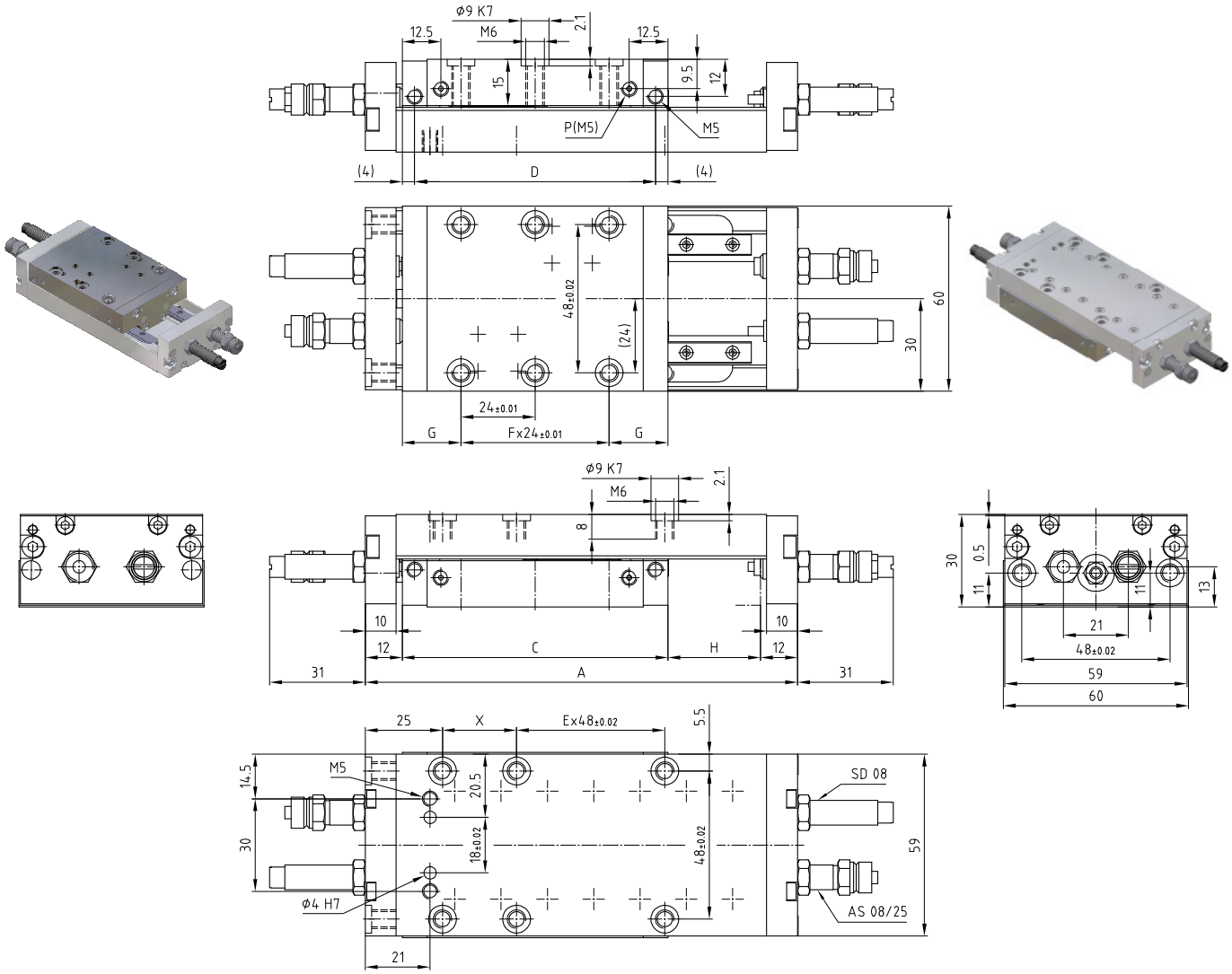
Linear-Element LES 16 | Elément linéaire LES 16 | Unità lineare LES 16 | Linear element LES 16



P=Luftanschluss M5 | P=Raccord d'air M5 | P=Raccordi pneumatici M5 | P=Air connections M5

Typ	Type	Tipo	Type	LES 16-30	LES 16-60	LES 16-90
Artikelnummer	No d'article	Codice No.	Reference No.	1000001	1000002	1000003
Nennhub H	Course H	Corsa H	Stroke H	30 mm	60 mm	90 mm
Mass A	Dimension A	Dimensione A	Dimension A	140 mm	200 mm	260 mm
Mass C	Dimension C	Dimensione C	Dimension C	86 mm	116 mm	146 mm
Mass D	Dimension D	Dimensione D	Dimension D	78 mm	108 mm	138 mm
Mass Ex48	Dimension Ex48	Dimensione Ex48	Dimension Ex48	1	2	3
Mass Fx24	Dimension Fx24	Dimensione Fx24	Dimension Fx24	2	3	4
Mass G	Dimension G	Dimensione G	Dimension G	19 mm	22 mm	25 mm
Mass X	Dimension X	Dimensione X	Dimension X	24 mm	48 mm	48 mm

Sonderausführungen auf Anfrage | Constructions particulières sur demande | Esecuzioni speciali su richiesta | Special types on request

Zubehör finden Sie auf den Seiten 1.34, 6.1 | Vous trouvez des accessoires aux pages 1.34, 6.1 | Per gli accessori, vedi alle pagine 1.34, 6.1 | You will find accessories on pages 1.34, 6.1

Technische Daten | Données techniques | Dati tecnici | Technical data

Typ	Type	Tipo	Type	LES 16-30	LES 16-60	LES 16-90
Artikelnummer	No d'article	Codice No.	Reference No.	1000001	1000002	1000003
Nennhub H	Course H	Corsa H	Stroke H	30 mm	60 mm	90 mm
Max. Nutzgewicht=m	Charge utile max.=m	Carico utile max.=m	Max. useful load=m	5 kg	5 kg	4 kg
Kolbenkraft einfahrend	Force du piston rentrant	Forza di rientro	Piston force retracted	78 N (5 bar)	78 N (5 bar)	78 N (5 bar)
Kolbenkraft ausfahrend	Force du piston sortant	Forza di uscita	Piston force extended	90 N (5 bar)	90 N (5 bar)	90 N (5 bar)
Betriebsdruck	Pression d'air	Pressione aria	Working pressure	3-8 bar	3-8 bar	3-8 bar
Luftanschlüsse (P)	Raccords d'air (P)	Raccordi pneumatici (P)	Air connectors (P)	M5	M5	M5
Luftverbrauch/Hub	Consommation d'air/course	Consumo aria/corsa	Air consumption/stroke	0.030 NL	0.060 NL	0.090 NL
Temperaturbereich	Ecart de température	Gamma di temperatura	Temperature range	-10°/ +60°C	-10°/ +60°C	-10°/ +60°C
Gewicht	Poids	Peso	Weight	0.5 kg	0.8 kg	1.1 kg
Wiederholgenauigkeit	Reproductibilité	Ripetibilità	Repeating accuracy	± 0.01 mm	± 0.01 mm	± 0.01 mm
Einbaulage (beliebig)	Position de montage (à volonté)	Posizione di montaggio (a volontà)	Any given position (any)			

Lieferumfang:	Matériel livré:	Ambito di fornitura:	Items supplied:
2 Anschlagschr. AS 08/25	2 Vis d'arrêt AS 08/25	2 Viti d'arresto AS 08/25	2 Stop screws AS 08/25
2 Stossdämpfer SD 08	2 Amortisseurs SD 08	2 Ammortizzatori SD 08	2 Shock absorbers SD 08
2 Positionierringe	2 Bagues de positionnement	2 Anelli di posizionamento	2 Positioning rings

Taktzeit
Messungen bei 5 bar

m=Masse [kg]
t = Hubzeit [s]

Temps de cycle
Mesuré à 5 bar

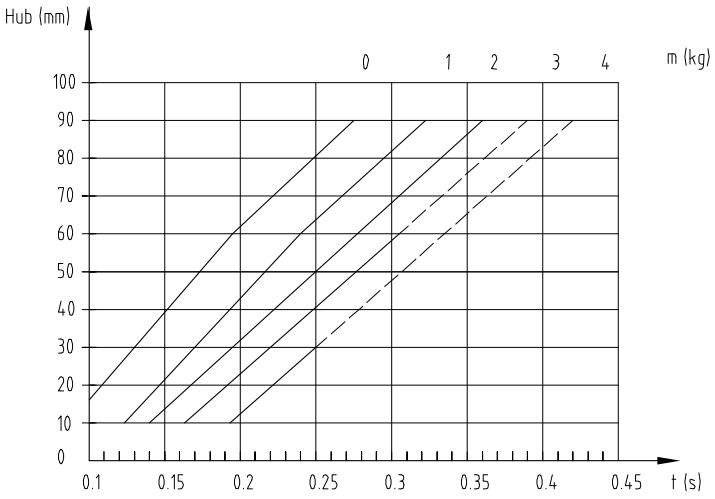
m=Masse [kg]
t = Temps par course [s]

Tempo di ciclo
Misurato con 5 bar

m=Massa [kg]
t = Tempo di corsa [s]

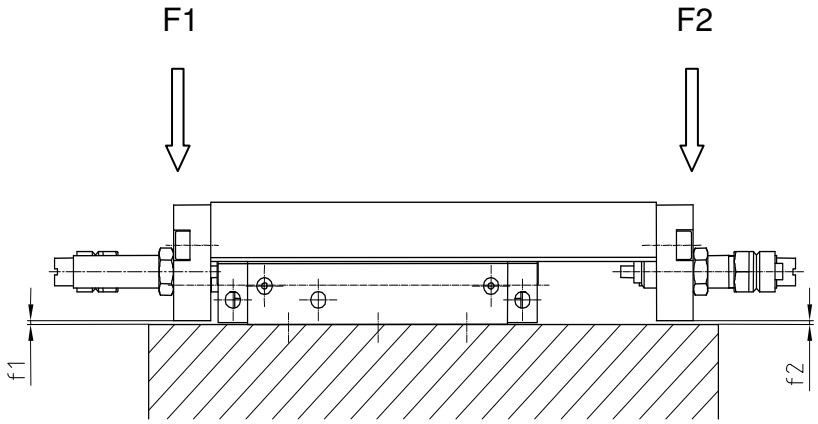
Cycle time
Measurements at 5 bar

m=Mass [kg]
t = Stroke time [s]



Änderungen vorbehalten
Modifications réservées
Modifiche senza preavviso
Modifcations reserved

Durchbiegung Fléchissement Deflessione Deflection

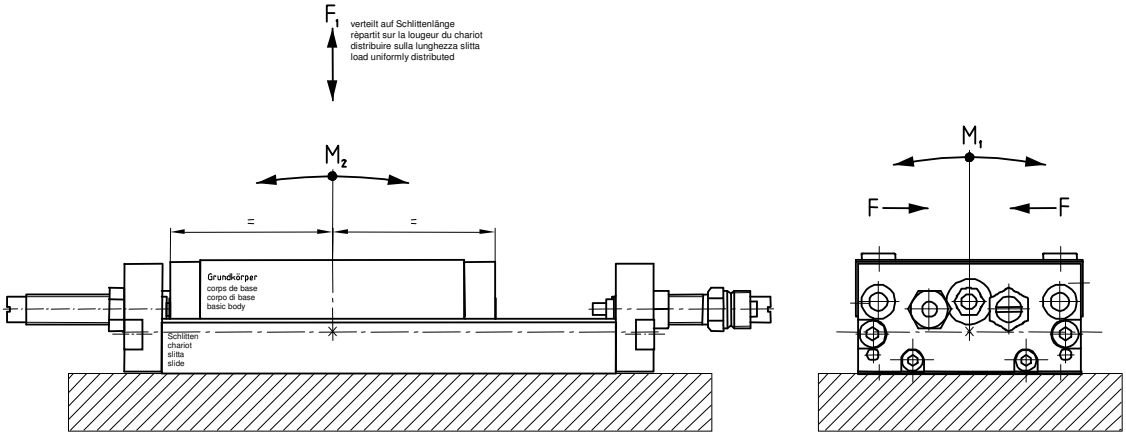


LES 16-30		
F1 / F2	f1	f2
10 N	0	0.012
20 N	0	0.020
30 N	0.005	0.030
40 N	0.008	0.035
50 N	0.010	0.050

LES 16-60	
f1	f2
0	0.020
0	0.050
0.005	0.080
0.008	0.100
0.010	0.130

LES 16-90	
f1	f2
0	0.065
0	0.110
0.005	0.170
0.008	0.210

Moment Moment Momento Moment



LES 16-30		
F1	M1	M2
1590 N	10 Nm	11 Nm

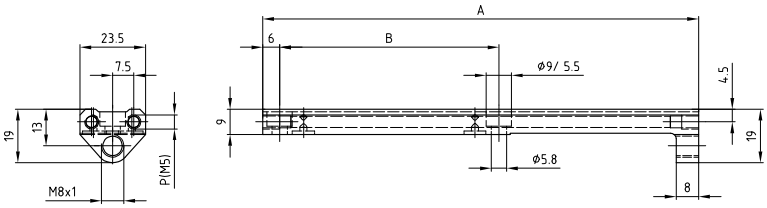
LES 16-60		
F1	M1	M2
1590 N	10 Nm	15 Nm

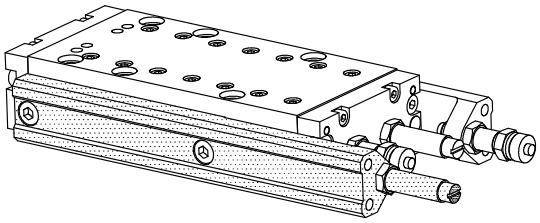
LES 16-90		
F1	M1	M2
1590 Nm	10 Nm	22 Nm

Zubehör LES 16 Accessoires LES 16 Accessori LES 16 Accessory LES 16

Anschlagwinkel	Butée d'angle	Angolo di arresto	Stop L-bar	LES 16-30	LES 16-60	LES 16-90
Artikelnummer	No d'article	Codice No.	Reference No.	4000001	4000002	4000003
Mass A	Dimension A	Dimensione A	Dimension A	145 mm	205 mm	265 mm
Mass B	Dimension B	Dimensione B	Dimension B	78 mm	108 mm	138 mm
Gewicht	Poids	Peso	Weight	0.060 kg	0.090 kg	0.120 kg

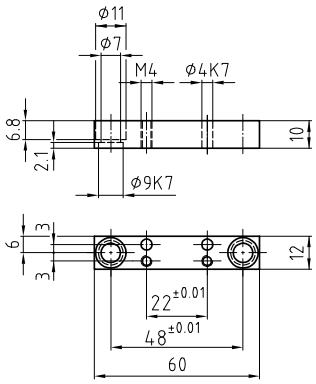
Lieferumfang:	Matériel livré:	Ambito di fornitura:	Items supplied:
2 Schrauben M5x12	2 Vis M5x12	2 Viti M5x12	2 Screws M5x12
1 O-Ring 12x1.5	1 Joint torique 12x1.5	1 Angelo toroidale 12x1.5	1 O-ring 12x1.5

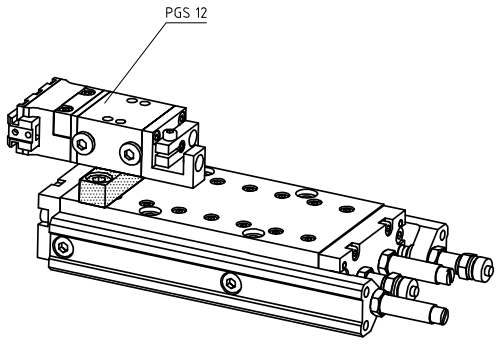




Verbindungsplatte	Plaque de raccordement	Piastra di collegamento	Connecting plate	4000063

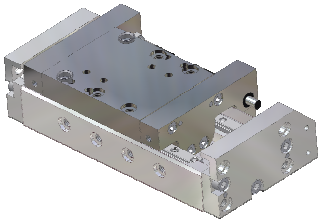
Lieferumfang:	Matériel livré:	Ambito di fornitura:	Items supplied:
2 Positionierringe	2 Bagues de positionnement	2 Anelli di posizionamento	2 Positioning rings
2 Schrauben M6x16	2 Vis M6x16	2 Viti M6x16	2 Screws M6x16
2 Schrauben M4x30	2 Vis M4x30	2 Viti M4x30	2 Screws M4x30

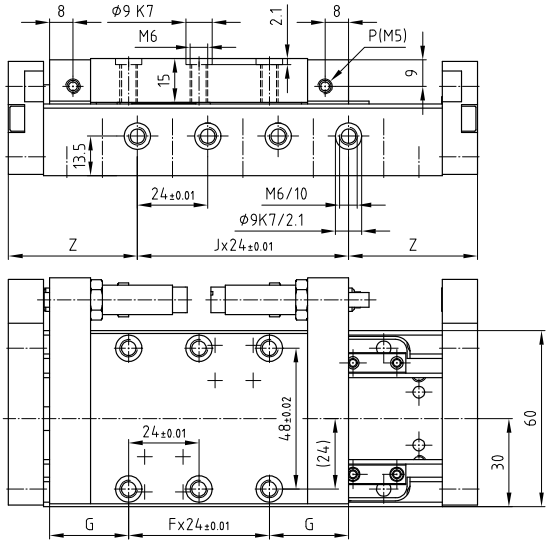


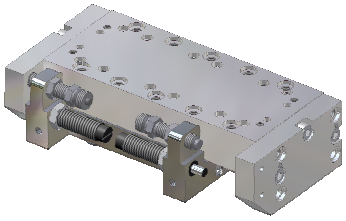


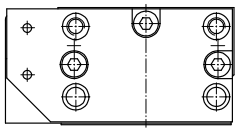
Änderungen vorbehalten
Modifications réservées
Modifiche senza preavviso
Modifcations reserved

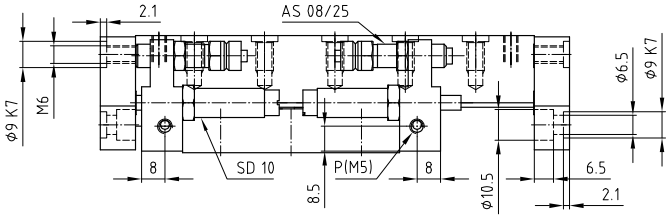
Linear-Element LES 20 | Elément linéaire LES 20 | Unità lineare LES 20 | Linear element LES 20

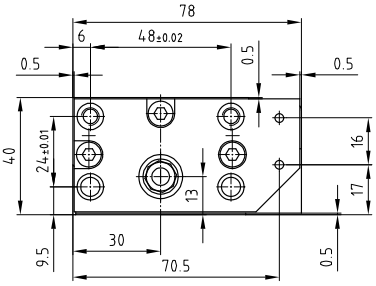


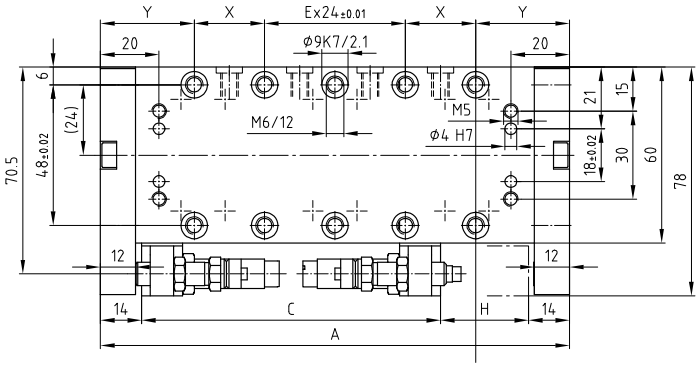












P=Luftanschluss M5 | P=Raccord d'air M5 | P=Raccordi pneumatici M5 | P=Air connections M5

Typ	Type	Tipo	Type	LES 20-30	LES 20-60	LES 20-90
Artikelnummer	No d'article	Codice No.	Reference No.	1000004	1000005	1000006
Nennhub H	Course H	Corsa H	Stroke H	30 mm	60 mm	90 mm
Mass A	Dimension A	Dimensione A	Dimension A	160 mm	190 mm	250 mm
Mass C	Dimension C	Dimensione C	Dimension C	102 mm	102 mm	132 mm
Mass E x 24	Dimension E x 24	Dimensione E x 24	Dimension E x 24	2	4	6
Mass F x 24	Dimension F x 24	Dimensione F x 24	Dimension F x 24	2	2	3
Mass G	Dimension G	Dimensione G	Dimension G	27 mm	27 mm	30 mm
Mass J x24	Dimension J x 24	Dimensione J x 24	Dimension J x 24	3	5	7
Mass X	Dimension X	Dimensione X	Dimension X	24 mm	24 mm	30 mm
Mass Y	Dimension Y	Dimensione Y	Dimension Y	32 mm	23 mm	23 mm
Mass Z	Dimension Z	Dimensione Z	Dimension Z	44 mm	35 mm	41 mm

Sonderausführungen auf Anfrage | Constructions particulières sur demande | Esecuzioni speciali su richiesta | Special types on request

Zubehör finden Sie auf den Seiten 1.44, 6.1 | Vous trouvez des accessoires aux pages 1.44, 6.1 | Per gli accessori, vedi alle pagine 1.44, 6.1 | You will find accessories on pages 1.44, 6.1

Technische Daten | Données techniques | Dati tecnici | Technical data

Typ	Type	Tipo	Type	LES 20-30	LES 20-60	LES 20-90
Artikelnummer	No d'article	Codice No.	Reference No.	1000004	1000005	1000006
Nennhub H	Course H	Corsa H	Stroke H	30 mm	60 mm	90 mm
Max. Nutzgewicht=m	Charge utile max.=m	Carico utile max.=m	Max. useful load=m	5 kg	5 kg	4 kg
Kolbenkraft einfahrend	Force du piston rentrant	Forza di rientro	Piston force retracted	120 N (5 bar)	120 N (5 bar)	120 N (5 bar)
Kolbenkraft ausfahrend	Force du piston sortant	Forza di uscita	Piston force extended	141 N (5 bar)	141 N (5 bar)	141 N (5 bar)
Betriebsdruck	Pression d'air	Pressione aria	Working pressure	3-8 bar	3-8 bar	3-8 bar
Luftanschlüsse (P)	Raccords d'air (P)	Raccordi pneumatici (P)	Air connectors (P)	M5	M5	M5
Luftverbrauch/Hub	Consommation d'air/course	Consumo aria/corsa	Air consumption/stroke	0.05 NL	0.10 NL	0.15 NL
Temperaturbereich	Ecart de température	Gamma di temperatura	Temperature range	-10°/ +60°C	-10°/ +60°C	-10°/ +60°C
Gewicht	Poids	Peso	Weight	1.00 kg	1.10 kg	1.30 kg
Wiederholgenauigkeit	Reproductibilité	Ripetibilità	Repeating accuracy	± 0.01 mm	± 0.01 mm	± 0.01 mm
Einbaulage (beliebig)	Position de montage (à volonté)	Posizione di montaggio (a volontà)	Any given position (any)			

Lieferumfang:	Matériel livré:	Ambito di fornitura:	Items supplied:
2 Anschlagschr. AS 08/25	2 Vis d'arrêt AS 08/25	2 Viti d'arresto AS 08/25	2 Stop screws AS 08/25
2 Stossdämpfer SD 10	2 Amortisseurs SD 10	2 Ammortizzatori SD 10	2 Shock absorbers SD 10
2 Positionierringe	2 Bagues de positionnement	2 Anelli di posizionamento	2 Positioning rings

Taktzeit
Messungen bei 5 bar

m=Masse [kg]
t = Hubzeit [s]

Temps de cycle
Mesuré à 5 bar

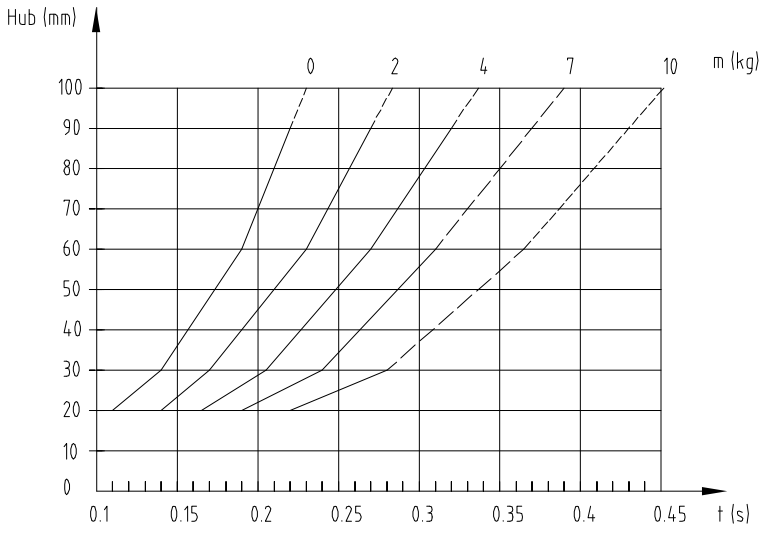
m=Masse [kg]
t = Temps par course [s]

Tempo di ciclo
Misurato con 5 bar

m=Massa [kg]
t = Tempo di corsa [s]

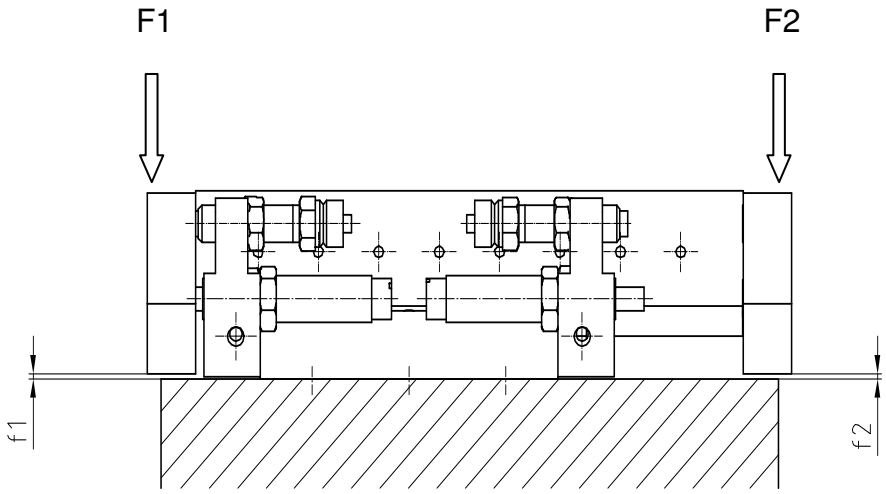
Cycle time
Measurements at 5 bar

m=Mass [kg]
t = Stroke time [s]



Änderungen vorbehalten
Modifications réservées
Modifiche senza preavviso
Modifcations reserved

Durchbiegung Fléchissement Deflessione Deflection

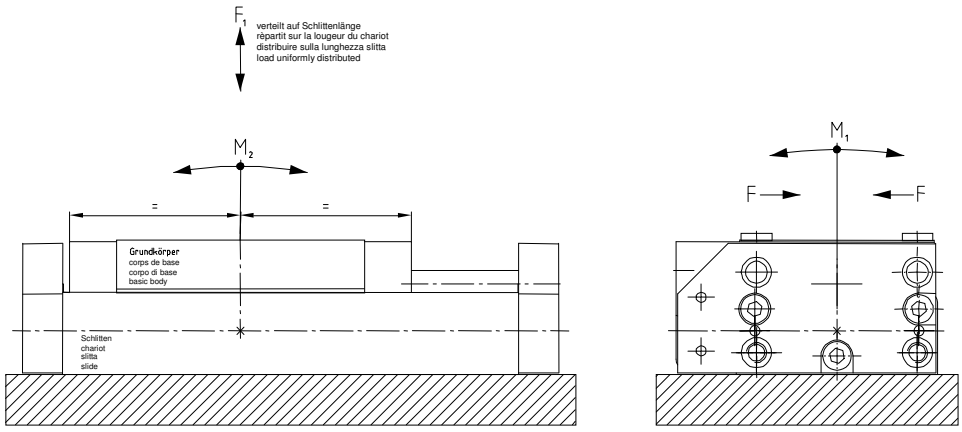


LES 20-30		
F1 / F2	f1	f2
10 N	0	0.005
20 N	0.005	0.010
30 N	0.008	0.015
40 N	0.010	0.030
50 N	0.010	0.050

LES 20-60	
f1	f2
0	0.020
0.005	0.030
0.008	0.060
0.010	0.080
0.010	0.110

LES 20-90	
f1	f2
0	0.040
0.005	0.090
0.008	0.140
0.010	0.160

Moment Moment Momento Moment



LES 20-30		
F1	M1	M2
1590 N	12 Nm	11 Nm

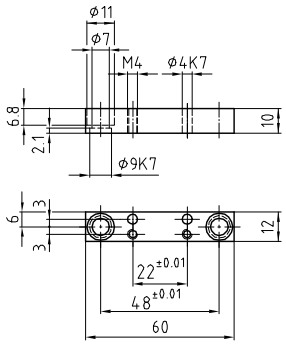
LES 20-60		
F1	M1	M2
1590 N	12 Nm	11 Nm

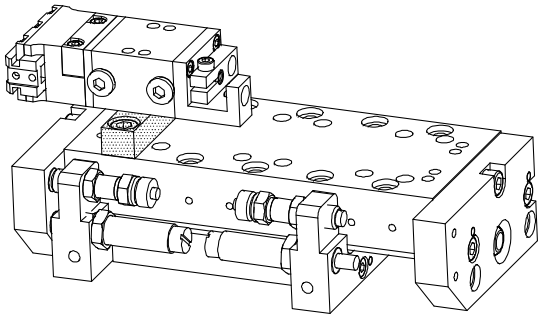
LES 20-90		
F1	M1	M2
1590 N	12 Nm	13 Nm

Zubehör LES 20 | Accessoires LES 20 | Accessori LES 20 | Accessory LES 20

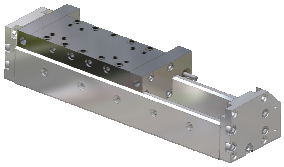
Verbindungsplatte	Plaque de raccordement	Piastra di collegamento	Connecting plate	4000063

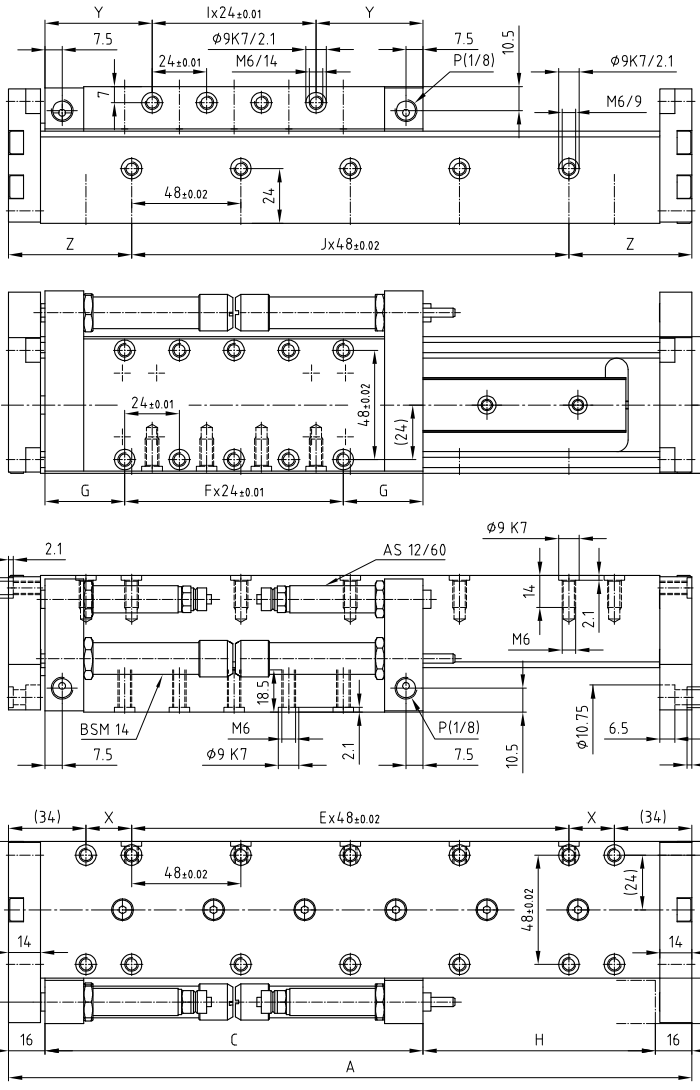
Lieferumfang:	Matériel livré:	Ambito di fornitura:	Items supplied:
2 Positionierringe	2 Bagues de positionnement	2 Anelli di posizionamento	2 Positioning rings
2 Schrauben M6x16	2 Vis M6x16	2 Viti M6x16	2 Screws M6x16
2 Schrauben M4x30	2 Vis M4x30	2 Viti M4x30	2 Screws M4x30

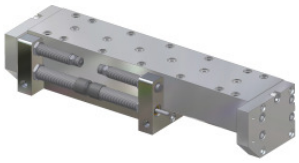


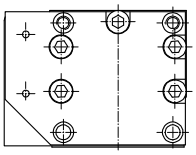


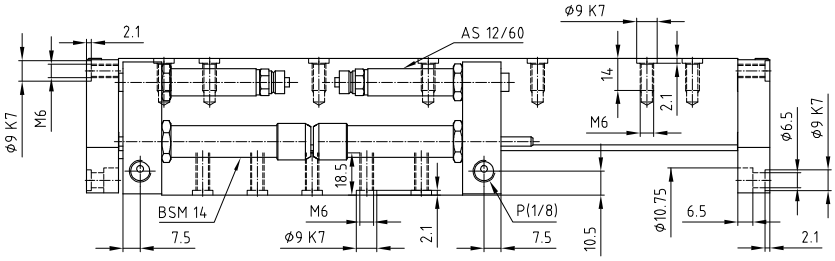
Linear-Element LES 25 | Elément linéaire LES 25 | Unità lineare LES 25 | Linear element LES 25

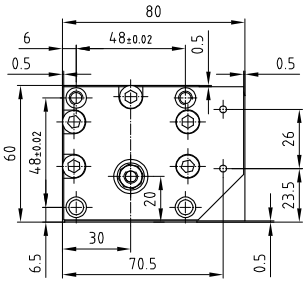


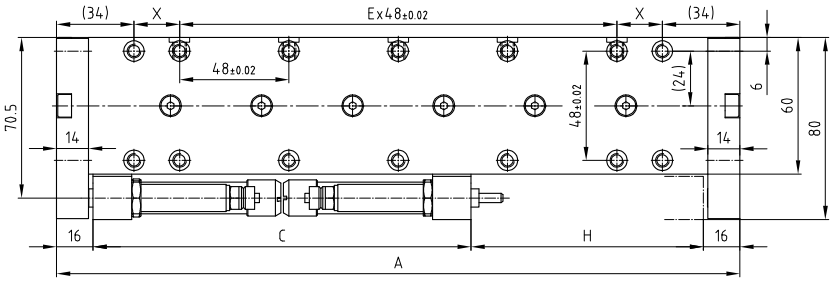












P=Luftanschluss G 1/8 | P=Raccord d'air G 1/8 | P=Raccordi pneumatici G 1/8 | P=Air connections G 1/8

Typ	Type	Tipo	Type	LES 25-100	LES 25-200	LES 25-300
Artikelnummer	No d'article	Codice No.	Reference No.	1000007	1000008	1000009
Nennhub H	Course H	Corsa H	Stroke H	100 mm	200 mm	300 mm
Mass A	Dimension A	Dimensione A	Dimension A	300 mm	500 mm	700 mm
Mass C	Dimension C	Dimensione C	Dimension C	166 mm	266 mm	366 mm
Mass Ex 48	Dimension E x 48	Dimensione E x 48	Dimension E x 48	4	7	12
Mass F x 24	Dimension F x 24	Dimensione F x 24	Dimension F x 24	4	8	12
Mass G	Dimension G	Dimensione G	Dimension G	35 mm	37 mm	39 mm
Mass I x 24	Dimension I x 24	Dimensione I x 24	Dimension I x 24	3	9	13
Mass J x 48	Dimension J x 48	Dimensione J x 48	Dimension J x 24	4	9	12
Mass X	Dimension X	Dimensione X	Dimension X	20 mm	48 mm	28 mm
Mass Y	Dimension Y	Dimensione Y	Dimension Y	47 mm	25 mm	27 mm
Mass Z	Dimension Z	Dimensione Z	Dimension Z	54 mm	34 mm	62 mm

Sonderausführungen auf Anfrage | Constructions particulières sur demande | Esecuzioni speciali su richiesta | Special types on request

Zubehör finden Sie auf den Seiten 6.1 | Vous trouvez des accessoires aux pages 6.1 | Per gli accessori, vedi alle pagine 6.1 | You will find accessories on pages 6.1

Technische Daten | Données techniques | Dati tecnici | Technical data

Typ	Type	Tipo	Type	LES 25-100	LES 25-200	LES 25-300
Artikelnummer	No d'article	Codice No.	Reference No.	1000007	1000008	1000009
Nennhub H	Course H	Corsa H	Stroke H	100 mm	200 mm	300 mm
Max. Nutzgewicht=m	Charge utile max.=m	Carico utile max.=m	Max. useful load=m	8 kg	8 kg	7 kg
Kolbenkraft einfahrend	Force du piston rentrant	Forza di rientro	Piston force retracted	195 N (5 bar)	195 N (5 bar)	195 N (5 bar)
Kolbenkraft ausfahrend	Force du piston sortant	Forza di uscita	Piston force extended	220 N (5 bar)	220 N (5 bar)	220 N (5 bar)
Betriebsdruck	Pression d'air	Pressione aria	Working pressure	3-8 bar	3-8 bar	3-8 bar
Luftanschlüsse (P)	Raccords d'air (P)	Raccordi pneumatici (P)	Air connectors (P)	G 1/8	G 1/8	G 1/8
Luftverbrauch/Hub	Consommation d'air/course	Consumo aria/corsa	Air consumption/stroke	0.27 NL	0.55 NL	0.82 NL
Temperaturbereich	Ecart de température	Gamma di temperatura	Temperature range	-10°/ +60°C	-10°/ +60°C	-10°/ +60°C
Gewicht	Poids	Peso	Weight	2.60 kg	3.90 kg	5.20 kg
Wiederholgenauigkeit	Reproductibilité	Ripetibilità	Repeating accuracy	± 0.01 mm	± 0.01 mm	± 0.01 mm
Einbaulage (beliebig)	Position de montage (à volonté)	Posizione di montaggio (a volontà)	Any given position (any)			

Lieferumfang:	Matériel livré:	Ambito di fornitura:	Items supplied:
2 Anschlagschr. AS 12/60	2 Vis d'arrêt AS 12/60	2 Viti d'arresto AS 12/60	2 Stop screws AS 12/60
2 Stossdämpfer BSM 14	2 Amortisseurs BSM 14	2 Ammortizzatori BSM 14	2 Shock absorbers BSM 14
2 Positionierringe	2 Bagues de positionnement	2 Anelli di posizionamento	2 Positioning rings

Taktzeit
Messungen bei 5 bar

m=Masse [kg]
t = Hubzeit [s]

Temps de cycle
Mesuré à 5 bar

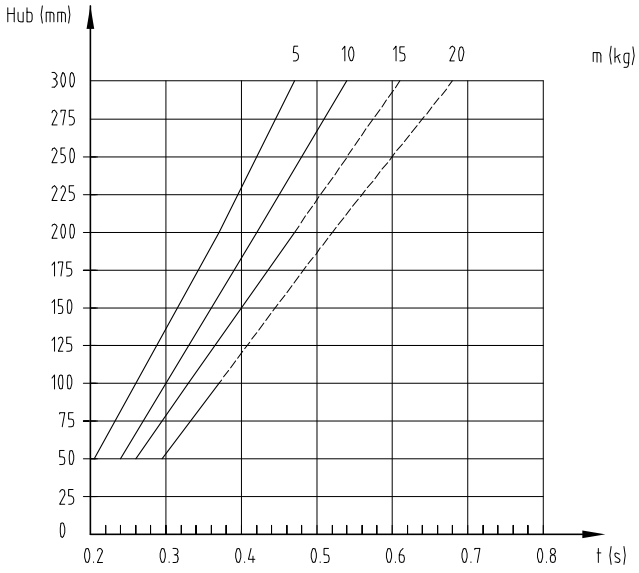
m=Masse [kg]
t = Temps par course [s]

Tempo di ciclo
Misurato con 5 bar

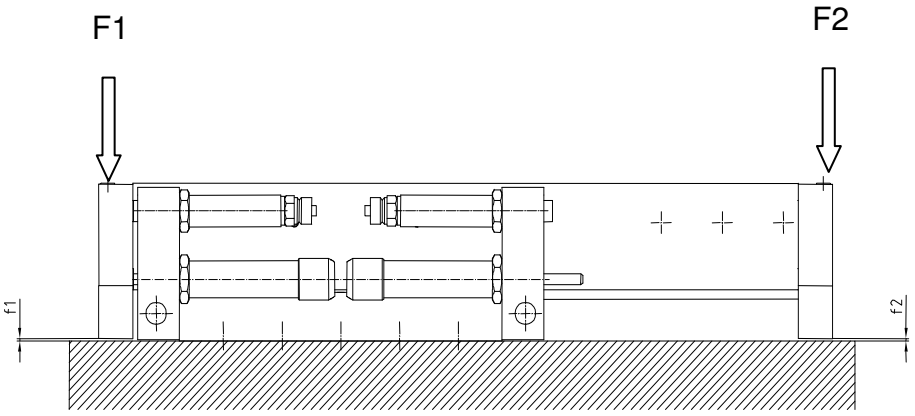
m=Massa [kg]
t = Tempo di corsa [s]

Cycle time
Measurements at 5 bar

m=Mass [kg]
t = Stroke time [s]



Durchbiegung Fléchissement Deflessione Deflection

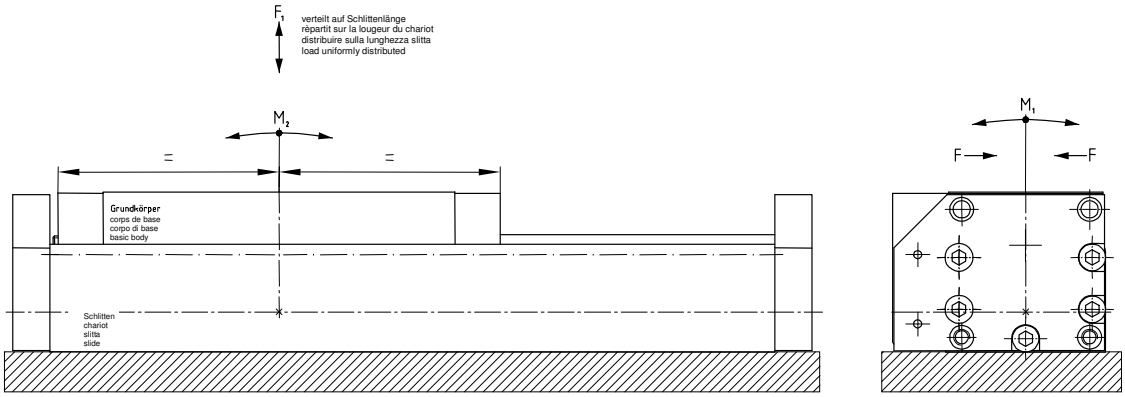


LES 25-100		
F1 / F2	f1	f2
10 N	0	0
20 N	0	0.005
30 N	0	0.010
40 N	0	0.013
50 N	0.005	0.020
60 N	0.010	0.030
70 N	0.010	0.035
80 N	0.015	0.040

LES 25-200	
f1	f2
0	0.010
0	0.030
0	0.050
0	0.060
0.005	0.080
0.010	0.090
0.010	0.095
0.015	0.100

LES 25-300	
f1	f2
0	0.015
0	0.022
0	0.031
0	0.035
0.005	0.039
0.010	0.042
0.010	0.045

Moment Moment Momento Moment



LES 25-100		
F1	M1	M2
4020 N	50 Nm	12 Nm

LES 25-200		
F1	M1	M2
4020 N	112 Nm	12 Nm

LES 25-300		
F1	M1	M2
4020 N	174 Nm	12 Nm