

HBD-50 to HBD-85 Hydraulic dampers

Regulation to the highest level

Adjustable, no free travel

Compression and extension force
range 150 N to 50,000 N

Stroke 50 mm to 700 mm

HBD-50

HBD-70

HBD-85

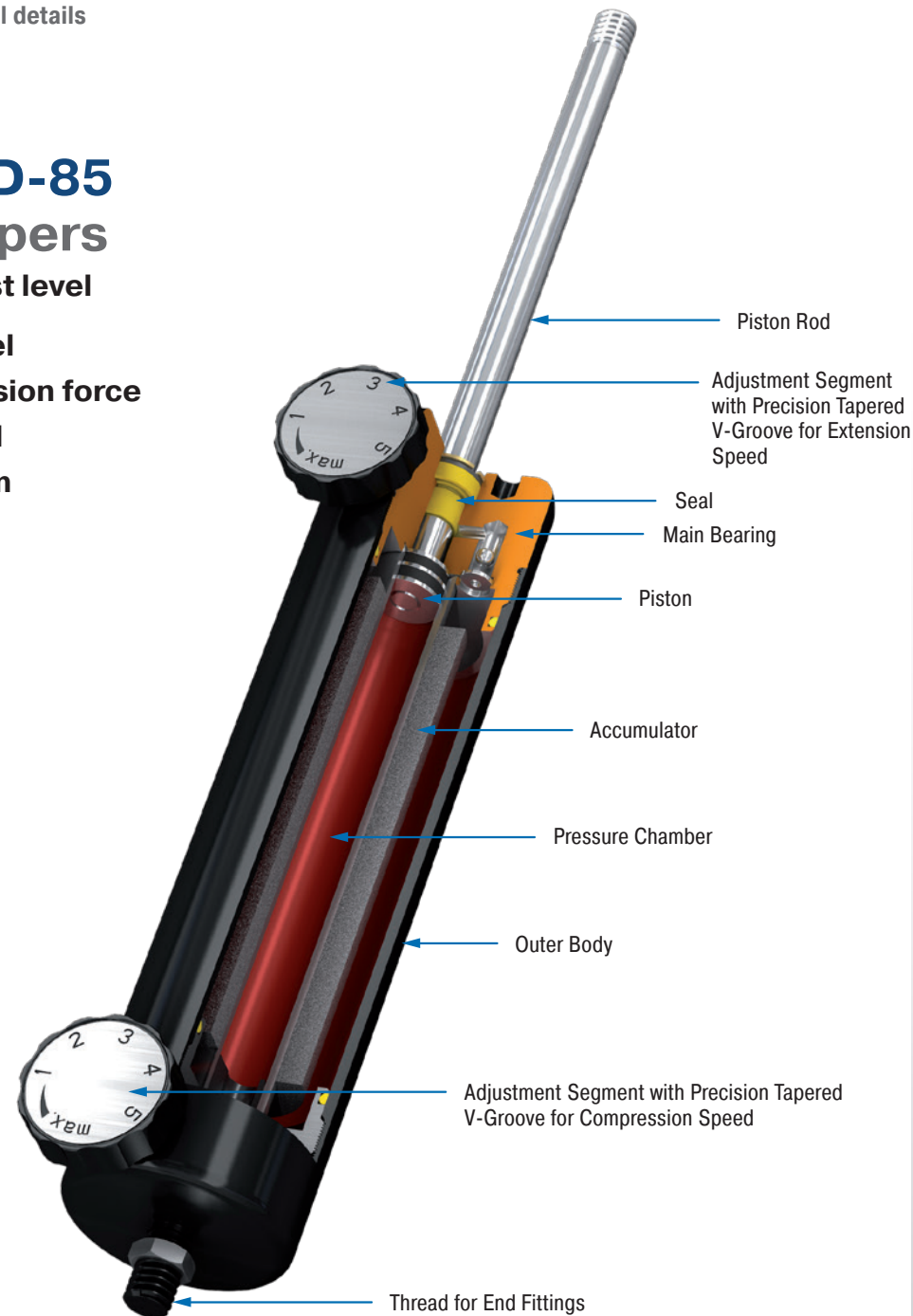


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Manual

General instructions

This manual is for the disruption-free use of the product types listed on page 1; its compliance is a prerequisite for the fulfilment of any warranty claims.

Therefore, make sure to read this manual before use.

Please always maintain the specified limits from the performance table (technical data). Take into account the predominant environmental conditions and restrictions.

Note the regulations of the trade association, TÜV or corresponding national, international and European regulations. Installation and commissioning only according to mounting instructions.

Safety information

WARNING



If ACE hydraulic dampers are used where a failure of the product could lead to personal injuries and/or material damage, additional safety elements must be implemented.



The flap/mass can fall down during installation of dampers. Secure the flap/mass to be moved against falling down.

Intended use

Hydraulic dampers by ACE are used wherever moving masses are to be subjected to an even, defined speed. The damping is retracting and/or extending. The damping is adjustable in both directions independently of one another.

Description and function

Hydraulic dampers are maintenance-free and ready-to-install. They are available with a body diameter of 50 to 85 mm.

When extending or retracting the piston rod, the hydraulic fluid, located in the cylinder space in front of the piston, is displaced by the piston and pressed through the throttle into the cylinder space behind the piston. The sealing system reliably takes care of the sealing of the chrome-plated piston rod on the outside. The adjustment can take place in fitted condition via the adjustment segments; the adjustment segments engage in six steps.

The hydraulic damper does not have its own return force and must be guided over the total working stroke in both directions. The compression and extension force can be found in the performance table.

Calculation and design

In order to ensure an optimum and durable function of the hydraulic damper they must be correctly dimensioned and designed. The following parameters must be known:

- Moving mass
- Feed force
- Feed speed
- Number of strokes or cycles per minute

For the correct sizing, please phone the following number for free advice: +49 (0)2173 - 9226-20.

Delivery and storage

- After delivery please check the damper for any damage.
- The hydraulic damper can become damaged if it falls. Carefully remove the product from the packaging.
- Dampers can generally be stored in any position.
- Always store dampers in a dry place in order to avoid oxidation.
- The recommended maximum storage time is 1 year.
- Any protective packaging must be removed before installation.

Maintenance and care

Regularly check the hydraulic dampers for oil loss, function and external damage.

Hydraulic dampers are maintenance-free and ready-to-install.

Hydraulic dampers are machine elements that are subject to continuous wear.

Disassembly and disposal

Take account of environmental protection during disposal of the hydraulic dampers.

The corresponding disposal instructions are available on request. You can return the door dampers to ACE for disposal that is free of charge.

Hydraulic dampers HBD-50 to HBD-85 are repairable.

Faulty HBD-50 to HBD-85 can be sent to our service department for determination of the cause of failure and for repair.

Mounting instructions and mounting accessories

Installation instructions

Before installation and use check whether the identification number on the hydraulic damper or on the packaging matches the respective designation on the delivery note. Hydraulic dampers are maintenance-free and ready-to-install.

Operating temperature range: 0 °C to 65 °C

Mounting: in any position

Positive stop: External positive stops 1 mm to 3 mm before the end of stroke provided by the customer.

Adjustment: Stepless adjustment

M10x1.5 mounting accessories

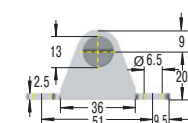
HBD-50

Before installation check whether the identification number on the packaging matches the respective designation on the delivery note.

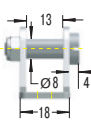
Note the dimensioning for mounting when using accessory parts. Bolts for fitting of accessories are not included.

If you have any questions, please phone +49 (0)2173 - 9226-20 for free advice.

¹ Up to max. 1,800 N

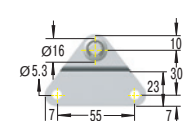


MA10

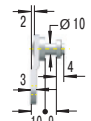


ME10

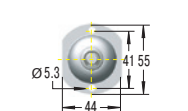
¹ Up to max. 1,200 N



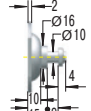
OE10



¹ Up to max. 1,200 N



PE10

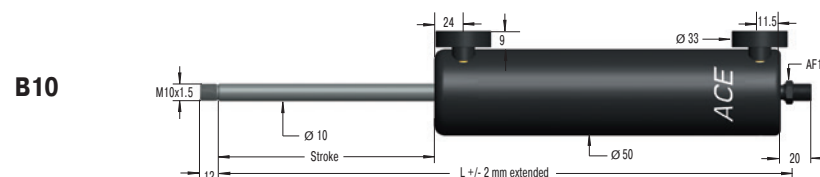


¹ Note! Max. static load in N; note force increase when pushing in (progression). Higher load possible on request.

Adjustable, no free travel, Compression and extension force range 100 N to 6,000 N

End Fitting

Standard Dimensions



B10

A10

C10

D10

E10

Performance data and dimensions

TYPES	Stroke mm	L extended mm	¹ recommended compression force max. N	Weight kg
HBD-50-50	50	192	6,000	1.25
HBD-50-100	100	292	6,000	1.75
HBD-50-150	150	392	4,400	2.25
HBD-50-200	200	492	2,800	2.75
HBD-50-250	250	592	2,000	3.25
HBD-50-300	300	692	1,400	3.75

¹ Max. traction force 6,000 N for all stroke lengths.

End Fitting

**Threaded pin
B10**

**Eyelet
A10**

up to max. 10,000 N

**Hinge joint
C10**

up to
max. 1,800 N

Clevis fork D10

up to max. 10,000 N

Joint head E10

up to max. 10,000 N

The end fittings can be combined in any manner and must be secured against twisting by the customer, if necessary. See mounting accessories.

WARNING

- The flap/mass can fall down during installation of hydraulic dampers.**
Secure the flap/mass to be moved against falling down.
- If the temperature exceeds or falls below the maximum or minimum temperature, hydraulic dampers may fail.**
Always maintain temperature range of 0 °C to +65 °C.
- Fluids, gases and dirt particles in the surrounding area can attack or destroy the seal system of the hydraulic damper cause the gas spring to fail.**
Protect piston rod and seal system from external materials in the environment.
- Damage to the piston rod surface can destroy the seal system.**
Do not grease, oil, paint piston rod, etc.; protect against dirt particles.
- The piston rod can be torn from the hydraulic damper.**
Ensure a mechanical end stop in tension direction.
- Tilting and lateral forces can lead to leaks from the damper or blocking of the piston rod.**
Check installation and ensure suitable end fittings and guides. There must be no tension on mounting parts; if necessary, allow a little free play.
- The body tube can become deformed.**
Do not allow any transverse or lateral forces on the hydraulic damper. Do not clamp the body tube.
- End fittings can come loose from the hydraulic damper.**
Always completely screw on the end fittings and, if necessary, secure with threadlocker (Loctite).
- High forces may cause the hydraulic damper to compress or overstretch.**
Apply mechanical stops.

Packaging disposal

Please dispose of the transportation packaging in an environmentally-friendly manner. Recycling packaging materials saves raw materials and reduces waste. The packaging materials do not contain any prohibited materials.

Mounting instructions and mounting accessories

Installation instructions

Before installation and use check whether the identification number on the hydraulic damper or on the packaging matches the respective designation on the delivery note. Hydraulic dampers are maintenance-free and ready-to-install.

Operating temperature range: 0 °C to 65 °C

Mounting: in any position

Positive stop: External positive stops 1 mm to 3 mm before the end of stroke provided by the customer.

Adjustment: Stepless adjustment

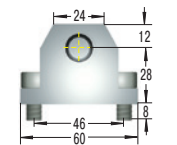
M14x1.5 mounting accessories

HBD-70

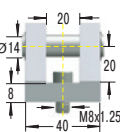
Before installation check whether the identification number on the packaging matches the respective designation on the delivery note. Note the dimensioning for mounting when using accessory parts. Bolts for fitting of accessories are not included.

If you have any questions, please phone +49 (0)2173 - 9226-20 for free advice.

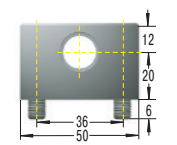
¹ Up to max. 10,000 N



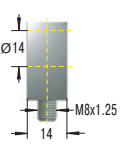
ME14



¹ Up to max. 10,000 N



ND14

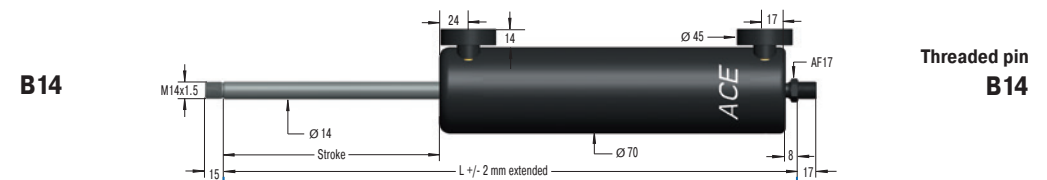


¹ Note! Max. static load in N; note force increase when pushing in (progression). Higher load possible on request.

Adjustable, no free travel, Compression and extension force range 150 N to 10,000 N

End Fitting

Standard Dimensions



B14

End Fitting

Threaded pin B14

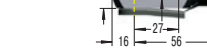
A14



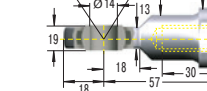
C14



D14



E14



Performance data and dimensions

TYPES	Stroke mm	L extended mm	¹ recommended compression force max. N	Weight kg
HBD-70-100	100	306	10,000	4.25
HBD-70-150	150	406	10,000	4.75
HBD-70-200	200	506	10,000	5.30
HBD-70-300	300	706	10,000	6.40
HBD-70-400	400	906	8,000	7.50
HBD-70-500	500	1,106	6,000	8.60

¹ Max. traction force 10,000 N for all stroke lengths.

Eyelet A14

up to max. 10,000 N

Hinge joint C14

up to max. 3,200 N

Clevis fork D14

up to max. 10,000 N

Joint head E14

up to max. 10,000 N

The end fittings can be combined in any manner and must be secured against twisting by the customer, if necessary. See mounting accessories.

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Manual

Warranty

Fundamentally, all modifications to the product by third parties lead to exclusion from the warranty.

Obvious defects must be reported to the vendor in writing immediately after delivery, no later than one week, but in any case before processing or installation, otherwise the assertion of a warranty claim is excluded. A timely dispatch is sufficient to keep the term.

The vendor is to be given an opportunity to check on site. If the complaint is justified the vendor offers warranty by repair or replacement at its own discretion. If the rectification fails, the buyer may choose to demand reduction of payment (abatement) or cancellation of the contract (withdrawal). If there is only a minor lack of conformity, particularly with only minor defects, the buyer nevertheless has a right of withdrawal.

If, after failed rectification, the buyer chooses to cancel the contract due to a defect of title or material defect, they are not entitled to additionally claim for damages.

If, after failed fulfilment, the buyer chooses compensation, the goods remain with the buyer, if this is reasonable. The compensation is limited to the difference between the purchase price and the value of the defective item. This does not apply if the vendor maliciously causes the breach of contract.

The quality of the goods is only considered as agreed upon with the product description of the vendor. Public statements, claims or advertising of the manufacturer do not represent an additional contractual specification of quality of the goods.

If the buyer receives defective mounting instructions, the buyer is only obligated to deliver defect-free mounting instructions and only if the defect to the mounting instructions prevents proper mounting.

The warranty period is two years and begins upon completion. Exchange and return of custom products are fundamentally excluded. The factory conditions of the manufacturing factory apply to parts not manufactured and processed by the vendor, which can be viewed by the orderer at the vendor at any time. Construction and installation parts are delivered according to the present standard of engineering.

Expected service life

In general, hydraulic dampers are machine elements that are subject to wear. Wear parts such as seals and pistons are excluded from the general warranty.

The wear of seals is largely dependent upon the operating conditions and the respective application with its operating parameters. In general, the hydraulic dampers HBD-50 to HBD-85 by ACE are tested over a lifetime of approx. 10,000 m. Adverse environmental and operating conditions can significantly reduce the expected service life.

Performance data

TYPES	Stroke mm	¹ Compression force min. N	¹ Compression force max. N	Traction force range min. N	Traction force range max. N	Weight kg
HBD-50	50 - 300	100	6,000	100	6,000	1.25 - 3.75
HBD-70	100 - 500	150	10,000	150	10,000	4.2 - 8.6
HBD-85	100 - 700	150	50,000	150	50,000	6.6 - 14.4

¹ Depending on stroke, see datasheet of respective range.

Technical data

Compression and extension force: 150 N to 50,000 N

Outer body diameter: Ø 50 mm to Ø 85 mm

Piston rod diameter: Ø 10 mm to Ø 20 mm

Lifetime: approx. 10,000 m

Operating temperature range: 0 °C to 65 °C

Adjustment: Stepless adjustment

Positive stop: External positive stops 1 mm to 3 mm before the end of stroke provided by the customer.

Damping medium: Hydraulic oil

Material: Outer body: Steel coated; piston rod: Chrome-plated steel; end fittings: Zinc-plated steel

Mounting: in any position

Application field: Sports equipment, rehabilitation technology, conveyor technology

Note: Increased clamping torque with longer downtimes. A locknut is included.

End fittings: Can be combined in any manner and must be secured against twisting by the customer, if necessary.

On request: Special oils and other special options and further accessories are available.