

Application Note AN 316

Gas Hoses Connections to IHT Autogen Equipment

The principle of Autogen / oxy-fuel cutting is that the steel is burned by a jet of oxygen while the material is preheated by a flame at its ignition temperature. The technology is based on gases which provide the energy for the process.

- See also [AN 310](#) for a detailed explanation of gas supply system design.
- For gas distribution within the cutting machine (table or robot), rubber hoses according to ISO 3821 should be used.
- Hose assemblies with fittings to EN 1256
- Hose connections according to EN 560

Standard gas connections for IHT Autogen cutting system components (cutting torches, flashback arrestors, adjustment valves, gas controllers) are as follows:

Gas	Connection EN 560
Cutting oxygen	G3/8" RH male
Heating oxygen	G1/4" RH male
Fuel gas	G3/8" LH male

Recommended hose sizes (inner diameter) are given below.

Gas Connections - General



Gas nipples fitted to IHT cutting torches and gas regulators must never be removed!

There are two ways for the installer and user to make the correct hose connection to the IHT equipment:

1. Fitted hose assemblies with correct connections.

The Hose Nipple Kit with Nut and Clamping Rings is available (item no. 100972), Hose Clamping Pliers (item no. 100973). Recommended hose sizes are shown in the text below. See [Product information](#) for instructions.



2. Installation of some of the following adapters between the IHT device and the user's hose to modify the connection.

Adaptor set	IHT side of adaptor	User side of adaptor
100971 (Australia)	G1/4"RH female, sleeve nut	G5/8" RH male
	G3/8"RH female, sleeve nut	G5/8" RH male
	G3/8"LH female, sleeve nut	G5/8" LH male
100848 (USA)	G1/4"RH female, sleeve nut	9/16" RH male
	G3/8"RH female, sleeve nut	9/16" RH male
	G3/8"LH female, sleeve nut	9/16" LH male
100847	G1/4"RH female, sleeve nut	G3/8"RH male



Gas Connections – Products

1. Hose connections of APC Gas controller (only used within APC system)

Item No. 101190 Gas controller for APC M 4000

Item No. 101367 Gas controller for APC Robot



The **outlet gas connection** (to the torch) is made using IHT gas hose assemblies which are supplied with the APC system. The **inlet gas connection** is the responsibility of the user and should be as follows:

Gas controller inlet	Connection EN 560	Recommended hose internal diameter
Cutting oxygen	G3/8" RH	9 mm (3/8")
Heating oxygen	G1/4" RH	8 / 9 mm (3/8")
Fuel gas	G3/8" LH	9 mm (3/8")

One piece of the Hose Nipple Kit 100972 described above is included with the APC Gas Controller.



Hose Clamp Pliers 100973 and/or one of the adapter kits are optional and must be ordered separately.

2. Hose connections of Gas control block (not used within APC system)

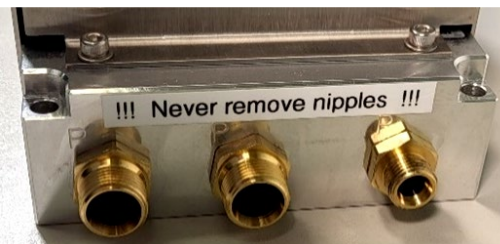
Item No. 101694 Gas control block



Inlet and outlet gas connections are withing user's responsibility, and it should be as follows:

Gas control box connection	In/Out Connection EN 560	Recommended hose internal diameter	
		Inlet from gas supply	Outlet to the cutting torch
Cutting oxygen	G3/8" RH	9 mm (3/8")	9 mm (3/8")
Heating oxygen	G1/4" RH	8 / 9 mm (3/8")	6,3 / 8 mm (1/4" / 3/8")
Fuel gas	G3/8" LH	9 mm (3/8")	9 mm (3/8")

Two pieces of the Hose Nipple Kit 100972 described above is included with the APC Gas Controller.



Hose Clamp Pliers 100973 and/or one of the adapter kits are optional and must be ordered separately.

3. Hose connections of Cutting torches FIT+ family

Various Item Nos., see IHT catalogue

- FIT+ three
- FIT+ two
- FIT+ one



Where the APC system is used, the correct Gas Hose Assembly is supplied with the system. Where individual torches are used, the inlet gas connections are the responsibility of the user and should be as follows:

Cutting torch inlet connection	Connection EN 560	Recommended hose internal diameter
Cutting oxygen	G3/8" RH	9 mm (3/8")
Heating oxygen	G1/4" RH	6,3 / 8 mm (1/4" / 3/8")
Fuel gas	G3/8" LH	9 mm (3/8")

Never remove the gas connectors from the torch!

Hose Nipple Kit 100972, Hose Clamp Pliers 100973 and/or any of the Adaptor Kits are optional and must be ordered separately.

