

Instruction Manual

ROBOTIC TIG TORCHES

TA-203 Series

TA-203HA

TA-203CDA

Please read this instruction manual
before using the product.

Please be sure to deliver this instruction manual
to the end user of this product.

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NOTES REGARDING SAFETY

Be sure to read these instructions before using the welding torch.

- In order to ensure safe operation, this equipment should only be set up, inspected and maintained by a qualified person, or by someone who has a thorough understanding of the welding equipment and who has received sufficient training in its use.
- In order to ensure safe operation, this equipment should only be operated by people who have read these instructions thoroughly and understood their contents and who have the knowledge and ability to handle the equipment safely.
- It is recommended that instruction in all aspects of safe operation should be obtained from institutions and associations which provide courses in proper welding techniques taught by qualified welding instructors.
- After reread these instructions, keep them in a safe and easily-accessible place so that they can be reread at a later date as required.
- Please contact TOKIN CORPORATION or its dealer if there are any unclear points in this manual. If there are any questions regarding service, contact the dealer of your purchase or TOKIN CORPORATION. The contact address and the telephone number are printed on the rear cover of this instructions.


1. Precautions for safety

- Different degrees of personal injury or equipment damage can occur if this welding torch is used incorrectly. The terms and symbols which appear in the "NOTES REGARDING SAFETY" section of these instructions are classified into three ranks according to the possible degree of danger or injury that each one warns against.


Symbol	Term	Definition
	DANGER	The instructions which follow this term represent situations where failure to follow the instructions will almost certainly result in severe injury or death.
	WARNING	The instructions which follow this term represent situations where failure to follow the instructions can possibly result in severe injury or death.
	CAUTION	The instructions which follow this term represent situations where failure to follow the instructions may result in injury to the operator or physical damage.

In the above definitions, "severe injury" refers to cases of blindness, physical wounds, burns (high- and medium-temperature), electric shocks, fractures or poisoning which may leave scars or lasting ill-effects and for which medical treatment or prolonged hospitalization may be necessary. "Injury refers to cases of physical wounds, burns and electric shocks for which prolonged medical treatment and hospitalization are not necessary, and "physical damage" refers to extensive damage that may result in damaged property or broken equipment.

2. Items that must always be observed for safety


WARNING 	These items should be observed at all times in order to prevent the possibility of serious personal injury.
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- Welding torches have been designed and manufactured with full consideration given to safety; however, the warning and cautions given in this "Notes Regarding Safety" section must always be strictly observed during use. If they are not observed, severe injury or death through misoperation may result.
- Do not unauthorized personal come into the area where welding equipment is being used.
- When welding equipment is turned ON, it generates a magnetic field. This magnetic field may adversely affect the operation of some sensors and gauges. For the same reason, people who are using a heartbeat pace maker must not go close to operating welding equipment or go into workshops where welding equipment is being used unless prior medical approval has been obtained.
- In order to ensure safe operation, welding torch, wire feeder and the welding power supply equipment should only be set up, inspected, maintained and repaired by a qualified person, or by someone who has a thorough understanding of welding equipment and who has received sufficient training in its use.
- In order to ensure safe operation, welding torch should only be operated by people who have read these instructions and the instructions for the wire feeder and power supply equipment through and understood their contents and who have the knowledge and ability to handle the equipment safely.
- Do not use welding torch for any applications other than for arc welding as explained in these instructions and in the instructions for the wire feeder and power supply equipment.

WARNING 	These items should be observed at all times in order to prevent the possibility of electric shocks.
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- *Touching the charged parts can cause fatal electric shocks or burns. Welding wire, contact tip and tip body are charged whenever the welding torch is turned ON and operating.
- Never Torch charged parts such as welding wire, or contact tip while welding torch is turned ON and operating.
- Grounding of welding power supply case and base metal and tools which are connected electrically to the base metal, must be carried out by a qualified electrician in accordance with the proper electrical engineering regulations.
- Turn OFF all input power supplies by turning OFF the switches in the distribution box before carrying out any inspections or maintenance.

- Inspections and maintenance should be carried out at periodic intervals, and the equipment must not be used until any damaged parts found have been repaired or replaced.
- Do not use cables that are damaged or that have exposed conductors, or that are rated lower than the specified level.
- Make sure that the cable is connected securely and that it is insulated.
- Welding cable should be connected as close as possible to the base metal being welded and it should be connected securely.
- Do not wear gloves which are torn or wet.
- Use a safety strap if welding in raised places.
- Turn OFF all power switches and the input power supply when not using.

CAUTION 	Wear protective equipment at all times to protect yourself and others against arc beam, welding flashes, flying spatter and slag, and noise.
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- *Welding flashes contain harmful ultraviolet and infrared lights which can cause inflammation or burn to eyes.
- *Flying spatter and slag can hurt the eyes and cause serious burns.
- *The noise generated by welding can cause problems with hearing.

- Always wear protective goggles or welding masks which have sufficient shielding properties when doing welding or when observing welding being done.
- Wear protective glasses to protect the eyes from spatter and slag.
- Hang a curtain around the area where welding is being carried out to prevent welding flashes from affecting passers-by.
- Wear protective clothing such as leather gloves, longsleeves, leg covers and a leather apron for protection while welding.
- Wear noise proof ear protectors if the noise level is too high.

CAUTION 	Use protective equipment at all times to protect yourself and others against any fumes and gases that may be generated from welding.
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- *Fumes and gases are generated when welding is carried out. Inhaling fumes and gases can be dangerous to your health.
- *Welding in confined spaces can reduce the oxygen content in the air, which can result in suffocation.

- To prevent gas poisoning and suffocation, always use a proper ventilation equipment to vent gases locally or entirely as stipulated by labor safety regulations and air contamination prevention regulations, or use an adequate breathing apparatus.
- When welding in a confined space, make sure that the air is circulating freely, wear some kind of breathing apparatus, and work only under the supervision of a properly trained supervisor.
- Toxic gases may be generated if welding is carried out near where degreasing, cleaning or demisting operations are also being carried out. Avoid welding near places where such operations are being carried out.
- Welding metal which has been plated with zinc will cause toxic fumes. Remove the plating before welding, or wear adequate absorption equipment for protection.

CAUTION 	Be sure to observe the following to avoid burns from the nozzle and tip or injury from fine wire ends.
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- *The nozzle or contact tip becomes very hot after use, and it can cause serious burns if touched.

- Do not touch the nozzle or tip immediately after welding has been completed.
- Do not bring the tip of the welding torch close to your face during wire inching.

CAUTION 	Be sure to observe the following to avoid fires, explosions and rupturing.
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- *Fires can be caused by spatter and base metals which are hot after welding.
- *Fire can occur as a result of heat generated by the flow of current if the cable has not been correctly connected or there is an incomplete contact in the current path at the base metal being used.
- *Explosions can occur if an arc is generated near containers that contain flammable substances such as gasoline.
- *Ruptures can occur if welding sealed objects such as tanks and pipes.

- Do not use the welding torch in places where flying spatter can cause flammable materials to ignite.
- Do not use the welding torch near places where flammable gases are present.
- Keep base metals away from flammable materials immediately after welding as they may have become hot.
- Remove any flammable materials on the other side of ceilings, floors and walls that are being welded as sparks from welding could cause such materials to ignite.
- The welding cable should be connected as close as possible to the base metal being welded, and it should be connected securely.
- Do not weld gas cylinders which still contain gas.
- Do not weld sealed tanks or pipes.
- Keep a fire extinguisher close by the place where welding is being carried out in case a fire starts.

[1]Specifications

TA-203 Robotic TIG Torches

Torch Model		TA-203HA	TA-203HA Short Torch Body	TA-203CDA	TA-203CDA Short Torch Body
Guidance		Robot/Mechanical	Robot/Mechanical	Robot/Mechanical	Robot/Mechanical
Rated Current	A	200	200	200	200
Duty Cycle	%	60	60	60	60
Tungsten Electrode	mm	1.6, 2.4, 3.2	1.6, 2.4, 3.2	1.6, 2.4, 3.2	1.6, 2.4, 3.2
Electrode Fastener		Manual Type	Manual Type	Double Acting Type	Double Acting Type
Cooling Method		Air Cooled	Air Cooled	Air Cooled	Air Cooled
Weight(without cable)	kg	1.9	1.6	1.6	1.3
Cable Length	m	6, 8	6, 8	6, 8	6, 8

The standard set is lens nozzle NO.6 and tungsten electrode diameter 2.4mm.

[2]Model Notation

TA-203 CDA-A-6 (Special Instruction)

<div>※ 1</div> <div>Torch Model</div> <div>TA-203</div>	<div>※ 2</div> <div>Fastener Method</div>		<div>※ 3</div> <div>Cable</div>	
	Symbol	Specification	Symbol	Specification
	HA	Manual Type	A	Cabtyre Cable
	CDA	Double Acting Type		DINZE Type(DIX-SK50)
<div>※ 4</div> <div>Cable Length m 6:6m 8:8m</div>			B	Cabtyre Cable Round Terminal(R38-10)
<div>※ 5</div> <div>Special Instructions</div> <ul style="list-style-type: none"> ●Short Torch Body ●L Shape Hose Connection ●Tungsten Electrode Diameter 1.6 or 3.2 ●Gas Lense Ceramic Nozzle NO.6 (or other specification) ●General Collet Body Specification 			HA Specification	CDA Specification
			TA-203HA-A-6	TA-203CDA-A-6
			TA-203HA-A-8	TA-203CDA-A-8
			TA-203HA-B-6	TA-203CDA-B-6
			TA-203HA-B-8	TA-203CDA-B-8

[3]Operation

[3]-1 Electrode Clamp and Unclamp Method

TA-203HA

Identical to conventional TIG torches the electrode is locked in using the rear clamp.

When replacing or adjusting the length of the electrode, loosen the handle to unclamp.

Before using please verify the handle is firmly tightened.

TA-203CDA

This TIG torch uses a special built-in dual air cylinder with front and rear driving force for clamping and unclamping the electrode.

When you supply air to the intake the shaft will push the electrode out from the front and clamp it in place.

When replacing or adjusting the length of the electrode, supply air to the intake and the shaft will pull in the electrode clamping it in place.

Even if air is not supplied the electrode won't fall out thanks to the retention spring internal cylinder.

In the unlikely event that while the robot is operating air cannot be supplied, the electrode still won't fall out.

However, there won't be enough retention strength to weld. Whenever you perform welding please be sure to push the air supply.

Before operating please verify that air is being supplied. (The air hose diameter is 6mm.)

Additional Note:

(1)As written above, in order to retain the electrode the shaft is always pushed-out.

When exchanging consumable parts, if the gas lense collet body is not in the correct position the collet will be damaged. Please make sure the electrode is unclamped when exchanging end consumables (i.e. collet, gas lense collet body).

(2)Please use air pressure within 0.4 ~ 0.7MP. The recommended pressure is 0.5MP.

[3]-2 Tungsten Electrode

(1) This torch may be used with the following tungsten electrode diameters 1.6mm, 2.4mm, 3.2mm.

The standard electrode set is Tungsten with 1.5% Lantana 2.4mm. For other desired sizes please specify.

(2) If using the TA-203CDA electrode changer please round the electrode ends for easy insertion.

Also, it is important to separate electrode ends by classification and to remove any coating in advance.

(3) Besides Tungsten with 1.5% Lantana, Tungsten with 2% Cerium and Pure Tungsten are available.

Tungsten with 1.5% Lantana

For Non-ferrous metal except aluminum and iron



- Contains no radioactive substances.
- Good arc starting.
- Maintains the preset current and voltage for a stable arc.
- Excellent durability and long service life.

Size φ × L (mm)	Parts No.
φ 1.0 × 150	018320
φ 1.6 × 150	018321
φ 2.0 × 150	018322
φ 2.4 × 150	018323
φ 3.2 × 150	018324
φ 4.0 × 150	018325

Tungsten with 2% Cerium

For Non-ferrous metal and iron



- Contains no radioactive substances.
- Good arc starting at low current.
- AC aluminum welding ensures good durability and minimal electrode contamination.
- Optimal for welding copper or copper alloys.

Size φ × L (mm)	Parts No.
φ 1.0 × 150	018340
φ 1.6 × 150	018341
φ 2.0 × 150	018342
φ 2.4 × 150	018343
φ 3.2 × 150	018344
φ 4.0 × 150	018345

Pure Tungsten

For Aluminum



- For AC welding
- Uniform and high purity materials.

Size φ × L (mm)	Parts No.
φ 1.0 × 150	018336
φ 1.6 × 150	018330
φ 2.0 × 150	018331
φ 2.4 × 150	018333
φ 3.2 × 150	018334
φ 4.0 × 150	018335

[3]-3 Collet and Gas Lens Collet Body

This torch collet and gas lens collet body are for dedicated use only.



These cannot be used with a hand welding torch.

Even when not using the gas lens, the general collet body may be utilized. However, the collet is for dedicated use only.

[3]-4 Ceramic Nozzle (identical to hand welding torch)

The standard gas lens nozzle is NO.6 (10mm aperture).

For other desired sizes please specify.

Nozzle					
Material	Applicable Torch	Appearance overall length×outer diameter(mm)	Parts No.	Size No.	Exit inner diameter(mm)
Ceramic nozzle	TA-200	 47 × 17.2	10N50	4	6
	TA-203		10N49	5	8
	TA-301		10N48	6	10
	TA-303		10N47	7	11
			10N46	8	12.5
Gas lens ceramic nozzle	TA-200	 42 × 24	54N18	4	6
	TA-203		54N17	5	8
	TA-301		54N16	6	10
	TA-303		54N15	7	11
			54N14	8	12.5

(1) *Cable Specification A: Able to be mounted to digital welding machines.*

Examples of Applicable Welding Machines

- (2) *Cable Specification B: Able to be mounted to non-digital welding machines.*

In addition, for HITACHI welding machine [018812 H Gas Connection Fittings] is necessary.

[3]-6 Concerning Right Angle Torch Hoses

Technical drawing of the rear view of the welding torch assembly, showing the gas and air inlet connections. The main body has a diameter of 24mm. The gas inlet is labeled "ガス用ハーフユニオン" (Gas Half Union) and the air inlet is labeled "ワンタッチ管継手" (One-touch Pipe Joint). The gas inlet is connected to a 1/8 inch gas hose using a 018433 L Fitting for Gas hose. The air inlet is connected to a 1/8 inch air hose using a 018435 L Fitting for Air hose. The drawing shows the internal structure of the torch head and the connection points for the hoses.

(1) *Torch body 24 diameter section mounting method.*

(2) *Torch body rear side internal thread screw anchoring method.*

These screws can be used to anchor the torch.

Technical drawing of a 4-hole 100mm diameter cast iron flange. The drawing shows a side view and a cross-section. Key dimensions include: outer diameter 100mm, inner diameter 65mm, flange thickness 12.5mm, mounting hole diameter 11mm, and a central hole diameter of 2-φ4H7. The material is cast iron (GG-15).

TA-203CDA



[4] Filler Unit (Option)

Filler unit wire option includes the filler unit.

06319A 45 – 12B – 1.5m – N

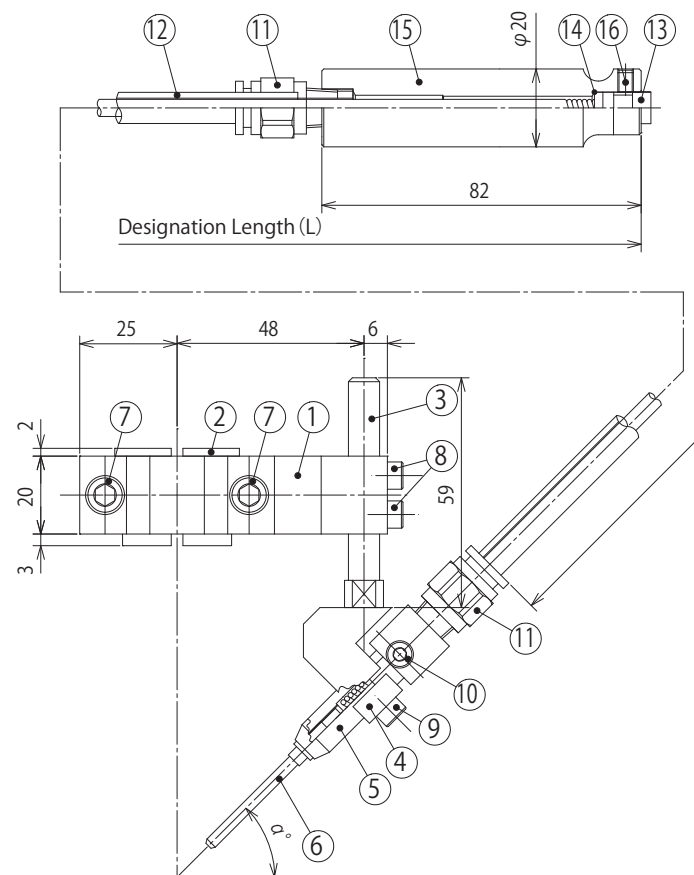
Model
TA-301 Filler Unit ASSY

Insert Angle	α°	Guide Receiver
25	25°	TX1811171
30	30°	TX1601061
45	45°	TX1512013
60	60°	DX1105092

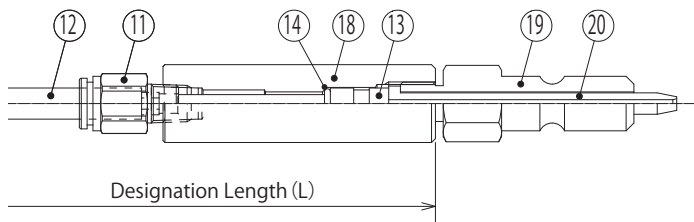
Length (L)
m

Inlet Type	Feeder Maker
N	Panasonic
DD	Daihen

Wire Class	Wire Diameter	Aiming Guide	Liner Dimension
08A	ϕ 0.8	023103	1.3*1.6*4.2
09A	ϕ 0.9	023104	1.3*1.6*4.2
10B	ϕ 1.0	023102	1.3*1.8*4.4
12B	ϕ 1.2	023100	1.3*1.8*4.4
14C	ϕ 1.4	023101	1.2*2.2*4.6
16C	ϕ 1.6	023107	1.2*2.2*4.6



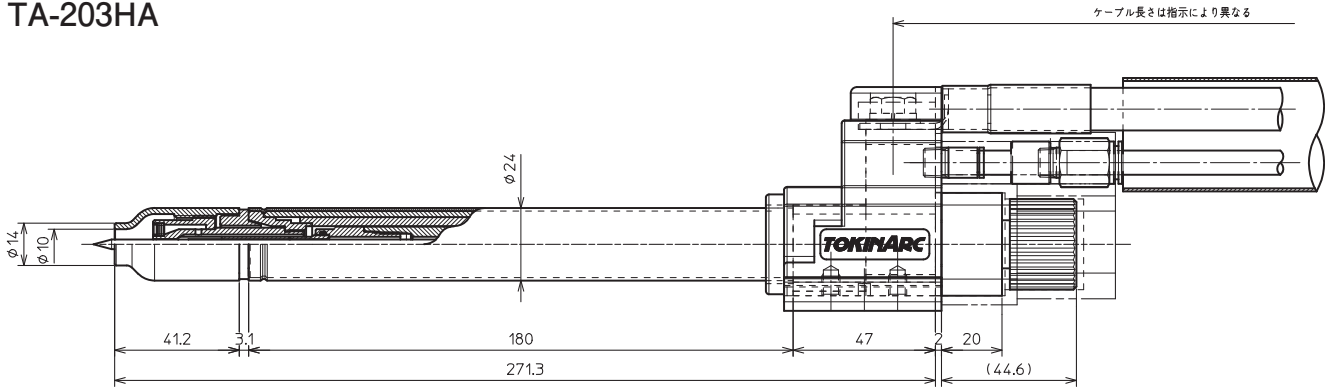
In case of DAIHEN wire feeder CMRE741/742, the Parts used will change.



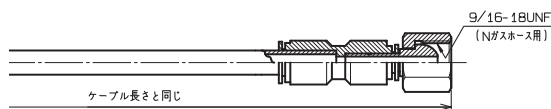
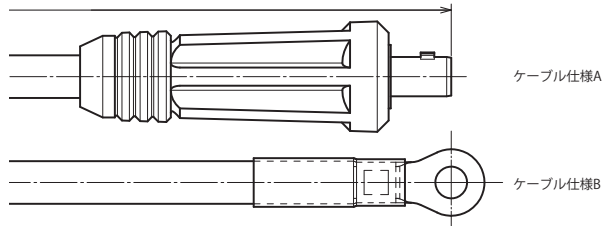
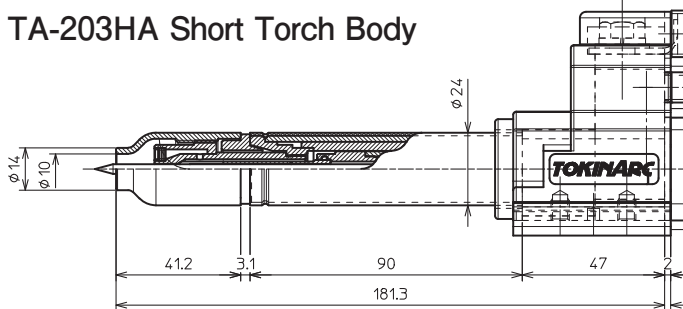
Parts List

NO.	Parts Number	Parts Name
1	TX1512011	TA-301 Filler Body (Including Bolt)
2	TX1512012	TA-301 Filler Body Sleeve
3	TX1512014	TA-301 Guide Shaft
4	TX1811171	Guide Bearing 25° (Including Bolt)
	TX1601061	Guide Bearing 30° (Including Bolt)
	TX1512013	Guide Bearing 45° (Including Bolt)
	DX1105092	Guide Bearing 60° (Including Bolt)
5	TX1603121	Guide Body (Including Bolt)
6	023103	TCC Aiming Guide 0.8
	023104	TCC Aiming Guide 0.9
	023102	TCC Aiming Guide 1.0
	023100	TCC Aiming Guide 1.2
	023101	TCC Aiming Guide 1.4
	023107	TCC Aiming Guide 1.6
7	① Included	Hex Socket Bolt M6-20
8	① Included	Hex Socket Bolt M4-12
9	④ Included	Hex Socket Bolt M4-12
10	⑤ Included	Hex Socket Bolt M4-8
11	⑤⑭⑱ Included	One Push Coupler WCEC8-PT1/8
12		Teflon Tube ϕ 5 × ϕ 8
13		Filler Liner
14	⑬ Included	O ring
15	TX1603122	Filler Tap for N(PANA)
16	⑮ Included	Liner Locking Screw
17		
18	018986	TIG Filler DD Tap
19	023024	CMRE741 Guide Adapter
20	023022	Outlet Guide
1 ~ 11		TA-301 Filler Unit 25° -08A
		TA-301 Filler Unit 25° -09A
		TA-301 Filler Unit 25° -10B
		TA-301 Filler Unit 25° -12B
		TA-301 Filler Unit 25° -14C
		TA-301 Filler Unit 25° -16C
1 ~ 11		TA-301 Filler Unit 30° -08A
		TA-301 Filler Unit 30° -09A
		TA-301 Filler Unit 30° -10B
		TA-301 Filler Unit 30° -12B
		TA-301 Filler Unit 30° -14C
		TA-301 Filler Unit 30° -16C
1 ~ 11		TA-301 Filler Unit 45° -08A
		TA-301 Filler Unit 45° -09A
		TA-301 Filler Unit 45° -10B
		TA-301 Filler Unit 45° -12B
		TA-301 Filler Unit 45° -14C
		TA-301 Filler Unit 45° -16C
1 ~ 11		TA-301 Filler Unit 60° -08A
		TA-301 Filler Unit 60° -09A
		TA-301 Filler Unit 60° -10B
		TA-301 Filler Unit 60° -12B
		TA-301 Filler Unit 60° -14C
		TA-301 Filler Unit 60° -16C
11 ~ 16		TA-301 • 500 Filler Guide N
11 ~ 14, 18 ~ 20		TA-301 • 500 Filler Guide DD

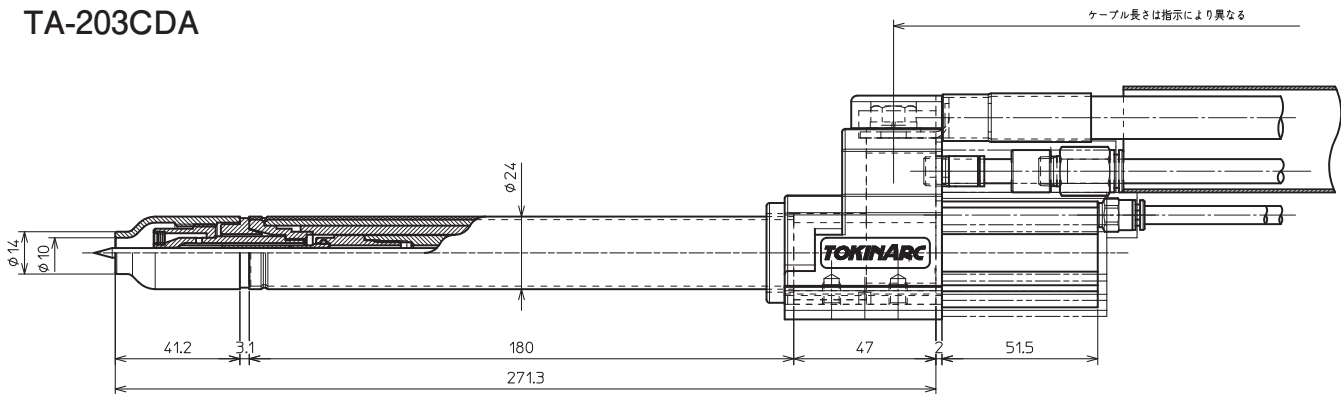
TA-203HA



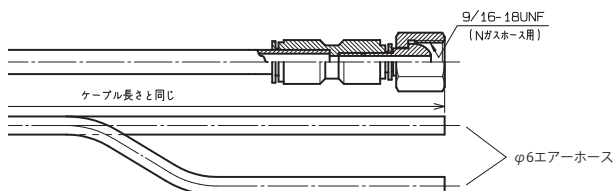
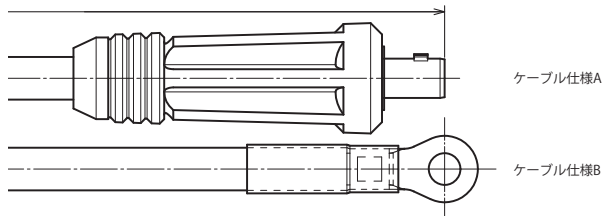
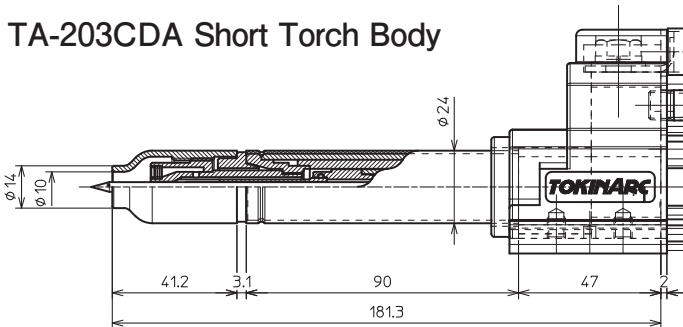
TA-203HA Short Torch Body



TA-203CDA

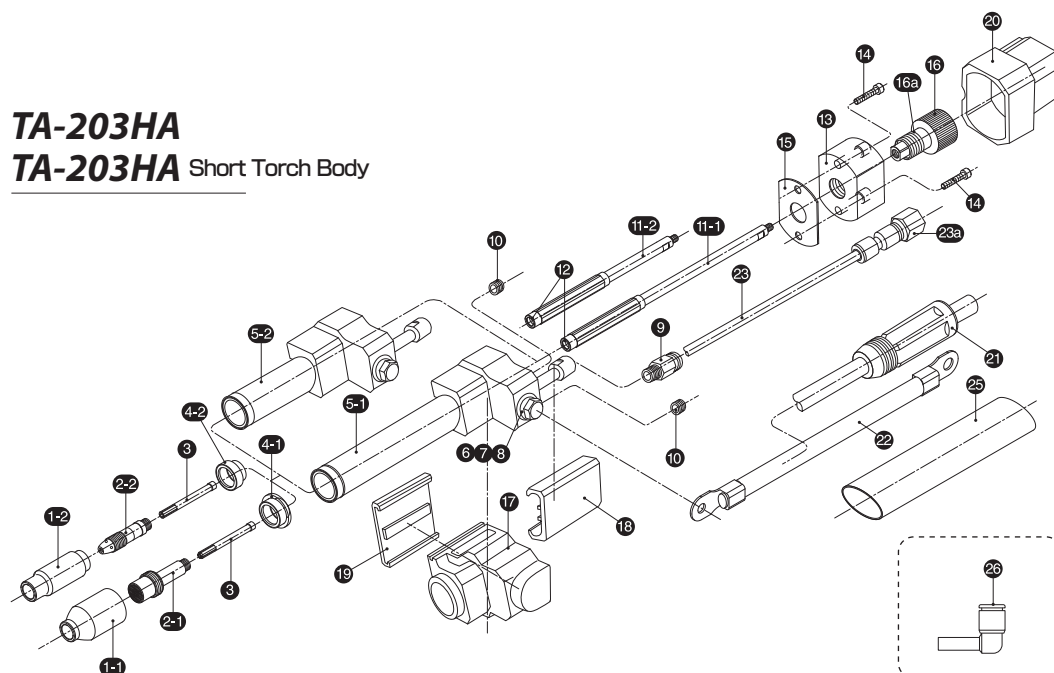


TA-203CDA Short Torch Body



[6]TA-203HA Parts List

TA-203HA TA-203HA Short Torch Body



TA-203HA Parts List

No.	Part No.	Parts Name	Size	Qty
1-1	54N16	TA-17 Gas Lens Nozzle	No.6	1
1-2	10N48	TA-17 Ceramic Nozzle	No.6	1
2-1	018905	TA-200,301 Gas Lens Collet Body	1.6mm	1
	018906	"	2.4mm	1
	018907	"	3.2mm	1
2-2	10N31	TA-17 Collet Body	1.6mm	1
	10N32	"	2.4mm	1
	10N28	"	3.2mm	1
3	018900	TA-200,301 Collet	1.6mm	1
	018901	"	2.4mm	1
	018902	"	3.2mm	1
4-1	54N01	TA-17 Gas Lens Insulator		1
4-2	018708	TA-17 Nozzle Insulator		
5-1	018415	TA-203,303 Torch Body	Standard	1
5-2	018416	TA-203,303 Short Torch Body	Short Type	1
6	⑤ Accessory	Hex Bolt	M8*1.25-L12	1
7	⑤ Accessory	Flat Washer	8mm	1

No.	Part No.	Parts Name	Size	Qty
8	⑤ Accessory	Spring Washer	8mm	1
9	018431	Gas Half Union	KRH08-01S	1
10	018436	Taper Plug	MSWT1	2
11-1	018921	TA-301 Guide Shaft	With ② O-Ring	1
11-2	018426	TA-203,303 Short Guide Shaft	With ② O-Ring	
12	OS06-04D	O-Ring	4D S-6	1
13	018931	TA-200,301H Anchoring Block		1
14	⑬ Accessory	Hex Bolt	M5*0.8-L25	2
15	018934	TA-302 Rubber Seal		1
16	018932	TA-200,301H Cap	With ② O-Ring	1
16a	OP12-01A	O-Ring for Cap	P-12	1
17	018421	TA-203,303 Insulation Cover		1
18	018422	TA-203,303 Fitting Cover		1
19	018423	TA-203,303 Protection Cover		1
20	018424	TA Cap Cover		1
1~20	018417	TA-203HA Torch Body ASSY		
	018418	TA-203HA Short Torch Body ASSY		

Cable Type

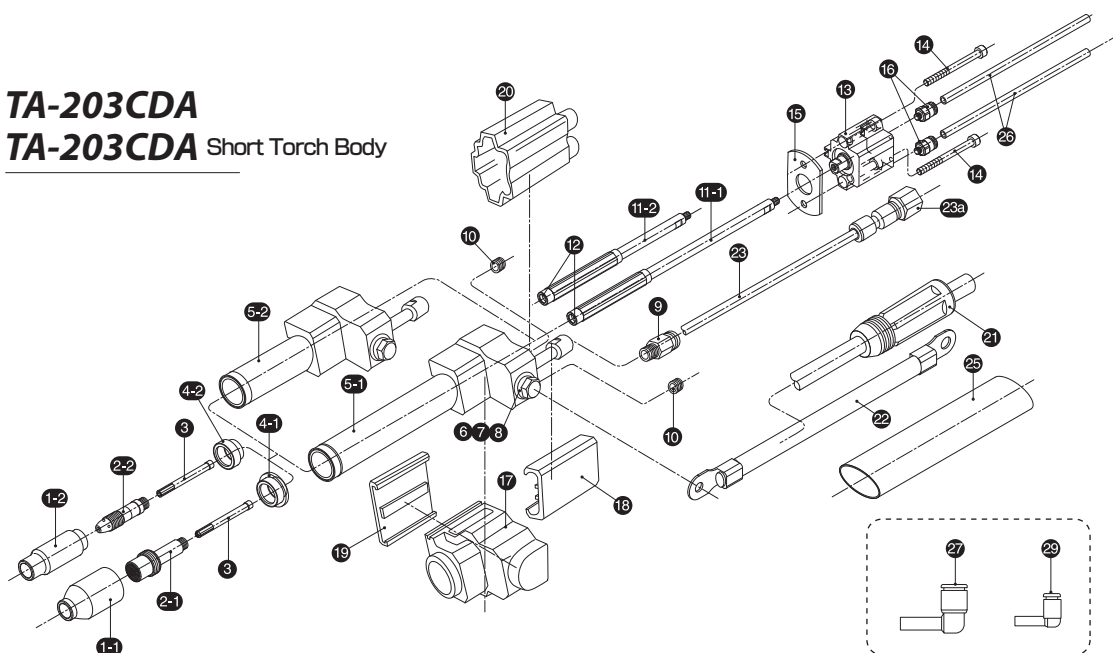
No.	Part No.	Parts Name	Size	Qty
21	018954	TA-203,303 Cabtyre Cable 6m	A DINZE Type (DIX-SK50)	1
	018955	TA-203,303 Cabtyre Cable 8m	A DINZE Type (DIX-SK50)	1
22	018951	TA-301 Cabtyre Cable 6m	B Round Terminal (R38-10)	1
	018952	TA-301 Cabtyre Cable 8m	B Round Terminal (R38-10)	1
23	018451	TA-203,303 Gas Hose 6m	φ8-φ5.5	1
	018452	TA-203,303 Gas Hose 8m	φ8-φ5.5	1
23a	018453	Nipple Set for Gas Hose	② Accessory	
25	018053	TA-18 Hose Sheath 6m		1
	018036	TA-18 Hose Sheath 6m		1

L Fitting Parts Added if necessary for right angle contrast between hose and torch axis.

No.	Part No.	Parts Name	Size	Qty
26	018433	L Fitting for Gas Hose	KRL08-99W2	1

[7]TA-203CDA Parts List

TA-203CDA TA-203CDA Short Torch Body



TA-203CDA Parts List

No.	Part No.	Parts Name	Size	Qty
1-1	54N16	TA-17 Gas Lens Nozzle	No.6	1
1-2	10N48	TA-17 Ceramic Nozzle	No.6	1
2-1	018905	TA-200,301 Gas Lens Collet Body	1.6mm	1
	018906	“	2.4mm	1
	018907	“	3.2mm	1
2-2	10N31	TA-17 Collet Body	1.6mm	1
	10N32	“	2.4mm	1
	10N28	“	3.2mm	1
3	018900	TA-200,301 Collet	1.6mm	1
	018901	“	2.4mm	1
	018902	“	3.2mm	1
4-1	54N01	TA-17 Gas Lens Insulator		1
4-2	018708	TA-17 Nozzle Insulator		1
5-1	018415	TA-203,303 Torch Body	Standard	1
5-2	018416	TA-203,303 Short Torch Body	Short Type	1
6	⑤ Accessory	Hex Bolt	M8*1.25-L12	1
7	⑤ Accessory	Flat Washer	8mm	1

No.	Part No.	Parts Name	Size	Qty
8	⑤ Accessory	Spring Washer	8mm	1
9	018431	Gas Half Union	KRH08-01S	1
10	018436	Taper Plug	MSWT1	2
11-1	018921	TA-301 Guide Shaft	With ② O-Ring	1
11-2	018426	TA-203,303 Short Guide Shaft	With ② O-Ring	1
12	OS06-04D	O-Ring	4D S-6	1
13	018960	Air Cylinder	CDOP2820D-W4978-5	1
14	018983	Hex Bolt	M5*0.8-L55	2
15	018934	TA-302 Cylinder Seal		1
16	MIGQH06-M5	One-Touch Pipe Joint	KQ2H06-M5A	2
17	018421	TA-203,303 Insulation Cover		1
18	018422	TA-203,303 Fitting Cover		1
19	018423	TA-203,303 Protection Cover		1
20	018425	TA Cylinder Cover		1
1~20	018419	TA-203CDA Torch Body ASSY		
	018420	TA-203CDA Short Torch Body ASSY		

Cable Type

No.	Part No.	Parts Name	Size	Qty
21	018954	TA-203,303 Cabtyre Cable 6m	A DINZE Type(DIX-SK50)	1
	018955	TA-203,303 Cabtyre Cable 8m	A DINZE Type(DIX-SK50)	1
22	018951	TA-301 Cabtyre Cable 6m	B Round Terminal (R38-10)	1
	018952	TA-301 Cabtyre Cable 8m	B Round Terminal (R38-10)	1
23	018451	TA-203,303 Gas Hose 6m	φ8-φ5.5	1
	018452	TA-203,303 Gas Hose 8m	φ8-φ5.5	1
23a	018453	Nipple Set for Gas Hose	② Accessory	
25	018053	TA-18 Hose Sheath 6m		1
	018036	TA-18 Hose Sheath 6m		1
26	018935	TA-301CD Air Hose 6m	φ6-φ4(6300L)	2
	018936	TA-301CD Air Hose 8m	φ6-φ4(8300L)	2

L Fitting Parts Added if necessary for right angle contrast between hose and torch axis.

No.	Part No.	Parts Name	Size	Qty
27	018433	L Fitting for Gas Hose	KRL08-99W2	1
29	018435	L Fitting for Air Hose	KQ2L06-99A	2

TC1701T05-4

ROBOTIC TIG TORCHES TA203

March,2018 Ver. 1.0 First Edition
April,2019 Ver. 2.0 Second Edition
October,2020 Ver. 3.0 Third Edition
June,2023 Ver. 4.0

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