Compact cylinders ADVULQ/AEVULQ/AEVULQZ – Inch Series

- Piston ∅ 1/2″ to 4″
- Stroke lengths up to 16″
- Non-rotating square rod
- Double-acting or single-acting versions
- Compact design – less space required
- Numerous options
- Repairable

Product range overview

Function	Version	Piston ∅ [in]	Stroke [in]	Force [lbf]	Variants						
					A	P	A	S2	S6	S20	S26
Non-rotating with square piston rod											
Double-acting	ADVULQ	1/2, 5/8, 3/4, 1, 1-1/4, 1-5/8, 2, 2-1/2, 3, 4	See table below	15.3 … 1,060	■	■	■	■	■	■	■
Single-acting	AEVULQ, pushing	5/8, 3/4, 1, 1-1/4, 1-5/8, 2, 2-1/2, 3, 4		25 … 1,016	■	■	■	■	■	–	–
	AEVULQZ, pulling	5/8, 3/4, 1, 1-1/4, 1-5/8, 2, 2-1/2, 3, 4		25 … 1,016	■	■	■	–	■	–	–

Variants

A	Male thread	A	Magnet for position sensing	S6	Heat-resistant seals up to 302 °F	S26	Through piston rod, with heat-resistant seals up to 302 °F
P	Flexible cushioning rings at both ends	S2	Through piston rod	S20	Through, hollow piston rod		

Type	Piston ∅ [in]	Standard strokes [in]	Variable strokes [in]
ADVULQ	1/2, 5/8	1/4, 1/2, 3/4, 1, 1-1/4, 1-1/2	0.04 … 8
Piston rod at one end	3/4, 1	1/4, 1/2, 3/4, 1, 1-1/4, 1-1/2, 2	0.04 … 8
	1-1/4, 1-5/8	1/4, 1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3	0.04 … 12
	2, 2-1/2	1/2, 3/4,1,1-1/4, 1-1/2,2, 2-1/2, 3	0.04 … 12
	3, 4	1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3	0.04 … 16
AEVULQ	5/8, 3/4, 1, 1-1/4, 1-5/8	1/4, 1/2, 3/4, 1	0.04 … 1
Piston rod at one end, pushing	2, 2-1/2, 3, 4	1/2, 3/4, 1	0.04 … 1
AEVULQZ	5/8, 3/4, 1, 1-1/4, 1-5/8	1/4, 1/2, 3/4, 1	0.04 … 1
Piston rod at one end, pulling	2, 2-1/2, 3, 4	1/2, 3/4, 1	0.04 … 1

Compact cylinders ADVULQ – Inch Series

Technical data – Double-acting, non-rotating with square piston rod

Double-acting

Diameter

1/2 ... 4 inch

Stroke length

0.04 ... 16 inch

- Through piston rod (S2)
- Through, hollow piston rod (S20)
- Heat resistant seals (S6)
- Through piston rod, heat resistant seals (S26)

ADVULQ-...-...-P-A

ADVULQ-...-...-P-A-S2

General technical data											
Piston ∅		1/2	5/8	3/4	1	1-1/4	1-5/8	2	2-1/2	3	4
Pneumatic connection		10-32 UNF				1/8" NPT					1/4" NPT
End of piston rod	Female thread	4-48 UNF 2B	8-36 UNF-2B	10-32 UNF-2B		1/4-28 UNF-2B		5/16-24 UNF-2B		3/8-24 UNF-2B	1/2-20 UNF-2B
	Male thread	10-32 UNF-2A	5/16-24 UNF-2A	3/8-24 UNF-2A				1/2-20 UNF-2A		5/8-18 UNF-2A	3/4-16 UNF-2A
Operating medium		Filtered compressed air, lubricated or unlubricated									
Constructional design		Piston									
		Piston rod									
Cushioning		Flexible cushioning rings at both ends									
Magnet for position sensing[1]		Standard									

1) Position sensing via magnetic proximity sensor (ordered separately, see accessories).

Operating pressure [psi]											
Piston ∅		1/2	5/8	3/4	1	1-1/4	1-5/8	2	2-1/2	3	4
Piston rod at one end		19.1...147		14.7 ...147		11.8 ...147			8.8... 147		
Through piston rod S2/S20		22.1 ... 147	19.1 ... 147	17.6 ... 147		14.7 ... 147			11.8 ... 147		

Ambient conditions			
Variant		Basic version	S6
Ambient temperature[1]	[°F]	–4 ... +176	0 ... +302
Corrosion resistance class CRC[2]		2	2

1) Note operating range of proximity sensors.
2) Corrosion resistance class 2 according to Festo standard 940 070
Components with moderate corrosion resistance for use in normal industrial environments subjected to contact with coolants or lubricating agents.

Compact cylinders ADVULQ – Inch Series

Technical data – Double-acting, non-rotating with square piston rod

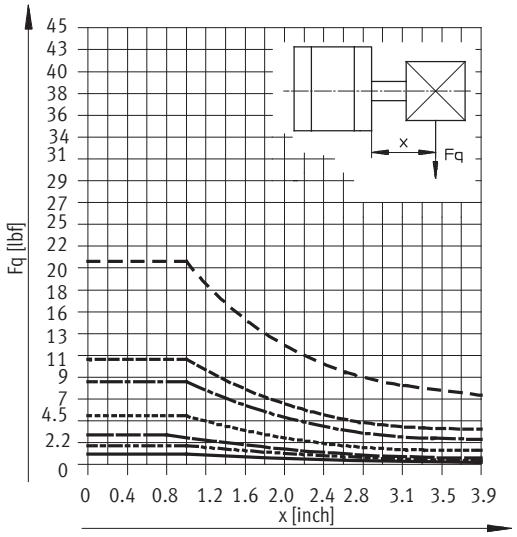
Forces [lbf] and impact energy [ft-lbf]											
Piston ∅		1/2	5/8	3/4	1	1-1/4	1-5/8	2	2-1/2	3	4
Theoretical force at 90psi, extending		15.3	27.2	42.3	66.4	108.7	169.7	265	420.8	678.6	1060.2
	S2/S20	15.3	27.2	42.3	66.4	108.7	169.7	265	420.8	678.6	1060.2
Theoretical force at 90 psi, retracting		15.3	27.2	42.3	66.4	108.7	169.7	265	420.8	678.6	1060.2
	S2/S20	15.3	27.2	42.3	66.4	108.7	169.7	265	420.8	678.6	1060.2
Max. impact energy at end positions		0.07	0.07	0.10	0.07	0.30	0.38	0.47	0.52	0.55	0.74
	S20	0.01	0.01	0.01	0.01	0.03	0.04	0.04	0.05	0.06	0.07

Technical data – Square piston rod											
Piston ∅		1/2	5/8	3/4	1	1-1/4	1-5/8	2	2-1/2	3	4
Max. torque at the piston rod[1)]	[ft-lbf]	0.07	0.15	0.33	0.33	0.59	0.59	0.81	0.81	1.11	2.2
Max. torsional backlash of piston rod	[°]	±1.0	±0.9	±0.8	±0.8	±0.6	±0.6	±0.5	±0.5	±0.4	±0.4
Piston rod distortion	[°/2 inch]	0.40	0.30	0.25	0.25	0.20	0.20	0.15	0.15	0.15	0.09

1) The max. torque must not be exceeded even when fitting attachments.

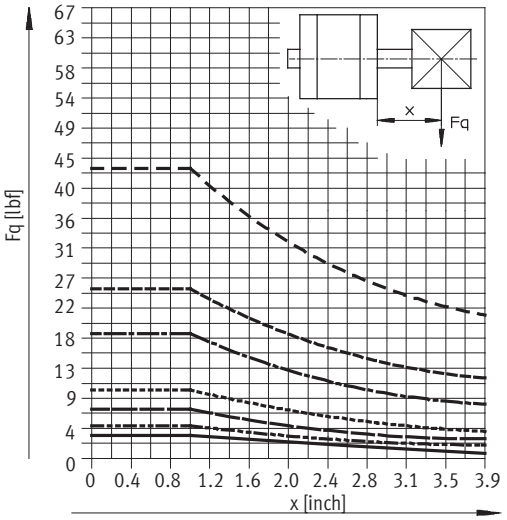
Max. lateral force Fq as a function of the projection x

Piston rod at one end



- ∅ 1/2
- ∅ 5/8
- ∅ 3/4/1
- ∅ 1-1/4/1-5/8
- ∅ 2/2-1/2
- ∅ 3
- ∅ 4

Through piston rod



- ∅ 1/2
- ∅ 5/8
- ∅ 3/4/1
- ∅ 1-1/4/1-5/8
- ∅ 2/2-1/2
- ∅ 3
- ∅ 4

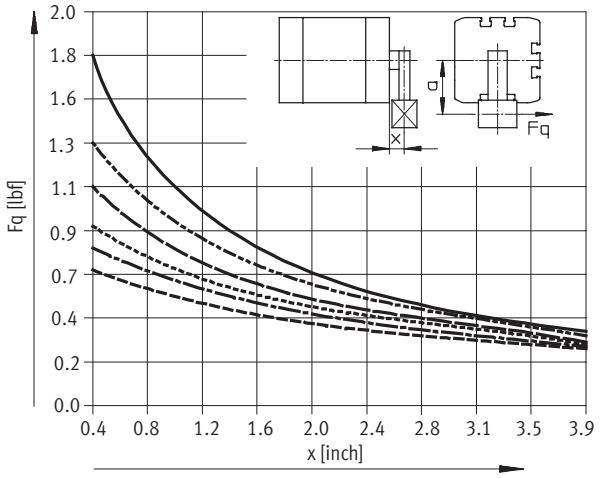
Compact cylinders ADVULQ – Inch Series

Technical data – Double-acting, non-rotating with square piston rod

Max. lateral force Fq as a function of the projection x

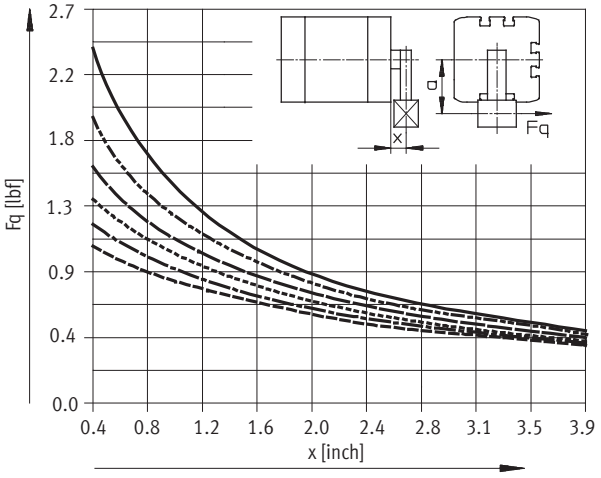
Q – square piston rod

∅ 1/2″



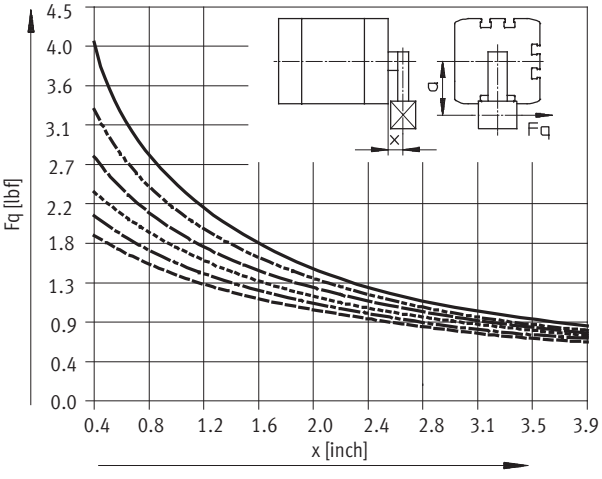
a = 0.2 inch
a = 0.4 inch
a = 0.6 inch
a = 0.8 inch
a = 1.0 inch
a = 1.2 inch

∅ 5/8″



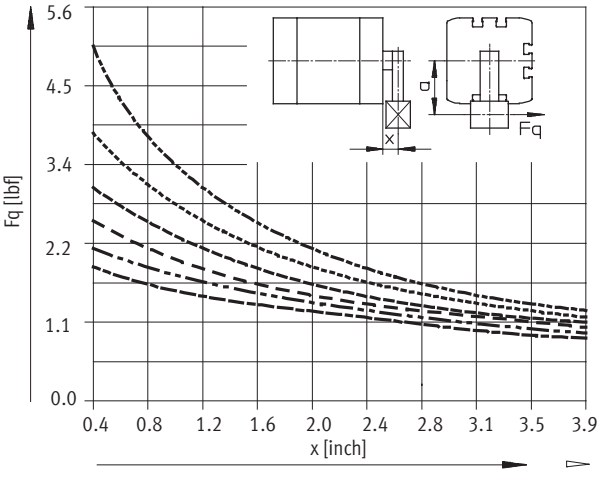
a = 0.2 inch
a = 0.4 inch
a = 0.6 inch
a = 0.8 inch
a = 1.0 inch
a = 1.2 inch

∅ 3″ / 4″ / 1″



a = 0.2 inch
a = 0.4 inch
a = 0.6 inch
a = 0.8 inch
a = 1.0 inch
a = 1.2 inch

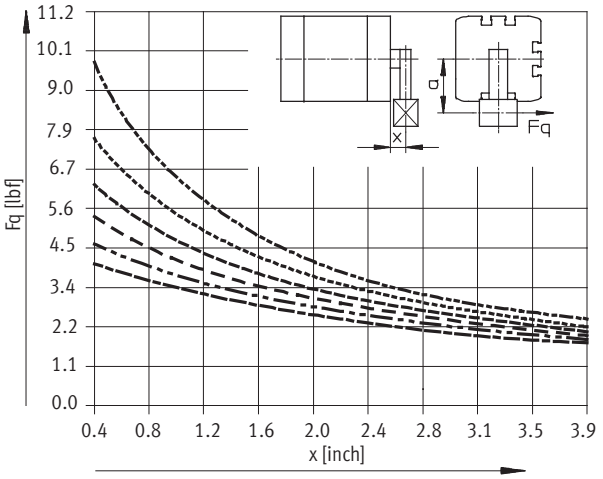
∅ 1-1/4″ / 1-5/8″



a = 0.4 inch
a = 0.8 inch
a = 1.2 inch
a = 1.6 inch
a = 2.0 inch
a = 2.4 inch

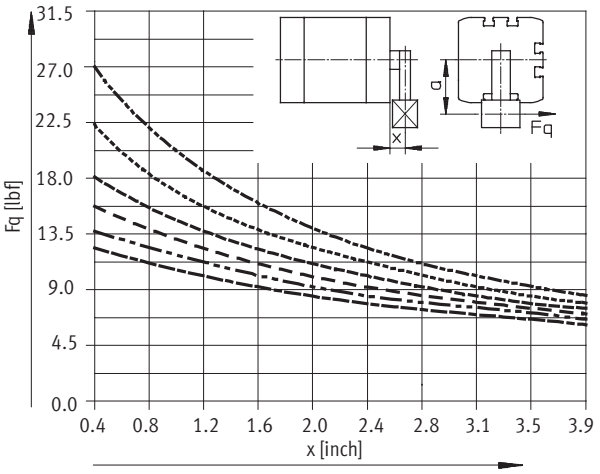
Max. lateral force Fq as a function of the projection x

∅ 2" / 2-1/2"



a = 0.4 inch
a = 0.8 inch
a = 1.2 inch
a = 1.6 inch
a = 2.0 inch
a = 2.4 inch

∅3/4"



a = 0.4 inch
a = 0.8 inch
a = 1.2 inch
a = 1.6 inch
a = 2.0 inch
a = 2.4 inch

Mass [lb]

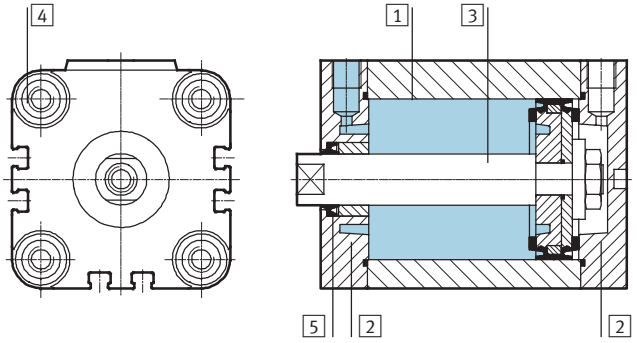
Piston ∅	1/2	5/8	3/4	1	1-1/4	1-5/8	2	2-1/2	3	4
Product mass with 0 inch stroke	0.19	0.19	0.33	0.40	0.66	0.96	1.24	2.34	3.91	6.17
Additional mass per 1 inch stroke	0.08	0.08	0.13	0.16	0.23	0.33	0.41	0.60	0.94	0.99
Moving load with 0 inch stroke (m_{piston})	0.02	0.03	0.04	0.06	0.11	0.14	0.25	0.29	0.68	1.36
Additional load per 1 inch stroke (m_{piston})	0.01	0.03	0.03	0.03	0.05	0.05	0.09	0.09	0.14	0.21

Compact cylinders ADVULQ – Inch Series

Technical data – Double-acting, non-rotating with square piston rod

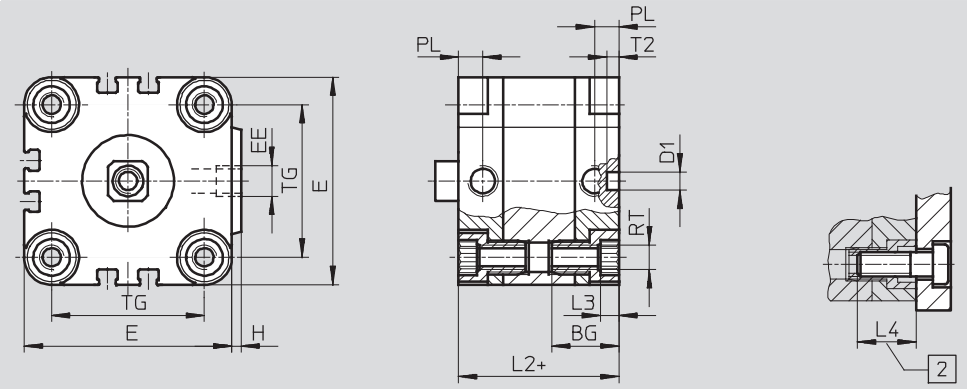
Materials

Sectional view



Variants			Basic version	S6
1	Cylinder barrel		Wrought aluminum alloy	Wrought aluminum alloy
2	End cap		Wrought aluminum alloy	Wrought aluminum alloy
3	Piston rod	∅ 1/2 ... 1-1/4	High-alloy stainless steel	High-alloy stainless steel
		∅ 1-5/8 ... 4	High-alloy steel	High-alloy steel
4	Flange screws	∅ 1/2 ... 5/8	High-alloy stainless steel	High-alloy stainless steel
		∅ 3/4 ... 4	Tempered steel	Tempered steel
5	Dynamic seals		Polyurethane	Fluorocarbon rubber

Dimensions – Basic cylinder



Note

To attach cylinder ∅ 1/2 and 5/8 in from above, use only 2 screws diagonally or non-magnetic screws.

\+ = plus stroke length

2 Minimum screw-in depth

∅ [in]	BG	D1 ∅	E	EE	H	L2	L3	L4	PL	RT	T2	TG
1/2	0.73	0.2	1.1	10-32 UNF	0.04	1.5	0.1	0.6	0.3	M4	0.2	0.7
5/8	0.73	0.2	1.1	10-32 UNF	0.04	1.5	0.1	0.6	0.3	M4	0.2	0.7
3/4	0.73	0.2	1.4	10-32 UNF	0.06	1.5	0.2	0.7	0.3	M5	0.2	0.9
1	0.73	0.2	1.6	10-32 UNF	0.06	1.6	0.2	0.7	0.3	M5	0.2	1.0
1-1/4	0.85	0.2	2.0	1/8" NPT	0.08	1.8	0.2	0.8	0.3	M6	0.2	1.3
1-5/8	0.85	0.2	2.4	1/8" NPT	0.10	1.8	0.2	0.8	0.3	M6	0.2	1.7
2	0.87	0.2	2.7	1/8" NPT	0.12	1.8	0.2	0.8	0.3	M8	0.2	2.0
2-1/2	0.96	0.3	3.4	1/8" NPT	0.16	2.0	0.3	1.0	0.3	M10	0.2	2.4
3	1.08	0.3	4.2	1/8" NPT	0.16	2.2	0.3	1.0	0.3	M10	0.2	3.2
4	1.28	0.3	5.0	1/4" NPT	0.20	2.6	0.3	1.0	0.4	M10	0.2	4.1

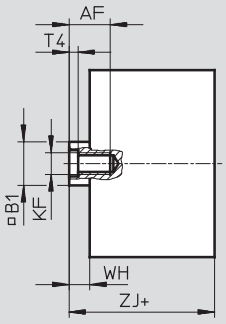
Dimensions are in inches, unless otherwise noted.

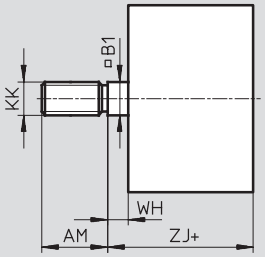
Compact cylinders ADVULQ – Inch Series

Technical data – Double-acting, non-rotating with square piston rod

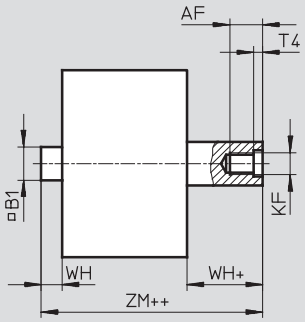
Dimensions – Variants

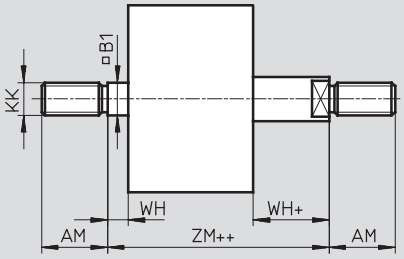
Basic version



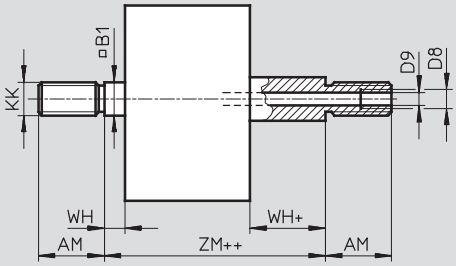


S2 – Through piston rod





S20 – Through, hollow piston rod



\+ = plus stroke length

++ = plus 2x stroke length

∅ [in]	AF	AM	B1 □	D8	D9 ∅	KF	KK	T4	WH	ZJ	ZM
1/2	0.3	0.6	0.2	–	0.09	4-48 UNF-2B	10-32 UNF-2A	0.06	0.2	1.67	1.9
5/8	0.4	0.8	0.3	–	0.13	8-36 UNF-2B	5/16-24 UNF-2A	0.06	0.2	1.67	1.9
3/4[2)]	0.5	0.9	0.4	–	0.15	10-32 UNF-2B	3/8-24 UNF-2A	0.08	0.2	1.67	1.9
1[2)]	0.5	0.9	0.4	–	0.15	10-32 UNF-2B	3/8-24 UNF-2A	0.08	0.2	1.77	2.0
1-1/4[2)]	0.6	0.9	0.4	–	0.18	1/4-28 UNF-2B	3/8-24 UNF-2A	0.10	0.2	1.99	2.2
1-5/8[2)]	0.6	0.9	0.4	–	0.18	1/4-28 UNF-2B	3/8-24 UNF-2A	0.10	0.3	2.05	2.3
2[2)]	0.6	0.9	0.5	–	0.24	5/16-24 UNF-2B	1/2-20 UNF-2A	0.13	0.3	2.09	2.4
2-1/2[2)]	0.6	0.9	0.5	–	0.24	5/16-24 UNF-2B	1/2-20 UNF-2A	0.13	0.3	2.26	2.6
3[2)]	0.8	1.3	0.6	G1/8	0.31	3/8-24 UNF-2B	5/8-18 UNF-2A	0.19	0.3	2.52	2.8
4[2)]	0.9	1.6	0.8	G1/4	0.46	1/2-20 UNF-2B	3/4-16 UNF-2A	0.24	0.4	3.01	3.4

1) With a stroke < 0.2 inch, the maximum screw-in depth is reduced by 0.2 inch.

2) Nut for piston rod thread included in scope of delivery.

Dimensions are in inches, unless otherwise noted.

Compact cylinders ADVULQ – Inch Series

Ordering Data

FESTO

M Mandatory data					O Options	
Function	Piston ∅	Stroke	Cushioning	Magnet for position sensing	Type of piston rod	Temperature Resistant
ADVULQ	1/2 5/8 3/4 1 1 1/4 1 5/8 2 2 1/2 3 4	0.04 ... 16	P	A	S2 S20	S6 S26
ADVULQ	– **1**	– **6**	– **P**	– **A**	– **S26**	

Ordering table

Size			1/2	5/8	3/4	1	1 1/4	1 5/8	2	2 1/2	3	4	Conditions	Code		Enter code
M	Function		Double-acting, non-rotating with square piston rod											**ADVULQ**		ADVULQ
	Piston ∅	[in]	1/2	5/8	3/4	1	1 1/4	1 5/8	2	2 1/2	3	4		**-...**		
	Stroke	[in]	0.04 ... 8				0.04 ... 13				0.04 ... 16			**-...**		
	Cushioning		Flexible cushioning rings at both ends											**-P**		-P
	Magnet for position sensing		For use with magnetic proximity sensor											**-A**		-A
O	Type of piston rod		Through piston rod											**-S2**		
			Through, hollow piston rod										1	**-S20**		
	Temperature resistant		Heat-resistant seals up to max. 302 °F											**-S6**		
			Through piston rod, heat resistant up to max. 302 °F										2	**-S26**		

1 Not in combination with S6

2 S2 in combination with S6 equals S26

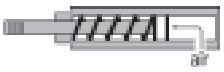
Transfer order code

ADVULQ	–		–		–	**P**	–	**A**	–

Compact cylinders AEVULQ/AEVULQZ – Inch Series

Technical data – Single-acting, non-rotating with square piston rod

Pushing - AEVULQ



Pulling - AEVULQZ

Diameter

5/8 ... 4 inch

Stroke length

0.04 ... 1 inch

- Through piston rod (S2)
- Heat resistant seals (S6)

AEVULQ-...-...-P-A

AEVULQ-...-...-P-A-S2

General technical data										
Piston ∅		5/8	3/4	1	1-1/4	1-5/8	2	2-1/2	3	4
Pneumatic connection		10-32 UNF			1/8" NPT					1/4" NPT
End of piston rod	Female thread	8-36 UNF-2B	10-32 UNF-2B		1/4-28 UNF-2B		5/16-24 UNF-2B		3/8-24 UNF-2B	1/2-20 UNF-2B
	Male thread	5/16-24 UNF-2A	3/8-24 UNF-2A				1/2-20 UNF-2A		5/8-18 UNF-2A	3/4-16 UNF-2A
Operating medium		Filtered compressed air, lubricated or unlubricated								
Constructional design		Piston								
		Piston rod								
Cushioning		Flexible cushioning rings at both ends								
Magnet for position sensing[1)]		Standard								

1) Position sensing via magnetic proximity sensor (ordered separately, see accessories).

Operating pressure [bar]									
Piston ∅	5/8	3/4	1	1-1/4	1-5/8	2	2-1/2	3	4
Pushing variant AEVULQ									
Piston rod at one end	19 ... 147	15 ... 147		12 ... 147			9 ... 147		
Through piston rod S2	22 ... 147	21 ... 147		18 ... 147			15 ... 147		
Pulling variant AEVULQZ									
Piston rod at one end	19 ... 147	15 ... 147		12 ... 147					

Ambient conditions			
Variant		Basic version	S6
Ambient temperature[1)]	[°F]	−4 ... +176	32 ... +302
Corrosion resistance class CRC[2)]		2	2

1) Note operating range of proximity sensors.

2) Corrosion resistance class 2 according to Festo standard 940 070
Components with moderate corrosion resistance for use in normal industrial environments subjected to contact with coolants or lubricating agents.

Compact cylinders AEVULQ/AEVULQZ – Inch Series

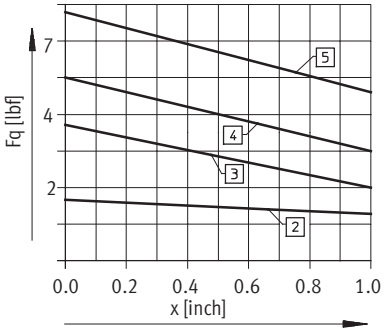
Technical data – Single-acting, non-rotating with square piston rod

Forces [lbf]										
Piston ∅		5/8	3/4	1	1-1/4	1-5/8	2	2-1/2	3	4
Pushing variant AEVULQ										
Theoretical force at 90 psi, extending		25	40.3	60.8	102.6	163	252.2	404.8	653	1016.1
	S2	25	40.3	60.8	102.6	163	252.2	404.8	653	1016.1
Pulling variant AEVULQZ										
Theoretical force at 90 psi, extending		1.35	3.15	3.2	9.5	24.5	0.68	1.35	8.55	41.6

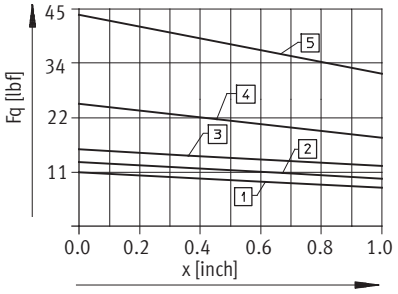
Technical data – Square piston rod										
Piston ∅		5/8	3/4	1	1-1/4	1-5/8	3	2-1/2	3	4
Max. torque at the piston rod[1)]	[ft-lbf]	0.22	0.50	0.50	0.89	0.89	1.22	1.22	1.66	3.32
Max. torsional backlash of piston rod	[°]	±0.9	±0.8	±0.8	±0.6	±0.6	±0.5	±0.5	±0.4	±0.4
Piston rod distortion	[°/2 inch]	0.30	0.25	0.25	0.20	0.20	0.15	0.15	0.15	0.09

1) The max. torque must not be exceeded even when fitting attachments.

Spring return force F as a function of the stroke l



2 AEVULQ/AEVULQZ-5/8
3 AEVULQ/AEVULQZ-3/4
4 AEVULQ/AEVULQZ-1
5 AEVULQ/AEVULQZ-1-1/4



1 AEVULQ/AEVULQZ-1-5/8
2 AEVULQ/AEVULQZ-2
3 AEVULQ/AEVULQZ-2-1/2
4 AEVULQ/AEVULQZ-3
5 AEVULQ/AEVULQZ-4

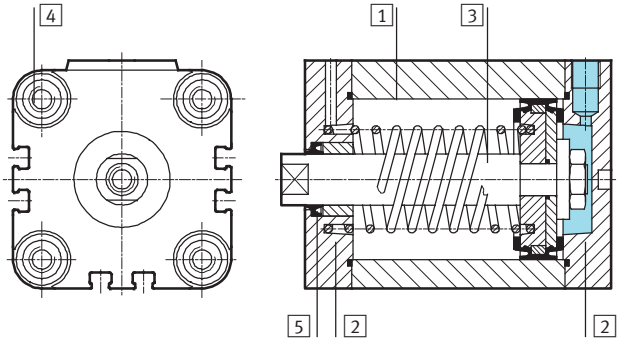
Mass [lb]								
Piston ∅	5/8	3/4	1	1-1/4	1-5/8	2	2-1/2	3	4
Product mass with 0 inch stroke	0.19	0.33	0.40	0.66	0.96	1.24	2.34	3.91	6.17
Additional mass per 1 inch stroke	0.08	0.13	0.16	0.23	0.33	0.41	0.60	0.94	0.99
Moving load with 0 inch stroke (m_{piston})	0.03	0.04	0.06	0.11	0.14	0.25	0.29	0.68	1.36
Additional load per 1 inch stroke (m_{piston})	0.03	0.03	0.03	0.05	0.05	0.09	0.09	0.14	0.21

Compact cylinders AEVULQ/AEVULQZ – Inch Series

Technical data – Single-acting, non-rotating with square piston rod

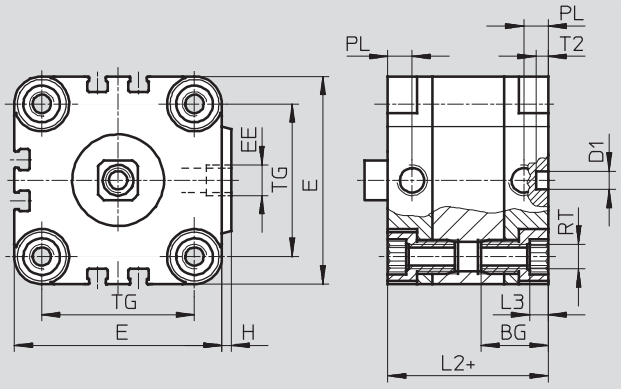
Materials

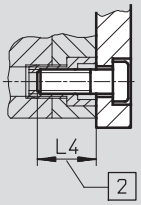
Sectional view



Variants		Basic version	S6
1 Cylinder barrel		Wrought aluminum alloy	Wrought aluminum alloy
2 End cap		Wrought aluminum alloy	Wrought aluminum alloy
3 Piston rod	∅ 5/8 ... 1-1/4	High-alloy stainless steel	High-alloy stainless steel
	∅ 1-5/8 ... 4	High-alloy steel	High-alloy steel
4 Flange screws	∅ 5/8	High-alloy stainless steel	High-alloy stainless steel
	∅ 3/4 ... 4	Tempered steel	Tempered steel
5 Dynamic seals		Polyurethane	Fluorocarbon rubber

Dimensions – Basic cylinder





Note

To attach cylinder ∅ 5/8 inch from above, use only 2 screws diagonally or non-magnetic screws.

\+ = plus stroke length

2 Minimum screw-in depth

∅ [in]	BG	D1 ∅	E	EE	H	L2	L3	L4	PL	RT	T2	TG
5/8	0.7	0.2	1.1	10-32 UNF	0.04	1.5	0.1	0.6	0.3	M4	0.2	0.7
3/4	0.7	0.2	1.4	10-32 UNF	0.06	1.5	0.2	0.7	0.3	M5	0.2	0.9
1	0.7	0.2	1.6	10-32 UNF	0.06	1.6	0.2	0.7	0.3	M5	0.2	1.0
1-1/4	0.8	0.2	2.0	1/8" NPT	0.08	1.8	0.2	0.8	0.3	M6	0.2	1.3
1-5/8	0.8	0.2	2.4	1/8" NPT	0.10	1.8	0.2	0.8	0.3	M6	0.2	1.7
2	0.9	0.2	2.7	1/8" NPT	0.12	1.8	0.2	0.8	0.3	M8	0.2	2.0
2-1/2	1.0	0.3	3.4	1/8" NPT	0.16	2.0	0.3	1.0	0.3	M10	0.2	2.4
3	1.1	0.3	4.2	1/8" NPT	0.16	2.2	0.3	1.0	0.3	M10	0.2	3.2
4	1.3	0.3	5.0	1/4" NPT	0.20	2.6	0.3	1.0	0.4	M10	0.2	4.1

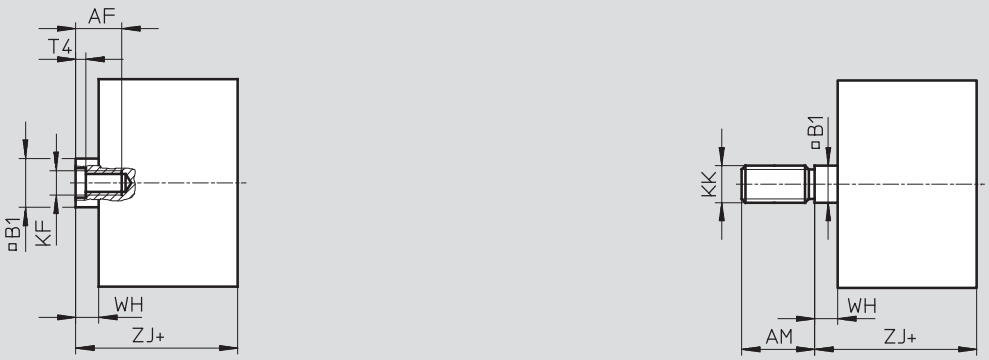
Dimensions are in inches, unless otherwise noted.

Compact cylinders AEVULQ/AEVULQZ – Inch Series

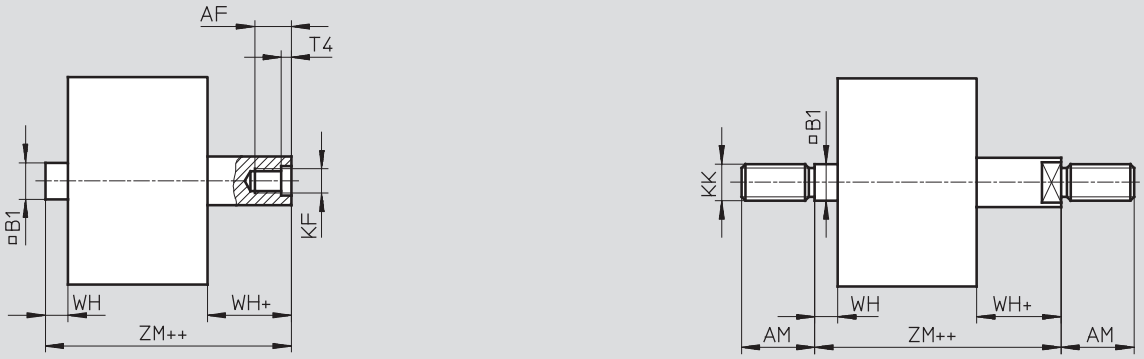
Technical data – Single-acting, non-rotating with square piston rod

Dimensions – Pushing variants, AEVULQ

Basic version



S2 – Through piston rod



∅ [in]	AF	AM	B1 □	KF	KK	T4	WH	ZJ	ZM
5/8	0.4	0.8	0.3	8-36 UNF-2B	5/16-24 UNF-2A	0.06	0.2	1.7	1.9
3/4[2]	0.5	0.9	0.4	10-32 UNF-2B	3/8-24 UNF-2A	0.08	0.2	1.7	1.9
1[2]	0.5	0.9	0.4	10-32 UNF-2B	3/8-24 UNF-2A	0.08	0.2	1.8	2.0
1-1/4[2]	0.6	0.9	0.4	1/4-28 UNF-2B	3/8-24 UNF-2A	0.10	0.2	2.0	2.2
1-5/8[2]	0.6	0.9	0.4	1/4-28 UNF-2B	3/8-24 UNF-2A	0.10	0.2	2.0	2.3
2[2]	0.6	0.9	0.5	5/16-24 UNF-2B	1/2-20 UNF-2A	0.13	0.2	2.1	2.4
2-1/2[2]	0.6	0.9	0.5	5/16-24 UNF-2B	1/2-20 UNF-2A	0.13	0.3	2.3	2.6
3[2]	0.8[1]	1.3	0.6	3/8-24 UNF-2B	5/8-18 UNF-2A	0.19	0.3	2.5	2.8
4[2]	0.9[1]	1.6	0.8	1/2-20 UNF-2B	3/4-16 UNF-2A	0.24	0.4	3.0	3.4

1) With a stroke < 0.2 inch, the maximum screw-in depth is reduced by 0.2 inch.
2) Nut for piston rod thread included in scope of delivery.

Dimensions are in inches, unless otherwise noted.

Compact cylinders AEVULQ/AEVULQZ – Inch Series

Technical data – Single-acting, non-rotating with square piston rod

Dimensions – Pulling variants, AEVULQZ

\+ = plus stroke length

++ = plus 2x stroke length

∅ [in]	AF	AM	B1 □	KF	KK	T4	WH	ZJ
5/8	0.4	0.8	0.3	8-36 UNF-2B	5/16-24 UNF-2A	0.06	0.2	1.7
3/4[1)]	0.5	0.9	0.4	10-32 UNF-2B	3/8-24 UNF-2A	0.08	0.2	1.7
1[1)]	0.5	0.9	0.4	10-32 UNF-2B	3/8-24 UNF-2A	0.08	0.2	1.8
1-1/4[1)]	0.6	0.9	0.4	1/4-28 UNF-2B	3/8-24 UNF-2A	0.10	0.2	2.0
1-5/8[1)]	0.6	0.9	0.4	1/4-28 UNF-2B	3/8-24 UNF-2A	0.10	0.3	2.0
2[1)]	0.6	0.9	0.5	5/16-24 UNF-2B	1/2-20 UNF-2A	0.13	0.3	2.1
2-1/2[1)]	0.6	0.9	0.5	5/16-24 UNF-2B	1/2-20 UNF-2A	0.13	0.3	2.3
3[1)]	0.8	1.3	0.6	3/8-24 UNF-2B	5/8-18 UNF-2A	0.19	0.3	2.5
4[1)]	0.9	1.6	0.8	1/2-20 UNF-2B	3/4-16 UNF-2A	0.24	0.4	3.0

1) Nut for piston rod thread included in scope of delivery.

Dimensions are in inches, unless otherwise noted.

Compact cylinders AEVULQ/AEVULQZ – Inch Series

Odering Data

M Mandatory data					O Options	
Function	**Piston ∅**	**Stroke**	**Cushioning**	**Magnet for position sensing**	**Type of piston rod**	**Temperature Resistant**
AEVULQ AEVULQZ	5/8 3/4 1 1 1/4 1 5/8 2 2 1/2 3 4	0.04 ... 1	P	A	S2	S6
AEVULQ –	**1** –	**1** –	**P** –	**A** –	**S6**	

Ordering table

Size			5/8	3/4	1	1 1/4	1 5/8	2	2 1/2	3	4	Conditions	Code		Enter code
M	Function		Single-acting, non-rotating with square piston rod, pushing										**AEVULQ**		
			Single-acting, non-rotating with square piston rod, pulling										**AEVULQZ**		
	Piston ∅	[in]	5/8	3/4	1	1 1/4	1 5/8	2	2 1/2	3	4		**-...**		
	Stroke	[in]	0.04 ... 1										**-...**		
	Cushioning		Flexible cushioning rings at both ends										**-P**		-P
	Magnet for position sensing		For use with magnetic proximity sensor										**-A**		-A
O	Type of piston rod		Through piston rod										**-S2**		
	Temperature resistant		Heat-resistant seals up to max. 302 °F									1	**-S6**		

1 Not in combination with S2

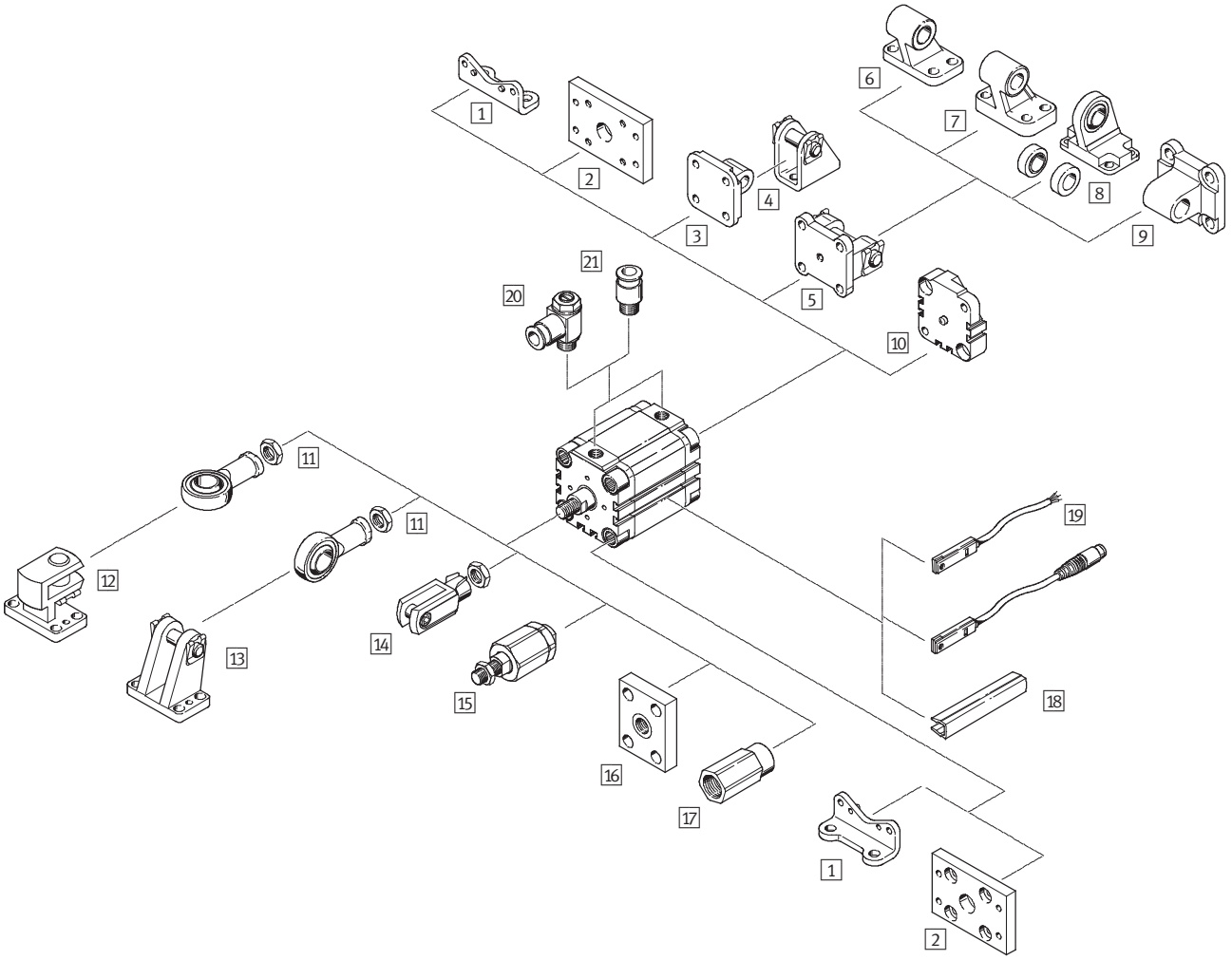
Transfer order code

	–		–		–	**P**	–	**A**	–	

Compact cylinders ADVULQ/AEVULQ/AEVULQZ – Inch Series

Accessories overview

Piston ∅ 1/2 … 4 inch



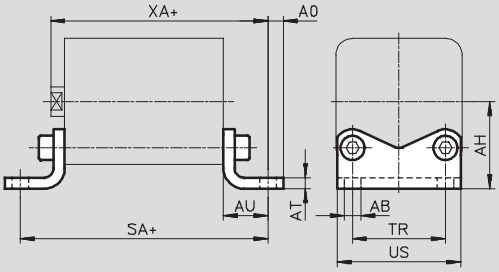
Compact cylinders ADVULQ/AEVULQ/AEVULQZ – Inch Series

Accessories overview

Mounting attachments and accessories			
	Description	ADVULQ AEVULQ AEVULQZ	
		Basic	S2/S20
1 Foot mounting HUA	For bearing and end cap	■	■
2 Flange mounting FUA	For bearing or end cap	■	■
3 Swivel flange SUA for ∅ 1/2 ... 1	For end cap	■	–
4 Clevis foot LBN	–	■	–
5 Swivel flange SUA for ∅ 1-1/4 ...4	For end cap	■	–
6 Clevis foot LN	–	■	–
7 Clevis foot LNG	–	■	–
8 Clevis foot LSN	With spherical bearing	■	–
9 Swivel flange SNCL	–	■	–
10 Adapter kit DPVU	For connecting two cylinders with identical piston ∅ to form a multi-position cylinder	■	–
11 Rod eye SGS	With spherical bearing	–	–
12 Clevis foot, lateral LQG	–	–	–
13 Clevis foot LBG	–	–	–
14 Rod clevis SG	Permits a swivelling movement of the cylinder in one plane	■	■
15 Self-aligning rod coupler FK	For compensating radial and angular deviations	–	–
16 Coupling piece KSZ	For cylinders with non-rotating piston rod for compensating radial deviations	■	■
17 Adapter AD	For vacuum generator	–	■ S20
18 Slot cover ABP-5-S	For protecting the sensor cable and keeping dirt out of the sensor slots	■	■
19 Proximity sensor SME/SMT-8	Can be integrated in the cylinder profile barrel	■	■
20 One-way flow control valve GRLA/GRLZ	For speed regulation	■	■
21 Push-in fitting QS	For connecting compressed air tubing with standard O.D.	■	■

Foot mounting HUA
for piston ∅ 1/2 ... 4 inch

Material: Galvanized steel



Dimensions and Ordering Data

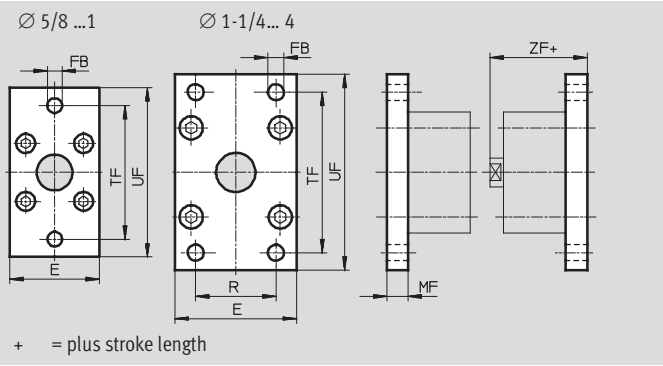
For ∅	AB ∅	AH	AO	AT	AU	SA	TR	US	XA	Weight [oz]	Basic version		
											CRC[1]	Part No.	Type
1/2, 5/8	0.22	0.9	0.2	0.1	0.5	2.5	0.7	1.1	2.2	1.38	2	**157309**	**HUA-12/16**
3/4	0.26	1.1	0.2	0.2	0.6	2.8	0.9	1.3	2.3	2.75	2	**157310**	**HUA-20**
1	0.26	1.1	0.2	0.2	0.6	2.8	1.0	1.5	2.4	3.17	2	**157311**	**HUA-25**
1-1/4	0.26	1.3	0.3	0.2	0.7	3.2	1.3	1.9	2.7	5.47	2	**157312**	**HUA-32**
1-5/8	0.35	1.6	0.3	0.2	0.8	3.4	1.7	2.3	2.8	7.09	2	**157313**	**HUA-40**
2	0.35	1.9	0.3	0.2	0.9	3.7	2.0	2.6	3.0	11.08	2	**157314**	**HUA-50**
2-1/2	0.43	2.2	0.5	0.2	1.1	4.1	2.4	3.3	3.3	19.40	2	**157315**	**HUA-63**
3	0.43	2.7	0.5	0.3	1.2	4.6	3.2	4.1	3.7	29.10	2	**157316**	**HUA-80**
4	0.53	3.2	0.5	0.3	1.3	5.2	4.1	5.0	4.3	37.04	2	**157317**	**HUA-100**

1) Corrosion resistance class 2 according to Festo standard 940 070
Components with moderate corrosion resistance for use in normal industrial environments subjected to contact with coolants or lubricating agents.

Dimensions are in inches, unless otherwise noted.

Flange mounting FUA
for piston ∅ 1/2 ... 4 inch

Material: Clear anodized aluminum



Dimensions and ordering data

For ∅	E	FB ∅	MF	R	TF	UF	ZF	CRC[2]	Weight [oz]	Part No.	Type
1/2, 5/8	1.1	0.2	0.4	–	1.7	2.2	2.1	2	1.69	**157299**	**FUA-12/16**
3/4	1.4	0.3	0.4	–	2.2	2.8	2.1	2	2.54	**157300**	**FUA-20**
1	1.6	0.3	0.4	–	2.4	3.0	2.2	2	3.07	**157301**	**FUA-25**
1-1/4	2.0	0.3	0.4	1.3	2.6	3.1	2.4	2	4.13	**157302**	**FUA-32**
1-5/8	2.4	0.4	0.4	1.4	3.2	4.0	2.4	2	6.35	**157303**	**FUA-40**
2	2.7	0.4	0.5	1.8	3.5	4.3	2.6	2	9.38	**157304**	**FUA-50**
2-1/2	3.4	0.4	0.6	2.0	4.3	5.1	2.9	2	19.40	**157305**	**FUA-63**
3	4.2	0.5	0.6	2.5	5.3	6.3	3.0	2	26.28	**157306**	**FUA-80**
4	5.0	0.6	0.6	3.0	6.4	7.5	3.6	2	36.51	**157307**	**FUA-100**

1) Free of copper, PTFE and silicone
2) Corrosion resistance class 2 according to Festo standard 940 070
Components with moderate corrosion resistance for use in normal industrial environments subjected to contact with coolants or lubricating agents.

Dimensions are in inches, unless otherwise noted.

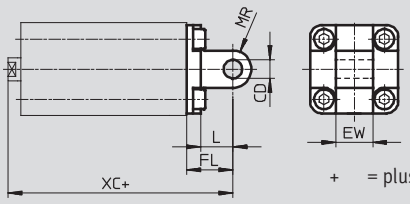
Compact cylinders ADVULQ/AEVULQ/AEVULQZ – Inch Series

Accessories

Swivel flange SUA
for piston ∅ 1/2 ... 1 inch

Material:
SUA: Anodized aluminum

∅ 1/2 ...1 inch

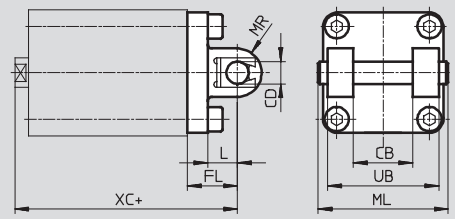


\+ = plus stroke length

for piston ∅ 1-1/4 ... 4 inch

Material:
SUA: Anodized aluminum

∅ 1-1/4 ...4 inch



\+ = plus stroke length

Dimensions and Ordering Data

For ∅	CB	CD ∅	EW	FL	L	ML	MR	UB	XC	Weight [oz]	Basic version Part No.	Type
1/2, 5/8	–	0.2	0.5	0.6	0.4	–	0.2	–	2.3	1.5	**157319**	**SUA-12/16**
3/4	–	0.3	0.6	0.8	0.6	–	0.3	–	2.5	2.8	**157320**	**SUA-20**
1	–	0.3	0.6	0.8	0.6	–	0.3	–	2.6	3.0	**157321**	**SUA-25**
1-1/4	1.0	0.4	–	0.9	0.5	2.1	0.4	1.8	2.9	7.3	**157322**	**SUA-32**
1-5/8	1.1	0.5	–	1.0	0.6	2.4	0.5	2.0	3.0	11.3	**157323**	**SUA-40**
2	1.3	0.5	–	1.1	0.6	2.8	0.5	2.4	3.1	15.4	**157324**	**SUA-50**
2-1/2	1.6	0.6	–	1.3	0.8	3.2	0.6	2.8	3.5	26.8	**157325**	**SUA-63**
3	2.0	0.6	–	1.4	0.9	4.0	0.6	3.5	3.9	42.0	**157326**	**SUA-80**
4	2.4	0.8	–	1.6	1.0	5.0	0.8	4.3	4.6	67.0	**157327**	**SUA-100**

Note
Do not exceed the maximum overall stroke length listed when combining cylinders and swivel flanges.

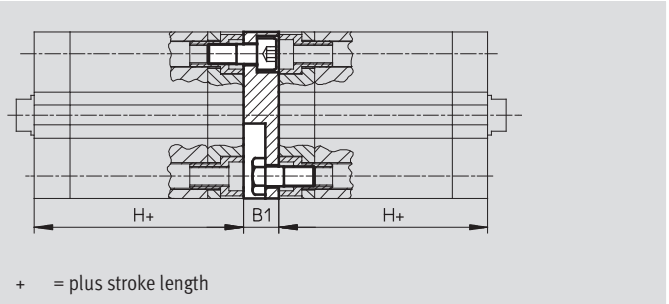
For ∅	Max. stroke length [in]
1/2	2
5/8	2
3/4	2
1	2
1-1/4	4

For ∅	Max. stroke length [in]
1-5/8	4
2	4
2-1/2	4
3	6
4	6

Dimensions are in inches, unless otherwise noted.

Adapter kit DPVU
for piston ∅ 1/2 ... 4 inch

Material:
Aluminum
Free of copper, PTFE and silicone



\+ = plus stroke length

Note
Do not exceed the maximum overall stroke length listed when combining cylinders and the adapter kit.

Dimensions and ordering data

For ∅	B1	H	Max. overall stroke length [in]	CRC[1)]	Weight [oz]	Part No.	Type
1/2, 5/8	0.5	1.5	15.7	2	0.78	**161194**	**DPVU-12/16**
3/4	0.5	1.5	15.7	2	1.27	**161195**	**DPVU-20**
1	0.5	1.6	15.7	2	1.55	**161196**	**DPVU-25**
1-1/4	0.6	1.8	23.6	2	3.17	**161197**	**DPVU-32**
1-5/8	0.6	1.8	23.6	2	4.83	**161198**	**DPVU-40**
2	0.6	1.8	23.6	2	6.24	**161199**	**DPVU-50**
2-1/2	0.6	2.0	23.6	2	10.86	**161200**	**DPVU-63**
3	0.6	2.2	31.5	2	17.46	**161201**	**DPVU-80**
4	0.8	2.6	31.5	2	30.30	**161202**	**DPVU-100**

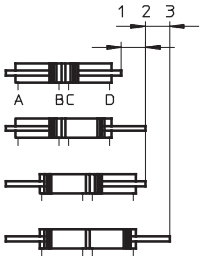
1) Corrosion resistance class 2 according to Festo standard 940 070
Components with moderate corrosion resistance for use in normal industrial environments subjected to contact with coolants or lubricating agents.

Connecting two cylinders with identical piston ∅ as a 3 or 4-position cylinder

A 3 or 4-position cylinder consists of two separate cylinders whose piston rods advance in opposing directions. Depending upon actuation and stroke pattern, this type of cylinder can assume up to four positions. In each case the cylinder is driven precisely against a stop. If one end of the piston rod is fixed, the cylinder barrel executes the movement. The cylinder must be connected with flexible line connections.

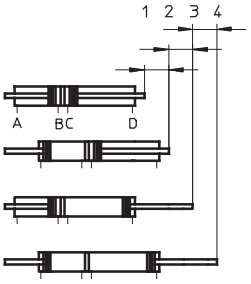
Implementing 3 positions

Two cylinders with identical stroke length must be connected to accomplish this.



Implementing 4 positions

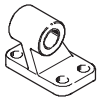
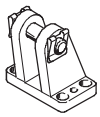
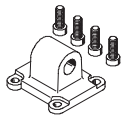
Two cylinders with different stroke lengths must be connected to accomplish this.

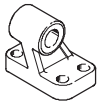
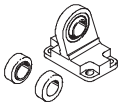
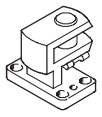


Dimensions are in inches, unless otherwise noted.

Ordering Data – Mounting Attachments

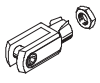
Technical data ➔ www.festo.com/catalog/‹type› or ‹order code›

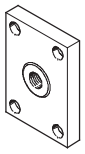
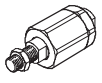
Designation	For ∅ [in]	Part No.	Type
Clevis foot LBN			
	1/2	**6058**	**LBN-12/16**
	5/8	**6058**	**LBN-12/16**
	3/4	**6059**	**LBN-20/25**
	1	**6059**	**LBN-20/25**
Clevis foot LN			
	1-1/4	**5147**	**LN-32**
	1-5/8	**5148**	**LN-40**
	2	**5149**	**LN-50**
	2-1/2	**5150**	**LN-63**
	3	**5151**	**LN-80**
	4	**5152**	**LN-100**
Clevis foot LBG			
	3/4, 1, 1-1/4, 1-5/8	**31761**	**LBG-32**
	2, 2-1/2	**31762**	**LBG-40**
	3	**31763**	**LBG-50**
		31764	**LBG-63**
	4	**31765**	**LBG-80**
		31766	**LBG-100**
Swivel flange SNCL			
	1-1/4	**174404**	**SNCL-32**
	1-5/8	**174405**	**SNCL-40**
	2	**174406**	**SNCL-50**
	2-1/2	**174407**	**SNCL-63**
	3	**174408**	**SNCL-80**
	4	**174409**	**SNCL-100**

Designation	For ∅ [in]	Part No.	Type
Clevis foot LNG			
	1-1/4	**33890**	**LNG-32**
	5/8	**33891**	**LNG-40**
	2	**33892**	**LNG-50**
	2-1/2	**33893**	**LNG-63**
	3	**33894**	**LNG-80**
	4	**33895**	**LNG-100**
Clevis foot LSN			
	1-1/4	**5561**	**LSN-32**
	1-5/3	**5562**	**LSN-40**
	2	**5563**	**LSN-50**
	2-1/2	**5564**	**LSN-63**
	3	**5565**	**LSN-80**
	4	**5566**	**LSN-100**
Clevis foot, lateral LQG			
	3/4, 1, 1-1/4, 1-5/8	**31768**	**LQG-32**
	2,2-1/2	**31769**	**LQG-40**
	3	**31770**	**LQG-50**
		31771	**LQG-63**
	4	**31772**	**LQG-80**
		31773	**LQG-100**

Ordering Data – Piston Rod Attachments

Technical data ➔ www.festo.com/catalog/‹type› or ‹order code›

Designation	For ∅ [in]	Part No.	Type
Rod eye SGS			
	1/2, 5/8	**532694**	**SGS-10-32**
	3/4	**532695**	**SGS-5/16-24**
	1, 1-1/4	**532696**	**SGS-3/8-24**
	1-5/8	**532697**	**SGS-1/2-20**
	2, 2-1/2	**532698**	**SGS-5/8-18**
	3, 4	**532699**	**SGS-3/4-16**
Rod clevis SG			
	1/2, 5/8	**546552**	**SG-UNF10-32-B**
	3/4	**546574**	**SG-UNF5/16-24-B**
	1, 1-1/4	**546540**	**SG-UNF3/8-24-B**
	1-5/8	**546545**	**SG-UNF1/2-20-B**
	2, 2-1/2	**546575**	**SG-UNF5/8-18-B**
	3, 4	**546576**	**SG-UNF3/4-16-B**

Designation	For ∅ [in]	Part No.	Type
Coupling piece KSZ			
	1/2, 5/8, 3/4	–	
	1, 1-1/4	**36129**	**KSZ-3/8-24-UNF**
	1-5/8	**36130**	**KSZ-1/2-20-UNF**
	2, 2-1/2	**36131**	**KSZ-5/8-18-UNF**
	3, 4	**36132**	**KSZ-3/4-16-UNF**
Self-aligning rod coupler FK			
	1/2, 5/8	**532703**	**FK-10-32**
	3/4	**532704**	**FK-5/16-24**
	1, 1-1/4	**532705**	**FK-3/8-24**
	1-5/8	**532706**	**FK-1/2-20**
	2, 2-1/2	**532707**	**FK-5/8-18**
	3, 4	**532708**	**FK-3/4-16**

Compact cylinders ADVULQ/AEVULQ/AEVULQZ – Inch Series

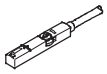
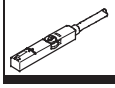
Accessories

FESTO

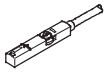
Ordering Data – One-way Flow Control Valves			Technical data ➔ www.festo.com/catalog/‹type› or ‹order code›	
	Connection		Part No.	Type
	Thread	For tubing OD		
For exhaust air				
	10-32 UNF	5/32	**165008**	**GRLA-10-32-UNF-QS-5/32-U**
		1/4	**192753**	**GRLA-10-32-UNF-QS-1/4-U**
	1/8″ NPT	5/32	**165009**	**GRLA-1/8-NPT-QS-5/32-U**
		3/16	**190941**	**GRLA-1/8-NPT-QS-3/16-U**
		1/4	**165010**	**GRLA-1/8-NPT-QS-1/4-U**
		5/16	**165013**	**GRLA-1/8-NPT-QS-5/16-U**
	1/4″ NPT	3/16	**190944**	**GRLA-1/4-NPT-QS-3/16-U**
		1/4	**165011**	**GRLA-1/4-NPT-QS-1/4-U**
		5/16	**165014**	**GRLA-1/4-NPT-QS-5/16-U**
		3/8	**190947**	**GRLA-1/4-NPT-QS-3/8-U**
For supply air				
	10-32-UNF	–	**151576**	**GRLZ-10-UNF-B**
			151579	**GRLZ-10-UNF-RS-B**
		3/16	**151577**	**GRLZ-10-UNF-3/16-B**
		1/4	**151578**	**GRLZ-10-UNF-1/4-B**
	1/8″ NPT	–	**151561**	**GRLZ-1/8-NPT-B**
			151564	**GRLZ-1/8-NPT-RS-B**
		1/4	**151562**	**GRLZ-1/8-NPT-1/4-B**
		3/8	**151563**	**GRLZ-1/8-NPT-3/8-B**

Ordering Data – Push-in Fittings QB, NPT Thread						Technical Data ➔ www.festo.com/catalog/QB	
	For tubing O.D. [in]	10/32 UNF		⅛NPT		¼NPT	
		Part No.	Type	Part No.	Type	Part No.	Type
With external hex							
	1/8	**533266**	**QB-10-32-UNF-1/8-U**	**533270**	**QB-1/8-1/8-U**	–	
	5/32	**533267**	**QB-10-32-UNF-5/32-U**	**533271**	**QB-1/8-5/32-U**	–	
	3/16	**533268**	**QB-10-32-UNF-3/16-U**	**533272**	**QB-1/8-3/16-U**	**533275**	**QB-1/4-3/16-U**
	1/4	**533269**	**QB-10-32-UNF-1/4-U**	**533273**	**QB-1/8-1/4-U**	**533276**	**QB-1/4-1/4-U**
	5/16	–		**533274**	**QB-1/8-5/16-U**	**533277**	**QB-1/4-5/16-U**
	3/8	–		–		**533278**	**QB-1/4-3/8-U**
	1/2	–		–		–	

Ordering Data – Proximity Switches for T-slot, Magneto-resistive — Technical data ➔ www.festo.com/catalog/sm

	Type of mounting	Switch output	Electrical connection	Cable length [m]	Part No.	Type
N/O contact						
	Insertable in the slot from above, flush with cylinder profile	PNP	Cable, 3-wire	2.5	**543867**	**SMT-8M-PS-24V-K-2,5-OE**
			Plug M8x1, 3-pin	0.3	**543866**	**SMT-8M-PS-24V-K-0,3-M8D**
			Plug M12x1, 3-pin	0.3	**543869**	**SMT-8M-PS-24V-K-0,3-M12**
		NPN	Cable, 3-wire	2.5	**543870**	**SMT-8M-NS-24V-K-2,5-OE**
			Plug M8x1, 3-pin	0.3	**543871**	**SMT-8M-NS-24V-K-0,3-M8D**
	Insertable in the slot lengthwise, flush with the cylinder profile	PNP	Cable, 3-wire	2.5	**175436**	**SMT-8-PS-K-LED-24-B**
			Plug M8x1, 3-pin	0.3	**175484**	**SMT-8-PS-S-LED-24-B**
N/C contact						
	Insertable in the slot from above, flush with cylinder profile	PNP	Cable, 3-wire	7.5	**543873**	**SMT-8M-PO-24V-K7,5-OE**

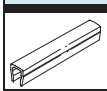
Ordering Data – Proximity Switches for T-slot, Magnetic Reed — Technical data ➔ www.festo.com/catalog/sm

	Type of mounting	Switch output	Electrical connection	Cable length [m]	Part No.	Type
N/O contact						
	Insertable in the slot from above, flush with cylinder profile	Contacting	Cable, 3-wire	2.5	**543862**	**SME-8M-DS-24V-K-2,5-OE**
				5.0	**543863**	**SME-8M-DS-24V-K-5,0-OE**
			Cable, 3-wire	2.5	**543872**	**SME-8M-ZS-24V-K-2,5-OE**
			Plug M8x1, 3-pin	0.3	**543861**	**SME-8M-DS-24V-K-0,3-M8D**
	Insertable in the slot lengthwise, flush with the cylinder profile	Contacting	Cable, 3-wire	2.5	**150855**	**SME-8-K-LED-24**
			Plug M8x1, 3-pin	0.3	**150857**	**SME-8-S-LED-24**
N/C contact						
	Insertable in the slot lengthwise, flush with the cylinder profile	Contacting	Cable, 3-wire	7.5	**160251**	**SME-8-O-K-LED-24**

Ordering Data – Connecting Cables — Technical data ➔ www.festo.com/catalog/nebu

	Electrical connection, left	Electrical connection, right	Cable length [m]	Part No.	Type
	Straight socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	**541333**	**NEBU-M8G3-K-2.5-LE3**
			5.0	**541334**	**NEBU-M8G3-K-5-LE3**
	Straight socket, M12x1, 5-pin	Cable, open end, 3-wire	2.5	**541363**	**NEBU-M12G5-K-2.5-LE3**
			5.0	**541364**	**NEBU-M12G5-K-5-LE3**
	Angled socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	**541338**	**NEBU-M8W3-K-2.5-LE3**
			5.0	**541341**	**NEBU-M8W3-K-5-LE3**
	Angled socket, M12x1, 5-pin	Cable, open end, 3-wire	2.5	**541367**	**NEBU-M12W5-K-2.5-LE3**
			5.0	**541370**	**NEBU-M12W5-K-5-LE3**

Ordering Data – Slot Cover for T-slot

	Assembly	Length [ft]	Part No.	Type
	Insertable from above	2x 1.6	**151680**	**ABP-5-S**

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