

Section 2

Posidyne® Clutch/Brakes

Major Advantages of a Posidyne...

2

Today's **Posidyne** is a modern motion control device capable of rapid and precise stopping, starting, reversing, speed changing and positioning. The **Posidyne Clutch/Brake** being designed to handle the energy of rapid acceleration and deceleration has a field proven history under normal use demonstrating its ability to reduce maintenance normally associated with cycling applications. Use of a **Posidyne** also reduces stress on motors and other components in the machine.

1. Higher Production Rates

a. Higher cycle rates - because the **Posidyne** can cycle at rates faster than most prime movers, machine speeds can be increased for higher production levels.

b. Reduced downtime - The **Posidyne's** patented fluid recirculation system, and quality components, enables a long life with a minimum of maintenance. The reduced loads and stress on other components can also reduce maintenance on those items. This reduced downtime means more production time, increasing overall production.

2. Energy Savings

a. By reducing the high starting inrush currents and associated power factor imbalance, energy costs can be reduced.

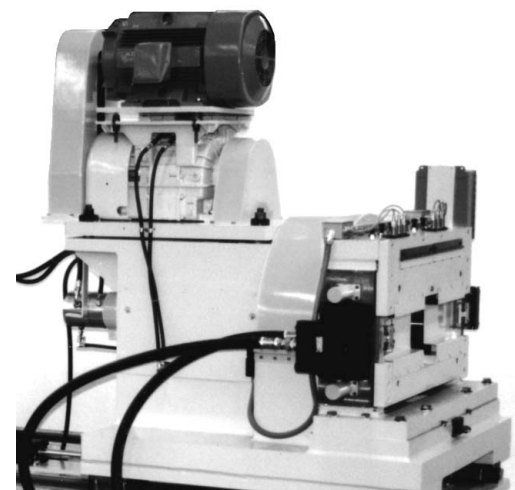
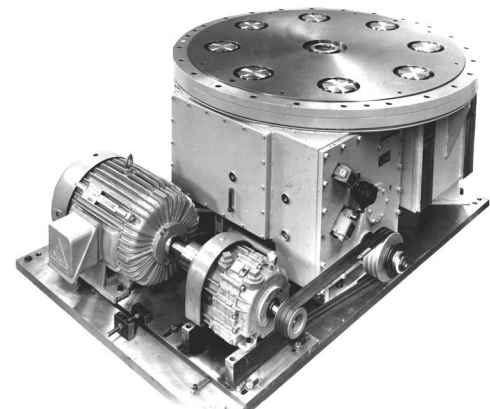
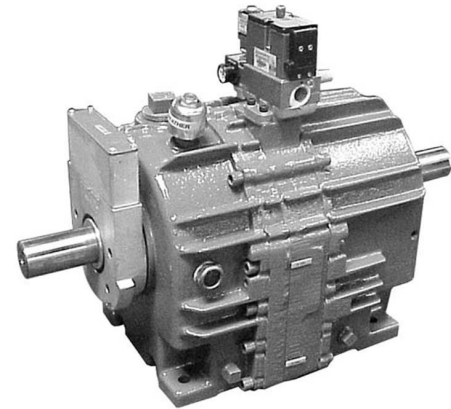
3. Hostile Environments

a. The totally enclosed sealed unit prevents contamination by chips, dust, dirt, chemicals, coolant, caustic washdown, weather, etc.

b. The enclosed unit also prevents contamination of the surrounding environment.

4. High Torque - Small Package

a. The multiple disc design provides a small package with high torque capacity. Because inertia increases by the fourth power of the diameter as torque increases proportional to the diameter or number of surfaces the **Posidyne's** multiple disc design increases torque capacity with a minimum increase in inertia.



b. The recirculating fluid efficiently removes the heat of engagement from the working surfaces for increased capacity.

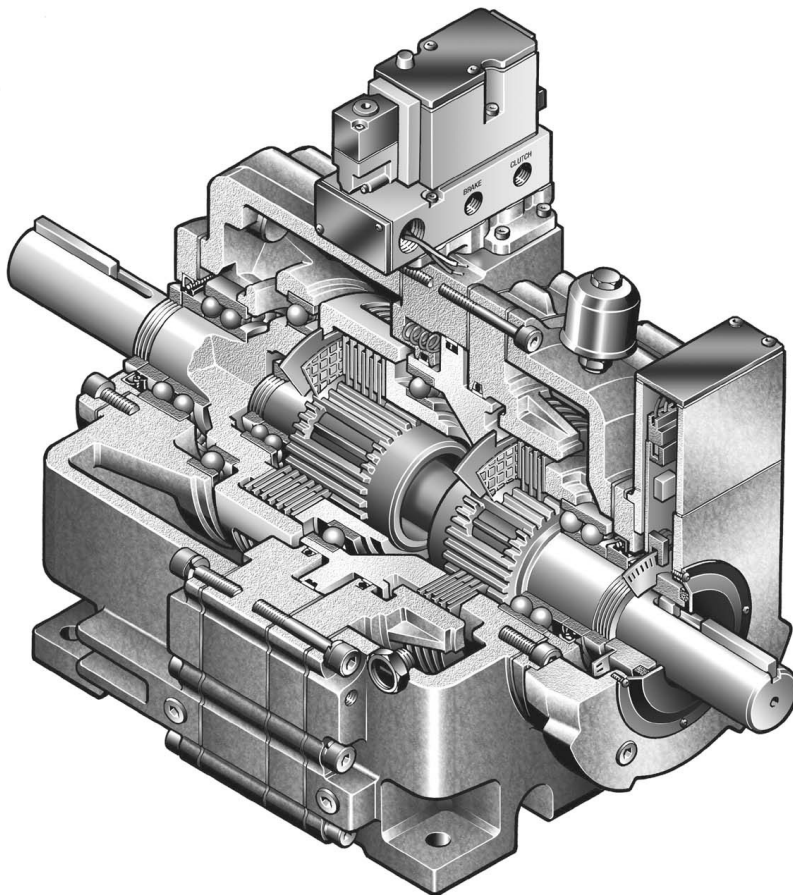
5. Precision Control

a. Due to the simple actuation system, torque in the clutch and brake can be precisely controlled. Adjustment for rapid or soft starts and stops is simple with a *Posidyne*.

b. Advanced friction materials provide consistent and repeatable output torque for controlled starts and stops especially important for positioning applications.

c. Many different standard control logic options are available, ranging from fully adjustable torque control to fixed settings and combinations of both.

d. Encoders provided for CLPC (*Closed Loop Position Control*) option.



Size 03 Posidyne Clutch/Brake shown with an Optical Encoder for Precision Positioning Control and a Manifold Mounted Control Valve for Ultra-Quick Response Time.

6. Ultra-Quick Response

a. Manifold mounted control valves reduce response time by eliminating hoses and fittings.

b. New lightweight pistons in the 1.5 *Posidyne* for a faster response time.

c. DC valve solenoid for further improvement of control response and consistency.

7. Ease of Installation

a. Totally self contained and ready to use. Installation requires only mounting to a base and coupling to the prime mover and load. Normal care in alignment such as that used when installing a motor or gear reducer is all that is required.

b. NEMA C-Face and piggyback mounting options are available for many of the sizes.

8. Flexibility

a. **9-Basic Unit Sizes** - 1/2 to 250 HP to cover the majority of applications including high horsepower.

b. **7-Control Logic Options** - for flexibility in type of control required.

c. **4-Cooling Systems** - Standard, fan cooled, water cooled and forced lube for any degree of thermal load.

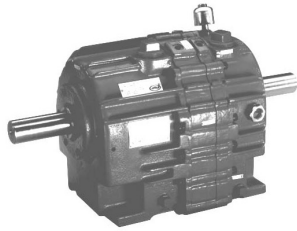
d. **8-Mounting Arrangements** - Basic, C-Face input, C-Face output, piggyback, vertical up, vertical down and 2 wall mounts to fit even the most difficult applications.

9. Easy Maintenance

a. Normal maintenance of the *Posidyne* requires only periodic checking and maintaining the oil level. A simple method of checking stack wear is also provided to predict and schedule maintenance. Since wear is minimal in normal applications, out of service time is greatly reduced.

We at Force Control Industries strive to make our Clutch/Brake Products as reliable and maintenance free as other components in the drive system. In many cases this has been done so well that the *Posidyne* may actually outlast many other components.

Posidyne Clutch/Brake Drives

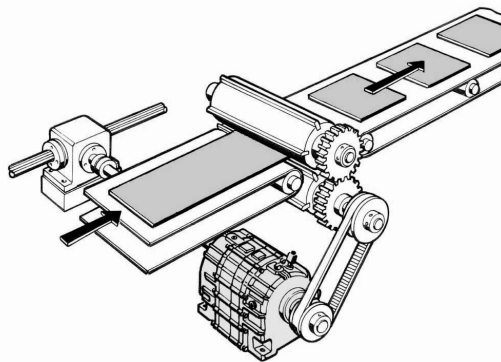


Typical Applications

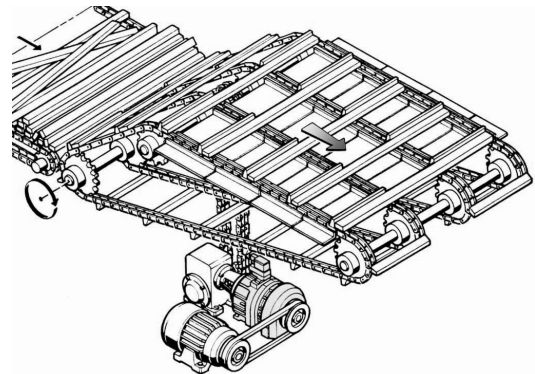
2

Posidyne clutch and brake drives may be found on a large variety of applications serving many industries world wide. Their uses vary from indexing and positioning of simple conveyors, hoists and tables to cycle on demand control for cam type devices. A few sample applications are shown for your reference.

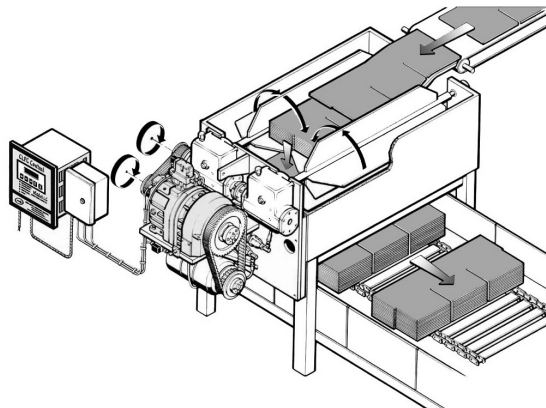
ROTARY CUT-OFF



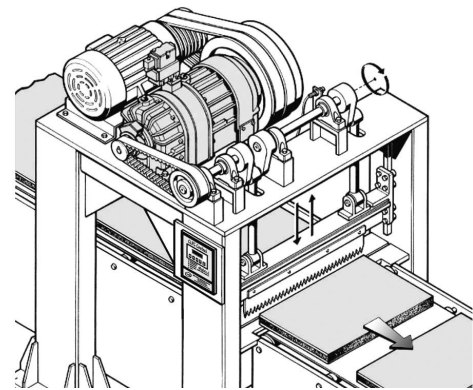
UNSCRAMBLER CONVEYOR



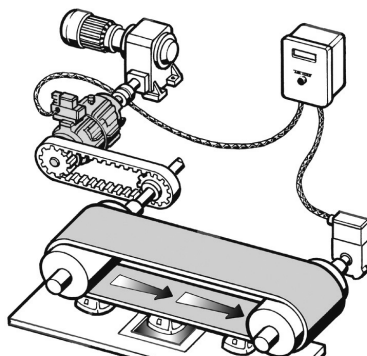
CATCHING ROOFING SHINGLES



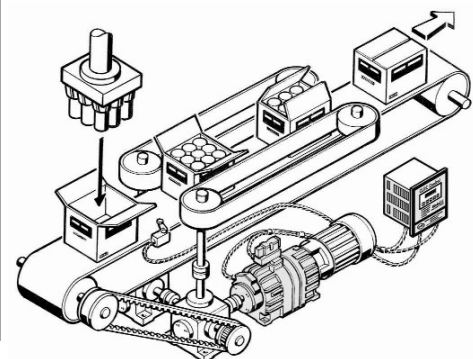
GUILLOTINE SHEAR



HEADLAMP INSPECTION



CASE PACKER



2



Posidyne Clutch/Brake

Size 1.5

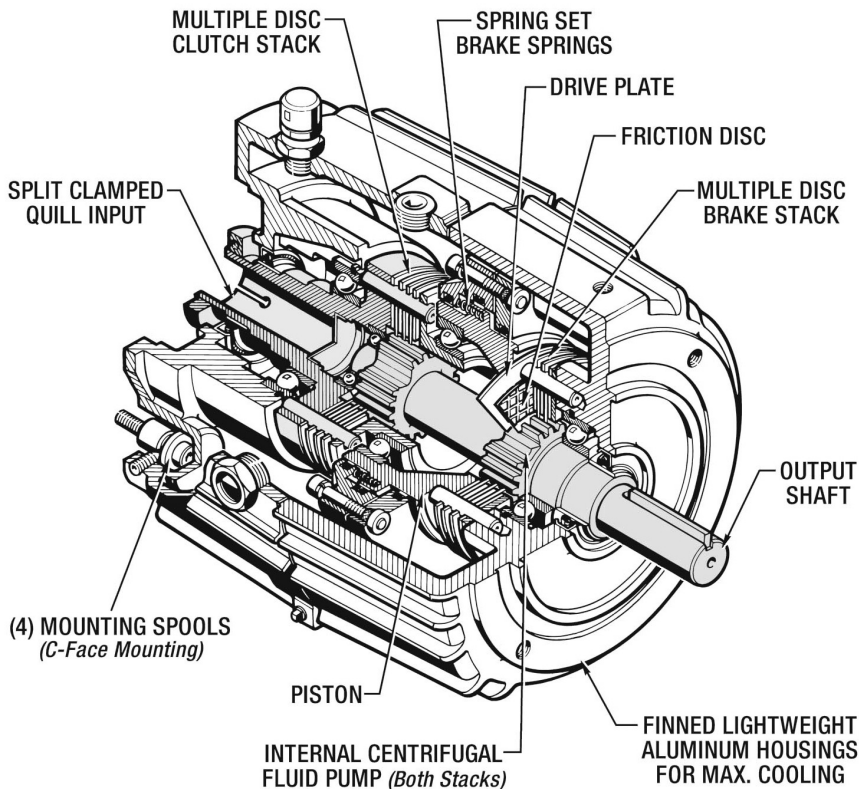
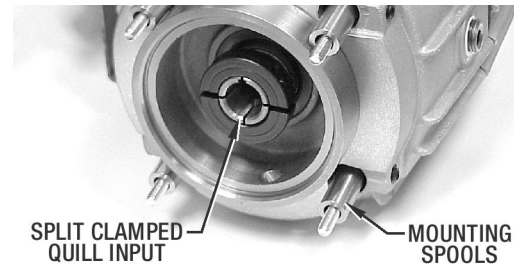
World renowned oil shear clutch/brakes are now available for fractional to 3 HP applications.

Posidyne Clutch/Brakes are the standard for performance and durability where there is no time for downtime. Now this performance is available for your smaller 1/2 to 3 HP drives for conveyors, packaging machines, food processing applications and extruder cut-offs.

The 1.5 *Posidyne* boosts the cycle rate, accuracy and life of your fractional to 3 HP drives. They bring oil shear durability to a new level of performance and convenience in a compact, lightweight, double C-Face mounted package.

- The new split clamped quill input eliminates key and keyway problems associated with competitive clutch/brakes. By splitting the quill shaft and using a locking collar the quill is **clamped tightly 360°** on the motor shaft.
- The minimal inertia of cyclic parts, combined with high torque handling capability, puts more usable horsepower into your drive - **quicker**.
- The 1.5 *Posidyne* can cycle up to 600 times per minute, and with oil shear technology can last for years, making them perfect for those high cycle applications that may have required more expensive alternative drives in the past.

- High heat dissipation capability ensures long life and consistent accuracy in 24 hour operations.
- Convenient options such as foot mounting kits, manifold mounted valves and optical encoders are available to fit most any application.



FEATURES...

- Rapid-fire cycle rates of 600 cpm and more capability with the manifold mounted valve.
- Consistent accuracy with virtually no fade.
- Ideal in hostile or washdown environments. Nickel-plated shafts and anodized housings available.
- Low cyclic inertia of only .012 Lb.Ft.² for ultra-quick acceleration with maximum usable horsepower.
- Pneumatic actuation for easy control of acceleration/deceleration rates by simply adjusting the air pressure. (See Section 6)
- Smooth and quiet engagements with Oil Shear Technology.
- Usable with the **CLPC-LC™** Closed Loop Positioning Control with an Optical Encoder for optimal positioning accuracy.
- Easy access C-Face mounting spool design.

Larger Sizes - Page 2.9
 Selection Procedure - Section 15
 Pressure vs. Torque Specifications - Section 15, Page 15.6
 Engineering Information - Section 16

Specifications - Posidyne Clutch/Brake

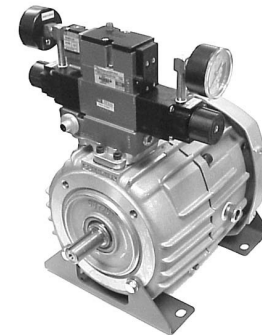
Size 1.5

Size	Logic	Max. Clutch Torque (Lb. In.)			Max. Brake Torque (Lb. In.)					Max RPM	Max KE per Engmt. (Ft. Lbs.)	Avg. Therm. H.P.		Air Vol. per Engmt. (Cu. In.)	Oil Cap. (Qts.)		Inertia of Cyclic Parts (Lb. Ft. ²)
		Static	Dyn.	Max Air Pr.	Springs Only		With Air Assist					Cooling			Horiz	Vert	
					Static	Dyn.	Static	Dyn.	Max Air Pr.			Basic	Fan				
1.5	S	427	367	60 psi	32	27	484	416	60 psi	3600	11,230	Horiz. .25 .55 ----- Vert. --- ---	.50	2.0	2.5	.012	
	SA	387	333	70 psi	110	95	492	423	70 psi								
	A	387	333	70 psi	110	95	---	---	---								
	B	240	206	70 psi	220	189	---	---	---								
	C	427	367	60 psi	---	---	---	---	---								
	P	464	399	70 psi	---	---	464	399	70 psi								

NOTES:

Thermal HP ratings based on 1800 RPM, 80° F ambient, 220° F max. oil temp.

Air pressures are at maximum. Operating pressures are generally much lower. Refer to Section 15 "Pressure vs. Static Torque" charts on page 15.7 for proper pressure settings.



1.5 Posidyne shown with Manifold Mounted Control Valve.

Mounting the control valve directly on the Posidyne improves response time with the shortest possible air circuit. It also makes installation quick and easy.

OVERHUNG LOAD CAPACITY (Lbs. Pull)**

Size	Male Input Shaft				Output Shaft							
	300 RPM	1200 RPM*	1800 RPM	3600 RPM	300 RPM		1200 RPM		1800 RPM		3600 RPM	
					Without Encoder	With Encoder	Without Encoder	With Encoder	Without Encoder	With Encoder	Without Encoder	With Encoder
1.5	275	175	150	120	360	245	360	245	335	235	265	186

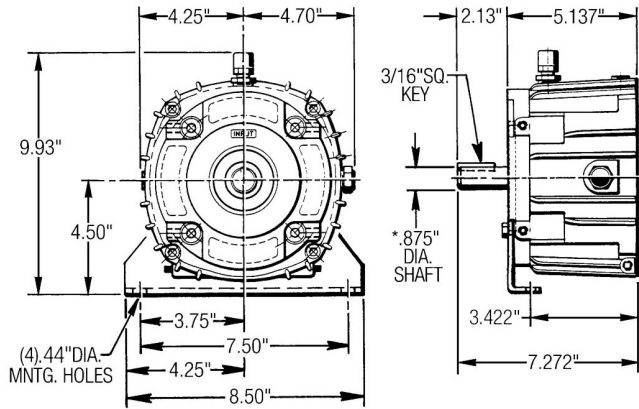
** - At midpoint of shaft extension.

Input Module Dimensions - 1.5 Posidyne® Clutch/Brake (Inches)

2

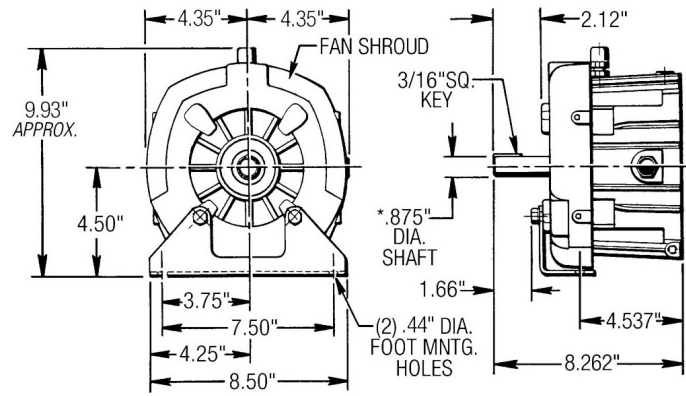
INPUT MODULE #1

7/8" DIA. MALE EXTENDED INPUT SHAFT & FOOT MOUNT



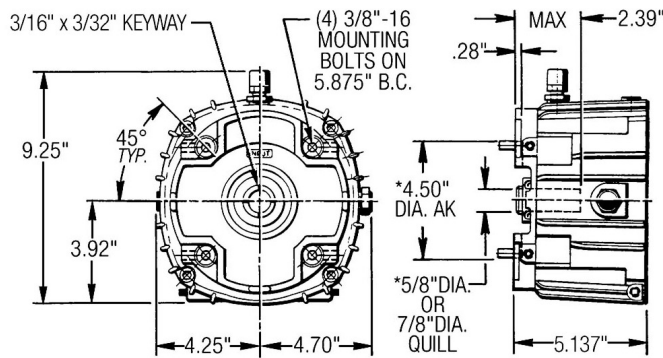
INPUT MODULE #1 WITH FAN COOLING

7/8" DIA. MALE EXTENDED INPUT SHAFT & FOOT MOUNT



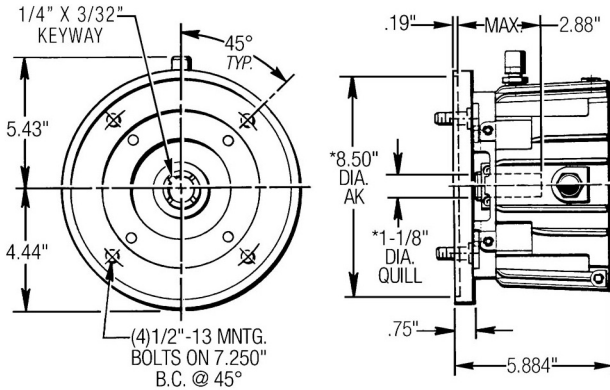
INPUT MODULE #2 & #3 (C-Face)

5/8" OR 7/8" DIA. FU, 4.50" DIA. AK, SPLIT CLAMPED QUILL (56/143TC/145TC Frame)



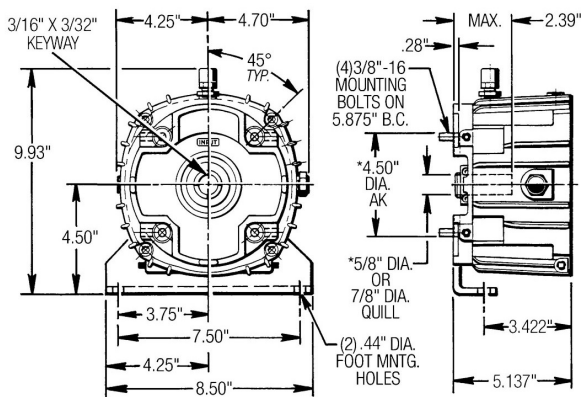
INPUT MODULE #4 (C-Face)

1-1/8" DIA. FU, 8.50" DIA. AK, SPLIT CLAMPED QUILL (182TC/184TC Frame)



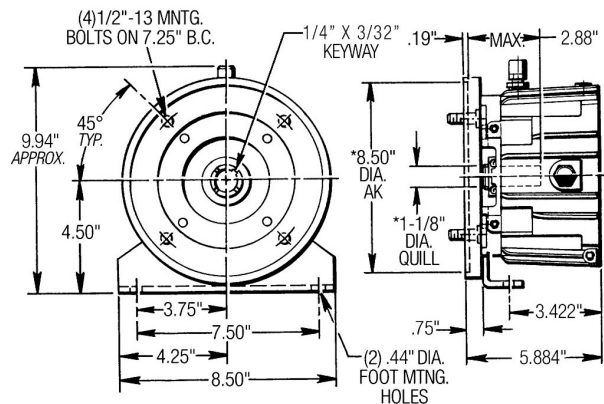
INPUT MODULE "A" & "B" (C-Face)

5/8" OR 7/8" DIA. FU, 4.50" DIA. AK, SPLIT CLAMPED QUILL & FOOT MOUNTED (56/143TC/145TC Frame)



INPUT MODULE "C" (C-Face)

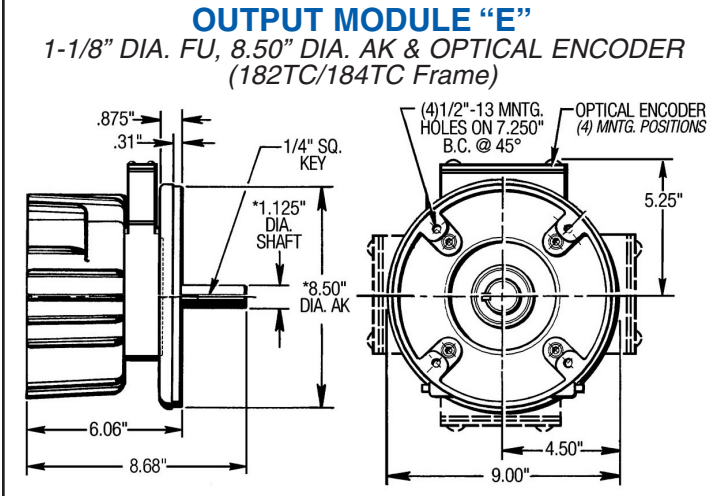
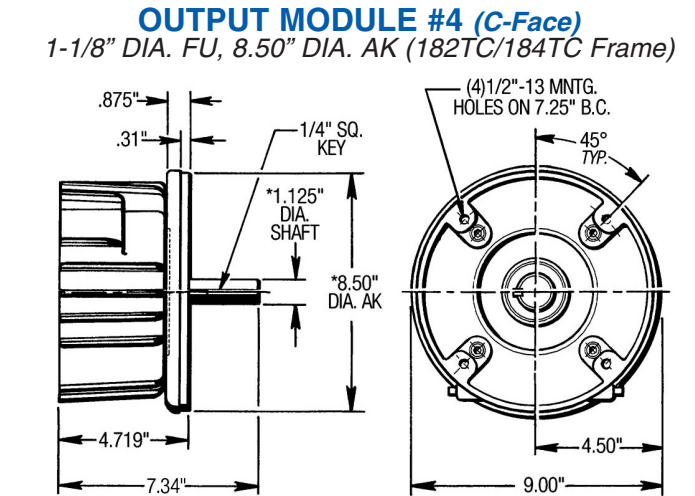
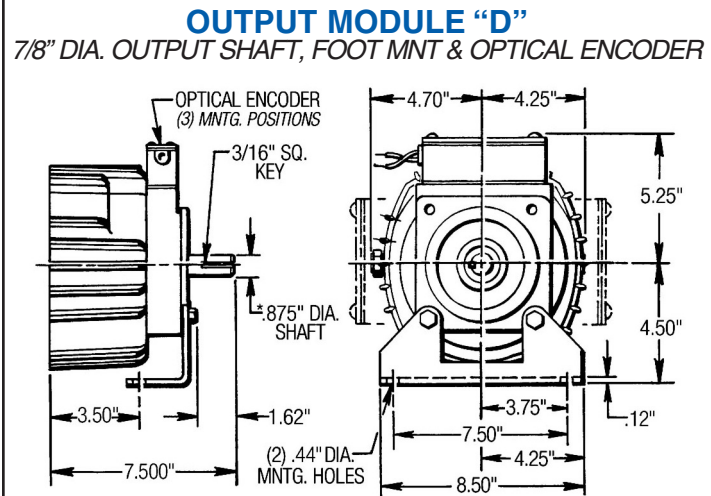
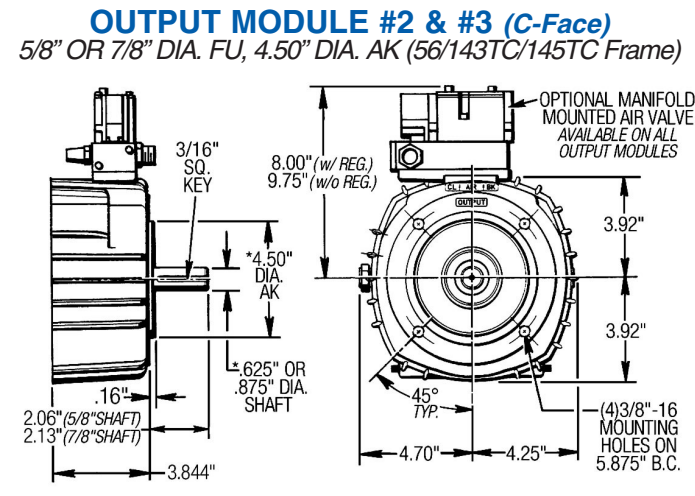
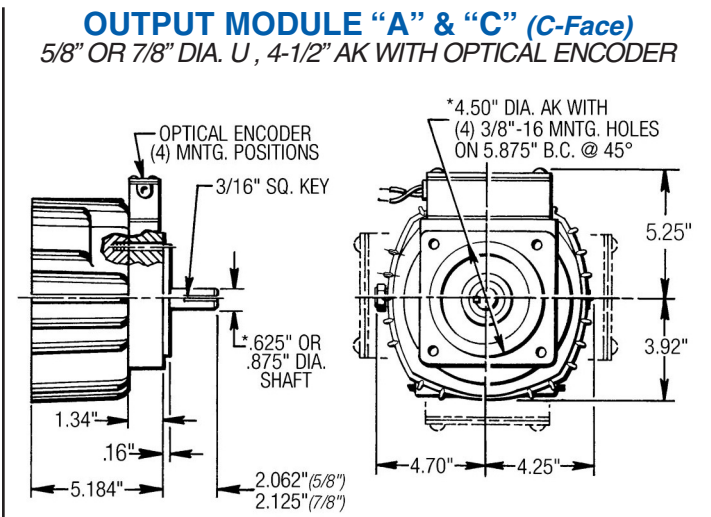
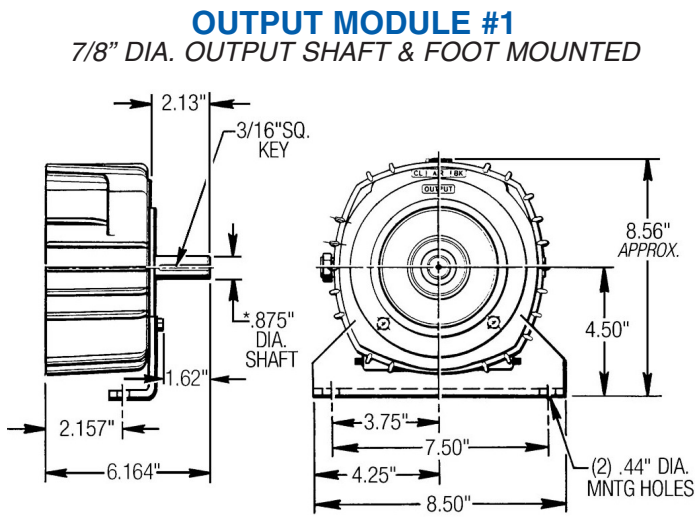
1-1/8" DIA. FU, 8.50" DIA. AK, SPLIT CLAMPED QUILL & FOOT MOUNTING (182TC/184TC Frame)



Choose the appropriate Input Module and Output Module to get the complete envelope dimensions.

Output Module Dimensions - 1.5 Posidyne® Clutch/Brake (Inches)

2



Choose the appropriate Input Module and Output Module to get the complete envelope dimensions.

How to order your Posidyne Size 1.5 Clutch/Brake

2

Ordering System Chart

Example: 15-1D3-H7T / _____ / _____



SIZE (1,2)

1 5 = 1.5

INPUT (3)

- 1** = 7/8" FU Extended Shaft. (With Mounting Foot)
- 2** = 4-1/2" FAK, 5/8" FU with Clamped Split Quill Input Shaft. (56C Frame)
- 3** = 4-1/2" FAK, 7/8" FU with Clamped Split Quill Input Shaft. (143TC / 145TC Frame)
- 4** = 8-1/2" FAK, 1-1/8" FU with Clamped Split Quill Input Shaft (182TC / 184TC Frame)
- A** = 4-1/2" FAK, 5/8" FU with Clamped Split Quill Input Shaft and Foot Mounting. (56C Frame)
- B** = 4-1/2" FAK, 7/8" FU with Clamped Split Quill Input Shaft and Foot Mounting (143TC/145TC Frame)
- C** = 8-1/2" FAK, 1-1/8" FU with Clamped Split Quill Input Shaft and Foot Mounting. (182TC / 184TC Frame)

C-Face

OUTPUT (5)

- 1** = 7/8" U Male Shaft (With Mntg. Foot)
- 2** = 4-1/2" FAK, 5/8" FU. (56C Frame)
- 3** = 4-1/2" FAK, 7/8" FU. (143TC / 145TC Frame)
- 4** = 8-1/2" FAK, 1-1/8" FU. (1.5 Only) (182TC / 184TC Frame)
- A** = Optical Encoder* 4-1/2" AK, 5/8" U.
- C** = Optical Encoder* 4-1/2" AK, 7/8" U.
- D** = Optical Encoder* 7/8" U and Foot Mounting
- E** = Optical Encoder* 8-1/2" AK, 1-1/8" U

C-Face

C-Face

* Machined to accept an Encoder. See Section 11.7 for Ordering Encoder.

MOUNTING POSITION (6)

- H** = Horizontal.
- D** = VID - Vertical, Input Down.
- U** = VIU - Vertical, Input Up.
- L** = Wall on Left Viewing Input Shaft.
- R** = Wall on Right Viewing Input Shaft.

COOLING (7)

- 1** = Basic (Radiant)
- 5** = Fan Cooled.
- 6** = Basic, (Manifold Mntd. Valve)
- 7** = Fan Cooled, (Manifold Mntd. Valve)

9 ENCODER

See Section 11 for Ordering Number. Use **N** if no Encoder is to be ordered.

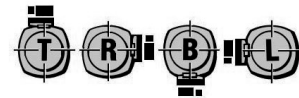
CONTROL VALVE 10

See Section 10 for Ordering Number. Use **N** if no Valve is to be ordered.

PORTING/VALVE LOCATION (8)
(Viewing Input Shaft) See Below

- T** = Top **B** = Bottom
- R** = Right **L** = Left

PORTING/VALVE LOCATION
(Viewing Input Shaft)



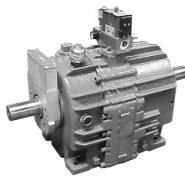
ASSEMBLY OPTIONS

Location	Std.	C-Face	Foot Mntd.	Piggy Back
T	X	X	X	---
R	X	X	X	X
B	X	X	---	X
L	X	X	X	X

Posidyne Clutch/Brakes with Optical Encoder and Manifold Mounted Valve

The **Posidyne Clutch/Brake** size 02 through 20 can be furnished with a Manifold Mounted Valve, which mounts directly on a machined surface on the unit. This feature eliminates hoses to the clutch and brake ports, reduces assembly time and improves response time.

An Encoder can also be furnished for improved positioning, when used with one of the CLPC Series Closed Loop Positioning Controls. The Encoder mounts on the output shaft, and includes a home position for single revolution applications.



Posidyne C-Face Clutch/Brakes

Posidyne C-Face Clutch / Brakes are available for up to 10 HP - 256UC Frame applications. Sizes 02, 2.5 and 03 can be equipped with provisions for NEMA C-Face input mounting, NEMA C-Face output mounting, or both. All units incorporate the Force Control Oil Shear Drive principle. Basic or Water Cooled Options are available with the C-Face input option. Fan Cooling is not available.



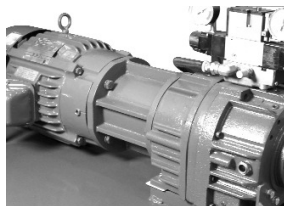
2.5 Posidyne with C-Face Input



2.5 Posidyne with C-Face Output

Posidyne Clutch/Brake with C-Face Long Coupled Input

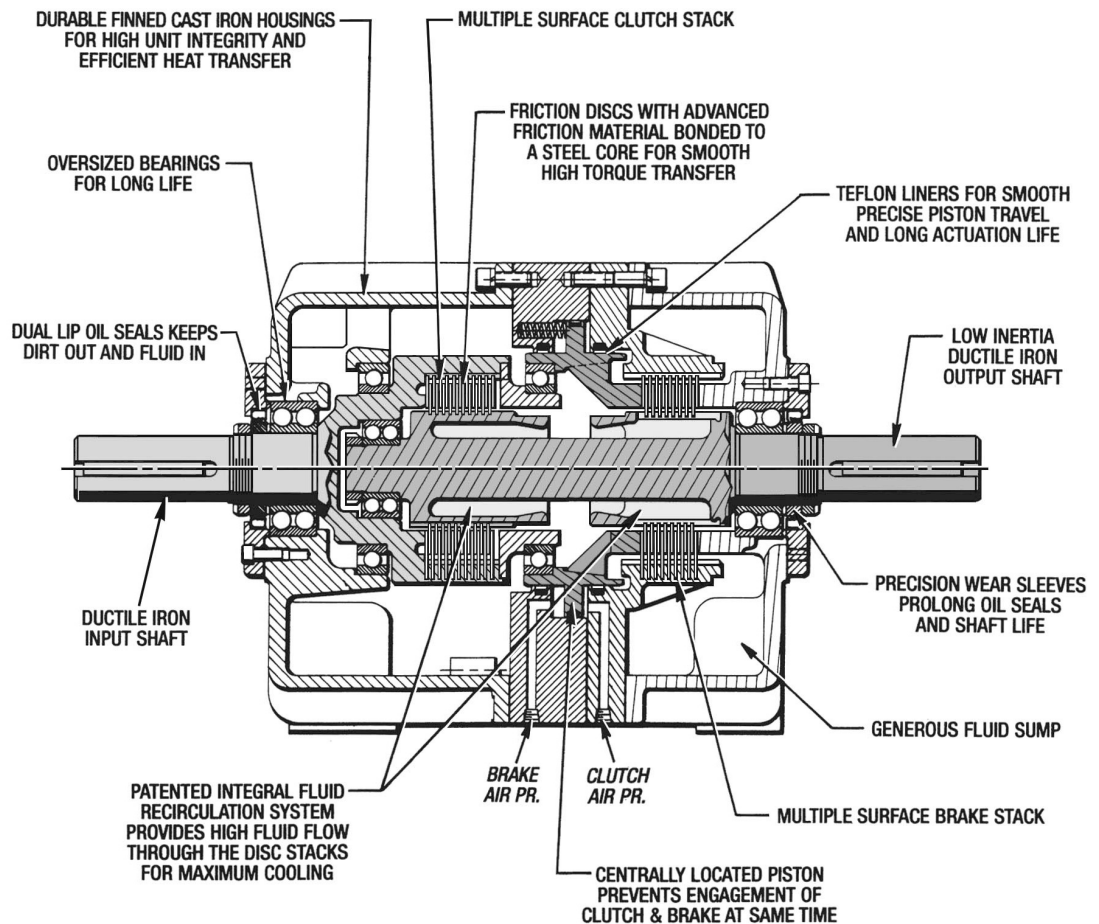
Sizes 02, 2.5 and 03 is available with a C-Face Long Coupled Input for NEMA motor frame sizes 143T to 256T and 182U to 256U. Fan cooling is not available



Posidyne Clutch/Brake

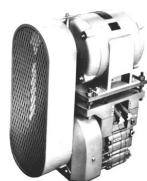
Sizes 02 to 30

The **Posidyne** is the backbone of the **Force Control** line of Clutch/Brake products. Constant development of new designs and materials has enabled the **Posidyne** to become a work-horse on today's modern high production machinery. The basic **Posidyne** is a combination of a clutch and brake in a single unit. The multiple stacks enclosed in a cast iron housing, cooled and lubricated by recirculating fluid are unaffected by outside contaminants and have a tremendous ability to dissipate heat. With their built in mechanical strength this makes the **Posidyne** an excellent choice for applications of heavy loads and high cycle rates.



Piggyback Posidyne

Posidyne sizes 02 thru 10 are available with a piggyback mounting frame that will accept NEMA motor sizes from 56 through 356U depending on the drive size.



Fan Cooled Units

Fan cooled **Posidyne** clutch/brake units may be required for those applications where thermal requirements are somewhat above average. The fan and shroud may be easily added in the field to any standard unit when required.



Water Cooled Units

For applications with extremely high inertia loads or cyclic requirements, the water cooled **Posidyne** clutch/brake unit may be required. The internal Heat Exchanger and necessary fittings may easily be installed in the field to most standard units when increased duty cycles are required.

View showing the coiled tube heat exchanger mounted in the input housing. The oil lubricating the clutch stack is cooled prior to returning to the sump. (Water Flow Requirements in GPM = 0.01 x calculated thermal HP)



2

Specifications - Posidyne Clutch/Brake

Sizes 02 to 10

Size	Logic	Max Clutch Torque (Lb. In.)			Max Brake Torque (Lb. In.)						Max. (RPM)		Max. KE per Engmt. (Ft Lbs)	Average Thermal HP			Air Vol. Per Engmt. (In ³)	Oil Cap. (Qts)	Inertia of Cyclic Parts (Lb. Ft ²)
		Static	Dyn.	Max. Air Pr.	Springs Only		With Max Air Assist			Basic & Fan Cool	Water Cool	Basic		Fan	Water				
					Static	Dyn.	Static	Dyn.	Max. Air Pr.										
02	S	518	439	60 psi	48	41	553	468	60 psi	1800	3600	11,230	Horizontal .80 2.00 4.00			1	Horz 2 ----- Vert 3	.04	
	SA	542	458	80 psi	164	139	501	424	40 psi				----- Vertical .40 1.50 6.00						
	A	503	426	80 psi	126	107	---	---	---										
	B	336	284	80 psi	252	214	---	---	---										
	C	335	284	60 psi	---	---	---	---	---										
	P	590	499	60 psi	---	---	505	428	60 psi										
2.5	S	1,331	1,126	60 psi	113	96	1,396	1,181	60 psi	1800	3600	15,865	Horizontal .70 2.00 4.00			5	Horz 2.5 ----- Vert 4	.20	
	SA	1,482	1,227	80 psi	512	433	1,663	1,399	40 psi				----- Vertical .35 1.00 2.00						
	A	1,451	1,254	80 psi	476	403	---	---	---										
	B	968	819	80 psi	952	806	---	---	---										
	C	1,270	1,074	60 psi	---	---	---	---	---										
	SCP	1,234	1,061	60 psi	---	---	1,051	904	60 psi										
	P	1,497	1,267	60 psi	---	---	1,283	1086	60 psi										
03	S	2,574	2,178	60 psi	144	122	2,049	1,734	60 psi	1800	3600	21,494	Horizontal .75 2.80 8.00			8	Horz 3.5 ----- Vert 4.5	.20	
	SA	2,790	2,361	80 psi	651	551	2,238	1,894	40 psi				----- Vertical .38 1.40 4.00						
	A	2,852	2,413	80 psi	602	509	---	---	---										
	B	1,895	1,603	80 psi	1,203	1,018	---	---	---										
	C	2,474	2,093	60 psi	---	---	---	---	---										
	SCP	2,668	2,258	60 psi	---	---	1,833	1,551	60 psi										
	P	2,857	2,417	60 psi	---	---	1,905	1,612	60 psi										
05	S	4,325	3,659	60 psi	212	179	4,021	3,402	60 psi	1800	3600	42,988	Horizontal 1.0 4.50 12.0			8	Horz 8 ----- Vert 10	.30	
	SA	4,889	4,137	80 psi	789	668	3,645	3,085	40 psi				----- Vertical .50 2.25 6.00						
	A	4,487	3,797	80 psi	1,136	962	---	---	---										
	B	2,626	2,222	80 psi	2,273	1,923	---	---	---										
	C	4,017	3,399	60 psi	---	---	---	---	---										
	SCP	4,362	3,691	60 psi	---	---	3,518	2,977	60 psi										
	P	4,761	4,029	60 psi	---	---	3,809	3,223	60 psi										
10	S	9,832	8,320	60 psi	691	585	10,489	8,875	60 psi	1800	3600	68,035	Horizontal 1.0 6.00 15.0			12	Horz 10 ----- Vert 13	.69	
	SA	9,471	8,014	80 psi	2,766	2,340	9,297	7,867	40 psi				----- Vertical .50 3.00 7.50						
	A	10,013	8,472	80 psi	2,797	2,366	---	---	---										
	B	5,097	4,313	80 psi	5,593	4,733	---	---	---										
	C	9,228	7,808	60 psi	---	---	---	---	---										
	SCP	9,936	8,407	60 psi	---	---	8,612	7,287	60 psi										
	P	11,197	9,474	60 psi	---	---	9,797	8,290	60 psi										

NOTES:

Thermal HP ratings based on 1800 RPM and 70° ambient temperature. Higher thermal ratings available with forced lubrication. Consult factory with application details.

For Water cooled Units Cooling water flow requirements in GPM equals .10 x thermal horsepower

Oil Capacity is only approximate. Always fill unit to center of sight gauge.

Air pressures are at maximum torque. Operating pressures are generally much lower. Refer to Section 15 "Pressure vs. Static Torque" charts on pages 15.7 & 15.8 for proper pressure settings.

Specifications - Posidyne Clutch/Brake

Sizes 11 to 30

2

Size	Logic	Max Clutch Torque (Lb. In.)			Max Brake Torque (Lb. In.)					Max. (RPM)		Max. KE per Engmt. (Ft Lbs)	Average Thermal HP			Air Vol. Per Engmt. (In ³)	Oil Cap. (Qts)	Inertia of Cyclic Parts (Lb. Ft ²)	
		Static	Dyn.	Max. Air Pr.	Springs Only		With Max Air Assist			Basic & Fan Cool	Water Cool		Basic	Fan	Water				
					Static	Dyn.	Static	Dyn.	Max. Air Pr.										
11	S	18,045	15,269	80 psi	888	751	14,926	12,630	80 psi	**	1200	N/A	108,501	Horizontal 4.00			15	Horz 10 Vert 13	1.60
	SA	13,358	11,303	80 psi	2,961	2,505	9,980	8,445	40 psi					-----					
	A	14,036	11,877	80 psi	2,661	2,252	---	---	---					Vertical 2.00					
	B	8,019	6,785	80 psi	5,322	4,504	---	---	---					-----					
	C	18,045	15,269	80 psi	---	---	---	---	---					-----					
	SCP	17,833	15,090	80 psi	---	---	17,833	15,090	80 psi					-----					
14	P	20,054	16,969	80 psi	---	---	14,038	11,878	80 psi	**	1200	N/A	170,532	Horizontal 4.00			15	Horz 10 Vert 13	1.75
	S	22,989	19,453	80 psi	1,681	1,410	23,737	20,085	80 psi					-----					
	SA	16,484	13,948	80 psi	5,237	4,431	16,264	13,762	40 psi					Vertical 2.00					
	A	17,576	14,872	80 psi	4,660	3,926	---	---	---					-----					
	B	10,783	9,124	80 psi	8,352	7,067	---	---	---					-----					
	C	23,453	19,844	80 psi	---	---	---	---	---					-----					
20	SCP	23,183	19,617	80 psi	---	---	20,793	17,594	80 psi	600 (Basic) 1800 (Fan)	1800	137,221	Horizontal 1.5 8.00 25.0			23	Horz 25 Vert 30	4.37	
	P	26,066	22,056	80 psi	---	---	22,056	18,662	80 psi				-----						
	S	31,082	26,300	80 psi	2,018	1,707	32,274	27,308	80 psi				Vertical .75 4.00 12.5						
	SA	25,837	21,862	80 psi	5,045	4,269	20,173	17,069	40 psi				-----						
	A	26,332	22,281	80 psi	4,759	4,027	---	---	---				-----						
	B	18,087	15,304	80 psi	9,518	8,054	---	---	---				-----						
30	C	30,455	25,770	80 psi	---	---	---	---	---	1200	1200	322,062	CF			97	CF	61.0	
	SCP	32,737	27,700	80 psi	---	---	28,115	23,789	80 psi				-----						
	P	34,578	29,258	80 psi	---	---	30,256	25,601	80 psi				-----						
	S	78,857	67,028	50 psi	8,010	6,808	72,185	61,357	40 psi				-----						
	SA	75,478	64,156	60 psi	20,026	17,200	68,157	57,933	30 psi				-----						
	A	75,478	64,156	60 psi	20,026	17,200	---	---	---				-----						

NOTES:

Thermal HP ratings based on 1800 RPM and 70° ambient temperature. Higher thermal ratings available with forced lubrication. Consult factory with application details.

For Water cooled Units Cooling water flow requirements in GPM equals .10 x thermal horsepower

Oil Capacity is only approximate. **Always fill unit to center of sight gauge.**

Air pressures are at maximum torque. Operating pressures are generally much lower. Refer to **Section 15 "Pressure vs. Static Torque"** charts on pages 15.7 & 15.8 for proper pressure settings.

Size 11 and 14 Posidyne rated @ 1200 RPM. Fan cooled only. These sizes can run up to 1800 RPM with the External Cooling System shown below.

CF- Consult Factory

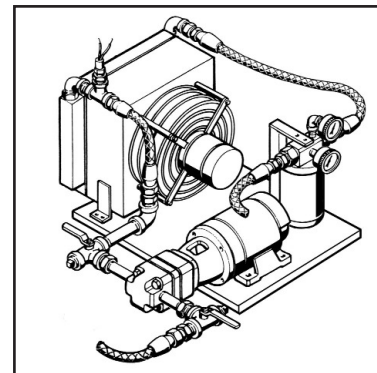
EXTERNAL COOLING SYSTEM - "Oil to Air" Shown

This External Cooling System is available for all sizes of *Posidyne* Clutch/Brakes. The typical cooling configuration is "Oil to Air" as shown, but "Oil to Water" is also available.

The External Cooling System filters the oil so the life of the Clutch/Brake is in turn increased.

The Thermal Capacity is increased so in some applications the max. operating RPM can also be increased.

Consult the Force Control Factory for additional information.

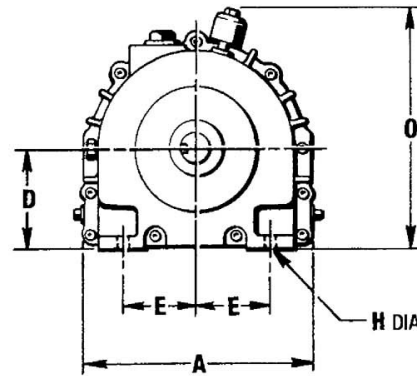
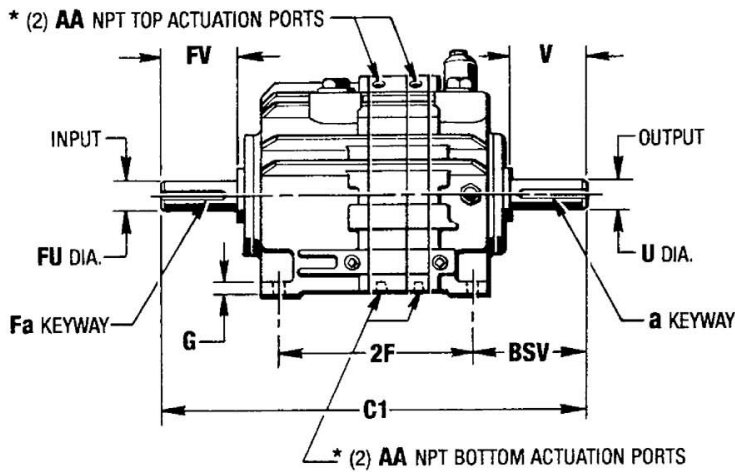


Dimensions - Posidyne Clutch/Brake (Inches)

Basic Posidyne

Sizes 02 to 30

2



STANDARD SHAFT DIAMETER TOLERANCES
 UP TO & INCLUDING 1.500" DIA. +.0000" -.0005"
 OVER 1.500" DIA..... +.000" -.001"

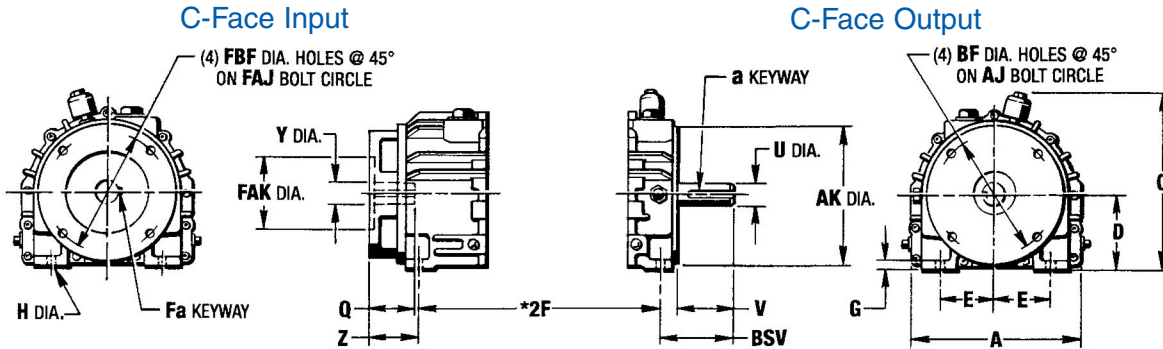
Size	Drive Dim.									Shaft Dim.					Porting - AA		
	A	D	E	2F	G	H	O	BSV	C1	a Keyway	Fa Keyway	U	FU	V	FV	(Bot.)	(Top)
02	9.00	4.00	3.50	7.00	0.59	0.44	9.25	3.5	14.62	1/4 X 1/8	1/4 X 1/8	1.125	1.125	2.00	2.00	1/8-27	1/8-27
2.5	9.50	4.37	3.31	8.75	0.50	0.44	10.0	4.62	18.25	5/16 X 5/32	5/16 X 5/32	1.375	1.375	3.00	3.25	1/4-18	1/4-18
03	10.25	4.50	3.31	8.77	0.50	0.44	10.69	5.16	19.25	5/16 X 5/32	5/16 X 5/32	1.375	1.375	3.50	3.50	1/4-18	1/4-18
05	10.25	6.50	3.50	10.25	0.75	0.56	12.69	5.75	22.75	3/8 x 3/16	3/8 x 3/16	1.625	1.625	4.00	4.00	1/4-18	1/4-18
10	12.50	6.50	3.50	15.38	1.00	0.75	14.0	5.61	27.50	3/8 x 3/16	3/8 x 3/16	1.750	1.750	3.75	3.75	1/4-18	1/4-18
11	12.63	6.50	4.75	15.38	1.00	0.75	14.56	6.75	31.56	5/8 x 5/16	5/8 x 5/16	2.375	2.375	5.00	5.62	1/4-18	1/4-18
14	12.63	6.50	4.75	15.38	1.13	0.75	15.21	6.75	32.04	5/8 x 5/16	5/8 x 5/16	2.375	2.375	4.43	5.56	1/4-18	1/4-18
20	17.50	9.00	5.75	19.63	1.25	0.88	19.0	7.38	35.5	5/8 x 5/16	5/8 x 5/16	2.750	2.750	4.75	4.75	3/8-18	1/2-14
30	22.50	13.00	8.00	29.25	1.50	1.06	24.37	9.88	49.00	1 x 1/2	1 x 1/2	4.000	4.000	6.58	6.58	1/2-14	1/2-14

* - Top porting and bottom porting are both supplied. The use of bottom porting is recommended to purge contaminants out of the pistons when they are exhausted. The use of top porting will not purge the pistons.

Dimensions - Posidyne Clutch/Brake (Inches)

C-Face Mounting Options Sizes 02, 2.5 and 03

2

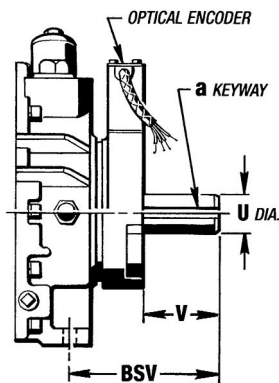


Size	Input Module	Input Dimensions							Output Module	Output Dimensions						Foot Mounting Dimensions						
		FAJ	FAK	Fa	FBF	Q	Y	Z		AJ	AK	a	BF	BSV	U	V	A	D	E	G	H	O
02	3	5.88	4.5	3/16 x 3/32	0.41	2.62	7/8	3.44	3**	5.88	4.5	3/16 x 3/32	3/8-16 x .75	2.94	7/8	2.06	9.0	4.0	3.5	.59	.44	9.25
	4	7.25	8.5	1/4 x 1/8	0.53	2.75	1-1/8	3.25	4	7.25	8.5	1/4 x 1/8	1/2-13 x 1	4.56	1-1/8	2.69						
2.5	3	5.88	4.5	3/16 x 3/32	0.41	3.50	7/8	2.56	3	5.88	4.5	3/16 x 3/32	3/8-16 x .75	4.62	7/8	2.12	9.5	4.37	3.31	.50	.44	10.0
	4	7.25	8.5	1/4 x 1/8	0.53	3.50	1-1/8	2.81	4	7.25	8.5	1/4 x 1/8	1/2-13 x 1	4.13	1-1/8	2.62						
	5	7.25	8.5	5/16 x 5/32	0.53	3.50	1-3/8	2.81	5	7.25	8.5	5/16 x 5/32	1/2-13 x 1	4.62	1-3/8	3.00						
03	4	7.25	8.5	1/4 x 1/8	0.53	3.50	1-1/8	2.91	4	7.25	8.5	1/4 x 1/8	1/2-13 x 1	4.22	1-1/8	2.62	10.2 5	4.5	3.31	.50	.44	10.5
	5	7.25	8.5	5/16 x 5/32	0.53	3.50	1-3/8	2.91	5	7.25	8.5	5/16 x 5/32	1/2-13 x 1	5.16	1-3/8	3.50						

* - See Basic Posidyne Dimensions on previous page.

** - Spacer may be required to keep Output Housing from interfering with mating C-Face.

Optical Encoder Dimensions Sizes 02 to 30



Size	Output Module	U	V	BSV	a
02	C	1.125	2.17	4.57	3/16 X 3/32
2.5	C	1.375	1.79	4.62	5/16 X 5/32
03	C	2.50	5.16		
05	C	1.625	3.00	5.75	3/8 X 3/16
10	C	1.750	2.81	5.50	
11	C	2.375	3.91	6.75	5/8 X 5/16
14	C	2.375	3.34	6.75	
20	C	2.750	4.37	8.19	
30	----	----	----	----	----

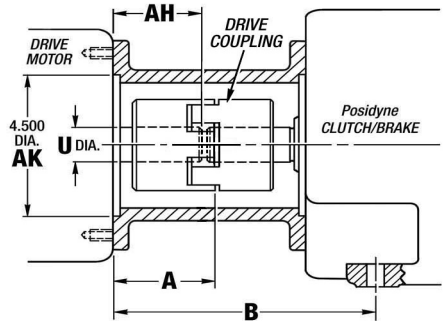
See Section 11 for additional information on Optical Encoders.

Dimensions - Posidyne Clutch/Brake (Inches)

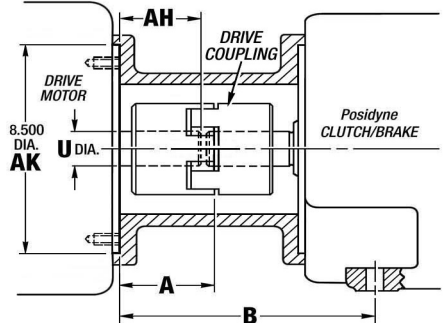
Sizes 02 to 30

2 C-Face Long Coupled Input Dimensions (Inches) Sizes 02, 2.5 and 03 Only

4.500" AK MOTOR REGISTER



8.500" AK MOTOR REGISTER



Posidyne SIZE	MOTOR FRAME	DIMENSION (Inches)					
		AH	AK DIA.	U DIA.	A	B	
02	143T, 145T	2.290	4.500	.875	2.63	6.62	
	182, 184				3.17		
	182T, 184T	2.630			8.500	1.125	7.37
	213, 215	2.750				3.23	
2.5	182T, 184T	2.630	8.500	1.125	3.46	8.69	
	213, 215	2.750			3.52		
	213T, 215T	3.130			1.375		3.71
	254, 256	3.500			3.89		
	254T, 256T	3.750			1.625		4.60
03	182T, 184T	2.630	8.500	1.125	3.50	8.78	
	213, 215	2.750			3.51		
	213T, 215T	3.130			1.375	3.76	
	254, 256	3.500			4.22		
	254T, 256T	3.750			1.625	4.52	9.47

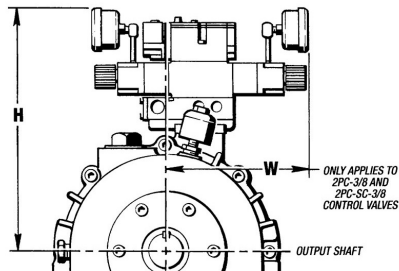
Manifold Mounted Control Valve Envelope Dimensions

Sizes 02 to 30

Size	Without Regulators		With Regulators	
	H	W	H	W
02	8.16	---	10.47	6.13
2.5	8.82	---	10.92	6.70
03	9.44	---	11.75	6.70
05	9.32	---	11.63	6.70
10	10.57	---	12.89	6.70
11	12.77	9.63	---	---
14	12.77	9.63	---	---
20	14.05	11.75	---	---
30	18.05	11.75	---	---

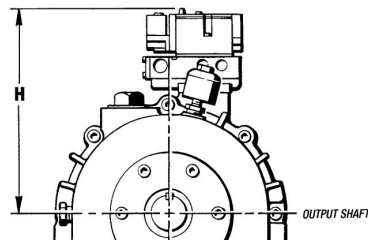
See Section 10 for additional information on Pneumatic Control Valves.

(With Regulators and Gauges)



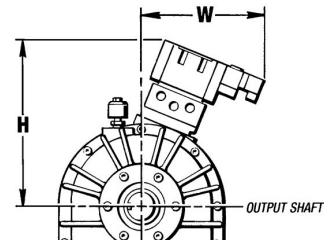
02, 2.5, 03, 05 and 10 Posidyne Clutch/Brakes
(1PC-3/8, 2PC-3/8 and 2PC-SC-3/8 Manifold Mntd. Control Valves)

(Without Regulators and Gauges)



02, 2.5, 03, 05 and 10 Posidyne Clutch/Brakes
(2 Pr. Inlet-3/8 Manifold Mounted Control Valve)

(Without Regulators and Gauges)

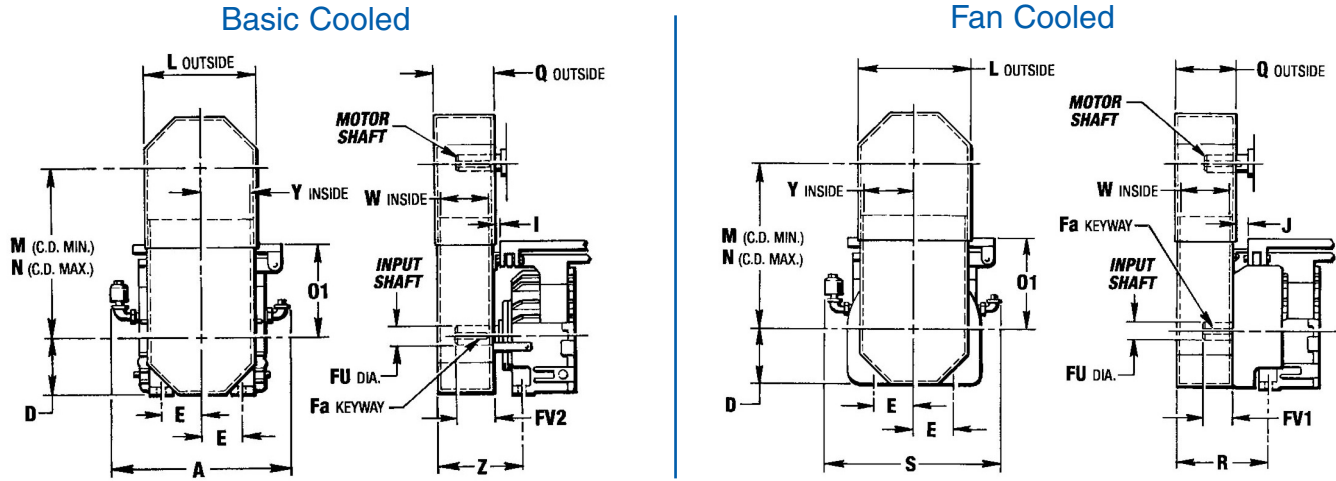


11 and 14 Posidyne Clutch/Brake (2PI-5/8 Manifold Mntd. Control Valve)
20 and 30 Posidyne Clutch/Brake (2PI-3/4 Manifold Mntd. Control Valve)

Dimensions - Posidyne Clutch/Brake (Inches)

Piggyback Mounting Options Sizes 02 to 10

2

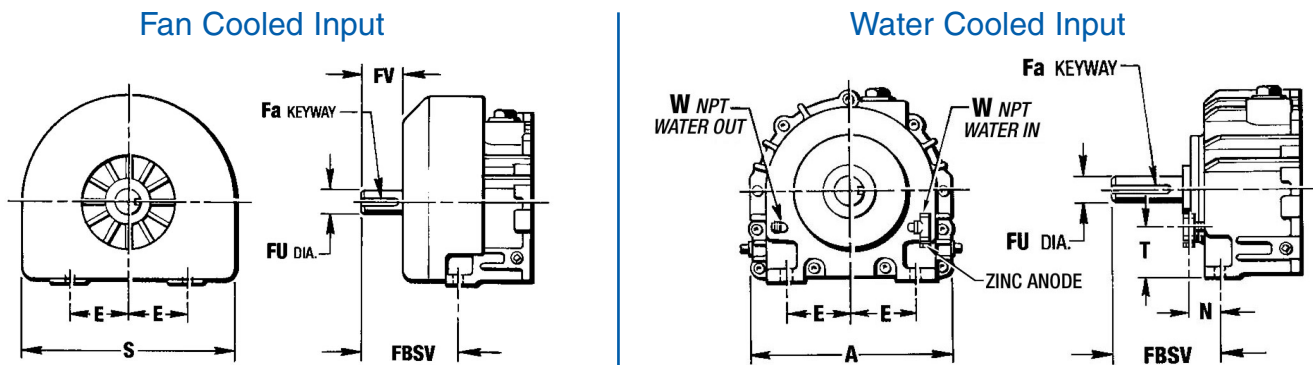


Size	Drive Dimensions								Piggyback Dimensions										Max Pulley Size		
	A	D	E	Fa	FU	FV1	FV2	S	I	J	L	M	N	O1	Q	R	W	Y	Z	Dia.	Width
02	---	4.0	3.5	1/4 x 1/8	1-1/8	1.0	1.0	---	---	---	7.31	12.31	13.31	7.12	3.16	5.38	2.50	3.12	5.38	6.00	2.00
2.5	---	4.37	3.31	5/16 x 5/32	1-3/8	2.13	2.13	---	1.25	1.25	7.62	11.5	15.19	8.44	4.31	4.75	4.19	3.69	4.75	5.39	3.00
03	11.5	4.5	3.31	5/16 x 5/32	1-3/8	2.38	3.5	11.5	.38	1.5	9.12	12.5	16.50	7.94*	4.68	6.62	4.38	4.44	5.5	6.84	3.25
05	11.5	6.5	3.5	3/8 x 3/16	1-5/8	2.94	4.0	11.5	1.5	2.56	9.12	12.5	16.50	7.94*	4.68	8.38	4.38	4.44	7.31	6.84	3.25
10	---	6.5	3.5	3/8 x 3/16	1-3/4	2.62	3.75	---	1.56	2.94	12.12	16.12	19.12	9.62	5.18	8.88	4.88	5.94	7.5	9.00	3.75

* This dimension changes to 8.44 with 254 thru 286 Frame Motors.
 Manifold Mounted Valve not available with Piggyback Mounting.

Dimensions are subject to change without notice. Certified Installation Drawings are available upon request.

Cooling Options Sizes 02 to 30



Size	Dimensions									
	A	E	Fa	FBSV	FU	FV	N	S	T	W
02	9.00	3.50	1/4 x 1/8	4.12	1.125	1.38	---	9.0	---	---
2.5	9.50	3.31	5/16 x 5/32	4.88	1.375	2.25	2.0	10.50	2.50	.38
03	10.25	3.31	5/16 x 5/32	5.31	1.375	2.31	2.0	11.5	2.50	.38
05	10.25	3.50	3/8 x 3/16	6.75	1.625	2.72	1.5	11.5	4.75	.38
10	12.50	3.50	3/8 x 3/16	6.62	1.750	2.88	2.0	14.0	4.00	.38
11	12.63	4.75	5/8 x 5/16	9.43	2.375	5.50	---	14.0	---	---
14	12.63	4.75	5/8 x 5/16	9.43	2.375	5.50	---	14.0	---	---
20	17.50	5.75	5/8 x 5/16	8.50	2.750	3.75	4.0	19.0	7.25	.50

OVERHUNG LOAD CAPACITY (Lbs. Pull)

Size	Input Shaft			Output Shaft					
	900 RPM	1200 RPM*	1800 RPM	900 RPM		1200 RPM		1800 RPM	
				Without Encoder	With Encoder	Without Encoder	With Encoder	Without Encoder	With Encoder
02	700	600	500	765	550	680	490	595	430
2.5	900	800	700	1020	805	935	740	850	670
03	1400	1350	1150	1785	1410	1700	1340	1490	1180
05	1400	1350	1150	1785	1410	1700	1340	1490	1180
10	1800	1700	1500	2550	2140	2380	2000	1960	1650
11	2200	2000	-----	3910	3280	3570	3000	-----	-----
14	2200	2000	-----	3910	3280	3570	3000	-----	-----
20	4100	3000	1800	4500	3780	4080	3430	3530	2970
30	9400	8500	-----	11900	-----	10900	-----	-----	-----

Overhung Loads are based on:

Bearing life L₁₀ 25,000 hrs. @ 20% duty.

At midpoint of shaft extension.

Standard male shaft diameters. (Not applicable to C-Face.)

CAUTION - Excessive overhung load will shorten bearing life and may exceed the capacity of the shaft to the point of failure.

Posidyne Available Options

(3) INPUT MODULE

	02	2.5	03	05	10	11	14	20	30
1	X	X	X	X	X	X	X	X	X
3	X	X	---	---	---	---	---	---	---
4	X	X	X	---	---	---	---	---	---
5	---	X	X	---	---	---	---	---	---
7	X	X	X	X	X	---	---	---	---
9	X	X	X	---	---	---	---	---	---
A	X	X	X	---	---	---	---	---	---
B	---	X	X	---	---	---	---	---	---

(5) OUTPUT MODULE

	02	2.5	03	05	10	11	14	20	30
1	X	X	X	X	X	X	X	X	X
3	X	X	---	---	---	---	---	---	---
4	X	X	X	---	---	---	---	---	---
5	---	X	X	---	---	---	---	---	---
7	X	X	X	X	X	---	---	---	---
C	X	X	X	X	X	X	X	X	X
E	X	---	---	---	---	---	---	---	---

Posidyne Piggyback

Motor Option Availabilities

To limit the torque delivered to a drive and the physical size of the motor mounted on our piggyback drives, please use the following chart.

U-Fr	T-Fr	02	2.5	03	05	10
56	143T	X	---	---	---	---
56	145T	X	---	---	---	---
182	182T	X	X	X	---	---
184	184T	X	X	X	---	---
213	213T	---	X	X	X	---
215	215T	---	X	X	X	---
254U	254T	---	---	X	X	---
256U	256T	---	---	X	X	---
284U	284T	---	---	---	X	X
286U	324T	---	---	---	X	X
324U	326T	---	---	---	---	X
326U	326T	---	---	---	---	X
364U	364T	---	---	---	---	X
365U	365T	---	---	---	---	X

(4) CONTROL LOGIC

	02	2.5	03	05	10	11	14	20	30
S	X	X	X	X	X	X	X	X	X
A	X	X	X	X	X	X	X	X	X
B	X	X	X	X	X	X	X	X	---
C	X	X	X	X	X	X	X	X	X
D	X	X	X	X	X	X	X	X	X
E	---	X	X	X	X	X	X	X	X
F	---	X	X	X	---	---	---	---	---
G	---	X	X	X	---	---	---	---	---
P	X	X	X	X	X	X	X	X	X
J	---	X	X	X	---	---	---	---	---

(6) MOUNTING POSITION

All options available in all sizes.

(7) COOLING*

	02	2.5	03	05	10	11	14	20	30
1	X	X	X	X	X	---	---	X	X
2	---	X	X	X	X	---	---	X	---
5	X	X	X	X	X	X	X	X	X
7	---	X	X	X	X	X	X	X	X

* Fan cooling not available with C-Face input.

How to order your Posidyne Size 02-30 Clutch/Brake

Ordering System Chart

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