



Application Kit: **C1D1 for Hazardous Environments**

A Class 1, Division 1 (C1D1) cobot is a collaborative robot designed and certified for use in Class I, Division 1 hazardous environments, which are areas containing flammable gases, vapors, or combustible liquid-produced vapors where dangerous concentrations are likely to exist during normal operation.

IDEAL USE CASES:

- Hazardous material handling
- Explosive gas or vapor detection
- Custom assembly in volatile environments
- Quality control in explosive-risk zones
- Press fitting & insertion in hazardous locations

WHAT YOU NEED:

Cobot Arm: 6-axis collaborative robot with 5–10 kg payload and ± 0.03 mm repeatability, certified for explosion-proof environments (ATEX, IECEx, UL)

Explosive Proof Gripper: Adaptive 2-finger or 3-finger gripper with adjustable stroke and force control, built for safety in hazardous zones

Workstation Fixture: Custom jig or clamp system to securely hold components while preventing risk in Class 1 Division 1 areas

Sensor or Vision Add-on: (Optional) Intrinsically safe vision system or part presence sensor for precise alignment and verification in hazardous settings

Force Feedback Integration: (Optional) Force monitoring to prevent over-pressing or damaging sensitive components in explosive environments

Programming Software: Pre-built routines designed for safety and optimized for operation in Class 1 Division 1 environments

Vision or Sensor Add-on: (Optional) Camera or laser sensor for part edge detection

Safety Equipment (Optional): Scanner or light curtain if deployed near operators

Training & Setup: 1 day on-site setup and calibration + 4 hours remote support

SPECIFICATIONS:

Payload: 5-10kg

Cycle Time: Application-dependent (typically 15–60 seconds per part)

Repeatability: ± 0.03 mm

Reach: 1000–1300 mm

Power Requirements: 110–240V AC (compressed air if using pneumatic tools)

Safety Compliance: ATEX, IECEx, UL certified for explosion-proof operation in Class 1 Division 1 environments

