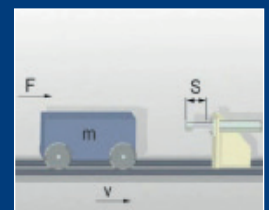


Elasto-Fluid Shock Absorbers

WES 8



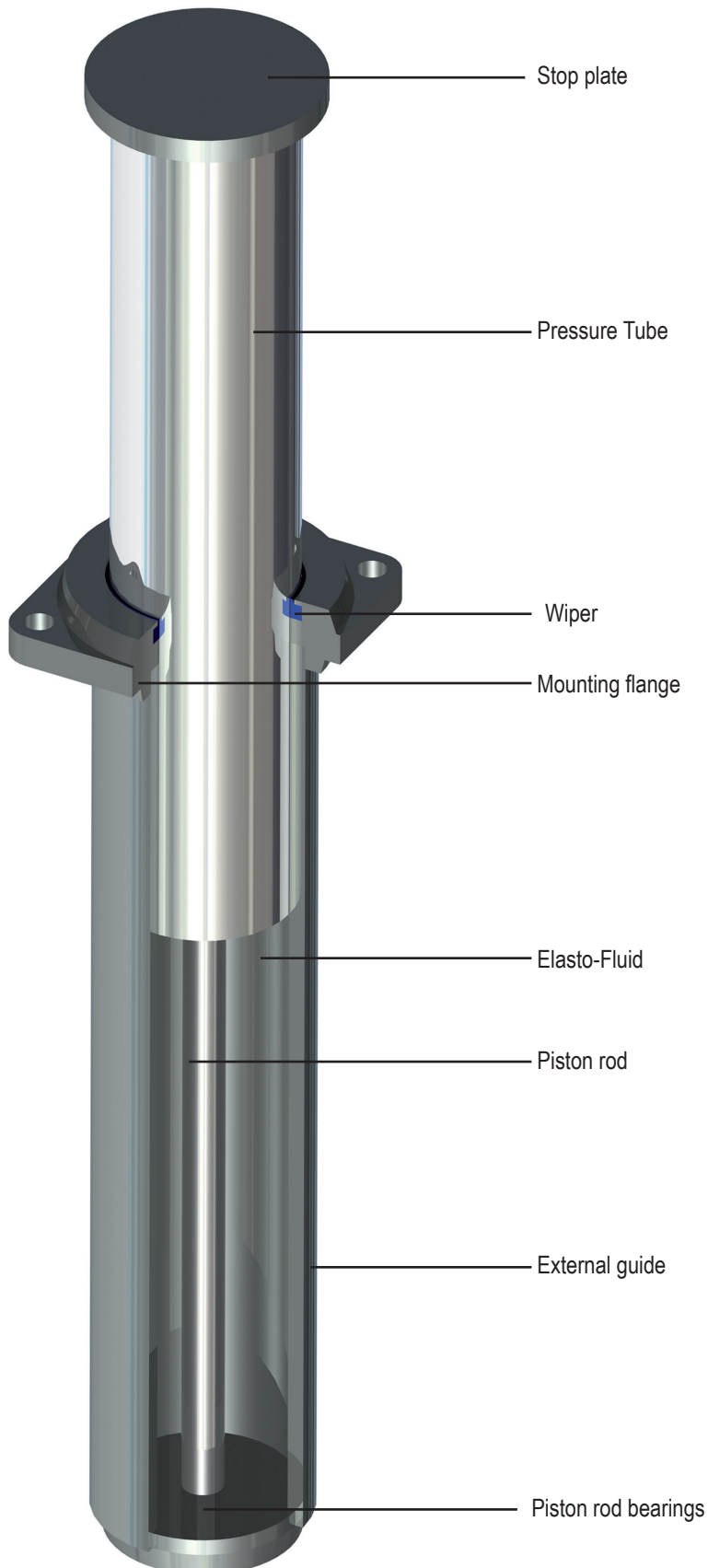
ONLINE
Calculation and
2D / 3D CAD Download



Benefits

Damping medium	High-viscosity elastomer
Energy absorption	Max. 1.000.000 Nm
Surface protection	Pressure tube zinc plated / Housing painted
Deceleration	Progressive, customer specific
Temperature	-10°C - +60°C
RoHS compliant	Directive 2002/95/EG
Applications	Sluices, Flight simulators, Metal industry

Operating Principle



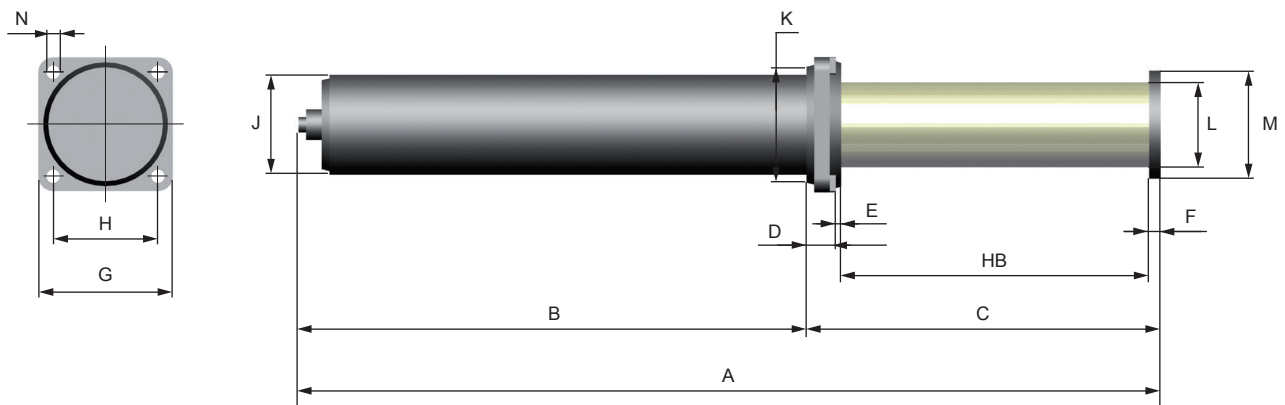
Function

Shock absorbers of series WES have been developed based on the principle of the hydrostatic compression of visco-elastic fluids. Two characteristics are taken advantage of: compressibility and viscosity - this means that in a product the dual function of a shock absorber and a spring can be used or each function can be used separately.

Shock absorber:

The weight is cushioned by the fluid friction in the throttling port of the piston head and/or in the annular clearance between piston and reservoir.

Resetting of the piston rod is effected by the slackening of the compressed visco-elastic fluid.



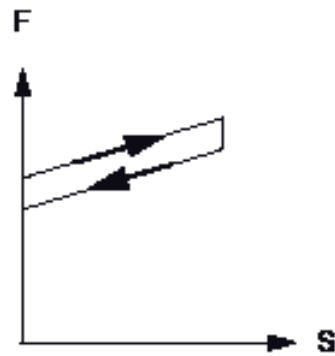
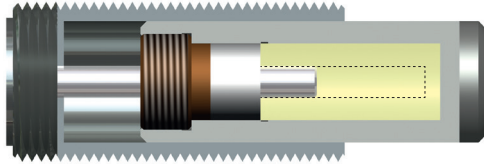
DIMENSIONS

	A	B	C	D	E	F	G	H	Ø J	Ø K	Ø L	Ø M	N
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
WES-8-100-400	1120	660	460	25	20	15	175	140	130	150	110	140	18
WES-8-150-500	1350	775	575	30	25	20	215	170	140	185	120	150	22
WES-8-220-400	1258	783	475	30	25	20	215	170	140	185	120	150	22
WES-8-250-650	1750	1025	725	30	25	20	215	170	155	185	135	170	22
WES-8-400-850	2185	1250	935	35	25	25	265	210	175	235	150	190	27
WES-8-600-1050	2555	1420	1135	35	25	25	265	210	200	235	175	215	27
WES-8-800-1200	2935	1630	1305	40	35	30	300	240	220	270	190	235	30
WES-8-1000-1300	3225	1820	1405	40	35	30	300	240	230	270	205	248	30

PERFORMANCE

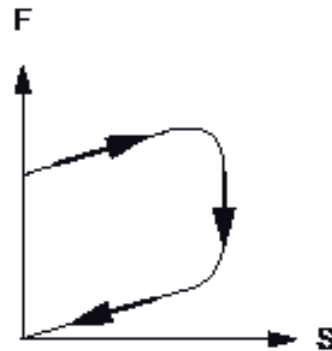
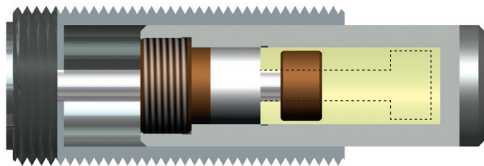
	Stoke	Energy absorption		Counterforce		V	Weight
	mm	kNm	kNm / h	FG min kN	FG max kN	max m/s	kg
WES-8-100-400	400	100	1000	30,0	161,9	3	63
WES-8-150-500	500	150	1500	41,5	201,4	3	90
WES-8-220-400	400	220	2200	45,0	270,0	3	100
WES-8-250-650	650	250	2500	45,0	253,0	3	135
WES-8-400-850	850	400	4000	49,6	307,9	3	218
WES-8-600-1050	1050	600	6000	47,5	351,5	3	295
WES-8-800-1200	1200	800	8000	64,2	441,0	3	420
WES-8-1000-1300	1300	1000	10000	85,0	534,0	3	470

Pre-stressed elasto-fluid spring



$$F = F_0 + KS$$

Pre-stressed elasto-fluid damper and spring



$$F = F_0 + KS + CV^x$$

$x: 0,1 < x < 0,2$

Shock absorber without resetting

$$F = CV^x$$

$x: 0,1 < x < 0,4$

F0	Static prestrain
K	Static rigidity
S	Stroke
C: kN (m/s) ^x	Velocity coefficient
V	Velocity
X	0,1 to 0,4

