

# BOILER TUBE EXPANDER

**BHARTIYA**

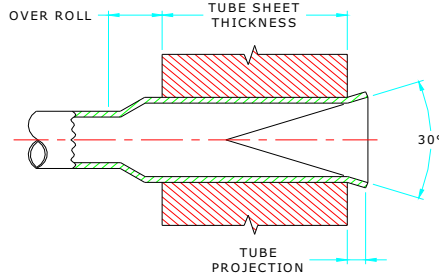
Tube O. D.  
7/8"- 4.1/2"

**TUBE TOOLS**

## FLARE TYPE 'BAF3' - 3 PLAIN & 3 FLARE ROLLERS

### FEATURES:

- Time tested, durable design.
- Sturdy construction with rolls self contained in cage.
- Best 'Value for Money' tool in the world when parallel rolling tubes.
- Use - Economical tool used for applications where tubes are to be expanded with flaring.



TUBE SIZE			TUBE SIZE			MIN. I. D. TUBE TOOL ENTERS		MAX. EXPANSION OF TOOL		TUBE EXPANDER MODEL NUMBER				
O.D. inch	THK. GA.	THK. inch	O.D. inch	THK. GA.	THK. inch	Mm	Inch	Mm	Inch	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	(.072)	1	10	(.134)	18.1	(.712)	20.4	(.803)	BF3-31/2	BF3-31/3	-	-	-
7/8	16	(.065)				18.4	(.724)	20.7	(.814)	BF3-32/2	AF3-32/3	-	-	-
7/8	17	(.058)	1	11	(.120)	18.8	(.740)	21.1	(.830)	BF3-33/2	AF3-33/3	-	-	-
7/8	18	(.049)	1	12	(.109)	19.4	(.763)	21.6	(.850)	AF3-34/2	AF3-34/3	-	-	-
7/8	19 & 20	(.042 & .035)	1. 1/8	8	(.165)	19.7	(.775)	22.3	(.877)	AF3-35/2	AF3-35/3	-	-	-
1	13	(.095)				20.1	(.791)	22.4	(.881)	AF3-36/2	AF3-36/3	-	-	-
1	14	(.083)	1. 1/8	9	(.148)	20.6	(.811)	23.1	(.909)	AF3-37/2	AF3-37/3	AF3-37/4	-	-
1	15 & 16	(.072 & .065)	1. 1/8	10	(.134)	21.3	(.838)	23.8	(.937)	AF3-38/2	AF3-38/3	AF3-38/4	-	-
1	17 & 18	(.058 & .048)	1. 1/8	11	(.120)	22.0	(.866)	24.5	(.964)	AF3-39/2	AF3-39/3	AF3-39/4	-	-
1	19 & 20	(.042 & .035)	1. 1/8	12	(.109)	22.4	(.881)	25.0	(.984)	AF3-40/2	AF3-40/3	AF3-40/4	-	-
1. 1/4	8	(.165)	1. 1/8	13	(.095)	23.3	(.917)	25.9	(1.019)	AF3-41/2	AF3-41/3	AF3-41/4	-	-
1. 1/4	9	(.148)	1. 1/8	14	(.083)	23.8	(.937)	26.5	(1.043)	AF3-42/2	AF3-42/3	AF3-42/4	-	-
1. 1/4	10	(.134)	1. 1/8	15 & 16	(.072 & .065)	24.4	(.960)	27.2	(1.070)	AF3-43/2	AF3-43/3	AF3-43/4	-	-
1. 1/4	11	(.120)				25.2	(.992)	28.0	(1.102)	AF3-44/2	AF3-44/3	AF3-44/4	-	-
1. 1/4	12	(.109)				25.7	(1.011)	28.5	(1.122)	AF3-45/2	AF3-45/3	AF3-45/4	-	-
1. 1/4	13	(.095)	1. 3/8	8	(.165)	26.1	(1.027)	28.8	(1.133)	AF3-46/2	AF3-46/3	AF3-46/4	-	-
1. 1/4	14	(.083)				26.4	(1.039)	29.2	(1.149)	AF3-47/2	AF3-47/3	AF3-47/4	-	-
1. 1/4	15	(.072)	1. 3/8	9	(.148)	26.9	(1.059)	29.7	(1.169)	AF3-48/2	AF3-48/3	AF3-48/4	-	-
1. 1/4	16	(.065)	1. 3/8	10	(.134)	27.6	(1.086)	30.4	(1.196)	AF3-49/2	AF3-49/3	AF3-49/4	AF3-49/5	AF3-49/6
1. 1/2	7	(.180)	1. 3/8	11	(.120)	28.3	(1.114)	31.2	(1.228)	AF3-50/2	AF3-50/3	AF3-50/4	AF3-50/5	AF3-50/6
1. 1/2	8	(.165)	1. 3/8	12	(.109)	28.8	(1.133)	31.7	(1.248)	AF3-51/2	AF3-51/3	AF3-51/4	AF3-51/5	AF3-51/6
1. 1/2	9	(.148)	1. 3/8	13 & 14	(.095 & .083)	29.5	(1.161)	33.4	(1.314)	AF3-52/2	AF3-52/3	AF3-52/4	AF3-52/5	AF3-52/6
1. 1/2	10	(.134)	1. 3/8	15 & 16	(.072 & .065)	30.0	(1.181)	34.1	(1.342)	AF3-53/2	AF3-53/3	AF3-53/4	AF3-53/5	AF3-53/6
1. 1/2	11 & 12	(.120 & .109)				30.6	(1.204)	34.8	(1.370)	AF3-54/2	AF3-54/3	AF3-54/4	AF3-54/5	AF3-54/6
1. 1/2	13	(.095)	1. 3/4	5	(.220)	31.4	(1.236)	35.6	(1.401)	AF3-55/2	AF3-55/3	AF3-55/4	AF3-55/5	AF3-55/6
1. 1/2	14 & 15	(.083 & .072)	1. 3/4	6	(.203)	32.6	(1.283)	36.8	(1.448)	AF3-56/2	AF3-56/3	AF3-56/4	AF3-56/5	AF3-56/6
			1. 3/4	7	(.180)	33.4	(1.314)	38.1	(1.500)	AF3-57/2	AF3-57/3	AF3-57/4	AF3-57/5	AF3-57/6
2	3	(.259)	1. 3/4	8	(.165)	34.2	(1.346)	38.7	(1.523)	AF3-58/2	AF3-58/3	AF3-58/4	AF3-58/5	AF3-58/6
2	4	(.238)	1. 3/4	9 & 10	(.148 & .134)	35.0	(1.377)	40.6	(1.598)	AF3-59/2	AF3-59/3	AF3-59/4	AF3-59/5	AF3-59/6
			1. 3/4	11 & 12	(.120 & .109)	36.6	(1.440)	42.2	(1.661)	AF3-60/2	AF3-60/3	AF3-60/4	AF3-60/5	AF3-60/6
2	5 & 6	(.220 & .203)	1. 3/4	13 & 14	(.095 & .083)	38.2	(1.503)	43.8	(1.712)	AF3-61/2	AF3-61/3	AF3-61/4	AF3-61/5	AF3-61/6
2	7 & 8	(.180 & .165)	1. 3/4	15 & 16	(.072 & .065)	39.8	(1.566)	45.4	(1.787)	AF3-62/2	AF3-62/3	AF3-62/4	AF3-62/5	AF3-62/6
2	9 & 10	(.148 & .134)	2. 1/4	3	(.259)	41.4	(1.629)	47.0	(1.850)	AF3-63/2	AF3-63/3	AF3-63/4	AF3-63/5	AF3-63/6
2	11 - 13	(.120 - .095)	2. 1/4	4	(.238)	42.9	(1.688)	49.5	(1.948)	AF3-64/2	AF3-64/3	AF3-64/4	AF3-64/5	AF3-64/6
2	14 - 16	(.083 - .065)	2. 1/4	6 & 7	(.203 & .180)	44.5	(1.751)	51.1	(2.011)	AF3-65/2	AF3-65/3	AF3-65/4	AF3-65/5	AF3-65/6
2	17 & 18	(.058 & .049)	2. 1/4	8 & 9	(.165 & .148)	46.1	(1.814)	52.7	(2.074)	AF3-66/2	AF3-66/3	AF3-66/4	AF3-66/5	AF3-66/6

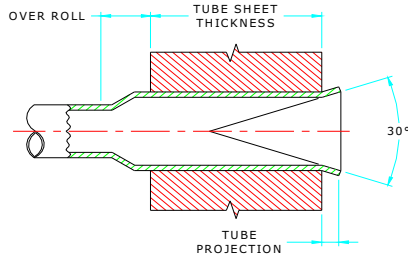
# BOILER TUBE EXPANDER

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## FLARE TYPE 'BAF3' - 3 PLAIN & 3 FLARE ROLLERS

Tube O. D.  
7/8" - 4.1/2"

**TUBE TOOLS**



SPARE ROLLERS SET MODEL NUMBER					SPARE MANDREL MODEL NUMBER			
TUBE SHEET THICKNESS RANGE					MANDREL SIZE inch	DRUM TYPE	HEADER TYPE	SHORT SERIES
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	<<< Tube Sheet Thickness Codes			
15-2-F3S	15-3-F3S	-	-	-	3/8	BDM-11	-	-
15-2-F3S	15-3-F3S	-	-	-	3/8	BDM-12	-	-
16-2-F3S	16-3-F3S	-	-	-	3/8	BDM-12	-	-
20-2-F3S	20-3-F3S	-	-	-	3/8	BDM-12	-	-
17-2-F3S	17-3-F3S	-	-	-	3/8	BDM-13	-	-
18-2-F3S	18-3-F3S	-	-	-	3/8	BDM-12	-	-
18-2-F3S	18-3-F3S	18-4-F3S	-	-	3/8	BDM-13	BHM-13	BSM-13
19-2-F3S	19-3-F3S	19-4-F3S	-	-	3/8	BDM-13	BHM-13	BSM-13
21-2-F3S	21-3-F3S	21-4-F3S	-	-	3/8	BDM-13	BHM-13	BSM-13
21-2-F3S	21-3-F3S	21-4-F3S	-	-	3/8	BDM-14	BHM-14	BSM-14
22-2-F3S	22-3-F3S	22-4-F3S	-	-	3/8	BDM-14	BHM-14	BSM-14
23-2-F3S	23-3-F3S	23-4-F3S	-	-	1/2	BDM-15	BHM-15	BSM-15
24-2-F3S	24-3-F3S	24-4-F3S	-	-	1/2	BDM-15	BHM-15	BSM-15
26-2-F3S	26-3-F3S	26-4-F3S	-	-	1/2	BDM-16	BHM-16	BSM-16
27-2-F3S	27-3-F3S	27-4-F3S	-	-	1/2	BDM-16	BHM-16	BSM-16
31-2-F3S	31-3-F3S	31-4-F3S	-	-	1/2	BDM-16	BHM-16	BSM-16
28-2-F3S	28-3-F3S	28-4-F3S	-	-	1/2	BDM-17	BHM-17	BSM-17
29-2-F3S	29-3-F3S	29-4-F3S	-	-	1/2	BDM-17	BHM-17	BSM-17
30-2-F3S	30-3-F3S	30-4-F3S	30-5-F3S	30-6-F3S	1/2	BDM-17	BHM-17	BSM-17
30-2-F3S	30-3-F3S	30-4-F3S	30-5-F3S	30-6-F3S	1/2	BDM-18	BHM-18	BSM-18
32-2-F3S	32-3-F3S	32-4-F3S	32-5-F3S	32-6-F3S	1/2	BDM-18	BHM-18	BSM-18
28-2-F3S	28-3-F3S	28-4-F3S	28-5-F3S	28-6-F3S	1/2	BDM-20	BHM-20	BSM-20
29-2-F3S	29-3-F3S	29-4-F3S	29-5-F3S	29-6-F3S	1/2	BDM-20	BHM-20	BSM-20
30-2-F3S	30-3-F3S	30-4-F3S	30-5-F3S	30-6-F3S	1/2	BDM-20	BHM-20	BSM-20
33-2-F3S	33-3-F3S	33-4-F3S	33-5-F3S	33-6-F3S	1/2	BDM-20	BHM-20	BSM-20
34-2-F3S	34-3-F3S	34-4-F3S	34-5-F3S	34-6-F3S	1/2	BDM-21	BHM-21	BSM-21
36-2-F3S	36-3-F3S	36-4-F3S	36-5-F3S	36-6-F3S	1/2	BDM-21	BHM-21	BSM-21
37-2-F3S	37-3-F3S	37-4-F3S	37-5-F3S	37-6-F3S	1/2	BDM-21	BHM-21	BSM-21
33-2-F3S	33-3-F3S	33-4-F3S	33-5-F3S	33-6-F3S	3/4	BDM-22	BHM-22	BSM-22
37-2-F3S	37-3-F3S	37-4-F3S	37-5-F3S	37-6-F3S	3/4	BDM-22	BHM-22	BSM-22
38-2-F3S	38-3-F3S	38-4-F3S	38-5-F3S	38-6-F3S	3/4	BDM-22	BHM-22	BSM-22
39-2-F3S	39-3-F3S	39-4-F3S	39-5-F3S	39-6-F3S	3/4	BDM-22	BHM-22	BSM-22
40-2-F3S	40-3-F3S	40-4-F3S	40-5-F3S	40-6-F3S	3/4	BDM-22	BHM-22	BSM-22
40-2-F3S	40-3-F3S	40-4-F3S	40-5-F3S	40-6-F3S	3/4	BDM-23	BHM-23	BSM-23
41-2-F3S	41-3-F3S	41-4-F3S	41-5-F3S	41-6-F3S	3/4	BDM-23	BHM-23	BSM-23
42-2-F3S	42-3-F3S	42-4-F3S	42-5-F3S	42-6-F3S	3/4	BDM-23	BHM-23	BSM-23

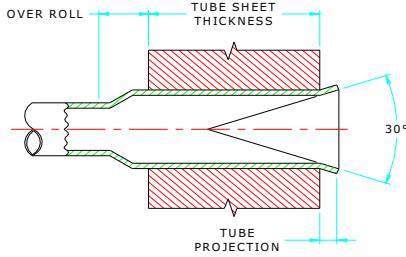
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**BHARTIYA**

## FLARE TYPE 'BAF3' - 3 PLAIN & 3 FLARE ROLLERS

Tube O. D.  
7/8" - 4.1/2"

**TUBE TOOLS**



TUBE SIZE			TUBE SIZE			MIN. I. D. TUBE TOOL ENTERS		MAX. EXPANSION OF TOOL		TUBE EXPANDER MODEL NUMBER				
O.D. inch	THK. GA.	THK. inch	O.D. inch	THK. GA.	THK. inch					TUBE SHEET THICKNESS RANGE				
						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
2. 1/2	3	(.259)	2. 1/4	10 & 11	(.134 & .120)	47.7	(1.877)	54.3	(2.137)	BAF3-67/2	BAF3-67/3	BAF3-67/4	BAF3-67/5	BAF3-67/6
2. 1/2	4 & 5	(.238 & .220)	2. 1/4	12 & 13	(.109 & .095)	49.3	(1.940)	55.9	(2.200)	BAF3-68/2	BAF3-68/3	BAF3-68/4	BAF3-68/5	BAF3-68/6
2. 1/2	6 & 7	(.203 & .180)	2. 1/4	14 - 16	(.083 - .065)	50.8	(2.000)	57.8	(2.275)	BAF3-69/2	BAF3-69/3	BAF3-69/4	BAF3-69/5	BAF3-69/6
2. 1/2	8 & 9	(.165 & .148)	2. 3/4	3	(.259)	52.4	(2.062)	59.4	(2.338)	BAF3-70/2	BAF3-70/3	BAF3-70/4	BAF3-70/5	BAF3-70/6
2. 1/2	10 & 11	(.134 & .120)	2. 3/4	4	(.238)	54.0	(2.125)	61.0	(2.401)	BAF3-71/2	BAF3-71/3	BAF3-71/4	BAF3-71/5	BAF3-71/6
2. 1/2	12 - 14	(.109 - .083)	2. 3/4	5 & 6	(.220 & .203)	55.6	(2.188)	64.0	(2.519)	BAF3-72/2	BAF3-72/3	BAF3-72/4	BAF3-72/5	BAF3-72/6
2. 1/2	15 & 16	(.072 & .065)	2. 3/4	7 & 8	(.180 & .165)	57.2	(2.251)	65.6	(2.582)	BAF3-73/2	BAF3-73/3	BAF3-73/4	BAF3-73/5	BAF3-73/6
3	3	(.259)	2. 3/4	9 & 10	(.148 & .134)	58.6	(2.307)	67.0	(2.637)	BAF3-74/2	BAF3-74/3	BAF3-74/4	BAF3-74/5	BAF3-74/6
3	4	(.238)	2. 3/4	11 - 13	(.120 - .095)	60.4	(2.377)	68.8	(2.708)	BAF3-75/2	BAF3-75/3	BAF3-75/4	BAF3-75/5	BAF3-75/6
3	5 & 6	(.220 & .203)	2. 3/4	14 - 16	(.083 - .065)	62.2	(2.448)	70.4	(2.771)	BAF3-76/2	BAF3-76/3	BAF3-76/4	BAF3-76/5	BAF3-76/6
3	7 & 8	(.180 & .165)	2. 3/4	3	(.259)	63.6	(2.503)	72.0	(2.834)	BAF3-77/2	BAF3-77/3	BAF3-77/4	BAF3-77/5	BAF3-77/6
3	9 & 10	(.148 & .134)	3. 1/4	3	(.259)	65.0	(2.559)	73.4	(2.889)	BAF3-78/2	BAF3-78/3	BAF3-78/4	BAF3-78/5	BAF3-78/6
3	11 - 13	(.120 - .095)	3. 1/4	4	(.238)	66.6	(2.622)	75.0	(2.952)	BAF3-79/2	BAF3-79/3	BAF3-79/4	BAF3-79/5	BAF3-79/6
3	14 - 16	(.083 - .065)	3. 1/4	5 & 6	(.220 & .203)	68.3	(2.688)	76.9	(3.027)	BAF3-80/2	BAF3-80/3	BAF3-80/4	BAF3-80/5	BAF3-80/6
3. 1/2	2	(.284)	3. 1/4	7 & 8	(.180 & .165)	69.9	(2.751)	78.5	(3.090)	BAF3-81/2	BAF3-81/3	BAF3-81/4	BAF3-81/5	BAF3-81/6
3. 1/2	3	(.259)	3. 1/4	9 & 10	(.148 & .134)	71.5	(2.814)	80.1	(3.153)	BAF3-82/2	BAF3-82/3	BAF3-82/4	BAF3-82/5	BAF3-82/6
3. 1/2	4	(.238)	3. 1/4	11 - 13	(.120 - .095)	73.1	(2.877)	81.7	(3.216)	BAF3-83/2	BAF3-83/3	BAF3-83/4	BAF3-83/5	BAF3-83/6
3. 1/2	5 & 6	(.220 & .203)	3. 1/4	14 - 16	(.083 - .065)	74.6	(2.937)	84.2	(3.314)	BAF3-84/2	BAF3-84/3	BAF3-84/4	BAF3-84/5	BAF3-84/6
3. 1/2	7 & 8	(.180 & .165)	3. 3/4	2	(.084)	76.2	(3.000)	85.5	(3.366)	BAF3-85/2	BAF3-85/3	BAF3-85/4	BAF3-85/5	BAF3-85/6
3. 1/2	9 - 11	(.148 - .120)	3. 3/4	3	(.259)	77.8	(3.062)	87.4	(3.440)	BAF3-86/2	BAF3-86/3	BAF3-86/4	BAF3-86/5	BAF3-86/6
3. 1/2	12 - 16	(.109 - .065)	3. 3/4	4	(.238)	79.4	(3.125)	89.0	(3.503)	BAF3-87/2	BAF3-87/3	BAF3-87/4	BAF3-87/5	BAF3-87/6
4	2	(.284)	3. 3/4	5 & 6	(.220 & .203)	81.0	(3.188)	90.6	(3.566)	BAF3-88/2	BAF3-88/3	BAF3-88/4	BAF3-88/5	BAF3-88/6
4	3	(.259)	3. 3/4	7 & 8	(.180 & .165)	82.6	(3.251)	92.2	(3.629)	BAF3-89/2	BAF3-89/3	BAF3-89/4	BAF3-89/5	BAF3-89/6
4	4	(.238)	3. 3/4	9 & 10	(.148 & .134)	84.2	(3.314)	93.8	(3.692)	BAF3-90/2	BAF3-90/3	BAF3-90/4	BAF3-90/5	BAF3-90/6
4	4	(.238)	3. 3/4	11 - 13	(.120 - .095)	85.8	(3.377)	96.2	(3.787)	BAF3-91/2	BAF3-91/3	BAF3-91/4	BAF3-91/5	BAF3-91/6
4	5 & 6	(.220 & .203)	3. 3/4	14 - 16	(.083 - .065)	87.4	(3.440)	97.8	(3.850)	BAF3-92/2	BAF3-92/3	BAF3-92/4	BAF3-92/5	BAF3-92/6
4	7 & 8	(.180 & .165)	4. 1/4	2		89.0	(3.503)	99.4	(3.913)	BAF3-93/2	BAF3-93/3	BAF3-93/4	BAF3-93/5	BAF3-93/6
4	9 - 11	(.148 - .120)	4. 1/4	3	(.284)	90.4	(3.559)	100.8	(3.968)	BAF3-94/2	BAF3-94/3	BAF3-94/4	BAF3-94/5	BAF3-94/6
4	12 - 16	(.109 - .065)	4. 1/4	4	(.238)	92.0	(3.622)	102.4	(4.031)	BAF3-95/2	BAF3-95/3	BAF3-95/4	BAF3-95/5	BAF3-95/6
			4. 1/4	5 & 6	(.220 & .203)	93.4	(3.677)	103.8	(4.086)	BAF3-96/2	BAF3-96/3	BAF3-96/4	BAF3-96/5	BAF3-96/6
4. 1/2	2	(.284)	4. 1/4	7 & 8	(.180 & .165)	95.0	(3.740)	105.4	(4.149)	BAF3-97/2	BAF3-97/3	BAF3-97/4	BAF3-97/5	BAF3-97/6
4. 1/2	3	(.259)	4. 1/4	9 - 11	(.148 - .120)	96.6	(3.803)	107.0	(4.212)	BAF3-98/2	BAF3-98/3	BAF3-98/4	BAF3-98/5	BAF3-98/6
4. 1/2	4 & 5	(.238 & .220)	4. 1/4	11 - 13	(.120 - .095)	98.2	(3.866)	108.6	(4.275)	BAF3-99/2	BAF3-99/3	BAF3-99/4	BAF3-99/5	BAF3-99/6
4. 1/2	6 & 7	(.203 & .180)				101.2	(3.984)	110.0	(4.330)	BAF3-100/2	BAF3-100/3	BAF3-100/4	BAF3-100/5	BAF3-100/6
4. 1/2	8 & 9	(.165 & .148)				102.8	(4.047)	111.6	(4.393)	BAF3-101/2	BAF3-101/3	BAF3-101/4	BAF3-101/5	BAF3-101/6
4. 1/2	10 - 12	(.134 - .109)				104.4	(4.110)	113.2	(4.456)	BAF3-102/2	BAF3-102/3	BAF3-102/4	BAF3-102/5	BAF3-102/6

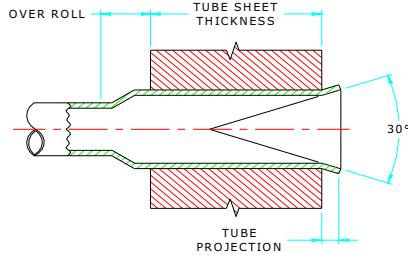
# BOILER TUBE EXPANDER

**BHARTIYA**

## FLARE TYPE 'BAF3' - 3 PLAIN & 3 FLARE ROLLERS

Tube O. D.  
7/8" - 4.1/2"

**TUBE TOOLS**



SPARE ROLLERS SET MODEL NUMBER					SPARE MANDREL MODEL NUMBER			
TUBE SHEET THICKNESS RANGE					MANDREL SIZE inch	DRUM TYPE	HEADER TYPE	SHORT SERIES
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	<<< Tube Sheet Thickness Codes			
43-2-F3S	43-3-F3S	43-4-F3S	43-5-F3S	43-6-F3S	3/4	BDM-23	BHM-23	BSM-23
44-2-F3S	44-3-F3S	44-4-F3S	44-5-F3S	44-6-F3S	3/4	BDM-23	BHM-23	BSM-23
43-2-F3S	43-3-F3S	43-4-F3S	43-5-F3S	43-6-F3S	3/4	BDM-24	BHM-24	BSM-24
44-2-F3S	44-3-F3S	44-4-F3S	44-5-F3S	44-6-F3S	3/4	BDM-24	BHM-24	BSM-24
45-2-F3S	45-3-F3S	45-4-F3S	45-5-F3S	45-6-F3S	3/4	BDM-24	BHM-24	BSM-24
47-2-F3S	47-3-F3S	47-4-F3S	47-5-F3S	47-6-F3S	3/4	BDM-24	BHM-24	BSM-24
46-2-F3S	46-3-F3S	46-4-F3S	46-5-F3S	46-6-F3S	1	BDM-25	BHM-25	BSM-25
47-2-F3S	47-3-F3S	47-4-F3S	47-5-F3S	47-6-F3S	1	BDM-25	BHM-25	BSM-25
48-2-F3S	48-3-F3S	48-4-F3S	48-5-F3S	48-6-F3S	1	BDM-25	BHM-25	BSM-25
49-2-F3S	49-3-F3S	49-4-F3S	49-5-F3S	49-6-F3S	1	BDM-25	BHM-25	BSM-25
50-2-F3S	50-3-F3S	50-4-F3S	50-5-F3S	50-6-F3S	1	BDM-25	BHM-25	BSM-25
51-2-F3S	51-3-F3S	51-4-F3S	51-5-F3S	51-6-F3S	1	BDM-25	BHM-25	BSM-25
52-2-F3S	52-3-F3S	52-4-F3S	52-5-F3S	52-6-F3S	1	BDM-25	BHM-25	BSM-25
51-2-F3S	51-3-F3S	51-4-F3S	51-5-F3S	51-6-F3S	1	BDM-26	BHM-26	BSM-26
52-2-F3S	52-3-F3S	52-4-F3S	52-5-F3S	52-6-F3S	1	BDM-26	BHM-26	BSM-26
53-2-F3S	53-3-F3S	53-4-F3S	53-5-F3S	53-6-F3S	1	BDM-26	BHM-26	BSM-26
54-2-F3S	54-3-F3S	54-4-F3S	54-5-F3S	54-6-F3S	1	BDM-26	BHM-26	BSM-26
54-2-F3S	54-3-F3S	54-4-F3S	54-5-F3S	54-6-F3S	1	BDM-27	BHM-27	BSM-27
55-2-F3S	55-3-F3S	55-4-F3S	55-5-F3S	55-6-F3S	1	BDM-27	BHM-27	BSM-27
56-2-F3S	56-3-F3S	56-4-F3S	56-5-F3S	56-6-F3S	1	BDM-27	BHM-27	BSM-27
57-2-F3S	57-3-F3S	57-4-F3S	57-5-F3S	57-6-F3S	1	BDM-27	BHM-27	BSM-27
58-2-F3S	58-3-F3S	58-4-F3S	58-5-F3S	58-6-F3S	1	BDM-27	BHM-27	BSM-27
59-2-F3S	59-3-F3S	59-4-F3S	59-5-F3S	59-6-F3S	1	BDM-27	BHM-27	BSM-27
60-2-F3S	60-3-F3S	60-4-F3S	60-5-F3S	60-6-F3S	1	BDM-27	BHM-27	BSM-27
59-2-F3S	59-3-F3S	59-4-F3S	59-5-F3S	59-6-F3S	1	BDM-28	BHM-28	BSM-28
60-2-F3S	60-3-F3S	60-4-F3S	60-5-F3S	60-6-F3S	1	BDM-28	BHM-28	BSM-28
61-2-F3S	61-3-F3S	61-4-F3S	61-5-F3S	61-6-F3S	1	BDM-28	BHM-28	BSM-28
62-2-F3S	62-3-F3S	62-4-F3S	62-5-F3S	62-6-F3S	1	BDM-28	BHM-28	BSM-28
63-2-F3S	63-3-F3S	63-4-F3S	63-5-F3S	63-6-F3S	1	BDM-28	BHM-28	BSM-28
62-2-F3S	62-3-F3S	62-4-F3S	62-5-F3S	62-6-F3S	1	BDM-29	BHM-29	BSM-29
63-2-F3S	63-3-F3S	63-4-F3S	63-5-F3S	63-6-F3S	1	BDM-29	BHM-29	BSM-29
64-2-F3S	64-3-F3S	64-4-F3S	64-5-F3S	64-6-F3S	1	BDM-29	BHM-29	BSM-29
63-2-F3S	63-3-F3S	63-4-F3S	63-5-F3S	63-6-F3S	1	BDM-30	BHM-30	BSM-30
64-2-F3S	64-3-F3S	64-4-F3S	64-5-F3S	64-6-F3S	1	BDM-30	BHM-30	BSM-30
65-2-F3S	65-3-F3S	65-4-F3S	65-5-F3S	65-6-F3S	1	BDM-30	BHM-30	BSM-30
66-2-F3S	66-3-F3S	66-4-F3S	66-5-F3S	66-6-F3S	1	BDM-30	BHM-30	BSM-30