

MENU



# Future is bright... Are you ready?

Experts from Baden-Baden / Germany present

## CATALOGUE AUTOGEN AND PLASMA CUTTING

## With the Customer in View

Our story starts and ends with the customer. Our customers have always been the main source of ideas and requirements which we later transform into new Products and Services. These customers and their applications are the background of our long-term experience and drive all of our daily activities in Product Development, Production, and Sales and Marketing.

Our relationship with the final customer is mainly through cutting machine manufacturers, system integrators and service companies. A typical end-user of our products is someone working within the steel business or metal fabricating sector, manufacturing steel structures and is using cutting tables or robots aided by our technology.

We are always looking for market opportunities or the possibility for improvement with our customers and partners all over the world. That way we have found that the Oxy-Fuel cutting, whilst one of the most reliable steel cutting technologies has been struggling and lacking focus and so we came with our "ReThink" concept which was to collect experience and data from the industry. Once we had finished, we then examined the collected information and discovered that automating the cutting process was what most of customers were missing. That led to the re-wake of "Autogen", an Automated cutting technology.

## Focusing on Our Core Business

Since its creation in 1990, IHT Automation has always focused on the development of new solutions for the benefit of the customers in the cutting industry. The original area that received our special attention was the control of the height of the cutting torch for cutting with Oxy-Fuel, Plasma or Laser. The clearance control systems from IHT Automation became justifiably well known in the industry around the world. More experience with the cutting, flame, gases and related technologies have been gained over the years. Today, we provide complete technological solutions, mainly focused on Oxy-Fuel cutting but also in the Plasma cutting area and several of which are covered by international patents. All of the system components, whether that be hardware, software or operating parameters, have been developed and perfected internally or sometimes with external partners such as Universities or other partners, all respected leaders in the cutting industry. Our current product range comprises complete cutting systems as well as individual components, all supported by an after sales service, capable of providing full product and application training.



So, that is the experience which is mainly but not only reflected in following pages of this brochure.

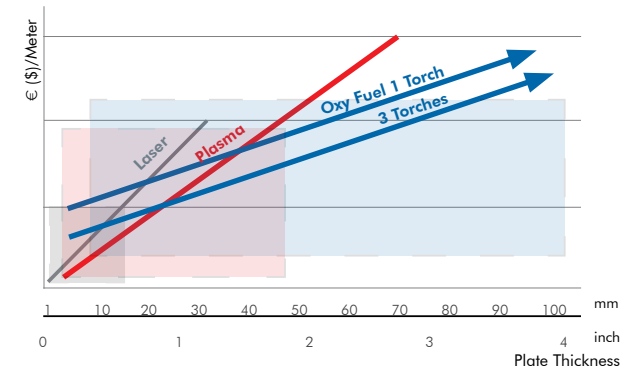
A close-up photograph of an autogen cutting process. A bright, intense flame is visible at the point where a cutting torch tip meets a metal workpiece. A large volume of bright orange and yellow sparks is being ejected from the cut, creating a dramatic, high-contrast scene against the dark background of the industrial setting.

# Autogen Cutting

# Autogen is the Automated Oxy-Fuel cutting technology, it is more than a torch

**auto-**, autonomous from Ancient Greek. By yourself, operating independently and without needing help. Independent and having the power to make your own decisions.

**-gen**, generare, generate from Latin. To create, to produce.



## Autogen Cutting

Mechanized or **automated technology for cutting** the unalloyed carbon **steel plates, tubes or profiles** used on cutting tables or robots. Principle of the method is combustion of the steel in cutting oxygen stream. Material is preheated at its ignition temperature by the flame which is build up by heating oxygen and fuel gas. It is a method of thermal cutting when parameters of the gases delivered by the nozzles, process speed and distance between the nozzle and the material are the key influencers of the Autogen technology performance. It is strongly recommended to pay attention for precise parameters set up for all phases of the process.

## Cost Effective process

Whatever Thermal cutting method is used, the total cutting process cost depends on many elements as consumable cost, gas cost, machine depreciation, material waste, labour, overheads, working time efficiency, downtime rate, cutting speed, etc.

One of the most significant factors is the cost of the consumed electricity. We all are very much focused on electricity now, because the price we pay for it is rapidly increasing. It is good to know that the **Autogen cutting process directly does not require any electrical power**. There are two sources of power to make a cut. Approximately 80% of the power is taken from the reaction between the steel and oxygen and the rest is delivered by the flame.

**No electricity!** Majority of consumed energy was cumulated in the steel which we are cutting. **In comparison with others, Autogen is a low-energy process.**

When cutting plates that are 20 mm (3/4") or thicker, Autogen should be considered as primary process. The latest statistics confirms that 20-50 mm carbon steel plate thickness is the mostly used area for Autogen cutting.



# Autogen cutting general requirements

IHT cutting parameters are provided to reach cuts of quality level 1 according to EN ISO 9013. It is possible to reach 100% of the cutting speed when respecting parameters adjustment as in the charts (gas pressures shall be measured at the torch inlet), when cutting straight cuts of unalloyed carbon steel with clean steel sheet surface, material temperature 10-50°C / 50-122°F, and by using a quality cutting machine with a proper Gas supply and Gas control and undamaged, original Cutting and Heating nozzles. Oxygen shall be with purity 99,5% or better. Cutting speed should be reduced to 70% if the above conditions are not met or if bevel cutting is performed.

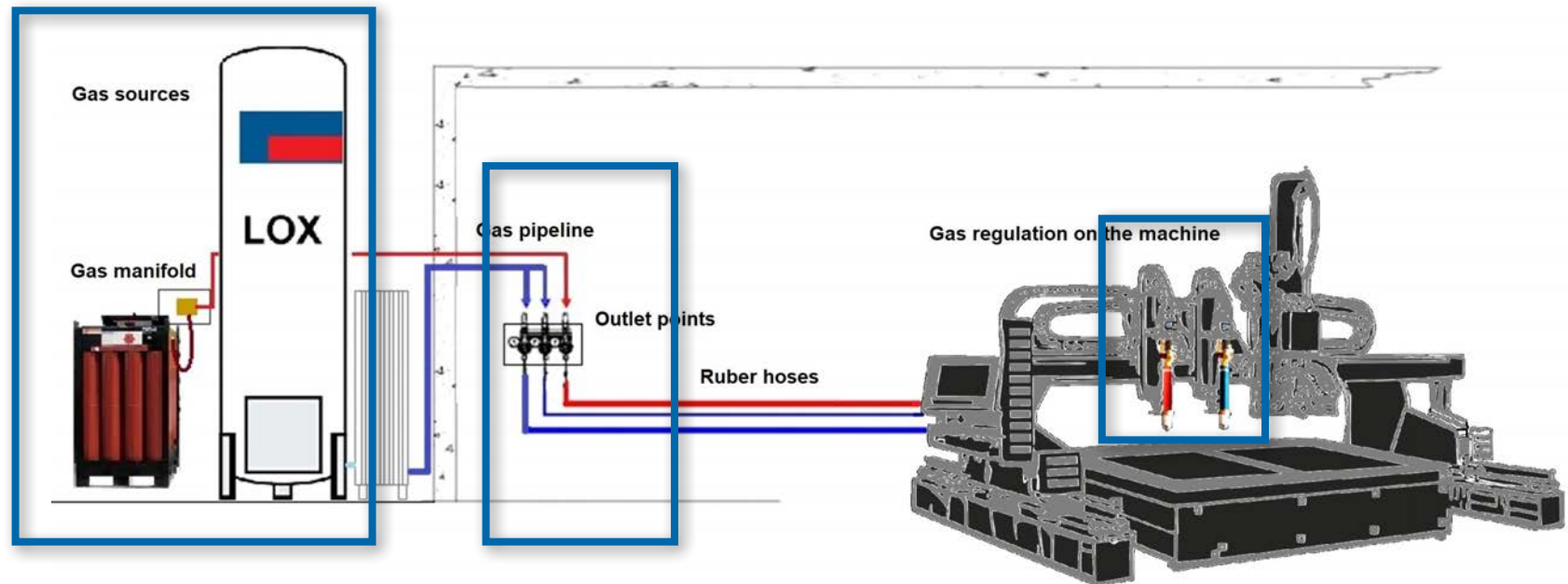
Electricity is not needed for the autogen cutting technology. All energy needed for the process is in the material and in the gases. The technology is called Oxy-Fuel or Gas or Flame cutting which means it is based on gases, both Oxygen and Fuel gas. Unfortunately this is very often underestimated by customers who sometimes pay big attention on the machine but are not much focused on the Gas control.

At first, the gases are needed to build the flame. Heating Oxygen and Fuel gas are mixed together in proper ratio to react as the Flame. The relative proportion between both gases depends on the Fuel gas type and also on the cutting technology phases as the flame Ignition, material Preheating, Piercing and Cutting. That means, a continuous regulation of the gas pressure and flow is needed during the process. This regulation should be well controlled and needs to be fast and smooth in the same time. Steel is preheated by the flame until the combustion temperature is reached (carbon steel approx. 1150°C / 2100°F). Then the Cutting Oxygen is switched-on which is reacting with the steel to create oxides. Fast blowing Oxygen jet is then removing the oxides out of the cut. Relatively high amount of Cutting Oxygen is needed by keeping its very precise parameters.

All above mean that there shall be well balanced Gas supply and Gas control systems, well designed for each cutting machine and professionally installed to be safe and efficient, not limiting the performance of the cutting process (please find details in the IHT Application Note AN310).

## Autogen Needs 3 Stage - Pressure Regulation

A typical installation of the Gas Supply and Control systems:



### 1. Stage, Gas Manifold

- Regulates from Gas sources to pipeline
- Main pressure reduction

### 2. Stage, Wall Outlet Point

- Regulates from the Pipeline to Rubber hoses
- Low pressure drop – massive regulators needed
- Pressure stabilisation

### 3. Stage, Cutting Machine

- Prepares working parameters.
- Pressure needs to variate depending on the cutting process phase

# Features and Benefits - FIT+ three / FIT+ two / FIT+ one

- All torches and nozzles conform to ISO 5172
- High speed cutting nozzles with improved performance
- Increased cutting speed with Rapid Cutting oxygen curtain nozzles
- One type of heating nozzle for all fuel gases and all types of cutting nozzles

## Integrated COOLEX® System

- Long torch lifetime
- Higher cutting quality with constant dimensions of the cutting oxygen channel
- Extends operational life of both cutting and heating nozzles

## Resonator Mixing System in Acetylene Range

- Safe operation with axial spiral injector
- Constant flame power with homogenous mixture of fuel gas and heating oxygen

## Tool-Free Nozzle Connection

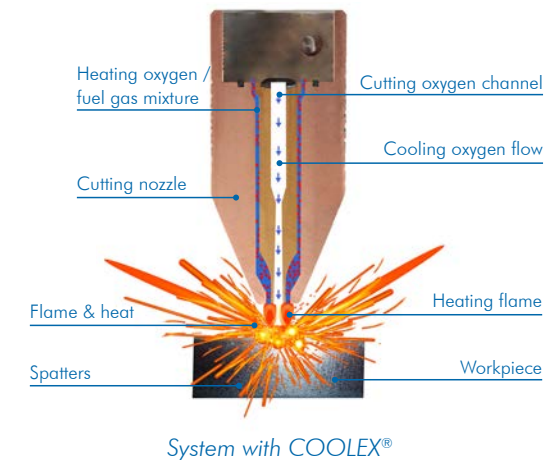
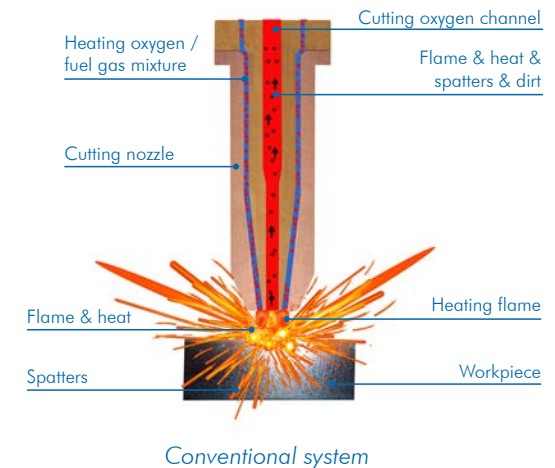
- Single handed operation thanks to bayonet type connector
- Less time needed to change nozzles
- Savings in gas use as appropriately sized nozzle can be used for plate being cut

## Gas Connections

- Cutting oxygen G3/8"
- Heating oxygen G1/4"
- Fuel gas G3/8"LH
- Adapters are available for other connections

## 3 Step Nozzle Change, Tool-Free

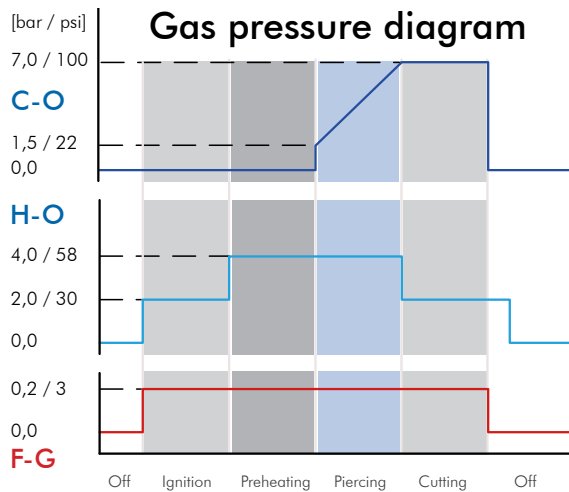
- **Step 1:** Place inner cutting nozzle into outer heating nozzle
- **Step 2:** Locate the pins of the outer heating nozzle in the grooves of the torch head
- **Step 3:** Turn the heating nozzle through 90° until the pins reach the end of the groove



## Piercing process

1. Before start cutting, the metal sheet needs to be preheated at ignition temperature (for carbon steel around 1200°C / 2200°F). The approximate time of the preheating can be found in the chart. Heating oxygen pressure is increased on the same value as for piercing, fuel gas pressure stays constant, no cutting oxygen.
2. When ignition temperature is reached (light red or yellow color of the steel plate spot, small light sparks flying from the spot), open the cutting oxygen with the adjusted piercing pressure, see chart. Start full speed movement with the torch at the same time. It is recommended to increase nozzle-sheet distance for sheet metal thickness above 40mm / 1½" to avoid slag coming into the nozzle. Never reduce torch traveling speed during piercing, keep constant, full cutting speed. The speed can be slightly increased during piercing (up to 5-10%), especially when molten slag goes up into the torch. If so, then after piercing through the sheet, the speed shall be reduced back at the chart-value.
3. After the hole piercing time has expired, the cutting oxygen pressure should be changed to the full pressure value according to the chart.
4. When the cutting oxygen jet has penetrated the metal sheet, start cutting with parameters according to the chart.

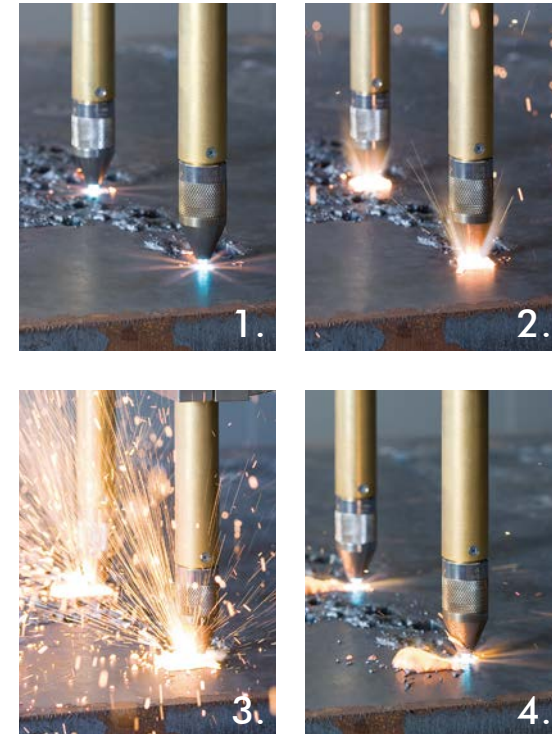
## Cutting Cycle Example



Gas type: Propane  
 Cutting nozzle: PSF 15-25  
 Gas pressure in [bar / psi]  
 Plate thickness: 25mm / 1"

C-O = Cutting Oxygen  
 H-O = Heating Oxygen  
 F-G = Fuel Gas

When igniting with propane H-O and F-G can be reduced to 50% of the values in the table.



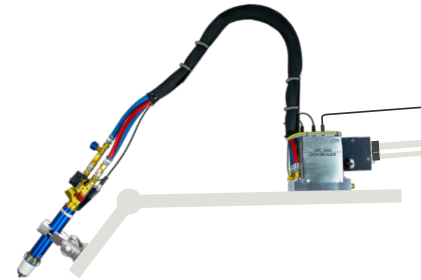


# Autogen Cutting Systems Overview

APC M 4000



APC Robot



M 4000 FIT+



<b>Cutting Database</b>	Operator Interface which embedded cutting database for complete cutting process.	Operator Interface which embedded cutting database for complete cutting process.	Customer's own solution, IHT supports with basic cutting chart for FIT+ range
<b>Gas Control</b>	Automatic Gas Controller for all gases, pre-programmed parameters for all material thicknesses.	Automatic Gas Controller for all gases, pre-programmed parameters for all material thicknesses.	Customer's own solution.
<b>Gas Supply and Safety</b>	Gas hose assembly, safety devices included, all fuel gases ready.	Gas hose assembly, safety devices included, all fuel gases ready.	Customer's own solution.
<b>Height Control</b>	M 4000 Lifter 220, 350, 500 mm	Optional with board interface	M 4000 Lifter 220, 350, 500 mm
	Height sensing integrated in torch, Collision detection	Not included	Height sensing integrated in torch, Collision detection
<b>Flame Ignition Automatic</b>	Yes	Yes	Yes
<b>Cutting Torch</b>	FIT+ three DIG	FIT+ three DIG	FIT+ three DIG
<b>Other features</b>	Operating software, Backfire detection, Slag detection	Operating software, Backfire detection, Slag detection	Backfire detection

# Autogen Cutting Systems Overview

M 4000 CAP



M 4000 TWIN



CSC 500



External Ignition



<b>Cutting Database</b>	Customer's own solution, IHT supports with basic cutting chart for FIT+ range.	Combining both Autogen CAP and Plasma PCS systems with one M 4000 lifter	Customer's own solution	Customer's own solution.
<b>Gas Control</b>	Customer's own solution		Customer's own solution	Customer's own solution.
<b>Gas Supply and Safety</b>	Customer's own solution		Customer's own solution	Customer's own solution.
<b>Height Control</b>	M 4000 Lifter 220, 350, 500 mm Sensor Ring, Plate and Bevel sensor		Sensor Ring, Plate and Bevel sensor	No
<b>Flame Ignition Automatic</b>	No (Yes with FIT+ two)		No	Yes, with external burner
<b>Cutting Torch</b>	Torch not included. Options: FIT+ two, FIT+ one		Torch not included. Options: FIT+ two, FIT+ one	Torch not included. Options: FIT+ two, FIT+ one
<b>Other features</b>	Option: External ignition system		External ignition	CSC 500, M 4000 CAP

# Autogen Cutting Torches Overview

FIT+ three ANA



FIT+ two



FIT+ one



<b>Height Control Integrated</b>	Yes (ANALOGUE)	No	No
<b>Flame Ignition Integrated</b>	Yes	Yes	No
<b>Cutting Process</b>	High Speed or Rapid Cutting	High Speed or Rapid Cutting	High Speed or Rapid Cutting
<b>Additional Features</b>	COOLEX®, Integrated Adjustment Valves, Cutting Oxygen Pressure Gauge, Backfire detection, Collision detection	COOLEX®, Integrated Adjustment Valves, Cutting Oxygen pressure Gauge	COOLEX®
<b>Cutting Nozzles</b>	Tool-Free High Speed or Rapid Cutting	Tool-Free High Speed or Rapid Cutting	Tool-Free High Speed or Rapid Cutting
<b>Optional Equipment</b>	Heat Shield	External Height Control CSC 500, M 4000 CAP	External Ignition system External Height Control CSC 500, M 4000 CAP Bevel cutting attachment Strip cutting attachment

# APC Autogen Process Control

## Complete cutting solution

### Features

- **Integrated cutting process** - hardware, software and process data
- **All in one package** - Gas Control, Distribution and Safety, Cutting Torch, Flame Ignition, Height Control
- **Cutting database** - ready-to-use parameters for Flame ignition, Preheating, Piercing and Cutting operation
- **Fits on all** common machines and CNC systems
- **Easy connections** - only requires simple oxygen and fuel gas connection and two cables
- **Precise gas settings** - Gas controller mounted close to the torch, one controller per torch
- **Modular approach** for high flexibility of configuration
- **Short torch to torch distance** to minimize material waste
- **Cutting close to edge and kerf** for optimized nesting
- **Best in class Height sensor** - maximized cutting performance and quality
- **Backfire detection** for safety and longer torch lifetime
- **Slag detection**
- **Integrated ignition** and Ignition detection
- **Tool free nozzle exchange** - High speed, High quality cutting

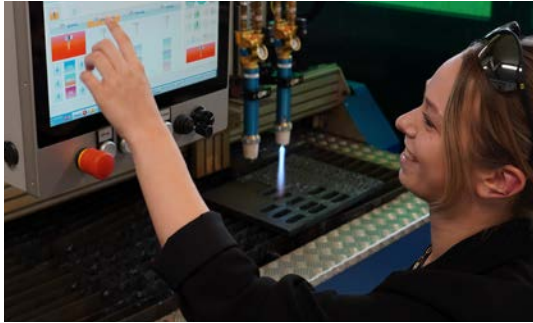
### Application Fields

- Oxy-Fuel cutting machines for straight cutting up to 300 mm / 12" sheets
- Single- or multi- torch applications, one APC system for up to -10 stations
- Solution for new cutting machines and retrofits
- Cutting range up to 300 mm / 12" thickness with active Height sensor. Hole piercing up to 80mm / 3 1/2" with Height sensor, above that with Splash Protector
- Cutting with Height sensor on dry cutting tables



# APC ensures High Productivity and Quality of the Production

*Low cutting cost per meter ensures the best Return on Investment. Besides using the right cutting machine design, the automation of the Autogen cutting process is important factor of the success. The APC system provides the best torch technology available with extraordinary features, carefully selected „best in class“ components and a high level of Autogen cutting automation.*



## Fully Automated Cutting Process

Automation ensures maximal productivity and safe cutting environment as it prevents the operator from using the system incorrectly. Dozens of sensors, control elements and software cooperate to provide optimal operation. The integrated cutting database ensures consistent high cutting quality with reduced scrap. The parameters in the database have been developed based on many cutting tests with wide variety of conditions.

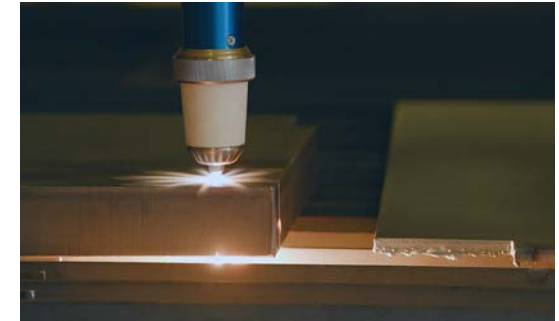
A fully automated process maximises the efficiency of the cutting machine.

## High Cutting Speed

It is well known that Autogen cutting is not the fastest cutting process at low material thicknesses, but in the medium thickness range it starts to be **very efficient**. Success can be further accelerated when a **multi-torch process** is used.

High performance nozzle design increases cutting speed. The results can be even 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

Autogen technology delivers cuts with much higher quality than other thermal cutting processes. Perpendicularity and straightness of both cut sides throughout the thickness range is an advantage when evaluating the cuts according to ISO 9013.

The hardness of the cut edge surface layer is the lowest within the thermal cutting processes. This is a very important factor for a following successful welding process, as highlighted in EN 1090. All this minimizes rework and makes Autogen profitable.

# APC makes the whole Process Effective and Easy

The requirements on the technical knowledge of the machine operators are continuously increasing. There are new machine types with multi-technology equipment, more and more automated, digitalized. The trend is going to achieve automated production lines and factories where operators are not present at all, or they are controlling many machines with many technologies in the same time. Operator's knowledge is changing, going higher to allow working with software, more as to be process supervisor than process operator. The help of the machine is expected and required.



## 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.

## Slag Detection

Slag detection followed by automatic parameters adjustment allows a perfect cut even if slag from previous piercing is in the way. Cut will be lost when not acting while the torch is moving over slag. Alternatively, the slag can be mechanically removed by operator, what is time consuming especially during multi-torch process.



## Extended Lifetime

APC is design as robust and long-life system to be use in daily professional operation of cutting tables or robots. The entire system is build from carefully selected and properly tested components conforming to technical requirements of ISO, EN and DIN standards.

Premium materials and componets has been used for APC design and an intensive testing programm to prove it. Today, many happy customers and successful installations gives the evidence about system reliability.

Incorporated COOLEX® system extends the lifetime of the cutting torch and its consubables by cooling the cutting oxygen channel during preheating, piercing and cutting operations. When the torch is cool, it has a higher resistance to overheating.

# 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 Flame Ignition

Automatic ignition of the flame speeds up the process. 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. By this an important amount of gases is saved.

The ignition system is embedded inside the torch. It is robust, well protected and continuously cleaned system which is giving also the feedback in case when igniting fails.

According to the Operation safety rules, access to an running machine is strictly prohibited so an operation such as manual ignition is no longer possible.

## Backfire Detection

Safety should never be compromised. Early detection of any accident helps to prevent operation downtime, material damage or loss and more importantly, personal injury.

Detection of sustained backfire minimises the risk of dangerous situations. The flame is stopped automatically and torch is parked in the safe position when sensors detect the backfire.



## Built-in Safety Devices

Flashback arrestors are safety devices according to ISO 5175-1 which are mandatory part of the each Oxy-Fuel installation. They will always stop the propagation of the flame inside the system (flashback) if backfire occurs.

Flashback arrestors are installed at each gas inlet of the FIT+ three cutting torch of APC. They have been carefully selected for use in the cutting process for material up to 300 mm / 12" thick.

# APC M 4000

## APC M 4000 with dedicated Operator Terminal

- Cutting database 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 M 4000 Operator Interface integrated into CNC

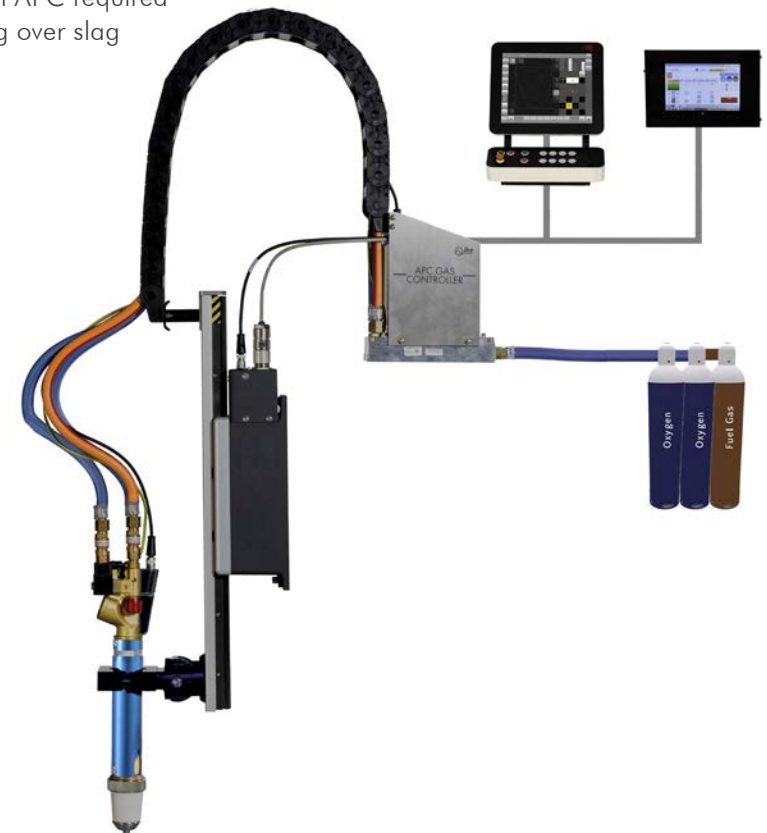
- Cutting database for FIT+ three torches is implemented in machine control (CNC)
- APC operator interface is embedded in CNC
- APC with flexible fieldbus interface to connect to CNC\*
- Hassle free interface to CNC, only "Start Process" from CNC and "Ok to Move" from APC required
- Change Speed output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

\* For fieldbus connectivity details please ask your IHT partner

## CNC Connections

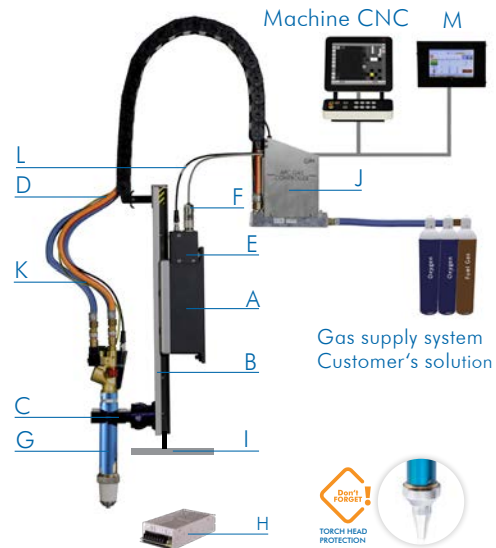
- **In:** Start Process
- **In:** Manual Up/Down
- **In:** Clearance Control Off
- **In:** Torch disable
- **Out:** Ok to Move
- **Out:** Change Speed
- **Out:** Error/Collision/Flashback
- Power Supply: 24 V DC

**In:** = from CNC / **Out:** = to CNC





## SYSTEM CONFIGURATION OPTIONS



Position	Description	Part No.	
A	Linear Drive Body DIG, 30 kg	100505	
B	Guiding rail, 220 mm	Stroke 220 mm, Overall length 496 mm	100551
	Guiding rail, 220+ mm	Stroke 220 mm, Overall length 626 mm	100558
	Guiding rail, 350 mm	Stroke 350 mm, Overall length 626 mm	100552
	Guiding rail, 500 mm	Stroke 500 mm, Overall length 776 mm	100553
C	Torch clamp M4000	For torch Ø 35-53 mm	100662
	Bevel Torch clamp	For torch Ø 35-53 mm	100668
D	Hose clamp fixed		100663
E	Control Unit+ DIG FB		100684
F	Linear Drive Cable	10 / 20 / 30 m	100196
G	Sensor Torch FIT+ three 220/45PMY DIG Blue	Cutting torch with digital torch controller and Height sensor	140110
	Sensor Torch FIT+ three 220/45A DIG Blue	Cutting torch with digital torch controller and Height sensor	140111
	Sensor Torch FIT+ three 220/45PMY DIG Red	Cutting torch with digital torch controller and Height sensor	140113
	Sensor Torch FIT+ three 220/45A DIG Red	Cutting torch with digital torch controller and Height sensor	140114
H	Power Supply		101021
	Power Supply	High power (recommended for 30kg LD body 100505)	100446
I	Heat Shield M 4000		100651
J	Gas Controller	all gases	101190
K	Gas Hose Assembly	1,5 / 2,5 m, all fuel gases	140801
	Gas Hose Assembly e-chain	1,5 / 2,5 m, all fuel gases	140831
L	FB-RS CABLE	10 / 20/ 30 m for CNC connection	140539
	Cable DIG	1,0 / 1,5 / 2,5 m (2,5m required for Guiding rail 500mm 100553)	140525
	Grounding Cable "PE M5 Cable M5"	0,8 / 1,5 / 2,0 m (2,0m required for Guiding rail 500mm 100553)	101243
M	Operator terminal APC W10	incl. Convertor cable (one piece per machine)	140823
	Convertor USB/RS485	One piece per machine	140824
	Terminator RS485 M12	One piece per machine	101241



## ACCESSORIES

Description	Part No.
Heat Shield FIT+ three	140522
Starter Kit FIT+ three APC A (more details on page 42)	101227
Starter Kit FIT+ three APC PMY (more details on page 42)	101225



## CONSUMABLES

CUTTING CONSUMABLES  
ON PAGE 38

Description		Part No.
Splash Protector		140551
Clearance Sensor Kit FIT+		140550
Sensor Holder		100772
Clearance Sensor type B 14/19		100773
O-Ring for Mounting Ring	5 pcs in the package	100774
Contact Pin	5 pcs in the package	100780
Heat shield plate		100691

## SPARE PARTS

Description		Part No.
Cutting Torch FIT+ three 220/45PMY Blue	Without torch controller, without Height sensor	140300
Cutting Torch FIT+ three 220/45A Blue	Without torch controller, without Height sensor	140301
Cutting Torch FIT+ three 220/45PMY Red	Without torch controller, without Height sensor	140303
Cutting Torch FIT+ three 220/45A Red	Without torch controller, without Height sensor	140304
FIT+ three Torch Controller DIG		140502

## TOOLS

Description		Part No.
Clearance Sensor Tool		100775
Clearance Sensor Ejector		100781
Pin Tool		100778
Torch Setting Tool		100779
Service cable FIT+ three DIG	1,8 m	140532

# APC Robot

## APC Robot with dedicated Operator Terminal

- Cutting database for FIT+ three torches is stored in Operator Terminal
- APC operator interface software is embedded in Operator Terminal
- Hassle free interface to CNC, only "Start Process" and "Start Piercing" from CNC and "Ok to Move" from APC required

## APC Robot Operator Interface software integrated into CNC

- APC Cutting database for FIT+ three torches is implemented in machine control (CNC or PLC)
- APC operator interface is embedded in CNC
- APC with flexible fieldbus interface to connect to CNC\*
- Hassle free interface to CNC, only "Start Process" and "Start Piercing" from CNC required and "Ok to Move" from APC required
- Powerful DLL communication package for data exchange between CNC and APC software available

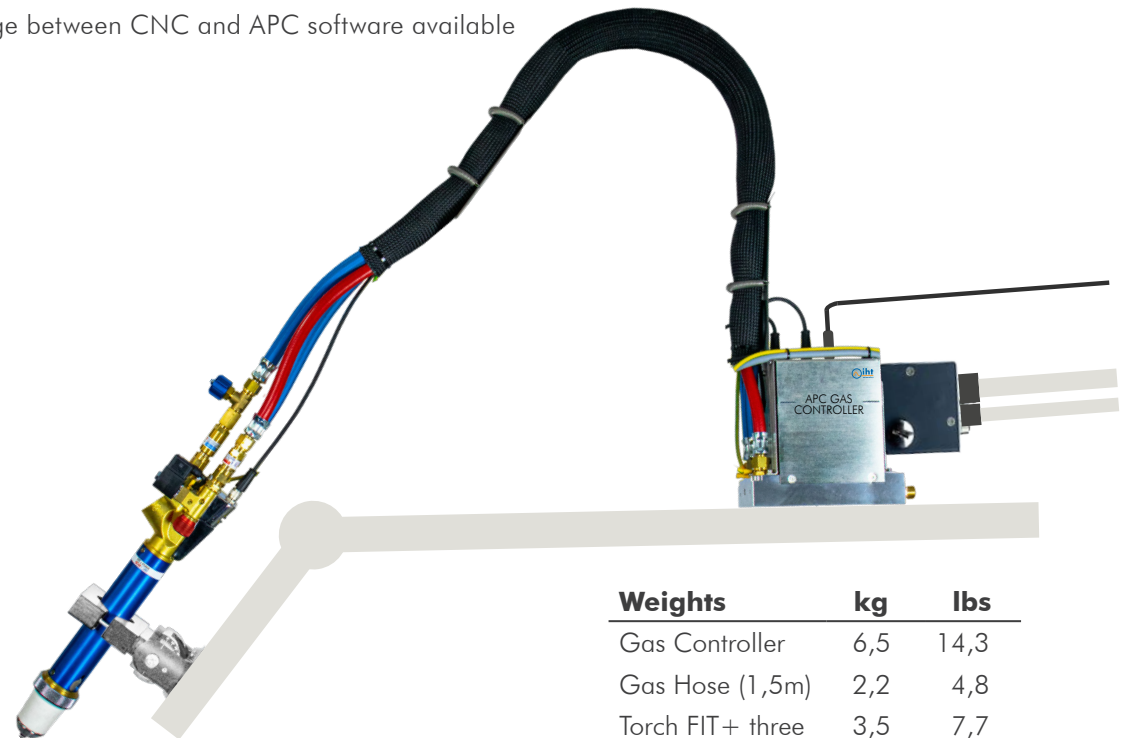
## CNC Connections

- **In:** Start Process
- **In:** Start Piercing
- **In:** Clearance Adjust
- **In:** Torch Disable
- **Out:** Ok to Move
- **Out:** Torch Height (0-10V)
- **Out:** Error/Collision/Flashback
- Power Supply: 24 V DC

• **In:** = from CNC / **Out:** = to CNC

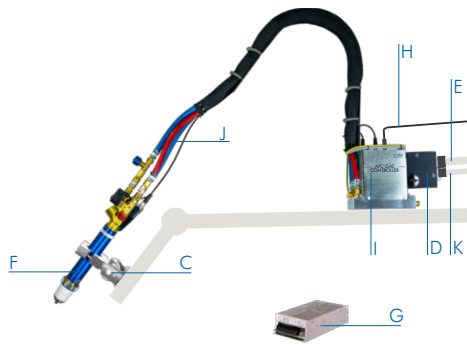
## DLL data exchange with CNC

Preheat time and height  
Pierce time and height  
Cutting height and speed  
Kerf and lead in length



<b>Weights</b>	<b>kg</b>	<b>lbs</b>
Gas Controller	6,5	14,3
Gas Hose (1,5m)	2,2	4,8
Torch FIT+ three	3,5	7,7

## SYSTEM CONFIGURATION OPTIONS



Position	Description	Part No.	
C	Torch Clamp M4000	For torch Ø 35-53 mm	100662
D	Control Unit+ ROB FB		100685
E	Linear Drive Cable	10 / 20 / 30 m	100196
F	Sensor Torch FIT+ three 220/45PMY DIG Blue	Cutting torch with digital torch controller and Height sensor	140110
	Sensor Torch FIT+ three 220/45A DIG Blue	Cutting torch with digital torch controller and Height sensor	140111
	Sensor Torch FIT+ three 220/45PMY DIG Red	Cutting torch with digital torch controller and Height sensor	140113
	Sensor Torch FIT+ three 220/45A DIG Red	Cutting torch with digital torch controller and Height sensor	140114
G	Power Supply		101021
H	Cable 5 Pole M12	10 / 20 m for Height Control Analogue Signal 0-10 V	140526
I	Gas Controller ROB	all gases	101367
J	Gas Hose Assembly	1,5 / 2,5 m, all fuel gases	140801
K	FB-RS Cable	10 / 20/ 30 m for CNC connection	140539
	DIG Cable	1,0 / 1,5 / 2,5 m for connection between GC and CU+	140525
	Operator Terminal APC W10	incl. Converter Cable (one piece per machine)	140823
	Converter USB/RS485	(one piece per machine)	140824
	Terminator RS485 M12	(one piece per machine)	101241



## ACCESSORIES

Description	Part No.
Heat Shield FIT+ three	140522
Starter Kit FIT+ three APC A (more details on page 42)	101227
Starter Kit FIT+ three APC PMY (more details on page 42)	101225



## CONSUMABLES

CUTTING CONSUMABLES  
ON PAGE 38

Description		Part No.
Splash Protector		140551
Clearance Sensor Kit FIT+		140550
Sensor Holder		100772
Clearance Sensor type B 14/19		100773
O-Ring for Mounting Ring	5 pcs in the package	100774
Contact Pin	5 pcs in the package	100780
Heat shield plate		100691

## SPARE PARTS

Description		Part No.
Cutting Torch FIT+ three 220/45PMY Blue	Without torch controller, without Height sensor	140300
Cutting Torch FIT+ three 220/45A Blue	Without torch controller, without Height sensor	140301
Cutting Torch FIT+ three 220/45PMY Red	Without torch controller, without Height sensor	140303
Cutting Torch FIT+ three 220/45A Red	Without torch controller, without Height sensor	140304
FIT+ three Torch Controller DIG		140502

## TOOLS

Description		Part No.
Clearance Sensor Tool		100775
Clearance Sensor Ejector		100781
Pin Tool		100778
Torch Setting Tool		100779
Service cable FIT+ three DIG	1,8 m	140532

# M 4000 FIT+

## Autogen Cutting System with Height Control and Torch with Automated Ignition

- **Cutting system** with Torch, Flame Ignition, Height Sensing and Lifter
- **Easy integration** fits on all common machines and CNC systems
- **Modularity** allows highest flexibility
- **Selection of best components** ensures high cutting quality and productivity
- **Flashback detection** makes the process safe and equipment lifetime long

## Fields of Application

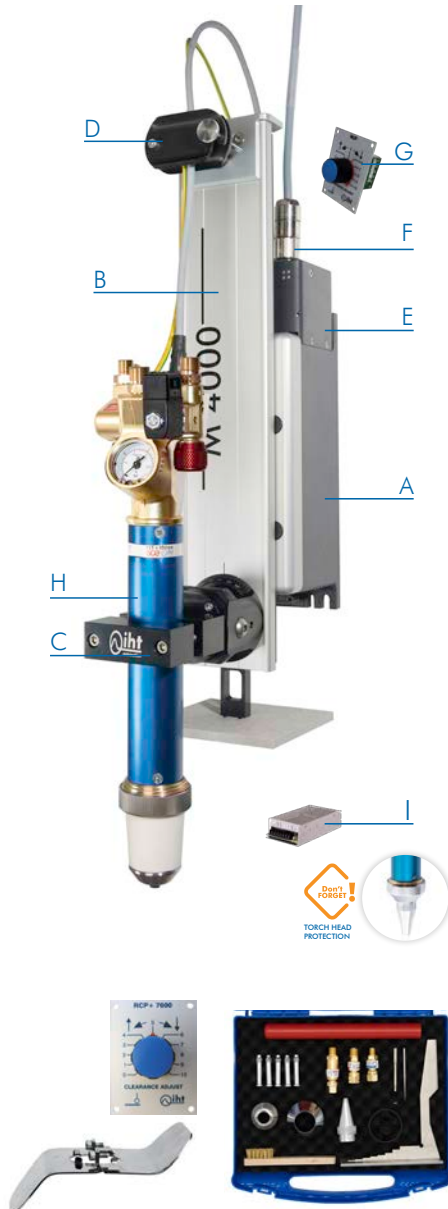
- Autogen cutting machines for straight cutting up to 300 mm sheets
- Single- or multi- torch applications
- Solution for new cutting machines and retrofits
- Cutting range up to 300 mm / 12" thickness with active Height sensor.
- Hole piercing up to 80 mm / 3 1/2" with Height sensor, above that with Splash Protector
- Cutting with Height sensor on dry cutting tables
- 100 % compatible with the plasma systems IHT M 4000 PCS and M 4000 BAS

## CNC Connections

- **In:** Automatic control of torch height On/Off
- **In:** Clearance Setpoint (0-10 V), torch height setting during cutting process
- **In:** Piercing Setpoint (0-5 V), torch height setting during piercing process
- **In:** Ignite, start ignition command
- **In:** Manual Up, manual torch movement
- **In:** Manual Down, manual torch movement
- **Out:** Error/Collision/Flashback
- **Out:** In Position, confirmation of set position
- **Out:** Upper Limit, highest possible point
- Power Supply: 24 V DC, use of IHT power supply strongly recommended

**In:** = from CNC / **Out:** = to CNC





## SYSTEM CONFIGURATION OPTIONS

Position	Description	Part No.
A	Linear drive body DIG, 30 kg	Only with Power Supply 100446 100505
B	Guiding rail, 200+ mm	Stroke 220 mm, Overall length 496 mm 100551
	Guiding rail, 220+ mm	Stroke 220 mm, Overall length 626 mm 100558
	Guiding rail, 350 mm	Stroke 350 mm, Overall length 626 mm 100552
C	Guiding rail, 500 mm	Stroke 500 mm, Overall length 776 mm 100553
	Standard Torch Clamp	For torch Ø 35-53 mm 100662
D	Bevel torch clamp	For torch Ø 35-53 mm 100668
	Hose clamp fixed	100663
E	Control unit + DIG	100634
F	Linear drive cable	10 m / 20 m / 30 m 100196
G	Remote control potentiometer	101158
H	Sensor Torch FIT+three PMY DIG Blue	Cutting torch with digital torch controller and Height sensor 140110
	Sensor Torch FIT+three A DIG Blue	Cutting torch with digital torch controller and Height sensor 140111
	Sensor Torch FIT+ three PMY DIG Red	Cutting torch with digital torch controller and Height sensor 140113
	Sensor Torch FIT+ three A DIG Red	Cutting torch with digital torch controller and Height sensor 140114
I	Power supply	100446
J	Heat shield kit M 4000	100651
	Cable DIG	1,5 m (2,5 m for Guiding rail 500 mm 100553) 140525
	Grounding Cable „PE M5 Cable M5“	1,5 m (2,0 m for Guiding rail 500 mm 100553) 101243
	Heating nozzle GSF 3- 150 mm	100797

## ACCESSORIES

Description	Part No.
Heat Shield FIT+ three	140522
Remote Control Potentiometer	101158
Starter Kit FIT+ three A (more details on page 42)	101213
Starter Kit FIT+ three PMY (more details on page 42)	101211



## SPARE PARTS

Description		Part No.
Cutting Torch FIT+ three 220/45PMY Blue	Without torch controller, without Height sensor	140300
Cutting Torch FIT+ three 220/45A Blue	Without torch controller, without Height sensor	140301
Cutting Torch FIT+ three 220/45PMY Red	Without torch controller, without Height sensor	140303
Cutting Torch FIT+ three 220/45A Red	Without torch controller, without Height sensor	140304
FIT+ three Torch Controller DIG		140502

## TOOLS

Description		Part No.
Clearance Sensor Tool		100775
Clearance Sensor Ejector		100781
Pin Tool		100778
Torch Setting Tool		100779

## CONSUMABLES

CUTTING CONSUMABLES  
ON PAGE 38

Description		Part No.
Splash Protector		140551
Clearance Sensor Kit FIT+		140550
Sensor Holder		100772
Clearance Sensor type B 14/19		100773
O-Ring for Mounting Ring	5 pcs in the package	100774
Contact Pin	5 pcs in the package	100780
Heat shield plate		100691



# M 4000 CAP

## Autogen Height Control System

- **Height control system** with capacitive Sensor Ring
- **Easy integration** - fits on all common machines and CNC systems
- **Modularity** allows highest flexibility
- **Selection of best components** ensures high cutting quality and productivity
- Optional Cutting torches **FIT+ two** and **FIT+ one**

## Fields of Application

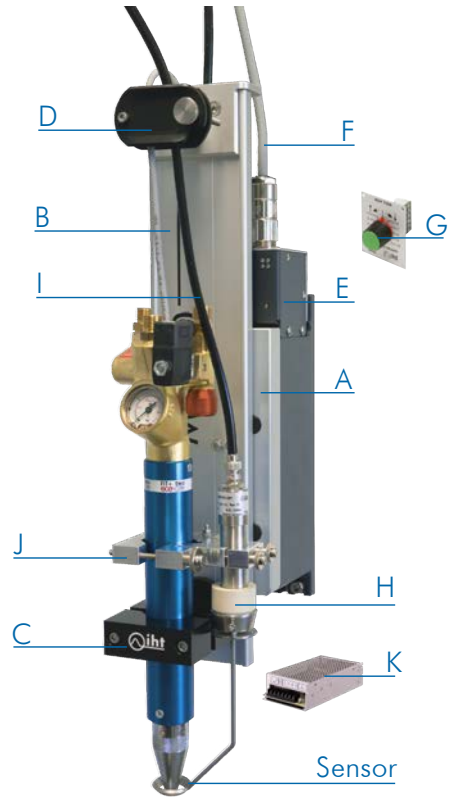
- Autogen cutting machines for straight cutting up to 300mm / 12" sheets
- Single- or multi- torch applications
- Solution for new cutting machines and retrofits
- Hole piercing up to 100 mm / 4" with Sensor ring
- Cutting with Height sensor on dry cutting tables
- 100 % compatible with the plasma systems IHT M 4000 PCS and M 4000 BAS

## CNC Connections

- **In:** Automatic control of torch clearance On / Off
- **In:** Clearance setpoint (0-10 V), adjustment of torch clearance during cutting process
- **In:** Hole piercing setpoint (0-5 V), adjustment of the torch clearance during hole piercing
- **In:** Manual Up, move torch by hand
- **In:** Manual Down, move torch by hand
- **Out:** Error/Collision
- **Out:** In position, setpoint reached
- **Out:** Upper end point, torch in highest position
- Power Supply: 24 V DC, use of the IHT power supply strongly recommended

**In:** = from CNC / **Out:** = to CNC





*Cutting torch is optional*

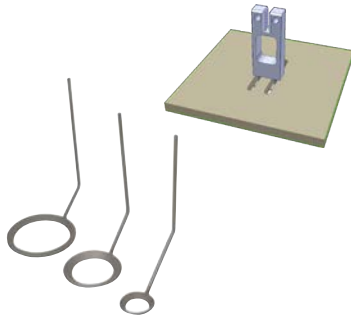
## SYSTEM CONFIGURATION OPTIONS

Position	Description	Part No.
A	Linear Drive Body CAP, 12 kg	100501
	Linear Drive Body CAP, 30 kg	Only with Power Supply 100446 100502
B	Guiding Rail, 220 mm	Stroke 220 mm, overall length 496 mm 100551
	Guiding Rail, 220+ mm	Stroke 220 mm, overall length 626 mm 100558
	Guiding Rail, 350 mm	Stroke 350 mm, overall length 626 mm 100552
	Guiding Rail, 500 mm	Stroke 500 mm, overall length 776 mm (with 1,5 m Coax Cable) 100553
C	Torch Clamp M4000	For torch Ø 30-35 mm 100661
	Torch Clamp M4000	For torch Ø 35-53 mm 100662
	Bevel Torch Clamp	For torch Ø 30-35 mm 100679
	Bevel Torch Clamp	For torch Ø 35-53 mm 100668
D	Hose clamp fixed	100663
E	Control unit + CAP/ISC	100632
F	Linear drive cable, CAP	10 m / 20 m 100196
G	Remote control potentiometer	100233
H	Sensor connector unit	100212
	Sensor connector unit HT	For high temperature applications 100994
I	Coax cable	1,2 m / 1,5 m 100279
	Coax / Ground cable	1,2 m / 1,5 m / 2,2 m 100771
J	Sensor torch clamp	100268
K	Power supply	101021
	Power supply	High power (for LD body 100502) 100446
	Heat shield kit	100651
Sensors	Sensor Ring	Ø 34 mm 100269
	Sensor Ring	Ø 60 mm 100270
	Sensor Ring	Ø 75 mm 100271
	Plate sensor	With SCU HT 100994 100737
	Bevel sensor	Left 100214
	Bevel sensor	Right 100213



## CUTTING TORCHES

Description	Part No.
Cutting Torch FIT+ two 220/40 PMY Blue	140200
Cutting Torch FIT+ two 220/40 A Blue	140201
Cutting Torch FIT+ two 220/40 PMY Red	140203
Cutting Torch FIT+ two 220/40 A Red	140204
Cutting Torch FIT+ one 220/32A	101170
Cutting Torch FIT+ one 220/32PMY	101171
Cutting Torch FIT+ one 320/32A	101172
Cutting Torch FIT+ one 320/32PMY	101173



## ACCESSORIES / SPARE PARTS

CUTTING CONSUMABLES  
ON PAGE 38

Description	Part No.
Heat shield kit	100651
Sensor kit 1	Ø 34 mm 100374
Sensor kit 2	Ø 60 mm 100375
Sensor kit 3	Ø 75 mm 100376

Sensor kit contains: Sensor Ring, Sensor connector unit, Sensor torch clamp, Coax cable 1,2mm

# M 4000 TWIN

## Automatic combined clearance control for Plasma and Autogen cutting

M 4000 TWIN is an universal Height Control device which is designed to work alternate with Plasma and / or Autogen cutting. A specific Control Unit installed on one common Linear Drive proposes the best features of both M 4000 PCS system for Plasma and M 4000 CAP system for Autogen. For detail information regarding both of these systems and their application fields please go to pages of this catalogue dedicated to them.

The special torch clamp allows fast exchange of the torches and also required accessories for parking of the not used torch is available.

System is suitable for cutting any kind of Plasma specific material, whereas the distance between plasma nozzle and work piece is measured and controlled by the arc voltage. The ring electrode measures on capacitive principle the clearance to the steel work piece during Autogen cutting.

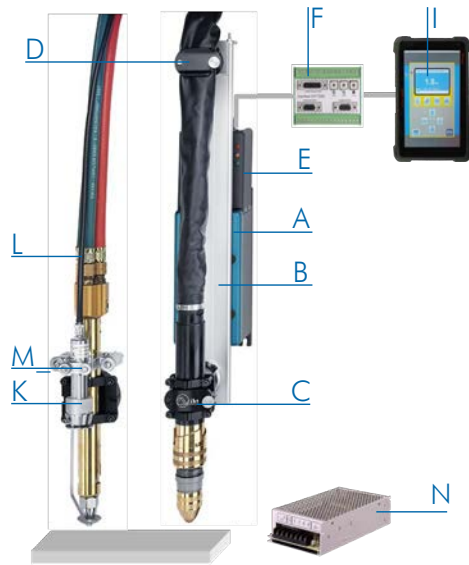
Optional CUTBUS® for automatic transfer of cutting parameters from the CNC to the Linear Drive.

The torch is protected using excellent 3D collision protection in the torch clamp and vertical collision detection.

All parameters of the torch lifter can be set up and changed during operation with the multi language Operator Terminal.



## SYSTEM CONFIGURATION OPTIONS

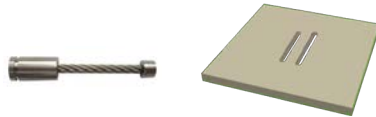


Position	Description	Part No.	
A	Linear Drive Body PCS, 12 kg	100522	
	Linear Drive Body PCS, 30 kg	100523	
B	Guiding Rail, 220 mm	Stroke 220 mm, Overall length 496 mm	100551
	Guiding Rail, 220+ mm	Stroke 220 mm, Overall length 626 mm	100558
	Guiding Rail, 350 mm	Stroke 350 mm, Overall length 626 mm	100552
	Guiding Rail, 500 mm	Stroke 500 mm, Overall length 776 mm	100553
C	Torch Clamp 3D Collision protection	For torch Ø 30-58 mm	100665
	Torch Clamp 3D Collision detection	For torch Ø 30-60 mm, with Quick opening clamp	100669
	Torch Clamp 3D Extension cable 1,3 m	For Collision detection clamp and with Guiding rail 500 mm	101033
D	Hose Clamp Fixed		100663
E	Control Unit TWIN		100605
F	Interface (IF)		100358
	Linear Drive Control Cable PCS	10 m / 20 m / 30 m	100359
	Linear Drive Power Cable PCS	10 m / 20 m / 30 m	100361
I	Operator Terminal PCS W10		101885
	Operator Terminal Cable	5 m / 10 m	100364
K	Sensor Connector Unit		100212
	Sensor Connector unit HT	For high temperature applications	100994
L	Coax Cable	1,2 m / 1,5 m (1,5 m required for 500mm Guiding rail 100553)	100279
	Coax / Ground Cable	1,2 m / 1,5 m / 2,2 m	100771
M	Sensor Torch Clamp		100268
	Sensor Ring	Ø 34 mm	100269
	Sensor Ring	Ø 60 mm	100270
	Sensor Ring	Ø 75 mm	100271
	Sensor Ring	Ø 99 mm	100431
	Sensor Open	Ø 75 mm, one side open for thick plates piercing	100436
	Plate Sensor	With SCU HT 100994	100737
	Bevel Sensor Left		100214
	Bevel Sensor Right		100213
	Heat Shield		100651
	Torch Holder (TWIN)	For torch Ø 30-55 mm	100656
	Parking Adapter for Torch Holder		100657
N	Power Supply		101021
	Power Supply	High power	100446
	CUTBUS® Cable	5 m / 10 m	100368
	Converter RS232/RS485		100395
	Converter USB/RS485		100400



## ACCESSORIES

Description		Part No.
Contact sensor kit PCS		101001
Contact sensor interface 700 kit		101280



## SPARES AND CONSUMABLES

Description		Part No.
3D-collision sensor (SUB-D)	With the cable 1,4m, for Collision Detection torch clamp	101038
Safety rope		100690
Heat shield plate		100691

# CSC 500

## Capacitive sensor system for Oxy-Fuel cutting machines

The CSC 500 is the most advanced and reliable sensor system in the market for controlling the torch height in Oxy-Fuel cutting. It can be connected to most torch lifters.

The sensor system allows non-contact precise clearance control of Oxy-Fuel torches on cutting machines that equipped with built-in torch lifters. Used for dry-cutting, ring electrodes or the integrated sensor (ISC) measure the clearance to a metallic workpiece using a capacitive measurement.

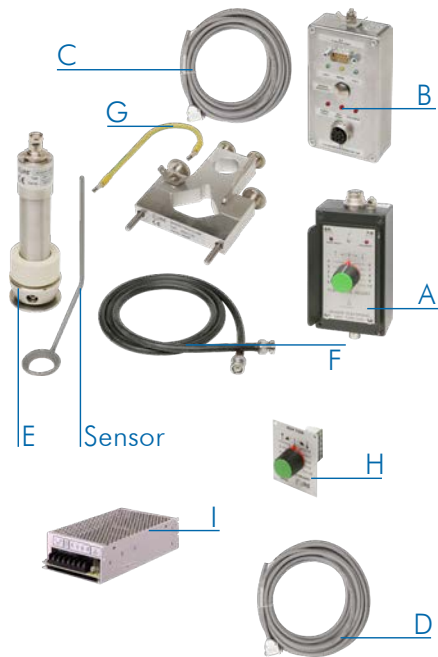
### Advantages

- Works with the majority of all torch lifters equipped with  $\pm 10$  V control signals or 0-10 V to connect to any CNC
- Contact-free accurate clearance control
- Remote setting of clearance distance
- Splash repellent finish for increased ring electrode lifetime

### Features

- Output signal  $\pm 10$  V and inverted or optionally 0-10 V for CNC applications, see Application Note AN110 or AN111
- Output signal "IN POSITION", ready for ignition
- Adjustable piercing height
- Built-in collision protection, if ring electrode touches the workpiece, an automatic vertical movement protects the torch
- Integrated monitoring of all operations





## SYSTEM CONFIGURATION OPTIONS

Position	Description	Part No.
A	Sensor electronic unit	100205
B	SEU interface unit +/-10V	100206
	SEU interface unit 0-10V	100204
C	SEU cable	10 m / 15 m / 20 m
D	SEU machine control cable	2 m
E	Sensor connector unit	100212
	Sensor connector unit HT	For high temperature applications
F	Coax cable	1,2 / 1,5 m
	Coax / ground cable	1,2 / 1,5 / 2,2 m
G	Sensor torch clamp	100268
H	Remote control potentiometer	100233
I	Power supply	101021
Sensors	Sensor Ring	Ø 34 mm
	Sensor Ring	Ø 60 mm
	Sensor Ring	Ø 75 mm
	Plate sensor	With SCU HT 100994
	Bevel sensor	Left
	Bevel sensor	Right



# Flame Ignition External System

This Oxy-fuel ignition system is designed to be used with cutting machines fitted with either propane or acetylene torches. It is fully compatible with the following IHT Oxy-Fuel control systems: CSC 500, M 4000 CAP, M 4000 ISC and M 4000 TWIN.

## High productivity

as a result of integrated automatic ignition system

- When used in multi-burner systems, process times can be reduced
- Reduced gas consumption
- Available for both propane and acetylene torches

## Increased reliability

- Increased distance to the torch tip possible
- Gas ignition burners protected from slag
- No high voltage ignition required
- Gas supply mechanically protected

## Simple installation and commissioning

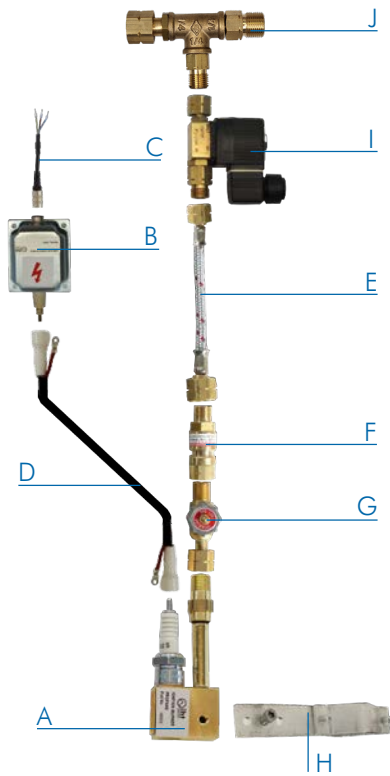
thanks to a fully integrated design

- All system components are fully compatible
- Simple connection to CNC control system
- No oxygen supply necessary
- 24V signal for ignition

## Specification

- Gas Connection: 1/4" LH-ÜM (left hand thread)
- Ignition burner supply: 24V / 0.5A
- Solenoid valve: 1/4", 6 bar, Supply 24V DC
- Ignition burner clamp: for torch diameters 32-50 mm





## SYSTEM OPTIONS

Description	Gas type	Part No.
Complete ignition system	Propane	100926
Complete ignition system	Acetylene	100925
Complete ignition system	Propane US	101157

## SPARE PARTS

Position	Description		Part No.
A	Ignition burner	Propane	100906
	Ignition burner	Acetylene	100905
B	Ignition transformer 24 V DC		100907
C	Ignition power cable	1,2 / 3 m	100911
D	Ignition/ground cable	1,4 m	100934
E	Gas hose	1,2 m	100935
F	Flashback arrestor		100910
G	Adjustment valve		100915
H	Torch clamp		100916
I	Solenoid valve 24 V DC incl.plugin	Propane	100933
	Solenoid valve 24 V DC incl.plugin	Acetylene	100913
J	T-piece 3/8"	For connecting to fuel gas supply	100936
K	Nipple G1/4" - NPT 1/4	Instead of T-piece for US	100937

# FIT+ three ANA

## Intelligent Cutting Torch

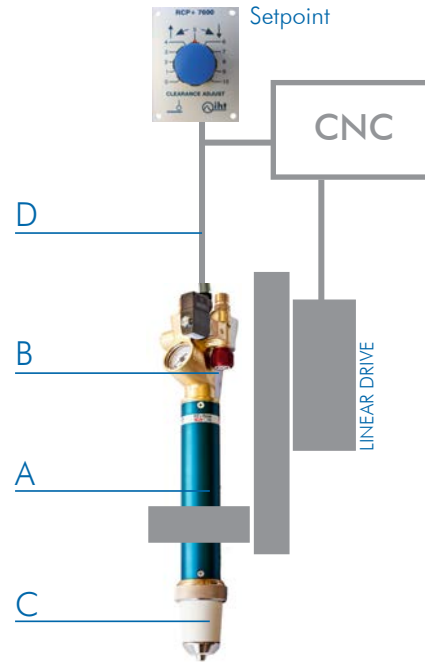
- Best in class **Height sensing system**
- Automatic **Flame ignition**
- **Torch Controller** - easy connection to machine CNC
- **Tool-Free system** - nozzles and sensor exchange reduce downtime
- **Integrated control valves** - heating oxygen and fuel gas control for a quicker installation
- **Built-in pressure gauge** to ensure cutting oxygen pressure that improves cut quality
- **Flashback detection** for safe operation and a longer life time

## Application Fields

- Cutting machines with integrated z-axis and motor controller.
- For cutting up to 300 mm / 12" sheets.
- Single- or multi- torch applications.
- Solution for new cutting machines and retrofits.
- Cutting range up to 300 mm / 12" thickness with active Height sensor.
- Hole piercing up to 80 mm / 3 1/2" with Height sensor, above that with Splash Protector.
- Cutting with Height sensor on dry cutting tables.

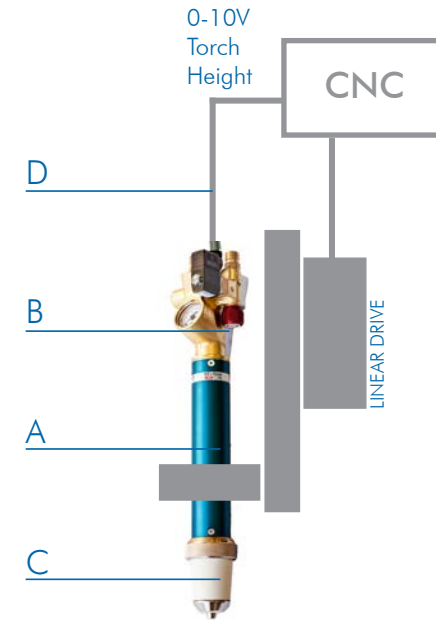


### Integration with Remote Control Potentiometer



- In: Setpoint (0-10 V)
- In: Ignite
- Out: Deviation Position (0-10 V)
- Out: In Position
- Out: Error/Collision/Flashback

### Direct CNC Integration



- Power: 24 V DC/0,6 A
- In: Calibrate height
- In: Ignite
- Out: Torch Height (0-10 V)
- Out: Error/Collision/Flashback
- Power: 24 V DC/0,6 A



## TORCH CONFIGURATION OPTIONS

Description		Part No.
Sensor Torch FIT+ three 220/45PMY ANA Blue	Cutting torch with analogue torch controller and Height sensor	140100
Sensor Torch FIT+ three 220/45A ANA Blue	Cutting torch with analogue torch controller and Height sensor	140101
Sensor Torch FIT+ three 220/45PMY ANA Red	Cutting torch with analogue torch controller and Height sensor	140103
Sensor Torch FIT+ three 220/45A ANA Red	Cutting torch with analogue torch controller and Height sensor	140104



## ACCESSORIES / SPARE PARTS

Position	Description	Part No.
	Heat Shield FIT+ three	140522
	Starter Kit FIT+ three A	101213
	Starter Kit FIT+ three PMY	101211
	Remote Control Potentiometer	101158
D	TC Cable FIT+ three ANA	2 / 5 / 10 / 20 m 140524



## SPARE PARTS

Position	Description	Part No.
A	Cutting Torch FIT+ three 220/45PMY Blue	Without torch controller 140300
A	Cutting Torch FIT+ three 220/45A Blue	Without torch controller 140301
A	Cutting Torch FIT+ three 220/45PMY Red	Without torch controller 140303
A	Cutting Torch FIT+ three 220/45A Red	Without torch controller 140304
B	FIT+ three Torch Controller ANA	140501



## TOOLS

Description	Part No.
Clearance Sensor Ejector	100781
Pin Tool	100778
Torch Setting Tool	100779
Glowplug Exchange Tools +5 Glow plugs	140564



## CONSUMABLES

CUTTING CONSUMABLES  
ON PAGE 38

Position	Description	Part No.
E	Splash Protector	140551
C	Clearance Sensor Kit FIT+ three	140550
	Sensor Holder	100772
	Clearance Sensor type B 14/19	100773
	O-Ring	5 pcs in the package 100774
	Contact Pin	5 pcs in the package 100780
	Mounting Ring	100776

# FIT+ two

## Intelligent Cutting Torch

- **Automatic ignition system** - integrated in the torch
- **Improved productivity** - with use of High-Speed Cutting nozzles
- **Fast installation and safe operation** - integrated flame adjustment valves
- **Easier to handle for machine operators** - thanks to use of Tool-Free Nozzle changing system

## Application Fields

- Autogen cutting of straight and shaped cuts in accordance with ISO 9013
- Autogen cutting up to 300 mm / 12"
- Hole piercing up to 150 mm / 6"
- Can be used with different fuel gases
- Compatible with all cutting machines
- Suitable for new installations as well as retrofitting

## CNC Connections

- **In:** Ignite 24 V DC/1 mA, start ignition command
- **Out:** Error
- Power 24 V DC /1 A
- Earth/Ground





## TORCH CONFIGURATION OPTIONS

Position	Description	Part No.
A	Cutting Torch FIT+ two 220/40 PMY Blue	140200
A	Cutting Torch FIT+ two 220/40 A Blue	140201
A	Cutting Torch FIT+ two 220/40 PMY Red	140203
A	Cutting Torch FIT+ two 220/40 A Red	140204
B	Extension Cable FIT+ two Cable open, (10/20/30m)	140527

## ACCESSORIES

Description	Part No.
Starter Kit FIT+ two A	101223
Starter Kit FIT+ two PMY	101221

## SPARE PARTS / CONSUMABLES / TOOLS

CUTTING CONSUMABLES  
ON PAGE 38

Description	Part No.
Torch Setting Tool	100779
Glowplug Exchange Tools + 5 Glow plugs	140564
Glow Plug (1 pce)	140565
Service cable FIT+ two	140530



Cutting torch FIT+ two and External Height  
Sensor System with Sensor Ring (ext. Ø 34 mm)

# FIT+ one

## High Performance Cutting Torch

- **Unique system** for Autogen machine cutting technology
- **Product concept** created thanks to the long-term partnership with the customers
- **High productivity** of Autogen machine cutting process due to high-speed cutting nozzles
- **Safe operation** - high resistance against flashback ensured by integrated COOLEX® and axial injector with application of Resonator Mixing system in acetylene variants
- **Work-time efficiency** with minimized nozzle exchange time
- **Easy to handle** for machine operators because of Tool-Free nozzle changing by special bayonet system, without any wrench
- **One type of heating nozzle** for all fuel gases
- **Extended lifetime** of consumable nozzles
- **Conform to ISO 5172**

## Application Fields

- Autogen cutting of straight and shaped cuts in accordance with ISO 9013
- Autogen cutting up to 300 mm / 12"
- Hole piercing up to 150 mm / 6"
- Can be used with different fuel gases
- Compatible with all cutting machines
- Suitable for new installations as well as retrofitting







## TORCH CONFIGURATION OPTIONS

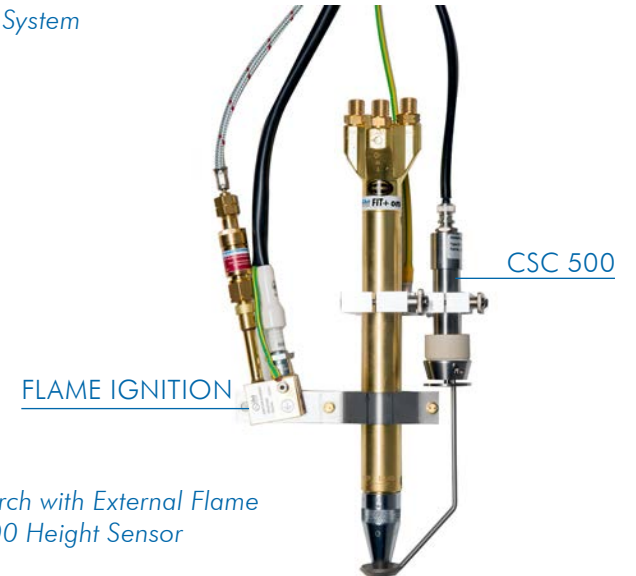
Description	Part No.
Cutting Torch FIT+ one 220/32PMY	101171
Cutting Torch FIT+ one 320/32PMY	101173
Cutting Torch FIT+ one 110/32PMY	101175
Cutting Torch FIT+ one 220/32A	101170
Cutting Torch FIT+ one 320/32A	101172
Cutting Torch FIT+ one 110/32A	101174

## ACCESSORIES / SPARE PARTS

Description	Part No.
Strip Cutting Attachment (Don't use with Cutting Torches with Integrated flame ignition)	101249
Bevel Cutting Attachment (Don't use with Cutting Torches with Integrated flame ignition)	101321
Flashback arrestor cutting oxygen G3/8"	101165
Flashback arrestor heating oxygen G1/4"	101166
Flashback arrestor fuel gas G3/8"LH	101167
Adjustment valve cutting oxygen G3/8"	101164
Adjustment valve heating oxygen G1/4"	101163
Adjustment valve fuel gas G3/8"LH	101162



*M4000 CAP Height Control System  
with FIT+ one cutting torch*



*FIT+ one Cutting Torch with External Flame  
Ignition and CSC 500 Height Sensor*

## CONSUMABLES AND SPARE PARTS



Description	Heating nozzle	Part No.
GSF Heating nozzle APMYF 3-150 mm		100797
GSF Heating nozzle APMYF 150-300 mm		101193
HDF Heating Nozzle APMYF 150-300 mm		101237
PSF High speed cutting nozzle PMY 3-6 mm	100797	100887
PSF High speed cutting nozzle PMY 7-15 mm	100797	100888
PSF High speed cutting nozzle PMY 15-25 mm	100797	100889
PSF High speed cutting nozzle PMY 25-40 mm	100797	100890
PSF High speed cutting nozzle PMY 40-60 mm	100797	100891
PSF High speed cutting nozzle PMY 60-100 mm	100797	100892
PSF High speed cutting nozzle PMY 100-150 mm	100797	101081
PSF High speed cutting nozzle PMY 150-200 mm	101193	101082
PSF High speed cutting nozzle PMY 200-250 mm	101193	101083
PSF High speed cutting nozzle PMY 250-300 mm	101193	101084
PRC Rapid cutting nozzle PMY 5-40 mm	100797	101096
PRC Rapid cutting nozzle PMY 5-70 mm	100797	101097
ASF High speed cutting nozzle A 3-5 mm	100797	100893
ASF High speed cutting nozzle A 6-10 mm	100797	100894
ASF High speed cutting nozzle A 10-25 mm	100797	100895
ASF High speed cutting nozzle A 25-40 mm	100797	100896
ASF High speed cutting nozzle A 40-60 mm	100797	100897
ASF High speed cutting nozzle A 60-100 mm	100797	100898
ASF High speed cutting nozzle A 100-150 mm	100797	100899
ASF High speed cutting nozzle A 150-230 mm	101193	101085
ASF High speed cutting nozzle A 230-300 mm	101193	101086
ARC Rapid cutting nozzle A 3-40 mm	100797	101098
ARC Rapid cutting nozzle A 3-70 mm	100797	101099

Description	Part No.
O-Ring kit for cutting and heating nozzles (10+10 pcs)	101180

## SPARE PARTS



Part No.	Description	FIT+ two	FIT+ three	Instruction video (QR code)
140564	GLOW PLUG KIT (5x glow plug + tool)	×	×	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>TWO SEALS</p>  <p>OLD DESIGN</p> </div> <div style="text-align: center;"> <p>ONE SEAL</p>  <p>NEW DESIGN</p> </div> </div>
140562	GLOW PLUG KIT (1x glow plug + tool)	×	×	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>TWO SEALS</p>  <p>OLD DESIGN</p> </div> <div style="text-align: center;"> <p>ONE SEAL</p>  <p>NEW DESIGN</p> </div> </div>
4647089	GLOW PLUG KIT (1x glow plug)	×	×	
140566	GLOW PLUG KIT (10x nuts + 20x micawashers)	×	×	
140559	IGNITION INJECTOR SET (propane)	×	×	
140560	IGNITION INJECTOR SET (acetylene)	×	×	
203412	IGNITION INJECTOR TOOL SPRING	×	×	
140552	SOLENOID VALVE Z-O2-24VDC FIT+	×	×	

## SPARE PARTS



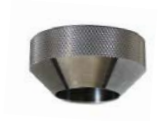
Part No.	Description	FIT+ two	FIT+ three	Instruction video (QR code)
140561	PRESSURE GAUGE KIT (1x gauge, 2x glass, 2x sealing, 2x glass o-ring, 1x retaining ring, 3x screw, 4x o-ring, 1x vacuum clamp)	×	×	 OLD DESIGN NEW DESIGN
140563	PRESSURE GAUGE SEALING KIT (5x glass, 5x sealing, 5x glass o-ring, 2x retaining ring, 2x vacuum clamp)	×	×	 OLD DESIGN NEW DESIGN
140556	ADJUSTMENT VALVE FUEL GAS	×	×	
140557	ADJUSTMENT VALVE OXY	×	×	
140533	CONNECTOR 4-PIN FEMALE FIT + TWO	×	-	
140534	CONNECTOR 4-PIN MALE FIT + TWO	-	×	

# TOOLS



Part No.	Description	FIT+ two	FIT+ three	Instruction video (QR code)
140548	IGNITION INJECTOR PROFESSIONAL TOOL	×	×	
140530	SERVICE CABEL (4 pole)	×	-	
140531	SERVICE CABEL analog (8 pole)	-	×	
100775	CLEARANCE SENSOR TOOL	-	×	
100781	CLEARANCE SENSOR EJECTOR	-	×	
100778	PIN TOOL	-	×	
100779	TORCH SETTING TOOL	×	×	
101181	BRASS CLEANING BRUSH	×	×	
101182	CLEANING NEEDLE FOR CUTTING OXYGEN CHANNELS	×	×	

## CONSUMABLES



Part No.	Description	FIT+ two	FIT+ three	Instruction video (QR code)
140551	SPLASH PROTECTOR FIT +	-	×	
140550	CLEARANCE SENSOR KIT FIT+ THREE (sensor holder, clearance sensor, mounting ring, o-ring)	-	×	
100772	SENSOR HOLDER	-	×	
100773	CLEARANCE SENSOR TYPE B 14/19	-	×	
100774	O-RING (5 PCS)	-	×	
100776	MOUNTING RING	-	×	
100780	CONTACT PIN (5 pcs)	-	×	

# Height sensors for M4000 CAP & CSC 500

## Rings sensor

IHT sensor rings are the best-in-class capacitive sensors for Autogen cutting. They have been produced as the result of own company development supported by customers feedback. A long-term use at many machines around the world gives the best proof of their quality. A specifically designed conical shape of the ring minimizes the contact face for contact with the splash of the steel oxides during sheet metal piercing. High-temperature resistant Stainless steel with stone washed surface minimizes adhesion of the slag. That all leads to long lifetime of these consumables.

- Ring diameter 34 mm: Best seller, maximal work piece utilisation (minimal material waste), very good height control.
- Ring diameter 60 mm: Excellent height control stability.
- Open ring with diameter 75 mm: Long life for one-direction piercing operations
- Ring diameter 99 mm: Primary dedicated plasma process height control during grid cutting



## Plate sensor

- Capacitive sensor for Autogen three-torch bevel cutting applications
- Automatic height sensing when cutting with three torches
- Touchless and precise clearance control
- Minimal size of the sensor for low heat transfer
- Made of stainless steel for high temperature resistance.
- Optional cooling of sensor with compressed air for longer life



## Bevel sensor

- Bevel Sensor for capacitive Height Control system for Autogen cutting process.
- Touchless and precise clearance control for cutting with angled torches.
- Left and right version for optimal mounting
- Made of stainless steel for high temperature resistance.
- Optional cooling of sensor with compressed air for longer life



## HEIGHT SENSORS

Description		Part No.
Sensor Ring	Ø 34 mm	100269
Sensor Ring	Ø 60 mm	100270
Sensor Ring	Ø 75 mm	100271
Sensor Ring	Ø 99 mm	100431
Sensor Open	Ø 75 mm, one side open for thick plates piercing	100436
Plate sensor	With SCU HT 100994	100737
Bevel sensor Left		100214
Bevel sensor Right		100213

# Gas Control Block

A precise Gas parameters control is one of the most important factors for an efficient Autogen cutting process. Cutting oxygen, Heating oxygen and Fuel gas pressure and flow needs to be continuously controlled to allow exact settings of optimal values for each particular stage of the cutting process as flame ignition, material preheating, piercing and cutting.

Gas Control Block is a compact gas pressure controller for three above mentioned gases. It is to be controlled by CNC (PLC) of cutting machine.

#### Electrical connections:

- Setpoint: 0-10 V DC for each gas (Output)
- Power: 24 V DC / 2A
- Connector: M12 male 8 pole

• **Overall dimensions:** L210 × W120 × H200 mm

• **Weight:** 6kg

#### Fuel Gas type options:

- Propane
- Acetylene\*
- LPG mixtures
- Natural Gas
- Methane
- Propylene

## GAS CONTROL BLOCK

Description	Part No.
Gas control block (All gases)	101694



Gases	Connection	Max inlet pressure	Outlet pressure range
Cutting Oxygen	G3/8"	12 bar	0-10 bar
Heating Oxygen	G1/4"	10 bar	0-10 bar
Fuel Gas	G3/8"LH	2 bar*	0-2 bar*

\*Acetylene max. 1,5 bar



# Autogen Cutting Starter Kits

- Recommended to use one Kit for starting operation of one machine
- Each Starter Kit consists of components needed to start Autogen Cutting.
- Variants for different systems, torches, and gas types.
- Get all in one!



## STARTER KIT FIT+ APC

### Description

- Starter Kit FIT+ three APC A
- Starter Kit FIT+ three APC PMY

### Part No.

- 101227
- 101225



## STARTER KIT FIT+ THREE

### Description

- Starter Kit FIT+ three A
- Starter Kit FIT+ three PMY

### Part No.

- 101213
- 101211



## STARTER KIT FIT+ TWO

### Description

- Starter Kit FIT+ two A
- Starter Kit FIT+ two PMY

### Part No.

- 101223
- 101221

## CONTENT OF STARTER KITS



Component Description	APC		FIT+ three		FIT+ two		Component Item number
	PMY	A	PMY	A	PMY	A	
	101225	101227	101211	101213	101221	101223	
Tool-Free Heating Nozzle GSF 3-150 mm APMY	×	×	×	×	×	×	100797
Cutting Nozzle pack PSF 7-100 mm (Range: 7-15 / 15-25 / 25-40 / 40-60 / 60-100 mm)	×		×		×		101692
Cutting Nozzle pack ASF 6-100 mm (Range: 6-10 / 10-25 / 25-40 / 40-60 / 60-100 mm)		×		×		×	101693
Spare O-Rings for FIT+ Nozzles (10+10pcs)	×	×	×	×	×	×	101180
Splash Protector for FIT+ three	×	×	×	×			140551
Clearance Sensor B 14/19	×	×	×	×			100773
O-Ring for Height Sensor	×	×	×	×			100774
Contact Pin	×	×	×	×			100780
Pin Tool	×	×	×	×			100778
Clearance Sensor Ejector	×	×	×	×			100781
Cleaning Brass Brush	×	×	×	×	×	×	101181
Conical Cleaning Needle	×	×	×	×	×	×	101182
Torch Setting Tool	×	×	×	×	×	×	100779
Flashback Arrestor Cutting Oxy			×	×	×	×	101165
Flashback Arrestor Heating Oxy			×	×	×	×	101166
Flashback Arrestor Fuel Gas			×	×	×	×	101167

# Demo Kit FIT+ three

Demo kit FIT+ three     Part No. 101888

A kit for presenting the FIT three technology to the customer. Ideal tool supporting sales of Autogen technology and for training of equipment maintenance and repairs.

Kit can be configured by DIG or ANA torch variants with blue or red colour of the torch shaft.

Parts are safely stored in the tailored hard foam inside a robust plastic box.

## Demo Kit contains:

- Sensor torch FIT+ three (with Torch Controller and Height Sensor)
- GSF Heating Nozzle 3 – 150 mm
- GSF Heating Nozzle 150 – 300 mm
- 6 pcs Cutting Nozzles (2x ASF, 2x PSF, 1x ARC, 1x PRC)
- 3 pcs Flashback Arrestors for the torch (Fuel Gas, Heating Oxygen, Cutting Oxygen)
- Splash Protector
- Heat Shield FIT+ three
- Service Cable FIT+ three ANA
- Torch Setting Tool
- Cleaning Brass Brush
- Cleaning Needle
- Pin Tool



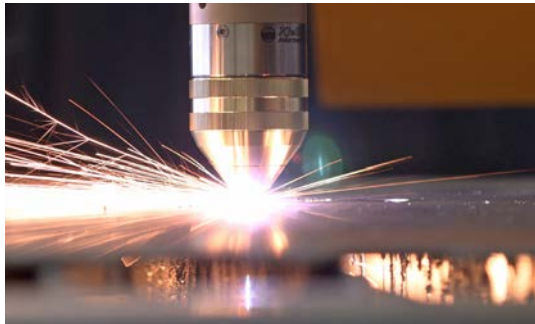
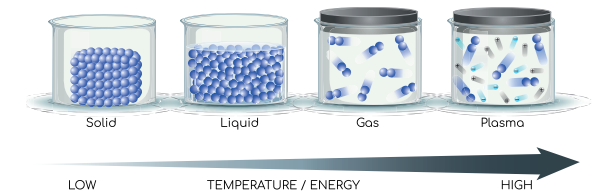
# Plasma Cutting

# Plasma

## What is it?

Plasma is well known as the fourth state of matter. Changing of state of matter is related to the energy in that matter. When increasing energy, we come from the solid state via liquid and gas to ions. Then if we increase the density of ions, we get the plasma.

Plasma is high-density electric arc – electrically conductive, high-temperature matter.



## Plasma Cutting

Plasma is created from the gas such as argon, nitrogen, oxygen or air in the cutting torch. It is the focused and blown away to the material surface. Electric current from the strong power source adds enough energy to ionize blowing gas to create continuous high-power plasma arc.

Such plasma arc melts the metal very fast and blows the melt away creating the kerf. Plasma cutting is a thermal fusion process.

High number of parameters are needed to be optimized to provide seamless plasma cutting process. The exact distance between the nozzles and the metal surface needs to be set for all process sections such as arc ignition, hole piercing, straight or bevel cutting etc.

## Height Control Systems

Following height control systems provides robust, time-proven solution for new high-end machines but also for retrofitting of existing tables. They are on modular base with many practical features, assembled from reliable and long-lasting components.



# Plasma Height Control Systems Overview

M 4000 PCS



M 4000 BAS



M 4000 TWIN



<b>M 4000 Lifter Stroke</b>	220 mm 350 mm 500 mm	220 mm 350 mm	Combining both Autogen CAP and Plasma PCS systems with one M 4000 lifter
<b>Load / Speed</b>	12 kg / 80 mm/s 30 kg / 60 mm/s	12 kg / 80 mm/s	
<b>Height resolution / ARC Voltage</b>	0,1 mm / 0,5 V	0,5 mm / 1,0 V	
<b>CUTBUS®</b>	Included	Optional with board interface	
<b>Up-Limit output</b>	Included	Not included	
<b>Retract position digital input</b>	Included	Not included	
<b>Cutting height change during cutting</b>	Included	Not included	
<b>Fast switching between marking and cutting position</b>	Included	Not included	
<b>Plasma Torch</b>	Torch is not included	Torch is not included	

# M 4000 PCS

## Plasma Clearance Control System for Plasma Cutting Machines

- Suitable for all torch carriages
- Easy integration to the CNC control
- Works with all common CNC controls on the market
- Optional fieldbus connection
- Modular design for maximum flexibility
- High-quality components ensure high cutting quality and productivity

## Fields of Application

- Suitable for cutting with all plasma-specific processes and for the corresponding materials, also for underwater cutting or for thin sheet metal cutting
- The first finding is done tactilely or optionally with the Contact Sensor which is especially used for thin sheets
- The adjustment of the clearance in 0.1 millimetre steps ensures a consistently high cutting quality
- Vertical collision detection with weight compensation
- 3D collision protection
- Optional 3D collision detection
- 100% compatible with the IHT M 4000 Oxy-Fuel systems
- Multilingual operator terminal or
- Fieldbus connection (CUTBUS®)

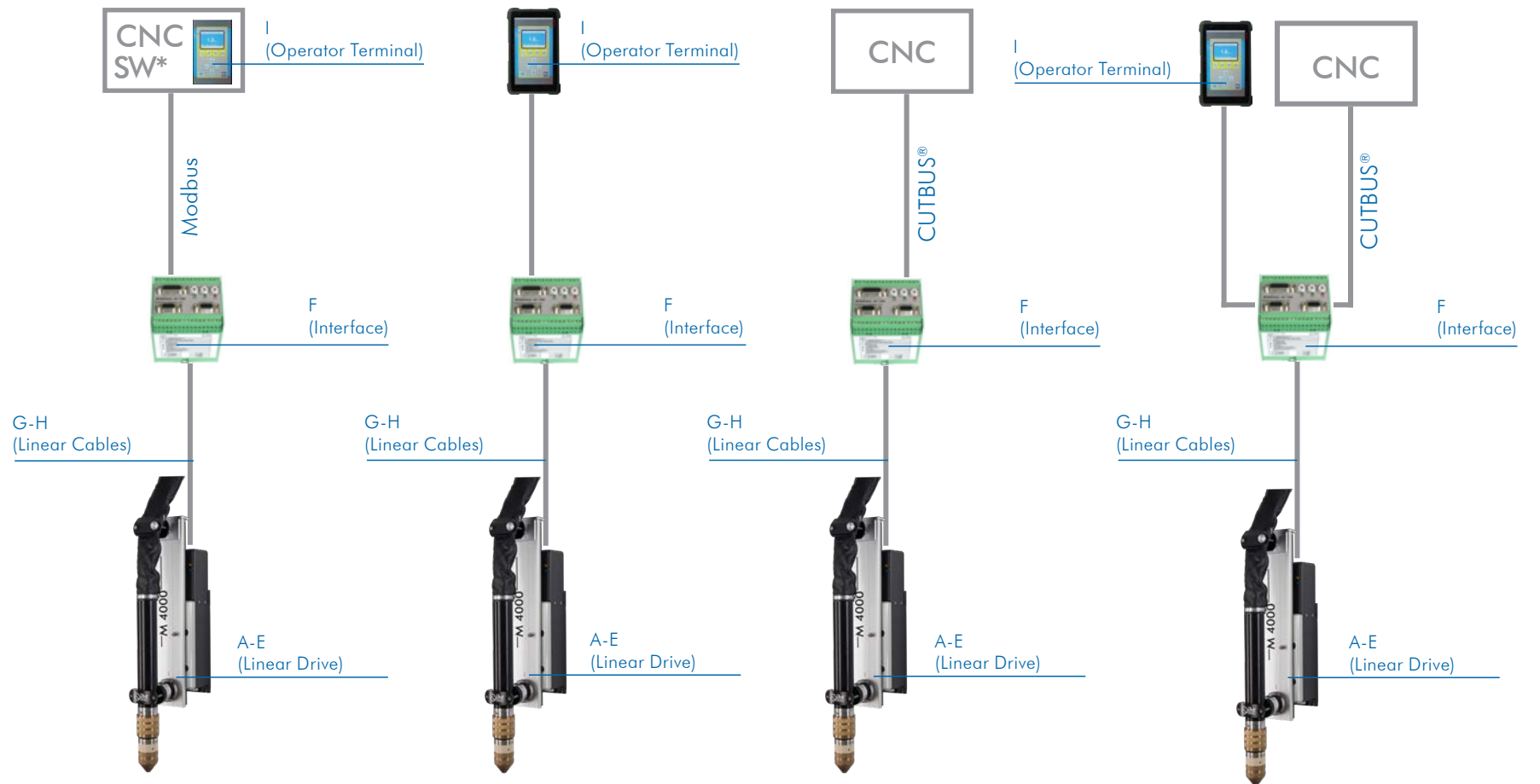
## CNC Connections

- **In:** Plasma high voltage 300 or low voltage +10V (ARC Voltage)
- **In:** Initial Position Start
- **In:** Start XY
- **In:** Corner
- **In:** Retract position 20 mm above the cutting height (Retract 1)
- **In:** Retract position 50 mm above the cutting height (Retract 2)
- **In:** Scrap cutting without initial position finding
- **In:** Manual Up
- **In:** Manual Down
- **Out:** Ok to Move
- **Out:** Upper Treshold
- **Out:** Delay Time
- **Out:** Plasma Start
- **Out:** Control Active
- **Out:** Error
- **Out:** Collision
- **Out:** Reference / Retract position
- **Out:** Separate ignition with gas pre-flow
- **Out:** Reference position

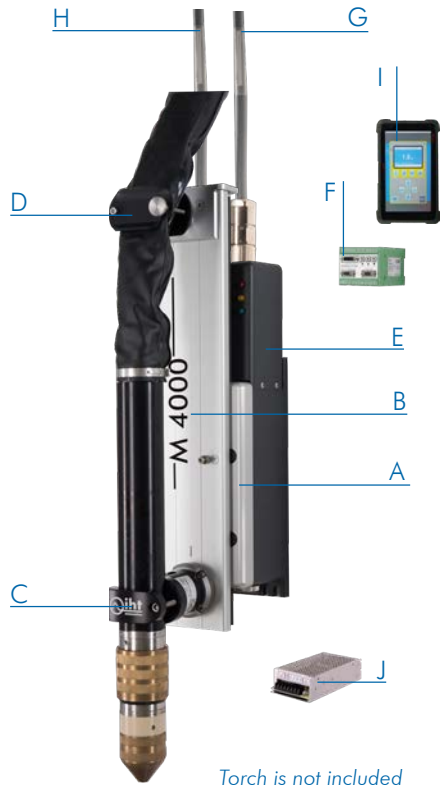
**In:** = from CNC / **Out:** = to CNC



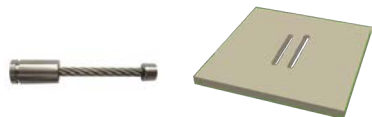
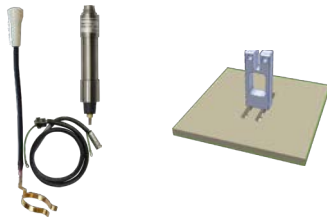
# SYSTEM CONFIGURATION







Torch is not included



## SYSTEM CONFIGURATION OPTIONS

Position	Description	Part No.
A	Linear drive body PCS, 12 kg	100522
	Linear drive body PCS, 30 kg	Only with Power Supply 100446 100523
B	Guiding rail, 200 mm	Stroke 220 mm, Overall length 496 mm 100551
	Guiding rail, 220+ mm	Stroke 220 mm, Overall length 626 mm 100558
	Guiding rail, 350 mm	Stroke 350 mm, Overall length 626 mm 100552
	Guiding rail, 500 mm	Stroke 500 mm, Overall length 776 mm 100553
	(with 1,5 m Coax Cable)	100665
C	Torch clamp 3D collision protection	For torch Ø 30-58 mm 100669
	Torch clamp 3D collision detection	+ fastener, For torch Ø 30-60 mm 100669
	Torch clamp 3D extension cable 1,3 m	For guiding rail 500 mm 101033
D	Hose clamp fixed	100663
E	Control unit PCS	100604
F	Interface (IF)	100358
G	Linear drive control cable PCS	10 m / 20 m / 30 m 100359
H	Linear drive power cable PCS	10 m / 20 m / 30 m 100361
I	Operator terminal PCS W10	101885
	Operator terminal cable	5 m / 10 m 100374
J	Power supply	101021
	Power supply	100446
	CUTBUS® cable	5 m / 10 m 100368
	Converter RS232/RS485	100395
	Converter USB/RS485	100400
	Heat shield kit	100651

## ACCESSORIES

Description	Part No.
Contact sensor kit PCS*	101001
Contact sensor interface 700 kit	101280
Heat shield	100651

\* See Contact sensor kit PCS content on the page 59.

## SPARE PARTS / CONSUMABLES

Description	Part No.
3D-collision sensor (SUB-D)	With the cable 1,4m, for Collision Detection torch clamp 101038
Safety rope	100690
Heat shield plate	100691

# M 4000 BAS

## Plasma Clearance Control system for Plasma Cutting Machines

- The M 4000 BAS system provides all the necessary features for a good cut
- Suitable for all torch carriages
- Easy integration to the CNC control
- Works with all common CNC controls on the market
- Optional fieldbus connection
- Modular design for maximum flexibility
- High-quality components ensure high cutting quality and productivity

## Fields of Application

- Suitable for cutting with all plasma-specific processes and for the corresponding materials, also for underwater cutting or for thin sheet metal cutting
- The initial position finding is done tactile or optionally with the Contact Sensor which is especially used for thin plates
- The adjustment of the clearance in 0.5 millimetre steps ensures a consistently high cutting quality
- Vertical collision detection with weight compensation 3D collision protection
- Optional 3D collision detection
- 100% compatible with the IHT M 4000 Oxy-Fuel systems
- Multilingual operator terminal or Fieldbus connection (Cutbus®)

## CNC Power Source Connections

- **In:** Plasma high voltage 300 V or low voltage +10V (ARC Voltage)
- **In:** Plasma Ready (Plasma On)
- **Out:** Plasma Start
- **Out:** corner (Corner)

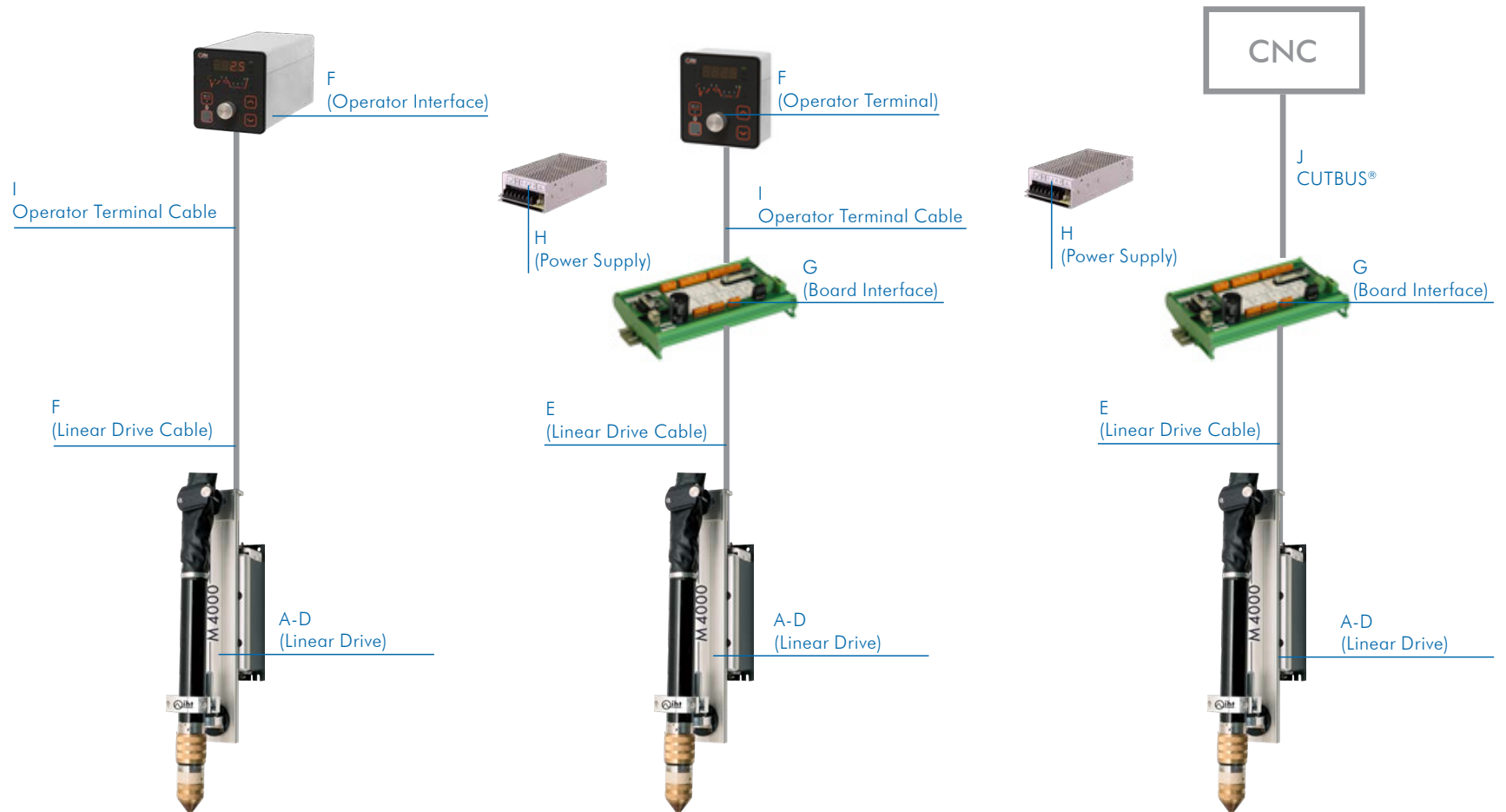
## CNC Connections to the CNC

- **In:** Manual Up
- **In:** Manual Down
- **In:** Start Initial Position
- **In:** Corner
- **Out:** Ok to Move
- **Out:** Error
- **Out:** Collision during cutting (Collision)

**In:** = from CNC / **Out:** = to CNC

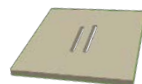
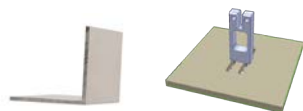


# SYSTEM CONFIGURATION





Torch is not included



## SYSTEM CONFIGURATION OPTIONS

Position	Description	Part No.	
A	Linear drive body cap, 12 kg	100531	
B	Guiding rail, 200 mm	Stroke 220 mm, Overall length 496 mm	100551
	Guiding rail, 220+ mm	Stroke 220 mm, Overall length 626 mm	100558
	Guiding rail, 350 mm	Stroke 350 mm, Overall length 626 mm	100552
C	Torch clamp BAS 3D collision protection		101092
	Torch clamp BAS 3D collision detection		101093
D	Hose clamp fixed		100663
E	Linear drive cable BAS	10 m / 20 m / 30 m	101014
F	Operator interface 110 VAC (OI)		101034
	Operator interface 230 VAC (OI)		101013
	Operator terminal (OT)		101016
G	Board interface - OT 24 VDC (BI)		101020
	Board interface - CUTBUS 24 VDC (BI)		101089
H	Power supply		101021
I	Operator terminal cable (OTC)	5 m / 10 m / 20 m	101069
J	Fieldbus 485 cable open (Cutbus)	5 m / 10 m / 20 m	101148

## ACCESSORIES

Description	Part No.
Mounting angle	101037
Contact sensor kit BAS*	101009
Heat shield kit	100651

\* See Contact sensor kit PCS content on the page 59.

## SPARE PARTS / CONSUMABLES

Description	Part No.	
3D-collision sensor (SUB-D)	With the cable 1,4m, for Collision Detection torch clamp	101038
Heat shield plate		100691

# Contact Sensor Kit for Plasma Systems

One of the most important factors when cutting with plasma is achieving the correct cutting height.

Besides the already proven tactile, IHT Automation now offers initial position finding using an electrical contact. With this system an electrical signal is generated when the tip of the cutting nozzle comes into contact with the surface of the workpiece.

This reduces the probability of the workpiece being pierced, a particular concern, especially when cutting thin sheets. Tactile position finding is always active when using this method. The sensing signal is connected to the PCS-CS control unit via a separate connector.

Some manufacturers of plasma systems have this initial position finding contact already built into their systems. The M 4000 PCS Interface Module has a dedicated „External initial position contact“ input for these systems.



Description	Part No.
<b>Contact Sensor Kit for M4000 PCS</b>	<b>101001</b>
Contact Sensor Interface Cable (Length: 10 / 20 / 30 m)	101003
Contact Sensor Unit	101002
Sensor Torch Clamp	100268
Contact Sensor Clip Cable (Length: 0,85 m)	101005
Contact Sensor Clip	101004

Description	Part No.
<b>Contact Sensor Kit for M4000 BAS</b>	<b>101009</b>
Contact Sensor / Ground Cable	101006
Contact Sensor Unit	101002
Sensor Torch Clamp	100268
Contact Sensor Clip Cable (Length: 0,85 m)	101005
Contact Sensor Clip	101004

## Contact Sensor Basics

There are two version of contact sensor available. The Contact Sensor Unit is easy to install. It can sense touching the plate at 50 kOhm resistance between the plate and the torch. Reliable operation is guaranteed when the torch resistance is of 100kOhm or more. All Kjellberg torches meet this specification.

Some plasma cutting torches can have a internal resistance against ground down to 1kOhm, if this is the case, the Contact Sensor Interface 700 should be used.



Description	Part No.
<b>Contact Sensor Interface Kit</b>	<b>101280</b>
Contact Sensor Interface Cable (Length: 10 / 20 / 30 m)	101003
Contact Sensor Interface 700	101236
Contact Sensor Clip	101004

M 4000

**Other Systems and Products**

# M 4000 MAN

## Manual Clearance Control System

- Cost effective system for manually controlled up and down torch height for Oxy-Fuel and plasma torches.
- It is suitable for fitting new machines and for retrofitting existing equipment
- Easy upgrade to other M 4000 systems
- Clearance between torch and work-piece will be set via manual UP / DOWN control
- Suitable for all torch carriages
- Easy integration into the CNC control
- Works with all common CNC systems on the market
- Modular construction for maximum flexibility
- High-quality components ensure high cutting quality and productivity

## CNC Connections

- **In:** Manual Up, move torch by hand
- **In:** Manual Down, move torch by hand
- **Out:** Error
- **Out:** Upper end point, torch in highest position
- Supply: 24 V DC, use of IHT power supply strongly recommended

**In:** = from CNC / **Out:** = to CNC





## SYSTEM CONFIGURATION OPTIONS

Position	Description	Part No.
A	Linear drive body cap, 12 kg	100501
	Linear drive body cap, 30 kg	Only with Power Supply 100446 100502
B	Guiding rail, 200 mm	Stroke 220 mm, Overall length 496 mm 100551
	Guiding rail, 220+ mm	Stroke 220 mm, Overall length 626 mm 100558
	Guiding rail, 350 mm	Stroke 350 mm, Overall length 626 mm 100552
C	Guiding rail, 500 mm	Stroke 500 mm, Overall length 776 mm 100553
	Torch clamp M4000	For torch Ø 30-35 mm 100661
	Torch clamp M4000	For torch Ø 35-53 mm 100662
	Bevel torch clamp	For torch Ø 30-35 mm 100679
D	Bevel torch clamp	For torch Ø 35-53 mm 100668
	Hose clamp fixed	100663
E	Control unit + MAN	100631
F	Linear drive cable, CAP	10 m / 20 m 100196
G	Power supply	101021
	Power supply	High power (for LD body 100502) 100446

## ACCESSORIES

Description	Part No.
Heat shield kit	100651

## SPARES AND CONSUMABLES

Description	Part No.
Heat shield plate	100691



# Hose & Torch Clamps



## HOSE CLAMPS

Description	System	Part No.
Hose clamp fixed	M 4000	100663
Hose clamp flexible	M 4000	100664

## TORCH CLAMPS

Description	System	Part No.
Bevel torch clamp 30-35 mm (contains 100661+100653)	M 4000 Autogen	100679
Bevel torch clamp, 35-53 mm (contains 100662+100653)	M 4000 Autogen	100668
Bevel head 3D 46°	M 4000 Autogen	100653
Standard Torch Clamp 30-35 mm	M 4000 Autogen	100661
Standard Torch Clamp 35-53 mm	M 4000 Autogen	100662

### Bevel torch clamp

The BEVEL torch clamp is ideally suited for 2D bevel cutting in all directions up to 46°.

Its modular design can be used to clamp cutting torches with typical barrel diameter 32 mm and 1,38" or 40-45 mm.

Description	System	Part No.
Slide support - 100 mm	M 4000 Autogen	100654
Adapter plate, multi purpose	M 4000 Autogen	100666

### Slide support

To allow an offset positioning or adjustment of the cutting torches, this shifting device can be mounted between the Guiding Rail and the Torch Clamp (or Bevel Head). This allows the torches to be moved by max. 100 mm.

### Adapter plate

On this ADAPTER PLATE it is possible to mount customer specific devices which are not covered by the IHT torch clamp range.

Description	System	Part No.
Torch clamp PCS 3D collision protection, 30-58 mm	M 4000 PCS / M 4000 TWIN	100665
Torch clamp PCS 3D collision detection + fastener, 30-60 mm	M 4000 PCS / M 4000 TWIN	100669
Extension cable for Torch clamp PCS (1,3 m for guiding rail 500 mm)	M 4000 PCS / M 4000 TWIN	101033
Torch clamp BAS 3D collision detection	M 4000 BAS	101093
Torch clamp BAS 3D collision protection	M 4000 BAS	101092
Torch holder TWIN	M 4000 TWIN	100656
Parking adaptor TWIN	M 4000 TWIN	100657

# Guiding rails



## GUIDING RAILS

Description		Part No.
Guiding rail, 200 mm	Stroke 220 mm, Overall length 496 mm	100551
Guiding rail, 220+ mm	Stroke 220 mm, Overall length 626 mm	100558
Guiding rail, 350 mm	Stroke 350 mm, Overall length 626 mm	100552
Guiding rail, 500 mm	Stroke 500 mm, Overall length 776 mm	100553
Guiding rail 800 mm	Stroke 800mm (twin LD bodies needed)	100559

# Service software tool



Have you ever asked yourself „What does this button do?“

It doesn't do anything! In fact, it is just a cover.

By removing it, you gain access to a USB-B port which allows for communication with the Control Unit and other system components.

By installing our simple Service Software on your PC, you can then read a lot of information from the system, such as its current status and historical data regarding the use of the system since it was commissioned.

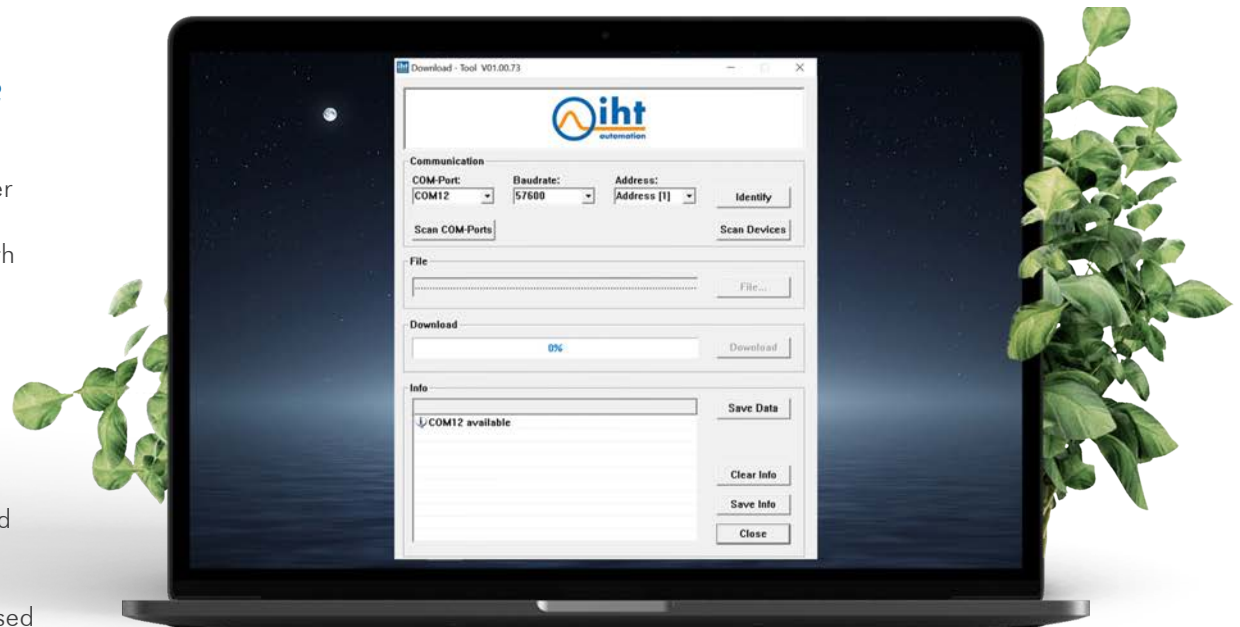
The recorded data can be used for cutting process improvement, planning preventive maintenance tasks or if necessary, program changes and troubleshooting.

It can also be used to upload latest edition of the operating software.



## How to get Service software on your PC?

1. Go to [www.iht-automation.com](http://www.iht-automation.com)
2. Select the Customer Login in the right upper corner of the screen
3. Register yourself by filling simple inquiry with a couple of mandatory fields
4. Wait until your registration is confirmed by Administrator
5. After conformation, go to Customer Login again, fill your Login data and entry Download area with many useful, product related technical documents
6. Select the Software section of the menu and load Download/Service Tool to your PC down.
7. Install the software tool according to enclosed instruction and use it.



*“Autogen technology used in a modern way opens up new opportunities in manufacturing.”*

Martin Roubicek  
Sales and Marketing Manager



**IHT Automation GmbH & Co. KG**  
Baden-Baden, Germany  
+49 7221 39419 0  
info@iht-automation.com  
www.iht-automation.com