

# Semi-Automatic Torches

[CO<sub>2</sub>/MAG Welding Torch]

**TOKINARC**<sup>®</sup>  
TOKIN CORPORATION

■ CS Series ■ CP-35 ■ α-500W ■ CSH-50W ■ CSA-252



[www.tokinarc.co.jp](http://www.tokinarc.co.jp)

TOKIN CORPORATION

# Superior Performance, Excellent Operability and High S TOKIN Meets Your Demanding Arc Welding Applications

## 1 Handle grip with greater comfort and operability

**1** Allows you to perform twisting work while holding it by your thumb

**2** Meets the JIS requirements IP3X\* that defines protection against intrusion of solid objects  
\*IP3X is the protection level given to electrical equipment

**3** Improves the comfort of a grip for your little finger

**4** The projection formed on the side keeps your hand from slipping

**5** Made of light and tough material that excels in heat resistance, impact resistance, and insulation

**6** Manufactured by pollution-free process conforming to RoHS regulations

## 2 Protects the cable from over bending and prevents a failure in wire feeding



## 3 Quick Exchange System

Easy installation to wire feeder of various specifications



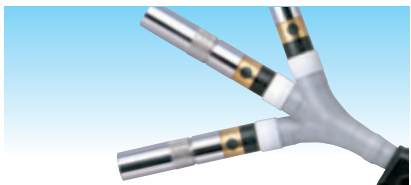
## 4 Power cable with outstanding abilities in wire feeding, endurance, and operation



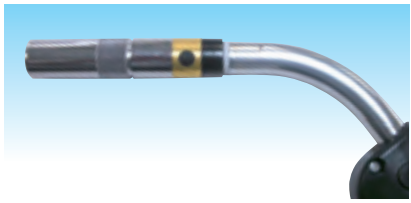
In-1982, TOKIN introduced the first all-in-one welding power cable in Japan. Devoted efforts have brought the evolution in welding cable.

## 5 Wide varieties of welding torch consumables

### ▼ Specially designed torches for unique welding applications

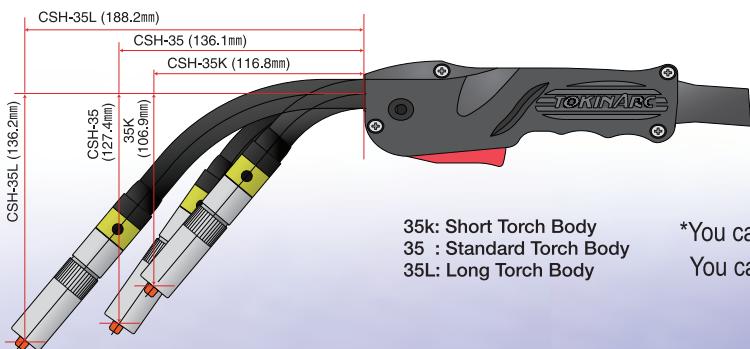


**Flexible torch bodies can freely bent any way you want**  
**CSL-20F, CSL-35F, CSH-35F, CSH-45F, CSH-50F**



**CSL-35G, CSH-35G**  
**The strength of the torch body is doubled by metallic construction**

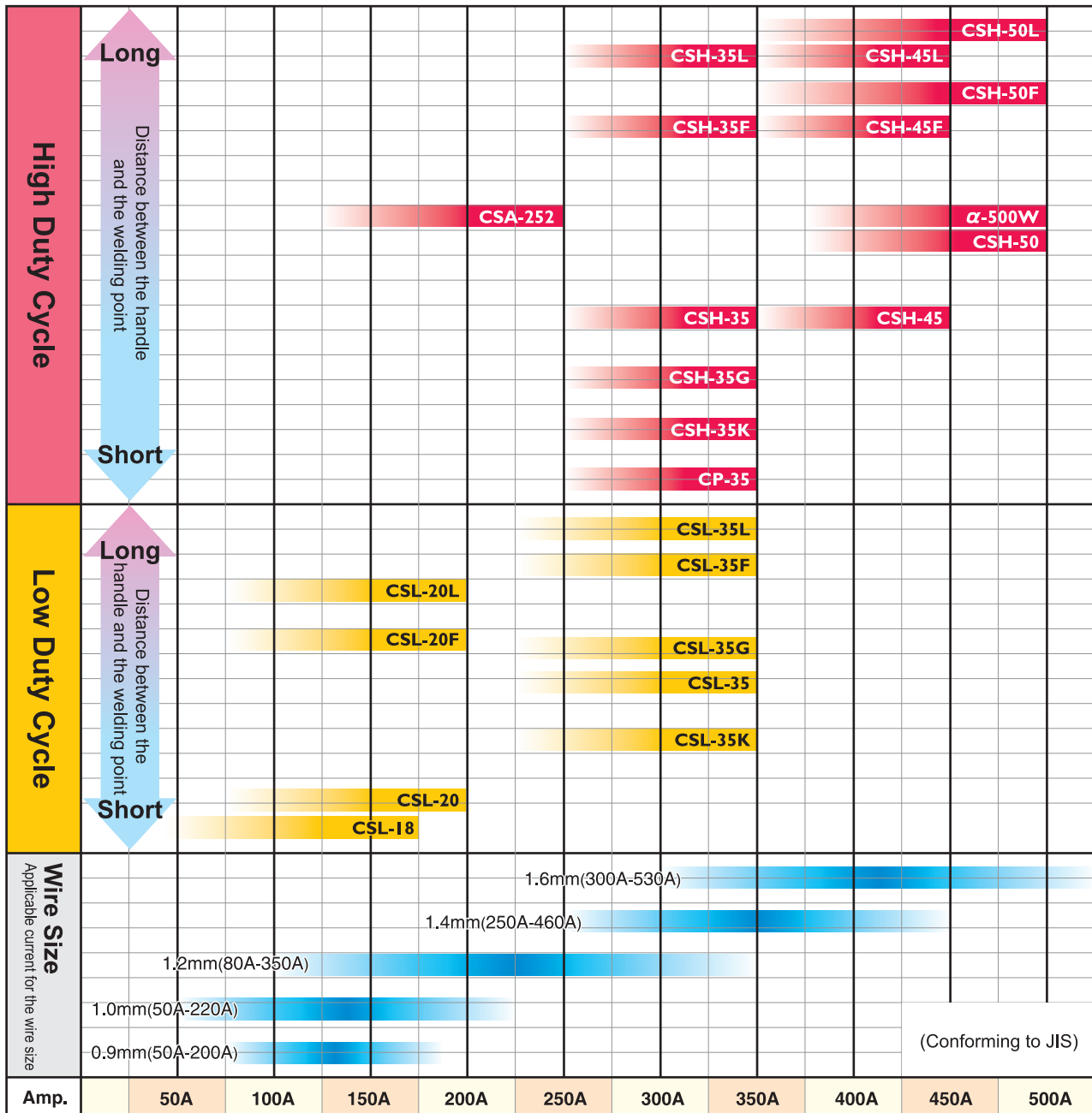
- ① For the use in tough welding applications, torch body is reinforced by the metallic pipe.
- ② Insulation is secured by the Teflon® in the torch.
- ③ Weight difference is only 14g and maintains the same operability compared to the CSH-35.



**Three lengths of Torch Body (350A) are available as a standard product line and they enables you to cover various weld condition.**

\*You can easily detach Torch Body by unfixing the tie bolt on its side. You can also select the suitable length of Torch Body as you wish.

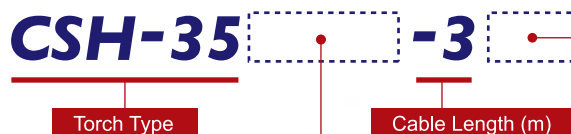
Find your best torch! (Please refer to the following chart based on your welding application.)



\*Applicable current in the chart is a rough value that is placed in CO<sub>2</sub> welding.

\*Applicable current represents a general allowance for downward welding.

\*Distances between the handle and welding point in the chart are only approximate. As for the precise values of individual type, see the following pages.

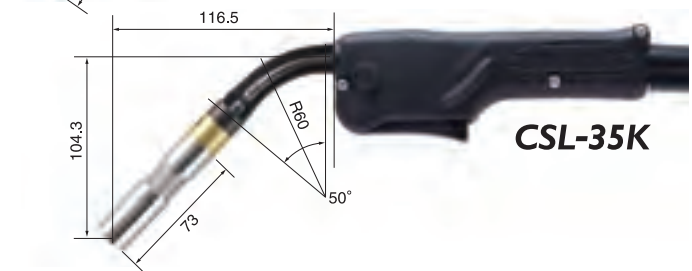
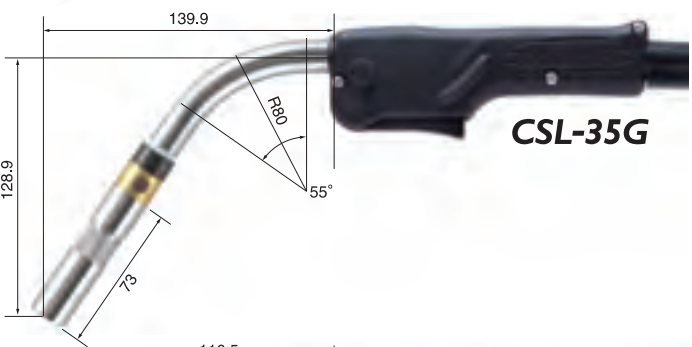
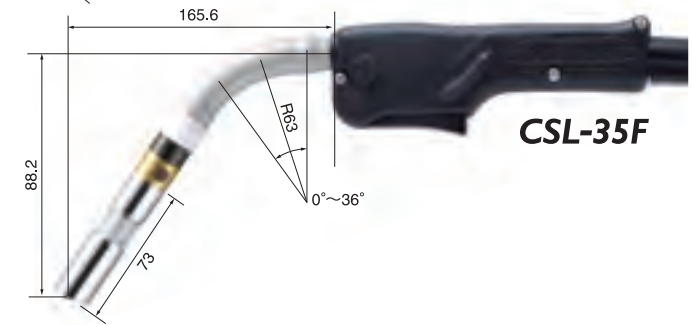
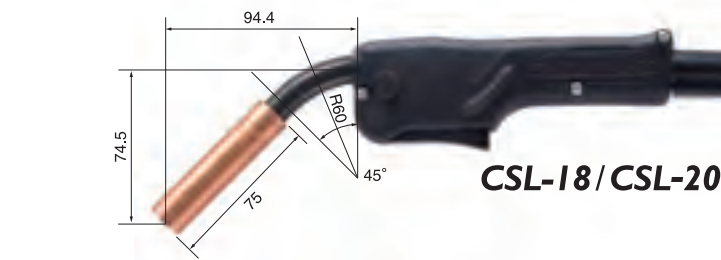


This space is used for indicating the following direct types. Nothing is filled if you purchase standard type.

N: PANASONIC  
 D: DAIHEN  
 H: HITACHI

Fill a blank space with the following codes when special types are used.

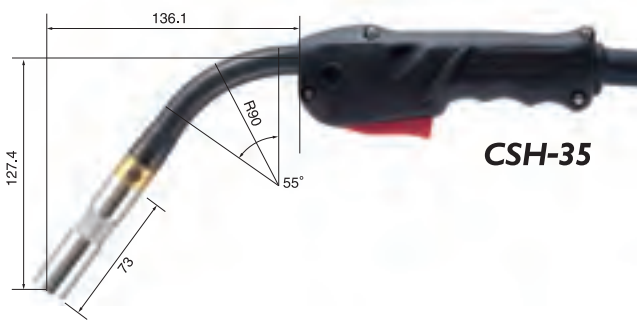
Contact Tip Size: Used other than standard size.  
 EURO: Euro Type



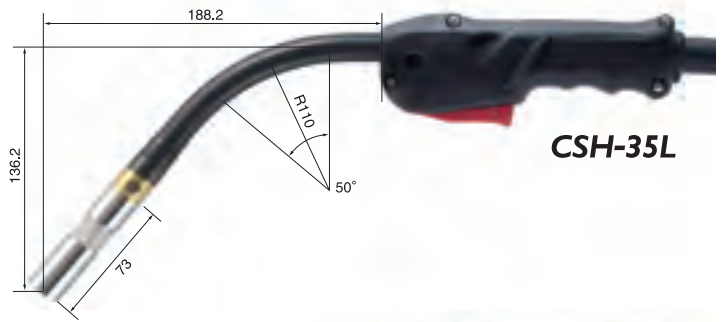
Torch Model		CSL-18	CSL-20	CSL-18L	CSL-20L	CSL-18F
Rated Current	A	180	200	180	200	180
Duty Cycle	%(CO <sub>2</sub> )	40	40	40	40	40
	%(MAG)	20	20	20	20	20
Applicable Wire Size	mm	(0.6, 0.8) 0.9	(1.0) 1.2	(0.6, 0.8) 0.9	(1.0) 1.2	(0.6, 0.8) 0.9
Cable Length	m	3	3 / 4	3	3 / 4	3
Cooling Method		Air-Cooled	Air-Cooled	Air-Cooled	Air-Cooled	Air-Cooled
Total Weight	kg	1.9	1.9	1.9	1.9	1.9

Torch Model		CSL-20F	CSL-35/CSL-35K	CSL-35F	CSL-35G
Rated Current	A	200	350	350	350
Duty Cycle	%(CO <sub>2</sub> )	40	35	35	35
	%(MAG)	20	20	20	20
Applicable Wire Size	mm	(1.0) 1.2	(0.8, 0.9, 1.0) 1.2	(0.8, 0.9, 1.0) 1.2	(0.8, 0.9, 1.0) 1.2
Cable Length	m	3 / 4	3 / 4 / 4.5 / 5 / 6	3 / 4 / 4.5 / 5 / 6	3 / 4 / 4.5 / 5 / 6
Cooling Method		Air-Cooled	Air-Cooled	Air-Cooled	Air-Cooled
Total Weight	kg	1.9	2.3	2.3	2.3

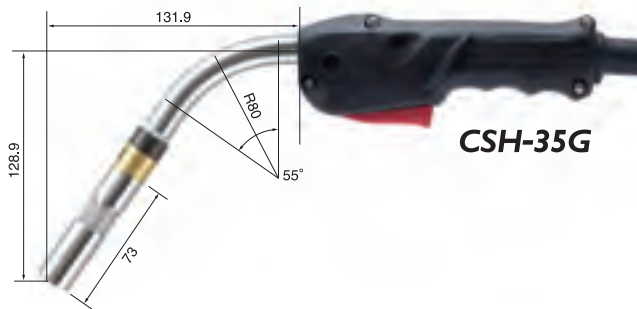
# CSH Series [High Duty Cycle]



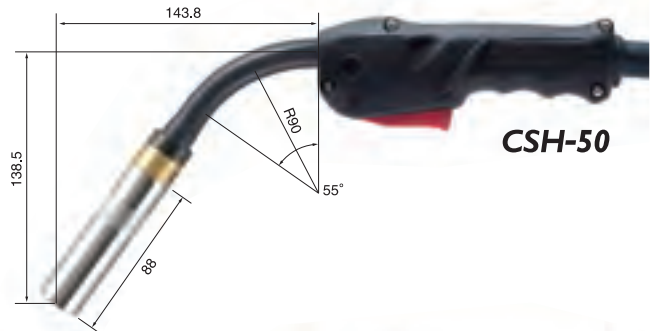
**CSH-35**



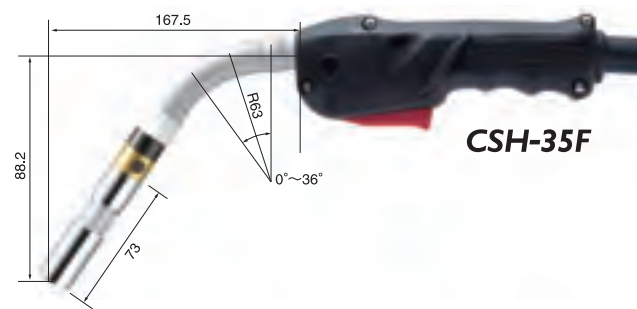
**CSH-35L**



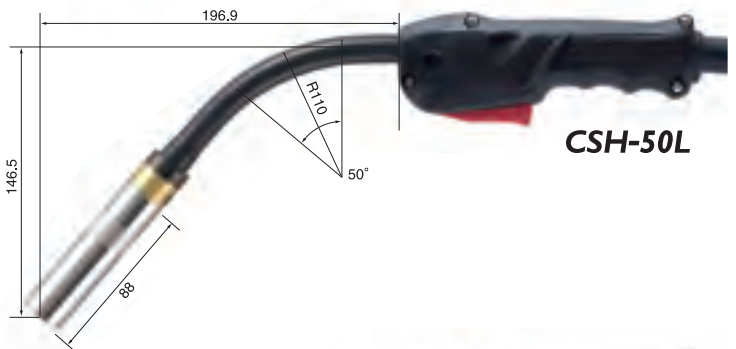
**CSH-35G**



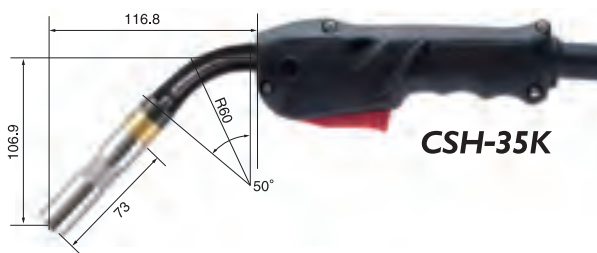
**CSH-50**



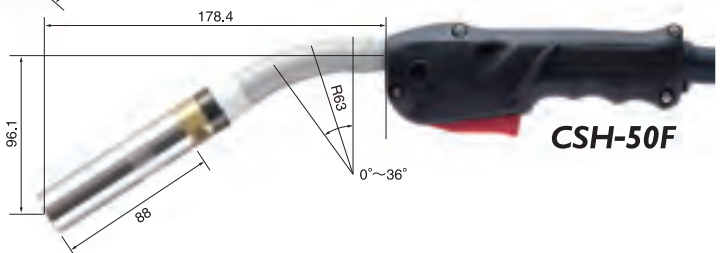
**CSH-35F**



**CSH-50L**



**CSH-35K**



**CSH-50F**

Torch Model		CSH-35 / 35K / 35L	CSH-35G	CSH-35F
Rated Current	A	350	350	350
Duty Cycle	%(CO <sub>2</sub> )	60	60	60
	%(MAG)	35	35	35
Applicable Wire Size	mm	(0.9, 1.0, 1.4) 1.2	(0.9, 1.0, 1.4) 1.2	(0.9,1.0,1.4) 1.2
Cable Length	m	3 / 4 / 4.5 / 5 / 6	3 / 4 / 4.5 / 5 / 6	3/4/4.5/5/6
Cooling Method		Air-Cooled	Air-Cooled	Air-Cooled
Total Weight	kg	2.4	2.4	2.4

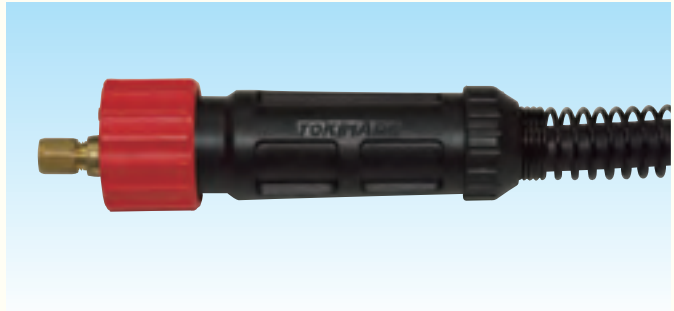
Torch Model		CSH-45F	CSH-45 / 45K	CSH-50 / 50L	CSH-50F
Rated Current	A	450	450	500	500
Duty Cycle	%(CO <sub>2</sub> )	40	60	60	35
	%(MAG)	20	35	35	20
Applicable Wire Size	mm	(1.4, 1.6) 1.2	(1.4, 1.6) 1.2	(1.2, 1.4) 1.6	(1.2, 1.4) 1.6
Cable Length	m	3/4/4.5/5/6	3 / 4 / 4.5 / 5 / 6	3 / 4 / 4.5 / 5 / 6	3 / 4 / 4.5 / 5 / 6
Cooling Method		Air-Cooled	Air-Cooled	Air-Cooled	Air-Cooled
Total Weight	kg	3	3	3.6	3.6

# Quick Exchange System

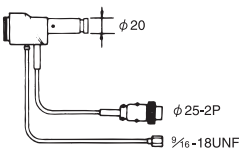
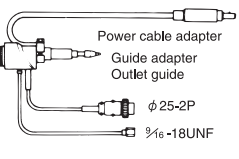
## Easy installation to wire feeder of various specifications

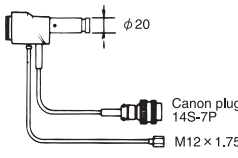
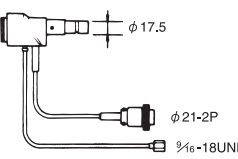
### Connection to Wire Feeders

Quick torch exchange is possible by simply connecting your choice of adapter to the wire feeder. Variety of adapters specially designed for individual manufactures' wire feeders are available.



□ TOKIN Standard

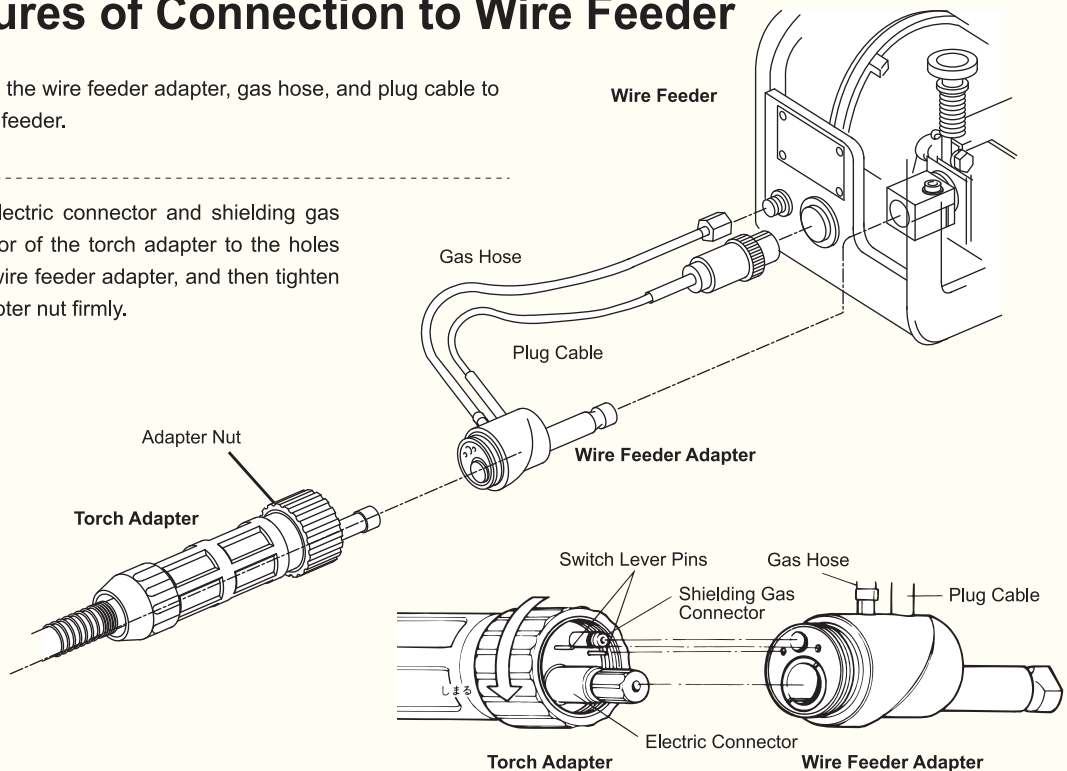
Adapter Type	Shape and Dimensions	Applicable Wire Feeder
<b>N Adapter</b> (020030)		<b>Panasonic</b> For all Air-Cooled Wire Feeder  <i>No adapter is needed when using a Uni-Con O series torch.</i>
<b>D Adapter</b> <b>350A</b> (020029) <b>500A</b> (020031)		<b>DAIHEN</b> CM-231/CM-144/ C M L -23/CM-501  <i>No adapter is needed when using a blue torch.</i>
<b>D GEMMY</b> <b>160</b> (020032)	For power cable adapter replacement	<b>DAIHEN</b> CM-232/CM-233
<b>D GEMMY</b> <b>16</b> (020038)		<b>DAIHEN</b> CPS-160 built-in type

Adapter Type	Shape and Dimensions	Applicable Wire Feeder
<b>H Adapter</b> (020033)		<b>HITACHI</b> For all Air-Cooled Wire Feeders
<b>B Adapter</b> (020037)		<b>OSAKA DENKI</b> For all Air-Cooled Wire Feeders  <i>No adapter is needed when using a GR · GH series torch.</i>

### Procedures of Connection to Wire Feeder

**1** Connect the wire feeder adapter, gas hose, and plug cable to the wire feeder.

**2** Insert electric connector and shielding gas connector of the torch adapter to the holes on the wire feeder adapter, and then tighten the adapter nut firmly.



## Other Connection Types



**EURO Type**



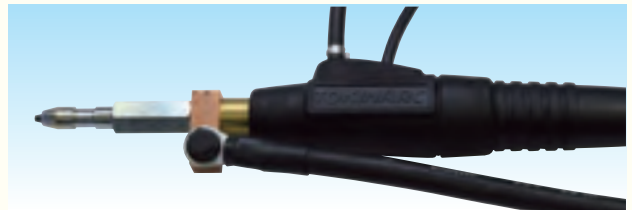
**N Type**

PANASONIC direct connection type



**AT Welder Type**

DAIHEN direct connection type to compact welders "Auto welder 160/180" and "Dyna Auto Mini 160/180."



**D Type**

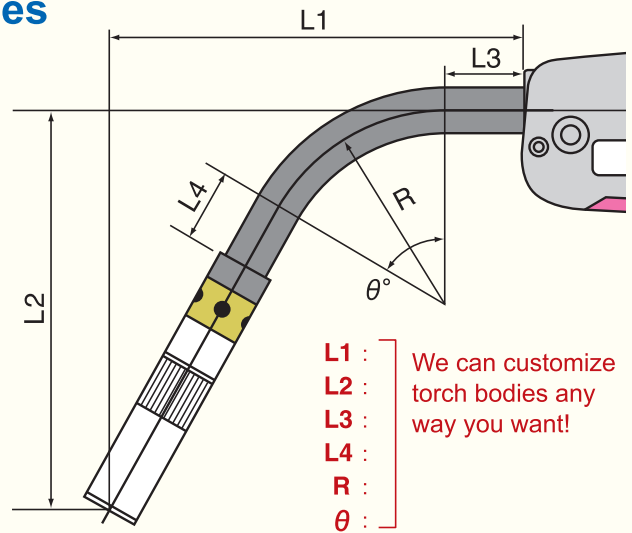
DAIHEN direct connection type (Available in 350 A type and a 500 A type)

## Customized Torch Bodies

**We make customized torch bodies specifically designed to match your welding application.**

**If you are tired of:**

- unstable stand that you must take for welding, or
- trouble due to the interference between the workpiece and torch body



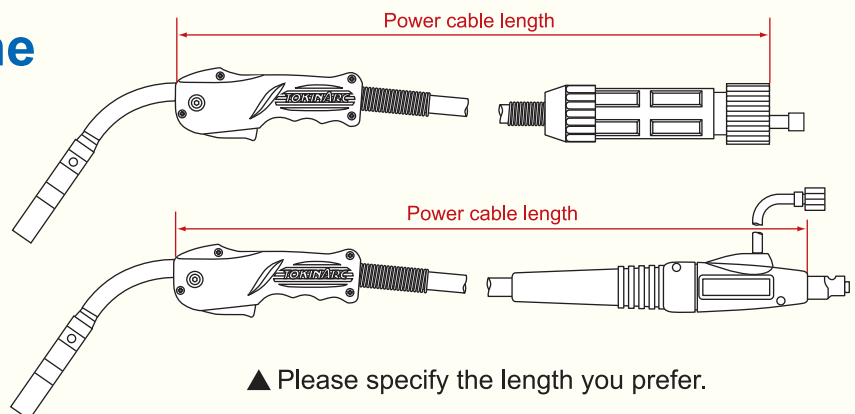
## Power Cable

If the standard lengths (3 m, 4 m, 4.5 m, 5 m, 6 m) do not satisfy your welding application:

**You can select the length of power cable.**

(1 to 10 m)

\*Please consult us if needed the length of 6 m or longer.



# Special Torches Designed for Various Applications

## CP-35, CSH-50W, α-500W [Medium-High Current]

### CP-35 350A

- Pistol-shaped grip is designed for less interference with the cable during welding
- Lightweight and superior operability



Torch Model		CP-35	α-500W	CSH-50W
Rated Current	A	350	500	500
Duty Cycle	%(CO <sub>2</sub> )	60	100	100
	%(MAG)	—	80	60
	%(MIG)	—	70	—
Applicable Wire Diameter	mm	(0.9,1.0,)1.2	(1.2,1.4,)1.6	(1.2,1.4,)1.6
Cable Length	m	3 / 4	3 / 4 / 5 / 6	3 / 4 / 5
Cooling Method		Air-Cooled	Water-Cooled	Water-Cooled
Total Weight	kg	2.3	3.6	3

### CSH-50W Water-Cooled 500A

- Lightweight Water Cooled Torch of high operability Small grab of easy handling



### α-500W Water-Cooled 500A

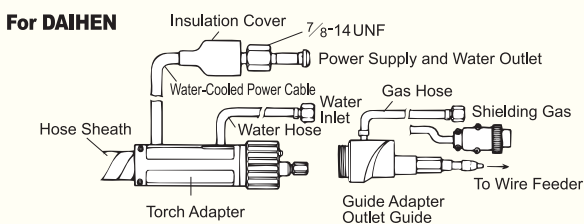
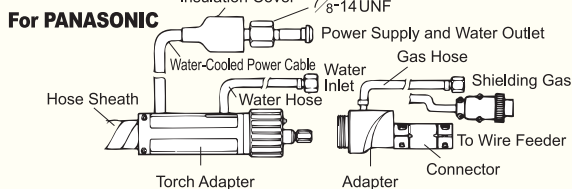
- Hose cover made of the heat resistant fiber provides protection against spatter and flame
- TOKIN's original water circulation system



## CSH-50W, α-500W Connection to Wire Feeders

### Water-Cooled Wire Feeders

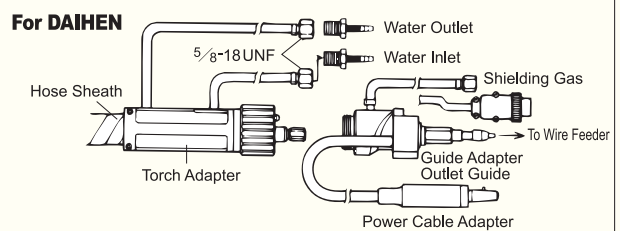
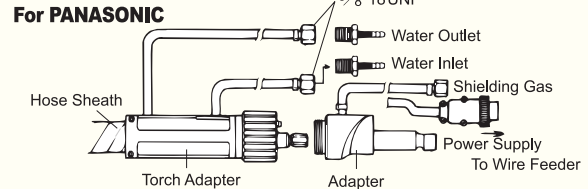
★The following types of adapters are needed when you use the water-cooled wire feeder.



	Part No.	
N Water-Cooled Adapter	035 001	For PANASONIC
D Water-Cooled Adapter	035 005	For DAIHEN

### Air-Cooled Wire Feeders

★The following types of adapters are needed when you use the Air-Cooled wire feeder.



	Part No.	
N Air-Cooled Adapter	020 030	For PANASONIC
D Air-Cooled Adapter	020 031	For DAIHEN



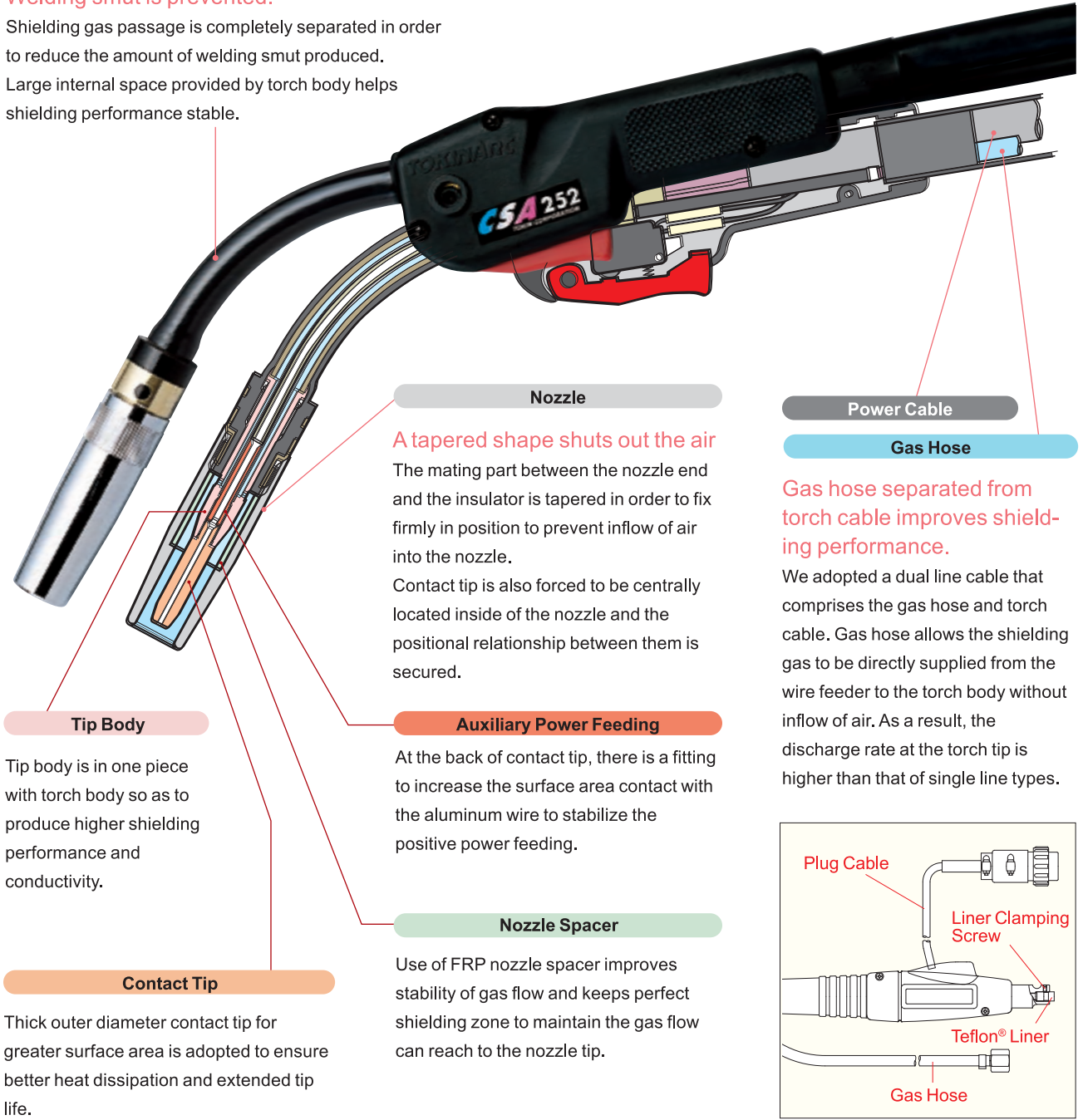
# CSA-252 [Aluminum MIG Welding Torch for Medium and Low Current] Aluminum MIG Torch

**Completely shut out the air. Excellent shield performance!**

## Torch Body

**Welding smut is prevented.**

Shielding gas passage is completely separated in order to reduce the amount of welding smut produced. Large internal space provided by torch body helps shielding performance stable.



## Nozzle

**A tapered shape shuts out the air**

The mating part between the nozzle end and the insulator is tapered in order to fix firmly in position to prevent inflow of air into the nozzle. Contact tip is also forced to be centrally located inside of the nozzle and the positional relationship between them is secured.

Contact tip is also forced to be centrally located inside of the nozzle and the positional relationship between them is secured.

## Power Cable

## Gas Hose

**Gas hose separated from torch cable improves shielding performance.**

We adopted a dual line cable that comprises the gas hose and torch cable. Gas hose allows the shielding gas to be directly supplied from the wire feeder to the torch body without inflow of air. As a result, the discharge rate at the torch tip is higher than that of single line types.

## Tip Body

Tip body is in one piece with torch body so as to produce higher shielding performance and conductivity.

## Auxiliary Power Feeding

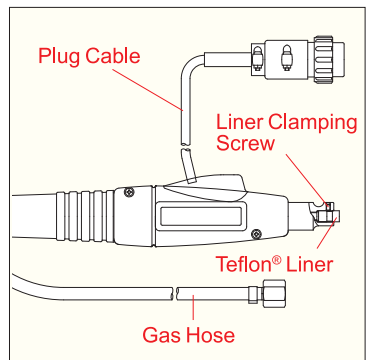
At the back of contact tip, there is a fitting to increase the surface area contact with the aluminum wire to stabilize the positive power feeding.

## Nozzle Spacer

Use of FRP nozzle spacer improves stability of gas flow and keeps perfect shielding zone to maintain the gas flow can reach to the nozzle tip.

## Contact Tip

Thick outer diameter contact tip for greater surface area is adopted to ensure better heat dissipation and extended tip life.



## Description of Complete Torch

Example: CSA-252 is indicated as shown below.

**CSA-252-N-30 12**

Torch Type

Semi-automatic dual lined welding torch for aluminum MIG welding

Connection Type

N: PANASONIC  
D: DAIHEN

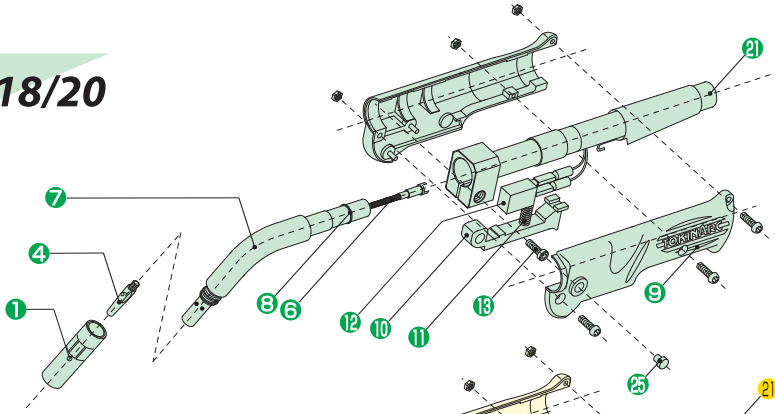
Wire diameter and suitable Teflon® Liner

Power Cable Length

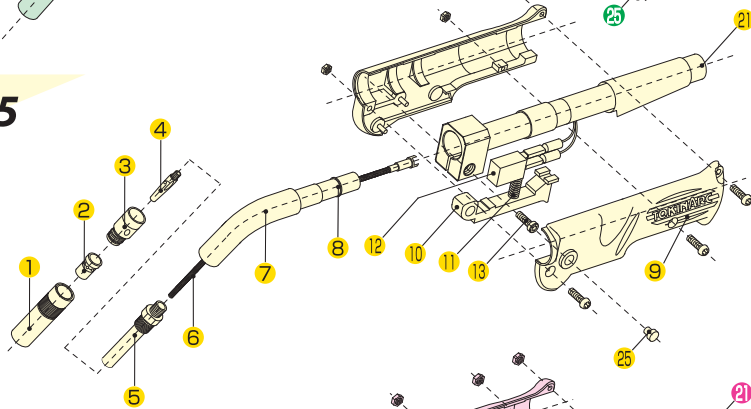
Torch Model		CSA-252
Rated Current	A(MIG)	250
Duty Cycle	%(MIG)	70
Applicable Wire Diameter	mm	(1.0) 1.2
Cable Length	m	3
Cooling Method		Air-Cooled
Total Weight	kg	3.2

# CSL · CSH/CS-PRO/CS Parts Interchangeability

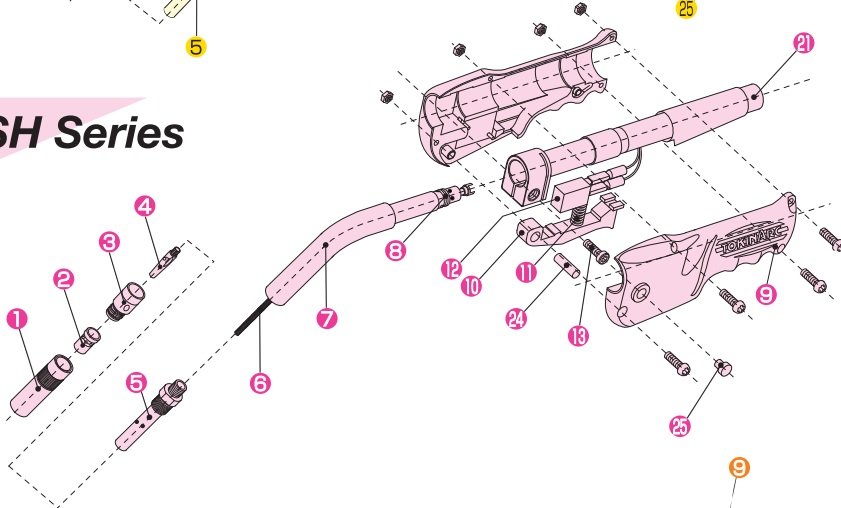
## CSL-18/20



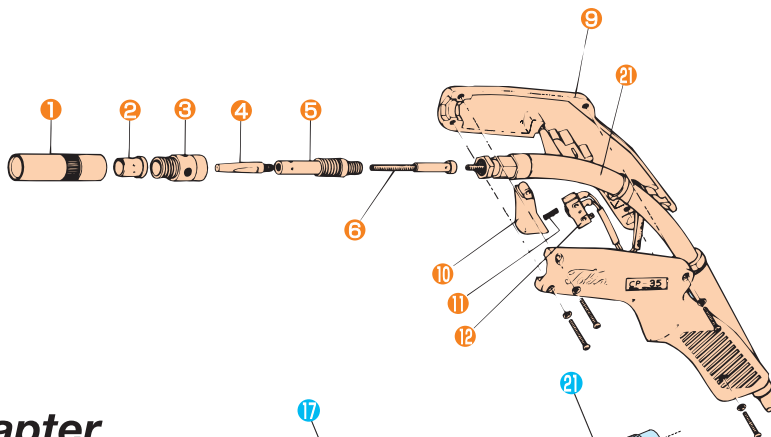
## CSL-35



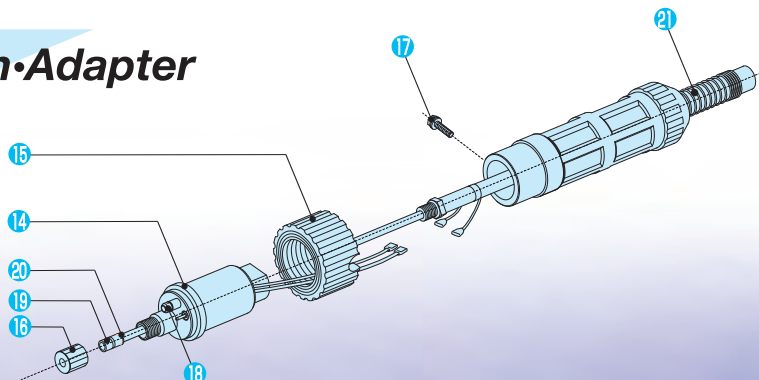
## CSH Series



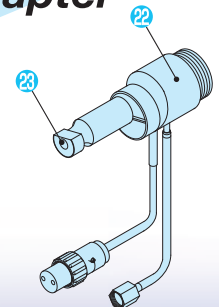
## CP-35



## Torch Adapter



## Adapter



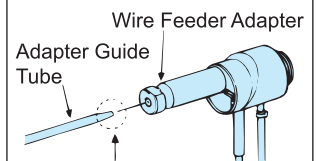
### Rated specification

Torch Type	Feature of torch body	Rated Current (A)	Duty Cycle CO <sub>2</sub> MAG
CSL-18	Lightweight/0.9 mm wire dia.	180	40 20
CSL-20	Standard	200	40 20
CSL-20F	Flexible	200	40 20
CSL-20L	Long	200	40 20
CSL-35K	Lightweight and Short	350	35 20
CSL-35	Lightweight and Standard	350	35 20
CSL-35F	Lightweight and Flexible	350	35 20
CSL-35G	Metallic	350	35 20
CSH-35K	Short	350	60 35
CSH-35	Standard	350	60 35
CSH-35F	Flexible	350	60 35
CSH-35L	Long	350	60 35
CSH-35G	Metallic	350	60 35
CSH-45	Standard	450	60 35
CSH-45F	Flexible	450	40 20
CSH-45L	Long	450	60 35
CSH-50	Standard	500	60 35
CSH-50F	Flexible	500	35 20
CSH-50L	Long	500	60 35
CP-35	Pistol-Shaped	350	60 35

Refer to pp. 3, 4 for more information.

### Replace the guide tube

1. Push by screwdriver head and pull out old guide tube.



2. Insert new adapter guide tube from the sharpened tip.

# Parts List

## 1 Nozzle

Part No.	Size • Applicable Torch Model
001 002	φ 16 (350A) 73L
001 003	φ 12 (350A) 73L
001 008	φ 18 (350A) 73L
001 009	φ 16 (350A thick 2.5t)
001 004	N Narrow Nozzle (350A)
001 007	350A Arc Spot Nozzle
001 001	φ 19 (500A) 88L
001 010	φ 16 (500A) 88L
001 005	φ 13 (500A) 88L
001 012	φ 19 (500A) 84L
001 015	φ 16 (500A) 84L
038 040	CSL-18/20 φ 13
038 041	CSL-18/20 φ 16
* 038 042	CSL-18/20 Narrow Nozzle

\* Use the nozzle in combination with a long tip.

## 2 Orifice

Part No.	Size • Applicable Torch Model
003 001	L (500A)
003 002	S (350A)

## 3 Insulator

Part No.	Size • Applicable Torch Model
004 001	L (500A)
004 002	S (350A)

## 4 Contact Tip

Part No.	Size • Applicable Torch Model
002 016	N Tip 0.6
002 005	N Tip 0.8
002 001	N Tip 0.9
002 002	N Tip 1.0
002 003	N Tip 1.2
002 017	N Tip 1.4
002 004	N Tip 1.6
002 018	N Tip 1.2 (for Aluminum Welding)
002 019	N Tip 1.6 (for Aluminum Welding)
002 013	N Tip 1.2 (for Flux Cored Welding)
002 011	N Long Tip 0.6
002 006	N Long Tip 0.8
002 007	N Long Tip 0.9
002 008	N Long Tip 1.0
002 009	N Long Tip 1.2
002 507	N MAG Tip 1.0
002 503	N MAG Tip 1.2
002 502	N MAG Tip 1.4
002 501	N MAG Tip 1.6
002 212	N P Tip 1.2

## 5 Tip Body

Part No.	Size • Applicable Torch Model
036 001	A (350,450A)
036 002	B (500A)

## 6 Inner Tube

Part No.	Size • Applicable Torch Model
038 053	CSL-18/20
038 072	CSL-18L/20L
038 061	CSL-20F
020 210	CSL-35/35K/35G
020 212	CSL-35F
036 011	CSH-35K/35/45/50
036 350	CSH-35F/45F/50F
050 310	CSH-35L/45L/50L
036 014	CP-35

## 7 Torch Body

Part No.	Size • Applicable Torch Model
038 054	CSL-18/20
038 060	CSL-20F
038 056	CSL-20L
020 306	CSL-35
038 070	CSL-35K
020 205	CSL-35F
020 202	CSL-35G
036 022	CSH-35/45/50
038 004	CSH-35K
036 024	CSH-35F/45F/50F
036 051	CSH-35G
050 302	CSH-35L/45L/50L

## 8 Torch Body O-Ring

Part No.	Size • Applicable Torch Model
038 055	CSL (P-8)
036 030	CSH (S-9)

## 9 Handle

Part No.	Size • Applicable Torch Model
072 001	CSL
072 005	CSH
039 041	CP-35

## 10 Switch Lever

Part No.	Size • Applicable Torch Model
072 003	CSL
070 002	CSH
039 001	CP-35

## 11 Switch Spring

Part No.	Size • Applicable Torch Model
032 016	CSL/CSH/CP-35

## 12 Micro Switch

Part No.	Size • Applicable Torch Model
032 013	CSL/CSH with Rubber Cover (032081) *
032 014	CSL/CSH
032 081	Rubber Cover
039 003	CP-35

## 13 Hexagon Socket Head Bolt

Part No.	Size • Applicable Torch Model
020 123	CSL
036 033	CSH

## 14 Power Adapter

Part No.	Size • Applicable Torch Model
020 001	CSL/CSH/CP-35

## 15 Adapter Nut

Part No.	Size • Applicable Torch Model
020 002	CSH/CP-35

## 16 Liner Nut

Part No.	Size • Applicable Torch Model
020 003	CSL/CSH/CP-35

## 17 Screw

Part No.	Size • Applicable Torch Model
020 004	CSL/CSH/CP-35

## 18 Adapter O-Ring

Part No.	Size • Applicable Torch Model
020 005	CSL/CSH/CP-35

## 19 Liner

Part No.	Size • Applicable Torch Model
037 001	CSL 0.6 3m
037 002	CSL/CP 0.8-0.9 3m
037 045	CSL 0.8-0.9 4m
037 003	CSL/CSH-35/CP 1.0-1.2 3m
037 004	CSL/CSH-35 1.0-1.2 4m
037 046	CSL-35/CSH-35 1.2 4.5m
037 005	CSL-35/CSH-35 1.2 5m
037 006	CSL-35/CSH-35 1.2 6m
037 007	CSH-35 1.4 3m
037 008	CSH-35 1.4 4m
037 047	CSH-35 1.4 4.5m
037 009	CSH-35 1.4 5m
037 050	CSH-35 1.4 6m
036 044	CSH-45/50 1.2-1.6 3m
036 043	CSH-45/50 1.2-1.6 4m
036 047	CSH-45/50 1.2-1.6 4.5m
036 042	CSH-45/50 1.2-1.6 5m
036 041	CSH-45/50 1.2-1.6 6m

## 19 Teflon Liner

Part No.	Size • Applicable Torch Model
043 1030	CSL/CSH-35/CP 1.2 3m
044 1030	CSH1.6 3m

## 20 Liner O-Ring

Part No.	Size • Applicable Torch Model
036 035	S-4

## 21 Power Cable

Part No.	Size • Applicable Torch Model
082 030	CSL-18/20 3m
082 040	CSL-20 4m
083 030	CSL-35 3m
083 040	CSL-35 4m
083 045	CSL-35 4.5m
083 050	CSL-35 5m
083 060	CSL-35 6m
084 030	CSH-35 3m
084 040	CSH-35 4m
084 045	CSH-35 4.5m
084 050	CSH-35 5m
084 060	CSH-35 6m
085 030	CSH-45 3m
085 040	CSH-45 4m
085 045	CSH-45 4.5m
085 050	CSH-45 5m
085 060	CSH-45 6m
086 030	CSH-50 3m
086 040	CSH-50 4m
086 045	CSH-50 4.5m
086 050	CSH-50 5m
086 060	CSH-50 6m
039 330	CP-35 3m

## 22 Adapter

Part No.	Size • Applicable Torch Model
020 030	N
020 031	D (500A)
020 029	D (350A)
020 033	H
020 036	T
020 037	B

## 23 Adapter Guide Tube

Part No.	Size • Applicable Torch Model
020 040	N
020 041	D
020 043	B
020 044	H
020 045	T

## 24 Switch Lever Pin

Part No.	Size • Applicable Torch Model
072 008	CSH
072 021	CSL

## 25 CSL/CSH Insulation Rubber

Part No.	Size • Applicable Torch Model
072 017	CSL
072 019	CSH

## Parts for D Adapter

Part No.	Size • Applicable Torch Model
020 050	Power Cable Adapter (500A)
020 054	Power Cable Adapter (350A)
020 052	Outlet Guide
020 053	Guide Adapter

## Arc Cover

Part No.	Size • Applicable Torch Model
072 007	CSH



Product Catalogue



Air-Cooled  
 Robotic Torches



Water-Cooled  
 Robotic Torches



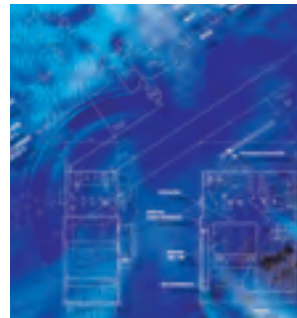
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