SHOCK DAMPER MC SERIES

INSTRUCTION MANUAL

NOTICE FOR SAFETY

- Read thoroughly this Instruction Manual and other attached documents before installing and using SHOCK DAMPER.
- Use SHOCK DAMPER only after having full knowledge of the equipment and all applicable safety procedures.
- Keep this instruction manual where the user can always refer to it.
- In this Instruction Manual, safety notice are divided into two levels :**WARNING** and **CAUTION**

: There is the possibility of a dangerous situation, death ,or serious injury when SHOCK DAMPER is used incorrectly.

: There is the possibility of a dangerous situation , and injury or only physical damage (except for personal) when SHOCK DAMPER is installed incorrectly

NOTE:Even if an item is marked **CAUTION** there is a possibility of serious injury depending on the situation.
For safe operation it is important to comply with the contents if the Instruction Manual.

WARNIG

- Fix the object not to move suddenly and to provide safety to any individuals area, when installing/removal/maintenance/inspection of SHOCK DAMPER
- Comply with all applicable safety standards of your country.
  When revisions are published, the updated editions shall apply.
- When installing/removal/maintenance/inspection of SHOCK DAMPER.
- Comply the Instruction Manual.
- Always lock out power switch.
- Wear safety glasses, protective clothing, gloves and safety shoes.

CAUTION

- Install a mechanical stopper to support the load at the end of the piston stroke.
- Use the fixture with the strength of SHOCK DAMPER a maximum allowable resistance and stronger.
- Capacity/performance of SHOCK DAMPER may decrease due to the wear/life of parts.
  Do the periodic inspection in accordance with this Instruction Manual.
  Contact Tsubaki Emerson for repair if something is wrong.
- Read thoroughly this Instruction Manual and other attached documents before installing using SHOCK DAMPER.
  Contact Tsubaki Emerson with Model No./Series for extra Instruction Manual.
- Forward this Instruction Manual to the customer who uses SHOCK DAMPER.

1.Features

Optimally positioned orifices and quality construction provided low resistance force that has flat characteristic for optimal absorption of kinetic energy. Effective use of the stroke means that these SHOCK DAMPERs can bring even large moving bodies to a gentle stop.

2. Check

Check as follow

①Series / Maximum Energy / Velocity

②Damage by transportation

③Make sure equipment

3. Installation

（1） Protect the SHOCK DAMPER with a cover when using it outdoors or in environments where it will be exposed to a lot of dust or water. When using a cover, leave plenty of space around the periphery of the SHOCK DAMPER.

（2）Maintain sufficient surrounding space for better heat radiation. The suitable ambient temperature is -10～70℃.

（3）SHOCK DAMPER may be mounted at any position; horizontally with the piston rod up or down.

（4）The moving load must be guided and set within five degree, between the centerline of the SHOCK DAMPER and the direction of the impacting load. (Fig 1)

（5）In case of that the nuts is loosened by the vibration from the equipment,Installing apply thread lock cements on nuts,threads and install keep tight.

（6）The supporting structure must be rigid. The necessary strength of the mounting base of the SHOCK DAMPER is shown in the catalog.)

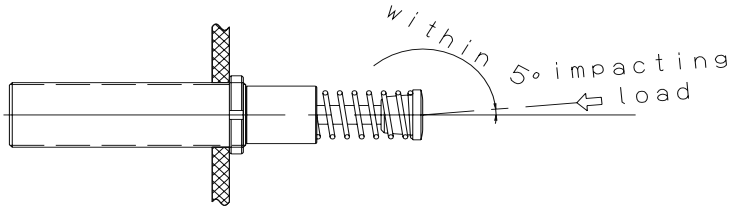
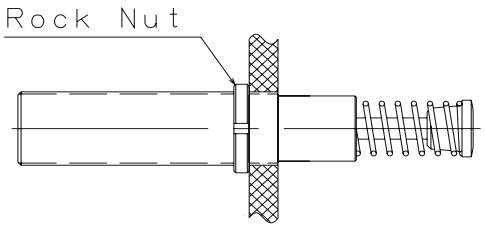
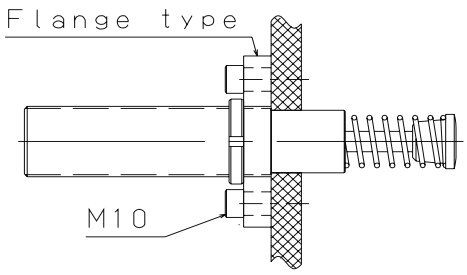


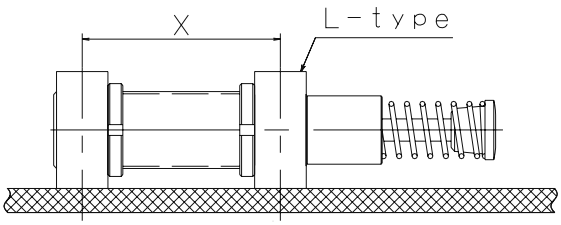
Fig1

TYPE	RESISTANCE FORCE
DP33**MC*	12820 N{1308 kgf}
DP36**MC*	
DP45**MC*	28670 N{2926 kgf}
DP64**MC*	67750 N{6913 kgf}

（7）Example of Mounting







(mm)

TYPE	X min	X max
DP3325MC*	40	55
DP3350MC*	55	80
DP3625MC*	40	55
DP3650MC*	55	80
DP4525MC*	50	65
DP4550MC*	60	90
DP4575MC*	75	115
DP6450MC*	70	105
DP64100MC*	95	155
DP64150MC*	120	205

4. Fluid Change

(1) MC SERIS are delivered with ATF oil(Automatic Transmission Fluid) .
(2) Under normal usage, operating fluid should be changed every 1 year.

5. Precaution in operation

(1) Do not use when there are overloading conditions.
(2) Confirm the kinetic energy, equivalent mass of moving load, velocity of moving load and operating frequency of your machine.
(3) When two SHOCK DAMPER are used. Both graduations should be the same.
(4) Do not turn the piston rod forcibly.
(5) Never modify the SHOCK DAMPER.
(6) Indoor use only.

6. Trouble Shooting Guide

Malfunction	Counter Plan
Insufficient shock absorption.	・Change the size of SHOCK DAMPER.
Bottoming out with shock load.	・Change the size of SHOCK DAMPER.
Piston rod does not more freely or return all the way.	・Exchange the SHOCK DAMPER. ・Reinstall the SHOCK DAMPER properly
Oil Reek	・Exchange the SHOCK DAMPER.

Warranty:

Tsubaki E&M CO.: hereinafter referred to as “Seller”
Customer: hereinafter referred to as “Buyer”
Goods sold or supplied by Seller to Buyer: hereinafter referred to as “Goods”

1. Warranty period without charge
   18 months effective the date of shipment or 12 months effective the first use of Goods, including installation of Goods to Buyer’s equipment or machine - whichever comes first.
2. Warranty coverage
   Should any damage or problem with the Goods arise within the warranty period, given that the Goods were operated and maintained according to the instructions provided in the manual, Seller will repair and replace at no charge once the Goods are returned to the Seller.
   This warranty does not include the following:
   1) Any costs related to removal of Goods from the Buyer’s equipment or machine to repair or replace parts.
   2) Cost to transport Buyer’s equipment or machines to the Buyer’s repair shop.
   3) Costs to reimburse any profit loss due to any repair or damage and consequential losses caused by the Buyer.
3. Warranty with charge
   Seller will charge any investigation and repair of Goods caused by:
   1) Improper installation by failing to follow the instruction manual.
   2) Insufficient maintenance or improper operation by the Buyer.
   3) Incorrect installation of Goods to other equipment or machine.
   4) Any modifications or alterations of Goods by the Buyer.
   5) Any repair by engineers other than the Seller or those designated by the Seller.
   6) Operation in an inappropriate environment not specified in the manual.
   7) Force Majeure or forces beyond the Seller’s control such as natural disasters and injustices done by a third party.
   8) Secondary damage or problem incurred by the Buyer’s equipment or machine.
   9) Defected parts supplied, or specified by the Buyer.
   10) Incorrect wiring or parameter setting by the Buyer.
   11) The end of life cycle of the Goods under normal usage.
   12) Loss or damage not liable to the Seller.
4. Dispatch service
   Service to dispatch a Seller’s engineer to investigate, adjust or trial test Seller’s Goods is at the Buyer’s expense.
5. Disclaimer
   1) In our constant efforts to improve, Tsubaki E&M CO may make changes to this document or the product described herein, without notice.
   2) Considerable effort has been made to ensure that the contents of this document are free from technical inaccuracies and errors. However, any such inaccuracies or errors reported will be gladly examined and amended as necessary.

TSUBAKI

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