






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

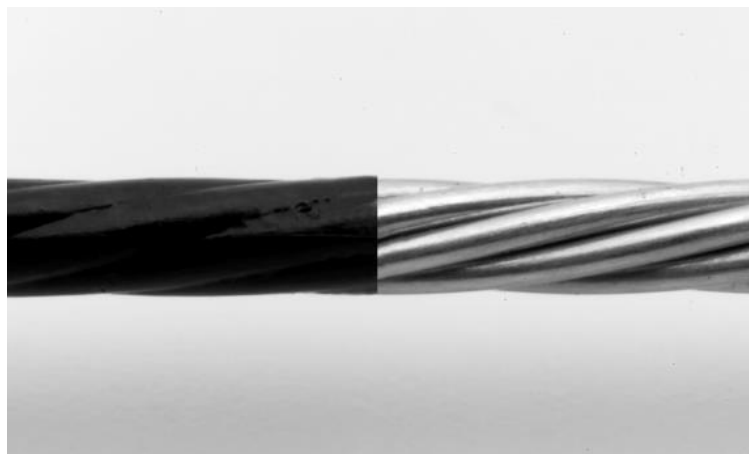
Product lineup

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	OD(mm)						ID(mm)						↑
			0.41-6.00						-						
	Torque rope	1x3,1x7, 1x12,1x19	0.30-3.00						-	4	3	5	4	3	
Wire rope	1x7,1x19 7x7,7x19 7x7x7, etc.	0.09-3.00	-						1	1	5	4	3	High breaking strength and elongation resistance	
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.					

Outer coating



A stainless steel cable assembly may be sprayed, dipped, or extruded with PTFE, Nylon, and other coatings for your particular abrasion-resistance, lubricity, low coefficient of friction, and long-term durability requirements. Asahi Intecc can precisely mask the ends of the coated stainless steel cable assemblies to attach various in-house iron (FE), stainless steel (SUS, SS), Aluminum (AL), Copper (Cu), and other metallic finishes.

Comparison of properties

Type	Resin	Abbreviation	Cost (1=lowest)	Heat resistance	Flexibility	Chemical resistance	Lubricity	Minimum thickness
Polyamide	Nylon 12	PA	3	3	2	3	2	20μ
	Nylon 6	PA	3	5	2	3	2	20μ
Polyurethane	Polyurethane	PU	4	2	5	3	1	20μ
Polyethylene	Polyethylene	PE	1	2	3	3	2	20μ
Fluororesin	Fluorinated ethylene propylene	FEP	4	3	2	5	5	20μ
	Perfluoroalkoxy alkanes	PFA	4	5	2	5	3	20μ
	Ethylene tetrafluoroethylene	ETFE	3	3	2	3	2	20μ
	Polytetrafluoroethylene	PTFE	5	5	2	5	5	7μ

Legend

5 = Highest applicability

1 = Lowest applicability

Machining & Assembly

Processing on surface



Swaging process

We can decrease O. D. without both I. D. change and decrease of stiffness by beating surface of rope. It improves the anti-elongation



Flat-grinding process

We can perform Flat-grinding on surface of rope in whole length . It improves flexibility of rope without changing I. D..



Auger

We can set additional filar on rope. This structure adds the transportation function to rope.



Marking process

We can put marking to make clear the its position of the wire rope.

End treatment



Electric discharge method

This method makes individual filars avoid being crushed by cutting with nipper.



End treatment by laser

We can unite individual filars into one end by laser welding.



Plasma welding

We can make hemisphere shape at the end of rope. It improves both safety and sliding performance.



L-grinding process

We can perform high precision grinding process to make L-shaped end of rope. This shape helps to connect rope to other materials.

Assembly



Laser welding

We can weld different kind of materials by laser welding.



Solder welding

We can weld different kind of materials by soldering.