



## The world standard in tube expanders

Airetool heat exchanger and condenser expanders have long been recognized as the standard to which all other brands are measured. The extra time spent manufacturing our expanders results in consistent performance and incredible durability that OEM Heat Exchanger Manufacturers expect.

## Tube Expanders

Tube expanding is the art of cold working the ends of tubes into intimate contact with the metal of the containing tube holes to form a leak proof mechanical seal and/or joint. In other words, it is a mechanical method of establishing a mechanical joint between a tube and a tube hole. Airetool manufactures condensed/heat exchanger expanders, boiler expanders, furnace expanders and many special application expanders.

Tube expanders consist of:

**Mandrel** – A tapered pin through the center of the expander to which the power is attached and when advanced pushes the rolls against the tubes.

**Rolls** – A set of (3 or more) of tapered cylindrical parts which are driven by mandrel and contact the tube wall to be expanded. The taper on the rolls is in the reverse direction and one-half the taper of the mandrel if it is a parallel roll expander.

**Cage** – This is the expander body (or housing) that holds the mandrel and rolls in place. The slots which contain the rolls also provide a feed angle which helps pull the mandrel in to provide expansion of the rolls



**Mandrel, Rolls and Cage** are the three things common to all expanders. Other parts added further classify the type of expander.

**Thrust Assembly** – This assembly attaches to the cage and allows adjustment of the expanding depth. The thrust collar will remain stationary against the tube sheet or tube end while the cage, mandrel and rolls expand the tube. A thrust assembly is used on condenser/heat exchanger expanders, some furnace expanders and special boiler expanders.

## Condenser/Heat Exchanger Expanders

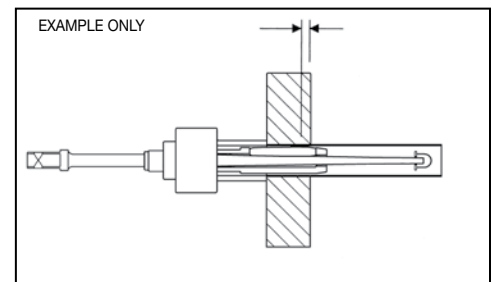
Airetool Condenser Heat Exchanger Expanders are self-feeding, parallel rolling, ball bearing thrust expanders. They are available in standard sizes for 1/4" O.D. through 3" O.D. for tube sheets up to 6-3/4" thick. Other sizes and lengths are available upon request. We supply most of the air conditioning manufacturers with expanders up to sixteen feet in length.

### To select the correct tube expander, the following information is required:

- Tube OD
- Tube wall thickness or BWG
- Tube sheet thickness
- Tube material
- Longer reach expanders are available upon request
- Special Conditions, i.e. enhanced tubing, thick tube sheets, double tube sheet, baffle sheets, tubes close to tube sheet channel or other tubes, protrusions, welded tubes, and tube bends close to the tube sheet.

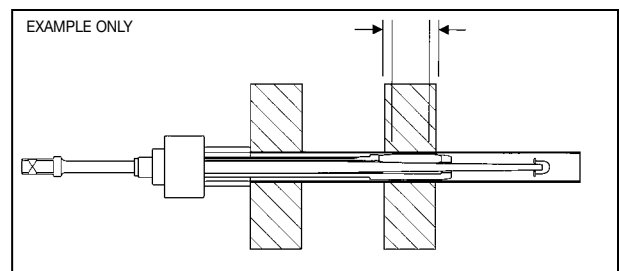
### Setting the tube expander's collar on Primary Tube Sheets

It is very important to set the tube expander's collar in the correct position inside the tube sheet. The expander's roll high point should be positioned ~1/8" (3mm) from the inner side of the tube sheet as shown in the figure below. The purpose for setting the expander's collar this way is to allow for thermal expansion and contraction of the tube while it is in service. If the tube is expanded beyond the tube sheet, thermal expansion and contraction of the tube will cause stress on the tube, which may cause the tube to crack or rupture at the inner tube sheet location. When tightening the set screw on the expander's collar, be sure it is aligned with the cage groove.



### Double Tube Sheet Applications

In a double tube sheet application additional information is required. The thickness of the outer tube sheet (primary tube sheet) and inner tube sheet (secondary tube sheet) and the distance between the two must be known. When expanding the tube in the primary tube sheet the expanders collar is positioned as in the figure above with an 800 series tube expander. For the secondary tube sheet a 1200 series expander is required with "S" type (double radius) rolls. The "S" type rolls are required to allow the expander to have clearance on each side of the secondary tube sheet as shown in the figure below. The purpose of using "S" type rolls on an inner tube sheet and setting the expander's collar this way is to reduce stresses in the tube due to thermal expansion and contraction of the tube while it is in service.



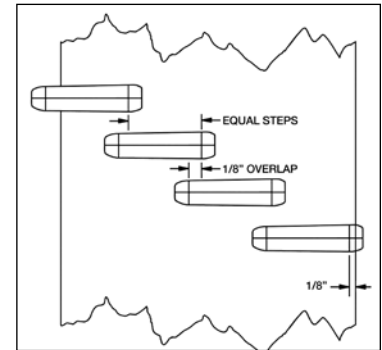
# Heat Exchanger – Condenser Expanders

## **Five roll expander vs. Three roll expander**

Many manufacturers prefer the five-roll expander for applications using tube materials that work harden quickly such as stainless steel and titanium. The five-roll expander inherently has more contact area with the tube than the three-roll which reduces the amount of work hardening and spring back effect that is common with these tube materials. They are also used in applications with closely spaced tubes having triangular pitch. The thinner the tube walls, 18 BWG (.049"/1.25mm) and thinner, the more apt work hardening is to occur.

## **Step Rolling**

Step rolling is required when expanding tubes in thick tube sheets. Typically the first expansion is made at the innermost location, away from the inner side of the tube sheet. This is extremely important when rolling the opposite end of the vessel. This allows the tube material to grow in the proper direction towards the operator and keeps the tube from being stressed. After all the tubes have been expanded in this location, adjust the expander's collar to overlap the previously rolled area. Repeat as necessary until the complete thickness of the tube sheet has been expanded. "S" type rolls (double radius) are recommended for step rolling to provide a smooth transition on the I.D. of the tube.



## **Care and Maintenance of Tube Expanders**

**Tube expanders are precision tools and should be treated as such. The service demanded of them is severe. Therefore, they must be given a reasonable amount of care to insure satisfactory operation and long life.**

### **All Tube Rolling Applications**

1. Before using, clean the expander thoroughly to remove any dirt or foreign matter.
2. Check thrust bearing and grease if needed. This should be done daily.
3. Proper lubrication of the expander during the rolling operation is a must in order to keep the rolls and mandrel cool, to extend their life, and to insure uniform tube to tube sheet joints.
4. Inspect rolls and mandrels for scarring or chips regularly and if found, replace them immediately. One small chip in a roll can cause the complete set of rolls and the mandrel to be damaged in a single rolling cycle. Always replace rolls and mandrels at the same time.
5. When the rolling job is complete, wash the expander thoroughly and then oil and grease generously to prevent rusting during storage.

## **Lubrication & Cleaning**

### **Hand-Held Rolling Applications**

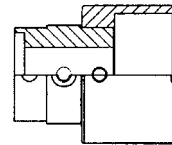
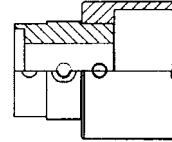
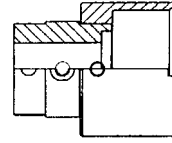
Depending on the severity of the rolling application, the expander should be washed periodically (every 25-100 tubes) in any commercial solvent. For best expander life, the expander should be left in solvent to cool while a second expander is used to continue rolling.

### **DAS Automated Tube Rolling Applications**

An optional automatic lubrication system is offered for the automatic tube rolling systems. Hand cleaning is virtually eliminated with the use of the automatic lubricating system as the air pressure that blows the lubrication into the expander to cool it also blows away dirt or foreign matter during each cycle.

## **Flip Collars**

All G-800 and G-1200 Series tube expanders are supplied with a flip collar with a 10-32 UNF auto-lube port. The flip collar allows for flush and recessed tube rolling. The standard expander is supplied with a recess of 1/8" (3 mm). Other recess lengths are available. Contact technical service for details.



## **Fixed Recess Thrust Collars**

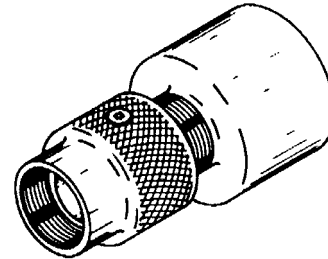
Fixed recess collars are available for tube projections between 3/16" (4.7mm) to 7/8" (22.2 mm) from the tube sheet for special applications and require a quote from technical service.

## **Full Recess Thrust Collars**

The full recess collar accommodates tube projections up to 7/8" (22.2 mm) from the tube sheet.

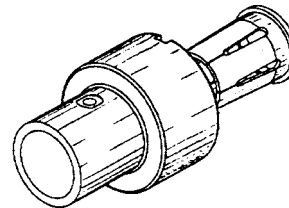
## **Adjustable Recess Thrust Collars**

The adjustable recess collar accommodates tube projections up to 1/2" (12.7 mm) from the tube sheet.



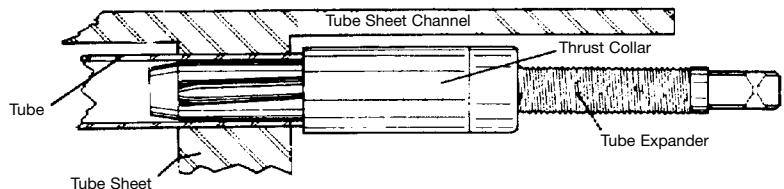
## **Thin Wall Thrust Collars**

Thin wall thrust collars are recommended when expanding 20 BWG .035" (0.9 mm) or lighter wall tubes. This design limits the possibility of the tube being drawn up inside the thrust collar. Removing the collar's collet allows the expander to be used as a full recess style compensating for various length tube projections from the tube sheet. These collars are application specific and require a quote from technical service.



## **Small Diameter Thrust Collars**

Small diameter thrust collars are recommended for rolling tubes in confined areas, close to tube sheet channels, or if there is interference from adjacent tubes.



## **Tube Expander Lubricant "LUBE-A-TUBE"**

- A water soluble lubricant especially compounded for use with tube expanders. It prevents rust and acts as a coolant providing longer life and smoother rolling.
- 5-gallon container: LAT-5 (order number 2981695)



# "AN" Series Expanders

Selection Guide AN Series Heat Exchanger & Condenser Tube Expanders

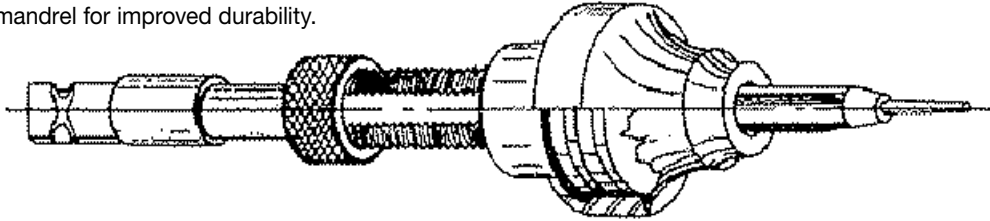
## AN Series Expanders

### O.D. Range:

1/4 – 3/8 Inches

6.3 – 9.5 mm

- "AN" expanders have 1" (25.4mm) long rolls and will accommodate tube sheet thicknesses from 1/4" to 1" (6.3 to 25.4mm).
- Captive mandrel retained on the rear of the cage instead of an acorn nut on the tip of the mandrel.
- Heavy duty mandrel for improved durability.



Tube O.D.		Tube Gauge		Tube I.D.		Tube Sheet Thickness		Min. I.D. Tool Enters		Max. Expan. of Tool		Mandrel No. (Order No.) Square Drive 1/4 in. (6.3 mm)	Bearing No. (Order No.)	Recommended Rolling Motor (Order No.)	
						1/4 in. to 1 in. (6.3 mm to 25.4 mm)									
in.	mm	BWG	in.	mm	in.	mm	Tool No. (Order No.)	Roll Set No. (Order No.)	in.	mm	in.	mm			
1/4	6.3	18	.049	1.24	.152	3.86	A-25018 (5515689)	R-20018 (5515705)	.148	3.76	.167	4.24	M-21819 (2980037)	NTA-613-A (5515716)	720-2500B (8405541)
		19	.042	1.06	.166	4.21	A-25019 (5515653PT)	R-21920 (5515706)	.160	4.06	.180	4.57			
		20	.035	0.88	.180	4.57	A-25020 (5515654)	R-21920 (5515706)	.175	4.44	.196	4.97	M-22021 (2980038)		
		21	.032	0.81	.186	4.72	A-25021 (5515690)	R-22124 (5515707)	.180	4.57	.202	5.13			
		22	.028	0.71	.194	4.92	A-25022 (5515691)	R-22124 (5515707)	.190	4.82	.213	5.41	M-220022 (2980158)		
		23	.025	0.63	.200	5.08	A-25023 (5515692)	R-21920 (5515706)	.195	4.95	.216	5.48	M-22324 (2980149)		
		24	.022	0.55	.206	5.23	A-25024 (5515693)	R-22124 (5515707)	.201	5.10	.224	5.69			
		28	.014	0.35	.222	5.63	A-25028 (5515694)	R-22830 (5515709)	.217	5.51	.243	6.17	M-22830 (2980150)		
		29	.013	0.33	.224	5.68									
		30	.012	0.30	.226	5.74									
3/8	9.5	14	.083	2.10	.209	5.30	A-37514 (5515695)	R-21920 (5515706)	.204	5.18	.230	5.84	M-22830 (2980150)	NTA-613-A (5515716)	720-2500B (8405541)
		15	.072	1.82	.231	5.86	A-37515 (5515696)	R-31516 (5515711)	.225	5.71	.265	6.73			
		16	.065	1.65	.245	6.22	A-37516 (5515697)		R-31720 (5515712)	.238	6.04	.278	7.06		
		17	.058	1.47	.259	6.57	A-37517 (5515698)	.253		6.42	.293	7.44			
		18	.049	1.24	.277	7.03	A-37518 (5515699)	R-32122 (5515713)	.270	6.85	.310	7.87	M-30018 (2980155)		
		19	.042	1.06	.291	7.39	A-37519 (5515700)		.285	7.24	.325	8.25	M-30019 (2980156)		
		20	.035	0.88	.305	7.74	A-37520 (5515701)	R-32324 (5515715)	.295	7.49	.335	8.51	M-32021 (2980157)		
		21	.032	0.81	.311	7.90	A-37521 (5515702)		.305	7.74	.345	8.76			
		22	.028	0.71	.319	8.10	A-37522 (5515703)	M-32224 (2980159)	.312	7.92	.353	8.96			
		23	.025	0.63	.325	8.25	A-37523 (5515704)		R-32324 (5515715)	.318	8.07	.363	9.22		
		24	.022	0.55	.331	8.40									

# Condenser Expanders

Selection Guide G-900 Series Heat Exchanger & Condenser Tube Expanders



## G-900 Series Expanders

**O.D. Range:**  
**1/4 – 3/8 Inches**  
**6.3 – 9.5 mm**

- Expander with 3/4 in. (19.0 mm) long rolls will accommodate tube sheet thicknesses from 1/4 in. to 3/4 in. (6.3 mm to 19.0 mm)
- Expander with 1-1/4 in. (31.7 mm) long rolls will accommodate tube sheet thicknesses from 3/4 in. to 1-1/4 in. (19.0 mm to 31.7 mm)



NOTE: Information on any size of tube not listed will be furnished upon request.

Tube O.D.		Tube Gauge		Tube I.D.		Tube Sheet Thickness				Min. I.D. Tool Enters		Max. Expan. of Tool		Mandrel No. (Order No.) 1/4 in. Sq. Dr. 6.3 mm	Recommended Controlled Rolling Motors Airetrol (Order No.)		
						1/4 in. to 3/4 in. (6.3 mm to 19.0 mm)		3/4 in. to 1-1/4 in. (19.0 mm to 31.7 mm)									
in.	mm	bwg	in.	mm	in.	mm	Tool No. (Order No.)	Roll Set No. (Order No.)	Tool No. (Order No.)	Roll Set No. (Order No.)	in.	mm	in.	mm			
1/4	6.3	18	.049	1.24	.152	3.86	921 (5016710)	921 (5175610)	920 (5016700)	904 (5174800)	.151	3.83	.173	4.39	(921) M-39 (2520300) (920) M-38 (2520100)	720-2500B (8405541)	
		19	.042	1.06	.166	4.21	922 (5016800)	923 (5175700)			.165	4.19	.185	4.70	M-39 (2520300)		
		20	.035	0.88	.180	4.57	923 (5016901)	923 (5175700)			.175	4.44	.200	5.08	M-40 (2520500)		
		21	.032	0.81	.186	4.72	924 (5017000)	924 (5175800)			.180	4.57	.207	5.25	M-40 (2520500)		
		22	.028	0.71	.194	4.92	925 (5017100)	925 (5175900)			.190	4.82	.216	5.48	M-41 (2520700)		
		23	.025	0.63	.200	5.08	926 (5017200)	923 (5175700)			.195	4.95	.222	5.63	M-41 (2520700)		
		24	.022	0.55	.206	5.23	927 (5017300)	924 (5175800)			.201	5.10	.230	5.84	M-41 (2520700)		
		28	.014	0.35	.222	5.63	928 (5017400)	903 (5174700)			.222	5.63	.238	6.04	928 (2161300)		
		29	.013	0.33	.224	5.68					.222	5.63	.238	6.04	928 (2161300)		
		30	.012	0.30	.226	5.74	929 (5519723)	929 (5519757)			.205	5.21	.235	5.99	M-40 (2520500)		
3/8	9.5	14	.083	2.10	.209	5.30	927 (5017300)	924 (5175800)			.201	5.10	.232	5.89	M-41 (2520700)	720-2500B (8405541)	
		15	.072	1.82	.231	5.86	915 (5016410)	903 (5174700)			.230	5.84	.265	6.73	M-42 (2520900)		
		16	.065	1.65	.245	6.22	916* (5016500)	916 (5175600)			.240	6.09	.275	6.98	M-36 (2519700)		
		16	.065	1.65	.245	6.22			916L* (5512156)	916L (5512157)	.240	6.09	.275	6.98	M-36L (2968803)		
		17	.058	1.47	.259	6.57	918 (5016600)	903 (5174700)	920 (5016700)			.255	6.47	.289	7.34		M-38 (2520100)
		18	.049	1.24	.277	7.03	901 (5015200)	903 (5174700)	902 (5015300)	904 (5174800)	.272	6.90	.307	7.79	M-30 (2518400)		
		19	.042	1.06	.291	7.39	903 (5015400)	903 (5174700)	904 (5015500)			.286	7.26	.330	8.38		M-31 (2518700)
		20	.035	0.88	.305	7.74	905 (5015600)	907 (5174900)	906 (5015700)	908 (5175000)	.300	7.62	.334	8.48	M-32 (2518900)		
		21	.032	0.81	.311	7.90	907 (5015800)	907 (5174900)	908 (5015900)			.306	7.77	.340	8.63		M-33 (2519100)
		22	.028	0.71	.319	8.10	909 (5016000)	909 (5175100)	910 (5016100)	910 (5175200)	.314	7.97	.349	8.86	M-34 (2519300)		
		23	.025	0.63	.325	8.25	911 (5016200)	911 (5175300)	912 (5016300)	912 (5175400)	.320	8.12	.357	9.06	M-34 (2519300)		
		24	.022	0.55	.331	8.40	911 (5016200)	911 (5175300)	912 (5016300)			.320	8.12	.357	9.06		M-34 (2519300)

\* This expander has 1" long rolls.

# Condenser Expanders

Selection Guide G-1300 Series Heat Exchanger & Condenser Tube Expanders

## G-1300 Series Expanders

**O.D. Range:**  
**3/8 Inches**  
**9.5 mm**

- Expanders with 3/4 in. (19.0 mm) long rolls will accommodate tube sheet thicknesses of 3/4 in. to 3 in. (19 mm to 76.2 mm)
- Expanders with 1-1/4 in. (31.7 mm) long rolls will accommodate tube sheet thicknesses from 1-1/4 in. to 3-1/2 in. (31.7 mm to 88.9 mm)



NOTE: Information on any size of tube not listed will be furnished upon request.

Tube O.D.		Tube Gauge		Tube I.D.		Tube Sheet Thickness				Min. I.D. Tool Enters		Max. Expan. of Tool		Mandrel No. (Order No.) 1/4 in. Sq. Dr. 6.3 mm	Recommended Rolling Motors (Order No.)		
						3/4 in. to 3 in. (19.0 mm to 76.0 mm) *		1-1/4 in. to 3-1/2 in. (31.7 mm to 88.9 mm) *									
in.	mm	bwg	in.	mm	in.	mm	Tool No. (Order No.)	Roll Set No. (Order No.)	Tool No. (Order No.)	Roll Set No. (Order No.)	in.	mm	in.	mm			
3/8	9.5	15	.072	1.82	.231	5.86	1315 (5512183)	1315 (5512184)	1316 (5512185)	1316 (5512180)	.230	5.84	.265	6.73	M-86 (2541400)	720-2500B (8405541)	
		16	.065	1.65	.245	6.22	1319 (5512187)	903 (5174700)	1319-L (5512190)	916-L (5512157)	.240	6.09	.275	6.98			
		17	.058	1.47	.259	6.57	1317 (5512191)		1318 (5512192-5)	904 (5174800)		.255	6.47	.289	7.34		
		18	.049	1.24	.277	7.03	1301 (5055100)		1302 (5055200)			.272	6.90	.307	7.79		M-80 (2540000)
		19	.042	1.06	.291	7.39	1303 (5055300)		1304 (5055400)			.286	7.26	.320	8.12		M-81 (2540200)
		20	.035	0.88	.305	7.74	1305 (5055500)	907 (5174900)	1306 (5055600)	908 (5175000)	.300	7.62	.334	8.48	M-82 (2540400)		
		21	.032	0.81	.311	7.90	1307 (5055700)		1308 (5055800)		.306	7.77	.340	8.63	M-83 (2540600)		
		22	.028	0.71	.319	8.10	1309 (5055900)	909 (5175100)	1310 (5056000)	910 (5175200)	.314	7.97	.349	8.86	M-84 (2540800)		
		23	.025	0.63	.325	8.25	1311 (5056100)	911 (5175300)	1312 (5056200)	912 (5175400)	.320	8.12	.357	9.06			
		24	.022	0.55	.331	8.40					.320	8.12	.357	9.06			

\* NOTE: Step expanding becomes necessary if the tube sheet thickness exceeds the length of the roll.

## G-800 Series – 3-Roll Expanders

**O.D. Range:**  
**1/2 – 1-1/2 Inches**  
**12.7 – 38.1 mm**

- Expanders with 1-1/2 in. (38.1 mm) long rolls will accommodate tube sheet thicknesses of 1/2 in. to 1-1/2 in. (12.7 mm to 38.1 mm)
- Expanders with 2-1/4 in. (57.1mm) long rolls will accommodate tube sheet thicknesses from 1-1/4 in. to 2-1/4 in. (31.7 mm to 57.1 mm)
- **Reversible Thrust Collar** design allows flush and 1/8 in. recess tube rolling. Collars have lubrication port for use with auto-lube configured ATR and DAS tube rolling systems.



Sizes not listed available upon request.

Tube O.D.		Tube Gauge		Tube I.D.		Tube Sheet Thickness				Min. I.D. Tool Enters		Max. Expan. of Tool		Mandrel Number (Order No.) 3/8 in. Sq. Dr. (9.5 mm)	Recommended Rolling Motors (Order No.)		
						1/2 in. to 1-1/2 in. (12.7 mm to 38.1 mm)		1-1/4 in. to 2-1/4 in. (31.7 mm to 57.1 mm)							Airetrol	Electric	
in.	mm	bwg	in.	mm	in.	mm	Tool No. (Order No.)	Roll Set No. (Order No.)	Tool No. (Order No.)	Roll Set No. (Order No.)	in.	mm	in.	mm			
1/2	12.7	14	.083	2.10	.334	8.48	797 (5005780)	797 (5512194)			.324	8.22	.374	9.49	797 (2131300)	720-550-B (8405391)	
		15	.072	1.82	.356	9.04	799 (5005782)	R-1 (5284800)			.348	8.83	.398	10.10	799 (2131900)		
		16	.065	1.65	.370	9.39	801 (5005800)					.360	9.14	.410	10.41	M-1 (2511800)	720-1800-B-3/8 (8405512)
		17	.058	1.47	.384	9.75	803 (5005900)	R-2 (5285000)			.374	9.49	.424	10.76			
		18	.049	1.24	.402	10.21	805 1/2 (5006000)	R-3 (5285200)			.392	9.95	.447	11.35	M-2 (2512100)		
		20	.035	0.88	.430	10.92	807 1/2 (5525444)	R-4 (5285400)			.420	10.66	.480	12.19	M-3 (2512400)		
5/8	15.8	12	.109	2.76	.407	10.33	805 5/8 (5006001)	R-3 (5285200)			.392	9.95	.447	11.35	M-2 (2512100)	850-600-A (8405398)	
		13	.095	2.41	.435	11.04	807 5/8 (5006100)	R-4 (5285400)			.420	10.66	.480	12.19	M-3 (2512400)		
		14	.083	2.10	.459	11.65	809 (5006200)	R-4 (5285400)	810 (5006300)	R-4-A (5285500)	.449	11.40	.509	12.92	M-4 (2512700)		
		15	.072	1.82	.481	12.21	811 5/8 (5006400)	R-5 (5285800)	812 5/8 (5006500)	R-5-A (5285900)	.471	11.96	.536	13.61	M-5 (2513000)		
		16	.065	1.65	.495	12.57	813 (5006600)	R-6 (5286200)	814 (5006700)	R-6-A (5286300)	.485	12.31	.550	13.97			
		17	.058	1.47	.509	12.92	815 5/8 (5006800)				816 5/8 (5006900)		.499	12.67	.564	14.32	M-6 (2513300)
		18	.049	1.24	.527	13.38	817 5/8 (5007000)	R-7 (5286600)	818 5/8 (5007100)	R-7-A (5286700)	.517	13.13	.582	14.78			
		19	.042	1.06	.541	13.74										850-1250-A (8405399)	
		20	.035	0.88	.555	14.09	819 (5007200)	R-7 (5286600)	820 (5007300)	R-7-A (5286700)	.531	13.48	.596	15.13	M-8 (2513900)		
		21	.032	0.81	.561	14.24											
22	.028	0.71	.569	14.45													



# Condenser Expanders

Selection Guide G-800 Series Heat Exchanger & Condenser Tube Expanders – continued

Tube O.D.		Tube Gauge		Tube I.D.		Tube Sheet Thickness				Min. I.D. Tool Enters		Max. Expan. of Tool		Mandrel Number (Order No.) 3/8 in. Sq. Dr. (9.5 mm)	Recommended Rolling Motors (Order No.)		
						1/2 in. to 1-1/2 in. (12.7 mm to 38.1 mm)		1-1/4 in. to 2-1/4 in. (31.7 mm to 57.1 mm)							Airetrol	Electric	
in.	mm	bwg	in.	mm	in.	mm	Tool No. (Order No.)	Roll Set No. (Order No.)	Tool No. (Order No.)	Roll Set No. (Order No.)	in.	mm	in.	mm			
3/4	19.0	10	.134	3.40	.482	12.24	811 3/4 (5006401)	R-5 (5285800)	812 3/4 (5006501)	R-5-A (5285900)	.471	11.96	.536	13.61	M-5 (2513000)	850-600-A (8405398)	
		11	.120	3.04	.510	12.95	815 3/4 (5006801)	R-6 (5286200)	816 3/4 (5006901)	R-6-A (5286300)	.499	12.67	.564	14.32	M-6 (2513300)		
		12	.109	2.76	.532	13.51	817 3/4 (5007001)	R-7 (5286600)	818 3/4 (5007101)	R-7-A (5286700)	.517	13.13	.582	14.78			
		13	.095	2.41	.560	14.22	821 (5007400)	R-8 (5287000)	822 (5007500)	R-8-A (5287100)	.550	13.97	.615	15.62	M-8 (2513900)		
		14	.083	2.10	.584	14.83	823 (5007600)	R-9 (5287400)	824 (5007700)	R-9-A (5287500)	.574	14.57	.639	16.23			
		15	.072	1.82	.606	15.39	825 3/4 (5007800)	R-10 (5287800)	826 3/4 (5007900)	R-10-A (5287900)	.596	15.13	.661	16.78			
		16	.065	1.65	.620	15.74	827 (5008000)		828 (5008100)			.605	15.36	.685	17.39		
		17	.058	1.47	.634	16.10	829 3/4 (5008200)	R-11 (5288200)	830 3/4 (5008300)	R-11-A (5288300)	.619	15.72	.699	17.75	M-9 (2514200)	850-1250-A (8405399)	
		18	.049	1.24	.652	16.56											
		19	.042	1.06	.666	16.91	831 3/4 (5008400)	R-12 (5288600)	832 3/4 (5008500)	R-12-A (5288700)	.642	16.30	.722	18.33			
		20	.035	0.88	.680	17.27											
		21	.032	0.81	.686	17.42											
22	.028	0.71	.694	17.62													
7/8	22.2	10	.134	3.40	.607	15.41	825 7/8 (5007801)	R-10 (5287800)	826 7/8 (5007901)	R-10-A (5287900)	.596	15.13	.661	16.78	M-8 (2513900)	850-600-A (8405398)	
		11	.120	3.04	.635	16.12	829 7/8 (5008201)	R-11 (5288200)	830 7/8 (5008301)	R-11-A (5288300)	.619	15.72	.699	17.75	M-9 (2514200)		
		12	.109	2.76	.657	16.68	831 7/8 (5008401)	R-12 (5288600)	832 7/8 (5008501)	R-12-A (5288700)	.642	16.30	.722	18.33			
		13	.095	2.41	.685	17.39	833 (5008600)	R-13 (5289000)	834 (5008700)	R-13-A (5289100)	.670	17.01	.750	19.05	M-10 (2514500)		
		14	.083	2.10	.709	18.00	835 (5008800)	R-14 (5289400)	836 (5008900)	R-14-A (5289500)	.685	17.39	.774	19.65	M-11 (2514800)		
		15	.072	1.82	.731	18.56	837 (5009000)	R-15 (5289800)	838 (5009100)	R-15-A (5289900)	.712	18.08	.801	20.34			
		16	.065	1.65	.745	18.92	839 (5009200)		840 (5009300)			.726	18.44	.815	20.70		
		17	.058	1.47	.759	19.27	843 (5009600)	R-16 (5290200)	844 (5009700)	R-16-A (5290300)	.740	18.79	.829	21.05	M-12 (2515100)		
18	.049	1.24	.777	19.73													
1	25.4	8	.165	4.19	.670	17.01	841 (5009400)	R-13 (5289000)	842 (5009500)	R-13-A (5289100)	.655	16.63	.735	18.66	M-9 (2514200)	1050-400 (8404200)	
		9	.148	3.75	.704	17.88	835 (5008800)	R-14 (5289400)	836 (5008900)	R-14-A (5289500)	.685	17.39	.774	19.65	M-11 (2514800)		
		10	.134	3.40	.732	18.59	837 (5009000)	R-15 (5289800)	838 (5009100)	R-15-A (5289900)	.712	18.08	.801	20.34			
		11	.120	3.04	.760	19.30	843 (5009600)	R-16 (5290200)	844 (5009700)	R-16-A (5290300)	.740	18.79	.829	21.05	M-12 (2515100)		
		12	.109	2.76	.782	19.86	845 (5009800)	R-17 (5290600)	846 (5009900)	R-17-A (5290700)	.763	19.38	.852	21.64			
		13	.095	2.41	.810	20.57	847 (5010000)	R-18 (5291000)	848 (5010100)	R-18-A (5291100)	.791	20.09	.880	22.35			
		14	.083	2.10	.834	21.18	849 (5010200)		850 (5010300)			.810	20.57	.909			

# Condenser Expanders

Selection Guide G-800 Series Heat Exchanger & Condenser Tube Expanders – continued



Tube O.D.		Tube Gauge		Tube I.D.		Tube Sheet Thickness				Min. I.D. Tool Enters		Max. Expan. of Tool		Mandrel Number (Order No.) 3/8 in. Sq. Dr. (9.5 mm)	Recommended Rolling Motors (Order No.)							
						1/2 in. to 1-1/2 in. (12.7 mm to 38.1 mm)		1-1/4 in. to 2-1/4 in. (31.7 mm to 57.1 mm)							Airetrol	Electric						
in.	mm	bwg	in.	mm	in.	mm	Tool No. (Order No.)	Roll Set No. (Order No.)	Tool No. (Order No.)	Roll Set No. (Order No.)	in.	mm	in.	mm								
1	25.4	15	.072	1.82	.856	21.74	851 (5010400)	R-19 (5291400)	852 (5010500)	R-19-A (5291500)	.837	21.25	.936	23.77	M-13 (2515400)	850-600-A (8405398)	979-C-650/ ATC-900					
		16	.065	1.65	.870	22.09	855 (5010800)	R-21 (5292200)	856 (5010900)	R-21-A (5292300)	.865	21.97	.964	24.48		850-1250-A (8405399)						
		17	.058	1.47	.884	22.45																
		18	.049	1.24	.902	22.91																
		19	.042	1.06	.916	23.26																
		20	.035	0.88	.930	23.62																
1-1/8	28.5	8	.165	4.19	.795	20.19	853 (5010600)	R-20 (5291800)	854 (5010700)	R-20-A (5291900)	.776	19.71	.875	22.22	M-13 (2515400)		979-C-300/ ATC-900					
		9	.148	3.75	.829	21.05	849 (5010200)	R-18 (5291000)	850 (5010300)	R-18-A (5291100)	.810	20.57	.909	23.08								
		10	.134	3.40	.857	21.76	851 (5010400)	R-19 (5291400)	852 (5010500)	R-19-A (5291500)	.837	21.25	.936	23.77								
		11	.102	3.04	.885	22.47	855 (5010800)	R-21 (5292200)	856 (5010900)	R-21-A (5292300)	.865	21.97	.964	24.48								
		12	.109	2.76	.907	23.03	857 (5011000)		858 (5011100)		.883	22.42	.982	24.94	M-14 (2515700) *							
		13	.095	2.41	.935	23.74	859 (5011200)	R-22 (5292600)	860 (5011300)	R-22-A (5292700)	.916	23.26	1.015	25.78	M-15 (2516000) *	1050-400 (8404200)						
		14	.083	2.10	.959	24.35	861 (5011400)	R-23 (5293000)	862 (5011500)	R-23-A (5293100)	.935	23.74	1.044	26.51								
		15	.072	1.82	.981	24.91	863 (5011600)	R-24 (5293400)	864 (5011700)	R-24-A (5293500)	.962	24.43	1.071	27.20								
		16	.065	1.65	.995	25.27	867 (5012000)	R-26 (5294200)	868 (5012100)	R-26-A (5293500)	.990	25.14	1.099	27.91	M-16 (2516300) *							
		17	.058	1.47	1.009	25.62																
18	.049	1.24	1.027	26.08	865 (5011800)	R-25 (5293800)	866 (5011900)	R-25-A (5293900)	.901	22.88	1.010	25.65	M-15 (2516000) *									
9	.148	3.75	.954	24.23										861 (5011400)	R-23 (5293000)		862 (5011500)	R-23-A (5293100)	.935	23.74	1.044	26.51
10	.134	3.40	.982	24.94										863 (5011600)	R-24 (5293400)		864 (5011700)	R-24-A (5293500)	.962	24.43	1.071	27.20
11	.120	3.04	1.010	25.65									867 (5012000)	R-26 (5294200)	868 (5012100)		R-26-A (5293500)	.990	25.14	1.099	27.91	M-16 (2516300) *
12	.109	2.76	1.032	26.21									869 (5012200)	R-27 (5294600)	870 (5012300)		R-27-A (5294700)	1.013	25.73	1.122	28.49	
13	.095	2.41	1.060	26.92									871 (5012400)	R-28 (5295000)	872 (5012500)	R-28-A (5295100)	1.041	26.44	1.150	29.21	M-17 (2516600) *	
14	.083	2.10	1.084	27.53									873 (5012600)	R-29 (5295400)	874 (5012700)	R-29-A (5295500)	1.060	26.92	1.169	29.69		
15	.072	1.82	1.106	28.09									875 (5012800)	R-30 (5295800)	876 (5012900)	R-30-A (5295900)	1.087	27.60	1.196	30.37		
16	.065	1.65	1.120	28.44																		
17	.058	1.47	1.134	28.80	879 (5013200)	R-30 (5295800)	880 (5013300)	R-30-A (5295900)	1.115	28.32	1.224	31.08	M-18 (2516900) *									
18	.049	1.24	1.152	29.26																		

\* 1/2 in. Sq. Dr. (12.7 mm)

# Condenser Expanders

Selection Guide G-800 Series Heat Exchanger & Condenser Tube Expanders – continued

Tube O.D.		Tube Gauge			Tube I.D.		Tube Sheet Thickness				Min. I.D. Tool Enters		Max. Expan. of Tool		Mandrel Number (Order No.) 1/2 in. Sq. Dr. (12.7 mm)	Recommended Rolling Motors (Order No.)	
							1/2 in. to 1-1/2 in. (12.7 mm to 38.1 mm)		1-1/4 in. to 2-1/4 in. (31.7 mm to 57.1 mm)							Airetrol	Electric
in.	mm	bwg	in.	mm	in.	mm	Tool No. (Order No.)	Roll Set No. (Order No.)	Tool No. (Order No.)	Roll Set No. (Order No.)	in.	mm	in.	mm			
1-3/8	34.9	8	.165	4.19	1.045	26.54	877 (5013000)	R-31 (5296200)	878 (5013100)	R-31-A (5296300)	1.026	26.06	1.135	28.82	M-17 (2516600)	1550-250 (8404280)	979-C-210/ ATC-900
		9	.148	3.75	1.079	27.40	873 (5012600)	R-29 (5295400)	874 (5012700)	R-29-A (5295500)	1.060	26.92	1.169	29.69			
		10	.134	3.40	1.107	28.11	875 (5012800)	R-30 (5295800)	876 (5012900)	R-30-A (5295900)	1.087	27.60	1.196	30.37			
		11	.120	3.04	1.135	28.82	879 (5013200)		880 (5013300)		1.115	28.32	1.224	31.08	M-18 (2516900)		
		12	.109	2.76	1.157	29.38	881 (5013400)	R-32 (5296600)	882 (5013500)	R-32-A (5296700)	1.133	28.77	1.242	31.54			
		13	.095	2.41	1.185	30.09	883 (5013600)	R-33 (5297000)	884 (5013700)	R-33-A (5297100)	1.160	29.46	1.275	32.38	M-20 (2517500)	1550-900 (8404290)	979-C-300/ ATC-900
		14	.083	2.10	1.209	30.70	885 (5013800)	R-34 (5297400)	886 (5013900)	R-34-A (5297500)	1.179	29.94	1.294	32.86			
		15	.072	1.82	1.231	31.26											
		1-1/2	38.1	8	.165	4.19	1.170	29.71	889 (5014200)	R-34 (5297400)	890 (5014300)	R-34-A (5297500)	1.145	29.08	1.260	32.00	M-19 (2517200)
9	.148			3.75	1.204	30.58	885 (5013800)	886 (5013900)	1.177		29.89		1.294	32.86			
10	.134			3.40	1.232	31.29	887 (5014000)	R-35 (5297800)	888 (5014100)	R-35-A (5297900)	1.206	30.63	1.321	33.55	M-20 (2517500)		
11	.120			3.04	1.260	32.00	891 (5014400)	R-36 (5298200)	892 (5014500)	R-36-A (5298300)	1.235	31.36	1.350	34.29			
12	.109			2.76	1.282	32.56	893 (5014600)	R-37 (5298600)	894 (5014700)	R-37-A (5298700)	1.257	31.92	1.372	34.84			
13	.095			2.41	1.310	33.27	895 (5014800)	R-37 (5298600)	896 (5014900)	R-37-A (5298700)	1.285	32.63	1.400	35.56	M-21 (2517800)		
14	.083			2.10	1.334	33.88											
15	.072			1.82	1.356	34.44	899 (5015120)	R-38 (5299000)	900 (5015150)	R-38-A (5299100)	1.331	33.80	1.472	37.38	M-22 (2518100)	1550-900 (8404290)	979-C-300/ ATC-900
16	.065			1.65	1.370	34.79											
17	.058			1.47	1.384	35.15											
18	.049			1.24	1.402	35.61											
19	.042			1.06	1.416	35.96											
20	.035	0.88	1.430	36.32													

## G-800 Series – 5-Roll Expanders

**O.D Range:**  
**5/8 – 1-1/2 Inches**  
**15.8 – 38.1 mm**

- Expanders with 1-1/2 in. (38.1 mm) long rolls will accommodate tube sheets from 1/2 in. to 1-1/2 in. (12.7mm to 38.1 mm)
- Expanders with 2-1/4 in. (57.1 mm) long rolls will accommodate tube sheets from 1-1/4 in. to 2-1/4 in. (31.7mm to 57.1 mm)
- Reversible Thrust Collar** design allows flush and 1/8 in. recess tube rolling. Collars have lubrication port for use with auto-lube configured ATR and DAS tube rolling systems. 20 BWG .035" (0.9 mm).



NOTE: For best results the Airetool five-roll expander should be fitted with a thin wall thrust collar when being used to roll tubing with 20 BWG .035" (0.9 mm).

Sizes not listed available upon request.



Tube O.D.		Tube Gauge		Tube I.D.		Tube Sheet Thickness				Min. I.D. Tool Enters		Max. Expan. of Tool		Mandrel Number (Order No.) 3/8 in. Sq. Dr. (9.5 mm)	Recommended Rolling Motors (Order No.)			
						1/2 in. to 1-1/2 in. (12.7 mm to 38.1 mm)		1-1/4 in. to 2-1/4 in. (31.7 mm to 57.1 mm)							Airetool	Electric		
in.	mm	bwg	in.	mm	in.	mm	Tool No. (Order No.)	Roll Set No. (Order No.)	Tool No. (Order No.)	Roll Set No. (Order No.)	in.	mm	in.	mm				
5/8	15.8	17	.058	1.47	.509	12.92	815-5 (5517135)	R-4-5 (5513832)	816-5 (5519516)	R-4-A-5 (5517897PT)	.499	12.67	.564	14.32	M-9 (2514200)	850-1250-A (8405399)		
		18	.049	1.24	.527	13.38	817-5 (5514294)		818-5 (5521051)		.517	13.13	.576	14.63				
		19	.042	1.06	.541	13.74												
		20	.035	0.88	.555	14.09												
		21	.032	0.81	.561	14.24												
		22	.028	0.71	.569	14.45												
3/4	19.0	13	.095	2.41	.560	14.22	821-5 (5513230)	R-5-5 (5513231)	822-5 (5514482)	R-5-A-5 (5518189)	.550	13.97	.615	15.62	M-11 (2514800)	850-600-A (8405398)	979-C-650/ ATC-900	
		14	.083	2.10	.584	14.83	823-5 (5515375)	R-6-5 (5518187)	824-5 (5514171)	R-6-A-5 (5517898)	.574	14.57	.629	15.97	M-12 (2515100)			
		15	.072	1.82	.606	15.39	825-5 (5522104)	R-7-5 (5514393)	826-5 (5518376)	R-7-A-5 (5517899)	.590	14.98	.661	16.78	M-13 (2515400)			
		16	.065	1.65	.620	15.74			827-5 (5513799)			.605	15.36	.680	17.27	M-13 (2515400)	850-1250-A (8405399)	
		17	.058	1.47	.634	16.10												
		18	.049	1.24	.652	16.56	829-5 (5513426)	R-8-5 (5515995)	830-5 (5513413)	R-8-A-5 (5515996)	.619	15.72	.699	17.75	M-13 (2515400)			
		19	.042	1.06	.666	16.91												
		20	.035	0.88	.680	17.27												
		21	.032	0.81	.685	17.39												
		22	.028	0.71	.694	17.62												
7/8	22.2	13	.095	2.41	.685	17.39	833-5 (5517076)	R-9-5 (5517888)	834-5 (5514704)	R-9-A-5 (5517900)	.670	17.01	.747	18.97	M-14 (2515700) *	850-600-A (8405398)	979-C-650/ ATC-900	
		14	.083	2.10	.709	18.00	835-5 (5517735)	R-10-5 (5518191)	836-5 (5515680)	R-10-A-5 (5517901)	.685	17.39	.774	19.65	M-15 (2516000) *			
		16	.065	1.65	.745	18.93	839-5 (5518154)	R-11-5 (5517889)	840-5 (5514564)	R-11-A-5 (5517902)	.685	17.39	.750	19.05				
		17	.058	1.47	.759	19.27												
		18	.049	1.24	.777	19.73	843-5 (5517922)	R-11-5 (5517889)	844-5 (5517923)	R-11-A-5 (5517902)	.740	18.79	.824	20.92	M-17 (2516600) *			

\* 1/2 in. Sq. Dr. (12.7 mm)

# Condenser Expanders

Selection Guide G-800 Type Five-Roll Expanders – continued

Tube O.D.		Tube Gauge		Tube I.D.		Tube Sheet Thickness				Min. I.D. Tool Enters		Max. Expan. of Tool		Mandrel Number (Order No.) 1/2 in. Sq. Dr. (12.7 mm)	Recommended Rolling Motors (Order No.)		
						1/2 in. to 1-1/2 in. (12.7 mm to 38.1 mm)		1-1/4 in. to 2-1/4 in. (31.7 mm to 57.1 mm)							Airetrol	Electric	
in.	mm	bwg	in.	mm	in.	mm	Tool No. (Order No.)	Roll Set No. (Order No.)	Tool No. (Order No.)	Roll Set No. (Order No.)	in.	mm	in.	mm			
7/8	22.2	19	.042	1.06	.791	20.09	845-5 (5513810)	R-11-5 (5517889)	846-5 (5517924)	R-11-A-5 (5517902)	.763	19.38	.851	21.61	M-18 (2516900)	850-1250-A (8405399)	
		20	.035	0.88	.805	20.44											
		21	.032	0.81	.811	20.59											
		22	.028	0.71	.819	20.80											
1	25.4	12	.109	2.76	.782	19.86	845-5 (5513810)	R-11-5 (5517889)	846-5 (5517924)	R-11-A-5 (5517902)	.763	19.38	.852	21.64	M-18 (2516900)	850-600-A (8405398)	979-C-650/ ATC-900
		13	.095	2.41	.810	20.57	847-5 (5513379)	R-13-5 (5513741)	848-5 (5517099)	R-13-A-5 (5517903)	.791	20.09	.880	22.35			
		14	.083	2.10	.834	21.18	849-5 (5514922)	R-12-5 (5517890)	850-5 (5513331)	R-12-A-5 (5515825)	.810	20.57	.909	23.08	M-20 (2517500)		
		15	.072	1.82	.856	21.74	851-5 (5513778)	R-14-5 (5517894)	852-5 (5513330)	R-14-A-5 (5515826)	.837	21.25	.936	23.77			
		16	.065	1.65	.870	22.09											
		17	.058	1.47	.884	22.45	855-5 (5515194)	R-13-5 (5513741)	856-5 (5513745)	R-13-A-5 (5517903)	.865	21.97	.965	24.51	M-21 (2517800)	850-1250-A (8405399)	
		18	.049	1.24	.902	22.91											
		19	.042	1.06	.916	23.26											
		20	.035	0.88	.930	23.62											
		21	.032	0.81	.936	23.77	857-5 (5513825)	R-15-5 (5513833)	858-5 (5515935)	R-15-A-5 (5517907)	.883	22.42	.997	25.32	M-21 (2517800)		
22	.028	0.71	.944	23.97													
1-1/8	28.5	12	.109	2.76	.907	23.03	857-5 (5513825)	R-15-5 (5513833)	858-5 (5515935)	R-15-A-5 (5517907)	.883	22.42	.997	25.32	M-21 (2517800)	1050-400 (8404200)	979-C-300/ ATC-900
		13	.095	2.41	.935	23.74	859-5 (5514397)	R-16-5 (5518056)	860-5 (5513492)	R-16-A-5 (5517904)	.916	23.26	1.000	25.40			
		14	.083	2.10	.959	24.35	861-5 (5513325)	R-17-5 (5517891)	862-5 (5513747)	R-17-A-5 (5517905)	.935	23.74	1.043	26.49			
1-1/4	31.8	15	.072	1.82	1.106	28.09	875-5 (5513884)	R-21-5 (5517887)	876-5 (5519970)	R-21-A-5 (5513291)	1.087	27.60	1.196	30.37	876-5 (2975348)	1050-400 (8404200)	979-C-650/ ATC-900
		16	.065	1.65	1.120	28.44											
		17	.058	1.47	1.134	28.80	879-5 (5513993)	R-21-5 (5517887)	880-5 (5512151)	R-21-A-5 (5513291)	1.115	28.32	1.231	31.26	880-5 (2968789)		
		18	.049	1.24	1.152	29.26											
		19	.042	1.06	1.166	29.61											
		20	.035	0.88	1.180	29.97											
		21	.032	0.81	1.186	30.12											
22	.028	0.71	1.194	30.32													
1-3/8	34.9	12	.109	2.76	1.154	29.31	881-5 (5516001)	R-21-5 (5517887)	882-5 (5514657)	R-21-A-5 (5513291)	1.133	28.77	1.242	31.54	882-5 (2973230)	1550-250 (8404280)	979-C-210/ ATC-900
		14	.083	2.10	1.209	30.70	885-5 (5513252)	R-23-5 (5517892)	886-5 (5515778)	R-23-A-5 (5518192)	1.179	29.94	1.296	32.91			
1-1/2	38.1	17	.058	1.47	1.384	35.15	899-5 (5513850)	R-29-5 (5517893)	900-5 (5517605)	R-29-A-5 (5517906)	1.331	33.80	1.489	37.82	900-5 (2975262)	1550-900 (8404290)	979-C-300/ ATC-900
		18	.049	1.24	1.402	35.61											
		19	.042	1.06	1.416	35.96											
		20	.035	0.88	1.430	36.32											
		21	.032	1	1.436	36.47											
		22	.028	0.71	1.444	36.67											

# Condenser Expanders

Standard Reach G-1200 Series Heat Exchanger & Condenser Tube Expanders



## G-1200 Series – 3-Roll Expander, Standard Reach

**O.D Range:**  
**1/2 – 1-1/2 Inches**  
**12.7 – 38.1 mm**

- Expanders with 1-1/2 in. (38.1 mm) long rolls will accommodate tube sheet thicknesses from 1/2" to 5" (12.7 mm to 127.0 mm)
- Expanders with 2-1/4 in. (57.1 mm) long rolls will accommodate tube sheet thicknesses from 1-1/4" to 5-3/4" (31.7 mm to 146.0 mm)
- Reversible Thrust Collar** design allows flush and 1/8 in. recess tube rolling. Collars have lubrication port for use with auto-lube configured ATR and DAS tube rolling systems.



NOTE: Step expanding becomes necessary if the tube sheet thickness exceeds the length of the roll. Specify "S" Type rolls for step rolling applications.

Sizes not listed available upon request.



Standard Reach						Tube Sheet Thickness				Min. I.D. Tool Enters		Max. Expan. of Tool		Mandrel Number (Order No.) 3/8 in. Sq. Dr. (9.5 mm)	Recommended Rolling Motors (Order No.)			
Tube O.D.		Tube Gauge		Tube I.D.		1/2 in. to 5 in. (12.7 mm to 127.0 mm)		1-1/4 in. to 5-3/4 in. (31.7 mm to 146.0 mm)							Airetrol	Electric		
in.	mm	bwg	in.	mm	in.	mm	Tool No. (Order No.)	Roll Set No. (Order No.)	Tool No. (Order No.)	Roll Set No. (Order No.)	in.	mm	in.	mm				
1/2	12.7	14	.083	2.10	.334	8.48	1197 (5017460)	797 (5512194)			.324	8.22	.374	9.49	1197 (2165300)	720-550-B (8405391)		
		15	.072	1.82	.356	9.04	1199 (5056204)	R-1 (5284800)			.348	8.83	.398	10.10	1199 (2166400)			
		16	.065	1.65	.370	9.39	1201 (5017500)					.360	9.14	.410	10.41		M-51 (2521100)	
		17	.058	1.47	.384	9.75	1203 (5017900)	R-2 (5285000)					.374	9.49	.424	10.76		720-1800-B (8405512)-3/8
		18	.049	1.24	.402	10.21	1205 1/2 (5018300)	R-3 (5285200)					.392	9.95	.447	11.35	M-52 (2522000)	
		20	.035	0.88	.430	10.92	1207 1/2 (5018701)	R-4 (5285400)					.420	10.66	.480	12.19	M-53 (2522900)	
5/8	15.8	12	.109	2.76	.407	10.33	1205 5/8 (5018301)	R-3 (5285200)			.392	9.95	.447	11.35	M-52 (2522000)	850-600-A (8405398)		
		13	.095	2.41	.435	11.04	1207 5/8 (5018700)	R-4 (5285400)			.420	10.66	.480	12.19	M-53 (2522900)			
		14	.083	2.10	.459	11.65	1209 (5019100)		1210 (5019500)	R-4-A (5285500)	.449	11.40	.509	12.92	M-54 (2523800)			
		15	.072	1.82	.481	12.21	1211 5/8 (5019900)	R-5 (5285800)	1212 5/8 (5020300)	R-5-A (5285900)	.471	11.96	.536	13.61	M-55 (2524700)	850-1250-A (8405399)		
		16	.065	1.65	.495	12.57	1213 (5020700)	R-6 (5286200)	1214 (5021100)	R-6-A (5286300)	.485	12.31	.550	13.97				
		17	.058	1.47	.509	12.92	1215 5/8 (5021500)		1216 5/8 (5021900)		.499	12.67	.564	14.32	M-56 (2525600)			
		18	.049	1.24	.527	13.38	1217 5/8 (5022300)	R-7 (5286600)	1218 5/8 (5022700)	R-7-A (5286700)	.517	13.13	.582	14.78				
		19	.042	1.06	.541	13.74												
		20	.035	0.88	.555	14.09												
		21	.032	0.81	.561	14.24												
22	.028	0.71	.569	14.45	1219 (5023100)	R-7 (5286600)	1220 (5023500)	R-7-A (5286700)	.531	13.48	.596	15.13	M-58 (2527400)					

# Condenser Expanders

Standard Reach G-1200 Series Heat Exchanger & Condensor Tube Expanders – continued

Standard Reach						Tube Sheet Thickness				Min. I.D. Tool Enters		Max. Expan. of Tool		Mandrel Number (Order No.) 3/8 in. Sq. Dr. (9.5 mm)	Recommended Rolling Motors (Order No.)			
Tube O.D.		Tube Gauge		Tube I.D.		1/2 in. to 5 in. (12.7 mm to 127.0 mm)		1-1/4 in. to 5-3/4 in. (31.7 mm to 146.0 mm)							Airetrol	Electric		
in.	mm	bwg	in.	mm	in.	mm	Tool No. (Order No.)	Roll Set No. (Order No.)	Tool No. (Order No.)	Roll Set No. (Order No.)	in.	mm	in.	mm				
3/4	19.0	10	.134	3.40	.482	12.24	1211 3/4 (5019901)	R-5 (5285800)	1212 3/4 (5020301)	R-5-A (5285900)	.471	11.96	.536	13.61	M-55 (2524700)	850-600-A (8405398)	979-C-650/ ATC-900	
		11	.120	3.04	.510	12.95	1215 3/4 (5021501)	R-6 (5286200)	1216 3/4 (5513251)	R-6-A (5286300)	.499	12.67	.564	14.32	M-56 (2525600)			
		12	.109	2.76	.532	13.51	1217 3/4 (5022301)	R-7 (5286600)	1218 3/4 (5022701)	R-7-A (5286700)	.517	13.13	.582	14.78	M-58 (2527400)			
		13	.095	2.41	.560	14.22	1221 (5023900)	R-8 (5287000)	1222 (5024300)	R-8-A (5287100)	.550	13.97	.615	15.62				
		14	.083	2.10	.584	14.83	1223 (5024700)	R-9 (5287400)	1224 (5025100)	R-9-A (5287500)	.574	14.57	.639	16.23				
		15	.072	1.82	.606	15.39	1225 3/4 (5025500)	R-10 (5287800)	1226 3/4 (5025900)	R-10-A (5287900)	.596	15.13	.661	16.78				
		16	.065	1.65	.620	15.74	1227 (5026300)		1228 (5026700)		.605	15.36	.685	17.39				
				17	.058	1.47	.634	16.10	1229 3/4 (5027100)	R-11 (5288200)	1230 3/4 (5027500)	R-11-A (5288300)	.619	15.72	.699	17.75	M-59 (2528300)	850-1250-A (8405399)
				18	.049	1.24	.652	16.56	1231 3/4 (5027900)	R-12 (5288600)	1232 3/4 (5028300)	R-12-A (5288700)	.642	16.30	.722	18.33		
				19	.042	1.06	.666	16.91										
				20	.035	0.88	.680	17.27										
				21	.032	0.81	.686	17.42										
		22	.028	0.71	.694	17.62												
7/8	22.2	10	.134	3.40	.607	15.41	1225 7/8 (5025501)	R-10 (5287800)	1226 7/8 (5025901)	R-10-A (5287900)	.596	15.13	.661	16.78	M-58 (2527400)	850-600-A (8405398)	979-C-650/ ATC-900	
		11	.120	3.04	.635	16.12	1229 7/8 (5027101)	R-11 (5288200)	1230 7/8 (5027501)	R-11-A (5288300)	.619	15.72	.699	17.75	M-59 (2528300)			
		12	.109	2.76	.657	16.68	1231 7/8 (5027901)	R-12 (5288600)	1232 7/8 (5028301)	R-12-A (5288700)	.642	16.30	.722	18.33	M-60 (2529200)			
		13	.095	2.41	.685	17.39	1233 (5028700)	R-13 (5289000)	1234 (5029100)	R-13-A (5289100)	.670	17.01	.750	19.05				
				14	.083	2.10	.709	18.00	1235 (5029500)	R-14 (5289400)	1236 (5029900)	R-14-A (5289500)	.685	17.39	.774	19.65	M-61 (2530100)	
				15	.072	1.82	.731	18.56	1237 (5030300)	R-15 (5289800)	1238 (5030700)	R-15-A (5289900)	.712	18.08	.801	20.34		
				16	.065	1.65	.745	18.92	1239 (5031100)		1240 (5031500)		.726	18.44	.815	20.70	M-62 (2531000)	
				17	.058	1.47	.759	19.27	1243 (5032700)	R-16 (5290200)	1244 (5033100)	R-16-A (5290300)	.740	18.79	.829	21.05		850-1250-A (8405399)
		18	.049	1.24	.777	19.73												
1	25.4	8	.165	4.19	.670	17.01	1241 (5031900)	R-13 (5289000)	1242 (5032300)	R-13-A (5289100)	.665	16.89	.735	18.66	M-59 (2528300)	1050-400 (8404200)	979-C-300/ ATC-900	
		9	.148	3.75	.704	17.88	1235 (5029500)	R-14 (5289400)	1236 (5029900)	R-14-A (5289500)	.685	17.39	.774	19.65	M-61 (2530100)			
		10	.134	3.40	.732	18.59	1237 (5030300)	R-15 (5289800)	1238 (5030700)	R-15-A (5289900)	.712	18.08	.801	20.34				
				11	.120	3.04	.760	19.30	1243 (5032700)	R-16 (5290200)	1244 (5033100)	R-16-A (5290300)	.740	18.79	.829	21.05	M-62 (2531000)	
				12	.109	2.76	.782	19.86	1245 (5033500)	R-17 (5290600)	1246 (5033900)	R-17-A (5290700)	.763	19.38	.852	21.64		
				13	.095	2.41	.810	20.57	1247 (5034300)	R-18 (5291000)	1248 (5034700)	R-18-A (5291100)	.791	20.09	.880	22.35	850-600-A (8405398)	

# Condenser Expanders

Standard Reach G-1200 Series Heat Exchanger & Condenser Tube Expanders – continued



Standard Reach						Tube Sheet Thickness				Min. I.D. Tool Enters		Max. Expan. of Tool		Mandrel Number (Order No.) 3/8 in. Sq. Dr. (9.5 mm)	Recommended Rolling Motors (Order No.)		
Tube O.D.		Tube Gauge		Tube I.D.		1/2 in. to 5 in. (12.7 mm to 127.0 mm)		1-1/4 in. to 5-3/4 in. (31.7 mm to 146.0 mm)							Airetrol	Electric	
in.	mm	bwg	in.	mm	in.	mm	Tool No. (Order No.)	Roll Set No. (Order No.)	Tool No. (Order No.)	Roll Set No. (Order No.)	in.	mm	in.	mm			
1	25.4	14	.083	2.10	.834	21.18	1249 (5035100)	R-18 (5291000)	1250 (5035500)	R-18-A (5291100)	.810	20.57	.909	23.08	M-63 (2531900)	850-600-A (8405398)	979-C-300/ATC-900
		15	.072	1.82	.856	21.74	1251 (5035900)	R-19 (5291400)	1252 (5036300)	R-19-A (5291500)	.837	21.25	.936	23.77			
		16	.065	1.65	.870	22.09											
		17	.058	1.47	.884	22.45	1255 (5037500)	R-21 (5292200)	1256 (5037900)	R-21-A (5292300)	.865	21.97	.964	24.48	M-63 (2531900)	850-1250-A (8405399)	979-C-650/ATC-900
		18	.049	1.24	.902	22.91											
		19	.042	1.06	.916	23.26											
		20	.035	0.88	.930	23.62											
1-1/8	28.5	8	.165	4.19	.795	20.19	1253 (5036700)	R-20 (5291800)	1254 (5037100)	R-20-A (5291900)	.776	19.71	.875	22.22	M-63 (2531900)	979-C-300/ATC-900	
		9	.148	3.75	.829	21.05	1249 (5035100)	R-18 (5291000)	1250 (5035500)	R-18-A (5291100)	.810	20.57	.909	23.08			
		10	.134	3.40	.857	21.76	1251 (5035900)	R-19 (5291400)	1252 (5036300)	R-19-A (5291500)	.837	21.25	.936	23.77			
		11	.120	3.04	.885	22.47	1255 (5037500)	R-21 (5292200)	1256 (5037900)	R-21-A (5292300)	.865	21.97	.964	24.48			
		12	.109	2.76	.907	23.03	1257 (5038300)		1258 (5038700)		.883	22.42	.982	24.94	M-64 (2532800) *	1050-400 (8404200)	
		13	.095	2.41	.935	23.74	1259 (5039100)	R-22 (5292600)	1260 (5039500)	R-22-A (5292700)	.916	23.26	1.015	25.78			M-65 (2533700) *
		14	.083	2.10	.959	24.35	1261 (5039900)	R-23 (5293000)	1262 (5040300)	R-23-A (5293100)	.935	23.74	1.044	26.51			
		15	.072	1.82	.981	24.91	1263 (5040700)	R-24 (5293400)	1264 (5041100)	R-24-A (5293500)	.962	24.43	1.071	27.20			
		16	.065	1.65	.995	25.27											
		17	.058	1.47	1.009	25.62	1267 (5042300)	R-26 (5294200)	1268 (5042700)	R-26-A (5294300)	.990	25.14	1.099	27.91	M-66 (2534600) *		
18	.049	1.24	1.028	26.11													
1-1/4	31.7	8	.165	4.19	.920	23.36	1265 (5041500)	R-25 (5293800)	1266 (5041900)	R-25-A (5293900)	.901	22.88	1.010	25.65	M-65 (2533700) *	1550-250 (8404280)	979-C-300/ATC-900
		9	.148	3.75	.954	24.23	1261 (5039900)	R-23 (5293000)	1262 (5040300)	R-23-A (5293100)	.935	23.74	1.044	26.51			
		10	.134	3.40	.982	24.94	1263 (5040700)	R-24 (5293400)	1264 (5041100)	R-24-A (5293500)	.962	24.43	1.071	27.20			
		11	.120	3.04	1.010	25.65	1267 (5042300)	R-26 (5294200)	1268 (5042700)	R-26-A (5294300)	.990	25.14	1.099	27.91	M-66 (2534600) *		
		12	.109	2.76	1.032	26.21	1269 (5043100)	R-27 (5294600)	1270 (5043500)	R-27-A (5294700)	1.013	25.73	1.122	28.49			
		13	.095	2.41	1.060	26.92	1271 (5043900)	R-28 (5295000)	1272 (5044300)	R-28-A (5295100)	1.041	26.44	1.150	29.21	M-67 (2535500) *	1050-400 (8404200)	979-C-650/ATC-900
		14	.083	2.10	1.084	27.53	1273 (5044700)	R-29 (5295400)	1274 (5045100)	R-29-A (5295500)	1.060	26.92	1.169	29.69			
		15	.072	1.82	1.106	28.09	1275 (5045500)	R-30 (5295800)	1276 (5045900)	R-30-A (5295900)	1.087	27.60	1.196	30.37			
		16	.065	1.65	1.120	28.44											
		17	.058	1.47	1.134	28.80	1279 (5047100)		1280 (5047500)		1.115	28.32	1.224	31.08	M-68 (2536400) *		
18	.049	1.24	1.152	29.26													

\* 1/2 in. Sq. Dr. (12.7 mm)



# Condenser Expanders

Standard Reach G-1200 Series Heat Exchanger & Condenser Tube Expanders – continued

Standard Reach						Tube Sheet Thickness				Min. I.D. Tool Enters		Max. Expan. of Tool		Mandrel Number (Order No.) 1/2 in. Sq. Dr. (12.7 mm)	Recommended Rolling Motors (Order No.)		
Tube O.D.		Tube Gauge		Tube I.D.		1/2 in. to 5 in. (12.7 mm to 127.0 mm)		1-1/4 in. to 5-3/4 in. (31.7 mm to 146.0 mm)							Airetrol	Electric	
in.	mm	bwg	in.	mm	in.	mm	Tool No. (Order No.)	Roll Set No. (Order No.)	Tool No. (Order No.)	Roll Set No. (Order No.)	in.	mm	in.	mm			
1-3/8	34.9	8	.165	4.19	1.045	26.54	1277 (5046300)	R-31 (5296200)	1278 (5046700)	R-31-A (5295900)	1.026	26.04	1.135	28.82	M-67 (2535500)	1550-250 (8404280)	979-C-210/ ATC-900
		9	.148	3.75	1.079	27.40	1273 (5044700)	R-29 (5295400)	1274 (5045100)	R-29-A (5295500)	1.060	26.92	1.169	29.69			
		10	.134	3.40	1.107	28.11	1275 (5045500)	R-30 (5295800)	1276 (5045900)	R-30-A (5295900)	1.087	27.60	1.196	30.37			
		11	.120	3.04	1.135	28.82	1279 (5047100)		1280 (5047500)		1.115	28.32	1.224	31.08			
		12	.109	2.76	1.157	29.38	1281 (5047900)	R-32 (5295800)	1282 (5048300)	R-32-A (5296700)	1.133	28.77	1.242	31.54	M-68 (2536400)		
		13	.095	2.41	1.185	30.09	1283 (5048700)	R-32 (5295800)	1284 (5049100)	R-32-A (5296700)	1.160	29.46	1.275	32.38			
		14	.083	2.10	1.209	30.70	1285 (5049500)	R-34 (5297400)	1286 (5049900)	R-34-A (5297500)	1.179	29.94	1.294	32.86			
		15	.072	1.82	1.231	31.26	1287 (5050300)	R-35 (5297800)	1288 (5050700)	R-35-A (5297900)	1.206	30.63	1.321	33.55			
1-1/2	38.1	8	.165	4.19	1.170	29.71	1289 (5051100)	R-34 (5297400)	1290 (5051500)	R-34-A (5297500)	1.145	29.08	1.260	32.00	M-69 (2537300)	1550-250 (8404280)	979-C-210/ ATC-900
		9	.148	3.75	1.204	30.58	1285 (5049500)	R-34 (5297400)	1286 (5049900)	R-34-A (5297500)	1.179	29.94	1.294	32.86	M-70 (2538200)		
		10	.134	3.40	1.232	31.29	1287 (5050300)	R-35 (5297800)	1288 (5050700)	R-35-A (5297900)	1.206	30.63	1.321	33.55			
		11	.120	3.04	1.260	32.00	1291 (5051900)	R-36 (5298200)	1292 (5052300)	R-36-A (5298300)	1.235	31.36	1.350	34.29			
		12	.109	2.76	1.282	32.56	1293 (5052700)	R-37 (5298600)	1294 (5053100)	R-37-A (5298700)	1.257	31.92	1.372	34.84			
		13	.095	2.41	1.310	33.27	1295 (5053500)	R-37 (5298600)	1296 (5053900)	R-37-A (5298700)	1.285	32.63	1.400	35.56			
		14	.083	2.10	1.334	33.88	1297 (5054300)	R-38 (5299000)	1298 (5054700)	R-38-A (5299100)	1.331	33.80	1.446	36.72			
		15	.072	1.82	1.356	34.44	1299 (5512167)	R-38 (5299000)	1300 (5055075)	R-38-A (5299100)	1.331	33.80	1.472	37.38	M-72 (2539920)	1550-900 (8404290)	979-C-300/ ATC-900
		16	.065	1.65	1.370	34.79											
		17	.058	1.47	1.384	35.15											
		18	.049	1.24	1.402	35.61											
		19	.042	1.06	1.416	35.96											
20	.035	0.88	1.430	36.32													

# Condenser Expanders

"A" Reach G-1200 Series Heat Exchanger & Condenser Tube Expanders



## G-1200 Series – 3-Roll Expander, "A" Reach

**O.D Range:**  
**1/2 – 1-1/2 Inches**  
**12.7 – 38.1 mm**

- Expanders with 1-1/2 in. (38.1 mm) long rolls will accommodate tube sheet thicknesses from 1-1/4" to 7-3/4" (31.7 mm to 196.8 mm)
- Expanders with 2-1/4 in. (57.1 mm) long rolls will accommodate tube sheet thicknesses from 2" to 8-1/2" (50.8 mm to 215.9 mm)
- **Reversible Thrust Collar** design allows flush and 1/8 in. recess tube rolling



NOTE: Step expanding becomes necessary if the tube sheet thickness exceeds the length of the roll. Specify "S" Type rolls for step rolling applications.



Sizes not listed available upon request.

Tube O.D.		"A" Reach					Tube Sheet Thickness				Min. I.D. Tool Enters		Max. Expan. of Tool		Mandrel Number (Order No.) 3/8 in. Sq. Dr. (9.5 mm)	Recommended Rolling Motors (Order No.)			
		Tube Gauge		Tube I.D.			1-1/4 in. to 7-3/4 in. (31.7 mm to 196.8 mm)		2 in. to 8-1/2 in. (50.8 mm to 215.9 mm)							Airetrol	Electric		
in.	mm	bwg	in.	mm	in.	mm	Tool No. (Order No.)	Roll Set No. (Order No.)	Tool No. (Order No.)	Roll Set No. (Order No.)	in.	mm	in.	mm					
1/2	12.7	14	.083	2.10	.334	8.48	1197 A (5514943)	797 (5512194)			.324	8.22	.374	9.49	1197-A (2165900)	720-550-B (8405391)			
		15	.072	1.82	.356	9.04	1199 A (5515077)	R-1 (5284800)			.348	8.83	.398	10.10	1199 A (2972749)				
		16	.065	1.65	.370	9.39	1201 A (5017600)					.360	9.14	.410	10.41				M-51-A (2521200)
		17	.058	1.47	.384	9.75	1203 A (5018000)	R-2 (5285000)					.374	9.49	.424	10.76			
		18	.049	1.24	.402	10.21	1205 A (5018400)	R-3 (5285200)					.392	9.95	.447	11.35			M-52-A (2522100)
		20	.035	0.88	.430	10.92	1207 A (5018800)	R-4 (5285400)					.420	10.66	.480	12.19			M-53-A (2523000)
5/8	15.8	12	.109	2.76	.407	10.33	1205 A (5018400)	R-3 (5285200)			.392	9.95	.447	11.35	M-52-A (2522100)	850-600-A (8405398)			
		13	.095	2.41	.435	11.04	1207 A (5018800)	R-4 (5285400)			.420	10.66	.480	12.19	M-53-A (2523000)				
		14	.083	2.10	.459	11.65	1209 A (5019200)		1210 A (5019600)	R-4-A (5285500)	.449	11.40	.509	12.92	M-54-A (2523900)				
		15	.072	1.82	.481	12.21	1211 A (5020000)	R-5 (5285800)	1212 A (5020400)	R-5-A (5285900)	.471	11.96	.536	13.61	M-55-A (2524800)				
		16	.065	1.65	.495	12.57	1213 A (5020800)	R-6 (5286200)	1214 A (5021200)	R-6-A (5286300)	.485	12.31	.550	13.97					
		17	.058	1.47	.509	12.92	1215 A (5021600)		1216 A (5022000)		.499	12.67	.564	14.32	M-56-A (2525700)				
		18	.049	1.24	.527	13.38	1217 A (5022400)	R-7 (5286600)	1218 A (5022800)	R-7-A (5286700)	.517	13.13	.582	14.78					
		19	.042	1.06	.541	13.74													
		20	.035	0.88	.555	14.09													
		21	.032	0.81	.561	14.24	1219 A (5023200)	R-7 (5286600)	1220 A (5023600)	R-7-A (5286700)	.531	13.48	.596	15.13	M-58-A (2527500)				
22	.028	0.71	.569	14.45															

# Condenser Expanders

"A" Reach G-1200 Series Heat Exchanger & Condensor Tube Expanders – continued

"A" Reach						Tube Sheet Thickness				Min. I.D. Tool Enters		Max. Expan. of Tool		Mandrel Number (Order No.) 3/8 in. Sq. Dr. (9.5 mm)	Recommended Rolling Motors (Order No.)								
Tube O.D.		Tube Gauge		Tube I.D.		1-1/4 in. to 7-3/4 in. (31.7 mm to 196.8 mm)		2 in. to 8-1/2 in. (50.8 mm to 215.9 mm)							in.	mm	in.	mm	M-55-A (2524800)	M-56-A (2525700)	M-58-A (2527500)	Airetrol	Electric
in.	mm	bwg	in.	mm	in.	mm	Tool No. (Order No.)	Roll Set No. (Order No.)	Tool No. (Order No.)	Roll Set No. (Order No.)	in.	mm	in.	mm								Airetrol	Electric
3/4	19.0	10	.134	3.40	.482	12.24	1211 A (5020000)	R-5 (5285800)	1212 A (5020400)	R-5-A (5285900)	.471	11.96	.536	13.61	M-55-A (2524800)	850-600-A (8405398)	979-C-650/ ATC-900						
		11	.120	3.04	.510	12.95	1215 A (5021600)	R-6 (5286200)	1216 A (5022000)	R-6-A (5286300)	.499	12.67	.564	14.32	M-56-A (2525700)								
		12	.109	2.76	.532	13.51	1217 A (5022400)	R-7 (5286600)	1218 A (5022800)	R-7-A (5286700)	.517	13.13	.582	14.78	M-58-A (2527500)								
		13	.095	2.41	.560	14.22	1221 A (5024000)	R-8 (5287000)	1222 A (5024400)	R-8-A (5287100)	.550	13.97	.615	15.62									
		14	.083	2.10	.584	14.83	1223 A (5024800)	R-9 (5287400)	1224 A (5025200)	R-9-A (5287500)	.574	14.57	.639	16.23									
		15	.072	1.82	.606	15.39	1225 A (5025600)	R-10 (5287800)	1226 A (5026000)	R-10-A (5287900)	.596	15.13	.661	16.78									
		16	.065	1.65	.620	15.74	1227 A (5026400)		1228 A (5026801)		.605	15.36	.685	17.39									
		17	.058	1.47	.634	16.10	1229 A (5027100)	R-11 (5288200)	1230 A (5027600)	R-11-A (5288300)	.619	15.72	.699	17.75				M-59-A (2528400)	850-1250-A (8405399)				
		18	.049	1.24	.652	16.56																	
		19	.042	1.06	.666	16.91																	
		20	.035	0.88	.680	17.27																	
		21	.032	0.81	.686	17.42																	
22	.028	0.71	.694	17.62	1231 A (5028000)	R-12 (5288600)					1232 A (5028400)	R-12-A (5288700)	.642	16.30		.722	18.33						
7/8	22.2	10	.134	3.40	.607	15.41					1225 A (5025600)	R-10 (5287800)	1226 A (5026000)	R-10-A (5287900)		.596	15.13			.661	16.78	M-58-A (2527500)	850-600-A (8405398)
		11	.120	3.04	.635	16.12					1229 A (5027200)	R-11 (5288200)	1230 A (5027600)	R-11-A (5288300)	.619	15.72	.699			17.75	M-59-A (2528400)		
		12	.109	2.76	.657	16.68					1231 A (5028000)	R-12 (5288600)	1232 A (5028400)	R-12-A (5288700)	.642	16.30	.722			18.33			
		13	.095	2.41	.685	17.39					1233 A (5028800)	R-13 (5289000)	1234 A (5029200)	R-13-A (5289100)	.670	17.01	.750			19.05	M-60-A (2529300)		
		14	.083	2.10	.709	18.00					1235 A (5029600)	R-14 (5289400)	1236 A (5030000)	R-14-A (5289500)	.685	17.39	.774			19.65	M-61-A (2530200)		
		15	.072	1.82	.731	18.56					1237 A (5030400)	R-15 (5289800)	1238 A (5030800)	R-15-A (5289900)	.712	18.08	.801			20.34			
		16	.065	1.65	.745	18.92	1239 A (5031200)	1240 A (5031600)	.726	18.44	.815		20.70										
		17	.058	1.47	.759	19.27	1243 A (5032800)	R-16 (5290200)	1244 A (5033200)	R-16-A (5290300)	.740	18.79	.829	21.05	M-62-A (2531100)	850-1250-A (8405399)							
		18	.049	1.24	.777	19.73																	
1	25.4	8	.165	4.19	.670	17.01	1241 A (5032000)	R-13 (5289000)	1242 A (5032400)	R-13-A (5289100)	.665	16.89	.735	18.66	M-59-A (2528400)	1050-400 (8404200)	979-C-300/ ATC-900						
		9	.148	3.75	.704	17.88	1235 A (5029600)	R-14 (5289400)	1236 A (5030000)	R-14-A (5289500)	.685	17.39	.774	19.65	M-61-A (2530200)								
		10	.134	3.40	.732	18.59	1237 A (5030400)	R-15 (5289800)	1238 A (5030800)	R-15-A (5289900)	.712	18.08	.801	20.34									
		11	.120	3.04	.760	19.30	1243 A (5032800)	R-16 (5290200)	1244 A (5033200)	R-16-A (5290300)	.740	18.79	.829	21.05	M-62-A (2531100)								
		12	.109	2.76	.782	19.86	1245 A (5033600)	R-17 (5290600)	1246 A (5034000)	R-17-A (5290700)	.763	19.38	.852	21.64									
		13	.095	2.41	.810	20.57	1247 A (5034400)	R-18 (5291000)	1248 A (5034800)	R-18-A (5291100)	.791	20.09	.880	22.35									
													850-600-A (8405398)										

# Condenser Expanders

"A" Reach G-1200 Series Heat Exchanger & Condenser Tube Expanders – continued



"A" Reach						Tube Sheet Thickness				Min. I.D. Tool Enters		Max. Expan. of Tool		Mandrel Number (Order No.) 3/8 in. Sq. Dr. (9.5 mm)	Recommended Rolling Motors (Order No.)		
Tube O.D.		Tube Gauge		Tube I.D.		1-1/4 in. to 7-3/4 in. (31.7 mm to 196.8 mm)		2 in. to 8-1/2 in. (50.8 mm to 215.9 mm)							Airetrol	Electric	
in.	mm	bwg	in.	mm	in.	mm	Tool No. (Order No.)	Roll Set No. (Order No.)	Tool No. (Order No.)	Roll Set No. (Order No.)	in.	mm	in.	mm			
1	25.4	14	.083	2.10	.834	21.18	1249 A (5035200)	R-18 (5291000)	1250 A (5035600)	R-18-A (5291100)	.810	20.57	.909	23.08	M-63-A (2532000)	850-600-A (8405398)	979-C-300/ ATC-900
		15	.072	1.82	.856	21.74	1251 A (5036000)	R-19 (5291400)	1252 A (5036400)	R-19-A (5291500)	.837	21.25	.936	23.77			
		16	.065	1.65	.870	22.09											
		17	.058	1.47	.884	22.45	1255 A (5037600)	R-21 (5292200)	1256 A (5038000)	R-21-A (5292300)	.865	21.97	.964	24.48	M-63-A (2532000)	850-1250-A (8405399)	979-C-650/ ATC-900
		18	.049	1.24	.902	22.91											
		19	.042	1.06	.916	23.26											
		20	.035	0.88	.930	23.62											
1-1/8	28.5	8	.165	4.19	.795	20.19	1253 A (5036800)	R-20 (5291800)	1254 A (5037200)	R-20-A (5291900)	.776	19.71	.875	22.22	M-63-A (2532000)	1050-400 (8404200)	979-C-300/ ATC-900
		9	.148	3.75	.829	21.05	1249 A (5035200)	R-18 (5291000)	1250 A (5035600)	R-18-A (5291100)	.810	20.57	.909	23.08			
		10	.134	3.40	.857	21.76	1251 A (5036000)	R-19 (5291400)	1252 A (5036400)	R-19-A (5291500)	.837	21.25	.936	23.77			
		11	.120	3.04	.885	22.47	1255 A (5037600)	R-21 (5292200)	1256 A (5038000)	R-21-A (5292300)	.865	21.97	.964	24.48			
		12	.109	2.76	.907	23.03	1257 A (5038300)		1258 A (5038800)		.883	22.42	.982	24.94			
		13	.095	2.41	.935	23.74	1259 A (5039200)	R-22 (5292600)	1260 A (5039600)	R-22-A (5292700)	.916	23.26	1.015	25.78	M-64-A (2532900PT) *	1050-400 (8404200)	979-C-650/ ATC-900
		14	.083	2.10	.959	24.35	1261 A (5040000)	R-23 (5293000)	1262 A (5040400)	R-23-A (5293100)	.935	23.74	1.044	26.51	M-65-A (2533800) *		
		15	.072	1.82	.981	24.91	1263 A (5040800)	R-24 (5293400)	1264 A (5041200)	R-24-A (5293500)	.962	24.43	1.071	27.20			
		16	.065	1.65	.995	25.27											
		17	.058	1.47	1.009	25.62	1267 A (5042400)	R-26 (5294200)	1268 A (5042800)	R-26-A (5294300)	.990	25.14	1.099	27.91	M-66-A (2534700) *		
18	.049	1.24	1.028	26.11													
1-1/4	31.7	8	.165	4.19	.920	23.36	1265 A (5041600)	R-25 (5293800)	1266 A (5042000)	R-25-A (5293900)	.901	22.88	1.010	25.65	M-65-A (2533800) *	1550-250 (8404280)	979-C-300/ ATC-900
		9	.148	3.75	.954	24.23	1261 A (5040000)	R-23 (5293000)	1262 A (5040400)	R-23-A (5293100)	.935	23.74	1.044	26.51			
		10	.134	3.40	.982	24.94	1263 A (5040800)	R-24 (5293400)	1264 A (5041200)	R-24-A (5293500)	.962	24.43	1.071	27.20			
		11	.120	3.04	1.010	25.65	1267 A (5042400)	R-26 (5294200)	1268 A (5042800)	R-26-A (5294300)	.990	25.14	1.099	27.91	M-66-A (2534700) *	1050-400 (8404200)	979-C-650/ ATC-900
		12	.109	2.76	1.032	26.21	1269 A (5043200)	R-27 (5294600)	1270 A (5043600)	R-27-A (5294700)	1.013	25.73	1.122	28.49			
		13	.095	2.41	1.060	26.92	1271 A (5044000)	R-28 (5295000)	1272 A (5044400)	R-28-A (5295100)	1.041	26.44	1.150	29.21	M-67-A (2535600) *		
		14	.083	2.10	1.084	27.53	1273 A (5044800)	R-29 (5295400)	1274 A (5045200)	R-29-A (5295500)	1.060	26.92	1.169	29.69			
		15	.072	1.82	1.106	28.09	1275 A (5045600)	R-30 (5295800)	1276 A (5046000)	R-30-A (5295900)	1.087	27.60	1.196	30.37	M-68-A (2536500) *		
		16	.065	1.65	1.120	28.44											
		17	.058	1.47	1.134	28.80	1279 A (5047200)	R-30 (5295800)	1280 A (5047600)	R-30-A (5295900)	1.115	28.32	1.224	31.08			
18	.049	1.24	1.152	29.26													

\* 1/2 in. Sq. Dr. (12.7 mm)

# Condenser Expanders

"A" Reach G-1200 Series Heat Exchanger & Condenser Tube Expanders – continued

"A" Reach						Tube Sheet Thickness				Min. I.D. Tool Enters		Max. Expan. of Tool		Mandrel Number (Order No.) 1/2 in. Sq. Dr. (12.7 mm)	Recommended Rolling Motors (Order No.)		
Tube O.D.		Tube Gauge		Tube I.D.		1-1/4 in. to 7-3/4 in. (31.7 mm to 196.8 mm)		2 in. to 8-1/2 in. (50.8 mm to 215.9 mm)							Airetrol	Electric	
in.	mm	bwg	in.	mm	in.	mm	Tool No. (Order No.)	Roll Set No. (Order No.)	Tool No. (Order No.)	Roll Set No. (Order No.)	in.	mm	in.	mm			
1-3/8	34.9	8	.165	4.19	1.045	26.54	1277 A (5046400)	R-31 (5296200)	1278 A (5046800)	R-31-A (5295900)	1.026	26.04	1.135	28.82	M-67-A (2535600)	1550-250 (8404280)	979-C-210/ ATC-900
		9	.148	3.75	1.079	27.40	1273 A (5044800)	R-29 (5295400)	1274 A (5045200)	R-29-A (5295500)	1.060	26.92	1.169	29.69			
		10	.134	3.40	1.107	28.11	1275 A (5045600)	R-30 (5295800)	1276 A (5046000)	R-30-A (5295900)	1.087	27.60	1.196	30.37			
		11	.120	3.04	1.135	28.82	1279 A (5047200)		1280 A (5047600)			1.115	28.32	1.224	31.08	M-68-A (2536500)	
		12	.109	2.76	1.157	29.38	1281 A (5048000)	R-32 (5295800)	1282 A (5048400)	R-32-A (5296700)	1.133	28.77	1.242	31.54			
		13	.095	2.41	1.185	30.09	1283 A (5048800)	R-32 (5295800)	1284 A (5049200)	R-32-A (5296700)	1.160	29.46	1.275	32.38	M-70-A (2538300)	1550-900 (8404290)	979-C-300/ ATC-900
		14	.083	2.10	1.209	30.70	1285 A (5049600)	R-34 (5297400)	1286 A (5050000)	R-34-A (5297500)	1.179	29.94	1.294	32.86			
		15	.072	1.82	1.231	31.26	1287 A (5050400)	R-35 (5297800)	1288 (5050700)	R-35-A (5297900)	1.206	30.63	1.321	33.55			
		16	.065	1.65	1.245	31.62											
1-1/2	38.1	8	.165	4.19	1.170	29.71	1289 A (5051200)	R-34 (5297400)	1290 A (5051600)	R-34-A (5297500)	1.145	29.08	1.260	32.00	M-69-A (2537300)	1550-250 (8404280)	979-C-210/ ATC-900
		9	.148	3.75	1.204	30.58	1285 A (5049600)	R-34 (5297400)	1286 A (5050000)	R-34-A (5297500)	1.179	29.94	1.294	32.86	M-70-A (2538300)		
		10	.134	3.40	1.232	31.29	1287 A (5050400)	R-35 (5297800)	1288 A (5050800)	R-35-A (5297900)	1.206	30.63	1.321	33.55			
		11	.120	3.04	1.260	32.00	1291 A (5052000)	R-36 (5298200)	1292 A (5052400)	R-36-A (5298300)	1.235	31.36	1.350	34.29			
		12	.109	2.76	1.282	32.56	1293 A (5052800)	R-37 (5298600)	1294 A (5053200)	R-37-A (5298700)	1.257	31.92	1.372	34.84			
		13	.095	2.41	1.310	33.27	1295 A (5053600)	R-37 (5298600)	1296 A (5054000)	R-37-A (5298700)	1.285	32.63	1.400	35.56	M-71-A (2539200)	1550-900 (8404290)	979-C-300/ ATC-900
		14	.083	2.10	1.334	33.88											
		15	.072	1.82	1.356	34.44	1297 A (5054400)	R-38 (5299000)	1298 A (5054800)	R-38-A (5299100)	1.331	33.80	1.446	36.72			
		16	.065	1.65	1.370	34.79											
		17	.058	1.47	1.384	35.15	1299 A (5515074)	R-38 (5299000)	1300 A (5515089)	R-38-A (5299100)	1.331	33.80	1.472	37.38	M-72-A (2980795)		
		18	.049	1.24	1.402	35.61											
		19	.042	1.06	1.416	35.96											
20	.035	0.88	1.430	36.32													

## G-1200 Series – 3-Roll Expander, "C" Reach

**O.D Range:**  
**1/2 – 1-1/2 Inches**  
**12.7 – 38.1 mm**

- Expanders with 1-1/2 in. (38.1 mm) long rolls will accommodate tube sheet thicknesses from 1-1/2" to 11-3/4" (38.1 mm to 298.4 mm)
- Expanders with 2-1/4 in. (57.1 mm) long rolls will accommodate tube sheet thicknesses from 2-1/4" to 12-1/2" (57.1 mm to 317.5 mm)
- **Reversible Thrust Collar** design allows flush and 1/8 in. recess tube rolling



NOTE: Step expanding becomes necessary if the tube sheet thickness exceeds the length of the roll. Specify "S" Type rolls for step rolling applications.

Sizes not listed available upon request.



"C" Reach						Tube Sheet Thickness				Min. I.D. Tool Enters		Max. Expan. of Tool		Mandrel Number (Order No.) 3/8 in. Sq. Dr. (9.5 mm)	Recommended Rolling Motors (Order No.)						
Tube O.D.		Tube Gauge		Tube I.D.		1-1/2 in. to 11-3/4 in. (38.1 mm to 298.4 mm)		2-1/4 in. to 12-1/2 in. (57.1 mm to 317.5 mm)		in.	mm	in.	mm		Airetrol	Electric					
in.	mm	bwg	in.	mm	in.	mm	Tool No. (Order No.)	Roll Set No. (Order No.)	Tool No. (Order No.)	Roll Set No. (Order No.)											
1/2	12.7	14	.083	2.10	.334	8.48	1197 C (5515076)	797 (5512194)			.324	8.22	.374	9.49	1197 C (2979579)	720-550-B (8405391)					
		15	.072	1.82	.356	9.04	1199 C (5515079)	R-1 (5284800)			.348	8.83	.398	10.10	1199 C (2978730)						
		16	.065	1.65	.370	9.39	1201 C (5017800)				.360	9.14	.410	10.41	M-51-C (2521600)						
		17	.058	1.47	.384	9.75	1203 C (5018200)	R-2 (5285000)			.374	9.49	.424	10.76			720-1800-B (8405512)-3/8				
		18	.049	1.24	.402	10.21	1205 C (5018600)	R-3 (5285200)			.392	9.95	.447	11.35	M-52-C (2522500)						
		20	.035	0.88	.430	10.92	1207 C (5019000)	R-4 (5285400)			.420	10.66	.480	12.19	M-53-C (2523400)						
5/8	15.8	12	.109	2.76	.407	10.33	1205 C (5018600)	R-3 (5285200)			.392	9.95	.447	11.35	M-52-C (2522500)	850-600-A (8405398)					
		13	.095	2.41	.435	11.04	1207 C (5019000)	R-4 (5285400)			.420	10.66	.480	12.19	M-53-C (2523400)						
		14	.083	2.10	.459	11.65	1209 C (5019400)		1210 C (5019800)	R-4-A (5285500)	.449	11.40	.509	12.92	M-54-C (2524300)						
		15	.072	1.82	.481	12.21	1211 C (5020200)	R-5 (5285800)	1212 C (5020600)	R-5-A (5285900)	.471	11.96	.536	13.61	M-55-C (2525200)						
		16	.065	1.65	.495	12.57	1213 C (5021000)	R-6 (5286200)	1214 C (5021400)	R-6-A (5286300)	.485	12.31	.550	13.97							
		17	.058	1.47	.509	12.92	1215 C (5021800)		1216 5/8 C (5022200)			.499	12.67	.564	14.32	M-56-C (2526100)					
		18	.049	1.24	.527	13.38	1217 C (5022600)	R-7 (5286600)	1218 C (5023000)	R-7-A (5286700)	.517	13.13	.582	14.78			850-1250-A (8405399)				
		19	.042	1.06	.541	13.74	1219 C (5023400)	R-7 (5286600)	1220 C (5023800)	R-7-A (5286700)											
		20	.035	0.88	.555	14.09															
		21	.032	0.81	.561	14.24															
22	.028	0.71	.569	14.45									.531	13.48	.596	15.13	M-58-C (2527900)				

# Condenser Expanders

"C" Reach G-1200 Series Heat Exchanger & Condensor Tube Expanders – continued

"C" Reach						Tube Sheet Thickness				Min. I.D. Tool Enters		Max. Expan. of Tool		Mandrel Number (Order No.) 3/8 in. Sq. Dr. (9.5 mm)	Recommended Rolling Motors (Order No.)		
Tube O.D.		Tube Gauge		Tube I.D.		1-1/2 in. to 11-3/4 in. (38.1 mm to 298.4 mm)		2-1/4 in. to 12-1/2 in. (57.1 mm to 317.5 mm)							in.	mm	in.
in.	mm	bwg	in.	mm	in.	mm	Tool No. (Order No.)	Roll Set No. (Order No.)	Tool No. (Order No.)	Roll Set No. (Order No.)	in.	mm	in.	mm			
3/4	19.0	10	.134	3.40	.482	12.24	1211 C (5020200)	R-5 (5285800)	1212 C (5020600)	R-5-A (5285900)	.471	11.96	.536	13.61	M-55-C (2525200)	850-600-A (8405398)	979-C-650/ ATC-900
		11	.120	3.04	.510	12.95	1215 C (5021800)	R-6 (5286200)	1216 3/4 C (5526691PT)	R-6-A (5286300)	.499	12.67	.564	14.32	M-56-C (2526100)		
		12	.109	2.76	.532	13.51	1217 C (5022600)	R-7 (5286600)	1218 C (5023000)	R-7-A (5286700)	.517	13.13	.582	14.78	M-58-C (2527900)		
		13	.095	2.41	.560	14.22	1221 C (5024200)	R-8 (5287000)	1222 C (5024600)	R-8-A (5287100)	.550	13.97	.615	15.62			
		14	.083	2.10	.584	14.83	1223 C (5025000)	R-9 (5287400)	1224 C (5025400)	R-9-A (5287500)	.574	14.57	.639	16.23			
		15	.072	1.82	.606	15.39	1225 C (5025800)	R-10 (5287800)	1226 C (5026200)	R-10-A (5287900)	.596	15.13	.661	16.78			
		16	.065	1.65	.620	15.74	1227 C (5026600)		1228 C (5027000)		.605	15.36	.685	17.39			
		17	.058	1.47	.634	16.10	1229 C (5027400)	R-11 (5288200)	1230 C (5027800)	R-11-A (5288300)	.619	15.72	.699	17.75	M-59-C (2528800)	850-1250-A (8405399)	
		18	.049	1.24	.652	16.56											
		19	.042	1.06	.666	16.91											
		20	.035	0.88	.680	17.27											
		21	.032	0.81	.686	17.42											
22	.028	0.71	.694	17.62	1231 C (5028200)	R-12 (5288600)					1232 C (5028600)	R-12-A (5288700)	.642	16.30			.722
7/8	22.2	10	.134	3.40	.607	15.41	1225 C (5025800)	R-10 (5287800)	1226 C (5026200)	R-10-A (5287900)	.596	15.13	.661	16.78	M-58-C (2527900)	850-600-A (8405398)	979-C-650/ ATC-900
		11	.120	3.04	.635	16.12	1229 C (5027400)	R-11 (5288200)	1230 C (5027800)	R-11-A (5288300)	.619	15.72	.699	17.75	M-59-C (2528800)		
		12	.109	2.76	.657	16.68	1231 C (5028200)	R-12 (5288600)	1232 C (5028600)	R-12-A (5288700)	.642	16.30	.722	18.33			
		13	.095	2.41	.685	17.39	1233 C (5029000)	R-13 (5289000)	1234 C (5029400)	R-13-A (5289100)	.670	17.01	.750	19.05	M-60-C (2529700)		
		14	.083	2.10	.709	18.00	1235 C (5029800)	R-14 (5289400)	1236 C (5030200)	R-14-A (5289500)	.685	17.39	.774	19.65	M-61 (2530600)		
		15	.072	1.82	.731	18.56	1237 C (5030600)	R-15 (5289800)	1238 C (5031000)	R-15-A (5289900)	.712	18.08	.801	20.34			
		16	.065	1.65	.745	18.92	1239 C (5031400)		1240 C (5031800)		.726	18.44	.815	20.70	M-62-C (2531500)		
		17	.058	1.47	.759	19.27	1243 C (5033000)	R-16 (5290200)	1244 C (5033400)	R-16-A (5290300)	.740	18.79	.829	21.05			
18	.049	1.24	.777	19.73													
1	25.4	8	.165	4.19	.670	17.01	1241 C (5032200)	R-13 (5289000)	1242 C (5032600PT)	R-13-A (5289100)	.665	16.89	.735	18.66	M-59-C (2528800)	1050-400 (8404200)	979-C-300/ ATC-900
		9	.148	3.75	.704	17.88	1235 C (5029800)	R-14 (5289400)	1236 C (5030200)	R-14-A (5289500)	.685	17.39	.774	19.65	M-61-C (2530600)		
		10	.134	3.40	.732	18.59	1237 C (5030600)	R-15 (5289800)	1238 C (5031000)	R-15-A (5289900)	.712	18.08	.801	20.34			
		11	.120	3.04	.760	19.30	1243 C (5033000)	R-16 (5290200)	1244 C (5033400)	R-16-A (5290300)	.740	18.79	.829	21.05	M-62-C (2531500)		
		12	.109	2.76	.782	19.86	1245 C (5033800)	R-17 (5290600)	1246 C (5034200)	R-17-A (5290700)	.763	19.38	.852	21.64			
		13	.095	2.41	.810	20.57	1247 C (5034600)	R-18 (5291000)	1248 C (5035000)	R-18-A (5291100)	.791	20.09	.880	22.35			

# Condenser Expanders

"C" Reach G-1200 Series Heat Exchanger & Condenser Tube Expanders – continued



"C" Reach						Tube Sheet Thickness				Min. I.D. Tool Enters		Max. Expan. of Tool		Mandrel Number (Order No.) 3/8 in. Sq. Dr. (9.5 mm)	Recommended Rolling Motors (Order No.)		
Tube O.D.		Tube Gauge		Tube I.D.		1-1/2 in. to 11-3/4 in. (38.1 mm to 298.4 mm)		2-1/4 in. to 12-1/2 in. (57.1 mm to 317.5 mm)							Airetrol	Electric	
in.	mm	bwg	in.	mm	in.	mm	Tool No. (Order No.)	Roll Set No. (Order No.)	Tool No. (Order No.)	Roll Set No. (Order No.)	in.	mm	in.	mm			
1	25.4	14	.083	2.10	.834	21.18	1249 C (5035400)	R-18 (5291000)	1250 C (5035800)	R-18-A (5291100)	.810	20.57	.909	23.08	M-63-C (2532400)	850-600-A (8405398)	979-C-300/ ATC-900
		15	.072	1.82	.856	21.74	1251 C (5036200)	R-19 (5291400)	1252 C (5036600)	R-19-A (5291500)	.837	21.25	.936	23.77			
		16	.065	1.65	.870	22.09											
		17	.058	1.47	.884	22.45	1255 C (5037800)	R-21 (5292200)	1256 C (5038200)	R-21-A (5292300)	.865	21.97	.964	24.48	M-63-C (2532400)	850-1250-A (8405399)	979-C-650/ ATC-900
		18	.049	1.24	.902	22.91											
		19	.042	1.06	.916	23.26											
		20	.035	0.88	.930	23.62											
1-1/8	28.5	8	.165	4.19	.795	20.19	1253 C (5037000)	R-20 (5291800)	1254 C (5037400)	R-20-A (5291900)	.776	19.71	.875	22.22	M-63-C (2532400)	1050-400 (8404200)	979-C-300/ ATC-900
		9	.148	3.75	.829	21.05	1249 C (5035400)	R-18 (5291000)	1250 C (5035800)	R-18-A (5291100)	.810	20.57	.909	23.08			
		10	.134	3.40	.857	21.76	1251 C (5036200)	R-19 (5291400)	1252 C (5036600)	R-19-A (5291500)	.837	21.25	.936	23.77			
		11	.120	3.04	.885	22.47	1255 C (5037800)	R-21 (5292200)	1256 C (5038200)	R-21-A (5292300)	.865	21.97	.964	24.48			
		12	.109	2.76	.907	23.03	1257 C (5038600)		1258 C (5039000)		.883	22.42	.982	24.94			
		13	.095	2.41	.935	23.74	1259 C (5039400)	R-22 (5292600)	1260 C (5039800)	R-22-A (5292700)	.916	23.26	1.015	25.78	M-64-C (2533300) *	1050-400 (8404200)	979-C-650/ ATC-900
		14	.083	2.10	.959	24.35	1261 C (5040200)	R-23 (5293000)	1262 C (5040600)	R-23-A (5293100)	.935	23.74	1.044	26.51	M-65-C (2534200) *		
		15	.072	1.82	.981	24.91	1263 C (5041000)	R-24 (5293400)	1264 C (5041400)	R-24-A (5293500)	.962	24.43	1.071	27.20			
		16	.065	1.65	.995	25.27											
		17	.058	1.47	1.009	25.62	1267 C (5042600)	R-26 (5294200)	1268 C (5043000)	R-26-A (5294300)	.990	25.14	1.099	27.91	M-66-C (2535100) *		
18	.049	1.24	1.028	26.11													
1-1/4	31.7	8	.165	4.19	.920	23.36	1265 C (5041800)	R-25 (5293800)	1266 C (5042200)	R-25-A (5293900)	.901	22.88	1.010	25.65	M-65-C (2534200) *	1550-250 (8404280)	979-C-300/ ATC-900
		9	.148	3.75	.954	24.23	1261 C (5040200)	R-23 (5293000)	1262 C (5040600)	R-23-A (5293100)	.935	23.74	1.044	26.51			
		10	.134	3.40	.982	24.94	1263 C (5041000)	R-24 (5293400)	1264 C (5041400)	R-24-A (5293500)	.962	24.43	1.071	27.20			
		11	.120	3.04	1.010	25.65	1267 C (5042600)	R-26 (5294200)	1268 C (5043000)	R-26-A (5294300)	.990	25.14	1.099	27.91	M-66-C (2535100) *	1050-400 (0)	979-C-650/ ATC-900
		12	.109	2.76	1.032	26.21	1269 C (5043400)	R-27 (5294600)	1270 C (5043800)	R-27-A (5294700)	1.013	25.73	1.122	28.49			
		13	.095	2.41	1.060	26.92	1271 C (5044200)	R-28 (5295000)	1272 C (5044600)	R-28-A (5295100)	1.041	26.44	1.150	29.21	M-67-C (2536000) *		
		14	.083	2.10	1.084	27.53	1273 C (5045000)	R-29 (5295400)	1274 C (5045400)	R-29-A (5295500)	1.060	26.92	1.169	29.69			
		15	.072	1.82	1.106	28.09	1275 C (5045800)	R-30 (5295800)	1276 C (5046200)	R-30-A (5295900)	1.087	27.60	1.196	30.37			
		16	.065	1.65	1.120	28.44											
		17	.058	1.47	1.134	28.80	1279 C (5047400)	R-30 (5295800)	1280 C (5047800)	R-30-A (5295900)	1.115	28.32	1.224	31.08	M-68-C (2536900) *		
18	.049	1.24	1.152	29.26													

\* 1/2 in. Sq. Dr. (12.7 mm)



# Condenser Expanders

"C" Reach G-1200 Series Heat Exchanger & Condensor Tube Expanders – continued

"C" Reach						Tube Sheet Thickness				Min. I.D. Tool Enters		Max. Expan. of Tool		Mandrel Number (Order No.) 1/2 in. Sq. Dr. (12.7 mm)	Recommended Rolling Motors (Order No.)		
Tube O.D.		Tube Gauge		Tube I.D.		1-1/2 in. to 11-3/4 in. (38.1 mm to 298.4 mm)		2-1/4 in. to 12-1/2 in. (57.1 mm to 317.5 mm)							Airetrol	Electric	
in.	mm	bwg	in.	mm	in.	mm	Tool No. (Order No.)	Roll Set No. (Order No.)	Tool No. (Order No.)	Roll Set No. (Order No.)	in.	mm	in.	mm			
1-3/8	34.9	8	.165	4.19	1.045	26.54	1277 C (5046600)	R-31 (5296200)	1278 C (5047000)	R-31-A (5295900)	1.026	26.04	1.135	28.82	M-67-C (2536000)	1550-250 (8404280)	979-C-210/ ATC-900
		9	.148	3.75	1.079	27.40	1273 C (5045000)	R-29 (5295400)	1274 C (5045400)	R-29-A (5295500)	1.060	26.92	1.169	29.69			
		10	.134	3.40	1.107	28.11	1275 C (5045800)	R-30 (5295800)	1276 C (5046200)	R-30-A (5295900)	1.087	27.60	1.196	30.37			
		11	.120	3.04	1.135	28.82	1279 C (5047400)		1280 C (5047800)		1.115	28.32	1.224	31.08	M-68-C (2536900)		
		12	.109	2.76	1.157	29.38	1281 C (5048200)	R-32 (5295800)	1282 C (5048600)	R-32-A (5296700)	1.133	28.77	1.242	31.54			
		13	.095	2.41	1.185	30.09	1283 C (5049000)	R-32 (5295800)	1284 C (5049400)	R-32-A (5296700)	1.160	29.46	1.275	32.38	M-70-C (2538700)	1550-900 (8404290)	979-C-300/ ATC-900
		14	.083	2.10	1.209	30.70	1285 C (5049800)	R-34 (5297400)	1286 C (5050201PT)	R-34-A (5297500)	1.179	29.94	1.294	32.86			
		15	.072	1.82	1.231	31.26	1287 C (5050600)	R-35 (5297800)	1288 C (5051000)	R-35-A (5297900)	1.206	30.63	1.321	33.55			
		16	.065	1.65	1.245	31.62											
1-1/2	38.1	8	.165	4.19	1.170	29.71	1289 C (5051400)	R-34 (5297400)	1290 C (5051800)	R-34-A (5297500)	1.145	29.08	1.260	32.00	M-69-C (2537800)	1550-250 (8404280)	979-C-210/ ATC-900
		9	.148	3.75	1.204	30.58	1285 C (5049800)	R-34 (5297400)	1286 C (5050201PT)	R-34-A (5297500)	1.179	29.94	1.294	32.86	M-70-C (2538700)		
		10	.134	3.40	1.232	31.29	1287 C (5050600)	R-35 (5297800)	1288 C (5051000)	R-35-A (5297900)	1.206	30.63	1.321	33.55			
		11	.120	3.04	1.260	32.00	1291 C (5052200)	R-36 (5298200)	1292 C (5052600)	R-36-A (5298300)	1.235	31.36	1.350	34.29			
		12	.109	2.76	1.282	32.56	1293 C (5053000)	R-37 (5298600)	1294 C (5053400)	R-37-A (5298700)	1.257	31.92	1.372	34.84			
		13	.095	2.41	1.310	33.27	1295 C (5053800)	R-37 (5298600)	1296 C (5054200)	R-37-A (5298700)	1.285	32.63	1.400	35.56	M-71-C (2539600)	1550-900 (8404290)	979-C-300/ ATC-900
		14	.083	2.10	1.334	33.88											
		15	.072	1.82	1.356	34.44	1297 C (5054600)	R-38 (5299000)	1298 C (5055000PT)	R-38-A (5299100)	1.331	33.80	1.446	36.72			
		16	.065	1.65	1.370	34.79											
		17	.058	1.47	1.384	35.15	1299 C (5513991)	R-38 (5299000)	1300 C 5515091	R-38-A (5299100)	1.331	33.80	1.472	37.38	M-72-C (2975538)		
		18	.049	1.24	1.402	35.61											
		19	.042	1.06	1.416	35.96											
20	.035	0.88	1.430	36.32													

## G-1200 Series – 5-Roll Expanders

**O.D Range: 5/8 – 1-1/2 Inches 15.8 – 38.1 mm**

- Expanders with 1-1/2 in. (38.1 mm) long rolls will accommodate tube sheet thicknesses as follows:  
 Standard Reach 1/2" to 5" (12.7 mm to 127.0 mm)  
 "A" Reach 1-1/4" to 7-3/4" (31.7 mm to 196.8 mm)  
 "C" Reach 1-1/2" to 11-3/4" (38.1 mm to 298.5 mm)
- Expanders with 2-1/4 in. (57.1 mm) long rolls will accommodate tube sheet thicknesses as follows:  
 Standard Reach 1-1/4" to 5-3/4" (31.7 mm to 146.0 mm)  
 "A" Reach 2" to 8-1/2" (50.8 mm to 215.9 mm)  
 "C" Reach 2-1/4" to 12-1/2" (57.1 mm to 317.5 mm)
- Longer reaches available upon request.
- **Reversible Thrust Collar** design allows flush and 1/8 in. recess tube rolling. Reversible thrust collars on Standard Reach expanders and have lubrication port for use with auto-lube configured ATR and DAS tube rolling systems.



NOTE: Step expanding becomes necessary if the tube sheet thickness exceeds the length of the roll. Specify "S" Type rolls for step rolling applications.

Sizes not listed available upon request.



Standard Reach						Tube Sheet Thickness				Min. I.D. Tool Enters		Max. Expan. of Tool		Mandrel Number (Order No.) 3/8 in. Sq. Dr. (9.5 mm)	Recommended Rolling Motors (Order No.)	
Tube O.D.		Tube Gauge		Tube I.D.		1/2 in. to 5 in. (12.7 mm to 127.0 mm)		1-1/4 in. to 5-3/4 in. (31.7 mm to 146.0 mm)							Airetrol	Electric
in.	mm	bwg	in.	mm	in.	mm	Tool No. (Order No.)	Roll Set No. (Order No.)	Tool No. (Order No.)	Roll Set No. (Order No.)	in.	mm	in.	mm		
5/8	15.8	17	.058	1.47	.509	12.92	1215-5 (5519905)	R-4-5 (5513832)	1216-5 (5516284)	R-4-A-5 (5517897)	.499	12.67	.564	14.32	M-59 (2528300)	850-1250-A (8405399)
		18	.049	1.24	.527	13.38	1217-5 (5517561)	R-4-5 (5513832)	1218-5 (5516230)	R-4-A-5 (5517897)	.517	13.13	.576	14.63		
		19	.042	1.06	.541	13.74	1219-5 (5517601)	R-4-5 (5513832)	1220-5 (5515836)	R-4-A-5 (5517897)	.531	13.48	.596	15.13	M-61 (2530100)	
		20	.035	0.88	.555	14.09										
		21	.032	0.81	.561	14.24										
		22	.028	0.71	.569	14.45										
3/4	19.0	13	.095	2.41	.560	14.22	1221-5 (5518046)	R-5-5 (5513231)	1222-5 (5515972)	R-5-A-5 (5518189)	.550	13.97	.615	15.62	M-61 (2530100)	850-600-A (8405398)
		14	.083	2.10	.584	14.83	1223-5 (5514699)	R-6-5 (5518187)	1224-5 (5513968)	R-6-A-5 (5517898)	.574	14.57	.629	15.97		
		15	.072	1.82	.606	15.39	1225-5 (5515940)	R-7-5 (5514393)	1226-5 (5523014)	R-7-A-5 (5517899)	.590	14.98	.661	16.78	M-62 (2531000)	
		16	.065	1.65	.620	15.74	1227-5 (5514698)	R-7-5 (5514393)	1228-5 (5512230)	R-7-A-5 (5517899)	.605	15.36	.680	17.27	M-63 (2531900)	
		17	.058	1.47	.634	16.10	1229-5 (5515536)	R-8-5 (5515995)	1230-5 (5513536)	R-8-A-5 (5515996)	.619	15.72	.699	17.54		
		18	.049	1.24	.652	16.56	1231-5 (5514862)	R-9-5 (5517888)	1232-5 (5513488)	R-9-A-5 (5517900)	.642	16.30	.729	18.51		
		19	.042	1.06	.666	16.91										
		20	.035	0.88	.680	17.27										
		21	.032	0.81	.686	17.42										
		22	.028	0.71	.694	17.62										
7/8	22.2	13	.095	2.41	.685	17.39	1233-5 (5515915)	R-9-5 (5517888)	1234-5 (5518158)	R-9-A-5 (5517900)	.670	17.01	.747	18.97	M-64 (2532800) *	850-600-A (8405398)
		14	.083	2.10	.709	18.00	1235-5 (5518682)	R-10-5 (5518191)	1236-5 (5520939)	R-10-A-5 (5517901)	.685	17.39	.774	19.65	M-65 (2533700) *	
		16	.065	1.65	.745	18.92	1239-5 (5525733)	R-11-5 (5517889)	1240-5 (5525734)	R-11-A-5 (5517902)	.685	17.39	.750	19.05	M-67 (2535500) *	850-1250-A (8405399)
		17	.058	1.47	.759	19.27	1243-5 (5518366)	R-11-5 (5517889)	1244-5 (5521320)	R-11-A-5 (5517902)	.740	18.79	.824	20.92		
		18	.049	1.24	.777	19.73	1245-5 (5525740)	R-11-5 (5517889)	1246-5 (5515924)	R-11-A-5 (5517902)	.763	19.38	.851	21.61		
		19	.042	1.06	.791	20.09										
		20	.035	0.88	.805	20.44										

\* 1/2 in. Sq. Dr. (12.7 mm)

# Condenser Expanders

Selection Guide G-1200 Type Five-Roll Expanders – continued

Standard Reach						Tube Sheet Thickness				Min. I.D. Tool Enters		Max. Expan. of Tool		Mandrel Number (Order No.) 1/2 in. Sq. Dr. (12.7 mm)	Recommended Rolling Motors (Order No.)		
Tube O.D.		Tube Gauge		Tube I.D.		1/2 in. to 5 in. (12.7 mm to 127.0 mm)		1-1/4 in. to 5-3/4 in. (31.7 mm to 146.0 mm)							Airetrol	Electric	
in.	mm	bwg	in.	mm	in.	mm	Tool No. (Order No.)	Roll Set No. (Order No.)	Tool No. (Order No.)	Roll Set No. (Order No.)	in.	mm	in.	mm			
7/8	22.2	21	.032	0.81	.811	20.59	1245-5 (5525740)	R-11-5 (5517889)	1246-5 (5515924)	R-11-A-5 (5517902)	.763	19.38	.851	21.61	M-68 (2536400)	850-1250-A (8405399)	979-C-650/ ATC-900
		22	.028	0.71	.819	20.80											
1	25.4	12	.109	2.76	.782	19.86	1245-5 (5525740)	R-11-5 (5517889)	1246-5 (5515924)	R-11-A-5 (5517902)	.763	19.38	.851	21.61	M-68 (2536400)	850-600-A (8405398)	979-C-650/ ATC-900
		13	.095	2.41	.810	20.57	1247-5 (5516336)	R-13-5 (5513741)	1248-5 (5517558)	R-13-A-5 (5517903)	.791	20.09	.880	22.35			
		14	.083	2.10	.834	21.18	1249-5 (5514121)	R-12-5 (5517890)	1250-5 (5514700)	R-12-A-5 (5515825)	.810	20.57	.909	23.08	M-70 (2538200)		
		15	.072	1.82	.856	21.74	1251-5 (5513797)	R-14-5 (5517894)	1252-5 (5512231)	R-14-A-5 (5515826)	.837	21.25	.936	23.77			
		16	.065	1.65	.870	22.09											
		17	.058	1.47	.884	22.45	1255-5 (5513740)	R-13-5 (5513741)	1256-5 (5513809)	R-13-A-5 (5517903)	.865	21.97	.965	24.51	M-71 (2539100)	850-1250-A (8405399)	
		18	.049	1.24	.902	22.91											
		19	.042	1.06	.916	23.26											
		20	.035	0.88	.930	23.62											
		21	.032	0.81	.936	23.77	1257-5 (5514329)	R-15-5 (5513833)	1258-5 (5513627)	R-15-A-5 (5517907)	.883	22.42	.997	25.32			
22	.028	0.71	.944	23.97													
1-1/8	28.5	12	.109	2.76	.907	23.03	1257-5 (5514329)	R-15-5 (5513833)	1258-5 (5513627)	R-15-A-5 (5517907)	.883	22.42	.997	25.32	M-71 (2539100)	1050-400 (8404200)	979-C-300/ ATC-900
		13	.095	2.41	.935	23.74	1259-5 (5524563)	R-16-5 (5518056)	1260-5 (5525735)	R-16-A-5 (5517904)	.916	23.26	1.000	25.40			
		14	.083	2.10	.959	24.35	1261-5 (5525736)	R-17-5 (5517891)	1262-5 (5514470)	R-17-A-5 (5517905)	.935	23.74	1.043	26.49			
1-1/4	31.8	15	.072	1.82	1.106	28.09	1275-5 (5521923)	R-21-5 (5517887)	1276-5 (5516623)	R-21-A-5 (5513291)	1.087	27.60	1.196	30.37	1276-5 (2982367)	1050-400 (8404200)	979-C-650/ ATC-900
		16	.065	1.65	1.120	28.44											
		17	.058	1.47	1.134	28.80	1279-5 (5525540)	R-21-5 (5517887)	1280-5 (5517875)	R-21-A-5 (5513291)	1.115	28.32	1.231	31.26	1280-5 (2983613)		
		18	.049	1.24	1.152	29.26											
		19	.042	1.06	1.166	29.61											
		20	.035	0.88	1.180	29.97											
		21	.032	0.81	1.186	30.12											
22	.028	0.71	1.194	30.32													
1-3/8	34.9	12	.109	2.76	1.154	29.31	1281-5 (5518823)	R-21-5 (5517887)	1282-5 (5525737)	R-21-A-5 (5513291)	1.133	28.77	1.242	31.54	1282-5 (2986615)	1550-250 (8404280)	979-C-210/ ATC-900
		14	.083	2.10	1.209	30.70	1285-5 (5522166)	R-23-5 (5517982)	1286-5 (5525869)	R-23-A-5 (5518192)	1.179	29.94	1.296	31.91			
1-1/2	38.1	17	.058	1.47	1.384	35.15	1299-5 (5513442)	R-29-5 (5517893)	1300-5 (5514833)	R-29-A-5 (5517906)	1.331	33.80	1.489	37.82	1299-5 (2973869)	1550-900 (8404290)	979-C-300/ ATC-900
		18	.049	1.24	1.402	35.61											
		19	.042	1.06	1.416	35.96											
		20	.035	0.88	1.430	36.32											
		21	.032	0.81	1.436	36.47											
		22	.028	0.71	1.444	36.67											

# Condenser Expanders

G-8012 Series Heat Exchanger & Condenser Tube Expanders



## G-8012 Series

**O.D. Range:**  
**1-3/4 – 4 Inches**  
**44.4 – 76.2 mm**

- Expanders with 2-1/4 in. (57.1mm) long rolls will accommodate tube sheet thicknesses from 1/2 in. to 4 in. (12.7 mm to 101.6 mm)



NOTE: Step expanding becomes necessary if the tube sheet thickness exceeds the length of the roll. Specify "S" Type rolls for step expanding applications.

Sizes not listed available upon request.

Tube O.D.		Tube Gauge		Tube I.D.		Tube Sheet Thickness		Min. I.D. Tool Enters		Max. Expan. of Tool		Mandrel No. (Order No.) 3/4 in. Sq. Dr. (19.0 mm)	Recommended Rolling Motors (Order No.)		
						1/2 in. to 4 in. (12.7 mm to 101.6 mm)							Airetrol	Electric	
in.	mm	bwg	in.	mm	in.	mm	Tool No. (Order No.)	Roll Set No. (Order No.)	in.	mm	in.	mm			
1-3/4	44.4	8	.165	4.19	1.420	36.06	8012-1-3/4-8 (5518639)	R-33-A (5297100)	1.368	34.74	1.550	39.37	M-90 (2541900)	1550-250 (8404280)	979-C-210/ ATC-900
		10	.134	3.40	1.482	37.64	8012-1-3/4-10 (5139000)	R-37-A (5298700)	1.420	36.06	1.607	40.81			
		11	.120	3.04	1.510	38.35	8012-1-3/4-11 (5139100)	R-42 (5299400)	1.454	36.93	1.635	41.52			
		12	.109	2.76	1.532	38.91	8012-1-3/4-12 (5139200)	R-44 (5299500)	1.482	37.64	1.657	42.08			
		13	.095	2.41	1.560	39.62	8012-1-3/4-13 (5139300)	R-46 (5299600)	1.510	38.35	1.685	42.79			
		14	.083	2.10	1.584	40.23	8012-1-3/4-14 (5139400)	R-48 (5299700)	1.532	38.91	1.709	43.40			
2	50.8	8	.165	4.19	1.670	42.41	8012-2-8 (5518643)	R-48 (5299700)	1.595	40.51	1.795	45.59	M-91 (2542200)	1550-250 (8404280)	979-C-210/ ATC-900
		10	.134	3.40	1.732	43.99	8012-2-10 (5139500)	R-50 (5299800)	1.640	41.65	1.857	47.16			
		11	.120	3.04	1.760	44.70	8012-2-11 (5139600)	R-52 (5299900)	1.670	42.41	1.885	47.87			
		12	.109	2.76	1.782	45.26	8012-2-12 (5139700)	R-54 (5300000)	1.704	43.28	1.907	48.43			
		13	.095	2.41	1.810	45.97	8012-2-13-18 (5139800)	R-56 (5300100)	1.732	43.99	1.956	49.68			
		14	.083	2.10	1.834	46.58									
		15	.072	1.82	1.856	47.14									
		16	.065	1.65	1.870	47.49									
		17	.058	1.47	1.884	47.85									
18	.049	1.24	1.902	48.31											
2-1/4	57.1	10	.134	3.40	1.982	50.34	8012-2-1/4-10 (5140100)	R-56 (5300100)	1.890	48.00	2.107	53.51	M-92 (2542300)	1550-250 (8404280)	999-C-45/ ATC-900
		11	.120	3.04	2.010	51.05	8012-2-1/4-11 (5140200)	R-58 (5300200)	1.920	48.76	2.135	54.22			
		12	.109	2.76	2.032	51.61	8012-2-1/4-12 (5140300)	R-60 (5300300)	1.954	49.63	2.157	54.78			
		13	.095	2.41	2.060	52.32	8012-2-1/4-13-16 (5140400)	R-62 (5300400)	1.982	50.34	2.185	55.49			
		14	.083	2.10	2.084	52.93									
		15	.072	1.82	2.106	53.49									
16	.065	1.65	2.120	53.84											

# Condenser Expanders

G-8012 Series Heat Exchanger & Condenser Tube Expanders – continued

Tube O.D.		Tube Gauge		Tube I.D.		Tube Sheet Thickness 1/2 in. to 4 in. (12.7 mm to 101.6 mm)		Min. I.D. Tool Enters		Max. Expan. of Tool		Mandrel No. (Order No.) 3/4 in. Sq. Dr. (19.0 mm)	Recommended Rolling Motors (Order No.)		
in.	mm	bwg	in.	mm	in.	mm	Tool No. (Order No.)	Roll Set No. (Order No.)	in.	mm	in.		mm	Airetrol	Electric
2-1/2	63.5	10	.134	3.40	2.232	56.69	8012-2-1/2-10-12 (5139900)	R-64 (5300500)	2.140	54.35	2.407	61.13	M-93 (2542400)	1550-250 (8404280)	999-C-45/ ATC-900
		11	.120	3.04	2.260	57.40									
		12	.109	2.76	2.282	57.96									
		13	.095	2.41	2.310	58.67	8012-2-1/2-13-18 (5140000)	R-64 (5300500)	2.232	56.69	2.450	62.23	M-94 (2542500)		
		14	.083	2.10	2.334	59.28									
		15	.072	1.82	2.356	59.84									
		16	.065	1.65	2.370	60.19									
		17	.058	1.47	2.384	60.55									
		18	.049	1.24	2.402	61.01									
2-3/4	69.8	10	.134	3.40	2.482	63.04	8012-2-3/4-10-16 (5140500)	R-66 (5300700)	2.390	60.70	2.702	68.63	M-96 (2542700)	1850-90 (8405315)	999-C-45/ ATC-900
		11	.120	3.04	2.510	63.75									
		12	.109	2.76	2.532	64.31									
		13	.095	2.41	2.560	65.02									
		14	.083	2.10	2.584	65.63									
		15	.072	1.82	2.606	66.19									
		16	.065	1.65	2.620	66.54									
3	76.2	8	.165	4.19	2.670	67.81	8012-3-8-9 (5512193)	R-67 (5300800)	2.560	65.02	2.829	71.85	M-97 (2968867)	1850-90 (8405315)	999-C-45/ ATC-900
		9	.148	3.75	2.704	68.68									
		10	.134	3.40	2.732	69.39	8012-3-10-18 (5140600)	R-67 (5300800)	2.640	67.05	2.952	74.98	M-96 (25)		
		11	.120	3.04	2.760	70.10									
		12	.109	2.76	2.782	70.66									
		13	.095	2.41	2.810	71.37									
		14	.083	2.10	2.834	71.98									
		15	.072	1.82	2.856	75.54									
		16	.065	1.65	2.870	72.89									
			.058	1.47	2.884	73.25									
		18	.049	1.24	2.902	73.71									



## Linsen Flaring Expander

**O.D. Range:**  
**1/4 - 2-5/8 Inches**  
**6.3 - 66.7mm**

These special expanders are designed for making tubing connections without fittings. Using a drill press, lathe, or other power-driven tool, the Linsen expander enlarges the end of the tube leaving a .015" clearance for slip-fit and soldering of another tube of the same size. Can be used on copper, brass, aluminum, and thin steel tubing. Always specify tube gauge when ordering.

- Rolls out tubes smoothly and evenly so it doesn't distort or buckle the tube
- Eliminates extra fittings which saves on installation costs

Expander*	Order Number	Tube O.D.		Cup Length		Shank Diameter (Round)	
		in.	mm	in.	mm	in.	mm
AL 250	5518385	1/4	6.3	.437	11.1	.250	6.35
AL 312	5146300	5/16	7.9	.625	15.87	.250	6.35
AL 375	5146400	3/8	9.5	.625	15.87	.250	6.35
AL 500	5146600	1/2	12.7	.625	15.87	.312	7.92
AL 625	5146800	5/8	15.8	.750	19.05	.312	7.92
AL 750	5146900	3/4	19.0	.750	19.05	.375	9.52
AL 875	5147000	7/8	22.2	.750	19.05	.375	9.52
AL 1000	5146000	1	25.4	1.000	25.40	.500	12.70
AL 1125	5147100	1-1/8	28.5	1.000	25.40	.500	12.70
AL 1250	5147200	1-1/4	31.7	1.000	25.40	.500	12.70
AL 1375	5147300	1-3/8	34.9	1.000	25.40	.500	12.70
AL 1500	5146100	1-1/2	38.1	1.000	25.40	.625	15.87
AL 1625	5147400	1-5/8	41.2	1.000	25.40	.625	15.87
AL 2000	5146200	2	50.8	1.000	25.40	.625	15.87
AL 2125	5512247	2-1/8	53.9	1.000	25.40	.625	15.87
AL 2625	5524547	2-5/8	66.6	1.000	25.40	.562 (Hex)	14.27 (Hex)

\* Other sizes may be available. Contact customer service for details.



## SR Expander\*

The "SR" Short Reach Expanders incorporate a rapid taper on the mandrel that allows full expansion of a tube with minimum travel of the mandrel. The mandrel is retained at the rear of the expander to shorten the mandrel length which allows use near sharp tube bends. These expanders are made to order so application details must be provided ahead of time.

- Compact expander allows operation in confined areas
- Short mandrel length used in "bent tube" applications



## Diesel Engine Expander\*

Diesel engine expanders are a special line of expanders designed for rolling the injector sleeves into the heads of diesel engines. Detailed drawings of the injector sleeve and engine head must accompany the order to insure proper design. These expanders are made to order for each application.

- Used in manufacturing, re-manufacturing, and repair of diesel engines
- Expands sleeve against top injector bore in cylinder head forming a tight seal



## "PST" Pipe Sizing Expander\*

The "PST" Expanders are designed to true pipe ends and enlarge the pipe end diameter in two easy steps, providing the correct clearance between the pipe O.D. and the I.D. of a fitting before making a silver solder or brazed welded joint.

- Portable expanders suitable for field work using hand tools or ratchet wrenches
- Accurate expansion of pipe end using quality hardened parts for greater durability
- Threaded mandrel allows fine adjustment for accurate sizing of the pipe end



## Collins Expander\*

**O.D. Range:**  
**1/2 - 4-1/2 Inches**  
**12.7 - 113.8mm**

Collins self-feeding tube expanders are tough, durable, and powerful. These nonparallel rolling, self-feeding expanders are suitable for close quarter tube installation and repair work.

- Compact design works well in thin tube sheet applications
- No setup or adjustments make it quick and easy to use
- Self-contained rolls that won't fall out

\* Please contact your Apex Tool Group sales representative for further information on these products.