



Vacuworx CC-MP

Computer Controlled Multi-Pad Vacuum Lifting System

Customer

Qube Energy

Scope of Project

Qube wanted to find a faster and safer way to handle multiple pipes at a time during the transportation process. Specifically, the company wanted to be able to unload pipes from the hull of a ship, load/unload flatbed trailers and stack in yards. Current methods involve manual attachment of slings or straps, which puts workers in potentially hazardous situations by either climbing on top of pipe or being in close proximity during lifts.

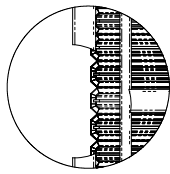
Other Considerations

Solution needed to work or coincide with standard industry equipment such as shipping container dimensions, crane attachments and trailer sizes. Due to the nature of the intended application and lifting environment, innovative features were developed such as a computer control system, cameras and pad sensors.

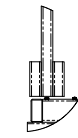
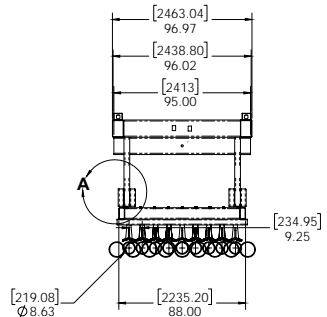
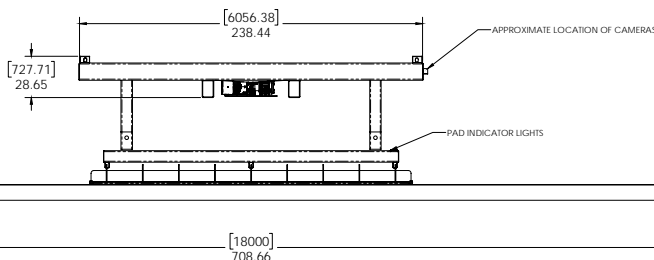
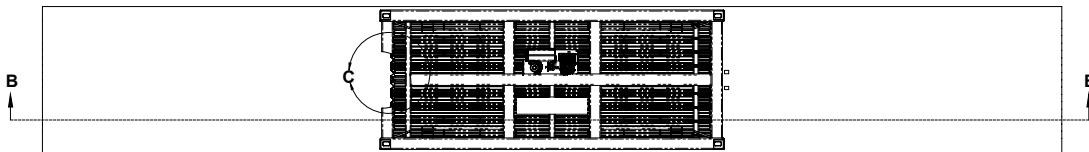
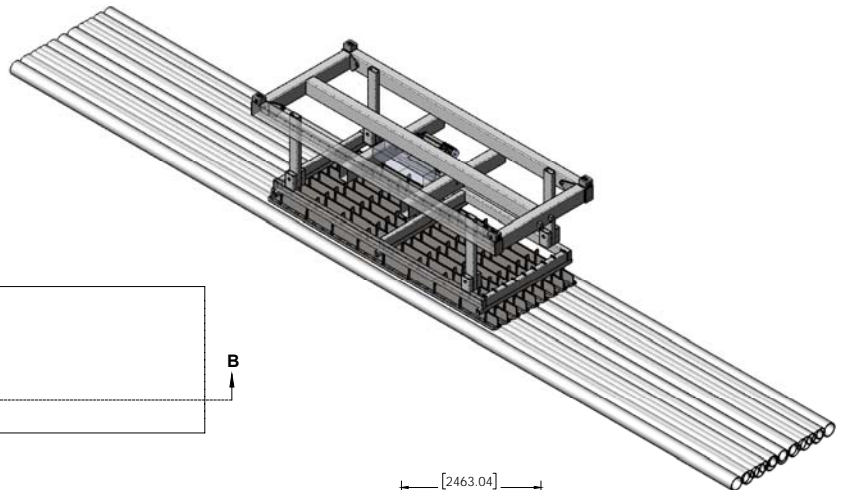
Engineering Design

NOTES:
 1. INTERPRET PER ASME Y14.5-2009.

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED

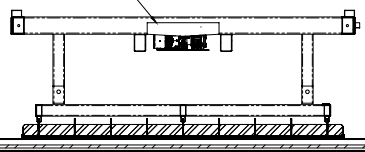


DETAIL C
 SCALE 1 : 18



DETAIL A
 SCALE 1 : 18

CURRENT TANK
 VOLUME:
 22.72 GAL (86.03 L)



SECTION B-B

UNLESS OTHERWISE SPECIFIED				NAME	DATE
DESIGNED BY	DESIGNED BY	DESIGNED BY	DESIGNED BY	DATE	DATE
DRAWN BY	DRAWN BY	DRAWN BY	DRAWN BY	DATE	DATE
CHECKED BY	CHECKED BY	CHECKED BY	CHECKED BY	DATE	DATE
APPROVED BY	APPROVED BY	APPROVED BY	APPROVED BY	DATE	DATE
SCALE	SCALE	SCALE	SCALE	DATE	DATE
DATE	DATE	DATE	DATE	DATE	DATE

REV	DESCRIPTION	DATE
D	ASSEMBLY	
	ASSEMBLY	
	ASSEMBLY	
	ASSEMBLY	

SIZE	DWG. NO.	REV.
D	134	1
	134	1
	134	1
	134	1



DOUBLE-CURVED ASSY

Phase 1

During the first trial using a Vacuworx CC-MP system on a reach stacker (telehandler) to unload pipes from flatbed trailers, Qube was able to complete the project 30 hours ahead of budget. They were also able to reduce teams to 3 people instead of 7 or 8. The importance of operator training was a key learning point during the introduction of this new technology, as the need to switch personnel can cause unexpected delays. Also, both Vacuworx and Qube worked together to address some initial charging issues with the battery system.

Phase 2

In the next phase of implementation, the Vacuworx CC-MP system will be used with a crane to unload pipe directly from the ship. The innovative system is designed to eliminate the need for workers to be in the hull of the ship to secure straps or chains to pipes, or during the dangerous process of lifting the pipe, greatly reducing the risk for injuries.

