

Section 3

Posistop X Class Brake

**WASH DOWN**

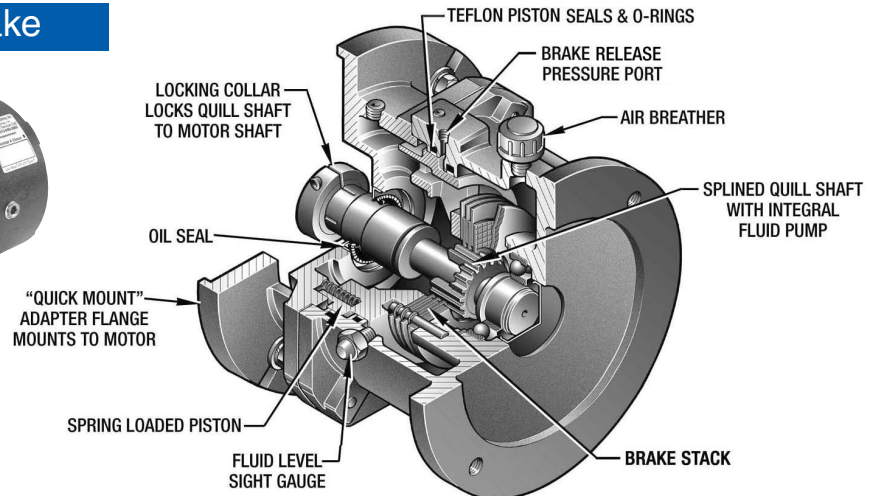
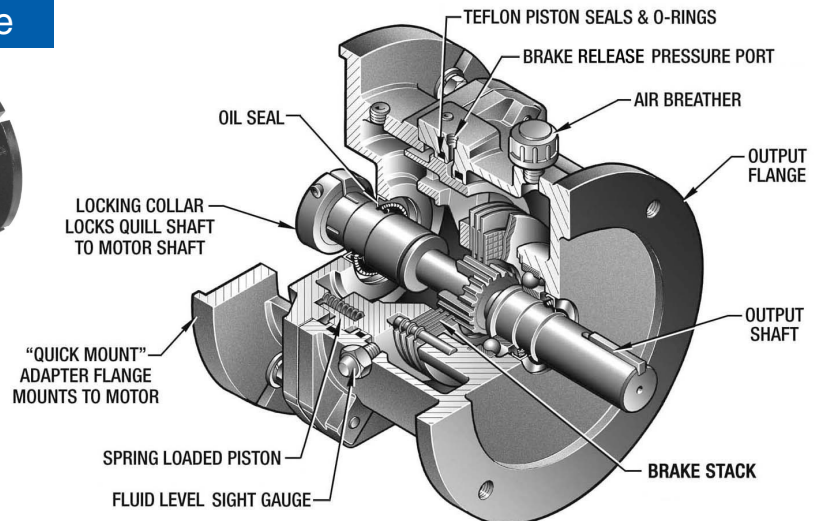
For wash down applications (USDA H-2) in food processing facilities, the optional wash down modification is available. This modification consists of nickel-plated shafts, stainless steel locking collar on the Clamped Split Quill, "Steel-It" epoxy coating, stainless steel fasteners, non-corrosive breather and sight gauge.

X-treme Performance - Now Value-Engineered

The *Posistop*® X Class Oil Shear Motor and Coupler Brakes are designed and tested to operate over 6 million trouble free cycles with only occasional oil changes and no adjustment - ever! This unheard of life expectancy allows the *Posistop*® X Class Motor and Coupler Brakes to be used on applications previously thought impossible to do using a brake.

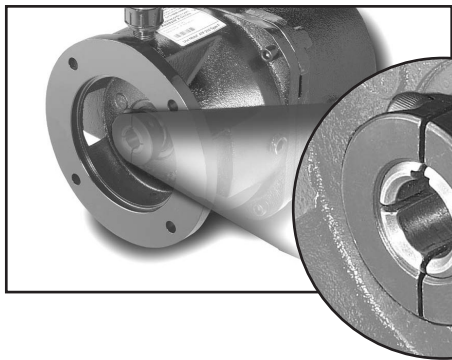
New *Posistop*® X Class Brakes let you eliminate the typical line stops, the frequent brake repairs and replacements. Here's the reliability you need for today's 24/7 manufacturing demands. Here's speed and precision that can let you run at higher cycle rates and quality levels, or design new machines for higher performance.

3

Motor Brake**Coupler Brake****X Class Features:**

- Packaged, fully assembled/tested
- Simplified double C-face or brake mounting
- Horizontal or vertical mounting
- Spring set, Air Release
- Multiple friction discs cooled in recirculating transmission fluid
- Low maintenance: annual oil change
- Hard-coat epoxy finish highly resistant to rust and chipping.
- 10X longer design life – designed & tested for over 6 million cycles
- Clamped-Split-Quill reduces keyway problems in aggressive applications

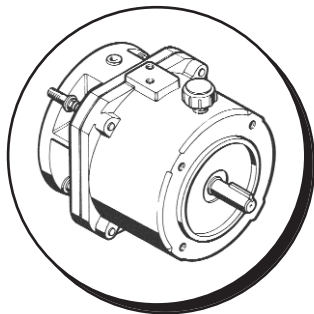
Simplified C-Face Mounting System



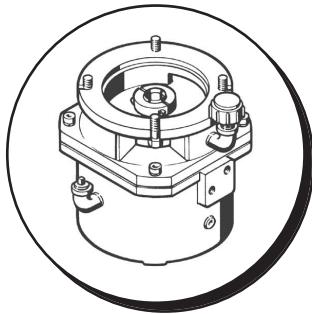
The *Posistop*® X Class C-face mount adds a new level of convenience to this classic configuration. An innovative Clamped-Split-Quill absolutely stops play that could deform the key and keyway in high-torque, rapid cycling applications. The new clamp design splits the input quill four ways at 90° intervals. A clamp collar fits over the quill to give 360° clamping effect when tightened down. The keyway is centered in one of the splits in the quill to securely lock the key on both sides.

Mounting Configurations

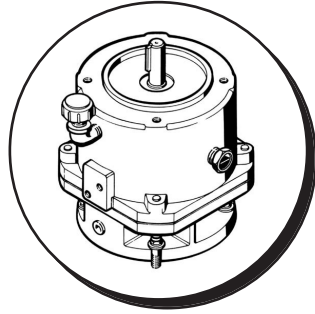
The *Posistop*® X Class brakes may be mounted in three configurations (horizontal, vertical input up and vertical input down) to allow the most flexibility in machine design.



HORIZONTAL



VERTICAL-INPUT UP



VERTICAL-INPUT DOWN

Unit Selection

The correct size X Class brakes can be selected using motor frame size and required brake torque. The following tables indicate the proper size X Class brake based on various motor frame sizes. Torque can be determined for moderate inertial loads using the formula:

$$\text{TORQUE (Lb. Ft.)} = \frac{\text{motor Hp} \times 5250 \times 1.5}{\text{RPM at Brake}}$$

Select a brake with a rating equal to or greater than the torque calculated. Several torque ratings are available in each brake size. Use the following tables to select the appropriate torque. Please contact your local distributor, rep or the factory for application assistance.

BRAKE SIZE	MOTOR FRAME SIZE										
	56	143T	145T	182T	184T	213T	215T	254T	256T	284T	286T
XB1	X	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
XB2	-----	X	X	-----	-----	-----	-----	-----	-----	-----	-----
XB3	-----	-----	-----	X	X	-----	-----	-----	-----	-----	-----
XB5	-----	-----	-----	-----	-----	X	X	X	X	-----	-----
XB6	-----	-----	-----	-----	-----	-----	-----	-----	-----	X	X

STATIC TORQUE (Lb. Ft.)

XB1	Spring Qty. (Light)			(2) Drive Plates	
	3	6	9		
	(2) Friction Discs	4	8		12
	10	20	30		
Pr. to Release (PSI)					
XB2	Spring Qty. (Light)			(3) Drive Plates	
	3	6	9		
	(3) Friction Discs	6	12		18
	15	30	46		
Pr. to Release (PSI)					

XB1 & XB2 TECHNICAL SPECIFICATIONS

	Thermal Rating (HP Sec/Min)	Max. KE per Engagement (Ft. Lbs.)	Piston Volume (Cu. In.)	Inertia WK ² (Lb. Ft. ²)	Max. Speed (RPM)	Weight (Lbs.)	Oil Capacity (Ounces)
XB1	21	7530	.9	0.0130	1800	31	28
XB2	39	11295					

3

XB3 TECHNICAL SPECIFICATIONS

XB3 STATIC TORQUE (Lb. Ft.)

		No. of Springs (Heavy)				
		3	6	9		
No. of Friction Discs	3	7	15	23	6	No. of Drive Plates
	4	10	20	30	8	
	5	12	25	38	6	
		17	34	50		
		Pressure to Release (PSI)				

	Thermal Rating (HP Sec/Min)	Max. KE per Engagement (Ft. Lbs.)	Piston Volume (Cu. In.)	Inertia WK ² (Lb. Ft. ²)	Max. Speed (RPM)	Weight (Lbs.)	Oil Capacity (Ounces)
42		11295	.9	.0174	1800	45	30
		15060		.0181			
		18825		.0189			

XB5 & XB6 STATIC TORQUE (Lb. Ft.)

		No. of Springs				
		3	6	9		
No. of Friction Discs	4	50	100	150	11	No. of Drive Plates
	5	65	130	185	10	
	6	80	160	240*	9	
	7	100	200	300*	8	
		16	32	48		
		Pressure to Release (PSI)				

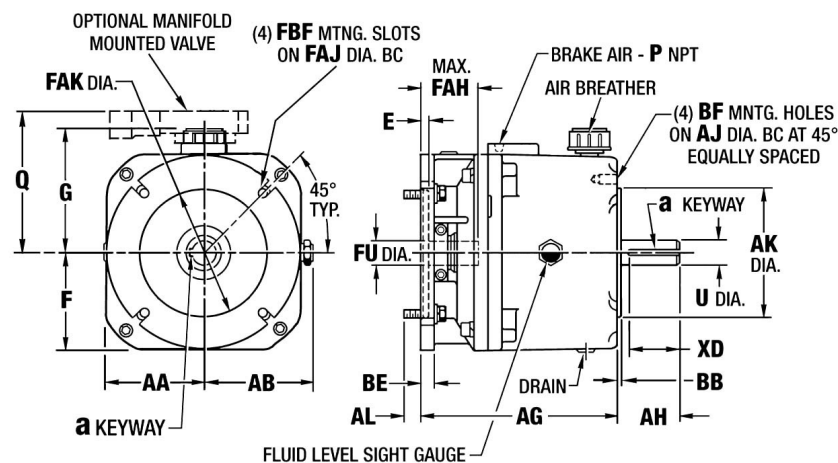
XB5 & XB6 TECHNICAL SPECIFICATIONS

Thermal Rating <i>(HP Sec/Min)</i>	Max. KE per Engagement <i>(Ft. Lbs.)</i>	Piston Volume <i>(Cu. In.)</i>	Inertia WK ² <i>(Lb. Ft.²)</i>	Max. Speed <i>(RPM)</i>	Weight <i>(Lbs.)</i>	Oil Capacity <i>(Ounces)</i>
CF	29103	3.92	0.2011	1800	140	110
	36378		0.2215			
	43654					
	50930					

* These Torques only available with
1-5/8" & 1-7/8" Dia. Shafts.

CF = Consult Factory

Coupler Brake Dimensions



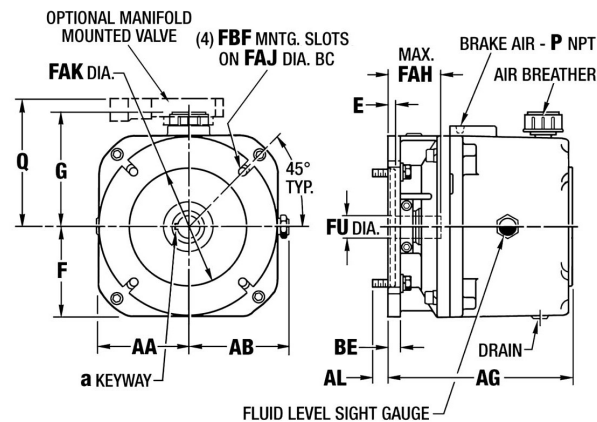
Brake Size	Coupler Brake Overall Dimensions (Inches)						
	AA	AB	AG	F	G	P	Q
XB1	3.51	3.77	7.00	3.44	4.50	1/8 NPT	4.94
XB2	4.44	4.44	8.46	4.44	5.08	1/8 NPT	4.94
XB3	5.00	5.00	11.45	5.50	6.64	1/4 NPT	----
XB5	5.50	5.50	----	----	----	----	----
XB6	5.50	5.50	----	----	----	----	----

Brake Size	Coupler Brake Input Dimensions (Inches)						
	AL	BE	E	FAH	FAJ	FAK	FU
XB1	.63	.50	.28	2.38	5.88	4.502	5/8
XB2	.57	.73	.19	2.94	7.25	8.502	7/8
XB3	.57	.73	.19	2.94	7.25	8.502	1-1/8
XB5	.71	.69	----	3.88	7.25	----	*
XB6	.71	.69	----	4.88	9.00	----	*

* Available Input Bores XB5: 1-1/8, 1-3/8 & 1-5/8
XB6: 1-5/8 & 1-7/8

Brake Size	Coupler Brake Output Dimensions (Inches)							
	a	AH	AJ	AK	BB	BF	U	XD
XB1	3/16 x 3/32	2.06	5.875	4.50	.16	3/8-16	5/8	1.50
XB2	1/4 x 1/8	2.12	7.250	8.50	.25	1/2-13	7/8	1.73
XB3	1/4 x 1/8	2.63	7.250	8.50	.25	1/2-13	1-1/8	2.00
XB5	5/16 x 5/32	2.75	7.250	8.50	.25	1/2-13	1-1/8	2.65
XB5	3/8 x 3/16	3.12	7.250	8.50	.25	1/2-13	1-3/8	3.00
XB5	1/2 x 1/4	3.75	7.250	8.50	.25	1/2-13	1-5/8	3.63
XB6	3/8 x 3/16	4.62	9.000	10.50	.25	1/2-13	1-5/8	3.69
XB6	1/2 x 1/4	4.37	9.000	10.50	.25	1/2-13	1-7/8	3.62

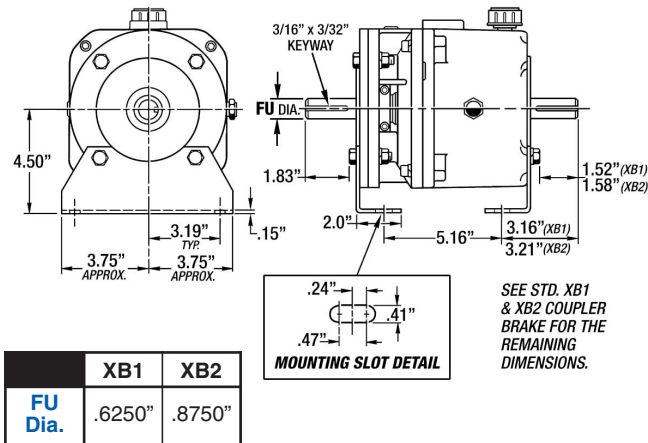
Motor Brake Dimensions



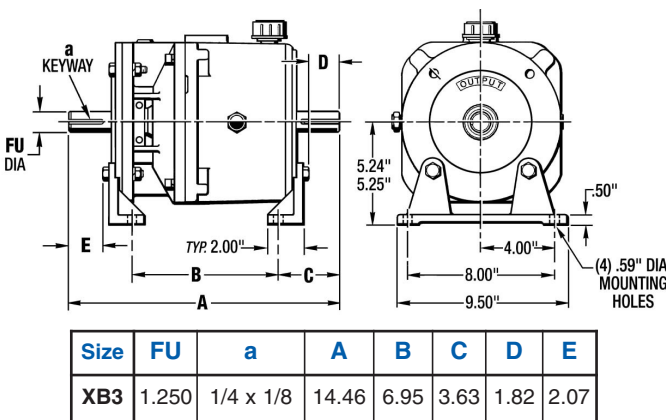
Brake Size	Motor Brake Dimensions (Inches)														
	AA	AB	AG	AL	BE	E	F	G	FAH	FAK	FU	a	FBF	FAJ	P
XB1	3.51	3.77	7.00	.63	.50	.28	3.44	4.50	2.38	4.50	5/8	3/16 x 3/32	7/16	5.875	1/8 NPT
XB2	4.44	4.44	8.46	.57	.56	.73	4.44	4.50	2.94	8.50	7/8	1/4 x 1/8	9/16	7.250	1/8 NPT
XB3	5.00	5.00	11.45	.57	.56	.73	4.44	4.50	2.94	8.50	1-1/8	1/4 x 1/8	9/16	7.250	1/8 NPT
XB5	5.50	5.50	11.70	.71	.69	---	5.50	6.64	3.88	---	1-1/8	1/4 x 1/8	9/16	7.250	1/4 NPT
XB5	5.50	5.50	11.70	.71	.69	---	5.50	6.64	3.88	---	1-3/8	5/16 x 5/32	9/16	7.250	1/4 NPT
XB5	5.50	5.50	11.70	.71	.69	---	5.50	6.64	3.88	---	1-5/8	3/8 x 3/16	9/16	7.250	1/4 NPT
XB6	5.50	5.50	11.70	.71	.69	---	5.50	6.64	4.88	---	1-5/8	3/8 x 3/16	9/16	7.250	1/4 NPT
XB6	5.50	5.50	11.70	.71	.69	---	5.50	6.64	4.88	---	1-7/8	1/2 x 1/4	9/16	7.250	1/4 NPT

XB1, XB2, & XB3 Coupler Brake Dimensions (With Mounting Feet and Male Input Shaft)

Sizes XB1 and XB2



Sizes XB3



Accessories and Kits

To make the X Class Brakes adaptable to many applications, several accessories are available.

Mounting Foot Kit

A foot kit is available for the Coupler Brake. The foot kit includes two feet that bolt onto the brake. They are made of heavy gauge steel XB1 and XB2, or cast iron XB3, and hard coat epoxy coated.

Male Input Shaft Assembly

For applications where a belt drive may be required on the input, an input shaft assembly is available to convert the quill input to an extended shaft. It consists of a mounting plate with a bearing and stainless steel shaft that bolts to the C-Face mounting flange. The shaft is then locked into the Split Clamped Quill.

Manifold Mounted Valve

Add the convenience and performance of a Manifold Mounted Valve. Mounting the valve directly on the unit eliminates extra plumbing, improves response time, increases cycle rate, and improves positioning accuracy.



Foot Mounting Kit

XB1 & XB2 Foot Kit (Pair of feet)	.02-X1-FT-KIT
XB1 & XB2 Foot Kit Washdown	.02-X1-FT-KITW (Steel It Epoxy)
XB3 Foot Kit (Pair of feet)	.02-X4-FT-KIT
XB3 Foot Kit Washdown	.02-X4-FT-KITW (Steel It Epoxy)

Extended Input Shaft Assembly

Input Shaft Ass'y. XB1 5/8" shaft	.02-X1-IA-KIT
Input Shaft Ass'y. XB1 5/8" Shaft, Washdown	.02-X1-IA-KITW
Input Shaft Ass'y. XB2 7/8" Shaft	.02-X2-IA-KIT
Input Shaft Ass'y. XB2 7/8" Shaft, Washdown	.02-X2-IA-KITW
Input Shaft Ass'y. XB3 1-1/8" Shaft	.02-X3-IA-KIT
Input Shaft Ass'y. XB3 1-1/8" Shaft, Washdown	.02-X3-IA-KITW

Pneumatic Control Valves

Control Valve, 434A Series, Manifold Mounted 120 VAC/60Hz, 1.0 Cv	.09-56-A3NN-00
Control Valve, 434A Series, Manifold Mounted 24 VDC, 1.0 Cv	.09-56-A1NN-00
Control Valve, 35A Series, A logic, 120 VAC/60Hz, .25 Cv, Ship Loose	.01-56-147-08
Control Valve, 35A Series, A logic, 7.3 watt 24 VDC, .21 Cv, Ship Loose	.01-56-148-08

Note: All valves are washdown duty

How To Order Your Posistop X Class Motor or Coupler Brake

Posistop X Class Brake

Unit Size (1)

1 = Size 1
2 = Size 2
3 = Size 3
5 = Size 5
6 = Size 6

Input Module (2)

	Motor Frame	
2 = 5/8" U, 4-1/2" AK	56C	XB1 & XB2
3 = 7/8" U, 4-1/2" AK	143TC, 145TC	XB1 & XB2
4 = 1-1/8" U, 8-1/2" AK	182TC, 184TC	XB3, XB5
5 = 1-3/8" U, 8-1/2" AK	213TC, 215TC	XB5
6 = 1-5/8" U, 8-1/2" AK	254TC, 256TC	XB5
7 = 1-5/8" U, 10-1/2" AK	284C, 286C	XB6
8 = 1-7/8" U, 10-1/2" AK	284TC, 286TC	XB6

Spring Set Brake (3)

Torque (5,6,7) Lb. Ft.
Example:
6 Lb. Ft. = **006**
12 Lb. Ft. = **012**

Output Module (4)

	Motor Frame	
0 = Motor Brake		
2 = 5/8" U, 4-1/2" AK	56C	XB1 & XB2
3 = 7/8" U, 4-1/2" AK	143TC, 145TC	XB1 & XB2
4 = 1-1/8" U, 8-1/2" AK	182TC, 184TC	XB3, XB5
5 = 1-3/8" U, 8-1/2" AK	213TC, 215CT	XB5
6 = 1-5/8" U, 8-1/2" AK	254TC, 256TC	XB5
7 = 1-5/8" U, 10-1/2" AK	254TC, 256TC	XB6
8 = 1-7/8" U, 10-1/2" AK	284TC, 286TC	XB6

Options (9)

N = None**
* D = Vert. Input Down
* U = Vert. Input Up

Package Type (8)

S = Standard
F = Food Grade, Fluid (USDA H-2)
W = Washdown, Plated Shafts, SS Hardware, Steel-It Epoxy Paint, Food Grade Fluid (USDA H-2)
E = Washdown, Plated Shafts, SS Hardware, White Epoxy Paint, Food Grade Fluid (USDA H-2)

NOTE: Accessories and Kits shown above must be ordered separately.

** N is Horizontal mounting for XB5 & XB6
* Req'd. for XB5 & XB6. All others use N