

ACT ONE®



ACT ONE cable tubes possess a high maximum torque and high torque transmission compared to polymer braided tubes. They also feature higher kink resistance and flexibility compared to hypo tubes. ACT ONE cable tubes are applied to a wide variety of minimally invasive and interventional devices within Cardiology, Peripheral, Neurology, Oncology, Orthopedics, and Endoscopy.

Specifications

Type		1to1 Torque Response	Pushability	Flexibility	OD	ID	Filar*	Length
Standard		5	3	5	0.27-2.80 mm (Trial : 0.21-4.52)	0.16-2.10 mm (Trial : 0.13-3.20)	6-18	up to 3000mm
Flat		4	3	4	0.66-1.57 mm (Trial : 0.21-4.52)	0.44-1.27 mm (Trial : 0.16-3.20)	8-18	up to 3000mm
Swage		4	5	2	0.71-2.46 mm (Trial : 0.39-3.83)	0.45-1.81 mm (Trial : 0.21-3.10)	7-18	up to 3000mm
Ultra Thin		1	1	5	0.50-3.03 mm (Trial : 0.42-3.75)	0.13-2.75 mm (Trial : 0.34-3.20)	2-12	up to 3000mm
Auger		2	3	5	Above ACT ONE with spiral wire, used as Archimedes screw (Japan Patent number : 5408809)			

*By changing the number of filars, the flexibility of ACT ONE can be customized.













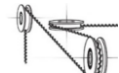

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Legend 5 = Highest applicability
1 = Lowest applicability

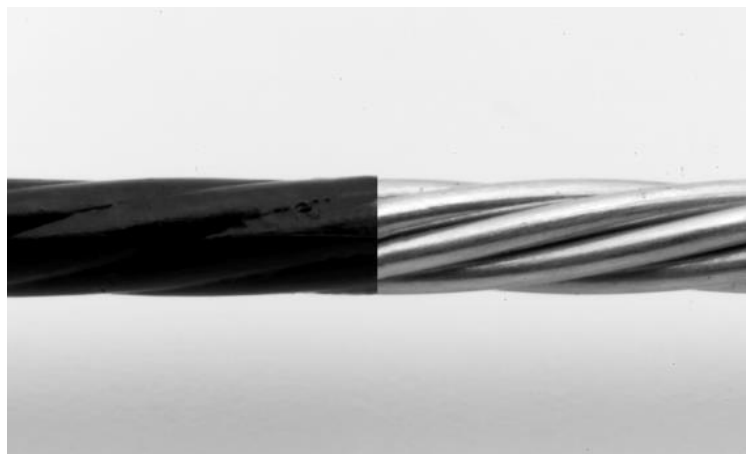
Product lineup

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 2layer flat auger*	0.36-6.00	0.18-3.20	5	5	3	2	4	bi-directional (3 layers) or unidirectional (2 layers) rotation *Archimedes screw with spiral wire
	Torque Hypotube		0.20-1.10	0.10-0.70	5	2	5	5	1	high breaking strength and elongation resistance
	ACT ONE	 standard flat ultra thin auger*	0.21-4.52	0.13-3.20	4	3	4	3	3	well balanced properties *Archimedes screw with spiral wire
	Wire coil	 round flat	0.10-3.50	~1.80	1	1	2	4	5	high flexibility and compression resistance
Cable	Drive Cable	 2-6layer	0.41-6.00	-	5	5	5	4	2	Optimized for high speed rotation and power transmission
	Torque rope	 1x3,1x7, 1x12,1x19	0.30-3.00	-	4	3	5	4	3	1:1 torque transmission at hand-speed rotation
	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	W3.0 x H3.6	-	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

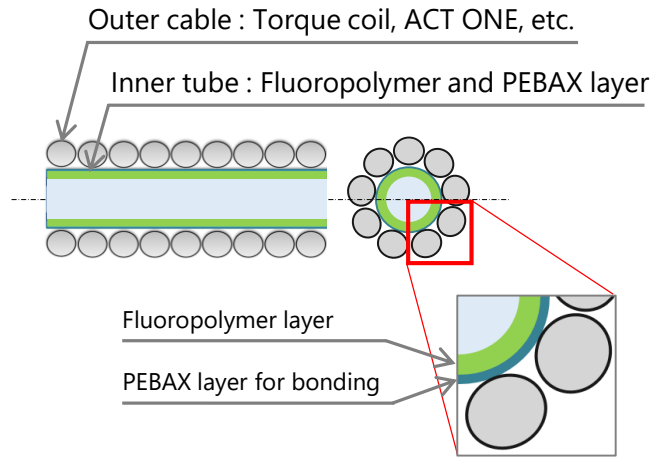
Type	Resin	Abbreviation	Cost (1=lowest)	Heat resistance	Flexibility	Chemical resistance	Lubricity	Minimum thickness
Polyamide	Nylon 12	PA	3	3	2	3	2	20μ
	Nylon 6	PA	3	5	2	3	2	20μ
Polyurethane	Polyurethane	PU	4	2	5	3	1	20μ
Polyethylene	Polyethylene	PE	1	2	3	3	2	20μ
Fluororesin	Fluorinated ethylene propylene	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

Inner tube



The Inner tube is designed for internal coating applied to hollow cable tubes like ACT ONE, Torque coil, or Wire coil for adding lubricity, chemical isolation, or surface preparation to the inside of the hollow cable. Ideal for applications requires lumen lubricity, sealing, or chemical resistance, for customers developing a delivery system.

Specifications

Minimum wall thickness (including Fluoropolymer and PEBAX layer)

*It depends on Inner tube ID as below, which is not include tolerance.

Inner tube ID	Min. wall thickness	Inner tube ID	Min. wall thickness
0.20 - 0.73 mm	0.03 mm	1.58 - 1.85 mm	0.07 mm
0.74 - 1.01 mm	0.04 mm	1.86 - 2.13 mm	0.08 mm
1.02 - 1.29 mm	0.05 mm	2.14 - 2.33 mm	0.09 mm
1.30 - 1.57 mm	0.06 mm	2.34mm ~	N/A

Coating material (Fluoropolymer layer)

- PTFE greatest lubricity and chemical resistance
- PFA similar in chemical resistance to PTFE, but less lubricity
- FEP similar to PFA, slightly less susceptible to water absorption than others
- ETFE greatest strength and abrasion resistance

Length up to 1800mm (Trial : up to 3000mm)

End treatment of inner tube manually cut using utility knife

End treatment of outer cable EDM cut, chamfering

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.