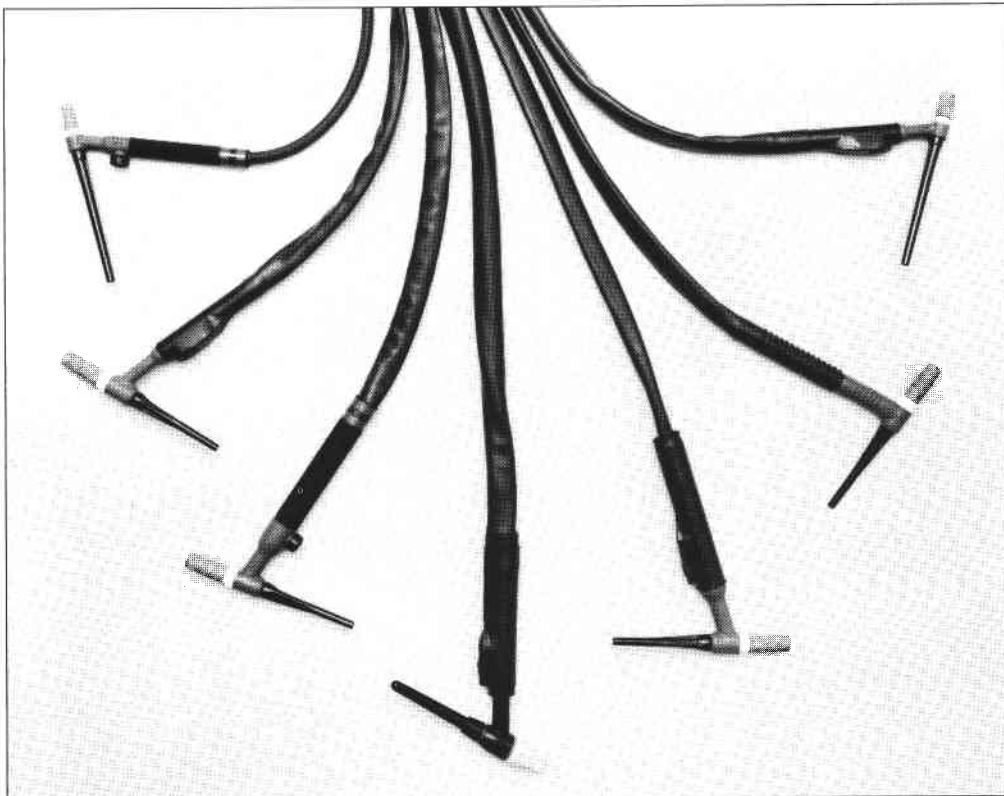




Operating Manual

TIG Torch Manual

TG123V, TG153, TG153F, TG203, TG203V, TW253, TW403



This picture shows the full range of Murex TIG torches

**Please ensure that this
Instruction Manual and
Parts List is made
available to the user
of the equipment**

OPERATION AND SAFETY INSTRUCTIONS FOR TIG TORCHES

Your attention is drawn to the European directives and new regulations in the areas of health and safety. Please refer to the following:

- 1) Health and Safety (General Provisions) Regulations
- 2) Provision and use of Work Equipment Regulations
- 3) Workplace (Health, Safety and Welfare) Regulations
- 4) Personal Protective Equipment at work (PPE) Regulations

IMPORTANT!!

BEFORE USING TORCH - TIGHTEN REGULATOR AND HOSE FITTINGS WITH PROPER SPANNER.

PURGE REGULATOR AND TIG TORCH WITH INERT GAS AT 20 CUBIC FEET PER HOUR FOR 15 MINUTES BEFORE USING TORCH. THIS WILL USE 5 CUBIC FEET OF GAS AND WILL INSURE CONTAMINATION FREE WELDS.

THIS PROCEDURE SHOULD BE FOLLOWED WHENEVER TORCH OR REGULATOR FITTINGS ARE ATTACHED.

Water Cooled TIG Torches

When using a water cooled TIG torch, care must be taken to ensure adequate flow of cooling water is present, or irreparable damage to the torch will occur.

It is recommended that a water flow switch is fitted to the equipment water circulating system, to prevent use if the cooling water flow is inadequate.

High Frequency

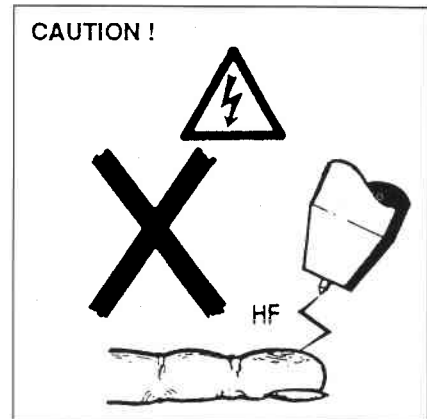
Care must be taken when using a TIG torch in conjunction with High Frequency.

Never strike the HF on your finger or any other part of the body.

When welding is not taking place, do not leave the torch or torch leads lying in contact with metal surfaces for prolonged periods whilst the high frequency switch is on, or the torch foot switch is left in the latched position. Failure to comply with this instruction may result in a breakdown of torch and torch leads insulation.

Shielding Gas

To prevent electrode oxidation, always purge the shielding gas hose before welding and maintain the flow until the electrode has cooled after welding has ceased.



Electrode

The electrode must be ground as shown in Fig 1 and Fig 2. Do not use the grinding wheel used for electrode grinding for other purposes, as contamination with other metals may cause electrode deterioration and weld contamination.

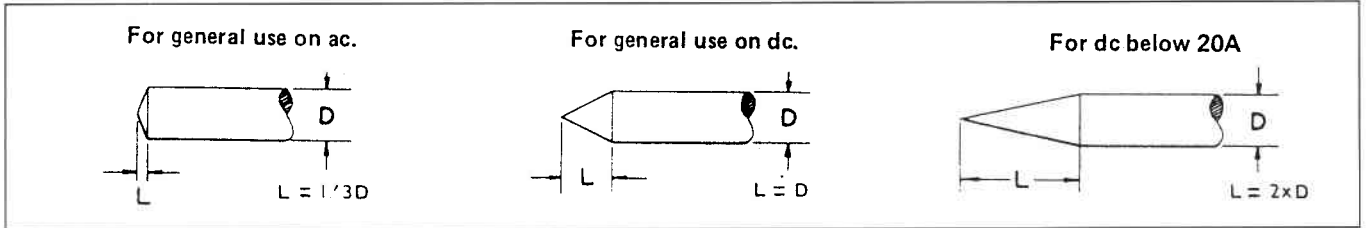


Fig. 1. Electrode Grinding

The way in which the electrode tip is ground is very important (see Fig 1 and Fig 2). If the tip is not ground to the correct shape, the result will be instability in the arc.

When welding with A.C. current the end of the electrode should be slightly rounded, the electrode will shape itself in use, and further grinding is not necessary. If the tip becomes spherical when welding with A.C. current, it indicates that the current is too high for the electrode diameter concerned.

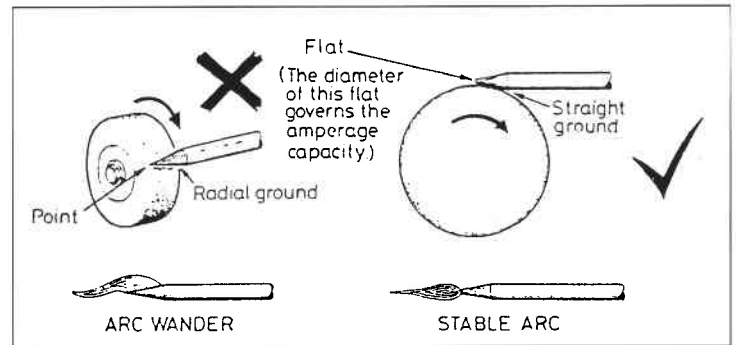


Fig. 2. Electrode Grinding

To adjust or renew the electrode, undo the electrode cap one turn to allow the electrode to be withdrawn from the collet. If the collet does not release its grip, lightly tap the end of the electrode. The electrode cap should never be tightened more than finger-tight.

To prevent damaging the collet, always ensure that at least 9.0mm (3/8in) of the electrode is gripped by the collet.

The electrode should not protrude more than 9.0mm (1/3in) from the nozzle except when acute angle welding or using a gas lens - see Fig 3.

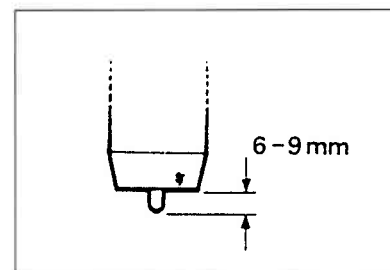
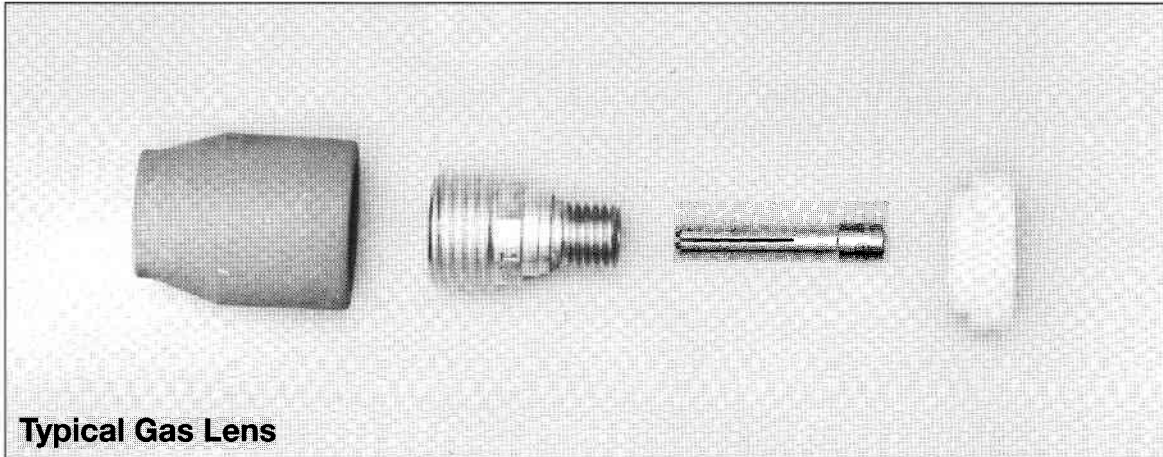


Fig. 3. Electrode Stick-out

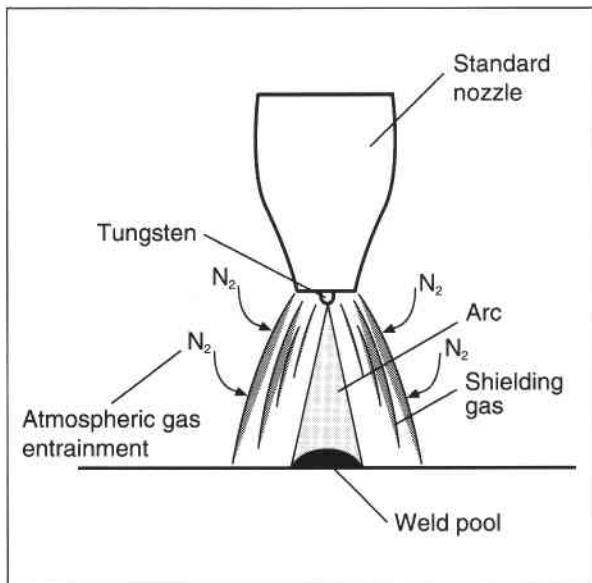
Gas Lens



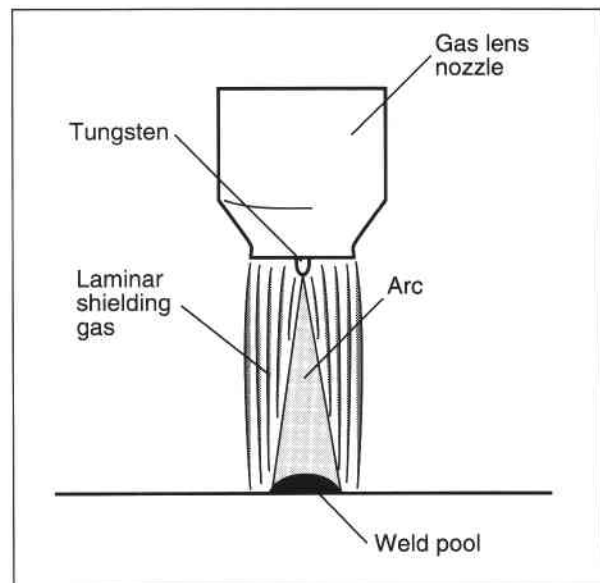
Used in place of a regular collet body and nozzle a gas lens collet body and nozzle will provide a linear gas flow with no turbulence and hence no atmospheric air entrainment.

This provides the following overall benefits:

- 1) Retains the gas shield in a smooth column around the weld pool
- 2) Reduces risk of atmospheric gas entrainment
- 3) Reduces risk of weld defects due to poor shielding of the weld pool
- 4) Enables the welder to position the torch further away from the weld to increase access and visibility
- 5) Reduces the level of gas flow required, which leads to reduction in cost.



Normal



With Gas Lens



Recommended Electrode maximum Current ratings (See Note below)

Electrode Diameter (mm)	Welding Current Supply																
	DC								AC								
	0.5	1.0	1.6	2.4	3.2	4.0	4.8	6.4	0.5	1.0	1.6	2.4	3.2	4.0	4.8	6.4	
Max Welding Current (Amps)																	
Thoriated Electrode	20	60	70	120	200	300	370	500	15	25	50	80	120	160	200	320	
Zirconiated Electrode	-	-	-	-	-	-	-	-	15	25	50	80	120	160	200	320	
'Arcrite' Electrode	-	-	70	120	200	-	-	-	-	-	50	80	120	160	200	320	
Ceriated Electrode	-	60	70	120	200	300	370	500	-	25	50	80	120	160	200	320	
Ceramic Nozzle Size (approx bore in mm)	6	6	6	10	11	13	13	18	6	6	6	10	11	13	13	18	
	8	8	8	11	13	18	18	-	8	8	8	11	13	18	18	-	
	-	-	10	13	18	-	-	-	-	-	10	-	18	-	-	-	

Note: The figures given in the above table are recommended for Class 1 welding (balanced wave-form on AC) by British Standard 3019 Parts 1 and 2. Higher welding currents may be used by experienced welders.

Although thoriated electrodes may be used for A.C. welding, zirconiated electrodes are preferred when welding aluminium as the risk of tungsten contamination is reduced.

See also the Accessories, Torch and Torch Spares Catalogue for full details on tungstens and nozzles.

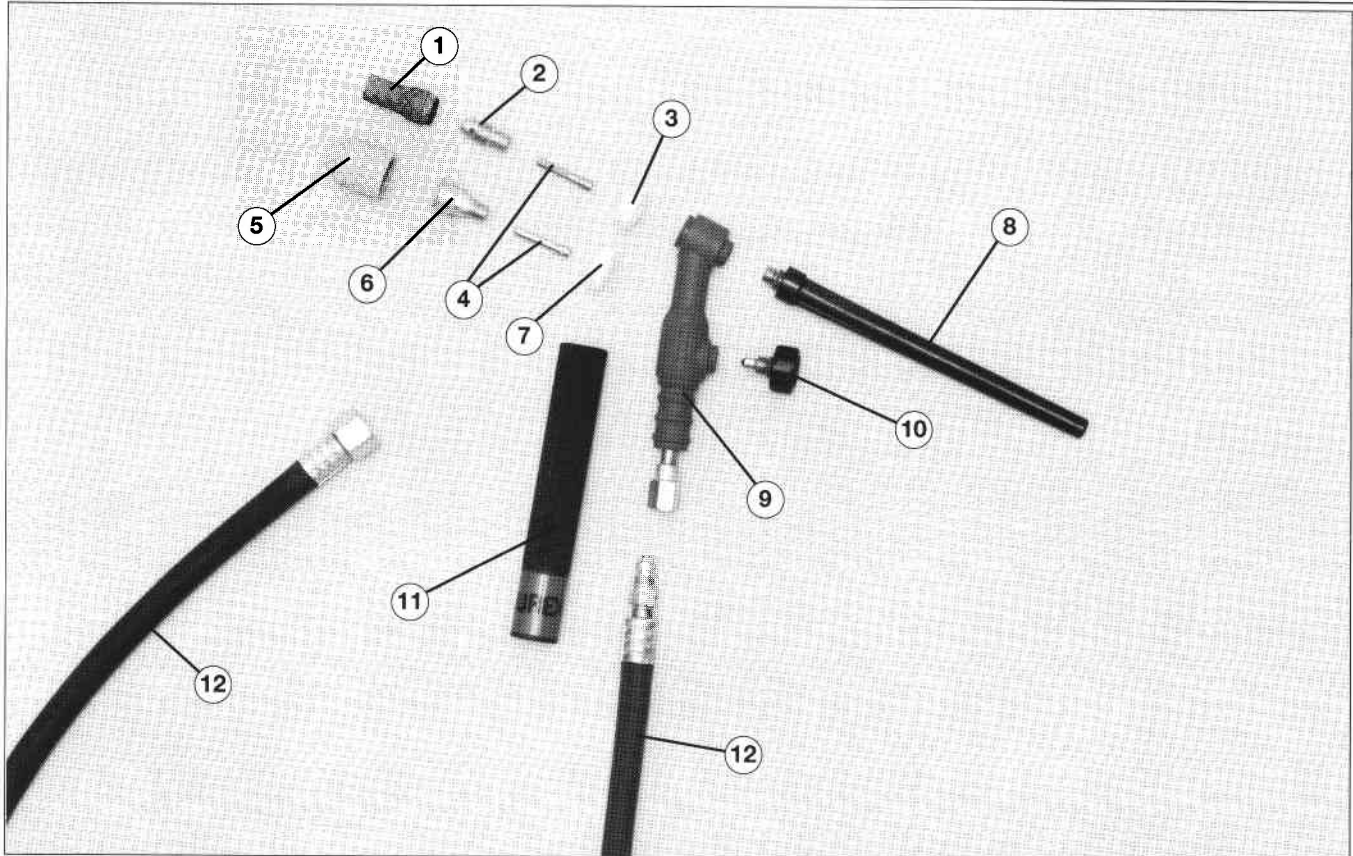


Parts List - TG123V

TG123V 3.8m TIG Torch
TG123V 7.6m TIG Torch

1411615
1411620

125 Amps @ 60% Duty Cycle DC-ve
75 Amps @ 60% Duty Cycle AC



Nozzles / Collet Bodies		
▲ 1	Ceramic Nozzle 47mm x 6mm Pk10	1408340
● 1	Ceramic Nozzle 47mm x 8mm Pk10	1408341
1	Ceramic Nozzle 47mm x 10mm Pk10	1408342
▲ 1	Ceramic Nozzle 47mm x 11mm Pk10	1408343
1	Ceramic Nozzle 47mm x 13mm Pk10	1408344
* 2	Collet Body 0.5mm	1408080
*▲2	Collet Body 1.0mm	1408081
*●2	Collet Body 1.6mm	1408082
*▲2	Collet Body 2.4mm	1408083
3	Nozzle Gasket	1411633
Collets		
4	Collet 0.5mm Pk5	1410880
4	Collet 1.0mm Pk5	1410881
4	Collet 1.6mm Pk5	1410882
4	Collet 2.4mm Pk5	1410883
Switches and Components		
NS	Momentary Switch (SW1F)	1411668
NS	On/Off Switch (SW2)	1411669
NS	Strap-On Switch (SW3)	1411735
NS	Switch Kit 3.8m (SW3)	1412221
NS	Switch Kit 7.6m (SW3)	1412222
NS	Switch Boot 19mm dia. (SW1F)	1411670
NS	Switch Boot 19mm dia. (SW2)	1411671

Nozzles / Gas Lenses		
5	Gas Lens Nozzle 41mm x 6mm Pk5	1408360
5	Gas Lens Nozzle 41mm x 8mm Pk5	1408361
5	Gas Lens Nozzle 41mm x 10mm Pk5	1408362
5	Gas Lens Nozzle 41mm x 11mm Pk5	1408363
* 6	Gas Lens Collet body 0.5mm	1408100
* 6	Gas Lens Collet Body 1.0mm	1408101
* 6	Gas Lens Collet Body 1.6mm	1408102
* 6	Gas Lens Collet Body 2.4mm	1408103
7	Gas Lens Insulator	1411633

Components		
▲ NS	Short Back Cap with O Ring	1408140
NS	Medium Back Cap with O Ring	1408141
● 8	Long Back Cap with O Ring	1408142
9	Torch Body	1411625
10	Valve with O Ring	1411626
11	Torch Handle 19mm Diameter	1411627
◆ 12	Power/Gas Lead Assembly 3.8m	1411628
◆ 12	Power/Gas Lead Assembly 7.6m	1411629
NS	Neoprene Rubber 13.7m	1411674
NS	Protective Zip Cover 3.1m	1411672
NS	Protective Zip Cover 6.7m	1411673
NS	Torch Accessory Kit	1408020

Torch Switch Plugs		
NS	Plug 2-pin	1407817
NS	Plug 3 Pin	607574
NS	Plug 4 Pin	627018
NS	Plug 6 Pin	607771

KEY

- * Collet Bodies include one collet of matching size
- ◆ Coaxial power/gas cable fitted with 1/4" BSP nut and bullnose fitting
- ▲ Items contained in accessory kit
- Consumable items supplied with torch
- NS Not Shown

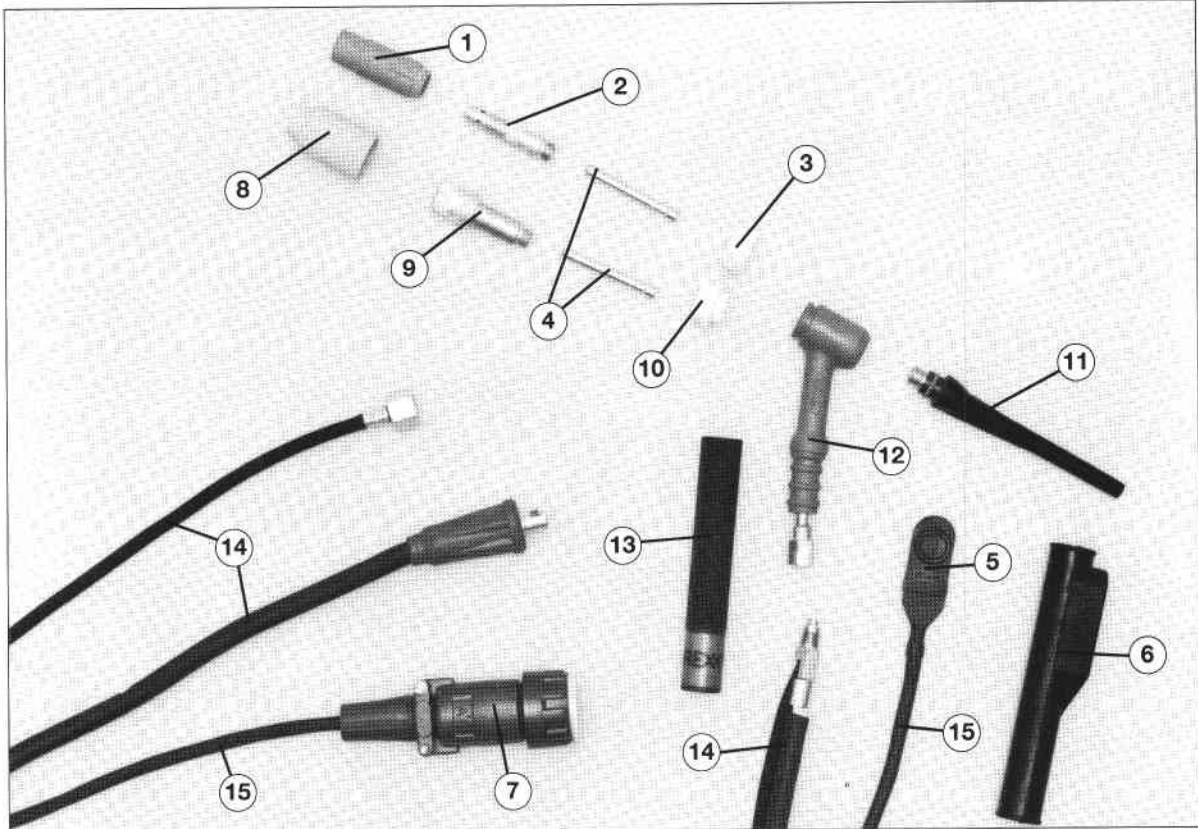
Optional

- 1/4" BSP - 25mm² Dinse Gas/Power Adaptor 1407737

TG153 3.8m TIG Torch
TG153 7.6m TIG Torch

1415020
1415021

150 Amps @ 60% Duty Cycle DC -ve
90 Amps @ 60% Duty Cycle AC



Nozzles / Collet Bodies

▲	1	Ceramic Nozzle 47mm x 6mm Pk10	1408350
▲	1	Ceramic Nozzle 47mm x 8mm Pk10	1408351
●	1	Ceramic Nozzle 47mm x 10mm Pk10	1408352
●	1	Ceramic Nozzle 47mm x 11mm Pk10	1408353
▲	1	Ceramic Nozzle 47mm x 13mm Pk10	1408354
▲	1	Ceramic Nozzle 47mm x 16mm Pk10	1408355
▲	1	Ceramic Nozzle 47mm x 20mm Pk10	1408356

*	2	Collet Body 0.5mm	1408091
*	2	Collet Body 1.0mm	1408092
*▲	2	Collet Body 1.6mm	1408093
*●	2	Collet Body 2.4mm	1408094
*▲	2	Collet Body 3.2mm	1408095
	3	Nozzle Gasket	1411649

Collets

	4	Collet 0.5mm Pk5	1408190
	4	Collet 1.0mm Pk5	1408191
	4	Collet 1.6mm Pk5	1408192
	4	Collet 2.4mm Pk5	1408193
	4	Collet 3.2mm Pk5	1408194

Switches and Components

●	5	Momentary Switch (SW1F)	1411668
●	6	Switch Boot 19mm dia. (SW1F)	1411670

Torch Switch lead

	7	Plug 2- pin	1407817
	7	Plug 3- pin	607574
	7	Plug 4- pin	627018
●	7	Plug 6- pin	607771

Nozzles / Gas Lenses

8	Gas Lens Nozzle 41mm x 6mm Pk5	1408386
8	Gas Lens Nozzle 41mm x 8mm Pk5	1408387
8	Gas Lens Nozzle 41mm x 10mm Pk5	1408388
8	Gas Lens Nozzle 41mm x 11mm Pk5	1408389
8	Gas Lens Nozzle 41mm x 13mm Pk5	1408390
8	Gas Lens Nozzle 41mm x 18mm Pk5	1408391

*	9	Gas Lens Collet Body 0.5mm	1408111
*	9	Gas Lens Collet Body 1.0mm	1408112
*	9	Gas Lens Collet Body 1.6mm	1408113
*	9	Gas Lens Collet Body 2.4mm	1408114
*	9	Gas Lens Collet Body 3.2mm	1408115
10	Gas Lens Insulator	1412254	

Components

▲	NS	Short Back Cap with O Ring	1408143
●	11	Long Back Cap with O Ring	1408144
	12	Torch Body	1411643
	13	Torch Handle 19mm Diameter	1411627
◆	14	Power/Gas Lead Assembly 3.8m	1415036
◆	14	Power/Gas Lead Assembly 7.6m	1415037
	15	Torch Switch Leads 3.8m	1415038
	15	Torch Switch Leads 7.6m	1415039
●	NS	Neoprene Rubber 13.7m	1411674
	NS	Protective Zip Cover 3.1m	1411672
	NS	Protective Zip Cover 6.7m	1411673
	NS	Tig Spot Welding Kit	1411662
	NS	Torch Accessory Kit	1410208

KEY

- * Collet Bodies include one collet of matching size
- ◆ Gas hose fitted with 1/4" BSP nut & nipple
- Power cable fitted with 25mm² Dinse plug

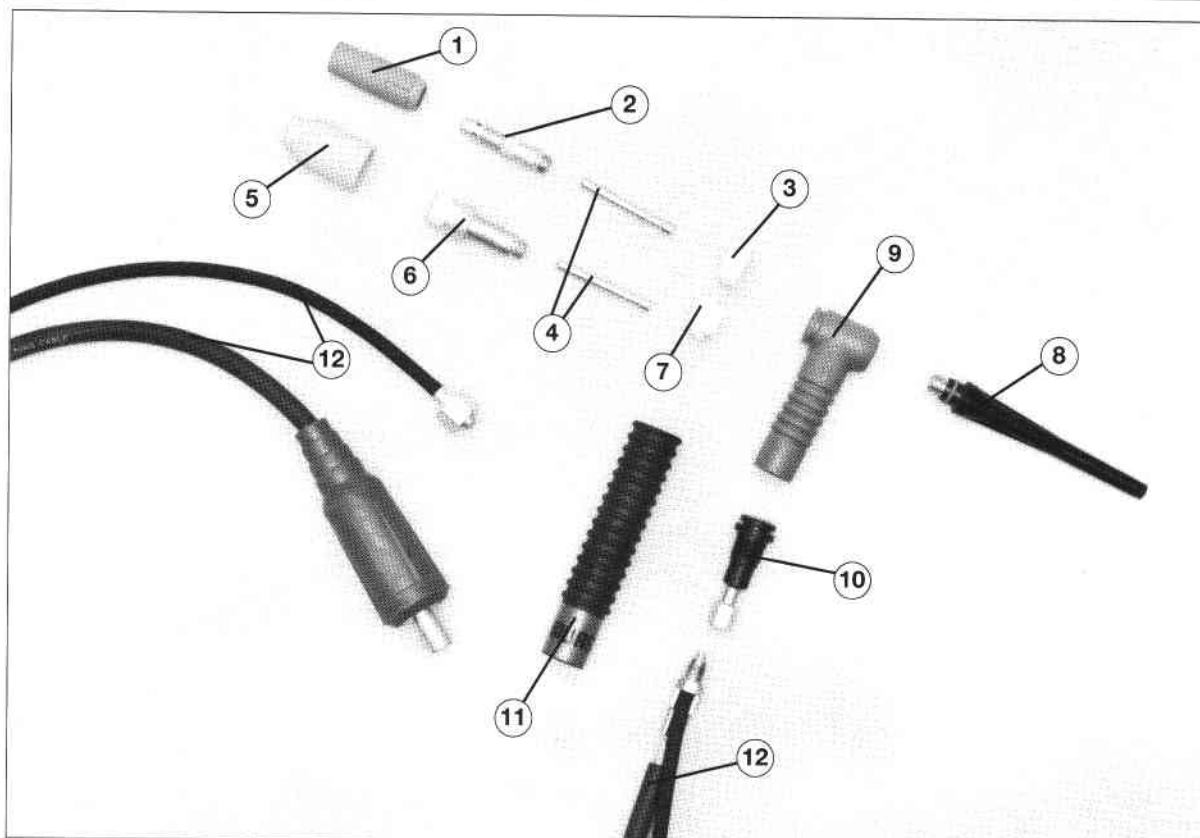
- Consumable items supplied with the torch
- ▲ Items contained in the accessory kit
- NS Not Shown

Parts List - TG153F

TG153F 3.8m TIG Torch
TG153F 7.6m TIG Torch

1412295
1412297

150 Amps @ 60% Duty Cycle DC -ve
 90 Amps @ 60% Duty Cycle AC



Nozzles / Collet Bodies

▲	1 Ceramic Nozzle 47mm x 6mm Pk10	1408350
	1 Ceramic Nozzle 47mm x 8mm Pk10	1408351
	1 Ceramic Nozzle 47mm x 10mm Pk10	1408352
●	1 Ceramic Nozzle 47mm x 11mm Pk10	1408353
▲	1 Ceramic Nozzle 47mm x 13mm Pk10	1408354
	1 Ceramic Nozzle 47mm x 16mm Pk10	1408355
	1 Ceramic Nozzle 47mm x 20mm Pk10	1408356
*	1 Collet Body 0.5mm	1408091
*	2 Collet Body 1.0mm	1408092
* ▲	2 Collet Body 1.6mm	1408093
* ●	2 Collet Body 2.4mm	1408094
* ▲	2 Collet Body 3.2mm	1408095
	3 Nozzle Gasket	1411649

Collets

4	Collet 0.5mm Pk5	1408190
4	Collet 1.0mm Pk5	1408191
4	Collet 1.6mm Pk5	1408192
4	Collet 2.4mm Pk5	1408193
4	Collet 3.2mm Pk5	1408094

Switches and Components

	NSMomentary Switch (SW1F)	1411668
	NSOn/Off Switch (SW2)	1411669
	NSStrap-On Switch (SW3)	1411735
	NSSwitch Kit 3.8m (SW3)	1412221
	NSSwitch Kit 7.6m (SW3)	1412222

Torch Switch Plugs

	NSPlug 2-pin	1407817
	NSPlug 3 Pin	607574
	NSPlug 4 Pin	627018
	NSPlug 6 Pin	607771

Nozzles / Gas Lenses

5	Gas Lens Nozzle 41mm x 6mm Pk5	1408386
5	Gas Lens Nozzle 41mm x 8mm Pk5	1408387
5	Gas Lens Nozzle 41mm x 10mm Pk5	1408388
5	Gas Lens Nozzle 41mm x 11mm Pk5	1408389
5	Gas Lens Nozzle 41mm x 13mm Pk5	1408390
5	Gas Lens Nozzle 41mm x 18mm Pk5	1408391
* 6	Gas Lens Collet Body 0.5mm	1408111
* 6	Gas Lens Collet Body 1.0mm	1408112
* 6	Gas Lens Collet Body 1.6mm	1408113
* 6	Gas Lens Collet Body 2.4mm	1408114
* 6	Gas Lens Collet body 3.2mm	1408115
7	Gas Lens Insulator	1412254

Components

▲	NS Short Back Cap with O Ring	1408143
●	8 Long Back Cap with O Ring	1408144
9	Torch Head	1412298
10	Torch Body	1412259
11	Torch Handle	1412299
◆	12 Power/Gas Lead Assembly 3.8m	1411645
◆	12 Power/Gas Lead Assembly 7.6m	1411646
●	NS Neoprene Rubber 13.7m	1411674
NS	Protective Zip Cover 3.1m	1411672
NS	Protective Zip Cover 6.7m	1411673
NS	Tig Spot Welding Kit	1411662
NS	Torch Accessory Kit	1410208

KEY

- * Collet Bodies include one collet of matching size
- ◆ Gas hose fitted with 1/4" BSP nut & nipple
- Power cable fitted with 35mm² Dinse plug

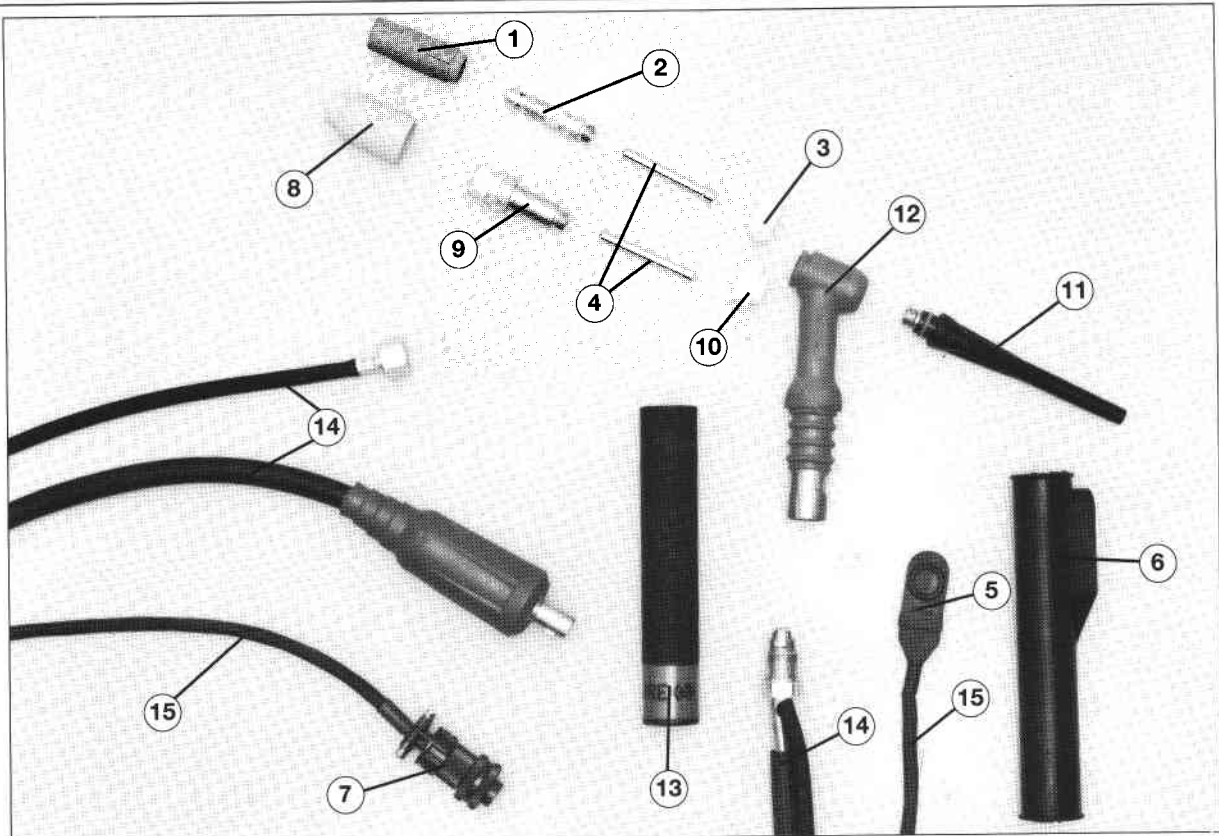
- Consumable items supplied with the torch
- ▲ Items contained in the accessory kit
- NS Not Shown

Parts List - TG203

TG203 3.8m TIG Torch
TG203 7.6m TIG Torch

1415022
1415023

200 Amps @ 60% Duty Cycle DC -ve
 120 Amps @ 60% Duty Cycle AC



Nozzles / Collet Bodies

▲ 1	Ceramic Nozzle 47mm x 6mm Pk10	1408350
▲ 1	Ceramic Nozzle 47mm x 8mm Pk10	1408351
● 1	Ceramic Nozzle 47mm x 10mm Pk10	1408352
● 1	Ceramic Nozzle 47mm x 11mm Pk10	1408353
▲ 1	Ceramic Nozzle 47mm x 13mm Pk10	1408354
▲ 1	Ceramic Nozzle 47mm x 16mm Pk10	1408355
▲ 1	Ceramic Nozzle 47mm x 20mm Pk10	1408356
* 2	Collet Body 0.5mm	1408091
* 2	Collet Body 1.0mm	1408092
*▲ 2	Collet Body 1.6mm	1408093
*● 2	Collet Body 2.4mm	1408094
*▲ 2	Collet Body 3.2mm	1408095
* 2	Collet Body 4.0mm	1408096
3	Nozzle Gasket	1411649

Collets

4	Collet 0.5mm Pk5	1408190
4	Collet 1.0mm Pk5	1408191
4	Collet 1.6mm Pk5	1408192
4	Collet 2.4mm Pk5	1408193
4	Collet 3.2mm Pk5	1408194
4	Collet 4.0mm Pk5	1408195

Switches and Components

● 5	Momentary Switch (SW1F)	1411668
● 6	Switch Boot 27mm dia. (SW1F)	1412252

Torch Switch Plugs

● 7	Plug 2-pin	1407817
7	Plug 3 Pin	607574
7	Plug 4 Pin	627018
7	Plug 6 Pin	607771

Nozzles / Gas Lenses

8	Gas Lens Nozzle 41mm x 6mm Pk5	1408386
8	Gas Lens Nozzle 41mm x 8mm Pk5	1408387
8	Gas Lens Nozzle 41mm x 10mm Pk5	1408388
8	Gas Lens Nozzle 41mm x 11mm Pk5	1408389
8	Gas Lens Nozzle 41mm x 13mm Pk5	1408390
8	Gas Lens Nozzle 28mm x 18mm Pk5	1408391
* 9	Gas Lens Collet Body 0.5mm	1408111
* 9	Gas Lens Collet Body 1.0mm	1408112
* 9	Gas Lens Collet Body 1.6mm	1408113
* 9	Gas Lens Collet Body 2.4mm	1408114
* 9	Gas Lens Collet Body 3.2mm	1408115
* 9	Gas Lens Collet Body 4.0mm	1408116
10	Gas Lens Insulator	1412254

Components

▲ NS	Short Back Cap with O Ring	1408143
● 11	Long Back Cap with O Ring	1408144
12	Torch Body	1411650
13	Torch Handle 27mm Diameter	1411651
◆ 14	Power/Gas Lead Assembly 3.8m	1411652
◆ 14	Power/Gas Lead Assembly 7.6m	1411653
15	Torch Switch Leads 3.8m	1415038
15	Torch Switch Leads 7.6m	1415039
● NS	Neoprene Rubber 13.7m	1411675
NS	Protective Zip Cover 3.1m	1411672
NS	Protective Zip Cover 6.7m	1411673
NS	Tig Spot Welding Kit	1411662
NS	Torch Accessory Kit	1410207

KEY

- * Collet Bodies include one collet of matching size
- ◆ Gas hose fitted with 1/4" BSP nut & nipple
- Power cable fitted with 35mm² Dinse plug

- Consumable items supplied with the torch
- ▲ Items contained in the accessory kit
- NS Not Shown