

Section 1

Posidyne® X Class Clutch/Brakes



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.

Value Engineered for Highest Performance at Lowest Cost per Cycle

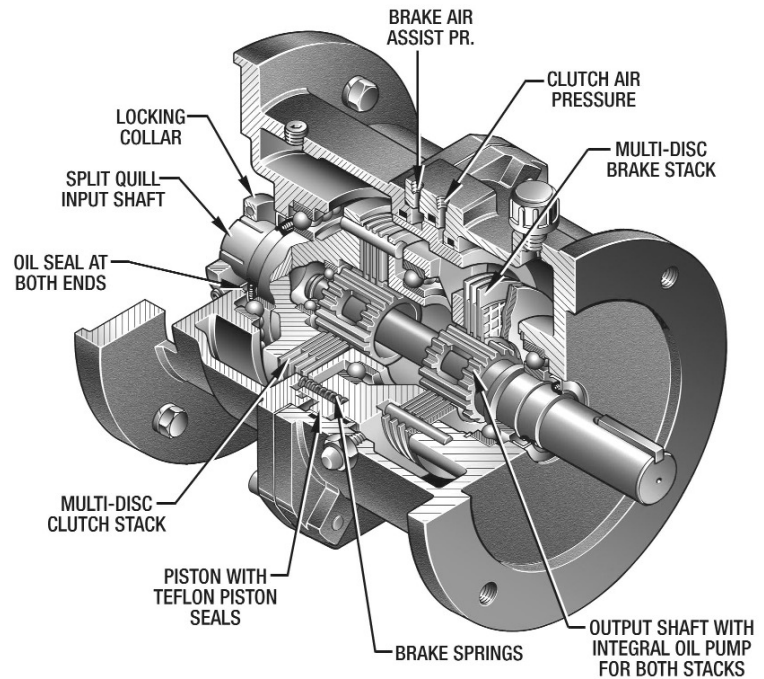
The Posidyne® X Class Clutch/Brakes are designed and tested to operate over 40 million trouble free cycles with only occasional oil changes and no adjustment - ever! This unheard of life expectancy allows the Posidyne® X Class Clutch/Brakes to be used on applications previously thought impossible to do using a clutch/brake. How many cycles do you require to meet your machines design life? Use the total Life Cycle

Calculator shown below to determine expected life for your application.

New Posidyne® X Class Clutch/Brakes let you eliminate the typical line stops, the frequent clutch/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.

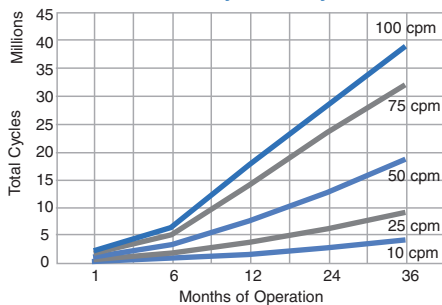
X Class Features:

- Packaged, fully assembled/tested
- Simplified double C-face mounting
- Horizontal or vertical mounting
- Five operating logics: 1. Air-set Clutch/Spring-set Brake; 2. Air-set Clutch/Air-set brake; 3. Clutch only; 4. Air-set Clutch/Light spring-set brake with air assist. 5. Air-set Clutch/Med. spring-set brake with air assist
- Multiple friction discs cooled in recirculating transmission fluid
- Low maintenance: annual oil change
- Hard-coat epoxy finish highly resistant to rust and chipping.
- 2X-10X higher cycle rates – 200 CPM is not unusual
- 10X longer design life – designed & tested for over 40 million cycles
- 4-5X higher thermal rating for fade-free stopping, no burned clutches
- Clamped-Split-Quill reduces key-way problems in aggressive applications

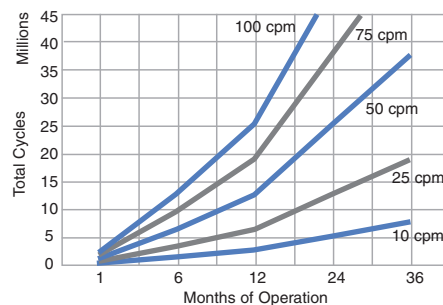


Total Cycle Calculator

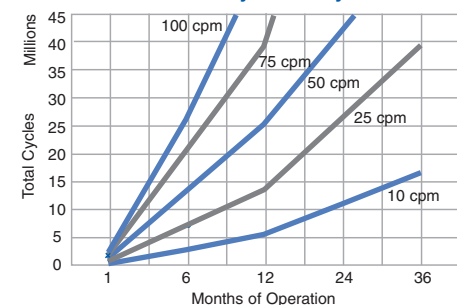
8 Hours/Day • 5 Days/Week



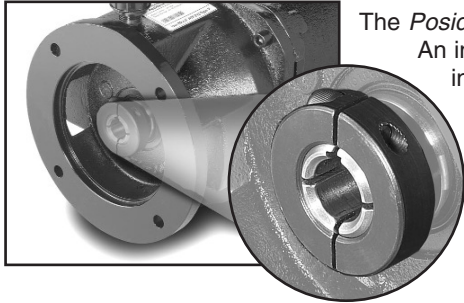
16 Hours/Day • 5 Days/Week



24 Hours/Day • 7 Days/Week



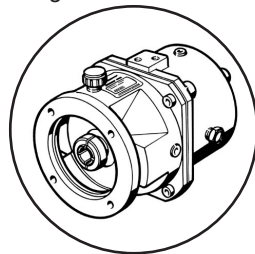
1 Simplified C-Face Mounting System



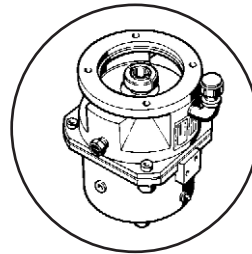
The Posidyne® X Class C-face mount adds a new level of convenience to this classic configuration. An innovative Clamped-Split-Quill absolutely stops play that could deform the key and keyway in high-torque, rapid cycling applications. The new clamp design splits the input quill four ways at 90° intervals. 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

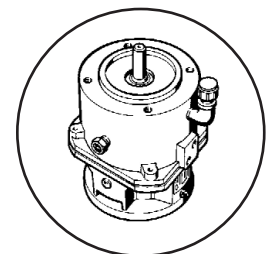
The Posidyne® X Class clutch/brakes may be mounted in three configurations (horizontal, vertical input up and vertical input down) to allow the most flexibility in machine design.



HORIZONTAL



VERTICAL-INPUT UP
(Not available in X4)



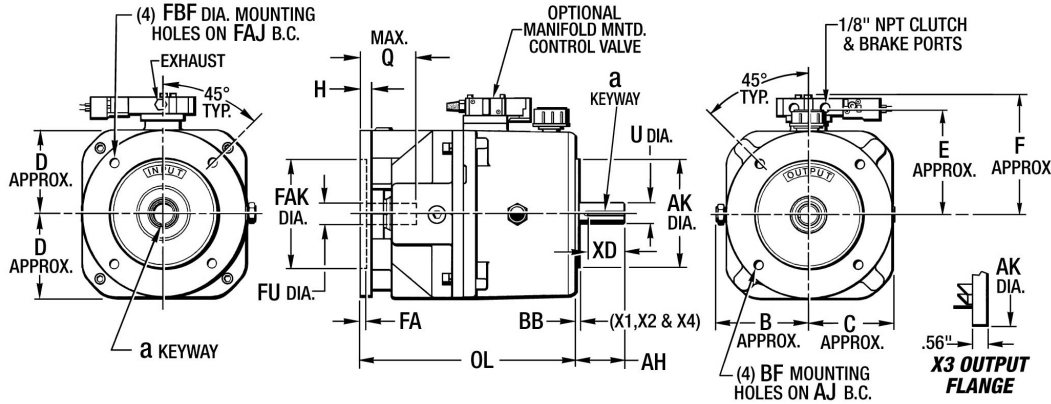
VERTICAL-INPUT DOWN
(Not Available in X4)

Operating and Technical Specifications

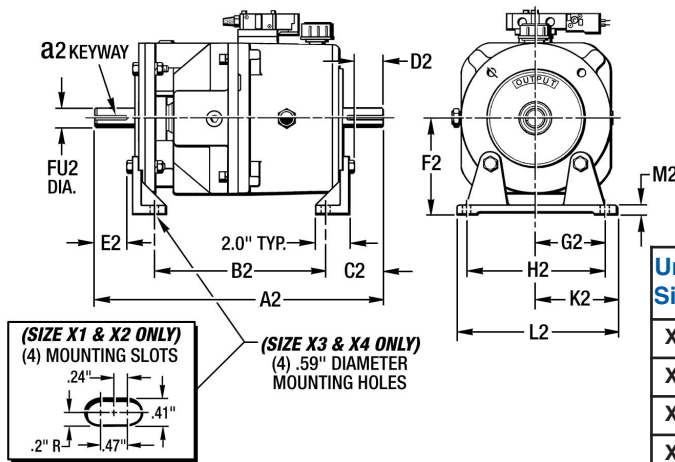
Size	Logic	Clutch Torque			Brake Torque			Max RPM	Max KE per Engmt. (Ft. Lbs.)	Avg. Thermal HP			Cyclic Inertia (Lb. Ft. ²)	Air per Engmt (Cu. In.)	Oil Capacity (Oz)			Overhung Load Cap. (Lbs. Pull)	Weight (Ft. Lbs.)
		Static (Lb. In.)	Dyn. (Lb. In.)	Air Pr. (PSI)	Static (Lb. In.)	Dyn. (Lb. In.)	Air Pr. (PSI)			Horiz.	VIU	VID			Horiz.	VIU	VID		
X1	S	99	85	70	106	90	45	1800	3,765	.40	.40	.40	.005	1.52	37	54	50	167	42
	SA	90	77	80	104	88	30												
	P	110	95	60	110	95	60												
	A	90	77	80	49	42	-----												
	C	99	85	70	-----	-----	-----												
X2	S	198	170	70	213	181	45	1800	7,530	.50	.40	.44	.006	1.52	37	54	50	167	42
	SA	179	154	80	208	177	40												
	P	220	189	60	220	189	60												
	A	179	154	80	98	84	-----												
	C	198	170	70	-----	-----	-----												
X3	S	468	402	80	531	451	60	1800	15,060	.41	.40	.34	.011	1.61	53	59	59	464	57
	SA	359	304	80	480	408	40												
	P	512	440	70	512	440	70												
	A	359	309	80	189	163	-----												
	C	468	402	80	-----	-----	-----												
X4	P	1039	894	60	1039	894	60	1800	21,150	.66	N/A	N/A	.049	2.21	76	N/A	N/A	597	103
	A	777	668	80	444	382	-----												
	C	1000	860	70	-----	-----	-----												

- 1.2
- VIU = Vertical Input Up • VID = Vertical Input Down
 - THP Ratings developed @ 100° F maximum temperature rise and 226° F maximum oil temperature.
 - Overhung Load Capacity based on load @ midpoint of output shaft extension.

Dimensional Specifications



Unit Size	Input Dimensions							Keyway a	Output Dimensions					Overall Dimensions							
	FAK	FA	FU	H	Q	FBF	FAJ		AK	BB	U	AH	XD	BF	AJ	B	C	D	E	F	OL
X1	4.500	.28	.625	.50	2.38	.41	5.875	3/16 x 3/32	4.500	.16	.625	2.06	1.50	3/8 x .75	5.875	3.87	3.44	3.44	4.29	4.94	9.00
X2			.875								.875										
X3	8.500	.19	1.125	.80	2.75	.53	7.250	1/4 x 1/8	8.500	---	1.125	2.63	2.12	1/2 x 1.00	7.250	4.44	4.44	4.50	5.09	4.94	11.00
X4	8.500	.19	1.375	.63	3.13	.53	7.250	5/16 x 5/32	8.500	.25	1.375	3.13	2.50	1/2 x 1.00	7.250	5.00	4.50	4.50	5.67	6.00	11.75



Reduced Reaction Time - By mounting the valve directly on the unit, the reaction time is reduced as much as 15 milliseconds. The **Maximum Cycle Rate** is also then increased considerably.

Increased Consistency - This reduction in response time also leads to a more consistent and accurate stopping position in critical applications.

Reduced Cost - Using the manifold mounted valve eliminates the need to purchase a valve, mounting the valve and connecting air lines to the unit.

Unit Size	Dimensions (Inches)												
	A2	B2	C2	D2	E2	F2	G2	H2	K2	L2	M2	FU2	a2
X1	13.69	7.16	3.16	1.50	1.83	4.50	3.19	6.38	3.75	7.50	.15	.6250	3/16 x 3/32
X2	13.75		3.21									.8750	
X3	17.00	9.50	3.63	1.88	2.20	5.25	4.00	8.00	4.75	9.50	.50	1.1250	1/4 x 1/8
X4	18.62	10.50	4.13	2.36	2.62	5.25	4.00	8.00	4.75	9.50	.50	1.375	5/16 x 5/32

Unit Size Selection Chart

The correct size Posidyne X Class Clutch/Brake can generally be selected by the HP and RPM of the motor by using the following Selection Chart. Find the correct motor HP and speed and follow down to the correct X Class Clutch/Brake.

HP	1800 RPM										1200 RPM					
	1/2	3/4	1	1-1/2	2	3	5	7-1/2	10	1/2	3/4	1	1-1/2	2	3	5
X1	X1	X1	X1							X1	X1					
X2			X2	X2	X2						X2	X2	X2			
X3						X3	X3					X3	X3			
X4								X4	X4						X4	X4

When high cycle rates are required (40 cpm +) a thermal HP calculation should be done to assure heat dissipation capability.

Contact Force Control for more information or assistance with your application.

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Accessories and Kits



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

Mounting Foot Kit

A foot kit is available for those applications where the *Posidyne* X Class clutch/brake may not be mounted on a C-Face motor or reducer. The foot kit includes two feet that bolt onto the clutch/brake. They are made of heavy gauge steel X1 and X2, or cast iron X3 and X4, and hard coat epoxy coated. Note: The *Posidyne* X Class Clutch/Brake cannot be C-Faced mounted to the motor or reducer with feet installed.

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

X1 & X2 Foot Kit (Pair of feet)	.02-X1-FT-KIT
X1 & X2 Foot Kit Washdown (Steel It Epoxy)	.02-X1-FT-KITW
X3 & X4 Foot Kit (Pair of feet)	.02-X4-FT-KIT
X3 & X4 Foot Kit Washdown (Steel It Epoxy)	.02-X4-FT-KITW

Extended Input Shaft Assembly

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

Extended Input Shaft Assembly, Cont.

Input Shaft Ass'y. X4 1-3/8" Shaft	.02-X4-IA-KIT
Input Shaft Ass'y. X4 1-3/8" Shaft, Washdown	.02-X4-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, explosion proof available.

How To Order Your Posidyne X Class Clutch/Brake

