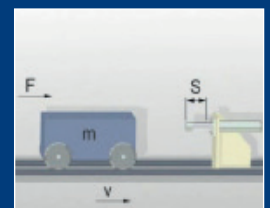


## Elasto-Fluid Shock Absorbers

WES 8



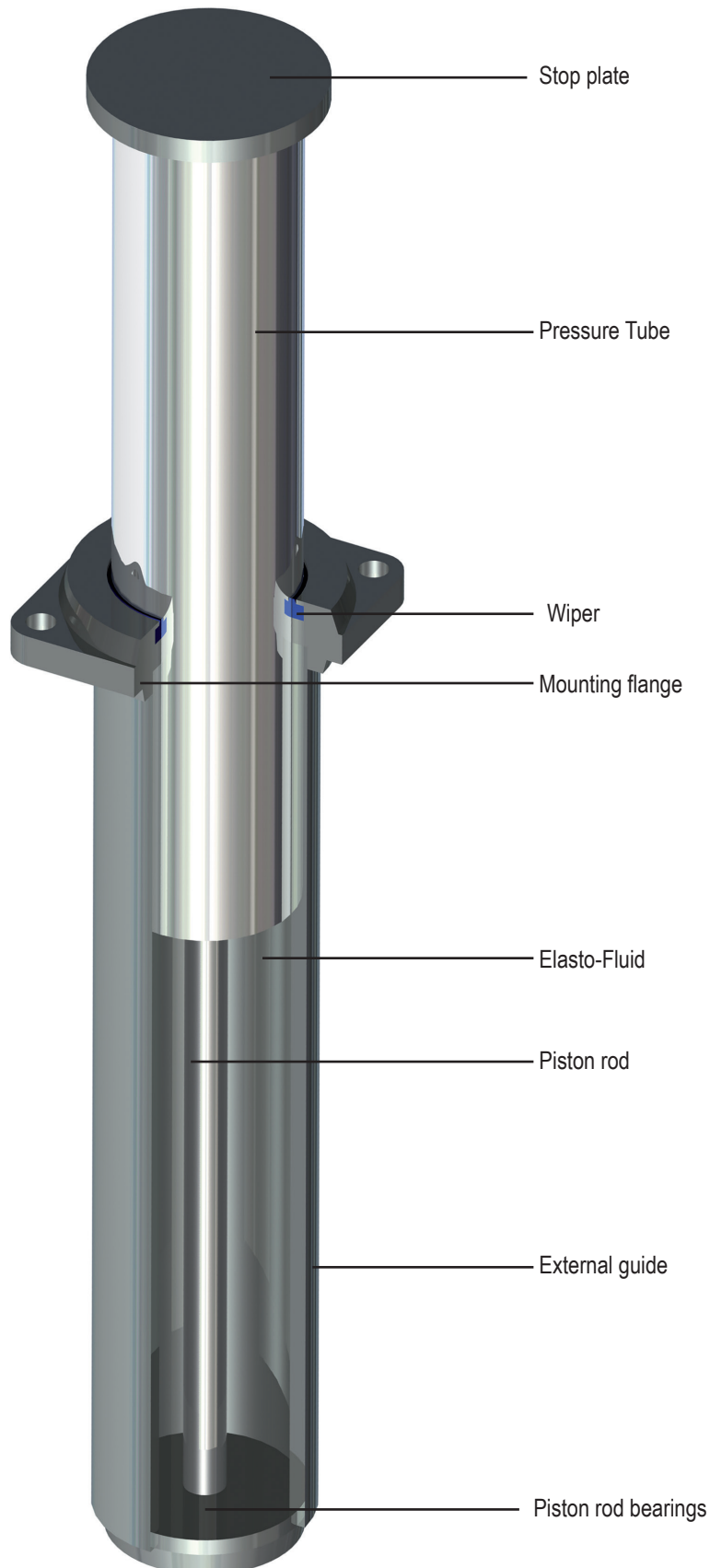
**ONLINE**  
Calculation and  
2D / 3D CAD Download



## Benefits

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

## Operating Principle



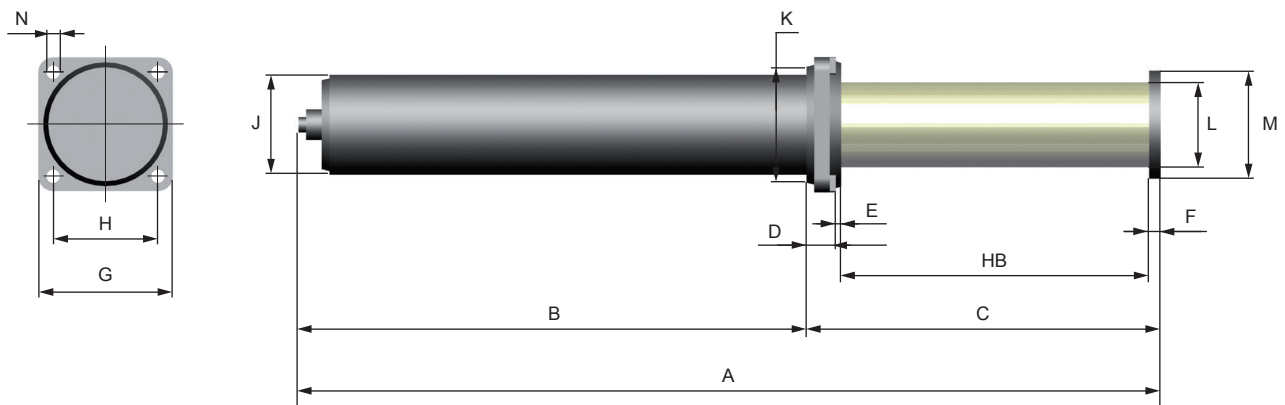
### Function

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.



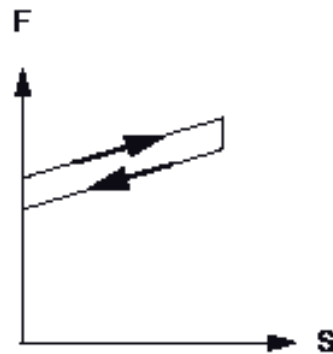
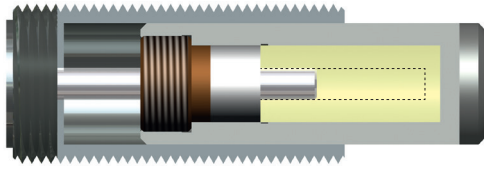
## DIMENSIONS

	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

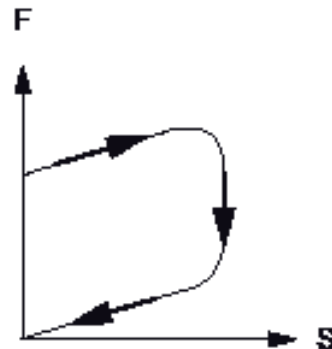
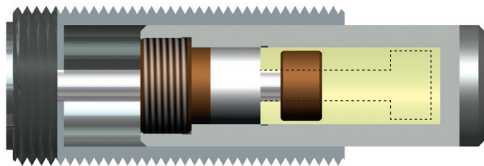
	Stoke	Energy absorption		Counterforce		V	Weight
	mm	kNm	kNm / h	FG min kN	FG max kN	max m/s	kg
WES-8-100-400	400	100	1000	30,0	161,9	3	63
WES-8-150-500	500	150	1500	41,5	201,4	3	90
WES-8-220-400	400	220	2200	45,0	270,0	3	100
WES-8-250-650	650	250	2500	45,0	253,0	3	135
WES-8-400-850	850	400	4000	49,6	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

$$F = CV^x$$

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

F <sub>0</sub>	Static prestrain
K	Static rigidity
S	Stroke
C: kN (m/s) <sup>x</sup>	Velocity coefficient
V	Velocity
X	0,1 to 0,4

## Important information

### Attention!

Before Installation, commissioning, servicing and repair the date sheet is to be noticed. Realisation of the works only by trained, introduced specialist staff.

Electric connections according to the suitable national regulation.  
for Germany: VDE regulation VD E0100

Before all repair, and servicing works the energy supplies (main switch, etc.) are to be switched off! Moreover, measures are necessary, around unintentional Reconnect to prevent, e.g., in the main switch a suitable warning „servicing works“, „repair works“ etc. attach.

### Designated use

Check before installation and use whether the type name on the damper or on the packaging with the suitable name on the delivery note agrees

Industrial shock absorbers are maintenance-free and ready with installation

- Moved masses can start with the installation of the shock absorbers by unintentional for injuries and body damages lead. Moved masses against unintentional procedure protect.
- The dampers can be inexpedient for the application and show no sufficient damping effect. Before the installation check the suitable suitability of the shock absorbers
- At the company beyond the allowed temperature area the damper can lose his function. To temperature area absolutely keep. Shock absorbers because of the warm radiotherapy do not varnish
- Fluide, gases and dirty particle in the surroundings can attack the poetry system of the shock absorber or destroy and lead to the functional financial loss of the shock absorber. Piston rod and poetry system against outside funds in the surroundings protect or isolate.
- Damages of the piston rod surface can destroy the poetry system. Piston rod are not greasy, oil etc. and before dirty particles protect.
- The piston rod can be torn out from the damper. The piston rod do not load on train tension
- Shock absorber can break off in demand. The connection construction always lay out in such a way that the at most appearing forces with sufficient security can be recorded. The maximum supporting forces performed in the calculation programme can deviate from the later really appearing supporting forces, because these are based on theoretical values.
- A setting of the shock absorbers to the respective application is necessary compelling. A wrong setting of the damping leads to a raised machine charge and to an untimely financial loss of the shock absorber

### Liability

Due to the number of possible uses of our products and the conditions of use that lie outside of our scope of influence, we accept no liability as to whether the purchase object is suitable for the Client's intended purpose. The verification to this effect, in particular the verification as to whether the purchase object is suitable for the planned use, is the responsibility of the Client alone, unless expressly agreed otherwise in writing.

For the reasons we accept no liability for the suitability of the purchase object for the purpose intended by the Client, except in cases of intent or gross negligence.

With damages, the not designated use and from high-handed, in these instructions do not originate to intended interventions, any guarantee and liability claim goes out towards the manufacturer.

### Guarantee

By non-use of the original spare parts the guarantee claim goes out.

### Environment protection

By the exchange from damaged parts is to be respected to a proper disposal.