

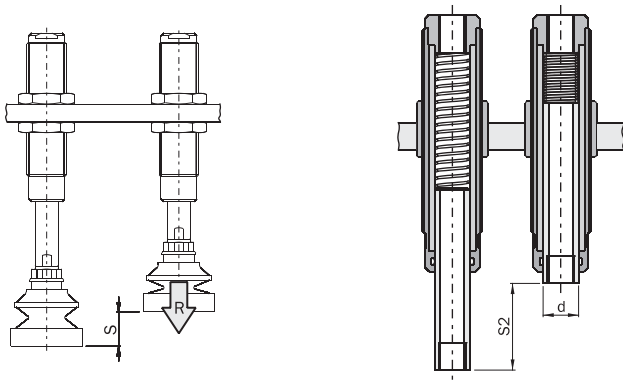
**Sospensioni per ventose**

- Le sospensioni (o buffer, o compensatori di livello) sono usate per tenere in posizione le ventose durante l'avvicinamento del robot.
- Gimatic offre una gamma specificamente progettata per le applicazioni Plastics.
- Tipicamente sono montate su EOAT (End Of Arm Tooling) con le staffe MFI.

**Forza di reazione**

La forza di reazione dipende dalla compressione (S) della molla interna. E anche dal diametro del pistone (d) e dalla pressione di utilizzo (p), nel caso delle sospensioni telescopiche. Usare la formula seguente per il calcolo.

$$R = R1 + K \cdot S + d^2 \cdot \frac{\pi}{40} \cdot p$$



**Vacuum cup suspensions**

- The suspensions (or buffers, or level compensators) are used to keep the suction cups in position as the robot approaches.
- Gimatic offers a range specifically designed for Plastics applications.
- They are typically mounted on EOATs (End Of Arm Toolings) with MFI brackets.

**Reaction force**

The reaction force depends on the compression (S) of the internal spring. And also on the piston diameter (d) and operation pressure (p), in the case of telescopic suspensions. Use the following formula for calculation.

- R [N] Forza di reazione  
Reaction force
- R1 [N] Forza della molla all'inizio della corsa  
Spring force at the beginning
- K [N/mm] Costante elastica della molla  
Spring rate
- S [mm] Corsa effettuata  
Compression stroke
- d [mm] Alesaggio  
Piston bore
- p [bar] Pressione  
Pressure
- R2 [N] Forza della molla alla fine della corsa  
Spring force at the end-stroke
- S2 [mm] Corsa massima  
Maximum stroke
- m [g] Peso  
Weight



VSL



VSC



VSR



VSRT



VSN



VSNT



VSE



VSET



VWX



VSRTG



VSNB



VSNTG



VSS

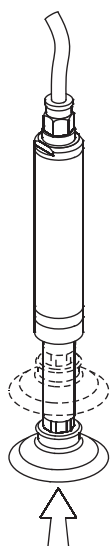


VSD

**Sospensioni telescopiche**

*Telescopic suspensions*

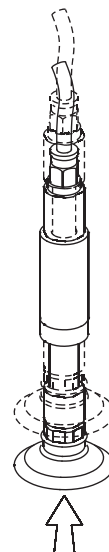
- VSC
- VSL
- VSS



**Sospensioni con stelo passante**

*Through rod suspensions*

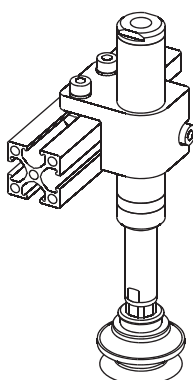
- VSR
- VSRT
- VSN
- VSNT
- VSE
- VSET
- VVX
- VSRTG
- VSNG
- VSNTG
- VSD



**Sospensioni con corpo liscio**

*Suspensions with smooth body*

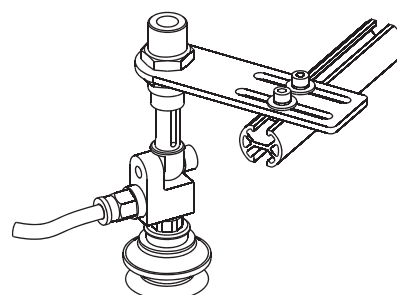
- VSL
- VSS
- VSR
- VSN
- VSE
- VVX
- VSNG
- VSD



**Sospensioni con corpo filettato**

*Suspensions with threaded body*

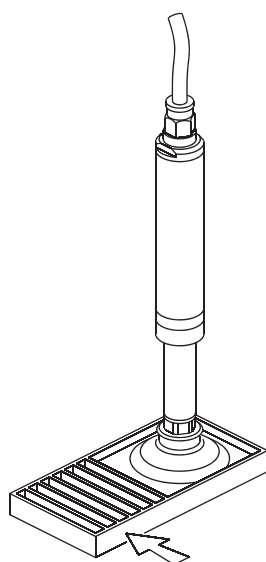
- VSC
- VSRT
- VSNT
- VSET
- VSRTG
- VSNTG



**Sospensioni anti-rotazione**

*Non-rotative suspensions*

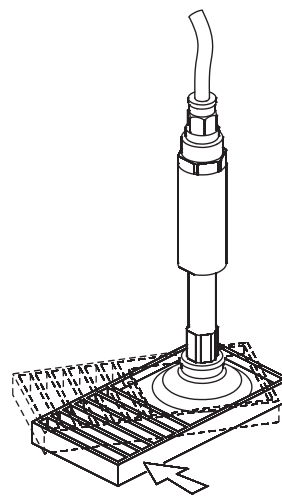
- VSC
- VSL
- VSN
- VSNT
- VSE
- VSET
- VVX
- VSNG
- VSNTG
- VSD



**Sospensioni rotanti**

*Rotative suspensions*

- VSS
- VSR
- VSRT
- VSRTG

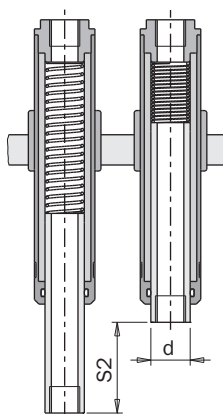
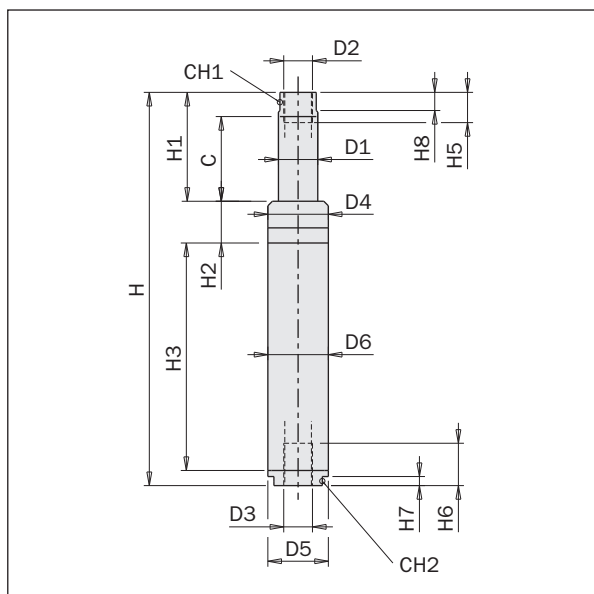


### Sospensioni telescopiche anti-rotazione con corpo liscio

- Corpo e stelo in alluminio anodizzato.
- Trattamento anti-frizione sullo stelo.
- Cuscinetto in polimero per un movimento più omogeneo.
- Stelo anti-rotazione con gioco ridotto.
- Movimento telescopico: i raccordi ed i tubi non si muovono.
- Guarnizioni unidirezionali: usabile solo con il vuoto.
- Pressione di utilizzo:  $-1 \div 0$  bar.
- Grasso alimentare FDA-H1.

### Smooth-body non-rotative telescopic suspensions

- Body and rod in anodized aluminum.
- Anti-friction treatment on the rod.
- Smooth movement thanks to the plastic bearing.
- Non-rotative rod with reduced tolerance.
- Telescopic lay-out: fittings and hoses don't move.
- Unidirectional sealing: only for vacuum applications.
- Pressure range:  $-1 \div 0$  bar.
- FDA-H1 food-grade grease.



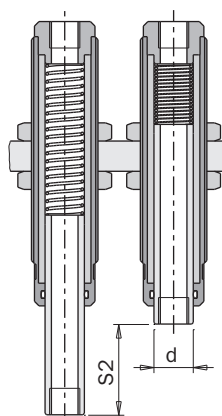
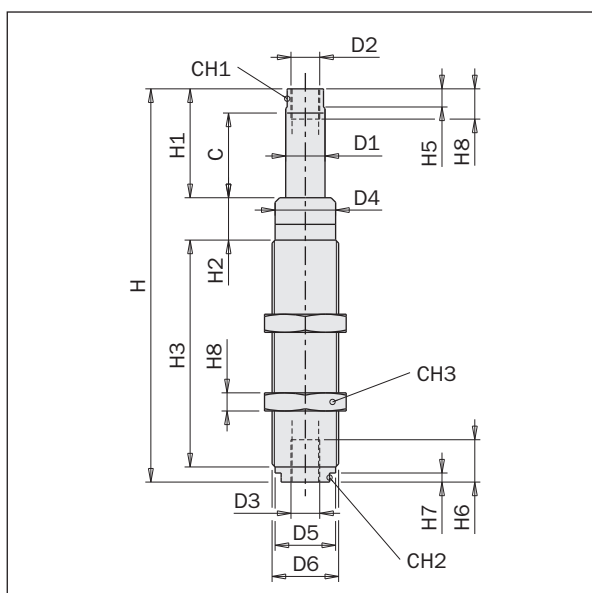
	VSL1620	VSL2030	VSL2430
H [mm]	100	130	130
H1 [mm]	26	36	36
H2 [mm]	12	14	14
H3 [mm]	57	75	75
H4 [mm]	5	5	5
H5 [mm]	10	10	10
H6 [mm]	14	14	14
H7 [mm]	3	3	3
H8 [mm]	5	6	6
D1 [mm]	Ø8	Ø13	Ø16
D2	M5	G1/8"	G1/4"
D3	M5	G1/8"	G1/4"
D4 [mm]	Ø14.5	Ø20	Ø23
D5 [mm]	Ø14.5	Ø20	Ø23
D6 [mm]	Ø16	Ø20	Ø24
CH1 [mm]	7	12	14
CH2 [mm]	13	16	20
C [mm]	20	30	30
S2 [mm]	20	30	30
d [mm]	8	13	16
K [N/mm]	0.311	0.239	0.334
R1 [N]	9.338	14.80	20.05
R2 [N]	16.04	22.37	30.42
m [g]	30	55	70

## Sospensioni telescopiche anti-rotazione con corpo filettato

- Corpo e stelo in alluminio anodizzato.
- Trattamento anti-frizione sullo stelo.
- Cuscinetto in polimero per un movimento più omogeneo.
- Stelo anti-rotazione con gioco ridotto.
- Movimento telescopico: i raccordi ed i tubi non si muovono.
- Guarnizioni unidirezionali: usabile solo con il vuoto.
- Pressione di utilizzo:  $-1 \div 0$  bar.
- Grasso alimentare FDA-H1.

## Threaded-body non-rotative telescopic suspensions

- Body and rod in anodized aluminum.
- Anti-friction treatment on the rod.
- Smooth movement thanks to the plastic bearing.
- Non-rotative rod with reduced tolerance.
- Telescopic lay-out: fittings and hoses don't move.
- Unidirectional sealing: only for vacuum applications.
- Pressure range:  $-1 \div 0$  bar.
- FDA-H1 food-grade grease.



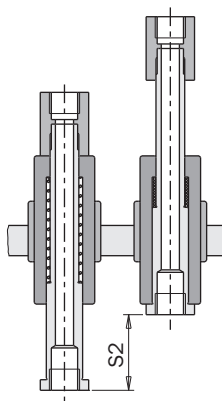
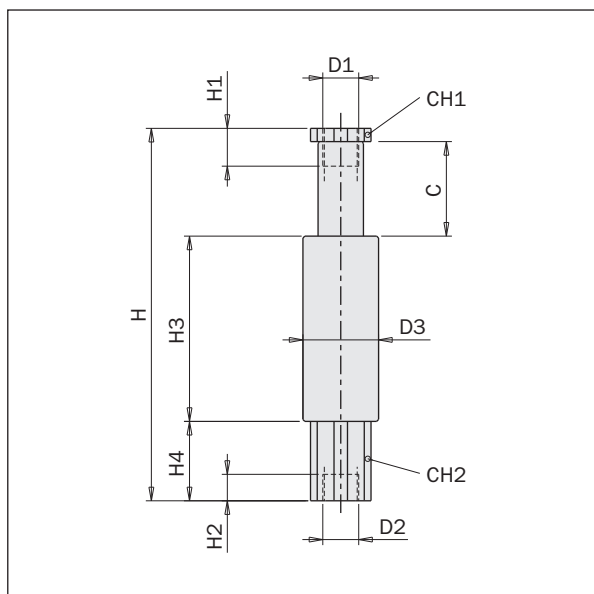
	VSC1620	VSC2230	VSC2530
H [mm]	100	130	130
H1 [mm]	26	36	36
H2 [mm]	12	14	14
H3 [mm]	57	75	75
H4 [mm]	5	5	5
H5 [mm]	10	10	10
H6 [mm]	14	14	14
H7 [mm]	3	3	3
H8 [mm]	5	6	6
D1 [mm]	Ø8	Ø13	Ø16
D2	M5	G1/8"	G1/4"
D3	M5	G1/8"	G1/4"
D4 [mm]	Ø14.5	Ø20	Ø23
D5 [mm]	Ø14.5	Ø20	Ø23
D6	M16x1	M22x1.5	M25x1.5
CH1 [mm]	7	12	14
CH2 [mm]	13	16	20
CH3 [mm]	19	27	32
C [mm]	20	30	30
S2 [mm]	20	30	30
d [mm]	8	13	16
K [N/mm]	0.311	0.239	0.334
R1 [N]	9.338	14.80	20.05
R2 [N]	16.04	22.37	30.42
m [g]	35	80	115

**Sospensioni rotanti con corpo liscio**

- Corpo e stelo in alluminio anodizzato.
- Stelo girevole.
- Pressione di utilizzo: -1 ÷ 8 bar.
- Grasso alimentare FDA-H1.

**Smooth-body rotative suspensions**

- Body and rod in anodized aluminum.
- Rotative rod.
- Pressure range: -1 ÷ 8 bar.
- FDA-H1 food-grade grease.



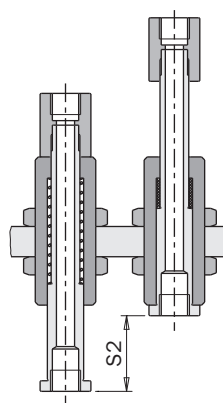
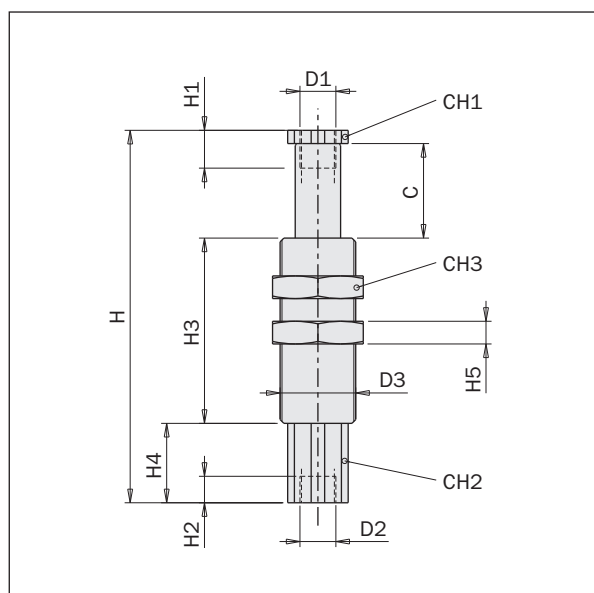
	VSR1010	VSR1025	VSR1420	VSR1435	VSR2025	VSR2050
H [mm]	51	85.5	92.5	127.5	98.5	156
H1 [mm]	6	6	10	10	10	10
H2 [mm]	5	5	7	7	7	7
H3 [mm]	21	40.5	38.5	58.5	49	81.5
H4 [mm]	17	17	20	20	21	21
D1	M5	M5	G1/8"	G1/8"	G1/8"	G1/8"
D2	M5	M5	G1/8"	G1/8"	G1/8"	G1/8"
D3 [mm]	Ø10	Ø10	Ø14	Ø14	Ø20	Ø20
CH1 [mm]	8	8	12	12	16	16
CH2 [mm]	8	8	12	12	16	16
C [mm]	10	25	20	35	25	50
S2 [mm]	10	25	20	35	25	50
d [mm]	0	0	0	0	0	0
K [N/mm]	0.213	0.085	0.268	0.150	0.275	0.141
R1 [N]	1.490	1.575	3.617	4.267	4.131	4.308
R2 [N]	3.619	3.704	8.975	9.507	11.02	11.37
m [g]	7	11	23	32	50	77

## Sospensioni rotanti con corpo filettato

- Corpo e stelo in alluminio anodizzato.
- Stelo girevole.
- Pressione di utilizzo:  $-1 \div 8$  bar.
- Grasso alimentare FDA-H1.

## Threaded-body rotative suspensions

- Body and rod in anodized aluminum.
- Rotative rod.
- Pressure range:  $-1 \div 8$  bar.
- FDA-H1 food-grade grease.



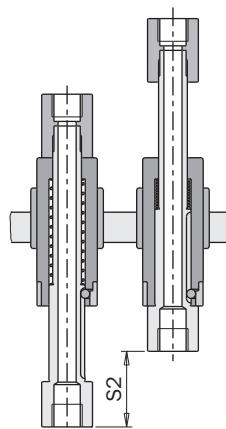
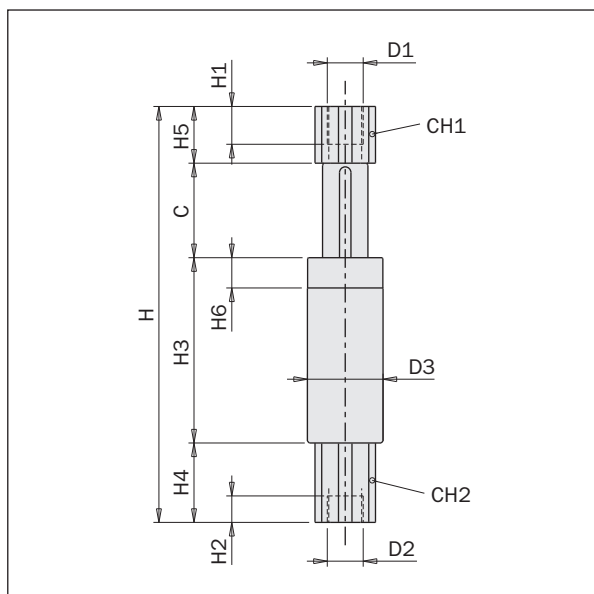
	VSRT1010	VSRT1025	VSRT1420	VSRT1435	VSRT1620	VSRT1635	VSRT2025	VSRT2050
H [mm]	51	85.5	92.5	127.5	92.5	127.5	98.5	156
H1 [mm]	6	6	10	10	10	10	10	10
H2 [mm]	5	5	7	7	7	7	7	7
H3 [mm]	21	40.5	38.5	58.5	38.5	58.5	49	81.5
H4 [mm]	17	17	20	20	20	20	21	21
H5 [mm]	3.5	3.5	4	4	5	5	6	6
D1	M5	M5	G1/8"	G1/8"	G1/8"	G1/8"	G1/8"	G1/8"
D2	M5	M5	G1/8"	G1/8"	G1/8"	G1/8"	G1/8"	G1/8"
D3	M10x1	M10x1	M14x1.5	M14x1.5	M16x1	M16x1	M20x1.5	M20x1.5
CH1 [mm]	8	8	12	12	12	12	16	16
CH2 [mm]	8	8	12	12	12	12	16	16
CH3 [mm]	13	13	17	17	19	19	24	24
C [mm]	10	25	20	35	20	35	25	50
S2 [mm]	10	25	20	35	20	35	25	50
d [mm]	0	0	0	0	0	0	0	0
K [N/mm]	0.213	0.085	0.268	0.150	0.268	0.150	0.275	0.141
R1 [N]	1.490	1.575	3.617	4.267	3.617	4.267	4.131	4.308
R2 [N]	3.619	3.704	8.975	9.507	8.975	9.507	11.02	11.37
m [g]	11	16	32	42	40	50	70	104

**Sospensioni anti-rotazione con corpo liscio**

- Corpo e stelo in alluminio anodizzato.
- Stelo anti-rotazione con elevata capacità di carico.
- Pressione di utilizzo: -1 ÷ 8 bar.
- Grasso alimentare FDA-H1.

**Smooth-body non-rotative telescopic suspensions**

- Body and rod in anodized aluminum.
- Non-rotative rod with high load capability.
- Pressure range: -1 ÷ 8 bar.
- FDA-H1 food-grade grease.



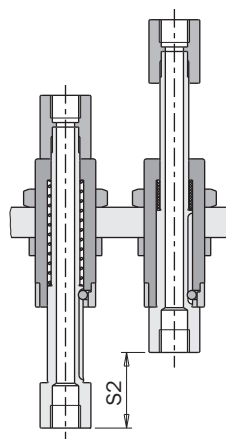
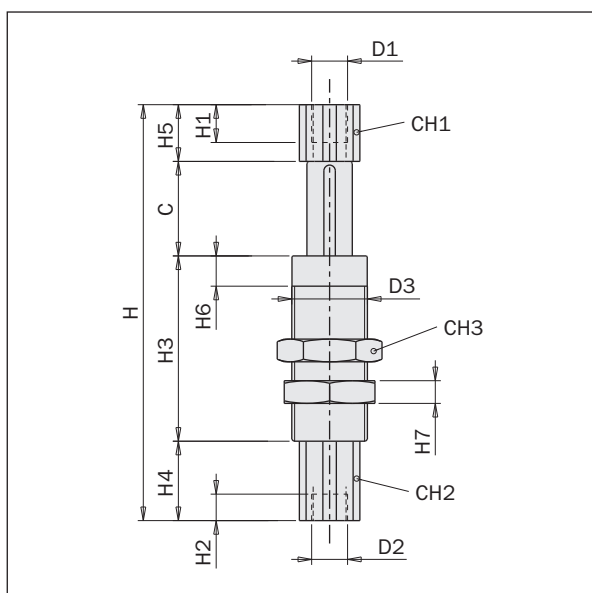
	VSN1010	VSN1025	VSN1420	VSN1435	VSN2025	VSN2050
H [mm]	56	90.5	98.5	133.5	110	167.5
H1 [mm]	6	6	10	10	10	10
H2 [mm]	5	5	7	7	7	7
H3 [mm]	21	40.5	38.5	58.5	49	81.5
H4 [mm]	17	17	20	20	21	21
H5 [mm]	8	8	20	20	15	15
H6 [mm]	5	5	7	7	8	8
D1	M5	M5	G1/8"	G1/8"	G1/8"	G1/8"
D2	M5	M5	G1/8"	G1/8"	G1/8"	G1/8"
D3 [mm]	Ø10	Ø10	Ø14	Ø14	Ø20	Ø20
CH1 [mm]	8	8	12	12	16	16
CH2 [mm]	8	8	12	12	16	16
C [mm]	10	25	20	35	25	50
S2 [mm]	10	25	20	35	25	50
d [mm]	0	0	0	0	0	0
K [N/mm]	0.213	0.085	0.268	0.150	0.275	0.141
R1 [N]	1.490	1.575	3.617	4.267	4.131	4.308
R2 [N]	3.619	3.704	8.975	9.507	11.02	11.37
m [g]	7	11	24	33	54	80

### Sospensioni anti-rotazione con corpo filettato

- Corpo e stelo in alluminio anodizzato.
- Stelo anti-rotazione con elevata capacità di carico.
- Pressione di utilizzo:  $-1 \div 8$  bar.
- Grasso alimentare FDA-H1.

### Threaded-body non-rotative suspensions

- Body and rod in anodized aluminum.
- Non-rotative rod with high load capability.
- Pressure range:  $-1 \div 8$  bar.
- FDA-H1 food-grade grease.



	VSNT1010	VSNT1025
H [mm]	56	90.5
H1 [mm]	6	6
H2 [mm]	5	5
H3 [mm]	21	40.5
H4 [mm]	17	17
H5 [mm]	8	8
H6 [mm]	5	5
H7 [mm]	3.5	3.5
D1	M5	M5
D2	M5	M5
D3	M10x1	M10x1
CH1 [mm]	8	8
CH2 [mm]	8	8
CH3 [mm]	13	13
C [mm]	10	25
S2 [mm]	10	25
d [mm]	0	0
K [N/mm]	0.213	0.085
R1 [N]	1.490	1.575
R2 [N]	3.619	3.704
m [g]	12	16

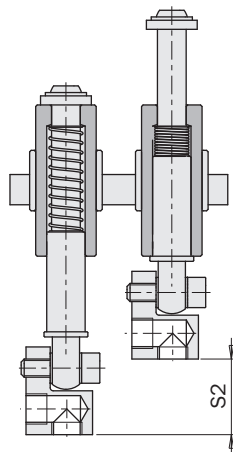
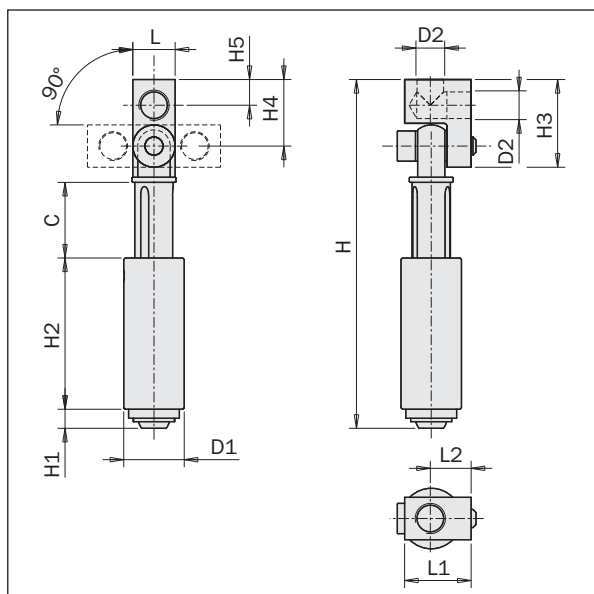


**Sospensioni anti-rotazione con giunto angolare integrato e corpo liscio**

- L'angolo è regolabile continuamente fra 0° e +/-90°.
- Alimentazione esterna.
- Corpo e stelo in alluminio anodizzato.
- Stelo anti-rotazione con elevata capacità di carico.
- Pressione di utilizzo: -1 ÷ 8 bar.
- Grasso alimentare FDA-H1.

**Smooth-body non-rotative suspensions with integral elbow arms**

- It is possible to set continuously the angle between 0° and +/-90°.
- External air feeding.
- Body and rod in anodized aluminum.
- Non-rotative rod with high load capability.
- Pressure range: -1 ÷ 8 bar.
- FDA-H1 food-grade grease.



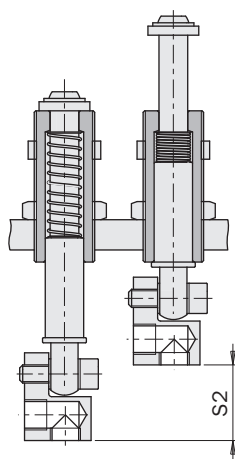
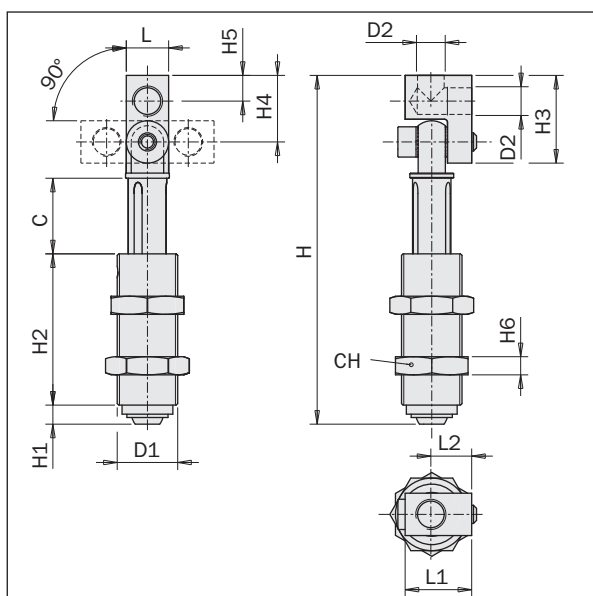
	VSE1010F05	VSE1025F05	VSE1420F18	VSE1435F18	VSE2025F18	VSE2025F14	VSE2050F18	VSE2050F14
H [mm]	56.3	90.8	96.1	131.1	115.3	121.3	172.8	178.8
H1 [mm]	3.3	3.3	5.3	5.3	6.3	6.3	6.3	6.3
H2 [mm]	22.5	42	40	60	50	50	82.5	82.5
H3 [mm]	19	19	29	29	29	38	29	38
H4 [mm]	14	14	22	22	22	28	22	28
H5 [mm]	5.5	5.5	8.5	8.5	8.5	12	8.5	12
D1 [mm]	Ø10	Ø10	Ø14	Ø14	Ø20	Ø20	Ø20	Ø20
D2	M5	M5	G1/8"	G1/8"	G1/8"	G1/4"	G1/8"	G1/4"
L [mm]	10	10	14	14	14	20	14	20
L1 [mm]	16.5	16.5	22	22	22	27	22	27
L2 [mm]	11	11	13.5	13.5	13.5	15	13.5	15
C [mm]	10	25	20	35	25	25	50	50
S2 [mm]	10	25	20	35	25	25	50	50
d [mm]	0	0	0	0	0	0	0	0
K [N/mm]	0.106	0.138	0.268	0.150	0.275	0.275	0.141	0.141
R1 [N]	0.957	3.100	3.617	4.267	4.131	4.131	4.308	4.308
R2 [N]	2.020	6.545	8.975	9.507	11.02	11.02	11.37	11.37
m [g]	15	20	45	55	70	90	105	120

**Sospensioni anti-rotazione con giunto angolare integrato e corpo filettato**

- L'angolo è regolabile continuamente fra 0° e +/-90°.
- Alimentazione esterna.
- Corpo e stelo in alluminio anodizzato.
- Stelo anti-rotazione con elevata capacità di carico.
- Pressione di utilizzo: -1 ÷ 8 bar.
- Grasso alimentare FDA-H1.

**Threaded-body non-rotative suspensions with integral elbow arms**

- It is possible to set continuously the angle between 0° and +/-90°.
- External air feeding.
- Body and rod in anodized aluminum.
- Non-rotative rod with high load capability.
- Pressure range: -1 ÷ 8 bar.
- FDA-H1 food-grade grease.



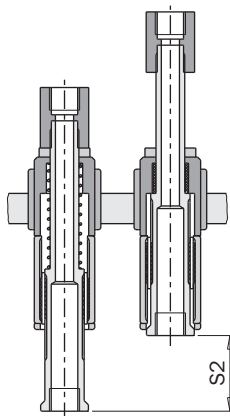
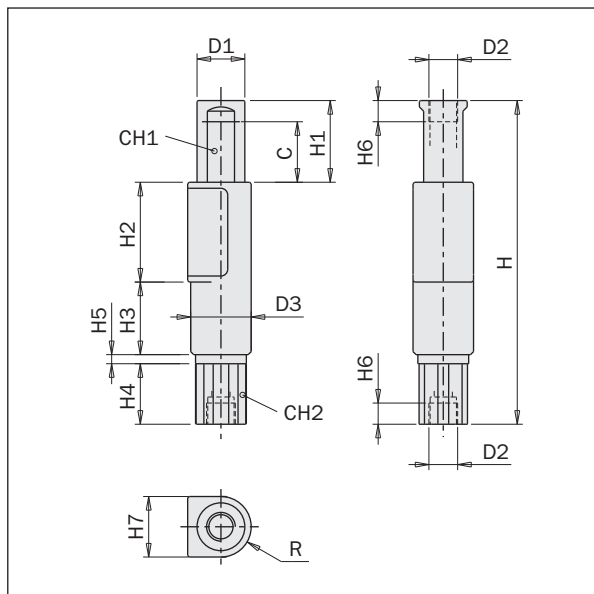
	VSET1010F05	VSET1025F05	VSET1620F18	VSET1635F18	VSET2025F18	VSET2025F14	VSET2050F18	VSET2050F14
H [mm]	56.3	90.8	96.1	131.1	115.3	121.3	172.8	178.8
H1 [mm]	3.3	3.3	5.3	5.3	6.3	6.3	6.3	6.3
H2 [mm]	22.5	42	40	60	50	50	82.5	82.5
H3 [mm]	19	19	29	29	29	38	29	38
H4 [mm]	14	14	22	22	22	28	22	28
H5 [mm]	5.5	5.5	8.5	8.5	8.5	12	8.5	12
H6 [mm]	3.5	3.5	5	5	6	6	6	6
D1	M10x1	M10x1	M16x1	M16x1	M20x1.5	M20x1.5	M20x1.5	M20x1.5
D2	M5	M5	G1/8"	G1/8"	G1/8"	G1/4"	G1/8"	G1/4"
L [mm]	10	10	14	14	14	20	14	20
L1 [mm]	16.5	16.5	22	22	22	27	22	27
L2 [mm]	11	11	13.5	13.5	13.5	15	13.5	15
C [mm]	10	25	20	35	25	25	50	50
CH [mm]	13	13	19	19	24	24	24	24
S2 [mm]	10	25	20	35	25	25	50	50
d [mm]	0	0	0	0	0	0	0	0
K [N/mm]	0.213	0.085	0.268	0.150	0.275	0.275	0.141	0.142
R1 [N]	1.490	1.575	3.617	4.267	4.131	4.131	4.308	4.308
R2 [N]	3.619	3.704	8.975	9.507	11.02	11.02	11.37	11.37
m [g]	18	23	57	70	88	109	125	142

**Sospensioni inox anti-rotazione per carichi elevati**

- Corpo, stelo, cuscinetto e molla in acciaio inossidabile.
- Guida a sfere per un'altissima capacità di carico.
- Gioco zero.
- Grasso alimentare FDA-H1.
- Pressione di utilizzo: -1 ÷ 8 bar.
- Grasso alimentare FDA-H1.

**Non-rotative heavy duty stainless suspensions**

- Body, rod, bearing and spring in stainless steel.
- Ball bearing for a very high load capability.
- Zero backlash.
- FDA-H1 food-grade grease.
- Pressure range: -1 ÷ 8 bar.
- FDA-H1 food-grade grease.



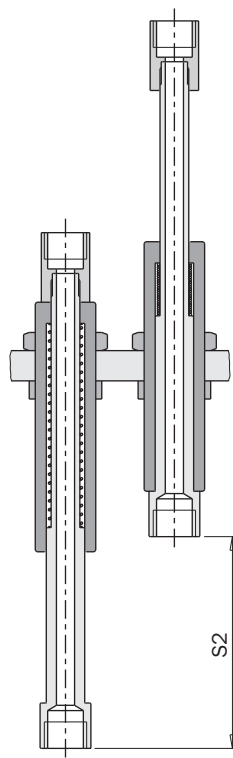
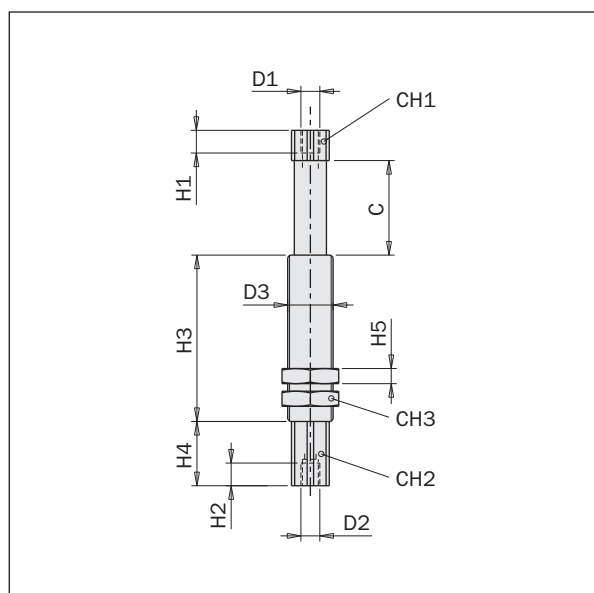
	WX1010F	WX1025F	WX1420F	WX1435F	WX2025F	WX2050F
H [mm]	63	100.5	99	137	107	169
H1 [mm]	11	26	25	40	27	52
H2 [mm]	23.5	35	31	43	33	50.5
H3 [mm]	12	23	21	32	24	43.5
H4 [mm]	15	15	20	20	20	20
H5 [mm]	10	10	14	14	20	20
H6 [mm]	6	6	7	7	7	7
H7 [mm]	8	8	10	10	11	11
D1 [mm]	Ø7.8	Ø7.8	Ø11.8	Ø11.8	Ø15.8	Ø15.8
D2	M5	M5	G1/8"	G1/8"	G1/8"	G1/8"
D3 [mm]	Ø10	Ø10	Ø14	Ø14	Ø20	Ø20
CH1 [mm]	6	6	10.5	10.5	13	13
CH2 [mm]	8	8	12	12	16	16
C [mm]	10	25	20	35	25	50
R [mm]	5	5	7	7	10	10
S2 [mm]	10	25	20	35	25	50
d [mm]	0	0	0	0	0	0
K [N/mm]	0.194	0.0786	0.252	0.137	0.258	0.129
R1 [N]	1.548	1.533	3.65	4.325	4.388	4.452
R2 [N]	3.483	3.498	8.685	9.132	10.84	10.9
m [g]	30	45	80	110	150	235

### Sospensioni inox rotanti con corpo filettato

- Corpo, stelo e molla in acciaio inossidabile.
- Stelo girevole.
- Grasso alimentare FDA-H1.
- Pressione di utilizzo:  $-1 \div 8$  bar.
- Grasso alimentare FDA-H1.

### Rotative stainless suspensions with threaded body

- Body, rod and spring in stainless steel.
- Rotative rod.
- FDA-H1 food-grade grease.
- Pressure range:  $-1 \div 8$  bar.
- FDA-H1 food-grade grease.



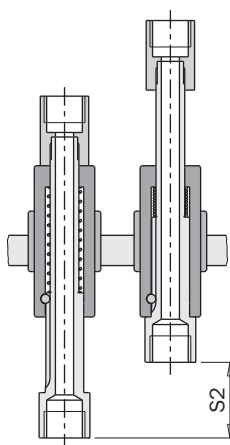
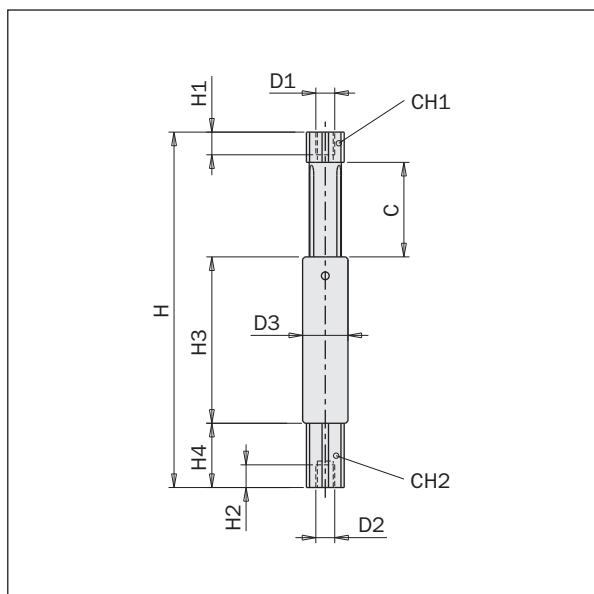
	VSRTG1225	VSRTG1635	VSRTG2050	VSRTG2580
H [mm]	94	127.5	170.5	249
H1 [mm]	5.5	9	10	11
H2 [mm]	5.5	7	10	11
H3 [mm]	44	58.5	82.5	121
H4 [mm]	17	20	23	33
H5 [mm]	4	5	6	8
D1	M5	G1/8"	G1/4"	G3/8"
D2	M5	G1/8"	G1/4"	G3/8"
D3	M12x1	M16x1	M20x1.5	M25x1.5
CH1 [mm]	10	12	16	23
CH2 [mm]	10	12	16	23
CH3 [mm]	15	19	24	32
C [mm]	25	35	50	80
S2 [mm]	25	35	50	80
d [mm]	0	0	0	0
K [N/mm]	0.108	0.137	0.129	0.119
R1 [N]	2.112	4.325	4.452	6.005
R2 [N]	4.820	9.132	10.90	15.52
m [g]	50	110	220	560

**Sospensioni anti-rotazione con corpo liscio**

- Corpo e stelo in alluminio anodizzato.
- Molla e sfere in acciaio inossidabile.
- Stelo anti-rotazione con elevata capacità di carico.
- Pressione di utilizzo: -1 ÷ 8 bar.
- Grasso alimentare FDA-H1.

**Smooth-body non-rotative telescopic suspensions**

- Body and rod in anodized aluminum.
- Spring and balls in stainless steel.
- Non-rotative rod with high load capability.
- Pressure range: -1 ÷ 8 bar.
- FDA-H1 food-grade grease.



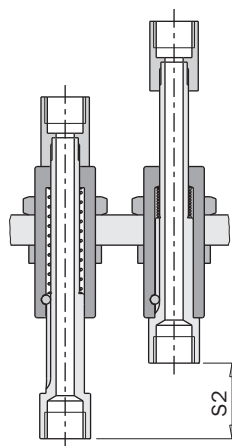
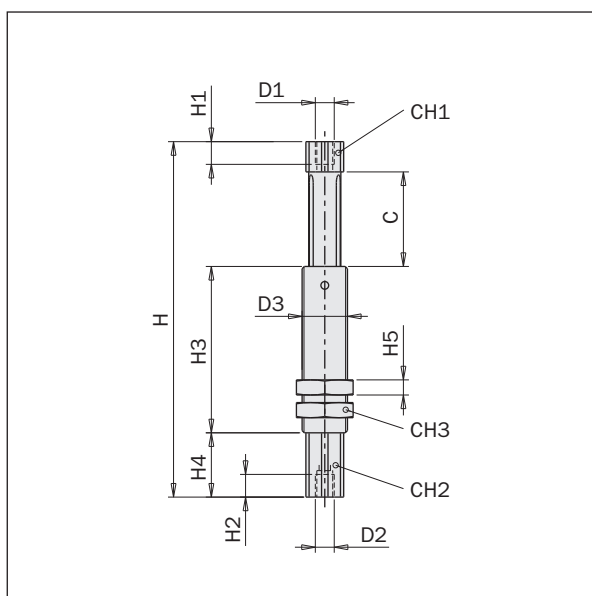
		VSN1010	VSN1025	VSN1210	VSN1225	VSN1420	VSN1435	VSN1620	VSN1635	VSN2025F18	VSN2025	VSN2050F18	VSN2050	VSN2540	VSN2580
H	[mm]	56	90.5	60	94	100	135	100	135	111	113	168.5	170.5	159	249
H1	[mm]	5	5	5.5	5.5	7	7	9	9	10	10	10	10	11	11
H2	[mm]	5	5	5.5	5.5	7	7	7	7	10	10	10	10	11	11
H3	[mm]	21	40.5	25	44	38.5	58.5	38.5	58.5	50	50	82.5	82.5	71	121
H4	[mm]	17	17	17	17	20	20	20	20	21	23	21	23	33	33
D1		M5	M5	M5	M5	G1/8"	G1/8"	G1/8"	G1/8"	G1/8"	G1/4"	G1/8"	G1/4"	G3/8"	G3/8"
D2		M5	M5	M5	M5	G1/8"	G1/8"	G1/8"	G1/8"	G1/8"	G1/4"	G1/8"	G1/4"	G3/8"	G3/8"
D3	[mm]	Ø10	Ø10	Ø12	Ø12	Ø14	Ø14	Ø16	Ø16	Ø20	Ø20	Ø20	Ø20	Ø25	Ø25
CH1	[mm]	8	8	10	10	12	12	12	12	16	16	16	16	22	22
CH2	[mm]	8	8	10	10	12	12	12	12	16	16	16	16	22	22
C	[mm]	10	25	10	25	20	35	20	35	25	25	50	50	40	80
S2	[mm]	10	25	10	25	20	35	20	35	25	25	50	50	40	80
d	[mm]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
K	[N/mm]	0.213	0.085	0.277	0.108	0.268	0.15	0.252	0.137	0.275	0.258	0.141	0.129	0.230	0.119
R1	[N]	1.49	1.575	1.938	2.112	3.617	4.267	3.650	4.325	4.131	4.388	4.308	4.452	6.082	6.005
R2	[N]	3.619	3.704	4.706	4.820	8.975	9.507	8.685	9.132	11.02	10.84	11.37	10.90	15.26	15.52
m	[g]	7	11	15	20	22	33	40	50	54	55	80	85	135	205

**Sospensioni anti-rotazione con corpo filettato**

- Corpo e stelo in alluminio anodizzato.
- Molla e sfere in acciaio inossidabile.
- Stelo anti-rotazione con elevata capacità di carico.
- Pressione di utilizzo: -1 ÷ 8 bar.
- Grasso alimentare FDA-H1.

**Threaded-body non-rotative suspensions**

- Body and rod in anodized aluminum.
- Spring and balls in stainless steel.
- Non-rotative rod with high load capability.
- Pressure range: -1 ÷ 8 bar.
- FDA-H1 food-grade grease.



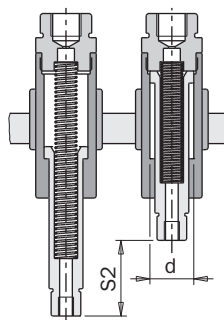
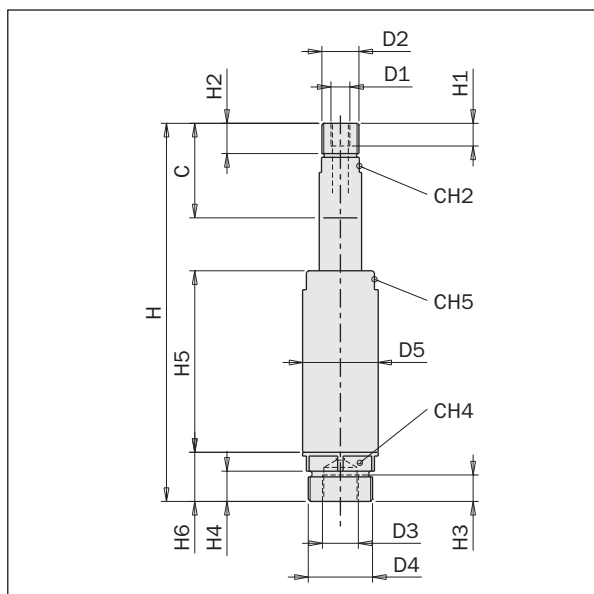
	VSNTG1010	VSNTG1025	VSNTG1210	VSNTG1225	VSNTG1420	VSNTG1435	VSNTG1620	VSNTG1635	VSNTG2025F18	VSNTG2025	VSNTG2050F18	VSNTG2050	VSNTG2540	VSNTG2580
H [mm]	56	90.5	60	94	100	135	100	135	111	113	168.5	170.5	159	249
H1 [mm]	5	5	5.5	5.5	7	7	7	7	10	10	10	10	11	11
H2 [mm]	5	5	5.5	5.5	7	7	9	9	10	10	10	10	11	11
H3 [mm]	21	40.5	25	44	38.5	58.5	38.5	58.5	50	50	82.5	82.5	71	121
H4 [mm]	17	17	17	17	20	20	20	20	21	23	21	23	33	33
H5 [mm]	3.5	3.5	4	4	4	4	5	5	6	6	6	6	8	8
D1	M5	M5	M5	M5	G1/8"	G1/8"	G1/8"	G1/8"	G1/8"	G1/4"	G1/8"	G1/4"	G3/8"	G3/8"
D2	M5	M5	M5	M5	G1/8"	G1/8"	G1/8"	G1/8"	G1/8"	G1/4"	G1/8"	G1/4"	G3/8"	G3/8"
D3	M10x1		M12x1		M14x1.5		M16x1		M20x1.5			M25x1.5		
CH1 [mm]	8	8	10	10	12	12	12	12	16	16	16	16	22	22
CH2 [mm]	8	8	10	10	12	12	12	12	16	16	16	16	22	22
CH3 [mm]	13	13	15	15	17	17	19	19	24	24	24	24	32	32
C [mm]	10	25	10	25	20	35	20	35	25	25	50	50	40	80
S2 [mm]	10	25	10	25	20	35	20	35	25	25	50	50	40	80
d [mm]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
K [N/mm]	0.213	0.085	0.277	0.108	0.268	0.15	0.252	0.137	0.275	0.258	0.141	0.129	0.230	0.119
R1 [N]	1.49	1.575	1.938	2.112	3.617	4.267	3.650	4.325	4.131	4.388	4.308	4.452	6.082	6.005
R2 [N]	3.619	3.704	4.706	4.820	8.975	9.507	8.685	9.132	11.02	10.84	11.37	10.90	15.26	15.52
m [g]	7	11	15	20	22	33	35	45	54	65	80	90	170	235

**Sospensioni telescopiche auto-ritraenti**

- Corpo e stelo in alluminio anodizzato.
- Tenuta senza guarnizioni.
- Usabile solo con il vuoto.
- Quando la ventosa prende un pezzo, il vuoto che agisce sul pistone interno supera la forza della molla e muove lo stelo.
- La velocità del movimento di ritrazione può essere calibrata con un regolatore di flusso standard.
- Quando si rimuove il vuoto, il pezzo viene rilasciato e la molla interna riporta lo stelo a fondo corsa.
- Pressione di utilizzo:  $-1 \div 0$  bar.
- Grasso alimentare FDA-H1.

**Telescopic self-retracting suspensions**

- Body and rod in anodized aluminum.
- Sealing with no seals.
- Only for vacuum applications.
- When the cup takes a part, the vacuum on the internal piston overtakes the spring force and moves the rod up.
- The speed of the retraction movement can be adjusted by a standard throttle valve.
- When the vacuum is removed the part is released and the internal spring resets the rod.
- Pressure range:  $-1 \div 0$  bar.
- FDA-H1 food-grade grease.



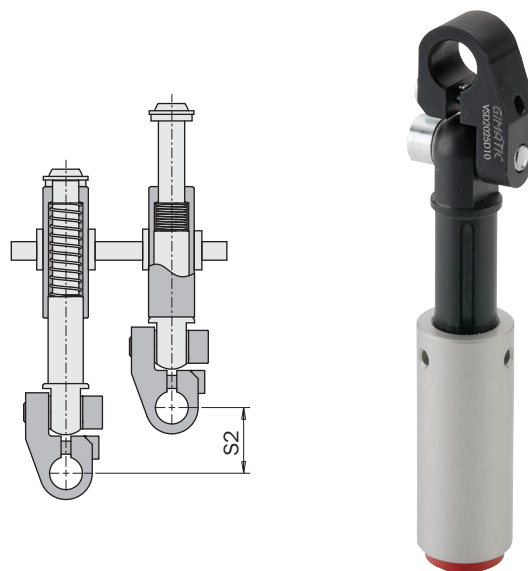
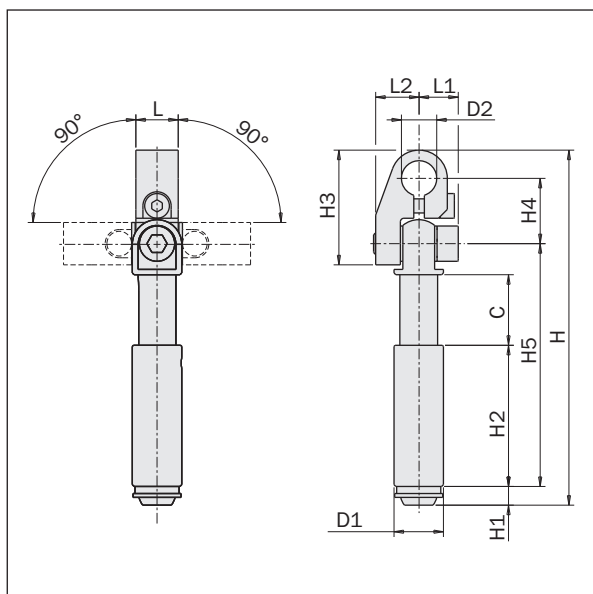
	VSS2025	VSS2050
H [mm]	100	150
H1 [mm]	6	6
H2 [mm]	8	8
H3 [mm]	8	8
H4 [mm]	8	8
H5 [mm]	48	73
H6 [mm]	13	13
D1	M5	M5
D2	G1/8"	G1/8"
D3	G1/8"	G1/8"
D4	M17x1	M17x1
D5 [mm]	Ø20	Ø20
CH2 [mm]	10	10
CH4 [mm]	18	18
CH5 [mm]	18	18
C [mm]	25	50
S2 [mm]	25	50
d [mm]	14.5	14.5
K [N/mm]	0.085	0.052
R1 [N]	1.525	1.606
R2 [N]	3.642	4.197
m [g]	40	55

### Sospensioni anti-rotazione con cravatta regolabile e corpo liscio

- L'angolo è regolabile continuamente fra 0° e +/-90°.
- Alimentazione esterna.
- Corpo e stelo in alluminio anodizzato.
- Stelo anti-rotazione.
- Grasso alimentare FDA-H1.

### Non-rotative suspensions with smooth-body and adjustable clamp

- It is possible to set continuously the angle between 0° and +/-90°.
- External air feeding.
- Body and rod in anodized aluminum.
- Non-rotative rod.
- FDA-H1 food-grade grease.



	VSD1420D10	VSD2025D10	VSD2025D20
H [mm]	100.6	119.8	131.8
H1 [mm]	5.3	6.3	6.3
H2 [mm]	40	50	50
H3 [mm]	32.5	32.5	46.5
H4 [mm]	18.5	18.5	25
H5 [mm]	67.3	86	86
D1 [mm]	Ø14	Ø20	Ø20
D2 [mm]	Ø10	Ø10	Ø20
L [mm]	12	12	16
L1 [mm]	11.3	11.3	13.5
L2 [mm]	12.3	12.3	13.5
C [mm]	20	25	25
S2 [mm]	20	25	25
d [mm]	0	0	0
K [N/mm]	0.268	0.275	0.275
R1 [N]	3.617	4.131	4.131
R2 [N]	8.975	11.02	11.02
m [g]	43	69	85

