

1200-5 Five Roll Series

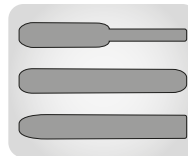
Tools for expanding tubes in condensers, chillers, heat exchangers, fin fan coolers, feedwater heaters and surface condensers. As a standard expanders are supplied with STC collar but for 5-roll versions, especially for 19 to 22 GA tubes, TWTC thin wall thrust collar is recommended. Available in regular and long reaches (some diameters, up to 5 m) and as the 3-rolls version.



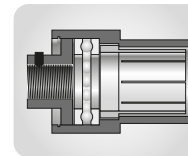
WORKING RANGE

TUBE ID	TUBE OD	TUBE SHEET
14,83 - 36,32 MM	19,0 - 38,1 MM	See table below
0,584 - 1,430"	1/2" to 1-1/2"	

OPTIONAL SPARES AND ACCESSORIES



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TUBE SHEET THICKNESS

ROLLS	REACH	TUBE SHEET THICKNESS	
		[INCH]	[MM]
1-1/2" 38,1	STD	1 1/2 - 6"	38,1 - 152,4 mm
	A	1 1/2 - 8"	38,1 - 203,2 mm
	B	1 1/2 - 10"	38,1 - 254,0 mm
	C	1 1/2 - 12"	38,1 - 304,8 mm
2-1/4" 57,1	STD	2 1/4 - 6 3/4"	57,1 - 171,4 mm
	A	2 1/4 - 8 3/4"	57,1 - 222,2 mm
	B	2 1/4 - 10 3/4"	57,1 - 273,0 mm
	C	2 1/4 - 12 3/4"	57,1 - 323,8 mm

NOTE!

Please note that expanders are equipped with "UNIVERSAL NOSE PIECE" which shorten the expansion reach by 3/4". In order to receive full expansion reach, expander has to be equipped with "SHORT NOSE PIECE".

TUBE OD		TUBE GAUGE		TUBE ID		EXPANSION RANGE				TUBE SHEET THICKNESS				MANDREL	MANDREL SQUARE		PNEUMATIC MOTOR *	ELECTRIC MOTOR *	
										1/2" TO 6"		2-1/4" TO 6-3/4"							
[INCH]	[MM]	[BWG]	[INCH]	[MM]	[INCH]	[MM]	MIN	MAX	MIN	MAX	TOOL NO.	ROLL NO.	TOOL NO.	ROLL NO.	[INCH]	[MM]			
5/8	15,8	17	0,058	1,47	0,509	12,93	0,499	0,564	12,67	14,33	1215-5	R-4-5	1216-5	R-4-A-5	M-1216-5	3/8	9,5	K50-1250	TES3000 G1000 or TESMini2 DUO
		18	0,049	1,24	0,527	13,39	0,517	0,572	13,13	14,53	1217-5	R-4-5	1218-5	R-4-A-5	M-59	3/8	9,5		
		19	0,042	1,07	0,541	13,74	0,522	0,582	13,26	14,78	1219-5	R-4-5	1220-5	R-4-A-5	M-1220-5	3/8	9,5		
		20	0,035	0,89	0,555	14,10	0,536	0,596	13,61	15,14	1219-5[S]	R-4-5	1220-5[S]	R-4-A-5	M-1220-5[S]	3/8	9,5		
		21	0,032	0,81	0,561	14,25	0,536	0,596	13,61	15,14	1219-5[S]	R-4-5	1220-5[S]	R-4-A-5	M-1220-5[S]	3/8	9,5		
		22	0,028	0,71	0,569	14,45	0,536	0,596	13,61	15,14	1219-5[S]	R-4-5	1220-5[S]	R-4-A-5	M-1220-5[S]	3/8	9,5		
3/4	19,0	13	0,095	2,41	0,560	14,22	0,550	0,615	13,97	15,62	1221-5	R-5-5	1222-5	R-5-A-5	M-1222-5	3/8	9,5	K50-600	TES3000 G1450 or TESMini2 ES2
		14	0,083	2,11	0,584	14,83	0,574	0,639	14,58	16,23	1223-5	R-6-5	1224-5	R-6-A-5	M-1224-5	3/8	9,5		
		15	0,072	1,83	0,606	15,39	0,590	0,661	14,99	16,79	1225-5	R-7-5	1226-5	R-7-A-5	M-1226-5	3/8	9,5		
3/4	19,0	16	0,065	1,65	0,620	15,75	0,605	0,685	15,37	17,40	1227-5	R-7-5	1228-5	R-7-A-5	M-63	3/8	9,5	K50-1250	TES3000 G1000 or TESMini2 DUO
		17	0,058	1,47	0,634	16,10	0,619	0,699	15,72	17,75	1229-5	R-7-5	1230-5	R-7-A-5	M-1230-5	3/8	9,5		
		18	0,049	1,24	0,652	16,56	0,619	0,699	15,72	17,75	1229-5	R-7-5	1230-5	R-7-A-5	M-1230-5	3/8	9,5		
		19	0,042	1,07	0,666	16,92	0,642	0,722	16,31	18,34	1231-5	R-9-5	1232-5	R-9-A-5	M-63	3/8	9,5		
		20	0,035	0,89	0,680	17,27	0,642	0,722	16,31	18,34	1231-5	R-9-5	1232-5	R-9-A-5	M-63	3/8	9,5		
		21	0,032	0,81	0,686	17,42	0,642	0,722	16,31	18,34	1231-5	R-9-5	1232-5	R-9-A-5	M-63	3/8	9,5		
7/8	22,2	22	0,028	0,71	0,694	17,63	0,642	0,722	16,31	18,34	1231-5	R-9-5	1232-5	R-9-A-5	M-63	3/8	9,5	K50-600	TES3000 G1450 or TESMini2 ES2
		13	0,095	2,41	0,685	17,40	0,670	0,750	17,02	19,05	1233-5	R-9-5	1234-5	R-9-A-5	M-64-3/8	3/8	9,5		
		14	0,083	2,11	0,709	18,01	0,685	0,774	17,40	19,66	1235-5	R-10-5	1236-5	R-10-A-5	M-65	3/8	9,5		
		16	0,065	1,65	0,745	18,92	0,726	0,815	18,44	20,70	1239-5	R-11-5	1240-5	R-11-A-5	M-1240-5	3/8	9,5		
		17	0,058	1,47	0,759	19,28	0,740	0,829	18,80	21,06	1243-5	R-11-5	1244-5	R-11-A-5	M-67-3/8	3/8	9,5		
		18	0,049	1,24	0,777	19,74	0,740	0,829	18,80	21,06	1243-5	R-11-5	1244-5	R-11-A-5	M-67-3/8	3/8	9,5		
7/8	22,2	19	0,042	1,07	0,791	20,09	0,763	0,852	19,38	21,64	1245-5	R-11-5	1246-5	R-11-A-5	M-68-3/8	3/8	9,5	K50-1250	TES3000 G1000 or TESMini2 DUO
		20	0,035	0,89	0,805	20,45	0,763	0,852	19,38	21,64	1245-5	R-11-5	1246-5	R-11-A-5	M-68-3/8	3/8	9,5		
		21	0,032	0,81	0,811	20,60	0,763	0,852	19,38	21,64	1245-5	R-11-5	1246-5	R-11-A-5	M-68-3/8	3/8	9,5		
		22	0,028	0,71	0,819	20,80	0,763	0,852	19,38	21,64	1245-5	R-11-5	1246-5	R-11-A-5	M-68-3/8	3/8	9,5		
		21	0,032	0,81	0,811	20,60	0,763	0,852	19,38	21,64	1245-5	R-11-5	1246-5	R-11-A-5	M-68-3/8	3/8	9,5		
		22	0,028	0,71	0,819	20,80	0,763	0,852	19,38	21,64	1245-5	R-11-5	1246-5	R-11-A-5	M-68-3/8	3/8	9,5		

1200-5 Five Roll Series

TUBE OD		TUBE GAUGE		TUBE ID		EXPANSION RANGE				TUBE SHEET THICKNESS				MANDREL		MANDREL SQUARE		PNEUMATIC MOTOR *	ELECTRIC MOTOR *
										1/2" TO 6"		2-1/4" TO 6-3/4"							
[INCH]	[MM]	[BWG]	[INCH]	[MM]	[INCH]	[MM]	MIN	MAX	MIN	MAX	TOOL NO.	ROLL NO.	TOOL NO.	ROLL NO.	[INCH]	[MM]			
1	25,4	12	0,109	2,77	0,782	19,86	0,763	0,852	19,38	21,64	1245-5	R-11-5	1246-5	R-11-A-5	M-68-3/8	3/8	9,5	K50-600	TES3000 G1450 or TESMini2 ES2
		13	0,095	2,41	0,810	20,57	0,791	0,880	20,09	22,35	1247-5	R-13-5	1248-5	R-13-A-5	M-68-3/8	3/8	9,5		
		14	0,083	2,11	0,834	21,18	0,810	0,909	20,57	23,09	1249-5	R-12-5	1250-5	R-12-A-5	M-1250-5	3/8	9,5		
		15	0,072	1,83	0,856	21,74	0,837	0,936	21,26	23,77	1251-5	R-14-5	1252-5	R-14-A-5	M-1252-5	3/8	9,5		
		16	0,065	1,65	0,87	22,10	0,837	0,936	21,26	23,77	1251-5	R-14-5	1252-5	R-14-A-5	M-1252-5	3/8	9,5		
		17	0,058	1,47	0,884	22,45	0,865	0,964	21,97	24,49	1255-5	R-13-5	1256-5	R-13-A-5	M-1256-5	3/8	9,5		
		18	0,049	1,24	0,902	22,91	0,865	0,964	21,97	24,49	1255-5	R-13-5	1256-5	R-13-A-5	M-1256-5	3/8	9,5	K50-1250	TES3000 G1000 or TESMini2 DU0
		19	0,042	1,07	0,916	23,27	0,865	0,964	21,97	24,49	1255-5	R-13-5	1256-5	R-13-A-5	M-1256-5	3/8	9,5		
		20	0,035	0,89	0,93	23,62	0,865	0,964	21,97	24,49	1255-5	R-13-5	1256-5	R-13-A-5	M-1256-5	3/8	9,5		
		21	0,032	0,81	0,936	23,77	0,883	0,982	22,43	24,94	1257-5	R-15-5	1258-5	R-15-A-5	M-71-3/8	3/8	9,5		
		22	0,028	0,71	0,944	23,98	0,883	0,982	22,43	24,94	1257-5	R-15-5	1258-5	R-15-A-5	M-71-3/8	3/8	9,5		
		12	0,109	2,77	0,907	23,04	0,883	0,982	22,43	24,94	1257-5	R-15-5	1258-5	R-15-A-5	M-71-3/8	3/8	9,5		
13	0,095	2,41	0,935	23,75	0,916	1,015	23,27	25,78	1259-5	R-16-5	1260-5	R-16-A-5	M-1260-5	1/2	12,7				
14	0,083	2,11	0,959	24,36	0,935	1,044	23,75	26,52	1261-5	R-17-5	1262-5	R-17-A-5	M-1262-5	1/2	12,7	K60-400	TES3000 G1000 or TESMini2 DU1		
15	0,072	1,83	1,106	28,09	1,087	1,196	27,61	30,38	1275-5	R-21-5	1276-5	R-21-A-5	M-1276-5	1/2	12,7				
16	0,065	1,65	1,120	28,45	1,087	1,196	27,61	30,38	1275-5	R-21-5	1276-5	R-21-A-5	M-1276-5	1/2	12,7				
17	0,058	1,47	1,134	28,80	1,115	1,231	28,32	31,27	1279-5	R-21-5	1280-5	R-21-A-5	M-1280-5	1/2	12,7				
18	0,049	1,24	1,152	29,26	1,115	1,231	28,32	31,27	1279-5	R-21-5	1280-5	R-21-A-5	M-1280-5	1/2	12,7				
19	0,042	1,07	1,166	29,62	1,115	1,231	28,32	31,27	1279-5	R-21-5	1280-5	R-21-A-5	M-1280-5	1/2	12,7				
20	0,035	0,89	1,180	29,97	1,115	1,231	28,32	31,27	1279-5	R-21-5	1280-5	R-21-A-5	M-1280-5	1/2	12,7				
21	0,032	0,81	1,186	30,12	1,115	1,231	28,32	31,27	1279-5	R-21-5	1280-5	R-21-A-5	M-1280-5	1/2	12,7				
22	0,028	0,71	1,194	30,33	1,115	1,231	28,32	31,27	1279-5	R-21-5	1280-5	R-21-A-5	M-1280-5	1/2	12,7	K60-250			
12	0,109	2,77	1,157	29,39	1,133	1,242	28,78	31,55	1281-5	R-21-5	1282-5	R-21-A-5	M-1282-5	1/2	12,7				
14	0,083	2,11	1,209	30,71	1,179	1,294	29,95	32,87	1285-5	R-23-5	1286-5	R-23-A-5	M-1282-5	1/2	12,7	K60-900	TES3000 G1000 or TESMini2 ES2		
17	0,058	1,47	1,384	35,15	1,331	1,472	33,81	37,39	1299-5	R-29-5	1300-5	R-29-A-5	M-1300-5	1/2	12,7				
18	0,049	1,24	1,402	35,61	1,331	1,472	33,81	37,39	1299-5	R-29-5	1300-5	R-29-A-5	M-1300-5	1/2	12,7				
19	0,042	1,07	1,416	35,97	1,331	1,472	33,81	37,39	1299-5	R-29-5	1300-5	R-29-A-5	M-1300-5	1/2	12,7				
20	0,035	0,89	1,430	36,32	1,331	1,472	33,81	37,39	1299-5	R-29-5	1300-5	R-29-A-5	M-1300-5	1/2	12,7				
21	0,032	0,81	1,436	36,47	1,331	1,472	33,81	37,39	1299-5	R-29-5	1300-5	R-29-A-5	M-1300-5	1/2	12,7				
22	0,028	0,71	1,444	36,68	1,331	1,472	33,81	37,39	1299-5	R-29-5	1300-5	R-29-A-5	M-1300-5	1/2	12,7				

* Motor recommendation applies only to most popular cases with a standard percentage of the wall reduction. The recommendation can be different for thicker tube sheet, harder and exotic metal tube and a higher percentage of wall reduction.

RECOMMENDATION

Recommended order of step by step expanding in a thick tube sheets in order to avoid tension between both tube sheets after rolling.

