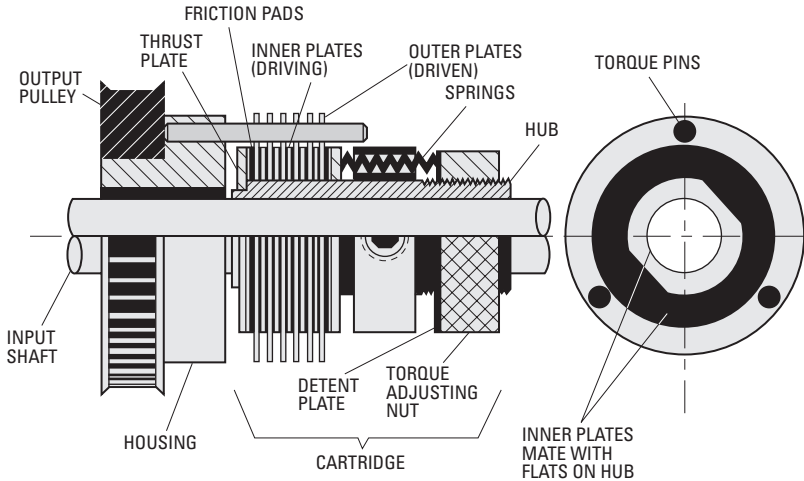




> FUNCTION:

Multiplate slip clutches control torque for intermittent, continuous, or overload slip. It will drive in both directions, slip when the torque setting is reached, and resume driving as the load is reduced. These clutches are excellent as continuous or intermittent drag brakes, protection against overloads, for "soft starts," slip at the end of a stroke, as friction hinges, for screwing on container caps, etc.



> CONSTRUCTION:

The clutch consists of two assemblies: a cartridge and a housing (see cutaway above). The cartridge is set-screwed or keyed to the input shaft. The housing is either set-screwed 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.

> CAPACITY:

The clutch capacity as noted in the catalog 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:

English Unit Watts = Torque (inch pounds) x rpm x 0.0118 x % Duty Cycle

Metric Unit Watts = Torque (N • m) x rpm x 0.104 x % Duty Cycle

For typical applications, see examples on page 13-4

> MATERIAL:

- Fig. 1 - Housing** - Zinc Plated Steel
- Plates** - Brass
- Friction Materials** - Proprietary (Nonasbestos)
- Fig. 2 - Housing** - Aluminum
- Plates** - Brass
- Friction Materials** - Proprietary (Nonasbestos)

> FEATURES:

- Fully adjustable within rating limits
- Low stick / slip ratio
- Continuous slip within dissipation limit
- Available with bronze bearing in hub end so that gear, pulley, etc. can be mounted on hub "D₁"
- Available with other bores as special order



Fig. 1



Fig. 2

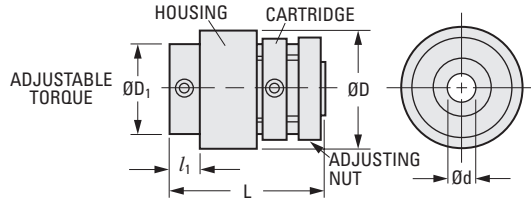


Fig. 1

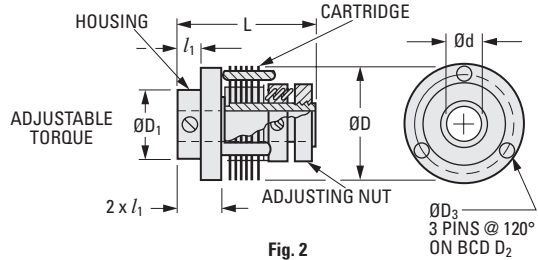


Fig. 2

METRIC COMPONENT

Catalog Number	D Body Dia. ± 0.5	d Bore		L Length ± 0.05	D ₁ Hub Dia. ± 0.05	l ₁ Hub Length	Bore Depth		Torque* Range N • cm @ 50 rpm	* Dissip. Power Watts	Friction Surfaces
		Std. +0.05 0	Max. Bore Spec.				Hub End	Cart. End			
Fig. 1											
S98CA6MMEC250827	25.4	8	10	26.9	19.3	6.3	7.8	19.1	0.23 to 22.6	1	2
S98CA6MMEC250833	25.4	8	10	33.3	19.3	6.3	7.8	25.4	1.13 to 113	5.8	8

Catalog Number	D Body Dia. ± 0.5	d Bore		L Length ± 0.05	D ₁ Hub Dia. ± 0.05	l ₁ Hub Length	Bore Depth		D ₂	D ₃	Torque* Range N • cm @ 50 rpm	* Dissip. Power Watts	Friction Surfaces
		Std. +0.05 0	Max. Bore Spec.				Hub End	Cart. End					
Fig. 2													
S98CA6MMOC320838	31.8	8	10	38.1	19.3	6.3	12.7	25.4	26.98	2.38	1.13 to 113	6	8
S98CA6MMOC381063	38.1	10	13	63.5	25.7	9.4	19.1	44.5	33.32	3.17	5.65 to 282	14.5	12
S98CA6MMOC511273	50.8	12	16	72.9	35.1	12.7	25.4	47.7	42.47	4.78	9.04 to 564	29	12
S98CA6MMOC701273	69.9	12	16	72.9	41.4	12.7	25.4	47.7	60.33	4.78	11.3 to 847	43	12

* See Technical Applications page.



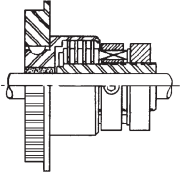


> UNLIMITED APPLICATIONS:*

- | | |
|---------------------|-----------------|
| Intermittent motion | Torque limiting |
| Indexing | Hinging |
| Phase adjustment | Many more |
| Feeding | |

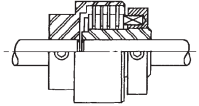
* The ingenuity of engineering has led to applications with labelers, indexing, film transport, instrumentation, business machines, computer peripherals, packaging, mailing, plotters, paper feeds and many more. We supply stock clutches or we work with you to develop units for your specific applications.

> TYPICAL MULTIPLATE SLIP CLUTCH APPLICATIONS:



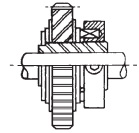
TIMING BELT ON HOUSING

Timing belt drives housing. Torque transmitted through adjustable pressure plates to shaft. Also operates as shaft input to timing belt.



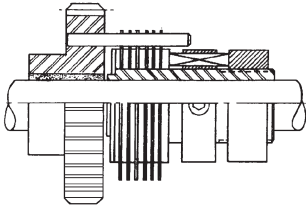
SHAFT TO SHAFT CONTROL

Either shaft as input. Fixed torque transmitted through pressure plates. Shafts must be journaled. Also can be adjustable torque.



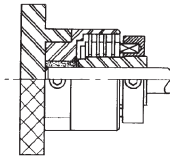
SLIP CARTRIDGE WITH GEAR

Pressure pads transmit torque directly to gear for space saving package.



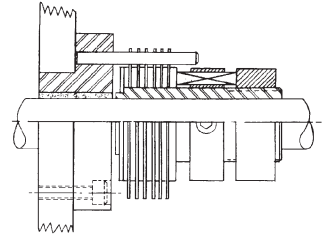
CLUTCH WITH A MODIFIED GEAR

Torque transmitted directly from gear through pins to adjustable pressure plates.



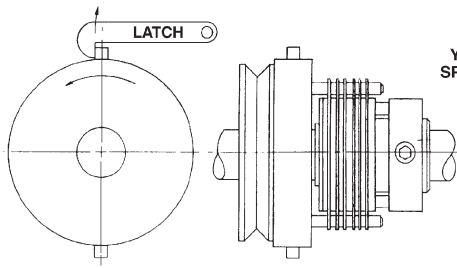
KNOB WITH TORQUE PROTECTION

Knob connected directly to housing. Fixed torque transmitted to shaft. Will slip above preset torque.



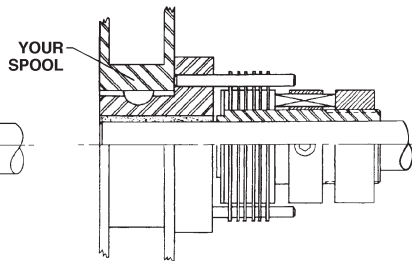
BRAKE TO FRAME OF MACHINE

Outer pressure plates held to machine frame. Adjustable braking pressure transmitted to shaft.



"SINGLE" REVOLUTION CLUTCH

Input shaft turns continuously. Output shaft turns when latch is disengaged. Single revolution, partial revolution, or multi-revolutions can be designed.



CONSTANT TORQUE – SUPPLY OR REWIND SPOOL

Slip clutch mounted directly to spool will give constant torque. Mounted directly to constant diameter cylinder will give constant tension. Many variations available to control wire supply system.



> FEATURES:

- Long life under continuous slip conditions
- Unidirectional or bidirectional operation
- Same or different clockwise and counterclockwise torques
- Precise and stable limit torque calibration (range: 0.007 to 4.24 N • m)
- Same torque at breakaway as at high slip velocities
- Mounting provisions for gear, sprocket or pulley
- Corrosion-resistant materials

> APPLICATIONS:

- Tension control of film or tape drives
- Transmission overload protection

> SPECIAL DESIGNS:

The standard line of slip elements provides a wide selection of limit torques, sizes and coupling arrangements. In addition, our engineers will modify designs to meet your specific requirements in such areas as:

- Configuration
- Driving arrangement
- Limit torques from a fraction of a N • cm to many N • m's
- Calibration of torque to a tolerance of $\pm 5\%$
- Different limit torques for the two directions of rotation
- Spring windup and limit torque combination. The spring action of the slip element is useful for tensioning of tape and prevention of slack loops.

*Stock units are calibrated with equal clockwise and counterclockwise slip torques corresponding to the tabulated Upper Limit Torques. Other torques are readily available from full, down to 1/8 of the Upper Limit Torque for each model. Torque values are independent of each other for clockwise and counterclockwise rotation, and may be specified the same or different for the two directions.

**All clutches in this series have a pilot diameter "D₃" and three tapped holes "T₁" for mounting a gear, sprocket or pulley on the input hub. Screw penetration into the clutch housing must not exceed the depth specified in column "T₁". Concentricity of pilot diameter "D₃" to bore "d" is 0.025 T.I.R. max.

All slip clutches are designed for long life under continuous slip conditions. The useful life of these elements is a function of the transmitted torque and slip speed.

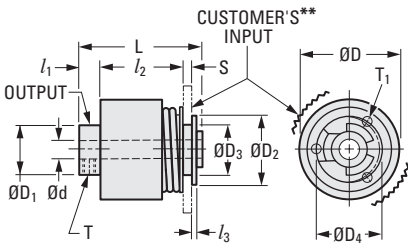


Fig. 1

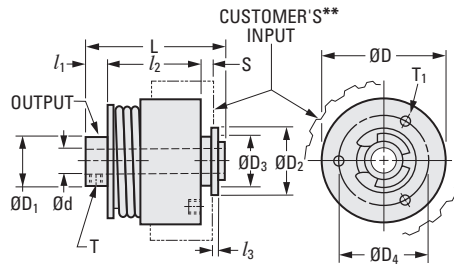


Fig. 2

METRIC COMPONENT

Catalog Number	Fig. No.	d Bore +0.025/0	D	L	l ₁	l ₂	S	l ₃	T Set Screw	D ₁ Max.	D ₂ Max.	D ₃ 0 -0.025	D ₄	T ₁	Upper* Limit Torque N • m	Wt. g
S9940YMSWC16X03	1	3	16	26.7	4.57	18.29	2.03	0.76	M1.6	13	11.43	9.5	12.7	M2X3	± 0.064	26
S9940YMSWC16X04	1	4	16	26.7	4.57	18.29	2.03	0.76	M1.6	13	11.43	9.5	12.7	M2X3	± 0.007	26
S9940YMSWC25X04	1	4	25.4	31.5	5.33	21.59	2.41	1.02	M3	22.4	17.27	12.675	16.51	M2X3	0.141	68
S9940YMSWC25X06	1	6	25.4	31.5	5.33	21.59	2.41	1.02	M3	22.4	17.27	12.675	16.51	M2X3	± 0.014	68
S9940YMSWC25X08	1	8	25.4	31.5	5.33	21.59	2.41	1.02	M3	22.4	17.27	12.675	16.51	M2X3	± 0.057	68
S9940YMSWC32X06	2	6	31.75	35.3	5.84	23.88	3.3	1.02	M4	25.7	17.27	12.675	23.5	M2X3	± 0.339	117
S9940YMSWC32X08	2	8	31.75	35.3	5.84	23.88	3.3	1.02	M4	25.7	17.27	12.675	23.5	M2X3	± 0.035	117
S9940YMSWC38X06	1	6	38.1	35.3	5.84	23.88	3.3	1.02	M4	25.7	17.27	12.675	23.5	M3X4	0.565	213
S9940YMSWC38X08	1	8	38.1	35.3	5.84	23.88	3.3	1.02	M4	32	17.27	12.675	23.5	M3X4	± 0.057	213
S9940YMSWC48X06	1	6	47.5	42.4	6.35	30.48	3.3	1.02	M4	32	17.27	12.675	19.2	M3X4	0.847	355
S9940YMSWC48X08	1	8	47.5	42.4	6.35	30.48	3.3	1.02	M4	38.4	17.27	12.675	19.2	M3X4	± 0.085	355
S9940YMSWC48X10	1	10	47.5	47.8	7.37	34.04	3.3	1.02	M4	38.4	17.27	12.675	29.72	M3X4	1.059	482
S9940YMSWC48X12	1	12	47.5	47.8	7.37	34.04	3.3	1.02	M4	38.4	17.27	19.025	29.72	M3X4	± 0.106	482
S9940YMSWC57X06	2	6	57.15	47.8	7.37	34.04	3.3	1.02	M4	38.4	18.8	19.025	29.72	M3X4	± 0.170	582
S9940YMSWC57X08	2	8	57.15	47.8	7.37	34.04	3.3	1.02	M4	51.1	18.8	19.025	29.72	M3X4	1.695	582
S9940YMSWC57X10	2	10	57.15	47.8	7.37	34.04	3.3	1.02	M4	51.1	18.8	19.025	29.72	M3X4	± 0.170	582
S9940YMSWC57X12	2	12	57.15	47.8	7.37	34.04	3.3	1.02	M4	51.1	18.8	19.025	29.72	M3X4	± 0.170	582
S9940YMSWC67X08	1	8	66.55	47.8	8.13	33.27	3.3	1.02	M5	51.1	18.8	19.025	29.72	M4X5	2.540	794
S9940YMSWC67X10	1	10	66.55	47.8	8.13	33.27	3.3	1.02	M5	51.1	18.8	19.025	29.72	M4X5	± 0.250	794
S9940YMSWC67X12	1	12	66.55	47.8	8.13	33.27	3.3	1.02	M5	51.1	18.8	19.025	29.72	M4X5	± 0.250	794
S9940YMSWC76X16	1	16	76.2	58.4	—	50.17	5.72	1.17	M6	76.5	27.94	28.55	37.6	M2X3	3.390	993
S9940YMSWC76X19	1	19	76.2	58.4	—	50.17	5.72	1.17	2@	76.5	27.94	28.55	37.6	M2X3	± 0.340	993
S9940YMSWC76X20	1	20	76.2	58.4	—	50.17	5.72	1.17	120°	76.5	27.94	28.55	37.6	M2X3	± 0.340	993

* or ** See Preceding Page

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