

## 1200-5 Five roll Series Condenser Tube Expanders



### BASIC INFO

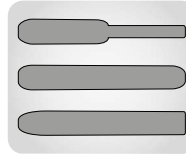
Tools for expanding tubes in condensers, chillers, heat exchangers, fin fan coolers, feedwater heaters and surface condensers. As a standard expanders are supplied with STC collar but for 5-roll versions, especially for 19 to 22 GA tubes, TWTC thin wall thrust collar is recommended.

Expanders are available in regular and long reaches (some diameters, up to 5 m) and as the 3-rolls version. Many different shaped rolls are available.

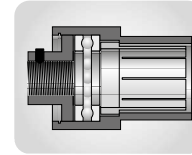
### WORKING RANGE

| 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"<br>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"<br>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]  | [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 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               |                  |                               |
| 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            |      |                   |                  |                               |

| 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]  | [INCH]        | [MM]          | [INCH]               | [MM]            | MIN              | MAX             |                 |         |  |          |  |                  |
|         |       |            |       |       |         |       |                 |       |               |               |                      |                 |                  |                 |                 |         |  |          |  |                  |
| 7/8     | 22,2  | 13         | 0,095 | 2,41  | 0,685   | 17,40 | 0,670           | 0,750 | 17,02         | 19,05         | <b>1233-5</b>        | <b>R-9-5</b>    | <b>1234-5</b>    | <b>R-9-A-5</b>  | <b>M-64-3/8</b> | 3/8     | 9,5                                    | K50-600  | TES3000<br>G1450 or<br>TESMini2<br>ES2 |                  |
|         |       | 14         | 0,083 | 2,11  | 0,709   | 18,01 | 0,685           | 0,774 | 17,40         | 19,66         | <b>1235-5</b>        | <b>R-10-5</b>   | <b>1236-5</b>    | <b>R-10-A-5</b> | <b>M-65</b>     | 3/8     | 9,5                                    |          |  |                  |
|         |       | 16         | 0,065 | 1,65  | 0,745   | 18,92 | 0,726           | 0,815 | 18,44         | 20,70         | <b>1239-5</b>        | <b>R-11-5</b>   | <b>1240-5</b>    | <b>R-11-A-5</b> | <b>M-1240-5</b> | 3/8     | 9,5                                    |          |  |                  |
|         |       | 17         | 0,058 | 1,47  | 0,759   | 19,28 | 0,740           | 0,829 | 18,80         | 21,06         | <b>1243-5</b>        | <b>R-11-5</b>   | <b>1244-5</b>    | <b>R-11-A-5</b> | <b>M-67-3/8</b> | 3/8     | 9,5                                    |          |  |                  |
|         |       | 18         | 0,049 | 1,24  | 0,777   | 19,74 | 0,740           | 0,829 | 18,80         | 21,06         | <b>1243-5</b>        | <b>R-11-5</b>   | <b>1244-5</b>    | <b>R-11-A-5</b> | <b>M-67-3/8</b> | 3/8     | 9,5                                    | K50-1250 | TES3000<br>G1000 or<br>TESMini2<br>DUO |                  |
|         |       | 19         | 0,042 | 1,07  | 0,791   | 20,09 | 0,763           | 0,852 | 19,38         | 21,64         | <b>1245-5</b>        | <b>R-11-5</b>   | <b>1246-5</b>    | <b>R-11-A-5</b> | <b>M-68-3/8</b> | 3/8     | 9,5                                    |          |  |                  |
|         |       | 20         | 0,035 | 0,89  | 0,805   | 20,45 | 0,763           | 0,852 | 19,38         | 21,64         | <b>1245-5</b>        | <b>R-11-5</b>   | <b>1246-5</b>    | <b>R-11-A-5</b> | <b>M-68-3/8</b> | 3/8     | 9,5                                    |          |  |                  |
|         |       | 21         | 0,032 | 0,81  | 0,811   | 20,60 | 0,763           | 0,852 | 19,38         | 21,64         | <b>1245-5</b>        | <b>R-11-5</b>   | <b>1246-5</b>    | <b>R-11-A-5</b> | <b>M-68-3/8</b> | 3/8     | 9,5                                    |          |  |                  |
| 22      | 0,028 | 0,71       | 0,819 | 20,80 | 0,763   | 0,852 | 19,38           | 21,64 | <b>1245-5</b> | <b>R-11-5</b> | <b>1246-5</b>        | <b>R-11-A-5</b> | <b>M-68-3/8</b>  | 3/8             | 9,5             |         |  |          |  |                  |
| 12      | 0,109 | 2,77       | 0,782 | 19,86 | 0,763   | 0,852 | 19,38           | 21,64 | <b>1245-5</b> | <b>R-11-5</b> | <b>1246-5</b>        | <b>R-11-A-5</b> | <b>M-68-3/8</b>  | 3/8             | 9,5             |         |  |          |  |                  |
| 1       | 25,4  | 12         | 0,095 | 2,41  | 0,810   | 20,57 | 0,791           | 0,880 | 20,09         | 22,35         | <b>1247-5</b>        | <b>R-13-5</b>   | <b>1248-5</b>    | <b>R-13-A-5</b> | <b>M-68-3/8</b> | 3/8     | 9,5                                    | K50-600  | TES3000<br>G1450 or<br>TESMini2<br>ES2 |                  |
|         |       | 13         | 0,083 | 2,11  | 0,834   | 21,18 | 0,810           | 0,909 | 20,57         | 23,09         | <b>1249-5</b>        | <b>R-12-5</b>   | <b>1250-5</b>    | <b>R-12-A-5</b> | <b>M-1250-5</b> | 3/8     | 9,5                                    |          |  |                  |
|         |       | 15         | 0,072 | 1,83  | 0,856   | 21,74 | 0,837           | 0,936 | 21,26         | 23,77         | <b>1251-5</b>        | <b>R-14-5</b>   | <b>1252-5</b>    | <b>R-14-A-5</b> | <b>M-1252-5</b> | 3/8     | 9,5                                    |          |  |                  |
|         |       | 16         | 0,065 | 1,65  | 0,87    | 22,10 | 0,837           | 0,936 | 21,26         | 23,77         | <b>1251-5</b>        | <b>R-14-5</b>   | <b>1252-5</b>    | <b>R-14-A-5</b> | <b>M-1252-5</b> | 3/8     | 9,5                                    |          |  |                  |
|         |       | 17         | 0,058 | 1,47  | 0,884   | 22,45 | 0,865           | 0,964 | 21,97         | 24,49         | <b>1255-5</b>        | <b>R-13-5</b>   | <b>1256-5</b>    | <b>R-13-A-5</b> | <b>M-1256-5</b> | 3/8     | 9,5                                    | K50-1250 | TES3000<br>G1000 or<br>TESMini2<br>DUO |                  |
|         |       | 18         | 0,049 | 1,24  | 0,902   | 22,91 | 0,865           | 0,964 | 21,97         | 24,49         | <b>1255-5</b>        | <b>R-13-5</b>   | <b>1256-5</b>    | <b>R-13-A-5</b> | <b>M-1256-5</b> | 3/8     | 9,5                                    |          |  |                  |
|         |       | 19         | 0,042 | 1,07  | 0,916   | 23,27 | 0,865           | 0,964 | 21,97         | 24,49         | <b>1255-5</b>        | <b>R-13-5</b>   | <b>1256-5</b>    | <b>R-13-A-5</b> | <b>M-1256-5</b> | 3/8     | 9,5                                    |          |  |                  |
|         |       | 20         | 0,035 | 0,89  | 0,93    | 23,62 | 0,865           | 0,964 | 21,97         | 24,49         | <b>1255-5</b>        | <b>R-13-5</b>   | <b>1256-5</b>    | <b>R-13-A-5</b> | <b>M-1256-5</b> | 3/8     | 9,5                                    |          |  |                  |
| 21      | 0,032 | 0,81       | 0,936 | 23,77 | 0,883   | 0,982 | 22,43           | 24,94 | <b>1257-5</b> | <b>R-15-5</b> | <b>1258-5</b>        | <b>R-15-A-5</b> | <b>M-71-3/8</b>  | 3/8             | 9,5             |         |  |          |  |                  |
| 22      | 0,028 | 0,71       | 0,944 | 23,98 | 0,883   | 0,982 | 22,43           | 24,94 | <b>1257-5</b> | <b>R-15-5</b> | <b>1258-5</b>        | <b>R-15-A-5</b> | <b>M-71-3/8</b>  | 3/8             | 9,5             |         |  |          |  |                  |
| 12      | 0,109 | 2,77       | 0,907 | 23,04 | 0,883   | 0,982 | 22,43           | 24,94 | <b>1257-5</b> | <b>R-15-5</b> | <b>1258-5</b>        | <b>R-15-A-5</b> | <b>M-71-3/8</b>  | 3/8             | 9,5             |         |  |          |  |                  |
| 1-1/8   | 28,5  | 12         | 0,095 | 2,41  | 0,935   | 23,75 | 0,916           | 1,015 | 23,27         | 25,78         | <b>1259-5</b>        | <b>R-16-5</b>   | <b>1260-5</b>    | <b>R-16-A-5</b> | <b>M-1260-5</b> | 1/2     | 12,7                                   | K60-400  | TES3000<br>G1000 or<br>TESMini2<br>DU1 |                  |
|         |       | 13         | 0,083 | 2,11  | 0,959   | 24,36 | 0,935           | 1,044 | 23,75         | 26,52         | <b>1261-5</b>        | <b>R-17-5</b>   | <b>1262-5</b>    | <b>R-17-A-5</b> | <b>M-1262-5</b> | 1/2     | 12,7                                   |          |  |                  |
|         |       | 14         | 0,072 | 1,83  | 1,106   | 28,09 | 1,087           | 1,196 | 27,61         | 30,38         | <b>1275-5</b>        | <b>R-21-5</b>   | <b>1276-5</b>    | <b>R-21-A-5</b> | <b>M-1276-5</b> | 1/2     | 12,7                                   |          |  |                  |
| 15      | 0,065 | 1,65       | 1,120 | 28,45 | 1,087   | 1,196 | 27,61           | 30,38 | <b>1275-5</b> | <b>R-21-5</b> | <b>1276-5</b>        | <b>R-21-A-5</b> | <b>M-1276-5</b>  | 1/2             | 12,7            | K60-400 | TES3000<br>G1000 or<br>TESMini2<br>DU1 |          |  |                  |
| 16      | 0,058 | 1,47       | 1,134 | 28,80 | 1,115   | 1,231 | 28,32           | 31,27 | <b>1279-5</b> | <b>R-21-5</b> | <b>1280-5</b>        | <b>R-21-A-5</b> | <b>M-1280-5</b>  | 1/2             | 12,7            |         |  |          |  |                  |
| 17      | 0,049 | 1,24       | 1,152 | 29,26 | 1,115   | 1,231 | 28,32           | 31,27 | <b>1279-5</b> | <b>R-21-5</b> | <b>1280-5</b>        | <b>R-21-A-5</b> | <b>M-1280-5</b>  | 1/2             | 12,7            |         |  |          |  |                  |
| 18      | 0,042 | 1,07       | 1,166 | 29,62 | 1,115   | 1,231 | 28,32           | 31,27 | <b>1279-5</b> | <b>R-21-5</b> | <b>1280-5</b>        | <b>R-21-A-5</b> | <b>M-1280-5</b>  | 1/2             | 12,7            |         |  |          |  |                  |
| 19      | 0,035 | 0,89       | 1,180 | 29,97 | 1,115   | 1,231 | 28,32           | 31,27 | <b>1279-5</b> | <b>R-21-5</b> | <b>1280-5</b>        | <b>R-21-A-5</b> | <b>M-1280-5</b>  | 1/2             | 12,7            |         |  |          |  |                  |
| 20      | 0,032 | 0,81       | 1,186 | 30,12 | 1,115   | 1,231 | 28,32           | 31,27 | <b>1279-5</b> | <b>R-21-5</b> | <b>1280-5</b>        | <b>R-21-A-5</b> | <b>M-1280-5</b>  | 1/2             | 12,7            |         |  |          |  |                  |
| 21      | 0,028 | 0,71       | 1,194 | 30,33 | 1,115   | 1,231 | 28,32           | 31,27 | <b>1279-5</b> | <b>R-21-5</b> | <b>1280-5</b>        | <b>R-21-A-5</b> | <b>M-1280-5</b>  | 1/2             | 12,7            |         |  |          |  |                  |
| 22      | 0,028 | 0,71       | 1,194 | 30,33 | 1,115   | 1,231 | 28,32           | 31,27 | <b>1279-5</b> | <b>R-21-5</b> | <b>1280-5</b>        | <b>R-21-A-5</b> | <b>M-1280-5</b>  | 1/2             | 12,7            |         |  |          |  |                  |
| 1-3/8   | 34,9  | 12         | 0,109 | 2,77  | 1,157   | 29,39 | 1,133           | 1,242 | 28,78         | 31,55         | <b>1281-5</b>        | <b>R-21-5</b>   | <b>1282-5</b>    | <b>R-21-A-5</b> | <b>M-1282-5</b> | 1/2     | 12,7                                   | K60-250  |  |                  |
|         |       | 14         | 0,083 | 2,11  | 1,209   | 30,71 | 1,179           | 1,294 | 29,95         | 32,87         | <b>1285-5</b>        | <b>R-23-5</b>   | <b>1286-5</b>    | <b>R-23-A-5</b> | <b>M-1282-5</b> | 1/2     | 12,7                                   |          |  |                  |
| 1-1/2   | 38,1  | 17         | 0,058 | 1,47  | 1,384   | 35,15 | 1,331           | 1,472 | 33,81         | 37,39         | <b>1299-5</b>        | <b>R-29-5</b>   | <b>1300-5</b>    | <b>R-29-A-5</b> | <b>M-1300-5</b> | 1/2     | 12,7                                   | K60-900  | TES3000<br>G1000 or<br>TESMini2<br>ES2 |                  |
|         |       | 18         | 0,049 | 1,24  | 1,402   | 35,61 | 1,331           | 1,472 | 33,81         | 37,39         | <b>1299-5</b>        | <b>R-29-5</b>   | <b>1300-5</b>    | <b>R-29-A-5</b> | <b>M-1300-5</b> | 1/2     | 12,7                                   |          |  |                  |
|         |       | 19         | 0,042 | 1,07  | 1,416   | 35,97 | 1,331           | 1,472 | 33,81         | 37,39         | <b>1299-5</b>        | <b>R-29-5</b>   | <b>1300-5</b>    | <b>R-29-A-5</b> | <b>M-1300-5</b> | 1/2     | 12,7                                   |          |  |                  |
|         |       | 20         | 0,035 | 0,89  | 1,430   | 36,32 | 1,331           | 1,472 | 33,81         | 37,39         | <b>1299-5</b>        | <b>R-29-5</b>   | <b>1300-5</b>    | <b>R-29-A-5</b> | <b>M-1300-5</b> | 1/2     | 12,7                                   |          |  |                  |
|         |       | 21         | 0,032 | 0,81  | 1,436   | 36,47 | 1,331           | 1,472 | 33,81         | 37,39         | <b>1299-5</b>        | <b>R-29-5</b>   | <b>1300-5</b>    | <b>R-29-A-5</b> | <b>M-1300-5</b> | 1/2     | 12,7                                   |          |  |                  |
|         |       | 22         | 0,028 | 0,71  | 1,444   | 36,68 | 1,331           | 1,472 | 33,81         | 37,39         | <b>1299-5</b>        | <b>R-29-5</b>   | <b>1300-5</b>    | <b>R-29-A-5</b> | <b>M-1300-5</b> | 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.