

# **Instruction Manual**

## **Hydraulic Buffer(KHG)**

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

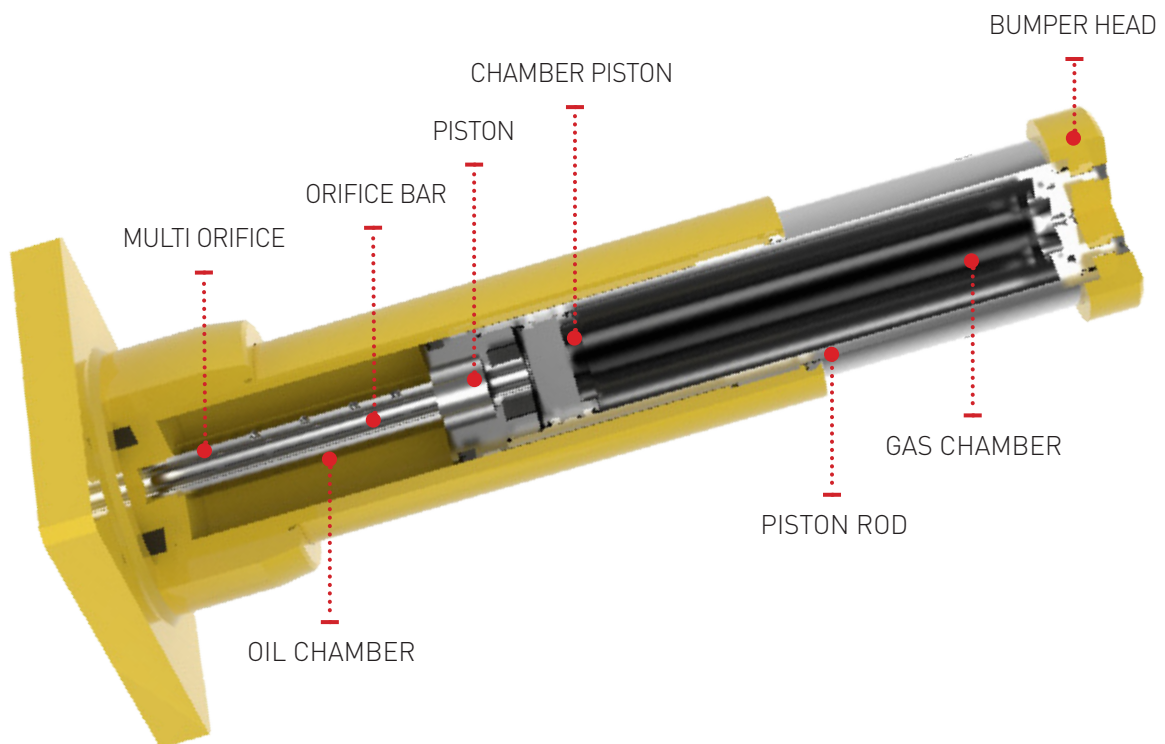
## 1. Structure & operating theory of KHG Series Hydraulic Buffer

Internal Hydraulic Buffer consist of Piston, Check valve, Accumulator, Inner tube, Multiple orifice, Oil, N2 Gas etc.

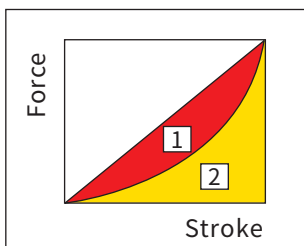
Hydraulic Buffer is divided into Oil Chamber and Gas Chamber. As the Stroke progresses, the Oil chamber moves through the gas chamber direction through the orifice.

During the Gas chamber pressing process, shock energy of external collide materials is absorbed properly.

In addition, when the shock absorption is completed and the compressed Piston Rod is returned quickly to it's initial position by the Piston Check valve opens.

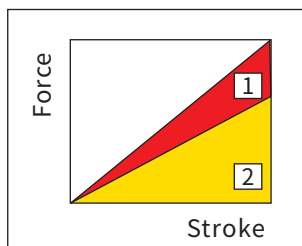


## 2. Energy absorption rate comparison



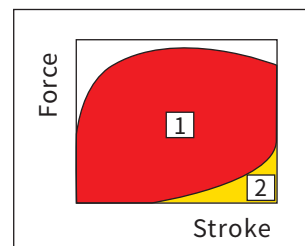
Rubber Damping

1. Low damping
2. High spring



Spring Damping

1. Low damping
2. High spring

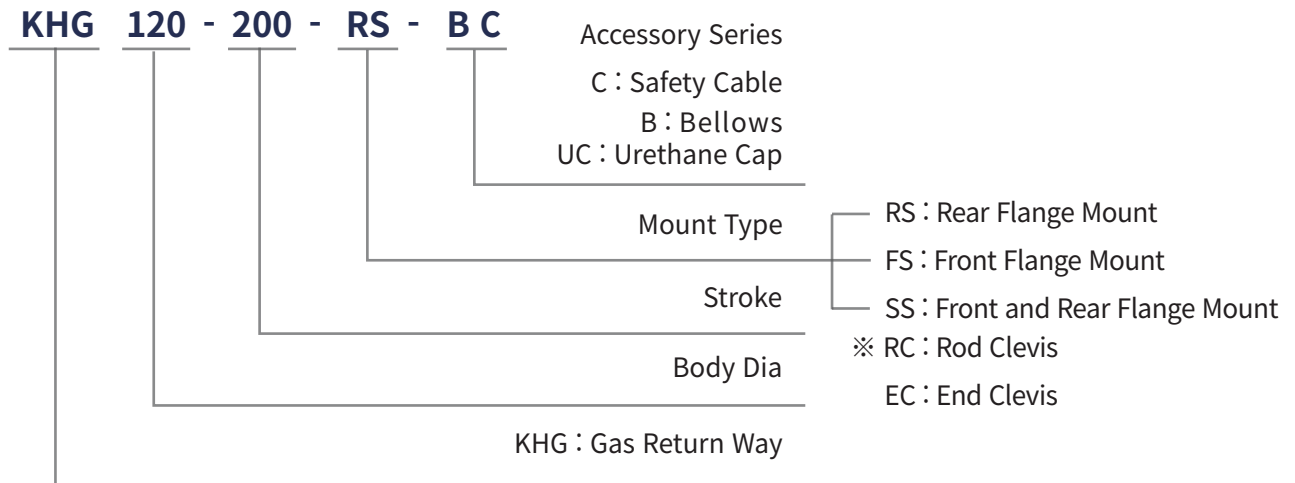


Hydraulic Buffer

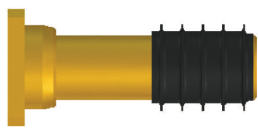
1. Maximum damping
2. Low gas spring

■ Absorbed energy  
■ Atored energy

## 3. KHG Series Ordering Information



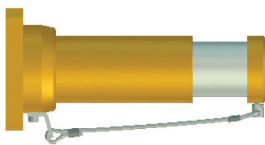
## 4. Accessory



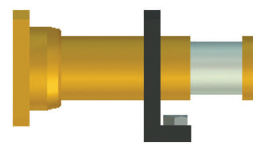
Bellows Cover



Clevis Mounting



Front & Rear Safety Cable



Rear Mount + Front Foot Mount

## 5. Special Order

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

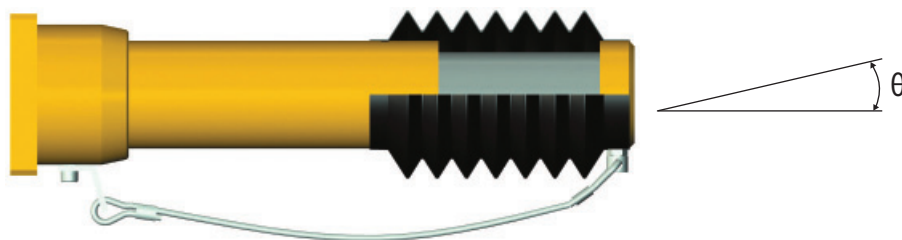
## 6. Operation Manual

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

- 1) Check if the capacity is properly selected.
- 2) Check if the operating 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 Bolt, Lock Nut and Set Screw 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 Hydraulic Buffer is normally within  $3.5^{\circ}$  for 0~100mm,  $3^{\circ}$  for 101~200mm,  $2.5^{\circ}$  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 be on the Piston Rod, foreign material should be removed cleanly.
- 2) Check for oil leakage in the seal area.
- 3) Check the dimensions of the Stroke section.  
If general dimensions are not secured according to the stroke, 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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