

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

# ELLIOTT "COLLET STYLE" Baffle Expander With Hydraulic Power Supply

B9765 Pkg – 3/4" OD  
B10180 Pkg – 1" OD



## Operating and Maintenance Instructions

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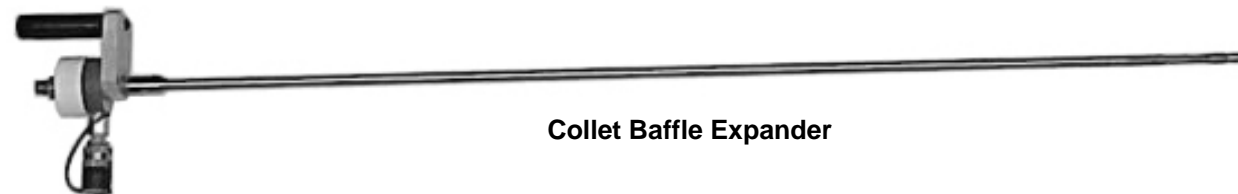
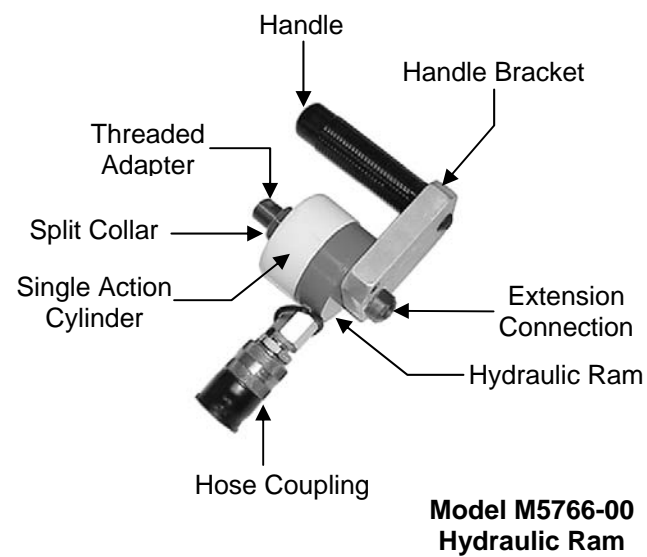
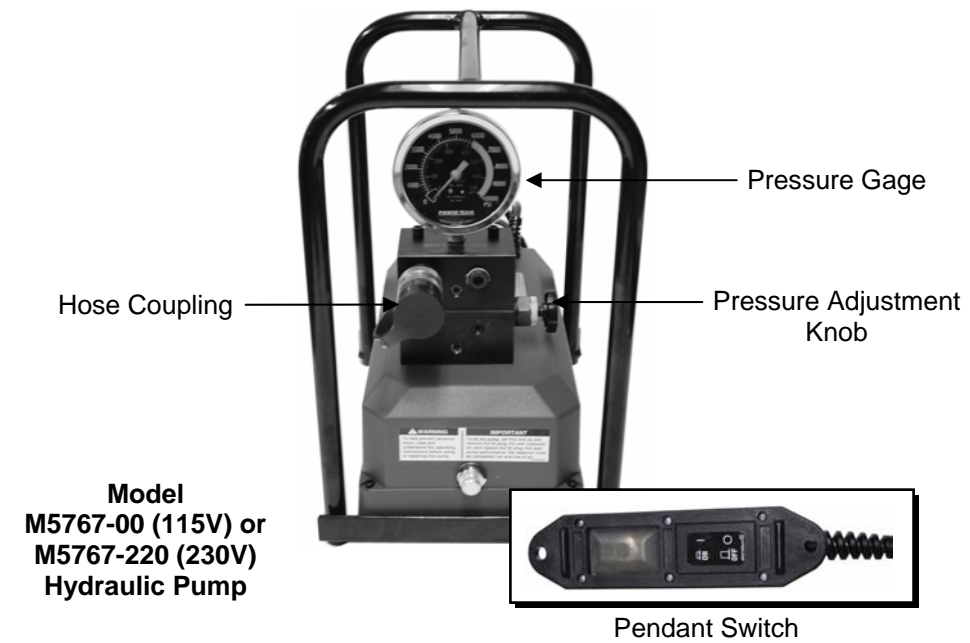
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# QUICK REFERENCE DIAGRAM



- 3/4" OD Kit**  
**B9765PKG Consists Of:**  
 (2) B9765A00 Baffle Expander  
 (1) M5766-00 Ram w/15' Hose  
 (2) M5767-00 Hydraulic Pump

- 1" OD Kit**  
**B10180PKG Consists Of:**  
 (1) B10180-00 Baffle Expander  
 (1) M5766-00 Ram w/15' Hose  
 (1) M5767-00 Hydraulic Pump

**\*Wt. Includes three 4' sections**

# TABLE OF CONTENTS

Introduction .....	2
Safety .....	3
Start-up .....	4
Tool Selection Guide .....	5
Specifications .....	6
Operation .....	7
Quick Reference Diagram .....	8

# INTRODUCTION

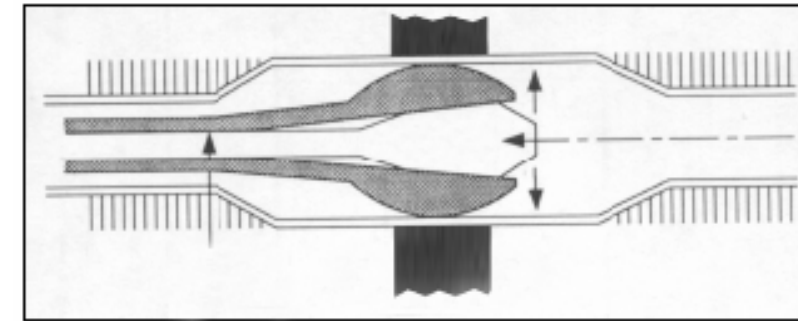
Thank you for purchasing this Elliott product. The design and manufacture of this machine, represents the highest standard of quality, value and durability. Elliott tools have proven themselves in thousands of hours of trouble free field operation.

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 Baffle Expander is a lightweight, portable tube expansion system designed to expand tubes at the support plates or baffles in heat exchangers, chillers, and condensers. The adjustable hydraulic pressure allows for consistent expansion, eliminating the risk of over expansion that can lead to tube failure. This tool is not designed for heavy expansion at the primary tube sheets.

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 Baffle Expander will provide many years of trouble free operation.



**Proper Position of Collet**

Figure A

# OPERATION

1. Measure the distance from the face of the tube sheet to the center of the baffle support plate being expanded.
2. Assemble the collet extensions (7) and draw bar extensions (5) as required to reach the needed length.
3. Position the location collar (6) so that the collet (3) will be properly positioned under the support plate. See diagram above.
4. The pump pressure controls the amount of tube expansion achieved. To set this pressure properly, a sample piece of tube (similar to the tube in the heat transfer vessel) will be required. Set the hydraulic pump to 400 PSI. Depress the pendant switch to the on position for 2 to 3 seconds. This will retract the draw bar (4) and expand the collet (3) and the tube sample. When the pendant switch is released, the collet expander will be returned to its minimum diameter.
5. To adjust the minimum and maximum expansion of this tool loosen the split collar (8) set screw and adjust the threaded adapter (5) either inward to increase the diameter, or outward to decrease the diameter. The entry diameter should be .005" to .015" under the minimum ID of the tube. Increase the pump pressure in 50 PSI increments until the proper expansion rate has been achieved. Note: **DO NOT** exceed 1,500 PSI as over-expansion and tube damage could occur. Once the proper expansion rate has been achieved, you are ready to begin expanding the tubes in the heat transfer vessel.
6. Insert the collet expander into the tube until the location collar (6) is seated against the tube sheet. Depress the pendant switch for 2 to 3 seconds to expand the tube as in step 4 above. Release the switch to return the collet expander to its minimum diameter. Note: When using 2 or more extensions, center support of tool is required.
7. At this time you can rotate the expander 30° and repeat step 6 to maximize the tube to tube support contact, or you can move to the next tube.

# SPECIFICATIONS

Specifications		
<b>RAM M5766-00</b>		
<b>Weight</b>	5 lbs.	
<b>Height</b>	9.1"	
<b>Width</b>	2.75"	
<b>Length</b>	5.4"	
<b>PUMP M5767-00 and M5767-220</b>		
<b>Weight</b>	29 lbs.	
<b>Height</b>	15.75"	
<b>Width</b>	10"	
<b>Length</b>	12.75"	
<b>*Electric Pump Specification</b>	<b>Electrical Requirements</b> M5767-00 115 V/1/50-60 Hz. M5767-220 230V/1/50-60 Hz.	
	<b>Horse Power</b> 0.25	
	<b>Max (psi) Operating Pressure</b> 1,500	
	<b>Flow @ Rated Press. (inch<sup>3</sup>/min.)</b> 20 - 200	
	<b>Weight (lbs.)</b> 29	
<b>EXPANDER</b>		
	<b>3/4" B9765A00</b>	<b>1" B10180-00</b>
<b>Weight</b>	9.4 lbs.*	16.3 lbs.*
<b>Overall Length</b>	12 ft.	12 ft.

\*Includes (3) 4 ft. sections.  
(Additional sections are available.)

# SAFETY

Every effort has been made to ensure the operation of the Elliott Baffle Expander 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 Baffle Expander, 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. Do not allow other people at the opposite end of the tube while expanding. In the rare event of draw bar failure, the draw bar can be expelled from the tube with dangerous force.
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 Baffle Expander 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 hoses are in good condition.
7. Always be aware of the location 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 parts are missing, or if performance appears to be unsatisfactory.
10. Never use the Baffle Expander, 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 Baffle Expander Kit is shipped, complete with baffle expander, hydraulic ram, hose and pump. On arrival, check for external damage to the cartons. 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 hydraulic ram or any other hydraulic port.

## Connecting to Hydraulic Power Supply

The Elliott Baffle Expander includes a hydraulic power source. The hydraulic power source supplied by Elliott will be either Elliott Model M5767-00 (115 Volts) or M5767-220 (230 Volts). An optional pneumatic pump is available.

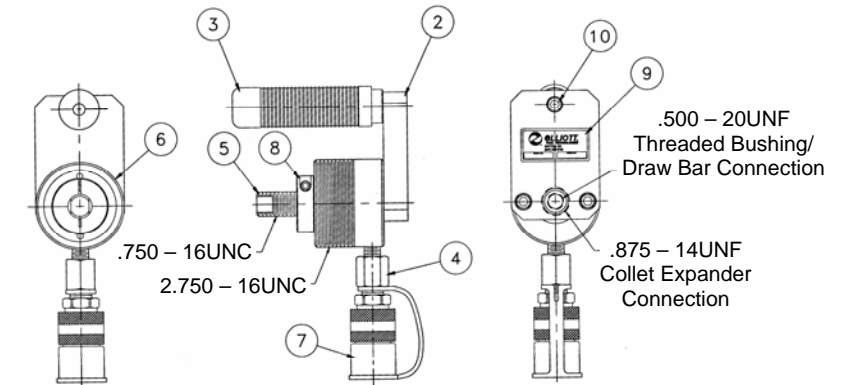
1. Position the Elliott Baffle Expander and the hydraulic power source on a flat surface.
2. Connect the 15' hydraulic hose to the ram and pump.
3. Follow the directions of the Elliott hydraulic pump manual to assure that the hydraulic pump is working properly.
4. Cycle the Baffle Expander Ram several strokes to eliminate any air in the hydraulic lines.
5. The Elliott Baffle Expander Ram is ready for installation of the baffle expander.

## Connecting to Baffle Expander (Refer to page 5 – Tool Selection Guide)

1. Thread the threaded bushing (8) into the hydraulic ram. Make sure that the screwdriver slot is facing outward. Use a screw driver to final thread the bushing firmly into the hydraulic ram. Set the hydraulic ram aside until step 6.
2. Select and connect the number of 4' draw bar (5) and collet extensions (7) that will be required for your task. It is best to insert the draw bar extension into the collet extensions before assembling extensions together.
3. Thread the collet (3) onto the end of the collet extensions (7).
4. Pull out the end of draw bar extension(s) (5) assembly from the collet extension(s) to expose the flat. Use a wrench to hold the draw bar extension while threading on the draw bar (4). Use a second wrench on the draw bar flat to firmly tighten the draw bar to the draw bar extension assembly.
5. On the opposite end of the collet extension assembly, thread on the collet extension adapter (2). The complete assembly is now ready to be connected to the hydraulic ram.
6. Connect the complete assembly to the hydraulic ram by threading the collet extension adapter end of the assembly into the hydraulic ram. Tighten firmly.
7. Internally thread the draw bar extension into the threaded bushing in the hydraulic ram. Tighten firmly.
8. The Baffle Expander is now ready to use.

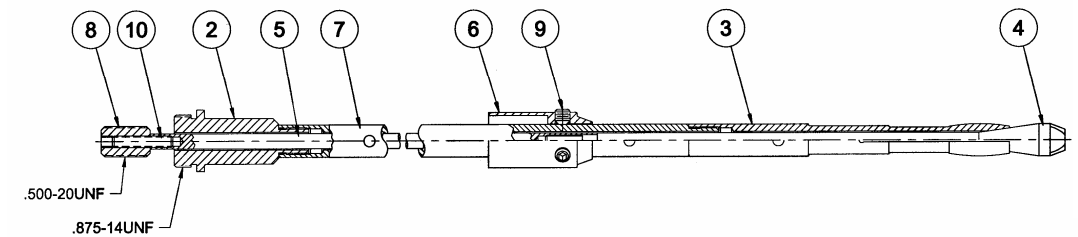
# TOOL SELECTION GUIDE

## Short Stroke Hydraulic Ram M5766-00



② Handle Bracket	③ Handle Assembly	④ Adapter	⑤ Threaded Adapter	⑥ Hydraulic Cylinder	⑦ Hose Coupling with Cap	⑧ Split Collar	⑨ Name Plate	⑩ Cap Screw (3-Req'd.)	⑪ 15' Hydraulic Hose (not Shown)
M5766D1	M5766D2	M5766D3	M5766D5	17RH120	17-9796	212121	P709827-2	P8302-54	80RH303-4

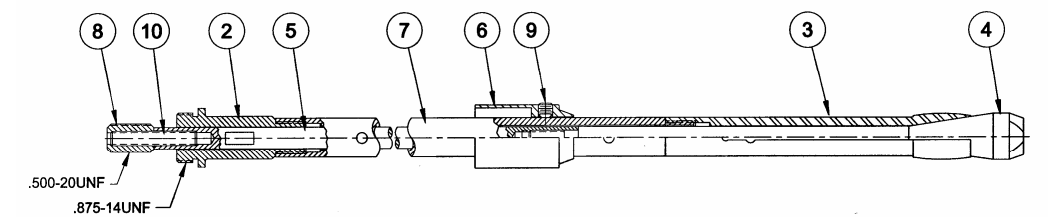
## Collet Style Baffle Expanders B9765A00 (3/4" Size)



② Collet Ext. Adapter	③ Collet	④ Draw Bar	⑤ Draw Bar Extension	⑥ Location Collar	⑦ Collet Extension	⑧ Threaded Bushing	⑨ Set Screw (2-Req'd.)	⑩ Set Screw	⑪ *Set Screw (Not Shown)
B9669D2	B9765AD6	B9765AD7	B9765AD8	B9765D9	B9765D11	M5223-5	128L	173AY	173AX

\*One required between each Draw Bar Extension.

## B10180-00 (1" Size)



② Collet Ext. Adapter	③ Collet	④ Draw Bar	⑤ Draw Bar Extension	⑥ Location Collar	⑦ Collet Extension	⑧ Threaded Bushing	⑨ Set Screw (2-Req'd.)	⑩ *Set Screw (Not Shown)
B10180D3	B10180D8	B10180D9	B10180D5	B10180D7	B10180D6	M5223-2	128L	128DU

\*One required between each Draw Bar Extension.