

SECTION 6 - TECHNOLOGY SAFETY DATA SHEET

TECHNOLOGY SAFETY DATA SHEET KEIBLER THOMPSON CORPORATION KT-30

SECTION 1: TECHNOLOGY IDENTITY	
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SECTION 2: PROCESS DESCRIPTION

The KT-30 is a track mounted mobile telescopic boom type machine capable of being fitted with different attachments depending on the task at hand. The KT-30 uses a double-pivot boom design that keeps the overall profile height low (7 feet 11 inches) but able to unfold for maximum reach when needed. The KT-30 has a 1-inch steel plate frame construction and heavy plate body covers for durability and protection. All boom hydraulics are plumbed internally. The entire machine, including the boom, is controlled using a remote control capable of removing the operator 400 feet from the work area. For this assessment, the UP6 cutting shear and the oxygen lance manipulator were used to dismantle pipes, I-beams, tanks, barricades, steel plates, gate valves, shafts and railings. In addition to the UP6 cutting shear and the oxygen lance manipulator the KT-30 may be equipped with a specialty manufactured KT hydraulic hammer, grapple, or concrete profiler.

The operator uses a remote handheld pendant control. This allows the operator to use the machine in a potentially dangerous environment without actually being present or to achieve a better line of sight.

The KT-30 is 7 feet, 11 inches high; 6 feet, 10 inches wide; and 19 feet, 3 inches long. It weighs approximately 26,000 pounds. The KT-30 has a 10-foot telescopic boom with large area contact plates that distribute impact stress from a hydraulic breaker.

SECTION 3: TECHNOLOGY PHOTOS



A magnesium oxygen lancing rod is being held and manipulated by an oxygen lance manipulator attachment while cutting a steel I-beam.



The KT-30 track mounted mobile telescopic boom type machine equipped with UP6 cutting shear begins demolition.



The KT-30, on the left, prepares to engage an I-beam while the KT-15, right, holds the piece in place.

SECTION 4: CONTAMINANTS AND MEDIA	
Specific contaminants need to be evaluated on a site-by-site, job-by-job basis to determine the potential for exposure. This technology has the potential to increase the risk of exposure by sending resting contaminants airborne during demolition.	
SECTION 5: ASSOCIATED SAFETY HAZARDS	
Probability of Occurrence of Hazard:	
<ol style="list-style-type: none"> 1. Hazard may be present but not expected over background level 2. Some level of hazard above background level known to be present 3. High hazard potential 4. Potential for imminent danger to life and health 	
A. ELECTRICAL (LOCKOUT/TAGOUT)	RISK RATING: 3
The KT-30 uses electrical energy as well as hydraulic and mechanical energy. Lockout/tagout of the machine and the handheld pendent remote control is a necessity during maintenance.	
B. FIRE AND EXPLOSION	RISK RATING: 3
The KT-30 has the potential for fire and explosion if fuel, oil, or hydraulic fluid is ignited. The oxygen lance cutting attachment increases this risk. The lance is an ignition source and proper storage and care should be taken with the oxygen tanks.	
C. CONFINED SPACE ENTRY	RISK RATING: N/A
Not part of this technology.	
D. MECHANICAL HAZARDS	RISK RATING: 2
The KT-30 is a track mounted machine. Lockout/tagout procedures should be followed during maintenance and repair. Operators should be conscious of the machine and any workers in the area.	
E. PRESSURE HAZARDS	RISK RATING: 2
The KT-30 uses hydraulic energy to power its boom and some attachments such as the UP6 cutting shear. Hydraulic oil is under pressure flowing through hoses, which may be punctured during operation. Lockout/tagout procedures should be followed during maintenance and repair.	
F. TRIPPING AND FALLING	RISK RATING: 3
The handheld pendent remote control is on a tether to the machine. Operators should be conscious of this hazard at all times. A trip of fall around the machine may result in contact with the tracks.	
G. LADDERS AND PLATFORMS	RISK RATING: N/A
Not part of this technology.	

SECTION 5: ASSOCIATED SAFETY HAZARDS (CONTINUED)	
H. MOVING VEHICLE	RISK RATING: 3
The ability of the operator to move does offer some advantages because they are on the ground and there is a blind spot on the other side of the machine. Operators should be conscious of all workers and equipment in the area.	
I. BURIED UTILITIES, DRUMS, AND TANKS	RISK RATING: N/A
Not part of this technology, but site-specific considerations need to be taken.	
J. PROTRUDING OBJECTS	RISK RATING: N/A
Not part of this technology.	
K. GAS CYLINDERS	RISK RATING: 2
Proper storage, handling and use of gas cylinders during oxygen lance cutting is imperative.	
L. TRENCHING AND EXCAVATIONS	RISK RATING: N/A
Not part of this technology.	
M. OVERHEAD LIFTS	RISK RATING: 2
The attachments are used to cut and remove overhead debris during demolition.	
N. OVERHEAD HAZARDS	RISK RATING: 2
Loose and falling debris may be present during demolition.	

SECTION 6: ASSOCIATED HEALTH HAZARDS	
Probability of Occurrence of Hazard: <ul style="list-style-type: none"> 1. Hazard may be present but not expected over background level 2. Some level of hazard above background level known to be present 3. High hazard potential 4. Potential for imminent danger to life and health 	
A. INHALATION HAZARD	RISK RATING: 2
During demolition concrete dust may be present. Site-specific hazards must be taken into consideration and monitoring conducted accordingly. A hazard assessment of the contents of tanks, pipes etc. will identify inhalation hazards that may be released or created during demolition.	
B. SKIN ABSORPTION	RISK RATING: 2
Hazard assessment of contents of containers where oxygen lance cutting is being performed needs to be conducted. Traditional hazards associated with heavy equipment such as exposure to diesel fuel and hydraulic fluid does exist.	
C. HEAT STRESS	RISK RATING: 2
Operators are exposed to low workload operating handheld remote control. Ambient temperatures and the addition of PPE may increase heat stress and should be taken into consideration on a site-by-site, day-to-day basis.	

SECTION 6: ASSOCIATED HEALTH HAZARDS (CONTINUED)	
D. NOISE	RISK RATING: 3
The KT-30 itself creates noise above the OSHA PEL of 90 dBA. This is compounded with the addition of different attachments such as the UP6 cutting shear or the impact hammer. Additional machinery in the area, such as the KT-15 for this assessment, will increase noise exposure.	
E. NON-IONIZING RADIATION	RISK RATING: N/A
Not part of this technology.	
F. IONIZING RADIATION	RISK RATING: N/A
Not part of this technology.	
G. COLD STRESS	RISK RATING: 1
Ambient conditions on a site-by-site, day-to-day basis should be taken into consideration.	
H. ERGONOMIC HAZARDS	RISK RATING: 2
Operators stand for long periods of time during operation, chronic fatigue may result. Operators should also be conscious of the weight of the attachments and practice correct lifting methods when changing the attachments. Mechanical lifting devices such as a forklift or crane should be used for lifting.	
I. OTHER	RISK RATING: N/A
None noted.	

SECTION 7: PHASE ANALYSIS	
A. CONSTRUCTION/START-UP	
Traditional considerations are present with the KT-30 during start-up. Normal machine checks are required which require the operator to climb on the machine and open doors to perform pre-operational checks. The various attachments are very heavy requiring special care and correct lifting techniques. Mechanical lifting devices such as a forklift or crane should be used to lift attachments. In the event oxygen lance cutting is required, proper storage and handling of gas cylinders is required. Exposure to hydraulic fluids and diesel fuel is possible. HAZCOM should be implemented and MSDSs provided. A Lockout/Tagout Program should be implemented when working on or around electrical, mechanical, or hydraulic systems.	

SECTION 7: PHASE ANALYSIS (CONTINUED)
B. OPERATION
During operation, hazards from hanging or falling objects are present. Operators should ensure each worker in the area is visible and not hidden on the other side of the machine. Site-specific considerations for dormant containers may need to be taken into consideration when destroying or cutting them. Noise levels were at, or above, the OSHA PEL. A Hearing Conservation Program should be implemented. Air monitoring for total dust and individual contaminants should be conducted. Proper lifting techniques or the use of motorized lifting devices should be used when working with the attachments.
C. MAINTENANCE
Traditional considerations are present with the KT-30 during maintenance. Operators will be required to climb on the machine and open doors to gain access to system components. Safety with hand tools should be practiced so as to not create any additional hazards. Lockout/tagout must be practiced during maintenance. Assuming the machine is left in the hazardous environment during maintenance heat stress considerations should be taken into account due to the possible addition of PPE. Exposure to hydraulic fluids and diesel fuel is possible. HAZCOM should be implemented and MSDSs provided. Proper lifting techniques or the use of motorized lifting devices should be used when working with the attachments.
D. DECOMMISSIONING
The decommissioning phase presents several hazards, including exposure to the contaminants, pinch points, slips/trips/falls and muscular/back injury.
SECTION 8: HEALTH AND SAFETY PLAN REQUIRED ELEMENTS
A. AIR MONITORING
During demolition total dust monitoring should be practiced. With a hazard assessment of the site, individual contaminants may be identified that require monitoring. The hazard of being exposed to these contaminants increases during demolition.

SECTION 8: HEALTH AND SAFETY PLAN REQUIRED ELEMENTS (CONTINUED)

B. WORKER TRAINING

Training that would apply in this case may include but not be limited to:

- HAZWOPER
- HAZCOM
- Training for specific contaminants such as lead, if applicable
- Respiratory Protection
- Personal Protective Equipment
- Lockout/Tagout
- Electrical Safety
- Job-specific training for equipment operation
- Ergonomics (proper lifting, bending, stooping, kneeling, etc.)
- Hearing Conservation
- Heat Stress (learning to recognize signs and symptoms)
- CPR/First Aid/Emergency Response/Bloodborne Pathogens
- Construction Industry Outreach (OSHA 500) and/or General Industry Outreach (OSHA 501)
- Compressed Gases

C. EMERGENCY RESPONSE

Emergency response planning for a site needs to assure adequate coverage for hazards described in the TSDS. Having at least one worker per shift trained in CPR and first aid is recommended.

D. MEDICAL SURVEILLANCE

Medical surveillance in accordance with the OSHA standards will need to be conducted. Medical surveillance for site-specific hazards may be required. Initial and annual audiograms may be required.

E. INFORMATIONAL PROGRAM

Workers must be trained in specific operation of equipment before use with emphasis on capabilities and limitations such as the blind spot. Hazard communication for all substances necessary for the operation of the KT-30 and any hazards that may be present at the work site.

SECTION 9: COMMENTS AND SPECIAL CONSIDERATIONS

Only personnel who have been adequately trained in the operation of this technology should be permitted to operate and/or work on the equipment.