



TRUSTED TO PERFORM

Heat Exchanger Tube Expanders and Accessories



Tools for the maintenance and repair of...

CONDENSERS

CHILLERS

ABSORBERS

COOLERS

EVAPORATORS

T.C.Wilson, LLC

Wilson... A Family Tradition

Thomas C. Wilson was founded in New York, N.Y. by the late Mr. Thomas Wilson in 1925. While serving in the United States Navy as a Chief Engineer, operating the boilers for main propulsion systems aboard Naval ships, Mr. Wilson developed the first mechanical brush system to clean scales in the tubes of boilers. The Wilson Company, from that first product has been the innovators in many tools for heat exchangers, boilers and other tubular apparatus. Through its 89 years of history, its products have improved the process for many clients domestically and internationally for generations. Thomas C. Wilson is well into its 3rd generation of family ownership and continues to retain and improve its processes serving their customers needs.

Sincerely,

Stephen Hanley
C.O.O. &
President



Service Hotline

If you have technical questions about tube cleaning and expanding, or any Thomas C. Wilson, LLC product, call us toll free at (800) 230-2636 and talk to a knowledgeable Thomas C. Wilson, LLC representative.

There is a Thomas C. Wilson, Inc. representative or distributor in every major city, domestically and internationally. Please write, call, or fax us to locate your area representative.

Customer Satisfaction/Money Back Guarantee

If, for any reason, you are not satisfied with your purchase, simply return it to us within 10 days, and we will refund the purchase price of the unit, exclusive of shipping and handling costs.

One Year Limited Warranty

All Thomas C. Wilson, LLC products are manufactured, tested, and inspected in accordance with strict engineering requirements and are warranted to be free from defects in materials and workmanship.*

Delivery

Thomas C. Wilson, LLC products are delivered by all major common carriers, and next day delivery is available. We also have same day, counter-to-counter delivery on request.

What's On Your Mind

We're always interested in your comments! At Thomas C. Wilson LLC, we work every day to improve our product offerings and customer service. We want to know what you think. Please write, call, or fax us with your comments or suggestions, **or reach us online at <http://www.tcwilson.com>**.

T.C.Wilson, LLC MAIN FACILITY:

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fax: (718) 361-2872 · e-mail: tcwilson@tcwilson.com.

www.tcwilson.com



How to Order



Our sales engineers are available Monday - Friday, 8:30am to 6:30pm EST. The easiest way to order is to look up the product that you would like to purchase and note the corresponding part number. Then, call toll free (800) 230-2636. If you are not sure exactly what tool you need, just give our experienced staff the details and they will help you find the right product for your application.

You can use your Visa, Mastercard, or American Express card to order.

* There is a minimum order of \$50.

All Thomas C. Wilson, LLC products are designed and manufactured in the U.S.A.

* The warranty is subject to conditions and limitations. Call for details.

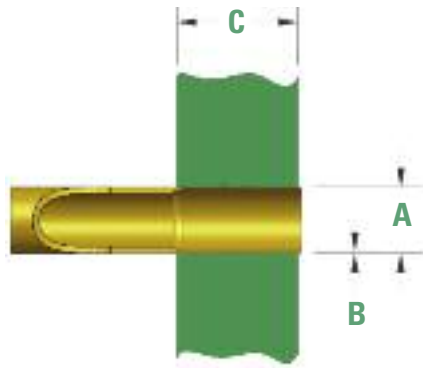
**24 HOUR SERVICE
365 days a year...Call 1-800-230-2636**

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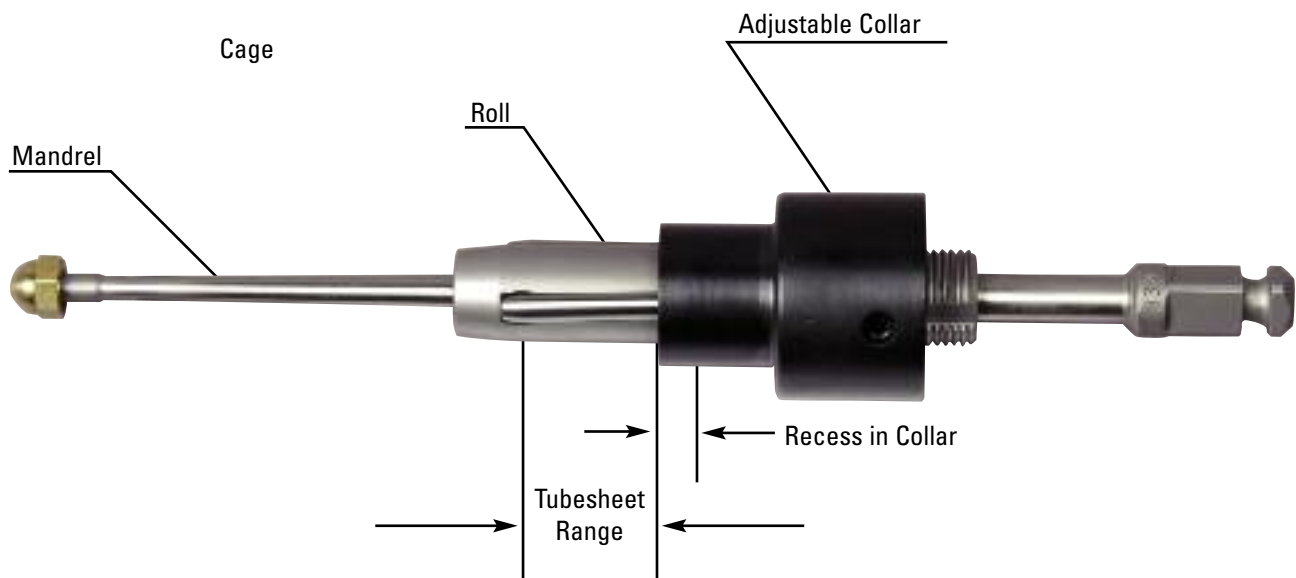
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In order to ensure proper selection of expanders, the following information is needed:



- A** = Tube Outer Diameter
- B** = Gauge
- C** = Tubesheet
- D** = Tube Projection
- E** = Type of Material
- F** = Number of Tubes to be Expanded



Collars



Flip Flop Collar

The advantage of this collar is that it provides 1/16" (1.6mm) recess on one side of the collar and by simply removing a set screw and flipping it you can have a flush collar.



Thrust-Bearing Collar

Thrust-Bearing Collar assembly furnished on all Wilson Expanders up to 1-inch Outer Diameter tube sizes except 72 and 73 series 20-23 Gauge. Supplied with a 1/16-inch recess. Recesses up to 15/16-inch available on special order.



Deep-Recess Collar

Available for 72 and 73 Series Expander. Allows rolling on far end where tubes project up to 3 inches. Order by basic "Thin Gauge Collar." Assembly no. and required dash no. 7300 for 1-inch, 7200 for 2-inch, and 7400 for 3-inch.

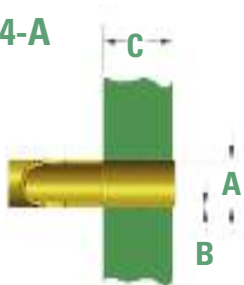


Close Collar

Optional Collar Assembly used for rolling tubes too close to shell sides, divider plates, etc. to allow the greater diameter of standard collars to pass. Collars available from flush to 15/16-inch recess for all tube expanders offered.

3-Roll Condenser Expanders - 1/4 - 3 1/2-Inch Tubesheets

Series 41-A, 44-A



A = 1/4 (6.4mm) to 3/8-Inch (9.5mm) Tube Outer Diameter

B = 18 (1.2mm) to 28 (.4mm) Gauge

C = 41-A - 1/4 (6.4mm) to 1-Inch (25.4mm)
44-A - 1 (25.4mm) to 3 1/2-Inch (89.0mm)

The Model 41-A and 44-A expanders were primarily designed for very small tubes as generally found on lubricating oil coolers and heat exchangers of similar characteristics. It features an adjustable ball bearing collar to meet the requirements of various thicknesses of tubesheets. The assembly comes complete with mandrel, rolls, cage, and collar with a flush (for 1/4-inch size) or 1/16-inch recess (for 3/8-inch size).

NOTE: On selection of expanders, wall thickness of tubes run either nominally or minimum wall.



Tube		41-A Expander 1/4-1-Inch Reach			44-A Expander 1-3 1/2-Inch Reach			1-Inch (25.4) Roll Length Common Roll Set - Part No.		
OD	GA	Range		Assembly	Mandrel	Cage	Assembly	Mandrel	Cage	
Inches (mm)		Inches	(mm)	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	
1/4 (6.4)	18	.147-.174	(3.7-4.4)	34339		34348	-	-	-	34375
	19	.159-.186	(4.0-4.7)	34388	34380	34389	-	-	-	34390
	20	.175-.202	(4.4-5.1)	34338		34347	-	-	-	
	21	.180-.207	(4.6-5.3)	34385	34387	34386	-	-	-	34374
	22	.189-.216	(4.8-5.5)	34337		34346	-	-	-	
	23	.195-.222	(5.0-5.6)	34408		34413	-	-	-	34417
	24	.201-.228	(5.1-5.8)	34336	34379	34345	-	-	-	34373
	26	.209-.236	(5.3-6.0)	34407		34412	-	-	-	34416
3/8 (9.5)	28	.216-.244	(5.5-6.2)	34391		34400	-	-	-	34399
	15	.225-.266	(5.7-6.8)	34418	34378	34419	33955	33954	33965	34373
	16	.237-.278	(6.0-7.1)	34335		34344	33956		33966	34372
	17	.253-.294	(6.4-7.5)	34406		34411	33957		33967	34399
	18	.269-.310	(6.8-7.9)	34334	34377	34343	33958	33953	33968	34371
	19	.283-.324	(7.2-8.2)	34405		34410	33959		33969	34415
	20	.297-.338	(7.5-8.6)	34333		34342	33960		33970	
	21	.303-.344	(7.7-8.7)	34365	34366	34367	33961	33949	33971	34370
	22	.311-.352	(7.9-8.9)	34332		34341	33962		33972	
	23	.317-.358	(8.1-9.1)	34404	34376	34409	33963	33952	33973	34414
	24	.323-.364	(8.2-9.2)	34331		34340	33964		33974	34369

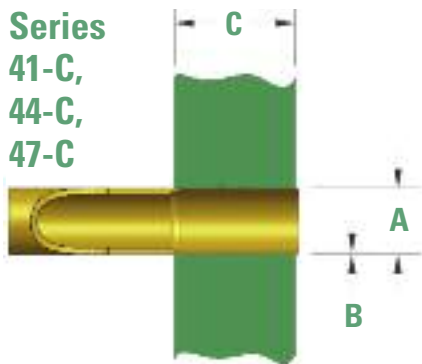
TUBE WALL THICKNESS OF WALL IN BIRMINGHAM WIRE GAUGE

GA	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6
Inch	.014	.016	.018	.020	.022	.025	.028	.032	.035	.042	.049	.058	.065	.072	.083	.095	.109	.120	.134	.148	.165	.180	.203
mm	.4	.4	.5	.5	.6	.6	.7	.8	.9	1.1	1.2	1.5	1.7	1.8	2.1	2.4	2.8	3.0	3.4	3.8	4.2	4.6	5.2

Expander Series

3-Roll Condenser Expanders

Series
41-C,
44-C,
47-C



A = 1/2 (12.7mm) to 1½-Inch (38.1mm) Tube Outer Diameter

B = 9 (3.8mm) to 22 (.7mm) Gauge

C = 41-C - 1/2 (12.7mm) to 1½-Inch (38.1mm) Tubesheet

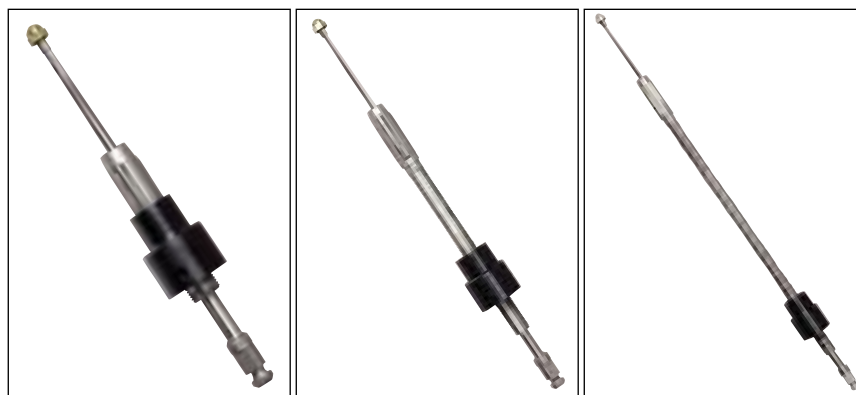
44-C - 1/4 (31.8mm) to 6-Inch (152.4mm) Tubesheet

47-C - 1/4 (38.1mm) to 12-Inch (304.8mm) Tubesheet

47-C and 47-D Expanders are similar in design to the Models 41 and 44 previously described. However, the threaded shanks are extra-long and suitable for the unusual conditions of extra-thick or widely spaced multiple tubesheets.

The Model 41-C and 41-D Expanders are suitable for condensers and/or evaporators, heaters or coolers of power, refrigeration, air conditioning, marine, coke, and chemical plants.

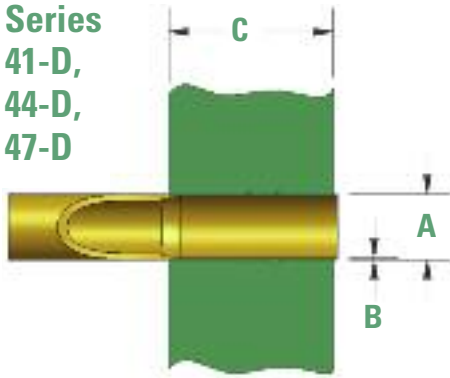
The long-reach 44-C and 44-D Expanders are particularly suitable for thick and multiple tubesheet applications where *step rolling* is practiced. They are unsurpassed for use on condensers and heat exchangers of oil refineries, chemical plants, atomic energy installations, and others.



1½-Inch
(38.1)
Roll Length
Common
Roll Set
Part No.

OD Tube Inches (mm)	GA	Range		41-C Expander			44-C Expander			47-C Expander			Common Roll Set Part No.
		Inches	(mm)	Assembly	Mandrel	Cage	Assembly	Mandrel	Cage	Assembly	Mandrel	Cage	
1/2 (12.7)	14	.320-.370	(8.1-9.4)	34043		34322	34143		39739	-	-	-	33371
	15	.342-.390	(8.7-9.9)	34042	33454	34320	34142	33455	39740	-	-	-	33360
	16-17	.360-.411	(9.1-10.4)	34000		33040	34100		33240	-	-	-	
	18-19	.392-.447	(10.0-11.4)	34001	33400	33041	34101	33430	33241	41597	38567	38566	
	20-22	.425-.481	(10.5-12.2)	40582	41866	33042	34102	41867	33242	41598	41868	38568	33361
5/8 (15.9)	12	.392-.447	(10.0-11.4)	39366	33400	33041	39369	33430	33241	39445	38567	38566	
	13	.425-.481	(10.5-12.2)	34051		33042	34099		33242	38554		38568	
	14	.444-.513	(11.3-13.0)	41034		33043	41393		33243	41397	41868	38569	33362
	15-17	.464-.537	(11.8-13.6)	38388	41866	38619	38396		38623	39447	41868	39448	33375
	18-19	.497-.571	(12.6-14.5)	38394		39807	38392		39549	39449		39450	33376
3/4 (19.1)	20-22	.542-.600	(13.8-15.2)	40585	41531	33046	39593	41548	33246	39607	41550	38571	33364
	10	.444-.513	(11.3-13.0)	34003		33043	34103		33243	38555		38569	33362
	11	.482-.550	(12.2-14.0)	34004	41866	33044	34104	41867	33244	38575	41868	38576	33363
	12	.508-.583	(12.9-14.8)	34005		33045	34105		33245	38556		38570	33363
	13-14	.542-.625	(13.8-15.9)	34006	33402	33046	34106	33432	33246	38557	33932	38571	33364
7/8 (22.2)	15-17	.589-.681	(15.0-17.3)	34008	33403	33048	34108	33433	33248	38579	33933	38580	33365
	18-22	.635-.722	(16.1-18.3)	34009	33404	33049	34109	33434	33249	39453	33934	39454	33365
	11	.589-.681	(15.0-17.3)	34008	33403	33048	34108	33433	33248	38579	33933	38580	
	12-13	.635-.722	(16.1-18.3)	34010	33404	33049	34110	33434	33249	39456	33934	39454	
	14-15	.686-.781	(17.4-19.8)	34011	33405	33051	34111	33435	33251	39457	33935	39458	33366
1 (25.4)	16-17	.717-.815	(18.2-20.7)	34013	33407	33053	34113	33437	33253	39461	33937	39462	33367
	18-22	.758-.855	(19.3-21.7)	34015	33406	33055	34115	33436	33255	39465	33936	39466	33367
	9	.686-.781	(17.4-19.8)	34011	33405	33051	34111	33435	33251	39457	33935	39458	
	10	.701-.800	(17.8-20.3)	34012	33406	33052	34112	33436	33252	39459	33936	39460	33366
	11	.717-.815	(18.2-20.7)	34013	33407	33053	34113	33437	33253	39461	33937	39462	
1% (28.6)	12-13	.758-.855	(19.3-21.7)	34015	33406	33055	34115	33436	33255	39465	33936	39466	33367
	14-16	.794-.919	(20.2-23.3)	34018	33408	33058	34118	33438	33258	39469	33938	39470	33368
	17-22	.856-.980	(21.7-24.9)	40579	33411	33062	41399	33441	33262	41403	33941	38611	33369
	9-10	.794-.919	(20.2-23.3)	41869	33408	33058	42326	33438	33258	-	-	-	33368
	11-14	.856-.999	(21.7-25.4)	34022	33411	33062	34122	33441	33262	-	-	-	33369
1% (31.8)	15-22	.950-1.106	(24.1-28.1)	41014	41012	33067	41405	41013	33267	-	-	-	
	9-11	.920-1.076	(23.4-27.3)	34025	33412	33065	34125	33442	33265	39481	33942	39482	33370
	12-13	.950-1.106	(24.1-28.1)	34027	33414	33067	34127	33444	33267	39485	33944	39486	
	14-22	1.055-1.235	(26.8-31.4)	40588		33071	41407		33271	41864	33945	39492	33372
	10-13	1.055-1.250	(26.8-31.8)	34031		33071	34131		33274	-	-	-	
1% (34.9)	14-20	1.185-1.350	(30.1-34.3)	40589	33415	33074	41409			-	-	-	33373
	10-13	1.185-1.375	(30.1-34.9)	34034		33074	34134			39497	33945	39498	
1½ (38.1)	14-18	1.310-1.460	(33.3-37.1)	34037	33416	33077	34137	33446	33277	39503	33946	39504	33374

**Series
41-D,
44-D,
47-D**

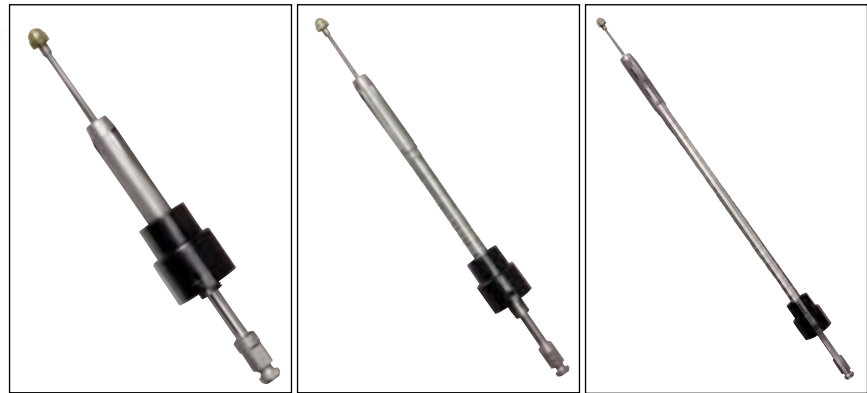


- A** = 1/2 (12.7mm) to 2½-Inch (63.5mm) Tube Outer Diameter
- B** = 9 (3.8mm) to 22 (.7mm) Gauge
- C** = 41-D - 1¼ (31.8mm) to 2¼-Inch (57.2mm) Tubesheet
 44-D - 2 (50.8mm) to 6¾-Inch (171.5mm) Tubesheet
 47-D - 2 (50.8mm) to 12¾-Inch (323.9mm) Tubesheet



How to Identify Wilson Rolls

The assembly comes complete with mandrel, rolls, cage, and collar with a 1/16-inch standard recess.



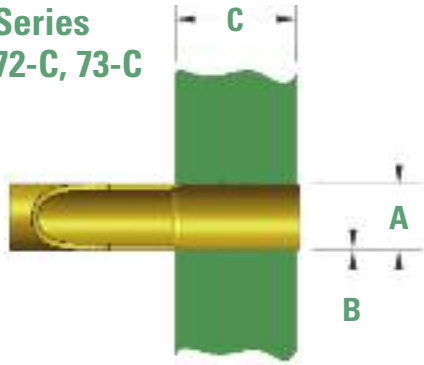
2½-Inch
(57.2)
Roll length
Common
Roll Set
Part No

Inches	OD Tube (mm)	Range		41-D Expander			44-D Expander			47-D Expander			Common Roll Set Part No
		GA	Inches (mm)	Assembly	Mandrel	Cage	Assembly	Mandrel	Cage	Assembly	Mandrel	Cage	
1/2	(12.7)	18-19	.392-.447 (10.0-11.4)	39734	33400	39368	41414	33430	39371	41601	38567	39506	33381
		20-22	.425-.481 (10.5-12.2)	40616	33401	33184	41415	33431	33456	41602	33931	33852	
5/8	(15.9)	12	.392-.447 (10.0-11.4)	39367	33400	39368	39370	33430	39371	39505	38567	39506	
		13	.425-.481 (10.5-12.2)	34052		33184	34152		33456	33802		33852	
		14	.444-.513 (11.3-13.0)	41035	33401	33133	41394		33323	41398	33931	33853	
		15-17	.464-.537 (11.8-13.6)	38389		38621	38397	33431	38624	38627		38628	
		18-19	.497-.571 (12.6-14.5)	38395		39805	38393		39554	39507		39508	
		20-22	.542-.600 (13.8-15.2)	40591	41531	33136	39597	41548	33326	39610	41550	33856	
3/4	(19.1)	10	.444-.513 (11.3-13.0)	34053	33401	33133	34153		33323	33803		33853	
		11	.482-.550 (12.2-14.0)	34054		33134	34154	33431	33324	33804	33931	33854	
		12	.508-.583 (12.9-14.8)	34055	33402	33135	34155		33325	33805	33932	33855	
		13-14	.542-.625 (13.8-15.9)	34056		33136	34156	33432	33326	33806		33856	
		15-17	.589-.681 (15.0-17.3)	34058	33403	33138	34158	33433	33328	33808	33933	33858	
		18-22	.635-.722 (16.1-18.3)	34059	33404	33139	34159	33434	33329	33809	33934	33859	
7/8	(22.2)	11	.589-.681 (15.0-17.3)	34058	33403	33138	34158	33433	33328	33808	33933	33858	33385
		12-13	.635-.722 (16.1-18.3)	34060	33404	33139	34160	33434	33329	33810	33934	33859	
		14-15	.686-.781 (17.4-19.8)	34061	33405	33141	34161	33435	33331	33811	33935	33861	
		16-17	.717-.815 (18.2-20.7)	34063	33407	33143	34163	33437	33333	33813	33937	33863	
		18-22	.758-.855 (19.3-21.7)	34065	33406	33145	34165	33436	33335	33815	33936	33865	
1	(25.4)	9	.686-.781 (17.4-19.8)	34061	33405	33141	34161	33435	33331	33811	33935	33861	33386
		10	.701-.800 (17.8-20.3)	34062	33406	33142	34162	33436	33332	33812	33936	33862	
		11	.717-.815 (18.2-20.7)	34063	33407	33143	34163	33437	33333	33813	33937	33863	
		12-13	.758-.855 (19.3-21.7)	34065	33406	33145	34165	33436	33335	33815	33936	33865	
		14-16	.794-.919 (20.2-23.3)	34068	33408	33148	34168	33438	33338	33818	33938	33868	
		17-22	.856-.980 (21.7-24.9)	40592	33411	33152	41400	33441	33342	41404	33941	33872	
1½	(28.6)	9-10	.794-.919 (20.2-23.3)	41870	33408	33148	42327	33438	33338	-	-	-	33388
		11-14	.856-.999 (21.7-25.4)	34072	33411	33152	34172	33441	33342	-	-	-	33389
		15-22	.950-1.106 (24.1-28.1)	41015	41012	33157	41406	41013	33347	-	-	-	
1¼	(31.8)	9-11	.920-1.076 (23.4-27.3)	34075	33412	33155	34175	33442	33345	33825	33942	33875	33390
		12-13	.950-1.106 (24.1-28.1)	34077	33414	33157	34177	33444	33347	33827	33944	33877	
		14-22	1.055-1.235 (26.8-31.4)	40593		33161	41408		33351	41865	33945	33881	
1¾	(34.9)	10-13	1.055-1.250 (26.8-31.8)	34081	33415		34181		33354	-	-	-	33393
		14-20	1.185-1.350 (30.1-34.3)	40594		33164	41410	33445		-	-	-	
1½	(38.1)	10-13	1.185-1.375 (30.1-34.9)	34084			34184		33354	33834	33945	33884	33394
		14-18	1.310-1.460 (33.3-37.1)	34087	33416	33167	34187	33446	33357	33837	33946	33887	
1¾	(44.5)	8-13	1.372-1.620 (34.8-41.1)	34089		33169	34310		33359	-	-	-	33395
		14-18	1.495-1.710 (38.0-43.4)	40595	33419	33171	41412	33449	33425	-	-	-	
2	(50.8)	7-8	1.495-1.744 (38.0-44.3)	34091			34312			-	-	-	33396
		9-11	1.630-1.876 (41.4-47.7)	34093		33173	34314		33322	-	-	-	
		12-18	1.753-1.972 (44.5-50.1)	34095	33422	33175	34316	33452	33183	-	-	-	
2¼	(57.2)	10-18	1.926-2.213 (48.9-56.2)	34096		33176	34317		33427	-	-	-	33397
2½	(63.5)	10-18	2.176-2.462 (55.3-62.5)	34097	33423	33177	34318	33453	33428	-	-	-	

Expander Series

4- & 5-Roll Condenser Expanders - 1/2 - 6 1/4-Inch Tubesheets

Series
72-C, 73-C



A = 1/2 (12.7mm) to 1 1/2-Inch (38.1mm) Tube Outer Diameter
B = 13 (2.4mm) to 25 (.5mm) Gauge
C = 72-C - 1/2 (12.7mm) to 1 1/2-Inch (38.1mm) Tubesheet
 73-C - 3/4 (19.1mm) to 5 1/2-Inch (139.7mm) Tubesheet

These expanders are used on light Gauge tubes of stainless steel, titanium, and materials of similar hardness.

5-Rolls with light wall tubes can prevent triangulation of the tube to the tube hole. Wilson Thin Gauge Collars also offer a large advantage for projection of tube.



Tube				72-C Expander 1/2-1 1/2-Inch Reach			73-C Expander 3/4-5 1/2-Inch Reach			1 1/2-Inch (38.1) Roll Length Common Roll Set - Part No.			
OD Inches (mm)	Wall GA	Range Inches (mm)		Assembly Part No.	Mandrel Part No.	Cage Part No.	Assembly Part No.	Mandrel Part No.	Cage Part No.				
1/2 (12.7)	18-19	.387-.449	(9.8-11.4)	41552	41879	41511	-	-	-	33361-4			
	20-25	.425-.480	(10.5-12.2)	41553	41880	41512	-	-	-				
5/8 (15.9)	18-19	.515-.570	(13.1-14.5)	41554	41881	41513	41936	42064	42000	33362-4			
	20-25	.537-.596	(13.6-15.1)	41555		41514	41937		42001				
3/4 (19.1)	13-14	.537-.596	(13.6-15.1)	41556	41882	41515	41938	42066	42002	33363-5			
	16-17	.605-.676	(15.2-17.2)	41557			41939		42003				
	18-19	.635-.715	(16.1-18.2)	41558			41833		41516	41940	42067	42004	33364-5
	20-25	.665-.750	(16.9-19.1)	41559			41884		41517	41941	42005		
7/8 (22.2)	16-17	.717-.795	(18.2-20.2)	41560	41885	41519	41942	42069	42006	33365-5			
	18-19	.758-.859	(19.3-21.9)	41561			41943		42007				
	20-25	.790-.885	(20.1-22.5)	41562			41520		42332	42008			
1 (25.4)	13-15	.790-.885	(20.1-22.5)	41563	41886	41521	41944	42070	42008	33366-5			
	16-17	.850-.922	(21.6-23.4)	41564			41887		41522		41945	42009	
	18-19	.885-.950	(22.5-24.1)	41565			41887		41522	41945	42009	42307	33367-5
	20-25	.915-1.015	(23.2-25.8)	41566			41888		41523	42303	42071	42307	
1 1/8 (28.6)	18-19	1.010-1.075	(25.7-27.3)	41567	41889	41524	41946	42072	42010	33369-5			
	20-25	1.040-1.125	(26.4-28.6)	41568			41889		41528		41947	42011	
1 1/4 (31.8)	18-19	1.135-1.200	(28.8-30.5)	41569	41890	41530	41948	42073	42012	33370-5			
	20-25	1.165-1.250	(29.6-31.8)	41570			41891		41532		41949	42013	
1 1/2 (38.1)	18-19	1.385-1.450	(35.2-36.8)	41571	41892	41533	41950	42074	42014	33372-5			
	20-25	1.415-1.500	(35.9-38.1)	41572			42297		41534		41951	42075	42015

Thin Gauge Collar

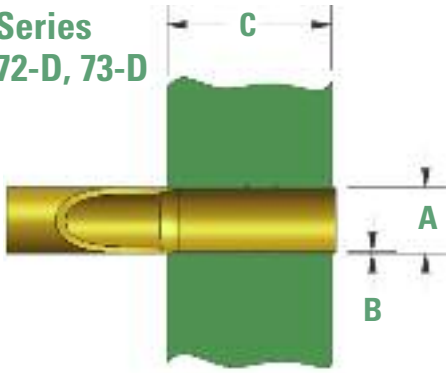
Thin Gauge Collar assembly supplied on all 5-Roll, Series 72 and 73, 20-23 Gauge Expanders. Recess adjustable by use of space washers. Unique design maintains tube end contact throughout expansion.



TUBE WALL THICKNESS OF WALL IN BIRMINGHAM WIRE GAUGE

GA	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6
Inch	.014	.016	.018	.020	.022	.025	.028	.032	.035	.042	.049	.058	.065	.072	.083	.095	.109	.120	.134	.148	.165	.180	.203
mm	.4	.4	.5	.5	.6	.6	.7	.8	.9	1.1	1.2	1.5	1.7	1.8	2.1	2.4	2.8	3.0	3.4	3.8	4.2	4.6	5.2

**Series
72-D, 73-D**



- A** = 1/2 (12.7mm) to 1½-Inch (38.1mm) Tube Outer Diameter
- B** = 13 (2.4mm) to 25 (.5mm) Gauge
- C** = 72-D - 1/2 (12.7mm) to 2¼-Inch (57.2mm) Tubesheet
73-D - 1½ (38.1mm) to 6¼-Inch (158.8mm) Tubesheet

The assembly comes complete with mandrel, rolls, cage, and collar with a 1/16-inch standard recess.



Tube		Range		72-D Expander 1/2-2¼-Inch Reach			73-D Expander 1½-6¼-Inch Reach			2¼-Inch (57.2) Roll Length Common Roll Set - Part No.
OD Inches (mm)	Wall GA	Inches	(mm)	Assembly Part No.	Mandrel Part No.	Cage Part No.	Assembly Part No.	Mandrel Part No.	Cage Part No.	
1/2 (12.7)	18-19	.387-.449	(9.8-11.4)	42248	42286	42267	-	-	-	33380-4
	20-25	.425-.480	(10.5-12.2)	42249	42287	42268	-	-	-	
5/8 (15.9)	18-19	.515-.570	(13.1-14.5)	42250	42288	42269	41952	42064	42016	33382-4
	20-25	.537-.596	(13.6-15.1)	42251		42270	41953		42017	33377-4
3/4 (19.1)	13-14	.537-.596	(13.6-15.1)	42329	42289	42271	41954	42066	42018	33383-5
	16-17	.605-.676	(15.2-17.2)	42252		42272	41955		42019	
7/8 (22.2)	18-19	.635-.715	(16.1-18.2)	42253	42290	42273	41956	42067	42020	33384-5
	20-25	.665-.750	(16.9-19.1)	42254		42274	41957		42021	
1 (25.4)	16-17	.717-.795	(18.2-20.2)	42255	42291	42275	41958	42069	42022	33385-5
	18-19	.758-.859	(19.3-21.9)	42256		42276	41959		42023	
1 1/8 (31.8)	13-15	.790-.885	(20.1-22.5)	42330	42292	42277	42334	42070	42024	33386-5
	16-17	.850-.922	(21.6-23.4)	42258		42278	41960		42025	
1 1/4 (38.1)	18-19	.885-.950	(22.5-24.1)	42259	42293	42279	41961	42071	42308	33387-5
	20-25	.915-1.015	(23.2-25.8)	42260		42280	42304		42026	
1 3/8 (41.3)	18-19	1.010-1.075	(25.7-27.3)	42261	42294	42281	41962	42072	42027	33389-5
	20-25	1.040-1.125	(26.4-28.6)	42262		42282	41963		42028	
1 1/2 (38.1)	18-19	1.135-1.200	(28.8-30.5)	42263	42295	42283	41964	42073	42029	33390-5
	20-25	1.165-1.250	(29.6-31.8)	42264		42284	41965		42030	
1 3/4 (41.3)	18-19	1.385-1.450	(35.2-36.8)	42265	42296	42285	41966	42074	42031	33392-5
	20-25	1.415-1.500	(35.9-38.1)	42266		42285	41967		42031	

Expander Lube - Type B

Wilson Expander Lube is a water-soluble lubricant especially compounded for use with tube expanders. When rolling large or small, ferrous or non-ferrous tubes, use **Wilson Expander Lube** for smoother rolling and longer expander life. For clean tube ends after rolling, simply wash with water. **Wilson Type B** Expander Lube is used straight from the can without dilution.

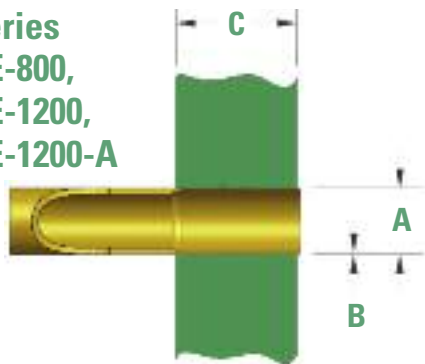
Expander Lube Type B	Part No.
1 Pint Can	28115-0001
1 Quart Can	28115-0002
1 Gallon Can	28115-0009
5 Gallon Can	28115-0005
30 Gallon Drum	28115-0030
55 Gallon Drum	28115-0055



Expander Series

Universal Tube Expanders - 1/2 - 12 1/2-Inch Tubesheets

Series
UE-800,
UE-1200,
UE-1200-A



A = 1/2 (12.7mm) to 1 1/2-Inch (38.1mm) Tube Outer Diameter

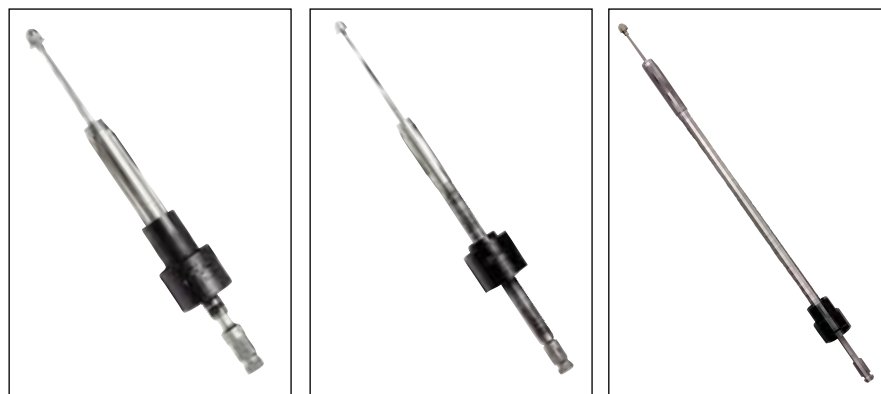
B = 11 (3.0mm) to 22 (.7mm) Gauge

C = UE-800 - 1/4 (31.8mm) to 2 1/4-Inch (57.2mm) Tubesheet

UE-1200 - 2 1/4 (57.2mm) to 6 3/4-Inch (171.5mm) Tubesheet

UE-1200-A - 2 1/4 (57.2mm) to 12 3/4-Inch (323.9mm) Tubesheet

These series of expanders are completely interchangeable with the Airetool design expander on the market. For example, a M-56 Mandrel is part #43358. Made by Thomas C. Wilson with excellent quality and performance.



OD Tube		Range		UE-800 Expander			UE-1200 Expander			UE-1200-A Expander			2 1/2-Inch (57.2) Roll Length Common Roll Set															
Inches	(mm)	GA	Inches	(mm)	Assembly	Mandrel	Cage	Assembly	Mandrel	Cage	Assembly	Mandrel	Cage															
5/8	(15.9)	15	.471-.536	(12.0-13.6)	43812	43305	43412	43212	43355	43512	43612	43955	43712	43105														
		16	.485-.550	(12.3-14.0)	43814		43414	43214	43514	43514	43614	43955	43714		43106													
		17	.499-.564	(12.7-14.3)	43816	43306	43416	43216	43356	43516	43616	43956	43716	43107														
		18	.517-.572	(13.1-14.5)	43818	43307	43418	43218	43357	43518	43618	43957	43718			43108												
		19	.522-.582	(13.3-14.8)	43820	43306	43420	43220	43356	43520	43620	43956	43720		43109													
20-22	.536-.596	(13.6-15.1)	43820A	43308	43420A	43220A	43358	43520A	43620A	43958	43720A	43110																
3/4	(19.1)	12	.522-.582	(13.3-14.8)	43820	43306	43420	43220	43356	43520	43620		43956	43720			43111											
		13	.550-.615	(14.0-15.6)	43822		43422	43222	43358	43522	43622		43958	43722				43112										
		14	.574-.639	(14.6-16.2)	43824	43308	43424	43224	43358	43524	43624		43958	43724		43113												
		16	.605-.685	(15.4-17.4)	43828		43428	43228		43528	43628			43728					43114									
		17-18	.619-.699	(15.7-17.8)	43830	43309	43430	43230	43359	43530	43630		43959	43730	43115													
19-22	.642-.722	(16.3-18.3)	43832		43432	43232		43532	43632		43732		43116															
7/8	(19.1)	14	.685-.774	(17.4-19.7)	43836		43436	43236		43536	43636			43736						43117								
		15	.712-.801	(18.1-20.3)	43838	43311	43438	43238	43361	43538	43638	43961		43738							43118							
		16	.726-.815	(18.4-20.7)	43840		43440	43240		43540	43640			43740			43119											
		17-18	.740-.829	(18.8-21.1)	43844		43444	43244		43544	43644			43744								43120						
		11	.740-.829	(18.8-21.1)		43312			43362			43962						43744					43121					
1	(25.4)	12	.763-.852	(19.4-21.6)	43846		43446	43246		43546	43646			43746				43122										
		13	.791-.880	(20.1-22.4)	43848		43448	43248		43548	43648			43748		43123												
		14	.810-.909	(20.6-23.1)	43850		43450	43250		43550	43650			43750										43124				
		15-16	.837-.936	(21.3-23.8)	43852	43313	43452	43252	43363	43552	43652	43963		43752					43752						43125			
17-20	.865-.964	(22.0-24.5)	43856		43456	43256		43556	43656		43756	43126																
1 1/8	(28.6)	15-16	.962-1.071	(24.4-27.2)	43864	43315	43464	43264	43365	43564	43664			43965	43764				43127									
		17-18	.990-1.099	(25.1-27.9)	43868	43316	43468	43268	43366	43568	43668			43966	43768											43128		
1 1/4	(31.8)	15-16	1.087-1.196	(27.6-30.4)	43876	43317	43476	43276	43367	43576	43676		43967	43776	43129													
		17-18	1.115-1.224	(28.3-31.1)	43880	43318	43480	43280	43368	43580	43680		43968	43780													43130	
1 1/2	(34.9)	14	1.179-1.294	(29.9-32.9)	43886		43486	43286		43586	43686			43786						43131								
		15-16	1.206-1.321	(30.6-33.6)	43888	43320	43488	43288	43370	43588	43688		43970	43788														43132
1 3/4	(38.1)	13-14	1.285-1.400	(32.6-35.6)	43896		43496	43296		43596	43696			43796							43133							
		15-16	1.331-1.446	(33.8-36.7)	43898	43321	43498	43298	43371	43598	43698		43971	43798														
		17-20	1.331-1.472	(33.8-37.4)	43900	43322	43500	43300	43372	43600	43700		43972	43800			43135											

Lubrication, Care, and Maintenance of Tube Expanders

The service demanded of tube expanders is severe; therefore, these precision tools should be given a reasonable amount of care. For long, trouble-free, and economical service, the following is suggested:

- Remove all rust, mill scale, and other foreign matter from inside and outside of tube. Foreign matter on the inside of the tube will tend to become embedded into the tube wall and may cause flaking or galling of the rolls and mandrel. Mill scale or grit left on the outer wall of the tube can cause damage to the tube seat and prevent the formation of a pressure-tight joint. Cleaning of the tube ends may be best accomplished by wire brushing or polishing. Remove protective coating by washing with light oil* or kerosene.
- Before using, expander should be washed in any commercial solvent to remove anti-rust, dirt, grease, and other foreign matter. Inspect expander to make sure that the rolls and mandrel are free and in good condition.
- Before using, expander should be properly lubricated with a pressure-resistant lubricant. We recommend using Wilson Expander Lube. This water-soluble lubricant was developed for tube rolling and may be mixed with water to the desired consistency. For small diameter and light tube gauges, immerse the expander in Wilson Expander Lube or a light-bodied oil* such as SAE 10 or 20. For large diameter and heavy Gauge tubes, swab or brush the expander with Wilson Expander Lube or a mixture of SAE 40* and graphite.

- Expanders should be rotated at a speed proportionate to the tube size, Gauge, and length of the tube seat. Tube metal must also be taken into consideration. The proper speed will provide the safe cold working of tube metal without crystallization or flaking. It will also ensure maximum expander life without undue roll or mandrel breakdown. The ideal speed will keep to a minimum mandrel slippage and heating of mandrels and rolls.
- After rolling each tube, clean and cool the expander in a solvent or light oil*, and then properly lubricate the expander. It is a good practice to use two expanders, if possible, so that one can be cooling while the clean expander is being used.
- Inspect the rolls and mandrel after rolling each tube. Replace any chipped rolls or mandrels immediately. A small chip in a roll can damage the entire set of rolls and mandrel if not replaced at once.
- After the job has been completed, the expander should be cleaned thoroughly with a commercial solvent or a light oil* and stored in a manner which will avoid possibility of parts rusting.

*CAUTION:

The presence of oil in the space between tube and tube seat of unrolled joints can prevent the formation of a leaktight joint. Do not allow an excess of lubricant to run down face of sheet, where it can seep into the spaces of unrolled joints.



Some Guidelines for Tube Expansion

Improperly rolled joints require additional expense to correct, whether they are under-rolled and can be corrected merely by rerolling, or over-rolled and require removal and replacement. The optimal joint is one that develops a leaktight joint with adequate strength for the service intended, with the minimum amount of cold working or reduction of the tube wall. Experience indicates that joints of this type are obtainable with non-ferrous tubes in surface condensers by expanding to a wall reduction of 3 to 4 percent after metal-to-metal contact of the tube Outer Diameter with the tubesheet hole. Steel tubes in heat exchangers may require wall reductions of 5 to 10 percent; soft copper and aluminum tubes in heat exchangers also require larger wall reductions in the area of 8 to 12 percent. Boiler tubes requiring development of optimum joint strength require wall reductions of 12 to 14 percent.

A typical example of the application of this method is indicated for a 3/4" x 18" Gauge tube in a condenser.

1.	Tubesheet Hole	=	.760
	Tube Outer Diameter	=	-.750
	Clearance		.010
2.	Tube Inner Diameter	=	.652
	Clearance	=	+.010
	Inner Diameter @ Metal to Metal		.662
3.	4% of .049 x 2	=	.004
	Tube Inner Diameter @ Metal to Metal	=	+.662
	Expanded Tube Inner Diameter		.666

TUBE WALL THICKNESS OF WALL IN BIRMINGHAM WIRE GAUGE

GA	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6
Inch	.014	.016	.018	.020	.022	.025	.028	.032	.035	.042	.049	.058	.065	.072	.083	.095	.109	.120	.134	.148	.165	.180	.203
mm	.4	.4	.5	.5	.6	.6	.7	.8	.9	1.1	1.2	1.5	1.7	1.8	2.1	2.4	2.8	3.0	3.4	3.8	4.2	4.6	5.2

Wilson Torq-Air-Matic™ Expander Drives

Reversible, Muffled, Controlled Tube Expansion



3A - Torq-Air-Matic™ Kit

Applications

- Rolling ferrous and non-ferrous tubes in heat exchangers and other pressure vessels
- 1/2 to 1½-Inch (12.7 to 38.1mm) Outer Diameter Tubes

Specifications

• 3A Torq-Air-Matic™ Kit

- Weight: Drive: 9 lbs. (4 Kg)
Kit: 21 lbs. (9.5 Kg)
- Air Consumption: 32 SCFM Maximum
- Length: 9.5 Inches (241 mm)
- Side to Center: 2 Inches (50.8 mm)
- Drive: 1/2-Inch Ball Drive Spindle



Model	Tube Capacities	Torq-Air-Matic™ Kit Part No.	Free Speed rpm	Maximum Torque		Minimum Torque	
				Ft. lbs.	Nm	Ft. lbs.	Nm
3A	1/2 to 7/8-Inch x 18 GA non-ferrous	40509	1000	10	13.6	3	4
	1/2 to 3/4-Inch ferrous						
	1/2 to 1-Inch non-ferrous	40510	750	12	16.3	3	4
	1/2 to 3/4-Inch ferrous						
	1/2 to 1½-Inch non-ferrous	40511	450	18	24.4	3	4
1/2 to 1-Inch ferrous							

* Other Drives Available - Consult Factory

Reversible, Muffled Air Motor



Model 952
Torque-Controlled Auto-Reverse



Model 930

Applications

- Rolling ferrous and non-ferrous tubes in heat exchangers and other pressure vessels
- 3/8 to 1½-Inch (9.5 to 31.8mm) Outer Diameter Tubes

Specifications

• Model 952: Torque-Controlled Auto-Reverse

- Weight: 2.5 lbs. (1.2 Kg)
- Air Consumption: 19 CFM
- Length: 8½ Inches (215 mm)
- Side to Center: 1½ Inches (39 mm)
- Drive: 3/8-Inch Square Spindle

• Model 930:

- Weight: Drive: 4.5 lbs. (2 Kg)
- Air Consumption: 32 SCFM Maximum
- Length: 7½ Inches (190 mm)
- Side to Center: .9 Inches (23 mm)
- Drive: 1/2-Inch Ball Drive Spindle

952 Kit Includes:

- Drive Motor
- 1/4-Inch Square Quick Connector
- Quick Torque Adjustment Tool
- Carrying Case 42878
- Service Manual SM-155

930 Kit Includes:

- Drive Motor
- 3/8-Inch Square Quick Connector 41337
- Hex Keys (3/16)
- Carrying Case 42878
- Service Manual SM-79D



Tube Capacities	Drive Motor Part No.	Free Speed rpm	Maximum Torque		Minimum Torque	
			Ft. lbs.	Nm	Ft. lbs.	Nm
Up to 3/8-Inch non-ferrous	952-1800	1800	3.6	4.8	1.5	2
1/2 to 7/8-Inch non-ferrous 1/2 to 3/4-Inch ferrous	930-1000	1000	10	13.6	3	4
1/2 to 1-Inch non-ferrous 1/2 to 3/4-Inch ferrous	930-7500	750	12	16.3	3	4
1/2- to 1½-Inch non-ferrous 1/2 to 1-Inch ferrous	930-4500	450	18	24.4	3	4

ACCESSORIES	Model 952	Model 930
8-Foot Hose	50371	50007
Filter Lubricator Unit	8596	8596
Spare Rotor Blades	952-1819X (Set of 6)	51139 (Set of 4)
1 Gallon of WilsoLube	9047	9047
1 Gallon of Expander Lube	28115-0009	28115-0009
3/8-Inch Square Flexible Mandrel Drive	-	71385
Other Mandrel Drives Available	Consult Factory	Consult Factory

Electronic Tube Expansion

Electric Tube Rollers: 1/2 to 3-Inch OD Tubes



Series 22488 with CB Expander

Applications

- Rolling ferrous and non-ferrous tubes in boilers, heat exchangers, and other pressure vessels.

Features

- **Wilson Electric Tube Rollers** are durable, reliable, and easy to use.
- Both the **41238** and **22488** include dead handles for added leverage.
- On/Off and reverse switches are conveniently located on the fixed handle.
- Exceeding their stall points will not damage these rugged machines.
- Wilson offers a complete line for various tube sizes and voltages. See chart below for selection.



The **22480** Electric Rolling Motor rolls tubes to 1½-inch Outer Diameter.



The **41238** Electric Rolling Motor rolls tubes to 2½-inch Outer Diameter.



The **22488** Electric Rolling Motor rolls tubes up to 3-inch Outer Diameter.

Tube OD Inches (mm)	Voltage and Frequency	Motor Part No.	Free Speed rpm	Amps/Wattage	Drive	Weight	Overall Length		Service Manual
							Inches	(mm)	
½ to 1 ½ (12.7-38.1)	110 Volts 60 Hz	22480-0000	750	10 Amps	1/2" Ball Drive	10.5 lbs. (4.8 Kg)	17	(440)	SM-335
	220 Volts 50 Hz	22480-0220		5 Amps					
1 to 2 ½ (25.4-63.5)	110 Volts 60 Hz	41238-0000	250	10 Amps	#3 Morse Taper Socket	19 lbs. (8.6 Kg)	18 ½	(470)	SM-133
	220 Volts 50 Hz	22487-0220		900 Watts					
2 to 3 (50.8-76.2)	110 Volts 60 Hz	22488-0000	100	900 Watts	#4 Morse Taper Socket	23 ½ lbs. (10.6 Kg)	16 ¾	(420)	SM-188
	220 Volts 50 Hz	22488-0220							

Connectors	Part No.
For 22480:	
3/8-Inch (9.5mm) Quick Connector	41337-0000
1/2-Inch (12.7mm) Quick Connector	41723-0000
For 41238 & 22487:	
1/2-Inch (12.7mm) Square Socket x 3 M.T.	41237-0000
3/4-Inch (19.1mm) Square Socket x 3 M.T.	20211-0000
1-Inch (25.4mm) Square Socket x 3 M.T.	20497-0000
For 22488:	
3/4-Inch (19.1mm) Square Socket x 4 M.T.	20212-0000
1-Inch (25.4mm) Square Socket x 4 M.T.	20213-0000

Accessories	Part No.
For 22480:	
Forward/Reverse Switch	22480-0025
On/Off Switch	22480-0050
Set of Motor Brushes (must order 2 sets)	22480-0075
For 41238:	
On/Off, Forward/Reverse Switch	41238-0105
Set of Motor Brushes (must order 2 sets)	41238-0125
For 22487 & 22488:	
Forward/Reverse Switch	22488-8691
On/Off Switch	22488-0080
Set of Motor Brushes (must order 2 sets)	22488-0008

Electronic Torque-Controlled Tube Rollers: 1/2 to 3-Inch OD Tubes



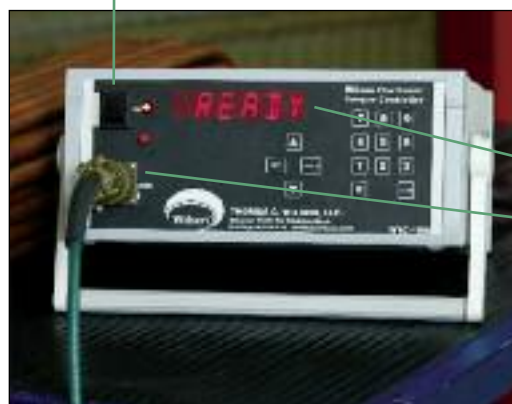
Applications

- Rolling ferrous and non-ferrous tubes in boilers, heat exchangers, condensers, and other pressure vessels with accurate and repeatable torque control.

Features

- Wilson Electric Torque-Controlled Tube Rollers** are durable, reliable, and easy to use. In most cases, you are ready to roll tubes in less than 3 minutes.
- The torque control box is adjustable for expanding torque and will automatically reverse the motor when selected torque is reached.
- Control boxes are available in 110V or 220V single-phase supply choices. Motors are on/off reversing and equipped with dead handle that gives operator added leverage and maneuverability.
- The system consists of a range of electric motors and control boxes. See chart below for selection.

On/Off Switch



Read-Out Screen

Motor Connector

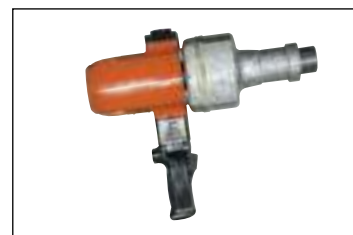
Control Box Panel



22480



41238



22488

Tube OD Inches (mm)	Voltage and Frequency	Motor Part No.	Free Speed rpm	Amps/Wattage	Control Box Part No.	Control Box Amps
1/2 to 1 1/2 (12.7-38.1)	110 Volts 60 Hz	22480-7000	750	10 Amps	76500-0000	20
	220 Volts 50 Hz	22480-7220		5 Amps	76500-0000	
1 to 2 1/2 (25.4-63.5)	110 Volts 60 Hz	41238-7000	250	10 Amps	76500-0000	
	220 Volts 50 Hz	22487-7220		900 Watts	76500-0000	
2 to 3 (50.8-76.2)	110 Volts 60 Hz	22488-7000	100	900 Watts	76500-0000	
	220 Volts 50 Hz	22488-7220			76500-0000	

Control Box Service Manual: SM-281

Wils-Tronic™ Tube Roller

The most important feature of the **Wils-Tronic™** is its ability to maintain constant speed during the entire rolling process, even at various torque settings, making it faster and more efficient than conventional tube rollers. It also runs more quietly than any other tool on the market.

Features

- Two Modes of Operation (Manual and Automatic)
- Constant rpm at Various Torque Settings
- Auto Cycle for Continuous Rolling of Multiple Tubes
- Fully Programmable Keypad
- Security Lockout by Password
- Very Low Noise Level
- Telescopic Shaft Eliminates Operator Fatigue
- Flexible Tool That Allows for a Variety of Tools, Including Expanders, Cutters, and Reamers.

Specifications

Power Requirements: 220V 3 Phase 50 or 60 Hz
 - or -
 440V 3 Phase 50 or 60 Hz
 Speed: Up to 1,400 rpm
 Torque (Programmable): 1 to 300 ft. lbs.
 Weight: 350 lb.
 Work Envelope Dimensions: Up to 10 ft. x 10 ft.
 with Standard Cart



Patent Pending

How to Order

Wils-Tronic™ Model		Ultra-Low Torque	Low Torque	Mid Torque	High Torque
Technical Data					
Tube Capacity		1/2 to 3/4-Inch Tubes	1/2 to 1½-Inch Tubes	3/4 to 3-Inch Tubes	Up to 3-Inch Tubes
rpm		50-1000 rpm	0-1400 rpm	0-400 rpm	0-400 rpm
Torque Ranges		1-10 Ft-lbs.	1-30 Ft-lbs.	15-120 Ft-lbs.	80-300 Ft-lbs.
Wils-Tronic™ Kits					
	3ø 230V, 60 Hz	45500-0000	46000-0000	46500-0000	47000-0000
Consisting of: Base Control, Foot Switch	3ø 230V, 50 Hz	45005-0000	46005-0000	46505-0000	47005-0000
Power Cable, Motor Mount, Accessory Tool Kit	3ø 440V, 60 Hz	45040-0000	46040-0000	46540-0000	47040-0000
Telescopic Shaft, Shipping Crate, and Manual	3ø 440V, 50 Hz	45045-0000	46045-0000	46545-0000	47045-0000
Accessories					
Mobile Stand		48000-7000		46000-5400	
Stationary Stand		48000-7010		46000-5010	
3/8-Inch Quick Connector		46000-4200	46000-4200	-	
1/2-Inch Quick Connector		46000-4250	46000-4250	21489-0500	
3/4-Inch Quick Connector				21489-0750	
3/4-Inch Extension Coupling				46500-4400	
1-Inch Extension Coupling				46500-4500	
1/2-Inch Jacobs Chuck		46000-4600	46000-4600	-	
#2MT Adaptor				46500-6000	
Telescopic Shaft		46000-4000	46000-4000	46500-4000	
Service Manual			SM-293	SM-287	SM-296

Enforcer-500 Tube Expanding Systems

Wilson Enforcer-500 systems offer the latest in electronic torque control for tube expanding. These systems feature an articulating arm mount for reduced operator fatigue. A torque sensing system allows the unit to accurately sense torque levels as low as 1 ft/lb and in 1/4 ft/lb increments. The unit also includes an automatic lubrication system that feeds lubricant directly to the collar to ensure longer life of both expanders and tubes.

- Two Modes of Operation (Manual and Automatic)
- Constant RPM at Various Torque Settings
- Auto Cycle for Continuous Rolling of Multiple Tubes
- Fully Programmable Human-Machine Interface for Parameter Input
- Pressure Regulation System to Adjust Level of Lifting Assistance for Arm and Tool
- Automatic Lubrication System (Optional)
- Outstanding Torque Accuracy (+/- 0.5 ft-lbs.)
- Very Low Noise Level
- Low Operator Fatigue
- Holding Fixture Increases Expander Life



Self-Lubricating Motor Assembly

Enforcer Model		Ultra-Low Torque	Low Torque
Technical Data			
Tube Capacity		1/2 to 3/4 Inch Tubes	3/4 to 1-1/2-Inch Tubes
Speed		50-1000 rpm	50-800 rpm
Torque Ranges		1-10 Ft-lbs.	3-30 Ft-lbs.
Enforcer Kits	3ø 220V, 60 Hz	48000-2000	48000-2200
	3ø 220V, 50 Hz	48005-2000	48005-2200
	3ø 440V, 60 Hz	48040-2000	48040-2200
	3ø 440V, 50 Hz	48045-2000	48045-2200



Human-Machine Interface

Power Requirements	220V 50 Hz, or 60 Hz; 440V 50 Hz, or 60 Hz
Speed	50 to 1,000 rpm
Torque	1 to 30 ft. lbs. (programmable)
Weight	350 lbs. (700 lbs. incl. Dead Wt.)
Footprint	29 in. x 37 in.
Total Height	7 ft., 4 in.
Vert. Arm Range	1 to 6 ft.
Horiz. Arm Range	8 ft.
Arm Reach	4 ft.

Push-Type Tube Cutters



Features

- For cutting and removal of ferrous or non-ferrous tubes
- Cuts tubes in seconds
- Attaches to electric or pneumatic drills
- Push to cut
- Pull to retract bit

To order:

Assembly Part No. **2 5 0 0 4 - 0 5 0 2**

"0" for uncoated bit

"9" for coated bit

Reach

"5" for 1/2-Inch Round Chucking Shank

"7" for 3/4-Inch Round Chucking Shank

"0" for Morse Taper Shank

Example:

Part no. for a 5/8" x 16" Gauge tube in a 2-inch tubesheet with a 1/2-inch Round Chucking Shank is 25004-0502



The Tube Trimmer attaches to the Push-Type Cutter

Applications

- Used where there is considerable projection to be cut off
- Available for 2 to 5-inch projection
- To order, specify Outer Diameter and projection

Tube OD Inches (mm)	Tube GA	Tubesheet Thickness				MT Shank	Chucking Shank	Set of Bits and Pins Part No.	Drive Motor			
		1 - 1½-Inch	1½ - 2½-Inch	2 - 4½-Inch	2½ - 4½-Inch							
1/2 (12.7)	16-17	25000-0001	-	-	-	1	1/2 (12.7)	25212	932-5000 Air Motor 500 rpm			
	18-19	25001-0001	-	-	-							
	20-24	25200-0001	-	-	-							
5/8 (15.9)	14	25002-0001	25002-0002	-	-			2		1/2 (12.7)	25183	932-5000 Air Motor 500 rpm
	15	25003-0001	25003-0002	-	-							
	16-17	25004-0001	25004-0002	-	-							
	18-19	25005-0001	25005-0002	-	-							
	20-24	25006-0001	-	26006-0004	-							
	14	25007-0001	-	25007-0004	-							
3/4 (19.1)	15	25008-0001	-	25008-0004	-			3		1/2 (12.7)	25186	932-5000 Air Motor 500 rpm
	16-17	25009-0001	-	25009-0004	-							
	18-19	25010-0001	-	25010-0004	-							
7/8 (22.2)	20-24	25201-0001	-	25201-0004	-	4	3/4 (19.1)	25194	932-3000 Air Motor 300 rpm			
	14-15	25014-0001	-	25014-0004	-							
	16-17	25015-0001	-	25015-0004	-							
1 (25.4)	18-19	25017-0001	-	25017-0004	-	1	3/4 (19.1)	25196	932-3000 Air Motor 300 rpm			
	20-22	25018-0001	-	25018-0004	-							
	14	25019-0001	-	-	-							
1 1/4 (31.8)	15	25020-0001	-	-	-	2	3/4 (19.1)	25199	41239 Electric Drive 110V 250 rpm			
	16-17	25021-0001	-	-	-							
	18-22	25022-0001	-	-	-							
1 1/2 (38.1)	14	25028-0001	-	25028-0004	-	3	3/4 (19.1)	25206	41239 Electric Drive 110V 250 rpm			
	15	25029-0001	-	25029-0004	-							
	16-17	25030-0001	-	25030-0004	-							
2 (50.8)	18-20	25031-0001	-	25031-0004	-	4	3/4 (19.1)	25217	41239 Electric Drive 110V 250 rpm			
	14	25037-0001	-	25037-0004	-							
	15	25038-0001	-	25038-0004	-							
2 (50.8)	16-17	25039-0001	-	25039-0004	-	1	3/4 (19.1)	25223	41239 Electric Drive 110V 250 rpm			
	18-20	25040-0001	-	25040-0004	-							
	14	-	25239-0001	-	25239-0003							
2 (50.8)	15	-	25240-0001	-	25240-0003	2	3/4 (19.1)	25223	41239 Electric Drive 110V 250 rpm			
	16-20	-	25241-0001	-	25241-0003							

One-Revolution Tube Cutters



Applications

- For use in heat exchangers
- Cuts up to 7-inch thick tubesheets
- No special drive required, uses either a ratchet or hand wrench
- Easily replaceable cutter

Tube OD Inches (mm)	Tube GA	Tube Cutter Assembly	Hex Drive Inches	Replacement Cutter Bits
1/2 (12.7)	18-19	47500-0019	5/16	47500-0005
	20-22	47500-0022		47500-0006
5/8 (15.9)	15-16	47625-0016	3/8	47625-0004
	17-18	47625-0018		47625-0005
	19-20	47625-0020		
	21-22	47625-0022		
3/4 (19.1)	14-15	47750-0015	1/2	47750-0005
	16	47750-0016		
	17-18	47750-0018		
	19-20	47750-0020		
7/8 (22.2)	14-15	47875-0015	5/8	47875-0005
	16-17	47875-0017		
	18	47875-0018		
	19-20	47875-0020		
1 (25.4)	15	47100-0015	3/4	
	16-17	47100-0017		
	18-20	47100-0020		
	21-22	47100-0022		47100-0005
1 1/4 (31.8)	12	47125-0012	1	
	13-14	47125-0014		
	15-16	47125-0016		
	17-19	47125-0019		
1 1/2 (38.1)	12-13	47150-0013	1	
	14-15	47150-0015		
	16-17	47150-0017		47150-005
	18-19	47150-0019		

Air Motors for Maintenance and Erection Tools #932



Model shown 932-5000
with accessories
Jacobs Chuck 3/8-Inch
Part No. 52130

Features

- Cutting ferrous and non-ferrous tubes in heat exchangers and other pressure vehicles
- 1/4 to 1 1/4-Inch Outer Diameter Tubes
- For Use with Tube Cutters, Facers, Reamers, Wall-Reducing Tools, Radius Cutters, and Packing Removal Tubes

Specifications

- **Model 932:**
Weight: Drive: 3 lbs. (1.4 Kg)
Air Consumption: 28 SCFM @ 90 psi
Drive: MT Connector**
Jacobs Chuck

Kit Includes:

- Drive Motor
- Jacob Chuck 52625
- Dead Handle
- Service Manual SM-80

Tube Capacities	Drive Motor	Free Speed rpm
Non-Ferrous up to 1-Inch OD	932-8500	850
Steel Tube OD's & Sheet Hole Diameters up to 3/4-Inch	932-5000	500
Steel & S.S. Tube OD's & Sheet Hole Diameters up to 1-Inch	932-3000	300
Steel & S.S. Tube OD's & Sheet Hole Diameters up to 1 1/4-Inch	932-1250	125

Accessories	Part No.
12-Foot Hose	24360-0012
Filter Lubricator Unit	8596
Spare Rotor Blades	51139 (Set of 4)
1 Gallon of Wilsolube	9047
3/8-Inch Jacobs Chuck	52130
1/2-Inch Jacobs Chuck	52625
**Other Mandrel Drives Available	Consult Factory

Wilson Power Puller WPP-1500

Electric Hydraulic Tube Puller-Spear Type 1/2 to 1½-Inch Tubes



Optional Equipment for 1¼-Inch Outer Diameter and 1½-Inch Outer Diameter Tubes:

Adapter Kit No. **74593-0000** consists of:

1 - Chair Part No. **74593-0001**

1 - Adapter Extension Part No. **74593-0002**



New: Pneumatic Vise to remove spear from tube. See page 27.

WPP-1500 Kit for 1/2 to 1-Inch OD Tubes Consists of		Part No.
Hydraulic Cylinder 7-Inch Stroke		75658
Notched Extension		74510
Electric/Hydraulic Pump Set	115 Volt/60 Hz	74825
Includes:		
1 Gallon of Hydraulic Oil No. 74478-0041		
2 12-Foot Hydraulic Hoses No. 74490		
Assembled with Quick-Acting Hose Couplings		
Mobile Cart		75657
Service Manual		SM-251

Other Available Kits	Kit No.
220 Volt/50 Hz	WPP-1501 Kit
Cylinder 3-Inch Stroke, 30-Ton	WPP-1503 Kit
Pneumatic/Hydraulic Pump	APP-1501 Kit

Features

- Heavy-duty, double-acting hydraulic cylinder with hydraulic return
- Safety relief valve on cylinder protects against overpressurizing
- Quick-acting, cylinder-mounted safety lock provides positive engagement with notched spear extension
- All hose connections to cylinder and pump have quick-disconnect couplings

Specifications

- Capacity:
- 30-ton capacity cylinder covers tube Outer Diameter range from 1/2 to 1½-inch tube sizes
 - 7-inch long stroke cylinder allows for 14-inch total pull when using notched extension
 - Maximum Operating Pressure: 10,000 psi
 - 1½ H.P. Motor with 115 Volt 60 Hz AC Power Input
 - 220 Volt motor available upon request

Tube GA	Tube Pulling Spears* Order By Tube Size and Gauge						
	1/2-Inch Tube Spear Part No.	5/8-Inch Tube Spear Part No.	3/4-Inch Tube Spear Part No.	7/8-Inch Tube Spear Part No.	1-Inch Tube Spear Part No.	1¼-Inch Tube Spear Part No.	1½-Inch Tube Spear Part No.
7	-	-	-	-	-	-	-
9	-	-	-	-	74192-0014	-	-
10	-	-	-	-	74192-0016	-	74189-0010
11	-	-	74194-0016	74193-0016	74191-0011	74190-0011	74189-0011
12	-	74195-0018	74194-0018	74193-0018	74191-0012	74190-0012	74189-0012
13	-	74195-0020	74194-0020	74193-0020	74191-0013	74190-0013	74189-0013
14	-	74194-0014	74193-0014	74192-0014	74191-0014	74190-0014	74189-0014
16	74195-0016	74194-0016	74193-0016	74192-0016	74191-0014	74190-0016	-
18	74195-0018	74194-0018	74193-0018	74191-0012	74191-0018	-	-
20	74195-0020	74194-0020	74193-0020	74191-0012	74191-0018	-	-

*For Spears from 1/2 to 1-Inch, End Thread is Male 3/4-Inch - 10

For 1¼ and 1½-Inch Spears, End Thread is Female 3/4-Inch - 10

Pneumatic Vise offers the most rugged, precision built, completely trouble-free air tool to remove the spear from the tube. The vise comes complete with two 5-foot air hoses, foot control valve with guard, and fittings ready for use.

Tube OD	Part No.
1 to 1½-Inch	74705-0000
5/8 to 1-Inch	74705-0625



SPECIFICATIONS	
Length	12"
Width	6"
Height	6"
Jaw Width	3"
Jaw Depth	2"
Wt. (Vise Only)	24 lbs.
Maximum Jaw Opening (Without Jaw Plates)	3"
Maximum Travel	5/8"
Maximum Operating Pressure: 150 psi	
Gripping Force: 15x Air Line Pressure	

Hydraulic Tube Extractor — Collet and Spear Type Pulls 5/8 to 1¼-Inch OD Tubes

Applications

- Quickly and efficiently removes tubes from heat exchangers, condensers, and other pressure vessels

Features

- Uses a heavy-duty, single-action hydraulic cylinder with spring return
- Quick-disconnect couplings and a heavy-duty, thermal-protected motor
- 1½ HP electric-hydraulic power unit that delivers 55CFM of oil at 10,000 psi with 115 Volt
- Also available in 220V/50-60 Hz versions
- The system has a 10-foot hose with spring guards and quick coupler fittings for added maneuverability
- An external pressure relief valve and gauge monitor the system's pressure

Benefits

- Many times faster than manual tube pulling
- Trigger operation is fast and efficient
- Spring return retracts gripper, further improving productivity
- Minimal training or experience required



How To Order

Simply add the tube Outer Diameter fractional to the kit number

Hydraulic Tube Extractor No. 75700-____ -Kit Consists of	Part No.
Extractor Gun (5/8 to 1-Inch OD Tubes)	75700-7001
Power Hose and On/Off Assembly	75700-7210
Hydraulic Power Unit (110V-60 Hz)	75700-7260
Gripper Set (see chart below)	75700-0XXX
Service Manual	SM-250
Hydraulic Power Unit (220V-50/60 Hz)	75700-7262

To order 220V Kit, add "220" before the word "Kit"

Item	Part No.	Item	Part No.
Spear 0.375 - 0.500	75700-7401	Spear Driver	75700-7331
Spear 0.500 - 0.625	75700-7402	Spear Gripper	75700-7320
Spear 0.625 - 0.750	75700-7403	Yoke 1 - 1½ - 2-Inch	75700-7290
Spear 0.750 - 0.875	75700-7404	Standoff/Depth Stop	75700-7354
Spear 0.875 - 1.000	75700-7405	Large Front Housing	75700-7351
Spear 1.000 - 1.125	75700-7411	Large Mandrel	75700-7183
Spear 1.125 - 1.125	75700-7412		

Spear pulling kit for 5/8 to 3/4-inch tubes #75700-6275 includes large front housing, large mandrel, spear gripper, spear driver, standoff, yoke, and spears (#75700-7402 and -7403).

Tube OD Inches (mm)	Tube GA	Gripper Set For Kit No.	Each Gripper Set Includes These Gripper	Each Gripper Set Includes These Mandrel	Components: Stop
5/8 (15.9)	16-19	75700-0062 (5/8-Inch Kit)	75700-7055S	75700-7182	75700-7065
	16-19		75700-7055M		
	18-22		75700-7055L		
3/4 (19.1)	16-18	75700-0075 (3/4-Inch Kit)	75700-7056S	75700-7182	75700-7066
	18-20		75700-7056M		
	20-22		75700-7056L		
7/8 (22.2)	16-18	75700-0087 (7/8-Inch Kit)	75700-7057S	75700-7182	75700-7067
	18-20		75700-7057M		
	20-22		75700-7057L		
1 (25.4)	16-18	75700-0100 (1-Inch Kit)	75700-7058S	75700-7183	75700-7068
	18-20		75700-7058M		
	20-22		75700-7058L		
1¼ (31.8)	16-19	75700-0125 (1¼-Inch Kit)	75700-7355S	75700-7183	75700-7353
	19-21		75700-7355M		
	18-22		75700-7355L		

S = Small M = Medium L = Large

Extractor can be converted to spear-type pulling for 14 Gauge and heavier.
Contact us with your specific requirements.

Tube End Facing Tools

Fixed Type: 1/4 to 9/16-Inch OD Tubes



Features

- Adjustable collar provides projection control
- Four-flute high-speed steel
- Simple replacement of pilots



Tube OD		Tube	Assembly	Spare	Shank Dia.
Inches	(mm)	GA	With Collar	Cutter Bits	
1/4	(6.4)	18-25	44070-X0GA	44070-0003	1/4-Inch
3/8	(9.5)	18-25	44071-X0GA	44071-0003	
1/2	(12.7)	16-25	44073-X0GA	44073-0003	

GA = Tube Gauge

X: 0 = Regular Bit; 9 = Coated Bit

Insert Type: 5/8 to 2-Inch OD Tubes



Features

- Adjustable collar provides projection control
- Cutter bits can be easily replaced, lengthening the life of the product
- Delrin Pilots are available for 5/8-inch and larger tools for non-scoring applications



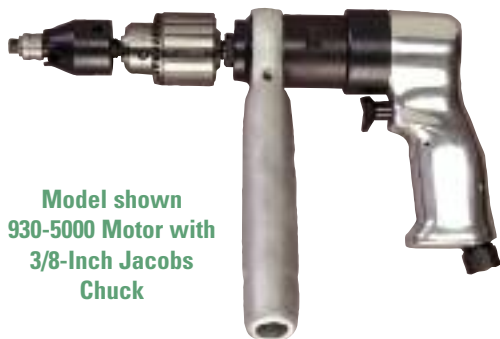
Tube OD		Tube	Assembly	Spare	Shank Dia.
Inches	(mm)	GA	With Collar	Cutter Bits	
5/8	(15.9)	15-25	44075-X0GA	44075-X001	3/8-Inch
3/4	(19.1)	13-25	44076-X0GA	44076-X001	
7/8	(22.2)	10-25	44077-X0GA	44077-X001	
1	(25.4)	9-25	44078-X0GA	44078-X001	1/2-Inch
1 1/8	(28.6)	15-22	44079-X0GA	44079-X001	
1 1/4	(31.8)	9-14	44080-X0GA	44080-X001	
1 1/2	(38.1)	9-12	44081-X0GA	44081-X001	
1 3/4	(44.5)	9-13	44082-X0GA	44082-X001	
2	(50.8)	7-12	44083-X0GA	44083-X001	

GA = Tube Gauge

X: 0 = Regular Bit; 9 = Coated Bit

Delrin Pilots are available upon request

Model shown
930-5000 Motor with
3/8-Inch Jacobs
Chuck



TUBE WALL THICKNESS OF WALL IN BIRMINGHAM WIRE GAUGE

GA	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6
Inch	.014	.016	.018	.020	.022	.025	.028	.032	.035	.042	.049	.058	.065	.072	.083	.095	.109	.120	.134	.148	.165	.180	.203
mm	.4	.4	.5	.5	.6	.6	.7	.8	.9	1.1	1.2	1.5	1.7	1.8	2.1	2.4	2.8	3.0	3.4	3.8	4.2	4.6	5.2

Flat and Radius Type Facer: 5/8 - 2-Inch

- Both Flat and Radius Tools trim tubes to consistent projection

Features

- Adjustable collar provides projection control
- Removable taper or chucking shank provides drive flexibility
- Cutters can be easily resharpened



Flat-Facing Tube End Facing Tool
(shown with chucking shank and adjustable collar installed)



NOTE:
Shown without collar for clarity

OD Inches	Tube (mm)	Wall GA	Flat Facer Assembly Part No.	Spare Cutter Part No.	Radius Facer Assembly Part No.	Spare Cutter Part No.
5/8	(15.9)	13-14	21874-xxGA	21874	21791-xxGA	21791
		15-16			21792-xxGA	21792
		17-18			21793-xxGA	21793
		19-20			21794-xxGA	21794
		21-25			-	-
3/4	(19.1)	13-14	21562-xxGA	21562	21795-xxGA	21795
		15-16			21796-xxGA	21796
		17-18			21797-xxGA	21797
		19-20			21798-xxGA	21798
		21-25			-	-
7/8	(22.2)	11-12	21563-xxGA	21563	21799-xxGA	21799
		13-14			21800-xxGA	21800
		15-16			21801-xxGA	21801
		17-18			21802-xxGA	21802
		19-20			21803-xxGA	21803
1	(25.4)	21-25	21564-xxGA	21564	-	-
		9-10			21804-xxGA	21804
		11-12			21805-xxGA	21805
		13-14			21806-xxGA	21806
		15-16			21807-xxGA	21807
1%	(28.6)	17-18	21565-xxGA	21565	21808-xxGA	21808
		20-22			40356-xxGA	40356
		23-25			40357-xxGA	40357
		-			40358-xxGA	40358
1 1/4	(31.8)	9-10	22287-xxGA	22287	-	-
		11-12			22336-xxGA	22336
		13-14			22337-xxGA	22337
1 1/2	(34.9)	9-10	22288-xxGA	22288	22338-xxGA	22338
		11-12			22339-xxGA	22339
		13-14			22340-xxGA	22340
1 3/4	(38.1)	9-10	22289-xxGA	22289	22341-xxGA	22341
		11-12			22342-xxGA	22342
2	(50.8)	7-8	22290-xxGA	22290	22343-xxGA	22343
		9-10			22344-xxGA	22344
		11-12			22345-xxGA	22345
					22346-xxGA	22346

MADE TO
ORDER
MINIMUM QUANTITY
IS APPLIED

To order:

GA= specify the tube Gauge when ordering
xx- std #2 MT shank=00, 1/2-inch chucking shank=50
2-inch size has #3 MT standard

Tube Wall Reducing Tools

Features

- Relieves tube joint prior to cutting
- Self-center design prevents damage to sheet
- Tubes do not need to be cleaned prior to use

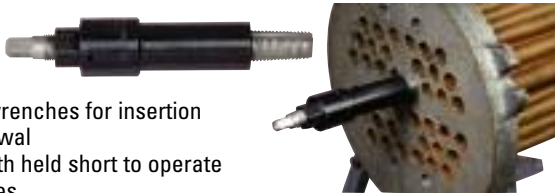


Tube OD		Tube	Part No.	Shank	Major Dia.
Inches	(mm)	GA			
1/4	(6.4)	18-24	22088-00xx	1/4-Inch Rd.	.238
5/16	(7.9)	18-24	22089-00xx	5/16-Inch Rd.	.300
3/8	(9.5)	16-24	22090-00xx	3/8-Inch Rd.	.359
1/2	(12.7)	16-22	22091-00xx	#2 MT	.484
5/8	(15.9)	12-22	22092-00xx		.609
3/4	(19.1)	12-22	22093-00xx		.734
7/8	(22.2)	12-22	22094-00xx	#3 MT	.859
1	(25.4)	10-22	22095-00xx		.984
1 1/8	(28.6)	16-22	22096-00xx	#4 MT	1.109
1 1/4	(31.8)	10-20	22097-00xx		1.234
1 1/2	(38.1)	10-15	22098-00xx		1.484

Manual Tube Puller

Features

- Easy to use
- Only hand wrenches for insertion and withdrawal
- Overall length held short to operate in tight places



Tube OD		Tube	Part No.	Replacement Spear
Inches	(mm)	GA		
1/4	(6.4)	18-19	74811-1819	74811-0001
		20-21	74811-2021	74811-0002
3/8	(9.5)	18-19	74812-1819	74812-0001
		20-21	74812-2021	74812-0002
1/2	(12.7)	16-25	74834	74834-0001
5/8	(15.9)	16-25	74535	74535-0001
3/4	(19.1)	16-25	74536	74536-0001
7/8	(22.2)	16-25	74537	74537-0001
1	(25.4)	16-25	74538	74538-0001
1 1/4	(31.8)	16-25	74732	74732-0001

Tube Sheet Hole Brushes

Features

- Easy to use
- Can clean thick tubesheets
- Can be dipped in water or solvent for additional cleaning action

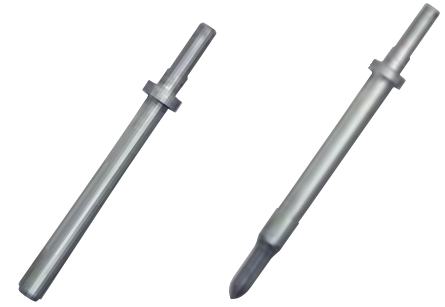


Tube OD		Nylon (6-Inch) Part No.	Stainless Steel	
Inches	(mm)		Length	Part No.
5/8	(15.9)	41040	6	41045-0006
			12	41045-0012
3/4	(19.1)	41041	6	41046-0006
			12	41046-0012
7/8	(22.2)	41042	6	41047-0006
			12	41047-0012
1	(25.4)	41043	6	41048-0006
			12	41048-0012
1 1/8	(28.6)	41044	6	41049-0006
			12	41049-0012

Tube Knockout/Collapsing Tools

Features

- Minimizes tube removal costs
- Specifically designed as a companion to the Tube Wall Reducing Tool



Tube OD		Tube	K.O. Tool Part No.	Shank	OAL	Collapsing Tool No.	
Inches	(mm)	GA				OAL	OAL
1/4	(6.4)	18-28	22111-00XX	.560/.680 (Round)	7	-	-
5/16	(7.9)	18-28	22112-00XX			-	-
3/8	(9.5)	16-28	21390-00XX			-	-
1/2	(12.7)	14-22	20956-00XX	.560/.680 (Round)	9	21909	11 1/2
5/8	(15.9)	12-22	20957-00XX			21910	
3/4	(19.1)	12-22	20958-00XX			21911	
7/8	(22.2)	12-22	20959-00XX	.680 (Round)	10	21912	11 1/2
1	(25.4)	10-22	20960-00XX			21913	
1 1/8	(28.6)	16-22	40171-00XX			40514	11 1/2
1 1/4	(31.8)	10-22	21391-00XX	.680 (Round)	-	21914	12
1 1/2	(38.1)	10-22	40563-00XX			21915	
2	(50.8)	-	-			74010-0800	12 1/2

Extra-Length Tube Knockout Tools



Tube OD		Tube	K.O. Tool Part No.	OAL	K.O. Tool Part No.	OAL
Inches	(mm)	GA				
5/8	(15.9)	8-16	20732-00xx	8	20732-14xx	14
3/4	(19.1)	8-16	20733-00xx		20733-14xx	
7/8	(22.2)	8-16	20734-00xx		20734-14xx	
1	(25.4)	8-16	20735-00xx		20735-14xx	
1 1/4	(31.8)	8-16	20736-00xx		20736-14xx	

Tube Knockout Tools For Use with No. 80 Boyer Gun



Tube OD		K.O. Tool Part No.	OAL
Inches	(mm)		
1	(25.4)	73750	11
1 1/4	(31.8)	72626	8
1 1/2	(38.1)	72806	10
2	(50.8)	72230	12
		72940	

Special Application Products

Long-Reach Expanders

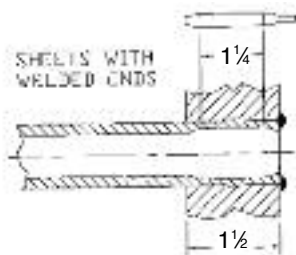
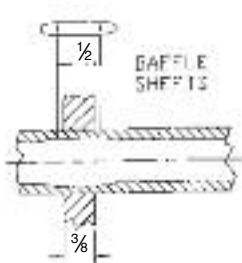


Wilson Long-Reach Expanders expand tubes at points far back from the tubesheet, such as the point at which it passes through a baffle sheet.

- Tube Outer Diameter: 5/8 to 4½-Inch, 8 to 22 Gauge
- Roll Length: 1½ or 2¼-Inch and Relieved
- Extended Reach: 6, 12, 18, 24, 30, 36, or 60-Inch

Relieved Rolls

Rolling Tubes with Welded Ends or Expanding Tubes at Baffle Sheets



Wilson Relieved Rolls adapt to any **Wilson 41, 44, or 47 Series Expander** to roll tubes after they have been welded or to roll tubes at the point at which they pass through a baffle sheet.

- For 1/2 to 2½-inch Outer Diameter tubes
- Relieved Rolls are installed in minutes and work with any **Wilson 41, 44, 47, 72, or 73 Series Expander**
- To order set of Relieved Rolls, simply specify Expander Assembly Part No. and effective roll length

Pipe Sizing Expanders

True Up or Bring Pipe or Tube Ends to Round



Wilson Pipe Sizing Expanders bring pipe or tube ends to a precise diameter to prepare them for soldering or brazing into sil-braz and similar pipe fittings. Very close manufacturing tolerances ensure that rolls expand in a parallel manner.

- For 0.435 to 12-Inch Inner Diameter pipe and tubes
- When ordering, specify tube Outer Diameter and Inner Diameter, tube metal, and approximate depth of rolling

Captive Mandrel Expanders

Tube Expansion with Limited Mandrel Travel



Wilson Captive Mandrel Tube Expanders enable tubes to be rolled where mandrel travel is limited because of restrictions in the tube Inner Diameter or when the tube bend is very close to the rolling area.

- For 3/8 to 2½-Inch Outer Diameter tubes
- To order a Captive Mandrel Expander, provide us with the details of your specific application (tube Outer Diameter and Gauge, tubesheet thickness, and maximum mandrel travel)

VLD Vacuum Leak Detector

Pinpoint Leaky Tubes - 1/4 to 3-Inch OD



Applications

The Vacuum Leak Detector (VLD) is a simple test instrument used by manufacturers and users of condensers, heat exchangers, and other tubular apparatus to identify leaky tubes. One man does the job. He seals the far end of each tube with a snap-type tube plug, then he presses the rubber-coated nozzle into the near end of the tube and depresses the trigger. Compressed air flows through a venturi chamber to produce a vacuum in the tested tube. When this vacuum reaches a satisfactory level, he releases the trigger. A steady gauge reading indicates a good tube. A falling vacuum indicates a leaky tube. Using a 90 psi dry clean air, a typical tube (1-inch Outer Diameter x 20 Gauge and 20 feet long) can be tested in 6 to 8 seconds. Tool weighs 2½ lbs. and is equipped with a muffler, so it operates quietly even in confined areas.



Kit No. 9836 for 5/8 to 1½-Inch OD Tubes	
Consists of	Part No.
Vacuum Leak Detector	42823
Assembled with Nozzle	41460-1003
Hose Assembly 12-Foot	24360-0012
T-Handle Tube Plug	42834-1003
Carrying Case	42837
Service Manual	SM-158

Accessory Parts for VLD Tool



Tube Plug Snap Type ID		
Inches	(mm)	Part No.
3/8	(9.5)	41482
7/16	(11.1)	41483
1/2	(12.7)	41484
9/16	(14.3)	41485
5/8	(15.9)	41486
11/16	(17.5)	41487
3/4	(19.1)	41488
13/16	(20.6)	41489
7/8	(22.2)	41490
15/16	(23.8)	41491
31/32	(24.6)	41492
1	(25.4)	41493
1½	(28.6)	41494
1¼	(31.8)	41495
1½	(34.9)	41496
1½	(38.1)	41497
1½	(41.3)	41498
1¾	(44.5)	41499
1¾	(47.6)	41500
2	(50.8)	41501



Additional Nozzles* Available	Part No.
Nozzle for 1/4 to 3/4-Inch OD Tubes	41460-1002
Nozzle for 5/8 to 1½-Inch OD Tubes	41460-1003
Nozzle for 1½ to 2-Inch OD Tubes	41460-1004
Nozzle for 1¾ to 3-Inch OD Tubes	41460-1005

*To be ordered in pairs (2) when T-handle is used.



Nozzle Extensions:	Part No.
For 5/8 to 1½-Inch Tubes 12-Inch Lg	41461-3012
For 1½ to 2-Inch Tubes 12-Inch Lg	41461-0012
For 1¾ to 2-Inch Tubes 24-Inch Lg	41461-0024

One-Piece Tube Plugs - Condensers - Heat Exchangers - Boilers

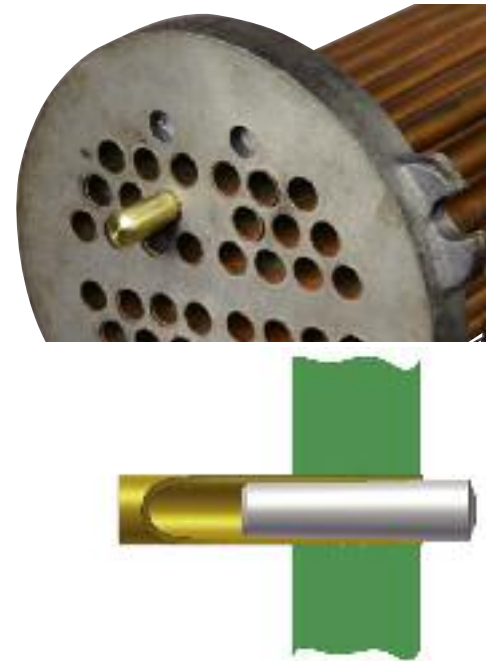
Wilson Tube Plugs offer a low-cost, quick, and efficient method of sealing leaking tubes. They are installed easily so that the pressure vessels get back on line. Minimum driving is required to establish a positive seal in seconds.

The tube plug and tube metal should always match. Fiber plugs require minimal driving since they tighten as they come in contact with water, but *fiber plugs should not be subjected to temperatures exceeding 105°C (221°F)*!

- Brass
- Carbon steel
- Stainless steel
- Fiber
- Monel (made to order)*
- Custom sizes and materials (We can make tube plugs from any material in any size. Contact us with your requirements.)

Tube plugs are packaged 10 per box, except 1½-inch Outer Diameter or larger plugs which are packaged individually.

Tube		Wall GA	Fiber Part No.	Brass Part No.	Carbon Steel (SA 105) Part No.	Stainless Steel (316) Part No.	Monel* Part No.
OD Inches	(mm)						
3/8	(9.5)	17-22	22017	22023	22029	22041	22035
1/2	(12.7)	11-14					
		15-22	22018	22024	22030	22042	22036
5/8	(15.9)	11-14					
		15-22	22019	22025	22031	22043	22037
3/4	(19.1)	11-14					
		15-22	22020	22026	22032	22044	22038
7/8	(22.2)	11-14					
		15-22	22021	22027	22033	22045	22039
1	(25.4)	11-14					
		15-22	22022	22028	22034	22046	22040
1½	(28.6)	15-22	40506	40507	40508	41581	41580
1½	(31.8)		44063	41083	42163	41084	-
1½	(34.9)		-	41085	42164	41086	-
1½	(38.1)		-	41233	42162	41235	-
2	(50.8)		-	-	42600	-	-
2½	(63.5)		10-13	-	-	42601	-
3	(76.2)	-	-	-	42602	-	-



Two-Piece Tube Plugs - Condensers - Heat Exchangers

OD	Tube	Wall	Ring & Pin Set Brass Part No.	OD	Tube	Wall	Ring & Pin Set Brass Part No.
Inches	(mm)	GA		Inches	(mm)	GA	
5/8	(15.9)	13	22321-9445	7/8	(22.2)	12	22321-9622
		14	22321-9469			13	22321-9696
		15	22321-9491			14	22321-9719
		16	22321-9505			15	22321-9741
		17	22321-9519			16	22321-9755
		18	22321-9537			17	22321-9769
		19-20	22321-9551			18	22321-9787
21-22	22321-9571	19-20	22321-9801				
3/4	(19.1)	12	22321-9537	1	(24.5)	21-22	22321-9821
		13	22321-9571			12	22321-9787
		14	22321-9594			13	22321-9821
		15	22321-9616			14	22321-9844
		16	22321-9630			15	22321-9866
		17	22321-9644			16	22321-9880
		18	22321-9662			17	22321-9894
19-20	22321-9676	18	22321-9912				
21-22	22321-9696	19-20	22321-9926				
				21-22	22321-9946		



How to use the tube plug

- For sealing off leaky condenser and heat exchanger tubes without damaging tubesheets.
- Place correct size ring in tube. (Order by tube Outer Diameter and Gauge)
- Tapered plug is driven into ring, which is tapered on the inside and is parallel to tube on the outside. This gives even expansion to the ring and a long contact to the seal. Available in a variety of metals: stainless steel 316 or 304, carbon steel, and others.

Hole Gauge: Three Point Mechanical



- Features**
- Three ball contact points
 - Adjustable collar for depth setting
 - Easy to calibrate with ring provided
 - Calibration of torque control rolling motors



Tube OD	Tube ID Range	Reach	Part No.
1/2		6-Inch	29100-4506
		12-Inch	29100-4512
5/8		6-Inch	29100-5306
		12-Inch	29100-5312
5/8-3/4	(15.9-19.1)	6-Inch	29100-6106
		12-Inch	29100-6112
3/4	(19.1)	6-Inch	29100-7306
		12-Inch	29100-7312
7/8	(22.2)	6-Inch	29100-8606
		12-Inch	29100-8612
1	(25.4)	6-Inch	29100-9806
		12-Inch	29100-9812
1 1/4	(31.8)	6-Inch	29100-1106
		12-Inch	29100-1112

Hole Micrometer: Three Point Electronic



- Features**
- Three line contact that allows for self-centering
 - Digital readout
 - Carbide-tipped contacts
 - Easy to calibrate with ring provided



Kit includes hole micrometer, extension, calibration ring and extra battery. All sizes have 3-inch reach standard. The extension in each kit has the length described in the chart.

Tube OD	Reach	Part No.	
			Inches
.275-.360	(6-8)	7-Inch	28270
.350-.425	(8-10)	7-Inch	28271
.425-.500	(10-12)	7-Inch	28272
.500-.650	(12-16)	9-Inch	28273
.650-.800	(16-20)	9-Inch	28274
.800-1.000	(20-25)	9-Inch	28275
1.000-1.200	(25-30)	9-Inch	28276



Condenser Tube Inserts



- Features**
- Offers permanent protection for new tubes or extended life for old condenser tubes already pitted or thinned at the entrance section.

Material	=	X
Nylon	=	0
Poly Propylene	=	1
TFE	=	2
TFE ZEL	=	3



Tube Cement
1/2-Pint Can
Part No. 62439

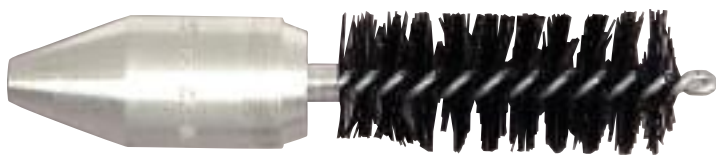
OD	Condenser Tube Size	# of Inserts/ Cans of Cement*	Part No.	Insert Length
5/8	(15.9)	450/can	62438-X006	6
			62553-X006	
			62482-X004	
3/4	(19.1)	250/can	62482-X006	6
			62440-X004	
		200/can	62440-X006	6
			62554-X006	
7/8	(22.2)	200/can	62386-X003	3
			62386-X006	
		150/can	62386-X007	7
			62555-X006	
1	(25.4)	150/can	62556-X006	6
			62557-X006	
		150/can	62557-X008	8
			62558-X006	
			62558-X006	

ESTIMATED REQUIREMENTS / CANS

- 5/8-Inch Tube - 450 Inserts
- 3/4-Inch Tube - 250 Inserts
- 7/8-Inch Tube - 200 Inserts
- 1-Inch Tube - 150 Inserts

*Cementing of TFE Inserts is not required. They are made to a press fit.

Aluminum Tube Guides



Features

- Protects tube end during installation
- Ensures accurate alignment of tube through baffle
- Replacement Nylon Brush available
- Wide range of Gauge

OD Inches (mm)	GA	Part No.
3/8 (9.5)	16-19	44141
	20-24	44142
1/2 (12.7)	14-17	44143
	18-22	44144
5/8 (15.9)	14-17	44145
	18-22	44146
3/4 (19.1)	14-17	44147
	18-22	44148
7/8 (22.2)	14-17	44149
	18-22	44150
1 (25.4)	14-17	44151
	18-22	44152
1 1/4 (31.8)	14-17	44153
	18-22	44154

* Guide are 10 per package.

* Other sizes and materials available 25 minimum.

Carbide Burs



OD Inches (mm)	Part No.	Features
0.640 (16.3)	9840	Left Hand Spiral, Right Hand Cut, 1/2-Inch Diameter Shank
0.765 (19.4)	9841	
0.890 (22.6)	9842	
1.015 (25.8)	9843	

Features

- .005 larger than tube hole within TEMA specifications

Tubesheet Hole Reamer



OD Inches (mm)	Part No.	Reamer Diameter Inches (mm)	Morse Taper
3/8 (9.5)	22250	.380 (9.7)	1
1/2 (12.7)	20333	.505 (12.8)	
5/8 (15.9)	20288	.632 (16.1)	
3/4 (19.1)	20289	.758 (19.3)	2
7/8 (22.2)	20290	.883 (22.4)	
1 (25.4)	20291	1.010 (25.7)	3
1 1/8 (28.6)	40513	1.135 (28.8)	
1 1/4 (31.8)	21358	1.260 (32.0)	

Features

- High-Speed Tool Steel 8 Flute
- Superior performance compared to adjustable reamer

Grooving Tools



Features

- Grooving of tubesheets for heat exchangers, condensers, or boiler drums
- Adds strength to tube-to-tube seat joint
- Adjustment for depth of groove and position of tubesheet

1/8 1/4 1/8



Standard bits are 1/8 x 1/4 x 1/8. Other bit configurations available, consult factory.

Tube Hole Inches (mm)	Grooving Tool Part No.	Tool Bit Part No.	Morse Taper Drive	Weight (Approx) lbs. (Kg)	
5/8 (15.9)	74358	74366	+ #3	3 (1.4)	
3/4 (19.1)	74359	74367		3 1/2 (1.6)	3 1/2 (1.5)
7/8 (22.2)	74360				6 1/2 (2.9)
1 (25.4)	74361		7 1/2 (3.4)		
1 1/4 (31.8)	74362		#4	#5	10 1/2 (4.8)
1 1/2 (38.1)	74363	19 (8.6)			
2 (50.8)	74364	26 (11.8)			
2 1/2 (63.5)	74700				
3 (76.2)	74704				

+ Available with 1/2-Inch Diameter Straight Shank



Flaring Tools



Features

- Flaring heat exchanger tubes that project outside the tubesheet
- Suitable for simultaneous flare and "seating" a flare into a countersunk tube of similar angle
- Flare angle produced is in accordance with ASME and U.S. Navy Boiler Code

OD		Tube	Wall	Part No.
Inches	(mm)		GA	
1/4	(6.4)		18-24	*22113
3/8	(9.5)		16-24	*22120
1/2	(12.7)		16-22	21875
5/8	(15.9)		14-15	22127
			16-22	20256
3/4	(19.1)		14-15	21017
			16-22	20259
7/8	(22.2)		14-15	22132
			16-22	20262
1	(25.4)		12-15	21053
			16-22	20265
1 1/8	(28.6)		12-15	40342
			16-22	40576
1 1/4	(31.8)		8-14	40342
			15-22	41224
1 3/8	(34.9)		8-14	41234
			15-22	41225
1 1/2	(38.1)		8-14	21903
			15-22	41226
2	(50.8)		7-14	22299

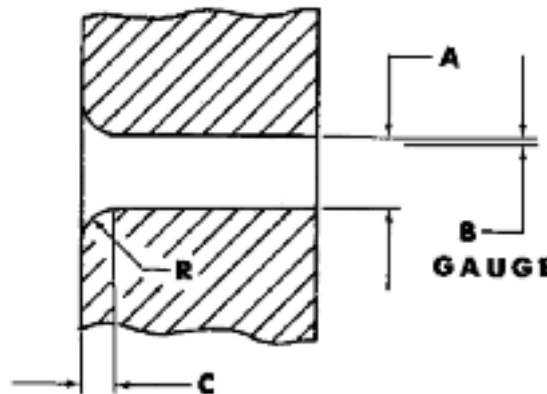
*For hand use only - No power shank provided

Belling Tools (Hand Shank Type)



Applications

- These special-order tools are made for tube inlet ends that require seating into the tubesheet, not projecting. Please use the drawing and chart to supply information to ensure a proper tool is provided. Specify hand- or power-driven.



A	B	C	R

Tubesheet Hole Radius Cutter



Features

- This high-speed steel tool is used to prepare tubesheets to suit flaring or the beading of tube ends. The rotating pilot is made to suit oversized reamed holes in the tubesheet.

OD Tubes		Tool Radius		Morse Taper	Radius Cutter Part No.
Inches	(mm)	Inches	(mm)		
1/2	(12.7)	1/8	(3.2)	2	20338
5/8	(15.9)	5/32	(4.0)		20224
3/4	(19.1)				20225
7/8	(22.2)	3/16	(4.8)		20226
1	(25.4)				20227
1 1/8	(28.6)	1/4	(6.4)		40512
1 1/4	(31.8)			21395	

Packing Tools



Applications

- Used to rapidly insert packing into female-type tube joints

Inches	Tube		Part No.
	OD (mm)	Wall GA	
5/8	(15.9)	16	20308
		17	20309
		18	20310
3/4	(19.1)	15	21034
		16	20311
		17	20312
		18	20313
7/8	(22.2)	16	20314
		17	20315
		18	20316
1	(25.4)	16	20317
		17	20318
		18	20319

Packing Removal Tools



Applications

- Used to remove packing in female-type joints. Self-piloted and available in left- or right-hand configurations. They easily fit any standard drill.

Inches	Tube		Shank Diameter		Rotation of Cut	
	OD (mm)	Wall GA	Inches	(mm)	Right Hand Part No.	Left Hand Part No.
5/8	(15.9)	16	3/8	(9.5)	20320	39535
		17			20431	39536
		18			20432	39537
3/4	(19.1)	14			21883	39538
		15			21036	39539
		16			20435	39540
		17			20436	39541
7/8	(22.2)	18			20437	39542
		16			20321	39543
		17			20433	39544
1	(25.4)	18			20434	39545
		16			20438	39546
		17	20439	39547		
		18	20440	39548		

Thread Chasing Tools



Applications

- Used in conjunction with the packing removal tool, the thread chasing tool will remove any leftover packing material in tubesheet hole threads before repacking is done.

Tubesheet Thread	Part No.	OAL	Drive Square
7/8-16	74246-0016	3%	5/8
7/8-18	74246-0018		
1-16	74253-0016	3%	3/4
1-18	74253-0018		

Linsen Flaring Expander



The **Linsen Expanders** are power-driven tools designed for making tubing connections without fittings. It enlarges end of tube, leaving .015-inch clearance for slip fit, so that another tube can be inserted and soldered like a sweat fitting.

It is excellent for short bends, U-turns, copper, brass, aluminum, or thin steel tubing.

Inches	Tube OD		Expansion Dia.	Drive Dia. Inches	Expander Part No.
	(mm)	Length			
3/8	(9.5)	.390	5/8	1/4	75520
1/2	(12.7)	.515		5/16	75521
5/8	(15.9)	.640		75522	
3/4	(19.1)	.765	3/4	3/8	75523
7/8	(22.2)	.890			75524
1	(25.4)	1.015	1		75525

Rental Equipment - Complete Equipment Kits Available for Rental

Torq-Air-Matic™ A

Page 12

Kit includes:

- Torq-Air-Motor™ Drive with Dead Handle
- 3/8-Inch Square Mandrel Connector
- 3/8-Inch Inner Diameter Hose (8 Feet)
- 5/16-Inch Hex Key
- Lubricator
- 1/8-Inch Hex Key
- Tool Box with Service Manual

Tube OD		Tube Material	rpm	Weight	Kit No.
Inches	(mm)				
1/2 - 1	(12.7 - 25.4)	Non-Ferrous	750	9 lbs.	R40510
1/2 - 3/4	(12.7 - 19.1)	Ferrous			
1/2 - 1 1/4	(12.7 - 31.8)	Non-Ferrous	450	9 lbs.	R40511
1/2 - 1	(12.7 - 25.4)	Ferrous			

VLD (Vacuum Leak Detector)

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Kit includes:

- Vacuum Leak Detector
- 1/4 to 3/4-Inch, 5/8 to 1 1/4 or 1 1/2 to 2-Inch Nozzle (as requested)
- 3/8-Inch Inner Diameter Hose (12 feet)
- T-Handle Tube Plug
- Tool Box with Service Manual

Tube OD		Weight	Kit No.
Inches	(mm)		
1/4 - 3/4	(6.4 - 19.1)	2 1/4 lbs.	R9836-1002
5/8 - 1 1/4	(15.9 - 31.8)	2 1/4 lbs.	R9836-1003
1 1/2 - 2	(28.6 - 50.8)	2 1/4 lbs.	R9836-1004

Electronic Torque Control Tube Roller

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Kit includes:

- Digital Torque Control Box (Auto-Reverse)
- Electric Rolling Motor
- Power Cord
- Carrying Case

Tube OD		Weight	Kit No.
Inches	(mm)		
5/8 - 1	(15.9 - 25.4)	26 lbs.	R76500

WPP-1500 & WAP-1000 Tube Puller

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Kit includes:

- Hydraulic Cylinder
- Pump Unit
- Hydraulic Oil (2 gallons)
- Hydraulic Hose
- Chair/Load Cap
- Notched Extension
- Operations Manual

Tube OD		Power	Weight	Kit No.
Inches	(mm)			
1/2 - 1	(12.7 - 25.4)	Air	25 lbs.	RWAP10-0000
1/2 - 1 1/2	(12.7 - 38.1)	Electric	45 lbs.	RWPP15-0000

Wils-Tronic™ Electronic Tube Roller

Page 16

Kit includes:

- Electronic Control Unit
- Telescopic Shaft
- Motor (Variable Speed)
- Portable Rolling Stand

Tube OD		Weight	Kit No.
Inches	(mm)		
1/2 - 1 1/2	(12.7 - 38.1)	350 lbs.	R46000
3/4 - 3	(19.1 - 76.2)	400 lbs.	R46500

Collet Spear Type Tube Puller

Page 20

Kit includes:

- Extractor Gun
- Gripper Set (includes small, medium and large plus Mandrel and Stop)
- Pump Unit
- Power Hose and On/Off Assembly

Tube OD		GA	Weight	Kit No.
Inches	(mm)			
5/8	(15.9)	16-22	15 lbs.	R75700-0062
3/4	(19.1)			R75700-0075
7/8	(22.2)			R75700-0087
1	(25.4)			R75700-0100
1 1/4	(31.8)			R75700-0125

Thomas C. Wilson, LLC services many markets such as:

- OEM pressure vessel manufacturers
- Petro Chemical
- Power Generation
- Marine and Shipyards
- Food Processing
- Industrial HVAC
- Public Institutions and Municipalities
- Paper and Sugar Mills
- General Manufacturing

Thomas C. Wilson offers more than just products:

MANUFACTURING:

Our skilled personnel process new models and specials to suit your needs. For some, a catalog solution fits the bill. For others, a more custom approach is needed.

- **Raw Material** - Only the best grades of certified alloy steels are used to meet the rugged services need for tube expanding.
- **Heat Treating** - Accomplished in modern instrument controlled furnaces, the instruments are constantly checked to assure the accurate control of temperature.
- **Inspection** ~ Thomas C. Wilson employs a range of inspection procedures and devices to ensure the highest possible quality of every product.



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In Stock:

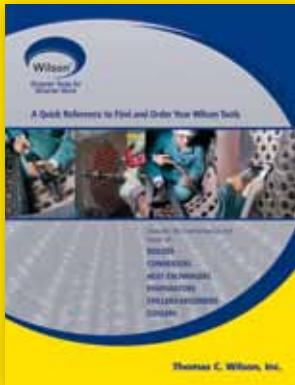
Thomas C. Wilson has tremendous in-house quantities and a global network ensures that a wide range of products are readily available. Our expanded inventory includes equipment that not only helps you to perform but make your job easier as well. We also specialize in tube cutting, trimming facing, beading tools, reaming rolling motors, collapsing tools, pneumatic tools, shaft and casings, cutter heads and accessories and supplies. Additionally, **Thomas C. Wilson** understands that not every job requires a purchase and not every budget can afford equipment ownership. We offer a range of equipment rental options to get the right tool in your hands as quickly and cost-effectively as possible.



FACTORY ENGINEERING:

Tools are engineered to meet the rigorous conditions in the industry. State-of-the-art designs are incorporated with a proven tradition of excellence and manufactured with the best materials available. Our engineering department is constantly testing and developing the tools for better equipment.





Quick Reference Catalog

An easy-to-use overview of Wilson's electric and pneumatic tube cleaning systems for heat exchangers, fire tube and water tube boilers, condensers, chillers, and absorbers, as well as other Wilson tools, accessories, and supplies.



Boiler Tube Expanders and Accessories Catalog

A comprehensive guide to all the tools you need to tube or re-tube water tube or fire tube boilers. Includes pneumatic and electric tube rollers, tube cutters, beading and collapsing tools, as well as tube plugs and accessories.



Tube Cleaners and Accessories Catalog

A detailed guide to the most extensive line of tube cleaning equipment and accessories available anywhere, including electric, pneumatic, and air-driven tube cleaning systems, spiral and expanding brushes, cutter heads and cutter bits, Blo-Guns and Blo-Brushes, and Shafts & Casings.



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