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The Synchromesh Drive System represents an entirely new approach to synchronous drives. At the heart of the system is a drive cable, which replaces conventional timing belts as well as other means of transmitting synchronous motion. The cable consists of a core bundle of stranded stainless steel wires encapsulated in a nylon jacket. Wound spirally around the nylon jacket is another cable of similar construction. The spiral member is bonded to the core cable to provide functional stability under load. The pitch of the spiral winding is carefully controlled during the winding and bonding processes.

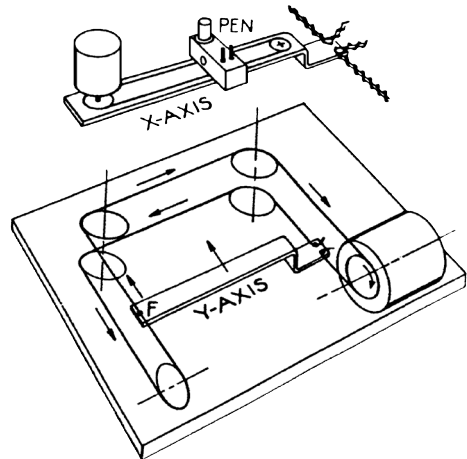
The use of stranded wire and nylon resin produces an extremely flexible cable that opens up new design possibilities, which were previously not possible with any other synchronous drives. The schematic diagram shown below illustrates the geometric features of an x-y plotter. Synchromesh cables are capable of changing operating planes, limited only by the size and proximity of adjacent pulleys. This unique characteristic makes it possible to produce this plotter design without employing expensive lead screw drive components. This is only one example of the countless possibilities offered with Synchromesh Drive Systems.

Complementing the Synchromesh cables are the drive pulleys, which have helical grooves on their outside diameter, to accurately engage the spiral convolutions on the drive cable. An additional radial groove of half round cross section supports the core cable and provides lateral stability. Synchromesh cables can be readily secured to other mechanism members in many different ways as well as those offered in the catalog pages.

Please note, however, that the Synchromesh Drive Systems are intended for reciprocating motion applications and cannot be made endless.

› **ADVANTAGES AND DESIGN FEATURES:**

- Synchronous motion
- Flexible in all directions
- Miniature in size
- High strength
- Small bending radius
- Lightweight
- Low inertia
- Low tension required
- Chemically resistant
- Electrically conductive & insulated
- Pulleys available machined or molded
- Easy to mount attachments & end fittings
- Cables available up to 200 feet long



SYNCHROMESH DRIVE SELECTION TABLE



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Catalog Number		IDLER PULLEY STYLES			
CABLE	PULLEY	Steel / Ball Bearing	All Plastic	Plastic / Sintered Brg.	Nylon / Ball Bearing
A 6J 9-AS0605 or A 6J 9MAS0605	A 6P 9-060... or A 6P 9M060...	A 6C 9-00804 (.441)	A 6M 9-00804 (.493) A 6M 9-01004 (.611) A 6M 9-01204 (.709) A 6M 9-01606 (.861)	A 6T 9-00604 (.401) A 6T 9-00804 (.517) A 6T 9-01004 (.626) A 6T 9-01204 (.711)	A 6Z 9-01004 (.623) A 6Z9-01204 (.706) A 6Z 9-01604 (.906)
A 6J 9-AS0805 or A 6J 9MAS0805	A 6P 9-080... or A 6P 9M080...	A 6C 9-00804 (.489)	A 6M 9-01204 (.759) A 6M 9-01606 (1.009) A 6M 9-02006 (1.229)	A 6T 9-00804 (.544) A 6T 9-01204 (.769) A 6T 9-01706 (1.019) A 6T 9-02006 (1.179) A 6T 9-02008 (1.179)	A 6Z 9-01204 (.767) A 6Z 9-01604 (.992) A 6Z 9-02006 (1.199) A 6Z 9-01706 (1.029) A 6Z 9-02008 (1.199)
A 6J 9-AS1005 or A 6J 9MAS1005	A 6P 9-100... or A 6P 9M100...	—	A 6M 9-02408 (1.348)	A 6T 9-01706 (1.058) A 6T 9-02006 (1.253) A 6T 9-02008 (1.253) A 6T 9-02408 (1.348) A 6T 9-02412 (1.348)	A 6Z 9-02006 (1.258) A 6Z 9-01706 (1.064) A 6Z 9-02008 (1.258) A 6Z 9-02408 (1.388) A 6Z 9-02412 (1.388)
A 6J 9-AS1209 or A 6J 9MAS1209	A 6P 9-120... or A 6P 9M120...	A 6C 9-01606 (.866) A 6C 9-01706 (1.000)	A 6M 9-02408 (1.426) A 6M 9-02808 (1.476)	A 6T 9-02408 (1.421) A 6T 9-02808 (1.491) A 6T 9-02412 (1.421) A 6T 9-02812 (1.491)	A 6Z 9-02408 (1.476) A 6Z 9-02808 (1.501) A 6Z 9-02412 (1.476) A 6Z 9-02812 (1.501)

NOTE: Numbers shown in parentheses indicate pitch diameters of cable when wrapped around related pulley.

Example: Cable **A 6J 9-AS1005** when used with pulley A 6M 9-02408 has a pitch diameter of 1.348.

METRIC SIZE BORES ARE AVAILABLE ON REQUEST.

PATENTED
MINIATURE
SYNCHRONOUS

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> MATERIAL:

- Core - 304 Stainless Steel
- Casing - Nylon

> SPECIFICATIONS:

Life Data:

- 10⁸ minimum flexing cycles where:
- Pulley Pitch Radius (R) = 2 x P

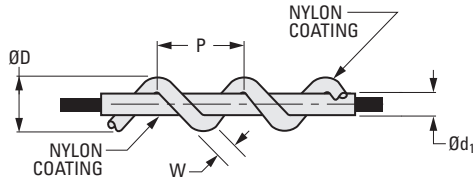
Accuracy:

1. Pitch Error ± .002 in.
2. Cumulative Pitch Error ± .16 in. max. over 100 pitches.

Ambient Factors:

1. Temperature Range: -22°F to +176°F
2. Avoid strong acids, alkalies and organic solvents.

Priced Per Foot



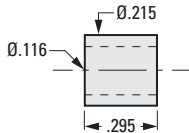
INCH COMPONENT

Catalog Number	P Pitch	D Outside Dia. in.	d ₁ Dia.	W	Breaking Load lbf
Priced Per Meter					
A 6J 9-AS0605	.120	.063	.024	.024	36
A 6J 9-AS0805	.150	.087	.032	.031	73
A 6J 9-AS1005	.200	.110	.039	.039	119
A 6J 9-AS1209	.250	.134	.047	.047	176

PLUGS - Annealed Brass

INCH COMPONENT

Catalog Number
Priced per 10 pieces
A 6J 9-B103

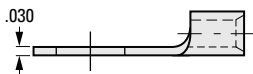
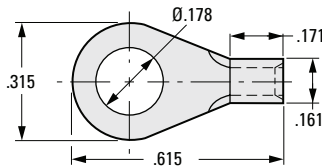


EYES - Low Carbon Steel, Chromium Finish - Meets EU Standards.

NOTE: Universal eyes fit all cable sizes and provide for convenient screw mounting.

INCH COMPONENT

Catalog Number
Priced per 10 pieces
A 6J 9-AA39



SYNCHROMESH CABLE PULLEYS



> MATERIAL:

Pulley - Acetal
Insert - Brass*

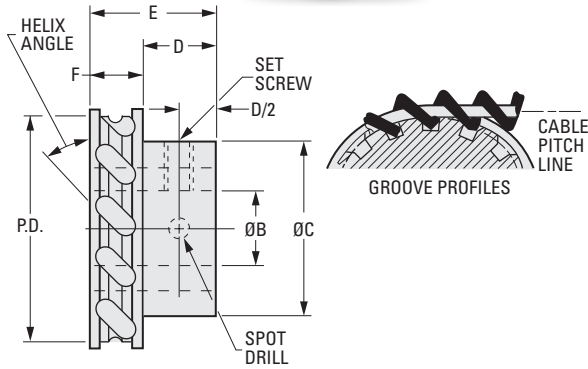
* Aluminum inserts used on .250 pitch pulleys.

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Also see Idler Pulley Series:

1. Steel with ball bearing - A 6C 9-...
2. Molded Nylon with Ball Bearing - A 6Z 9-...
3. Molded Nylon with Sintered Bronze Bearing - A 6T 9-...
4. Molded Acetal - A 6M 9-...



INCH COMPONENT

Catalog Number	No. of Grooves	P.D.	B Bore +.001 -.000	F Face Width	E Length	C Hub Dia.	D Hub Proj. (Ref.)	Set Screw
.120 Pitch - Helix Angle 45°								
A 6P 9-0601504	15	.573	.125	9/64	3/8	13/32	15/64	#2-56
A 6P 9-0602004	20	.764	.125	9/64	3/8	35/64	15/64	#2-56
A 6P 9-0602006	20	.764	.1875	9/64	3/8	35/64	15/64	#6-40
A 6P 9-0602504	25	.955	.125	9/64	3/8	35/64	15/64	#2-56
A 6P 9-0602506	25	.955	.1875	9/64	3/8	35/64	15/64	#6-40
.150 Pitch - Helix Angle 51°								
A 6P 9-0801506	15	.716	.1875	9/64	3/8	35/64	15/64	#6-40
A 6P 9-0801508	15	.716	.250	9/64	3/8	35/64	15/64	#8-32
A 6P 9-0802406	24	1.146	.1875	9/64	3/8	5/8	15/64	#6-40
A 6P 9-0802408	24	1.146	.250	9/64	3/8	5/8	15/64	#8-32
.200 Pitch - Helix Angle 42°								
A 6P 9-1001508	15	.955	.250	3/16	1/2	5/8	5/16	#8-32
A 6P 9-1001510	15	.955	.3125	3/16	1/2	5/8	5/16	#8-32
A 6P 9-1003008	30	1.910	.250	3/16	1/2	43/64	5/16	#8-32
A 6P 9-1003010	30	1.910	.3125	3/16	1/2	43/64	5/16	#8-32
.250 Pitch - Helix Angle 48°								
A 6P 9-1201512	15	1.193	.375	1/4	5/8	7/8	3/8	#10-32
A 6P 9-1203012	30	2.387	.375	1/4	5/8	7/8	3/8	#10-32

LOOP SLEEVES THIMBLES

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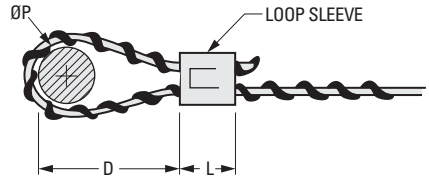
> MATERIAL:

Loop Sleeves - Copper, Zinc Plated
Thimbles - Stainless Steel

P = Pin Diameter

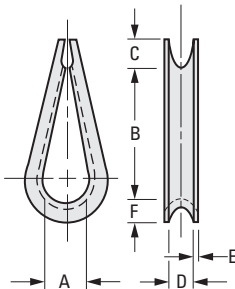
D = Distance from bearing point to fitting

P should be at least five (5) times the cable diameter for guaranteed breaking strength and D should be at least 2.5 times P.



INCH COMPONENT

Catalog Number	For Cable No.'s	L Length After Swaging
Loop Sleeves - Priced Per 10 Pieces		
A 6B 9-S039	A 6J 9-AS0605	7/16
A 6B 9-S063	A 6J 9-AS0805	15/32
A 6B 9-S093	A 6J 9-AS1005	1/2
A 6B 9-S093	A 6J 9-AS1209	1/2



Thimbles provide loop support at higher loads & protect cables from wear when motion is present. Some thimbles may have open and/or uneven ends.



INCH COMPONENT

Catalog Number	For Cable No.'s	A	B	C	D	E	F
Thimbles - Priced Per 10 Pieces							
A 6C 9-T015	A 6J 9-AS0605	.188	1/4	1/8	1/8	.015	3/64
A 6C 9-T047	A 6J 9-AS0805	.339	43/64	3/16	3/32	.032	5/64
A 6C 9-T047	A 6J 9-AS1005	.339	43/64	3/16	3/32	.032	5/64
A 6C 9-T094	A 6J 9-AS1209	.339	45/64	7/32	9/64	.032	5/64