



Air Tuggers

Selecting the Right
Tugger for the Right Task

PLANNING AHEAD FOR Air Tugger Operations

BE A GOOD OBSERVER:

Look out for yourself and others. Review what to look for and act on what you see. It is your right and obligation to shut down an unsafe activity.

JSA:

Unsafe work conditions and unsafe behaviors are the main reasons for injuries and accidents. The best way to avoid them is to “Plan your Work and Work your Plan” with the JSA process. Identify and minimize risk, then assign responsibilities to produce a safe working environment.

STOP WORK AUTHORITY:

Every worker has the responsibility to stop an unsafe act or task. Shut down the job and reassess the potential problem and update the JSA and continue the job safely.

REPORT ALL INCIDENTS:

Reporting incidents no matter how minor is the key to injury prevention. Properly report all incidents, document the event, and obtain medical care if needed, then share the event with others.

Introduction

Air Winch Operations

Morgan City Rentals supports the offshore and inland fabrication, construction, and the subsea industry with an Ingersoll Rand and RAM Air Tuggers (winches) (Utility and Man-Rider based mounted air winches). Our inventory of models range in pulling capacity from 1,000 lbs. to 28,000 lbs.

- The two most important aspects of winch operations are:
 1. Allowing only a trained person to operate a winch
 2. Subject each winch to a regular inspection and maintenance procedure

The biggest difference between a hoist and a base mounted winch is that a hoist is designed to both lift and lower a load, whereas a winch is designed to pull a load – and depending on design, hold it in place. Winches generally do not have a brake that is adequate to absorb the energy created when a load is being lowered.

Practices and Procedures

These practices and procedures have been prepared to provide the end user with basic operating practices. This program does not include all safe working practices required in specific air tugger operations. The information is based on quality control procedures set by Morgan City Rentals and should be performed by trained and experienced personnel.

- Always maintain and operate winch in accordance with ANSI B30.9 safety code
- Allow qualified, through training, personnel to operate winch
- Subject winch to regular inspection and maintenance
- Operator must understand proper methods of hitching loads
- Operator should have a knowledge of attitude regarding safety
- Operator should not operate under unsafe conditions
- Winches are not to be used for lifting or lowering personnel



Benefits of a Planned On-Site Preventative Maintenance

- Will only have a positive effect on your job or project
- Peace of Mind will enhance Job Performances
- Optimizes equipment performance
- Reduces downtime and improves profits
- Who is responsible for on-site equipment maintenance?
 - A service personnel that is competent and trained in safety and service procedures on the air tugger
- Never perform maintenance on a tugger while it is supporting a load
- Before performing maintenance on tugger- **TAG OUT/LOCK OUT**
WARNING – DO NOT OPERATE - EQUIPMENT BEING REPAIR

Be familiar with the troubleshooting information to determine specific causes and remedies before operating an air tugger.



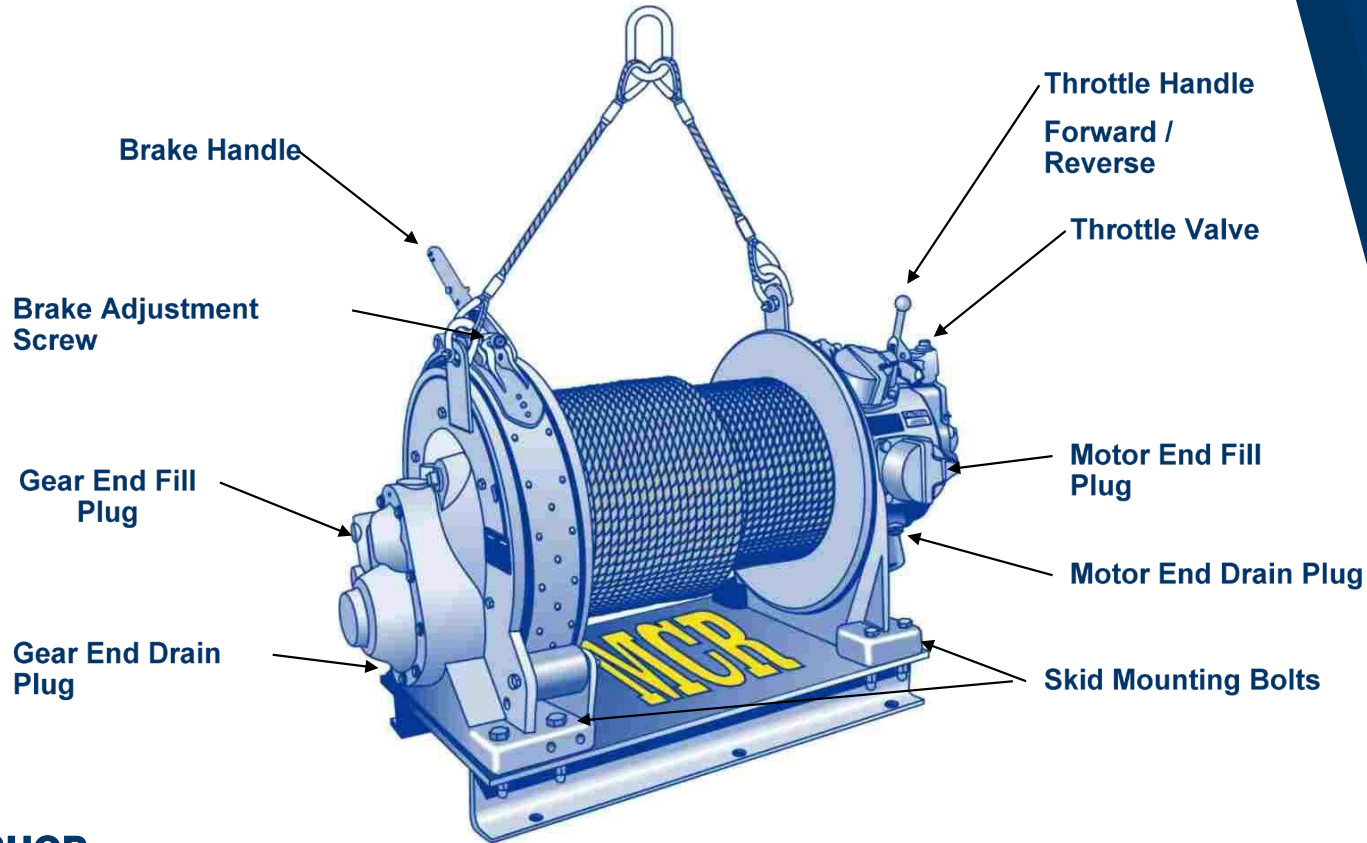
General Precautions – Air Tuggers

Personnel involved in or working around air tugger operations should be trained on the hazards involved in the work operations. **Only man-rated air tuggers are to be used to lift personnel.**

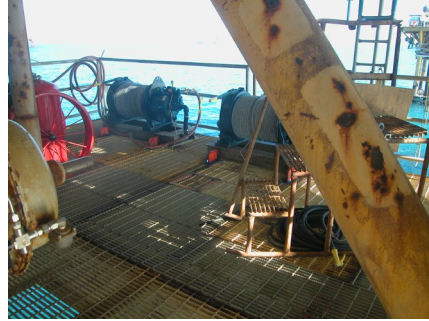
- All PPE (Personal Protective Equipment) will be donned by the tugger operator . Loose fitting clothing and rings/ jewelry should not be worn during tugger operations. Long sleeved shirts must be button and shirt fronts and tails should be tucked in.



Components of an Air Tugger



Air Tuggers in the field



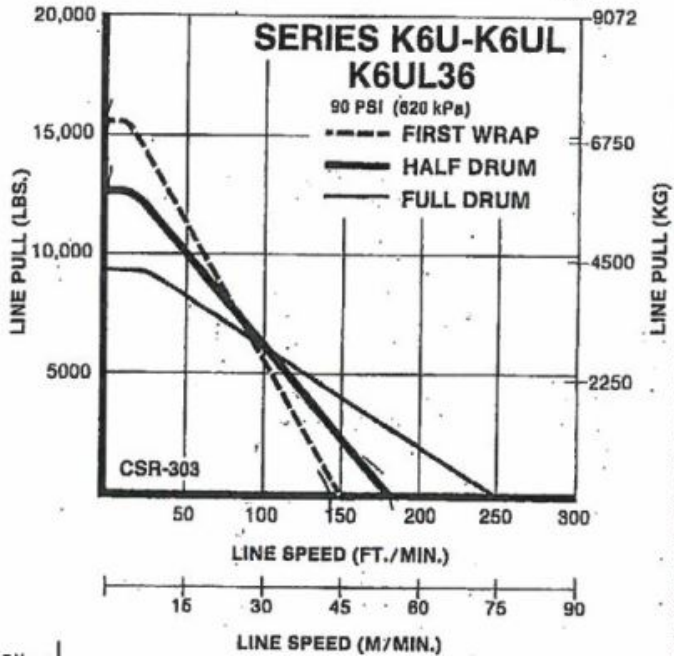
Pre-Job Procedures

- Every job is different –
 - Choose the right tugger for the right task
 - Have a **trained and competent person** in safety and operation of winch to maintain, inspect, and operate winch. The winch operator must be carefully instructed in his duties and is responsible to refuse to operate winch under unsafe conditions (**Stop Work Authority**).
 - Identify winch pulling capacity – MAX load rating
 - Know the rope speed at rated load before operating
 - Identify correct air CFM/ PSI requirement for winch to operate at loaded capacity. The air supply must be clean, free from moisture to ensure optimum motor performance
 - All hose assemblies should be viewed as potential hazards. Inspection and re-testing of hose assemblies on a regular and consistent basis in accordance with the hose manufacturer's recommendations

Pre-Job Procedures

- **Every job is different –**
 - Choose the right tugger for the right task**
 - Identify and install correct wire size and end connections for the task
 - Attachments must have the same working load limits as wire and hoist (clips, hooks, and shackles)
 - Visually inspect winch and tie-down method before each task
 - Review and identify -Lifting, lowering, swing, lift path, and cone of exposure
 - Discuss weather and site conditions before and during lift
 - Verify the weight of the load to be lifted or pulled
 - Before each shift, re-check winch for wear or damage
 - When moving winch, keep winch level to mitigate oil leaking from motor
 - Maintain at least 3-5 tight wraps of wire rope on the drum at all times. Ensure wire rope full drum top layer is a minimum of 1/2 inch (13 mm) below drum flange edge.

K6UL Air Tugger – Pull Capacity



Pulling Capacity Rating is based on a full drum of cable

K6UL Air tugger is rated at 10,000 lbs at full drum

K6UL Air tugger is rated at approximately 13,000 lbs at 1/2 drum

K6UL Air tugger is rated at approximately 16,000 lbs at 1st wrap on drum

Air Tugger – Air Consumption (CFM)

For top performance and maximum durability, operate tugger at 90 psi (6.3)/ 620 kPa) of air pressure

Air Consumption at 90 PSI/ 6.3 bar			
Winch Model		Pull Capacity	CFM Required
BU7A		1,000#	41
EU		2,000#	120
HU, HUL		3,000#	206
HU40, HUL40		4,000#	160
H5U, H5UL		4,000#	290
K4U, K4UL		5,000#	348
K5U, K5UL		6,000#	273
K6U, K6UL		10,000#	413
254UWB1142		16,000#	413
35UWD962		20,000#	1400
FA 10140		22,000#	800
AW3B-42AX1		22,000#	800
AW4A-40		28,000#	900

Man-Rider Air Winch			
Winch Model		Pull Capacity	CFM Required
FA 2.5A GMR		2500#	350
FA 525 MR		5000#	700
FA 5A		10,000#	700

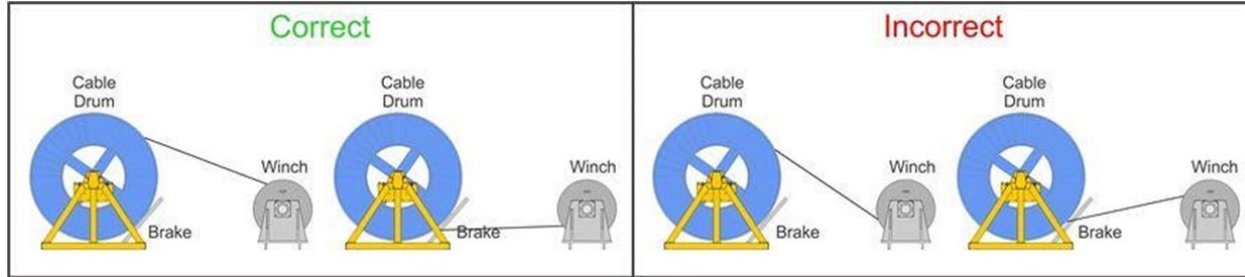
Wire Rope Spooling Criteria

Inspect the wire rope and end connection. Replace it **AT ONCE** if there is any indication of fraying, if it is crushed, cut or otherwise damaged.

- When reeling wire rope from one reel to another, it is preferable for the rope to travel from top to top
- Hoist should be spooled with the recommended wire rope size
- Cutting and seizing wire rope – should be properly seized on both sides of the cut, if not wire will unravel. Use proper PPE when working with wire
- Do not install wire that has been overloaded or stretched
- Make sure wire is properly attached to the drum with the set screws
- Keep tension on the wire while spooling on drum and guide each wire close to the preceding wrap
- After installation, allow wire to run through a cycle of operation at low speed

Failure to use these procedures can result in serious injury and destruction of property and equipment.

Wire Rope Spooling Criteria



To compensate for uneven spooling and decrease in line pull capacity as drum fills up, use as short a wire rope as practical.

When rewinding apply tension to wire rope to eliminate slack. This helps achieve level winding and tight spooling.

Support wire rope spool and have wire rope come off top of spool and over top of winch drum. This will prevent damage to wire rope.

Air Tugger – Operations Gone BAD!!!\$\$\$\$\$





— Our Effort Makes the DIFFERENCE —



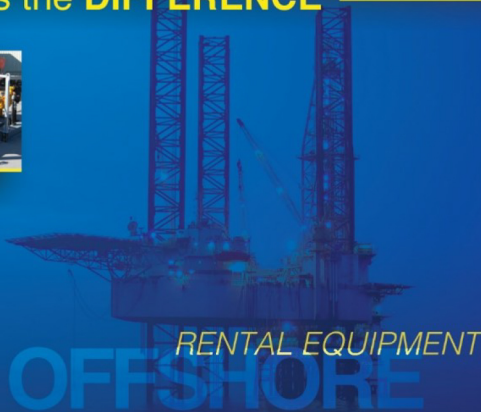
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