

POLYCLUTCH | PRECISION SLIP CLUTCHES

- CONTINUOUS SLIP MECHANICAL CLUTCHES
- PNEUMATIC SLIP CLUTCHES



SERIES 16



SLIPPERS



V-SERIES SLIPPERS



SLIP-EASE



SLIP-AIRE

For Jaw Clutches and One-Way Clutches,
visit [website](http://www.dynatect.com) for details.



ABOUT PRECISION SLIP CLUTCHES

POLYCLUTCH ELIMINATES STICTION – Polyclutch has developed a unique technology and manufacturing process resulting in static friction being lower than dynamic friction. This characteristic generates repeatable torque control and smooth operation while slipping.

- No sudden shock on sensitive paper, film, wire, thread, etc.
- Repeatability cushioned torque for protection during overload
- Ideal for friction hinges when smooth movement of lids, doors, screens, covers, etc., is required
- Smooth, accurate starting/stopping of conveyors, indexing mechanisms, linear actuators, etc.
- Repeatability accurate torque for capping machines, automatic screw driving, valve control, etc.

Our proprietary burn-in process ensures that all Polyclutch Slip Clutches will perform consistently right out of the box, with no break-in period required.

APPLICATIONS:

- Overload Protection (machine and personnel safety)
- Torque Control (bottle capping, fastener driving)
- Tension Control (printing, stamping, labeling and take-up reels)
- Positioning Hinge (covers, medical equipment, light fixtures)

KEY BENEFITS:

- Smooth Breakaway and continuous slip
- Long life of 20 to 30 million cycles in slip condition
- Torque range from 0.5 lb-in to 750 lb-in
- Fixed, adjustable and custom designs
- Clutches are bi-directional
- No lubrication needed
- Made in the USA

A GREAT ALTERNATIVE TO:

- Servo-Motors: our solution costs less
- Magnetic Clutches: smaller, less expensive
- Ball detent: no clicking, no reset required
- Torque limiters: consistent repeatability, continuous slip
- Electronic protection only: added mechanical safety in electronically controlled systems

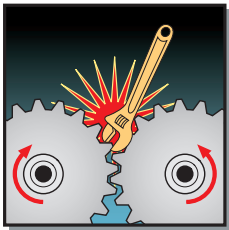
LIMITATIONS:

- Maximum 1.25-inch shaft size
- Not to be used as a universal joint or a spring coupler
- Does not de-couple at overload
- Cannot be exposed to radiation
- Contact a Polyclutch application specialist if slip clutch would be directly exposed to weather or wash down

CONTINUOUS SLIP CLUTCHES

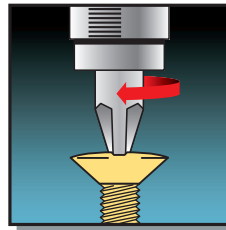
SOLVE MANY DESIGN ENGINEERING PROBLEMS

Polyclutch slip clutches can slip continuously or intermittently for over 30 million cycles. This opens up many design engineering options including...



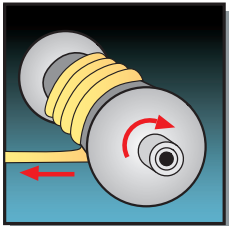
OVERLOAD PROTECTION

Protect machinery and operator. Clutch will slip when mechanism is jammed. Motion will continue when impediment is removed.



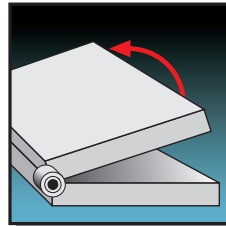
TORQUE CONTROL

Screw bottle caps, screws, controls, etc., to correct torque setting. Combine with one way clutch to slip at rated torque in one direction and freewheel or positive drive in other direction.



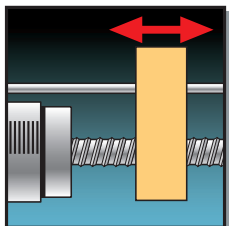
TENSION CONTROL

Maintain constant tension while winding or unwinding wire, paper, film, thread, etc. Slip clutch automatically compensates for changes in speed and diameter. Pneumatic clutch can change tension during operation.



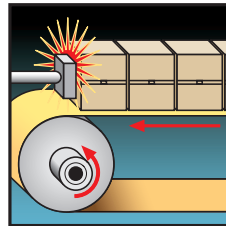
POSITIONING HINGE

Hold lid, cover, door, light fixture, screen, etc., at any position. Fingertip control. Combine with one way clutch for free movement in one direction.



SOFT STARTS/ CUSHIONED STOPS

Inertia makes clutch slip when starting and/or stopping. Results in less shock throughout the system. Ideal for slip at the end of stroke.



FORCE CONTROL

Push product against gate with constant force. Remove gate and move to next position. No damage to product or conveyor – clutch does all the slipping. Also used for overload protection when jammed and for indexing the conveyor.

SLIP CLUTCH LINE OVERVIEW

HOW TO DETERMINE THE PERFECT CLUTCH FOR YOU APPLICATION

Three factors in determining the right clutch are: the maximum shaft size, torque capacity of the clutch, and wattage capacity. Maximum wattage capacities are listed for each model in the Series specifications. Please consider the limitations listed below for each type of clutch.

Note: For torque adjustment while clutch is in use (remote torque adjustment), see the SLIP-AIRE clutches.

SERIES 16

- Most compact model
- Can accommodate shaft sizes up to 0.375 inch
- Torque capacity up to 10 lb-in
- Available in a fixed torque or adjustable torque configuration



V-SERIES SLIPPERS

- Torque control for driving, capping and other applications where thrust loads are applied
- Can accommodate shaft sizes up to 1 inch
- Horizontal and vertical installation without driveshaft modifications
- Integrated ball bearing allows thrust loads of up to 650 pounds without any effect on torque
- Torque capacities of up to 150 lb-in



SLIPPERS

- Our standard-duty clutch
- Can accommodate shaft sizes up to 1 inch
- Torque capacities of up to 100 lb-in
- Available in a fixed torque or adjustable torque configuration



SLIP-AIRE

- Pneumatic slip clutch
- Can be adjusted remotely while the machine is in operation to accomplish quick, repeatable, accurate setup
- Can accommodate shaft sizes up to 0.625 inch
- Torque capacities of up to 300 lb-in



SLIP-EASE

- For applications where space is at a premium and low backlash is required
- Can accommodate shaft sizes up to 1.25 inch
- Torque capacities of up to 500 lb-in
- Available in a fixed torque or adjustable torque configuration



APPLICATION EXAMPLES



Polyclutch Extends Machinery Life

Polyclutch adjustable slip clutches control the precise amount of torque to tighten bottle caps, without wear or breakage, in this capping line application. All the slippage is in the clutch, with no appreciable wear.

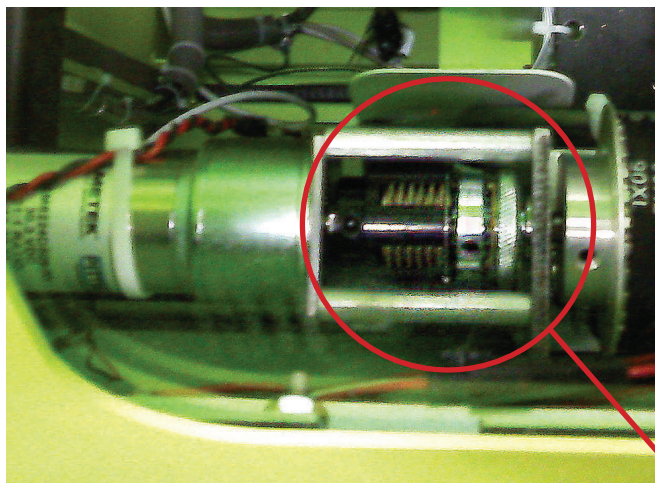


Constant Torque Gives You the Slip

A slip clutch acts as a continuous drag brake to meet the specific torque requirement for this unwind/rewind system application in a DATAMAX® bar code printer.

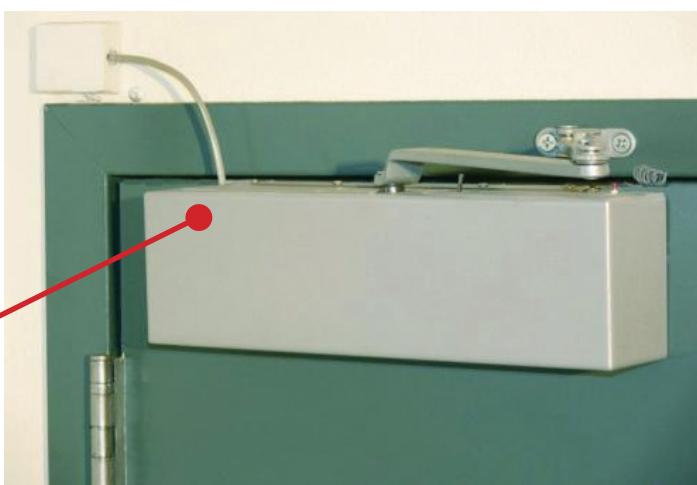
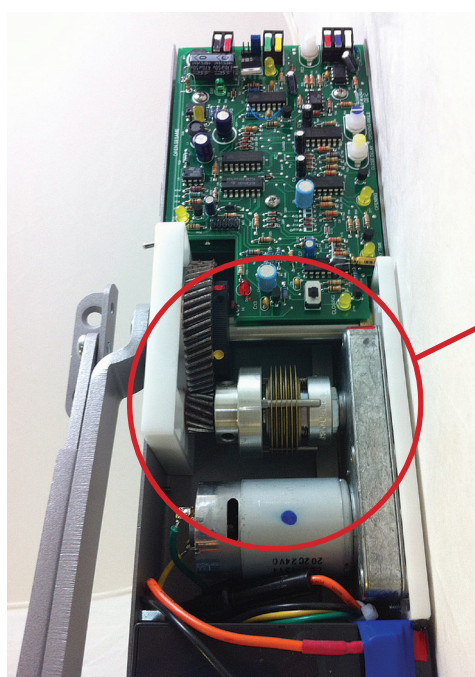
Other applications apply constant tension to film, wire, thread, paper, etc.

APPLICATION EXAMPLES



Automated Kiosks

Polyclutch slip clutches are an integral part of many retail kiosks. As shown in this photo, a slip clutch is used to protect the sensitive drive mechanisms of these automated machines.



Disabled Access Systems

A Polyclutch slip clutch provides safety in many disabled access systems, as seen in this photo, where it is being used for overload protection in an automated door opener.

APPLICATION EXAMPLES



Ice-Dispensing Machines

Hidden deep inside of this ice-making machine, a Polyclutch slip clutch prevents overload to the drive mechanism during the forming and dispensing of ice cubes.



Retail Vending Kiosks

A Polyclutch protects this machine against any type of overload or jamming during the process of dispensing a DVD.



MRI Beds

Polyclutch adds a mechanical safety for moving MRI beds as seen in this picture.

APPLICATION EXAMPLES



Conveyors

Polyclutch slip clutches offer an added level of safety and protection to both the machine and its operators.



Label Printers

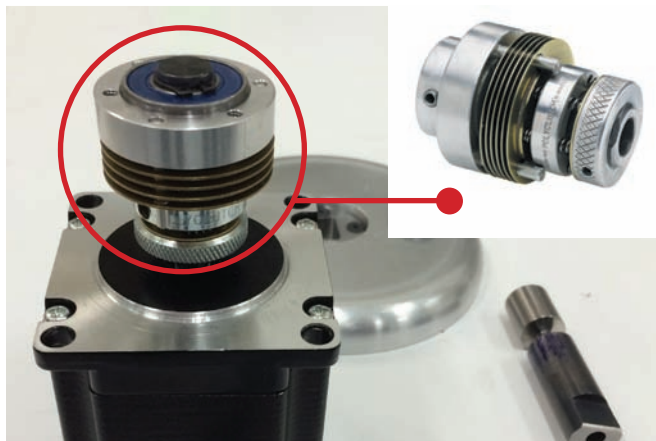
Polyclutch slip clutches are the perfect solution for adding just the right amount of tension to any reel or spool without having to worry about the tension varying over time or wearing out prematurely.



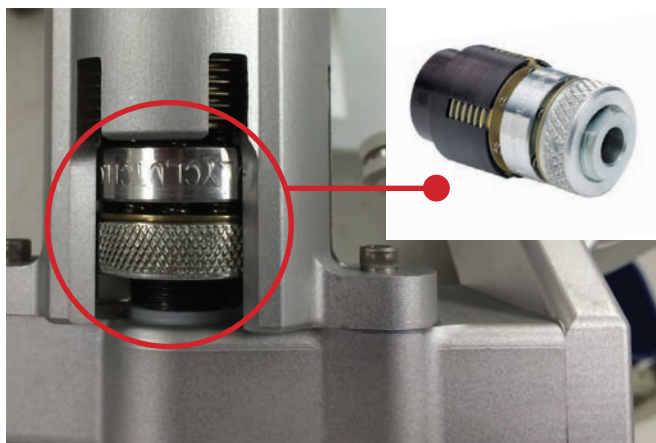
Military and Law Enforcement Inspection Robots

The Machine Lab, Inc., an industry leader in defense robotics, uses two Polyclutch slip clutches in each robot arm for overload protection.

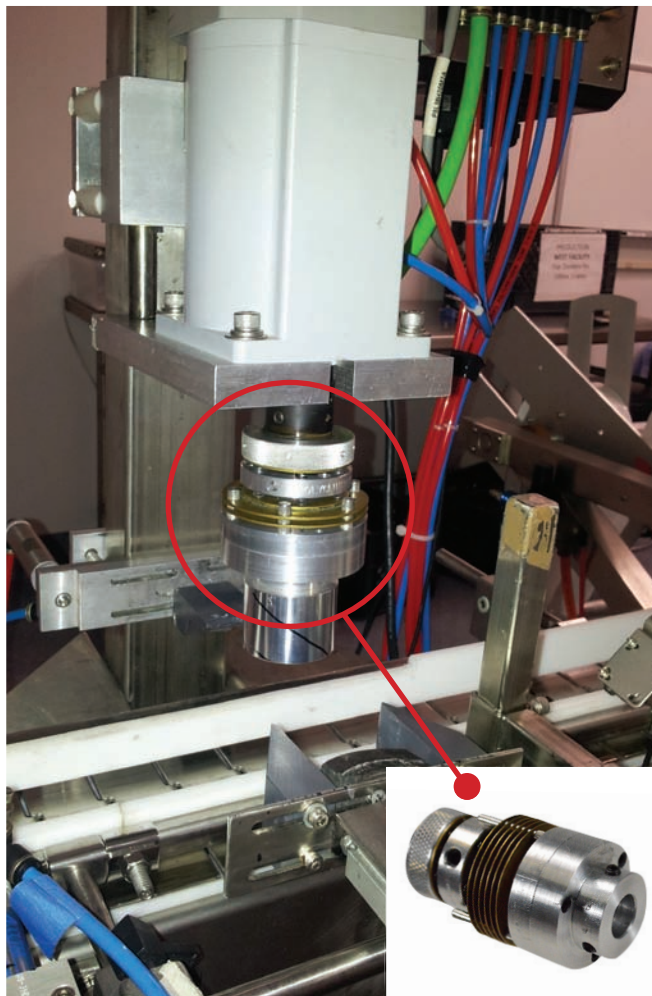
APPLICATION EXAMPLES



The Polyclutch slipper provides precision torque control during the manufacturing of dental implants.



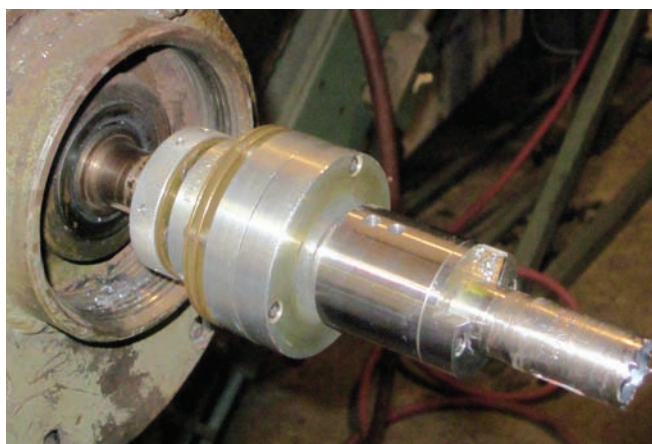
In this medical application, a Slip-Ease clutch is used as a retention hinge on a mounting platform of a surgical device.



The V-Series slipper is the ideal solution for torque control on capping machines.



The V-Series slipper provides overload protection and increases operator safety to this manual cutting tool. This mechanical slip clutch limits the amount of torque that is transferred to the cutting tool, making this a safer operation for the user.



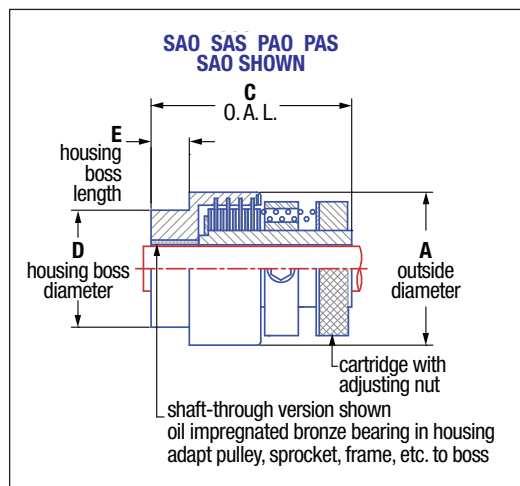
SERIES 16 | MECHANICAL SLIP CLUTCHES

OUR MOST COMPACT MODEL FEATURES BIG TORQUE IN A SMALL PACKAGE

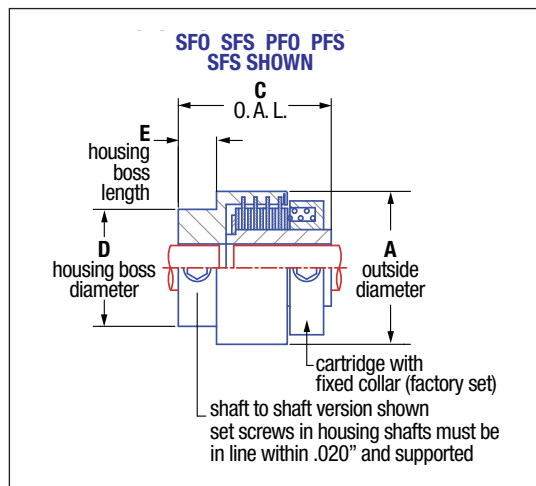
See pages 210-211 for slip clutch operation (construction, installation, capacity) and mounting options.



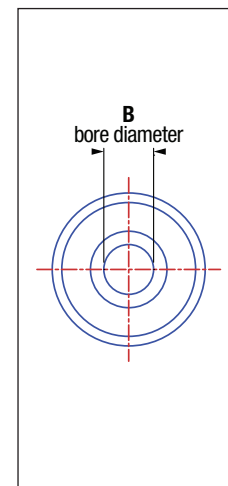
ADJUSTABLE



FIXED FACTORY SET – NON ADJUSTABLE



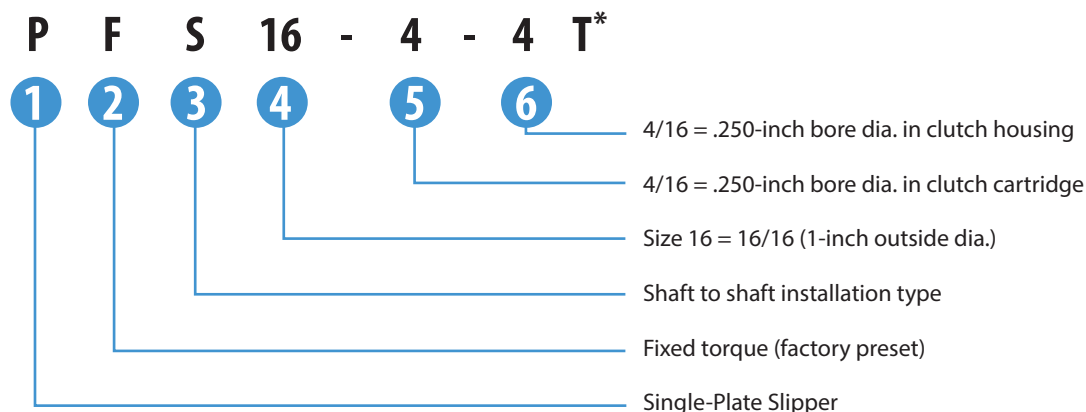
END VIEW TYPICAL



MODEL NO.	A inches (mm)	B STD. inches (mm)	B MAX. inches (mm)	C inches (mm)	D inches (mm)	E inches (mm)	CAPACITY @ 50 RPM		FRICTION SURFACES
		+.002 / -.000 inches (+.05 / -.00 mm)					lb-in (Nm)	Watts	
SFS 16 & SFO 16	1.00 (25.4)	.250 (8)	.375 (10)	1.00 (25.40)	.760 (19.30)	.25 (6.35)	10 (1.2)	6	8
SAS 16 & SAO 16	1.00 (25.4)	.250 (8)	.375 (10)	1.31 (33.27)	.760 (19.30)	.25 (6.35)	10 (1.2)	6	8
PFS 16 & PFO 16	1.00 (25.4)	.250 (8)	.375 (10)	.78 (19.81)	.760 (19.30)	.25 (6.35)	2 (.3)	1	2
PAS 16 & PAO 16	1.00 (25.4)	.250 (8)	.375 (10)	1.06 (26.92)	.760 (19.30)	.25 (6.35)	2 (.3)	1	2

PART NUMBER EXAMPLE

See page 212 for part number identification.



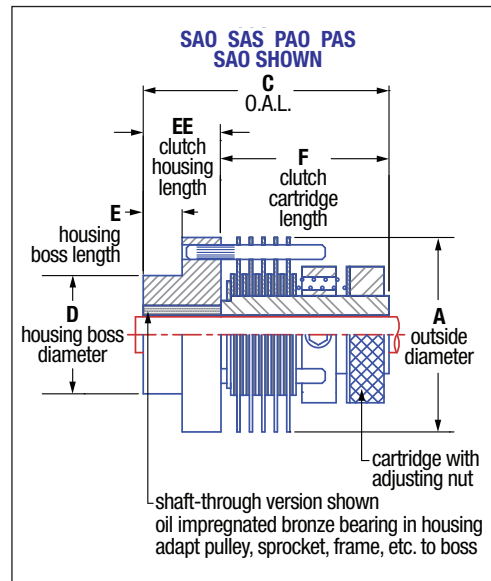
*T = Preset Torque Value, customer-specified

SLIPPER | MECHANICAL SLIP CLUTCHES

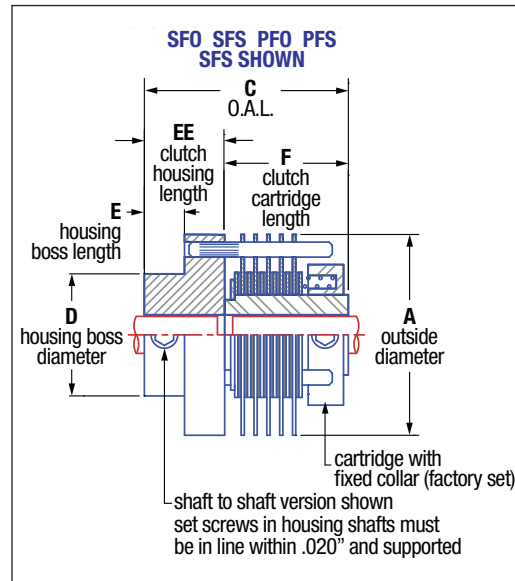
The Polyclutch slipper controls torque for intermittent, continuous or overload slip. It contains a number of brass plates interfaced with long life friction material. Soft springs maintain pressure on the friction plates, assuring constant torque. An adjacent component of your mechanism can often be used as the clutch housing reducing overall cost or space concerns. Torque control in one direction can be achieved by combining with our one-way clutch.



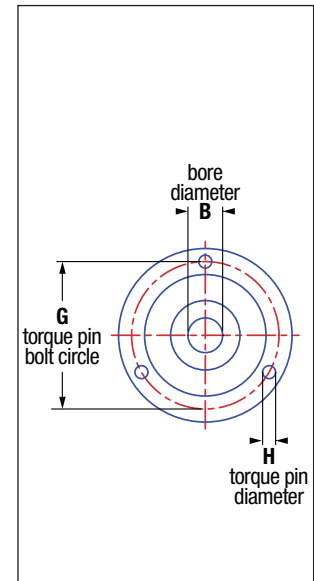
ADJUSTABLE



FIXED FACTORY SET - NON ADJUSTABLE



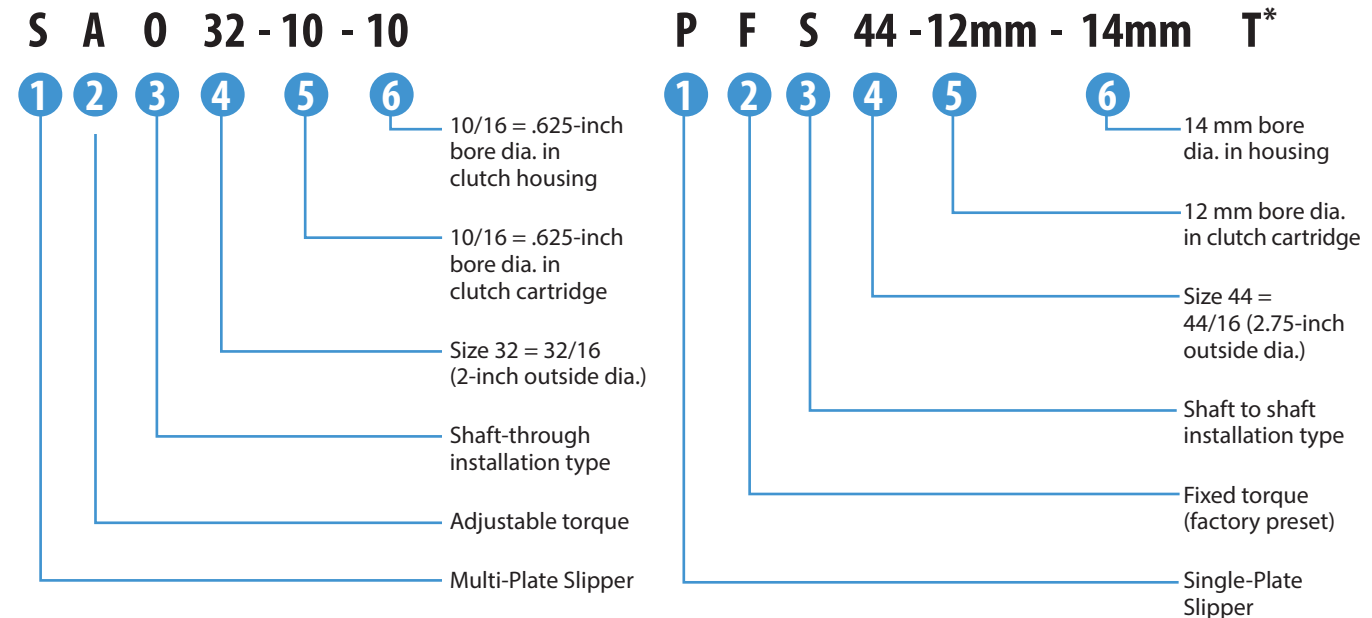
END VIEW TYPICAL



NOTE: Multi-plate clutches shown. Single-plate clutch supplied with one set of friction plates and pads.

PART NUMBER EXAMPLE

See page 212 for part number identification.



*T = Preset Torque Value, customer-specified

SLIPPER | SPECIFICATIONS

See pages 210-211 for slip clutch operation (construction, installation, capacity) and mounting options.

MODEL NO.	A inches (mm)	B* STD. inches (mm)	B MAX. inches (mm)	C inches (mm)	D inches (mm)	E inches (mm)	EE inches (mm)	F inches (mm)	G inches (mm)	H inches (mm)	CAPACITY @ 50 RPM		FRICTION SURFACES
		+.002 / -.000 inches (+.05 / -.00 mm)									lb-in (Nm)	Watts	
SFS 20 & SFO 20	1.25 (31.75)	.250 (8)	.375 (10)	1.19 (30.2)	.760 (19.30)	.25 (6.35)	.50 (12.70)	.69 (17.50)	1.062 (26.97)	.094 (6.35)	12 (1.5)	6	8
SAS 20 & SAO 20	1.25 (31.75)	.250 (8)	.375 (10)	1.50 (38.1)	.760 (19.30)	.25 (6.35)	.50 (12.70)	1.00 (25.40)	1.062 (26.97)	.094 (6.35)	12 (1.5)	6	8
SFS 24 & SFO 24	1.50 (38.10)	.375 (10)	.500 (13)	2.00 (50.08)	1.010 (25.65)	.38 (9.65)	.75 (19.05)	1.21 (30.70)	1.312 (33.32)	.125 (6.35)	25 (3)	15	12
SAS 24 & SAO 24	1.50 (38.10)	.375 (10)	.500 (13)	2.50 (63.5)	1.010 (25.65)	.38 (9.65)	.75 (19.05)	1.75 (44.50)	1.312 (33.32)	.125 (6.35)	25 (3)	15	12
SFS 32 & SFO 32	2.00 (50.80)	.500 (12)	.625 (16)	2.31 (58.7)	1.385 (35.18)	.50 (12.70)	1.00 (25.40)	1.31 (33.30)	1.672 (42.47)	.188 (6.35)	50 (6)	30	12
SAS 32 & SAO 32	2.00 (50.80)	.500 (12)	.625 (16)	2.87 (72.9)	1.385 (35.18)	.50 (12.70)	1.00 (25.40)	1.88 (47.80)	1.672 (42.47)	.188 (6.35)	50 (6)	30	12
SFS 44 & SFO 44	2.75 (69.85)	.500 (12)	.625 (16)	2.31 (58.7)	1.635 (41.53)	.50 (12.70)	1.00 (25.40)	1.31 (33.30)	2.375 (60.33)	.188 (6.35)	75 (9)	43	12
SAS 44 & SAO 44	2.75 (69.85)	.500 (12)	.625 (16)	2.87 (72.9)	1.635 (41.53)	.50 (12.70)	1.00 (25.40)	1.88 (47.80)	2.375 (60.33)	.188 (6.35)	75 (9)	43	12
SFS 48 & SFO 48	3.00 (76.20)	.625 (16)	1.00 (25)	3.00 (76.2)	1.760 (44.70)	.50 (12.70)	1.00 (25.40)	2.00 (50.80)	2.625 (66.80)	.250 (6.35)	100 (11.5)	55	12
SAS 48 & SAO 48	3.00 (76.20)	.625 (16)	1.00 (25)	3.50 (88.9)	1.760 (44.70)	.50 (12.70)	1.00 (25.40)	2.50 (63.50)	2.625 (66.80)	.250 (6.35)	100 (11.5)	55	12
PFS 20 & PFO 20	1.25 (31.75)	.250 (8)	.375 (10)	.78 (19.8)	.760 (19.30)	.19 (4.83)	.31 (7.87)	.47 (11.90)	1.062 (26.97)	.094 (6.35)	2.5 (.3)	1	2
PAS 20 & PAO 20	1.25 (31.75)	.250 (8)	.375 (10)	1.06 (26.9)	.760 (19.30)	.19 (4.83)	.31 (7.87)	.75 (19.10)	1.062 (26.97)	.094 (6.35)	2.5 (.3)	1	2
PFS 24 & PFO 24	1.50 (38.80)	.375 (10)	.500 (13)	1.07 (27.0)	1.010 (25.65)	.19 (4.83)	.38 (9.65)	.69 (17.50)	1.312 (33.32)	.125 (6.35)	4 (.5)	2	2
PAS 24 & PAO 24	1.50 (38.80)	.375 (10)	.500 (13)	1.32 (33.5)	1.010 (25.65)	.19 (4.83)	.38 (9.65)	.94 (23.90)	1.312 (33.32)	.125 (6.35)	4 (.5)	2	2
PFS 32 & PFO 32	2.00 (50.80)	.500 (12)	.625 (16)	1.22 (31.0)	1.385 (35.18)	.25 (6.35)	.50 (12.70)	.72 (18.30)	1.672 (42.47)	.188 (6.35)	8 (1)	5	2
PAS 32 & PAO 32	2.00 (50.80)	.500 (12)	.625 (16)	1.72 (43.7)	1.385 (35.18)	.25 (6.35)	.50 (12.70)	1.22 (31.00)	1.672 (42.47)	.188 (6.35)	8 (1)	5	2
PFS 44 & PFO 44	2.75 (69.85)	.500 (12)	.625 (16)	1.22 (31.0)	1.635 (41.53)	.25 (6.35)	.50 (12.70)	.72 (18.30)	2.375 (60.33)	.188 (6.35)	12 (1.5)	7	2
PAS 44 & PAO 44	2.75 (69.85)	.500 (12)	.625 (16)	1.72 (43.7)	1.635 (41.53)	.25 (6.35)	.50 (12.70)	1.22 (31.00)	2.375 (60.33)	.188 (6.35)	12 (1.5)	7	2
PFS 48 & PFO 48	3.00 (76.10)	.625 (16)	1.00 (25)	2.25 (57.15)	1.760 (44.70)	.50 (12.70)	1.0 (25.40)	1.25 (31.75)	2.625 (66.80)	.250 (6.35)	20 (2.4)	13	2
PAS 48 & PAO 48	3.00 (76.10)	.625 (16)	1.00 (25)	2.75 (69.85)	1.760 (44.70)	.50 (12.70)	1.0 (25.40)	1.75 (44.45)	2.625 (66.80)	.250 (6.35)	20 (2.4)	13	2

*Bore diameters (Dimension B) other than standards shown are available up to the maximum diameter.

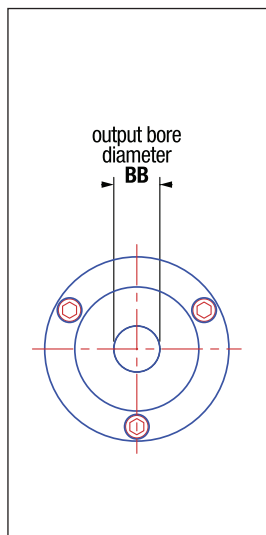
Please note that torque capacities are only guidelines. Higher torques and speeds are possible depending on operating conditions. Consult factory for details.

V-SERIES SLIPPER | MECHANICAL SLIP CLUTCHES

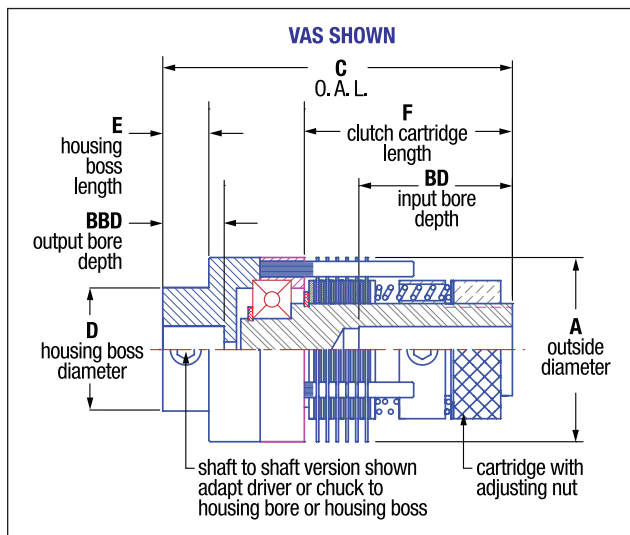
The V-Series slipper provides torque control for driving, capping and other applications where thrust loads are applied. Its integrated ball bearing allows thrust loads up to 650 pounds without any effect on torque. Self-supporting hub design allows for easy installation; shaft-through support is not required. The V-Series slipper may be used for pulley applications; and its design allows rebuilding, if necessary.



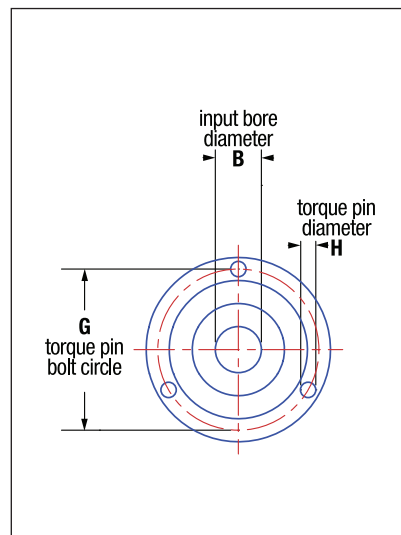
END VIEW TYPICAL



ADJUSTABLE



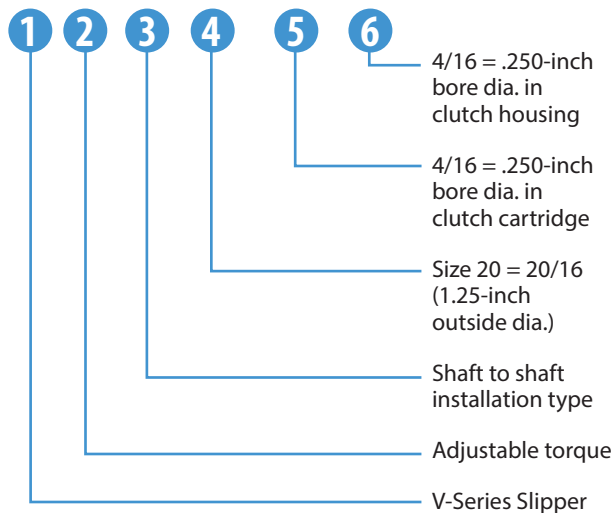
END VIEW TYPICAL



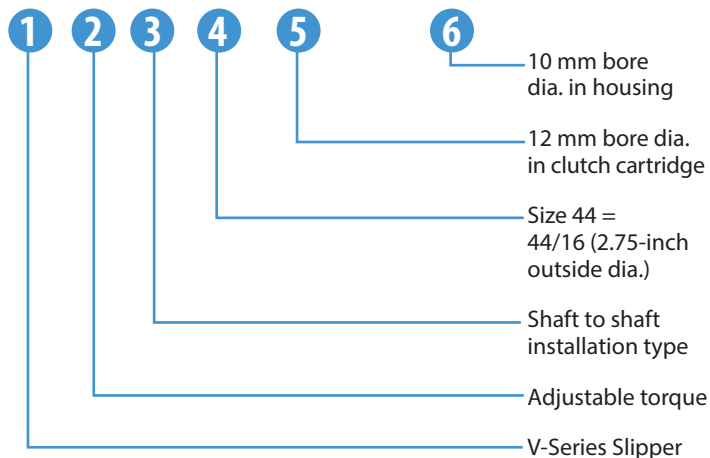
PART NUMBER EXAMPLE

See page 212 for part number identification.

V A S 20 - 4 - 4



V A S 44 - 12mm - 10mm



V-SERIES SLIPPER | SPECIFICATIONS

HORIZONTAL AND VERTICAL INSTALLATION WITHOUT DRIVESHAFT MODIFICATIONS!

See pages 210-211 for slip clutch operation (construction, installation, capacity) and mounting options.



MODEL NO.	A inches (mm)	B* STD. inches (mm)	B MAX. inches (mm)	BD inches (mm)	BB** inches (mm)	BBD inches (mm)	C inches (mm)	+ .002 / -.000 inches (+.05 / -.00 mm)	E inches (mm)	F inches (mm)	G inches (mm)	H inches (mm)
		+.002 / -.000 inches (+.05 / -.00 mm)						D inches (mm)				
VAS 20	1.25 (31.75)	.250 (8)	.375 (10)	.750 (19.05)	.250 (6.35)	.500 (12.07)	2.05 (52.07)	.750 (19.05)	.350 (8.89)	.98 (24.89)	1.062 (26.97)	.094 (2.39)
VAS 24	1.50 (38.10)	.375 (10)	.500 (13)	1.25 (31.75)	.250 (6.35)	.500 (12.07)	2.85 (72.39)	1.000 (25.40)	.375 (9.53)	1.69 (42.93)	1.312 (33.32)	.125 (3.19)
VAS 32	2.00 (50.80)	.500 (12)	.625 (16)	1.25 (31.75)	.250 (6.35)	.500 (12.07)	3.00 (76.20)	1.375 (34.93)	.500 (12.70)	1.80 (45.72)	1.672 (42.47)	.1884 (4.78)
VAS 44	2.75 (69.85)	.500 (12)	.625 (16)	1.25 (31.75)	.250 (6.35)	.500 (17.78)	3.30 (83.82)	1.625 (41.28)	.500 (12.70)	1.80 (45.72)	2.375 (60.33)	.188 (4.78)
VAS 48	3.00 (76.20)	.625 (16)	1.000 (25)	1.75 (44.45)	.250 (6.35)	.500 (17.78)	4.00 (101.60)	1.750 (44.45)	.500 (12.70)	2.43 (61.72)	2.625 (66.80)	.250 (6.35)

*Bore diameters (Dimension B): other than standards shown are available up to the maximum diameter.

**Standard output bore (Dimension BB): other diameters (English and Metric), hex sizes or custom configurations are available upon request.

MODEL NO.	THRUST LOAD lbs. (N)	CAPACITY @ 50 RPM		FRICTION SURFACES
		lb-in (Nm)	Watts	
VAS 20	165 (22.8)	12 (1.5)	6	8
VAS 24	255 (35.3)	25 (3)	15	12
VAS 32	300 (41.5)	50 (6)	30	12
VAS 44	400 (55.3)	75 (9)	43	12
VAS 48	665 (91.9)	100 (11.5)	55	12

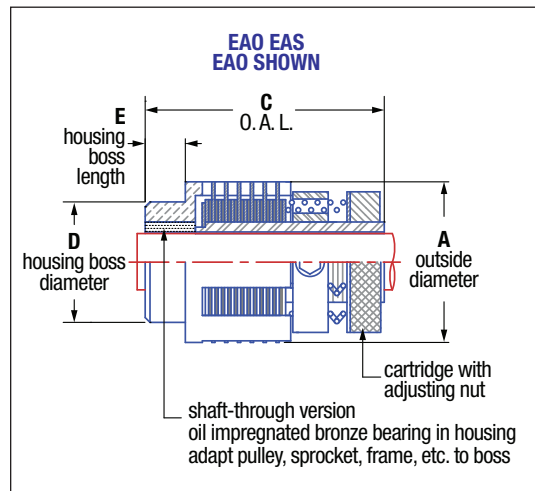
Please note that torque capacities are only guidelines. Higher torques and speeds are possible depending on operating conditions. Consult factory for details.

SLIP-EASE | MECHANICAL SLIP CLUTCHES

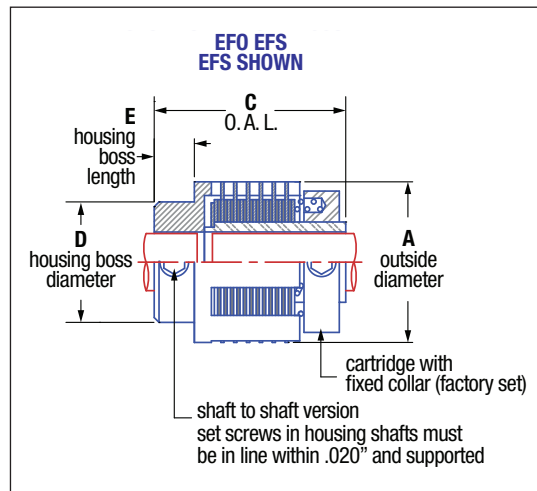
Utilizes an axial loaded multi-plate design. For applications where space is at a premium and low backlash is required.



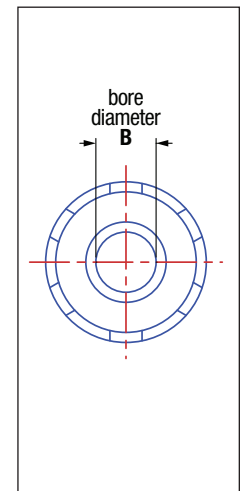
ADJUSTABLE



FIXED FACTORY SET – NON ADJUSTABLE



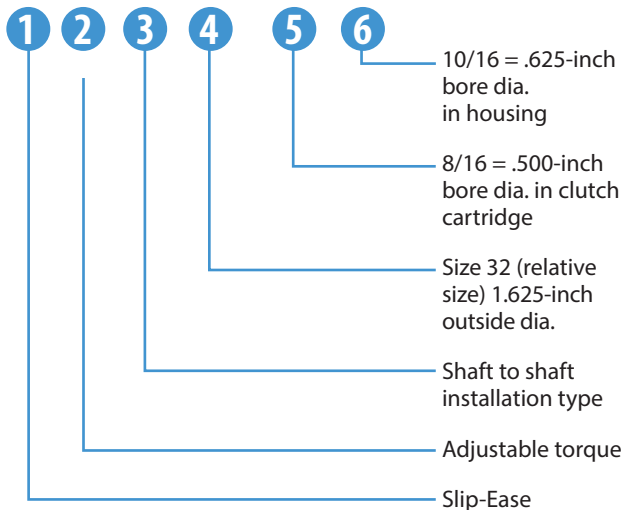
END VIEW TYPICAL



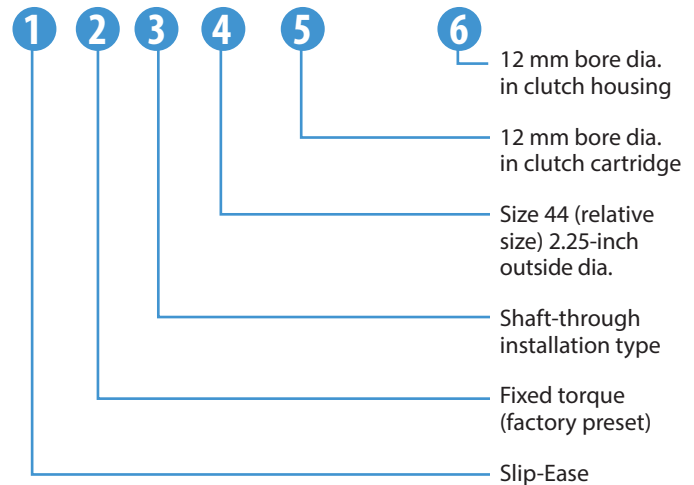
PART NUMBER EXAMPLES

See page 212 for part number identification.

E A S 32 - 8 - 10



E F O 44 - 12mm - 12mm



SLIP-EASE | SPECIFICATIONS

See pages 210-211 for slip clutch operation (construction, installation, capacity) and mounting options.

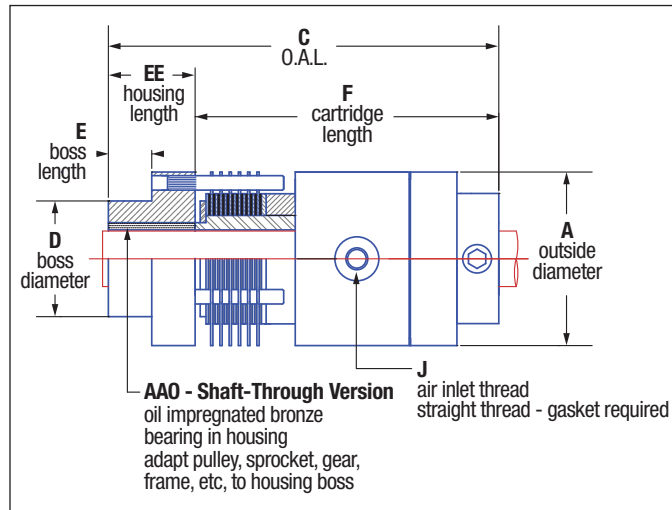
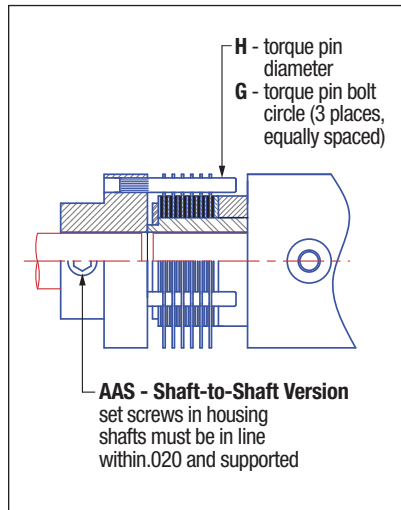
MODEL NO.	A inches (mm)	B* STD. inches (mm)	B MAX. inches (mm)	C inches (mm)	D inches (mm)	E inches (mm)	CAPACITY @ 50 RPM		FRICTION SURFACES
		+.002 / -.000 inches (+.05 / -.00 mm)					lb-in (Nm)	Watts	
EAS 12 & EAO 12	.750 (19.05)	.1875 (5)	.250 (6)	1.25 (31.75)	.562 (14.28)	.188 (4.78)	8.5 (1.0)	4.5	8
EFS 12 & EFO 12	.750 (19.05)	.1875 (5)	.250 (6)	1.00 (25.40)	.562 (14.28)	.188 (4.78)	8.5 (1.0)	4.5	8
EFS 16 & EFO 16	1.000 (25.40)	.250 (8)	.375 (10)	1.19 (30.2)	.750 (19.05)	.25 (6.35)	16 (2)	9	12
EAS 16 & EAO 16	1.000 (25.40)	.250 (8)	.375 (10)	1.50 (38.1)	.750 (19.05)	.25 (6.35)	16 (2)	9	12
EFS 24 & EFO 24	1.375 (34.90)	.375 (10)	.500 (13)	2.00 (50.8)	1.000 (25.40)	.38 (9.65)	25 (3)	15	12
EAS 24 & EAO 24	1.375 (34.90)	.375 (10)	.500 (13)	2.50 (63.50)	1.000 (25.40)	.38 (9.65)	25 (3)	15	12
EFS 32 & EFO 32	1.625 (41.28)	.500 (12)	.625 (16)	1.87 (47.5)	1.375 (34.93)	.50 (12.70)	50 (6)	30	12
EAS 32 & EAO 32	1.625 (41.28)	.500 (12)	.625 (16)	2.44 (62.0)	1.375 (34.93)	.50 (12.70)	50 (6)	30	12
EFS 44 & EFO 44	2.250 (57.15)	.500 (12)	.625 (16)	1.87 (47.5)	1.625 (41.28)	.50 (12.70)	75 (9)	43	12
EAS 44 & EAO 44	2.250 (57.15)	.500 (12)	.625 (16)	2.44 (62.0)	1.625 (41.28)	.50 (12.70)	75 (9)	43	12
EAS 52 & EAO 52	3.250 (82.55)	.750 (20)	1.250 (32)	4.00 (101.6)	2.000 (50.8)	.50 (12.70)	150 (17)**	85	12

*Bore diameters (Dimension B): other than standards shown are available up to the maximum diameter.

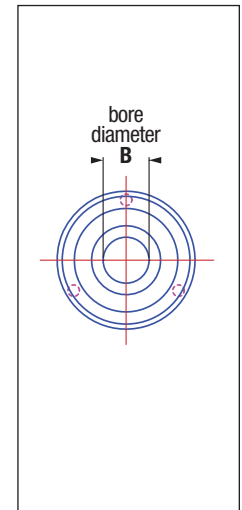
**Maximum capacity is 500 lb-in / 56 Nm. Heat generation should not exceed maximum Watts capacity. Watts = Torque x RPM x Duty Cycle x 0.011

SLIP-AIRE | PNEUMATIC SLIP CLUTCHES

The Polyclutch Slip-Aire is an air actuated version of the mechanical Polyclutch slip clutch. It has the same long life friction plates, assuring constant torque or tension. With air actuation it can be used to engage/disengage, to vary the torque during operation, or to adjust the torque remotely at any time. Ideal for servo mechanisms, it transmits higher torque levels than comparably sized mechanical slip clutches.



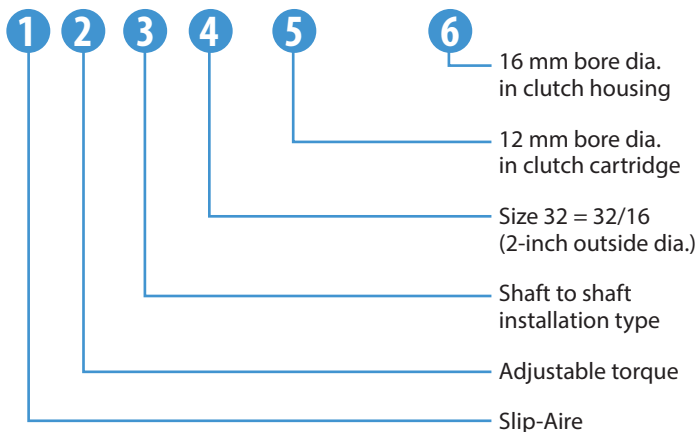
END VIEW TYPICAL



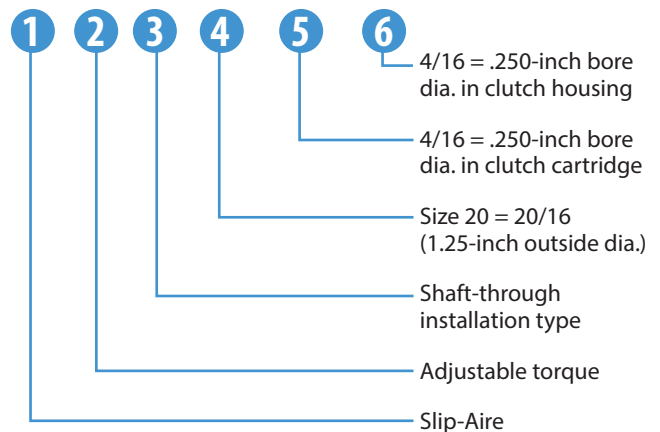
PART NUMBER EXAMPLES

See page 212 for part number identification.

A A S 32 - 12mm - 16mm



A A 0 20 - 4 - 4



SLIP-AIRE | SPECIFICATIONS

See pages 210-211 for slip clutch operation (construction, installation, capacity) and mounting options.

MODEL NO.	A inches (mm)	B* STD. inches (mm)	B MAX. inches (mm)	C inches (mm)	D** inches (mm)	E inches (mm)	EE inches (mm)	F inches (mm)	G inches (mm)	H inches (mm)	J inches (mm)
		+.002 / -.000 inches (+.05 / -.00 mm)									
AAS 20 & AAO 20	1.25 (31.75)	.250 (8)	.375 (10)	2.50 (63.50)	.760 (19.30)	.25 (6.35)	.50 (12.70)	2.00 (50.80)	1.062 (26.98)	0.94 (2.39)	10-32
AAS 24 & AAO 24	1.50 (38.10)	.375 (10)	.500 (13)	3.38 (85.85)	1.010 (25.65)	.38 (9.65)	.75 (19.05)	2.63 (66.80)	1.312 (33.73)	.125 (3.18)	10-32
AAS 32 & AAO 32	2.00 (50.80)	.500 (12)	.625 (16)	3.63 (92.20)	1.385 (35.18)	.50 (12.70)	1.00 (25.40)	2.63 (66.80)	1.672 (42.47)	.188 (4.78)	10-32
AAS 44 & AAO 44	2.75 (69.85)	.500 (12)	.625 (16)	3.63 (92.20)	1.635 (41.53)	.50 (12.70)	1.00 (25.40)	2.63 (66.80)	2.375 (60.33)	.188 (4.78)	10-32

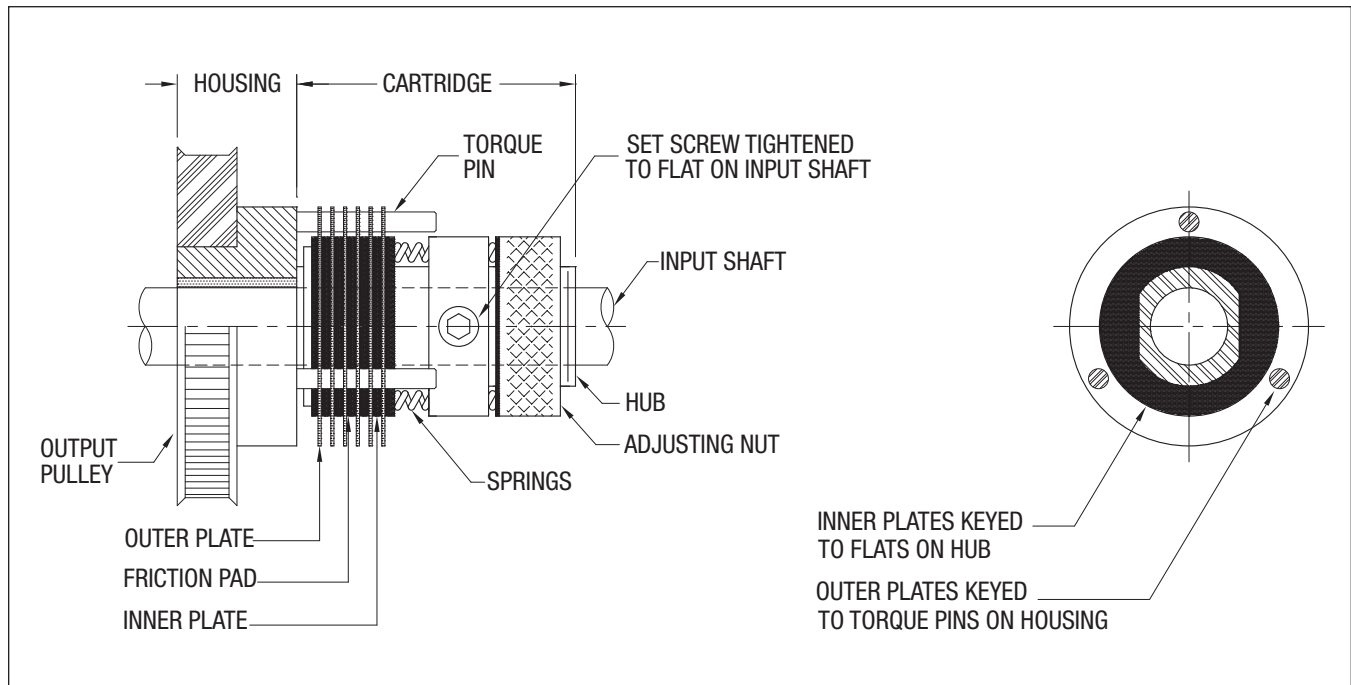
*Bore diameters (Dimension B): other than standards shown are available up to the maximum diameter.

MODEL NO.	CAPACITY CONTINUOUS @ 50 RPM* lb-in (Nm)	CAPACITY MAXIMUM @ 100 RPM** lb-in (Nm)	WATTS	FRICTION SURFACES
AAS 20 & AA0 20	12 (1.5)	20 (2.2)	6	8
AAS 24 & AA0 24	25 (3.0)	50 (6.0)	15	12
AAS 32 & AA0 32	50 (6.0)	100 (12.0)	30	12
AAS 44 & AA0 44	75 (9.0)	300 (34.0)	43	12

*Rated torque for continuous operation at 50 RPM. Torque can be higher or lower depending on actual RPM and duty cycle.

**Maximum torque attainable (at 100 PSI).

SLIP CLUTCH | CONSTRUCTION, INSTALLATION & CAPACITY



CONSTRUCTION

A Polyclutch consists of two parts: a cartridge and a housing (see above).

The cartridge is set screwed or keyed to the input shaft.

- The cartridge includes the clutch pack: outer plates, friction pads, inner plates
- Plates are brass with a proprietary finish
- Inner plates are keyed to the cartridge hub
- Outer plates are keyed to the cartridge housing
- Friction pads are a proprietary plastic-based composite (no asbestos)

The housing is either set screwed or keyed to the output shaft, or (as shown), attached to the output gear or pulley, with a bronze bearing to allow relative motion between the input shaft and the output gear/pulley.

Torque is controlled by changing the pressure applied to the clutch pack. In an adjustable style clutch, the torque level is controlled by compressing the springs with the adjusting nut. In a fixed style clutch, a collar is attached to the hub in a fixed position, and the torque level is set by pushing and locking the spring collar to a calibrated position.

All slip clutch torques are calibrated to +/- 20% but can be held to closer tolerances.

Backlash of 6° is standard for Slipper models and 2° for the Slip-Ease models. Slipper models can be held to 2° if required.

Our proprietary burn-in process ensures that all Polyclutch slippers will perform consistently right out of the box, with no break-in period required.

INSTALLATION (see page 211 for mounting options)

Shaft-through versions: Insert input shaft into cartridge and tighten set screws. Insert housing around input shaft, with torque pins engaging holes in outer plates. Input shaft will keep the *cartridge and housing* aligned.

Shaft to Shaft versions: Insert input shaft into cartridge and tighten set screws. Insert output shaft into housing and tighten set screws. Input and output shafts must be properly journaled with centerlines within +/- .010 T.I.R.

Do not lubricate the clutch. Friction materials are designed to run without additional lubrication. Lubrication will cause a change in torque and erratic behavior. The inherent axial loaded design will keep dirt and dust **OUT OF THE** friction surfaces.

Capacity

The clutch capacity is based on continuous operation at 50 RPM for over 25 million cycles. Torque, RPM, duty cycle and life are interdependent. A reduction of any of these will allow an increase in any other. (Running at 25 RPM will allow twice the torque, or running for only 10% of the cycle will allow higher RPM, etc.). The limit is based on heat **buildup measured in watts per:**

$$\text{Watts} = \text{Torque (lb-in)} \times \text{RPM} \times \text{Duty Cycle}^* \times 0.011$$

Please consult our factory for high torque, high RPM and rapid cycling applications.

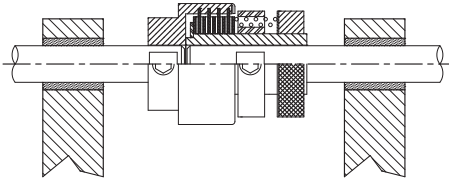
*Percent of the time the clutch is slipping, expressed as a decimal. For example, 0.5 = 50% of the time the clutch is slipping.

SLIP CLUTCH | TYPICAL MOUNTING FOR MECHANICAL & PNEUMATIC SLIP CLUTCHES

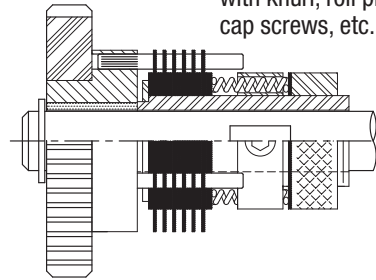
All Polyclutch slip clutches perform the basic function of controlling the torque between two elements. They can be supplied as a shaft-to-shaft coupling or a shaft to pulley, gear, or sprocket model. Polyclutch custom slip clutches can be provided with non-standard bore sizes, keyways, low backlash or higher torque, minus housings and with pulley, gear or sprocket.

EXAMPLE 1

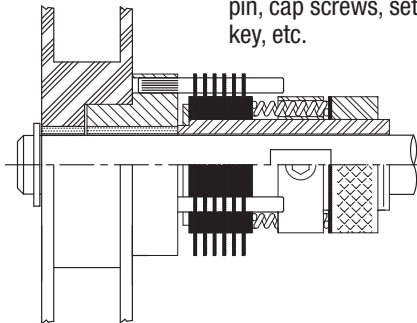
Shaft to Shaft
Shafts must be supported
and aligned within .010-.015

**EXAMPLE 2**

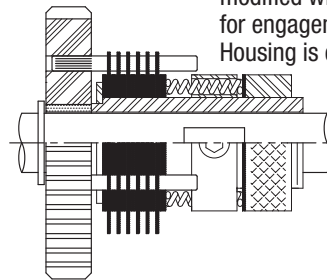
Gear/Pulley/Sprocket
adapted to housing
with knurl, roll pin,
cap screws, etc.

**EXAMPLE 3**

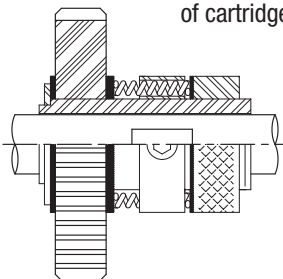
Supply or rewind spool
adapted to housing with knurl,
pin, cap screws, set screw,
key, etc.

**EXAMPLE 4**

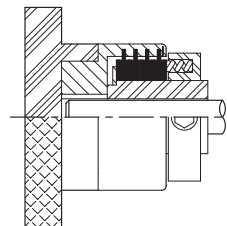
Gear/Pulley/Sprocket
modified with pins
for engagement
Housing is eliminated

**EXAMPLE 5**

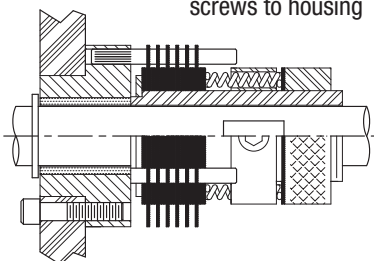
Gear/Pulley/Sprocket
integrated as part
of cartridge

**EXAMPLE 6**

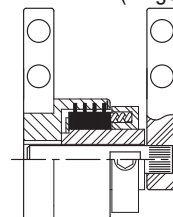
Knob adapted to housing
knurl, set screw, pin, etc.

**EXAMPLE 7**

Machine frame
adapted with cap
screws to housing

**EXAMPLE 8**

Rotary position holder
(hinge)



SLIP CLUTCH | HOW TO CREATE A PART NUMBER

S A S 24 - 4 - 6
1 2 3 4 5 6
HOUSING BORE SIZE:

Generally represented in sixteenths of an inch. For metric, add MM after bore sizes. (e.g., SAS24-4MM-6MM).

CARTRIDGE BORE SIZE:

Generally represented in sixteenths of an inch. For metric, add MM after bore size (e.g., SAS24-4MM).

OUTER DIAMETER:

Generally represented in sixteenths of an inch, please see specifications for exact dimensions.

INSTALLATION TYPE:

"S" is shaft to shaft

"O" is shaft-through for mounting to pulley, gear, sprocket, etc.

"Y" is cartridge only

TORQUE SETTING:

"A" is adjustable torque

"F" is factory preset (fixed) torque*

TYPE OF SLIP CLUTCH:

S = Multi-Plate Slipper

P = Single-Plate Slipper

V = V-Series Slipper

E = Slip-Ease

A = Slip-Aire (air-actuated)

*Please indicate torque value if fixed - 'T' =

STANDARD OPTIONS

Polyclutch slip clutches are designed to cover a wide range of solutions. To help better fit the clutch to your specific application, here is a list of standard options:

- Bore size changes – English (inches) and metric (mm)
- High torque option, accomplished by extra springs – "H" part no. suffix
 - Will increase capacity of standard adjustable slip clutches by 50% (note: removing springs will lower capacity, increase sensitivity)
- Keyways – English and metric – "K" part no. suffix
- Low backlash in Slipper clutch – "UL" part no. suffix
- Heavy inner plates for extra cooling – "D" part no. suffix
- 303/304 stainless steel construction – "Q" part no. prefix
- Two-plate Slipper clutch – "R" version (part no. begins with "R")
- Plastic cover for Slipper and Slip-Aire clutches

CUSTOM CLUTCHES

If you are looking for something outside of our standard options, our engineers will work with you to help design a clutch for your specific application.

PRECISION SLIP CLUTCHES | QUOTE REQUEST FORM

Date _____ Address _____
 Company Name _____ City _____ State/Prov. _____
 Contact _____ Country _____ Zip/Postal Code _____
 Quantity _____ Telephone _____ Fax _____
 Email _____

1. Application Information

- ☐ Overload Protection ☐ Torque Control (i.e. bottle capping, screwdriver)
☐ Constant Tension/Force ☐ Brake
☐ Soft Start/Cushioned Stop ☐ Positioning Hinge
☐ Other _____

Operating Environment: (list specific requirements, # corrosives, water, etc.)

Orientation: ☐ Vertical ☐ Horizontal

Temperature Range: _____ Type of Equipment: _____

Other Application Information: _____

2. Clutch Information

Polyclutch Part Number (if known): _____

☐ Mechanical Slip Clutch ☐ Pneumatic Slip Clutch ☐ One-Way Clutch ☐ Jaw Clutch ☐ Combination

Torque Range: _____ ☐ lb-in ☐ Nm ☐ Other _____

Type of Mount (select one):

☐ Shaft/Shaft Mounting ☐ Shaft Through Mounting ☐ Other _____
 Input Shaft Diameter: _____ Input Shaft Diameter: _____
 Output Shaft Diameter: _____ Output Type: _____
 (gear, pulley, frame...)

RPM (at the clutch): _____

Duty Cycle (percentage of the time the clutch will be in slip condition): _____

Maximum Space Limitations (envelope size, only if a limitation exists): _____

Life Requirements (number of cycles, only if a specification exists): _____