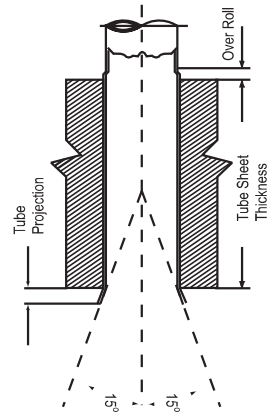


SPARE ROLLER SET MODEL					SPARE MANDREL MODEL			
1/2" to 7/8"	3/4" to 1.1/8"	1.1/8" to 1.5/8"	1.5/8" to 2.1/8"	2.1/8" to 2.5/8"	Drum Type	Header Type	Short Series 5.1/8"	SQ ☒
2	3	4	5	6				
152-F3	153-F3				TDM-11			
152-F3	153-F3				TDM-12			
162-F3	163-F3							
202-F3	203-F3							
172-F3	173-F3	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



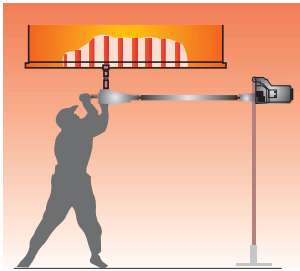
Boiler Tube Expanders

'TAF3' Series [Flare]

- 3 Plain Rollers
- 3 Flare Rollers



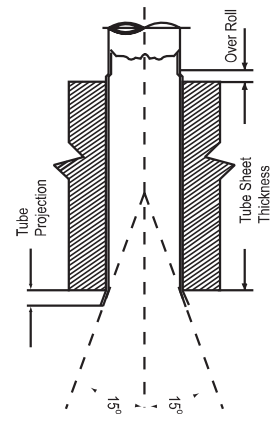
- Offset flare rolls eliminates ridges
- Rolls retained in cage when mandrel is removed



- 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				
								Tube Sheet Thickness Range				
O.D. inch	THK bwg	O.D. inch	THK bwg	mm	inch	mm	inch	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
2.1/2	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
	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	TAF3-68/6
	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
3	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	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
	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					Drum Type	Header Type	Short Series 5.1/8"	SQ
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				
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				3/4"
372-F3	373-F3	374-F3	375-F3	376-F3				
332-F3	333-F3	334-F3	335-F3	336-F3	TDM-22	THM-22	TSM-22	
372-F3	373-F3	374-F3	375-F3	376-F3				
382-F3	383-F3	384-F3	385-F3	386-F3				
392-F3	393-F3	394-F3	395-F3	396-F3				
402-F3	403-F3	404-F3	405-F3	406-F3	TDM-23	THM-23	TSM-23	
402-F3	403-F3	404-F3	405-F3	406-F3				
412-F3	413-F3	414-F3	415-F3	416-F3				
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	TDM-24	THM-24	TSM-24	
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	TDM-25	THM-25	TSM-25	
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

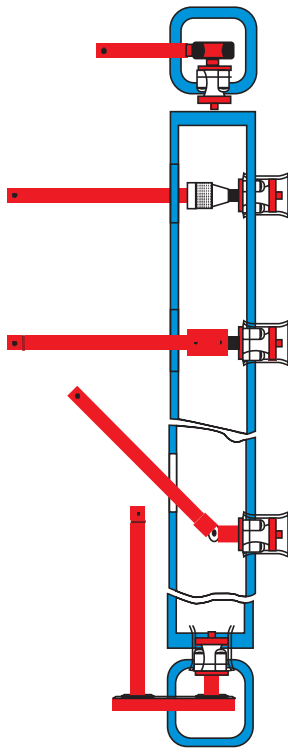
'TAF3' Series [Flare]

3 Plain Rollers

3 Flare Rollers



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



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				
								Tube Sheet Thickness Range				
O.D. inch	THK bwg	O.D. inch	THK bwg	mm	inch	mm	inch	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	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	TAF3-101/6
	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	SQ
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	SQ
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	SQ
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	SQ
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	1"
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	1"
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	1"
602-F3	603-F3	604-F3	605-F3	606-F3				
592-F3	593-F3	594-F3	595-F3	596-F3	TDM-29	THM-29	TSM-29	1"
602-F3	603-F3	604-F3	605-F3	606-F3				
612-F3	613-F3	614-F3	615-F3	616-F3	TDM-30	THM-30	TSM-30	1"
622-F3	623-F3	624-F3	625-F3	626-F3				
632-F3	633-F3	634-F3	635-F3	636-F3	TDM-29	THM-29	TSM-29	1"
622-F3	623-F3	624-F3	625-F3	626-F3				
632-F3	633-F3	634-F3	635-F3	636-F3	TDM-30	THM-30	TSM-30	1"
642-F3	643-F3	644-F3	645-F3	646-F3				
632-F3	633-F3	634-F3	635-F3	636-F3	TDM-30	THM-30	TSM-30	1"
642-F3	643-F3	644-F3	645-F3	646-F3				
652-F3	653-F3	654-F3	655-F3	656-F3	TDM-30	THM-30	TSM-30	1"
662-F3	663-F3	664-F3	665-F3	666-F3				

