UNC CHARLOTTE
Department of Engineering Technology

LABORATORY SAFETY ANALYSIS

OPERATING THE TQ RECIPROCATING COMPRESSOR EXPERIMENT

Location: Smith 129

Required Training: The TQ Reciprocating Compressor is designed and intended for use by properly trained and experienced operators. If you are not familiar with the proper and safe operation of this apparatus, do not use until proper training and knowledge have been obtained.

Required Personal Protective Equipment (PPE): Safety glasses, non-slip shoes, hearing protection.

Reference Materials: Manufacturer's safety rules and operating instructions

PHOTOS	TASK	HAZARDS	CONTROLS
	Wear clear safety glasses with side shields..	Compressed air	• Students are required to provide their own safety glasses. • See laboratory instructor or laboratory manager if you do not have safety glasses before proceeding to use equipment.
	Inspect safety glasses for cracks, scratches or other defects. Ensure the ANSI standard Z87.1 is stamped into the side of glasses.	Compressed air	• If defects are found report to your laboratory instructor before using.
	Put on PPE	Compressed air	• Always wear safety glasses. • Wear non-slip shoes due to potential water on floor. • Use earplugs while the equipment is running.
	Inspect work area, walk around area looking for any trip hazards and ensure adequate lighting.	Slips, trips & falls	• Ensure adequate space to work around apparatus. • Check for any tank condensate that may have leaked onto floor. • Route all computer cables out of the way.
	Visually inspect the electrical power cord.	Electrical shock	• If the electrical cord is damaged or worn the electrical cord should be unplugged and tagged "Out of Service-Do Not Use". • This should be reported to the laboratory manager immediately.

			• Electrical cord replacement should only be conducted by a factory authorized technician or electrician.
	Ensure the electrical cord is connected to electrical outlet.	Electrical shock, injury	• Caution: Apparatus is moveable. Always disconnect electrical cord before moving.
	Turn on main power switch	Electrical hazards.	• Ensure that display panels and lights illuminate correctly. • Check that all guards are in place.
	Run experiment.	Rotating parts, compressed air, noise levels, thermal hazards.	• Keep hands and fingers away from rotating parts, even though guarded. • Check that pressure relief valve is working properly and do not fill compressed air reservoir beyond recommended pressure. • Always wear earplugs while compressor is running and/or reservoir bleed valve is open. • Note: Compressor housing and exposed air lines become hot during operation, do not touch these areas.
	Ending experiment	Compressed air, noise levels	• Bleed any residual pressure from reservoir. • Drain condensate from reservoir into a suitable container **only** after reservoir pressure has been bled off completely. •
	Clean work area and return all PPE to clean, dry storage area.	Injury, slips	• To ensure adequate housekeeping measures to prevent accidents. • Clean up any areas where water may have collected on the floor around the apparatus or reservoir drain.

For more information about this LSA, contact the *Department of Engineering Technology* at UNC Charlotte (704) 687-2305
Please visit our website at: http://www.et.uncc.edu\

The development of Laboratory Safety Analyses is a very effective means of helping reduce incidents, accidents, and injuries in the workplace. It is an excellent tool to use for training purposes and can also be used to investigate "near misses" and accidents.