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**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)

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Tube Plugs
(High & Low Pressure)

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Tube Cutters
Manual Tools
Spear Type Tube Pullers
Collet-Type Tube Pullers
CYCLGRIP Tube Extractors
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products**

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

**"TUBE FACER"
ETF Style
For 3/8" – 1-1/2" Tube OD**



Operating and Maintenance Instructions

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TOOL ADJUSTMENTS AND COMPONENT REPLACEMENTS

ADJUSTING THE DEPTH OF CUT

The Elliott ETF Tube Facer can be adjusted to allow the tube to project from 0" – 1/4".

1. Loosen the screw in the Thrust Nut. (Chart 3, Detail 4)
2. Thread the Thrust Nut to the desired position and tighten the set screw. (Chart 3, Detail 3)

REPLACING THE TUBE FACER PILOT

Using the Allen Wrench (provided)

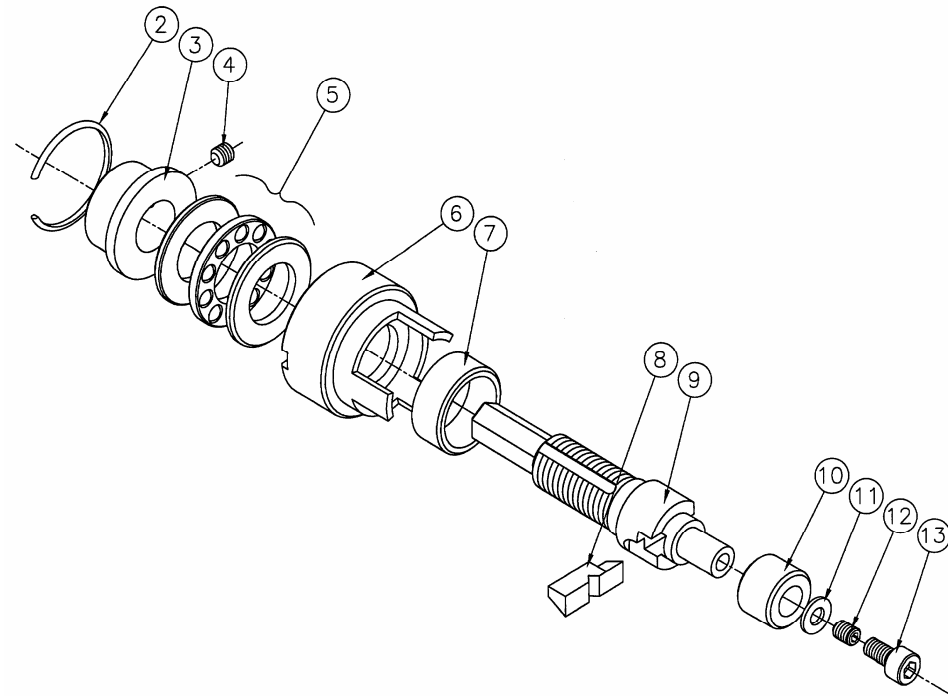
1. Remove the pilot screw and washer. (Chart 3, Detail 11 and 13)
2. Slip the pilot (Chart 3, Detail 10) onto the facer body (Chart 3, Detail 9).
3. Replace the pilot screw. **NOTE:** Just snug the pilot screw, there is no need to severely tighten.

REPLACING THE FACER BLADE

Using the Allen Wrench (provided)

1. Remove the pilot screw (Chart 3, Detail 13) and the facer pilot (Chart 3, Detail 10).
2. Using the Allen Wrench, loosen the set screw inside the facer body. (Chart 3, Detail 12)
NOTE: There is no need to remove the set screw.
3. Remove the old cutter bit and replace with a new bit. (Chart 3, Detail 8)
4. Position the bit with the notch aligned to accept the tightened set screw, then tighten the set screw. **NOTE:** Make sure the facer bit is centered and secured.
5. Replace the facer pilot and pilot screw.

TUBE FACER PARTS LIST (ETF Series)



(Chart 3)

Item #	Tube Size	3/8"	1/2"	5/8"	3/4"	7/8"	1"	1-1/8"	1-1/4"	1-3/8"	1-1/2"
1	Facer Assembly	ETF375	ETF500	ETF625	ETF750	ETF875	ETF1000	ETF1125	ETF1250	ETF1375	ETF1500
2	Retaining Spring	16-C18	16-C30	16-C30	16-C30	16-C30	16-C30	16-C30	16-C30	16-C30	16-C30
3	Thrust Nut	ETF375D7	ETF500D7	ETF625D7	ETF750D7	ETF875D7	ETF1000D7	ETF1125D7	ETF1250D7	ETF1375D7	ETF1500D7
4	Set Screw- Nut	128D5	128CX	128DT	128DT	128YY	128YY	128CY	128CY	128CY	128CY
5	Thrust Bearing	None	PC80-51103	PC80-51103	PC80-51103	PC80-51103	PC80-51103	PC80-51103	PC80-51103	PC80-51103	PC80-51103
6	Thrust Collar	ETF375D5	ETF500D5	ETF625D5	ETF750D5	ETF875D5	ETF1000D5	ETF1125D5	ETF1250D5	ETF1375D5	ETF1500D5
7	Chip Ring	ETF375D10	ETF500D10	ETF625D10	ETF750D10	ETF875D10	ETF1000D10	ETF1125D10	ETF1250D10	ETF1375D10	ETF1500D10
8	Tool Bit	ETF376	ETF506	ETF626	ETF756	ETF876	ETF1006	ETF1126	ETF1256	ETF1376	ETF1506
8	Tool Bit - SS	ETF376SS	ETF506SS	ETF626SS	ETF756SS	ETF876SS	ETF1006SS	ETF1126SS	ETF1256SS	ETF1376SS	ETF1506SS
9	Body	ETF375D9	ETF500D9	ETF625D9	ETF750D9	ETF875D9	ETF1000D9	ETF1125D9	ETF1250D9	ETF1375D9	ETF1500D9
11	Washer	None	169C	549-6	549-6	169F	169F	132B	132B	132B	132B
12	Set Screw- Bit	Not Req'd.	128CQ	128DT	128DT	128YY	128YY	128YY	128CY	128CY	128CY
13	Cap Screw	P8302-141	P8302-127	P8302-142	P8302-142	P8302-143	P8302-143	P8302-136	P8302-136	P8302-136	P8302-136

Facer ships with customer specified pilot. (Example: ETF375-18 is 3/8 facer with 18 ga pilot).

Customer specifies blade type, either non-ferrous/carbon steel or stainless steel.

Pilots are standard in even gage sizes. Special gage sizes available on request.

Wrenches are included with Tube Facer assembly.

PILOT LISTING											
Tube Size	3/8"	1/2"	5/8"	3/4"	7/8"	1"	1-1/8"	1-1/4"	1-3/8"	1-1/2"	
10-11ga				ETF750P10	ETF875P10	ETF1000P10	ETF1125P10	ETF1250P10	ETF1375P10	ETF1500P10	
12-13ga				ETF750P12	ETF875P12	ETF1000P12	ETF1125P12	ETF1250P12	ETF1375P12	ETF1500P12	
14-15ga			ETF625P14	ETF750P14	ETF875P14	ETF1000P14	ETF1125P14	ETF1250P14	ETF1375P14	ETF1500P14	
16-17ga	ETF375P16	ETF500P16	ETF625P16	ETF750P16	ETF875P16	ETF1000P16	ETF1125P16	ETF1250P16	ETF1375P16	ETF1500P16	
18-19ga	ETF375P18	ETF500P18	ETF625P18	ETF750P18	ETF875P18	ETF1000P18	ETF1125P18	ETF1250P18	ETF1375P18	ETF1500P18	
20-22ga	ETF375P20	ETF500P20	ETF625P20	ETF750P20							

SAFETY

1. Remove the tool from the drive motor prior to changing facer blades or facer pilots.
2. Always wear safety glasses when using this equipment.
3. The Elliott ETF Series Tube Facer is a rotating cutter. Avoid wearing loose clothing and jewelry. Wear protective hair covering to prevent long hair from getting caught in the tool.
4. Do not use this tool if it appears damaged.
5. Never use the Tube Facer, or any other power tool when under the influence of medication, drugs or alcohol that decrease concentration and impair operator control.

OPERATION

1. Select the proper Elliott ETF Series Tube Facer for the tube size. (Each tube OD requires a different size Tube Facer.)
2. Each Facer is shipped with several pilots as indicated in Chart 1. Chart 1 also shows additional pilot sizes that are available. See "Tool Adjustment and Component Replacement" for installation instruction.
3. Set the Thrust Collar to the desired tube projection from the tube sheet. See "Tool Adjustment and Component Replacement" for instruction.
4. The Elliott ETF Series Tube Facer can be driven with either an electric or air powered motor. Refer to Chart 2 for recommended starting RPM speeds for the material type and size being cut. **NOTE:** Operating the tube facer at too high a RPM can result in "burning" the cutter blade and reducing cutter blade life.
5. Once all adjustments are made, insert the cutter into a tube to be trimmed. Activate the motor, which will rotate the facer. Apply steady forward pressure to the facer cutting into the tube end. **NOTE:** Do not jam the facer blade into the tube wall. That may result in a broken facer blade or damage to the tool. When the cut is complete stop the drive motor, withdraw the facer from the tube and move the tool to the next tube to be trimmed. **NOTE:** Use a cutting fluid to promote cutter blade life.

PILOT SIZES

	10-11ga	12-13ga	14-15ga	16-17ga	18-19ga	20-22ga
ETF375P(xx)				* 16	* 18	* 20
ETF500P(xx)				* 16	* 18	* 20
ETF625P(xx)			* 14	* 16	* 18	20
ETF750P(xx)	* 10	* 12	* 14	* 16	* 18	20
ETF875P(xx)	10	12	* 14	* 16	* 18	
ETF1000P(xx)		* 12	* 14	* 16	18	
ETF1125P(xx)		* 12	* 14	* 16	18	
ETF1250P(xx)		* 12	* 14	* 16	18	
ETF1375P(xx)		* 12	* 14	* 16	18	
ETF1500P(xx)		* 12	* 14	* 16	18	

(Chart 1)

* Standard pilots shipped with facer.

RECOMMENDED STARTING RPM FOR TUBE FACERS

TUBE O.D.	TUBE MATERIAL											
	Inconel 10 SFM	Hastelloy 20 SFM	300 Series Stainless 30 SFM	Monel 40 SFM	400 Series Stainless 50 SFM	Titanium 60 SFM	Carbon Steels 80 SFM	Copper 90 SFM	Copper- Nickel 100 SFM	Red Brass 200 SFM	Admiralty Brass 225 SFM	Aluminum 250 SFM
1/4"	153	306	458	611	764	917	1222	1376	1528	3056	3438	3820
5/16"	122	244	367	489	611	733	978	1100	1222	2445	2750	3056
3/8"	102	204	306	408	509	611	815	916	1018	2037	2292	2546
7/16"	87	175	262	349	437	524	699	786	874	1746	1964	2183
1/2"	76	153	229	306	382	459	611	688	764	1528	1719	1910
9/16"	68	137	204	272	340	407	543	611	679	1358	1528	1698
5/8"	61	122	184	245	306	367	489	552	612	1222	1375	1528
11/16"	55	112	167	222	278	333	444	500	555	1111	1250	1389
3/4"	51	102	153	203	254	306	408	458	508	1019	1146	1273
13/16"	47	95	142	190	237	284	379	427	474	940	1058	1175
7/8"	44	87	131	175	219	262	349	392	438	873	982	1091
1"	38	76	115	153	191	229	306	344	382	764	859	955
1-1/8"	34	68	102	136	170	204	272	306	340	679	764	849
1-1/4"	31	61	92	123	153	183	245	274	306	611	688	764
1-3/8"	28	56	83	111	139	167	222	250	278	556	625	694
1-1/2"	25	51	76	102	127	153	204	230	254	509	573	637
1-3/4"	22	44	66	88	109	131	175	196	218	437	491	546
2"	19	38	57	76	96	115	153	172	191	382	430	477

Revolutions Per Minute
(Chart 2)

TOOL TIPS FOR THE ELLIOTT ETF STYLE TUBE FACER

1. The facer blade supplied with your Elliott ETF Style Tube Facer is specially coated to provide up to three times longer life than a standard high speed steel blade. Use of cutting fluid will contribute to even greater blade life.
2. Different tube materials and tube sizes require different cutting speeds. Refer to Chart 2 for cutting speed recommendations. Excessive cutting speed will reduce the life of, or may damage the facer blade.
3. Excessive pressure when cutting (forcing rapid feed-rate) will reduce the life of the facer blade. Moderate and steady pressure is recommended.
4. Facer blades with a dull or chipped cutting edge should be replaced with a new blade.
5. Keep the facer pilot surface clean and smooth to avoid damage to tube IDs.
6. Never run this tool in a "counter clockwise" direction.
7. Tube Facers should never be operated at an angle to the tube centerline. The Elliott ETF Style Tube Facer has opposing cutting surfaces that will contribute to centering the facer assembly to the centerline of the tube, avoiding tool breakage.

TOOL CARE

1. Before each use inspect your Elliott ETF Style Tube Facer for damaged or worn blade.
2. Always make sure the blade is sharp and not chipped.
3. Use a cutting fluid to reduce cycle time and increase blade life.
4. Operate your Elliott ETF Style Tube Facer at the proper speed for the material type and size being cut. This will contribute to cutter blade life.
5. After each use clean the tool and apply a light oil to prevent rust and tarnish.