

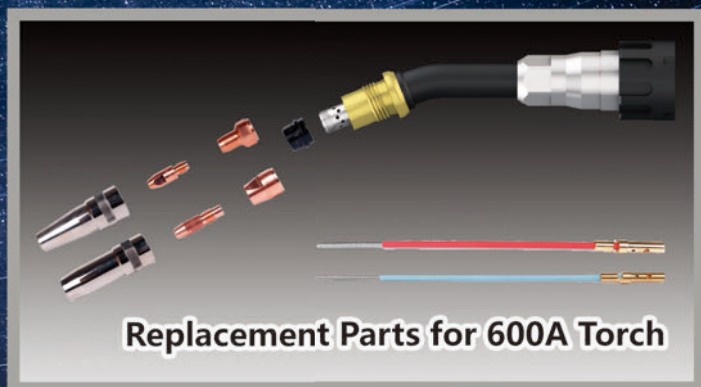
Never compromise on quality

**TRM**<sup>®</sup> 特尔玛

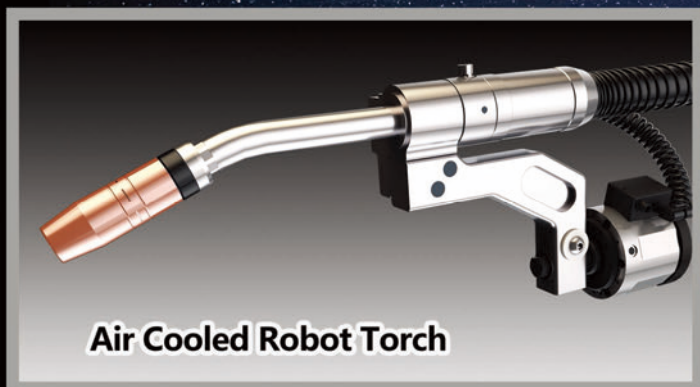
# Robotic Welding Torch



Servo Push-Pull Robot Torch



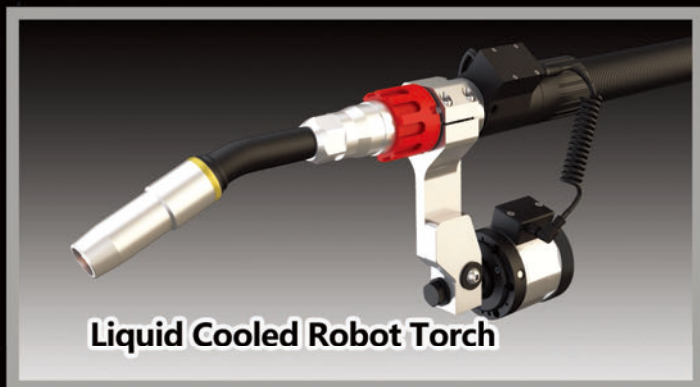
Replacement Parts for 600A Torch



Air Cooled Robot Torch



Replacement Parts for 550A Torch



Liquid Cooled Robot Torch



Cleaning Station

Since 2001

# CATALOGUE

CATALOGUE (V2.2 revision time: Mar. 2023)

[www.trm-welding.com](http://www.trm-welding.com)







TRM is a leader in designing and manufacturing Robotic and Manual MIG/Plasma torches and consumables based in China.

Over the past two decades, we make high quality torches and consumables for customers around the globe by setting the standard for quality and cost-efficiency.

Founded in 2001, the founding principle of customer-focused innovation continues to drive product development at TRM. We dedicate more resources to world-class facilities, industry research and manufacturing operations than any other manufacturers in China.

Nowadays, TRM Technology Inc. represents China's best technology and the largest production scale in this industry at a competitive cost. We look forward to working with you and generate values for customers world-wide.



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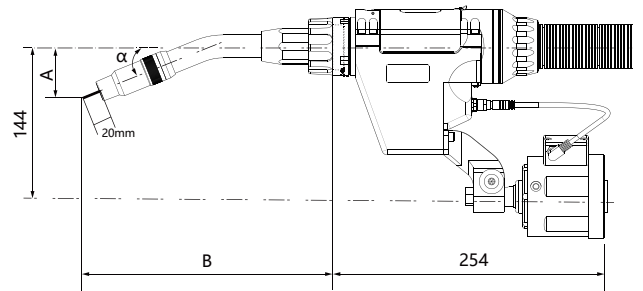
# TRM613WPP SERVO PUSH-PULL



## TECHNICAL DATA

<b>Cooling method</b>	Liquid cooled
<b>Rating</b>	550A CO <sub>2</sub> 500A mixed gas M21(ISO14175)
<b>Duty cycle</b>	100%
<b>Wire diameter</b>	0.8~1.6mm
<b>Torch geometries</b>	22°, 45°
<b>Wire feed speed</b>	0-25m/min

## TCP DATA



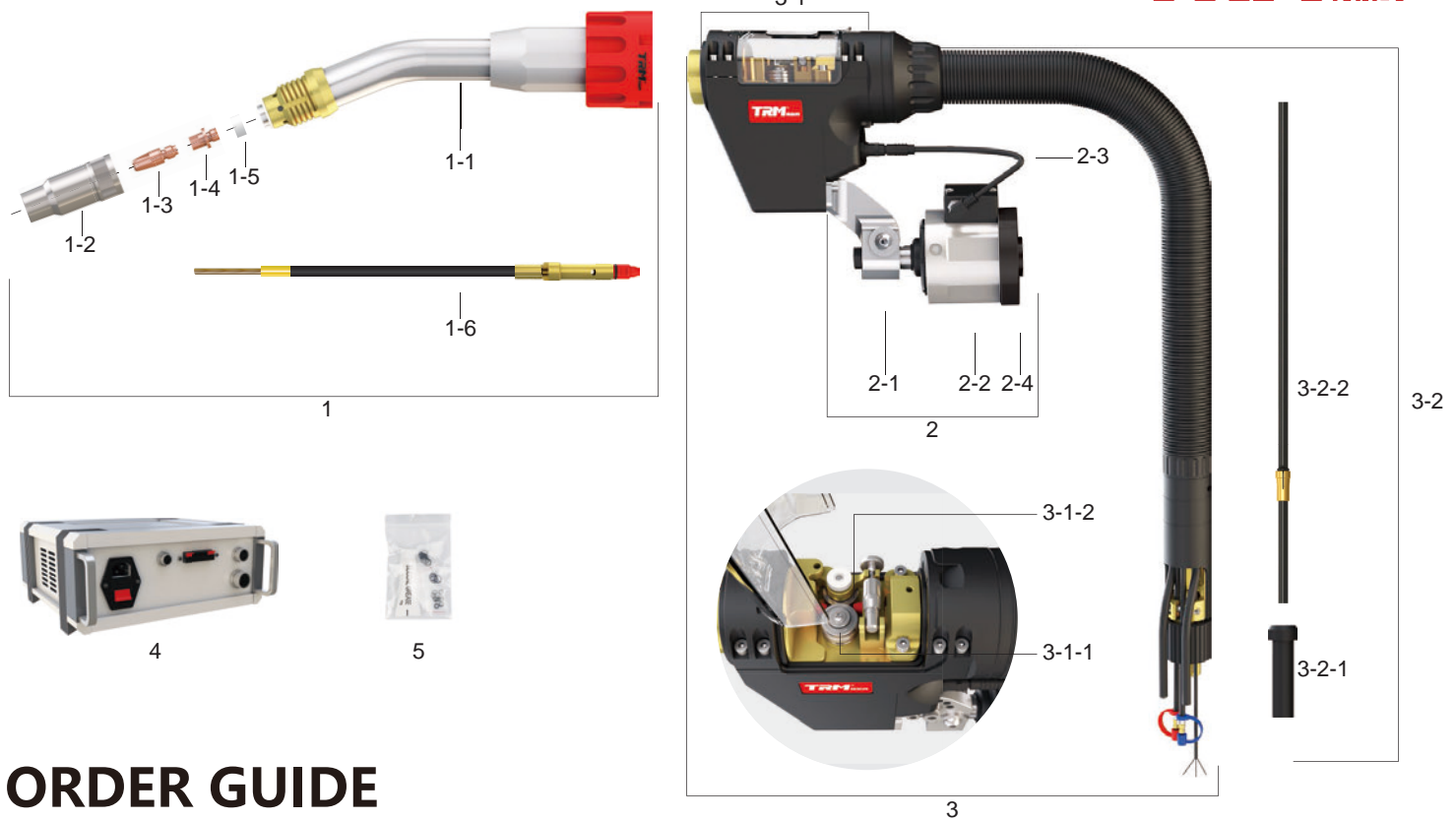
$\alpha$	A(mm)	B(mm)	Angle	Neck Part No
22°	50.2	247.45	22°	TRM613W-22
22°	52.08	374	22°	TRM613W-22L
45°	107.56	235.86	45°	TRM613W-45
45°	107.56	335.86	45°	TRM613W-45L
45°	109.87	435	45°	TRM613W-45L1

## Product features:

- Compact and flexible structure with high reachability
- Servo motor with high-precision and quick-response
- Quick Euro connector, easy to connect
- Be available for popular wire feeder connection like Panasonic, Lincoln and other common connectors.

## COLLISION SENSOR DATA SHEET

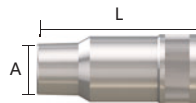
ITEM	TRM313-01-N10	TRM313-01-N16
Size	Diameter $\phi$ 77/Height 103.7mm	Diameter $\phi$ 77/Height 103.7mm
Weight	0.98kg	0.98kg
Sensing accuracy	1°~1.5°	1°~1.5°
Maximum deflection	XY direction 8°	XY direction 4°
Repeatability(400mm)	0.1~0.15mm	Within 0.15mm
Trigger force	About 60-70N in X/Y (400mm) direction	About 90-100N in X/Y (400mm) direction
IP protection level	IP21	IP21
Switching capacity	0.1A/250VAC	0.1A/250VAC
Ambient temperature	-10°C to +55°C	-10°C to +55°C
Relative humidity	70% at 20 °C during operation	70% at 20 °C during operation



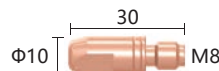
## ORDER GUIDE

Item	Order NO.	Product Description
ROBOT TORCH	TRM613WPP	Push-pull robot welding torch (not including synchronizer)
		Synchronizer

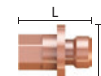
### 1. TORCH NECK ASSEMBLY



1-2. NOZZLE



1-3. CONTACT TIP



1-4. TIP HOLDER

Item	Order NO.	Product Description
1-1. GOOSE NECK	TRM613W-22	22° straight length 37mm
	TRM613W-22L	22° , extended 100mm, straight length 156.78mm
	TRM613W-45	45° straight length 24.75mm
	TRM613W-45L	45° , extended 100mm, straight length 124.75mm
	TRM613W-45L1	45° , extended 160mm, straight length 221.6mm
1-2. NOZZLE	TRM016-03-14	Tip flush L=63.5mm A=φ14mm
	TRM016-03-16	Tip flush L=63.5mm A=φ16mm
	TRM016-03-17	Tip flush L=63.5mm A=φ17mm
1-3. CONTACT TIP	TRM035-02-08A	M8 CuCrZr φ0.8mm aluminium
	TRM035-02-10A	M8 CuCrZr φ1.0mm aluminium
	TRM035-02-12A	M8 CuCrZr φ1.2mm aluminium
	TRM035-02-14A	M8 CuCrZr φ1.4mm aluminium
	TRM035-02-16A	M8 CuCrZr φ1.6mm aluminium
1-4. TIP HOLDER	TRM046-02	M8 L=28mm B=M8×1
1-5. INSULATOR	TRM028-01	White
1-6. NECK LINER	TRM613WPP-12A-22TSG	Aluminium/ Aluminium alloy wire φ0.8-1.2mm (suitable for TRM613W-22 goose neck)
	TRM613WPP-12A-22LTSG	Aluminium/ Aluminium alloy wire φ0.8-1.2mm (suitable for TRM613W-22L goose neck)
	TRM613WPP-12A-45TSG	Aluminium/ Aluminium alloy wire φ0.8-1.2mm (suitable for TRM613W-45 goose neck)
	TRM613WPP-12A-45LTSG	Aluminium/ Aluminium alloy wire φ0.8-1.2mm (suitable for TRM613W-45L goose neck)
	TRM613WPP-12A-45L1TSG	Aluminium/ Aluminium alloy wire φ0.8-1.2mm (suitable for TRM613W-45L1 goose neck)
	TRM613WPP-16A-22TSG	Aluminium/ Aluminium alloy wire φ1.4-1.6mm (suitable for TRM613W-22 goose neck)
	TRM613WPP-16A-22LTSG	Aluminium/ Aluminium alloy wire φ1.4-1.6mm (suitable for TRM613W-22L goose neck)
	TRM613WPP-16A-45TSG	Aluminium/ Aluminium alloy wire φ1.4-1.6mm (suitable for TRM613W-45 goose neck)
	TRM613WPP-16A-45LTSG	Aluminium/ Aluminium alloy wire φ1.4-1.6mm (suitable for TRM613W-45L goose neck)
	TRM613WPP-16A-45L1TSG	Aluminium/ Aluminium alloy wire φ1.4-1.6mm (suitable for TRM613W-45L1 goose neck)

**2.ANTI-COLLISION UNIT**

Item	Order NO.	Product Description
<b>2-1. MOUNT ARM</b>	TRM613WPP-06-01CM	Fixing bracket(component)
<b>2-2. COLLISION SENSOR</b>	TRM313-01-N10	Suitable for 22°/22°L/45°/45°L standard goose neck
	TRM313-01-N16	Suitable for 45°L1 etc.extended goose neck

Item	Order NO.	Product Description
<b>2-3. SPRING LINE</b>	3.5.21.0677	To connect collision sensor and torch body
<b>2-4. FLANGE</b>	See P50-51 flange selection table	Including the installed screws.

**3.CABLE ASSEMBLY**

Item	Order NO.	Product Description
<b>3.CABLE ASSEMBLY</b>	TRM613WPP-CBSA	Cable assembly (including torch body)
<b>3-1. TORCH BODY</b>	TRM651WPP-06-01SA	
<b>3-1-1. MAIN WIRE FEED ROLL</b>	TRM651WPP-06-35	Wire feed rolls (0.8A) aluminium/ aluminium alloy wire
	TRM651WPP-06-32	Wire feed rolls (1.0A) aluminium/ aluminium alloy wire
	TRM651WPP-06-10	Wire feed rolls (1.2A) aluminium/ aluminium alloy wire
	TRM651WPP-06-33	Wire feed rolls (1.4A) aluminium/ aluminium alloy wire
	TRM651WPP-06-34	Wire feed rolls (1.6A) aluminium/ aluminium alloy wire
<b>3-1-2. AUXILIARY WIRE FEED ROLL</b>	TRM651WPP-06-23	Driven roll (smooth)
<b>3-2. CABLE</b>	TRM613WPP-CB	
<b>3-2-1. LINER HOLDER</b>	TRM651WPP-08-12	Aluminium Φ0.8-1.6
<b>3-2-2. LINER</b>	TRM153B-10A-18	EURO Type ( aluminium wire Φ0.8-1.0mm)
	TRM153B-12A-18	EURO Type ( aluminium wire Φ1.0-1.2mm)
	TRM153B-16A-18	EURO Type ( aluminium wire Φ1.2-1.6mm)
	TRM150N-08A-23	LINCOLN/ Panasonic Type ( aluminium wire Φ0.8-1.0mm)
	TRM150N-12A-23	LINCOLN/ Panasonic Type ( aluminium wire Φ1.0-1.2mm)
	TRM150N-16A-23	LINCOLN/ Panasonic (aluminium wire Φ1.2-1.6mm)

**4.SPARE PARTS**

Item	Order NO.	Product Description
<b>4. SYNCHRONIZER</b>	TRM607WPP-SYNC-01A	Synchronizer( including power cable and signal line )

**5.ACCESSORY BAG**

Item	Order NO.	Product Description
<b>5. ACCESSORY BAG</b>	TRM651WPP-AP-1	Including seal and grease on goose necks and connectors

**CARBON STEEL CONFIGURATION**

Item	Order NO.	Product Description
<b>CONTACT TIP</b>	TRM035-02-08	CuCrZr Φ0.8mm wire
	TRM035-02-10	CuCrZr Φ1.0mm wire
	TRM035-02-12	CuCrZr Φ1.2mm wire
	TRM035-02-14	CuCrZr Φ1.4mm wire
	TRM035-02-16	CuCrZr Φ1.6mm wire
<b>NECK LINER</b>	TRM158PP-12S-ALL	Wire0.8-1.2mm
	TRM158PP-16S-ALL	Wire1.4-1.6mm
<b>WIRE FEED ROLL</b>	TRM651WPP-06-29	Wire feed roll (0.8S)
	TRM651WPP-06-28	Wire feed roll (1.0S)
	TRM651WPP-06-27	Wire feed roll (1.2S)
	TRM651WPP-06-30	Wire feed roll (1.4S)
	TRM651WPP-06-31	Wire feed roll (1.6S)
<b>LINER</b>	TRM156B-12-23	0.8-1.2mm welding wire European connector
	TRM156B-16-23	1.4-1.6mm welding wire European connector
	TRM150-12-23	Length 2.3m, Japanese or Lincoln connector
	TRM150-16-23	Length 2.3m, Japanese or Lincoln connector
<b>LINER HOLDER</b>	TRM652W-E1-2	European style carbon steel 0.8-1.6mm (only for European style rear handlebars)

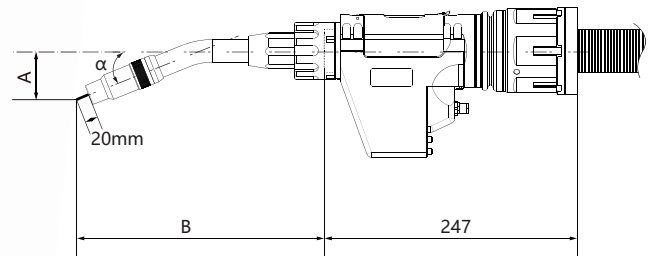
# TRM612WPP SERVO PUSH-PULL



## TECHNICAL DATA

<b>Cooling method</b>	Liquid cooled
<b>Rating</b>	550A CO <sub>2</sub> 500A mixed gas M21(ISO14175)
<b>Duty cycle</b>	100%
<b>Wire diameter</b>	0.8~1.6mm
<b>Torch geometries</b>	22°, 45°
<b>Wire feed speed</b>	0-25m/min

## TCP DATA



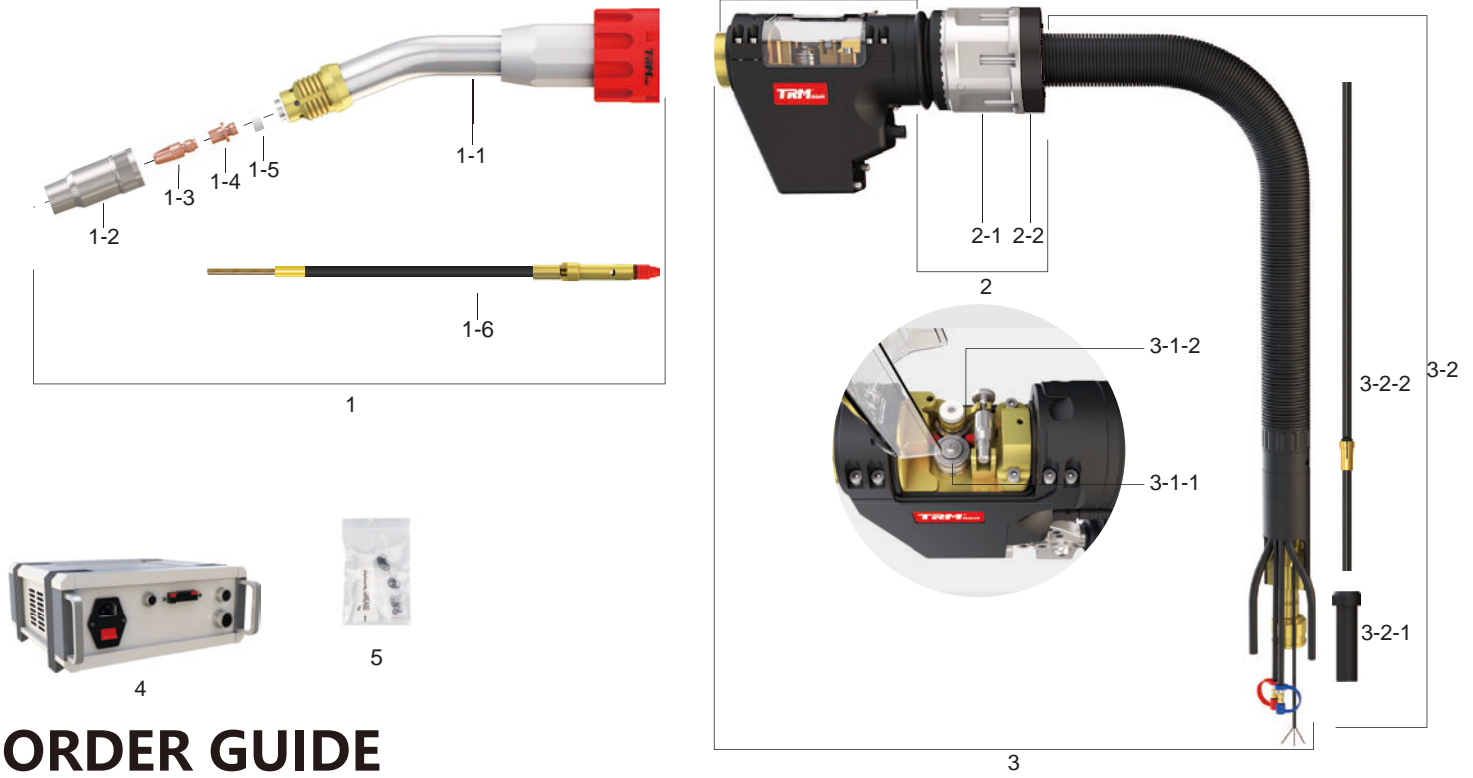
$\alpha$	A(mm)	B(mm)	Angle	Neck Part No
22°	50.2	247.45	22°	TRM613W-22
22°	52.08	374	22°	TRM613W-22L
45°	107.56	235.86	45°	TRM613W-45
45°	107.56	335.86	45°	TRM613W-45L
45°	109.87	435	45°	TRM613W-45L1

## Product features:

- Compact and flexible structure with high reachability
- Servo motor with high-precision and quick-response
- Quick Euro connector, easy to connect
- Be available for popular wire feeder connection like Panasonic, Lincoln and other common connectors.

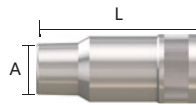
## COLLISION SENSOR DATA SHEET

ITEM	TRM316-01-N10	TRM316-01-N16
Size	Diameter $\phi$ 85mm/Height 89mm	Diameter $\phi$ 85mm/Height 89mm
Weight	600g	600g
Sensing Accuracy	Deflection in X/Y direction 0.9°~1.5 °	Deflection in X/Y direction 0.9°~1.5 °
Maximum deflection repeatability(400mm)	X/Y deflection approx. 10 ° Within 0.15mm	X/Y deflection approx. 6° Within 0.15mm
Trigger Force	About 60-70N in X/Y (400mm) direction	About 90-100N in X/Y (400mm) direction
IP protection level	IP21	IP21
Switching capacity	10A/250VAC	10A/250VAC
Ambient temperature	-10°C to +55°C	-10°C to +55°C
Relative Humidity	70% at 20 °C during operation	70% at 20 °C during operation

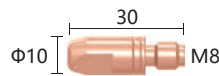


## ORDER GUIDE

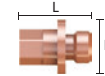
Item	Order NO.	Product Description
<b>ROBOT TORCH</b>	TRM612WPP	Push-pull robot welding torch (not including synchronizer)
		Synchronizer



1-2.NOZZLE



1-3.CONTACT TIP



1-4. TIP HOLDER

### 1.TORCH NECK ASSEMBLY

Item	Order NO.	Product Description
<b>1-1. GOOSE NECK</b>	TRM613W-22	22° straight length 37mm
	TRM613W-22L	22° , extended 100mm, straight length 156.78mm
	TRM613W-45	45° straight length 24.75mm
	TRM613W-45L	45° , extended 100mm, straight length 124.75mm
	TRM613W-45L1	45° , extended 160mm, straight length 221.6mm
<b>1-2. NOZZLE</b>	TRM016-03-14	Tip flush L=63.5mm A=Φ14mm
	TRM016-03-16	Tip flush L=63.5mm A=Φ16mm
	TRM016-03-17	Tip flush L=63.5mm A=Φ17mm
<b>1-3. CONTACT TIP</b>	TRM035-02-08A	M8 CuCrZr Φ0.8mm aluminium
	TRM035-02-10A	M8 CuCrZr Φ1.0mm aluminium
	TRM035-02-12A	M8 CuCrZr Φ1.2mm aluminium
	TRM035-02-14A	M8 CuCrZr Φ1.4mm aluminium
	TRM035-02-16A	M8 CuCrZr Φ1.6mm aluminium
<b>1-4. TIP HOLDER</b>	TRM046-02	M8 L=28mm B=M8×1
<b>1-5. INSULATOR</b>	TRM028-01	White
<b>1-6. NECK LINER</b>	TRM613WPP-12A-22TSG	Aluminium/ Aluminium alloy wire φ0.8-1.2mm (suitable for TRM613W-22 goose neck)
	TRM613WPP-12A-22LTSG	Aluminium/ Aluminium alloy wire φ0.8-1.2mm (suitable for TRM613W-22L goose neck)
	TRM613WPP-12A-45TSG	Aluminium/ Aluminium alloy wire φ0.8-1.2mm (suitable for TRM613W-45 goose neck)
	TRM613WPP-12A-45LTSG	Aluminium/ Aluminium alloy wire φ0.8-1.2mm (suitable for TRM613W-45L goose neck)
	TRM613WPP-12A-45L1TSG	Aluminium/ Aluminium alloy wire φ0.8-1.2mm (suitable for TRM613W-45L1 goose neck)
	TRM613WPP-16A-22TSG	Aluminium/ Aluminium alloy wire φ1.4-1.6mm (suitable for TRM613W-22 goose neck)
	TRM613WPP-16A-22LTSG	Aluminium/ Aluminium alloy wire φ1.4-1.6mm (suitable for TRM613W-22L goose neck)
	TRM613WPP-16A-45TSG	Aluminium/ Aluminium alloy wire φ1.4-1.6mm (suitable for TRM613W-45 goose neck)
	TRM613WPP-16A-45LTSG	Aluminium/ Aluminium alloy wire φ1.4-1.6mm (suitable for TRM613W-45L goose neck)
	TRM613WPP-16A-45L1TSG	Aluminium/ Aluminium alloy wire φ1.4-1.6mm (suitable for TRM613W-45L1 goose neck)



## 2.TORCH BODY AND COLLISION SENSOR

Item	Order NO.	Product Description
2-1. COLLISION SENSOR	TRM316-01-N10	Suitable for 22°/22°L/45°/45°L standard goose neck
	TRM316-01-N16	Suitable for 45°L1 etc. extended torch neck
2-2. FLANGE	See P50-51 flange selection table	Including the installed screws.

## 3.CABLE ASSEMBLY

Item	Order NO.	Product Description
3.CABLE ASSEMBLY	TRM612WPP-CBSA	Push-pull cable assembly (including torch body)
3-1. TORCH BODY	TRM651WPP-06-01SA	
3-1-1. MAIN WIRE FEED ROLL	TRM651WPP-06-35	Wire feed rolls (0.8A) aluminium/ aluminium alloy wire
	TRM651WPP-06-32	Wire feed rolls (1.0A) aluminium/ aluminium alloy wire
	TRM651WPP-06-10	Wire feed rolls (1.2A) aluminium/ aluminium alloy wire
	TRM651WPP-06-33	Wire feed rolls (1.4A) aluminium/ aluminium alloy wire
	TRM651WPP-06-34	Wire feed rolls (1.6A) aluminium/ aluminium alloy wire
3-1-2. AUXILIARY WIRE FEED ROLL	TRM651WPP-06-23	Driven roll (smooth)
3-2. CABLE	TRM612WPP-CB	
3-2-1. LINER HOLDER	TRM651WPP-08-12	Aluminium Φ0.8-1.6
3-2-2. LINER	TRM153B-10A-18	Euro type ( aluminium Φ0.8-1.0mm)
	TRM153B-12A-18	Euro type ( aluminium Φ1.0-1.2mm)
	TRM153B-16A-18	Euro type ( aluminium Φ1.2-1.6mm)
	TRM150N-08A-23	Panasonic or Lincoln type ( aluminium Φ0.8-1.0mm)
	TRM150N-12A-23	Panasonic or Lincoln type ( aluminium Φ1.0-1.2mm)
	TRM150N-16A-23	Panasonic or Lincoln type ( aluminium Φ1.2-1.6mm)

## 4.SPARE PARTS

Item	Order NO.	Product Description
4. SYNCHRONIZER	TRM607WPP-SYNC-01A	Synchronizer( including power cable and signal line )

## 5.ACCESSORY BAG

Item	Order NO.	Product Description
5. ACCESSORY BAG	TRM651WPP-AP-1	Including seal and grease on goose necks and connectors

## CARBON STEEL CONFIGURATION

Item	Order NO.	Product Description
CONTACT TIP	TRM035-02-08	CuCrZr Φ0.8mm wire
	TRM035-02-10	CuCrZr Φ1.0mm wire
	TRM035-02-12	CuCrZr Φ1.2mm wire
	TRM035-02-14	CuCrZr Φ1.4mm wire
	TRM035-02-16	CuCrZr Φ1.6mm wire
NECK LINER	TRM158PP-12S-ALL	Wire 0.8-1.2mm
	TRM158PP-16S-ALL	Wire 1.4-1.6mm
WIRE FEED ROLL	TRM651WPP-06-29	Wire feed roll (0.8S)
	TRM651WPP-06-28	Wire feed roll (1.0S)
	TRM651WPP-06-27	Wire feed roll (1.2S)
	TRM651WPP-06-30	Wire feed roll (1.4S)
	TRM651WPP-06-31	Wire feed roll (1.6S)
LINER	TRM156B-12-23	0.8-1.2mm welding wire European connector
	TRM156B-16-23	1.4-1.6mm welding wire European connector
	TRM150-12-23	Length 2.3m, Japanese or Lincoln connector
	TRM150-16-23	Length 2.3m, Japanese or Lincoln connector
LINER HOLDER	TRM652W-E1-2	European style carbon steel 0.8-1.6mm (only for European style rear handlebars)



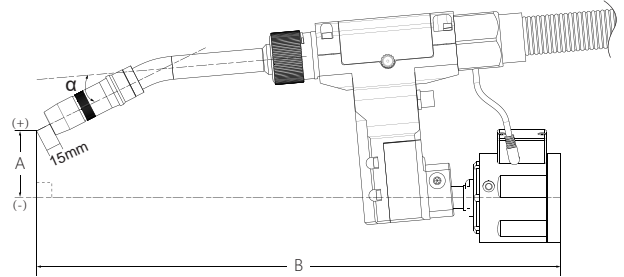
# TRM605WPP WPPUSH-PULL



## TECHNICAL DATA

Cooling method	Liquid cooled
Rating	550A mixed gas M21(ISO14175)
Duty cycle	100%
Wire diameter	0.8~1.6mm
Torch geometries	22°, 36°, 45°
Wire feed speed	2.5-25m/min

## TCP DATA



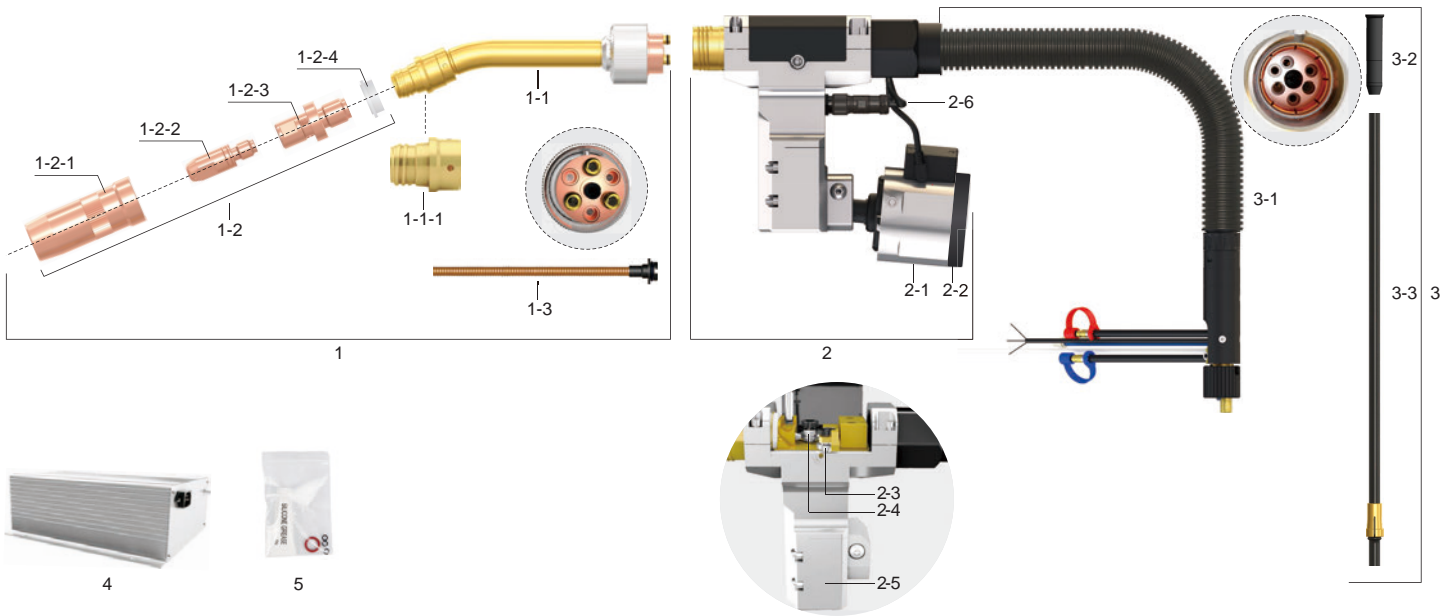
$\alpha$	A(mm)	B(mm)	Angle	Neck Part No
22°	57.8	453.9	22°	TRM605W-22
22°	42.6	626.8	22°	TRM605W-22L
22°	37.4	686.5	22°	TRM605W-22L1
36°	26.9	436.3	36°	TRM605W-36
36°	11.7	609.2	36°	TRM605W-36L
45°	-6.8	414.4	45°	TRM605W-45
45°	-23.2	602.1	45°	TRM605W-45L
45°	-30.3	683.4	45°	TRM605W-45L1

## Product features:

- The optimized design of wire feeding wheel makes wire feeding more stable
- Changeable goose neck with water stop function. Easy to change goose neck and do maintenance.
- With collision sensor
- Be available for popular wire feeder connection like Lincoln®, Panasonic® and European style etc.

## COLLISION SENSOR PERFORMANCE DATA SHEET

ITEM	TRM313-01-N10	TRM313-01-N16
Size	Diameter $\phi$ 77/Height 103.7mm	Diameter $\phi$ 77/Height 103.7mm
Weight	0.98kg	0.98kg
Sensing Accuracy	1°~1.5°	1°~1.5°
Maximum deflection	XY direction 8°	XY direction 4°
Reset accuracy (300mm)	0.1~0.15mm	Within 0.15mm
Trigger Force	About 60-70N in X/Y (400mm) direction	About 90-100N in X/Y (400mm) direction
IP protection level	IP21	IP21
Switching capacity	0.1A/250VAC	0.1A/250VAC
Ambient temperature	-10°C to +55°C	-10°C to +55°C
Relative Humidity	70% at 20 °C during operation	70% at 20 °C during operation

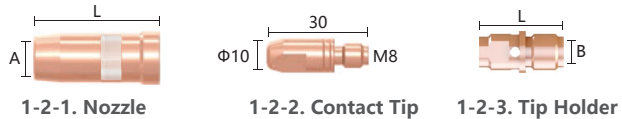


## ORDER GUIDE

Item	Order NO.	Product Description	Price
<b>ROBOT TORCH</b>	TRM605WPP	Push-pull robot welding torch (not including synchronizer)	
		Synchronizer	

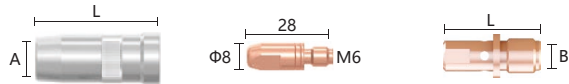
## 1.TORCH NECK ASSEMBLY

### 1-2. M8 GOOSE NECK CONSUMABLES



Item	Order NO.	Product Description
<b>1-1. GOOSE NECK</b>	TRM605W-22	Goose neck(22°)
	TRM605W-22L	Goose neck(22° , extended)
	TRM605W-22L1	Goose neck(22° , extended L1)
	TRM605W-36	Goose neck(36°)
	TRM605W-36L	Goose neck(36° , extended)
	TRM605W-45	Goose neck(45°)
	TRM605W-45L	Goose neck(45° , extended)
	TRM605W-45L1	Goose neck(45° , extended L1)
<b>1-1-1. NOZZLE HOLDER</b>	TRM605W-22-02-ZJ	With sealing ring
<b>1-2-1. NOZZLE</b>	TRM015-41-19C	Contact tip recess 2mm L=61.5mm A=Φ19mm
	TRM015-41-17C	Contact tip recess 2mm L=61.5mm A=Φ17mm
	TRM015-41-16C	Contact tip recess 2mm L=61.5mm A=Φ16mm
	TRM015-42-16C	Contact tip flush L=59.5mm A=Φ16mm
	TRM015-43-16C	Contact tip stick out L=56.5mm A=Φ16mm
	TRM015-11-14C	Contact tip recess L=61.5mm A=Φ14mm
	TRM015-12-14C	Contact tip flush L=59.5mm A=Φ14mm
TRM015-13-14C	Contact tip stick out L=56.5mm A=Φ14mm	
<b>1-2-2. CONTACT TIP</b>	TRM035-02-08A	M8 CuCrZr Φ0.8mm aluminium
	TRM035-02-10A	M8 CuCrZr Φ1.0mm aluminium
	TRM035-02-12A	M8 CuCrZr Φ1.2mm aluminium
	TRM035-02-14A	M8 CuCrZr Φ1.4mm aluminium
	TRM035-02-16A	M8 CuCrZr Φ1.6mm aluminium
<b>1-2-3. TIP HOLDER</b>	TRM045-03	M8 L=28mm B=M10X1
<b>1-2-4. INSULATOR</b>	TRM605W-22-01	Insulator(white)
<b>1-3. NECK LINER</b> (suitable for Aluminium welding)	TRM154-08A-42	( Aluminium) wire0.8-1.0mm
	TRM154-12A-42	( Aluminium) wire1.0-1.2mm
	TRM154-16A-42	( Aluminium) wire1.4-1.6mm





## 1-2.CONSUMABLES SERIES(M6)

1-2-1. NOZZLE    1-2-2. CONTACT TIP    1-2-3. TIP HOLDER

Item	Order NO.	Product Description
<b>1-2-1. NOZZLE</b>	TRM015-11-14C	Contact tip recess L=61.5mm A=Φ14mm
	TRM015-11-13C	Contact tip recess L=61.5mm A=Φ13mm
	TRM015-12-14C	Contact tip flush L=59.5mm A=Φ14mm
	TRM015-13-14C	Contact tip stick out L=56.5mm A=Φ14mm
<b>1-2-2. CONTACT TIP</b>	TRM035-12-08A	CuCrZr, Φ0.8 wire ( aluminium)
	TRM035-12-10A	CuCrZr, Φ1.0 wire ( aluminium)
	TRM035-12-12A	CuCrZr, Φ1.2 wire ( aluminium)
	TRM035-12-14A	CuCrZr, Φ1.4 wire ( aluminium)
	TRM035-12-16A	CuCrZr, Φ1.6 wire ( aluminium)
<b>1-2-3. TIP HOLDER</b>	TRM045-02	M6 L=29mm B=M10x1
<b>1-2-4. INSULATOR</b>	TRM605W-22-01	Insulator (white)

## 2.TORCH BODY AND COLLISION SENSOR

Item	Order NO.	Product Description
<b>2-1. COLLISION SENSOR</b>	TRM313-01-N10	Suitable for 22°/22°L/36°/36°L/45°/45°L/standard goose neck
	TRM313-01-N16	Suitable for 22°L1/45°L1 etc.extended goose neck
<b>2-2. FLANGE</b>	See P50-51 flange selection table	Including the installed screws.
<b>2-3. MAIN WIRE FEED ROLL</b>	TRM605WPP-06-54	Wire feed rolls, Φ0.8-1.0 wire ( aluminium)
	TRM605WPP-06-55	Wire feed rolls, Φ1.0-1.2 wire ( aluminium)
	TRM605WPP-06-63	Wire feed rolls, Φ1.4-1.6 wire ( aluminium)
<b>2-4. AUXILIARY WIRE FEED ROLL</b>	TRM605WPP-06-13	Driven rolls
<b>2-5. MOTOR&amp; CARBON BRUSH</b>	TRM605WPP-06-49	DC gear motor
	TRM92-14W-1	Carbon brush (1 Pcs)

## 3.CABLE ASSEMBLY

Item	Order NO.	Product Description
<b>3. CABLE ASSEMBLY</b>	TRM605WPP-CBSA	Liquid cooled cable assembly, Euro connector(including motor)
<b>3-1. CABLE ASSEMBLY</b>	TRM605WPP-XXC5E	Liquid cooled cable assembly, Euro connector(XX is length , 11=1.1m)
	TRM605WPP-06-58	Wire guide bushing(Φ0.8mm-Φ1mm)
	TRM605WPP-06-53	Wire guide bushing(Φ1. 2mm)
<b>3-2. WIRE GUIDE BUSHING</b>	TRM605WPP-06-59	Wire guide bushing(Φ1.4mm-Φ1.6mm)
	TRM153B-10A-18	Overall length 1.8m, ( aluminium) wire 0.8-1.0mm
	TRM153B-12A-18	Overall length 1.8m, ( aluminium) wire 1.0-1.2mm
<b>3-3. LINER</b> (suitable for Aluminium welding)	TRM153B-16A-18	Overall length 1.8m, ( aluminium) wire 1.4-1.6mm

Note: the cable for AL welding

Item	Order NO.	Product Description
<b>4. SYNCHRONIZER</b>	TRM605WPP-SYNC-01C	Synchronizer (including power line and signal line )

## 5.ACCESSORY BAG

Item	Order NO.	Product Description
<b>5. ACCESSORY BAG</b>	TRM651WPP-AP-1	Including seal and grease on goose necks and connectors



# TRM651W LIQUID COOLED



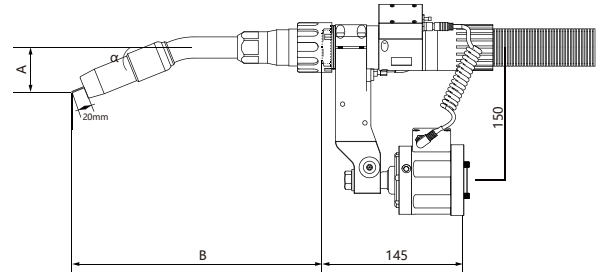
## Product features:

- Dual cooling with separate gas circuit;
- Changeable goose neck with water stop function, Easy to change goose neck and do maintenance;
- With collision sensor, wire brake and gas nozzle locating functions;
- Many options for torch neck with different angle and length Standard Euro connector.

## TECHNICAL DATA

<b>Cooling method</b>	Liquid cooled
<b>Rating</b>	600A CO <sub>2</sub> 550A mixed gas M21(ISO14175)
<b>Duty cycle</b>	100%
<b>Wire diameter</b>	1.0~1.6mm
<b>Torch geometries</b>	22°, 45°

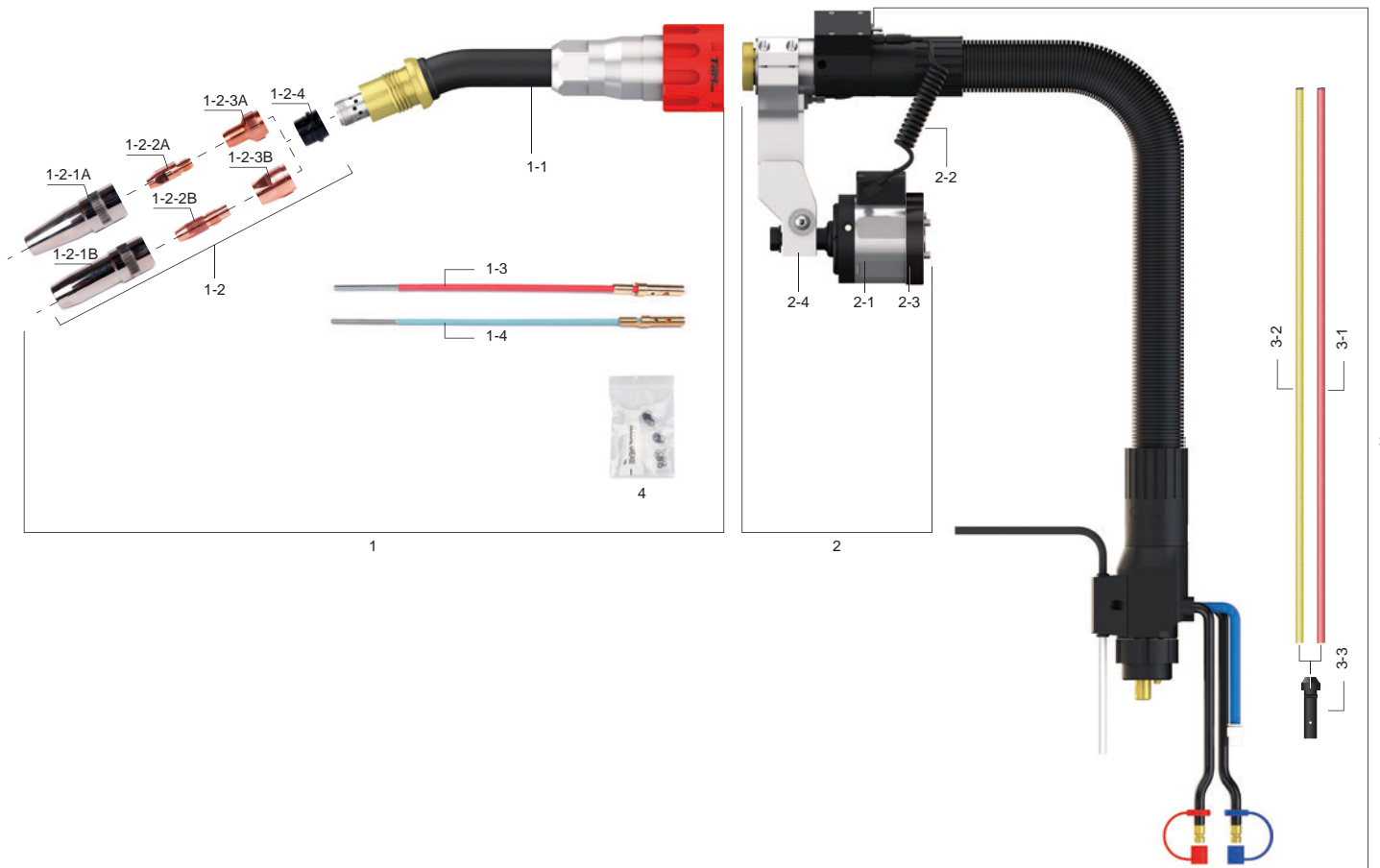
## TCP DATA



$\alpha$	A(mm)	B(mm)	Angle	Neck Part No
22°	52.35	282.5	22°	TTRM651W-22
22°	52.35	387.4	22°	TRM651W-22L
22°	52	583	22°	TRM651W-22L3
45°	114.57	254.6	45°	TRM651W-45
45°	114.57	354.6	45°	TRM651W-45L
45°	114.57	414.6	45°	TRM651W-45L1
45°	116.6	554	45°	TRM651W-45L3

## COLLISION SENSOR DATA SHEET

ITEM	TRM313-01-N10	TRM313-01-N16
Size	Diameter $\phi$ 77/Height 103.7mm	Diameter $\phi$ 77/Height 103.7mm
Weight	0.98kg	0.98kg
Sensing Accuracy	1 °~1.5°	1 °~1.5°
Maximum deflection	XY direction 8°	XY direction 4°
repeatability(400mm)	0.1~0.15mm	Within 0.15mm
Trigger Force	About 60-70N in X/Y (400mm) direction	About 90-100N in X/Y (400mm) direction
IP protection level	IP21	IP21
Switching capacity	0.1A/250VAC	0.1A/250VAC
Ambient temperature	-10°C to +55°C	-10°C to +55°C
Relative Humidity	70% at 20 °C during operation	70% at 20 °C during operation



## ORDER GUIDE

Item	Order NO.	Product Description
<b>ROBOT WELDING TORCH</b>	TRM651W	Over-arm liquid cooled robot welding torch

### 1. TORCH NECK ASSEMBLY

Item	Order NO.	Product Description
<b>1-1. GOOSE NECK</b>	TRM651W-22	22°, straight length 49.6mm
	TRM651W-22L	22°, extended 100, straight length 149.6mm
	TRM651W-22L3	22°, extended 300mm
	TRM651W-45	45°, straight length 18.6mm
	TRM651W-45L	45°, extended 100, straight length 118.6mm
	TRM651W-45L1	45°, extended 160, straight length 178.6mm
	TRM651W-45L3	45°, extended 300, straight length 316mm
<b>1-3. NECK LINER</b> Note: cable for mild steel welding	TRM158-12-25	Wire Φ1.0-1.2mm(22°&45° goose neck)
	TRM158-12-40	Wire Φ1.0-1.2mm(22°L/45°L goose neck)
	TRM158-12-45	Wire Φ1.0-1.2mm(45°L1 goose neck)
	TRM158-12-60	Wire Φ1.0-1.2mm(22°L3/45°L3 goose neck)
<b>1-4. NECK LINER</b>	TRM158-16-25	Wire Φ1.4-1.6mm(22°&45° goose neck)
	TRM158-16-40	Wire Φ1.4-1.6mm(22°L/45°L goose neck)
	TRM158-16-45	Wire Φ1.4-1.6mm(45°L1 goose neck)
	TRM158-16-60	Wire Φ1.4-1.6mm(22°L3/45°L3 goose neck)





1-2-1A.NOZZLE



1-2-2A.CONTACT TIP



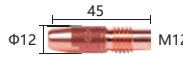
1-2-3A.TIP HOLDER

## 1-2. GOOSE NECK CONSUMABLES

Item	Order NO.	Product Description
<b>1-2-1A. NOZZLE</b>	TRM017-01-16	Flush L=92mm A=Φ16mm
<b>1-2-2A. CONTACT TIP</b>	TRM035-03-10	M8 Φ1.0mm (ultra long life)
	TRM035-03-12	M8 Φ1.2mm (ultra long life)
	TRM035-03-14	M8 Φ1.4mm (ultra long life)
	TRM035-03-16	M8 Φ1.6mm (ultra long life)
	TRM035-02-10	M8 CuCrZr, Φ1.0mm wire
	TRM035-02-12	M8 CuCrZr, Φ1.2mm wire
	TRM035-02-14	M8 CuCrZr, Φ1.4mm wire
<b>1-2-3A. TIP HOLDER</b>	TRM047-02	M8 L=28mm B=M16x1
<b>1-2-1B. NOZZLE</b>	TRM017-01-18	Flush L=92mm A=Φ18mm
	TRM017-01-21.5	Flush L=92mm A=Φ21.5mm
	TRM017-02-21.5	Stick out+6mm L=86mm A=Φ21.5mm
	TRM017-03-21.5	Recess -3mm L=95mm A=Φ21.5mm



1-2-1B.NOZZLE



1-2-2B.CONTACT TIP



1-2-3B.TIP HOLDER

Item	Order NO.	Product Description
<b>1-2-2B. CONTACT TIP</b>	TRM037-02-10	M12 CuCrZr, Φ1.0mm wire
	TRM037-02-12	M12 CuCrZr, Φ1.2mm wire
	TRM037-02-14	M12 CuCrZr, Φ1.4mm wire
	TRM037-02-16	M12 CuCrZr, Φ1.6mm wire
	TRM037-03-10	M12 Φ1.0mm (ultra long life)
	TRM037-03-12	M12 Φ1.2mm (ultra long life)
	TRM037-03-14	M12 Φ1.4mm (ultra long life)
<b>1-2-3B. TIP HOLDER</b>	TRM047-01	M12 L=23mm B=M16x1
<b>1-2-4. GAS DIFFUSER</b>	TRM029-01	Black

## 2.ANTI-COLLISION UNIT

Item	Order NO.	Product Description
<b>2-1. COLLISION SENSOR</b>	TRM313-01-N10	Suitable for 22°/22°L/45°/45°L/45°L1 standard goose neck
	TRM313-01-N16	Suitable for 22°L3/45°L3 etc. extended goose neck

Item	Order NO.	Product Description
<b>2-2. SPRING LINE</b>	3.5.11.0012	To connect collision sensor and torch
<b>2-3. FLANGE</b>	See P50-51 flange selection table	Including the installed screws.
<b>2-4. MOUNT ARM</b>	TRM218-045-KT	Mount arm

## 3.CABLE ASSEMBLY

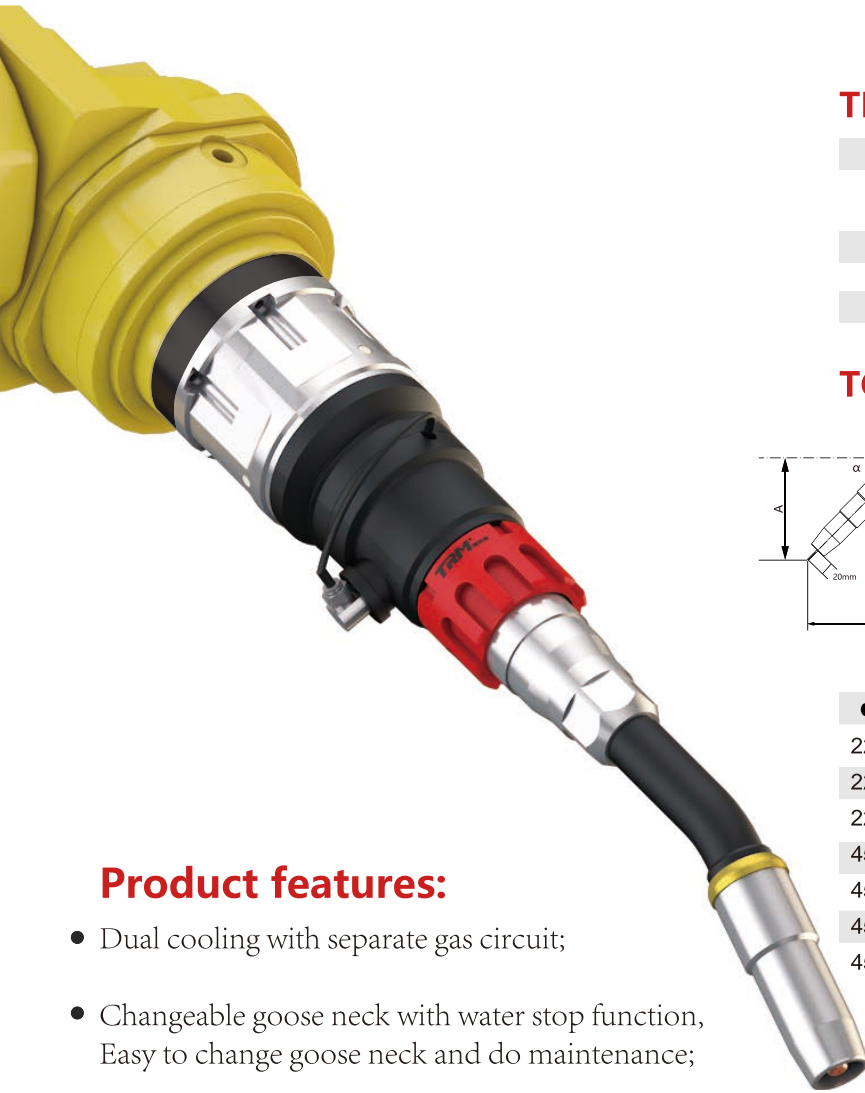
Item	Order NO.	Product Description
<b>3. CABLE ASSEMBLY</b>	TRM651W-XXC8X	XX is length
<b>3-1. LINER</b>	TRM156B-12-23	Wire Φ1.0-1.2mm
<b>3-2. LINER</b>	TRM156B-16-23	Wire Φ1.4-1.6mm
<b>3-3. LINER HOLDER</b>	TRM652W-E1-2	Liner holder

## 4.ACCESSORY BAG

Item	Order NO.	Product Description
<b>4. ACCESSORY BAG</b>	TRM651WPP-AP-1	Including seal and grease on goose necks and connectors



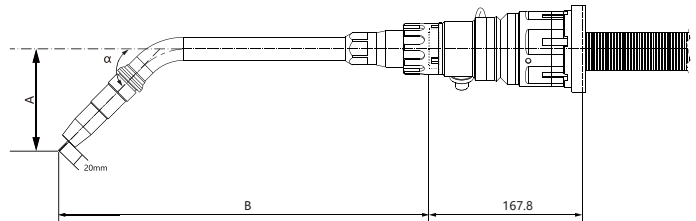
# TRM652W LIQUID COOLED



## TECHNICAL DATA

<b>Cooling method</b>	Liquid cooled
<b>Rating</b>	600A CO <sub>2</sub> 550A mixed gas M21(ISO14175)
<b>Duty cycle</b>	100%
<b>Wire diameter</b>	1.0~1.6mm
<b>Torch geometries</b>	22°, 45°

## TCP DATA



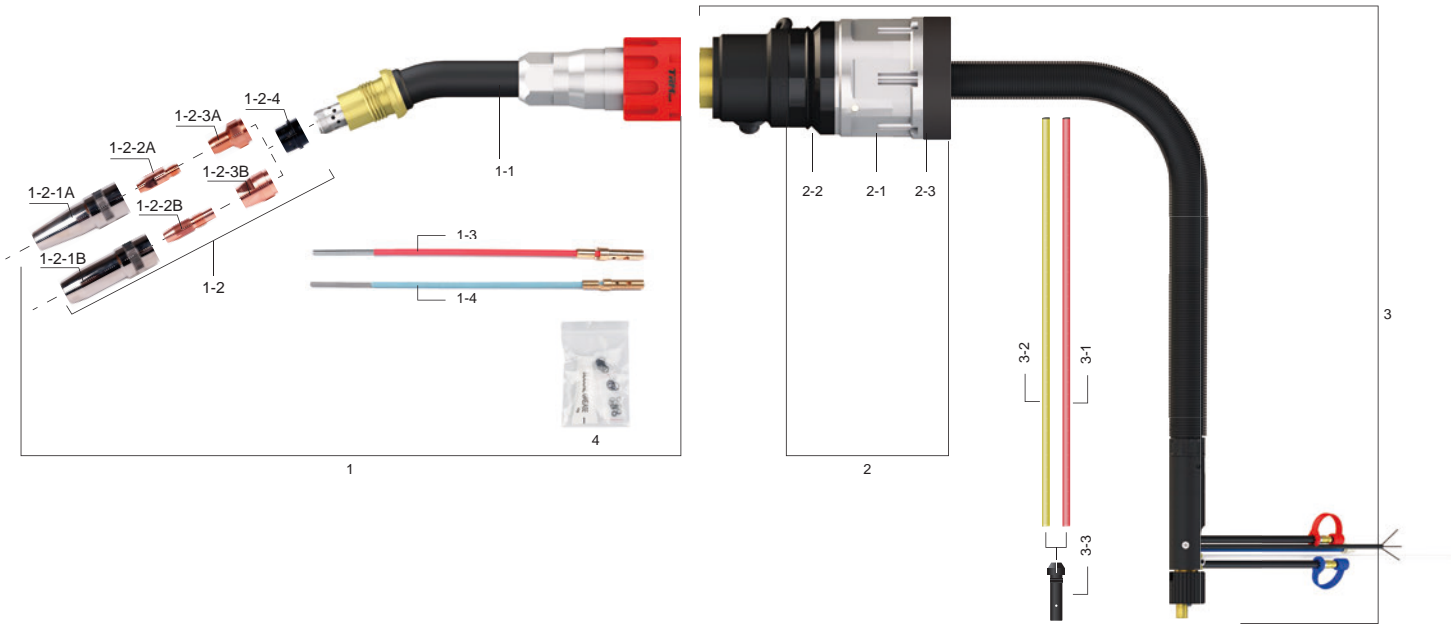
$\alpha$	A(mm)	B(mm)	Angle	Neck Part No
22°	52.35	282.5	22°	TTRM651W-22
22°	52.35	387.4	22°	TRM651W-22L
22°	52	583	22°	TRM651W-22L3
45°	114.57	254.6	45°	TRM651W-45
45°	114.57	354.6	45°	TRM651W-45L
45°	114.57	414.6	45°	TRM651W-45L1
45°	116.6	554	45°	TRM651W-45L3

## Product features:

- Dual cooling with separate gas circuit;
- Changeable goose neck with water stop function, Easy to change goose neck and do maintenance;
- With collision sensor, wire brake and gas nozzle locating functions;
- Many options for torch neck with different angle and length Standard Euro connector.

## COLLISION SENSOR DATA SHEET

ITEM	TRM316-01-N10	TRM316-01-N16
Size	Diameter $\phi$ 85mm/Height 89mm	Diameter $\phi$ 85mm/Height 89mm
Weight	600g	600g
Sensing Accuracy	Deflection in X/Y direction 0.9° ~ 1.5°	Deflection in X/Y direction 0.9° ~ 1.5°
Maximum deflection repeatability(400mm)	X/Y deflection approx. 10° Within 0.15mm	X/Y deflection approx. 6° Within 0.15mm
Trigger Force	About 60-70N in X/Y (400mm) direction	About 90-100N in X/Y (400mm) direction
IP protection level	IP21	IP21
Switching capacity	10A/250VAC	10A/250VAC
Ambient temperature	-10 °C to + 55 °C	-10°C to +55°C
Relative Humidity	70% at 20 °C during operation	70% at 20 °C during operation



## ORDER GUIDE

Item	Order NO.	Product Description
<b>ROBOT TORCH</b>	TRM652W	Through-arm liquid cooled robot welding torch

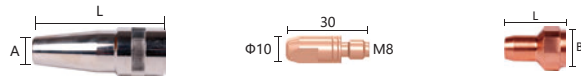
Note: other connetors need adapter

### 1.TORCH NECK ASSEMBLY

Item	Order NO.	Product Description
<b>1-1. GOOSE NECK</b>	TRM651W-22	22°, straight length 49.6mm
	TRM651W-22L	22°, extended 100, straight length 149.6mm
	TRM651W-22L3	22°, extended 300mm
	TRM651W-45	45°, straight length 18.6mm
	TRM651W-45L	45°, extended 100, straight length 118.6mm
	TRM651W-45L1	45°, extended 160, straight length 178.6mm
	TRM651W-45L3	45°, extended 300, straight length 316mm
<b>1-3. NECK LINER</b>	TRM158-12-25	Wire Φ1.0-1.2mm(22°&45° goose neck)
	TRM158-12-40	Wire Φ1.0-1.2mm(22°L/45°L goose neck)
	TRM158-12-45	Wire Φ1.0-1.2mm(45°L1 goose neck)
<b>1-4. NECK LINER</b>	TRM158-12-60	Wire Φ1.0-1.2mm(22°L3/45°L3 goose neck)
	TRM158-16-25	Wire Φ1.4-1.6mm(22°&45° goose neck)
	TRM158-16-40	Wire Φ1.4-1.6mm(22°L/45°L goose neck)
	TRM158-16-45	Wire Φ1.4-1.6mm(45°L1 goose neck)
	TRM158-16-60	Wire Φ1.4-1.6mm(22°L3/45°L3 goose neck)

Note: cable for mild steel welding





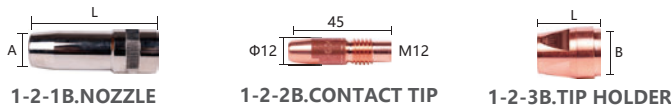
## 1-2. GOOSE NECK CONSUMABLES

1-2-1A.NOZZLE

1-2-2A.CONTACT TIP

1-2-3A.TIP HOLDER

Item	Order NO.	Product Description
<b>1-2-1A. NOZZLE</b>	TRM017-01-16	Flush L=92mm A=Φ16mm
	TRM035-03-10	M8 Φ1.0mm (ultra long life)
<b>1-2-2A. CONTACT TIP</b>	TRM035-03-12	M8 Φ1.2mm (ultra long life)
	TRM035-03-14	M8 Φ1.4mm (ultra long life)
	TRM035-03-16	M8 Φ1.6mm (ultra long life)
	TRM035-02-10	M8 CuCrZr, Φ1.0mm wire
	TRM035-02-12	M8 CuCrZr, Φ1.2mm wire
	TRM035-02-14	M8 CuCrZr, Φ1.4mm wire
	TRM035-02-16	M8 CuCrZr, Φ1.6mm wire
	<b>1-2-3A. TIP HOLDER</b>	TRM047-02
<b>1-2-1B. NOZZLE</b>	TRM017-01-18	Flush L=92mm A=Φ18mm
	TRM017-01-21.5	Flush L=92mm A=Φ21.5mm
	TRM017-02-21.5	Stick out +6mm L=86mm A=Φ21.5mm
	TRM017-03-21.5	Recess -3mm L=95mm A=Φ21.5mm



1-2-1B.NOZZLE

1-2-2B.CONTACT TIP

1-2-3B.TIP HOLDER

Item	Order NO.	Product Description
<b>1-2-2B. CONTACT TIP</b>	TRM037-03-10	M12 Φ1.0mm (ultra long life)
	TRM037-03-12	M12 Φ1.2mm (ultra long life)
	TRM037-03-14	M12 Φ1.4mm (ultra long life)
	TRM037-03-16	M12 Φ1.6mm (ultra long life)
	TRM037-02-10	M12 CuCrZr, Φ1.0mm wire
	TRM037-02-12	M12 CuCrZr, Φ1.2mm wire
	TRM037-02-14	M12 CuCrZr, Φ1.4mm wire
	TRM037-02-16	M12 CuCrZr, Φ1.6mm wire
<b>1-2-3B. TIP HOLDER</b>	TRM047-01	M12 L=23mm B=M16x1
<b>1-2-4. GAS DIFFUSER</b>	TRM029-01	Black

## 2.ANTI-COLLISION UNIT

Item	Order NO.	Product Description
<b>2-1. COLLISION SENSOR</b>	TRM316-01-N10	Suitable for 22°/22°L/45°/45°L/45°L1 standard goose neck
	TRM316-01-N16	Suitable for 22°L3/45°L3 etc. extended goose neck

Item	Order NO.	Product Description
<b>2-2. DUST COVER</b>	TRM652W-061-8-10	Black dust cover
<b>2-3. FLANGE</b>	See P50-51 flange selection table	Including the installed screws.

## 3.CABLE ASSEMBLY

Item	Order NO.	Product Description
<b>3. CABLE ASSEMBLY</b>	TRM652W-XXC8E	Cable assembly(xx is length )
<b>3-1. LINER</b>	TRM156B-12-23	Wire Φ1.0-1.2mm
<b>3-2. LINER</b>	TRM156B-16-23	Wire Φ1.4-1.6mm
<b>3-3. LINER HOLDER</b>	TRM652W-E1-2	Liner holder

## 4.ACCESSORY BAG

Item	Order NO.	Product Description
<b>4. ACCESSORY BAG</b>	TRM651WPP-AP-1	Including seal and grease on goose necks and connectors



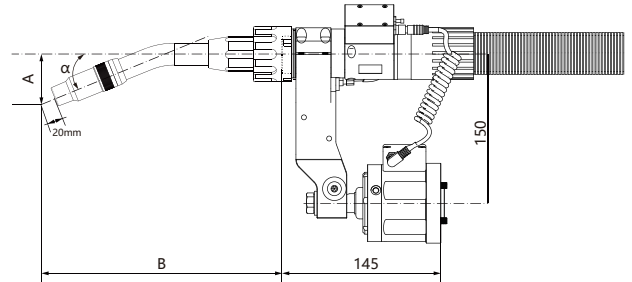
# TRM613W LIQUID COOLED



## TECHNICAL DATA

<b>Cooling method</b>	Liquid cooled
<b>Rating</b>	550A CO <sub>2</sub> 500A mixed gas M21(ISO14175)
<b>Duty cycle</b>	100%
<b>Wire diameter</b>	1.0~1.6mm
<b>Torch geometries</b>	22°, 45°

## TCP DATA



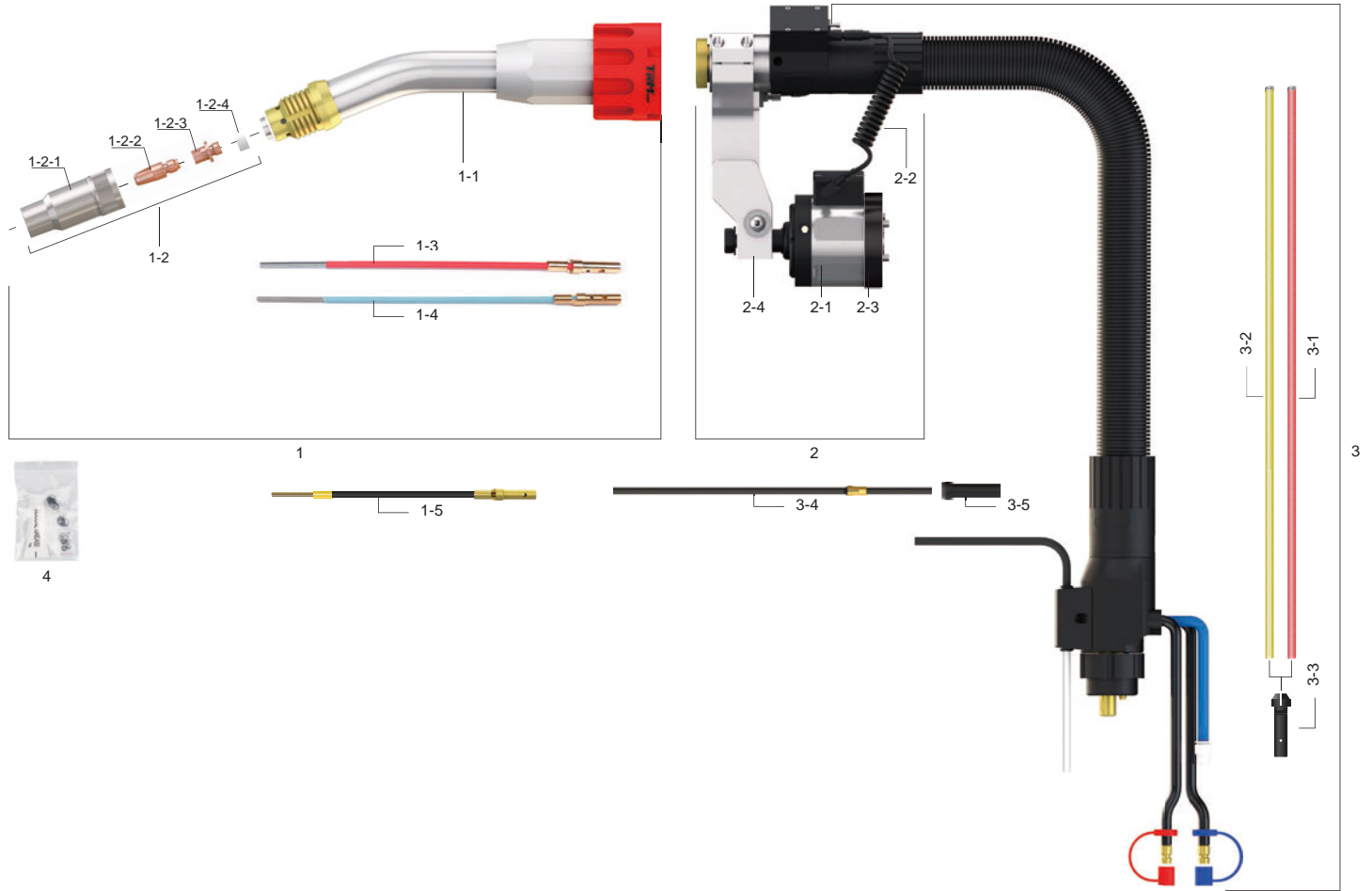
$\alpha$	A(mm)	B(mm)	Angle	Neck Part No
22°	50.2	247.45	22°	TRM613W-22
22°	50.05	374	22°	TRM613W-22L
45°	107.56	235.86	45°	TRM613W-45
45°	107.56	335.86	45°	TRM613W-45L
45°	109.87	435	45°	TRM613W-45L1
45°	105	511	45°	TRM613W-45L2

## Product features:

- Dual cooling with separate gas circuit
- Changeable goose neck with water stop function. Easy to change goose neck and do maintenance.
- With collision sensor, wire brake and gas nozzle locating functions.
- Many options for torch neck with different angle and length Standard Euro connector.

## COLLISION SENSOR DATA SHEET

ITEM	TRM313-01-N10	TRM313-01-N16
Size	Diameter $\phi$ 77/Height 103.7mm	Diameter $\phi$ 77/Height 103.7mm
Weight	0.98kg	0.98kg
Sensing Accuracy	1°~1.5°	1°~1.5°
Maximum deflection	XY direction 8°	XY direction 4°
repeatability(400mm)	0.1~0.15mm	Within 0.15mm
Trigger Force	About 60-70N in X/Y (400mm) direction	About 90-100N in X/Y (400mm) direction
IP protection level	IP21	IP21
Switching capacity	0.1A/250VAC	0.1A/250VAC
Ambient temperature	-10°C to +55°C	-10°C to +55°C
Relative Humidity	70% at 20 °C during operation	70% at 20 °C during operation

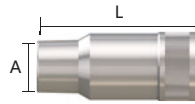


## ORDER GUIDE

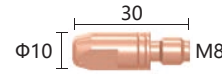
Item	Order NO.	Product Description
<b>ROBOT WELDING TORCH</b>	TRM613W	Over-arm liquid cooled robot welding torch

### 1.TORCH NECK ASSEMBLY

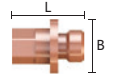
Item	Order NO.	Product Description
<b>1-1. GOOSE NECK</b>	TRM613W-22	22° , straight length 37mm
	TRM613W-22L	22° , extended 100, straight length 162.84mm
	TRM613W-45	45° , straight length 24.75mm
	TRM613W-45L	45° , extended 100, straight length 124.75mm
	TRM613W-45L1	45° , extended 160, straight length 221.6mm
	TRM613W-45L2	45° , extended 300, straight length 302mm
<b>1-3. NECK LINER</b>	TRM158-12-25	Wire Φ1.0-1.2mm(22°&45°goose neck)
	TRM158-12-40	Wire Φ1.0-1.2mm(22°L/45°L goose neck)
	TRM158-12-45	Wire Φ1.0-1.2mm(45°L1 goose neck)
	TRM158-12-60	Wire Φ1.0-1.2mm(45°L2 goose neck)
<b>1-4. NECK LINER</b>	TRM158-16-25	Wire Φ1.4-1.6mm(22°& 45° goose neck)
	TRM158-16-40	Wire Φ1.4-1.6mm(22°L/45°L goose neck)
	TRM158-16-45	Wire Φ1.4-1.6mm(45°L1 goose neck)
	TRM158-16-60	Wire Φ1.4-1.6mm(45°L2 goose neck)



1-2.NOZZLE



1-3.CONTACT TIP



1-4. TIP HOLDER

## 1-2. GOOSE NECK CONSUMABLES

Item	Order NO.	Product Description
<b>1-2-1.NOZZLE</b>	TRM016-03-14	Tip flush L=63.5mm A=Φ14mm
	TRM016-03-16	Tip flush L=63.5mm A=Φ16mm
	TRM016-03-17	Tip flush L=63.5mm A=Φ17mm
<b>1-2-2.CONTACT TIP</b>	TRM035-03-10	M8 Φ1.0 (ultra long life)
	TRM035-03-12	M8 Φ1.2 (ultra long life)
	TRM035-03-14	M8 Φ1.4 (ultra long life)
	TRM035-03-16	M8 Φ1.6 (ultra long life)
	TRM035-02-10	M8 CuCrZr, Φ1.0 wire
	TRM035-02-12	M8 CuCrZr, Φ1.2 wire
	TRM035-02-14	M8 CuCrZr, Φ1.4 wire
	TRM035-02-16	M8 CuCrZr, Φ1.6 wire
	<b>1-2-3.TIP HOLDER</b>	TRM046-02
<b>1-2-4.INSULATOR</b>	TRM028-01	White

## 2.ANTI-COLLISION UNIT

Item	Order NO.	Product Description
<b>2-1. COLLISION SENSOR</b>	TRM313-01-N10	Suitable for 22°/45°standard goose neck
	TRM313-01-N16	Suitable for 22°L/45°L/45°L1 etc.extended goose neck
<b>2-2. SPRING LINE</b>	3.5.11.0012	Connect collision sensor and torch
<b>2-3. FLANGE</b>	See P50-51 flange selection table	Including the installed screws.
<b>2-4. MOUNT ARM</b>	TRM218-045-KT	Mount arm

## 3.CABLE ASSEMBLY

Item	Order NO.	Product Description
<b>3. CABLE ASSEMBLY</b>	TRM613W-XXC8E	Euro connector (xx is length)
<b>3-1. LINER</b>	TRM156B-12-23	Wire Φ1.0-1.2mm
<b>3-2. LINER</b>	TRM156B-16-23	Wire Φ1.4-1.6mm
<b>3-3. LINER HOLDER</b>	TRM652W-E1-2	Liner holder

## ALUMINUM LINER CONFIGURATION

Item	Order NO.	Product Description
<b>1-5. NECK LINER</b>	TRM158PP-12A-22TSG	Aluminium/ Al-alloy wire Φ0.8-1.2mm(for TRM613W-22 goose neck)
	TRM158PP-12A-22LTSG	Aluminium/ Al-alloy wire Φ0.8-1.2mm(for TRM613W-22L goose neck)
	TRM158PP-12A-45TSG	Aluminium/ Al-alloy wire Φ0.8-1.2mm(for TRM613W-45 goose neck)
	TRM158PP-12A-45LTSG	Aluminium/ Al-alloy wire Φ0.8-1.2mm (for TRM613W-45L goose neck)
	TRM158PP-16A-22TSG	Aluminium/ Al-alloy wire Φ1.4-1.6mm (for TRM613W-22 goose neck)
	TRM158PP-16A-22LTSG	Aluminium/ Al-alloy wire Φ1.4-1.6mm (for TRM613W-22L goose neck)
	TRM158PP-16A-45TSG	Aluminium/ Al-alloy wire Φ1.4-1.6mm (for TRM613W-45 goose neck)
	TRM158PP-16A-45LTSG	Aluminium/ Al-alloy wire Φ1.4-1.6mm (for TRM613W-45L goose neck)
<b>3-4. LINER</b>	TRM153B-10A-18	Euro type (aluminium Φ0.8-1.0mm)
	TRM153B-12A-18	Euro type (aluminium Φ1.0-1.2mm)
	TRM153B-16A-18	Euro type (aluminium Φ1.2-1.6mm)
	TRM150P-08A-23	Japanese type or Lincoln type ( aluminium Φ0.8-1.0mm)
	TRM150P-12A-18	Japanese type or Lincoln type ( aluminium Φ1.0-1.2mm)
	TRM150P-16A-23	Japanese type or Lincoln type ( aluminium Φ1.2-1.6mm)
<b>3-5. EURO LINER HOLDER</b>	TRM613WPP-08-12	Aluminium Φ0.8-1.6mm

## 4.ACCESSORY BAG

Item	Order NO.	Product Description
<b>5. ACCESSORY BAG</b>	TRM651WPP-AP-01	Including seal and grease on goose necks and connectors



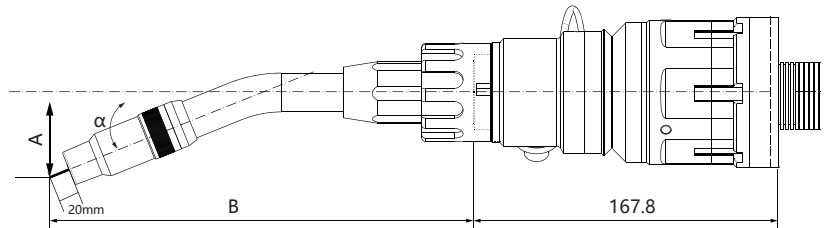
# TRM612W LIQUID COOLED



## TECHNICAL DATA

<b>Cooling method</b>	Liquid cooled
<b>Rating</b>	550A CO <sub>2</sub> 500A mixed gas M21 (ISO14175)
<b>Duty cycle</b>	100%
<b>Wire diameter</b>	1.0~1.6mm
<b>Torch geometries</b>	22°, 45°

## TCP DATA



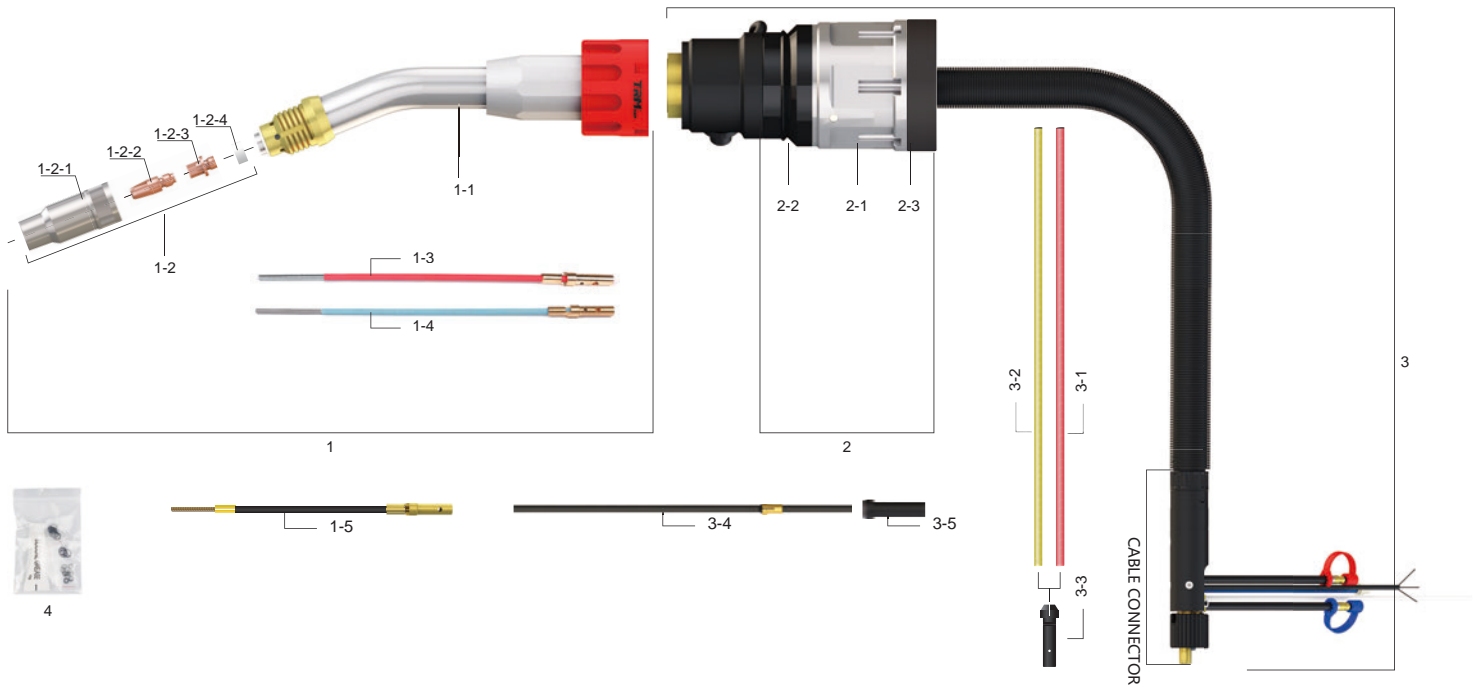
$\alpha$	A(mm)	B(mm)	Angle	Neck Part No
22°	50.2	247.45	22°	TRM613W-22
22°	50.05	374	22°	TRM613W-22L
45°	107.56	235.86	45°	TRM613W-45
45°	107.56	335.86	45°	TRM613W-45L
45°	109.87	435	45°	TRM613W-45L1
45°	105	511	45°	TRM613W-45L2

## Product features:

- Dual cooling with separate gas circuit
- Changeable goose neck with water stop function. Easy to change goose neck and do maintenance.
- With collision sensor, wire brake and gas nozzle locating functions.
- Many options for torch neck with different angle and length Standard Euro connector.

## COLLISION SENSOR DATA SHEET

ITEM	TRM316-01-N10	TRM316-01-N16
Size	Diameter $\phi$ 85mm/Height 89mm	Diameter $\phi$ 85mm/Height 89mm
Weight	600g	600g
Sensing Accuracy	Deflection in X/Y direction 0.9° ~ 1.5°	Deflection in X/Y direction 0.9° ~ 1.5°
Maximum deflection repeatability(400mm)	X/Y deflection approx. 10° Within 0.15mm	X/Y deflection approx. 6° Within 0.15mm
Trigger Force	About 60-70N in X/Y (400mm) direction	About 90-100N in X/Y (400mm) direction
IP protection level	IP21	IP21
Switching capacity	10A/250VAC	10A/250VAC
Ambient temperature	-10°C to +55°C	-10°C to +55°C
Relative Humidity	70% at 20 °C during operation	70% at 20 °C during operation

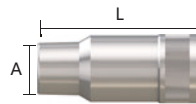


## ORDER GUIDE

Item	Order NO.	Product Description
<b>ROBOT TORCH</b>	TRM612W	Through-arm liquid cooled robot welding torch

### 1.TORCH NECK ASSEMBLY

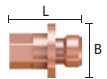
Item	Order NO.	Product Description
<b>1-1. GOOSE NECK</b>	TRM613W-22	22°, straight length 37mm
	TRM613W-22L	22°, extended 100, straight length 162.84mm
	TRM613W-45	45°, straight length 24.75mm
	TRM613W-45L	45°, extended 100, straight length 124.75mm
	TRM613W-45L1	45°, extended 160, straight length 221.6mm
	TRM613W-45L2	45°, extended 300, straight length 302mm
<b>1-3. NECK LINER</b>	TRM158-12-25	Wire $\Phi$ 1.0-1.2mm(22° & 45° goose neck)
	TRM158-12-40	Wire $\Phi$ 1.0-1.2mm(22°L/45°L goose neck)
	TRM158-12-45	Wire $\Phi$ 1.0-1.2mm(45°L1 goose neck)
	TRM158-12-60	Wire $\Phi$ 1.0-1.2mm(45°L2 goose neck)
<b>1-4. NECK LINER</b>	TRM158-16-25	Wire $\Phi$ 1.4-1.6mm(22° & 45° goose neck)
	TRM158-16-40	Wire $\Phi$ 1.4-1.6mm(22°L/45°L goose neck)
	TRM158-16-45	Wire $\Phi$ 1.4-1.6mm(45°L1 goose neck)
	TRM158-16-60	Wire $\Phi$ 1.4-1.6mm(45°L2 goose neck)



1-2.NOZZLE



1-3.CONTACT TIP



1-4. TIP HOLDER

### 1-2. GOOSE NECK CONSUMABLES

Item	Order NO.	Product Description
<b>1-2-1.NOZZLE</b>	TRM016-03-14	Tip flush L=63.5mm A= $\Phi$ 14mm
	TRM016-03-16	Tip flush L=63.5mm A= $\Phi$ 16mm
	TRM016-03-17	Tip flush L=63.5mm A= $\Phi$ 17mm
<b>1-2-2.CONTACT TIP</b>	TRM035-03-10	M8 $\Phi$ 1.0 (ultra long life)
	TRM035-03-12	M8 $\Phi$ 1.2 (ultra long life)
	TRM035-03-14	M8 $\Phi$ 1.4 (ultra long life)
	TRM035-03-16	M8 $\Phi$ 1.6 (ultra long life)
	TRM035-02-10	M8 CuCrZr, $\Phi$ 1.0 wire
	TRM035-02-12	M8 CuCrZr, $\Phi$ 1.2 wire
	TRM035-02-14	M8 CuCrZr, $\Phi$ 1.4 wire
	TRM035-02-16	M8 CuCrZr, $\Phi$ 1.6 wire
<b>1-2-3.TIP HOLDER</b>	TRM046-02	M8 L=18mm B=M8×1
<b>1-2-4.INSULATOR</b>	TRM028-01	White

## 2.ANTI-COLLISION UNIT

Item	Order NO.	Product Description
<b>2-1. COLLISION SENSOR</b>	TRM316-01-N10	Suitable for 22°/45°standard goose neck
	TRM316-01-N16	Suitable for 22°L/45°L/45°L1 etc.extended goose neck
<b>2-2. DUST COVER</b>	TRM652W-061-8-10	Black dust cover
<b>2-3. FLANGE</b>	See P50-51 flange selection table	Including installed screws

## 3.CABLE ASSEMBLY

Item	Order NO.	Product Description
<b>3. CABLE ASSEMBLY</b>	TRM612W-XXC8E	Euro connector
<b>3-1. LINER</b>	TRM156B-12-23	Wire Φ1.0-1.2mm
<b>3-2. LINER</b>	TRM156B-16-23	Wire Φ1.4-1.6mm
<b>3-3. LINER HOLDER</b>	TRM652W-E1-2	Liner holder

## ALUMINIUM LINER CONFIGURATION

Item	Order NO.	Product Description
<b>1-5. NECK LINER</b>	TRM158PP-12A-22TSG	Aluminium/ Al-alloy wire φ0.8-1.2mm (for TRM613W-22 goose neck)
	TRM158PP-12A-22LTSG	Aluminium/ Al-alloy wire φ0.8-1.2mm (for TRM613W-22L goose neck)
	TRM158PP-12A-45TSG	Aluminium/ Al-alloy wire φ0.8-1.2mm (for TRM613W-45 goose neck)
	TRM158PP-12A-45LTSG	Aluminium/ Al-alloy wire φ0.8-1.2mm (for TRM613W-45L goose neck)
	TRM158PP-16A-22TSG	Aluminium/ Al-alloy wire φ1.4-1.6mm (for TRM613W-22 goose neck)
	TRM158PP-16A-22LTSG	Aluminium/ Al-alloy wire φ1.4-1.6mm (for TRM613W-22L goose neck)
	TRM158PP-16A-45TSG	Aluminium/ Al-alloy wire φ1.4-1.6mm (for TRM613W-45 goose neck)
	TRM158PP-16A-45LTSG	Aluminium/ Al-alloy wire φ1.4-1.6mm (for TRM613W-45L goose neck)
<b>3-4. LINER</b>	TRM153B-10A-18	Euro type ( aluminium Φ0.8-1.0mm)
	TRM153B-12A-18	Euro type ( aluminium Φ1.0-1.2mm)
	TRM153B-16A-18	Euro type ( aluminium Φ1.2-1.6mm)
	TRM150P-08A-23	Japanese type or Lincoln type ( aluminium Φ0.8-1.0mm)
	TRM150P-12A-18	Japanese type or Lincoln type ( aluminium Φ1.0-1.2mm)
	TRM150P-16A-23	Japanese type or Lincoln type ( aluminium Φ1.2-1.6mm)
<b>3-5. EURO LINER HOLDER</b>	TRM613WPP-08-12	Aluminium Φ0.8-1.6mm

## 4.ACCESSORY BAG

Item	Order NO.	Product Description
<b>5. ACCESSORY BAG</b>	TRM651WPP-AP-01	Including seal and grease on goose necks and connectors

# TRM605W LIQUID COOLED



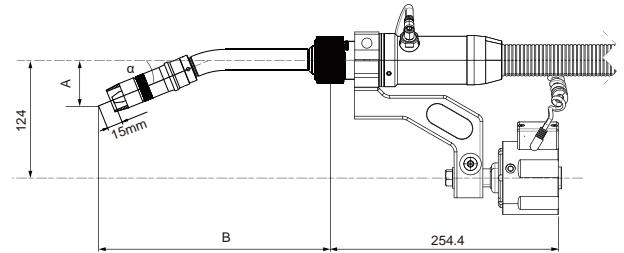
## Product features:

- Changeable goose neck with water stop function. Easy to change goose neck and do maintenance.
- Standard Anti-collision function.
- Optional Wire brake.
- Many options for goose neck and nozzle for different working conditions.
- Be available for popular wire feeder connection like Lincoln®, Panasonic® and European style etc.

## TECHNICAL DATA

<b>Cooling method</b>	Liquid cooled
<b>Rating</b>	550A CO <sub>2</sub> 500A mixed gas M21(ISO14175)
<b>Duty cycle</b>	100%
<b>Wire diameter</b>	0.8~1.6mm
<b>Torch geometries</b>	22°, 36°, 45°, 180°

## TCP DATA



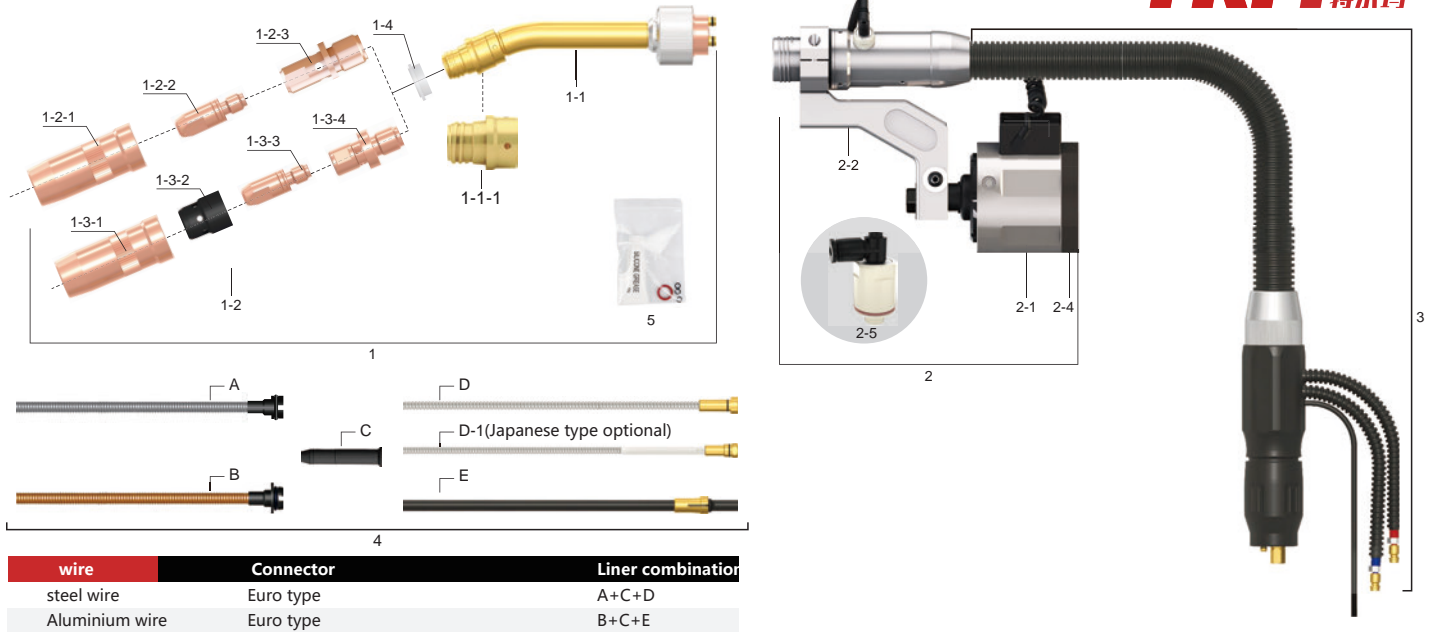
$\alpha$	A(mm)	B(mm)	Angle	Neck Part No
22°	44.3	219.13	22°	TRM605W-22
22°	44.3	392.63	22°	TRM605W-22L
22°	44.3	452.63	22°	TRM605W-22L1
22°	44.3	291.63	22°	TRM605W-22L2
36°	76.61	204.29	36°	TRM605W-36
36°	76.61	377.79	36°	TRM605W-36L
45°	112.05	185.39	45°	TRM605W-45
45°	112.05	373.79	45°	TRM605W-45L
45°	112.05	455.39	45°	TRM605W-45L1
45°	112.05	758.64	45°	TRM605W-45L2
45°	112.05	273.79	45°	TRM605W-45L3
180°	0	227.1	180°	TRM605W-180
180°	0	418.76	180°	TRM605W-180L1

## COLLISION SENSOR DATA SHEET

ITEM	TRM313-01-N10	TRM313-01-N16
Size	Diameter $\phi 77$ /Height 103.7mm	Diameter $\phi 77$ /Height 103.7mm
Weight	0.98kg	0.98kg
Sensing Accuracy	1°~1.5°	1°~1.5°
Maximum deflection	XY direction 8°	XY direction 4°
repeatability(400mm)	0.1~0.15mm	Within 0.15mm
Trigger Force	About 60-70N in X/Y (400mm) direction	About 90-100N in X/Y (400mm) direction
IP protection level	IP21	IP21
Switching capacity	0.1A/250VAC	0.1A/250VAC
Ambient temperature	-10°C to +55°C	-10°C to +55°C
Relative Humidity	70% at 20 °C during operation	70% at 20 °C during operation



# LIQUID COOLED ROBOT TORCH TRM605W

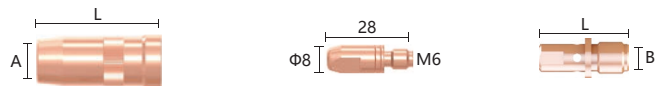


## ORDER GUIDE

Item	Order NO.	Product Description
<b>ROBOT WELDING TORCH</b> <small>Note: other connectors need adapters</small>	TRM605W	Over-arm liquid cooled robot welding torch
		Over-arm liquid cooled robot welding torch, with wire brake

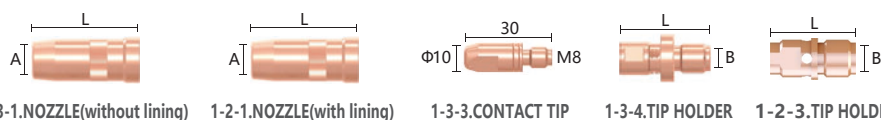
### 1. TORCH NECK ASSEMBLY

Item	Order NO.	Product Description
<b>1-1. GOOSE NECK</b>	TRM605W-22	Goose neck(22°)
	TRM605W-22L	Goose neck(22°, extended)
	TRM605W-22L1	Goose neck(22°, extended L1)
	TRM605W-22L2	Goose neck(22°, extended L2)
	TRM605W-36	Goose neck(36°)
	TRM605W-36L	Goose neck(36°, extended)
	TRM605W-45	Goose neck(45°)
	TRM605W-45L	Goose neck(45°, extended )
	TRM605W-45L3	Goose neck(45°, extended L3)
	TRM605W-45L1	Goose neck(45°, extended L1)
	TRM605W-180	Goose neck(180°)
	TRM605W-180L1	Goose neck(180°, extended L1)
<b>1-1-1. NOZZLE HOLDER</b>	TRM605W-22-02-ZJ	With sealing ring



### 1-2. GOOSE NECK CONSUMABLES(M6)

Item	Order NO.	Product Description
<b>1-2-1. NOZZLE (with lining)</b>	TRM015-11-14C	Contact tip recess L=61.5mm A=Φ14mm
	TRM015-11-13C	Contact tip recess L=61.5mm A=Φ13mm
	TRM015-12-14C	Contact tip flush L=59.5mm A=Φ14mm
	TRM015-13-14C	Contact tip stick out L=56.5mm A=Φ14mm
<b>1-2-2. CONTACT TIP</b>	TRM035-12-08	CuCrZr, Φ0.8 wire (steel)
	TRM035-12-10	CuCrZr, Φ1.0 wire (steel)
	TRM035-12-12	CuCrZr, Φ1.2 wire (steel)
	TRM035-12-14	CuCrZr, Φ1.4 wire (steel)
	TRM035-12-16	CuCrZr, Φ1.6 wire (steel)
	TRM035-12-08A	CuCrZr, Φ0.8 wire (aluminium)
	TRM035-12-10A	CuCrZr, Φ1.0 wire (aluminium)
	TRM035-12-12A	CuCrZr, Φ1.2 wire (aluminium)
	TRM035-12-14A	CuCrZr, Φ1.4 wire (aluminium)
	TRM035-12-16A	CuCrZr, Φ1.6 wire (aluminium)
	TRM035-11-08A	Copper, Φ0.8 wire (aluminium)
	TRM035-11-10A	Copper, Φ1.0 wire (aluminium)
	TRM035-11-12A	Copper, Φ1.2 wire (aluminium)
	TRM035-11-14A	Copper, Φ1.4 wire (aluminium)
	TRM035-11-16A	Copper, Φ1.6 wire (aluminium)
	<b>1-2-3. TIP HOLDER</b>	TRM045-02
<b>1-4. INSULATOR</b>	TRM605W-22-01	Insulator (white)



## 1-2. GOOSE NECK CONSUMABLES(M8)

Item	Order NO.	Product Description
<b>1-3-1. NOZZLE (without lining)</b>	TRM015-11-19C	Contact tip recess 2mm L=61.5mm A=Φ19mm
	TRM015-11-17C	Contact tip recess 2mm L=61.5mm A=Φ17mm
	TRM015-11-16C	Contact tip recess 2mm L=61.5mm A=Φ16mm
	TRM015-12-16C	Contact tip flush L=59.5mm A=Φ16mm
	TRM015-13-16C	Contact tip stick out L=56.5mm A=Φ16mm
<b>1-2-1. NOZZLE (with lining)</b>	TRM015-41-19C	Contact tip recess 2mm L=61.5mm A=Φ19mm
	TRM015-41-17C	Contact tip recess 2mm L=61.5mm A=Φ17mm
	TRM015-41-16C	Contact tip recess 2mm L=61.5mm A=Φ16mm
	TRM015-42-16C	Contact tip flush L=59.5mm A=Φ16mm
	TRM015-43-16C	Contact tip stick out L=56.5mm A=Φ16mm
	TRM015-11-14C	Contact tip recess L=61.5mm A=Φ14mm
	TRM015-12-14C	Contact tip flush L=59.5mm A=Φ14mm
TRM015-13-14C	Contact tip stick out L=56.5mm A=Φ14mm	
<b>1-3-2. GAS DIFFUSER</b>	TRM605W-22-19	Gas diffuser
<b>1-3-3. CONTACT TIP</b>	TRM035-02-08	CuCrZr, Φ0.8mm wire (steel)
	TRM035-02-10	CuCrZr, Φ1.0mm wire (steel)
	TRM035-02-12	CuCrZr, Φ1.2mm wire (steel)
	TRM035-02-14	CuCrZr, Φ1.4mm wire (steel)
	TRM035-02-16	CuCrZr, Φ1.6mm wire (steel)
	TRM035-02-08A	CuCrZr, Φ0.8mm wire (aluminium)
	TRM035-02-10A	CuCrZr, Φ1.0mm wire (aluminium)
	TRM035-02-12A	CuCrZr, Φ1.2mm wire (aluminium)
	TRM035-02-14A	CuCrZr, Φ1.4mm wire (aluminium)
	TRM035-02-16A	CuCrZr, Φ1.6mm wire (aluminium)
	TRM035-01-08A	Copper, Φ0.8mm wire (aluminium)
	TRM035-01-10A	Copper, Φ1.0mm wire (aluminium)
	TRM035-01-12A	Copper, Φ1.2mm wire (aluminium)
	TRM035-01-14A	Copper, Φ1.4mm wire (aluminium)
TRM035-01-16A	Copper, Φ1.6mm wire (aluminium)	
<b>1-3-4. TIP HOLDER</b>	TRM045-01	M8 L=30mm B=M10x1
<b>1-2-3. TIP HOLDER</b>	TRM045-03	M8 L=28mm B=M10x1
<b>1-4. INSULATOR</b>	TRM605W-22-01	Insulator (white)

Note: Due to the different structure of nozzle, it cannot be used with No. 2 gas diffuser, please pay attention.



## 1-2. GOOSE NECK CONSUMABLES(ONLY SUITABLE FOR TC TYPE GOOSE NECK)

Item	Order NO.	Product Description
<b>1-3-1. NOZZLE</b>	TRM015-31-16	Recess 2.0 L=47mm A=Φ16mm
	TRM015-31-14	Stick out 3.0 L=42mm A=Φ14mm
<b>1-3-2. GAS DIFFUSER</b>	TRM026-01	Gas diffuser(pink ceramic)
<b>1-3-3. CONTACT TIP</b>	TRM035-21-08	CuCrZr, Φ0.8mm wire (steel)
	TRM035-21-10	CuCrZr, Φ1.0mm wire (steel)
	TRM035-21-12	CuCrZr, Φ1.2mm wire (steel)
	TRM035-21-14	CuCrZr, Φ1.4mm wire (steel)
	TRM035-21-16	CuCrZr, Φ1.6mm wire (steel)
	TRM035-21-10A	CuCrZr, Φ1.0mm wire (aluminium)
	TRM035-21-12A	CuCrZr, Φ1.2mm wire (aluminium)
<b>1-3-4. TIP HOLDER</b>	TRM045-04	M6 L=23.5mm B=M10x1
<b>1-4. INSULATOR</b>	034.0001-10	Insulator
<b>1-1. TC GOOSE NECK</b>	TRM605W-TC45	Goose neck (45°)
	TRM605W-TC45L	Goose neck (45°, extended)
	TRM605W-TC45L1	Goose neck (45°, extended L1)
	TRM605W-TC45L2	Goose neck (45°, extended L2)

## 2.ANTI-COLLISION UNIT

Item	Order NO.	Product Description
<b>2-1. COLLISION SENSOR</b>	TRM313-01-N10	Suitable for 22°, 22°L, 22°L2, 36°, 36L°, 45°, 45L°, 45°L3, 180°, all TC goose necks.
	TRM313-01-N16	Suitable for 22°L1, 45°L1, 180°L1.

Item	Order NO.	Product Description
<b>2-2. L TYPE MOUNT ARM</b>	TRM215-045-105	Standard configuration; braking aperture 44mm
<b>2-3. SPRING LINE</b>	3.5.11.0012	To connect collision sensor and torch
<b>2-4. FLANGE</b>	See P50-51 flange selection table	Including installed screws
<b>2-5. WIRE CLAMP CYLINDER</b>	TRM602W-061JS-QG	Wire brake cylinder (component)

## 3.CABLE ASSEMBLY

Item	Order NO.	Product Description
<b>3. CABLE ASSEMBLY</b>	TRM605W-XXCXE-08	Liquid cooled cable assembly, Euro connector(xx is length )
		Liquid cooled cable assembly with wire brake

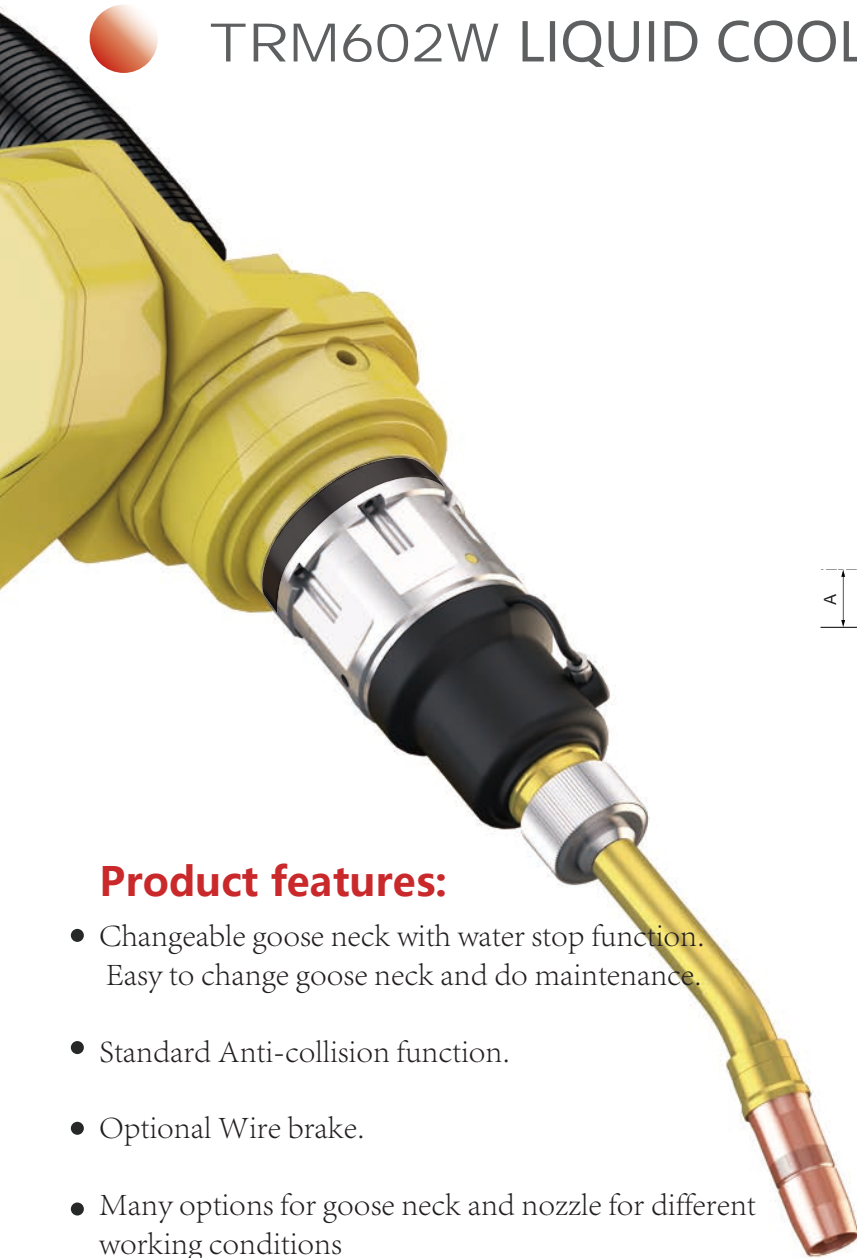
## 4.LINER OPTIONAL COMBINATION

Item	Order NO.	Product Description
<b>A. NECK LINER</b> <small>Note: xx=42, suitable for L goose neck; xx=80, suitable for L1/L2/L3 goose neck.</small>	TRM154-08-XX	(Steel) wire Φ0.8-0.9mm
	TRM154-12-XX	(Steel) wire Φ1.0-1.2mm
	TRM154-16-XX	(Steel) wire Φ1.4-1.6mm
<b>B. NECK LINER</b>	TRM154-08A-42	(Aluminium) wire Φ0.8-1.0mm
	TRM154-12A-42	(Aluminium) wire Φ1.0-1.2mm
	TRM154-16A-42	(Aluminium) wire Φ1.4-1.6
<b>C. WIRE GUIDE BUSHING</b>	TRM605W-061JS-19	Wire guide bushing(Φ0.8mm-Φ1.6mm)
<b>D. LINER</b>	TRM152B-08-XX	(Steel) wire Φ0.8-0.9mm
	TRM152B-12-XX	(Steel) wire Φ1.0-1.2mm
	TRM152B-16-XX	(Steel) wire Φ1.4-1.6mm
<b>D-1. LINER (optional Japanese type)</b>	TRM150-08-23	One-piece, overall length 2.3m, (steel) wire Φ0.8-0.9mm
	TRM150-12-23	One-piece, overall length 2.3m, (steel) wire Φ1.0-1.2mm
	TRM150-16-23	One-piece, overall length 2.3m, (steel) wire Φ1.4-1.6mm
<b>E. LINER</b>	TRM153B-10A-18	Overall length 1.8m, ( aluminium) wire Φ0.8-1.0mm
	TRM153B-12A-18	Overall length 1.8m, ( aluminium) wire Φ1.0-1.2mm
	TRM153B-16A-18	Overall length 1.8m, ( aluminium) wire Φ1.4-1.6mm

## 5.ACCESSORY BAG

Item	Order NO.	Product Description
<b>5. ACCESSORY BAG</b>	TRM651WPP-AP-01	Including seal and grease on goose necks and connectors

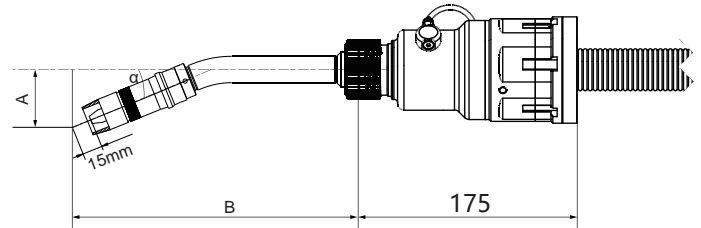
# TRM602W LIQUID COOLED



## TECHNICAL DATA

<b>Cooling method</b>	Liquid cooled
<b>Rating</b>	550A CO <sub>2</sub> 500A mixed gas M21(ISO14175)
<b>Duty cycle</b>	100%
<b>Wire diameter</b>	0.8~1.6mm
<b>Torch geometries</b>	22°, 36°, 45°, 180°

## TCP DATA



$\alpha$	A(mm)	B(mm)	Angle	Neck Part No
22°	44.3	219.13	22°	TRM605W-22
22°	44.3	392.63	22°	TRM605W-22L
22°	44.3	452.63	22°	TRM605W-22L1
22°	44.3	291.63	22°	TRM605W-22L2
36°	76.61	204.29	36°	TRM605W-36
36°	76.61	377.79	36°	TRM605W-36L
45°	112.05	185.39	45°	TRM605W-45
45°	112.05	373.79	45°	TRM605W-45L
45°	112.05	455.39	45°	TRM605W-45L1
45°	112.05	758.64	45°	TRM605W-45L2
45°	112.05	273.79	45°	TRM605W-45L3
180°	0	227.1	180°	TRM605W-180
180°	0	418.76	180°	TRM605W-180L1

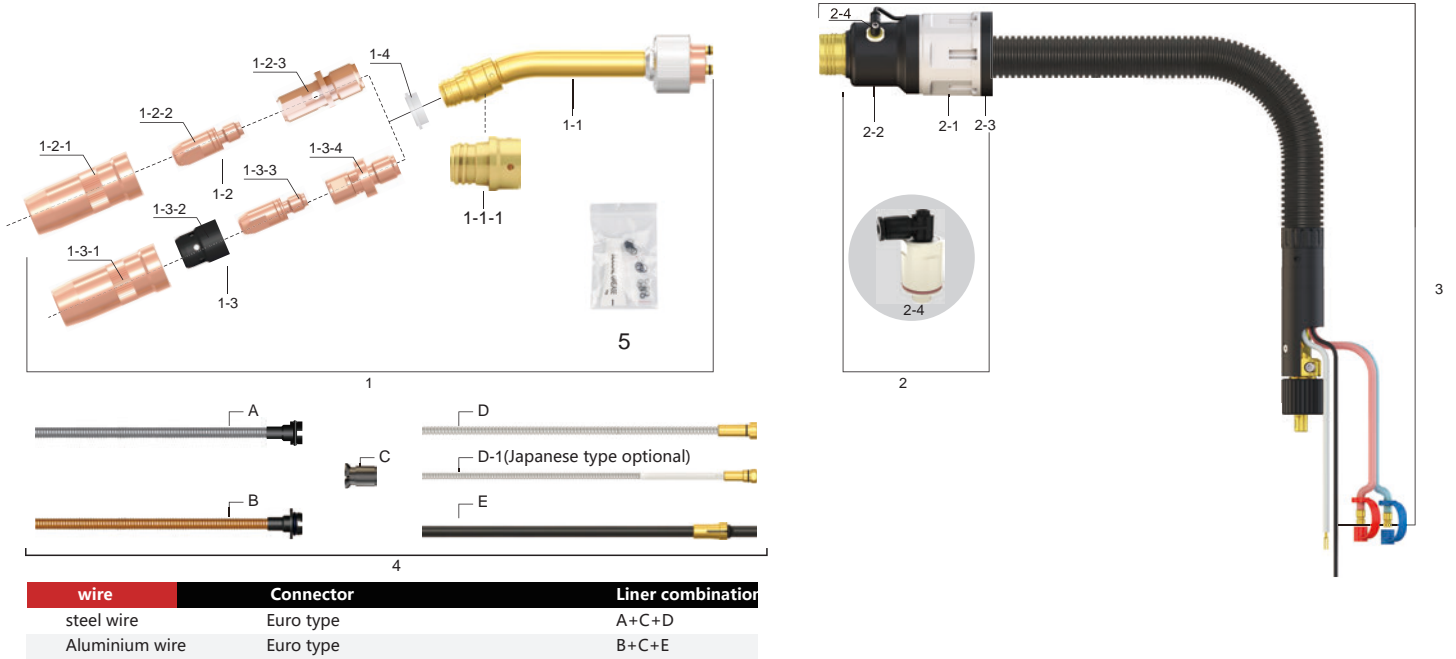
## Product features:

- Changeable goose neck with water stop function.  
Easy to change goose neck and do maintenance.
- Standard Anti-collision function.
- Optional Wire brake.
- Many options for goose neck and nozzle for different working conditions
- Be available for popular wire feeder connection like Lincoln<sup>®</sup>, Panasonic<sup>®</sup> and European style etc.

## COLLISION SENSOR PERFORMANCE DATA SHEET

ITEM	TRM316-01-N10	TRM316-01-N16
Size	Diameter $\phi$ 85mm/Height 89mm	Diameter $\phi$ 85mm/Height 89mm
Weight	600g	600g
Sensing Accuracy	Deflection in X/Y direction 0.9°~ 1.5°	Deflection in X/Y direction 0.9°~ 1.5°
Maximum deflection	X/Y deflection approx. 10°	X/Y deflection approx. 6°
Reset accuracy (300mm)	Within 0.15mm	Within 0.15mm
Trigger Force	About 60-70N in X/Y (400mm) direction	About 90-100N in X/Y (400mm) direction
IP protection level	IP21	IP21
Switching capacity	10A/250VAC	10A/250VAC
Ambient temperature	-10°C to +55°C	-10°C to +55°C
Relative Humidity	70% at 20 °C during operation	70% at 20 °C during operation



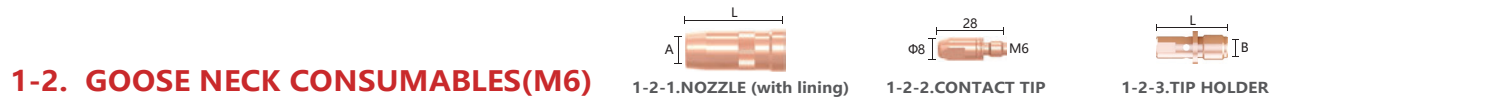


## ORDER GUIDE

Item	Order NO.	Product Description
<b>ROBOT WELDING TORCH</b>	TRM602W	Through-arm liquid cooled robot welding torch
		Through-arm liquid cooled robot welding torch with wire brake

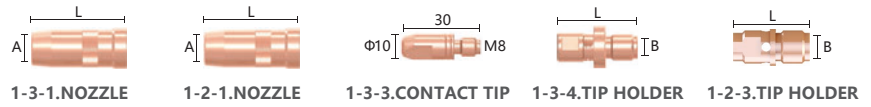
### 1.TORCH NECK ASSEMBLY

Item	Order NO.	Product Description
<b>1-1. GOOSE NECK</b>	TRM605W-22	Goose neck(22°)
	TRM605W-22L	Goose neck(22° , extended)
	TRM605W-22L1	Goose neck(22° , extended L1)
	TRM605W-22L2	Goose neck(22° , extended L2)
	TRM605W-36	Goose neck(36°)
	TRM605W-36L	Goose neck(36° , extended)
	TRM605W-45	Goose neck(45° )
	TRM605W-45L	Goose neck(45° , extended )
	TRM605W-45L1	Goose neck(45° , extended L1)
	TRM605W-45L3	Goose neck(45° , extended L3)
	TRM605W-180	Goose neck(180° )
TRM605W-180L1	Goose neck(180° , extended L1)	
<b>1-1-1. NOZZLE HOLDER</b>	TRM605W-22-02-ZJ	With sealing ring



### 1-2. GOOSE NECK CONSUMABLES(M6)

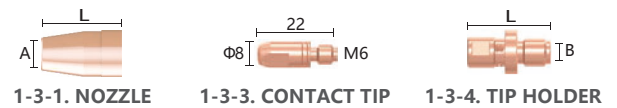
Item	Order NO.	Product Description
<b>1-2-1.NOZZLE (with lining)</b>	TRM015-11-14C	Contact tip recess L=61.5mm A=Φ14mm
	TRM015-11-13C	Contact tip recess L=61.5mm A=Φ13mm
	TRM015-12-14C	Contact tip flush L=59.5mm A=Φ14mm
	TRM015-13-14C	Contact tip stick out L=56.5mm A=Φ14mm
	<b>1-2-2.CONTACT TIP</b>	TRM035-12-08
TRM035-12-10		CuCrZr, Φ1.0 wire (steel)
TRM035-12-12		CuCrZr, Φ1.2 wire (steel)
TRM035-12-14		CuCrZr, Φ1.4 wire (steel)
TRM035-12-16		CuCrZr, Φ1.6 wire (steel)
TRM035-12-08A		CuCrZr, Φ0.8 wire (aluminium)
TRM035-12-10A		CuCrZr, Φ1.0 wire (aluminium)
TRM035-12-12A		CuCrZr, Φ1.2 wire (aluminium)
TRM035-12-14A		CuCrZr, Φ1.4 wire (aluminium)
TRM035-12-16A		CuCrZr, Φ1.6 wire (aluminium)
TRM035-11-08A		Copper, Φ0.8 wire (aluminium)
TRM035-11-10A		Copper, Φ1.0 wire (aluminium)
TRM035-11-12A		Copper, Φ1.2 wire (aluminium)
TRM035-11-14A		Copper, Φ1.4 wire (aluminium)
TRM035-11-16A		Copper, Φ1.6 wire (aluminium)
<b>1-2-3.TIP HOLDER</b>		TRM045-02
<b>1-4.INSULATOR</b>	TRM605W-22-01	Insulator (white)



## 1-2. GOOSE NECK CONSUMABLES (M8)

Item	Order NO.	Product Description
<b>1-3-1.NOZZLE (without lining)</b>	TRM015-11-19C	Contact tip recess 2mm L=61.5mm A=Φ19mm
	TRM015-11-17C	Contact tip recess 2mm L=61.5mm A=Φ17mm
	TRM015-11-16C	Contact tip recess 2mm L=61.5mm A=Φ16mm
	TRM015-12-16C	Contact tip flush L=59.5mm A=Φ16mm
	TRM015-13-16C	Contact tip stick out L=56.5mm A=Φ16mm
<b>1-2-1.NOZZLE (with lining)</b>	TRM015-41-19C	Contact tip recess 2mm L=61.5mm A=Φ19mm
	TRM015-41-17C	Contact tip recess 2mm L=61.5mm A=Φ17mm
	TRM015-41-16C	Contact tip recess 2mm L=61.5mm A=Φ16mm
	TRM015-42-16C	Contact tip flush L=59.5mm A=Φ16mm
	TRM015-43-16C	Contact tip stick out L=56.5mm A=Φ16mm
	TRM015-11-14C	Contact tip recess L=61.5mm A=Φ14mm
	TRM015-12-14C	Contact tip flush L=59.5mm A=Φ14mm
<b>1-3-2.GAS DIFFUSER</b>	TRM605W-22-19	Gas diffuser
	TRM035-02-08	CuCrZr, φ0.8 wire (steel)
<b>1-3-3.CONTACT TIP</b>	TRM035-02-10	CuCrZr, φ1.0 wire (steel)
	TRM035-02-12	CuCrZr, φ1.2 wire (steel)
	TRM035-02-14	CuCrZr, φ1.4 wire (steel)
	TRM035-02-16	CuCrZr, φ1.6 wire (steel)
	TRM035-02-08A	CuCrZr, φ0.8 wire (aluminium)
	TRM035-02-10A	CuCrZr, φ1.0 wire (aluminium)
	TRM035-02-12A	CuCrZr, φ1.2 wire (aluminium)
	TRM035-02-14A	CuCrZr, φ1.4 wire (aluminium)
	TRM035-02-16A	CuCrZr, φ1.6 wire (aluminium)
	TRM035-01-08A	Copper, φ0.8 wire (aluminium)
	TRM035-01-10A	Copper, φ1.0 wire (aluminium)
	TRM035-01-12A	Copper, φ1.2 wire (aluminium)
	TRM035-01-14A	Copper, φ1.4 wire (aluminium)
	TRM035-01-16A	Copper, φ1.6 wire (aluminium)
<b>1-3-4.TIP HOLDER</b>	TRM045-01	M8 L=30mm B=M10x1
<b>1-2-3.TIP HOLDER</b>	TRM045-03	M8 L=28mm B=M10x1
<b>1-4.INSULATOR</b>	TRM605W-22-01	Insulator (white)

Note: Due to the different structure of nozzle, it cannot be used with No. 2 gas diffuser, please pay attention.



## 1-2. GOOSE NECK CONSUMABLES(ONLY SUITABLE TC TYPE GOOSE NECK)

Item	Order NO.	Product Description
<b>1-3-1. NOZZLE</b>	TRM015-31-16	Recess 2.0 L=47mm A=Φ16mm
	TRM015-31-14	Stick out3.0 L=42mm A=Φ14mm
<b>1-3-2. GAS DIFFUSER</b>	TRM026-01	Gas diffuser( pink ceramic)
<b>1-3-3. CONTACT TIP</b>	TRM035-21-08	CuCrZr, Φ0.8 wire (steel)
	TRM035-21-10	CuCrZr, Φ1.0 wire (steel)
	TRM035-21-12	CuCrZr, Φ1.2 wire (steel)
	TRM035-21-14	CuCrZr, Φ1.4 wire (steel)
	TRM035-21-16	CuCrZr, Φ1.6 wire (steel)
	TRM035-21-10A	CuCrZr, Φ1.0 wire (aluminium)
	TRM035-21-12A	CuCrZr, Φ1.2 wire (aluminium)
<b>1-3-4. TIP HOLDER</b>	TRM045-04	M6 L=23.5mm B=M10x1
<b>1-4. INSULATOR</b>	034.0001-10	Insulator
	TRM605W-TC45	Goose neck (45°)
<b>1-1.TC GOOSE NECK</b>	TRM605W-TC45L	Goose neck (45°, extended)
	TRM605W-TC45L1	Goose neck (45°, extended L1)
	TRM605W-TC45L2	Goose neck (45°, extended L2)

## 2.ANTI-COLLISION UNIT

Item	Order NO.	Product Description
<b>2-1. COLLISION SENSOR</b> Note:including installed screws	TRM316-01-N10	Suitable for 22°, 22°L, 22°L2, 36°, 36L°, 45°, 45L°, 45°L3, 180°, all TC goose necks.
	TRM316-01-N16	Suitable for 22°L1, 45°L1, 180°L1.
<b>2-2. DUST COVER</b>	TRM602W-061JS-14	Select when with wire brake function
	TRM602W-061JS-15	Select when without wire brake function
<b>2-3. FLANGE</b>	See P50-51 flange selection table	Including installed screws
<b>2-4. WIRE CLAMP CYLINDER</b>	TRM602W-061JS-QG	Wire brake cylinder (component)

## 3.CABLE

Item	Order NO.	Product Description
<b>3. CABLE</b>	TRM602W-XXCXE-08	Euro type cable assembly
		Euro type cable assembly, with wire brake

## 4.LINER OPTIONAL COMBINATION

Item	Order NO.	Product Description
<b>A. NECK LINER</b> <small>Note: xx=42, suitable for L goose neck; xx=80, suitable for L1/L2/L3 goose neck.</small>	TRM154-08-XX	(Steel) wire Φ0.8-0.9mm
	TRM154-12-XX	(Steel) wire Φ1.0-1.2mm
	TRM154-16-XX	(Steel) wire Φ1.4-1.6mm
<b>B. NECK LINER</b>	TRM154-08A-42	(Aluminium) wire Φ0.8-1.0mm
	TRM154-12A-42	(Aluminium) wire Φ1.0-1.2mm
	TRM154-16A-42	(Aluminium) wire Φ1.4-1.6
<b>C. WIRE GUIDE BUSHING</b>	TRM602W-061JS-11	Wire guide bushing
<b>D. LINER</b>	TRM152B-08-XX	(Steel) wire Φ0.8-0.9mm
	TRM152B-12-XX	(Steel) wire Φ1.0-1.2mm
	TRM152B-16-XX	(Steel) wire Φ1.4-1.6mm
<b>D-1. LINER (optional Japanese type)</b>	TRM150-08-23	One-piece, overall length 2.3m, (steel) wire Φ0.8-0.9mm
	TRM150-12-23	One-piece, overall length 2.3m, (steel) wire Φ1.0-1.2mm
	TRM150-16-23	One-piece, overall length 2.3m, (steel) wire Φ1.4-1.6mm
<b>E. LINER</b>	TRM153B-10A-18	Overall length 1.8m, ( aluminium) wire Φ0.8-1.0mm
	TRM153B-12A-18	Overall length 1.8m, ( aluminium) wire Φ1.0-1.2mm
	TRM153B-16A-18	Overall length 1.8m, ( aluminium) wire Φ1.4-1.6mm

## 5.ACCESSORY BAG

Item	Order NO.	Product Description
<b>5. ACCESSORY BAG</b>	TRM651WPP-AP-01	Including seal and grease on goose necks and connectors

# TRM501(P) AIR COOLED



## Product features:

- Quick-change goose neck. Strong and durable torch body with aviation hard aluminium
- With collision sensor, optional wire brake function
- Multiple options for goose neck and nozzle for different working conditions
- Be available for popular wire feeder connection like Lincoln<sup>®</sup>, Panasonic<sup>®</sup> and European style etc.

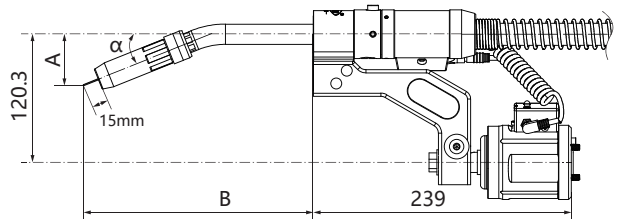
## TECHNICAL DATA(TRM501)

<b>Cooling method</b>	Air cooled
<b>Rating</b>	500A CO <sub>2</sub> 385A mixed gas M21(ISO14175)
<b>Duty cycle</b>	100%
<b>Wire diameter</b>	0.8~1.6mm
<b>Torch geometries</b>	22°, 35°, 45°, 60°

## TECHNICAL DATA(TRM501P)

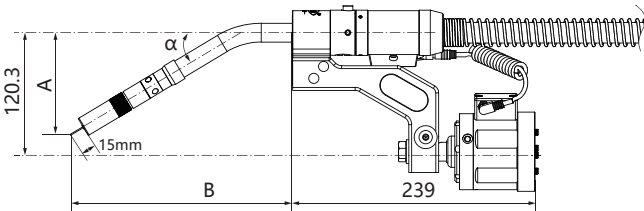
<b>Cooling method</b>	Air cooled
<b>Rating</b>	350A CO <sub>2</sub>
<b>Duty cycle</b>	100%
<b>Wire diameter</b>	0.8~1.2mm
<b>Torch geometries</b>	31°, 45°

## TCP DATA(TRM501)



$\alpha$	A(mm)	B(mm)	Angle	Neck Part No
22°	47.22	214.15	22°	TRM501-22
22°	47.15	271.25	22°	TRM501-22L
35°	118.35	229.18	35°	TRM501-35L-A
45°	100.97	166.39	45°	TRM501-45
45°	120.95	213.3	45°	TRM501-45L
45°	120.95	268.3	45°	TRM501-45L1
45°	120.95	318.3	45°	TRM501-45L2
60°	134.48	164.4	60°	TRM501-60

## TCP DATA(TRM501P)

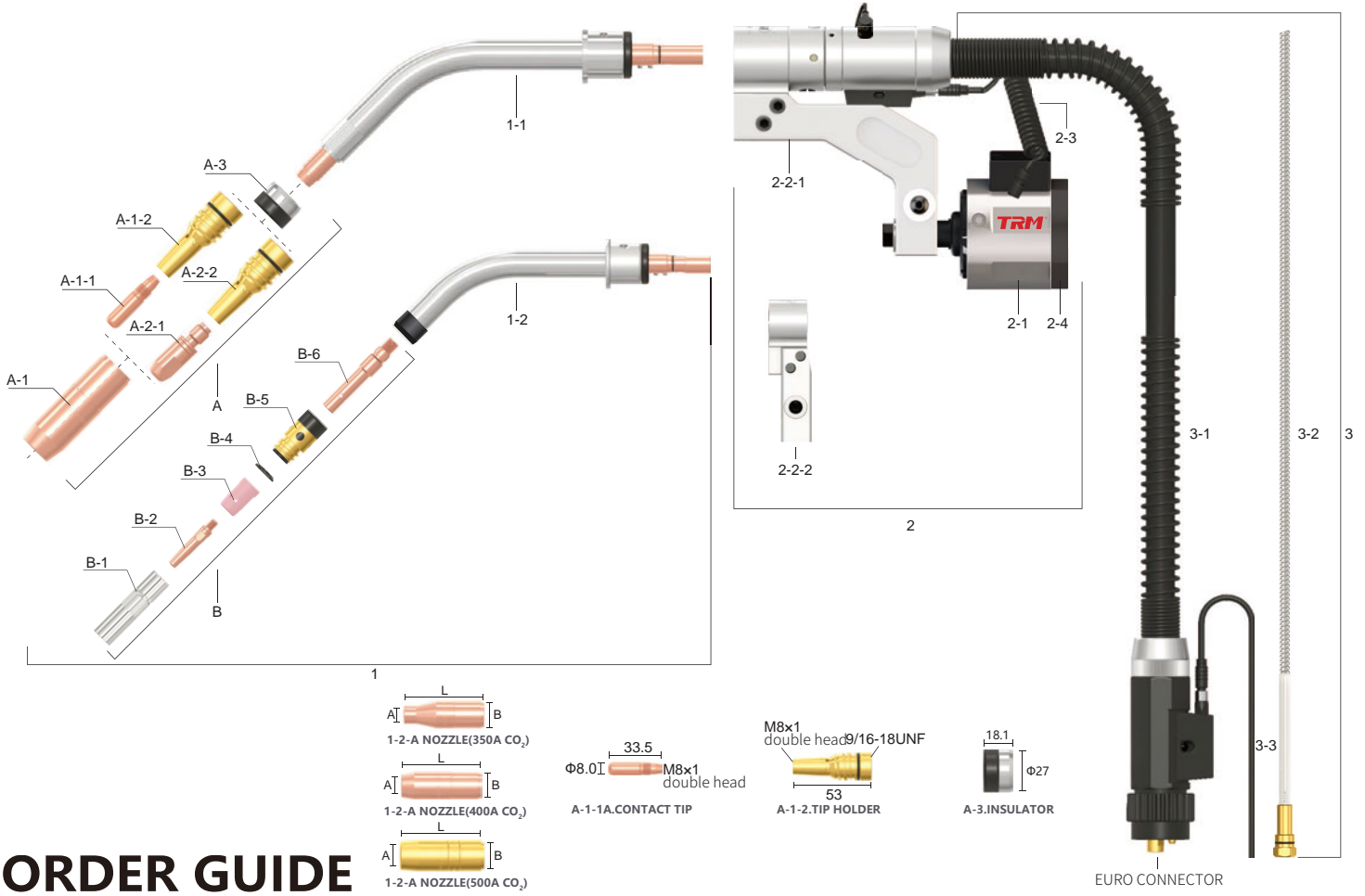


$\alpha$	A(mm)	B(mm)	Angle	Neck Part No
31°	103.3	224.66	31°	TRM501-P31-B
31°	103.3	393.16	31°	TRM501-P31L
45°	129.5	221.86	45°	TRM501-P45L
45°	129.5	276.86	45°	TRM501-P45L1

## COLLISION SENSOR DATA SHEET

ITEM	TRM313-01-N10	TRM313-01-N16
Size	Diameter $\phi$ 77/Height 103.7mm	Diameter $\phi$ 77/Height 103.7mm
Weight	0.98kg	0.98kg
Sensing Accuracy	1°~1.5°	1°~1.5°
Maximum deflection	XY direction 8°	XY direction 4°
repeatability(400mm)	0.1~0.15mm	Within 0.15mm
Trigger Force	About 60-70N in X/Y (400mm) direction	About 90-100N in X/Y (400mm) direction
IP protection level	IP21	IP21
Switching capacity	0.1A/250VAC	0.1A/250VAC
Ambient temperature	-10°C to +55°C	-10°C to +55°C
Relative Humidity	70% at 20 °C during operation	70% at 20 °C during operation





## ORDER GUIDE

Item	Order NO.	Product Description
<b>ROBOT TORCH</b>	TRM501	Over-arm air cooled robot welding torch
		Over-arm air cooled robot welding torch with wire brake

### 1.TORCH NECK ASSEMBLY

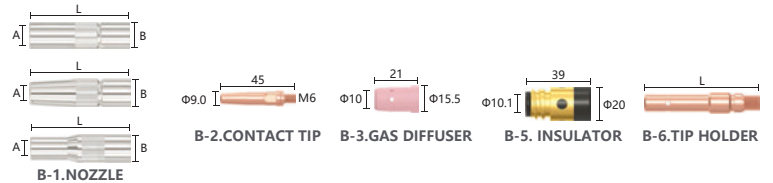
Item	Order NO.	Product Description
<b>1-1.GOOSE NECK</b>	TRM501-22	Goose neck(American type, 22°,one button quick change)
	TRM501-22L	Goose neck(American type, 22°, extended, one button quick change)
	TRM501-45	Goose neck(American type, 45°,one button quick change)
	TRM501-45L	Goose neck(American type, 45°, extended, one button quick change)
	TRM501-45L1	Goose neck(American type, 45°, extended, one button quick change)
	TRM501-45L2	Goose neck(American type, 45°, extended, one button quick change)
<b>1-2.GOOSE NECK</b>	TRM501-60	Goose neck(American type, 60°,one button quick change)
	TRM501-P31-B	Goose neck(Japanese type, 31°, one button quick change)
	TRM501-P31L	Goose neck(Japanese type, 31° long, one button quick change)
	TRM501-P45L	Goose neck(Japanese type, 45° middle, one button quick change)
TRM501-P45L1	Goose neck(Japanese type, 45° long, one button quick change)	

### GOOSE NECK CONSUMABLES(AMERICAN TYPE)

Item	Order NO.	Product Description
<b>A-1.NOZZLE</b>	TRM012-14-50	L=70.0, A =Φ13, B=Φ24, contact tip flush
	TRM012-16-50	L=73.2, A =Φ13, B=Φ24, contact tip recess 3.2mm
	TRM012-18-50	L=66.8, A=Φ13, B=Φ24, contact tip stick out 3.2mm
	TRM012-14-62	L=70.0, A =Φ16, B=Φ24, contact tip flush
	TRM012-16-62	L=73.2, A =Φ16, B=Φ24, contact tip recess 3.2mm
	TRM012-18-62	L=66.8, A=Φ16, B=Φ24, contact tip stick out 3.2mm
	TRM012-26-B75	L=73.2, A=Φ19, B=Φ27, contact tip recess 3.2mm, brass shell
	TRM012-24-62	L=70.0, A=Φ16, B=Φ27, contact tip flush, copper shell
	TRM012-26-62	L=73.2, A=Φ16, B=Φ27, contact tip recess 3.2mm, copper shell
	TRM012-28-62	L=66.8, A=Φ16, B=Φ27, contact tip stick out 3.2mm, copper shell
<b>A-1-1.CONTACT TIP</b>	TRM032-2-R08	CuCrZr, Φ0.8 wire (steel)
	TRM032-2-R09	CuCrZr, Φ0.9 wire (steel)
	TRM032-2-R10	CuCrZr, Φ1.0 wire (steel)
	TRM032-2-R12	CuCrZr, Φ1.2 wire (steel)
	TRM032-2-R12-A	CuCrZr, Φ1.2 wire (steel)
	TRM032-2-R14	CuCrZr, Φ1.4 wire (steel)
	TRM032-2-R16	CuCrZr, Φ1.6 wire (steel)
	TRM042-01	R series, brass
<b>A-1-2.TIP HOLDER</b>	TRM042-01	R series, brass
<b>A-3.INSULATOR</b>	TRM501-05R	

## GOOSE NECK CONSUMABLES(EURO SERIES)

Item	Order NO.	Product Description
<b>A-2-1.CONTACT TIP</b>	TRM035-02-08	CuCrZr, $\Phi 0.8$ wire (steel)
	TRM035-02-10	CuCrZr, $\Phi 1.0$ wire (steel)
	TRM035-02-12	CuCrZr, $\Phi 1.2$ wire (steel)
	TRM035-02-14	CuCrZr, $\Phi 1.4$ wire (steel)
	TRM035-02-16	CuCrZr, $\Phi 1.6$ wire (steel)
<b>A-2-2.TIP HOLDER</b>	TRM042-04	Brass
<b>A-3.INSULATOR</b>	TRM501-05R	



## GOOSE NECK CONSUMABLES(JAPANESE SERIES)

Item	Order NO.	Product Description
<b>1-2. GOOSE NECK</b>	TRM501-P31-B	Goose neck(Japanese type, 31°, one button quick change)
	TRM501-P31L	Goose neck(Japanese type, 31° long, one button quick change)
	TRM501-P45L	Goose neck(Japanese type, 45° middle, one button quick change)
	TRM501-P45L1	Goose neck(Japanese type, 45° long, one button quick change)
<b>B-1. NOZZLE</b>	TRM012-3-16	L=73.0,A= $\Phi 16$ ,B= $\Phi 20$
	TMP012-3-13	L=73.0,A= $\Phi 13$ ,B= $\Phi 20$
	TMP012-3-12	L=73.0,A= $\Phi 12$ ,B= $\Phi 20$
	TMP012-3B-10	L=73.0,A= $\Phi 10$ ,B= $\Phi 20$
	TMP012-3B-12	L=73.0, A= $\Phi 12$ ,B= $\Phi 20$
<b>B-2. CONTACT TIP</b>	TMP030-2-R08	CuCrZr, $\Phi 0.8$ mm wire (steel)
	TMP030-2-R10	CuCrZr, $\Phi 1.0$ mm wire (steel)
	TMP030-2-R12	CuCrZr, $\Phi 1.2$ mm wire (steel)
<b>B-3. GAS DIFFUSER</b>	TMP040-3	Pink
<b>B-4. SPRING WASHER</b>	TMP041-3-2	
<b>B-5. INSULATOR</b>	TMPTFZ35101-LX	
<b>B-6. TIP HOLDER</b>	TMP053-1C	L=68.5mm, contact tip recess 3.0mm
	TMP053-2C	L=75.0mm, contact tip stick out 3.5mm
	TMP053-3C	L=71.5mm, contact tip flush

## 2.ANTI-COLLISION UNIT

Item	Order NO.	Product Description
<b>2-1. COLLISION SENSOR</b> Note: see parameters in table	TRM313-01-N10	Suitable for 22°, 22°L, 35°L, 45°, 45°L, 45°L1, 60°, 180°
	TRM313-01-N16	Suitable for 45°L2
<b>2-2-1. MOUNT ARM</b>	TRM216-045-105	Standard configuration; clamping aperture 35mm
<b>2-2-2. MOUNT ARM</b>	TRM211-045L	Optional
<b>2-3. SPRING LINE</b>	3.5.11.0012	To connect collision sensor and torch
<b>2-4. Flange</b>	See P50-51 flange selection table	Including the installed screws.

## 3.CABLE ASSEMBLY

Item	Order NO.	Product Description
<b>3-1. CABLE ASSEMBLY</b>	TRM501-XXC5E	Cable assembly, Euro connector (xx is length)
		Cable assembly, with wire brake
<b>3-2. LINER</b>	TRM150-08-23	One-piece, overall length 2.3m, (steel) wire 0.8-0.9mm
	TRM150-12-23	One-piece, overall length 2.3m, (steel) wire 1.0-1.2mm
	TRM150-16-23	One-piece, overall length 2.3m, (steel) wire 1.4-1.6mm
<b>3-3. SIGNAL LINE</b>	3.5.11.0015	To connect torch and robot

# TRM508 AIR COOLED



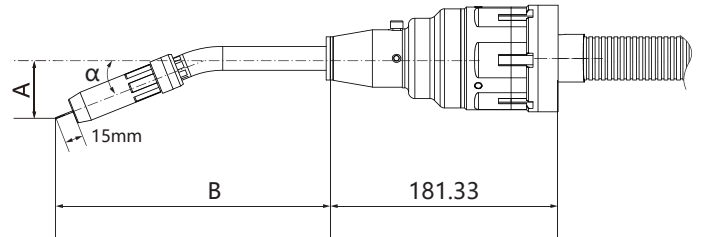
## Product features:

- Quick-change goose neck. Imported cable and low-stress rotation design extend the cable life. With collision sensor;
- Multiple options for goose neck and gas nozzle for different working conditions
- Be available for popular wire feeder connection like Lincoln<sup>®</sup>, Panasonic<sup>®</sup> and European style etc.

## TECHNICAL DATA

<b>Cooling method</b>	Air cooled
<b>Rating</b>	500A CO <sub>2</sub> 350A mixed gas M21(ISO14175)
<b>Duty cycle</b>	100%
<b>Wire diameter</b>	0.8 ~ 1.6mm
<b>Torch geometries</b>	22°, 35°, 45°, 60°

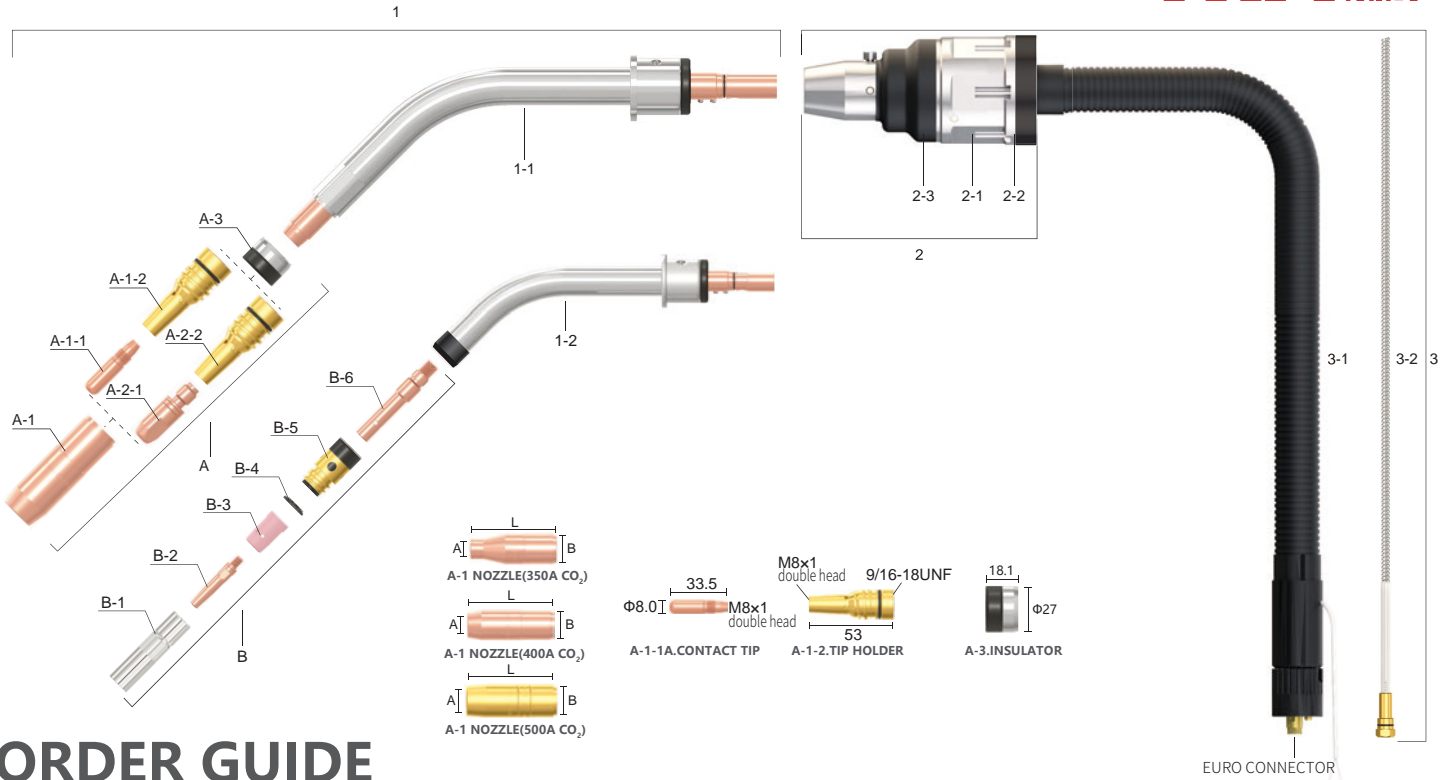
## TCP DATA



$\alpha$	A(mm)	B(mm)	Angle	Neck Part No
22°	46.84	285.84	22°	TRM501-22
22°	46.78	342.91	22°	TRM501-22L
35°	117.76	300.96	35°	TRM501-35L-A
45°	100.23	238.27	45°	TRM501-45
45°	120.23	285.19	45°	TRM501-45L
45°	120.23	340.19	45°	TRM501-45L1
45°	120.23	390.19	45°	TRM501-45L2
60°	133.59	236.52	60°	TRM501-60

## COLLISION SENSOR DATA SHEET

ITEM	TRM316-01-N6	TRM316-01-N10
Size	Diameter $\phi$ 85mm/Height 89mm	Diameter $\phi$ 85mm/Height 89mm
Weight	600g	600g
Sensing Accuracy	Deflection in X/Y direction 0.9° ~ 1.5°	Deflection in X/Y direction 0.9° ~ 1.5°
Maximum deflection repeatability(400mm)	X/Y deflection approx. 10° Within 0.15mm	X/Y deflection approx. 10° Within 0.15mm
Trigger Force	About 30-45N in X/Y (400mm) direction	About 60-70N in X/Y (400mm) direction
IP protection level	IP21	IP21
Switching capacity	10A/250VAC	10A/250VAC
Ambient temperature	-10 °C to + 55 °C	-10°C to +55°C
Relative Humidity	70% at 20 °C during operation	70% at 20 °C during operation



## ORDER GUIDE

Item	Order NO.	Product Description
ROBOT TORCH	TRM508	Through-arm air cooled robot torch
		Through-arm air cooled robot torch, with wire brake

### 1.TORCH NECK ASSEMBLY

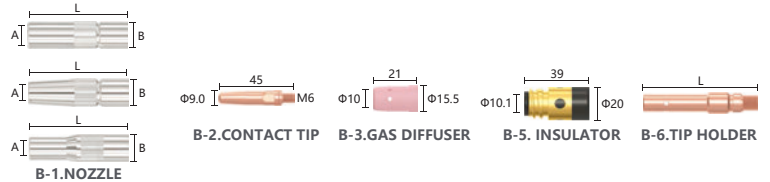
Item	Order NO.	Product Description
1-1. GOOSE NECK	TRM501-22	Goose neck(American type, 22°, one button quick change)
	TRM501-22L	Goose neck(American type, 22°, extended, one button quick change)
	TRM501-45	Goose neck(American type, 45°, one button quick change)
	TRM501-45L	Goose neck(American type, 45°, extended, one button quick change)
	TRM501-45L1	Goose neck(American type, 45°, extended, one button quick change)
	TRM501-45L2	Goose neck(American type, 45°, extended, one button quick change)
	TRM501-60	Goose neck(American type, 60°, one button quick change)
1-2. GOOSE NECK	TRM501-P31-B	Goose neck(Japanese type, 31°, one button quick change)
	TRM501-P31L	Goose neck(Japanese type, 31° long, one button quick change)
	TRM501-P45L	Goose neck(Japanese type, 45° middle, one button quick change)
	TRM501-P45L1	Goose neck(Japanese type, 45° long, one button quick change)

### GOOSE NECK CONSUMABLES(AMERICAN TYPE)

Item	Order NO.	Product Description
A-1.NOZZLE	TRM012-14-50	L=70.0, A =Φ13, B=Φ24, contact tip flush
	TRM012-16-50	L=73.2, A =Φ13, B=Φ24, contact tip recess 3.2mm
	TRM012-18-50	L=66.8, A=Φ13, B=Φ24, contact tip stick out 3.2mm
	TRM012-14-62	L=70.0, A =Φ16, B=Φ24, contact tip flush
	TRM012-16-62	L=73.2, A =Φ16, B=Φ24, contact tip recess 3.2mm
	TRM012-18-62	L=66.8, A=Φ16, B=Φ24, contact tip stick out 3.2mm
	TRM012-26-B75	L=73.2, A=Φ19, B=Φ27, contact tip recess 3.2mm, brass shell
	TRM012-24-62	L=70.0, A=Φ16, B=Φ27, contact tip flush, copper shell
	TRM012-26-62	L=73.2, A=Φ16, B=Φ27, contact tip recess 3.2mm, copper shell
	TRM012-28-62	L=66.8, A=Φ16, B=Φ27, contact tip stick out 3.2mm, copper shell
A-1-1.CONTACT TIP	TRM032-2-R08	CuCrZr, Φ0.8mm wire (steel)
	TRM032-2-R09	CuCrZr, Φ0.9mm wire (steel)
	TRM032-2-R10	CuCrZr, Φ1.0mm wire (steel)
	TRM032-2-R12	CuCrZr, Φ1.2mm wire (steel)
	TRM032-2-R12-A	CuCrZr, Φ1.2mm wire (steel)
	TRM032-2-R14	CuCrZr, Φ1.4mm wire (steel)
	TRM032-2-R16	CuCrZr, Φ1.6mm wire (steel)
A-1-2.TIP HOLDER	TRM042-01	R series, brass
	TRM042-01C	R series, copper
A-3.INSULATOR	TRM501-05R	

## GOOSE NECK CONSUMABLES(EURO TYPE)

Item	Order NO.	Product Description
<b>A-2-1.CONTACT TIP</b>	TRM035-02-08	CuCrZr, $\phi$ 0.8mm wire (steel)
	TRM035-02-10	CuCrZr, $\phi$ 1.0mm wire (steel)
	TRM035-02-12	CuCrZr, $\phi$ 1.2mm wire (steel)
	TRM035-02-14	CuCrZr, $\phi$ 1.4mm wire (steel)
	TRM035-02-16	CuCrZr, $\phi$ 1.6mm wire (steel)
<b>A-2-2.TIP HOLDER</b>	TRM042-04	Brass
<b>A-3.INSULATOR</b>	TRM501-05R	



## GOOSE NECK CONSUMABLES(JAPANESE SERIES)

Item	Order NO.	Product Description
<b>1-2. GOOSE NECK</b>	TRM501-P31-B	Goose neck(Japanese type, 31° , one button quick change)
	TRM501-P31L	Goose neck(Japanese type, 31° long, one button quick change)
	TRM501-P45L	Goose neck(Japanese type, 45° middle, one button quick change)
	TRM501-P45L1	Goose neck(Japanese type, 45° long, one button quick change)
<b>B-1. NOZZLE</b>	TRM012-3-16	L=73.0,A= $\phi$ 16,B= $\phi$ 20
	TMP012-3-13	L=73.0,A= $\phi$ 13,B= $\phi$ 20
	TMP012-3-12	L=73.0,A= $\phi$ 12,B= $\phi$ 20
	TMP012-3B-10	L=73.0,A= $\phi$ 10,B= $\phi$ 20
	TMP012-3B-12	L=73.0, A= $\phi$ 12,B= $\phi$ 20
<b>B-2. CONTACT TIP</b>	TMP030-2-R08	CuCrZr, $\phi$ 0.8mm wire (steel)
	TMP030-2-R10	CuCrZr, $\phi$ 1.0mm wire (steel)
	TMP030-2-R12	CuCrZr, $\phi$ 1.2mm wire (steel)
<b>B-3. GAS DIFFUSER</b>	TMP040-3	Pink
<b>B-4. SPRING WASHER</b>	TMP041-3-2	
<b>B-5. INSULATOR</b>	TMPTFZ35101-LX	
<b>B-6. TIP HOLDER</b>	TMP053-1C	L=68.5mm, contact tip recess 3.0mm
	TMP053-2C	L=75.0mm, contact tip stick out 3.5mm
	TMP053-3C	L=71.5mm, contact tip flush

## 2.ANTI-COLLISION UNIT

Item	Order NO.	Product Description
<b>2-1. COLLISION SENSOR</b>	TRM316-01-N6	Through-arm hollow collision sensor (standard goose neck)
	TRM316-01-N10	Through-arm hollow collision sensor (L/L1/L2 goose neck)
<b>2-2. FLANGE</b>	See P50-51 flange selection table	Including installed screws
<b>2-3. DUST COVER</b>	TRM508-061-1-4-A	Black

## 3.CABLE ASSEMBLY

Item	Order NO.	Product Description
<b>3-1. CABLE ASSEMBLY</b>	TRM508-XXC1E-08	Euro cable assembly(xx is length ) Euro cable assembly with wire brake
	TRM150-08-23	One-piece, overall length 2.3m, (steel) wire 0.8-0.9mm
<b>3-2. LINER</b>	TRM150-12-23	One-piece, overall length 2.3m, (steel) wire 1.0-1.2mm
	TRM150-16-23	One-piece, overall length 2.3m, (steel) wire 1.4-1.6mm



# TRM352P AIR COOLED



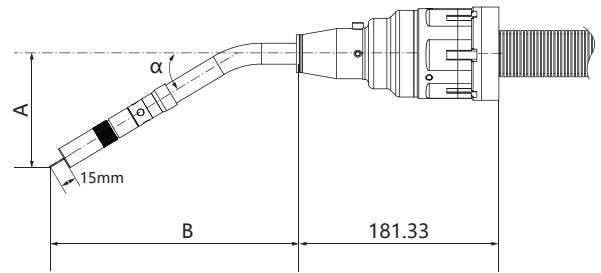
## Product features:

- Quick-change goose neck. Imported cable and low-stress rotation design extend the cable life. With collision sensor;
- Multiple options for goose neck and gas nozzle for different working conditions
- Be available for popular wire feeder connection like Lincoln®, Panasonic® and European style etc.

## TECHNICAL DATA

<b>Cooling method</b>	Air cooled
<b>Rating</b>	350A CO <sub>2</sub> 270A mixed gas M21(ISO14175)
<b>Duty cycle</b>	100%
<b>Wire diameter</b>	0.8 ~ 1.2mm
<b>Torch geometries</b>	31°, 45°

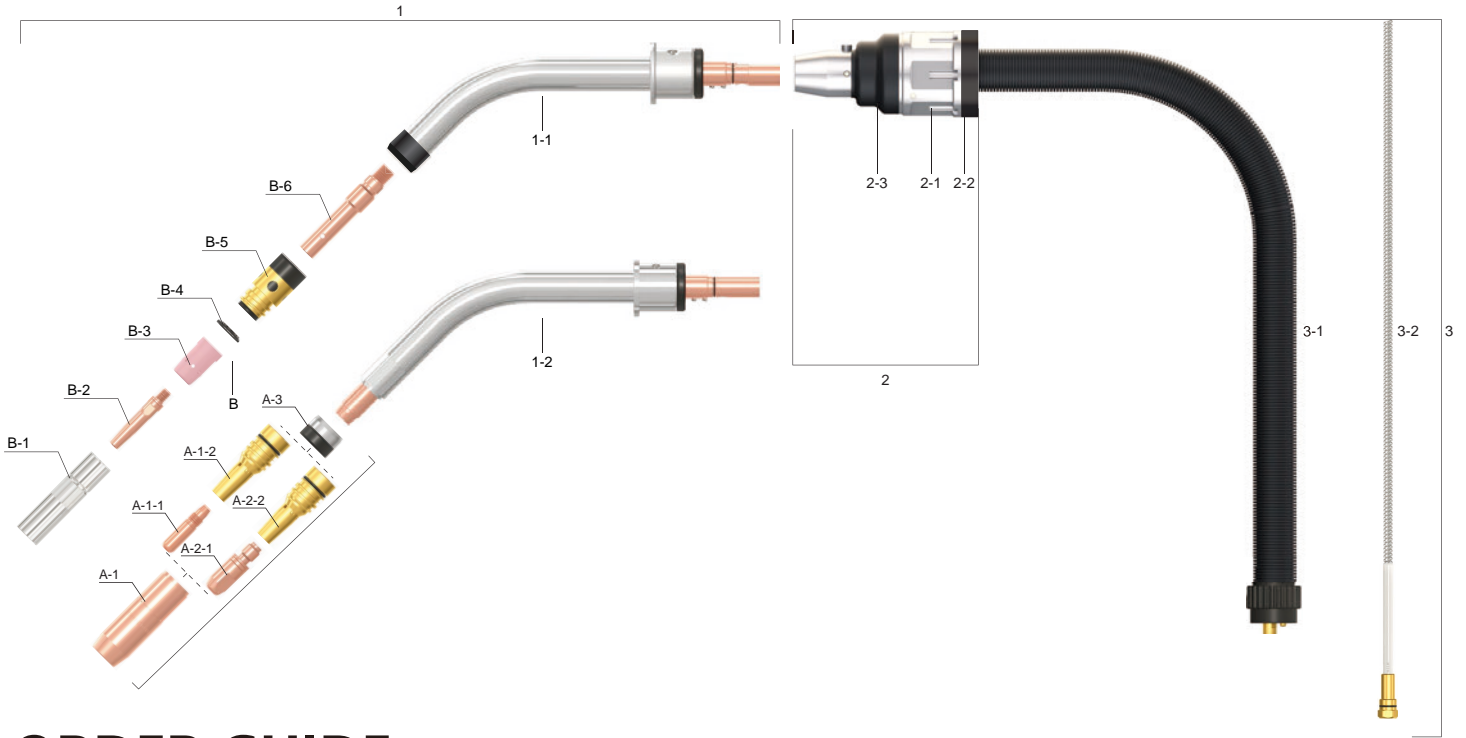
## TCP DATA



$\alpha$	A(mm)	B(mm)	Angle	Neck Part No
31°	84.04	265.2	31°	TRM501-P31-B
31°	84.04	433.7	31°	TRM501-P31L
45°	103.06	268.01	45°	TRM501-P45L
45°	103.06	323.01	45°	TRM501-P45L1

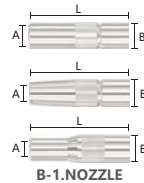
## COLLISION SENSOR DATA SHEET

ITEM	TRM316-01-N6	TRM316-01-N10
Size	Diameter $\phi$ 85mm/Height 89mm	Diameter $\phi$ 85mm/Height 89mm
Weight	600g	600g
Sensing Accuracy	Deflection in X/Y direction 0.9° ~ 1.5°	Deflection in X/Y direction 0.9° ~ 1.5°
Maximum deflection repeatability(400mm)	X/Y deflection approx. 10° Within 0.15mm	X/Y deflection approx. 10° Within 0.15mm
Trigger Force	About 30-45N in X/Y (400mm) direction	About 60-70N in X/Y (400mm) direction
IP protection level	IP21	IP21
Switching capacity	10A/250VAC	10A/250VAC
Ambient temperature	-10 °C to + 55 °C	-10°C to +55°C
Relative Humidity	70% at 20 °C during operation	70% at 20 °C during operation



## ORDER GUIDE

Item	Order NO.	Product Description
<b>ROBOT WELDING TORCH</b>	TRM352(P)	Through-arm air cooled robot torch

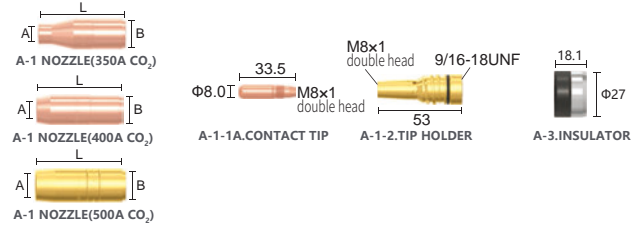


### 1. TORCH NECK ASSEMBLY

Item	Order NO.	Product Description
<b>1-1. GOOSE NECK</b>	TRM501-P31-B	Goose neck(Japanese type, 31° , one button quick change)
	TRM501-P31L	Goose neck(Japanese type, 31° long, one button quick change)
	TRM501-P45L	Goose neck(Japanese type, 45° middle, one button quick change)
	TRM501-P45L1	Goose neck(Japanese type, 45° long, one button quick change)
<b>1-2. GOOSE NECK</b>	TRM501-22	Goose neck(American type, 22° , one button quick change)
	TRM501-22L	Goose neck(American type, 22° , extended, one button quick change)
	TRM501-45	Goose neck(American type, 45° one button quick change)
	TRM501-45L	Goose neck(American type, 45° , extended, one button quick change)
	TRM501-45L1	Goose neck(American type, 45° , extended, one button quick change)
	TRM501-45L2	Goose neck(American type, 45° , extended, one button quick change)
	TRM501-60	Goose neck(American type, 60° one button quick change)

### GOOSE NECK CONSUMABLES(JAPANESE TYPE)

Item	Order NO.	Product Description
<b>B-1. NOZZLE</b>	TMP012-3-16	L=73.0,A=Φ16,B=Φ20
	TMP012-3-13	L=73.0,A=Φ13,B=Φ20
	TMP012-3-12	L=73.0,A=Φ12,B=Φ20
	TMP012-3B-10	L=73.0,A=Φ10,B=Φ20
	TMP012-3B-12	L=73.0, A=Φ12,B=Φ20
<b>B-2. CONTACT TIP</b>	TMP030-2-R08	CuCrZr, φ0.8mm wire (steel)
	TMP030-2-R10	CuCrZr, φ1.0mm wire (steel)
	TMP030-2-R12	CuCrZr, φ1.2mm wire (steel)
<b>B-3. GAS DIFFUSER</b>	TMP040-3	Pink
<b>B-4. SPRING WASHER</b>	TMP041-3-2	
<b>B-5. INSULATOR</b>	TMPTFZ35101-LX	
<b>B-6. TIP HOLDER</b>	TMP053-1C	L=68.5mm, contact tip recess 3.0mm
	TMP053-2C	L=75.0mm, contact tip stick out 3.5mm
	TMP053-3C	L=71.5mm, contact tip flush



## GOOSE NECK CONSUMABLES(AMERICAN TYPE)

Item	Order NO.	Product Description
<b>A-1. NOZZLE</b>	TRM012-14-50	L=70.0, A = $\phi$ 13, B= $\phi$ 24, contact tip flush
	TRM012-16-50	L=73.2, A = $\phi$ 13, B= $\phi$ 24, contact tip recess 3.2mm
	TRM012-18-50	L=66.8, A= $\phi$ 13, B= $\phi$ 24, contact tip stick out 3.2mm
	TRM012-14-62	L=70.0, A = $\phi$ 16, B= $\phi$ 24, contact tip flush
	TRM012-16-62	L=73.2, A = $\phi$ 16, B= $\phi$ 24, contact tip recess 3.2mm
	TRM012-18-62	L=66.8, A= $\phi$ 16, B= $\phi$ 24, contact tip stick out 3.2mm
<b>A-1-1. CONTACT TIP</b>	TRM035-02-08	CuCrZr, $\phi$ 0.8mm wire (steel)
	TRM035-02-10	CuCrZr, $\phi$ 1.0mm wire (steel)
	TRM035-02-12	CuCrZr, $\phi$ 1.2mm wire (steel)
	TRM035-02-14	CuCrZr, $\phi$ 1.4mm wire (steel)
	TRM035-02-16	CuCrZr, $\phi$ 1.6mm wire (steel)
<b>A-1-2. TIP HOLDER</b>	TRM042-04	Brass
<b>A-3. INSULATOR</b>	TRM501-05R	American type R series

## GOOSE NECK CONSUMABLES(EURO SERIES)

Item	Order NO.	Product Description
<b>A-2-1.CONTACT TIP</b>	TRM035-02-08	CuCrZr, $\phi$ 0.8 wire (steel)
	TRM035-02-10	CuCrZr, $\phi$ 1.0 wire (steel)
	TRM035-02-12	CuCrZr, $\phi$ 1.2 wire (steel)
	TRM035-02-14	CuCrZr, $\phi$ 1.4 wire (steel)
	TRM035-02-16	CuCrZr, $\phi$ 1.6 wire (steel)
<b>A-2-2.TIP HOLDER</b>	TRM042-04	Brass
<b>A-3.INSULATOR</b>	TRM501-05R	

## 2.ANTI-COLLISION UNIT

Item	Order NO.	Product Description
<b>2-1. COLLISION SENSOR</b>	TRM316-01-N6	Through arm hollow collision sensor (standard goose neck)
	TRM316-01-N10	Through arm hollow collision sensor (L/L1 goose neck)
<b>2-2.FLANGE</b>	See P50-51 flange selection table	Including installed screws
<b>2-3. DUST COVER</b>	TRM508-061-1-4-A	Black

## 3.CABLE ASSEMBLY

Item	Order NO.	Product Description
<b>3-1. CABLE ASSEMBLY</b>	TRM352-XXC5E-08	Euro cable assembly(xx is length )
<b>3-2. LINER</b>	TRM150-08-23	One-piece, overall length 2.3m, (steel) wire 0.8-0.9mm
	TRM150-12-23	One-piece, overall length 2.3m, (steel) wire 1.0-1.2mm
	TRM150-16-23	One-piece, overall length 2.3m, (steel) wire 1.4-1.6mm

# TRM351(P) AIR COOLED



## Product features:

- Economical model with light weight;
- Patented by changing quickly the installation position to increase reachability of torch;
- Both American and Japanese style consumables are available.

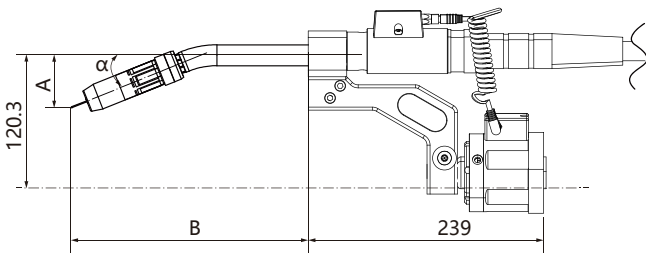
## TECHNICAL DATA(TRM501)

<b>Cooling method</b>	Air cooled
<b>Rating</b>	350A CO <sub>2</sub> 300A mixed gas M21(ISO14175)
<b>Duty cycle</b>	100%
<b>Wire diameter</b>	0.8 ~ 1.2mm
<b>Torch geometries</b>	22°, 45°

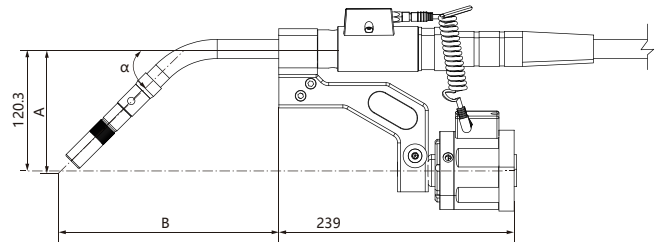
## TECHNICAL DATA(TRM501P)

<b>Cooling method</b>	Air cooled
<b>Rating</b>	350A CO <sub>2</sub> 300A mixed gas M21(ISO14175)
<b>Duty cycle</b>	100%
<b>Wire diameter</b>	0.8 ~ 1.2mm
<b>Torch geometries</b>	45°

## TCP DATA(TRM351)



## TCP DATA(TRM351P)

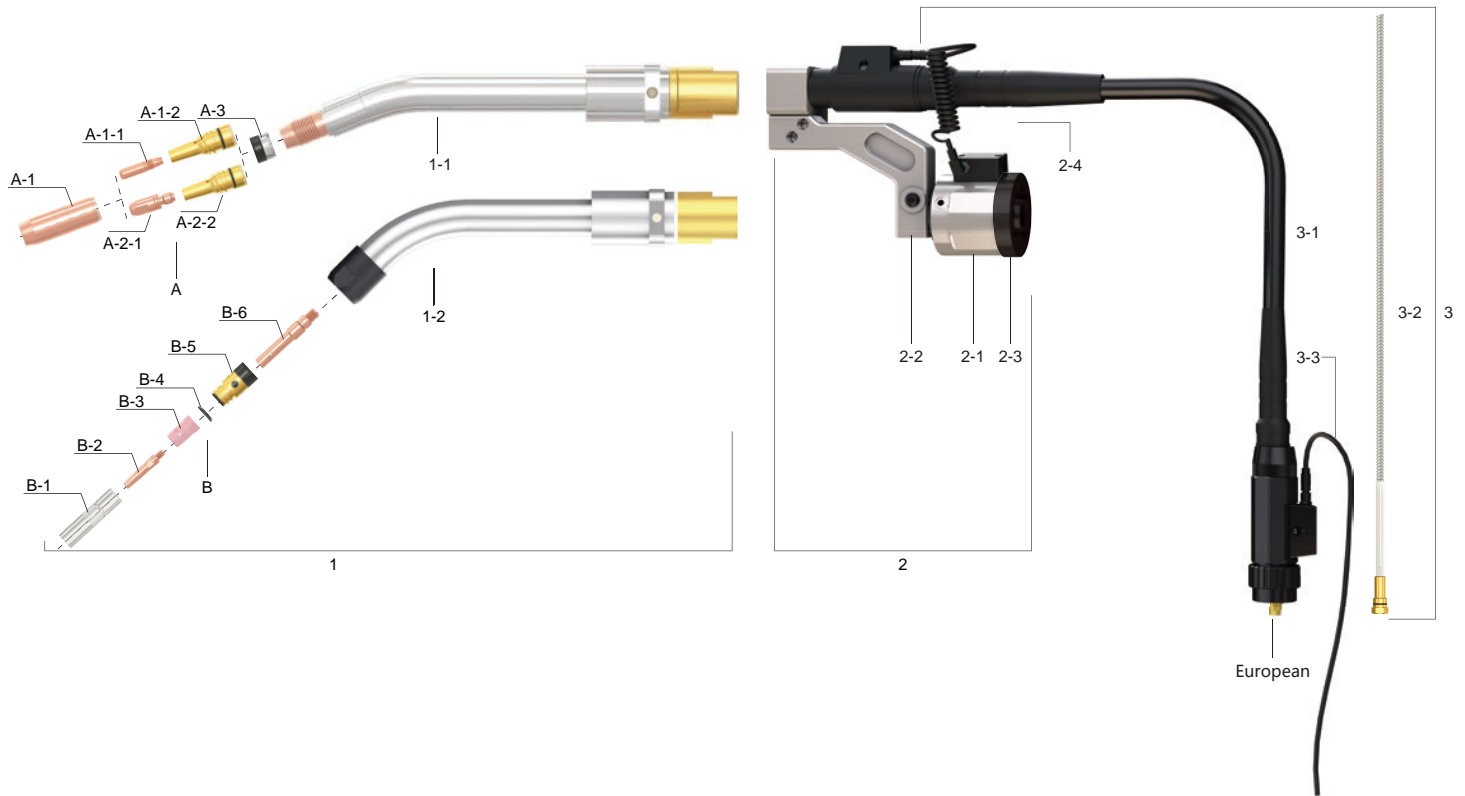


$\alpha$	A(mm)	B(mm)	Angle	Neck Part No
22°	46.8	243.5	22°	TRM351-22
22°	46.78	388.2	22°	TRM351-22L2
45°	100.3	196.2	45°	TRM351-45
45°	120.3	282.9	45°	TRM351-45L
45°	120.3	348.2	45°	TRM351-45L2
180°	0	230.9	180°	TRM351-180

$\alpha$	A(mm)	B(mm)	Angle	Neck Part No
45°	93.86	216.76	45°	TRM351-P45L
45°	93.86	274.86	45°	TRM351-P45L1

## COLLISION SENSOR DATA SHEET

ITEM	TRM313-01-N10	TRM313-01-N16
Size	Diameter $\phi$ 77/Height 103.7mm	Diameter $\phi$ 77/Height 103.7mm
Weight	0.98kg	0.98kg
Sensing Accuracy	1° ~ 1.5°	1° ~ 1.5°
Maximum deflection repeatability(400mm)	XY direction 8° 0.1 ~ 0.15mm	XY direction 4° Within 0.15mm
Trigger Force	About 60-70N in X/Y (400mm) direction	About 90-100N in X/Y (400mm) direction
IP protection level	IP21	IP21
Switching capacity	0.1A/250VAC	0.1A/250VAC
Ambient temperature	-10°C to +55°C	-10°C to +55°C
Relative Humidity	70% at 20 °C during operation	70% at 20 °C during operation



## ORDER GUIDE

Item	Order NO.	Product Description
<b>Robot welding torch</b>	TRM351	Over-arm air cooled robot welding torch

### 1.TORCH NECK ASSEMBLY

Item	Order NO.	Product Description
<b>1-1. GOOSE NECK</b>	TRM351-22	Goose neck(American type, 22°)
	TRM351-22L2	Goose neck(American type, 22° , extended)
	TRM351-45L2	Goose neck(American type, 45° , extended)
<b>1-2. GOOSE NECK (Japanese type)</b>	TRM351-P45L	Goose neck(Japanese type, 45° , extended)
	TRM351-P45L1	Goose neck(Japanese type, 45° , extended L1)

### GOOSE NECK CONSUMABLES(AMERICAN TYPE)

Item	Order NO.	Product Description
<b>A-1.NOZZLE</b>	TRM012-14-50	L=70.0, A = $\phi$ 13, B= $\Phi$ 24, contact tip flush
	TRM012-16-50	L=73.2, A = $\phi$ 13, B= $\Phi$ 24, contact tip recess 3.2mm
	TRM012-18-50	L=66.8, A= $\Phi$ 13, B= $\Phi$ 24, contact tip stick out 3.2mm
	TRM012-14-62	L=70.0, A = $\phi$ 16, B= $\Phi$ 24, contact tip flush
	TRM012-16-62	L=73.2, A = $\phi$ 16, B= $\Phi$ 24, contact tip recess 3.2mm
	TRM012-18-62	L=66.8, A= $\Phi$ 16, B= $\Phi$ 24, contact tip stick out 3.2mm
<b>A-1-1.CONTACT TIP</b>	TRM032-2-R08	CuCrZr, $\phi$ 0.8 wire (steel)
	TRM032-2-R09	CuCrZr, $\phi$ 0.9 wire (steel)
	TRM032-2-R10	CuCrZr, $\phi$ 1.0 wire (steel)
	TRM032-2-R12	CuCrZr, $\phi$ 1.2 wire (steel)
	TRM032-2-R14	CuCrZr, $\phi$ 1.4 wire (steel)
	TRM032-2-R16	CuCrZr, $\phi$ 1.6 wire (steel)
<b>A-1-2.TIP HOLDER</b>	TRM042-01	R Series, brass
<b>A-3.INSULATOR</b>	TRM501-05R	American type R series



## GOOSE NECK CONSUMABLES(EURO SERIES)

Item	Order NO.	Product Description
<b>A-2-1.CONTACT TIP</b>	TRM035-02-08	CuCrZr, $\phi$ 0.8 wire (steel)
	TRM035-02-10	CuCrZr, $\phi$ 1.0 wire (steel)
	TRM035-02-12	CuCrZr, $\phi$ 1.2 wire (steel)
	TRM035-02-14	CuCrZr, $\phi$ 1.4 wire (steel)
	TRM035-02-16	CuCrZr, $\phi$ 1.6 wire (steel)
<b>A-2-2.TIP HOLDER</b>	TRM042-04	Brass
<b>A-3.INSULATOR</b>	TRM501-05R	

## GOOSE NECK CONSUMABLES(JAPANESE STYE)

Item	Order NO.	Product Description
<b>B-1.NOZZLE</b>	TRM012-3-16	L=73.0,A= $\phi$ 16,B= $\phi$ 20
	TMP012-3-13	L=73.0,A= $\phi$ 13,B= $\phi$ 20
	TMP012-3-12	L=73.0,A= $\phi$ 12,B= $\phi$ 20
	TMP012-3B-10	L=73.0,A= $\phi$ 10,B= $\phi$ 20
	TMP012-3B-12	L=73.0,A= $\phi$ 12,B= $\phi$ 20
<b>B-2.CONTACT TIP</b>	TMP030-2-R08	CuCrZr, $\phi$ 0.8 wire (steel)
	TMP030-2-R10	CuCrZr, $\phi$ 1.0 wire (steel)
	TMP030-2-R12	CuCrZr, $\phi$ 1.2 wire (steel)
<b>B-3.GAS DIFFUSER</b>	TMP040-3	Pink
<b>B-4.SPRING WASHER</b>	TMP041-3-2	
<b>B-5.INSULATOR</b>	TMPTFZ35101-LX	
<b>B-6.TIP HOLDER</b>	TMP053-1C	L=68.5, contact tip recess 3.0mm
	TMP053-2C	L=75.0, contact tip stick out 3.5mm
	TMP053-3C	L=71.5, contact tip flush

## 2.ANTI-COLLISION UNIT

Item	Order NO.	Product Description
<b>2-1. COLLISION SENSOR</b>	TRM313-01-N10	Suitable for 22°/45°/P45°L/P45°L1 standard goose neck
	TRM313-01-N16	Suitable for 22°L2/45°L2 etc.extended goose neck
<b>2-2. MOUNT ARM</b>	TRM216-045-351	Standard configuration; braking aperture 28mm
<b>2-3. FLANGE</b>	See P50-51 flange selection table	Including installed screws
<b>2-4. SPRING LINE</b>	3.5.11.0012	To connect collision sensor and torch

## 3.CABLE ASSEMBLY

Item	Order NO.	Product Description
<b>3-1. Cable assembly(including torch)</b>	TRM351-XXC5E	(Euro) cable assembly (xx is length )
<b>3-2. LINER</b>	TRM151-08-18	Split type, overall length 1.8m, (steel) wire0.8mm
	TRM151-12-18	Split type, overall length 1.8m, (steel) wire1.0-1.2mm
<b>3-3. SIGNAL LINE</b>	3.5.11.0015	To connect torch and robot



1-1

1-2

## TECHNICAL DATA

<b>Air input</b>	Clean compressed air with lubricant oil 5.5-8bar
<b>Operating Temperature</b>	-5°C-+50°C
<b>Air consumption</b>	About 10L/S
<b>Pneumatic motor</b>	About 580rpm / maximum torque 8N.m
<b>Control voltage</b>	24V DC
<b>Control current</b>	I <sub>max</sub> =0.15A
<b>Anti-spatter liquid capacity</b>	250ml
<b>Wire cutting ability</b>	Solid wire: max1.6mm Flux-cored wire: max 3.2mm
<b>Cutting time</b>	About 0.5 seconds



1-3



1-4



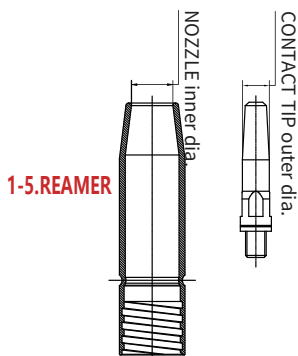
1-5

## Product features:

- Clamp max. 32mm OD nozzle. No need to change V-block;
- High precision and rigidity of pneumatic motor with high torque, which helps to remove heavy spatters. With overload protection to achieve ultra long life;
- Nozzle clamp cylinder return delay: Return after reamer leaves nozzle, effectively protect torch from damage;
- The special filter element can effectively filter oil, water and impurities in the gas path, and improve the lifetime of the equipment;
- With TCP tip;
- Spraying in closed space, Waste oil can be collected and recycled.

## ORDER GUIDE

Item	Order NO.	Product Description
1-1.PNEUMATIC CLEANING STATION	SC220ASE-Z2	Used for robot torch to remove spatters and cut off excessive welding wire(Height 1070mm)
1-2.PNEUMATIC CLEANING STATION	SC220ASE	Used for robot torch to remove spatters and cut off excessive welding wire(Height 330mm)
1-3.ANTI-SPATTER LIQUID	SC221A-PS	Anti-spatter liquid 250ml
1-4.WIRE CUTTER	SC200A-JS	Cut off excessive welding wire
	ANC-0907-40	Suitable for nozzle inner dia. 10, contact tip outer dia. 6
	ANC-1007-40	Suitable for nozzle inner dia. 11, contact tip outer dia. 6
	ANC-1107-40	Suitable for nozzle inner dia. 12, contact tip outer dia. 6
	ANC-1207-40	Suitable for nozzle inner dia. 13, contact tip outer dia. 6
	ANC-1209-40	Suitable for nozzle inner dia. 13, contact tip outer dia. 8
	ANC-1309-40	Suitable for nozzle inner dia. 14, contact tip outer dia. 8
	ANC-1409-40	Suitable for nozzle inner dia. 15, contact tip outer dia. 8
	ANC-1509-40	Suitable for nozzle inner dia. 16, contact tip outer dia. 8
	ANC-1210-40	Suitable for nozzle inner dia. 13, contact tip outer dia. 9
	ANC-1310-40	Suitable for nozzle inner dia. 14, contact tip outer dia. 9
	ANC-1410-40	Suitable for nozzle inner dia. 15, contact tip outer dia. 9
	ANC-1510-40	Suitable for nozzle inner dia. 16, contact tip outer dia. 9
	ANC-1411-40	Suitable for nozzle inner dia. 15, contact tip outer dia. 10
	ANC-1511-40	Suitable for nozzle inner dia. 16, contact tip outer dia. 10
	ANC-1611-40	Suitable for nozzle inner dia. 17, contact tip outer dia. 10
	ANC-1711-40	Suitable for nozzle inner dia. 18, contact tip outer dia. 10
	ANC-1713-40	Suitable for nozzle inner dia. 18, contact tip outer dia. 12
	ANC-1813-40	Suitable for nozzle inner dia. 19, contact tip outer dia. 12
	ANC-1913-40	Suitable for nozzle inner dia. 20, contact tip outer dia. 12



1-5.REAMER



1-1

1-2

## TECHNICAL DATA

<b>Air input</b>	Clean compressed air with lubricant oil 5.5-8bar
<b>Operating Temperature</b>	-5°C-+50°C
<b>Air consumption</b>	About 10L/S
<b>Pneumatic motor</b>	About 650rpm / maximum torque 9N.m
<b>Control voltage</b>	24V DC
<b>Control current</b>	I <sub>max</sub> =0.15A
<b>Anti-spatter liquid capacity</b>	250ml
<b>Wire cutting ability</b>	Solid wire: max1.6mm Flux-cored wire: max 3.2mm
<b>Cutting time</b>	About 0.5 seconds



1-3



1-4



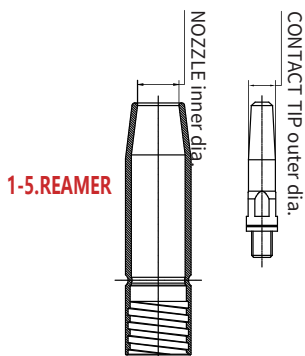
1-5

## Product features:

- Clamp max. 32mm OD nozzle. No need to change V-block;
- High precision and rigidity of pneumatic motor with high torque, which helps to remove heavy spatters. With overload protection to achieve ultra long life;
- Nozzle clamp cylinder return delay: Return after reamer leaves nozzle, effectively protect torch from damage;
- The special filter element can effectively filter oil, water and impurities in the gas path, and improve the lifetime of the equipment;
- With TCP tip;
- Spraying in closed space, Waste oil can be collected and recycled.

## ORDER GUIDE

Item	Order NO.	Product Description
1-1.PNEUMATIC CLEANING STATION	SC221A-Z2	Used for robot torch to remove spatters and cut off excessive welding wire(Height 1090mm)
1-2.PNEUMATIC CLEANING STATION	SC221A	Used for robot torch to remove spatters and cut off excessive welding wire(Height 347mm)
1-3.ANTI-SPATTER LIQUID	SC221A-PS	Anti-spatter liquid 250ml
1-4.WIRE CUTTER	SC200A-JS	Cut off excessive welding wire
1-5.REAMER	ANC-0907-40	Suitable for nozzle inner dia. 10, contact tip outer dia. 6
	ANC-1007-40	Suitable for nozzle inner dia. 11, contact tip outer dia. 6
	ANC-1107-40	Suitable for nozzle inner dia. 12, contact tip outer dia. 6
	ANC-1207-40	Suitable for nozzle inner dia. 13, contact tip outer dia. 6
	ANC-1209-40	Suitable for nozzle inner dia. 13, contact tip outer dia. 8
	ANC-1309-40	Suitable for nozzle inner dia. 14, contact tip outer dia. 8
	ANC-1409-40	Suitable for nozzle inner dia. 15, contact tip outer dia. 8
	ANC-1509-40	Suitable for nozzle inner dia. 16, contact tip outer dia. 8
	ANC-1210-40	Suitable for nozzle inner dia. 13, contact tip outer dia. 9
	ANC-1310-40	Suitable for nozzle inner dia. 14, contact tip outer dia. 9
	ANC-1410-40	Suitable for nozzle inner dia. 15, contact tip outer dia. 9
	ANC-1510-40	Suitable for nozzle inner dia. 16, contact tip outer dia. 9
	ANC-1411-40	Suitable for nozzle inner dia. 15, contact tip outer dia. 10
	ANC-1511-40	Suitable for nozzle inner dia. 16, contact tip outer dia. 10
	ANC-1611-40	Suitable for nozzle inner dia. 17, contact tip outer dia. 10
	ANC-1711-40	Suitable for nozzle inner dia. 18, contact tip outer dia. 10
ANC-1713-40	Suitable for nozzle inner dia. 18, contact tip outer dia. 12	
ANC-1813-40	Suitable for nozzle inner dia. 19, contact tip outer dia. 12	
ANC-1913-40	Suitable for nozzle inner dia. 20, contact tip outer dia. 12	



**TECHNICAL DATA**

<b>Air input</b>	Clean compressed air with lubricant oil 5.5-8bar
<b>Operating Temperature</b>	-5°C-+50°C
<b>Air consumption</b>	About 10L/S
<b>Pneumatic motor</b>	About 650rpm / maximum torque 8N.m
<b>Control voltage</b>	24V DC
<b>Control current</b>	I <sub>max</sub> =0.15A
<b>Anti-spatter liquid capacity</b>	500ml
<b>Wire cutting ability</b>	Solid wire: max1.6mm Flux-cored wire: max 3.2mm
<b>Cutting time</b>	About 0.5 seconds



1-1



1-2



1-3



1-4



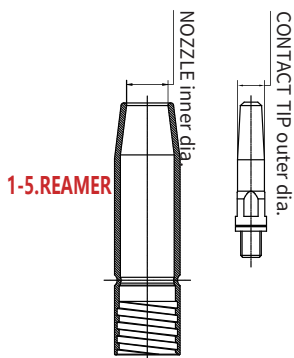
1-5

**Product features:**

- Hold gas nozzle with max. OD 32mm. No need to change V-block;
- High torque and rigidity of pneumatic motor removes heavy spatters. Long lifetime with overload protection;
- Cleaning and spraying at the same procedure, to save the time;
- Spraying device is placed inside, avoiding accidental damage.

**ORDER GUIDE**

Item	Order NO.	Product Description
1-1.PNEUMATIC CLEANING STATION	SC230ASE-Z2	Used for robot torch to remove spatters and cut off excessive welding wire(Height 1090mm)
1-2.PNEUMATIC CLEANING STATION	SC230ASE	Used for robot torch to remove spatters and cut off excessive welding wire(Height 347mm)
1-3.ANTI-SPATTER LIQUID	SC200A-PS	Anti-spatter liquid 500ml
1-4.WIRE CUTTER	SC200A-JS	Cut off excessive welding wire
	ANC-0907-40	Suitable for nozzle inner dia. 10, contact tip outer dia. 6
	ANC-1007-40	Suitable for nozzle inner dia. 11, contact tip outer dia. 6
	ANC-1107-40	Suitable for nozzle inner dia. 12, contact tip outer dia. 6
	ANC-1207-40	Suitable for nozzle inner dia. 13, contact tip outer dia. 6
	ANC-1209-40	Suitable for nozzle inner dia. 13, contact tip outer dia. 8
	ANC-1309-40	Suitable for nozzle inner dia. 14, contact tip outer dia. 8
	ANC-1409-40	Suitable for nozzle inner dia. 15, contact tip outer dia. 8
	ANC-1509-40	Suitable for nozzle inner dia. 16, contact tip outer dia. 8
	ANC-1210-40	Suitable for nozzle inner dia. 13, contact tip outer dia. 9
	ANC-1310-40	Suitable for nozzle inner dia. 14, contact tip outer dia. 9
	ANC-1410-40	Suitable for nozzle inner dia. 15, contact tip outer dia. 9
	ANC-1510-40	Suitable for nozzle inner dia. 16, contact tip outer dia. 9
	ANC-1411-40	Suitable for nozzle inner dia. 15, contact tip outer dia. 10
	ANC-1511-40	Suitable for nozzle inner dia. 16, contact tip outer dia. 10
	ANC-1611-40	Suitable for nozzle inner dia. 17, contact tip outer dia. 10
	ANC-1711-40	Suitable for nozzle inner dia. 18, contact tip outer dia. 10
	ANC-1713-40	Suitable for nozzle inner dia. 18, contact tip outer dia. 12
	ANC-1813-40	Suitable for nozzle inner dia. 19, contact tip outer dia. 12
	ANC-1913-40	Suitable for nozzle inner dia. 20, contact tip outer dia. 12



1-5.REAMER



## TECHNICAL DATA

<b>Air input</b>	Clean compressed air with lubricant oil 5.5-8bar
<b>Operating Temperature</b>	-5°C+50°C
<b>Air consumption</b>	About 10L/S
<b>Pneumatic motor</b>	About 650rpm / maximum torque 8N.m
<b>Control voltage</b>	24V DC
<b>Control current</b>	I <sub>max</sub> =0.15A
<b>Anti-spatter liquid capacity</b>	500ml
<b>Wire cutting ability</b>	Solid wire: max1.6mm Flux-cored wire: max 3.2mm
<b>Cutting time</b>	About 0.5 seconds



1-3



1-4



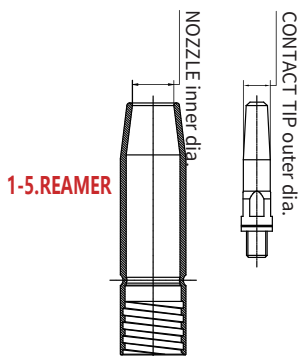
1-5

## Product features:

- Hold gas nozzle with max. OD 32mm. No need to change V-block;
- High torque and rigidity of pneumatic motor removes heavy spatters. Long lifetime with overload protection;
- Cleaning and spraying at the same procedure, to save the time;
- Spraying device is placed inside, avoiding accidental damage.

## ORDER GUIDE

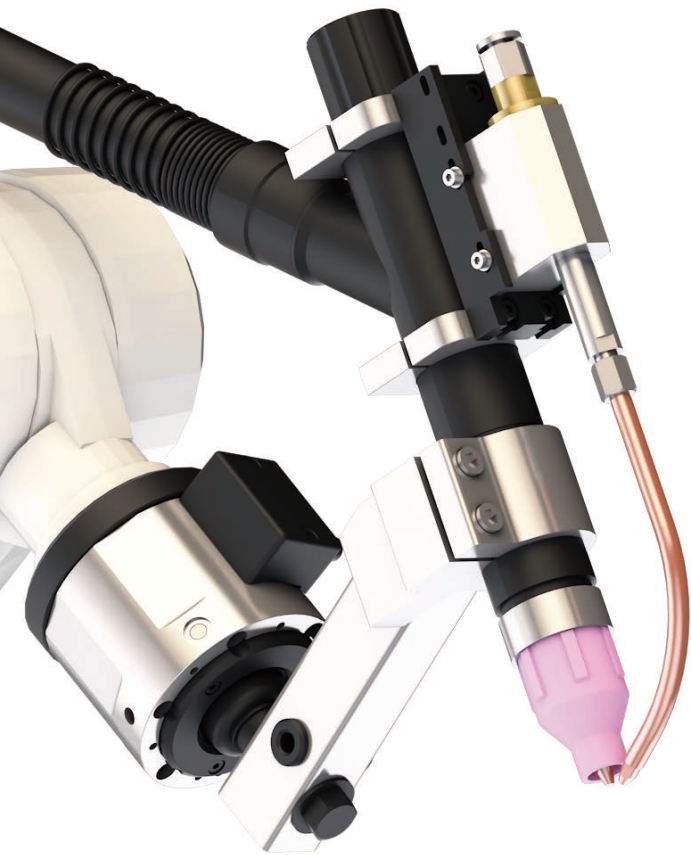
Item	Order NO.	Product Description
1-1.PNEUMATIC CLEANING STATION	SC230A-Z2	Used for robot torch to remove spatters and cut off excessive welding wire(Height 1090mm)
1-2.PNEUMATIC CLEANING STATION	SC230A	Used for robot torch to remove spatters and cut off excessive welding wire(Height 347mm)
1-3.ANTI-SPATTER LIQUID	SC200A-PS	Anti-spatter liquid 500ml
1-4.WIRE CUTTER	SC200A-JS	Cut off excessive welding wire
1-5.REAMER	ANC-0907-40	Suitable for nozzle inner dia. 10, contact tip outer dia. 6
	ANC-1007-40	Suitable for nozzle inner dia. 11, contact tip outer dia. 6
	ANC-1107-40	Suitable for nozzle inner dia. 12, contact tip outer dia. 6
	ANC-1207-40	Suitable for nozzle inner dia. 13, contact tip outer dia. 6
	ANC-1209-40	Suitable for nozzle inner dia. 13, contact tip outer dia. 8
	ANC-1309-40	Suitable for nozzle inner dia. 14, contact tip outer dia. 8
	ANC-1409-40	Suitable for nozzle inner dia. 15, contact tip outer dia. 8
	ANC-1509-40	Suitable for nozzle inner dia. 16, contact tip outer dia. 8
	ANC-1210-40	Suitable for nozzle inner dia. 13, contact tip outer dia. 9
	ANC-1310-40	Suitable for nozzle inner dia. 14, contact tip outer dia. 9
	ANC-1410-40	Suitable for nozzle inner dia. 15, contact tip outer dia. 9
	ANC-1510-40	Suitable for nozzle inner dia. 16, contact tip outer dia. 9
	ANC-1411-40	Suitable for nozzle inner dia. 15, contact tip outer dia. 10
	ANC-1511-40	Suitable for nozzle inner dia. 16, contact tip outer dia. 10
	ANC-1611-40	Suitable for nozzle inner dia. 17, contact tip outer dia. 10
	ANC-1711-40	Suitable for nozzle inner dia. 18, contact tip outer dia. 10
ANC-1713-40	Suitable for nozzle inner dia. 18, contact tip outer dia. 12	
ANC-1813-40	Suitable for nozzle inner dia. 19, contact tip outer dia. 12	
ANC-1913-40	Suitable for nozzle inner dia. 20, contact tip outer dia. 12	







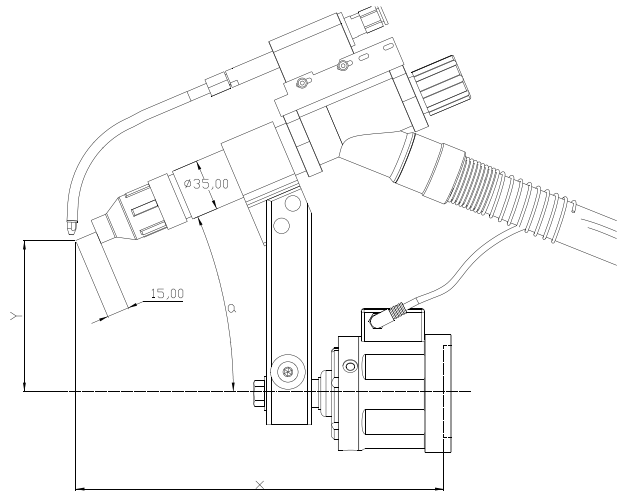
# TRMTIG500WM LIQUID COOLED



## TECHNICAL DATA

<b>Cooling method</b>	Liquid cooled
<b>Rating</b>	500A (DC) 350A (AC)
<b>Duty cycle</b>	100%
<b>Wire diameter</b>	0.8~1.6mm
<b>Torch geometries</b>	0°
<b>Size range of tungsten rod to be clamped</b>	1.6, 2.0, 2.4, 3.2, 4.0, 4.8, 6.4

## TCP DATA



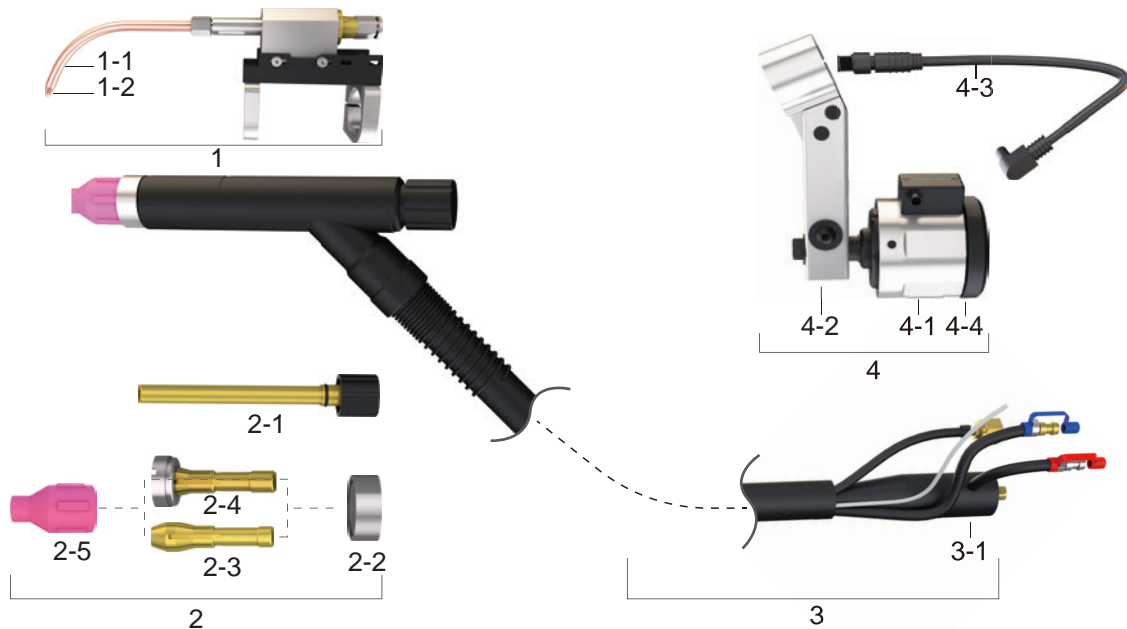
$\alpha$	A(mm)	B(mm)	Neck Part No
23°	251	102	TRM211-22L
45°	230	59.5	TRM211-180

## Product features:

- Cable with shielding design;
- Minimized design, good heat dissipation, long service life of components;
- With preset tungsten electrodes;
- Reinforced design for the main bodies of the welding torches, durable;
- Standard external wire feeding mechanism

## COLLISION SENSOR DATA SHEET

ITEM	TRM313-01-N6
Size	Diameter $\phi$ 77mm/Height 103.7mm
Weight	1.01kg
Sensing Accuracy	Deflection in X/Y direction 1°- 1.5 °
Maximum deflection	X/Y deflection approx. 6 °
Reset accuracy (300mm)	Within 0.15mm
Trigger Force	About 80N in X/Y (400mm) direction
IP protection level	IP21
Switching capacity	10A/250VAC
Ambient temperature	-10°C to +55°C
Relative Humidity	70% at 20 °C during operation



## ORDER GUIDE

Item	Order NO.	Product Description
ROBOT WELDING TORCH	TRMTIG500WM	Over-arm liquid cooled robot welding torch (6m)
		Over-arm liquid cooled robot welding torch (8m)

### 1.OVER-ARM WIRE FEEDING UNIT

Item	Order NO.	Product Description
1-1. WIRE GUIDE BUSHING	TRMTIG500WM-051-01-01	
1-2. WIRE NOZZLE	TRMTIG500WM-051-01-02	φ1.2
	TRMTIG500WM-051-01-03	φ1.0

### 2.CONSUMABLES

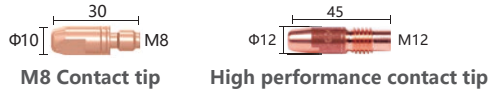
Item	Order NO.	Product Description
2-1. DRAINAGE TUBE	TRMTIG500WM-012-01	Standard
2-2. INSULATOR	TRMTIG500WM-011-01	
2-3. ELECTRODE HOLDER	TRMTIG500WM-021-03	φ1.6
	TRMTIG500WM-021-04	φ2.0
	TRMTIG500WM-021-01	φ2.4
	TRMTIG500WM-021-02	φ3.2
	TRMTIG500WM-021-05	φ4.0
	TRMTIG500WM-021-06	φ4.8
	TRMTIG500WM-021-07	φ6.4
2-4. GAS DIFFUSER	TRMTIG500WM-031-03	φ1.6
	TRMTIG500WM-031-04	φ2.0
	TRMTIG500WM-031-01	φ2.4
	TRMTIG500WM-031-02	φ3.2
	TRMTIG500WM-031-05	φ4.0
	TRMTIG500WM-031-06	φ4.8
	TRMTIG500WM-031-07	φ6.4
2-5. NOZZLE	TRMTIG500WM-041-01	Ceramic L=φ12.5 A=48
	TRMTIG500WM-041-02	Ceramic L=φ16 A=48
	TRMTIG500WM-041-03	Ceramic L=φ19 A=48
	TRMTIG500WM-041-04	Ceramic L=φ24 A=48

## 3.CABLE

Item	Order NO.	Product Description
<b>3. CABLE</b>	TRMTIG500WM-600	Cable length 6m
	TRMTIG500WM-800	Cable length 8m
<b>3-1. POWER CONNECTOR</b>	AR-05-009-A	30-50 quick connector L=φ13

## 4.ANTI-COLLISION UNIT

Item	Order NO.	Product Description
<b>4-1. COLLISION SENSOR</b>	TRM313-01-N6	Suitable for standard configuration
<b>4-2. MOUNT ARM</b>	TRM211-22L	Standard configuration; clamping aperture 35mm
	TRM211-180	Compatible for TRM351-22 goose neck (22°)
<b>4-3. SIGNAL LINE</b>	3.5.21.0677	Connect collision sensor with torch front end
<b>4-4. FLANGE</b>	See P50-51 flange selection table	Including the installed screws.



Item	Order NO.	Product Description
<b>CONTACT TIP</b>	TRM035-03-10	M8 Φ1.0mm (ultra long life)
	TRM035-03-12	M8 Φ1.2mm (ultra long life)
	TRM035-03-14	M8 Φ1.4mm (ultra long life)
	TRM035-03-16	M8 Φ1.6mm (ultra long life)
	TRM037-02-10	M12 CuCrZr, wire Φ1.0mm
	TRM037-02-12	M12 CuCrZr, wire Φ1.2mm
	TRM037-02-14	M12 CuCrZr, wire Φ1.4mm
	TRM037-02-16	M12 CuCrZr, wire Φ1.6mm
	TRM037-03-10	M12 Φ1.0mm (ultra long life)
	TRM037-03-12	M12 Φ1.2mm (ultra long life)
	TRM037-03-14	M12 Φ1.4mm (ultra long life)
	TRM037-03-16	M12 Φ1.6mm (ultra long life)

Robot	Order NO.	AL Flange Order NO.	Insulation Flange Order NO.
ABB	IRB1520iD	TRM236-AIRB1520ID	TRM236-BIRB1520ID
Yaskawa	MA1440 (AR1440) , MA2010 (AR2010) , MA3120	TRM236-AMA1440	TRM236-AMA1440-GN671
Yaskawa	GP12, GP25; MH12, MH24	TRM236-AMA1440	TRM236-AMA1440-GN671
Yaskawa	MA1400, EA1800, EA1900	TRM236-AMA1400	
ESTUN	ER8-1450-AW	TRM236-AQRH290-6	
ESTUN	ER6-1450H	TRM236-AER6-1450H	TRM236-BER6-1450H
BORUNTE	BRTIRWD1506A		TRM236-ABRT1506A
Kawasaki	BA006N, BA006L	TRM236-ABA006N	TRM236-BBA006N
Kawasaki	BA013N	TRM236-AIRB1520ID	TRM236-BIRB1520ID
CHAIFU	SF6-1440; SF6-C2080		
Changhong	LJ1490-06, CH1500-6, CH1600-6	TRM236-ACH1600-6	
Chuanxi	ZDFH0614A	TRM236-AMA1440	TRM236-AMA1440-GN671
LBBBD	LHZ1500-B-6		
FANUC	M10iD etc. (100iD) , M20iD etc. (120iD)	TRM236-AM10ID	TRM236-BM10ID
FANUC	M10iA etc. (100iC) , M20iA etc. (120iC)	TRM236-AMA1440	TRM236-AMA1440-GN671
GSK	RH06A2-1490, RH06A2-2000	TRM236-ARH06A2	TRM236-BRH06A2
Honyan	HY1006A-138 (Four axes 45mm)	TRM236-AJHY1510A	TRM236-BJHY1510A
Baykal	BR-1510A, JHY-2010A; BR-1610A	TRM236-AJHY1510A	TRM236-BJHY1510A
Baykal	BR-1406C	TRM236-AJHY1510A	TRM236-BJHY1510A
CLOOS	QR8-290 (=QRH290-6) , QR8-400-HW	TRM236-AQRH290-6	
KUKA	KR6 R1440-2 rac HW	TRM236-AKR8-R1620	TRM236-BKR6R1440-2ARCHW
KUKA	KR6 R1840-2 rac HW	TRM236-AKR8-R1620	TRM236-BKR6R1820HW
KUKA	KR8 R1620 arc HW; KR8 R1640-2 arc HW	TRM236-AKR8-R1620	TRM236-BKR8R1820HW
CROBOTP	CRP RH14/RH18/RH20	TRM236-AMA1440	TRM236-AMA1440-GN671
Moka	MR06/MR08/MR10	TRM236-AMA1440	TRM236-AMA1440-GN671
OTC	FD-B4		
QIANJIANG	QJR6-2000H	TRM236-AQJR6-2000H	
QIANJIANG	QJRH4-1a	TRM236-AQJRH4-1a	TRM236-BQJRH4-1a
Panasonic	TM1400		
TURIN	TKB1440	TRM236-AMA1440	TRM236-AMA1440-GN671
STEP	SA6-1440H, SA6-2000H		
STEP	SA6-1600Z	TRM236-ACH1600-6	
SIASUN	TA6-19, TA12A-14	TRM236-AMA1440	TRM236-AMA1440-GN671
ZD	ZDFH0620	TRM236-AMA1440*	TRM236-AMA1440-GN671*



Robot	Order NO.	AL Flange Order NO.	Insulation Flange Order NO.
ABB	IRB1200	TRM233-A31402	TRM233-B31402
ABB	IRB1410, IRB1600 etc., IRB2400L	TRM233-A40252	TRM233-B40252
ABB	IRB2400-10/-16, ABB IRB2600 etc.	TRM233-A50313-6M6	TRM233-B50313-6M6
ABB	IRB1520iD	TRM233-A63502-4M6	TRM233-B63502 (4M6)
ABB	IRB1660iD, IRB2600iD	TRM233-A40252/TRM242-AIRB1660iD	TRM233-B40252/TRM242-AIRB1660iD
Yaskawa	MA1440 (AR1440) , MA2010 (AR2010) , MA3120	TRM233-A56625	TRM233-B40252/TRM242-A56625
Yaskawa	GP12, GP25; MH12, MH24	TRM233-A56625	TRM233-B40252/TRM242-A56625
Yaskawa	MH6, SSF2000, HP20D	TRM233-A40252	TRM233-B40252
Efort	ER6 etc. (ER6-1400, ER6-2000; ER6B-C60, ER6L-C60)	TRM233-A40252	TRM233-B40252
Efort	ER7-700	TRM233-A31402	TRM233-B31402
ESTUN	ER12-1510, ER20 10L-2000	TRM233-A40252	TRM233-B40252
ESTUN	ER8-1450-H (-AW)	TRM233-A40252/TRM242-AQRH290-6	TRM233-B40252/TRM242-AQRH290-6
ESTUN	ER12B-1510 (ER8-1500)	TRM233-A40252	TRM233-B40252
ESTUN	ER16	TRM233-A50314 (4M6)	TRM233-B50314-4M6
BORUNTE	BRTIRWD1506A (2021)	TRM233-A52442-8M4	
BORUNTE	BRTIRWD1506A	TRM233-A56625/TRM242-AP1	
BORUNTE	1850	TRM233-A56625/TRM242-ABLT1	
BORUNTE	BRTIRUS1820A	TRM233-A56625/TRM242-ABLT1	
BORUNTE	BRTIRUS2110A		
Kawasaki	BA006N, BA006L	TRM233-A40252/TRM242-AQ1	TRM233-B40252/TRM242-AQ1
Kawasaki	BA013N	TRM233-A63502-4M6	TRM233-B63502 (4M6)
Kawasaki	RA010N	TRM233-A40252	TRM233-B40252
Kawasaki	RS010L, RS020N (RA020N)		TRM233-B63402
CHAIFU	SF6-1440; SF6-C2080	TRM233-A40252/TRM242-ASF6-C	TRM233-B40252/TRM242-ASF6-C
Changhong	LJ1468-10-A, LJ2000-8-A		TRM233-B40122
Changhong	CH1600-6	TRM233-A40252/TRM242-ACH1600	TRM233-B40252/TRM242-ACH1600
LBBBD	LHZ1500-B-6, LHZ2000-B-6	TRM233-A40252/TRM242-ALHZ1500-B-6	TRM233-B40252/TRM242-ALHZ1500-B-6
LBBBD	LT9905	TRM233-A40252/TRM242-ALT9905	TRM233-B40252/TRM242-ALT9905
FANUC	M10iD etc. (100iD) , M20iD etc. (120iD)	TRM233-A64572	TRM233-B40252/TRM242-A64572
FANUC	M10iA etc. (100iC) , M20iA etc. (120iC)	TRM233-A56625	TRM233-B40252/TRM242-A56625
FANUC	0iA, 0iB	TRM233-A31402	TRM233-B31402
FANUC	LR Mate 200iD-7L	TRM233-A31402	TRM233-B31402
FANUC	CRX-10iA, CRX-10iA-L	TRM233-A50314 (4M6)	TRM233-B50314-4M6
FAIR	FAIR FR10	TRM233-A50314 (4M6)	TRM233-B50314-4M6
GSK	RB08, RB08A3 etc., RH06, RH06A3 etc.	TRM233-A41503	TRM233-B41503
GSK	RB20, RB15L	TRM233-A50314 (4M6)	TRM233-B50314-4M6
GREE	GR608-1400H	TRM233-A31402/TRM242-ANII-P06P	TRM233-B31402/TRM242-ANII-P06P
NII	NII-P06P-1600	TRM233-A31402/TRM242-ANII-P06P	TRM233-B31402/TRM242-ANII-P06P
Honyan	HY1010A-145 (143)	TRM233-A40252/TRM242-AHY1006A-145-GN1863	TRM233-B40252/TRM242-AHY1006A-145-GN1863
Honyan	HY1006A-138, HY1006A-145, HY1006A-200		
HWASHI	HSR-JR612-020	TRM233-A31402/TRM242-ANII-P06P	TRM233-B31402/TRM242-ANII-P06P
HWASHI	HSR-JR620L	TRM233-A40252/TRM242-AHSR-JR620L	TRM233-B40252/TRM242-AHSR-JR620L
HWASHI	HSR-JS605E	TRM233-A40252/TRM242-AHSR-JS605E	TRM233-B40252/TRM242-AHSR-JS605E
HARMO	HS-R6-08	TRM233-A40252	TRM233-B40252
HM	HM06L	TRM233-A50314 (4M6)	TRM233-B50314-4M6
JAKA	JAKA Zu etc.	TRM233-A50314 (4M6)	TRM233-B50314-4M6
Baykal	BR-1510A, JHY-2010A; BR-1610A		
Baykal	BR-1520B, BR-1820B, BR-1920B, BR-2020B	TRM233-A40252/TRM242-ABR1920B	TRM233-B40252/TRM242-ABR1920B
CROBOTP	CRP-RH14-10-W, CRP-RH18-20-W, CRP-RH20-06-W	TRM233-A56625	TRM233-B40252/TRM242-A56625
CROBOTP	CRP-RH14-10, CRP-RH18-20	TRM233-A40252/TRM242-ACRP-RH14-10	TRM233-B40252/TRM242-ACRP-RH14-10
KUKA	KR5 R1400, KR10 R1420; KR8 R1620	TRM233-A31402	TRM233-B31402
KUKA	KR5 arc	TRM233-A40252	TRM233-B40252
KUKA	KR6 R1440-2 rac HW	TRM233-A40252/TRM242-AKR6R1440-2ARCHW	TRM233-B40252/TRM242-AKR6R1440-2ARCHW
KUKA	KR8 R2010-2; KR12 R1820-2; KR16 R1620 KR20 R1820-2;	TRM233-A50314 (4M6)	TRM233-B50314-4M6
KUKA	KUKAKR30 R2010	TRM233-A40252/TRM242-AKR60	TRM233-B40252/TRM242-AKR60
KUKA	KUKAKR210* (long flange)		TRM233-B40252-L82 + TRM242-AKR150
Moka	MR06/MR08/MR10	TRM233-A56625	TRM233-B40252/TRM242-A56625
OTC	FD-V6L, FD-V8	TRM233-A40252	TRM233-B40252
OTC	FD-NV8, FD-NV8L	TRM233-A40252	TRM233-B40252
Times	TIME R6-1400	TRM233-ATIMER6-1400	
Panasonic	TA1800, TL1800GIII		TRM233-B50402
TURIN	TKB1210, TKB1400, TKB1600	TRM233-A36112	TRM233-B36112
TURIN	TKB2690		
TURIN	TKB1440	TRM233-A56625	TRM233-B40252/TRM242-A56625
TURIN	TKB1520	TRM233-A40252/TRM242-ATKB1520	TRM233-B40252/TRM242-ATKB1520
HYUNDAI	HA006B, HA006L, HH010L, HH020	TRM233-A40252	TRM233-B40252
STEP	SA1400/SA1800	TRM233-A31402	TRM233-B31402
SIASUN	TA6-19, TA12A-14	TRM233-A56625	TRM233-B40252/TRM242-A56625
KOMATSU	RAL20-50H		TRM233-ARAL20-5GH-GN120
UNIVERSAL	UNIVERSAL UR10e	TRM233-A50314 (4M6)	TRM233-B50314-4M6
ZD	ZD	TRM233-A31402/TRM242-ANII-P06P	TRM233-B31402/TRM242-ANII-P06P
CHAPLIN	CR10-1600	TRM233-ACR10-1600	
ZHENGKANG	ZHENGKANG ZK1400-06	TRM233-A40252/TRM242-AZK1400	TRM233-B40252/TRM242-AZK1400

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