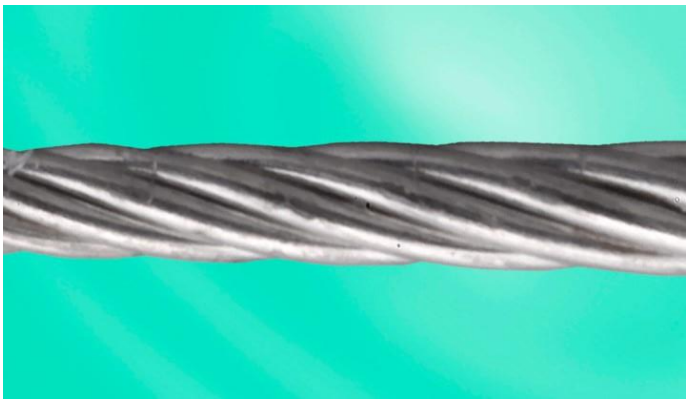
Torque rope

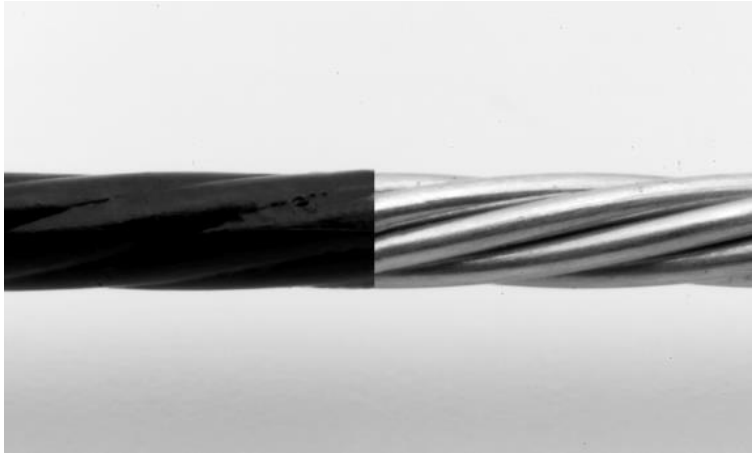


Regular wire ropes have reduced torque transmission. Our internal technologies make it possible to achieve 1:1 torque transmission. Well-known applications are endoscopic clips, forceps, and other devices that require high flexibility with precise torque transmission.

Specifications

Type		OD	Length
1 x 3		0.30-1.00 mm	up to 3000mm
1 x 7		0.60-1.00 mm (Trial : 0.27-1.52)	up to 3000mm
1 x 12		0.50-1.00 mm (Trial : 0.50-1.20)	up to 3000mm
1 x 19		0.40-0.83 mm (Trial : 0.30-3.00)	up to 3000mm

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

End termination

Eyelets, threaded screws, or balls may be crimped, laser welded, soldered, pressed, caulked, or swaged onto the ends of stainless steel cables to optimize mechanical performance and comply with space requirements. Asahi Intecc engineers carefully review both initial tension and initial cable elongation, and wire rope elongation after bending several cycles as well as the break load to help clients select the correct terminal and stainless cable configuration.

Eye end

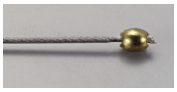
Mainly used in connection to a pin or a screw.
Wire rope stake eyes can be bent to any specified angle.
Caulking is possible without removing the coating, even with coated wire rope.

Loop end

Mainly used in connection to a pin.
Used for many applications as loop can be sized to suit specific need.

*With a thimble
Used in cables with loops when wear is a concern.
Provides wear resistance, greater strength and keeps shape of loop open.

Ball end



Ball can be swaged on in either the end or the middle of an assembly.
Mainly used in connection to a slit.

Threaded Studs end

Used in application which need to make fine adjustment to the length.

Flat end

Flat can be swaged on in the middle of an assembly.
Mainly used for intermediate attaching.

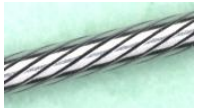
Stop end

Stop can be swaged on in either the end or the middle of an assembly.
Mainly used in application which permit rotation.

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

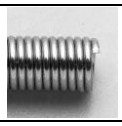
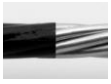
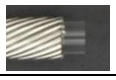
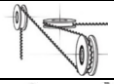
Laser welding
We can weld different kind of materials by laser welding.

Solder welding
We can weld different kind of materials by soldering.

Product lineup

Specifications and Comparison of properties

Legend : 5=Highest, 1=Lowest applicability

Category	Item		Type	Specification(Trial) OD(mm)	ID(mm)	1to1 Torque response	High-speed rotation	Push/Pull	Compression	Flexibility	Feature
Hollow cable	Torque coil		3layer 2layer flat auger*	0.36-6.05 0.30-5.17 - -	0.18-5.25 0.15-3.55 - -	5	5	3	2	4	bi-directional (3 layers) or unidirectional (2 layers) rotation *Archimedes screw with spiral wire
	ACT ONE		standard flat ultra thin auger*	0.21-5.22 0.21-4.70 0.42-3.90 -	0.13-4.00 0.16-3.95 0.34-3.35 -	4	3	4	3	3	well balanced properties *Archimedes screw with spiral wire
	Wire coil		round flat	0.10-3.50 0.10-5.90	~1.80 0.07-5.30	1	1	2	4	5	high flexibility and compression resistance
				OD(mm)	ID(mm)	Torque force					
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	W3.0xH3.6	-	With stainless cable core, ideal when the Rack needs to be flexible and high-force movement required.					