

Elliott offers a complete line of precision tube tools, including:



**tube
expanders**

- Boiler Expanders
- Heat Exchanger Expanders
- Condenser Expanders
- Refinery Expanders

**tube rolling motors
& torque controls**

- Electric
- Pneumatic

**tube
cleaners**

- Air & Water Driven Motors
(Internal/External Drives)
- Jiffy Guns
("Shoot-Thru" Devices)
- Roto-Jet
(Rotating Flex Shaft)

**additional
products**

- Tube and Joint Testers
- Tube Plugs
(High & Low Pressure)

**retubing
tools**

- Tube Gauges
- Tube Cutters
- Manual Tools
- Spear Type Tube Pullers
- Collet-Type Tube Pullers
- CYCLGRIP Tube Extractors
- Grooving Tools
- End-Prep Tools

**metal working
products**

- Back Chamfering Tools
- Carbide Roller Burnishing Tools
- Diamond Burnishing Tools
- Elliptical Deburring Tools
- Fine Boring Tools
- Internal Recessing Tools
- Magic Vise
- Mechanical Joining Tools
- Roller Burnishing Tools
- Single Blade Reamers

“SUPER TUBE-TUGGER®”
Continuous Tube Extractor
For 1-1/2” – 2” Tube OD
(80-40200)



Operating and Maintenance Instructions



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TOOL SELECTION CHART

Tube O.D.	Wall Gage	Nosepiece	Collet Set	O-Ring	Pulling Spear	Spear Male Square Size	Adapter From Spear Sq. To 3/4" Female Drive Sq.
1-1/2"	10-12	80-40200N150	80-40200C150	P8309-234	TR1500-10	1"	71SOMC
	13-16				TR1500-13		
	18-24				TR1500-18		
1-3/4"	10-12	80-40200N175	80-40200C175		TR1750-10		
	13-16				TR1750-13		
	18-24				TR1750-18		
2"	7-8	80-40200N200	80-40200C200		TR2000-7		
	10-12				TR2000-10		
	13-16				TR2000-13		

Above spears are standard. Additional gauges and lengths available upon request.

SPECIFICATIONS

	Super Tube-Tugger Specifications	
	Inch	Metric
Standard Tube OD Range	1-1/2" to 2"	38mm to 50.8mm
Cylinder Capacity	60 Tons	
Length (Includes Nosepiece)	18"	460mm
Diameter	8.5"	215mm
Weight	62#	27kg
Stroke	4"	100mm
Hydraulic Oil Type	ISO 32 Grade	

RECOMMENDED PUMP

Catalog Number	Pump Type	HP	Maximum Operating Pressure		Power Requirement	Weight	
			PSI	Bar		Lbs	Kg
M5773-00	115 Volt w/Pendant	1.13	10,000	700	25 amps @ 115V	88	39.95
M5775-00	*Pneumatic w/Pendant	3	10,000	700	50 cfm @ 80 psi	91	41.31
M5776-00	230 Volt w/Pendant	1.13	10,000	700	15 amps @ 230V	88	39.95
80-36102D3	Hand Pump	-	10,000	700	-	28	12.7

*Includes 6070 Filter / Lubricator

TOOL CHANGEOVER

Changing The Nosepiece:

1. Loosen socket screws in nosepiece adapter with Allen wrench.
2. Remove nosepiece from nosepiece adapter.
3. Insert new nosepiece into nosepiece adapter.
4. Make sure that the socket screw engages into slotted ring of the nosepiece.
5. Tighten socket screw to lock in nosepiece.

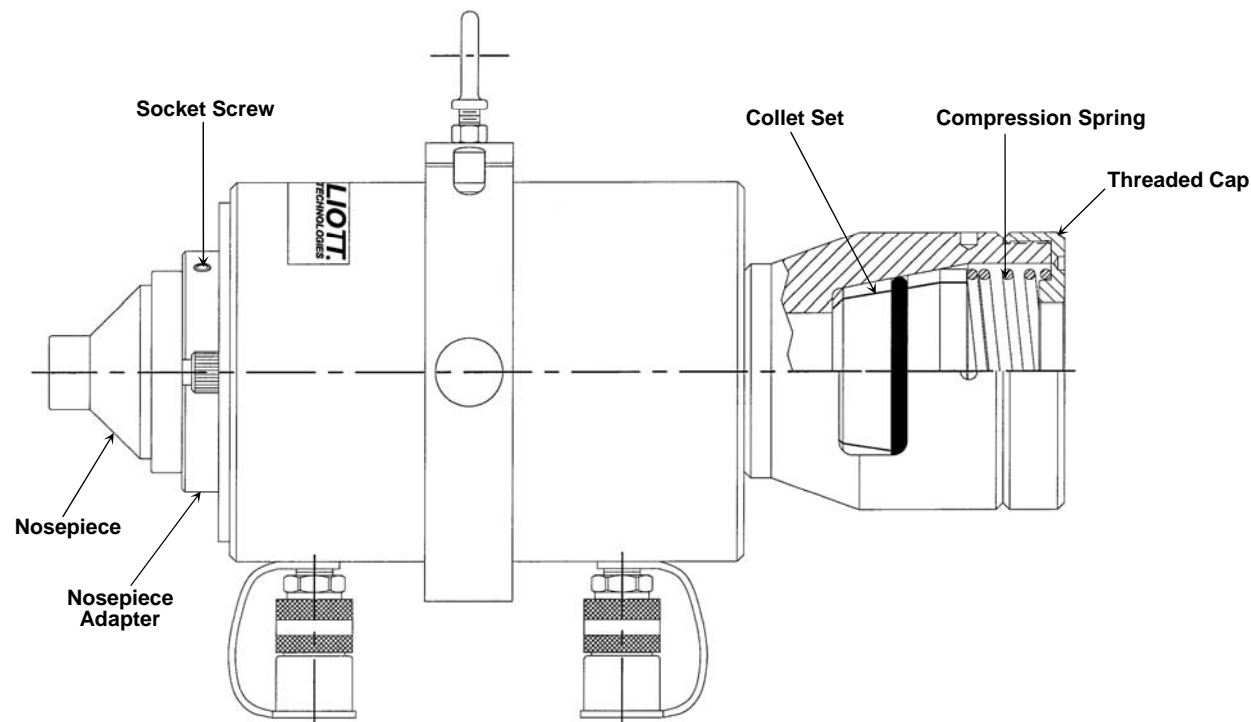


Diagram E

Changing The Collet Set:

1. Engage spanner wrench into threaded cap and loosen cap.
2. Unthread cap from rear of Super Tube-Tugger.
3. Remove compression spring.
4. Remove set of collet jaws from Super Tube-Tugger.
5. Lubricate new set of collet jaws on the OD of the jaws.
6. Insert new set of collet jaws into Super Tube-Tugger.
7. Insert compression spring.
8. Thread cap onto Super Tube-Tugger.
9. Secure cap firmly using spanner wrench and release fork.

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INTRODUCTION

Thank you for purchasing this Elliott product. The design and manufacture of this machine represents the highest standard of quality, value and durability. Elliott tools have proven themselves in thousands of hours of trouble free field operation.

If this is your first Elliott purchase, welcome to our company; our products are our ambassadors. If this is a repeat purchase, you can rest assured that the same value you have received in the past will continue with all of your purchases, now and in the future.

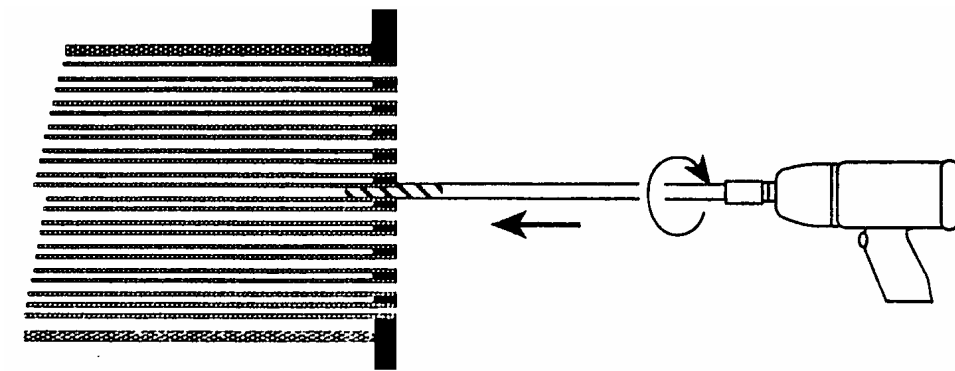
The Elliott Super Tube-Tugger® is a portable continuous tube extractor for removing or extracting tubes from heat exchangers, condensers and chillers. This tube extractor is hydraulically driven and powered by a separate hydraulic power source: Manual, electric or pneumatic.

We at Elliott would like you to be completely satisfied with this machine and therefore recommend that this instruction manual be thoroughly read prior to use.

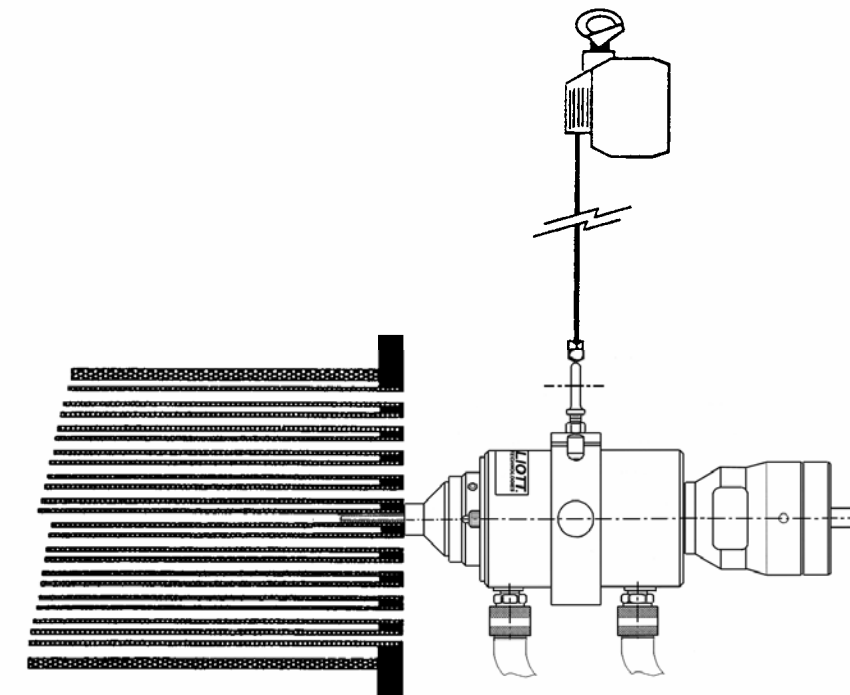
This machine has been designed and manufactured to the highest standards, using the latest in materials and technology. If the guidelines and maintenance schedules in this manual are followed, the Elliott Super Tube-Tugger will provide many years of trouble free operation.

Elliott Tool Technologies Ltd shall not be liable for errors contained herein or for incidental or consequential damage in connection with the furnishing, performance, or use of this material.

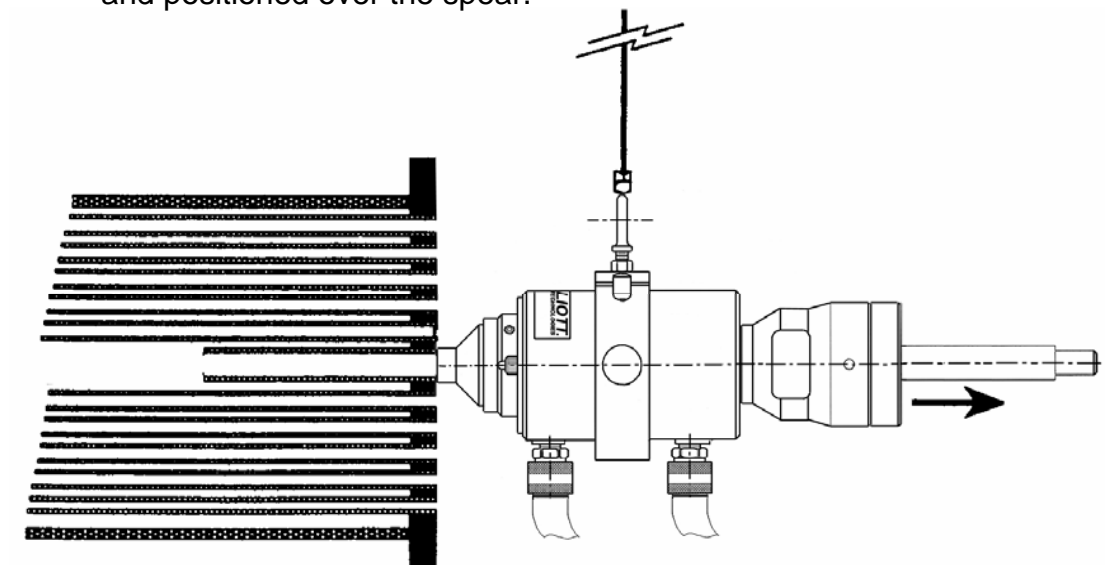
Diagram D



Spear being impacted into tube.



Super Tube-Tugger secured to counter balance and positioned over the spear.



Super Tube-Tugger in operation.

OPERATION

The Super Tube-Tugger has been designed for efficient use and optimum productivity.

The Super Tube-Tugger will extract tubes with outside diameters ranging from 1-1/2" to 2". Standard OD collet jaws and nosepieces are available for 1-1/2", 1-3/4" and 2" OD tubes.

Pulling spears are sized for the tube ID. Nine standard spear sizes are available.

The tool selection guide for the Super Tube-Tugger is listed on page 9.

1. Determine the OD and ID of the tubes to be extracted.
2. Select the proper tools: Nosepiece, pulling spear and collet set (See Page 9).
3. Install the correct nosepiece and collet set on the Super Tube-Tugger.
4. Thread the spear into the tube ID using adapter with an impact drive or by hand.
NOTE: Be careful not to impact the spear too deep, as this will cause difficulty in extracting the tubes.
5. Secure Super Tube-Tugger to counter balance.
6. Position the Super Tube-Tugger over the spear and hold against the tube sheet.
7. Initiate the stroke of the Super Tube-Tugger. When the Super Tube-Tugger has reached its maximum stroke, initiate the return stroke, keeping the Super Tube-Tugger in contact with the tube sheet. Repeat until the tube end is visible from the back end of the collet holder.
8. Once the spear has passed through the collet jaws, stop the Super Tube-Tugger and remove the spear from the tube.
9. Continue the extraction until the tube is fully extracted from the vessel. Once the tube is pulling freely the operator may hand pull the tube through the collet jaws to speed up the extraction process.
NOTE: The release fork may be used to fully open the collet jaws if required.
10. Repeat steps 4 to 9 until all tubes are extracted.

SAFETY

Every effort has been made to ensure the operation of the Elliott Super Tube-Tugger is safe, although it is impossible to remove all possibilities of accidents.

It is very important that **all operators** of this machine are fully aware of the following safety considerations.

1. If you are unfamiliar with the Elliott Super Tube-Tugger, read this Operation Manual thoroughly before use.
2. Always wear safety glasses, protective gloves, safety shoes and protective clothing.
3. Do not allow other people in the area of the machine unless they are wearing suitable protective clothing and equipment.
4. As the machine is hydraulically driven, hydraulic oil leaks from the ram and hose connections are possible. If hydraulic oil is leaked, clean-up oil immediately to avoid slippery floor surfaces.
5. The Elliott Super Tube-Tugger stroke is controlled by a manual control on the hydraulic power source. It is important to read and understand the manual for the hydraulic power source.
6. Ensure all hydraulic connections are properly made and that the hydraulic hoses are in good condition.
7. Always be aware of hydraulic power shut off valve.
8. Always shut down the hydraulic power supply before changing tooling.
9. Do not operate the machine if there appears to be damage to the machine, if screws are loose or missing, or if performance appears to be unsatisfactory.
10. Never use the Super Tube-Tugger, or any other power tool when under the influence of medication, drugs or alcohol that decrease concentration and impair operator control.

START-UP

Unpacking

The Elliott Super Tube-Tugger is shipped in a carton complete with all accessories listed. On arrival, check for external damage to the box. If damage is found, notify the carrier and the supplier so insurance inspectors can examine the box before it is unpacked. When opened, check the contents against the packing and parts list. Report any damage or shortage to Elliott.

Ensure that there is no packaging material left inside the openings of the machine, especially in the hydraulic inlets.

Connecting to Hydraulic Power Supply

The Elliott Super Tube-Tugger requires a hydraulic power source. The hydraulic power source supplied by Elliott will be an electric, pneumatic or manual pump.

1. Position the Super Tube-Tugger and the hydraulic power source on a flat surface.
2. Connect counter balance eye bolt and fasten operator side handles.
3. Connect the two 15' hydraulic hoses to both units. **Important:** Make sure that the male hose fittings are totally in contact with female fitting shoulder on the tube pulling cylinder before threading down the locking fitting. Otherwise the cylinder's relief valve will activate and release a fog of hydraulic fluid and the cylinder will remain idle.
4. Follow the directions of the Elliott hydraulic pump manual to assure that hydraulic pump is working properly.

5. Cycle the Super Tube-Tugger several strokes to eliminate any air in the hydraulic lines.

NOTE: The hydraulic hoses are pre-charged with oil by the factory.

6. The Super Tube-Tugger is ready for tool installation.

Removing the Hydraulic Hoses

1. Neutralize the pressure before removing the hydraulic hoses.

NOTE: On the hydraulic power units with remote control, flip the switch on the top of the hydraulic pump from "Remote" to "Off". Cycle both "Advance" and "Retract" switches on the remote control, to neutralize the pressure.

QUICK REFERENCE DIAGRAMS

