

SAS

MINI FRICTION SLIP CLUTCHES

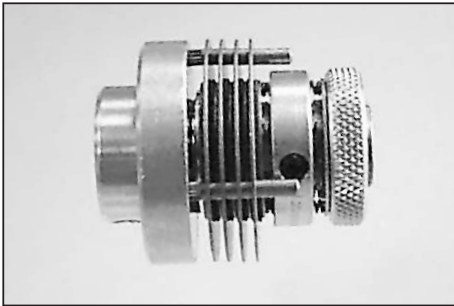
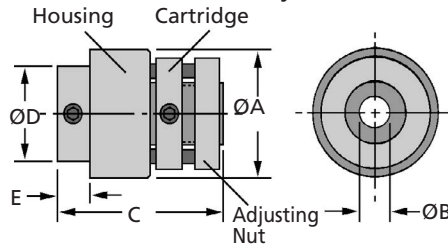
Miniature Friction Slip Clutches

0.01Nm - 8.4Nm Adjustable



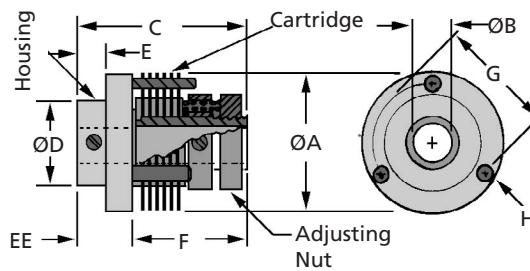
Polyclutch slippers, enclosed plate design

Size 16 only



Polyclutch slippers, open plate design

Sizes 20 - 44



EXAMPLE - the SAS20-6 can dissipate 6 Watts continuously. This translates to:

in lbs	@ rpm	@ % slip
10	50	100
1	500	100
1	1000	50
1	2000	25

% slip means within 5 mins. max. time period, e.g.

25% = 25s of slip, 75s of rest, not 25/75 mins.

As a rule, slip speed in rpm X torque in in-lbs X duty cycle in % X 0.011 = Watts

ADJUSTABLE TORQUE - For shaft to shaft coupling. Set screw housings in both housing and cartridge.

Part Number	ØA	(+0.05 -0.00)		C	ØD	E	EE	F	G	H
		ØB Std.	ØB Max.							
SAS16-6	25.40	6.00	9.53	33.27	19.30	6.35	-	-	-	-
SAS20-6	31.75	6.00	9.50	38.10	19.30	6.35	12.70	25.40	26.98	2.39
SAS24-10	38.10	10.00	12.70	63.50	25.65	9.40	19.05	44.45	33.33	3.18
SAS32-12	50.80	12.00	15.88	72.90	35.05	12.70	25.40	47.75	42.47	4.78
SAS44-14	69.85	14.00	15.88	72.90	41.40	12.70	25.40	47.75	60.33	4.78

PART NUMBER	Capacity at 50 rpm Ncm	Capacity at 50 rpm Watts	Friction Surfaces
SAS16-6	1 - 128	5.80	8
SAS20-6	1 - 135	6.00	8
SAS24-10	5.5 - 322	14.50	12
SAS32-12	9 - 564	29.00	12
SAS44-14	11 - 846	43.00	12

Other Info.

A Polyclutch slipper controls torque for intermittent, continuous or overload slip. It will drive in both directions, slip when torque setting is reached, and resume driving as the load is reduced. Slippers are excellent as continuous drag brakes, protection against accidental or intentional overloads, for "soft starts", slip at end of stroke etc. Torque control in one direction only can be provided by combining a Slipper with a POLYCLUTCH Hub Pak.

The Slipper is a small precision device containing a number of brass plates interfaced with an improved long life friction material. Soft springs maintain pressure on the friction members, assuring constant torque. An adjacent member of your mechanism can often be used as the Slipper housing.

Backlash of 6° is standard; 2° backlash available on request.

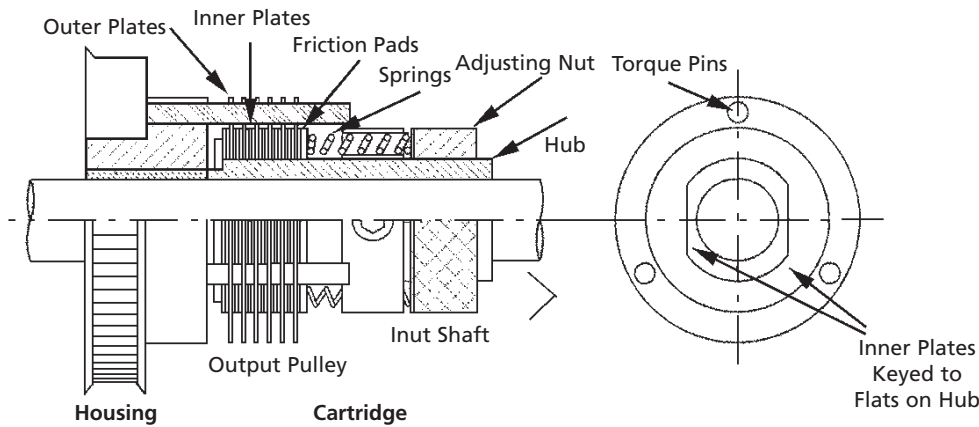
Size 16 & 20 use #8-32 UNC setscrews, 5/64" (0.078") hex key.

Size 24, 32 & 44 use 1/4-28 UNF setscrews, 1/8" (0.125") hex key.

Fixed torque clutches available (shortens length and torque - factory pre-set). P.O.A.

MINIATURE SLIP CLUTCHES

Operation



The clutch consists of two assemblies: a cartridge and a housing (see above). The cartridge is set screwed or keyed to the input shaft. The housing is either set screws or keyed to the output shaft or, (as shown), is 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 transmitted from the flats on the hub to the mating flats on the inner plates, through the friction pads to the outer plates, through the torque pins to the housing and the output gear/pulley. The torque level is controlled by compressing the springs with the adjusting nut. For a fixed torque clutch, a collar is attached to the hub in a fixed position, instead of the adjusting nut. In operation, either the input shaft or the housing can be the input member, with the other member being driven.

All Polyclutch slip clutch torques are calibrated to $\pm 20\%$ but can be held to closer tolerances. Backlash of 6° is standard for both slipper and series 16 slipper and 2° for the Slip-Ease line. Slipper models can be held to 2° if required.

INSTALLATION

Shaft to Pulley versions - Insert 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 centrelines within ± 0.10 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 behaviour. The inherent axial loaded design will keep dirt and dust out of the friction surfaces.

IDENTIFICATION

① ② ③ ④ ⑤ ⑥

S A S 24-6-8

8 is the housing bore

6 is the cartridge bore

24 is the outside diameter in sixteenths of an inch. Standard sizes are 16, 20, 24, 32, 44 and 52.

"S" is shaft to shaft. "O" is shaft to pulley or gear. "Y" is cartridge alone.

"A" is adjustable torque. "F" is factory preset torque.

Type of Clutch: S = Multi-Plate, P = Single-Plate, E = "Slip-Ease", A = Air Actuated, R = Double Plate.

CAPACITY

The clutch capacity as noted in this catalogue is based on continuous operation at 50RPM 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: Watts = Torque (inch pounds) x RPM x .011 Air actuated clutches have the same capacity as mechanical ones. However, when used for rapid engage/disengage, a limit of 50% of normal capacity should be used.

POLYCLUTCH SLIPPER



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