

Act Now!

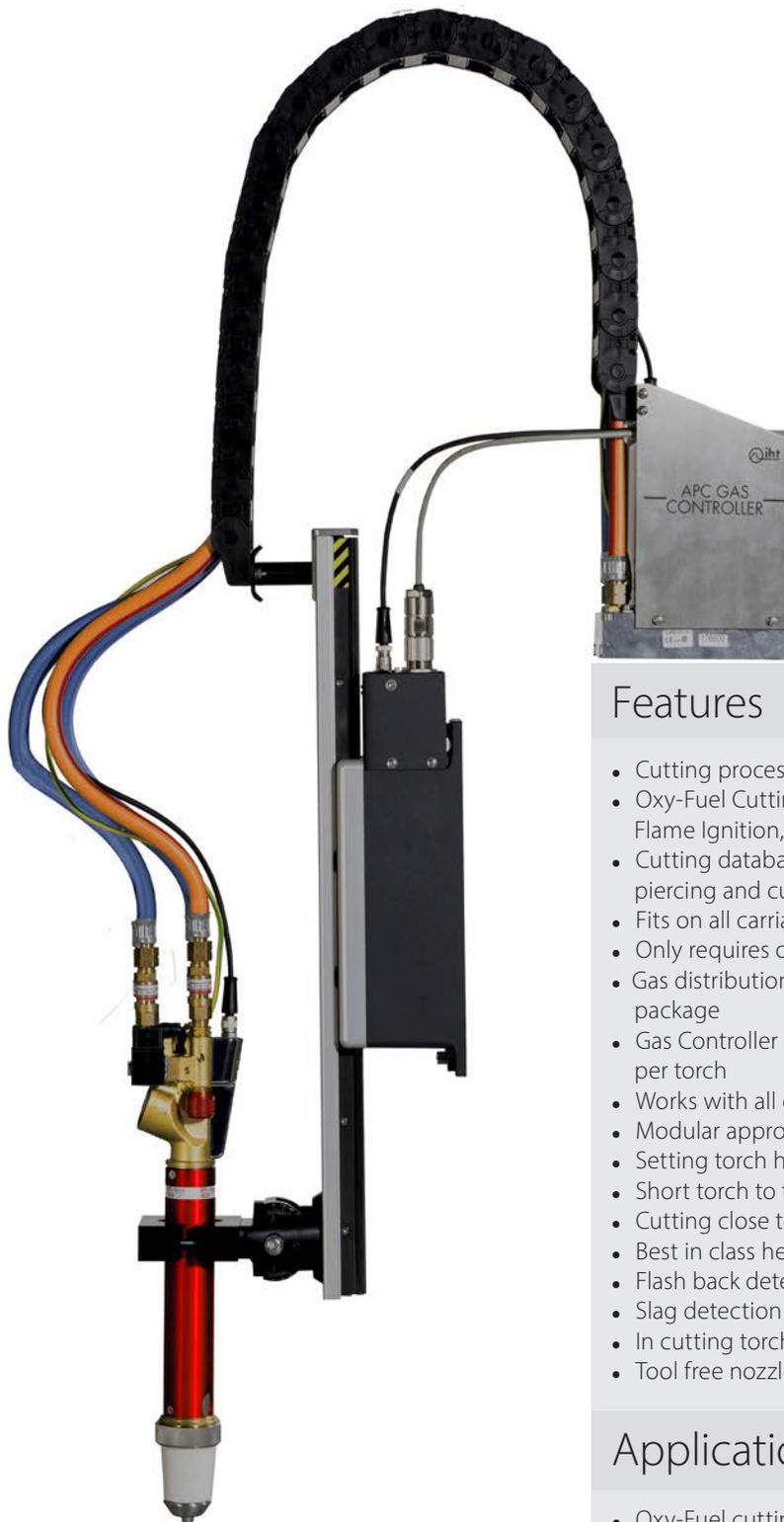
It's time to increase your productivity.



APC

Automatic Process Control
Oxy-Fuel Cutting

Automatic Process Control Oxy-Fuel Cutting



Features

- Cutting process is integrated into APC system
- Oxy-Fuel Cutting System with Cutting Torch, Gas Control, Flame Ignition, Height Sensing and Lifter - all in one package
- Cutting database, integrated automated ignition, preheating piercing and cutting operation
- Fits on all carriages
- Only requires oxygen and fuel gas connection
- Gas distribution, safety and electrical components are part of the package
- Gas Controller mounted close to the torch, one controller per torch
- Works with all common CNC controllers on the market
- Modular approach allows highest flexibility
- Setting torch height in mm or inch
- Short torch to torch distance
- Cutting close to edge and kerf
- Best in class height sensor for dry cuts
- Flash back detection to extend torch lifetime
- Slag detection
- In cutting torch integrated ignition and ignition detection
- Tool free nozzle exchange, highspeed, high quality cutting

Application Fields

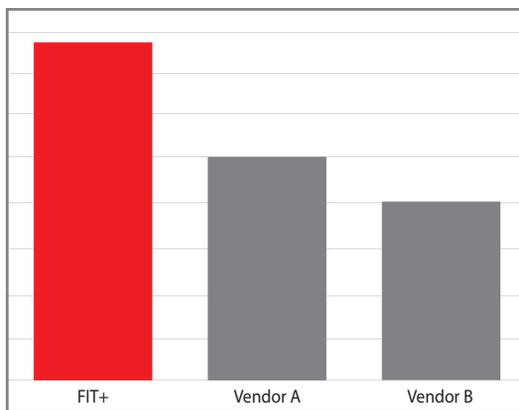
- Oxy-Fuel cutting machines for straight cutting of up to 300 mm sheets
- Single or multi torch applications, one Gas Controller per torch
- 100 % compatible with the plasma systems IHT M 4000 PCS and M 4000 BAS
- Solution for new cutting machines and retrofits
- Cut sheets up to 100 mm thickness when used with active height sensor and up to 300 mm with Splash Protector

APC ensures High Productivity and Quality of the Production

The best Return on Investment is when the cutting cost per meter is kept low. Besides using the right cutting machine design and using the best components, another important aspect is the automation of the Oxy-Fuel cutting process. The APC system provides the best torch technology available with extraordinary features, carefully selected "best in class" components and a high level of Oxy-Fuel cutting automation.

"Since starting cutting using FIT+ we have already reduced our costs by 28%." Statement of one of the biggest metal cutting workshops in Austria, after using FIT+ for a year.

Cutting Speed



High Cutting Speed

Cutting speed is one of the key factors for profitability. Cutting results can be improved with the Rapid Cutting Nozzles which have cutting speeds exceeding 1m/min. Nozzles are connected with a tool-free system for fast and easy handling.

High Quality Cuts

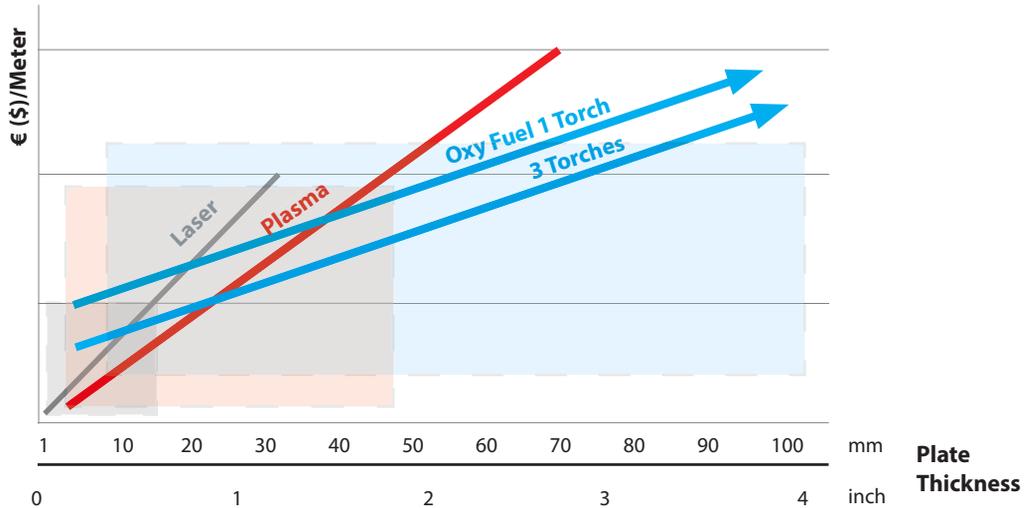
Cutting process performance and cut quality depend on the design and quality of the cutting nozzle and correct parameters setting. The use of a good quality nozzle will result in high cutting speed and perfect cut. Perpendicularity of the straight cut is ensured in entire thickness range from 3 to 300 mm. This is an advantage of Oxy-Fuel cutting in comparison with the other thermal cutting processes. A bad quality nozzle will lower your return on machine investment.

Fully Automated Cutting Process

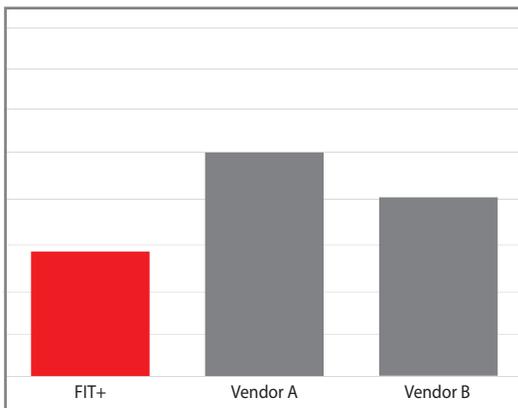
Automation ensures a safe cutting environment as it prevents the operator from using the system incorrectly. The integrated cutting database will ensure consistent high cutting quality.

APC makes the whole Process Cost Effective

When looking at costs, it is the cost per metre of the cut that really counts and not the overall investment. This cost is made up of a number of elements including the cost of energy, the cost of consumables and cost of labour.



Process Costs

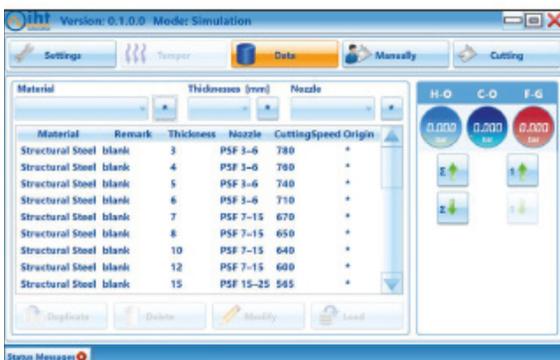


Cutting Cost Comparison

When cutting plates that are 20 mm (3/4") or thicker, Oxy-Fuel should be considered as primary process. New high performance nozzle design increases cutting speed, the most significant factor for process efficiency. Based on the latest statistics, 20-50 mm carbon steel plate thickness is the mostly used area for oxy-fuel machine cutting.

Cutting Database

An embedded cutting database allows high quality cuts and reduces scrap. This high quality cutting-edge database has been developed based on many cutting tests with wide variety of conditions.





APC Reduces Costs Even Further

Automatic internal ignition of the flame speeds up the process and reduces gas costs. The flame can be stopped automatically when the cut is finished and then be easy re-ignited again when preheating of the next piece needs to start. This is a similar way to what happens when a modern car stops at a traffic light.

A fully automated process maximises the efficiency of the cutting machine.



Slag Detection

Slag detection allows a perfect cut even if slag from previous piercing is in the way. You will lose the cut when you do not act while the torch is moving over slag. You can mechanically remove the slag, what is time consuming or you can use APC with automatic slag detection.

Consumable Lifetime



Consumable Lifetime

Robust design and incorporated Coolex system extend the lifetime of the cutting and heating nozzles by cooling the cutting oxygen channel during preheating, piercing and cutting operations.

APC increases Safety of the Cutting Operation

It is very important to have the right level of safety knowledge when cutting with Oxy-Fuel. Full knowledge of all the various gases being used and how to handle and use them is especially important. One benefit of using APC is that many of the required safety features are already built into the system.



Automatic Ignition

"Every site using Oxy-Fuel cutting that I have visited, reported accidents due to faulty manual ignition processes", this is a quote from an experienced service technician from the USA. According to the EU Machinery Directive, access to an operating machine is strictly prohibited so an operation such as manual ignition is no longer possible.



Cooler[®]

Extends the lifetime of the cutting and heating nozzles by cooling the cutting oxygen channel during preheating. When the torch is cool, it has a higher resistance to overheating by backfire or flashback.

Built-in Safety Devices

Flashback arrestors will always stop the propagation of the flame inside the system if flashback occurs. They have been carefully selected for use in the Oxy-Fuel cutting process for material up to 300 mm thick.



Backfire Detection

Safety can never be compromised. Early detection of any accident helps to prevent material loss and more importantly, personal injury. Detection of sustained backfire minimises the risk of dangerous situations.

APC System Configurations

APC O3M with dedicated Operator Terminal

- Cutting database for FIT+ three torches is stored in Operator Terminal
- APC operator interface is integrated into Operator Terminal
- Hassle free interface to CNC, only "Start Process" from CNC and "Ok to Move" from APC required
- Optional usage of "Change Speed" output to reduce speed while moving over slag

APC C3M Operator Interface integrated into CNC

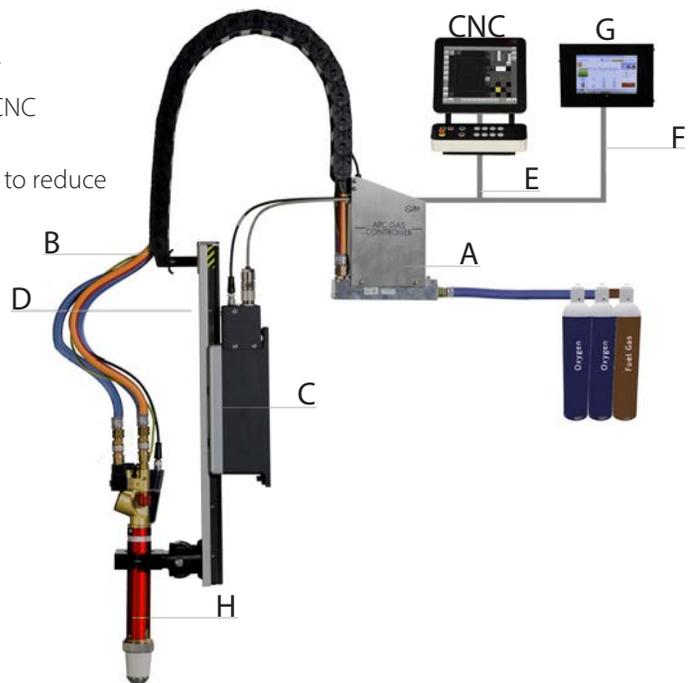
- Cutting database for FIT+ three torches is implemented in machine control (CNC)
- APC operator interface is embedded in CNC
- APC with flexible fieldbus interface to connect to CNC*
- Hassle free interface to CNC, only "Start Process" from CNC and "Ok to Move" from APC required
- Change Speed output to CNC for piercing process and to reduce speed while moving over slag

Please ask supplier for more system configurations

* For fieldbus connectivity details please ask supplier

CNC Connections

- In: Start Process
- In: Manual Up/Down
- In: Clearance Control Off
- In: Torch disable
- Out: Ok to Move
- Out: Change Speed
- Out: Error/Collision
- Power: 24 V DC



AUTOMATIC PROCESS CONTROL SYSTEM

| Item No. | Description | APC O3M | APC C3M | Position |
|----------|-------------------------------------------------------------------------------------|---------|---------|----------|
| 101090 | Gas Controller | ☒ | ☒ | A |
| 140801 | Gas Hose Assembly (1.5m) | ☒ | ☒ | B |
| 140831 | Gas Hose Assembly e-chain (1.5m) optional | ☒ | ☒ | B |
| 140802 | M 4000 APC Basic Kit | ☒ | ☒ | C |
| 140810 | Guiding rail kit APC 220+ | ☒ | ☒ | D |
| 140811 | Guiding rail kit APC 350 mm | ☒ | ☒ | D |
| 140812 | Guiding rail kit APC 500 mm | ☒ | ☒ | D |
| 140196 | Linear drive cable, IHT 7500-2-901 (10/20/30m) | ☒ | ☒ | E |
| 140525 | DIG Cable, RS485 (10/20/30m) | ☒ | ☒ | F |
| 140820 | Operator Terminal | ☒ | - | G |
| 140110 | Sensor Torch FIT+ three 220/45PMY DIG (cutting torch with digital torch controller) | ☒ | ☒ | H |
| 140111 | Sensor Torch FIT+ three 220/45A DIG (cutting torch with digital torch controller) | ☒ | ☒ | H |

For accessories, spare parts, tools and heating and cutting nozzles see our FIT+ Brochure



Gas Control Equipment



GCE Global Leader in Oxy-Fuel Technology

GCE is a world leading company in the field of Oxy-Fuel and Gas Control Equipment with over 100 years of experience in the handling of industrial, medical and specialty gases. The GCE Group has grown rapidly since its creation and now is a leader in the European gas equipment industry. The Group's Headquarter is based in Malmö, Sweden. The major manufacturing centres are located in the Czech Republic, China and Germany. Worldwide the Group now employs in excess of 950 people who are all ready to fulfil the expectations of their customers worldwide.

The Group's product portfolio covers a wide variety of applications, from simple pressure regulators and torches for welding and cutting, to sophisticated gas supply systems for medical and electronic industry applications. Product design is based on knowledge and expertise that has been built up in Oxy-Fuel cutting over the years with the primary concerns being safety and reliability. GCE provides innovative solutions and complete customer service.

“There is still significant potential to increase the efficiency of Oxy-Fuel cutting technology.”

Martin Roubicek
Business Development Manager

IHT Automation Focussing on Core Business

Since its creation, IHT Automation has always focused on the development of new solutions and the improvement of existing products so as to benefit its customers in the cutting industry. One area that always received special attention is the control of the height of the cutting torch. Whether cutting with Oxy-Fuel, Plasma or Laser, maintaining the correct distance between the torch and the work-piece is an often underestimated but critical factor for achieving the perfect cut.

IHT Automation realised the importance of this very early on and now relies on more than 40 years experience in the industry to ensure it provide its customers with the best technical advice and solutions. Great products combined with excellent service and unrivalled technical support makes IHT Automation your ideal partner.

“A higher level of integrated automation is the future of Oxy-Fuel cutting.”

Kurt Nachbargauer
Managing Director

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