

NDMRB-RA-093

Risk Assessment: Liquid Handling Robotics in the HTS lab

Scope

In the HTS lab there are multiple automated liquid handling robotics, used for screening:

Perkin Elmer Janus liquid handling robotics comprising: Varispan, MDT and Gripper automated moving arms; and PlateStacker/FlexDrop automated robotics. Janus instruments are operator controlled - once a programme is running there is no automatic cut off shielding user from these instruments. There is a pause function in the software (stops machine at end of current sequence) and a safety power cut-out button. It may be necessary to enter the enclosure while robotic arms are running for various reasons.

LabCyte Echo with robotic moving arm and automated plate feed into machine. The machine is inside a full enclosure which operates on a built in automatic cut-out when the enclosure door is opened. Plate feed to the Echo machine will continue to feed the machine

MicroStar automated screening unit, contained within a full enclosure. MicroStar hub contains a number of controls in place that ensure that the robot arm does not move while operators are inside the HUB; and is subject to its own risk assessment.

The risks associated with this instrumentation are minimised by ensuring only trained personnel are permitted to use them. These trained members of the group will be aware of the risks associated with working with the robots.

This replaces TDI-RA-031

Name of assessor:	Andrea Keepence-Keyte – Laboratory Manager	Date of Assessment:	Feb 2015	Review Date:	Every 3 years
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Risk Matrix:

Risk Matrix		Likelihood			
		High	Medium	Low	Negligible
Consequence	Severe	High	High	Medium	Effectively Zero
	Moderate	High	Medium	Medium/low	Effectively Zero
	Insignificant	Medium/Low	Low	Low	Effectively Zero
	Negligible	Effectively Zero	Effectively Zero	Effectively Zero	Effectively Zero

Risk Assessment:

Hazard (Cause and consequence)	Affected Groups	Existing controls	Risk	Further Action
Risk of injury from moving parts of the Janus robotics	Staff	Staff are to be trained before the use of the robots. Staff are to be made aware of the risks of entering the enclosure while a protocol is running. Although it is sometimes required to enter the enclosure while the robot is running the end user must be aware of the robots movements at all times.	Medium	No untrained personnel are to use the robotics.
MicroStar robot	Staff	The robot in the MicroStar Hub has an emergency cut out if the doors are opened during a run. The robot must be reset from the outside before it will activate again. Staff are not to close themselves in the enclosure at any time. The access door must remain open while staff are inside	low	No untrained personnel are to use the robotics.
Labcyte Echo and Access	Staff	The robotic moving arm machine is inside a full enclosure which operates on a built in automatic cut-out when the enclosure door is opened. Plate feed to the Echo machine will continue to feed the machine.	Low	No untrained personnel are to use the robotics.

Signed By Author:

Approved by (sign and print):

Reviewed by:

Review date: