

# **Instruction Manual**

## **Hydraulic Buffer(KHS)**

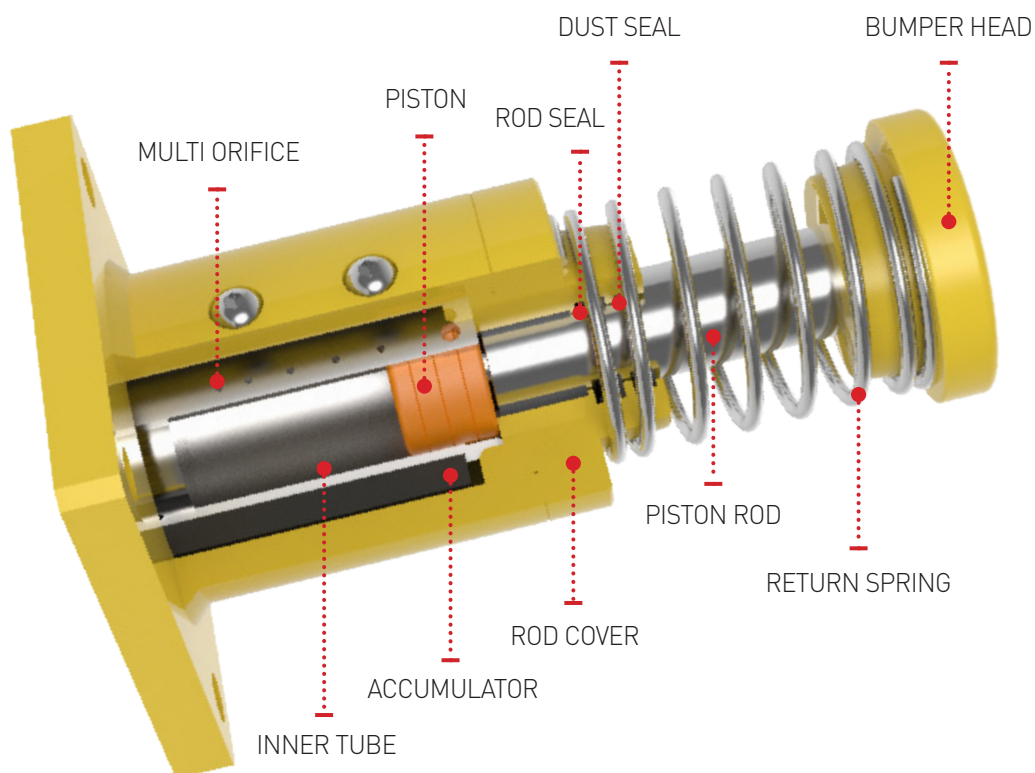
※ Details could be changed without prior notice subject to the performance upgrade.

## 1. KHS Series Hydraulic Buffer's structures & operation theory

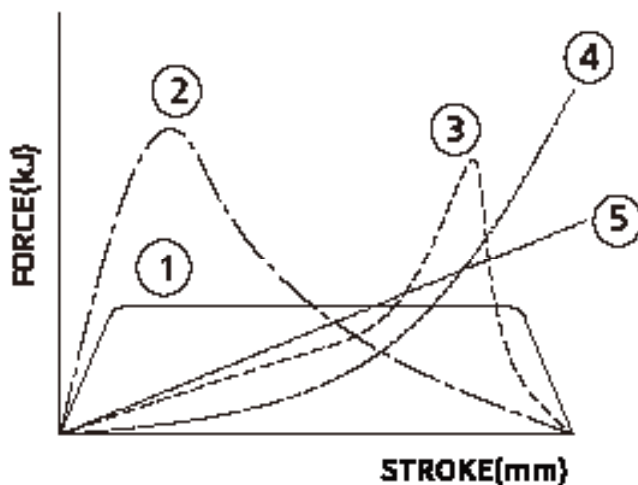
KHS Series is internally consist of Body, Rod Cover, Inner Tube, Mount, Piston, Piston Rod, Bumper Head, Accumulator, Oil etc.

When a moving object collides with the bumper head, it absorbs the collision energy as the oil escapes through the Multi Orifice using the internal piston.

After the collision, the compressed piston rod is returned to its original state by the external return spring.

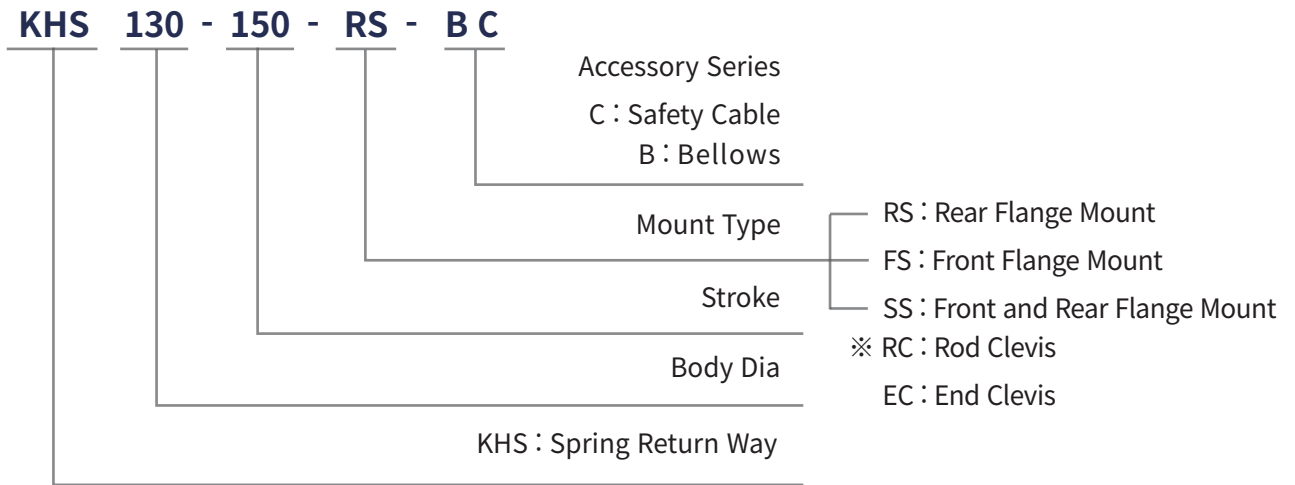


## 2. Technical Information Hydraulic Buffer

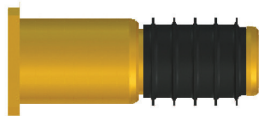


- ① KOBAS Series  
: It has a multi-orifice structure, so it is constant throughout the entire stroke section. It gently stops a colliding object with a resistive force.
- ② Single Orifice
- ③ Air Buffer
- ④ Rubber Crushing
- ⑤ Spring Crushing

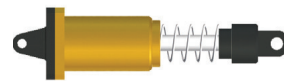
### 3. KHS Series Ordering Information



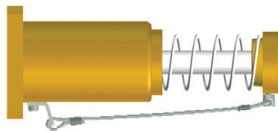
### 4. Accessory



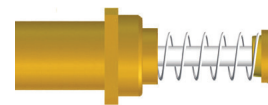
Bellows Cover



Clevis Mounting



Front & Rear Safety Cable



Front Mount

### 5. Special Order

- Temperature : -30~100°C
- Special Coatings
- Body Chrome Plating
- Stainless Steel
- Special Head

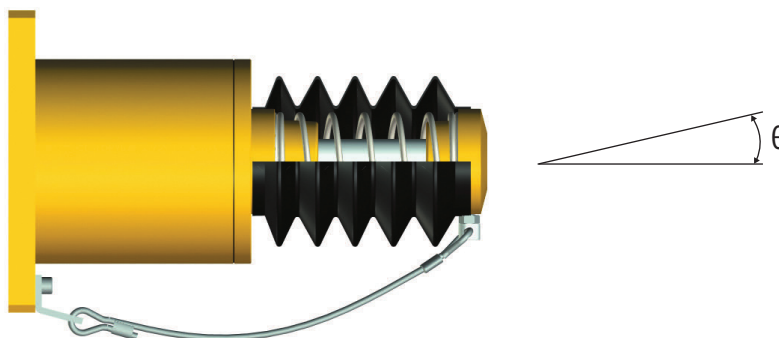
## 6. Operation Manual

KOBA's Hydraulic Buffer is designed for long life. Please using it with considering following points.

- 1) Check if the capacity is properly selected.
- 2) Check if the operating temperature is appropriate (standard temperature  $-10^{\circ}\text{C}\sim 80^{\circ}\text{C}$ ), and contact the head office or agency if other temperature conditions are required.
- 3) Check whether the mounting bolts, lock nuts, and set screws are properly tightened before use.
- 4) Do not weld or paint the body.
- 5) Do not scratch or paint the Piston Rod.  
(It shortens the life of Hydraulic Buffer due to leakage.)

## 7. Check points on installation

- 1) The installation angle( $\theta$ ) of the collision object and Stacker Crane Buffer is normally within  $3.5^{\circ}$  for 0~100mm, within  $3^{\circ}$  for 101~200mm, within  $2.5^{\circ}$  for 201~300mm, and within  $1^{\circ}$  for 301mm or more.



KHG Hydraulic Buffer

- 2) Bellows exhaust air hole should be installed facing downward.
- 3) Install the safety cable in the downward direction.

## 8. Check

For stable and normal use of KHG Buffer, the following points should be checked.

- 1) Check if any foreign materials may on the piston rod, foreign material should be remove cleanly.
- 2) Check for oil leakage in the seal area.
- 3) Check the dimensions of the Stoke section.  
If general dimensions are not secured according to the stoke, refill gas through the gas injection valve and check for other problems.



This product is manufactured through strict quality control.  
The product warranty period is 12 months from the date of purchase.

### 1. Free Service

In case the trouble comes within the warranty period, please contact our distributor or head quarter for free maintenance service or replacement.

### 2. Service on cost

Following cases are out of free service and it requires to pay for the service cost.

- 1) Mishandling on operation
- 2) Passing warranty period
- 3) When abnormal operation occurs or the product cannot be used again by applying it on abnormal conditions
- 4) Failure or damage due to user negligence (arbitrarily disassembled, assembled, or modified)
- 5) Failure and damage due to natural disasters
- 6) In case of damage caused by mistake during transportation
- 7) Failure or damage due to external shock, damage, or leakage



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