DESTEK®

Damper

ACTIVE PARTNER OF CUSTOMERS

Destek develops and manufactures gas springs, dampers and position adjustment products for everything that needs to be lifted, lowered, moved, slowed down, controlled and set into position-in machines, medical equipment, vehicles, furniture, etc. We support our customers on their way into the future by providing them individual solutions to help them move the world. For many years now, we have not only been a supplier of gas springs and dampers but also have been proud of becoming an active partner of our customers.

EXCEPTIONAL SERVICE

Destek's success is based on great innovative force, proximity to the customer on a global scale, the highest possible quality in all processes and its ability to react quickly to customers' special requirements. We continually strive to improve our service and capabilities for our customers and uphold this as our primary goal. We are committed to excellent quality and innovative ideas for the customer. Here at Destek, we have only one thing to offer, and this is exceptional service.

SYNERGY OF QUALITY AND EXPERIENCE

Today, modern equipments are expected to satisfy a variety of different - and seemingly contradictory-demands: they must be dynamic and durable, but also quiet and economical, while, at the same time, comfortable and safe. It takes creative technology using innovative products to reconcile these apparently incongruous trends. As a partner of various industries, we are the leader in developing and manufacturing system solutions for the demanding challenges facing our future. Destek sees itself as a development and engineering partner for its customers and has developed technologies, machines and control systems in-house to achieve fast and flexible manufacturing processes. We help our customers design new products, redesign an existing project and investigate cost savings.

QUALITY ASSURANCE AT EVERY MANUFACTURING STAGE

Although dampers are often a small component of the overall equipment package which they are included in, their function and reliability are paramount to the performance of the system as a whole. A consistent and strong quality management system throughout all phases from design to manufacturing ensures the highest product safety possible. We base our efforts on very high international quality standards such as ISO 9001:2000 and ISO/TS16949:2002.

The main purpose of a Damper is controlling an external force. They are force-absorbing units which are used for product safety and or comfort on many different types of applications. Depending on the application in which they are going to be used; the following Damper types are available to fulfill your requirements.

- HK Dampers for motion control of your application
- HA Dampers for shock and vibration absorption

HK DAMPERS

HK Dampers are similar in appearance and construction to gas springs. The HK Damper is simply a gas spring that is filled with oil instead of gas. Another major difference between gas springs and HK Dampers is that the pistons are equipped with an orifice plate. The hydraulic oil inside the HK damper must pass through a special piston, causing resistance thus providing motion control. The rate of the resistance and motion can be adapted to your individual application. The damping can be in extension, compression or in both directions.

HK type dampers are not suitable for absorbing vibration nor are they suitable for controlling the sudden stopping of weight. The usage of HK Dampers is to prevent impact dangers and shock damage to sensitive parts or simply to limit an object to a controlled speed or to avoid exceeding a certain speed. HK Dampers are used to increase an applications life by reducing the potential for damage.

Applications

Any mechanism that moves and needs to be controlled for a specific speed is a potential application for our HK Dampers.

HA DAMPERS (Monotube Shock Absorbers)

HA Dampers are our range of hydraulic vibration dampers. A vibration damper or shock absorber is a mechanical device designed to smooth out or damp a sudden shock impulse. All hydraulic shock absorbers work by the principle of converting kinetic energy (movement) into thermal energy (heat).

Vibration dampers are basically oil pumps. A piston, which is attached at the end of the piston rod, works against hydraulic fluid in the pressure tube. As the piston rod is working in and out, the hydraulic fluid is forced to flow through orifices inside the piston. The damping force of a vibration damper depends on the speed of the piston rod and the size and the number of the orifices in the piston. The faster the piston rod moves the more damping force is provided by the vibration damper.

Applications

- Various applications for the vehicle industry such as steering damping, engine vibration damping, belt tensioning damping for engines and on driver seats in commercial vehicles, etc.
- On household products such as washing machines
- Special shock absorbers for bicycles
- On commercial lawn movers
- In the medical equipment industry ie. on wheelchairs

TWIN-TUBE SHOCK ABSORBERS

As the name implies there are two actual tubes in a twin-tube shock absorber – the outer tube known as the reserve tube and the inner tube known as the pressure tube in which the piston moves. Tiny holes or orifices in the piston as well as special valves between the inner and outer tubes restrict the flow of oil, thus providing damping and suspension.

Comparison of Twin-tube shock absorbers to Monotube shock absorbers

Characteristic	Shock Absorber Type	
	Monotube	Twin-tube
Reaction time (damping in short strokes)	Good	Fair
Installation position	Position independent types available	Piston rod Downwards
Friction	High	Low
Weight	Light	Heavy
Construction Length	Long	Short

Applications

- Damping of oscillation and vibration for comfort on truck cabins (with air springs/bellows or coil springs)
- Damping on driver seats in commercial vehicles

WHICH TYPE OF DAMPER DO YOU NEED?

Your unique application calls for a unique solution. This is why Destek doesn't just make parts, we create solutions. Solutions which are custom designed for each individual application, whether it is large or small, simple or complex. We design the Damper that is right for you because what is good enough for most may not necessarily be the best overall solution for your design. You wouldn't want to choose a basketball ball to play football...

In order to let us create your individual solution, we ask you to clarify your needs in the following two steps and to fill out the inquiry sheets given on pages 5 and 6 accordingly.

First Step

It is important to select the right product for your application by asking what you expect the Damper to do.

- HK Dampers are designed to control the movement, motion of your application.
- HA Dampers are used for absorption of vibrations.

Second Step

The second step of choosing the right Damper is to specify which of the following features are required.

▸ Extension Force

The extension force pushes out the piston rod when the load or movement reverses. Therefore, the Damper is always ready when the next impact blow strikes. Please specify if a self extending piston rod (an extension force) is necessary or not.

▸ Damping direction

Choose between damping in compression, in extension and in both directions and please provide us with the required damping force in each direction. As the Damping force varies according to the working speed, please provide us with the damping force required using at least 2 different moving speeds.

▸ Idle Stroke (Delayed Damping)

Basic Damper types having an idle stroke, also known as delayed damping. At this stroke range the Damper has no damping and the piston rod moves freely within this stroke range. Dampers with an idle stroke are position dependent and must be installed with the piston rod downwards so that the idle stroke is at a minimum range. Installation with the piston rod pointing upwards or in horizontal position will increase the idle stroke. The idle stroke is approximately 20% of the total stroke.

Please clarify if an idle stroke is acceptable for your application. On applications where the piston rod is pointing downwards and where the full stroke is not used or where delayed damping has no negative influence, an idle stroke is considered acceptable.

▸ Damping Force: Fixed or Adjustable

If the exact damping force cannot be specified or if the same Damper is used on different applications (each with different damping forces) adjustable dampers are the ideal solution. Please clarify if force adjustability is required or not.

▸ Installation Position

Choose between position independent and position dependent installation.

▸ Damper Characteristic

Choose between linear, progressive or regressive set of characteristics.

Important Notice

Please note the more features you require the Damper will be longer, bigger and the price will increase accordingly. It's possible that in some cases the features you are looking may not be obtainable together. Due to this we ask you to choose only those features which are mandatory for your application.

INQUIRY SHEET

COMPANY : .....
FROM : .....
ADDRESS : .....
: .....
PHONE : ..... TELEFAX : .....

We ask you to offer us gas springs as specified below : .....
QUANTITY - DELIVERY : ..... QUANTITY - YEAR : .....
REMARKS : .....

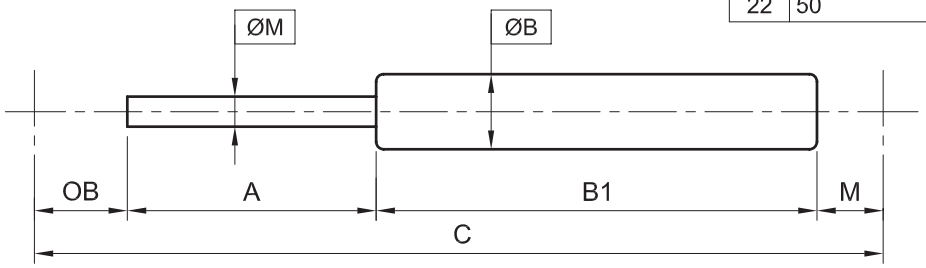
Please describe application : .....
.....

The tables on the right are showing standart Dampers groups

HK	
Rod	Tube
4	12
6	15 - 18 - 22
8	18 - 22 - 28
10	22 - 28
14	28 - 40
20	40
30	70

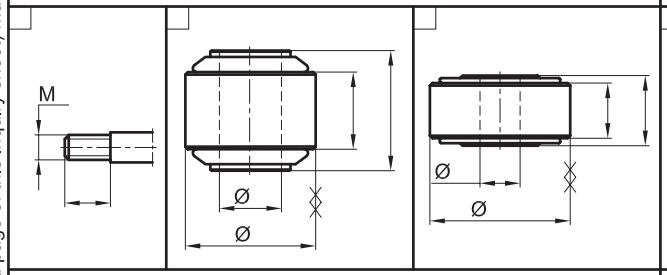
HA MONOTUBE	
Rod	Tube
6	15
8	24 - 39
10	24 - 28 - 33 - 39
11	40 - 50
13	40
14	40 - 50 - 64
16	50
22	50

HA TWIN-TUBE	
Rod	Tube
11	35 - 38
12	39 - 40
12.5	39 - 40
13	43.7 - 44.5 - 45
14	49.5
16	45
18	45
20	51
22	55
25	60 - 75
30	75 - 80



ØM	ØB	A	C	B1	OB	M	F1 (N)	Damping Force Extension Fz(N)	Compression Fd(N)	at speed m/sec

ROD END FITTING / *KOLBENSTANGENANSCHLUß*



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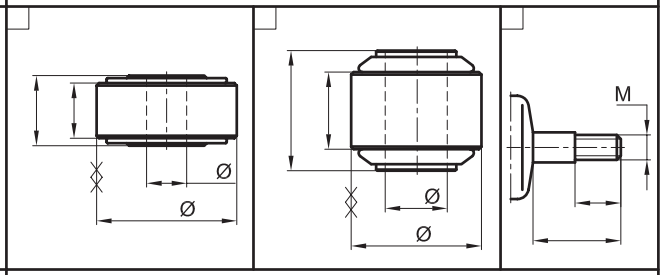
TUBE END FITTING / *DRUCKROHRANSCHLUß*



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DESTEK
OTOMOTİV YAN SANAYİ
VE TİCARET A.Ş.

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FORM :S-F.001.i.g Yayın Tarihi: 10-11-2008 Rev: 0

For proper design of a Damper "Data Shet" (second page of this inquiry sheet) must be filled in addition to this page.

DESTEK®

DATA SHEET

USAGE ☐ Motion Control (HK) ☐ Vibration Absorption (HA)

F1 (N) Extension Force ☐ . . . . . N ☐ without

Damping force in compression
(Weight to be damped in compresion)

Fd (N)	at speed
	m/sec
	m/sec

Damping force in extension
(Weight to be damped in extension)

Fz (N)	at speed
	m/sec
	m/sec

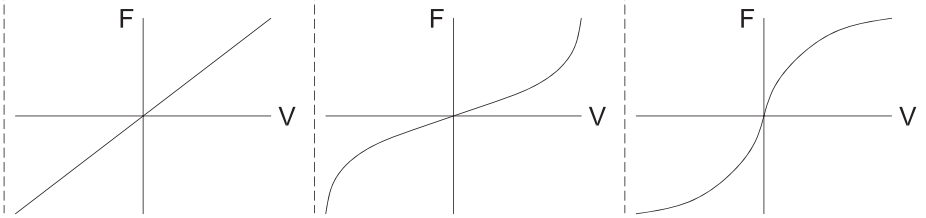
Idle Stroke ☐ Yes (Delayed damping) ☐ No (Instant damping) ☐ Not important

Cyle Frequency Number of operations / cycles per minute ..... / per day .....

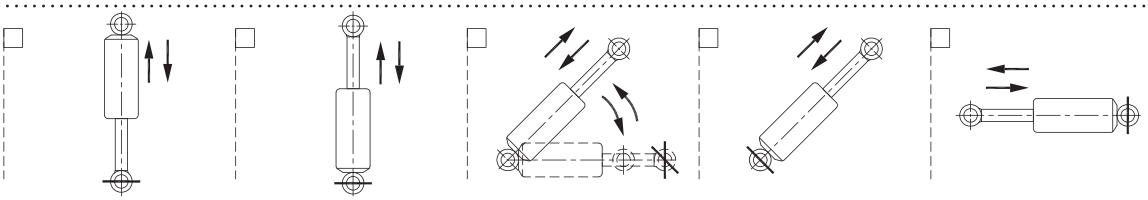
Characteristic

Progress of damping force (F) over speed (V)

☐ Linear ☐ Degressive ☐ Progressive



Installation position ☐



Only for Motion Control Dampers (HK)

Impact speed to be controlled .....m/sec.

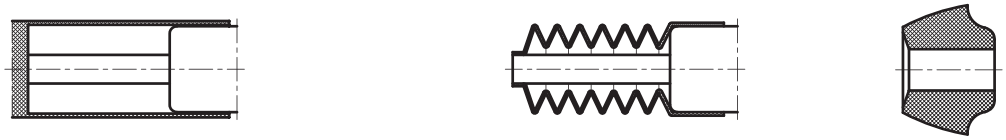
Impact weight to be controlled .....kg. (weight of moving flap/object to be controlled)

Ambient Temperature min. .....C° max. .....C°
(Standard Dampers ara suitable for an ambient temperature of -10C° to +70C°)

Adjustability ☐ Yes ☐ No

Extras :

☐ Protection Tube (Plastic) ☐ Protection Tube (Metal) ☐ Protection Tube (Bellows) ☐ Elastomer Bumper



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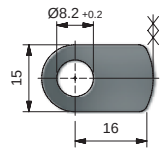
Thickness 5 B129
Thickness 6 B127



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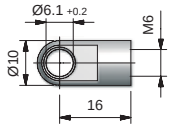

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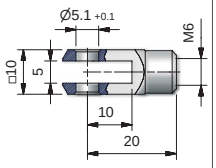

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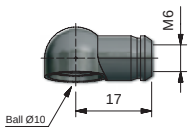
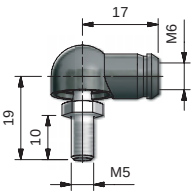


Plastic

B53



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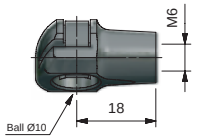

Plastic

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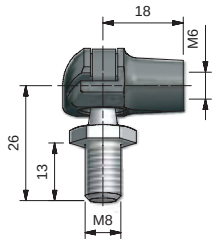
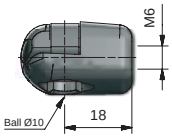
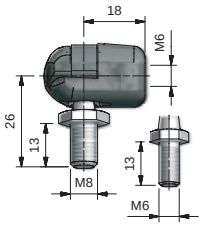


Plastic

B46

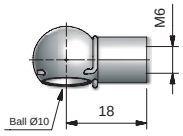


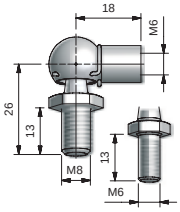


Plastic

B48 B47

B17





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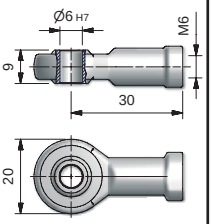
B72



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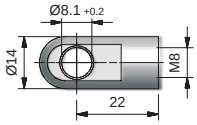

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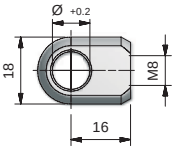
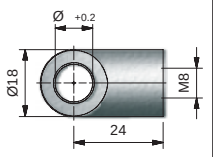
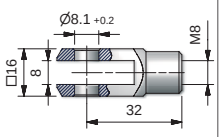


Ø8.1 B113 Ø10.1 B114



Zinc

B3



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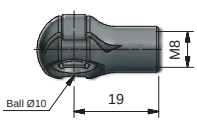

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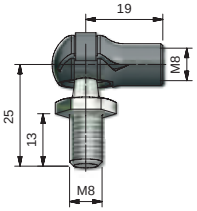

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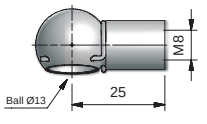

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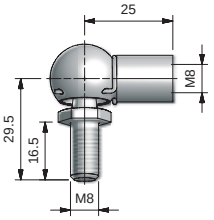

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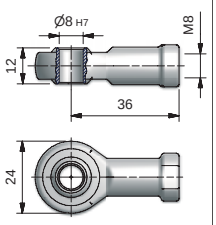

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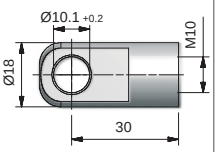

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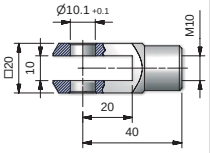

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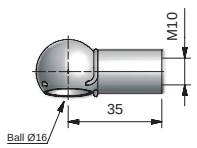

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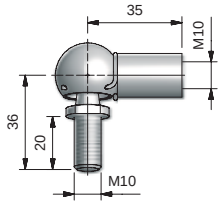

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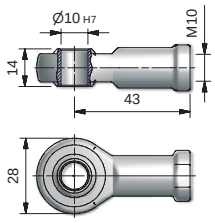

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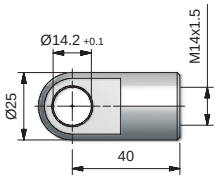

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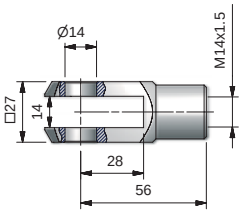

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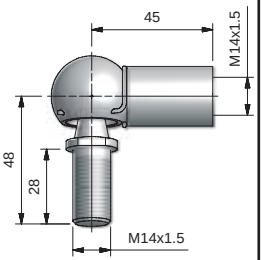

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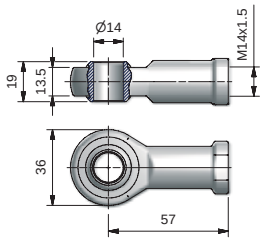

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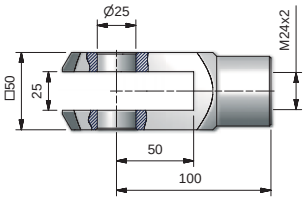

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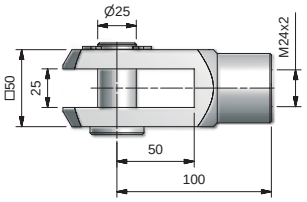
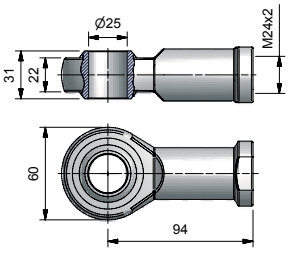


B78



Product variety

Gas springs for controlled lifting, lowering and moving of weights and flaps on various applications

Stainless Steel Gas Springs for harsh environments

Blocklift gas springs for variable positioning

Hydraulic Lift for comfortable position adjustment by usage of a pedal

Nitrogen Gas Springs for usage on metal sheet forming dies

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