

Torch height control (THC) product selection sheet

Feature	Sensor™ THC electronics OEM lifter	NEW	ArcGlide® THC	Sensor™ Ti THC	Sensor™ PHC
		Sensor™ THC Hypertherm lifter			
Supported Hypertherm CNCs	All EDGE Family CNCs	All EDGE Family CNCs	All EDGE Family CNCs*	All EDGE Family CNCs	All EDGE Family CNCs
CNC interface	Digital/Analog	Digital/Analog	Hypernet/Discrete I/O	EDGE® Pro Ti	Discrete I/O
User interface	Hypertherm CNC	Hypertherm CNC	Hypertherm CNC*	Hypertherm CNC	Stand-alone HMI
Lifter stroke length**	OEM dependent	239 mm (9.4")	239 mm (9.4")	152 mm (6")	152 mm (6")
Maximum travel speed	OEM dependent	OEM dependent	15240 mm/min (600 ipm)	10160 mm/min (400 ipm)	5080 mm/min (200 ipm)
SureCut™ technology (requires no operator input)					
Job setup	●	●	●	●	○
Cut-to-cut cycle time	○-● OEM dependent	●	●	○	○
Arc voltage control	●	●	●	●	○
Remote Help™ diagnostic	●	●	●	●	○
Part Program Support (PPS)	●	●	●	●	
Supported cutting processes					
Plasma: HyPerformance®	○-● OEM dependent	●	●		
Plasma: True Hole® capable	○-● OEM dependent	●	●		
Plasma: Conventional	○-● OEM dependent	●	●	●	○
Plasma: Tube/Pipe	●				
Waterjet	●				
Built-in laser pointer	OEM dependent	●	●		
Torch break away options	OEM dependent	●	●	○	○
3rd Party CNC capable			●		●
Warranty	OEM dependent	1 year	2 year	1 year	1 year

* HMI with discrete I/O required for EDGE Connect integration

** To increase overall range of motion, an optional torch extension sleeve may be used.

● = Best

○ = Good

Arc voltage

Arc voltage is the measure of voltage from the tip of the consumable to the bottom of the plate while the plasma arc is on. This is used as a feedback reference for automatic height control. This can also include sample arc voltage control which determines the proper arc voltage setpoint based on the specified cut height. This feature maintains optimal cut quality throughout consumable life without operator intervention.

Breakaway

A breakaway is a mechanical interface between the torch mounting block and torch lifter designed to protect the torch in the event of a collision on the cutting machine. A common cause of a collision is a “tip-up”, which is when a portion of the material being cut tilts up blocking the travel path of the cutting tool.

Cut-to-cut cycle time

Cut-to-cut cycle time refers to the amount of process time from one cut to the next. This often includes several non-value added motion and process preparation steps that can be minimized in intelligent control systems to increase productivity.

Digital and analog machine interface

Digital machine interface – A digital communication protocol for commanding motion, I/O, and cut process information to the cutting machine for operation. It enables improved process control and decreased installation complexity. Options include EtherCAT, SERCOS II, and SERCOS III.

Analog machine interface – A common machine interface using discrete I/O and 0–10 VDC +/- signals for motion control. Options include HyPath and Picopath.

EtherCAT interface

EtherCAT is an industrial digital communication protocol used with a Hypertherm EDGE® Connect CNC, and select Hypertherm cutting systems. It enables improved process management, decreased installation complexity, more robust isolation, and better multi-torch installation management.

HMI

The HMI (Human Machine Interface) or pendant is an electro-mechanical input device separate from the CNC, that allows control of the THC functions for operation and diagnostics.

Hypernet

Hypernet® is a proprietary Ethernet based communication protocol used with a Hypertherm CNC, ArcGlide® THC, and select Hypertherm cutting systems. It enables improved process management, decreased installation complexity, more robust isolation, and better multi-torch installation management.

I/O

Inputs and outputs are switched directional electronic interfaces that either provide or receive low voltage signals from devices on the cutting machine. Inputs are signals sent to the CNC, output signals are sent from the CNC.

Laser pointer

A laser indicator mounted alongside the torch to aid in torch-to-workpiece alignment.

Part Program Support (PPS)

PPS refers to the embedding of advanced process information in the part program code. Rapid Part™ technology is an example.

THC/ WHC

Height controls are a means to control the height position of a plasma cutting torch or waterjet cutting head for operation. This may be a simple pneumatic mechanism to raise the torch when not in use or a fully automated system to optimize cut quality and improve consumable life.

User interface

The user interface is the means by which the operator enters and views data for the control device. As an example, for the integrated Sensor™ THC this would be Phoenix® control software and related switches.

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