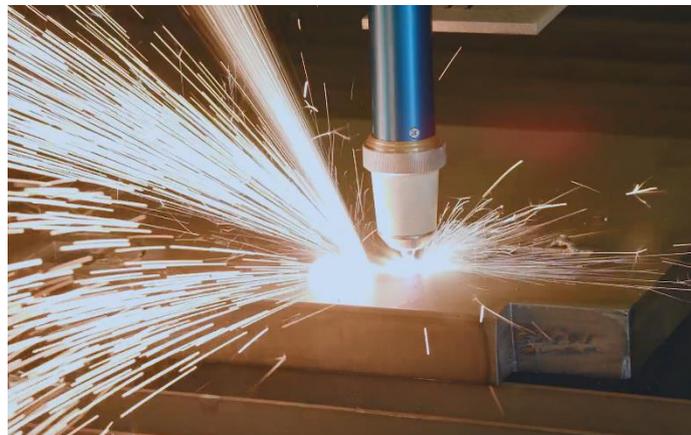


# Application Note AN309

## FIT+ three, Protection Against Splash of Slag

The Autogen cutting process is based on creating the kerf by burning of the material with pure oxygen. Material is preheated by flame at its combustion temperature (carbon steel approx. 1150°C / 2100°F) and the cutting oxygen is reacting with the steel to create oxides. Fast blowing oxygen jet is then removing the slag out of the cut. The slag is built by complex of iron oxides partially mixed with melted steel. An intensive splash of the slag is created always when piercing the hole into the plate and the splash is blowing upwards. But also during plate preheating period and cutting the slag blows sometimes partially upwards to the torch direction, especially in case when the plate surface is dirty or oxidized.

The cutting consumables, heating and cutting nozzles and the torch are negatively affected by blowing slag. The lifetime of the consumables is decreasing as more as bigger amount of the slag blows onto them.



FIT+ three is an intelligent cutting torch containing many sensors and electronic parts. All these sensitive parts are designed to be highly durable, temperature resistant and they are well protected. The most intensively affected part is the Height Sensor which partially works as the protection against the slag. FIT+ three

torch should be used for cutting with height control from 3mm / 1/10" to 300mm / 12" material thickness. When cutting, the Height Sensor kit should be installed on the torch to make his height control function but also to protect the torch parts against the slag splash. The use of Height Sensor is limited by 100mm / 4" for the plate piercing. In such case the Height Sensor shall be removed and replaced by Splash Protector to keep the protection function of the device. Also in all other cases when the Height Sensor is from whatever reason not installed during any of part of the cutting cycles the Splash Protector must be there to protect internal parts of the torch.



*FIT+ three cutting torch with Height Sensor and detail view on installed Splash Protector.*



*Splash Protector is part of FIT+ three Start kit but it is also available as individual accessory in the product brochure:*

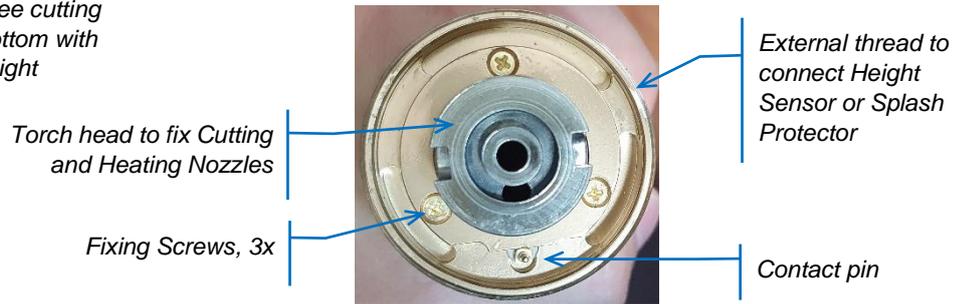
### ACCESSORIES



Item No.	Description
140522	Heat Shield FIT+ three
140551	Splash Protector
101158	Remote Control Potentiometer+ for TC ANA POSITION
140524	TC ANA Cable Fit+ three, one end with open wires (2/5/10/20 m)

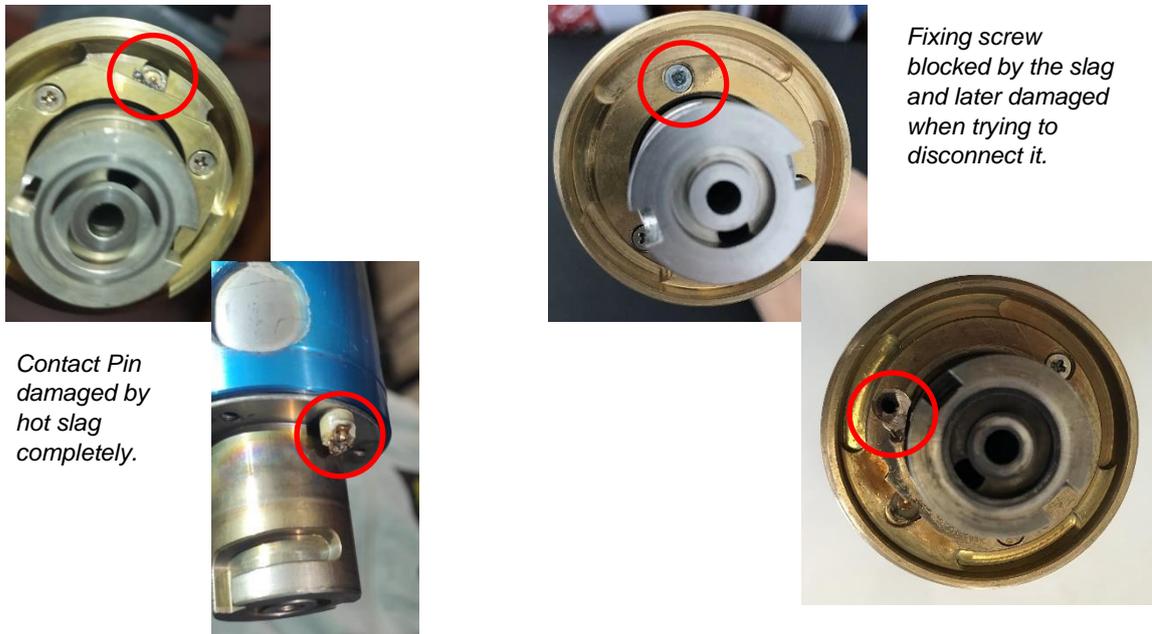
Missing protection can cause damages of the parts, mainly Contact Pin but also other parts:

*View on FIT+ three cutting torch from the bottom with disconnected Height Sensor.*



**Example:**

FIT+ three cutting torch head damaged by slag causing urgent need of torch maintenance and spare parts exchange.



Please find FIT+ product brochure via QR Code or using the link here:



[https://www.iht-automation.com/fileadmin/files/pdfs/Brochure-Flyer/FIT/FIT\\_brochure-IHT-EN.pdf](https://www.iht-automation.com/fileadmin/files/pdfs/Brochure-Flyer/FIT/FIT_brochure-IHT-EN.pdf)

List of Spare parts is available by scanning QR Code or in the Customer Login area here:



[https://www.iht-automation.com/fileadmin/files/pdfs/login/FIT\\_Plus/Spare\\_Parts\\_FIT\\_two\\_three.pdf](https://www.iht-automation.com/fileadmin/files/pdfs/login/FIT_Plus/Spare_Parts_FIT_two_three.pdf)