

## SECTION 6 - TECHNOLOGY SAFETY DATA SHEET

# TECHNOLOGY SAFETY DATA SHEET

## TRI TOOL INC.

Split Frame Clamshell  
(Equipment Dismantlement)

### SECTION 1: TECHNOLOGY IDENTITY

Manufacturer's Name and Address:  Tri Tool Inc. 3806 Security Park Drive Schenley, PA 15682	Emergency Contact: (916) 351-0144 (800) 345-5015
	Information Contact: (916) 351-0144 (800) 345-5015
	Date Prepared:
Other Names: Clamshell Split Lathe	Signature of Preparer:  Operating Engineers National Hazmat Program 1293 Airport Road, Beaver, WV 25813, phone 304-253-8674, fax 304-253-7758  Under cooperative agreement DE-FC21- 95 MC 32260

## **SECTION 2: PROCESS DESCRIPTION**

The Tri Tool Split Frame Clamshell is a pipe lathe which employs a split rotary bearing design which can be divided into two or more sections (depending on the size of the clamshell). The clamshell requires minimal axial or radial clearances. The sections are placed around the outside of the pipe/tube to be cut and bolted together. The rotating cutting heads then cut either a straight or beveled cut from the outside diameter (O.D.) inward. The clamshell clamps completely around the O.D. of the pipe with clamp pads and jackscrews to provide a stable and secure clamp-up.

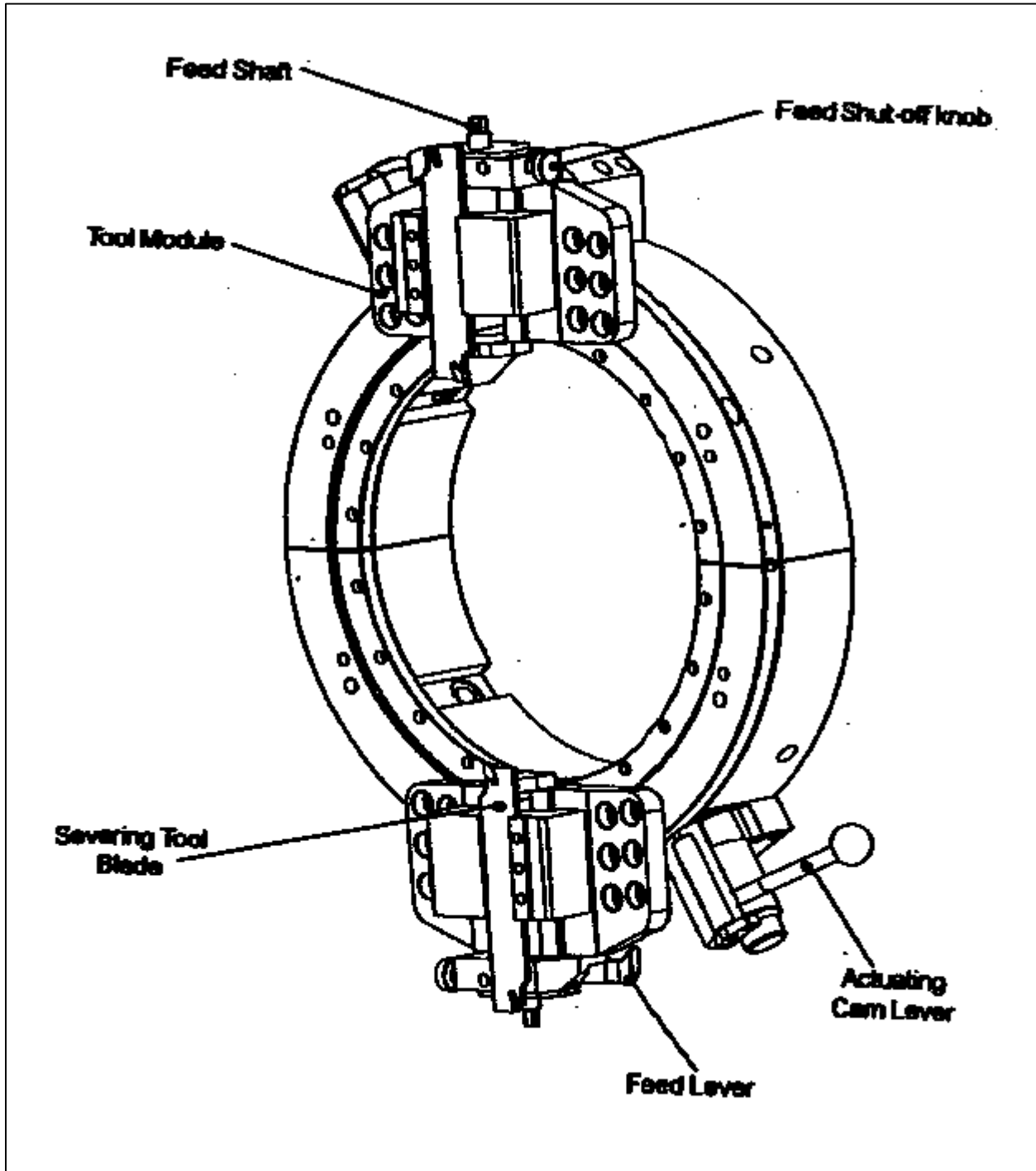
Clamshells are designed to cut pipe from ¼-inch to 60-inches in diameter. This is accomplished by having clamshells of varying sizes and incorporating an adjustable O.D. mounting system, as required, to fit the pipe diameter. The clamshell also features an enclosed drive gear and bearing surface and a multi-positionable motor mount. Additional features of the Split Frame Clamshell may vary depending on the size of the clamshell, including internal counterbore machining and worm drive tool modules to reduce vibration and extend tool bit life.

The automatic feed star wheels and adjustable slideways provide incremental tool bit feed for controlled cut depth. The star wheels mount on the rotating face of the clamshell and carry the tool bits within the tool holder section. The tool bit is fed into the pipe/tube at a fixed revolution of the head stock with one tripper pin assembly engaged. Multiple trippers increase the total feed of the tool bit per revolution. The star wheels provide 0.0025-inch of radial feed per revolution. The tool bits are carbide cutting bits.

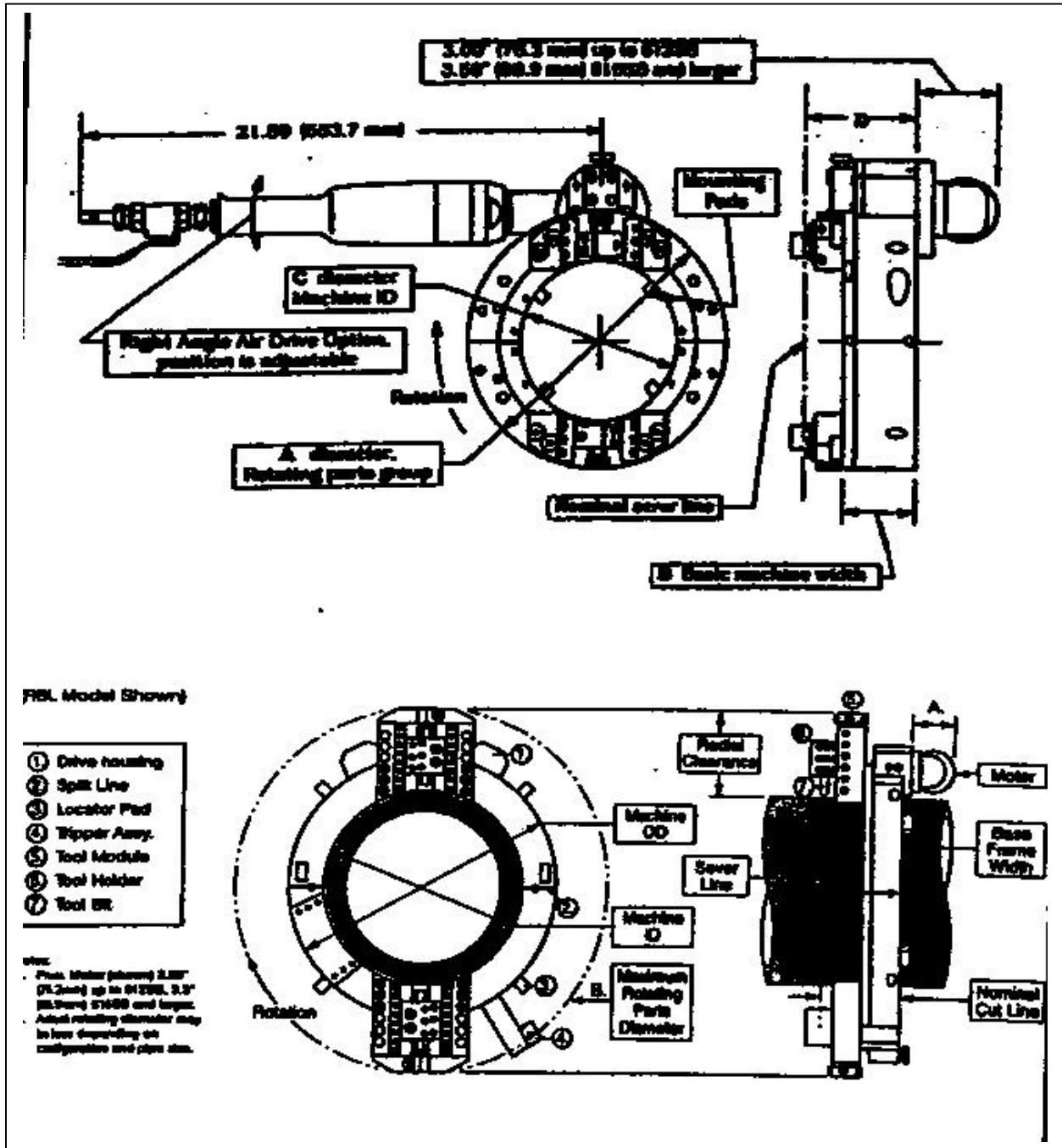
The Split Frame Clamshell can be pneumatically, hydraulically, or electrically powered. Pneumatic power provides the maximum power per unit weight, electric powered are for light duty machining, and hydraulic motors provide the maximum power and speed range capabilities at the machine. Dual drives can be fitted for additional power and machining capabilities.

The operator control for the Split Frame Clamshell is located on the shaft of the multi-positionable motor mount. The on-off control is a lever mechanism designed for four finger operation. It works as a “dead man” switch, shutting down the clamshell if pressure is released off of the lever.

**SECTION 3: PROCESS DIAGRAMS**



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**SECTION 4: CONTAMINANTS AND MEDIA**

Dust generation does not appear to be a concern with the split frame clamshell. Consideration does need to be given to contamination in the area where the clamshell is being used for D&D activities. An air sampling plan will need to be developed, as appropriate for the site where the clamshell is being used.

**SECTION 5: ASSOCIATED SAFETY HAZARDS**

Probability of Occurrence of Hazard:

- 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: N/A**

Not part of this technology (unless electrically operated model is used).

**B. FIRE AND EXPLOSION****RISK RATING: 1**

Technology does not pose this hazard in and of itself but could not be used in an explosive environment due to the potential for sparking.

**C. CONFINED SPACE ENTRY****RISK RATING: 1**

Not part of this technology unless the specific location where the clamshell is being used is a confined space. In this case, confined space procedures would need to be followed.

**D. MECHANICAL HAZARDS****RISK RATING: 4**

Attaching and removing the clamshell from the pipe/tube to be cut may pose the following: pinch points and struck by hazards. There is potential for injury from the rotating star wheels. Guarding of the area needs to be considered and proper precautions taken. Loose clothing should not be worn when working around the clamshell.

**E. PRESSURE HAZARDS****RISK RATING: 2**

The airlines and high pressure air may present hazards, proper precautions indicated. The airline fittings should have safety lines connecting the male and female half of the fitting.

**F. TRIPPING AND FALLING****RISK RATING: 3**

Air lines present potential hazards.

<b>SECTION 5: ASSOCIATED SAFETY HAZARDS (CONTINUED)</b>	
<b>G. LADDERS AND PLATFORM</b>	<b>RISK RATING: 2</b>
Not part of this technology but may be required for D&D activities. All regulations for working from ladders and platforms, including the OSHA scaffolding standard, must be followed.	
<b>H. MOVING VEHICLE</b>	<b>RISK RATING: 2</b>
Not part of this technology but may be required for D&D activities. All precautions and safety requirements for large pieces of equipment will need to be followed. For example, all moving vehicles should have working back-up alarms, warning lights, etc.	
<b>I. BURIED UTILITIES, DRUMS, AND TANKS</b>	<b>RISK RATING: N/A</b>
Not part of this technology.	
<b>J. PROTRUDING OBJECTS</b>	<b>RISK RATING: N/A</b>
Not part of this technology.	
<b>K. GAS CYLINDERS</b>	<b>RISK RATING: N/A</b>
Not part of this technology.	
<b>L. TRENCHING AND EXCAVATIONS</b>	<b>RISK RATING: N/A</b>
Not part of this technology.	
<b>M. OVERHEAD LIFTS</b>	<b>RISK RATING: 2</b>
Not part of this technology but may be required during D&D activities. All applicable standards and precautions must be followed for the type of equipment used. At a minimum, anyone in the work area should be wearing a hard hat.	
<b>N. OVERHEAD HAZARDS</b>	<b>RISK RATING: 2</b>
May be part of this technology if the pipe/tube being cut is overhead. At a minimum, anyone working in the area should be wearing a hard hat. It needs to be assured that all workers in the area are aware of the clamshell placement and avoid the area when the clamshell is overhead.	

<b>SECTION 6: ASSOCIATED HEALTH HAZARDS</b>	
<b>A. INHALATION HAZARD</b>	<b>RISK RATING: 1</b>
Technology does not appear to produce dust during operation. Other hazards that may be present in the area will be identified from the site characterization.	
<b>B. SKIN ABSORPTION</b>	<b>RISK RATING: 2</b>
This would be dependent on the contaminants at the site and would be identified by the site characterization. The oil used in the air lines may present a skin hazard.	

<b>SECTION 6: ASSOCIATED HEALTH HAZARDS (CONTINUED)</b>	
<b>C. HEAT STRESS</b>	<b>RISK RATING: 1-4</b>
Ambient conditions, work rates, and PPE levels must be considered.	
<b>D. NOISE</b>	<b>RISK RATING: 2</b>
The technology presents a potential noise hazard.	
<b>E. NON-IONIZING RADIATION</b>	<b>RISK RATING: N/A</b>
Not part of this technology.	
<b>F. IONIZING RADIATION</b>	<b>RISK RATING: 1-4</b>
Not part of this technology, but may be associated with the area where D&D activities are taking place.	
<b>G. COLD STRESS</b>	<b>RISK RATING: 1</b>
Technology does not produce a hazard, but ambient conditions need to be considered.	
<b>H. ERGONOMIC HAZARDS</b>	<b>RISK RATING: 3</b>
Poses ergonomic hazards associated with lifting, bending, twisting, stooping and kneeling. These may cause injury/strain to the back, shoulders, arms, knees, hips and/or legs.	
<b>I. OTHER</b>	<b>RISK RATING: 3</b>
Laceration/cutting hazards present from the cutting tip of the clamshell, the sharp shavings from the metal being cut, and the edge of the piece that was cut. Appropriate hand protection should be used.	

<b>SECTION 7: PHASE ANALYSIS</b>	
<b>A. CONSTRUCTION/START-UP</b>	
The set-up/start-up phase presents several hazards including pinch points, laceration hazards, slips/trips/falls struck by, fall from above hazards, and muscular/back injury.	
<b>B. OPERATION</b>	
The operational phase presents several hazards including exposure to contaminant, muscular/back injury, pinch points, laceration hazards, slips/trips/falls, pinch points, struck by hazards, fall from above hazards, and exposure to noise.	
<b>C. MAINTENANCE</b>	
The maintenance phase presents several hazards including pinch points, laceration hazards, slips/trips/falls, muscular/back injury, exposure to contaminants, and accidental activation of moving parts.	

**SECTION 7: PHASE ANALYSIS (CONTINUED)****D. DECOMMISSIONING**

The decommissioning phase presents several hazards, including exposure to the contaminant, pinch points, laceration hazards, slips/trips/falls, and muscular/back injury.

**SECTION 8: HEALTH AND SAFETY PLAN REQUIRED ELEMENTS****A. AIR MONITORING**

Dust does not appear to be a concern during operation of the clamshell. Monitoring may need to be conducted for contaminants in the area where the D&D activities take place. This will be determined by the site characterization prior to the initiation of the D&D project. Noise monitoring will need to be conducted.

**B. WORKER TRAINING**

Training that may apply in this case may include but not be limited to: HAZWOPER (Hazardous Waste Operations and Emergency Response), HAZCOM (Hazard Communication), PPE (Personal Protective Equipment) Training, Hearing Conservation, Ergonomics (proper lifting, bending, stooping, kneeling), specific training for equipment operation, CPR/First Aid/Emergency Response/Bloodborne Pathogens, Lockout/Tagout, Hand Signal Communication, and Construction Safety (OSHA 500) and/or General Industry Safety (OSHA 501).

**C. EMERGENCY RESPONSE**

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

**D. MEDICAL SURVEILLANCE**

Evaluation of personnel's general health with emphasis on the cardiovascular and respiratory system, and back. In addition, medical surveillance as required by OSHA standards must be conducted. Initial and annual audiograms may be required.

**E. INFORMATIONAL PROGRAM**

Workers must be trained in specific operation of equipment before use.

**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 with the equipment.