

Flexible Shaft

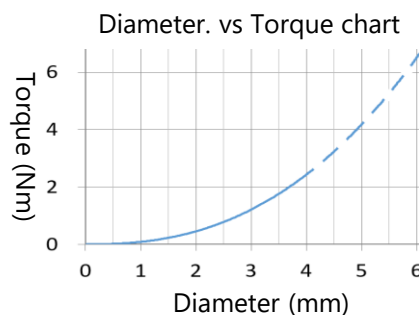


Flexible shaft (Product name: Drive cable) offers high torque force and excellent rotational performance during high-speed rotation, Designed for transmitting power or rotary motion through obstructed or curved path, either between fixed shafts or shafts having relative movement.

It can solve problems of misalignment, absorb and isolate vibration, and simplify power transmission designs and applications.

Specifications

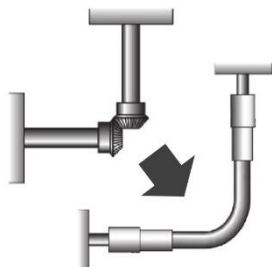
- Diameter: 0.5 - 4.0mm (Trial : up to 6.0mm)
- Max. Torque: up to 2.4Nm (Trial : up to 6.5Nm)
- Construction: 3 – 6 layers
- Material: Stainless steel, Ni-Ti



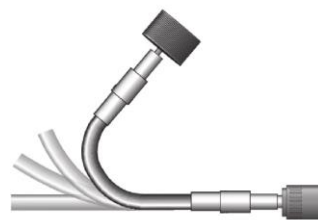
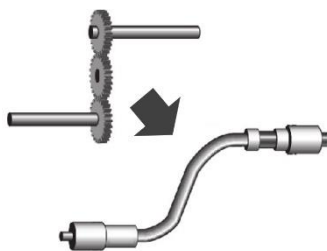
Applications

Flexible shaft tools in dental, jewelry and industrial applications.

Power transmission example



Simplify the designs solving misalignment



Between shafts having relative motion

Product lineup

Specifications and Comparison of properties

Legend : 5=Highest, 1=Lowest applicability


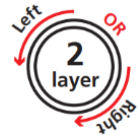



Category	Item	Type	Specification(Trial)		1to1 Torque response	High-speed rotation	Push/Pull	Compression	Flexibility	Feature					
			OD(mm)	ID(mm)											
Hollow cable	Torque coil	3layer	0.36-6.05	0.18-5.25	↑	5	3	2	4	bi-directional (3 layers) or unidirectional (2 layers) rotation *Archimedes screw with spiral wire					
		2layer	0.30-5.17	0.15-3.55											
		flat auger*	-	-											
	ACT ONE	standard	0.21-5.22	0.13-4.00						4	3	4	3	3	well balanced properties *Archimedes screw with spiral wire
		flat	0.21-4.70	0.16-3.95											
		ultra thin auger*	0.42-3.90	0.34-3.35											
Wire coil	round	0.10-3.50	~1.80	1	1	2	4	5	high flexibility and compression resistance						
	flat	0.10-5.90	0.07-5.30												
Cable	Drive Cable	2-6layer	0.41-6.00	-	↑	5	5	4	2	Optimized for high speed rotation and power transmission					
											Torque rope	1x3,1x7, 1x12,1x19	0.30-3.00	-	4
	Wire rope	1x7,1x19 7x7,7x19 7x7x7, etc.	0.09-3.00	-						1		1	5	4	3
Coating	Outer coating	Extrusion Dip coat Spray	Floropolymer Nylon, etc.							To add lubricity, ablation resistance or biocompatible sealing to cable					
	Inner tube		Floropolymer							Inner coating applied to a hollow cable					
	Precoating		PTFE							Coating for both inner and outer of hollow cable without losing the property of the cable					
Assembly	Machining & Assembly		Laser welding, Grinding Tube assembly							Variety of welding and machining available for assembly or additional mechanical property					
	End termination		Ball, Eye, Loop, etc.							For the end of a cable or used for intermediate attaching.					
Power transmission	Synchromesh wire rope		AWS40 -AWS120	1.10-3.40						Synchronous round belt, ideal for linear-motion system drawn in 3-dimensional.					
	Cable rack		CL0.8S / H	W3.0xH3.6						With stainless cable core, ideal when the Rack needs to be flexible and high-force movement required.					

Torque coil



The torque coil is a highly flexible coil consisting of multiple layers with very fine wires, which makes the coil ideal for high-speed rotation in very tortuous routings or anatomies. Typical applications are for IVUS, OCT catheter or atherectomy device.

Specifications

Type	Rotation direction	High speed rotation	Flexibility	Elongation resistance	OD	ID	Filar	Length
2 layer* 		5	5	3	0.44-1.68 mm (Trial : 0.30-5.17)	0.18-1.10 mm (Trial : 0.15-3.20)	4-18	up to 3000mm
3 layer* 		5	5	3	0.36-2.76 mm (Trial : 0.36-6.00)	0.18-1.71 mm (Trial : 0.18-3.20)	4-18	up to 3000mm
Auger 		-	-	-	Above torque coil with spiral wire, used as Archimedes screw (Japan Patent number : 5408809)			

*Round and flat type is available for its fine wires. Round is suitable for application that require High speed rotation, flat is for Elongation resistance.

Legend 5 = Highest applicability
1 = Lowest applicability