

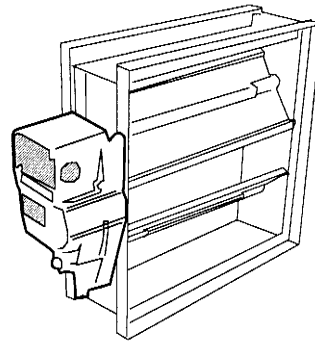
Motor Sizing and Selection for 3000 Series Air Control Damper

Use the following Load Multiplier Chart to select a damper motor for a specific damper.

Damper Series	Torque Loading	LOAD MULTIPLIER		
		Under 2 in. W.C. static or 1000 FPM Velocity	3 in. W.C. static or 2500 FPM Velocity	4 in. W.C. static or 3000 FPM Velocity
3000 OBD - Opposed blade, without edge seals, for non-tight close-off applications	3 in-lb/sq. ft.	1	1.5	2.0
3000 P - Parallel blade, without edge seals, for non-tight close-off applications	4 in-lb/sq. ft.	1	1.5	2.0
3000 OBDLL - Opposed blade, with edge seals, for tight close-off applications	5 in-lb/sq. ft.	1	1.5	2.0
3000 PLL - Parallel blade, with edge seals, for tight close-off applications	7 in-lb/sq. ft.	1	1.5	2.0

EXAMPLE: Opposed blade damper with tight shut-off and an area of 14 sq. ft. Design velocity thru the damper is 2200 FPM. From the chart above you find that the required torque loading is 5 in-lb/sq. ft. The required torque for the damper would be calculated as shown:

- Since the velocity is 2200 FPM, the torque loading will be increased by a load multiplier of 1.5.
- 5 in-lb/sq. ft. x 1.5 = 7.5 in-lb/sq. ft. actual torque load. 14 sq. ft. x 7.5 in-lb/sq. ft. = 105 in-lb required actuator torque
- The above torque loadings will work for most applications under 2 in.w.c. static pressure or 1000 FPM face velocity. For applications between this criteria and 3 in. w.c. or 2500 FPM, the torque loading should be increased by a multiplier of 1.5. If the applications calls for higher criteria up to 4 in. w.c. or 3000 FPM, use a multiplier of 2.0



Belimo Model	Torque (damper area*)	Spring Return	Power	Control Signal
SAF120	133 in-lb (35 sq.ft.)	yes	120v	on/off
SAF24	133 in-lb (35 sq.ft.)	yes	24v	on/off
SAF24-SR	133 in-lb (35 sq.ft.)	yes	24v	2-10VDC
SAF24-SR95	133 in-lb (35 sq.ft.)	yes	24v	0-135ohm
SNF120	60 in-lb (15 sq.ft.)	yes	120v	on/off
SNF24	60 in-lb (15 sq.ft.)	yes	24v	on/off
SNF24-SR	60 in-lb (15 sq.ft.)	yes	24v	2-10VDC
SLF120	35 in-lb (8 sq.ft.)	yes	120v	on/off
SLF24	35 in-lb (8 sq.ft.)	yes	24v	on/off
SLF24-SR	35 in-lb (8 sq.ft.)	yes	24v	2-10VDC
SGM24	266 in-lb (70 sq.ft.)	no	24v	on/off, floating
SGM24-SR	266 in-lb (70 sq.ft.)	no	24v	2-10VDC
SAM24	160 in-lb (40 sq.ft.)	no	24v	on/off, floating
SAM24-SR	160 in-lb (40 sq.ft.)	no	24v	2-10VDC
SLM24	35 in-lb (8 sq.ft.)	no	24v	on/off, floating
SLM24-SR	35 in-lb (8 sq.ft.)	no	24v	2-10VDC

*damper area based on parallel blade w/o edge seals, under 1000 FPM/2 in w.g.

Part # Accessory Description

- SZG-SM2** Crank arm adaptor kit for SSM
- SZG-AF** Crank arm adaptor kit for SAF or SNF
- SZG-GM2** Crank air adaptor kit for SGM
- SK4** Clamp for gripping up to 3/4" damper rod
- SKH6** Universal crank arm for SSKG6
- SKH8** Universal crank arm for SSKG8
- SKG6** Ball Joint, 5/16"
- SKG8** Ball Joint, 90 degree, 5/16"
- SZDB** Angle of Rotation Limiter for SSM
- SAV10-18** Universal shaft extension
- SZS100** Weather Shield (for all motors)
- SZG100** Universal mounting bracket ONLY
(Also required: SZG-SM2, SZG-GM2 or SZG-AF)
- SZG101** Universal mounting bracket (base)
(Also required: SZG-SM2, SZG-GM2 or SZG-AF)
- SZG102** Multiple actuator mounting bracket
For SSM, SGM, SAF, or SNF
For mounting two actuators to one shaft.
(The SAV10-18 may be needed)