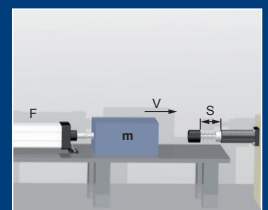


## Shock Absorbers

Mega-Line WS-M 10,0



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



## Benefits

### Self-compensating

#### Extended life cycle:

- Piston rod: hard-chrome plated
- Housing zinc plated
- Robust design type

#### High performance range

- Energy absorption up to 128000 Nm / Stroke

#### Spring return

#### Maintenance-free

#### Ready for Installation

#### Temperature:

Standard: -20°C-...+80°C

Low temperature: -50°C-...+60°C

High temperature: 0°C-...+120°C

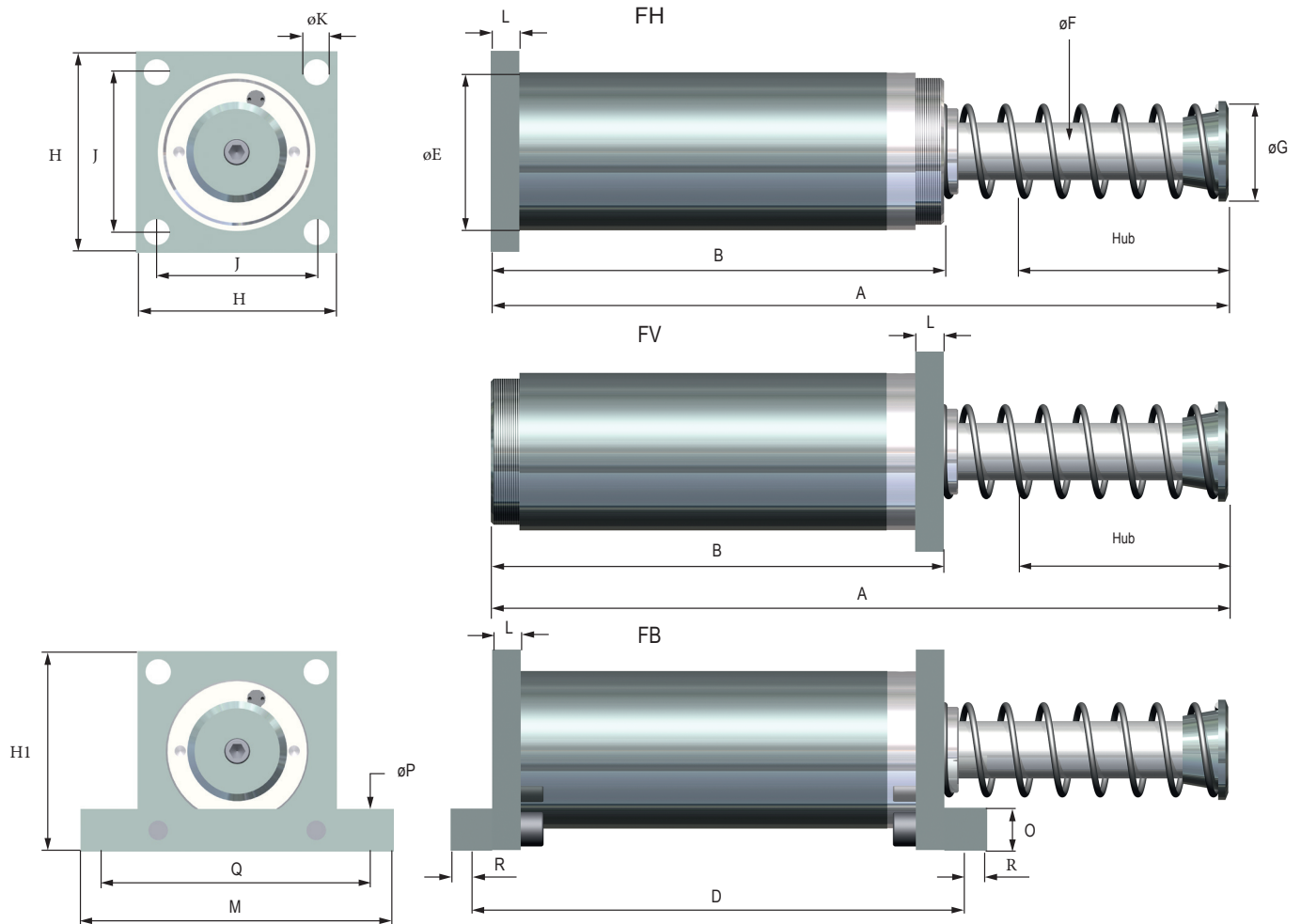
#### Deceleration characteristics:

- can be customized

#### Special models:

- Outdoor: Housing and seal bushing painted conforming to DIN ISO 12944-C5L

Piston rod: nickel (30 µm) and hardchrome (20 µm) plated



End stop required 2 - 3 mm before the stroke ends

## DIMENSIONS

	A	B	D	øE	øF	øG	H	J	øK	L	M	H1	O	øP	Q	R	Weight
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg
WS-M 10,0-150	716	434	484	200	65	112	250	197	22	40	360	254	50	27	317	25	60
WS-M 10,0-200	818	536	586	200	65	112	250	197	22	40	360	254	50	27	317	25	68
WS-M 10,0-400	1300	733	783	200	65	112	250	197	22	40	360	254	50	27	317	25	146

## PERFORMANCE

	Stroke mm	Energy absorption Nm / HB (max.) Nm/h (max.)		Effective mass								Impact Speed m/s	Return spring force N
				-1 (soft)		-2 (medium)		-3 (hard)		-4 (very hard)			
				min. kg	max. kg	min. kg	max. kg	min. kg	max. kg	min. kg	max. kg		
WS-M 10,0-150	150	50000	3150000	3500	9180	8650	18900	17360	44440	-	-	0,3 - 5,0	350 - 900
WS-M 10,0-200	200	65000	3575000	4630	11930	11250	24570	22570	57700	-	-	0,3 - 5,0	350 - 900
WS-M 10,0-400	400	128000	11520000	9115	23500	22145	48395	44440	113770	-	-	0,3 - 5,0	350 - 900

Technical data at + 20°C

## Technical Data

<b>Weight</b>	<b>10,0 - 150:</b>	60 kg
	<b>10,0 - 200:</b>	68 kg
	<b>10,0 - 400:</b>	146 kg
<b>Impact speed</b>	<b>WS-M:</b>	0,3 - 5,0 m/s
<b>Return spring force</b>	<b>10,0 - 150:</b>	350 N/min - 900 N/max
	<b>10,0 - 200:</b>	350 N/min - 900 N/max
	<b>10,0 - 400:</b>	350 N/min - 900 N/max
		350 N/min - 900 N/max
<b>Housing</b>		Zinc plated
<b>Piston rod</b>		Hard - chrome plated
<b>RoHS - compliant</b>		Directive 2002/95/EG

## Adjustment

The shock absorbers Mega-Line 10,0 are self-compensating.

Damping characteristics:

WS-M - self-adjusting, linear

The attenuation factor are available by default:

- 1 - soft
- 2 - medium
- 3 - hard
- 4 - very hard

The damping level is calculated with the formula for the effective mass. (see calculation in the catalog)

If the mass in a trial run impacts excessively hard on the fixed stop select the next harder model. If the mass impacts too hard on the shock absorber choose a softer version.

## Safety Instructions

Before installation, commissioning, servicing and repair the data sheet is to be noticed. This work may only be performed by trained, introduced 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.) have to be switched off! Moreover, measures are necessary to prevent an unintentional reconnect. For example, a warning sign "service works" or "maintenance work", applied to the switch.

## Designated use

Check before installation and make sure the type name on the shock absorber or on the packaging is corresponding with delivery note. Industrial shock absorbers are maintenance-free and ready for installation.

- Temperature influence: at higher temperatures the shock absorber characteristic will change.
- Movable loads have to be protected during the installation and maintenance against unintentional processes.
- In operation outside the allowed temperature range, the shock absorber can lose his function. Due to heat radiation don't paint the shock absorber.
- Fluids, gases and a dirty environment can affect or destroy the sealing system of the shock absorber. The result could be a failure malfunction. Piston rod and sealing system has to be protected against fluids, gases and a dirty environment.
- Damages at the piston rod can destroy the sealing system. Don't grease or oil the piston rod.
- Avoid traction forces on the piston rod to present internal damages.
- The shock absorber can be pulled out of the construction during the impact. The construction needs to be able to resist the max counterforce. Sufficient security must be calculated.  
The maximum counterforces performed in the calculation program can vary from the really appearing counter forces, because these are based on theoretical values.

## Fundamentals

Shock absorbers may under no circumstances be:

-painted



-welded



-held with clamps



-used on pull\*



(exception: clevis mounting)

In hazardous environments (dirt, humidity, oil) shock absorbers must be protected against damage and failure with the necessary accessory. If several shock absorbers are used on the same application, the deceleration has to be distributed equally. The "Torque" (PERFORMANCE) indicates the maximum force by using the flats. The Weforma catalogue shows technical data with both minimum and maximum values. If a product is to be used in continuous operation and within a range of 20% from the minimum and maximum values shown, then written confirmation of suitability of use from Weforma is necessary.

## Important information

### 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.