

# Cushioneer®

## ADJUSTABLE IMPACT ABSORBER

Bulletin S-30g  
3/15/02

Congratulations, you are in possession of a Cushioneer shock absorber, the hydraulic shock that has set the industry standard for precision stopping action. Please take a few moments to read the following instructions before using your Cushioneer. The Cushioneer is miniaturized. It is purposely built small in relation to its load absorption ability to facilitate being installed in small spaces. Like other precision miniaturized devices, it can be damaged by incorrect handling or installation. All Cushioneer models are adjustable, leak proof and built to operate for millions of trouble free cycles. Following our recommendations and precautions will insure you obtain a full service life.

**Remember to always provide adequate guards and whatever precautions are necessary to protect personnel and equipment at all times. Do not use this unit where a malfunction could result in human injury.**

### INSTALLATION

End of CUSHIONEER plunger is hardened and plunger should, whenever possible, be in line with any straight moving load as in Figure 1. Align CUSHIONEER accurately with direction of load movement so that moving load contacts plunger squarely during entire stroke of plunger. For heavy impact, or for service requirements exceeding a million cycles, mount on flat surfaces with block A10031 or equivalent at either snap ring groove, or use spacer for intermediate position. Thrust is taken by snap ring furnished. Striking surface of moving load should be hardened to prevent excessive wear.

NOTE: Please contact factory for price and availability of A10031 mounting block.

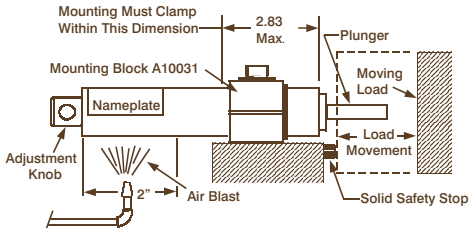


Fig. 1

Cushioners get hot because they convert impact energy to heat. The seals in a hot unit deteriorate faster than those in a cool unit. Operating temperature should be held below 130°F if a seal life of millions of operations is expected. Exhaust blast from an air cylinder is excellent for keeping a Cushioneer cool and insuring a normal length of life for the seals. For maximum effectiveness, have air strike within 2" of end of housing as shown—but not on nameplate.

For quick plunger return after a working stroke, and also to protect your equipment, provide a solid safety stop to stop moving load approximately 1/32" before Cushioneer plunger reaches bottom of its own stroke. Never place anything (finger & hand included) between end of plunger rod & moving load.

Plunger may contact swinging lever as in Figure 2 if service load is very light. For longest life with swinging levers, install roller on lever as in Figure 3, but roller must contact flat end of plunger squarely during entire stroke of plunger. Rollers A10131 and A10331 are suitable for this purpose. See Figure 5.

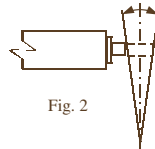


Fig. 2

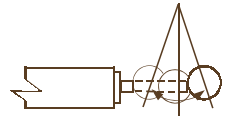


Fig. 3

Do not twist plunger rod within the body or allow load to slide across end of plunger causing plunger to twist during its stroke, otherwise plunger seal and bushing life will be shortened.

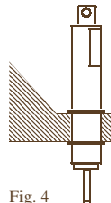
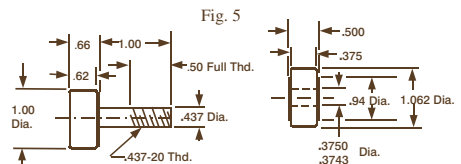


Fig. 4

Cushioners can be mounted in round holes and retained by snap rings in light duty installations.

If application is severe, body should be clamped radially by split mounting to prevent body working in hole. **Set screws must not be used.**

### ROLLER (ACCESSORIES)



Cantilever Roller No. A10131

Roller No. A10331

## OPERATION

AFTER INSTALLING, ADJUST AS FOLLOWS:

- (a) Insert rod in adjustment knob and rotate until knob slot is opposite numeral 20. See Figure 1.
- (b) Reduce velocity of moving load and let it strike plunger gently several times while you turn knob slot toward zero. Do not adjust in mid-stroke. Adjust only when Cushioneer is stopped. Continue adjusting until plunger travels its full stroke and settles softly into stopping position each time load strikes. Next, let moving load gradually come up to full velocity as you turn knob back toward 20. After final adjustment, plunger should be seen to settle softly into its stopping position every stroke. Do not overload by exceeding rated capacity.
- (c) Check your adjustment after Cushioneer has reached its highest operating temperature. Maximum recommended operating temperature is 135°F.

To prevent seal deterioration, provide air circulation around this unit, or an air blast as shown in Figure 1 to keep the unit's temperature below 130°F. The Cushioneer is running too hot if you can't hold your bare hand firmly against it for 2 full seconds.

CUSHIONEERS are designed to operate without external lubrication. Plunger bushing and seal are permanently lubricated with a special lubricant and protected by a rod wiper. Additional lubrication of plunger is not recommended because ordinary oil may displace the special lubricant and shorten the long wearing life of the unit. Plunger should be kept free of dirt, oil, cutting fluid, etc. to insure a maximum service life. A dry cloth may be used to wipe plunger clean when necessary.

### CAUTION

Not recommended for operation in ambient temperatures below +40°F or above +120°F.

## SERVICE

Remove Cushioneer from service immediately if the plunger hesitates or fails to travel all the way out on its return stroke.

Keep a spare unit on hand if a breakdown would be costly. Life expectancy is millions of cycles but any hydraulic unit will eventually wear out.

When repair service is required, the unit may be returned to factory for fast, expert work at reasonable rates. Cushioners are light in weight and inexpensive to ship.

## GUARANTEE AND LIMITATION OF LIABILITY

Every hydraulic unit is fully guaranteed against defects in workmanship or material. Within one year from the date of shipment to the original purchaser, any unit which has proven defective will be repaired without charge, F.O.B. factory, when unit is shipped prepaid to factory. The Company is not responsible for any damage resulting from tampering, abuse, or incorrect application.

The Company's liability on any claim of any kind, including negligence, for any loss or damage arising out

of, connected with, or resulting from, the design, manufacture, sale, delivery, resale, installation or installation advice, inspection, repair, operation, or use, of any equipment described herein, shall in no case exceed the price allocable to the equipment which gives rise to the claim, and shall terminate four years after the date of original shipment. The purchaser, by acceptance of any of the Company's products described herein, assumes all liability of the consequences of the use of those products.

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