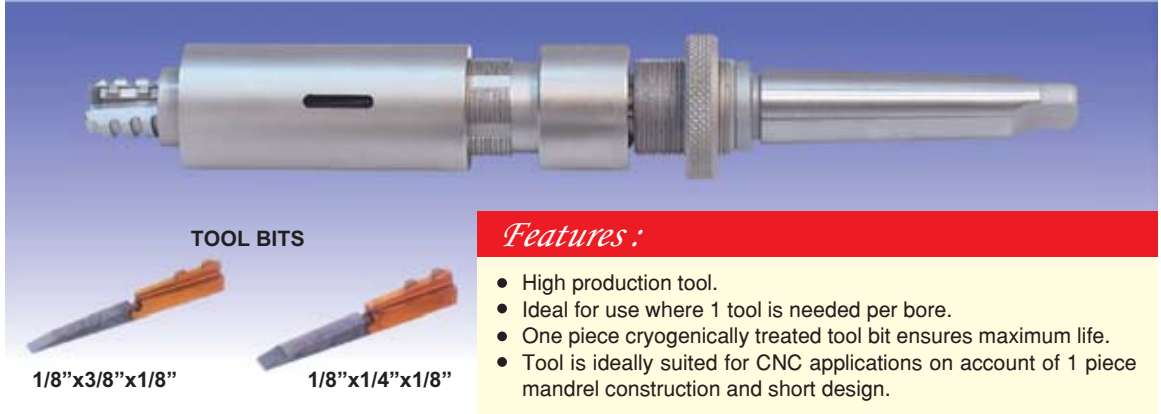


$\frac{3}{8}$ " - $\frac{1}{2}$ "
O.D.

SERRATING / GROOVING TOOL - 'ST' SERIES

FOR GROOVING IN TUBE SHEETS



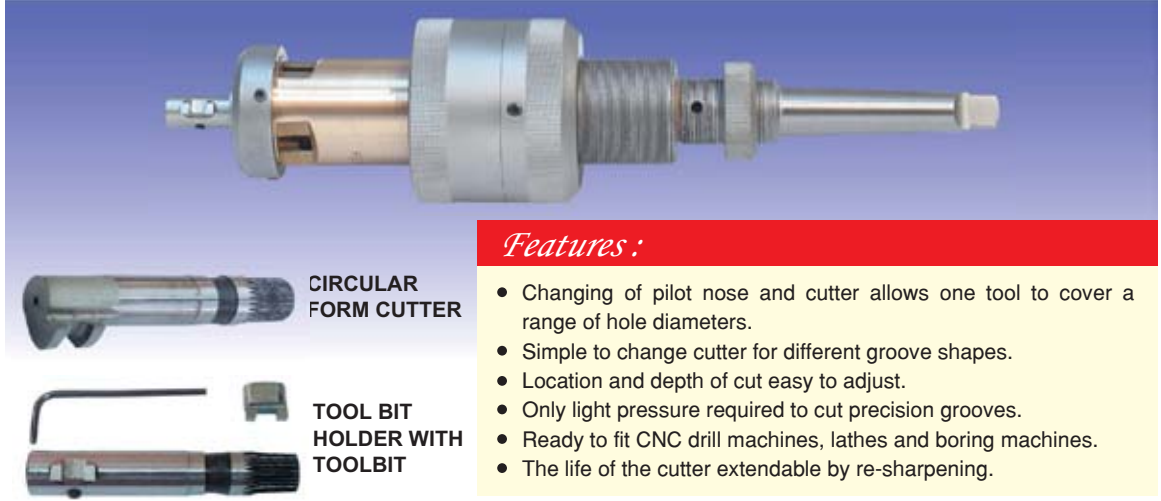
- Features :*
- High production tool.
 - Ideal for use where 1 tool is needed per bore.
 - One piece cryogenically treated tool bit ensures maximum life.
 - Tool is ideally suited for CNC applications on account of 1 piece mandrel construction and short design.

Tube O.D.		Tool Model No.	Spare Tool Bits		
mm	inch		1/8" x 3/8" x 1/8" Spacing	1/8" x 1/4" x 1/8" Spacing	Special Spacing
9.53	3/8	ST-375-970	ST-3703	ST-3703-S	ST-3703-SPEC
12.70	1/2	ST-500-1270	ST-5003	ST-5003-S	ST-5003-SPEC
15.87	5/8	ST-625-1588	ST-6203	ST-6203-S	ST-6203-SPEC
19.05	3/4	ST-750-1900	ST-7503	ST-7503-S	ST-7503-SPEC
22.22	7/8	ST-875-2220	ST-7503	ST-7503-S	ST-7503-SPEC
25.40	1	ST-1000-2540	ST-7503	ST-7503-S	ST-7503-SPEC
31.75	1.1/4	ST-1250-3175	ST-7503	ST-7503-S	ST-7503-SPEC
38.10	1.1/2	ST-1500-3810	ST-7503	ST-7503-S	ST-7503-SPEC
50.80	2	ST-2000-5080	ST-7503	ST-7503-S	ST-7503-SPEC
63.50	2.1/2	ST-2500-6350	ST-7503	ST-7503-S	ST-7503-SPEC

Note : Serrating Tools are available for MM bore sizes also. Please enquire.
Refer to operation manual for spare parts list and detailed features.

$\frac{3}{8}$ " - 4"
O.D.

SERRATING / GROOVING TOOL - 'NW' SERIES



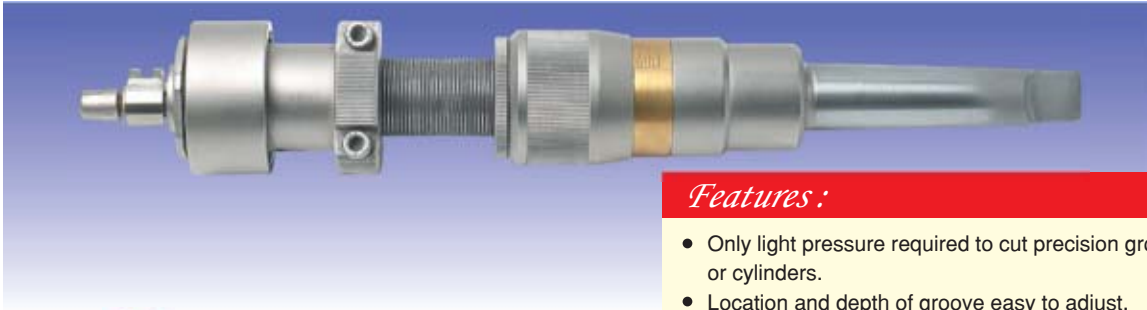
- Features :*
- Changing of pilot nose and cutter allows one tool to cover a range of hole diameters.
 - Simple to change cutter for different groove shapes.
 - Location and depth of cut easy to adjust.
 - Only light pressure required to cut precision grooves.
 - Ready to fit CNC drill machines, lathes and boring machines.
 - The life of the cutter extendable by re-sharpening.

Bore Range		Tool Model No.	Pilot Nose Model No.	Circular Form Cutter Model No.	Tool Bit Holder Model No.	Spare Tool Bit Model No.
mm	inch					
9 - 32	3/8 - 1.1/4	1 NW - 2 MT	1 NW - PN	1 NW - CF	1 NW - TBH	1 NW - TB
16 - 45	5/8 - 1.3/4	2 NW - 3 MT	2 NW - PN	2 NW - CF	2 NW - TBH	2 NW - TB
19 - 48	3/4 - 1.7/8	4 NW - 4 MT	4 NW - PN	4 NW - CF	4 NW - TBH	4 NW - TB
38 - 102	1.1/2 - 4	6 NW - 5 MT	6 NW - PN	6 NW - CF	6 NW - TBH	6 NW - TB

Note : Specify whether you need Circular Form Cutter (one piece HSS construction) or Tool Bit Holder with Tool Bit, when ordering.
Refer to operation manual for detailed spare parts list.
Ask for leaflet number 038 for detailed features.

SERRATING / GROOVING TOOL - 'SGT' SERIES

3/8" - 3"
O.D.



TOOL BIT

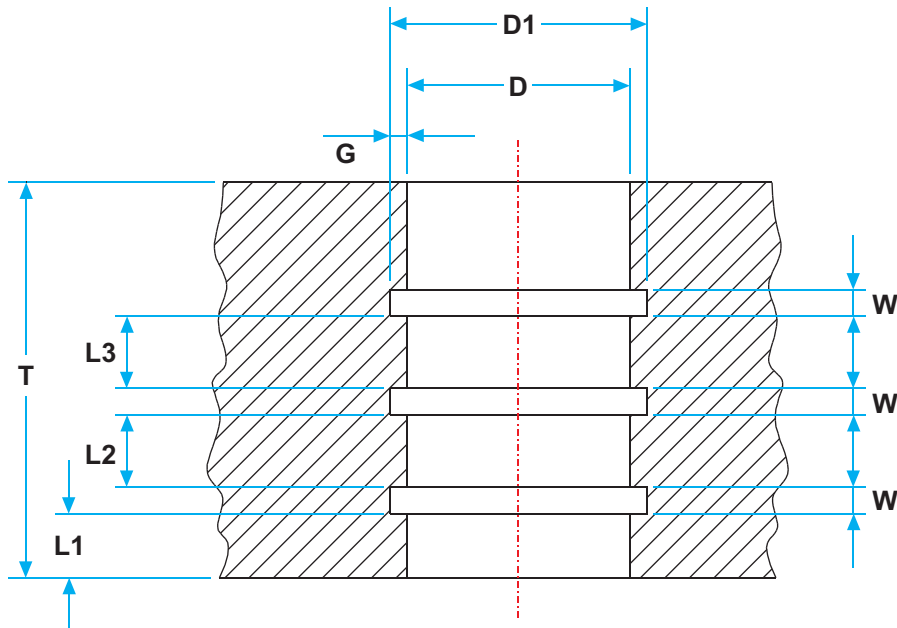
Features :

- Only light pressure required to cut precision grooves inside holes or cylinders.
- Location and depth of groove easy to adjust.
- Simple to change cutter for different groove shapes.
- Changing of bushing and cutter allows one tool to cover a range of hole diameters.
- The life of the cutter extendable by re-sharpening.

Bore Range		Tool Model No.	Pilot Nose / Bushing Model No.	Tool Bits Model No.
mm	inch			
10 - 13	0.40 - 0.51	SGT-102	SGT-102-PN	SGT-102-TB
12.7 - 16	0.50 - 0.63	SGT-122	SGT-122-PN	SGT-122-TB
16 - 20	0.63 - 0.79	SGT-162	SGT-162-PN	SGT-162-TB
19 - 32	0.75 - 1.26	SGT-193	SGT-193-PN	SGT-193-TB
30 - 52	1.18 - 2.05	SGT-303	SGT-303-PN	SGT-303-TB
50 - 78	1.97 - 3.07	SGT-504	SGT-504-PN	SGT-504-TB

Note : Ask for catalog number CTG-100 for spare parts list, operating instructions and detailed features.

PLEASE SUPPLY FOLLOWING INFORMATION WHEN ORDERING GROOVING TOOLS OR SPARE CUTTERS.

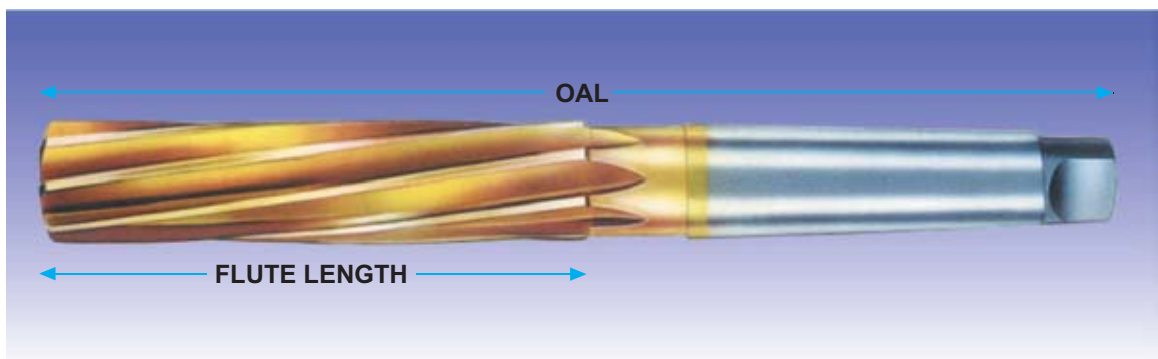


A)	Bore Dia after reaming with Tolerances	D
B)	Tube Plate Thickness	T
C)	Distance of First Groove	L1
D)	Total Number of Grooves	N
E)	Spacing of Grooves	L2, L3
F)	Groove Width	W
G)	Diameter of Grooves	D1
H)	Groove undercut Depth	G





TUBE SHEET HOLE REAMER



Features :

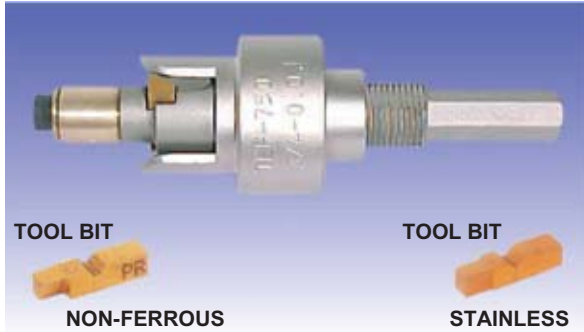
- High speed steel, cryogenically treated & coated with Titanium Nitride for long life.
- Ideal for heat exchanger and condenser tube sheet reaming.
- Reamers available in MM sizes also.
- For larger diameters, please enquire.

Tube O.D.		Reamer Size to "TEMA" Specification		Model No.	Flute Length		OAL		Shank: Morse Taper #
mm	inch	mm	inch		mm	inch	mm	inch	
9.53	3/8	9.65	.380	RM-095/66	66	2.60	146	5.70	1
				RM-095/101	101	3.97	181	7.12	
				RM-095/152	152	5.98	232	9.13	
12.70	1/2	12.83	.505	RM-127/76	76	2.99	156	6.14	1
				RM-127/101	101	3.97	181	7.12	
				RM-127/152	152	5.98	232	9.13	
15.87	5/8	16.03	.631	RM-158/87	87	3.42	187	7.36	2
				RM-158/152	152	5.98	252	9.92	
				RM-158/203	203	7.99	303	11.93	
16.00	-	16.16	.636	RM-160/87	87	3.42	187	7.36	2
				RM-160/152	152	5.98	252	9.92	
				RM-160/203	203	7.99	303	11.93	
19.05	3/4	19.25	.758	RM-190/100	100	3.90	200	7.87	2
				RM-190/152	152	5.98	252	9.92	
				RM-190/203	203	7.99	303	11.93	
20.00	-	20.20	.795	RM-200/100	100	3.90	200	7.87	2
				RM-200/152	152	5.98	252	9.92	
				RM-200/203	203	7.99	303	11.93	
22.00	-	22.22	.875	RM-220/107	107	4.21	207	8.15	2
				RM-220/152	152	5.98	252	9.92	
				RM-220/203	203	7.99	303	11.93	
22.22	7/8	22.42	.883	RM-222/107	107	4.21	207	8.15	2
				RM-222/152	152	5.98	252	9.92	
				RM-222/203	203	7.99	303	11.93	
25.00	-	25.25	.994	RM-250/115	115	4.53	242	9.53	3
				RM-250/203	203	7.99	330	12.99	
				RM-250/254	254	10.00	381	15.00	
25.40	1	25.65	1.010	RM-254/115	115	4.53	242	9.53	3
				RM-254/203	203	7.99	330	12.99	
				RM-254/254	254	10.00	381	15.00	
28.57	1.1/8	28.86	1.136	RM-285/124	124	4.88	251	9.88	3
				RM-285/203	203	7.99	330	12.99	
				RM-285/254	254	10.00	381	15.00	
31.75	1.1/4	32.07	1.262	RM-317/133	133	5.23	293	11.53	4
				RM-317/203	203	7.99	363	14.29	
				RM-317/254	254	10.00	414	16.30	



TUBE END FACER - 'TEF' SERIES

3/8" - 2 1/2"
O.D.



Features :

- Tool bits coated with Titanium Nitride to give 3 times the life of conventional tool bits.
- Ideal for quick facing of projecting tube ends in heat exchangers, condensers and boilers.
- One size of tool is suitable for use on multiple tube thicknesses by interchanging pilot. (TEF-375 is the exception with the tool suitable for one tube ID only).
- Each tool is supplied with a set of multiple pilots to cover all tube thicknesses.
- Tube end facers for MM sizes of tubes also available. Please enquire.

Tube O.D.		Tube Thk. bwg	Model No.	Spare Tool Bits	
mm	inch			Non-Ferrous or Carbon Steel Tubes Model No.	Stainless Steel Tubes Model No.
9.53	3/8	16-22	TEF-375	TEF-376	TEF-376 SS
12.07	1/2	15-20	TEF-500	TEF-506	TEF-506 SS
15.87	5/8	14-18	TEF-625	TEF-626	TEF-626 SS
19.05	3/4	10-18	TEF-750	TEF-756	TEF-756 SS
22.22	7/8	13-18	TEF-875	TEF-876	TEF-876 SS
25.40	1	11-18	TEF-1000	TEF-1006	TEF-1006 SS
28.57	1.1/8	11-18	TEF-1125	TEF-1126	TEF-1126 SS
31.75	1.1/4	11-18	TEF-1250	TEF-1256	TEF-1256 SS
34.92	1.3/8	11-18	TEF-1375	TEF-1376	TEF-1376 SS
38.10	1.1/2	11-18	TEF-1500	TEF-1506	TEF-1506 SS
41.27	1.5/8	11-18	TEF-1625	TEF-1626	TEF-1626 SS
44.45	1.3/4	11-18	TEF-1750	TEF-1756	TEF-1756 SS
47.62	1.7/8	11-18	TEF-1875	TEF-1876	TEF-1876 SS
50.80	2	11-18	TEF-2000	TEF-2006	TEF-2006 SS
57.15	2.1/4	11-18	TEF-2250	TEF-2256	TEF-2256 SS
63.50	2.1/2	11-18	TEF-2500	TEF-2506	TEF-2506 SS

TUBE END FACER - 'FB' SERIES



Features :

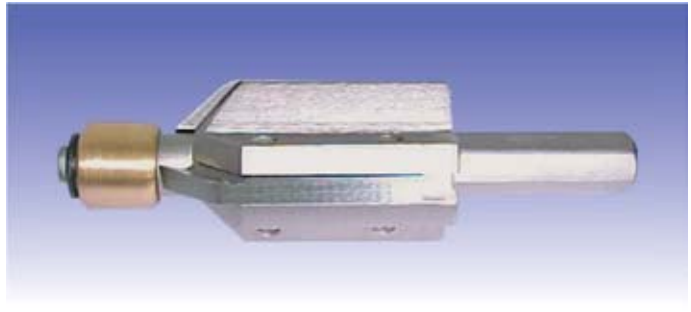
- High speed production tool.
- Titanium Nitride coated tool bit can be reversed and used. Doubles tool bit life.

Tube O.D.		Tube Thk. bwg	Model No.	Spare Tool Bits	
mm	inch			Non-Ferrous or Carbon Steel Tubes Model No.	Stainless Steel Tubes Model No.
9.53	3/8	16-22	FB-375	FB-376	FB-376 SS
12.07	1/2	15-20	FB-500	FB-506	FB-506 SS
15.87	5/8	14-18	FB-625	FB-626	FB-626 SS
19.05	3/4	10-18	FB-750	FB-756	FB-756 SS
22.22	7/8	13-18	FB-875	FB-876	FB-876 SS
25.40	1	11-18	FB-1000	FB-1006	FB-1006 SS
28.57	1.1/8	11-18	FB-1125	FB-1126	FB-1126 SS
31.75	1.1/4	11-18	FB-1250	FB-1256	FB-1256 SS
34.92	1.3/8	11-18	FB-1375	FB-1376	FB-1376 SS
38.10	1.1/2	11-18	FB-1500	FB-1506	FB-1506 SS
41.27	1.5/8	11-18	FB-1625	FB-1626	FB-1626 SS
44.45	1.3/4	11-18	FB-1750	FB-1756	FB-1756 SS
47.62	1.7/8	11-18	FB-1875	FB-1876	FB-1876 SS
50.80	2	11-18	FB-2000	FB-2006	FB-2006 SS
57.15	2.1/4	11-18	FB-2250	FB-2256	FB-2256 SS
63.50	2.1/2	11-18	FB-2500	FB-2506	FB-2506 SS



TUBE END FACER - 'FC' SERIES / WELD REMOVAL TOOL

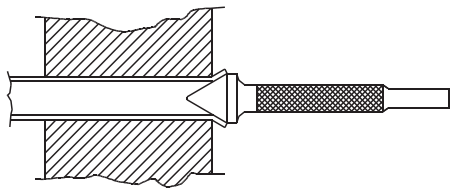
Tube O.D.		Facer Fitted With 3 Tool Bits Model No.	Spare Tool Bits Model No.
mm	inch		
38.10	1.1/2	FC-1500	FC-1500-TB
41.27	1.5/8	FC-1625	FC-1625-TB
44.45	1.3/4	FC-1750	FC-1750-TB
47.62	1.7/8	FC-1875	FC-1875-TB
50.80	2	FC-2000	FC-2000-TB
57.15	2.1/4	FC-2250	FC-2250-TB
63.50	2.1/2	FC-2500	FC-2500-TB
69.85	2.3/4	FC-2750	FC-2750-TB
76.20	3	FC-3000	FC-3000-TB
82.55	3.1/4	FC-3250	FC-3250-TB
88.90	3.1/2	FC-3500	FC-3500-TB
95.25	3.3/4	FC-3750	FC-3750-TB
101.6	4	FC-4000	FC-4000-TB



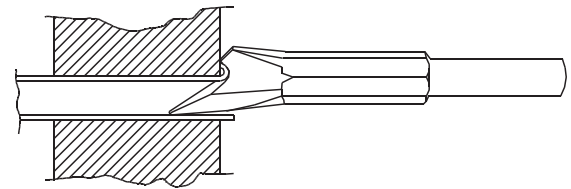
Features :

- Tool uses 3 cutting blades which can be configured for tube end facing or weld removal as a step in the removal of welded tubes from the tube sheet.
- Tool fitted with MT shank for use with standard air or electric drills.
- Cutting blades are Titanium Nitride coated to give 3 times the life of conventional cutting blades.
- Tools available for MM sizes of tubes also. Please enquire.
- Ideally suited for work on larger diameter boiler tubes.

FLARING TOOL



BEADING TOOL



Tube O.D.		Tube Thk. bwg.	Model No.
mm	inch		
12.70	1/2	16-22	FT-1
		14-15	FT-2
15.87	5/8	16-22	FT-3
		14-15	FT-4
19.05	3/4	16-22	FT-5
		14-15	FT-6
22.22	7/8	16-22	FT-7
		12-15	FT-8
25.40	1	16-22	FT-9
		12-15	FT-10
28.57	1.1/8	16-22	FT-11
		8-14	FT-12
31.75	1.1/4	15-22	FT-13
		8-14	FT-14
34.92	1.3/8	15-22	FT-15
		8-14	FT-16
38.10	1.1/2	15-22	FT-17

Tube O.D.		Tube Thk. bwg.	Model No.
mm	inch		
12.70	1/2	16-17	BDT-1
		18-19	BDT-2
		20-22	BDT-3
15.87	5/8	16-17	BDT-4
		18-19	BDT-5
		20-22	BDT-6
19.05	3/4	16-17	BDT-7
		18-19	BDT-8
		20-22	BDT-9
22.22	7/8	16-17	BDT-10
		18-19	BDT-11
		20-22	BDT-12
25.40	1	16-17	BDT-13
		18-19	BDT-14
		20-22	BDT-15

Note : Fitted with Type 1 round shank for use with standard pneumatic chipping hammer. Other shanks on request.

Note : Fitted with Type 1 round shank for use with standard pneumatic chipping hammer. Other shanks on request.

BELLING TOOL

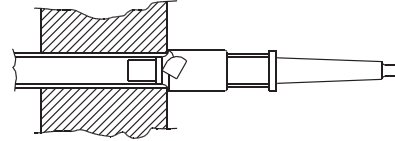


In many condensers the inlet end of tubes are required to be seated into the sheet (not projecting). The contour is a "Bell End" or "Trumpet Mouth" of special shape.

TUBE SHEET HOLE RADIUS CUTTER



- High speed steel tool used in preparing tube sheets to suit the flaring or beading of tube ends outside of or flush with the tube sheet.
- MM sizes and cutters with other radii are also available. Please enquire.



Tube O.D.		Model No.	Tool Radius		Morse Taper
mm	inch		mm	inch	
12.70	1/2	20338	3.2	1/8	2
15.87	5/8	20224	4.0	5/32	2
19.05	3/4	20225	4.8	3/16	2
22.22	7/8	20226	4.8	3/16	2
25.40	1	20227	4.8	3/16	2
28.57	1.1/8	40512	6.4	1/4	2
31.75	1.1/4	21395	6.4	1/4	2

TUBE SHEET HOLE BRUSH

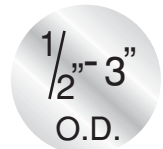


- To clean tube sheet bores, prior to tube installation.
- Can be used with any standard pneumatic or electric drill.

Tube O.D.		Model No.
mm	inch	
12.70	1/2	TSHB-1/2
15.87	5/8	TSHB-5/8
19.05	3/4	TSHB-3/4
22.22	7/8	TSHB-7/8
25.40	1	TSHB-1
31.75	1.1/4	TSHB-1.1/4
38.10	1.1/2	TSHB-1.1/2
44.45	1.3/4	TSHB-1.3/4
50.80	2	TSHB-2
57.15	2.1/4	TSHB-2.1/4
63.50	2.1/2	TSHB-2.1/2
69.85	2.3/4	TSHB-2.3/4
76.20	3	TSHB-3

Note : Available in your choice of carbon steel, stainless steel or brass.
For other / larger sizes, please enquire.

TUBE GUIDE



- To 'pilot' the tubes through the tube sheets and baffle plates during tube insertion.

Tube O.D.		Tube Thk. bwg.	Model No.
mm	inch		
12.70	1/2	16-18	PTG-1
		19-20	PTG-2
		21-23	PTG-2.5
15.87	5/8	12-13	PTG-3
		14-16	PTG-4
		17-20	PTG-5
		22-24	PTG-5.5
19.05	3/4	10-12	PTG-6
		13-16	PTG-7
		17-20	PTG-8
		22-24	PTG-8.5
22.22	7/8	10-12	PTG-9
		13-16	PTG-10
		17-20	PTG-11
		21-22	PTG-11.5
25.40	1	8-9	PTG-12.5
		10-12	PTG-12
		13-16	PTG-13
		17-20	PTG-14
		21-23	PTG-14.5
31.75	1.1/4	10-13	PTG-15
		14-20	PTG-16

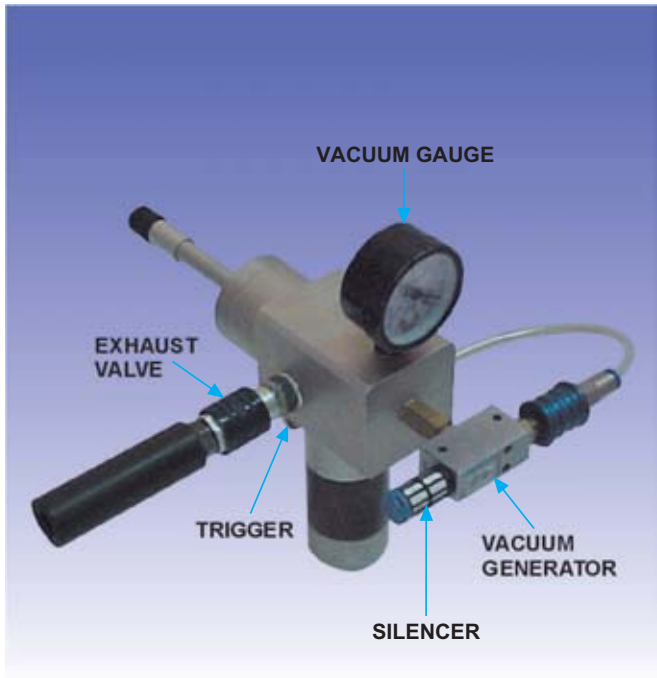
Note : For other / larger sizes, please enquire.



TUBE LEAK DETECTOR KIT



TUBE JOINT TESTING KIT



Features :

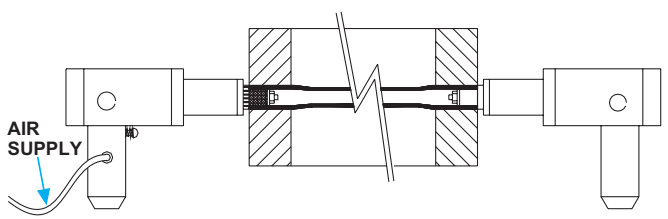
- Simple, Quick and Reliable tube and joint testing. Test 7 to 8 tubes or 10 tube joints per minute.
- Interchangeable seal sets : Allows testing of tubes from 7.75 mm to 30.63 mm ID with easy to replace accessories.
- Each Tube Testing Gun weighs less than 1.3 kg and Joint Testing Gun weighs less than 1.5 kg.
- Air supply : Uses standard plant air supplies from 70 psi to 100 psi (4.7 to 6.8 bar).
- Silent during use . Ergonomic design makes testing effortless.
- Each Kit packed in easy to carry case.

OPERATION

Tube Leak Detector detects tube leakage merely by pressing a button. The Pressurizing gun and Plugging Gun are inserted into opposite ends. Pressurizing Gun lets in air to pressurize the tube to 100 psi with compressed air. The gauge will show and hold the pressure if there are no leaks. Conversely, a pressure drop is indicated on gauge incase of tube leak. A quick slide of exhaust valve silently lets out the air in tube and releases the guns for next tube test.

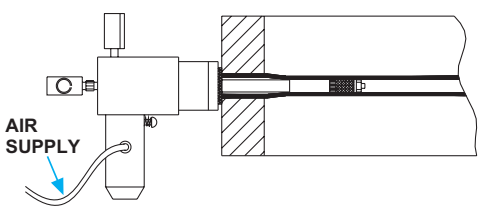
OPERATION

Tube Joint Tester is designed to test both rolled and welded tube-to-tubesheet joints. Joint Tester is inserted in tube, a trigger expands tube seal inside the tube and beyond the length of expansion. Actuating a slide valve generates vacuum between the tube seal and face seal over the joint seam. Vacuum level is indicated on gauge. Should the amount of vacuum shown on gauge start dropping, a leak is detected.

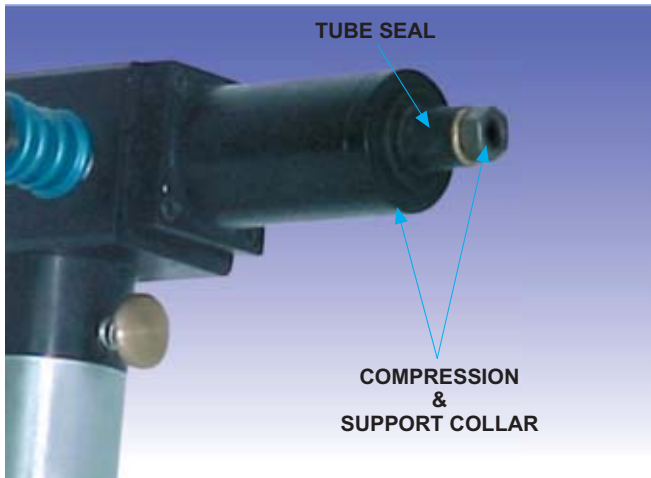


PRESSURE GUN

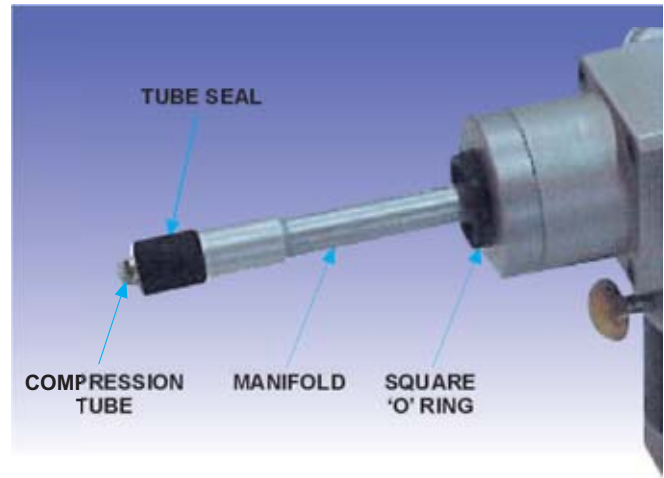
PLUGGING GUN



TUBE LEAK DETECTOR KIT



TUBE JOINT TESTING KIT



TUBE SIZE		TLD-6525 Tube Tester Assembly	TLD-6525 Tube Tester Replacement Parts		JTK-6500 Joint Tester Assembly	JTK-6500 Joint Tester Replacement Parts		
O.D.	BWG	Assembly Number	Tube Seals	Compression & Support Collar	Assembly Number	Tube Seals	Manifold with Square O-ring	Square O-ring
5/8"	8-9	TLD-6500 5/8SP	TLD-300 N	TLD-15-125	JTK-6500 5/8SP	JTK-300 N	JTM-6500 5/8SP	JTK-16 5/8
	10-11		TLD-350 N			JTK-350 N		
	12-13		TLD-370 N			JTK-370 N		
	14-15		TLD-450 N			JTK-450 N		
	16-17		TLD-470 N			JTK-470 N		
	18-19	TLD-490 N	JTK-490 N					
20-24	TLD-530 N	JTK-530 N	JTM-6500 5/8					
3/4"	8-9	TLD-6500 3/4SP	TLD-430 N	TLD-15-312	JTK-6500 3/4SP	JTK-430 N	JTM-6500 3/4SP	JTK-16 3/4
	10-11		TLD-450 N			JTK-450 N		
	12-13	TLD-6500 3/4	TLD-490 N	TLD-15-312	JTK-6500 3/4	JTK-490 N	JTM-6500 3/4	
	14-15		TLD-530 N			JTK-530 N		
	16-17		TLD-570 N			JTK-570 N		
	18-19		TLD-610 N			JTK-610 N		
20-24	TLD-650 N	JTK-650 N						
7/8"	8-9	TLD-6500 7/8	TLD-530 N	TLD-15-312	JTK-6500 7/8	JTK-530 N	JTM-6500 7/8	JTK-16 7/8
	10-11		TLD-570 N			JTK-570 N		
	12-13		TLD-610 N			JTK-610 N		
	14-15		TLD-690 N			JTK-690 N		
	16-17		TLD-730 N			JTK-730 N		
	18-19		TLD-740 N			JTK-740 N		
20-24	TLD-790 N	JTK-790 N						
1"	8-9	TLD-6500 1	TLD-650 N	TLD-15-405	JTK-6500 1	JTK-650 N	JTM-6500 1	JTK-16 1
	10-11		TLD-690 N			JTK-690 N		
	12-13		TLD-740 N			JTK-740 N		
	14-15		TLD-790 N			JTK-790 N		
	16-17		TLD-840 N			JTK-840 N		
	18-19		TLD-870 N			JTK-870 N		
20-24	TLD-890 N	JTK-890 N						
1.1/8"	8-9	TLD-6500 1.1/8	TLD-790 N 405	TLD-15-405	JTK-6500 1.1/8	JTK-790 N 405	JTM-6500 1.1/8	JTK-16 1.1/8
	10-11		TLD-840 N			JTK-840 N		
	12-13		TLD-870 N			JTK-870 N		
	14-15		TLD-940 N			JTK-940 N		
	16-17		TLD-980 N			JTK-980 N		
	18-19		TLD-990 N			JTK-990 N		
20-24	TLD-1040 N	JTK-1040 N						
1.1/4"	8-9	TLD-6500 1.1/4	TLD-890 N	TLD-15-405	JTK-6500 1.1/4	JTK-890 N	JTM-6500 1.1/4	JTK-16 1.1/4
	10-11		TLD-940 N			JTK-940 N		
	12-13		TLD-990 N			JTK-940 N		
	14-15		TLD-1080 N			JTK-1080 N		
	16-17		TLD-1090 N			JTK-1090 N		
	18-19		TLD-1100 N			JTK-1100 N		
20-24	TLD-1140 N	JTK-1140 N						

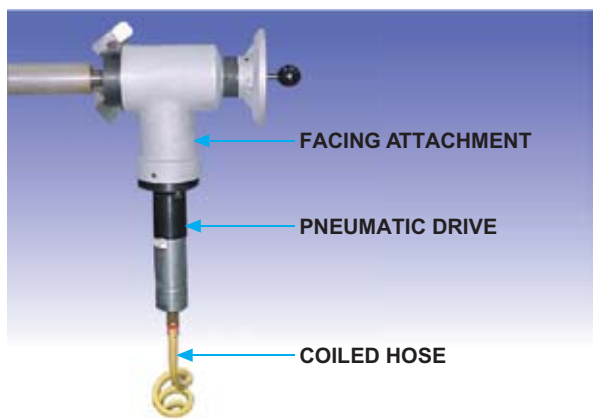


TUBE END FACING MACHINE

The POWERMASTER Facing Machine is a powerful yet portable fixture designed to self-align and mount on tubes for fast tube end facing and chamfering in constrained spaces.

Features :

- Power and range combined in light and portable design.
- Drive : Electric, Hydraulic or Pneumatic
- Range of Tube end facing, external or internal beveling and weld seam machining tool bits.
- Quick interchangeability of Pilot to suit range of inside diameters.
- Modular and Ergonomic design.

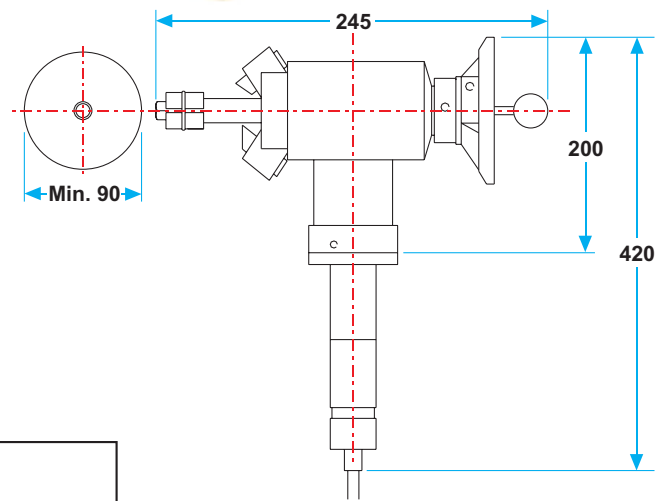


FACING ATTACHMENT

Locking Tube Range I.D. (mm)	28-82
Weight (kg)	6.8
Model	FM-3500

DRIVE

Motor	Pneumatic	Electric	Hydraulic
Torque (Nm)	84	138	140
Speed (rpm)	135 @ 500 lpm	70	480
Weight (kg)	1.8	2.8	5.6
Model	MD-P	FMD-E	FMD-H



Note : All Dimension in MM

CUTTING BITS

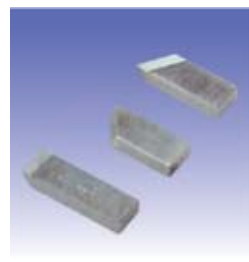
EXTERNAL BEVELLING

INSIDE BEVELLING

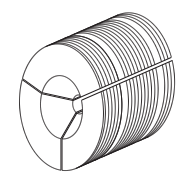
STRAIGHT BEVELLING

WELDED SEAM MACHINING

CUTTING BITS



PILOT JAWS



PILOT JAWS ARE AS PER TUBE INNER DIAMETER.

OPTIONAL ELECTRIC OR HYDRAULIC DRIVE

