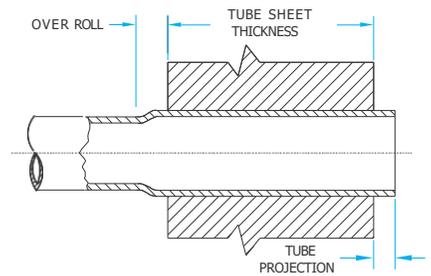


# A SERIES

7/8" - 4 1/2"  
O.D.

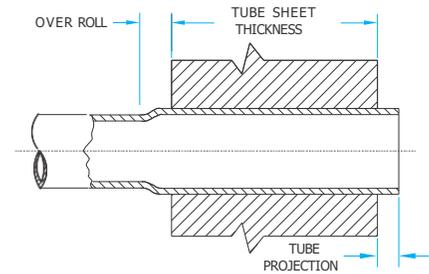
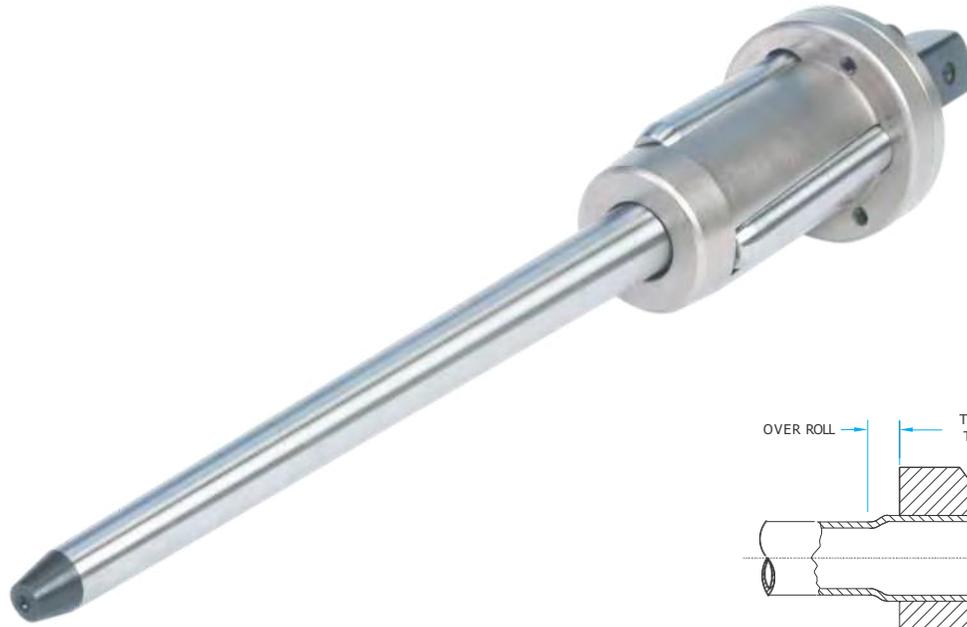
A SERIES



Spare Rollers Set Model Number Tube Sheet Thickness Range					Mandrel Square Drive Size inch	Spare Mandrel Model Number 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"		Drum Type	Header Type	Mandrel Set (No. Of Mandrels)
15-2-RS	15-3-RS	-	-	-	3/8	DM-11	-	-
15-2-RS	15-3-RS	-	-	-	3/8	DM-12	-	-
16-2-RS	16-3-RS	-	-	-	3/8	DM-12	-	-
20-2-RS	20-3-RS	-	-	-	3/8	DM-12	-	-
17-2-RS	17-3-RS	-	-	-	3/8	DM-13	-	-
18-2-RS	18-3-RS	-	-	-	3/8	DM-12	-	-
18-2-RS	18-3-RS	18-4-RS	-	-	3/8	DM-13	HM-13	SM-13 (2)
19-2-RS	19-3-RS	19-4-RS	-	-	3/8	DM-13	HM-13	SM-13 (2)
21-2-RS	21-3-RS	21-4-RS	-	-	3/8	DM-13	HM-13	SM-13 (2)
21-2-RS	21-3-RS	21-4-RS	-	-	3/8	DM-14	HM-14	SM-14 (2)
22-2-RS	22-3-RS	22-4-RS	-	-	3/8	DM-14	HM-14	SM-14 (2)
23-2-RS	23-3-RS	23-4-RS	-	-	1/2	DM-15	HM-15	SM-15 (2)
24-2-RS	24-3-RS	24-4-RS	-	-	1/2	DM-15	HM-15	SM-15 (2)
26-2-RS	26-3-RS	26-4-RS	-	-	1/2	DM-16	HM-16	SM-16 (2)
27-2-RS	27-3-RS	27-4-RS	-	-	1/2	DM-16	HM-16	SM-16 (2)
31-2-RS	31-3-RS	31-4-RS	-	-	1/2	DM-16	HM-16	SM-16 (2)
28-2-RS	28-3-RS	28-4-RS	-	-	1/2	DM-17	HM-17	SM-17 (2)
29-2-RS	29-3-RS	29-4-RS	-	-	1/2	DM-17	HM-17	SM-17 (2)
30-2-RS	30-3-RS	30-4-RS	30-5-RS	30-6-RS	1/2	DM-17	HM-17	SM-17 (2)
30-2-RS	30-3-RS	30-4-RS	30-5-RS	30-6-RS	1/2	DM-18	HM-18	SM-18 (2)
32-2-RS	32-3-RS	32-4-RS	32-5-RS	32-6-RS	1/2	DM-18	HM-18	SM-18 (2)
28-2-RS	28-3-RS	28-4-RS	28-5-RS	28-6-RS	1/2	DM-20	HM-20	SM-20 (2)
29-2-RS	29-3-RS	29-4-RS	29-5-RS	29-6-RS	1/2	DM-20	HM-20	SM-20 (2)
30-2-RS	30-3-RS	30-4-RS	30-5-RS	30-6-RS	1/2	DM-20	HM-20	SM-20 (2)
33-2-RS	33-3-RS	33-4-RS	33-5-RS	33-6-RS	1/2	DM-20	HM-20	SM-20 (2)
32-2-RS	32-3-RS	32-4-RS	32-5-RS	32-6-RS	1/2	DM-21	HM-21	SM-21 (2)
36-2-RS	36-3-RS	36-4-RS	36-5-RS	36-6-RS	1/2	DM-21	HM-21	SM-21 (2)
37-2-RS	37-3-RS	37-4-RS	37-5-RS	37-6-RS	1/2	DM-21	HM-21	SM-21 (2)
33-2-RS	33-3-RS	33-4-RS	33-5-RS	33-6-RS	3/4	DM-22	HM-22	SM-22 (3)
37-2-RS	37-3-RS	37-4-RS	37-5-RS	37-6-RS	3/4	DM-22	HM-22	SM-22 (3)
38-2-RS	38-3-RS	38-4-RS	38-5-RS	38-6-RS	3/4	DM-22	HM-22	SM-22 (3)
39-2-RS	39-3-RS	39-4-RS	39-5-RS	39-6-RS	3/4	DM-22	HM-22	SM-22 (3)
40-2-RS	40-3-RS	40-4-RS	40-5-RS	40-6-RS	3/4	DM-22	HM-22	SM-22 (3)
40-2-RS	40-3-RS	40-4-RS	40-5-RS	40-6-RS	3/4	DM-23	HM-23	SM-23 (3)
41-2-RS	41-3-RS	41-4-RS	41-5-RS	41-6-RS	3/4	DM-23	HM-23	SM-23 (3)
42-2-RS	42-3-RS	42-4-RS	42-5-RS	42-6-RS	3/4	DM-23	HM-23	SM-23 (3)

7/8" - 4 1/2"  
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A SERIES

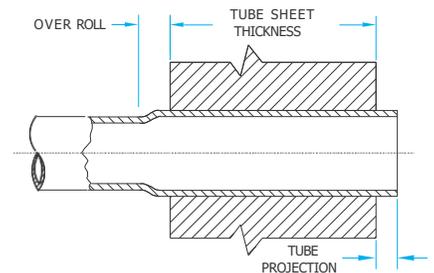


Tube O.D.	Tube Thickness		Tube O.D.	Tube Thickness		Minimum I.D. Tool Enters		Maximum Expansion Of Tool		Tube Expander Model Number Tube Sheet Thickness Range				
	inch	bwg		inch	bwg	inch	mm	inch	mm	inch	1/2" To 7/8"	3/4" To 1.1/8"	1.1/8" To 1.5/8"	1.5/8" To 2.1/8"
2.1/2	3	.259	2.1/4	10 & 11	.134 & .120	47.7	1.877	54.3	2.137	A-67/2	A-67/3	A-67/4	A-67/5	A-67/6
2.1/2	4 & 5	.238 & .220	2.1/4	12 & 13	.109 & .095	49.3	1.940	55.9	2.200	A-68/2	A-68/3	A-68/4	A-68/5	A-68/6
2.1/2	6 & 7	.203 & .180	2.1/4	14 - 16	.083 - .065	50.8	2.000	57.8	2.275	A-69/2	A-69/3	A-69/4	A-69/5	A-69/6
2.1/2	8 & 9	.165 & .148	2.3/4	3	.259	52.4	2.062	59.4	2.338	A-70/2	A-70/3	A-70/4	A-70/5	A-70/6
2.1/2	10 & 11	.134 & .120	2.3/4	4	.238	54.0	2.125	61.0	2.401	A-71/2	A-71/3	A-71/4	A-71/5	A-71/6
2.1/2	12 - 14	.109 - .083	2.3/4	5 & 6	.220 & .203	55.6	2.188	64.0	2.519	A-72/2	A-72/3	A-72/4	A-72/5	A-72/6
2.1/2	15 & 16	.072 & .065	2.3/4	7 & 8	.180 & .165	57.2	2.251	65.6	2.582	A-73/2	A-73/3	A-73/4	A-73/5	A-73/6
3	3	.259	2.3/4	9 & 10	.148 & .134	58.6	2.307	67.0	2.637	A-74/2	A-74/3	A-74/4	A-74/5	A-74/6
3	4	.238	2.3/4	11 - 13	.120 - .095	60.4	2.377	68.8	2.708	A-75/2	A-75/3	A-75/4	A-75/5	A-75/6
3	5 & 6	.220 & .203	2.3/4	14 - 16	.083 - .065	62.2	2.448	70.4	2.771	A-76/2	A-76/3	A-76/4	A-76/5	A-76/6
3	7 & 8	.180 & .165	-	-	-	63.6	2.503	72.0	2.834	A-77/2	A-77/3	A-77/4	A-77/5	A-77/6
3	9 & 10	.148 & .134	3.1/4	3	.259	65.0	2.559	73.4	2.889	A-78/2	A-78/3	A-78/4	A-78/5	A-78/6
3	11 - 13	.120 - .095	3.1/4	4	.238	66.6	2.622	75.0	2.952	A-79/2	A-79/3	A-79/4	A-79/5	A-79/6
3	14 - 16	.083 - .065	3.1/4	5 & 6	.220 & .203	68.3	2.688	76.9	3.027	A-80/2	A-80/3	A-80/4	A-80/5	A-80/6
3.1/2	2	.284	3.1/4	7 & 8	.180 & .165	69.9	2.751	78.5	3.090	A-81/2	A-81/3	A-81/4	A-81/5	A-81/6
3.1/2	3	.259	3.1/4	9 & 10	.148 & .134	71.5	2.814	80.1	3.153	A-82/2	A-82/3	A-82/4	A-82/5	A-82/6
3.1/2	4	.238	3.1/4	11 - 13	.120 - .095	73.1	2.877	81.7	3.216	A-83/2	A-83/3	A-83/4	A-83/5	A-83/6
3.1/2	5 & 6	.220 & .203	3.1/4	14 - 16	.083 - .065	74.6	2.937	84.2	3.314	A-84/2	A-84/3	A-84/4	A-84/5	A-84/6
3.1/2	7 & 8	.180 & .165	3.3/4	2	.084	76.2	3.000	85.5	3.366	A-85/2	A-85/3	A-85/4	A-85/5	A-85/6
3.1/2	9 - 10	.148 - .120	3.3/4	3	.259	77.8	3.062	87.4	3.440	A-86/2	A-86/3	A-86/4	A-86/5	A-86/6
3.1/2	12 - 16	.109 - .065	3.3/4	4	.238	79.4	3.125	89.0	3.503	A-87/2	A-87/3	A-87/4	A-87/5	A-87/6
			3.3/4	5 & 6	.220 & .203	81.0	3.188	90.6	3.566	A-88/2	A-88/3	A-88/4	A-88/5	A-88/6
4	2	.284	3.3/4	7 & 8	.180 & .165	82.6	3.251	92.2	3.629	A-89/2	A-89/3	A-89/4	A-89/5	A-89/6
4	3	.259	3.3/4	9 & 10	.148 & .134	84.2	3.314	93.8	3.629	A-90/2	A-90/3	A-90/4	A-90/5	A-90/6
4	4	.238	3.3/4	11 - 13	.120 - .095	85.8	3.377	96.2	3.787	A-91/2	A-91/3	A-91/4	A-91/5	A-91/6
4	5 & 6	.220 & .203	3.3/4	14 - 16	.083 - .065	87.4	3.440	97.8	3.850	A-92/2	A-92/3	A-92/4	A-92/5	A-92/6
4	7 & 8	.180 & .165	4.1/4	2		89.0	3.503	99.4	3.913	A-93/2	A-93/3	A-93/4	A-93/5	A-93/6
4	9 - 11	.148 - .120	4.1/4	3	.284	90.4	3.559	100.8	3.968	A-94/2	A-94/3	A-94/4	A-94/5	A-94/6
4	12 - 16	.109 - .065	4.1/4	4	.238	92.0	3.622	102.4	4.031	A-95/2	A-95/3	A-95/4	A-95/5	A-95/6
			4.1/4	5 & 6	.220 & .203	93.4	3.677	103.8	4.086	A-96/2	A-96/3	A-96/4	A-96/5	A-96/6
4.1/2	2	.284	4.1/4	7 & 8	.180 & .165	95.0	3.740	105.4	4.149	A-97/2	A-97/3	A-97/4	A-97/5	A-97/6
4.1/2	3	.259	4.1/4	9 - 11	.148 - .120	96.6	3.803	107.0	4.212	A-98/2	A-98/3	A-98/4	A-98/5	A-98/6
4.1/2	4 & 5	.238 & .220	4.1/4	11 - 13	.120 - .095	98.2	3.866	108.6	4.275	A-99/2	A-99/3	A-99/4	A-99/5	A-99/6
4.1/2	6 & 7	.203 & .180	-	-	-	101.2	3.984	110.0	4.330	A-100/2	A-100/3	A-100/4	A-100/5	A-100/6
4.1/2	8 & 9	.165 & .148	-	-	-	102.8	4.047	111.6	4.393	A-101/2	A-101/3	A-101/4	A-101/5	A-101/6
4.1/2	10 - 12	.134 - .109	-	-	-	104.4	4.110	113.2	4.456	A-102/2	A-102/3	A-102/4	A-102/5	A-102/6

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Spare Rollers Set Model Number Tube Sheet Thickness Range					Mandrel Square Drive Size inch	Spare Mandrel Model Number 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"		Drum Type	Header Type	Mandrel Set (No. Of Mandrels)
43-2-RS	43-3-RS	43-4-RS	43-5-RS	43-6-RS	3/4	DM-23	HM-23	SM-23 (3)
44-2-RS	44-3-RS	44-4-RS	44-5-RS	44-6-RS	3/4	DM-23	HM-23	SM-23 (3)
43-2-RS	43-3-RS	43-4-RS	43-5-RS	43-6-RS	3/4	DM-24	HM-24	SM-24 (3)
44-2-RS	44-3-RS	44-4-RS	44-5-RS	44-6-RS	3/4	DM-24	HM-24	SM-24 (3)
45-2-RS	45-3-RS	45-4-RS	45-5-RS	45-6-RS	3/4	DM-24	HM-24	SM-24 (3)
47-2-RS	47-3-RS	47-4-RS	47-5-RS	47-6-RS	3/4	DM-24	HM-24	SM-24 (3)
46-2-RS	46-3-RS	46-4-RS	46-5-RS	46-6-RS	1	DM-25	HM-25	SM-25 (3)
47-2-RS	47-3-RS	47-4-RS	47-5-RS	47-6-RS	1	DM-25	HM-25	SM-25 (3)
48-2-RS	48-3-RS	48-4-RS	48-5-RS	48-6-RS	1	DM-25	HM-25	SM-25 (3)
49-2-RS	49-3-RS	49-4-RS	49-5-RS	49-6-RS	1	DM-25	HM-25	SM-25 (3)
50-2-RS	50-3-RS	50-4-RS	50-5-RS	50-6-RS	1	DM-25	HM-25	SM-25 (3)
51-2-RS	51-3-RS	51-4-RS	51-5-RS	51-6-RS	1	DM-25	HM-25	SM-25 (3)
52-2-RS	52-3-RS	52-4-RS	52-5-RS	52-6-RS	1	DM-25	HM-25	SM-25 (3)
51-2-RS	51-3-RS	51-4-RS	51-5-RS	51-6-RS	1	DM-26	HM-26	SM-26 (4)
52-2-RS	52-3-RS	52-4-RS	52-5-RS	52-6-RS	1	DM-26	HM-26	SM-26 (4)
53-2-RS	53-3-RS	53-4-RS	53-5-RS	53-6-RS	1	DM-26	HM-26	SM-26 (4)
54-2-RS	54-3-RS	54-4-RS	54-5-RS	54-6-RS	1	DM-26	HM-26	SM-26 (4)
54-2-RS	54-3-RS	54-4-RS	54-5-RS	54-6-RS	1	DM-27	HM-27	SM-27 (4)
55-2-RS	55-3-RS	55-4-RS	55-5-RS	55-6-RS	1	DM-27	HM-27	SM-27 (4)
56-2-RS	56-3-RS	56-4-RS	56-5-RS	56-6-RS	1	DM-27	HM-27	SM-27 (4)
57-2-RS	57-3-RS	57-4-RS	57-5-RS	57-6-RS	1	DM-27	HM-27	SM-27 (4)
58-2-RS	58-3-RS	58-4-RS	58-5-RS	58-6-RS	1	DM-27	HM-27	SM-27 (4)
59-2-RS	59-3-RS	59-4-RS	59-5-RS	59-6-RS	1	DM-27	HM-27	SM-27 (4)
60-2-RS	60-3-RS	60-4-RS	60-5-RS	60-6-RS	1	DM-27	HM-27	SM-27 (4)
59-2-RS	59-3-RS	59-4-RS	59-5-RS	59-6-RS	1	DM-28	HM-28	SM-28 (4)
60-2-RS	60-3-RS	60-4-RS	60-5-RS	60-6-RS	1	DM-28	HM-28	SM-28 (4)
61-2-RS	61-3-RS	61-4-RS	61-5-RS	61-6-RS	1	DM-28	HM-28	SM-28 (4)
62-2-RS	62-3-RS	62-4-RS	62-5-RS	62-6-RS	1	DM-28	HM-28	SM-28 (4)
63-2-RS	63-3-RS	63-4-RS	63-5-RS	63-6-RS	1	DM-28	HM-28	SM-28 (4)
62-2-RS	62-3-RS	62-4-RS	62-5-RS	62-6-RS	1	DM-29	HM-29	SM-29 (4)
63-2-RS	63-3-RS	63-4-RS	63-5-RS	63-6-RS	1	DM-29	HM-29	SM-29 (4)
64-2-RS	64-3-RS	64-4-RS	64-5-RS	64-6-RS	1	DM-29	HM-29	SM-29 (4)
63-2-RS	63-3-RS	63-4-RS	63-5-RS	63-6-RS	1	DM-30	HM-30	SM-30 (4)
64-2-RS	64-3-RS	64-4-RS	64-5-RS	64-6-RS	1	DM-30	HM-30	SM-30 (4)
65-2-RS	65-3-RS	65-4-RS	65-5-RS	65-6-RS	1	DM-30	HM-30	SM-30 (4)
66-2-RS	66-3-RS	66-4-RS	66-5-RS	66-6-RS	1	DM-30	HM-30	SM-30 (4)