

Motor mounting bracket

Damper arm

Ball joints

Mounting screws

Crank arm

Model No.	Components	Quantity	Use for
Q605A	Motor mounting bracket	1	Q605A is used when one damper is controlled by one Modutrol Motor. Example is shown by Fig. 6.
	Damper arm	1	
	Crank arm *1	1	
	Ball joints	2	
	Mounting screws *2	1 set	
Q605D	Motor mounting bracket	1	Q605D is used when two dampers are controlled by one Modutrol Motor. Example is shown by Fig. 7 and 8.
	Damper arm	3	
	Crank arm *1	1	
	Ball joints	4	
	Mounting screws *2	1 set	
Q605E	Damper arm	1	Q605E is used when Modutrol Motor is directly mounted on duct wall and one Modutrol Motor controls one damper. As it is directly mounted on and fittings are not included. Example is shown by Fig.9.
	Crank arm *1	1	
	Ball joints	2	

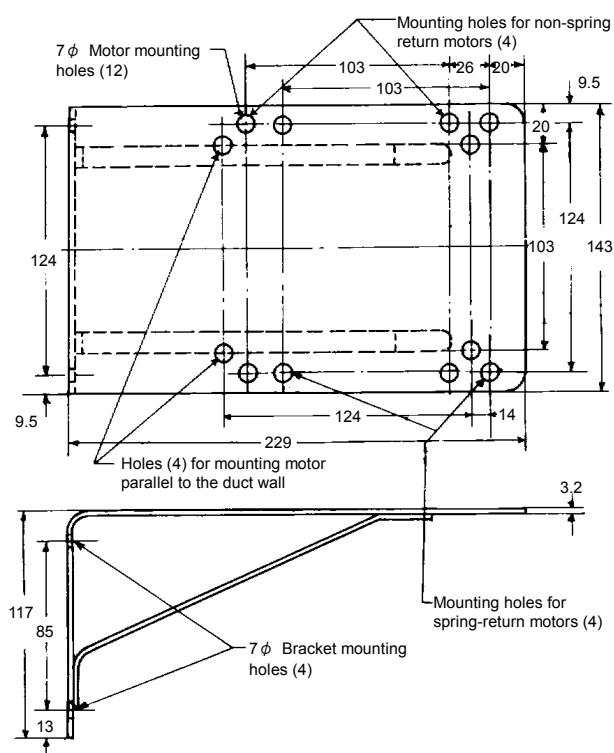


Fig. 1 Dimensions (in mm.) of motor mounting bracket (160724A-BKT)

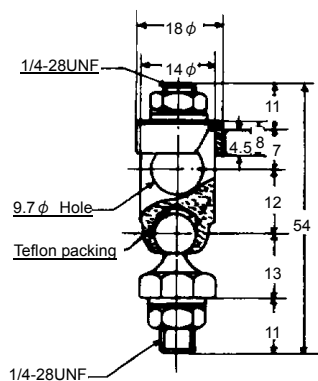


Fig. 2 Dimensions (in mm) of ball joint (J-27518-JOINT)

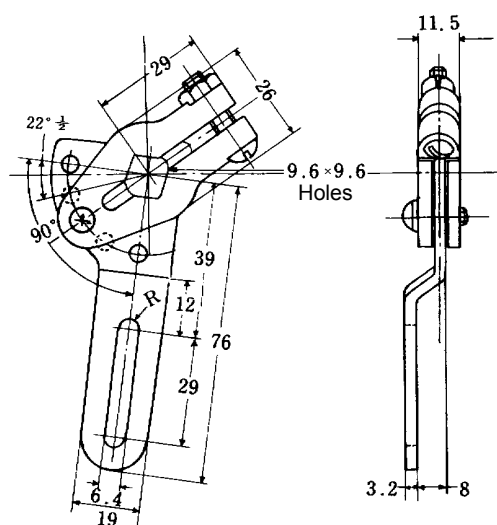


Fig. 4 Dimensions (in mm) of crank arm (N-3128)

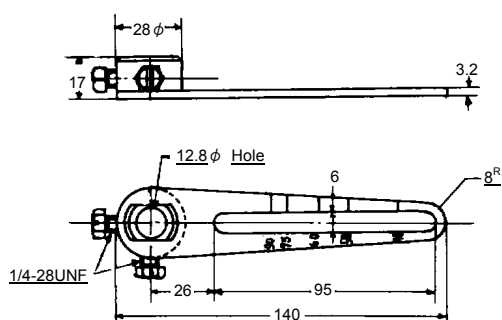


Fig. 3 Dimensions (in mm) of damper arm (J-26026G-ARM)

Safety Instructions

Please read instructions carefully and use the product properly. Please keep this instruction on hand for reference at any time.

Usage Restrictions

This product is intended for air conditioning control. Do not use this product where human life may be endangered. For applications where reliability or control accuracy are critical, please contact your Azbil Corporation sales representative. Azbil Corporation bears no responsibility for any benefit, or lack of benefit, derived from the operation by the customer.

⚠ CAUTION

- ❗ Installation must be performed by a trained, experienced technician.
- ❗ Check and do not exceed the ratings given herein to prevent equipment damage.
- ❗ Conform to the environmental specifications given herein to prevent equipment damage.
- ❗ Carefully read the instructions of the Modutrol Motor connected.
- ❗ Avoid excessively numerous or short operating cycles. Such operation can shorten the product's life.
- ❗ Do not disassemble except for wiring to Modutrol Motor or part replacement. Equipment damage or electrical shock may result

Installation

Please refer to instructions also for Modutrol Motor and damper for mounting this Damper Linkage.

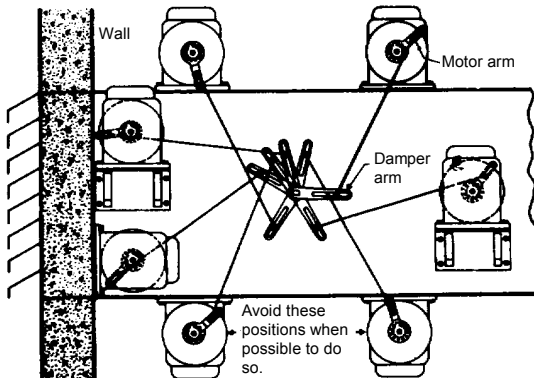


Fig. 5 Motor mounting positions

1. Fig. 5 shows motor mounting positions.
2. Slip the damper crank arm on the damper shaft (do not tighten the setscrews).
3. Align the motor-shaft holes in the crank arm and crank hub. Place the crank arm assembly on the motor shaft. Insert the clip (order separately) at the groove of shaft between crank arm and hub. Tighten the motor crank arm screws only thumb tight, as further adjustments will be required. (Note: Some Modutrol Motors are attached crank arm already.)
4. The motor crank arm and the damper arm should move in the same vertical plane.
5. Ball joint, which connects damper arm with push rod, on the side of damper must not reach dead point (the point at which damper arm stays in a straight line with push rod).
6. At the time of shipment from factory, the crank arm of Modutrol Motor shaft is placed in a position where it is completely turned in counterclockwise direction as viewed from flange end (gear end) of motor.
7. 8 to 9.5 mm Dia. steel bar is used as push rod. If the push rod is too long, transmission of force is not correctly carried out. Therefore, attention must be paid to the length of push rod.
8. If the operation starts before the adjustment of damper linkage is completed, unnecessary force is exerted on the system and ball joint is likely to be damaged.
9. Fig. 6 to 9 show the typical examples of mounting.

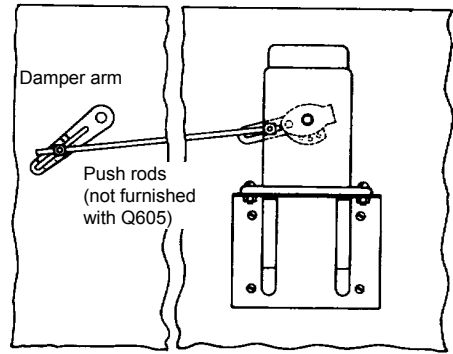


Fig. 6 Q605A Damper linkage

Modutrol motor mounted externally on the duct to control one damper

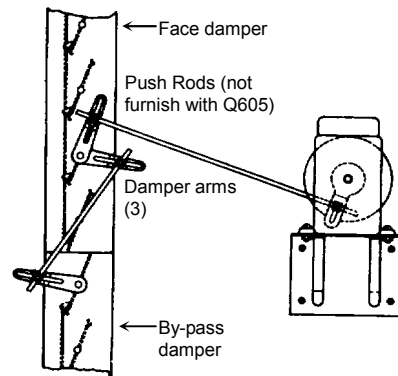


Fig. 7 Q605D Damper linkage

Modutrol motor mounted externally to operate a normally-closed face damper and a normally-open by-pass damper.

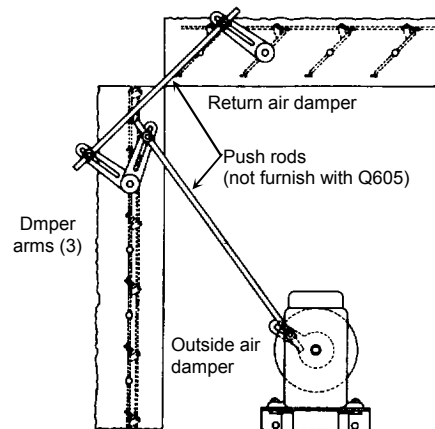


Fig. 8 Q605D Damper linkage

Modutrol motor mounted externally on the duct to control two louver dampers acting at right angles.

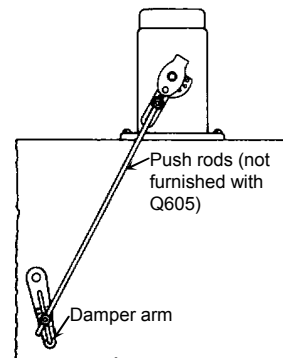


Fig. 9 Q605E Damper linkage →
Modutrol motor mounted directly on the duct
(without a mounting bracket) to control one louver
damper.

Linkage Adjustments

Graduation of the opening degree of damper arm can be used only when the following conditions are satisfied.
(See Fig. 10)

- (1) Full rotary angle of Modutrol Motor to be combined must be 160 degrees.
- (2) When the crankarm of Modutrol Motor is at the center of the full rotary angle, the position of damper arm must be in parallel with the center line of the long hole of crankarm and also the center of the maximum damper opening degrees desired.
- (3) Ball joint connecting crankarm with push rod must be mounted at the inner-most of the long hole of crankarm.

When the above-mentioned conditions are satisfied, ball joint on the side of damper is mounted at the graduation of the desired opening degree of damper arm, and Modutrol Motor goes into the full rotary angle operation, the damper arm can be turned at the angle of desired degrees.

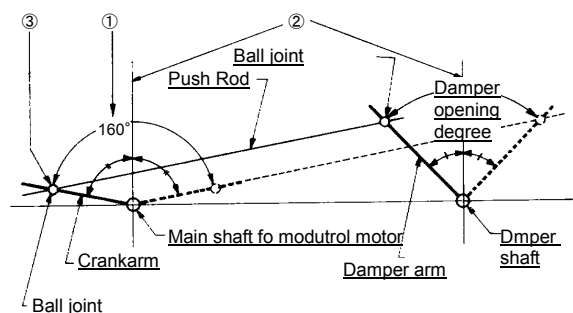


Fig. 10 Adjustment of linkage

For example, when ball joint is mounted at the graduation of 60 degrees and Modutrol Motor goes into the full rotary angle operation, damper arm will be turned at the angle of 60 degrees.

Setting of Damper Opening Degrees:

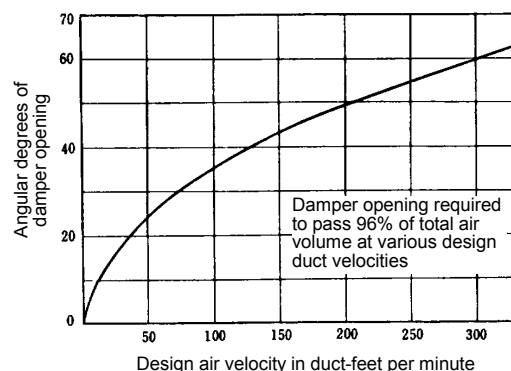
1. Two-position control

For two-position control, the ball joint on the side of damper should be set somewhere between 60 and 90 degrees mark on the damper arm so the damper will be either fully open or fully closed, depending on the demand of the controller.

2. Modulating control

For modulating control, the ball joint on the side of damper is mounted at the graduation, somewhere between 40 and 60 degrees mark on the damper arm. If the opening degrees of the damper arm are between 45 and 60 degrees, 96% of the maximum air volume always pass through the damper. In case of modulating control, therefore, it is not necessary to open the damper at the angle of more than 50 degrees. Even if the damper is opened at the angle of more than 60 degrees, there will be no change in its effect.

The following graph shows relations between air velocity in the designed duct of standard parallel blades damper and the damper opening degrees necessary for obtaining 96% of maximum air volume. The damper opening degrees are a little variable according to the kind of duct, shape of damper, and air pressure created by the fan. But, in most applications, the curve may be used as a guide to determine an initial setting.



Maintenance

Check for loose screws or deterioration once in half a year. Replace parts or product if disorder is found.

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Specifications are subject to change without notice.

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