

16. Struck by Robot

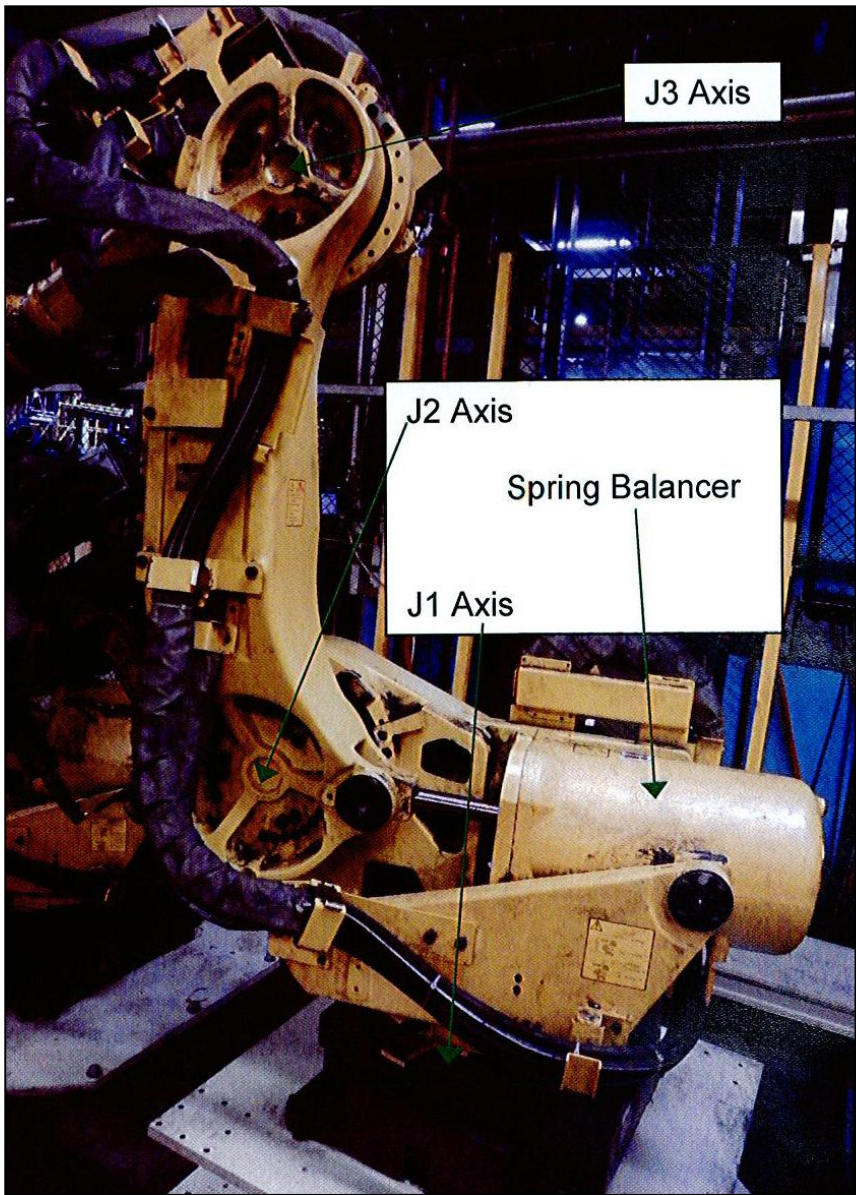
A **43-year-old** maintenance technician was killed when struck by a robot while performing maintenance on the equipment. The victim and co-workers replaced gaskets on one axis (J2) of a six-axis articulating robot with welding tooling mounted onto it. The gaskets were replaced after a leak was discovered while the robot was being lubricated after replacement of a part. After the J2 axis components were reconnected, the rigging that connected the robot's J3 arm to a crane and supported the equipment during the parts replacement was removed. The maintenance crew then began to replace another part on the J2 axis arm (the spring balancer). They had difficulty getting the arm to realign and used the "teach" pendant on the robot to attempt the alignment, but the "teach" pendant showed a fault. They then recycled the power to the pendant, but another fault occurred so the pendant was reset. At the same time the victim walked under the adjacent arm, J3, of the robot. The welding tooling and the J3 arm both fell toward the J2 arm and the victim was struck by the tooling and the arm, pinning him against the J2 arm and crushing him.

Citation(s) as Originally Issued

Citation 1

T.C.A. 50-3-105(1)	The employer did not furnish employment and a place of employment which were free from recognized hazards that were causing or likely to cause death or serious physical harm to employees in that the employer allowed employees to be exposed to crushing and struck-by hazards by standing within the work zone of the robot during movement of the arms.
Item 2 1910.147(d)(4)(i)	Lockout or tagout devices were not affixed to each energy isolating device by authorized employees.
Item 2b 1910. 147(f)(1)(ii)	When lockout or tagout devices were temporarily removed from the energy isolating device and the machine or equipment was energized to test or position the machine, equipment or components thereof, employees were not removed from the machine or equipment area.

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J3 Axis

J2 Axis

Spring Balancer

J1 Axis