrieb Y**
AL 12 (attack E)	AL 08 (attack C)
AL 16 (attack E)	AL 08 (attack C)
AL 16 (attack E)	AL 12 (attack C)
AL 20 (attack E)	AL 16 (attack C)
AL 25 (attack E)	AL 20 (attack C)
AL 25 (attack E)	AL 25 (attack C)
AL 30 (attack E)	AL 20 (attack C)
AL 30 (attack E)	AL 25 (attack C)

Ordering example — Bestellbeispiel

Type	Diameter cylinder bore	Version AA / CE	Stroke	Attacks on lower base code CA	Shock absorber hydraulic indicate code D	For cylinder indicate code C	Proximity switch M8 x 1 code F
Typ	**Kolpen-durch-messer**	**Version AA / CE**	**Hub**	**Angriffe auf die niedrigeren Basis – audrückstern CA**	**Stoßdämpfer audrückstern D**	**Kommerzielle Zylinder audrückstern C**	**Näherungsschalter M8x1 audrückstern F**
AL 16	25	AA	100	/	D	C	/