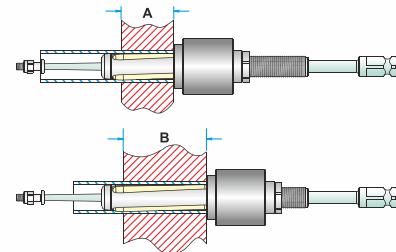


Heat Exchanger and Boiler Tube Expander

'T-8012' Series

- More Durable Components
- Extended Service Life
- In Built Thrust Bearing
- Heavy Duty Application

Tube Expanders fitted with Roller Length		For Tube Sheet Adjustment Range	
		Minimum "A"	Maximum "B"
2.1/4" (57.15 mm)	STD Reach	1.1/2" (38.10 mm)	4" (101.40 mm)
	"6" Reach	1.1/2" (38.10 mm)	6" (152.40 mm)
	"8" Reach	1.1/2" (38.10 mm)	8" (203.20 mm)



Tube I.D. inch	Tube I.D. inch	Min. I.D. inch	Max Expansion inch	Expander with 2.1/4" (57.15 mm) long rollers		
				Model No.	Mandrel	Rollers Set.
1.3/4" (44.45)	8	1.420	36.1	T 8012-1.3/4-8	TM-90	TR-33-A
	10	1.482	37.6	T 8012-1.3/4-8		TR-37-A
	11	1.510	38.3	T 8012-1.3/4-11		TR-42
	12	1.532	38.9	T 8012-1.3/4-12		TR-44
	13	1.560	39.6	T 8012-1.3/4-13		TR-46
	14	1.584	40.2	T 8012-1.3/4-14		TR-48
2" (50.80)	8	1.670	42.4	T 8012-2-8	TM-91	TR-48
	10	1.732	43.9	T 8012-2-10		TR-50
	11	1.760	44.7	T 8012-2-11		TR-52
	12	1.782	45.2	T 8012-2-12		TR-54
	13	1.810	45.9	T 8012-2-13-18		TR-56
	14	1.834	46.5	T 8012-2-13-18		TR-56
	15	1.856	47.1	T 8012-2-13-18		TR-56
	16	1.870	47.4	T 8012-2-13-18		TR-56
	17	1.884	47.9	T 8012-2-13-18		TR-56
	18	1.902	48.3	T 8012-2-13-18		TR-56
2.1/4" (57.15)	10	1.982	50.3	T 8012-2.1/4-10	TM-92	TR-56
	11	2.010	51.0	T 8012-2.1/4-11		TR-58
	12	2.032	51.6	T 8012-2.1/4-12		TR-60
	13	2.060	52.3	T 8012-2.1/4-13-16		TR-62
	14	2.084	52.9	T 8012-2.1/4-13-16		TR-62
	15	2.106	53.4	T 8012-2.1/4-13-16		TR-62
	16	2.120	53.8	T 8012-2.1/4-13-16		TR-62
2.1/2" (63.50)	10	2.232	56.6	T 8012-2.1/2-10-12	TM-93	TR-64
	11	2.260	57.4	T 8012-2.1/2-10-12		TR-64
	12	2.282	57.9	T 8012-2.1/2-10-12		TR-64
2.1/2" (63.50)	13	2.310	58.6	T 8012-2.1/2-13-18	TM-94	TR-64
	14	2.334	59.2	T 8012-2.1/2-13-18		TR-64
	15	2.356	59.8	T 8012-2.1/2-13-18		TR-64
	16	2.370	60.1	T 8012-2.1/2-13-18		TR-64
	17	2.384	60.6	T 8012-2.1/2-13-18		TR-64
	18	2.402	61.0	T 8012-2.1/2-13-18		TR-64

T-8012 expanders can be supplied with 4 and 5 rollers

Tube O.D. inch	Thk bwg	Tube I.D. inch mm	Min I.D.		Max Expansion		Expander with 2.1/4" (57.15 mm) long rollers		
			inch	mm	inch	mm	inch	mm	Model No.
2.3/4 (69.85)	10	2.482 63.0	2.390	60.7	2.702	68.6	T8012-2.3/4-10-16	TM-95	TR-66
	11	2.510 63.7	2.390	60.7	2.702	68.6	T8012-2.3/4-10-16		TR-66
	12	2.532 64.3	2.390	60.7	2.702	68.6	T8012-2.3/4-10-16		TR-66
	13	2.560 65.0	2.390	60.7	2.702	68.6	T8012-2.3/4-10-16		TR-66
	14	2.584 65.6	2.390	60.7	2.702	68.6	T8012-2.3/4-10-16		TR-66
	15	2.606 66.1	2.390	60.7	2.702	68.6	T8012-2.3/4-10-16		TR-66
3" (76.20)	16	2.620 66.6	2.390	60.7	2.702	68.6	T8012-2.3/4-10-16	TM-96	TR-66
	8	2.670 67.8	2.560	65.0	2.829	71.8	T8012-3-8-9		TR-67
	9	2.701 68.6	2.560	65.0	2.829	71.8	T8012-3-8-9		TR-67
	10	2.732 69.3	2.640	67.0	2.952	74.9	T8012-3-10-18		TR-67
	11	2.760 70.1	2.640	67.0	2.952	74.9	T8012-3-10-18		TR-67
	12	2.782 70.6	2.640	67.0	2.952	74.9	T8012-3-10-18		TR-67
	13	2.810 71.3	2.640	67.0	2.952	74.9	T8012-3-10-18		TR-67
	14	2.834 71.9	2.640	67.0	2.952	74.9	T8012-3-10-18	TM-97	TR-67
	15	2.856 72.5	2.640	67.0	2.952	74.9	T8012-3-10-18		TR-67
	16	2.870 72.8	2.640	67.0	2.952	74.9	T8012-3-10-18		TR-67
	17	2.884 73.3	2.640	67.0	2.952	74.9	T8012-3-10-18		TR-67
	18	2.902 73.7	2.640	67.0	2.952	74.9	T8012-3-10-18		TR-67
3.1/2" (88.90)	13	3.311 84.1	3.190	81.0	3.464	88.0	T8012-3.1/2-13-18	TM-98	TR-70
	14	3.334 84.7	3.190	81.0	3.464	88.0	T8012-3.1/2-13-18		TR-70
	15	3.354 85.2	3.190	81.0	3.464	88.0	T8012-3.1/2-13-18		TR-70
	16	3.370 85.6	3.190	81.0	3.464	88.0	T8012-3.1/2-13-18		TR-70
	17	3.385 86.0	3.190	81.0	3.464	88.0	T8012-3.1/2-13-18		TR-70
	18	3.401 86.4	3.190	81.0	3.464	88.0	T8012-3.1/2-13-18		TR-70
4" (100.60)	3	3.480 88.4	3.425	87.0	3.780	96.0	T8012-3.1/2-3-4	TM-99	TR-71
	4	3.527 89.6	3.425	87.0	3.780	96.0	T8012-3.1/2-3-4		TR-71
	8	3.670 93.2	3.582	91.0	3.940	100.0	T8012-3.1/2-8-9		TR-71
	9	3.704 94.1	3.582	91.0	3.940	100.0	T8012-3.1/2-8-9		TR-71
	10	3.732 94.8	3.661	93.0	3.960	100.6	T8012-4-10-16		TR-72
	11	3.760 95.5	3.661	93.0	3.960	100.6	T8012-4-10-16		TR-72
	12	3.783 96.1	3.661	93.0	3.960	100.6	T8012-4-10-16		TR-72
	13	3.811 96.8	3.661	93.0	3.960	100.6	T8012-4-10-16		TR-72
	14	3.834 97.4	3.661	93.0	3.960	100.6	T8012-4-10-16		TR-72
	16	3.870 98.3	3.661	93.0	3.960	100.6	T8012-4-10-16		TR-72
4.1/2" (114.30)	3	3.980 101.1	3.940	100.0	4.291	109.0	T8012-4.1/2-3-4	TM-100	TR-73
	4	4.030 102.3	3.940	100.0	4.291	109.0	T8012-4.1/2-3-4		TR-73
	8	4.170 105.9	4.020	102.0	4.370	111.0	T8012-4.1/2-8-9		TR-74
	9	4.204 106.8	4.020	102.0	4.370	111.0	T8012-4.1/2-8-9		TR-74
	10	4.232 107.5	4.100	104.0	4.450	113.0	T8012-4.1/2-10-16		TR-74
	12	4.283 108.8	4.100	104.0	4.450	113.0	T8012-4.1/2-10-16		TR-74
	16	4.370 111.0	4.100	104.0	4.450	113.0	T8012-4.1/2-10-16		TR-74
5" (127.0)	3	4.480 113.8	4.410	112.0	4.763	121.0	T8012-5-3-4	TM-101	TR-76
	4	4.527 115.0	4.410	112.0	4.763	121.0	T8012-5-3-4		TR-76
	8	4.670 118.6	4.566	116.0	4.921	125.0	T8012-5-8-9		TR-77
	9	4.704 119.5	4.566	116.0	4.921	125.0	T8012-5-8-9		TR-77
	10	4.732 120.2	4.606	117.0	4.960	126.0	T8012-5-10-16		TR-78
	11	4.763 121.0	4.606	117.0	4.960	126.0	T8012-5-10-16		TR-78
	12	4.783 121.5	4.606	117.0	4.960	126.0	T8012-5-10-16		TR-78
	14	4.834 122.8	4.606	117.0	4.960	126.0	T8012-5-10-16		TR-78
	16	4.870 123.7	4.606	117.0	4.960	126.0	T8012-5-10-16		TR-78

Boiler Tube Expanders

'T-114' Series (Flare) - 4 Plain Rollers & 2 Flare Rollers

- Multi purpose expander
- Popular choice for expanding & flaring
- Boiler Tubes
- Water Wall
- Economizer
- Riser & Air Heater Tubes

Tritorc offers solutions to overcome any installation problem.



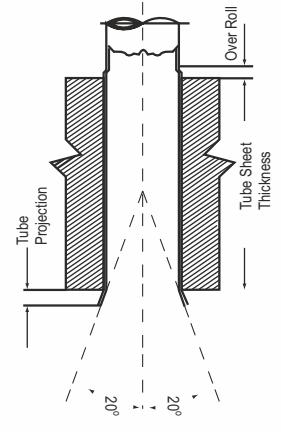
One of our drive systems helps overcome a problem caused by a difficult access...

- Reduces operator fatigue
- Ensures operator safety
- Increases productivity
- Maintains consistent accuracy

TUBE SIZE				Min I.D. Tool Enters	Max. Expansion of Tool	TUBE EXPANDER MODEL						
O.D. inch	THK bwg	O.D. inch	THK bwg			Tube Sheet Thickness Range						
						1/2" to 7/8"	3/4" to 1.1/8"	1.1/8" to 1.5/8"	1.5/8" to 2.1/8"	2.1/8" to 2.5/8"		
Tube Sheet Thickness Codes >				2		2	3	4	5	6		
2	4 - 5	1.3/4	11 - 13	36.7	1.444	43.1	1.696	-	T14172	T14174	T14176	T14178
	6 - 7	1.3/4	14 - 16	38.3	1.507	44.6	1.755	-	T14182	T14184	T14186	T14188
	7 - 8			39.9	1.570	46.4	1.826	T14191	T14192	T14194	T14196	T14198
	9 - 10	2.1/4	13	41.5	1.633	48.0	1.889	T14201	T14202	T14204	T14206	T14208
	11-13	2.1/4	4 - 5	43.1	1.696	49.6	1.952	T14211	T14212	T14214	T14216	T14218
2. 1/2	2	2.1/4	6 - 8	45.5	1.791	52.6	2.070	-	T14222	T14224	T14226	T14228
	3 - 4	2.1/4	9 - 11	47.1	1.856	54.2	2.133	-	T14232	T14234	T14236	T14238
	4 - 6	2.1/4	12 - 15	49.0	1.929	57.3	2.255	-	T14242	T14244	T14246	T14248
	7 - 10	2.3/4	2 - 3	51.9	2.043	60.5	2.381	-	T14252	T14254	T14256	T14258
	11 -13	2.3/4	4 - 5	55.1	2.169	63.7	2.507	T14261	T14262	T14264	T14266	T14268
3	1 - 3	2.3/4	6 - 10	57.4	2.259	66.6	2.622	-	T14272	T14274	T14276	T14278
	4 - 6	2.3/4	11 - 15	60.6	2.385	70.0	2.755	-	T14282	T14284	T14286	T14288
	7 - 11	3.1/4	1 - 4	63.8	2.511	73.9	2.909	-	T14292	T14294	T14296	T14298
	10 -12	3.1/4	4 - 7	66.9	2.635	77.3	3.043	T14301	T14302	T14304	T14306	T14308
3. 1/2	1 - 4	3.1/4	7 -11	70.1	2.759	80.1	3.153	-	T14312	T14314	T14316	T14318
	4 - 7	3.1/4	10 -15	73.0	2.874	83.4	3.283	-	T14322	T14324	T14326	T14328
	7 -11	3.3/4	2 - 3	76.2	3.000	86.8	3.417	-	T14332	T14334	T14336	T14338
	10 -12	3.3/4	4 - 5	79.3	3.122	89.8	3.535	-	T14342	T14344	T14346	T14348
4	1 - 4	3.3/4	6 -10	82.5	3.248	93.0	3.661	-	T14352	T14354	T14356	T14358
	4 - 7	3.3/4	11 -15	85.7	3.374	96.0	3.779	-	T14362	T14364	T14366	T14368
	7-11	4.1/4	2 - 3	88.9	3.500	98.6	3.881	-	T14372	T14374	T14376	T14378
	8 - 12	4.1/4	3 - 5	90.5	3.562	102.3	4.027	-	T14382	T14384	T14386	T14388
4.1/2	1 - 4	4.1/4	6 - 9	95.2	3.748	104.7	4.122	-	T14392	T14394	T14396	T14398
	3 - 8	4.1/4	10 -13	98.4	3.874	110.3	4.342	-	T14402	T14404	T14406	T14408
	6 - 12			101.6	4.000	113.5	4.468	-	T14412	T14414	T14416	T14418



SPARE ROLLER SET MODEL							SPARE MANDREL MODEL		
Tube Sheet Thickness Range									
1/2"	3/4"	1.1/8"	1.5/8"	2.1/8"	Drum Type	Header Type	Short Series 5.1/8"	Short Series 7.1/8"	SQ <input checked="" type="checkbox"/>
1/2"	3/4"	1.1/8"	1.5/8"	2.1/8"	2.5/8"				
7/8"	1.1/8"	1.5/8"	2.1/8"	2.5/8"					
2	3	4	5	6					
-	34872	34874	34878	34948	32269	32289	32308, 9, 10, 11	34876, 34948	
-	34879	34881	34883	34949	32269	32289	32309, 10, 11	-	
34878	34879	34881	34883	34949	32270	32290	32309, 10, 11, 12	-	
34878	34879	34881	34883	34949	32271	32291	32311, 12, 13	32346	
34885	34886	34888	34890	34950	32270	32290	32310, 11, 12	32345	
-	34893	34895	34897	34951	32270	32290	32310, 11, 12, 13	-	
-	34893	34895	34897	34951	32271	32291	32311, 12, 13, 14	-	
-	34893	34895	34897	34951	32272	32292	32312, 13, 14, 15, 16	-	
-	34900	34902	34904	34952	32272	32292	32312, 13, 14, 15, 16	32347, 48, 49	
-	34900	34902	34904	34952	32273	32293	32315, 16, 17	33630, 31	
-	34907	34909	34911	34953	32273	32293	32315, 16, 17, 18, 19	-	
-	34907	34909	34911	34953	32274	32294	32317, 18, 19, 20, 21	-	
-	34914	34916	34918	34954	32274	32294	32318, 19, 20, 21, 22	33632, 33, 34, 35	
34913	34914	34916	34918	34954	32275	32295	32320, 21, 22	33634, 35	
-	34921	34923	34925	34955	32274	32294	32318, 19, 20, 21, 22	-	
-	34921	34923	34925	34955	32275	32275	32321, 22, 23, 24, 25	-	
-	34921	34923	34925	34955	32276	32296	32323, 24, 25, 26, 27	-	
-	34921	34923	34925	34955	32277	32297	32324, 25, 26, 27, 28	-	
-	34928	34930	34932	34956	32276	32296	32324, 25, 26, 27, 28	-	
-	34928	34930	34932	34956	32277	32297	32326, 27, 28, 29, 30	-	
-	34928	34930	34932	34956	32278	32298	32328, 29, 30, 31, 32	-	
-	34935	34937	34939	34957	32277	32297	32324, 25, 26, 27, 28	-	
-	34935	34937	34939	34957	32278	32298	32329, 30, 31, 32, 50	-	
-	34935	34937	34939	34957	32279	32299	32331, 32, 50, 37, 38	-	
-	34942	34944	34946	34958	32278	32298	32326, 27, 28, 29, 30	-	

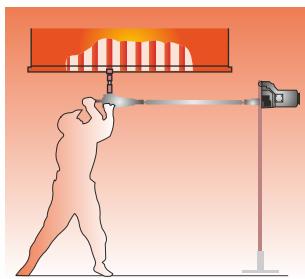


Boiler Tube Expanders

'TA' Series (Parallel) - 3 Plain Rollers

- Excellent expander for re-rolling and new construction
- Popular choice for small No. of tubes

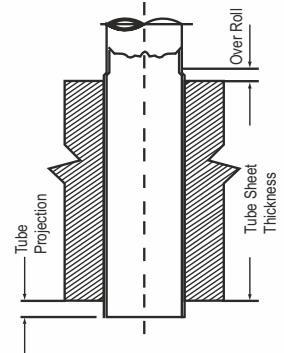
Tritorc offers solutions to overcome any installation problem



Tube expansion in vertical tubes

- Drive in conjunction with telescopic shaft coupled to a right angled gear drive makes tube installations easier.

TUBE SIZE				Min I.D. Tool Enters	Max Expansion of Tool	TUBE EXPANDER MODEL						
O.D. inch	THK bwg	O.D. inch	THK bwg			1/2"	3/4"	1.1/8"	1.5/8"	2.1/8"		
						mm	inch	mm	inch	7/8"	1.1/8"	1.5/8"
				Tube Sheet Thickness Codes >				2	3	4	5	6
7/8	15	1	10	18.1	0.712	20.4	0.803	TA-31/2	TA-31/3			
	16	-	-	18.4	0.724	20.7	0.814	TA-32/2	TA32/3			
	17	1	11	18.8	0.740	21.1	0.830	TA-33/2	TA-33/3			
	18	1	12	19.4	0.763	21.6	0.850	TA-34/2	TA-34/3			
	19 - 20	1.1/8	8	19.7	0.775	22.3	0.877	TA-35/2	TA-35/3			
1	13	-	-	20.1	0.791	22.4	0.881	TA-36/2	TA-36/3			
	14	1.1/8	9	20.6	0.811	23.1	0.909	TA-37/2	TA-37/3	TA-37/4		
	15 - 16	1.1/8	10	21.3	0.838	23.8	0.937	TA38/2	TA-38/3	TA-38/4		
	17 - 18	1.1/8	11	22.0	0.866	24.5	0.964	TA-39/2	TA-39/3	TA-39/4		
	19 - 20	1.1/8	12	22.4	0.881	25.0	0.984	TA-40/2	TA-40/3	TA-40/4		
1.1/4	8	1.1/8	13	23.3	0.917	25.9	1.019	TA-41/2	TA-41/3	TA-41/4		
	9	1.1/8	14	23.8	0.937	26.5	1.043	TA-42/2	TA-42/3	TA-42/4		
	10	1.1/8	15 - 16	24.4	0.960	27.2	1.070	TA-43/2	TA-43/3	TA-43/4		
	11			25.2	0.992	28.0	1.102	TA-44/2	TA-44/3	TA-44/4		
	12			25.7	1.011	28.5	1.122	TA-45/2	TA-45/3	TA-45/4		
	13	1.3/8	8	26.1	1.027	28.8	1.133	TA-46/2	TA-46/3	TA-46/4		
	14			26.4	1.039	29.2	1.149	TA-47/2	TA-47/3	TA-47/4		
	15	1.3/8	9	26.9	1.059	29.7	1.169	TA-48/2	TA-48/3	TA-48/4		
1.1/2	16	1.3/8	10	27.6	1.086	30.4	1.196	TA-49/2	TA-49/3	TA-49/4	TA-49/5	TA-49/6
	7	1.3/8	11	28.3	1.114	31.2	1.228	TA-50/2	TA-50/3	TA-50/4	TA-50/5	TA-50/6
	8	1.3/8	12	28.8	1.133	31.7	1.248	TA-51/2	TA-51/3	TA-51/4	TA-51/5	TA-51/6
	9	1.3/8	13 - 14	29.5	1.161	33.4	1.314	TA-52/2	TA-52/3	TA-52/4	TA-52/5	TA-52/6
	10	1.3/8	15 - 16	30.0	1.181	34.1	1.342	TA-53/2	TA-53/3	TA-53/4	TA-53/5	TA-53/6
	11 - 12			30.6	1.204	34.8	1.370	TA-54/2	TA-54/3	TA-54/4	TA-54/5	TA-54/6
	13	1.3/4	5	31.4	1.236	35.6	1.401	TA-55/2	TA-55/3	TA-55/4	TA-55/5	TA-55/6



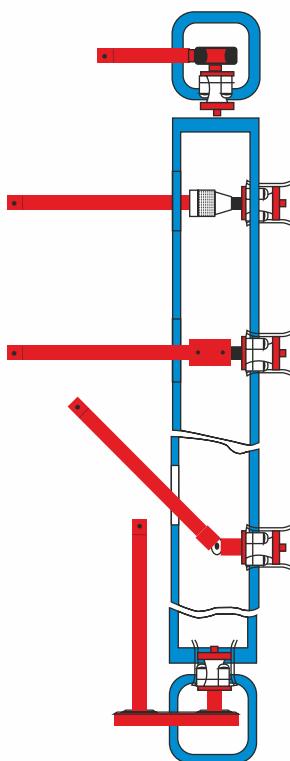
SPARE ROLLER SET MODEL					SPARE MANDREL MODEL			
Tube Sheet Thickness Range					Drum Type	Header Type	Short Series 5.1/8"	SQ <input checked="" type="checkbox"/>
1/2" to 7/8"	3/4" to 1.1/8"	1.1/8" to 1.5/8"	1.5/8" to 2.1/8"	2.1/8" to 2.5/8"				
2	3	4	5	6				
152-RS	153-RS	-	-	-	TDM-11			
152-RS	153-RS				TDM-12			
162-RS	163-RS							
202-RS	203-RS							
172-RS	173-RS				TDM-13			
182-RS	183-RS				TDM-12			3/8" <input checked="" type="checkbox"/>
182-RS	183-RS	184-RS			TDM-13	THM-13	TSM-13	
192-RS	193-RS	194-RS						
212-RS	213-RS	214-RS						
212-RS	213-RS	214-RS			TDM-14	THM-14	TSM-14	
222-RS	223-RS	224-RS						
232-RS	233-RS	234-RS						
242-RS	243-RS	244-RS			TDM-15	THM-15	TSM-15	
262-RS	263-RS	264-RS						
272-RS	273-RS	274-RS						
312-RS	313-RS	314-RS			TDM-16	THM-16	TSM-16	
282-RS	283-RS	284-RS						
292-RS	293-RS	294-RS						
302-RS	303-RS	304-RS	305-RS	306-RS	TDM-17	THM-17	TSM-17	1/2" <input checked="" type="checkbox"/>
302-RS	303-RS	304-RS	305-RS	306-RS				
322-RS	323-RS	324-RS	325-RS	326-RS				
282-RS	283-RS	284-RS	285-RS	286-RS	TDM-18	THM-18	TSM-18	
292-RS	293-RS	294-RS	295-RS	296-RS				
302-RS	303-RS	304-RS	305-RS	306-RS				
332-RS	333-RS	334-RS	335-RS	336-RS	TDM-20	THM-20	TSM-20	

Boiler Tube Expanders

'TA' Series (Parallel) - 3 Plain Rollers

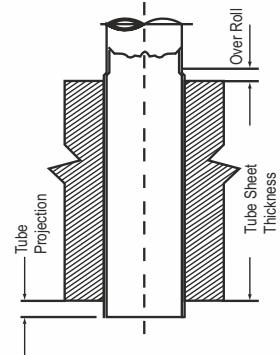
- Excellent expander for re-rolling and new construction
- Popular choice for small No. of tubes

Tritorc offers solutions to overcome any installation problem



The various drive accessories developed are designed for optimum productivity and operator ease

TUBE SIZE				Min I.D. Tool Enters	Max Expansion of Tool	TUBE EXPANDER MODEL						
O.D. inch	THK bwg	O.D. inch	THK bwg			1/2"	3/4"	1.1/8"	1.5/8"	2.1/8"		
						to 7/8"	to 1.1/8"	to 1.5/8"	to 2.1/8"	to 2.5/8"		
Tube Sheet Thickness Codes >				2	3	4	5	6				
1.1/2	14 - 5	1.3/4	6	32.6	1.283	36.8	1.448	TA-56/2	TA-56/3	TA-56/4	TA-56/5	TA-56/6
		1.3/4	7	33.4	1.314	38.1	1.500	TA-57/2	TA-57/3	TA-57/4	TA-57/5	TA-57/6
		1.3/4	8	34.2	1.346	38.7	1.523	TA-58/2	TA-58/3	TA-58/4	TA-58/5	TA-58/6
2	3	1.3/4	9 - 10	35.0	1.377	40.6	1.598	TA-59/2	TA-59/3	TA-59/4	TA-59/5	TA-59/6
	4	1.3/4	11 - 12	36.6	1.440	42.2	1.661	TA-60/2	TA-60/3	TA-60/4	TA-60/5	TA-60/6
	5 - 6	1.3/4	13 - 14	38.2	1.503	43.8	1.712	TA-61/2	TA-61/3	TA-61/4	TA-61/5	TA-61/6
	7 - 8	1.3/4	15 - 16	39.8	1.566	45.4	1.787	TA-62/2	TA-62/3	TA-62/4	TA-62/5	TA-62/6
	9 - 10	2.1/4	3	41.4	1.629	47.0	1.850	TA-63/2	TA-63/3	TA-63/4	TA-63/5	TA-63/6
	11 - 13	2.1/4	4	42.9	1.688	49.5	1.948	TA-64/2	TA-64/3	TA-64/4	TA-64/5	TA-64/6
	14 - 16	2.1/4	6 - 7	44.5	1.751	51.1	2.011	TA-65/2	TA-65/3	TA-65/4	TA-65/5	TA-65/6
	17 - 18	2.1/4	8 - 9	46.1	1.814	52.7	2.074	TA-66/2	TA-66/3	TA-66/4	TA-66/5	TA-66/6
2.1/2	3	2.1/4	10 - 11	47.7	1.877	54.3	2.137	TA-67/2	TA-67/3	TA-67/4	TA-67/5	TA-67/6
	4 - 5	2.1/4	12 - 13	49.3	1.940	55.9	2.200	TA-68/2	TA-68/3	TA-68/4	TA-68/5	TA-68/6
	6 - 7	2.1/4	14 - 16	50.8	2.000	57.8	2.275	TA-69/2	TA-69/3	TA-69/4	TA-69/5	TA-69/6
	8 - 9	2.3/4	3	52.4	2.062	59.4	2.338	TA-70/2	TA-70/3	TA-70/4	TA-70/5	TA-70/6
	10 - 11	2.3/4	4	54.0	2.125	61.0	2.401	TR-71/2	TA-71/3	TA-71/4	TA-71/5	TA-71/6
	12 - 14	2.3/4	5 - 6	55.6	2.188	64.0	2.519	TA-72/2	TA-72/3	TA-72/4	TA-72/5	TA-72/6
	15 - 16	2.3/4	7 - 8	57.2	2.251	65.6	2.582	TA-73/2	TA-73/3	TA-73/4	TA-73/5	TA-73/6
3	3	2.3/4	9 - 10	58.6	2.307	67.0	2.637	TA-74/2	TA-74/3	TA-74/4	TA-74/5	TA-74/6
	4	2.3/4	11 - 13	60.4	2.377	68.8	2.708	TA-75/2	TA-75/3	TA-75/4	TA-75/5	TA-75/6
	5 - 6	2.3/4	14 - 16	62.2	2.448	70.4	2.771	TA-76/2	TA-76/3	TA-76/4	TA-76/5	TA-76/6
	7 - 8			63.6	2.503	72.0	2.834	TA-77/2	TA-77/3	TA-77/4	TA-77/5	TA-77/6
	9 - 10	3.1/4	3	65.0	2.559	73.4	2.889	TA-78/2	TA-78/3	TA-78/4	TA-78/5	TA-78/6
	11 - 13	3.1/4	4	66.6	2.622	75.0	2.952	TA-79/2	TA-79/3	TA-79/4	TA-79/5	TA-79/6
	14 - 16	3.1/4	5 - 6	68.3	2.688	76.9	3.027	TA-80/2	TA-80/3	TA-80/4	TA-80/5	TA-80/6



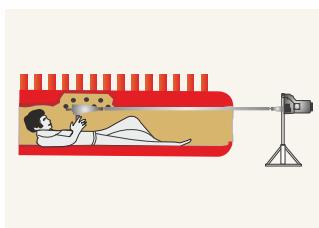
SPARE ROLLER SET MODEL					SPARE MANDREL MODEL			
Tube Sheet Thickness Range								
1/2"	3/4"	1.1/8"	1.5/8"	2.1/8"	Drum Type	Header Type	Short Series	SQ <input checked="" type="checkbox"/>
1/2" to 7/8"	3/4" to 1.1/8"	1.1/8" to 1.5/8"	1.5/8" to 2.1/8"	2.1/8" to 2.5/8"				
2	3	4	5	6				
342-RS	343-RS	344-RS	345-RS	346-RS	TDM-21	THM-21	TSM-21	12" <input checked="" type="checkbox"/>
362-RS	363-RS	364-RS	365-RS	366-RS				
372-RS	373-RS	374-RS	375-RS	376-RS				
332-RS	333-RS	334-RS	335-RS	336-RS	TDM-22	THM-22	TSM-22	3/4" <input checked="" type="checkbox"/>
372-RS	373-RS	374-RS	375-RS	376-RS				
382-RS	383-RS	384-RS	385-RS	386-RS				
392-RS	393-RS	394-RS	395-RS	396-RS	TDM-23	THM-23	TSM-23	1" <input checked="" type="checkbox"/>
402-RS	403-RS	404-RS	405-RS	406-RS				
402-RS	403-RS	404-RS	405-RS	406-RS				
412-RS	413-RS	414-RS	415-RS	416-RS	TDM-24	THM-24	TSM-24	1" <input checked="" type="checkbox"/>
422-RS	423-RS	424-RS	425-RS	426-RS				
432-RS	433-RS	434-RS	435-RS	436-RS				
442-RS	443-RS	444-RS	445-RS	446-RS	TDM-25	THM-25	TSM-25	1" <input checked="" type="checkbox"/>
432-RS	433-RS	434-RS	435-RS	436-RS				
442-RS	443-RS	444-RS	445-RS	446-RS				
452-RS	453-RS	454-RS	455-RS	456-RS	TDM-26	THM-26	TSM-26	1" <input checked="" type="checkbox"/>
472-RS	473-RS	474-RS	475-RS	476-RS				
462-RS	463-RS	464-RS	465-RS	466-RS				
472-RS	473-RS	474-RS	475-RS	476-RS				
482-RS	483-RS	484-RS	485-RS	486-RS				
492-RS	493-RS	494-RS	495-RS	496-RS				
502-RS	503-RS	504-RS	505-RS	506-RS				
512-RS	513-RS	514-RS	515-RS	516-RS				
522-RS	523-RS	524-RS	525-RS	526-RS				
512-RS	513-RS	514-RS	515-RS	516-RS	TDM-26	THM-26	TSM-26	

Boiler Tube Expanders

'TA' Series (Parallel) - 3 Plain Rollers

- Excellent expander for re-rolling and new construction
- Popular choice for small No. of tubes

Tritorc offers solutions to overcome any installation problem.

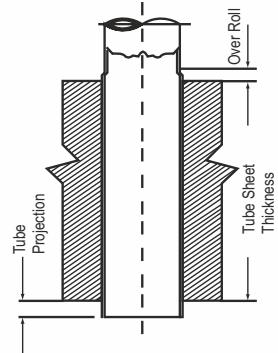


Typical example of solution oriented approach

TUBE SIZE				Min I.D. Tool Enters	Max Expansion of Tool	TUBE EXPANDER MODEL						
O.D inch	THK bwg	O.D. inch	THK bwg			Tube Sheet Thickness Range						
						1/2" to 7/8"	3/4" to 1.1/8"	1.1/8" to 1.5/8"	1.5/8" to 2.1/8"	2.1/8" to 2.5/8"		
				Tube Sheet Thickness Codes >				2	3	4	5	6
3.1/2	2	3.1/4	7 - 8	69.9	2.751	78.5	3.090	TA-81/2	TA-81/3	TA-81/4	TA-81/5	TA-81/6
	3	3.1/4	9 - 10	71.5	2.814	80.1	3.153	TA-82/2	TA-82/3	TA-82/4	TA-82/5	TA-82/6
	4	3.1/4	11 - 13	73.1	2.877	81.7	3.216	TA-83/2	TA-83/3	TA-83/4	TA-83/5	TA-83/6
	5 - 6	31/4	14 - 16	74.6	2.937	84.2	3.314	TA-84/2	TA-84/3	TA-84/4	TA-84/5	TA-84/6
	7 - 8	3.3/4	2	76.2	3.000	85.5	3.366	TA-85/2	TA-85/3	TA-85/4	TA-85/5	TA-85/6
	9 - 11	3.3/4	3	77.8	3.062	87.4	3.440	TA-86/2	TA-86/3	TA-86/4	TA-86/5	TA-86/6
	12 - 16	3.3/4	4	79.4	3.125	89.0	3.503	TA-87/2	TA-87/3	TA-87/4	TA-87/5	TA-87/6
		3.3/4	5 - 6	81.0	3.188	90.6	3.566	TA-88/2	TA-88/3	TA-88/4	TA-88/5	TA-88/6
4	2	3.3/4	7 - 8	82.6	3.251	92.2	3.629	TA-89/2	TA-89/3	TA-89/4	TA-89/5	TA-89/6
	3	3.3/4	9 - 10	84.2	3.314	93.8	3.692	TA-90/2	TA-90/3	TA-90/4	TA-90/5	TA-90/6
	4	3.3/4	11 - 13	85.8	3.377	96.2	3.787	TA-91/2	TA-91/3	TA-91/4	TA-91/5	TA-91/6
	5 - 6	3.3/4	14 - 16	87.4	3.440	97.8	3.850	TA-92/2	TA-92/3	TA-92/4	TA-92/5	TA-92/6
	7 - 8	4.1/4	2	89.0	3.503	99.4	3.913	TA-93/2	TA-93/3	TA-93/4	TA-93/5	TA-93/6
	9 - 11	4.1/4	3	90.4	3.559	100.8	3.968	TA-94/2	TA-94/3	TA-94/4	TA-94/5	TA-94/6
	12 - 16	4.1/4	4	92.0	3.622	102.4	4.031	TA-95/2	TA-95/3	TA-95/4	TA-96/5	TA-95/6
		4.1/4	5 - 6	93.4	3.677	103.8	4.086	TA-96/2	TA-96/3	TA-96/4	TA-96/5	TA-96/6
4.1/2	2	4.1/4	7 - 8	95.0	3.740	105.4	4.149	TA-97/2	TA-97/3	TA-97/4	TA-97/5	TA-97/6
	3	4.1/4	9 - 11	96.6	3.803	107.0	4.212	TA-98/2	TA-98/3	TA-98/4	TA-98/5	TA-98/6
	4 - 5	4.1/4	11 - 13	98.2	3.866	108.6	4.275	TA-99/2	TA-99/3	TA-99/4	TA-99/5	TA-99/6
	6 - 7			101.2	3.984	110.0	4.330	TA-100/2	TA-100/3	TA-110/4	TA-100/5	TA-100/6
	8 - 9			102.8	4.047	111.6	4.393	TA-101/2	TA-101/3	TA-101/4	TA-101/5	TA-101-6
	10 - 12			104.4	4.110	113.2	4.456	TA-102/2	TA-102/3	TA-102/4	TA-102/5	TA-102/6



SPARE ROLLER SET MODEL					SPARE MANDREL MODEL				
Tube Sheet Thickness Range					Drum Type	Header Type	Short Series	SQ	
1/2"	3/4"	1.1/8"	1.5/8"	2.1/8"					
to	to	to	to	to					
7/8"	1.1/8"	1.5/8"	2.1/8"	2.5/8"					
2	3	4	5	6					
522-RS	523-RS	524-RS	525-RS	526-RS	TDM-26	THM-26	TSM-26	1"	
532-RS	533-RS	534-RS	535-RS	536-RS					
542-RS	543-RS	544-RS	545-RS	546-RS					
542-RS	543-RS	544-RS	545-RS	546-RS	TDM-27	THM-27	TSM-27		
552-RS	553-RS	554-RS	555-RS	556-RS					
562-RS	563-RS	564-RS	565-RS	566-RS					
572-RS	573-RS	574-RS	575-RS	576-RS					
582-RS	583-RS	584-RS	585-RS	586-RS					
592-RS	593-RS	594-RS	595-RS	596-RS	TDM-28	THM-28	TSM-28		
602-RS	603-RS	604-RS	605-RS	606-RS					
612-RS	613-RS	614-RS	615-RS	616-RS					
622-RS	623-RS	624-RS	625-RS	626-RS					
632-RS	633-RS	634-RS	635-RS	636-RS	TDM-29	THM-29	TSM-29		
622-RS	623-RS	624-RS	625-RS	626-RS					
632-RS	633-RS	634-RS	635-RS	636-RS					
642-RS	643-RS	644-RS	645-RS	646-RS	TDM-30	THM-30	TSM-30		
632-RS	633-RS	634-RS	635-RS	646-RS					
642-RS	643-RS	644-RS	645-RS	646-RS					
652-RS	653-RS	654-RS	655-RS	656-RS					
662-RS	663-RS	664-RS	665-RS	666-RS					

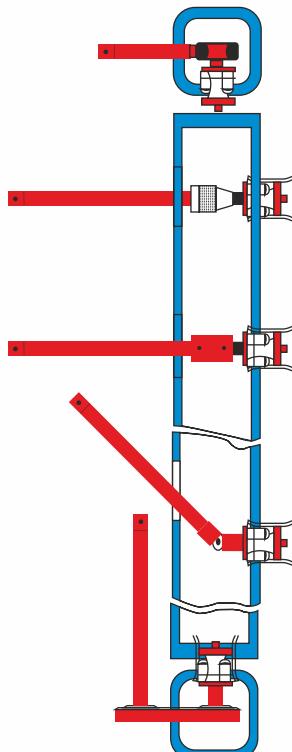


Boiler Tube Expanders

'TAF3' Series (Flare) - 3 Plain Rollers & 3 Flare Rollers

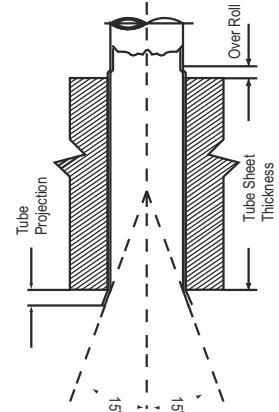
- Offset flare rolls eliminates ridges
- Rolls retained in cage when mandrel is removed

Tritorc offers solutions to overcome any installation problem



The various drive accessories developed are designed for optimum productivity and operator ease

TUBE SIZE				Min I.D. Tool Enters	Max Expansion of Tool	TUBE EXPANDER MODEL						
O.D. inch	THK bwg	O.D. inch	THK bwg			Tube Sheet Thickness Range						
						1/2" to 7/8"	3/4" to 1.1/8"	1.1/8" to 1.5/8"	1.5/8" to 2.1/8"	2.1/8" to 2.5/8"		
Tube Sheet Thickness Codes>				2	3	4	5	6				
7/8	15	1	10	18.1	0.712	20.4	0.803	TAF3-31/2	TAF3-31/3			
	16			18.4	0.724	20.7	0.814	TAF3-32/2	TAF3-32/3			
	17	1	11	18.8	0.740	21.1	0.830	TAF3-33/2	TAF3-33/3			
	18	1	12	19.4	0.763	21.6	0.850	TAF3-34/2	TAF3-34/3			
	19 - 20	1.1/8	8	19.7	0.775	22.3	0.877	TAF3-35/2	TAF3-35/3			
1	13			20.1	0.791	22.4	0.881	TAF3-36/2	TAF3-36/3			
	14	1.1/8	9	20.6	0.811	23.1	0.909	TAF3-37/2	TAF3-37/3	TAF3-37/4		
	15 - 16	1.1/8	10	21.3	0.838	23.8	0.937	TAF3-38/2	TAF3-38/3	TAF3-38/4		
	17 - 18	1.1/8	11	22.0	0.866	24.5	0.964	TAF3-39/2	TAF3-39/3	TAF3-39/4		
	19 - 20	1.1/8	12	22.4	0.881	25.0	0.984	TAF3-40/2	TAF3-40/3	TAF3-40/4		
1.1/4	8	1.1/8	13	23.3	0.917	25.9	1.019	TAF3-41/2	TAF3-41/3	TAF3-41/4		
	9	1.1/8	14	23.8	0.937	26.5	1.043	TAF3-42/2	TAF3-42/3	TAF3-42/4		
	10	1.1/8	15 - 16	24.4	0.960	27.2	1.070	TAF3-43/2	TAF3-43/3	TAF3-43/4		
	11			25.2	0.992	28.0	1.102	TAF3-44/2	TAF3-44/3	TAF3-44/4		
	12			25.7	1.011	28.5	1.122	TAF3-45/2	TAF3-45/3	TAF3-45/4		
	13	1.3/8	8	26.1	1.027	28.8	1.133	TAF3-46/2	TAF3-46/3	TAF3-46/4		
	14			26.4	1.039	29.2	1.149	TAF3-47/2	TAF3-47/3	TAF3-47/4		
	15	1.3/8	9	26.9	1.059	29.7	1.169	TAF3-48/2	TAF3-48/3	TAF3-48/4		
	16	1.3/8	10	27.6	1.086	30.4	1.196	TAF3-49/2	TAF3-49/3	TAF3-49/4		
1.1/2	7	1.3/8	11	28.3	1.114	31.2	1.228	TAF3-50/2	TAF3-50/3	TAF3-50/4		
	8	1.3/8	12	28.8	1.133	31.7	1.248	TAF3-51/2	TAF3-51/3	TAF3-51/4		
	9	1.3/8	13 - 14	29.5	1.161	33.4	1.134	TAF3-52/2	TAF3-52/3	TAF3-52/4		
	10	1.3/8	15 - 16	30.0	1.181	34.1	1.342	TAF3-53/2	TAF3-53/3	TAF3-53/4		
	11 - 12			30.6	1.204	34.8	1.370	TAF3-54/2	TAF3-54/3	TAF3-54/4		
										TAF3-54/5		
										TAF3-54/6		



SPARE ROLLER SET MODEL					SPARE MANDREL MODEL			
1/2"	3/4"	1.1/8"	1.5/8"	2.1/8"	Drum Type	Header Type	Short Series	SQ <input checked="" type="checkbox"/>
1/2" to 7/8"	3/4" to 1.1/8"	1.1/8" to 1.5/8"	1.5/8" to 2.1/8"	2.1/8" to 2.5/8"			5.1/8"	
2	3	4	5	6				
152-F3	153-F3				TDM-11			
152-F3	153-F3				TDM-12			
162-F3	163-F3							
202-F3	203-F3				TDM-13			
172-F3	173-F3							
182-F3	183-F3				TDM-12			
182-F3	183-F3	184-F3			TDM-13	THM-13	TSM-13	
192-F3	193-F3	194-F3						
212-F3	213-F3	214-F3			TDM-14	THM-14	TSM-14	
212-F3	213-F3	214-F3						
222-F3	223-F3	224-F3			TDM-15	THM-15	TSM-15	
232-F3	233-F3	234-F3						
242-F3	243-F3	244-F3			TDM-16	THM-16	TSM-16	
262-F3	263-F3	264-F3						
272-F3	273-F3	274-F3			TDM-17	THM-17	TSM-17	
312-F3	313-F3	314-F3						
282-F3	283-F3	284-F3			TDM-18	THM-18	TSM-18	
292-F3	293-F3	294-F3						
302-F3	303-F3	304-F3	305-F3	306-F3	TDM-20	THM-20	TSM-20	
302-F3	303-F3	304-F3	305-F3	306-F3				
322-F3	323-F3	324-F3	325-F3	326-F3				
282-F3	283-F3	284-F3	285-F3	286-F3				
292-F3	293-F3	294-F3	295-F3	296-F3				
302-F3	303-F3	304-F3	305-F3	306-F3				

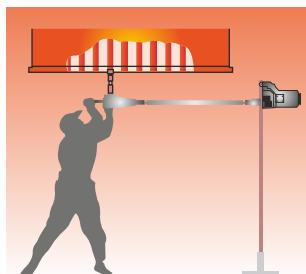
Can be supplied with
1 flare & 2 plane rollers

Boiler Tube Expanders

'TAF3' Series (Flare) - 3 Plain Rollers & 3 Flare Rollers

- Offset flare rolls eliminates ridges
- Rolls retained in cage when mandrel is removed

Tritorc offers solutions to overcome any installation problem

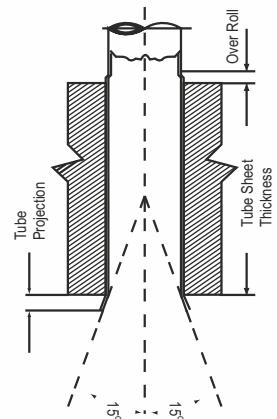


- Drive in conjunction with telescopic shaft coupled to a right angled gear drive makes tube installations easier.

TUBE SIZE				Min I.D. Tool Enters	Max Expansion of Tool	TUBE EXPANDER MODEL						
O.D. inch	THK bwg	O.D. inch	THK bwg			Tube Sheet Thickness Range						
						1/2" to 7/8"	3/4" to 1.1/8"	1.1/8" to 1.5/8"	1.5/8" to 2.1/8"	2.1/8" to 2.5/8"		
Tube Sheet Thickness Codes >				2	3	4	5	6				
1.1/2	13	1.3/4	5	31.4	1.236	35.6	1.401	TAF3-55/2	TAF3-55/3	TAF3-55/4	TAF3-55/5	TAF3-55/6
	14 - 15	1.3/4	6	32.6	1.283	36.8	1.448	TAF3-56/2	TAF3-56/3	TAF3-56/4	TAF3-56/5	TAF3-56/6
		1.3/4	7	33.4	1.314	38.1	1.500	TAF3-57/2	TAF3-57/3	TAF3-57/4	TAF3-57/5	TAF3-57/6
		1.3/4	8	34.2	1.346	38.7	1.523	TAF3-58/2	TAF3-58/3	TAF3-58/4	TAF3-58/5	TAF3-58/6
2	3	1.3/4	9 - 10	35.0	1.377	40.6	1.598	TAF3-59/2	TAF3-59/3	TAF3-59/4	TAF3-59/5	TAF3-59/6
	4	1.3/4	11 - 12	36.6	1.440	42.2	1.661	TAF3-60/2	TAF3-60/3	TAF3-60/4	TAF3-60/5	TAF3-60/6
	5 - 6	1.3/4	13 - 14	38.2	1.503	43.8	1.712	TAF3-61/2	TAF3-61/3	TAF3-61/4	TAF3-61/5	TAF3-61/6
	7 - 8	1.3/4	15 - 16	39.8	1.566	45.4	1.787	TAF3-62/2	TAF3-62/3	TAF3-62/4	TAF3-62/5	TAF3-62/6
	9 - 10	2.1/4	3	41.4	1.629	47.0	1.850	TAF3-63/2	TAF3-63/3	TAF3-63/4	TAF3-63/5	TAF3-63/6
	11 - 13	2.1/4	4	42.9	1.688	49.5	1.948	TAF3-64/2	TAF3-64/3	TAF3-64/4	TAF3-64/5	TAF3-64/6
	14 - 16	2.1/4	6 - 7	44.5	1.751	51.1	2.011	TAF3-65/2	TAF3-65/3	TAF3-65/4	TAF3-65/5	TAF3-65/6
	17 - 18	2.1/4	8 - 9	46.1	1.814	52.7	2.074	TAF3-66/2	TAF3-66/3	TAF3-66/4	TAF3-66/5	TAF3-66/6
2.1/2	3	2.1/4	10 - 11	47.7	1.877	54.3	2.137	TAF3-67/2	TAF3-67/3	TAF3-67/4	TAF3-67/5	TAF3-67/6
	4 - 5	2.1/4	12 - 13	49.3	1.940	55.9	2.200	TAF3-68/2	TAF3-68/3	TAF3-68/4	TAF3-68/5	TA3F-68/6
	6 - 7	2.1/4	14 - 16	50.8	2.200	57.8	2.275	TAF3-69/2	TAF3-69/3	TAF3-69/4	TAF3-69/5	TAF3-69/6
	8 - 9	2.3/4	3	52.4	2.062	59.4	2.338	TAF3-70/2	TAF3-70/3	TAF3-70/4	TAF3-70/5	TAF3-70/6
	10 - 11	2.3/4	4	54.0	2.125	61.0	2.401	TAF3-71/2	TAF3-71/3	TAF3-71/4	TAF3-71/5	TAF3-71/6
	12 - 14	2.3/4	5 - 6	55.6	2.188	64.0	2.519	TAF3-72/2	TAF3-72/3	TAF3-72/4	TAF3-72/5	TAF3-72/6
	15 - 16	2.3/4	7 - 8	57.2	2.251	65.6	2.582	TAF3-73/2	TAF3-73/3	TAF3-73/4	TAF3-73/5	TAF3-73/6
3	3	2.3/4	9 - 10	58.6	2.307	67.0	2.637	TAF3-74/2	TAF3-74/3	TAF3-74/4	TAF3-74/5	TAF3-74/6
	4	2.3/4	11 - 13	60.4	2.377	68.8	2.708	TAF3-75/2	TAF3-75/3	TAF3-75/4	TAF3-75/5	TAF3-75/6
	5 - 6	2.3/4	14 - 16	62.2	2.448	70.4	2.771	TAF3-76/2	TAF3-76/3	TAF3-76/4	TAF3-76/5	TAF3-76/6
	7 - 8			63.6	2.503	72.0	2.834	TAF3-77/2	TAF3-77/3	TAF3-77/4	TAF3-77/5	TAF3-77/6
	9 - 10	3.1/4	3	65.0	2.559	73.4	2.889	TAF3-78/2	TAF3-78/3	TAF3-78/4	TAF3-78/5	TAF3-78/6



SPARE ROLLER SET MODEL					SPARE MANDREL MODEL			
Tube Sheet Thickness Range								
1/2" to 7/8"	3/4" to 1.1/8"	1.1/8" to 1.5/8"	1.5/8" to 2.1/8"	2.1/8" to 2.5/8"	Drum Type	Header Type	Short Series 5.1/8"	SQ
2	3	4	5	6				
332-F3	332-F3	334-F3	335-F3	336-F3	TDM-20	THM-20	TSM-20	
342-F3	343-F3	344-F3	345-F3	346-F3	TDM-21	THM-21	TSM-21	1/2"
362-F3	363-F3	364-F3	365-F3	366-F3				
372-F3	373-F3	374-F3	375-F3	376-F3	TDM-22	THM-22	TSM-22	
332-F3	333-F3	334-F3	335-F3	336-F3				
372-F3	373-F3	374-F3	375-F3	376-F3	TDM-23	THM-23	TSM-23	
382-F3	383-F3	384-F3	385-F3	386-F3				3/4"
392-F3	393-F3	394-F3	395-F3	396-F3	TDM-24	THM-24	TSM-24	
402-F3	403-F3	404-F3	405-F3	406-F3				
402-F3	403-F3	404-F3	405-F3	406-F3	TDM-25	THM-25	TSM-25	
412-F3	413-F3	414-F3	415-F3	416-F3				1"
422-F3	423-F3	424-F3	425-F3	426-F3				
432-F3	433-F3	434-F3	435-F3	436-F3				
442-F3	443-F3	444-F3	445-F3	446-F3				
432-F3	433-F3	434-F3	435-F3	436-F3				
442-F3	443-F3	444-F3	445-F3	446-F3				
452-F3	453-F3	454-F3	455-F3	456-F3				
472-F3	473-F3	474-F3	475-F3	476-F3				
462-F3	463-F3	464-F3	465-F3	466-F3				
472-F3	473-F3	474-F3	475-F3	476-F3				
482-F3	483-F3	484-F3	485-F3	486-F3				
492-F3	493-F3	494-F3	495-F3	496-F3				
502-F3	503-F3	504-F3	505-F3	506-F3				
512-F3	513-F3	514-F3	515-F3	516-F3				

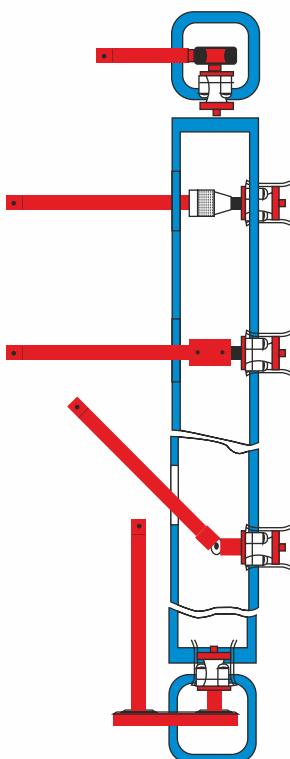


Boiler Tube Expanders

'TAF3' Series (Flare) - 3 Plain Rollers & 3 Flare Rollers

- Offset flare rolls eliminates ridges
- Rolls retained in cage when mandrel is removed

Tritorc offers solutions to overcome any installation problem

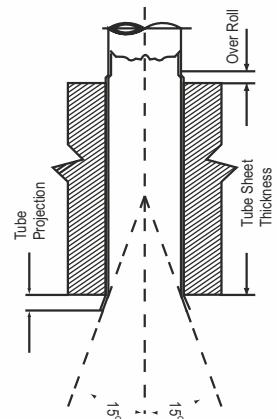


The various drive accessories developed are designed for optimum productivity and operator ease

TUBE SIZE				Min I.D. Tool Enters	Max Expansion of Tool	TUBE EXPANDER MODEL						
O.D. inch	THK bwg	O.D. inch	THK bwg			1/2"	3/4"	1.1/8"	1.5/8"	2.1/8"		
						to 7/8"	to 1.1/8"	to 1.5/8"	to 2.1/8"	to 2.5/8"		
				Tube Sheet Thickness Codes >			2	3	4	5	6	
3	11 - 13	3.1/4	4	66.6	2.622	75.0	2.952	TAF3-79/2	TAF3-79/3	TAF3-79/4	TAF3-79/5	TAF3-79/6
	14 - 16	3.1/4	5 - 6	68.3	2.688	76.9	3.027	TAF3-80/2	TAF3-80/3	TAF3-80/4	TAF3-80/5	TAF3-80/6
	3.1/2	2 3.1/4	7 - 8	69.9	2.751	78.5	3.090	TAF3-81/2	TAF3-81/3	TAF3-81/4	TAF3-81/5	TAF3-81/6
	3	3.1/4	9 - 10	71.5	2.814	80.1	3.153	TAF3-82/2	TAF3-82/3	TAF3-82/4	TAF3-82/5	TAF3-82/6
	4	3.1/4	11 - 13	73.1	2.877	81.7	3.216	TAF3-83/2	TAF3-83/3	TAF3-83/4	TAF3-83/5	TAF3-83/6
	5 - 6	3.1/4	14 - 16	74.6	2.937	84.2	3.314	TAF3-84/2	TAF3-84/3	TAF3-84/4	TAF3-84/5	TAF3-84/6
	7 - 8	3.3/4	2	76.2	3.000	85.5	3.366	TAF3-85/2	TAF3-85/3	TAF3-85/4	TAF3-85/5	TAF3-85/6
	9 - 11	3.3/4	3	77.8	3.062	87.4	3.440	TAF3-86/2	TAF3-86/3	TAF3-86/4	TAF3-86/5	TAF3-86/6
	12 - 16	3.3/4	4	79.4	3.125	89.0	3.503	TAF3-87/2	TAF3-87/3	TAF3-87/4	TAF3-87/5	TAF3-87/6
		3.3/4	5 - 6	81.0	3.188	90.6	3.566	TAF3-88/2	TAF3-88/3	TAF3-88/4	TAF3-88/5	TAF3-88/6
4	2	3.3/4	7 - 8	82.6	3.251	92.2	3.629	TAF3-89/2	TAF3-89/3	TAF3-89/4	TAF3-89/5	TAF3-89/6
	3	3.3/4	9 - 10	84.2	3.314	93.8	3.692	TAF3-90/2	TAF3-90/3	TAF3-90/4	TAF3-90/5	TA-F390/6
	4	3.3/4	11 - 13	85.8	3.377	96.2	3.787	TAF3-91/2	TAF3-91/3	TAF3-91/4	TAF3-91/5	TAF3-91/6
	5 - 6	3.3/4	14 - 16	87.4	3.440	97.8	3.850	TAF3-92/2	TAF3-92/3	TAF3-92/4	TAF3-92/5	TAF3-92/6
	7 - 8	4.1/4	2	89.0	3.503	99.4	3.913	TAF3-93/2	TAF3-93/3	TAF3-93/4	TAF3-93/5	TAF3-93/6
	9 - 11	4.1/4	3	90.4	3.559	100.8	3.968	TAF3-94/2	TAF3-94/3	TAF3-94/4	TAF3-94/5	TAF3-94/6
	12 - 16	4.1/4	4	92.0	3.622	102.4	4.031	TAF3-95/2	TAF3-95/3	TAF3-95/4	TAF3-96/5	TAF3-95/6
		4.1/4	5 - 6	93.4	3.677	103.8	4.086	TAF3-96/2	TAF3-96/3	TAF3-96/4	TAF3-96/5	TAF3-96/6
4.1/2	2	4.1/4	7 - 8	95.0	3.740	105.4	4.149	TAF3-97/2	TAF3-97/3	TAF3-97/4	TAF3-97/5	TAF3-97/6
	3	4.1/4	9 - 11	96.6	3.803	107.0	4.212	TAF3-98/2	TAF3-98/3	TAF3-98/4	TAF3-98/5	TAF3-98/6
	4 - 5	4.1/4	11 - 13	98.2	3.866	108.6	4.275	TAF3-99/2	TAF3-99/3	TAF3-99/4	TAF3-99/5	TAF3-99/6
	6 - 7			101.2	3.984	110.0	4.330	TAF3-100/2	TAF3-100/3	TAF3-110/4	TAF3-100/5	TAF3-100/6
	8 - 9			102.8	4.047	111.6	4.393	TAF3-101/2	TAF3-101/3	TAF3-101/4	TAF3-101/5	TAF3101/6
	10 - 12			104.4	4.110	113.2	4.456	TAF3-102/2	TAF3-102/3	TAF3-102/4	TAF3-102/5	TAF3-102/6



SPARE ROLLER SET MODEL					SPARE MANDREL MODEL				
Tube Sheet Thickness Range					Drum Type	Header Type	Short Series 5.1/8"	SQ <input checked="" type="checkbox"/>	
1/2" to 7/8"	3/4" to 1.1/8"	1.1/8" to 1.5/8"	1.5/8" to 2.1/8"	2.1/8" to 2.5/8"					
2	3	4	5	6					
522-F3	523-F3	524-F3	525-F3	526-F3	TDM-25	THM-25	TSM-25	1" <input checked="" type="checkbox"/>	
512-F3	513-F3	514-F3	515-F3	516-F3					
522-F3	523-F3	524-F3	525-F3	526-F3	TDM-26	THM-26	TSM-26		
532-F3	533-F3	534-F3	535-F3	536-F3					
542-F3	543-F3	544-F3	545-F3	546-F3	TDM-27	THM-27	TSM-27		
542-F3	543-F3	544-F3	545-F3	546-F3					
552-F3	553-F3	554-F3	555-F3	556-F3	TDM-28	THM-28	TSM-28		
562-F3	563-F3	564-F3	565-F3	566-F3					
572-F3	573-F3	574-F3	575-F3	576-F3	TDM-29	THM-29	TSM-29		
582-F3	583-F3	584-F3	585-F3	586-F3					
592-F3	593-F3	594-F3	595-F3	596-F3	TDM-30	THM-30	TSM-30		
602-F3	603-F3	604-F3	605-F3	606-F3					
592-F3	593-F3	594-F3	595-F3	596-F3					
602-F3	603-F3	604-F3	605-F3	606-F3					
612-F3	613-F3	614-F3	615-F3	616-F3					
622-F3	623-F3	624-F3	625-F3	626-F3					
632-F3	633-F3	634-F3	635-F3	636-F3					
622-F3	623-F3	624-F3	625-F3	626-F3					
632-F3	633-F3	634-F3	635-F3	636-F3					
642-F3	643-F3	644-F3	645-F3	646-F3					
632-F3	633-F3	634-F3	635-F3	636-F3					
642-F3	643-F3	644-F3	645-F3	646-F3					
652-F3	653-F3	654-F3	655-F3	656-F3					
662-F3	663-F3	664-F3	665-F3	666-F3					



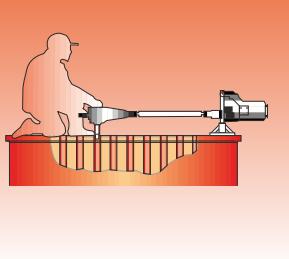
Boiler Tube Expander

'T - 1000' Series (Flare) - 3 Plain Rollers & 3 Flare Rollers

Most ideal for inaccessible areas

- Water boxes
- Small diameter drums

Tritorc believes in offering solutions to overcome any installation problem.



One of our drive systems helps overcome a problem caused by a difficult access...

- Reduces operator fatigue
- Ensures operator safety
- Increases productivity
- Maintains consistent accuracy

TUBE SIZE				Min I.D. Tool Enters	Max Expansion of Tool	TUBE EXPANDER MODEL						
O.D inch	THK bwg	O.D. inch	THK bwg			Tube Sheet Thickness Range						
						mm	inch	mm	inch	1/2" to 3/4"		
Tube Sheet Thickness Codes >						3	5	7	9	11		
1	13 - 14			19.7	0.775	23.4	0.921	T1079/3	T1079/5			
	15 - 16			20.7	0.814	24.4	0.961	T1083/3	T1083/5			
1.1/4	7			21.7	0.854	25.5	1.004	T1087/3	T1087/5			
	8 - 9			22.7	0.893	26.5	1.043	T1091/3	T1091/5			
	10			23.7	0.933	28.1	1.105	T1095/3	T1095/5			
	11-13			24.7	0.972	29.0	1.142	T1099/3	T1099/5			
	14 - 15			25.7	1.011	30.0	1.181	T1103/3	T1103/5			
	16			27.8	1.094	33.0	1.299	T1111/3	T1111/5			
1.1/2	10-12			30.7	1.280	35.0	1.378	T1118/3	T1118/5			
	13-16			32.7	1.287	38.0	1.496	T1126/3	T1126/5			
1.3/4	8-9	2	3	34.7	1.366	40.0	1.575	T1134/3	T1134/5	T1134/7		
	10 - 12	2	4 - 5	36.7	1.444	42.5	1.673	T1142/3	T1142/5	T1142/7		
	13 - 16	2	6	38.7	1.523	44.5	1.752	T1150/3	T1150/5	T1150/7		
2	7 - 9	2.1/4	6	40.7	1.602	47.0	1.850	T1158/3	T1158/5	T1158/7		
	10-12	2.1/4	4 - 5	42.7	1.681	49.0	1.929	T1166/3	T1166/5	T1166/7		
	13-16	2.1/4	6	44.7	1.760	51.5	2.027	T1174/3	T1174/5	T1174/7		
	16	2.1/2	3	46.7	1.838	54.0	2.126	T1181/3	T1181/5	T1182/7		
2.1/4	10 - 13	2.1/2	4 - 5	48.7	1.917	56.0	2.205	T1189/3	T1189/5	T1189/7		
	14 - 16	2.1/2	6	50.7	1.996	60.0	2.362	T1197/3	T1197/5	T1197/7		
2.1/2	7-10			52.7	2.074	62.0	2.441	T1205/3	T1205/5	T1205/7		
	11-13	3	2	54.7	2.135	64.0	2.520	T1213/3	T1213/5	T1213/7		
	14-16			56.7	2.323	66.0	2.598	T1221/3	T1221/5	T1221/7		
								T1221/9	T1221/11			



SPARE ROLLERS SET MODEL					SPARE MANDREL MODEL	
Tube Sheet Thickness Range						
1/2" to 3/4"	7/8" to 1.1/4"	1.3/8" to 1.3/4"	1.7/8" to 2.1/4"	2.3/8" to 2.3/4"	Drum Type	Short Series Mandrels
3	5	7	9	11		
0793-FS	0795-FS				TMP-83	
0833-FS	0835-FS					
0873-FS	0875-FS				TMP-91	
0953-FS	0955-FS					1/2"
0953-FS	0955-FS					
0993-FS	0995-FS				TMP-99	
1033-FS	1035-FS					
1113-FS	1115-FS				TMP-118	TMPS-1,2,3
1183-FS	1185-FS					TMPS-1,2,3
1263-FS	1265-FS				TMP-126	TMPS-2,3,4
1263-FS	1265-FS	1267-FS	1269-FS	12611-FS	TMP-134	TMPS-3,4,5
1423-FS	1425-FS	1427-FS	1429-FS	14211-FS		TMPS-3,4,5,6
1503-FS	1505-FS	1507-FS	1509-FS	15011-FS	TMP-150	
1583-FS	1585-FS	1587-FS	1589-FS	15811-FS		TMPS-4,5,6,7,8
1663-FS	1665-FS	1667-FS	1669-FS	16611-FS	TMP-174	
1743-FS	1745-FS	1747-FS	1749-FS	17411-FS		
1813-FS	1815-FS	1817-FS	1819-FS	18111-FS		TMPS-7,8,9,10,11
1743-FS	1745-FS	1747-FS	1749-FS	17411-FS	TMP-197	
2053-FS	2055-FS	2057-FS	2059-FS	20511-FS		TMPS-6,7,8,9,10,11
2053-FS	2055-FS	2057-FS	2059-FS	20511-FS	TMP-221	TMPS-7,8,9,10,11,12
2133-FS	2135-FS	2137-FS	2139-FS	21311-FS		
2213-FS	2215-FS	2217-FS	2219-FS	22111-FS		TMPS-7,8,9,10,11,12



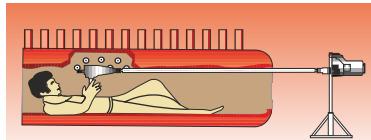
Boiler Tube Expander

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Most ideal for inaccessible areas

- Water boxes
- Small diameter drums

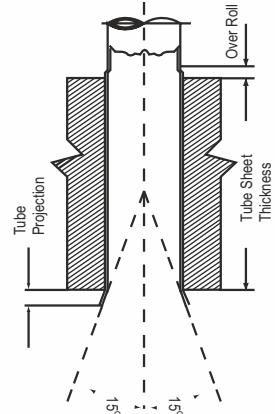
Tritorc offers solutions to overcome any installation problem.



A typical example of an inaccessible area where Tritorc drive system ensures...

- Reduces operator fatigue
- Ensures operator safety
- Increases productivity
- Maintains consistent accuracy

TUBE SIZE				Min I.D. Tool Enters	Max Expansion of Tool	TUBE EXPANDER MODEL						
O.D inch	THK bwg	O.D. inch	THK bwg			Tube Sheet Thickness Range						
						mm	inch	mm	inch	1/2" to 3/4"		
Tube Sheet Thickness Codes >						3	5	7	9	11		
2.3/4	7 - 9			58.7	2.311	68.0	2.677	T1229/3	T1229/5	T1229/7	T1229/9	T1229/11
	10 - 12			60.7	2.389	70.0	2.756	T1237/3	T1237/5	T1237/7	T1237/9	T1237/11
	13 - 16			62.7	2.468	72.0	2.835	T1244/3	T1244/5	T1244/7	T1244/9	T1244/11
3	7 - 8			64.7	2.547	74.0	2.913	T1252/3	T1252/5	T1252/7	T1252/9	T1252/11
	10 - 12			66.7	2.625	76.0	2.992	T1260/3	T1260/5	T1260/7	T1260/9	T1260/11
	13 - 14			68.7	2.704	78.0	3.071	T1268/3	T1268/5	T1268/7	T1268/9	T1268/11
	15 - 16			70.7	2.783	80.0	3.150	T1276/3	T1276/5	T1276/7	T1276/9	T1276/11
3.1/4	7 - 11			72.7	2.862	82.0	3.228	T1284/3	T1284/5	T1284/7	T1284/9	T1284/11
	12 - 14			74.7	2.940	84.0	3.307	T1292/3	T1292/5	T1292/7	T1292/9	T1292/11
	15 - 16	3.1/2	7 - 9	76.6	3.019	86.0	3.386	T1300/3	T1300/5	T1300/7	T1300/9	T1300/11
3.1/2	10 - 12			78.7	3.098	88.0	3.465	T1308/8	T1308/5	T1308/7	T1308/9	T1308/11
	13 - 15			80.7	3.177	92.0	3.622	T1315/3	T1315/5	T1315/7	T1315/9	T1315/11
	16	3.3/4	7 - 8	82.7	3.255	94.0	3.701	T1323/3	T1323/5	T1323/7	T1323/9	T1323/11
3.3/4	9 - 12			84.7	3.334	96.0	3.780	T1331/3	T1331/5	T1331/7	T1331/9	T1331/11
	13 - 16			86.7	3.413	98.0	3.858	T1339/3	T1339/5	T1339/7	T1339/9	T1339/11
4	7 - 8			88.7	3.492	100.0	3.937	T1347/3	T1347/5	T1347/7	T1347/9	T1347/11
	9 - 12			90.7	3.507	102.0	4.016	T1355/3	T1355/5	T1355/7	T1355/9	T1355/11
	13 - 15			92.7	3.649	104.0	4.094	T1363/3	T1363/5	T1363/7	T1363/9	T1363/11
	16	4.1/4	7 - 8	94.7	3.728	106.0	4.173	T1370/3	T1370/5	T1370/7	T1370/9	T1370/11
4.1/4	9 - 11			96.7	3.807	108.0	4.252	T1378/3	T1378/5	T1378/7	T1378/9	T1378/11
	12 - 16			98.7	3.885	110.0	4.331	T1386/3	T1386/5	T1386/7	T1386/9	T1386/11
	7 - 14			100.7	3.964	111.0	4.407	T1394/3	T1394/5	T1394/7	T1394/9	T1394/11



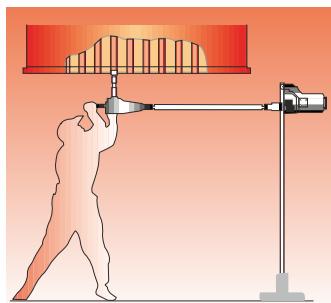
SPARE ROLLERS SET MODEL					SPARE MANDREL MODEL	
Tube Sheet Thickness Range						
1/2" to 7/8"	7/8" to 1.1/4"	1.3/8" to 1.3/4"	1.7/8" to 2.1/4"	2.3/8" to 2.3/4"	Drum Type	Short Series Mandrels
3	5	7	9	11		
2213-FS	2215-FS	2217-FS	2219-FS	22111-FS	TMP-244	TMPS-8,9,10,11,12,13
2373-FS	2375-FS	2377-FS	2379-FS	23711-FS		
2523-FS	2525-FS	2527-FS	2529-FS	25211-FS		
2523-FS	2525-FS	2527-FS	2529-FS	25211-FS	TMP-268	TMPS-10,11,12,13,14
2603-FS	2605-FS	2607-FS	2609-FS	26011-FS		
2683-FS	2685-FS	2687-FS	2689-FS	26811-FS		
2763-FS	2765-FS	2767-FS	2769-FS	27611-FS	TMP-300	TMPS-12,13,14,15,16
2843-FS	2845-FS	2847-FS	2849-FS	28411-FS		
2923-FS	2925-FS	2927-FS	2929-FS	29211-FS		
3153-FS	3155-FS	3157-FS	3159-FS	31511-FS	TMP-347	
2843-FS	2845-FS	2847-FS	2849-FS	28411-FS		TMPS-15,16,17,18,19
3153-FS	3155-FS	3157-FS	3159-FS	31511-FS		TMPS-14,15,16,17,18,19
3233-FS	3235-FS	3237-FS	3239-FS	32311-FS	TMP-394	
3313-FS	3315-FS	3317-FS	3319-FS	33111-FS		
3553-FS	3555-FS	3557-FS	3559-FS	35511-FS		TMPS-17,18,19,20,21
3633-FS	3635-FS	3637-FS	3639-FS	36311-FS	TMP-394	
3553-FS	3555-FS	3557-FS	3559-FS	35511-FS		
3633-FS	3635-FS	3637-FS	3639-FS	36311-FS		
3703-FS	3705-FS	3707-FS	3709-FS	37011-FS	TMP-394	
3783-FS	3785-FS	3787-FS	3789-FS	37811-FS		
3863-FS	3865-FS	3867-FS	3869-FS	38611-FS		
3943-FS	3945-FS	3947-FS	3949-FS	39411-FS	TMP-394	

Boiler Tube Expander

'T - 3000' Series (Flare) - 3 Plain Rollers

- More durable components
- Extended service life
- In built thrust bearing
- Heavy duty application

Tritorc offers solutions to overcome any installation problem

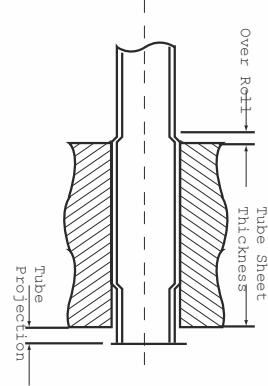


Our drive systems are designed to overcome any challenge posed by installation areas at any site

TUBE SIZE				Min I.D. Tool Enters	Max Expansion of Tool	TUBE EXPANDER MODEL			
O.D. inch	THK bwg	O.D. inch	THK bwg			Tube Sheet Thickness Range			
						1/2" to 4.3/8"	3/4" to 5.3/8"		
Tube Sheet Thickness Codes >						7	11		
1.1/4	16			28.1	1.105	33.0	1.299		
1.1/2	10 - 12			31.0	1.221	35.0	1.378		
	13 - 16			33.0	1.300	38.0	1.496		
1.3/4	8 - 9	2	3	35.0	1.379	40.0	1.575		
	10 - 12	2	4 - 5	37.0	1.457	42.5	1.673		
	13 - 16	2	6	39.0	1.536	44.5	1.752		
2	7 - 9	2.1/4	3	41.0	1.615	47.0	1.850		
	10 - 12	2.1/4	4 - 5	43.0	1.694	49.0	1.929		
	13 - 16	2.1/4	6	45.0	1.772	51.5	2.027		
	16	2.1/2	3	47.0	1.851	54.0	2.126		
2.1/4	10 - 13	2.1/2	4 - 5	49.0	1.930	56.0	2.205		
	14 - 16	2.1/2	6	51.0	2.009	60.0	2.362		
2.1/2	7 - 10			53.0	2.087	62.0	2.441		
	11 - 13	3	2	55.0	2.116	64.0	2.520		
	14 - 16			57.0	2.245	66.0	2.598		
2.3/4	7 - 9			59.0	2.323	68.0	2.677		
	10 - 12			61.0	2.402	70.0	2.756		
	13 - 16			63.0	2.481	72.0	2.835		



SPARE ROLLERS SET MODEL			SPARE MANDREL MODEL
Tube Sheet Thickness Range		Drum Type	
1/2" to 4.3/8"	1.1/2" to 5.3/8"	Drum Type	Short Series Mandrel
7	11	< Tube Sheet Thickness Codes	
1117-RS		TM-118	TMS-1,2,3
1187-RS			TMS-2,3,4
1267-RS	12611-RS	TM-150	TMS-3,4,5
1427-RS	14211-RS		TMS-3,4,5,6
1507-RS	15011-RS		
1587-RS	15811-RS	TM-175	TMS-4,5,6,7,8
1667-RS	16611-RS		
1747-RS	17411-RS	TM-197	
1817-RS	18111-RS		TMS-7,8,9,10,11,12
1747-RS	17411-RS	TM-197	
2057-RS	20511-RS		TMS-6,7,8,9,10,11,12
2057-RS	20511-RS	TM-221	TMS-7,8,9,10,11,12
2137-RS	21311-RS		
2217-RS	22111-RS	TM-244	
2217-RS	22111-RS		TMS-8,9,10,11,12,13
2377-RS	23711-RS		
2527-RS	25211-RS		



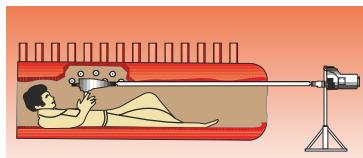
Note: 3000 B Series Expander can be supplied with 3" Shorter Mandrel for easy accessibility to limited access area.

Boiler Tube Expander

'T - 3000' Series (Flare) - 3 Plain Rollers

- More durable components
- Extended service life
- In built thrust bearing
- Heavy duty application

Tritorc offers solutions to overcome any installation problem

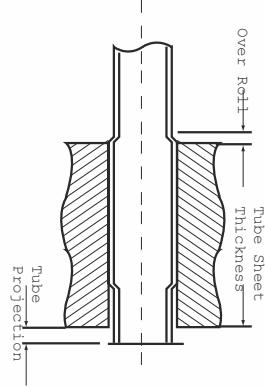


Typical example of solution oriented approach

TUBE SIZE				Min I.D. Tool Enters	Max Expansion of Tool	TUBE EXPANDER MODEL			
O.D. inch	THK bwg.	O.D. inch	THK bwg			mm	inch		
Tube Sheet Thickness Codes >						7	11		
3	7 - 8			65.0	2.560	74.0	2.913	T3252/7	T3252/11
	10 - 12			67.0	2.638	76.0	2.992	T3260/7	T3260/11
	13 - 14			69.0	2.717	78.0	3.071	T3268/7	T3268/11
	15 - 16			71.0	2.796	80.0	3.150	T3276/7	T3276/11
3.1/4	7 - 11			73.0	2.874	82.0	3.228	T3284/7	T3284/11
	12 - 14			75.0	2.953	84.0	3.307	T3292/7	T3292/11
	15 - 16	3.1/2	7 - 9	77.0	3.032	86.0	3.386	T3300/7	T3300/11
3.1/2	10 - 12			79.0	3.111	88.0	3.465	T3308/7	T3308/11
	13 - 15			81.0	3.190	92.0	3.622	T3315/7	T3315/11
	16	3.3/4	7 - 8	83.0	3.218	94.0	3.701	T3323/7	T3323/11
3.3/4	9 - 12			85.0	3.347	96.0	3.780	T3331/7	T3331/11
	13 - 16			87.0	3.426	98.0	3.858	T3339/7	T3339/11
4	7 - 8			89.0	3.505	100.0	3.937	T3347/7	T3347/11
	9 - 12			91.0	3.583	102.0	4.016	T3355/7	T3355/11
	13 - 15			93.0	3.662	104.0	4.094	T3363/7	T3363/11
	16	4.1/4	7 - 8	95.0	3.741	106.0	4.173	T3370/7	T3370/11
4.1/4	9 - 11			97.0	3.820	108.0	4.252	T3378/7	T3378/11
	12 - 16			99.0	3.898	110.0	4.331	T3386/7	T3386/11
	7 - 14			101.0	3.997	111.0	4.407	T3394/7	T3394/11



SPARE ROLLERS SET MODEL			SPARE MANDREL MODEL
Tube Sheet Thickness Range		Drum Type	
1/2" to 4.3/8	1.1/2" to 5.3/8	Drum Type	Short Series Mandrel
7	11	< Tube Sheet Thickness Codes	
2527-RS	25211-RS	TM-268	TMS-10, 11, 12, 13, 14
2607-RS	26011-RS		
2687-RS	26811-RS		
2767-RS	27611-RS		
2847-RS	28411-RS		TMS-12, 13, 14, 15, 16
2927-RS	29211-RS		
3157-RS	31511-RS		
2847-RS	28411-RS	TM-300	TMS-15, 16, 17, 18, 19
3157-RS	31511-RS		TMS-14, 15, 16, 17, 18, 19
3237-RS	32311-RS		
3317-RS	33111-RS		
3557-RS	35511-RS		
3637-RS	36311-RS	TM-347	
3557-RS	35511-RS		TMS-17, 18, 19, 20, 21
3637-RS	36311-RS		
3707-RS	37011-RS		
3787-RS	37811-RS		
3867-RS	38611-RS	TM-394	
3947-RS	39411-RS		



Note: 3000 Series Expander can also be supplied with 3" shorter mandrel for easy accessibility to limited access areas and is no menclatured as 3000B Series.

Sugar Industry Application

'TSB & TCSB' Series

- More durable components
- Extended service life
- In built thrust bearing
- Heavy duty application
- Hard rolling of tubes



'TSB' Tube Expander

TUBE SIZE		Min I.D. Tool Enters	Max Expansion of Tool	TUBE EXPANDER MODEL			Spare Roller	Spare Mandrel			
				Plate Thickness							
O.D. inch	THK bwg	mm inch	mm inch	31.75	38.1	50.8					
		(1.25)	(1.5)	(2.0)			Model	Model			
		Tube Sheet Thickness Codes>			A	B	C				
1.1/2	11 - 12	29.0	1.141	31.9	1.256	TSB-00A	TSB-00B	TSB-00C	TSBR-1A, 1B, 1C	TSBM-1	1/2"
	13 - 14	32.5	1.279	36.0	1.417	TSB-0A	TSB-0B	TSB-0C	TSBR-2A, 2B, 2C	TSBM-2	
	15 - 16	33.5	1.319	37.2	1.465	TSB-1A	TSB-1B	TSB-1C	TSBR-3A, 3B, 3C		
1.3/4	9 - 10	35.2	1.386	39.1	1.539	TSB-2A	TSB-2B	TSB-2C	TSBR-3A, 3B, 3C	TSBM-3	3/4"
	11 - 12	36.5	1.437	40.5	1.594	TSB-3A	TSB-3B	TSB-3C	TSBR-4A, 4B, 4C		
	13 - 14	38.1	1.500	42.7	1.681	TSB-4A	TSB-4B	TSB-4C	TSBR-5A, 5B, 5C		
	15 - 16	39.1	1.539	44.2	1.740	TSB-5A	TSB-5B	TSB-5C	TSBR-4A, 4B, 4C	TSBM-4	
2	7 - 8	41.3	1.626	46.7	1.838	TSB-6A	TSB-6B	TSB-6C	TSBR-5A, 5B, 5C		3/4"
	9 - 10	42.8	1.685	48.3	1.901	TSB-7A	TSB-7B	TSB-7C	TSBR-6A, 6B, 6C		
	11 - 13	44.4	1.748	49.7	1.957	TSB-8A	TSB-8B	TSB-8C	TSBR-6A, 6B, 6C	TSBM-5	
	14 - 16	46.0	1.811	52.3	2.055	TSB-9A	TSB-9B	TSB-9C	TSBR-7A, 7B, 7C		
2.1/4	9 - 10	47.6	1.874	53.8	2.118	TSB-10A	TSB-10B	TSB-10C	TSBR-8A, 8B, 8C		
	11 - 13	49.2	1.937	55.4	2.181	TSB-11A	TSB-11B	TSB-11C	TSBR-9A, 9B, 9C		
	14 - 16	50.7	1.996	57.8	2.275	TSB-12A	TSB-12B	TSB-12C	TSBR-8A, 8B, 8C	TSBM-6	
2.1/2	9 - 10	54.9	2.161	61.0	2.401	TSB-13A	TSB-13B	TSB-13C	TSBR-10A, 10B, 10C		

Tube Expander

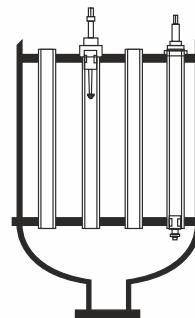
'TCSB' Series

TCSB Series Tube Expanders are used to expand tube at bottom plate of sugar evaporator. They are supplied with adjustable reach of 300mm from minimum to maximum of tube given below:



'TCSB' Tube Expander

Reach	Min (mm)	Max (mm)
Std Reach	700	1000
A	1000	1500
B	1500	2000
C	2000	2500
D	2500	3000



TUBE SIZE		Min I.D. Tool Enters	Max Expansion of Tool	TUBE EXPANDER MODEL			Spare Roller	Spare Mandrel			
				Plate Thickness							
O.D inch	THK bwg			mm	inch	mm	inch	31.75 (1.25)	38.1 (1.5)	50.8 (2.0)	Model
		Tube Sheet Thickness Codes>		A	B	C					
2.1/2	14 - 16	57.1	2.248	65.6	2.582	TSB-14A	TSB-14B	TSB-14C	TSBR-11A, 11B, 11C	TSBM-7	1"
2.3/4	10 - 14	60.3	2.374	68.8	2.708	TSB-15A	TSB-15B	TSB-15C	TSBR-12A, 12B, 12C		
	7 - 9	63.5	2.500	72.0	2.835	TSB-16A	TSB-16B	TSB-16C	TSBR-13A, 13B, 13C	TSBM-7	
	10 - 14	66.5	2.618	75.0	2.953	TSB-17A	TSB-17B	TSB-17C	TSBR-14A, 14B, 14C		
3.1/4	7 - 8	69.8	2.748	78.5	3.090	TSB-18A	TSB-18B	TSB-18C	TSBR-14A, 14B, 14C	TSBM-8	
3.1/2	4 - 5	73.0	2.874	81.7	3.216	TSB-19A	TSB-19B	TSB-19C	TSBR-15A, 15B, 15C		
	6 - 8	76.1	2.996	85.8	3.378	TSB-20A	TSB-20B	TSB-20C	TSBR-16A, 16B, 16C	TSBM-9	
3.3/4	4 - 5	79.3	3.122	89.0	3.504	TSB-21A	TSB-21B	TSB-21C	TSBR-17A, 17B, 17C		
	6 - 8	82.5	3.248	92.2	3.629	TSB-22A	TSB-22B	TSB-22C	TSBR-18A, 18B, 18C		
4	3 - 4	85.7	3.374	96.2	3.787	TSB-23A	TSB-23B	TSB-23C	TSBR-18A, 18B, 18C	TSBM-10	
	10 - 16	90.3	3.555	100.8	3.968	TSB-24A	TSB-24B	TSB-24C	TSBR-19A, 19B, 19C		
4.1/4	6 - 8	94.6	3.736	105.2	4.141	TSB-25A	TSB-25B	TSB-25C	TSBR-20A, 20B, 20C	TSBM-11	
4.1/2	4 - 7	89.7	3.531	110.9	4.366	TSB-26A	TSB-26B	TSB-26C	TSBR-21A, 21B, 21C		
	8 - 10	104.3	4.106	113.1	4.452	TSB-27A	TSB-27B	TSB-27C	TSBR-21A, 21B, 21C	TSBM-12	

Combination Beading Tube Expander 'TCB' Series



This is a dual operation tool that simultaneously beads and expands in one operation...

- No initial flaring is required
- Reduced manhour and operator fatigue
- Smooth bead finish
- Less parts, thus low maintenance
- Two bead rollers for self centering of tool

TUBE SIZE		TUBE	EXPANDER	MANDREL	EXPANDER	BEADING
inch	mm	Gauge	Model	No.	Rolls Set	Rolls.
2	50.8	10-14	TCB-508	TBM-508	TRR-508	TBR-508
2.1/2	63.5	10-14	TCB-635	TBM-635	TRR-635	TBR-635
3	76.2	10-14	TCB-762	TBM-762	TRR-762	TBR-762