

Plasma Torch Collision Mount

Description:

The Retro Systems plasma torch collision mount is a dynamically variable sensor that operates on an air pressure system. A regulated air supply provides positive pressure to hold the sensors' face plate firmly against an internal seal during normal operation.

During a collision, the face plate of the sensor is forced to tilt. The face plate seal is broken causing the air pressure inside the sensor to fall. Loss of pressure inside the sensor results in a "shut down" signal being sent to the CNC controller and drive amplifiers. The cutting machine motion and plasma system instantly shut off.

The mount automatically resets itself to the vertical position after the collision is cleared. The machine operator may need to touch the back-up button on the CNC before resuming the cut.



Figure 1 Collision Mount



Figure 2 Mount Activated

Features:

- * Repeatability of 0.0005" (0.013mm) after a crash
- * Signal within 2 to 10ms of collision
- * Full 13° of angular compliance
- * Torch position resets to within ± 0.0005 " (0.013mm) in x, y, and z dimensions
- * Air regulator pressure adjustment enables variable amount of resistance the unit must encounter before signaling a collision.

Applications:

- Protection from metal "tip ups"
- Protection from torch crashing into the edge of the burning table
- Insures consistent alignment after torch maintenance