

# Condenser Tube Expansion



## Condenser Tube Expansion AN Series

We are offering **AN Series Condenser Tube Expanders**.  
**1/4"- 3/8" O.D.**



**Use :** Oil Coolers, radiators and other apparatus with diameter tubes.

**Advantages :** Captive mandrel - eliminates nut to mandrel tip which prevents scratching of tube I.D. Increased Feed angle makes it the fastest operating tool on the market, ideal for high production environments.

Tube O.D. mm inch	Tube Thickness			Tube I.D.		Minimum I.D. Tool Enters		Maximum Expansion Of Tools		Expander With (25.4mm) 1" Long Rollers		
	bwg	mm	inch	mm	inch	mm	inch	mm	inch	Complete Tool No.	Mandrel No.	Rollers Set No.
6.35 1/4"	18	1.24	.049	3.8	.152	3.7	.148	4.2	.167	A-25018	M-21819	R-20018
	19	1.06	.042	4.2	.166	4.0	.160	4.5	.180	A-25019	M-21819	R-21920
	20	0.88	.035	4.5	.180	4.4	.175	4.9	.196	A-25020	M-22021	R-21920
	21	0.81	.032	4.7	.186	4.5	.180	5.1	.202	A-25021	M-22021	R-22124
	22	0.71	.028	4.9	.194	4.8	.190	5.4	.213	A-25022	M-20022	R-22124
	23	0.63	.025	5.0	.200	4.9	.195	5.5	.216	A-25023	M-22324	R-21920
	24	0.55	.022	5.2	.206	5.1	.201	5.7	.224	A-25024	M-22324	R-22124
	28	0.35	.014	5.6	.222	5.4	.217	6.1	.243	A-25028	M-22830	R-22830
	29	0.33	.013	5.7	.224	5.4	.217	6.1	.243	A-25028	M-22830	R-22830
	30	0.30	.012	5.7	.226	5.4	.217	6.1	.243	A-25028	M-22830	R-22830
(9.53) 3/8"	14	2.10	.083	5.3	.209	5.1	.204	5.8	.230	A-37514	M-22830	R-21920
	15	1.82	.072	5.8	.231	5.6	.225	6.6	.265	A-37515	M-22830	R-31516
	16	1.65	.065	6.2	.245	6.0	.238	7.0	.278	A-37516	M-31617	R-31516
	17	1.47	.058	6.5	.259	6.4	.253	7.4	.293	A-37517	M-31617	R-31720
	18	1.24	.049	7.0	.277	6.8	.270	7.8	.310	A-37518	M-30018	R-31720
	19	1.06	.042	7.3	.291	7.1	.285	8.1	.325	A-37519	M-30019	R-31720
	20	0.88	.035	7.7	.305	7.4	.295	8.4	.335	A-37520	M-32021	R-31720
	21	0.81	.032	7.9	.311	7.5	.305	8.6	.345	A-37521	M-32021	R-32122
	22	0.71	.028	8.1	.319	7.9	.312	8.9	.353	A-37522	M-32224	R-32122
	23	0.63	.025	8.2	.325	8.1	.318	9.2	.363	A-37523	M-32224	R-32324
	24	0.55	.022	8.4	.331	8.1	.318	9.2	.363	A-37524	M-32224	R-32324

**Note :** All 'AN' series expanders come with 1/4" square mandrel drives. Round mandrel drives are optional.



Condenser Tube Expansion 800 Series

We are offering **Condenser Tube Expansion 800 Series 1/2"-1 1/2 " O.D.**



FOR TUBES INTERNAL DIAMETER  
FROM (8.4MM).334" TO (36.3 MM)1.43"

TUBE EXPANDER FITTED WITH ROLLER LENGTH	FOR TUBE SHEET ADJUSTABLE RANGE	
	MINIMUM A	MAXIMUM B
(38.12mm) 1. 1/2"	(12.7mm )1/2"	(38.12mm) 1.1/2"
(57.1mm)2. 1/4"	(31.7mm)1. 1/4"	(57.1mm)2. 1/4"

Use : Most popular tool worldwide for use on heat exchangers & condensers with tubes of 1/2" - 1.1/2" O.D.

Tube O.D. (mm) inch	Tube Thickness			Tube I.D.		Minimum I.D. Tool Enters		Maximum Expansion of Tool		EXPANDER with (38.10mm) 1.1/2" Long Rollers			EXPANDER with (57.15 mm) 2.1/4" Long Rollers		
										Complete	Mandrel	Rollers	Complete	Mandrel	Rollers
	bwg	mm	inch	mm	inch	mm	inch	mm	inch	Tool No.	No.	Set. No.	Tool No.	No.	Set. No
(12.70)  1/2"	14	2.10	.083	8.4	.334	8.2	.324	9.5	.374	797	797	797	-	-	-
	15	1.82	.072	9.0	.356	8.8	.348	10.1	.398	799	799	R-1	-	-	-
	16	1.65	.065	9.4	.370	9.1	.360	10.4	.410	801	M-1	R-1	-	-	-
	17	1.47	.058	9.7	.384	9.5	.374	10.7	.424	803	M-1	R-2	-	-	-
	18	1.24	.049	10.2	.402	9.9	.392	11.3	.447	805	M-2	R-3	-	-	-
	20	0.88	.035	10.9	.430	10.3	.406	11.7	.461	805 S	M-3	R-3	-	-	-
(15.88)  5/8"	12	2.76	.109	10.3	.407	9.9	.392	11.3	.447	805	M-2	R-3	806	M-2	R-3-A
	13	2.41	.095	11.0	.435	10.8	.425	12.1	.480	807	M-3	R-4	808	M-3	R-4-A
	14	2.10	.083	11.6	.459	11.4	.449	12.9	.509	809	M-4	R-4	810	M-4	R-4-A
	15	1.82	.072	12.2	.481	11.9	.471	13.6	.536	811	M-5	R-5	812	M-5	R-5-A
	16	1.65	.065	12.5	.495	12.3	.485	13.9	.550	813	M-5	R-6	814	M-5	R-6-A
	17	1.47	.058	12.9	.509	12.6	.499	14.3	.564	815	M-6	R-6	816	M-6	R-6-A
	18	1.24	.049	13.3	.527	13.1	.517	14.5	.572	817	M-7	R-7	818	M-7	R-7-A
	19	1.06	.042	13.7	.541	13.2	.522	14.7	.582	819	M-6	R-7	820	M-6	R-7-A
	20	0.88	.035	14.1	.555	13.6	.536	15.1	.596	819 S	M-8	R-7	820 S	M-8	R-7-A
	21	0.81	.032	14.2	.561	13.6	.536	15.1	.596	819 S	M-8	R-7	820 S	M-8	R-7-A
(19.05)  3/4"	10	3.40	.134	12.2	.482	11.9	.471	13.6	.536	811	M-5	R-5	812	M-5	R-5-A
	11	3.04	.120	12.9	.510	12.6	.499	14.3	.564	815	M-6	R-6	816	M-6	R-6-A
	12	2.76	.109	13.5	.532	13.2	.522	14.7	.582	819	M-6	R-7	820	M-6	R-7-A
	13	2.41	.095	14.2	.560	13.9	.550	15.6	.615	821	M-8	R-8	822	M-8	R-8-A
	14	2.10	.083	14.8	.584	14.5	.574	16.2	.639	823	M-8	R-9	824	M-8	R-9-A
	15	1.82	.072	15.3	.606	15.1	.596	16.7	.661	825	M-8	R-10	826	M-8	R-10-A
	16	1.65	.065	15.7	.620	15.3	.605	17.4	.685	827	M-9	R-10	828	M-9	R-10-A
	17	1.47	.058	16.1	.634	15.7	.619	17.7	.699	829	M-9	R-11	830	M-9	R-11-A
	18	1.24	.049	16.5	.652	15.7	.619	17.7	.699	829	M-9	R-11	830	M-9	R-11-A
	19	1.06	.042	16.9	.666	16.3	.642	18.3	.722	831	M-9	R-12	832	M-9	R-12-A
	20	0.88	.035	17.2	.680	16.3	.642	18.3	.722	831	M-9	R-12	832	M-9	R-12-A
	21	0.81	.032	17.4	.686	16.3	.642	18.3	.722	831	M-9	R-12	832	M-9	R-12-A
(22.22)  7/8"	10	3.40	.134	15.4	.607	15.1	.596	16.7	.661	825	M-8	R-10	826	M-8	R-10-A
	11	3.04	.120	16.1	.635	15.7	.619	17.7	.699	829	M-9	R-11	830	M-9	R-11-A
	12	2.76	.109	16.6	.657	16.3	.642	18.3	.722	831	M-9	R-12	832	M-9	R-12-A
	13	2.41	.095	17.4	.685	17.0	.670	19.0	.750	833	M-10	R-13	834	M-10	R-13-A
	14	2.10	.083	18.0	.709	17.4	.685	19.6	.774	835	M-11	R-14	836	M-11	R-14-A
	15	1.82	.072	18.5	.731	18.0	.712	20.3	.801	837	M-11	R-15	838	M-11	R-15-A
	16	1.65	.065	18.9	.745	18.4	.726	20.7	.815	839	M-12	R-15	840	M-12	R-15-A
	17	1.47	.058	19.2	.759	18.8	.740	21.0	.829	843	M-12	R-16	844	M-12	R-16-A
	18	1.24	.049	19.7	.777	18.8	.740	21.0	.829	843	M-12	R-16	844	M-12	R-16-A

Use : Most popular tool worldwide for use on heat exchangers & condensers with tubes of 1/2" - 1.1/2" O.D.

300 Series

Tube O.D. (mm) inch	Tube Thickness			Tube I.D.		Minimum I.D. Tool Enters		Maximum Expansion of Tool		EXPANDER with (38.10mm) 1.1/2" Long Rollers			EXPANDER with (57.15 mm) 2.1/4" Long Rollers		
	bwg	mm	inch	mm	inch	mm	inch	mm	inch	Complete Tool No.	Mandrel No.	Rollers Set. No.	Complete Tool No.	Mandrel No.	Rollers Set. No
(25.40)  1"	8	4.19	.165	17.0	.670	16.6	.655	18.6	.735	841	M-9	R-13	842	M-9	R-13-A
	9	3.75	.148	17.8	.704	17.4	.685	19.6	.774	835	M-11	R-14	836	M-11	R-14-A
	10	3.40	.134	18.5	.732	18.0	.712	20.3	.801	837	M-11	R-15	838	M-11	R-15-A
	11	3.04	.120	19.3	.760	18.8	.740	21.0	.829	843	M-12	R-16	844	M-12	R-16-A
	12	2.76	.109	19.8	.782	19.3	.763	21.6	.852	845	M-12	R-17	846	M-12	R-17-A
	13	2.41	.095	20.5	.810	20.0	.791	22.3	.880	847	M-12	R-18	848	M-12	R-18-A
	14	2.10	.083	21.1	.834	20.5	.810	23.0	.909	849	M-13	R-18	850	M-13	R-18-A
	15	1.82	.072	21.7	.856	21.2	.837	23.7	.936	851	M-13	R-19	852	M-13	R-19-A
	16	1.65	.065	22.1	.870	21.2	.837	23.7	.936	851	M-13	R-19	852	M-13	R-19-A
	17	1.47	.058	22.4	.884	21.9	.865	24.4	.964	855	M-13	R-21	856	M-13	R-21-A
	18	1.24	.049	22.9	.902	21.9	.865	24.4	.964	855	M-13	R-21	856	M-13	R-21-A
	19	1.06	.042	23.2	.916	21.9	.865	24.4	.964	855	M-13	R-21	856	M-13	R-21-A
20	0.88	.035	23.6	.930	21.9	.865	24.4	.964	855	M-13	R-21	856	M-13	R-21-A	
(28.58)  1.1/8"	8	4.19	.165	20.1	.795	19.7	.776	22.2	.875	853	M-13	R-20	854	M-13	R-20-A
	9	3.75	.148	21.0	.829	20.5	.810	23.0	.909	849	M-13	R-18	850	M-13	R-18-A
	10	3.40	.134	21.7	.857	21.2	.837	23.7	.936	851	M-13	R-19	852	M-13	R-19-A
	11	3.04	.120	22.4	.885	21.9	.865	24.4	.964	855	M-13	R-21	856	M-13	R-21-A
	12	2.76	.109	23.0	.907	22.4	.883	24.9	.982	857	M-14	R-21	858	M-14	R-21-A
	13	2.41	.095	23.7	.935	23.2	.916	25.7	1.015	859	M-14	R-22	860	M-14	R-22-A
	14	2.10	.083	24.3	.959	23.7	.935	26.5	1.044	861	M-15	R-23	862	M-15	R-23-A
	15	1.82	.072	24.9	.981	24.4	.962	27.2	1.071	863	M-15	R-24	864	M-15	R-24-A
	16	1.65	.065	25.2	.995	24.4	.962	27.2	1.071	863	M-15	R-24	864	M-15	R-24-A
	17	1.47	.058	25.6	1.010	25.1	.990	27.9	1.009	867	M-16	R-26	868	M-16	R-26-A
	18	1.24	.049	26.0	1.027	25.1	.990	27.9	1.009	867	M-16	R-26	868	M-16	R-26-A
	(31.75)  1.1/4"	8	4.19	.165	23.3	.920	22.8	.901	25.6	1.010	865	M-15	R-25	866	M-15
9		3.75	.148	24.2	.954	23.7	.935	26.5	1.044	861	M-15	R-23	862	M-15	R-23-A
10		3.40	.134	24.9	.982	24.4	.962	27.2	1.071	863	M-15	R-24	864	M-15	R-24-A
11		3.04	.120	25.6	1.010	25.0	.990	27.9	1.099	867	M-16	R-26	868	M-16	R-26-A
12		2.76	.109	26.2	1.032	25.7	1.013	28.5	1.122	869	M-16	R-27	870	M-16	R-27-A
13		2.41	.095	26.9	1.060	26.4	1.039	29.2	1.150	871	M-17	R-28	872	M-17	R-28-A
14		2.10	.083	27.5	1.084	26.9	1.060	29.6	1.169	873	M-17	R-29	874	M-17	R-29-A
15		1.82	.072	28.0	1.106	27.6	1.087	30.3	1.196	875	M-17	R-30	876	M-17	R-30-A
16		1.65	.065	28.4	1.120	27.6	1.087	30.3	1.196	875	M-17	R-30	876	M-17	R-30-A
17		1.47	.058	28.8	1.134	28.3	1.115	31.0	1.224	879	M-18	R-30	880	M-18	R-30-A
18		1.24	.049	29.2	1.152	28.3	1.115	31.0	1.224	879	M-18	R-30	880	M-18	R-30-A
(34.92)  1.3/8"		8	4.19	.165	26.5	1.045	26.0	1.026	28.8	1.135	877	M-17	R-31	878	M-17
	9	3.75	.148	27.4	1.079	26.9	1.060	29.6	1.169	873	M-17	R-29	874	M-17	R-29-A
	10	3.40	.134	28.1	1.107	27.6	1.087	30.3	1.196	875	M-17	R-30	876	M-17	R-30-A
	11	3.04	.120	28.8	1.135	28.3	1.115	31.0	1.224	879	M-18	R-30	880	M-18	R-30-A
	12	2.76	.109	29.3	1.157	28.7	1.133	31.5	1.242	881	M-18	R-32	882	M-18	R-32-A
	13	2.41	.095	30.1	1.185	29.4	1.160	32.3	1.275	883	M-19	R-33	884	M-19	R-33-A
	14	2.10	.083	30.7	1.209	29.9	1.179	32.8	1.294	885	M-20	R-34	886	M-20	R-34-A
	15	1.82	.072	31.2	1.231	30.6	1.206	33.5	1.321	887	M-20	R-35	888	M-20	R-35-A
	16	1.65	.065	31.6	1.245	30.6	1.206	33.5	1.321	887	M-20	R-35	888	M-20	R-35-A
(38.10)  1.1/2"	8	4.19	.165	29.7	1.170	29.0	1.145	32.0	1.260	889	M-19	R-34	890	M-19	R-34-A
	9	3.75	.148	30.5	1.204	29.9	1.177	32.8	1.294	885	M-20	R-34	886	M-20	R-34-A
	10	3.40	.134	31.2	1.232	30.6	1.206	33.5	1.321	887	M-20	R-35	888	M-20	R-35-A
	11	3.04	.120	32.0	1.260	31.3	1.235	34.2	1.350	891	M-20	R-36	892	M-20	R-36-A
	12	2.76	.109	32.5	1.282	31.9	1.257	34.8	1.372	893	M-20	R-37	894	M-20	R-37-A
	13	2.41	.095	33.2	1.310	32.6	1.285	35.5	1.400	895	M-21	R-37	896	M-21	R-37-A
	14	2.10	.083	33.8	1.334	32.6	1.285	35.5	1.400	895	M-21	R-37	896	M-21	R-37-A
	15	1.82	.072	34.4	1.356	33.8	1.331	36.7	1.446	897	M-21	R-38	898	M-21	R-38-A
	16	1.65	.065	34.8	1.370	33.8	1.331	36.7	1.446	897	M-21	R-38	898	M-21	R-38-A
	17	1.47	.058	35.1	1.384	33.8	1.331	37.3	1.472	899	M-22	R-38	900	M-22	R-38-A
	18	1.24	.049	35.6	1.402	33.8	1.331	37.3	1.472	899	M-22	R-38	901	M-22	R-38-A
	19	1.06	.042	35.9	1.416	33.8	1.331	37.3	1.472	899	M-22	R-38	902	M-22	R-38-A



Condenser Tube Expansion 800-5 Series



We are offering **Condenser Tube Expander 800-5 Series**  
5/8"- 1 1/2" O.D.

Tube O.D.	Tube Thickness			Tube I.D.		Minimum I.D. Tool Enters		Maximum Expansion of Tool		EXPANDER with (38.10mm) 1.1/2" Long Rollers			EXPANDER with (57.15 mm) 2.1/4" Long Rollers		
										Complete	Mandrel	Rollers	Complete	Mandrel	Rollers
(mm)															
inch	bwg	mm	inch	mm	inch	mm	inch	mm	inch	Tool No.	No.	Set. No.	Tool No.	No.	Set. No
(15.88)  5/8"	17	1.47	.058	12.9	.509	12.6	.499	14.3	.564	815-5	316-5	R-4-5	816-5	316-5	R-4-A-5
	18	1.24	.049	13.4	.527	13.1	.517	14.6	.576	817-5	M-9	R-4-5	-	-	-
	19	1.06	.042	13.7	.541	13.3	.522	14.8	.582	819-5	320-5	R-4-5	820-5	320-5	R-4-A-5
	20	0.88	.035	14.1	.555	13.6	.536	15.1	.596	819-5 S	320-5 S	R-4-5	820-5 S	320-5 S	R-4-A-5
	21	0.81	.032	14.2	.561	13.6	.536	15.1	.596	819-5 S	320-5 S	R-4-5	820-5 S	320-5 S	R-4-A-5
	22	0.71	.028	14.5	.569	13.6	.536	15.1	.596	819-5 S	320-5 S	R-4-5	820-5 S	320-5 S	R-4-A-5
(19.05)  3/4"	13	2.41	.095	14.2	.560	13.9	.550	15.6	.615	821-5	322-5	R-5-5	822-5	322-5	R-5-A-5
	14	2.10	.083	14.8	.584	14.5	.574	15.9	.629	823-5	324-5	R-6-5	824-5	324-5	R-6-A-5
	15	1.82	.072	15.3	.606	14.9	.590	16.8	.661	825-5	326-5	R-7-5	826-5	326-5	R-7-A-5
	16	1.65	.065	15.7	.620	15.3	.605	17.2	.680	827-5	M-13	R-7-5	828-5	M-13	R-7-A-5
	17	1.47	.058	16.1	.634	15.7	.619	17.8	.699	829-5	330-5	R-7-5	830-5	330-5	R-7-A-5
	18	1.24	.049	16.5	.652	15.7	.619	17.8	.699	829-5	330-5	R-7-5	830-5	330-5	R-7-A-5
	19	1.06	.042	16.9	.666	16.3	.642	18.5	.729	831-5	M-13	R-9-5	832-5	M-13	R-9-A5
	20	0.88	.035	17.2	.680	16.3	.642	18.5	.729	831-5	M-13	R-9-5	832-5	M-13	R-9-A-5
	21	0.81	.032	17.4	.686	16.3	.642	18.5	.729	831-5	M-13	R-9-5	832-5	M-13	R-9-A-5
	22	0.71	.028	17.6	.694	16.3	.642	18.5	.729	831-5	M-13	R-9-5	832-5	M-13	R-9-A-5
	23	0.64	.025	17.8	.700	17.0	.670	18.9	.747	833-5	M-14- 3/8	R-9-5	834-5	M-14- 3/8	R-9-A5
	24	0.56	.022	17.9	.706	17.0	.670	18.9	.747	833-5	M-14- 3/8	R-9-5	834-5	M-14- 3/8	R-9-A5
	25	0.51	.020	18.0	.710	17.4	.685	19.0	.750	835-5	340-5	R-10-5	836-5	M-840-5	R-10-A-5

For best results a 'Thin Wall Thrust Coller' should be used when rolling 19 thru 22 gauge wall tubes.  
Model 315-5-358-5 come with 3/8" square mandrel drives and Model 359-5-400-5 come with 1/2" square mandrel drives.

Tube O.D. (mm) inch	Tube Thickness			Tube I.D.		Minimum I.D. Tool Enters		Maximum Expansion of Tool		EXPANDER with (38.10mm) 1.1/2" Long Rollers			EXPANDER with (57.15 mm) 2.1/4" Long Rollers		
										Complete	Mandrel	Rollers	Complete	Mandrel	Rollers
	bwg	mm	inch	mm	inch	mm	inch	mm	inch	Tool No.	No.	Set. No.	Tool No.	No.	Set. No
(22.22)  7/8	13	2.41	.095	17.4	.685	17.0	.670	18.9	.747	833-5	M-14-3/8	R-9-5	834-5	M-14-3/8	R-9-A-5
	14	2.10	.083	18.0	.709	17.4	.685	19.0	.750	835-5	M-15-3/8	R-10-5	836-5	M-15-3/8	R-10-A-5
	16	1.65	.065	18.9	.745	18.4	.726	20.3	.800	839-5	340-5	R-11-5	840-5	340-5	R-11-A-5
	17	1.47	.058	19.2	.759	18.8	.740	20.9	.824	843-5	M-17-3/8	R-11-5	844-5	M-17-3/8	R-11-A-5
	18	1.24	.049	19.7	.777	18.8	.740	20.9	.824	843-5	M-17-3/8	R-11-5	844-5	M-17-3/8	R-11-A-5
	19	1.07	.042	20.1	.791	19.4	.763	21.6	.851	845-5	M-18-3/8	R-11-5	846-5	M-18-3/8	R-11-A-5
	20	0.89	.035	20.4	.805	19.4	.763	21.6	.851	845-5	M-18-3/8	R-11-5	846-5	M-18-3/8	R-11-A-5
	21	0.81	.032	20.6	.811	19.4	.763	21.6	.851	845-5	M-18-3/8	R-11-5	846-5	M-18-3/8	R-11-A-5
	22	0.71	.028	20.8	.819	19.4	.763	21.6	.851	845-5	M-18-3/8	R-11-5	846-5	M-18-3/8	R-11-A-5
	23	0.64	.025	20.9	.825	20.1	.791	22.4	.880	847-5	M-18-3/8	R-13-5	848-5	M-18-3/8	R-13-A-5
24	0.56	.022	21.1	.831	20.1	.791	22.4	.880	847-5	M-18-3/8	R-13-5	848-5	M-18-3/8	R-13-A-5	
(25.40)  1	12	2.76	.109	19.8	.782	19.4	.763	21.6	.852	845-5	M-18-3/8	R-11-5	846-5	M-18-3/8	R-11-A-5
	13	2.41	.095	20.5	.810	20.1	.791	22.4	.880	847-5	M-18-3/8	R-13-5	848-5	M-18-3/8	R-13-A-5
	14	2.10	.083	21.2	.834	20.5	.810	22.3	.879	879-5	350-5	R-12-5	850-5	M-18-3/8	R-12-A-5
	15	1.82	.072	21.7	.856	21.3	.837	23.8	.936	851-5	352-5	R-13-5	852-5	352-5	R-13-A-5
	16	1.65	.065	22.0	.870	21.3	.837	23.8	.936	851-5	352-5	R-13-5	852-5	352-5	R-13-A-5
	17	1.47	.058	22.4	.884	22.0	.865	24.5	.965	855-5	356-5	R-13-5	856-5	356-5	R-13-A-5
	18	1.24	.049	22.9	.902	22.0	.865	24.5	.965	855-5	356-5	R-13-5	856-5	356-5	R-13-A-5
	19	1.06	.042	23.2	.916	22.0	.865	24.5	.965	855-5	356-5	R-13-5	856-5	356-5	R-13-A-5
	20	0.88	.035	23.6	.930	22.0	.865	24.5	.965	855-5	356-5	R-13-5	856-5	356-5	R-13-A-5
	21	0.81	.032	23.8	.936	22.4	.883	25.3	.997	857-5	M-21-3/8	R-15-5	858-5	M-21-3/8	R-15-A-5
	22	0.71	.028	24.0	.944	22.4	.883	25.3	.997	857-5	M-21-3/8	R-15-5	858-5	M-21-3/8	R-15-A-5
	23	0.64	.025	24.1	.950	22.4	.883	25.3	.997	857-5	M-21-3/8	R-15-5	858-5	M-21-3/8	R-15-A-5
	24	0.56	.022	24.3	.956	22.4	.883	25.3	.997	857-5	M-21-3/8	R-15-5	858-5	M-21-3/8	R-15-A-5
25	0.51	.020	24.4	.960	22.4	.883	25.3	.997	857-5	M-21-3/8	R-15-5	858-5	M-21-3/8	R-15-A-5	
(28.58)  1.1/8	12	2.76	.109	23.0	.907	22.4	.883	25.3	.997	857-5	M-21-3/8	R-15-5	858-5	M-21-3/8	R-15-A-5
	13	2.41	.095	23.7	.935	23.2	.916	25.4	1.000	859-5	360-5	R-16-5	860-5	360-5	R-16-A-5
	14	2.11	.083	24.3	.959	23.7	.935	26.4	1.039	861-5	362-5	R-17-5	862-5	362-5	R-17-A-5
	22	0.71	.028	27.2	1.069	26.4	1.039	29.4	1.157	871-5	372-5	R-19-5	872-5	372-5	R-19-A-5
	24	0.56	.022	27.5	1.081	26.4	1.039	29.4	1.157	871-5	372-5	R-19-5	872-5	372-5	R-19-A-5
(31.75)  1.1/4	15	1.82	.072	28.1	1.106	27.6	1.087	30.4	1.196	875-5	376-5	R-21-5	876-5	376-5	R-21-A-5
	16	1.65	.065	28.4	1.120	27.6	1.087	30.4	1.196	875-5	376-5	R-21-5	876-5	376-5	R-21-A-5
	17	1.47	.058	28.8	1.134	28.3	1.115	31.3	1.231	879-5	380-5	R-21-5	880-5	380-5	R-21-A-5
	18	1.24	.049	29.3	1.152	28.3	1.115	31.3	1.231	879-5	380-5	R-21-5	880-5	380-5	R-21-A-5
	19	1.07	.042	29.6	1.166	28.3	1.115	31.3	1.231	879-5	380-5	R-21-5	880-5	380-5	R-21-A-5
	20	0.88	.035	30.0	1.180	28.3	1.115	31.3	1.231	879-5	380-5	R-21-5	880-5	380-5	R-21-A-5
	21	0.81	.032	30.1	1.186	28.3	1.115	31.3	1.231	879-5	380-5	R-21-5	880-5	380-5	R-21-A-5
	22	0.71	.028	30.3	1.194	28.3	1.115	31.3	1.231	879-5	380-5	R-21-5	880-5	380-5	R-21-A-5
	23	0.64	.025	30.5	1.200	28.8	1.133	31.5	1.242	881-5	382-5	R-21-5	882-5	382-5	R-21-A-5
24	0.56	.022	30.6	1.206	28.8	1.133	31.5	1.242	881-5	382-5	R-21-5	882-5	382-5	R-21-A-5	
(34.92)  1.3/8	12	2.76	.109	29.3	1.154	28.8	1.133	31.5	1.242	881-5	382-5	R-21-5	880-5	380-5	R-21-A-5
	14	2.11	.083	30.7	1.209	29.9	1.179	32.9	1.296	885-5	382-5	R-23-5	882-5	382-5	R-23-A-5
	20	0.88	.035	33.2	1.305	31.9	1.257	35.2	1.385	893-5	394-5	R-26-5	894-5	394-5	R-26-A-5
	22	0.71	.028	33.5	1.319	32.6	1.285	36.0	1.417	895-5	396-5	R-26-5	896-5	396-5	R-26-A-5
	24	0.56	.022	33.8	1.331	32.6	1.285	36.0	1.417	895-5	396-5	R-26-5	896-5	396-5	R-26-A-5
(38.10)  1.1/2	17	1.47	.058	35.1	1.384	33.8	1.331	37.8	1.489	899-5	400-5	R-29-5	900-5	400-5	R-29-A-5
	18	1.24	.049	35.6	1.402	33.8	1.331	37.8	1.489	899-5	400-5	R-29-5	901-5	400-5	R-29-A-5
	19	1.06	.042	36.0	1.416	33.8	1.331	37.8	1.489	899-5	400-5	R-29-5	902-5	400-5	R-29-A-5
	20	0.89	.035	36.3	1.430	33.8	1.331	37.8	1.489	899-5	400-5	R-29-5	903-5	400-5	R-29-A-5
	21	0.81	.032	36.5	1.436	33.8	1.331	37.8	1.489	899-5	400-5	R-29-5	904-5	400-5	R-29-A-5
	22	0.71	.028	36.7	1.444	33.8	1.331	37.8	1.489	899-5	400-5	R-29-5	905-5	400-5	R-29-A-5
	23	0.64	.025	36.8	1.450	33.8	1.331	37.8	1.489	899-5	400-5	R-29-5	906-5	400-5	R-29-A-5
	24	0.56	.022	37.0	1.456	33.8	1.331	37.8	1.489	899-5	400-5	R-29-5	907-5	400-5	R-29-A-5





## Condenser Tube Expansion 900 Series

We are offering **Condenser Tube Expansion 900 Series 1/4" - 3/8" O.D.**



### Use :

Oil Coolers, Radiators & other apparatus with small diameter tubes. This tool has been the workhorse for several years for use on small diameter tubes.

Tube Size		Min Entry Dia. mm	Max Entry Dia. mm	Tube Expander with Roller		Mandrel No.	Rollers	
O.D. IN	THK GA.			19.05mm Long No.	31.75mm Long No.		19.05mm Long No.	31.75mm Long No.
1/4	20	4.47	5.28	923	-	M-23	R-923	-
1/4	21	4.56	5.38	924	-	M-24	R-923	-
1/4	22	4.83	5.58	925	-	M-25	R-923	-
1/4	23	4.94	5.78	926	-	M-26	R-923	-
1/4	24	5.11	5.88	927	-	M-27	R-923	-
3/8	15	5.71	6.48	914	-	M-27	R-914	-
3/8	16	6.11	6.98	916	-	M-28	R-914	-
3/8	17	6.51	7.33	918	-	M-29	R-903	-
3/8	18	6.91	7.75	901	902	M-30	R-903	R-904
3/8	19	7.26	8.13	903	904	M-31	R-903	R-904
3/8	20	7.60	8.48	905	906	M-32	R-905	R-906
3/8	21	7.77	8.63	907	908	M-33	R-905	R-906
3/8	22	7.92	8.84	909	910	M-34	R-909	R-910
3/8	23/24	8.13	9.04	911	912	M-34	R-911	R-912

**Note :** All '100' series expanders come with 1/4" & 3/8" square mandrel drives. Round mandrel drives are optional.



Condenser Tube Expansion1200 Series

We are offering Condenser Tube Expander 1200 Series 1/2"- 1 1/2" O.D.



FOR TUBES INTERNAL DIAMETER  
FROM (8.4MM).344" TO (36.3 MM)1.43"

TUBE EXPANDER FITTED WITH ROLLER LENGTH		FOR TUBE SHEET ADJUSTABLE RANGE	
		MINIMUM A	MAXIMUM B
(38.1mm ) 1.1/2"	STD REACH "A" REACH "B" REACH "C" REACH	(38.1mm)1.1/2" (38.1mm)1.1/2" (38.1mm)1.1/2" (38.1mm)1.1/2"	(152.4MM)6" (203.2mm)8" (253.8mm)10" (304.6mm)6"
(57.1mm) 2.1/4"	STD REACH "A" REACH "B" REACH "C" REACH	(57.1mm)2.1/4" (57.1mm)2.1/4" (57.1mm)2.1/4" (57.1mm)2.1/4"	(171.4MM)6.3/4" (222.1MM)8.3/4" (272.8MM)10.3/4" (323.6MM)12"

**Use :**  
Most popular tool worldwide for heat exchangers & condensers with tubes of 5/8" - 1 1/2" O.D. & thick tube sheets.  
Longer reach expanders are available. Please let us know reach needed

Tube O.D. (mm) inch	Tube Thickness			Tube I.D.		Minimum I.D. Tool Enters		Maximum Expansion of Tool		EXPANDER with (38.10mm) 1.1/2" Long Rollers			EXPANDER with (57.15 mm) 2.1/4" Long Rollers		
	bwg	mm	inch	mm	inch	mm	inch	mm	inch	Complete	Mandrel	Rollers	Complete	Mandrel	Rollers
										Tool No.	No.	Set. No.	Tool No.	No.	Set. No
(12.70)  1/2"	14	2.10	.083	8.4	.334	8.2	.324	9.5	.374	1197	497	797	-	-	-
	15	1.82	.072	9.0	.356	8.8	.348	10.1	.398	1199	499	R-1	-	-	-
	16	1.65	.065	9.4	.370	9.1	.360	10.4	.410	1201	M-51	R-1	-	-	-
	17	1.47	.058	9.7	.384	9.5	.374	10.7	.424	1203	M-51	R-2	-	-	-
	18	1.24	.049	10.2	.402	9.9	.392	11.3	.447	1205	M-52	R-3	-	-	-
	20	0.88	.035	10.9	.430	10.3	.406	11.7	.461	1205 S	M-53	R-3	-	-	-
(15.88)  5/8"	12	2.76	.109	10.3	.407	9.9	.392	11.3	.447	1205	M-52	R-3	-	-	-
	13	2.41	.095	11.0	.435	10.8	.425	12.1	.480	1207	M-53	R-4	-	-	-
	14	2.10	.083	11.6	.459	11.4	.449	12.9	.509	1209	M-54	R-4	1210	M-54	R-4-A
	15	1.82	.072	12.2	.481	11.9	.471	13.6	.536	1211	M-55	R-5	1212	M-55	R-5-A
	16	1.65	.065	12.5	.495	12.3	.485	13.9	.550	1213	M-55	R-6	1214	M-55	R-6-A
	17	1.47	.058	12.9	.509	12.6	.499	14.3	.564	1215	M-56	R-6	1216	M-56	R-6-A
	18	1.24	.049	13.3	.527	13.1	.517	14.5	.572	1217	M-57	R-7	1218	M-57	R-7-A
	19	1.06	.042	13.7	.541	13.2	.522	14.7	.582	1219	M-56	R-7	1220	M-56	R-7-A
	20	0.88	.035	14.1	.555	13.6	.536	15.1	.596	1219 S	M-58	R-7	1220 S	M-58	R-7-A
	21	0.81	.032	14.2	.561	13.6	.536	15.1	.596	1219 S	M-58	R-7	1220 S	M-58	R-7-A
	22	0.71	.028	14.4	.569	13.6	.536	15.1	.596	1219 S	M-58	R-7	1220 S	M-58	R-7-A
	22	0.71	.028	14.4	.569	13.6	.536	15.1	.596	1219 S	M-58	R-7	1220 S	M-58	R-7-A
(19.05)  3/4"	10	3.40	.134	12.2	.482	11.9	.471	13.6	.536	1211	M-55	R-5	1212	M-55	R-5-A
	11	3.04	.120	12.9	.510	12.6	.499	14.3	.564	1215	M-56	R-6	1216	M-56	R-6-A
	12	2.76	.109	13.5	.532	13.2	.522	14.7	.582	1219	M-56	R-7	1220	M-56	R-7-A
	13	2.41	.095	14.2	.560	13.9	.550	15.6	.615	1221	M-58	R-8	1222	M-58	R-8-A
	14	2.10	.083	14.8	.584	14.5	.574	16.2	.639	1223	M-58	R-9	1224	M-58	R-9-A
	15	1.82	.072	15.3	.606	15.1	.596	16.7	.661	1225	M-58	R-10	1226	M-58	R-10-A
	16	1.65	.065	15.7	.620	15.3	.605	17.4	.685	1227	M-59	R-10	1228	M-59	R-10-A
	17	1.47	0.58	16.1	.634	15.7	.619	17.7	.699	1229	M-59	R-11	1230	M-59	R-11-A
	18	1.24	.049	16.5	.652	15.7	.619	17.7	.699	1229	M-59	R-11	1230	M-59	R-11-A
	19	1.06	.042	16.9	.666	16.3	.642	18.3	.722	1231	M-59	R-12	1232	M-59	R-12-A
	20	0.88	.035	17.2	.680	16.3	.642	18.3	.722	1231	M-59	R-12	1232	M-59	R-12-A
	21	0.81	.032	17.4	.686	16.3	.642	18.3	.722	1231	M-59	R-12	1232	M-59	R-12-A
(22.22)  7/8"	10	3.40	.134	15.4	.607	15.1	.596	16.7	.661	1225	M-58	R-10	1226	M-58	R-10-A
	11	3.04	.120	16.1	.635	15.7	.619	17.7	.699	1229	M-59	R-11	1230	M-59	R-11-A
	12	2.76	.109	16.6	.657	16.3	.642	18.3	.722	1231	M-59	R-12	1232	M-59	R-12-A
	13	2.41	.095	17.4	.685	17.0	.670	19.0	.750	1233	M-60	R-13	1234	M-60	R-13-A
	14	2.10	.083	18.0	.709	17.4	.685	19.6	.774	1235	M-61	R-14	1236	M-61	R-14-A
	15	1.82	.072	18.5	.731	18.0	.712	20.3	.801	1237	M-61	R-15	1238	M-61	R-15-A
	16	1.65	.065	18.9	.745	18.4	.726	20.7	.815	1239	M-62	R-15	1240	M-62	R-15-A
	17	1.47	.058	19.2	.759	18.8	.740	21.0	.829	1243	M-62	R-16	1244	M-62	R-16-A
	18	1.24	.049	19.7	.777	18.8	.740	21.0	.829	1243	M-62	R-16	1244	M-62	R-16-A
	18	1.24	.049	19.7	.777	18.8	.740	21.0	.829	1243	M-62	R-16	1244	M-62	R-16-A
	18	1.24	.049	19.7	.777	18.8	.740	21.0	.829	1243	M-62	R-16	1244	M-62	R-16-A
	18	1.24	.049	19.7	.777	18.8	.740	21.0	.829	1243	M-62	R-16	1244	M-62	R-16-A

Model 497-556 expanders come with 3/8" square mandrel drives & Model 557-600 expanders come with 1/2" square mandrel drives.

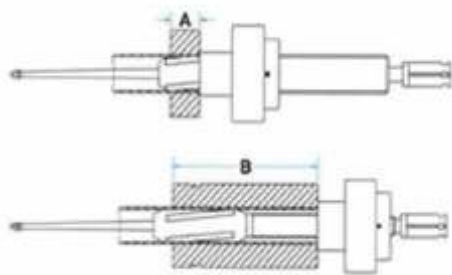
Tube O.D. (mm) inch	Tube Thickness			Tube I.D.		Minimum I.D. Tool Enters		Maximum Expansion of Tool		EXPANDER with (38.10mm)			EXPANDER with (57.15 mm)			
										1.1/2" Long Rollers			2.1/4" Long Rollers			
	Complete	Mandrel	Rollers	Complete	Mandrel	Rollers										
	bwg	mm	inch	mm	inch	mm	inch	mm	inch	Tool No.	No.	Set. No.	Tool No.	No.	Set. No	
(25.40)  1"	8	4.19	.165	17.0	.670	16.6	.655	18.6	.735	1241	M-59	R-13	1242	M-59	R-13-A	
	9	3.75	.148	17.8	.704	17.4	.685	19.6	.774	1235	M-61	R-14	1236	M-61	R-14-A	
	10	3.40	.134	18.5	.732	18.0	.712	20.3	.801	1237	M-61	R-15	1238	M-61	R-15-A	
	11	3.04	.120	19.3	.760	18.8	.740	21.0	.829	1243	M-62	R-16	1244	M-62	R-16-A	
	12	2.76	.109	19.8	.728	19.3	.763	21.6	.852	1245	M-62	R-17	1246	M-62	R-17-A	
	13	2.41	.095	20.5	.810	20.0	.791	22.3	.880	1247	M-62	R-18	1248	M-62	R-18-A	
	14	2.10	.083	21.1	.834	20.5	.810	23.0	.909	1249	M-63	R-18	1250	M-63	R-18-A	
	15	1.82	.072	21.7	.856	21.2	.837	23.7	.936	1251	M-63	R-19	1252	M-63	R-19-A	
	16	1.65	.065	22.1	.870	21.2	.837	23.7	.936	1251	M-63	R-19	1252	M-63	R-19-A	
	17	1.47	.058	22.4	.884	21.9	.865	24.4	.964	1255	M-63	R-21	1256	M-63	R-21-A	
	18	1.24	.049	22.9	.902	21.9	.865	24.4	.964	1255	M-63	R-21	1256	M-63	R-21-A	
	19	1.06	.042	23.2	.916	21.9	.865	24.4	.964	1255	M-63	R-21	1256	M-63	R-21-A	
20	0.88	.035	23.6	.930	21.9	.865	24.4	.964	1255	M-63	R-21	1256	M-63	R-21-A		
(28.58)  1.1/8"	8	4.19	.165	20.1	.795	19.7	.776	22.2	.875	1253	M-63	R-20	1254	M-63	R-20-A	
	9	3.75	.148	21.0	.829	20.5	.810	23.0	.909	1249	M-63	R-18	1250	M-63	R-18-A	
	10	3.40	.134	21.7	.857	21.2	.837	23.7	.936	1251	M-63	R-19	1252	M-63	R-19-A	
	11	3.04	.120	22.4	.885	21.9	.865	24.4	.964	1255	M-63	R-21	1256	M-63	R-21A	
	12	2.76	.109	23.0	.907	22.4	.883	24.9	.982	1257	M-64	R-21	1258	M-64	R-21-A	
	13	2.41	.095	23.7	.935	23.2	.916	25.7	1.015	1259	M-64	R-22	1260	M-64	R-22-A	
	14	2.10	.083	24.3	.959	23.7	.935	26.5	1.044	1261	M-65	R-23	1262	M-65	R-23-A	
	15	1.82	.072	24.9	.981	24.4	.962	27.2	1.071	1263	M-65	R-24	1264	M-65	R-24-A	
	16	1.65	.065	25.2	.995	24.4	.962	27.2	1.071	1263	M-65	R-24	1264	M-65	R-24-A	
	17	1.47	.058	25.6	1.010	25.1	.990	27.9	1.099	1267	M-66	R-26	1268	M-66	R-26-A	
	18	1.24	.049	26.0	1.027	25.0	.990	27.9	1.099	1267	M-66	R-26	1268	M-66	R-26-A	
	(31.75)  1.1/4"	8	4.19	.165	23.3	.920	22.8	.901	25.6	1.010	1265	M-65	R-25	1266	M-65	R-25-A
9		3.75	.148	24.2	.954	23.7	.935	26.5	1.044	1261	M-65	R-23	1262	M-65	R-23-A	
10		3.40	.134	24.9	.982	24.4	.962	27.2	1.071	1263	M-65	R-24	1264	M-65	R-24-A	
11		3.04	.120	25.6	1.010	25.1	.990	27.9	1.099	1267	M-66	R-26	1268	M-66	R-26-A	
12		2.76	.109	26.2	1.032	25.7	1.013	28.5	1.122	1269	M-66	R-27	1270	M-66	R-27-A	
13		2.41	.095	26.9	1.060	26.4	1.039	29.2	1.150	1271	M-67	R-28	1272	M-67	R-28-A	
14		2.10	.083	27.5	1.084	26.9	1.060	29.6	1.169	1273	M-67	R-29	1274	M-67	R-29-A	
15		1.82	.072	28.0	1.106	27.6	1.087	30.3	1.196	1275	M-67	R-30	1276	M-67	R-30-A	
16		1.65	.065	28.4	1.120	27.6	1.087	30.3	1.196	1275	M-67	R-30	1276	M-67	R-30-A	
17		1.47	.058	28.8	1.134	28.3	1.115	31.0	1.224	1279	M-68	R-30	1280	M-68	R-30-A	
18		1.24	.049	29.2	1.152	28.3	1.115	31.0	1.224	1279	M-68	R-30	1280	M-68	R-30-A	
(34.92)  1.3/8"		8	4.19	.165	26.5	1.045	26.0	1.026	28.8	1.135	1277	M-67	R-31	1278	M-67	R-31-A
	9	3.75	.148	27.4	1.079	26.9	1.060	29.6	1.169	1273	M-67	R-29	1274	M-67	R-29-A	
	10	3.40	.134	28.1	1.107	27.6	1.087	30.3	1.196	1275	M-67	R-30	1276	M-67	R-30-A	
	11	3.04	.120	28.8	1.135	28.3	1.115	31.0	1.224	1279	M-68	R-30	1280	M-68	R-30-A	
	12	2.76	.109	29.3	1.157	28.7	1.133	31.5	1.242	1281	M-68	R-32	1282	M-68	R-32-A	
	13	2.41	.095	30.1	1.185	29.4	1.160	32.3	1.275	1283	M-69	R-33	1284	M-69	R-33-A	
	14	2.10	.083	30.7	1.209	29.9	1.179	32.8	1.294	1285	M-70	R-34	1286	M-70	R-34-A	
	15	1.82	.072	31.2	1.231	30.6	1.206	33.5	1.321	1287	M-70	R-35	1288	M-70	R-35-A	
	16	1.65	.065	31.6	1.245	30.6	1.206	33.5	1.321	1287	M-70	R-35	1288	M-70	R-35-A	
	(38.10)  1.1/2"	8	4.19	.165	29.7	1.170	29.0	1.145	32.0	1.260	1289	M-69	R-34	1290	M-69	R-34-A
		9	3.75	.148	30.5	1.204	29.9	1.177	32.8	1.294	1285	M-70	R-34	1286	M-70	R-34-A
		10	3.40	.134	31.2	1.232	30.6	1.206	33.5	1.321	1287	M-70	R-35	1288	M-70	R-35-A
11		3.40	.120	32.0	1.260	31.3	1.235	34.2	1.350	1291	M-70	R-36	1292	M-70	R-36-A	
12		2.76	.109	32.5	1.282	31.9	1.257	34.8	1.372	1293	M-70	R-37	1294	M-70	R-37-A	
13		2.41	.095	33.2	1.310	32.6	1.285	35.5	1.400	1295	M-71	R-37	1296	M-71	R-37-A	
14		2.10	.083	33.8	1.334	32.6	1.286	35.5	1.400	1295	M-71	R-37	1296	M-71	R-37-A	
15		1.82	.072	34.4	1.356	33.8	1.331	36.7	1.446	1297	M-71	R-38	1298	M-71	R-38-A	
16		1.65	.065	34.8	1.370	33.8	1.331	36.7	1.446	1297	M-71	R-38	1298	M-71	R-38-A	
17		1.47	.058	35.1	1.384	33.8	1.331	37.3	1.472	1299	M-72	R-38	1300	M-72	R-38-A	
18		1.24	.049	35.6	1.402	33.8	1.331	37.3	1.472	1299	M-72	R-38	1300	M-72	R-38-A	
19		1.06	.042	35.9	1.416	33.8	1.331	37.3	1.472	1299	M-72	R-38	1300	M-72	R-38-A	
20	0.88	.035	36.3	1.430	33.8	1.331	37.3	1.472	1299	M-72	R-38	1300	M-72	R-38-A		





Condenser Tube Expansion 1200-5 Series

We are offering **Condenser Tube Expansion 1200-5 Series 3/4"- 1 1/2" O.D.**



**FOR TUBES INTERNAL DIAMETER**  
FROM (14.8 MM).584" TO (36.3 MM)1.43"

TUBE EXPANDER FITTED WITH ROLLER LENGTH		FOR TUBE SHEET ADJUSTABLE RANGE	
		MINIMUM A	MAXIMUM B
(38.1mm ) 1.1/2"	STD REACH	(38.1mm)1.1/2"	(152.4MM)6"
	"A" REACH	(38.1mm)1.1/2"	(203.2mm)8"
	"B" REACH	(38.1mm)1.1/2"	(253.8mm)10"
	"C" REACH	(38.1mm)1.1/2"	(304.6mm)6"
(57.1mm) 2.1/4"	STD REACH	(57.1mm)2.1/4"	(171.4MM)6.3/4"
	"A" REACH	(57.1mm)2.1/4"	(222.1MM)8.3/4"
	"B" REACH	(57.1mm)2.1/4"	(272.8MM)10.3/4"
	"C" REACH	(57.1mm)2.1/4"	(323.6MM)12"

**Use :**

Highly recommended for use on thin walled tubes (19 thru 22 gage walls) of Stainless Steel, Titanium, Incolony & other exotic materials in thick tube sheets.

**Advantages :**

Gives a more concentric and even expansion when expanding thin walled tubes vs. a conventional 3 roll expander & reduces tube spring back effect.

Expandeers for tube sizes not listed below are also available.

Tube O.D.	Tube Thickness			Tube I.D.		Minimum I.D. Tool Enters		Maximum Expansion of Tool		EXPANDER with (38.10mm) 1.1/2" Long Rollers			EXPANDER with (57.15 mm) 2.1/4" Long Rollers		
(mm)										Complete	Mandrel	Rollers	Complete	Mandrel	Rollers
inch	bwg	mm	inch	mm	inch	mm	inch	mm	inch	Tool No.	No.	Set. No.	Tool No.	No.	Set. No
(19.05)  3/4"	14	2.10	.083	14.8	.584	14.5	.574	16.2	.639	1223-5	524-5	R-6-5	1224-5	524-5	R-6-A-5
	15	1.82	.072	15.3	.606	14.9	.590	16.7	.661	1225-5	526-5	R-7-5	1226-5	526-5	R-7-A-5
	16	1.65	.065	15.7	.620	15.3	.605	17.4	.685	1227-5	M-63	R-7-5	1228-5	M-63	R-7-A-5
	17	1.47	.058	16.1	.634	15.7	.619	17.8	.699	1229-5	530-5	R-7-5	1230-5	530-5	R-7-A-5
	18	1.24	.049	16.5	.652	15.7	.619	17.8	.699	1229-5	530-5	R-7-5	1230-5	530-5	R-7-A-5
	19	1.06	.042	16.9	.666	16.3	.642	18.3	.722	1231-5	M-63	R-9-5	1232-5	M-63	R-9-A-5
	20	0.88	.035	17.2	.680	16.3	.642	18.3	.722	1231-5	M-63	R-9-5	1232-5	M-63	R-9-A-5
	21	0.81	.032	17.4	.686	16.3	.642	18.3	.722	1231-5	M-63	R-9-5	1232-5	M-63	R-9-A-5
	22	0.71	.028	17.6	.694	16.3	.642	18.3	.722	1231-5	M-63	R-9-5	1232-5	M-63	R-9-A-5
(25.40)  1"	14	2.10	.083	21.1	.834	20.5	.810	23.0	.909	1249-5	550-5	R-12-5	1250-5	550-5	R-12-A-5
	15	1.82	.072	21.7	.856	21.2	.837	23.7	.936	1251-5	551-5	R-14-5	1252-5	551-5	R-14-A-5
	16	1.65	.065	22.0	.870	21.2	.837	23.7	.936	1251-5	551-5	R-14-5	1252-5	551-5	R-14-A-5
	17	1.47	.058	22.4	.884	21.9	.865	24.4	.964	1255-5	556-5	R-13-5	1256-5	556-5	R-13-A-5
	18	1.24	.049	22.9	.902	21.9	.865	24.4	.964	1255-5	556-5	R-13-5	1256-5	556-5	R-13-A-5
	19	1.06	.042	23.2	.916	21.9	.865	24.4	.964	1255-5	556-5	R-13-5	1256-5	556-5	R-13-A-5
	20	0.88	.035	23.6	.930	21.9	.865	24.4	.964	1255-5	556-5	R-13-5	1256-5	556-5	R-13-A-5
	21	0.81	.032	23.8	.936	22.4	.883	24.9	.982	1257-5	M-71-3/8	R-15-5	1258-5	M-71-3/8	R-15-A-5
	22	0.71	.028	24.0	.944	22.4	.883	24.9	.982	1257-5	M-71-3/8	R-15-5	1258-5	M-71-3/8	R-15-A-5
(28.58)  1.1/8"	12	2.76	.109	23.0	.907	22.4	.883	24.9	.982	1257-5	M-71-3/8	R-15-5	1258-5	M-71-3/8	R-15-A-5
	15	1.82	.072	24.9	.981	24.4	.962	27.2	1.071	1263-5	563-5	R-18-5	-	-	-
	16	1.65	.065	25.2	.995	24.4	.962	27.2	1.071	1263-5	563-5	R-18-5	-	-	-
(38.10)  1.1/2"	17	1.47	.058	35.1	1.384	33.8	1.331	37.3	1.472	1299-5	599-5	R-29-5	1300-5	599-5	R-29-A-5
	18	1.24	.049	35.6	1.402	33.8	1.331	37.3	1.472	1299-5	599-5	R-29-5	1300-5	599-5	R-29-A-5
	19	1.06	.042	36.0	1.416	33.8	1.331	37.3	1.472	1299-5	599-5	R-29-5	1300-5	599-5	R-29-A-5
	20	0.89	.035	36.3	1.430	33.8	1.331	37.3	1.472	1299-5	599-5	R-29-5	1300-5	599-5	R-29-A-5

For best results a 'Thin Wall Thrust Coller' should be used when rolling 19 thru 22 gauge wall tubes.  
Model 523-5 - 558-5 expanders come with 3/8" square mandrel drives & Model 563-5 - 600-5 expanders come with 1/2" square mandrel drives.



## Condenser Tube Expansion 1300 Series

We are offering **Condenser Tube Expansion 1300 Series 3/8" O.D.**



**For Tubes Internal Diameter**

FROM (5.8MM).231" TO (8.4 MM).331"

**Use :** Oil Coolers, radiators & other apparatus with diameter tubes and thick tube sheets.

Tube O.D. (mm) inch	Tube Thickness			Tube I.D.		Minimum I.D. Tool Enters		Maximum Expansion of Tool		EXPANDER with (19.05 mm) 3/4" Long Rollers			EXPANDER with (31.75 mm) 1.1/4" Long Rollers		
	bwg	mm	inch	mm	inch	mm	inch	mm	inch	Complete Tool No.	Mandrel No.	Rollers Set. No.	Complete Tool No.	Mandrel No.	Rollers Set. No.
(9.53)  3/8"	18	1.24	.049	7.0	.277	6.9	.272	7.8	.307	201	M-80	103	202	M-80	104
	19	1.06	.042	7.3	.291	7.2	.286	8.1	.320	203	M-81	103	204	M-81	104
	20	0.88	.035	7.7	.305	7.6	.300	8.4	.334	205	M-82	107	206	M-82	108
	21	0.81	.032	7.9	.311	7.7	.306	8.6	.340	207	M-83	107	208	M-83	108
	22	0.71	.028	8.1	.319	7.9	.314	8.8	.349	209	M-84	109	210	M-84	110
	23	0.63	.025	8.2	.325	8.1	.320	9.0	.357	211	M-84	111	212	M-84	112
	24	0.55	.022	8.4	.331	8.1	.320	9.0	.357	211	M-84	111	212	M-84	112

**Note :** All '200' series expanders come with 1/4" & 3/8" square mandrel drives. Round mandrel drives are optional.



### Condenser Tube Expansion 8012 Series

We are offering **Condenser Tube Expansion 8012 Series 1 3/4"- 5" O.D.**



**FOR TUBES INTERNAL DIAMETER  
FROM (36.1 MM)1.420" TO (123.7 MM)4.870"**

TUBE EXPANDER FITTED WITH ROLLER LENGTH		FOR TUBE SHEET ADJUSTABLE RANGE	
		MINIMUM A	MAXIMUM B
2.1/4" (57.1mm)	STD REACH	(12.7mm)1/2"	(101.4mm)4"
	6" REACH	(12.7mm)1/2"	(152.4mm)6"
	8" REACH	(12.7mm)1/2"	(203.2mm)8"

**For Mandrels in 6" and 8" - suffix -6" or -8" to the mandrel model No.**

#### Use :

To expand tubes in Air Heaters, Boilers and Refinery still tubes. Can be used to expand thick tube sheets (upto 8").

For Larger Size '612' series expanders, please contact us.

Tube O.D. (mm) inch	Tube Thickness			Tube I.D.		Minimum I.D. Tool Enters		Maximum Expansion of Tool		EXPANDER with (57.15 mm) 2.1/4" Long Rollers		
	bwg	mm	inch	mm	inch	mm	inch	mm	inch	Complete Tool No.	Mandrel No.	Rollers Set. No
(44.45)  1.3/4"	8	4.19	.165	36.1	1.420	34.7	1.368	39.3	1.550	8012-1.3/4-8	M-90	R-33-A
	10	3.40	.134	37.6	1.482	36.0	1.420	40.8	1.607	8012-1.3/4-10	M-90	R-37-A
	11	3.04	.120	38.3	1.510	36.9	1.454	41.5	1.635	8012-1.3/4-11	M-90	R-42
	12	2.76	.109	38.9	1.532	37.6	1.482	42.0	1.657	8012-1.3/4-12	M-90	R-44
	13	2.41	.095	39.6	1.560	38.3	1.510	42.7	1.685	8012-1.3/4-13	M-90	R-46
	14	2.10	.083	40.2	1.584	38.9	1.532	43.4	1.709	8012-1.3/4-14	M-90	R-48
(50.80)  2"	8	4.19	.165	42.4	1.670	40.5	1.595	45.6	1.795	8012-2-8	M-91	R-48
	10	3.40	.134	43.9	1.732	41.6	1.640	47.1	1.857	8012-2-10	M-91	R-50
	11	3.04	.120	44.7	1.760	42.4	1.670	47.8	1.885	8012-2-11	M-91	R-52
	12	2.76	.109	45.2	1.782	43.2	1.704	48.4	1.907	8012-2-12	M-91	R-54
	13	2.41	.095	45.9	1.810	43.9	1.732	49.6	1.956	8012-2-13-18	M-91	R-56
	14	2.10	.083	46.5	1.834	43.9	1.732	49.6	1.956	8012-2-13-18	M-91	R-56
	15	1.83	.072	47.1	1.856	43.9	1.732	49.6	1.956	8012-2-13-18	M-91	R-56
	16	1.65	.065	47.4	1.870	43.9	1.732	49.6	1.956	8012-2-13-18	M-91	R-56
	17	1.47	.058	47.9	1.884	43.9	1.732	49.6	1.956	8012-2-13-18	M-91	R-56
	18	1.24	.049	48.3	1.902	43.9	1.732	49.6	1.956	8012-2-13-18	M-91	R-56
(57.15)  2.1/4"	10	3.40	.134	50.3	1.982	48.0	1.890	53.5	2.107	8012-2.1/4-10	M-92	R-56
	11	3.04	.120	51.0	2.010	48.7	1.920	54.2	2.135	8012-2.1/4-11	M-92	R-58
	12	2.76	.109	51.6	2.032	49.6	1.954	54.7	2.157	8012-2.1/4-12	M-92	R-60
	13	2.41	.095	52.3	2.060	50.3	1.982	55.4	2.185	8012-2.1/4-13-16	M-92	R-62
	14	2.10	.083	52.9	2.084	50.3	1.982	55.4	2.185	8012-2.1/4-13-16	M-92	R-62
	15	1.83	.072	53.4	2.106	50.3	1.982	55.4	2.185	8012-2.1/4-13-16	M-92	R-62
	16	1.65	.065	53.8	2.120	50.3	1.982	55.4	2.185	8012-2.1/4-13-16	M-92	R-62
(63.50)  2.1/2"	10	3.40	.134	56.6	2.232	54.3	2.140	61.1	2.407	8012-2.1/2-10-12	M-93	R-64
	11	3.04	.120	57.4	2.260	54.3	2.140	61.1	2.407	8012-2.1/2-10-12	M-93	R-64
	12	2.76	.109	57.9	2.282	54.3	2.140	61.1	2.407	8012-2.1/2-10-12	M-93	R-64
	13	2.41	.095	58.6	2.310	56.6	2.232	62.2	2.450	8012-2.1/2-13-18	M-94	R-64
	14	2.10	.083	59.2	2.334	56.6	2.232	62.2	2.450	8012-2.1/2-13-18	M-94	R-64
	15	1.83	.072	59.8	2.356	56.6	2.232	62.2	2.450	8012-2.1/2-13-18	M-94	R-64
	16	1.65	.065	60.1	2.370	56.6	2.232	62.2	2.450	8012-2.1/2-13-18	M-94	R-64
	17	1.47	.058	60.6	2.384	56.6	2.232	62.2	2.450	8012-2.1/2-13-18	M-94	R-64
	18	1.24	.049	61.0	2.402	56.6	2.232	62.2	2.450	8012-2.1/2-13-18	M-94	R-64

Tube O.D. (mm) inch	Tube Thickness			Tube I.D.		Minimum I.D. Tool Enters		Maximum Expansion of Tool		EXPANDER with (57.15 mm) 2.1/4" Long Rollers		
										Complete	Mandrel	Rollers
	bwg	mm	inch	mm	inch	mm	inch	mm	inch	Tool No.	No.	Set. No
(69.85)  2.3/4"	10	3.40	.134	63.0	2.482	60.7	2.390	68.6	2.702	8012-2.3/4-10-16	M-96	R-66
	11	3.04	.120	63.7	2.510	60.7	2.390	68.6	2.702	8012-2.3/4-10-16	M-96	R-66
	12	2.76	.109	64.3	2.532	60.7	2.390	68.6	2.702	8012-2.3/4-10-16	M-96	R-66
	13	2.41	.095	65.0	2.560	60.7	2.390	68.6	2.702	8012-2.3/4-10-16	M-96	R-66
	14	2.10	.083	65.6	2.584	60.7	2.390	68.6	2.702	8012-2.3/4-10-16	M-96	R-66
	15	1.83	.072	66.1	2.606	60.7	2.390	68.6	2.702	8012-2.3/4-10-16	M-96	R-66
	16	1.65	.065	66.5	2.620	60.7	2.390	68.6	2.702	8012-2.3/4-10-16	M-96	R-66
(76.20)  3"	8	4.19	.165	67.8	2.670	65.0	2.560	71.8	2.829	8012-3-8-9	M-97	R-67
	9	3.75	.148	68.6	2.704	65.0	2.560	71.8	2.829	8012-3-8-9	M-97	R-67
	10	3.40	.134	69.3	2.732	67.0	2.640	74.9	2.952	8012-3-10-18	M-96	R-67
	11	3.04	.120	70.1	2.760	67.0	2.640	74.9	2.952	8012-3-10-18	M-96	R-67
	12	2.76	.109	70.6	2.782	67.0	2.640	74.9	2.952	8012-3-10-18	M-96	R-67
	13	2.41	.095	71.3	2.810	67.0	2.640	74.9	2.952	8012-3-10-18	M-96	R-67
	14	2.10	.083	71.9	2.834	67.0	2.640	74.9	2.952	8012-3-10-18	M-96	R-67
	15	1.82	.072	72.5	2.856	67.0	2.640	74.9	2.952	8012-3-10-18	M-96	R-67
	16	1.65	.065	72.8	2.870	67.0	2.640	74.9	2.952	8012-3-10-18	M-96	R-67
	17	1.47	.058	73.3	2.884	67.0	2.640	74.9	2.952	8012-3-10-18	M-96	R-67
	18	1.24	.049	73.7	2.902	67.0	2.640	74.9	2.952	8012-3-10-18	M-96	R-67
(88.9)  3.1/2"	13	2.41	.095	84.1	3.311	81.0	3.190	88.0	3.464	8012-3.1/2-10-18	M-99	R-70
	14	2.10	.083	84.7	3.334	81.0	3.190	88.0	3.464	8012-3.1/2-10-18	M-99	R-70
	15	1.83	.072	85.2	3.354	81.0	3.190	88.0	3.464	8012-3.1/2-10-18	M-99	R-70
	16	1.65	.065	85.2	3.370	81.0	3.190	88.0	3.464	8012-3.1/2-10-18	M-99	R-70
	17	1.47	.058	86.0	3.385	81.0	3.190	88.0	3.464	8012-3.1/2-10-18	M-99	R-70
	18	1.24	.049	86.4	3.401	81.0	3.190	88.0	3.464	8012-3.1/2-10-18	M-99	R-70
(101.6)  4"	3	6.60	.259	88.4	3.480	87.0	3.425	96.0	3.780	8012-4-3-4	M-100	R-71
	4	6.00	.236	89.6	3.527	87.0	3.425	96.0	3.780	8012-4-3-4	M-100	R-71
	8	4.19	.165	93.2	3.670	91.0	3.582	100.0	3.940	8012-4-8-9	M-101	R-71
	9	3.75	.148	94.1	3.704	91.0	3.582	100.0	3.940	8012-4-8-9	M-101	R-71
	10	3.40	.134	94.8	3.732	93.0	3.661	100.6	3.960	8012-4-10-18	M-101	R-72
	11	3.04	.120	95.5	3.760	93.0	3.661	100.6	3.960	8012-4-10-18	M-101	R-72
	12	2.76	.109	96.1	3.783	93.0	3.661	100.6	3.960	8012-4-10-18	M-101	R-72
	13	2.41	.095	96.8	3.811	93.0	3.661	100.6	3.960	8012-4-10-18	M-101	R-72
	14	2.10	.083	97.4	3.834	93.0	3.661	100.6	3.960	8012-4-10-18	M-101	R-72
	16	1.65	.065	98.3	3.870	93.0	3.661	100.6	3.960	8012-4-10-18	M-101	R-72
(114.3)  4.1/2"	3	6.60	.259	101.1	3.980	100.0	3.940	109.0	4.291	8012-4.1/2-3-4	M-102	R-73
	4	6.00	.236	102.3	4.030	100.0	3.940	109.0	4.291	8012-4.1/2-3-4	M-102	R-73
	8	4.19	.165	105.9	4.170	102.0	4.020	111.0	4.370	8012-4.1/2-8-9	M-102	R-74
	9	3.75	.148	106.8	4.204	102.0	4.020	111.0	4.370	8012-4.1/2-8-9	M-102	R-74
	10	3.40	.134	107.5	4.232	104.0	4.100	113.0	4.450	8012-4.1/2-10-18	M-103	R-74
	12	2.76	.109	108.8	4.283	104.0	4.100	113.0	4.450	8012-4.1/2-10-18	M-103	R-74
	16	1.65	.065	111.0	4.370	104.0	4.100	113.0	4.450	8012-4.1/2-10-18	M-103	R-74
(127.0)  5"	3	6.60	.259	113.8	4.480	112.0	4.410	121.0	4.763	8012-5-3-4	M-105	R-76
	4	6.00	.236	115.0	4.527	112.0	4.410	121.0	4.763	8012-5-3-4	M-105	R-76
	8	4.19	.165	118.6	4.670	116.0	4.566	125.0	4.921	8012-5-8-9	M-105	R-77
	9	3.75	.148	119.5	4.704	116.0	4.566	125.0	4.921	8012-5-8-9	M-105	R-77
	10	3.40	.134	120.2	4.732	117.0	4.606	126.0	4.960	8012-5-10-18	M-105	R-78
	11	3.04	.120	121.0	4.763	117.0	4.606	126.0	4.960	8012-5-10-18	M-105	R-78
	12	2.76	.109	121.5	4.783	117.0	4.606	126.0	4.960	8012-5-10-18	M-105	R-78
	14	2.10	.083	122.8	4.834	117.0	4.606	126.0	4.960	8012-5-10-18	M-105	R-78
	16	1.65	.065	123.7	4.870	117.0	4.606	126.0	4.960	8012-5-10-18	M-105	R-78



## Condenser Tube Expansion AL Series

We are offering **Condenser Tube Expansion AL Series 5/16"- 1 5/8" O.D.**



Tube O.D.		Expander No.	Rollers Set No.	A		B		C	
mm	inch			mm	inch	mm	inch	mm	inch
7.93	5/16	AL-312	ALR-312	8.38	0.33	15.87	5/8	6.35	1/4
9.53	3/8	AL-375	ALR-375	9.90	0.39	15.87	5/8	6.35	1/4
11.11	7/16	AL-407	ALR-407	11.43	0.45	15.87	5/8	7.93	5/16
12.70	1/2	AL-500	ALR-500	13.20	0.52	15.87	5/8	7.93	5/16
14.28	9/16	AL-562	ALR-562	14.73	0.58	19.05	3/4	7.93	5/16
15.87	5/8	AL-625	ALR-625	16.25	0.64	19.05	3/4	7.93	5/16
19.05	3/4	AL-750	ALR-750	19.55	0.77	19.05	3/4	9.52	3/8
22.22	7/8	AL-875	ALR-875	22.60	0.89	19.05	3/4	9.52	3/8
25.40	1	AL-1000	ALR-1000	25.65	1.01	25.40	1	9.52	3/8
28.57	1.1/8	AL-1125	ALR-1125	28.95	1.14	25.40	1	12.70	1/2
31.75	1.1/4	AL-1250	ALR-1250	32.25	1.27	25.40	1	12.70	1/2
34.92	1.3/8	AL-1375	ALR-1375	35.30	1.39	25.40	1	12.70	1/2
38.10	1.1/2	AL-1500	ALR-1500	38.60	1.52	25.40	1	12.70	1/2
41.27	1.5/8	AL-1625	ALR-1625	41.65	1.64	25.40	1	14.28	9/16

**Note :** All 'AL' series expanders are supplied with round mandrel drives.



# Tube Rolling Controls



## Electric Tube Expansion System

We are offering **Electric Tube Expansion System**



### Specifications :

Model No.	Supply Voltage Volts	Phase	Maximum Current AMPS	Control Panel Suitable for Drives
TCC - 23010	230	Single	10	NPT-0, NPT-1, NPT2, NPT-2TS, NPT-3, NPT-2M5, NPT-3M5, NPT-2M25, NPT-3M25
TCC - 11020	110	Single	20	NPT-0L, NPT-1L, NPT-2L, NPT2TSL, NPT-3L, NPT-2LM5, NPT-3LM5, NPT-2LM25, NPT-3LM25

#### Note :

Latest Design Highly Advanced - Micro processor based torque control unit - Also available - quote on request.



## Hydraulic Tube Expansion Systems (Hydex)

We are offering **Hydraulic Tube Expansion Systems (Hydex)**

### Features :

- Drive communicates with the pump via 9v DC remote control. This ensures safety & eliminates the need of electrical cord between pump and drive that other manufacturers provide.
- Silent during use. In comparison electric and pneumatic tube expansion systems are noisy.
- Compact, therefore easy to use inside boiler drums.
- Compatibility - Same powerpack for all the 4 drives to expand 5/8" o.d. to 4" o.d. tube.
- Very High Torque Developed - can expand large diameter, thick wall tubes in thick tube sheets easily.
- Long life + low maintenance.
- Boiler erections get completed in record time.
- Can be use for long working hours because drive is unaffected by heat.
- Dual drive powerpack is available to connect 2 drives to a single powerpack to cut down tube expansion time cycle by a further 50%.
- Microprocessor controls on the pump automate the expansion cycle. Trip, pause & reverse times for the drive are adjustable. No need for repeated manual STOP / START of the drive during the expansion cycle - completely automatic. The Hydraulic pump supplied with hydraulic drive incorporates the latest state of the art trechnology resulting in a subcompact pump developing 100 bar pressure. The system is mounted on four wheels for on site manoeuvrability. Expansion of tubes is regulated by adjusting pressure setting on pump. Once required amount of wall thinning is achieved the drive trips automatically.

## Hydraulic Pump HEP - 500



	Hydraulic Pump Models		
	HEP-300	HEP-500	HEP-1000 TWIN HEAD
Oil Tank Capacity (litres)	30	45	138
Hydraulic oil	SAE VG 68	SAE VG 68	SAE VG 68
Maximum Working Pressure (bar)	100	100	100
Net weight (kgs)	80	100	220
Overall Dimensions (mm)	610 x 270 x 985	820 x 320 x 985	1775 x 550 x 1200
Electric Motor	3 hp. Single phase	5 hp. 3 phase	10 hp. 3 phase
Voltage	230 v / 110 v	415 v	415 v
Standard Hose Size (Length)	1/2" (10 mtrs.)	1/2" (10 mtrs.)	1/2" (10 mtrs.)

## Hydraulic Drives

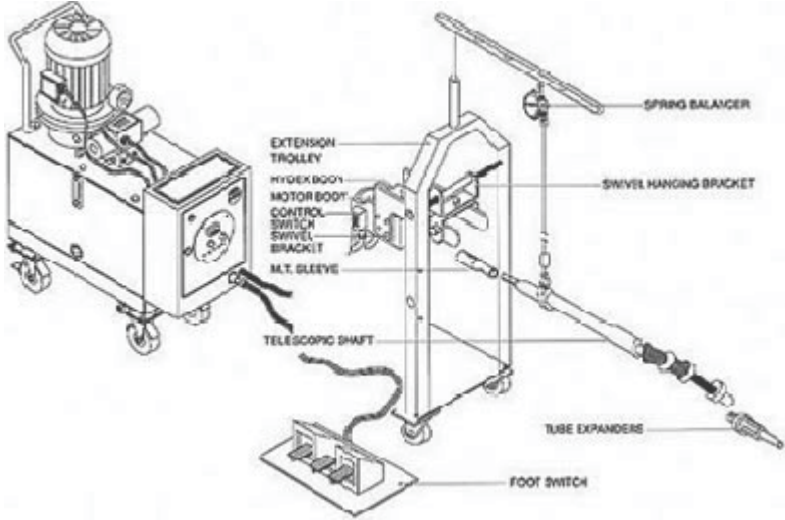


Tube Expansion Range				Drive		Drive No Load Speed (RPM)	Drive Weight kgs.
Steel Tube O.D.		Copper Tube O.D.		Model No.	Square Socket inch	With HEP-300/500/1000	
mm	inch	mm	inch				
15 - 25	5/8 - 1	25 - 38	1 - 1.1/2	HED-3	3/8	620/954/800	9.6
19 - 38	3/4 - 1.1/2	32 - 64	1.1/4 - 2.1/2	HED-4	3/8 & 1/2	350/480/400	9.7
38 - 76	1.1/2 - 3	50 - 102	2 - 4	HED-5	1/2 & 3/4	62/84/70	11.0
50 - 102	2 - 4	-	-	HED-6	3/4 & 1	40/62/54	11.5

### Note :

Drive supplied with START, STOP, REVEERSE BUTTONS, QUICK RELEASE COUPLINGS, SOCKETS & REACTION BAR. Powerpack includes 2 hoses each of length 10 meters. if required longer hoses can be supplied.

## Accessories for Hydraulic Expansion Systems



Model No.	Description
TS-1	Telescopic Shaft for HED-3
TS-2	Telescopic Shaft for HED-4
TS-3	Telescopic Shaft for HED-5
TS-4	Telescopic Shaft for HED-6
SEW-5	Spring Balancer
HE/FS/24	Foot Switch
HE/EXTR/3456	Extension Trolley
HE/HB/3456	Swivel Hanging Bracket

### Hydraulic Hose :

Model No.	Hydraulic Hose (Qty. x Size x Length) (Mtrs.)
HE/HS/1210/2	2 x 1/2" x 10
HE/HS/5815/2	2 x 5/8" x 15
HE/HS/5820/2	2 x 5/8" x 20
HE/HS/1210/4	4 x 1/2" x 10
HE/HS/5815/4	4 x 5/8" x 15
HE/HS/5820/4	4 x 5/8" x 20



### Supply Cable :

Model No.	Supply Cable Length (Mtrs.)
HE/SC/15	15
HE/SC/20	20
HE/SC/25	25



### Hydraulic Drive Socket :

Model No.	Square Size
HE/DS/38	3/8"
HE/DS/12	1/2"
HE/DS/34	3/4"
HE/DS/1	1"





# Tube Installation Tools



## Serrating/ Grooving Tool-'NW' Series



### Features :

- Changing of pilot nose & cutter allows one tool to cover a range of hole diameters.
- Simple to change cutter for different groove shapes.
- Location and depth for 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 cutter extendable by sharpening.

Bore Range		Tool Model No.	Pilot Nose Model No.	Circular From 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 From 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-'ST' Series

We are offering **Serrating / Grooving Tool-'ST' Series For Grooving In Tube Sheet**



### Features :

- High Production Tool
- Ideal For Tool where 1 Tool is need 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 & short design.

Tube O.D.		Tool Model No.	Spare Tool Bits		
			1/8" x 3/8" x 1/8"	1/8" x 1/4" x 1/8"	Special
mm	inch		Spacing	Spacing	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.



## Serrating/ Grooving Tool-'NW' Series

We are offering Serrating/ Grooving Tool-'SGT' Series 3/8"- 3" O.D.



### Features :

- Only light pressure required to cut precision grooves inside holes or cylinders.
- Location and depth of grooves easy to adjust.
- Simple to change cutter from different groove shapes.
- Changing of bushing and cutter allows one tool to cover a range of hole diameters.
- The life of cutter extendable by 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 - 162 - 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 & detailed features.

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	L 2, L 3
F)	Groove Width	W
G)	Diameter of Grooves	D1
H)	Groove undercut Depth	G



## Air / Hydraulic Stub Puller

We are offering **Tube Sheet Hole Reamer 3/8"- 4" O.D.**



### Features :

- High speed steel, cryogenically treated & coated with titanium Nitride for long life.
- Ideal for heat exchanger and tube sheet reaming.
- Reamers available in MM size 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

We are offering **Tube End Facer 'TEF' Series**



### Features :

- Tools 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 exchange condenser 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 to cover all thicknesses.
- Tube & facers for MM size of tube also available.

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

We are offering **Tube End Facer 'FB' Series**



### Features :

High speed production tool.

Titanium Nitride coated tool bit can be reversed and used. Double tool bit life.

Tube O.D.		Tube Thk. bwg	Model No.	Spare Tool Bits	
				Non-Ferrous or Carbon	Stainless
mm	inch			Steel Tubes Model No.	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

We are offering Tube End Facer 'FC' Series



### 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 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.
- Ideally suited for work on larger diameter boiler tubes.

Tube O.D.		Facer Fitted With 3 Tool Bits Model No.	Spare Tool Bits Model No.
mm	inch		
<b>38.10</b>	<b>1.1/2</b>	<b>FC-1500</b>	<b>FC-1500-TB</b>
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



Air / Hydraulic Stub Puller

We are offering Flaring Tool , Beading Tool, Belling Tool

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

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

Beading Tool



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.

Belling Tool



In many condensers the inlet end of tubes are required to be seated into the sheet. The contour is a "Bell End" or "Trumpet Mouth" of special shape.





## Tube Sheet Hole Radius Cutter

We are offering **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.

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, Tube Guide

We are offering **Tube Sheet Hole Brush, Tube Guide**



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	2.1/4	TSHB-2.1/4
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 1/2"- 3" O.D.



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

Tube O.D.		Tube Thk.	Model No.
mm	inch	bwg	
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 & Joint Testing Kit

We are offering Tube Leak Detector Kit & Joint Testing Kit

Tube Leak Detector Kit



Operation

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

Tube Leak Detector Kit



Operation

The Joint Tester is designed to test both rolled & welded tube-to-tubesheet joints. Joint Tester is inserted in tube, a tigger expands tube seal inside the tube & beyond the length of expansion. Actuating a slide valve generates vacuum between the tube seal & 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.

Features :

Simple, Quick & Reliable tube & 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 ( 07 to 6.8 bar ). Silent during use. Ergonomic design makes testing effortless. Each Kit packed in easy to carry case.

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 Squire 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-6500 5/8	TLD-490 N	TLD-15-312	JTK-6500 5/8	JTK-490 N	JTM-6500 5/8	
	20-24		TLD-530 N			JTK-530 N		
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-15-312	JTK-6500 1.1/8	JTK-790 N 405	JTM-6500 1.1/8	JTK-16 1.1/8
	10-11		TLD-840 N	TLD-15-405		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-990 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		



## CUTTING BITS



# Tube Removal Tools



## Air / Hydraulic Stub Puller

We are offering **Air / Hydraulic Stub Puller**



### Air / Hydraulic Pump - Model No. ASP-1008

**Features :**

- Improved productivity and better control through foot pedal.
- Extremely compact, durable, lightweight and portable package - useful in confined areas.
- Makes pulling tubes faster and easier.
- Quick and easy arrangement to reduce downtime.
- Lowest priced system available.
- Safe - Totally air operated for use in explosive environments.

Length (mm)	264
Width (mm)	135
Height (mm)	205
Weight without oil (kg)	6.6
Hose Length (ft.)	6
Hose I.D. (Inch)	1/4"
Air Inlet Port	1/2" BSP
Hydraulic Port	3/8" NPT
Hydraulic Oil	VG ISO 58 Grade
Working Air pressure (bar)	7
Working hydraulic pressure (bar)	700

Air-Powered Hydraulic Stub Puller set consists of :  
Self Tapping Spear. Air Powered hydraulic Pump with FRL unit. Stub Puller cylinder assembly (supplied in 2 models). Carrying case.



Spring Balancer

Model	Balancing Capacity	Suitable For
SEW - 9	5 - 9 Kgs	AHSP - 4
SEW - 22	15 - 22 Kgs	AHSP - 9

**SELECTION CHART FOR SPARES**

Spares	Spare Code	Suitable For
Filter Regulator Lubricator (FRL)	ASP - 1001	AHSP - 4 / AHSP - 9
QRC for air inlet	ASP - 1006	
QRC WP - 700 bar (mate)	ASP - 1010	
Hydraulic hose	ASP - 1011	
QRC WP - 700 bar (Female)	ASP - 1012	AHSP - 4
Support Collar - 1	ASP - 1014a	
	ASP - 1014B	AHSP - 9
Spear Lock Adapter	ASP - 1015a	AHSP - 4
	ASP - 1015b	AHSP - 9
Horse Shoe Lock	ASP - 1016a	AHSP - 4
	ASP - 1016b	AHSP - 9
Single Pull Adapter	ASP - 1017a	AHSP - 4
	ASP - 1017b	AHSP - 9

**STUB PULLER CYLINDER**



Model	AHSP - 4	AHSP - 9
Extraction Load (Ton)	4	9
Recommended Tube Sizes	Up to 3/4" OD	Up to 1.1/4" OD
Overall Dimension (mm) L x	550 x Ø 65.0	550 x Ø 104.0
Stroke (mm)	150	150
Pulling Speed secs. / Stroke	15	30
Weight (kg) with accessories	9	18.5

**PULLING SPEARS**

Model	Tube O.D. inch	Tube thk. bwg	Model	Tube O.D. inch	Tube thk. bwg
SS - 0916	3/8	16 - 17	SS - 2212	7/8	12 - 13
SS - 0918	3/8	18 - 19	SS - 2214	7/8	14 - 15
SS - 0920	3/8	20 - 21	SS - 2216	7/8	16 - 17
SS - 0922	3/8	22 - 23	SS - 2218	7/8	18 - 19
SS - 1214	1/2	14 - 15	SS - 2220	7/8	20 - 21
SS - 1216	1/2	16 - 17	SS - 2509	1	9 - 10
SS - 1218	1/2	18 - 19	SS - 2510	1	10 - 11
SS - 1220	1/2	20 - 21	SS - 2512	1	12 - 13
SS - 1222	1/2	22 - 23	SS - 2514	1	14 - 15
SS - 1512	5/8	12 - 13	SS - 2516	1	16 - 17
SS - 1514	5/8	14 - 15	SS - 2518	1	18 - 19
SS - 1518	5/8	18 - 19	SS - 2520	1	20 - 21
SS - 1520	5/8	20 - 21	SS - 3112	1.1/4	12 - 13
SS - 1911	3/4	11 - 12	SS - 3114	1.1/4	14 - 15
SS - 1912	3/4	12 - 13	SS - 3116	1.1/4	16 - 17
SS - 1914	3/4	14 - 15	SS - 3118	1.1/4	18 - 19
SS - 1916	3/4	16 - 17	SS - 3120	1.1/4	20 - 21
SS - 1918	3/4	18 - 19	-	-	-
SS - 1920	3/4	20 - 21	-	-	-

**Note :**

- Pulling Spears, Single & Double Pull Adaptors, Horse Shoe Locks & Extensions are compatible for use with 'Pine Jenny' type tube pullers.
- Spears can be modified for use with 'Wicksteed' Air / Hydraulic stub pullers.
- Refer to catalog number AHSP\01001 for detailed operating instruction and features.
- For larger size tube pulling spares, please enquire.



## Continuous Hydraulic Tube Puller



We are offering Continuous Hydraulic Tube Puller 3/8"- 4" O.D.



need of e

- freed of electrical cord between pump and gun that other manufacturers provide.
- Available with a choice of Electric - TPP System or Pneumatic - PPP System for hazardous, explosive working environments.
- Microprocessor controls on powerpack & gun ensure trouble free life.
- Removes tube without any damage to tube sheet.
- Low setup time and ease of operation.
- High power & High speed automatic cycling, for highest speed of pull available worldwide.
- Auto switchover from low pressure high flow to high pressure low flow on load & again back to low pressure high flow when load is released.
- Automatic slow start feature to minimize risk of breaking tubes & to conserve consumables.
- Compact design of Powerpack & Gun.
- Interchangeable pulling guns with same Powerpack. 15 ton gun for light duty high speed work, 30 ton gun for heavy duty tube pulling & 45 ton gun for tubes upto 3" O.D.
- Totally stainless steel construction body of powerpack for longer corrosion free life.
- Pulls up to 3" OD tubes continuously, pulls up to 4" O.D. stub.
- Low maintenance cost and worldwide availability of components.
- Significant saving of time & money over conventional system.
- Unit is portable with handle & mounted on four wheels for easy handling.
- Unit will pull tubes continuously through the gun effortlessly, needing only one man for operation.

Model	Motor	Volts / Phase			

			hp	litrs.	Kgs.	mm		max. mtrs.
TTP-50	Siemens	415/3	5	90	220	1200 x 750 x 990	-	1/2" x 5/8 3/4" x 5
TTP-75	Siemens	415/3	7.5	138	270	1225 x 775 x 1015	-	1/2" x 5/8 3/4" x 5
TTP-30	Siemens	230/1	3	12	42	500 x 410 x 750	-	1/2" x 5/8 3/4" x 5
PPP-50 (Pneumatic)	Gast	-	9	90	220	700 x 560 x 480	180CFM AT 7 BAR	1/2" x 5/8 3/4" x 5

350 bar. All Powerpacks supplied with 5mtr long hydraulic hoses.

### Hydraulic Tube Pulling Guns - Specifications

**Note :** Max. Working Pr

	Pulling	Max. Tube O.D. Thru	Stub Pulling	Weight
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Gun Model	Capacity	G.O. and Gun	Capacity	Weight		(meter/min) with			
	tons	inch	inch	kgs.	lbs.	TPP-50	TPP-75	TPP-30	PPP-50
HPG-15	15	1	1.1/2	26	57	5.2	8.4	1.8	5.6
HPG-30	30	1.1/2	3	38	84	3.0	3.7	2.4	3.5
HPG-45	45	3	4	78	172	2.0	2.7	2.0	2.3

Used to suspend pul

Frees the operator from handling weight of the gun, allowing

Frees the operator from handling weight of the gun, allowing him to concentrate on the tube pulling operation.

Model	Balancer Range		For Pulling Gun Model	Weight	
	Kg	lbs		Kgs.	lbs.
SEW - 30	20 - 30	44 - 66	HPG - 15	9.5	21.0
SEW - 40	30 - 40	66 - 88	HPG - 30	10.5	23.1
SEW - 85	70 - 85	154 - 187	HPG - 45	15.0	33.0

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- |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|

IMP - 1	PM - 7 to PM - 37	5.0	11.0	3/4"	3/8"
IMP - 2	PM - 19 to PM - 95/102	10.5	23.0	1"	1/2"

**Impact Wrench :**

as a	
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- | Model | ØA | ØC |
|-------|----|----|
|-------|----|----|

PS - 2	3/4"	1/2"
PS - 3	3/4"	5/8"
PS - 4	3/4"	3/4"
PS - 5	3/4"	1"
PS - 6	1"	3/4"
PS - 7	1"	1"
PS - 8	1"	1.1/2"

Tube Size		Expansion		Model		Model for HPG -15			Model for HPG -30			Model for HPG -45		
		d		Model	Square Size	Model for HPG -15	Model for HPG -30	Model for HPG -45	Model for HPG -15	Model for HPG -30	Model for HPG -45			
Ø	bwg	mm	inch	PM	Ø	PJ 15	PJ 30	PJ 45	PC 15	PC 30	PC 45			
3/8"	17 - 19	6.5 - 7.5	0.260 - 0.295	7	5/16"	1	1		11	11				
	20 - 24	7.5 - 8.5	0.295 - 0.335	8										
1/2"	14 - 16	8.5 - 9.5	0.335 - 0.375	9	3/8"	2	2		15	15				
	17 - 18	9.5 - 10.5	0.375 - 0.415	10										
	19 - 21	10.5 - 11.5	0.415 - 0.455	11										
	24	11.5 - 12.5	0.455 - 0.495	12										
5/8"	16 - 17	12.5 - 13.5	0.495 - 0.535	13 A	1/2"	3	3	18	18					
	19 - 21	13.5 - 14.5	0.535 - 0.570	14 A										
	23 - 24	14.5 - 15.5	0.570 - 0.610	15 A										
3/4"	11	12.5 - 13.5	0.495 - 0.535	13	5/8"	4	4	21	21					
	12 - 13	13.5 - 14.5	0.535 - 0.570	14										
	14 - 15	14.5 - 15.5	0.570 - 0.610	15										
	16 - 17	15.5 - 16.5	0.610 - 0.650	16										
	18 - 20	16.5 - 17.5	0.650 - 0.690	17										
	21 - 24	17.5 - 18.5	0.690 - 0.730	18										
7/8"	14	17.5 - 18.5	0.690 - 0.730	18 S	5/8"	4/A	4/A	25	25					
	16 - 17	18.5 - 19.5	0.730 - 0.770	19 S										
	18 - 19	19.5 - 20.5	0.770 - 0.810	20 S										
1"	10 - 11	18.5 - 19.5	0.730 - 0.770	19	3/4"	5	5	5	28	28	28			
	12	19.5 - 20.5	0.770 - 0.810	20										
	13 - 14	20.5 - 21.5	0.810 - 0.845	21										
	15 - 16	21.5 - 22.5	0.845 - 0.885	22										
	18	22.5 - 23.5	0.885 - 0.925	23										
	19 - 20	23.5 - 24.5	0.925 - 0.965	24										
3/4" Gas	13	21.5 - 22.5	0.845 - 0.886	22 G	1"		6	6	31	31				
	14 - 15	22.5 - 23.5	0.886 - 0.925	23 G										
	16 - 17	23.5 - 24.5	0.925 - 0.965	24 G										
	19 - 21	24.5 - 25.5	0.965 - 1.005	25 G										
1.1/4"	10	24.5 - 25.5	0.965 - 1.005	25			7	7	34	34				
	11 - 12	25.5 - 26.5	1.005 - 1.045	26										
	13	26.5 - 27.5	1.045 - 1.085	27										
	14 - 15	27.5 - 28.5	1.085 - 1.125	28										
	16 - 18	28.5 - 29.5	1.125 - 1.160	29										
	19 - 22	29.5 - 30.5	1.160 - 1.200	30										
	23 - 24	30.5 - 31.5	1.200 - 1.240	31										
1" Gas	9	25.5 - 26.5	1.005 - 1.045	26 G			8	8	37	37				
	10	26.5 - 27.5	1.045 - 1.085	27 G										
	11 - 12	27.5 - 28.5	1.085 - 1.125	28 G										
	13 - 14	28.5 - 29.5	1.125 - 1.160	29 G										
1.1/2"	10 - 11	31.5 - 32.5	1.240 - 1.280	32			9	9	41	41				
	12 - 13	32.5 - 33.5	1.280 - 1.320	33										
	14	33.5 - 34.5	1.320 - 1.360	34										
	15 - 17	34.5 - 35.5	1.360 - 1.400	35										
	18 - 20	35.5 - 36.5	1.400 - 1.440	36										
	21 - 24	36.5 - 37.5	1.440 - 1.475	37										
Note : All models indicated above are for continuous tube pulling. When you are using equipment for stub pulling,														

	Tube I.D.after Expansion	Mandrel	Jaw Set	Collar
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Tube Size		D		Model	Square Size	Model for HPG -15	Model for HPG -30	Model for HPG -45	Model for HPG -15	Model for HPG -30	Model for HPG -45																														
OD/Ø	bwg	mm	inch	PM	Ø	PJ 15	PJ 30	PJ 45	PC 15	PC 30	PC 45																														
1.1/4" Gas	12	36.5 - 37.5	1.440 - 1.475	37G	1"		10	10		44	44																														
	13 - 14	37.5 - 38.5	1.475 - 1.515	38G																																					
	15 - 16	38.5 - 39.5	1.515 - 1.555	39G																																					
	17 - 19	39.5 - 40.5	1.555 - 1.595	40G																																					
	20 - 24	40.5 - 41.5	1.595 - 1.635	41G																																					
1.3/4"	10 - 11	37.5 - 38.5	1.475 - 1.515	38/44											11			48																							
	12	38.5 - 39.5	1.515 - 1.555	39/44																																					
	13 - 14	39.5 - 40.5	1.555 - 1.595	40/44																																					
	15 - 16	40.5 - 41.5	1.595 - 1.635	41/44																																					
	18 - 19	41.5 - 42.5	1.635 - 1.675	42/44																																					
	20 - 24	42.5 - 43.5	1.675 - 1.715	43/44																																					
1.1/2" Gas	11 - 12	42.5 - 43.5	1.715 - 1.755	43G						12									53																						
	13 - 14	43.5 - 44.5	1.755 - 1.795	44G																																					
	15 - 17	44.5 - 45.6	1.795 - 1.830	45G																																					
	18 - 19	45.6 - 46.5	1.830 - 1.870	46G																																					
2"	10	43.5 - 44.5	1.830 - 1.870	44/51																		13			54																
	11 - 12	44.5 - 45.5	1.870 - 1.910	45/51																																					
	13	45.5 - 46.5	1.910 - 1.950	46/61																																					
	14 - 15	46.5 - 47.5	1.950 - 1.990	47/51																																					
	16 - 18	47.5 - 48.5	1.870 - 1.910	48/51																																					
	19 - 22	48.5 - 49.5	1.910 - 1.950	49/51																																					
2.1/4"	9 - 10	49.5 - 50.5	1.950 - 1.990	50/57																								14			60										
	11	50.5 - 51.5	1.990 - 2.030	51/57																																					
	12 - 13	51.5 - 52.5	2.030 - 2.070	52/57																																					
2" Gas	7	50.5 - 51.5	1.990 - 2.030	51G																														15			63				
	8	51.5 - 52.5	2.030 - 2.070	52G																																					
	9	52.5 - 53.5	2.070 - 2.105	53G																																					
2.1/2"	7	53.5 - 54.5	2.015 - 2.145	54/63																																		16			66
	8	54.5 - 55.5	2.145 - 2.185	55/63																																					
	9	55.5 - 56.5	2.185 - 2.225	56/63																																					
	10	56.5 - 57.6	2.225 - 2.265	57/63																																					
	7	66.5 - 67.5	2.580 - 2.620	67/76																																					

3"	8	67.5 - 68.5	2.620 - 2.660	68/76			17			80
	9 - 10	68.5 - 69.5	2.660 - 2.695	69/76						



## Air / Hydraulic Stub Puller

- Designed for fast removal of ferrous and non-ferrous tubes from Condensers, Heat Exchangers & Boilers.
- A rapid stroke allows the removal of 10 tubes a minute with little operator efforts.
- Gripping and pulling done in single operation.
- Compact and lightweight pulling gun, easy to operate inside boiler drum with 24 Volt DC control.
- Auto ejection of tube after removal.
- Remove tubes without any damage to tube sheet.
- Pneumatic version available for hazardous & explosive areas.
- Low setup time and ease of operation.
- Auto Switchover from low-pressure high flow to high-pressure low flow on load & back again when load is released.
- Interchangeable pulling gun with same power pack.
- Significant savings of time & money over conventional methods of stub removal.
- Can pull from 13 mm to 51 mm I.D. Tubes.

### Auto Stub Puller Set

Model	Tube Size ID		Stub Pulling Gun Model	Hydraulic Powerpack Model	Spring Balancer Model To Suspend Gun
	mm	inch			
ASP - 1	13 - 31	1/2 - 1.1/4	CTP-900	PPP-35 / EPP-15	SEW - 22
ASP - 2	31 - 51	1.1/4 - 2	CTP-1100	PPP-35 / EPP -15	SEW - 30

### Stub Pulling Gun - Specifications



Model Number	CTP - 900	CTP - 1100
Capacity / inside dia. of expanded tube (mm)	13 to 31	31 to 51
Maximum stroke (mm)	60	100
Weight (Kg)	23	27
Max. Working Pressure (bar)	700	700
Max. Pulling force (ton)	13	31



### Hydraulic Powerpack - Specifications

Model Number	PPP - 35	EPP - 15
Power	Pneumatic	Electric
Motot H.P.	3.5	1.5
Flow rate	4.5 lpm at 0 - 70 bar 1.8 lpm at 70 - 700 bar	3.5 lpm at 0 - 70 bar 0.45 lpm at 70 - 700 bar
Tank capacity (liters)	10	10
Weight including oil (kg)	40	52

**Note :** 5 mtr. long Remote Control and 5 mtr. long Hose set are supplied with Powerpack.

### Working Consumables For Auto Stub Puller 1/2" - 2" O.D.

Part Number	Description
1	Stub Pulling Gun
2	Tie Rod Screw
3	Spring
4	Lock Nut
5	Jaws
6	TieRod
7	Sleeve
8	Pulling collar
9	Support Collar
10	'O' Ring

#### Jaws For CTP - 900

Ø A mm	Model
12.5	961/125
13	961/130
13.5	961/135
14	960/140
14.5	960/145
15	960/150
15.5	960/155
16	960/160
16.5	960/165
17	960/170
17.5	960/175
18	960/180
18.5	960/185
19	960/190
19.5	960/195
20	960/200
20.5	965/205
21	965/210
21.5	965/215
22	965/220
22.5	965/225
23	965/230
23.5	965/235
24	965/240
24.5	965/245
25	965/250
25.5	965/255
26	965/260
26.5	965/265
27	965/270
27.5	965/275
28	965/280
28.5	965/285
29	965/290
29.5	965/295
30	965/300

#### Jaws For CTP - 1100

Ø A mm	Model
30.5	1166/305
31	1166/310
31.5	1166/315
32	1166/320
32.5	1166/325
33	1166/330
33.5	1166/335
34	1166/340
34.5	1166/345
35	1166/350
35.5	1166/355
36	1166/360
36.5	1166/365
37	1166/370
37.5	1166/375
38	1166/380
38.5	1166/385
39	1166/390
39.5	1166/395
40	1166/400
40.5	1167/405
41	1167/410
41.5	1167/415
42	1167/420
42.5	1167/425
43	1167/430
43.5	1167/435
44	1167/440
44.5	1167/445
45	1167/450
45.5	1167/455
46	1167/460
46.5	1167/465
47	1167/470
47.5	1167/475
48	1167/480
48.5	1167/485
49	1167/490
49.5	1167/495
50	1167/500

### Jaws - Tie Rod - Support Collar - Sleeve - Pulling Collar For CTP Tube Puller 1/2" - 2" O.D.

Gun Model	Jaws Model	Tie Rod Model	Support Collar	Sleeve Model	Pulling Collar Model
CTP - 900	961/125 to 960/145	970/55	980	990	950 Refer chart below
	960/150 to 960/180	970/60			
	960/185 to 960/200	970/80			
	965/205 to 965/245	975/120	985	995	955 Refer chart below
	965/250 to 965/300	975/160			
CTP - 1100	1166/305 to 1166/350	1176/220	1186	1196	1156 Refer chart below
	1166/355 to 1166/400	1176/270			
	1166/405 to 1167/450	1177/320	1187	1197	1157 Refer chart below
	1167/455 to 1167/500	1177/370			

#### For CTP - 900

#### For CTP - 1100

##### Pulling Collar - 950

Ø G mm	Model
19	950/190
20	950/200
21	950/210
22	950/220
23	950/230
24	950/240
25	950/250
26	950/260
27	950/270

##### Pulling Collar - 955

Ø G mm	Model
26	955/260
27	955/270
28	955/280
29	955/290
30	955/300
31	955/310
32	955/320
33	955/330
34	955/340
35	955/350
36	955/360
37	955/370

##### Pulling Collar - 1156

Ø G mm	Model
36	1156/360
37	1156/370
38	1156/380
39	1156/390
40	1156/400
41	1156/410
42	1156/420
43	1156/430
44	1156/440
45	1156/450
46	1156/460
47	1156/470

##### Pulling Collar - 1157

Ø G mm	Model
46	1157/460
47	1157/470
48	1157/480
49	1157/490
50	1157/500
51	1157/510
52	1157/520
53	1157/530
54	1157/540
55	1157/550
56	1157/560
57	1157/570



Tube Removal Tools

We are offering Tube Removal Tools 3/8"- 4" O.D.

Tube Wall Reducer



- Used to 'thin' the walls of heavy gauge tubes as a step in their removal from tube sheet.
- Suffix model number with tube gauge when ordering.  
Example for 3/4" OD. 16G, model no. will be WR-750-16.
- Wall reducers available for mm tube sizes also.  
Please enquire.
- Wall reducers are suited for tube sheets up to 5" thick.  
Longer reaches are available.

Tube O.D. inch	Model Number	MT Shank #
3/8	WR-375	1
1/2	WR-500	2
5/8	WR-625	2
3/4	WR-750	2
7/8	WR-875	3
1	WR-1000	3
1.1/4	WR-1250	3
1.1/2	WR-1500	3
1.3/4	SH-1750	3
2	SH-2000	3
2.1/2	SH-2500	4
2.3/4	SH-2750	4
3	SH-3000	4
3.1/4	SH-3250	4
3.1/2	SH-3500	4
4	SH-4000	4

Collapsing Tool



- Used to collapse tube & drive out collapsed tube from tube sheet with a chipping hammer.
- Recommended for use on 16G and thinner tubes.
- Available on 01 & 06 shanks as standard.
- Suffix model number with shank number when ordering.  
Example for 3/4" O.D. 16G, 06 shank, model number will be CT-750-06.
- Collapsing tools are available for mm tube sizes & larger tube sizes.

Tube O.D. inch	Model Number
3/8	CT-375
1/2	CT-500
5/8	CT-625
3/4	CT-750
7/8	CT-875
1	CT-1000
1.1/4	CT-1250
1.1/2	CT-1500
1.3/4	CT-1750
2	CT-2000
2.1/2	CT-2500

Model CH-1



Model CH-1 - Specification

Chipping Hammer with safety retainer for use with  
Tube Drifts / Collapsing Tools

Blows/mm	Bore	Stroke	Weight
1600	1.1" (28.5mm)	3.1/4" (82.5mm)	16lbs (7.0kg)



Push Type Internal Tube Cutter - ATP



- NIKSU "Push Type" Internal Tube Cutter quickly cuts through the walls of ferrous tubes in Condensers & Heat Exchangers as a step in their removal from the tube sheet.
- This sturdy "Push Type" Internal Tube Cutter can be used with a portable Electric or Air Drill Motor.
- "Push Type " Cutter is simple to operate. Merely insert it into the tube, apply power, press inward & the tube can be cut in a few seconds. Releasing of inward pressure automatically retracts the Cutter Bit. This Cutter is equipped with an adjustable collar suitable for reaching into tubes at various depths.
- The replaceable cutting bit can be interchanged in a few seconds. Standard adjustable reach is 4" (101.6mm) & they are available in optional increments of 2"(50.8mm)."A" reach = 6" (152.4mm). "B" reach = (203.2mm). "C" reach = 10" (254.0mm) etc. All Tube Cutter come with a complete set of pilots covering the entire range of tube thickness for a particular tube O.D. (ATP-625 tube cutters come with a built in pilot suitable for one tube ID only.)
- All Cutters are available for MM tube sizes also.

Tube O.D.	Tube Gauge (BWG)	Tube Cutter Model No. (Std. Reach)	Spare Cutting Bit Model No.
5/8"	14 - 22	ATP-625	ATP-625-SB
3/4"	14 - 22	ATP-750	ATP-750-SB
7/8"	14 - 22	ATP-875	ATP-875-SB
1"	12 - 22	ATP-1000	ATP-1000-SB
1.1/4"	12 - 22	ATP-1250	ATP-1250-SB
1.1/2"	12 - 22	ATP-1500	ATP-1500-SB

**Note :**  
When ordering Spare Cutting Bits, Please specify whether ordering for Non Ferrous, Ferrous or Stainless Tubes. Cutter Bits for these 3 type of tubes are different. Please refer to operation manual for parts list detailed features.

TUBE CUTTER DRIVES WITH SELF FEED ATTACHMENT



AIR DRIVEN

Model No.	Speed (rpm)	Suitable for
TIC-625	625	Non-Ferrous
TIC-350	350	Non-Ferrous / Ferrous
TIC-200	200	Ferrous / Stainless
TIC-100	100	Stainless / Titanium
TIC-40	40	Titanium / Inconel

ELECTRIC

Model No.	Speed (rpm)	Suitable for
EIC-625	550	Ferrous

**Note :**  
All tube cutter drives are fitted with Model SF-1 self feed attachment. Cutting speeds are crucial for different materials of tubes, to prevent tool bit premature wear and breakage. Always use the correct speed drive when cutting tubes of different materials.



## Internal Tube Cutter - PR-68

We are offering **Internal Tube Cutter - PR-68**  
**1/2"- 4 1/2" O.D.**



- PR-68 tube cutters are ideal for cutting thick walled boiler tubes of 2" O.D. & higher.
- The Internal Tube Cutter PR-68 is driven via the square in a clockwise direction using an electric, pneumatic or hydraulic driving machine.
- PR-68 type tube cutters are available in standard reach of 4" (100mm). Additional reaches in increments of 4" are available upto 16" (400mm).

Size	Tool Model Number	Spare Bit Model Number	Tube I.D. Range		Max. Tube O.D.		Body Diameter		Drive Square Male
			mm	inch	mm	inch	mm	inch	
095	0680951	1680951	10 - 12	.394 - .472	15	.591	9.5	.374	1/2"
105	0681051		11 - 13	.433 - .512	18	.709	10.5	.413	
115	0681151	1681151	12 - 14	.472 - .551	19	.748	11.5	.453	
125	0681251	1681251	13 - 15	.519 - .591	20	.787	12.5	.492	
135	0681351		14 - 17	.551 - .669	23	.906	13.5	.531	
155	0681551		16 - 19	.630 - .748	25	.984	15.5	.610	
175	0681751	1681751	18 - 21	.709 - .827	27	1.063	17.5	.689	
195	0681951	1681951	20 - 25	.787 - .984	34	1.339	19.5	.768	
245	0682451	1682451	25 - 30	.984 - 1.181	38	1.496	24.5	.965	
290	0682901	1682901	30 - 35	1.181 - 1.378	43	1.693	29	1.142	
330	0683301		35 - 40	1.378 - 1.575	48	1.890	33	1.299	3/4"
380	0683801		40 - 50	1.575 - 1.969	58	2.126	38	1.496	
480	0684801	1684801	50 - 60	1.969 - 2.362	68	2.677	48	1.890	
530	0685301		55 - 65	2.165 - 2.559	73	2.874	53	2.087	
630	0686301		65 - 75	2.559 - 2.953	83	3.268	63	2.480	
730	0687301	1687301	75 - 85	2.953 - 3.346	93	3.661	73	2.874	
830	0688301		85 - 95	3.346 - 3.740	103	4.055	83	3.268	
930	0689301		95 - 105	3.740 - 4.134	113	4.449	93	3.661	

**Note :** Refer to operation manual for detailed features and parts list.



## Tube Plugs

We are offering Tube Plugs 1/2"- 4 1/2" O.D.



- Tube plugs are designed for setting off leaking or damaged tubes in heat exchangers, condensers, boilers etc. It ensures a uniform joint without damaging the tube sheet.

Tube O.D.		One Piece Tube Plug Model No.	Two Piece Tube Plug Model No.
mm	inch		
9.53	3/8	PLG-375-1	-
12.70	1/2	PLG-500-1	PLG-500-2
15.87	5/8	PLG-625-1	PLG-625-2
19.05	3/4	PLG-750-1	PLG-750-2
22.22	7/8	PLG-875-1	PLG-875-2
25.40	1	PLG-1000-1	PLG-1000-2
31.75	1.1/4	PLG-1250-1	PLG-1250-2
38.10	1.1/2	PLG-1500-1	PLG-1500-2

**Note :** Tube plugs are available in a variety of materials like carbon steel, brass, stainless steel, fibre etc. Specify material needed when ordering.



Tube O.D.		Tube Gauge (BWG)	Tube I.D.		Cutter Model No.	Spare Bit Model No.
mm	inch		mm	inch		
15.87	5/8"	14	11.4 - 11.9	.450 - .470	OTC-625-14	OTC-625-SB
		15 - 16	12.0 - 12.9	.472 - .510	OTC-625-16	
		17 - 18	12.7 - 13.5	.500 - .531	OTC-625-18	
		19 - 20	13.5 - 14.2	.531 - .560	OTC-625-20	
		22	14.0 - 14.7	.550 - .580	OTC-625-22	
19.05	3/4"	14 - 15	14.7 - 15.5	.580 - .610	OTC-750-14	OTC-750-SB
		16	15.2 - 16.0	.600 - .630	OTC-750-16	
		17 - 18	15.9 - 16.5	.625 - .650	OTC-750-18	
		19 - 20	16.7 - 17.5	.660 - .690	OTC-750-20	
22.22	7/8"	14 - 15	17.8 - 18.5	.700 - .730	OTC-875-14	OTC-875-SB
		16 - 17	18.8 - 19.5	.740 - .770	OTC-875-16	
		18	19.3 - 20.0	.760 - .790	OTC-875-18	
		19 - 20	19.8 - 20.6	.780 - .810	OTC-875-20	
25.40	1"	14	20.8 - 21.6	.820 - .850	OTC-1000-14	OTC-1000-SB
		15	21.3 - 22.1	.840 - .870	OTC-1000-15	
		16 - 17	22.8 - 22.6	.860 - .890	OTC-1000-16	
		18 - 20	22.6 - 23.1	.890 - .910	OTC-1000-18	
		22	23.9 - 24.6	.940 - .970	OTC-1000-22	
31.75	1.1/4"	12	25.9 - 26.7	1.020 - 1.050	OTC-1250-12	OTC-1250-SB
		13 - 14	26.7 - 27.4	1.050 - 1.080	OTC-1250-14	
		15 - 16	27.9 - 28.7	1.100 - 1.130	OTC-1250-16	
		17 - 19	28.7 - 29.6	1.130 - 1.160	OTC-1250-18	
38.10	1.1/2"	12 - 13	32.5 - 33.3	1.280 - 1.310	OTC-1500-12	OTC-1500-SB
		14 - 15	33.8 - 34.5	1.330 - 1.360	OTC-1500-14	
		16 - 17	34.5 - 35.3	1.360 - 1.390	OTC-1500-16	
		18 - 19	35.3 - 36.1	1.390 - 1.420	OTC-1500-18	
50.80	2"	12 - 13	45.0 - 46.0	1.770 - 1.810	OTC-2000-12	OTC-2000-SB
		14 - 15	46.2 - 47.2	1.820 - 1.860	OTC-2000-14	
		16 - 17	47.2 - 48.2	1.860 - 1.900	OTC-2000-16	
		18 - 19	48.0 - 49.0	1.890 - 1.930	OTC-2000-18	
63.50	2.1/2"	12 - 13	57.6 - 58.6	2.270 - 2.310	OTC-2500-12	OTC-2500-SB
		14 - 15	58.9 - 60.0	2.320 - 2.360	OTC-2500-14	
		16 - 17	60.0 - 61.0	2.360 - 2.400	OTC-2500-16	
		18 - 19	60.7 - 61.7	2.390 - 2.430	OTC-2500-18	



## Manual Tube Puller

We are offering **Manual Tube Puller 1/4"- 1" O.D.**



### Features :

- No Power needed : Manual insertion & removal of tube with a hand wrench. Ideal for field service applications.
- Simple Design : Only two major parts reduce inventory.
- Ease of use : Hex at back of spear allows tightening without disassembly of thrust mechanism.
- Range of Sizes : A wide range of sizes allows use on popular tube size. Clarity of markings : Both spear & trust collar are clearly marked for fast relating tool to job.

Tube Size							Tube Puller Model Number	Spare Spear Model Number
O.D.		BWG	Wall Thickness		I.D.			
mm	inch		mm	inch	mm	inch		
6.35	1/4	18	1.24	.049	3.86	.152	MTP-25-18	MPS-25-18
9.52	3/8	16	1.65	.065	6.22	.245	MTP-38-16	MPS-38-16
9.52	3/8	18	1.24	.049	7.04	.277	MTP-38-18	MPS-38-18
9.52	3/8	20	0.88	.035	7.75	.305	MTP-38-20	MPS-38-20
12.70	1/2	14	2.11	.083	8.48	.334	MTP-50-14	MPS-50-14
12.70	1/2	16	1.65	.065	9.40	.370	MTP-50-16	MPS-50-16
12.70	1/2	18	1.24	.049	10.21	.402	MTP-50-18	MPS-50-18
12.70	1/2	20	0.88	.035	10.92	.430	MTP-50-20	MPS-50-20
15.88	5/8	14	2.10	.083	11.66	.459	MTP-63-14	MPS-63-14
15.88	5/8	16	1.65	.065	12.57	.495	MTP-63-16	MPS-63-16
15.88	5/8	18	1.24	.049	13.39	.527	MTP-63-18	MPS-63-18
15.88	5/8	20	0.88	.035	14.10	.555	MTP-63-20	MPS-63-20
19.05	3/4	14	2.10	.083	14.86	.585	MTP-75-14	MPS-75-14
19.05	3/4	16	1.65	.065	15.75	.620	MTP-75-16	MPS-75-16
19.05	3/4	18	1.24	.049	16.56	.652	MTP-75-18	MPS-75-18
19.05	3/4	20	0.88	.035	17.27	.680	MTP-75-20	MPS-75-20
22.22	7/8	14	2.10	.083	18.01	.709	MTP-87-14	MPS-87-14
22.22	7/8	16	1.65	.065	18.92	.745	MTP-87-16	MPS-87-16
22.22	7/8	18	1.24	.049	19.74	.777	MTP-87-18	MPS-87-18
22.22	7/8	20	0.88	.035	20.45	.805	MTP-87-20	MPS-87-20
25.40	1	14	2.10	.083	21.18	.834	MTP-100-14	MPS-100-14
25.40	1	16	1.65	.065	22.10	.870	MTP-100-16	MPS-100-16
25.40	1	18	1.24	.049	22.91	.902	MTP-100-18	MPS-100-18
25.40	1	20	0.88	.035	23.62	.930	MTP-100-20	MPS-100-20

**Note :** For larger / other sizes, please enquire.



'PINE JENNY' Style Tube Pulling Accessories

We are offering 'PINE JENNY' Style Tube Pulling Accessories 1/4"- 1" O.D.

3/8" - 1" Tube Spear



Model Number	Tube OD inch	BWG
S-0916	3/8	16 - 17
S-0918	3/8	18 - 19
S-0920	3/8	20 - 21
S-0922	3/8	22 - 24
S-1212	5/8	12 - 13
S-1214	5/8	14 - 15
S-1216	5/8	16 - 17
S-1218	5/8	18 - 19
S-1220	5/8	20 - 21
S-1911	3/4	11 - 13
S-1914	3/4	14 - 15
S-1916	3/4	16 - 17
S-1918	3/4	18 - 19
S-1920	3/4	20 - 21
S-2212	7/8	12 - 13
S-2214	7/8	14 - 15
S-2216	7/8	16 - 17
S-2218	7/8	18 - 19
S-2220	7/8	20 - 21

**Note :** For other sizes of 'Pine Jenny' spears, please enquire.

1.1/4" - 3" Tube Spear



Model Number	Tube OD inch	BWG
S-2509	1	9
S-2510	1	10 - 11
S-2512	1	12 - 13
S-2514	1	14 - 15
S-2516	1	16 - 17
S-2518	1	18 - 19
S-2520	1	20 - 21
S-3112	1-1/4	12 - 13
S-3114	1-1/4	14 - 15
S-3116	1-1/4	16 - 17
S-3318	1-1/4	18 - 19
S-3120	1-1/4	20 - 21
S-3814	1-1/2	14 - 16
S-3817	1-1/2	17 - 20
S-4414	1-3/4	14 - 18
S-5014	2	14 - 18
S-5714	2-1/2	14 - 18
S-7610	3	10 - 14

3055-3 Single Pull Adaptor



3055-5 Male x Male Extension



3055-4 Horse Shoe Lock



3055-6 Double Pull Adaptor



3055-6 Double Pull Adaptor



Extension Chairs



Model	Tube O.D.
80-3055-7	1.1/4" - 1.1/2"
80-36307	1.3/4"
80-36308	2" - 2.1/4"
80-36309	2.1/2"
80-36310	2.3/4" - 3"

Extension chair is sized to allow tube being pulled to enter I.D. of chair. Spears, Adaptors, Male x Male Extension, Horse Shoe Lock & Extension Chair are needed for sizes 1.1/4" O.D. & larger. Male x Female Extensions are used for longer reach. Consult us for sizes not listed here.

**Note :** All the above items are compatible for use with Tube Pulling Systems of Airetool, Wilson, Elliot & other manufacturers of "Pine Jenny" style system.



# Boiler Tube Expanders



## Boiler Tube Expanders A Series

We are offering **Boiler Tube Expanders A Series 7/8" - 4 1/2" O.D.**



O.D.	Tube Thickness		O.D.	Tube Thickness		I.D. Tool Enters		Expansion of Tool		Tube Expander Model Number Tube Sheet Thickness Range					Spare Mandrel & Roller Model No.		
inch	bwg	inch	inch	bwg	inch	mm	inch	mm	inch	1/2" To 7/8"	3/4" To 1.1/8"	1.1/8" To 1.5/8"	1.5/8" To 2.1/8"	2.1/8" To 2.5/8"	Roller Model Number	Mandrel Model Number	Mandrel Sq Inch
7/8	15	.072	1	10	.135	18.1	.712	20.4	.803	A-31/2	A-31/3	-	-	-	15	DM-11	3/8
7/8	16	.065	-	-	-	18.4	.724	20.7	.814	A-32/2	A-32/3	-	-	-	15	DM-12	3/8
7/8	17	.058	1	11	.120	18.8	.740	21.1	.830	A-32/2	A-33/3	-	-	-	16	DM-12	3/8
7/8	18	.049	1	12	.109	19.4	.763	21.6	.850	A-34/2	A-34/3	-	-	-	20	DM-12	3/8
7/8	19 & 20	.042 & .035	1.1/8	8	.165	19.7	.775	22.3	.877	A-35/2	A-35/3	-	-	-	17	DM-13	3/8
1	13	.095	-	-	-	20.1	.791	22.4	.881	A-36/2	A-36/3	-	-	-	18	DM-12	3/8
1	14	.083	1.1/8	9	.148	20.6	.811	23.1	.909	A-37/2	A-37/3	A-37/4	-	-	18	DM-13	3/8
1	15 & 16	.072 & .065	1.1/8	10	.134	21.3	.838	23.8	.937	A-38/2	A-38/3	A-38/4	-	-	19	DM-13	3/8
1	17 & 18	.058 & .048	1.1/8	11	.120	22.0	.866	24.5	.964	A-39/2	A-39/3	A-39/4	-	-	21	DM-13	3/8
1	19 & 20	.042 & .035	1.1/8	12	.109	22.4	.881	25.0	.984	A-40/2	A-40/3	A-40/4	-	-	21	DM-14	3/8
1.1/4	8	.165	1.1/8	13	.095	23.3	.917	25.9	1.019	A-41/2	A-41/3	A-41/4	-	-	22	DM-14	3/8
1.1/4	9	.148	1.1/8	14	.083	23.8	.937	26.5	1.043	A-42/2	A-42/3	A-42/4	-	-	23	DM-15	1/2
1.1/4	10	.134	1.1/8	15 & 16	.072 & .065	24.4	.960	27.2	1.070	A-43/2	A-43/3	A-43/4	-	-	24	DM-15	1/2
1.1/4	11	.120	-	-	-	25.2	.992	28.0	1.102	A-44/2	A-44/3	A-44/4	-	-	26	DM-16	1/2
1.1/4	12	.109	-	-	-	25.7	1.011	28.5	1.122	A-45/2	A-45/3	A-45/4	-	-	27	DM-16	1/2
1.1/4	13	.095	1.3/8	8	.165	26.1	1.027	28.8	1.133	A-46/2	A-46/3	A-46/4	-	-	31	DM-16	1/2
1.1/4	14	.083	-	-	-	26.4	1.039	29.2	1.149	A-47/2	A-47/3	A-47/4	-	-	28	DM-17	1/2
1.1/4	15	.072	1.3/8	9	.148	26.9	1.059	29.7	1.169	A-48/2	A-48/3	A-48/4	-	-	29	DM-17	1/2
1.1/4	16	.065	1.3/8	10	.134	27.6	1.086	30.4	1.196	A-49/2	A-49/3	A-49/4	A-49/5	A-49/6	30	DM-17	1/2
1.1/2	7	.180	1.3/8	11	.120	28.3	1.114	31.2	1.228	A-50/2	A-50/3	A-50/4	A-50/5	A-50/6	30	DM-18	1/2
1.1/2	8	.165	1.3/8	12	.109	28.8	1.133	31.7	1.248	A-51/2	A-51/3	A-51/4	A-51/5	A-51/6	32	DM-18	1/2
1.1/2	9	.148	1.3/8	13 & 14	.095 & .083	29.5	1.161	33.4	1.314	A-52/2	A-52/3	A-52/4	A-52/5	A-52/6	28	DM-20	1/2
1.1/2	10	.134	1.3/8	15 & 16	.072 & .065	30.0	1.181	34.1	1.342	A-53/2	A-53/3	A-53/4	A-53/5	A-53/6	29	DM-20	1/2
1.1/2	11 & 12	.120 & .109	-	-	-	30.6	1.204	34.8	1.370	A-54/2	A-54/3	A-54/4	A-54/5	A-54/6	30	DM-20	1/2
1.1/2	13	.095	1.3/4	5	.220	31.4	1.236	35.6	1.401	A-55/2	A-55/3	A-55/4	A-55/5	A-55/6	33	DM-20	1/2
1.1/2	14 & 15	.083 & .072	1.3/4	6	.203	32.6	1.283	36.8	1.448	A-56/2	A-56/3	A-56/4	A-56/5	A-56/6	34	DM-21	1/2
-	-	-	1.3/4	7	.180	33.4	1.314	38.1	1.500	A-57/2	A-57/3	A-57/4	A-57/5	A-57/6	36	DM-21	1/2
-	-	-	1.3/4	8	.165	34.2	1.346	38.7	1.523	A-58/2	A-58/3	A-58/4	A-58/5	A-58/6	37	DM-21	1/2
2	3	.259	1.3/4	9 & 10	.148 & .134	35.0	1.377	40.6	1.598	A-59/2	A-59/3	A-59/4	A-59/5	A-59/6	33	DM-22	3/4
2	4	.238	1.3/4	11 & 12	.120 & .109	36.6	1.440	42.2	1.661	A-60/2	A-60/3	A-60/4	A-60/5	A-60/6	37	DM-22	3/4
2	5 & 6	.200 & .203	1.3/4	13 & 14	.095 & .083	38.2	1.503	43.8	1.712	A-61/2	A-61/3	A-61/4	A-61/5	A-61/6	38	DM-22	3/4
2	7 & 8	.180 & .165	1.3/4	15 & 16	.072 & .065	39.8	1.566	45.4	1.787	A-62/2	A-62/3	A-62/4	A-62/5	A-62/6	39	DM-22	3/4
2	9 & 10	.148 & .134	2.1/4	3	.259	41.4	1.629	47.0	1.850	A-63/2	A-63/3	A-63/4	A-63/5	A-63/6	40	DM-22	3/4
2	11 - 13	.120 - .095	2.1/4	4	.238	42.9	1.688	49.5	1.948	A-64/2	A-64/3	A-64/4	A-64/5	A-64/6	40	DM-23	3/4
2	14 - 16	.083 - .065	2.1/4	6 & 7	.203 & .180	44.5	1.751	51.1	2.011	A-65/2	A-65/3	A-65/4	A-65/5	A-65/6	41	DM-23	3/4
2	17 & 18	.085 & .049	2.1/4	8 & 9	.165 & .148	46.1	1.814	52.7	2.074	A-66/2	A-66/3	A-66/4	A-66/5	A-66/6	42	DM-23	3/4
2.1/2	3	.259	2.1/4	10 & 11	.134 & .120	47.7	1.877	54.3	2.137	A-67/2	A-67/3	A-67/4	A-67/5	A-67/6	43	DM-23	3/4
2.1/2	4 & 5	.238 & .220	2.1/4	12 & 13	.109 & .095	49.3	1.940	55.9	2.200	A-68/2	A-68/3	A-68/3	A-68/5	A-68/6	44	DM-23	3/4
2.1/2	6 & 7	.203 & .180	2.1/4	14 - 16	.083 - .065	50.8	2.000	57.8	2.275	A-69/2	A-69/3	A-69/3	A-69/5	A-69/6	43	DM-24	3/4
2.1/2	8 & 9	.165 & .148	2.3/4	3	.259	52.4	2.062	59.4	2.338	A-70/2	A-70/3	A-70/3	A-70/5	A-70/6	44	DM-24	3/4
2.1/2	10 & 11	.134 & .120	2.3/4	4	.238	54.0	2.125	61.0	2.401	A-71/2	A-71/3	A-71/3	A-71/5	A-71/6	45	DM-24	3/4
2.1/2	12 - 14	.109 - .083	2.3/4	5 & 6	.220 & .203	55.6	2.188	64.									



### Boiler Tube Expanders AF3 / AF1 Series

We are offering **Boiler Tube Expanders AF3 / AF1 Series 7/8"- 4 1/2" O.D.**



Tube O.D.	Tube Thickness		Tube O.D.	Tube Thickness		Minimum I.D. Tool Enters		Maximum Expansion of Tool		Tube Expander Model Number Tube Sheet Thickness Range					Spare Mandrel & Roller Model No.		
inch	bwg	inch	inch	bwg	inch	mm	inch	mm	inch	1/2" To 7/8"	3/4" To 1.1/8"	1.1/8" To 1.5/8"	1.5/8" To 2.1/8"	2.1/8" To 2.5/8"	Roller Model No.	Mandrel Model No.	Mandrel Sq Inch
7/8	15	.072	1	10	.134	18.1	.712	20.4	.803	AF3-31/2	AF3-31/3	-	-	-	15-F1S	DM-11	3/8
7/8	16	.065	-	-	-	18.4	.724	20.7	.814	AF3-32/2	AF3-32/3	-	-	-	15-F1S	DM-12	3/8
7/8	17	.058	1	11	.120	18.8	.740	21.1	.830	AF3-33/2	AF3-33/3	-	-	-	16-F1S	DM-12	3/8
7/8	18	.049	1	12	.109	19.4	.763	21.6	.850	AF3-34/2	AF3-34/3	-	-	-	20-F1S	DM-12	3/8
7/8	19 & 20	.042 & .035	1.1/8	8	.165	19.7	.775	22.3	.877	AF3-35/2	AF3-35/3	-	-	-	17-F1S	DM-13	3/8
1	13	.095	-	-	-	20.1	.791	22.4	.881	AF3-36/2	AF3-36/3	-	-	-	18-F1S	DM-12	3/8
1	14	.083	1.1/8	9	.148	20.6	.811	23.1	.909	AF3-37/2	AF3-37/3	AF3-37/4	-	-	18-F1S	DM-13	3/8
1	15 & 16	.072 & .065	1.1/8	10	.134	21.3	.838	23.8	.937	AF3-38/2	AF3-38/3	AF3-38/4	-	-	19-F1S	DM-13	3/8
1	17 & 18	.058 & .048	1.1/8	11	.120	22.0	.866	24.5	.964	AF3-39/2	AF3-39/3	AF3-39/4	-	-	21-F1S	DM-13	3/8
1	19 & 20	.042 & .035	1.1/8	12	.109	22.4	.881	25.0	.984	AF3-40/2	AF3-40/3	AF3-40/4	-	-	21-F1S	DM-14	3/8
1.1/4	8	.165	1.1/8	13	.095	23.3	.917	25.9	1.019	AF3-41/2	AF3-41/3	AF3-41/4	-	-	22-F1S	DM-14	3/8
1.1/4	9	.148	1.1/8	14	.083	23.8	.937	26.5	1.043	AF3-42/2	AF3-42/3	AF3-42/4	-	-	23-F1S	DM-15	1/2
1.1/4	10	.134	1.1/8	15 & 16	.072 & .065	24.4	.960	27.2	1.070	AF3-43/2	AF3-43/3	AF3-43/4	-	-	24-F1S	DM-15	1/2
1.1/4	11	.120	-	-	-	25.2	.992	28.0	1.102	AF3-44/2	AF3-44/3	AF3-44/4	-	-	26-F1S	DM-16	1/2
1.1/4	12	.109	-	-	-	25.7	1.011	28.5	1.122	AF3-45/2	AF3-45/3	AF3-45/4	-	-	27-F1S	DM-16	1/2
1.1/4	13	.095	1.3/8	8	.165	26.1	1.027	28.8	1.133	AF3-46/2	AF3-46/3	AF3-46/4	-	-	31-F1S	DM-16	1/2
1.1/4	14	.083	-	-	-	26.4	1.039	29.2	1.149	AF3-47/2	AF3-47/3	AF3-47/4	-	-	28-F1S	DM-17	1/2
1.1/4	15	.072	1.3/8	9	.148	26.9	1.059	29.7	1.169	AF3-48/2	AF3-48/3	AF3-48/4	-	-	29-F1S	DM-17	1/2
1.1/4	16	.065	1.3/8	10	.134	27.6	1.086	30.4	1.196	AF3-49/2	AF3-49/3	AF3-49/4	AF3-49/5	AF3-49/6	30-F1S	DM-17	1/2
1.1/2	7	.180	1.3/8	11	.120	28.3	1.114	31.2	1.228	AF3-50/2	AF3-50/3	AF3-50/4	AF3-50/5	AF3-50/6	30-F1S	DM-18	1/2
1.1/2	8	.165	1.3/8	12	.109	28.8	1.133	31.7	1.248	AF3-51/2	AF3-51/3	AF3-51/4	AF3-51/5	AF3-51/6	32-F1S	DM-18	1/2
1.1/2	9	.148	1.3/8	13 & 14	.095 & .083	29.5	1.161	33.4	1.314	AF3-52/2	AF3-52/3	AF3-52/4	AF3-52/5	AF3-52/6	28-F1S	DM-20	1/2
1.1/2	10	.134	1.3/8	15 & 16	.072 & .065	30.0	1.181	34.1	1.342	AF3-53/2	AF3-53/3	AF3-53/4	AF3-53/5	AF3-53/6	29-F1S	DM-20	1/2
1.1/2	11 & 12	.120 & .109	-	-	-	30.6	1.204	34.8	1.370	AF3-54/2	AF3-54/3	AF3-54/4	AF3-54/5	AF3-54/6	30-F1S	DM-20	1/2
1.1/2	13	.095	1.3/4	5	.220	31.4	1.236	35.6	1.401	AF3-55/2	AF3-55/3	AF3-55/4	AF3-55/5	AF3-55/6	33-F1S	DM-20	1/2
1.1/2	14 & 15	.083 & .072	1.3/4	6	.203	32.6	1.283	36.8	1.448	AF3-56/2	AF3-56/3	AF3-56/4	AF3-56/5	AF3-56/6	34-F1S	DM-21	1/2
-	-	-	1.3/4	7	.180	33.4	1.314	38.1	1.500	AF3-57/2	AF3-57/3	AF3-57/4	AF3-57/5	AF3-57/6	36-F1S	DM-21	1/2
-	-	-	1.3/4	8	.165	34.2	1.346	38.7	1.523	AF3-58/2	AF3-58/3	AF3-58/4	AF3-58/5	AF3-58/6	37-F1S	DM-21	1/2
2	3	.259	1.3/4	9 & 10	.148 & .134	35.0	1.377	40.6	1.598	AF3-59/2	AF3-59/3	AF3-59/4	AF3-59/5	AF3-59/6	33-F1S	DM-22	3/4
2	4	.238	1.3/4	11 & 12	.120 & .109	36.6	1.440	42.2	1.661	AF3-60/2	AF3-60/3	AF3-60/4	AF3-60/5	AF3-60/6	37-F1S	DM-22	3/4
2	5 & 6	.200 & .203	1.3/4	13 & 14	.095 & .083	38.2	1.503	43.8	1.712	AF3-61/2	AF3-61/3	AF3-61/4	AF3-61/5	AF3-61/6	38-F1S	DM-22	3/4
2	7 & 8	.180 & .165	1.3/4	15 & 16	.072 & .065	39.8	1.566	45.4	1.787	AF3-62/2	AF3-62/3	AF3-62/4	AF3-62/5	AF3-62/6	39-F1S	DM-22	3/4
2	9 & 10	.148 & .134	2.1/4	3	.259	41.4	1.629	47.0	1.850	AF3-63/2	AF3-63/3	AF3-63/4	AF3-63/5	AF3-63/6	40-F1S	DM-22	3/4
2	11 - 13	.120 - .095	2.1/4	4	.238	42.9	1.688	49.5	1.948	AF3-64/2	AF3-64/3	AF3-64/4	AF3-64/5	AF3-64/6	40-F1S	DM-23	3/4
2	14 - 16	.083 - .065	2.1/4	6 & 7	.203 & .180	44.5	1.751	51.1	2.011	AF3-65/2	AF3-65/3	AF3-65/4	AF3-65/5	AF3-65/6	41-F1S	DM-23	3/4
2	17 & 18	.085 & .049	2.1/4	8 & 9	.165 & .148	46.1	1.814	52.7	2.074	AF3-66/2	AF3-66/3	AF3-66/4	AF3-66/5	AF3-66/6	41-F1S	DM-23	3/4
2.1/2	3	.259	2.1/4	10 & 11	.134 & .120	47.7	1.877	54.3	2.137	AF3-67/2	AF3-67/3	AF3-67/4	AF3-67/5	AF3-67/6	43-F1S	DM-23	3/4
2.1/2	4 & 5	.238 & .220	2.1/4	12 & 13	.109 & .095	49.3	1.940	55.9	2.200	AF3-68/2	AF3-68/3	AF3-68/3	AF3-68/5	AF3-68/6	44-F1S	DM-23	3/4
2.1/2	6 & 7	.203 & .180	2.1/4	14 - 16	.083 - .065	50.8	2.000	57.8	2.275	AF3-69/2	AF3-69/3	AF3-69/3	AF3-69/5	AF3-69/6	43-F1S	DM-24	3/4
2.1/2	8 & 9	.165 & .148															

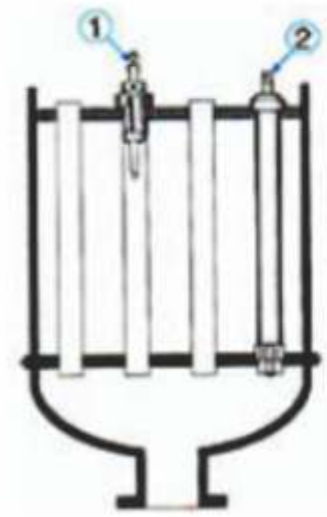


## Boiler Tube Expanders SB Series for Sugar Mills



1 1/2" - 4 1/2" O.D.

### FLEXIBLE SHAFT MACHINE (NFM SERIES)



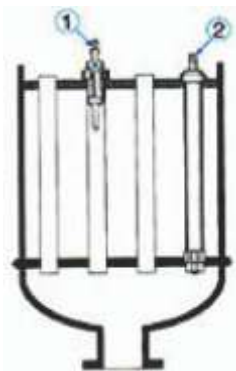
#### Features :

- 5 Roll' design is used primarily for rolling thin walled tubes used in sugar mill juice heaters, pans.
- 05 Rolls' give you a maore concentric, uniform expansion vs. a '3 roll' expander in thin tubes and reduces tube 'spring back' effect.
- Use - For top plate tube expansion in pans, juice heaters in sugar mills.

Tube O.D.	Tube Thickness		Minimum I.D. Tool Enters		Maximum Expansion Of Tool		Tube Sheet Thickness mm ( inch)			Spare Mandrel Model No.	Mandrel Sq. Drive	Spare Rollers Set Model No.		
							31.75 (1.25)	38.1 (1.5)	50.8 (2.0)					
inch	bwg	inch	mm	inch	mm	inch	Tube Expander Model No.				inch			
1.1/2	11 & 12	.120 & .109	29.0	1.141	31.9	1.256	SB - 00A	SB - 00B	SB - 00C	SBM - 1	1/2	SBR - 1A	SBR - 1B	SBR - 1C
1.1/2	13 & 14	.095 & .083	32.5	1.279	36.0	1.417	SB - 0A	SB - 0B	SB - 0C	SBM - 2	1/2	SBR - 2A	SBR - 2B	SBR - 2C
1.1/2	15 & 16	.072 & .065	33.5	1.319	37.2	1.465	SB - 1A	SB - 1B	SB - 1C	SBM - 2	1/2	SBR - 3A	SBR - 3B	SBR - 3C
1.3/4	9 & 10	.148 & .134	35.2	1.386	39.1	1.539	SB - 2A	SB - 2B	SB - 2C	SBM - 3	3/4	SBR - 3A	SBR - 3B	SBR - 3C
1.3/4	11 & 12	.120 & .109	36.5	1.437	40.5	1.594	SB - 3A	SB - 3B	SB - 3C	SBM - 3	3/4	SBR - 4A	SBR - 4B	SBR - 4C
1.3/4	13 & 14	.095 & .083	38.1	1.500	42.7	1.681	SB - 4A	SB - 4B	SB - 4C	SBM - 3	3/4	SBR - 5A	SBR - 5B	SBR - 5C
1.3/4	15 & 16	.072 & .065	39.1	1.539	44.2	1.740	SB - 5A	SB - 5B	SB - 5C	SBM - 4	3/4	SBR - 4A	SBR - 4B	SBR - 4C
2	7 & 8	.180 & .165	41.3	1.626	46.7	1.838	SB - 6A	SB - 6B	SB - 6C	SBM - 4	3/4	SBR - 5A	SBR - 5B	SBR - 5C
2	9 & 10	.148 & .134	42.8	1.685	48.3	1.901	SB - 7A	SB - 7B	SB - 7C	SBM - 4	3/4	SBR - 6A	SBR - 6B	SBR - 6C
2	11 - 13	.120 - .095	44.4	1.748	49.7	1.957	SB - 8A	SB - 8B	SB - 8C	SBM - 5	3/4	SBR - 6A	SBR - 6B	SBR - 6C
2	14 - 16	.083 - .065	46.0	1.811	52.2	2.055	SB - 9A	SB - 9B	SB - 9C	SBM - 5	3/4	SBR - 7A	SBR - 7B	SBR - 7C
2.1/4	9 & 10	.148 & .134	47.6	1.874	53.8	2.118	SB - 10A	SB - 10B	SB - 10C	SBM - 5	3/4	SBR - 8A	SBR - 8B	SBR - 8C
2.1/4	11 - 13	.120 - .095	49.2	1.937	55.4	2.181	SB - 11A	SB - 11B	SB - 11C	SBM - 5	3/4	SBR - 9A	SBR - 9B	SBR - 9C
2.1/4	14 - 16	.083 - .065	50.7	1.996	57.8	2.275	SB - 12A	SB - 12B	SB - 12C	SBM - 6	3/4	SBR - 8A	SBR - 8B	SBR - 8C
2.1/2	9 & 10	.148 & .134	54.9	2.161	61.0	2.401	SB - 13A	SB - 13B	SB - 13C	SBM - 6	3/4	SBR - 10A	SBR - 10B	SBR - 10C
2.1/2	14 - 16	.083 - .065	57.1	2.248	65.6	2.582	SB - 14A	SB - 14B	SB - 14C	SBM - 7	1	SBR - 11A	SBR - 11B	SBR - 11C
2.3/4	10 - 14	.134 - .083	60.3	2.374	68.8	2.708	SB - 15A	SB - 15B	SB - 15C	SBM - 7	1	SBR - 12A	SBR - 12B	SBR - 12C
3	7 - 9	.180 - .148	63.5	2.500	72.0	2.835	SB - 16A	SB - 16B	SB - 16C	SBM - 7	1	SBR - 13A	SBR - 13B	SBR - 13C
3	10 - 14	.134 - .083	66.5	2.618	75.0	2.953	SB - 17A	SB - 17B	SB - 17C	SBM - 7	1	SBR - 14A	SBR - 14B	SBR - 14C
3.1/4	7 & 8	.180 - .165	69.8	2.748	78.5	3.090	SB - 18A	SB - 18B	SB - 18C	SBM - 8	1	SBR - 14A	SBR - 14B	SBR - 14C
3.1/2	4 & 5	.238 - .220	73.0	2.874	81.7	3.216	SB - 19A	SB - 19B	SB - 19C	SBM - 8	1	SBR - 15A	SBR - 15B	SBR - 15C
3.1/2	6 - 8	.203 - .165	76.1	2.996	85.8	3.378	SB - 20A	SB - 20B	SB - 20C	SBM - 9	1	SBR - 16A	SBR - 16B	SBR - 16C
3.3/4	4 & 5	.238 & .220	79.3	3.122	89.0	3.504	SB - 21A	SB - 21B	SB - 21C	SBM - 9	1	SBR - 17A	SBR - 17B	SBR - 17C
3.3/4	6 - 8	.203 - .165	82.5	3.248	92.2	3.629	SB - 22A	SB - 22B	SB - 22C	SBM - 9	1	SBR - 18A	SBR - 18B	SBR - 18C
4	3 & 4	.259 & .238	85.7	3.374	96.2	3.787	SB - 23A	SB - 23B	SB - 23C	SBM - 10	1	SBR - 18A	SBR - 18B	SBR - 18C
4	10 - 16	.134 - .065	90.3	3.555	100.8	3.968	SB - 24A	SB - 24B	SB - 24C	SBM - 10	1	SBR - 19A	SBR - 19B	SBR - 19C
4.1/4	6 - 8	.203 - .165	94.9	3.736	105.2	4.141	SB - 25A	SB - 25B	SB - 25C	SBM - 11	1	SBR - 20A	SBR - 20B	SBR - 20C
4.1/2	4 - 7	.238 - .180	89.7	3.531	110.9	4.366	SB - 26A	SB - 26B	SB - 26C	SBM - 11	1	SBR - 21A	SBR - 21B	SBR - 21C
4.1/2	8 - 10	.165 - .134	104.3	4.106	113.1	4.452	SB - 27A	SB - 27B	SB - 27C	SBM - 12	1	SBR - 21A	SBR - 21B	SBR - 21C



Long Reach CSB For Sugar Mills



- Features :**
- '5 Roll' design is used primarily for rolling thin walled tubes used in sugar mill juice heaters, pans.
  - '5 Rolls' give you a more concentric, uniform expansion vs. a '3 roll' expander in thin tubes and reduces tube 'spring back' effect.
  - Use - For bottom plate tube expansion in pans, juice heaters in sugar mills.

Tube O.D.	Tube Thickness		Minimum I.D. Enters		Maximum Expansion Of Tool		Tube Sheet Thickness 'T'		Depth in Mtrs.		Mandrel Sq. Size	Oal	Weight in Kgs.	Tube Expander Model No.	Spare Mandrel Model No.	Spare Rollers Set Model No.
inch	bwg	inch	mm	inch	mm	inch	min	max	inch	Mtrs	inch	Mtrs.				
CSB-5 (3 Rollers)																
1.3/4	15 & 16	.072 & 0.65	39.8	1.566	45.3	1.783	32.0	1.259	1.7	2.0	3/4	2.258	10.0	CSB-5STD	CSBM-5STD	CSBR-5
1.3/4	15 & 16	.072 & 0.65	39.8	1.566	45.3	1.783	32.0	1.259	2.0	2.3	3/4	2.558	11.2	CSB-5A	CSBM-5A	CSBR-5
1.3/4	15 & 16	.072 & 0.65	39.8	1.566	45.3	1.783	32.0	1.259	2.3	2.3	3/4	2.858	12.4	CSB-5B	CSBM-5B	CSBR-5
1.3/4	15 & 16	.072 & 0.65	39.8	1.566	45.3	1.783	32.0	1.259	2.6	2.9	3/4	3.158	13.7	CSB-5C	CSBM-5C	CSBR-5
1.3/4	15 & 16	.072 & 0.65	39.8	1.566	45.3	1.783	32.0	1.259	2.9	3.2	3/4	3.458	14.9	CSB-5D	CSBM-5D	CSBR-5
1.3/4	15 & 16	.072 & 0.65	39.8	1.566	45.3	1.783	32.0	1.259	3.2	3.5	3/4	3.758	16.2	CSB-5E	CSBM-5E	CSBR-5
CSB-9 (3 Rollers)																
2	14 - 16	.083 - .065	46.2	1.818	50.8	2.000	32.0	1.259	1.7	2.0	3/4	2.241	16.2	CSB-9STD	CSBM-9STD	CSBR-9
2	14 - 16	.083 - .065	46.2	1.818	50.8	2.000	32.0	1.259	2.0	2.3	3/4	2.541	18.3	CSB-9A	CSBM-9A	CSBR-9
2	14 - 16	.083 - .065	46.2	1.818	50.8	2.000	32.0	1.259	2.3	2.3	3/4	2.841	20.4	CSB-9B	CSBM-9B	CSBR-9
2	14 - 16	.083 - .065	46.2	1.818	50.8	2.000	32.0	1.259	2.6	2.9	3/4	3.141	22.5	CSB-9C	CSBM-9C	CSBR-9
2	14 - 16	.083 - .065	46.2	1.818	50.8	2.000	32.0	1.259	2.9	3.2	3/4	3.441	24.6	CSB-9D	CSBM-9D	CSBR-9
2	14 - 16	.083 - .065	46.2	1.818	50.8	2.000	32.0	1.259	3.2	3.5	3/4	3.741	26.7	CSB-9E	CSBM-9E	CSBR-9
CSB-24 (3 Rollers)																
4	12 - 18	.109 - .049	90.5	3.563	102.4	4.031	32.0	1.259	0.7	1.0	1	1.416	23.7	CSB-24STD	CSBM-24STD	CSBR-24
4	12 - 18	.109 - .049	90.5	3.563	102.4	4.031	32.0	1.259	1.0	1.3	1	1.716	29.4	CSB-24A	CSBM-24A	CSBR-24
4	12 - 18	.109 - .049	90.5	3.563	102.4	4.031	32.0	1.259	1.3	1.6	1	2.016	35.5	CSB-24B	CSBM-24B	CSBR-24
4	12 - 18	.109 - .049	90.5	3.563	102.4	4.031	32.0	1.259	1.6	1.9	1	2.316	40.8	CSB-24C	CSBM-24C	CSBR-24
4	12 - 18	.109 - .049	90.5	3.563	102.4	4.031	32.0	1.259	1.9	2.2	1	2.616	46.5	CSB-24D	CSBM-24D	CSBR-24
4	12 - 18	.109 - .049	90.5	3.563	102.4	4.031	32.0	1.259	2.2	2.5	1	2.916	52.5	CSB-24E	CSBM-24E	CSBR-24

**Note :** Other sizes, special lengths are available on request.



Mandrel Drives

We are offering **Mandrel Drives**  
**Taper Shank - Interchangeable Female Square**



Morse Taper No.	Square Size	Model No.	Insert Square Size	Insert Model No.
2	3/8"	MM/2/95	3/8"	MDT/95
	1/2"	MM/2/127	1/2"	MDT/127
3	3/8"	MM/3/95	3/8"	MDT/95
	1/2"	MM/3/127	1/2"	MDT/127
	3/4"	MM/3/190	3/4"	MDT/190
	1"	MM/3/254	1"	MDT/254
3	3/8"	MM/4/95	3/8"	MDT/95
	1/2"	MM/4/127	1/2"	MDT/127
	3/4"	MM/4/190	3/4"	MDT/190
	1"	MM/4/254	1"	MDT/254
4	3/8"	MM/5/95	3/8"	MDT/95
	1/2"	MM/5/127	1/2"	MDT/127
	3/4"	MM/5/190	3/4"	MDT/190
	1"	MM/5/254	1"	MDT/240

**Use :**  
Mandrel drives serve the purpose of adapting tube expander mandrels to existing air or electric drills. Loosening the knurled nut, releases the square insert type of socket for the introduction of another size of mandrel square.

Taper Shank - Male Square



Morse Taper No.	Square Size	Model No.
1	3/8"	MTM/1/95
	1/2"	MTM/1/127
2	3/8"	MTM/2/95
	1/2"	MTM/2/127
3	3/4"	MTM/3/190
	1"	MTM/3/254
4	3/4"	MTM/4/190
	1"	MTM/4/254

Taper Shank - Female Square



Morse Taper No.	Square Size	Model No.
1	3/8"	MTF/1/95
	1/2"	MTF/1/127
2	3/8"	MTF/2/95
	1/2"	MTF/2/127
3	3/4"	MTF/3/190
	1"	MTF/3/254
4	3/4"	MTF/4/190
	1"	MTF/4/254

Tringle Shank - Female Square



Square Size	Chuck Size	Model No.
3/8"	1/4"	MTC/95/63
3/8"	3/8"	MTC/95/95
3/8"	1/2"	MTC/95/127
1/2"	1/2"	MTC/127/127

Reversible Ratchet Wrench



Square Size	Length	Model No.
3/8"	8"	HR/95
1/2"	10"	HR/127
3/4"	20"	HR/195
1"	24"	HR/254

**Note :** Ratchets are also available with hexagonal female openings for driving one revolution tube cutters and other items.

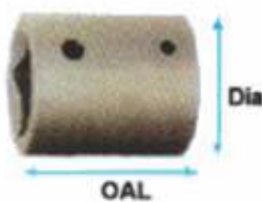
We are offering **Mandrel Drives**

Male x Male Drive Extensions



Square size	Model No.	OAL	Dia.
3/8"	EB/95/6	6"	1/2"
	EB/95/9	9"	
	EB/95/12	12"	
	EB/95/18	18"	
1/2"	EB/127/6	6"	5/8"
	EB/127/9	9"	
	EB/127/12	12"	
	EB/127/18	18"	
	EB/127/24	24"	
3/4"	EB/195/6	6"	1"
	EB/195/9	9"	
	EB/195/12	12"	
	EB/195/18	18"	
	EB/195/24	24"	
1"	EB/254/6	6"	1.1/4"
	EB/254/12	12"	
	EB/254/14	14"	
	EB/254/18	18"	
	EB/254/24	24"	

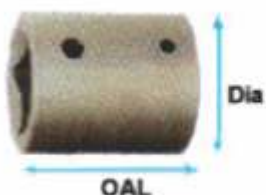
Female x Female Extensions Couplings



Square size	Model No.	OAL	Dia.
3/8" x 3/8"	EC/95/95	1.7/16"	13/16"
3/8" x 1/2"	EC/95/127	1.9/16"	1.1/16"
3/8" x 5/8"	EC/95/158	1.1/2"	1.1/4"
1/2" x 1/2"	EC/127/127	1.11/16"	1.1/16"
1/2" x 5/8"	EC/127/158	1.5/8"	1.1/4"
1/2" x 3/4"	EC/127/195	1.5/8"	1.3/8"
1/2" x 7/8"	EC/127/222	1.5/8"	1.5/8"
1/2" x 1"	EC/127/254	1.5/8"	1.7/8"
5/8" x 3/4"	EC/158/195	1.9/16"	1.3/8"
5/8" x 7/8"	EC/158/222	2"	1.5/8"
5/8" x 1"	EC/158/254	1.13/16"	1.7/8"
3/4" x 3/4"	EC/195/195	1.5/8"	1.7/16"
3/4" x 7/8"	EC/195/222	1.5/8"	1.3/4"
3/4" x 1"	EC/195/254	1.13/16"	1.7/8"
7/8" x 7/8"	EC/222/222	1.11/16"	1.3/4"
7/8" x 1"	EC/222/254	2.1/8"	2.1/8"
1" x 1"	EC/254/254	2.1/16"	1.7/8"

Universal Joints

Universal Joint Female-Female



Universal Joint Male-Female



Double Universal Joint Female-Female



Square Size	Model No.	OAL	Major Dia.
3/8"	UJ/95	2.1/4"	7/8"
1/2"	UJ/127	2.5/8"	1"
3/4"	UJ/195	3"	1.1/2"
1"	UJ/254	3.3/4"	1.3/4"

Square Size	Model No.	OAL	Major Dia.
3/8"	UC/95	2.1/4"	7/8"
1/2"	UC/127	2.19/32"	1"
3/4"	UC/195	3.9/32"	1.1/2"
1"	UC/254	4"	1.3/4"

Square Size	Model No.	OAL	Major Dia.
3/8"	DUJ/95	3.15/16"	1.1/8"
1/2"	DUJ/127	4"	1.5/16"
3/4"	DUJ/195	4.11/16"	1.5/8"
1"	DUJ/254	6.1/32"	2.1/4"

Extensions Universal Joint Female-Female



Square Size Female	Square Size Male	Model No.	OAL	Major Dia.
3/8"	3/8"	UE/95/6	6"	1.1/8"
		UE/95/9	9"	
		UE/95/12	12"	
3/8"	1/2"	UE/95S/9	9"	1.1/8"
		UE/95S/12	12"	
		UE/95S/16	16"	
1/2"	1/2"	UE/127/6	6"	1.5/16"
		UE/127/9	9"	
		UE/127/12	12"	
		UE/127/16	16"	
		UE/127/20	20"	
3/4"	3/4"	UE/195/9	9"	1.3/4"
		UE/195/12	12"	
		UE/195/16	16"	
		UE/195/20	20"	
1"	1"	UE/254/9	9"	2.1/4"
		UE/254/12	12"	
		UE/254/16	16"	



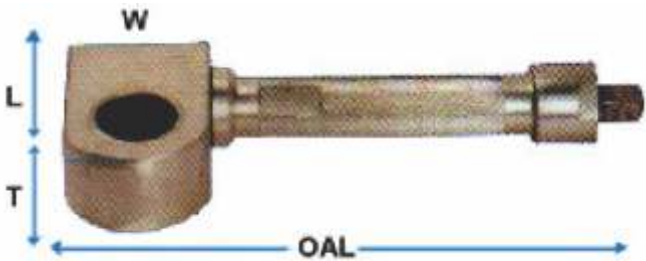
Gear Drives

We are offering **Gear Drives**  
**Parallel Gear Train Drive**



Square Size	No. of Openings	Model No.	Replacement Parts				Dimensions	
			Double Hub Gear		Center Gear			
			Model No.	Nos. Req'd.	Model No.	Nos. Req'd.	OAL	Width (W)
3/8"	3	BG/3/95	BGH/3/95	3	BGC/3/95	4	8.1/2"	2"
1/2"	3	BG/3/127	BGH/3/127	3	BGC/3/127	4	8.1/2"	2"
	4	BG/4/127	BGH/4/127	4	BGC/4/127	3		
3/4"	3	BG/3/195	BGH/3/195	3	BGC/3/195	4	9"	2.1/2"
	4	BG/4/195	BGH/4/195	4	BGC/4/195	3		
1"	4	BG/4/254	BGH/4/254	4	BGC/4/254	3	9"	2.1/2"

RIGHT ANGLE WORM GEAR DRIVE



Male Square	Female Square	Model No.	OAL	Gear Housing			Minimum Hand Hole Diameter	Gear Ratio
				Length (L)	Width (W)	Thick (T)		
1/2"	1/2"	RW/127/127	10.3/16"	3.3/16"	2.1/4"	1.3/8"	3.3/8"	4.1/2 to 1
1/2"	3/4"	RW/127/195	10.3/16"	3.3/16"	2.1/4"	1.3/8"	3.3/8"	4.1/2 to 1
3/4"	3/4"	RW/195/195	11.9/32"	3.27/32"	2.5/8"	1.7/8"	4"	4.1/2 to 1
3/4"	1"	RW/195/254	11.9/32"	4.1/4"	3.1/16"	1.7/8"	4.1/2"	4.1/2 to 1



## Boiler Tube Expanders 114 Series

We are offering **Boiler Tube Expanders 114 Series**  
2"- 4 1/2" O.D.



Tube O.D.	Tube Thickness		Tube O.D.	Tube Thickness		Minimum I.D. Tool Enters		Maximum Expansion of Tool		Tube Expander Model Number Tube Sheet Thickness Range				
inch	bwg	inch	inch	bwg	inch	mm	inch	mm	inch	1/2" To 7/8"	3/4" To 1.1/8"	1.1/8" To 1.5/8"	1.5/8" To 2.1/8"	2.1/8" To 2.5/8"
2	4 & 5	.238 & .220	1.3/4	11 - 13	.120 - .095	36.1	1.421	43.1	1.696	-	14172	14174	14176	14178
2	6 & 7	.203 & .180	1.3/4	14 - 16	.480 - .065	37.6	1.480	44.6	1.755	-	14182	14184	14186	14188
2	7 & 8	.180 & .165	-	-	-	39.2	1.543	46.4	1.826	14191	14192	14194	14196	14198
2	9 & 10	.148 & .134	2.1/4	13	.095	40.8	1.606	48.0	1.889	14201	14202	14204	14206	14208
2	11-13	.120 & .095	2.1/4	4 & 5	.238 & .220	42.4	1.669	49.6	1.952	14211	14212	14214	14216	14218
2.1/2	2	.284	2.1/4	6 - 8	.203 - .165	45.2	1.779	52.6	2.070	-	14222	14224	14226	14228
2.1/2	3 & 4	.259 & .238	2.1/4	9 - 11	.148 - .120	46.8	1.842	54.2	2.133	-	14232	14234	14236	14238
2.1/2	4 - 6	.238 - .203	2.1/4	12 - 15	.109 - .072	48.4	1.905	57.3	2.255	-	14242	14244	14246	14248
2.1/2	7 - 10	.180 - .134	2.3/4	2 & 3	.284 & .259	51.5	2.027	60.5	2.381	-	14252	14254	14256	14258
2.1/2	11-13	.120 - .095	2.3/4	4 & 5	.238 & .220	54.7	2.153	63.7	2.507	14261	14262	14264	14266	14268
3	1 - 3	.300 - .259	2.3/4	6 - 10	.203 - .134	57.1	2.248	66.6	2.622	-	14272	14274	14276	14278
3	4 - 6	.238 - .203	2.3/4	11 - 15	.120 - .072	60.3	2.374	70.0	2.755	-	14282	14284	14286	14288
3	7 - 11	.180 - .120	3.1/4	1 - 4	.300 - .238	63.5	2.500	73.9	2.909	-	14292	14294	14296	14298
3	10-12	.134 - .109	3.1/4	4 - 7	.238 - .180	66.6	2.622	77.3	3.043	14301	14302	14304	14306	14308
3.1/2	1 - 4	.300 - .238	3.1/4	7 - 11	.180 - .120	69.8	2.748	80.1	3.153	-	14312	14314	14316	14318
3.1/2	4 - 7	.238 - .180	3.1/4	10 - 15	.134 - .072	73.0	2.874	83.4	3.283	-	14322	14324	14326	14328
3.1/2	7 - 11	.180 - .120	3.3/4	2 & 3	.284 & .259	76.2	3.000	86.8	3.417	-	14332	14334	14336	14338
3.1/2	10-12	.134 - .109	3.3/4	4 & 5	.238 & .220	79.3	3.122	89.8	3.535	-	14342	14344	14346	14348
4	1 - 4	.300 - .238	3.3/4	6 - 10	.203 - .134	82.5	3.248	93.0	3.661	-	14352	14354	14356	14358
4	4 - 7	.238 - .180	3.3/4	11 - 15	.120 - .072	85.7	3.374	96.0	3.779	-	14362	14364	14366	14368
4	7 - 11	.180 - .120	4.1/4	2 & 3	.284 & .259	88.9	3.500	98.6	3.881	-	14372	14374	14376	14378
4	8 - 12	.165 - .109	4.1/4	3 & 5	.259 & .220	90.5	3.562	102.3	4.027	-	14382	14384	14386	14388
4.1/2	1 - 4	.300 - .238	4.1/4	6 - 9	.203 - .148	95.2	3.748	104.7	4.122	-	14392	14394	14396	14398
4.1/2	3 - 8	.238 - .165	4.1/4	10 - 15	.134 - .095	98.4	3.874	110.3	4.342	-	14402	14404	14406	14408
4.1/2	6 - 12	.203 - .109	-	-	-	101.5	4.000	113.5	4.468	-	14412	14414	14416	14418





Boiler Tube Expanders P-3000 Series

We are offering **Boiler Tube Expanders P-3000 Series 1"- 4 1/2" O.D.**



Tube O.D.	Tube Thickness		Tube O.D.	Tube Thickness		Minimum I.D. Tool Enters		Maximum Expansion of Tool		Tube Expander Model Number Tube Sheet Thickness Range	
inch	bwg	inch	inch	bwg	inch	mm	inch	mm	inch	1/2" To 4.3/8"	1.1/2" To 5.3/8"
1.1/4	16	.065	1.3/8	10	.134	26.8	1.055	33.0	1.299	P3111/7	-
1.1/2	10 - 12	.134 - .109	1.3/8	13 - 16	.095 - .065	29.7	1.169	35.0	1.378	P3118/7	-
1.1/2	13 - 16	.095 - .065	1.3/4	5 - 7	.220 - .180	31.7	1.248	38.0	1.496	P3126/7	-
2	3	.259	1.3/4	8 & 9	.165 & .148	33.7	1.326	40.0	1.575	P3134/7	P3134/11
2	4 & 5	.238 & .220	1.3/4	10 - 12	.134 - .109	35.7	1.405	42.5	1.673	P3142/7	P3142/11
2	6	.203	1.3/4	13 - 16	.095 - .065	37.7	1.484	44.5	1.752	P3150/7	P3150/11
2	7 - 9	.180 - .148	2.1/4	3	.259	39.7	1.562	47.0	1.850	P3158/7	P3158/11
2	10 - 12	.134 - .109	2.1/4	4 & 5	.238 & .220	41.7	1.641	49.0	1.929	P3166/7	P3166/11
2	13 - 15	.095 - .072	2.1/4	6 & 7	.203 & .180	43.7	1.720	51.5	2.027	P3174/7	P3174/11
2	16	.065	2.1/4	8 & 9	.165 & .148	45.7	1.799	54.0	2.126	P3181/7	P3181/11
2.1/2	4 & 5	.238 - .220	2.1/4	10 - 13	.134 - .095	47.7	1.877	65.0	2.205	P3189/7	P3189/11
2.1/2	6	.203	2.1/4	14 - 6	.083 - .065	49.7	1.956	60.0	2.362	P3197/7	P3197/11
2.1/2	7 - 10	.180 - .134	2.3/4	3	.259	51.7	2.035	62.0	2.441	P3205/7	P3205/11
2.1/2	11 - 13	.120 - .095	2.3/4	4 & 5	.238 & .220	53.7	2.114	64.0	2.520	P3213/7	P3213/11
2.1/2	14 - 16	.083 - .065	2.3/4	6	.203	55.7	2.192	66.0	2.598	P3221/7	P3221/11
3	2 & 3	.284 & .259	2.3/4	7 - 9	.203 - .148	57.7	2.271	68.0	2.677	P3229/7	P3229/11
3	4	.238	2.3/4	10 - 12	.134 - .109	59.7	2.350	70.0	2.756	P3237/7	P3237/11
3	5 & 6	.220 - .203	2.3/4	13 - 16	.095 - .065	61.7	2.429	72.0	2.835	P3244/7	P3244/11
3	7 - 9	.180 - .148	3.1/4	2 & 3	.284 & .259	63.7	2.507	74.0	2.913	P3252/7	P3252/11
3	10 - 12	.134 - .109	3.1/4	4	.238	65.7	2.586	76.0	2.992	P3260/7	P3260/11
3	13 - 14	.095 - .083	3.1/4	5	.220	67.7	2.665	78.0	3.071	P3268/7	P3268/11
3	15 & 16	.072 & .065	3.1/4	6	.203	69.7	2.744	80.0	3.150	P3276/7	P3276/11
3.1/2	3 & 4	.284 & .238	3.1/4	7 - 11	.203 - .120	71.7	2.822	82.0	3.228	P3284/7	P3284/11
3.1/2	5 & 6	.220 & .203	3.1/4	12 - 14	.109 - .083	73.7	2.901	84.0	3.307	P3292/7	P3292/11
3.1/2	7 - 9	.180 - .148	3.1/8	15 & 16	.072 & .065	75.7	2.980	86.0	3.386	P3300/7	P3300/11
3.1/2	10 - 12	.134 - .109	3.1/4	3 & 4	.284 & .238	77.7	3.059	88.0	3.465	P3308/7	P3308/11
3.1/2	13 - 15	.095 - .072	3.3/4	5 & 6	.220 & .203	79.7	3.137	92.0	3.622	P3315/7	P3315/11
3.1/2	16	.065	3.3/4	7 & 8	.203 & .165	81.7	3.216	94.0	3.701	P3323/7	P3323/11
4	3 & 4	.284 & .238	3.3/4	9 - 12	.148 - .109	83.7	3.295	96.0	3.780	P3331/7	P3331/11
4	5 & 6	.220 & .203	3.3/4	13 - 16	.095 - .065	85.7	3.374	98.0	3.858	P3339/7	P3339/11
4	7 & 8	.180 & .165	4.1/4	2	.284	87.7	3.452	100.0	3.937	P3347/7	P3347/11
4	9 - 12	.148 - .109	4.1/4	3 & 4	.284 & .238	89.7	3.531	102.0	4.016	P3355/7	P3355/11
4	13 - 15	.095 - .072	4.1/4	5 & 6	.220 & .203	91.7	3.610	104.0	4.094	P3363/7	P3363/11
4	16	.065	4.1/4	7 & 8	.203 & .165	93.7	3.688	106.0	4.173	P3370/7	P3370/11
4.1/2	3	.284	4.1/4	9 - 11	.148 - .120	95.7	3.767	108.0	4.252	P3378/7	P3378/11
4.1/2	4 - 6	.238 - .203	4.1/4	12 - 16	.109 - .065	97.7	3.846	110.0	4.331	P3386/7	P3386/11
4.1/2	7 - 14	.180 - .083	-	-	-	99.7	3.925	111.0	4.407	P3394/7	P3394/11





Combination Beading Expanders

Tube Expanding And Beading in Single Operation 2"- 3" O.D.



	Previously	Now
Tools Required	1) Flaring tube expander 2) Tube expander drive 3) Beading tool 4) Air hammer	1) COMBINATION BEADING EXPANDER 2) Tube Expander Drive
Operatig Steps	1) Expand 2) Bead 3) Reroll	1) Expand and Bead (single operation)
Operator Fatigue	high...largely due to air hammer vibration and noise	Reduced significantly no air hammer for beading...no rerolling

Tube O.D.	Tube Thickness		Expansion Range		Model No.	Mandrel Model No. (Square)	Spare Roller Set Model No.	Beading Roll Model No.	Guide Roll Assembly Model No.
	bwg	inch	mm	inch					
2	10	.134	43.2 - 47.6	1.700 - 1.906	41633 - 0010	42157 (3/4)"	42811 set of 4	41631 - 0010	41701 - 0010
	11	.120			41633 - 0011			41631 - 0011	41701 - 0011
	12	.109			41633 - 0012			41631 - 0012	41701 - 0012
	13	.095			41633 - 0013			41631 - 0013	41701 - 0013
2.1/2	10	.134	55.9 - 60.3	2.200 - 2.460	41634 - 0010	42158 (3/4)"	41673 set of 5	41651 - 0010	41702 - 0010
	11	.120			41634 - 0011			41651 - 0011	41702 - 0011
	12	.109			41634 - 0012			41651 - 0012	41702 - 0012
	13	.095			41634 - 0013			41651 - 0013	41702 - 0013
3	10	.134	68.6 - 73.7	2.700 - 2.980	41659 - 0010	42159(1)"	41676 set of 5	41666 - 0010	41703 - 0010
	11	.120			41659 - 0011			41666 - 0011	41703 - 0011
	12	.109			41659 - 0012			41666 - 0012	41703 - 0012

**Note :** Refer to operation manual for other spare parts. Reverse mandrels are available.

V Series Parallel Expansion  
1"- 3" O.D.



**Use :**  
Type 'V' Expander is used for repair & erection of boilers having thin tube sheets. It is approximately twice as fast during use than other conventional expanders. Use Header Mandrel when expander is to be used through a waterleg.

Tube O.D.	Tube Thickness		Expansion Range		Effective Rolling Length		Tube Expander Model No.	Spare Mandrel			Spare Roller Set Modle No.
	bwg	inch	Dim. A Dim. B mm	Dim. A Dim. B inch	mm	inch		Short Mandrel Model No.	Header Mandrel Model No.	Mandrel Sq. Size inch	
1	10 - 13	.134 - .095	17.3 - 23.7	.681 - .937	84.20	3.5/16	V- 1	VSM - 1	VHM - 1	1/2	VR - 1
1.1/4	10 - 13	.134 - .095	23.8 - 30.6	.940 - 1.206	84.20	3.5/16	V - 2	VSM - 2	VHM - 2	1/2	VR - 2
1.1/2	10 - 13	.134 - .095	29.3 - 37.3	1.156 - 1.469	101.20	4.000	V - 3	VSM - 3	VHM - 3	1/2	VR - 3
2	10 - 13	.134 - .095	42.3 - 49.7	1.665 - 1.960	101.20	4.000	V - 4	VSM - 4	VHM - 4	3/4	VR - 4
2.1/2	10 - 13	.134 - .095	54.5 - 62.7	2.145 - 2.469	101.20	4.000	V - 5	VSM - 5	VHM - 5	3/4	VR - 5
3	10 - 13	.134 - .095	68.2 - 76.6	2.687 - 3.015	101.20	4.000	V - 6	VSM - 6	VHM - 6	1	VR - 6

**Note :** Other sizes available on request.



Boiler Tube Expanders AB Series

We are offering **Boiler Tube Expanders AB Series 7/8"- 4 1/2" O.D.**



Tube O.D.	Tube Thickness		Tube O.D.	Tube Thickness		Minimum I.D. Tool Enters		Maximum Expansion of Tool		Tube Expander Model Number Tube Sheet Thickness Range				
inch	bwg	inch	inch	bwg	inch	mm	inch	mm	inch	1/2" To 7/8"	3/4" To 1.1/8"	1.1/8" To 1.5/8"	1.5/8" To 2.1/8"	2.1/8" To 2.5/8"
7/8	15	.072	1	10	.134	18.1	.712	20.4	.803	AB-31/2	AB-31/3	-	-	-
7/8	16	.065	-	-	-	18.4	.724	20.7	.814	AB-32/2	AB-32/3	-	-	-
7/8	17	.058	1	11	.120	18.8	.740	21.1	.830	AB-32/2	AB-33/3	-	-	-
7/8	18	.049	1	12	.109	19.4	.763	21.6	.850	AB-34/2	AB-34/3	-	-	-
7/8	19 & 20	.042 & .035	1.1/8	8	.165	19.7	.775	22.3	.877	AB-35/2	AB-35/3	-	-	-
1	13	.095	-	-	-	20.1	.791	22.4	.881	AB-36/2	AB-36/3	-	-	-
1	14	.083	1.1/8	9	.148	20.6	.811	23.1	.909	AB-37/2	AB-37/3	AB-37/4	-	-
1	15 & 16	.072 & .065	1.1/8	10	.134	21.3	.838	23.8	.937	AB-38/2	AB-38/3	AB-38/4	-	-
1	17 & 18	.058 & .048	1.1/8	11	.120	22.0	.866	24.5	.964	AB-39/2	AB-39/3	AB-39/4	-	-
1	19 & 20	.042 & .035	1.1/8	12	.109	22.4	.881	25.0	.984	AB-40/2	AB-40/3	AB-40/4	-	-
1.1/4	8	.165	1.1/8	13	.095	23.3	.917	25.9	1.019	AB-41/2	AB-41/3	AB-41/4	-	-
1.1/4	9	.148	1.1/8	14	.083	23.8	.937	26.5	1.043	AB-42/2	AB-42/3	AB-42/4	-	-
1.1/4	10	.134	1.1/8	15 & 16	.072 & .065	24.4	.960	27.2	1.070	AB-43/2	AB-43/3	AB-43/4	-	-
1.1/4	11	.120	-	-	-	25.2	.992	28.0	1.102	AB-44/2	AB-44/3	AB-44/4	-	-
1.1/4	12	.109	-	-	-	25.7	1.011	28.5	1.122	AB-45/2	AB-45/3	AB-45/4	-	-
1.1/4	13	.095	1.3/8	8	.165	26.1	1.027	28.8	1.133	AB-46/2	AB-46/3	AB-46/4	-	-
1.1/4	14	.083	-	-	-	26.4	1.039	29.2	1.149	AB-47/2	AB-47/3	AB-47/4	-	-
1.1/4	15	.072	1.3/8	9	.148	26.9	1.059	29.7	1.169	AB-48/2	AB-48/3	AB-48/4	-	-
1.1/4	16	.065	1.3/8	10	.134	27.6	1.086	30.4	1.196	AB-49/2	AB-49/3	AB-49/4	AB-49/5	AB-49/6
1.1/2	7	.180	1.3/8	11	.120	28.3	1.114	31.2	1.228	AB-50/2	AB-50/3	AB-50/4	AB-50/5	AB-50/6
1.1/2	8	.165	1.3/8	12	.109	28.8	1.133	31.7	1.248	AB-51/2	AB-51/3	AB-51/4	AB-51/5	AB-51/6
1.1/2	9	.148	1.3/8	13 & 14	.095 & .083	29.5	1.161	33.4	1.314	AB-52/2	AB-52/3	AB-52/4	AB-52/5	AB-52/6
1.1/2	10	.134	1.3/8	15 & 16	.072 & .065	30.0	1.181	34.1	1.342	AB-53/2	AB-53/3	AB-53/4	AB-53/5	AB-53/6
1.1/2	11 & 12	.120 & .109	-	-	-	30.6	1.204	34.8	1.370	AB-54/2	AB-54/3	AB-54/4	AB-54/5	AB-54/6
1.1/2	13	.095	1.3/4	5	.220	31.4	1.236	35.6	1.401	AB-55/2	AB-55/3	AB-55/4	AB-55/5	AB-55/6
1.1/2	14 & 15	.083 & .072	1.3/4	6	.203	32.6	1.283	36.8	1.448	AB-56/2	AB-56/3	AB-56/4	AB-56/5	AB-56/6
-	-	-	1.3/4	7	.180	33.4	1.314	38.1	1.500	AB-57/2	AB-57/3	AB-57/4	AB-57/5	AB-57/6
-	-	-	1.3/4	8	.165	34.2	1.346	38.7	1.523	AB-58/2	AB-58/3	AB-58/4	AB-58/5	AB-58/6
2	3	.259	1.3/4	9 & 10	.148 & .134	35.0	1.377	40.6	1.598	AB-59/2	AB-59/3	AB-59/4	AB-59/5	AB-59/6
2	4	.238	1.3/4	11 & 12	.120 & .109	36.6	1.440	42.2	1.661	AB-60/2	AB-60/3	AB-60/4	AB-60/5	AB-60/6
2	5 & 6	.220 & .203	1.3/4	13 & 14	.095 & .083	38.2	1.503	43.8	1.712	AB-61/2	AB-61/3	AB-61/4	AB-61/5	AB-61/6
2	7 & 8	.180 & .165	1.3/4	15 & 16	.072 & .065	39.8	1.566	45.4	1.787	AB-62/2	AB-62/3	AB-62/4	AB-62/5	AB-62/6
2	9 & 10	.148 & .134	2.1/4	3	.259	41.4	1.629	47.0	1.850	AB-63/2	AB-63/3	AB-63/4	AB-63/5	AB-63/6
2	11 - 13	.120 - .095	2.1/4	4	.238	42.9	1.688	49.5	1.948	AB-64/2	AB-64/3	AB-64/4	AB-64/5	AB-64/6
2	14 - 16	.083 - .065	2.1/4	6 & 7	.203 & .180	44.5	1.751	51.1	2.011	AB-65/2	AB-65/3	AB-65/4	AB-65/5	AB-65/6
2	17 & 18	.085 & .049	2.1/4	8 & 9	.165 & .148	46.1	1.814	52.7	2.074	AB-66/2	AB-66/3	AB-66/4	AB-66/5	AB-66/6



## Boiler Tube Expanders ABF3 Series

We are offering **Boiler Tube Expanders ABF3 Series 7/8"- 4 1/2" O.D**



Tube O.D.	Tube Thickness		Tube O.D.	Tube Thickness		Minimum I.D. Tool Enters		Maximum Expansion of Tool		Tube Expander Model Number Tube Sheet Thickness Range				
inch	bwg	inch	inch	bwg	inch	mm	inch	mm	inch	1/2" To 7/8"	3/4" To 1.1/8"	1.1/8" To 1.5/8"	1.5/8" To 2.1/8"	2.1/8" To 2.5/8"
7/8	15	.072	1	10	.134	18.1	.712	20.4	.803	ABF3-31/2	ABF3-31/3	-	-	-
7/8	16	.065	-	-	-	18.4	.724	20.7	.841	ABF3-32/2	ABF3-32/3	-	-	-
7/8	17	.058	1	11	.120	18.8	.740	21.1	.830	ABF3-33/2	ABF3-33/3	-	-	-
7/8	18	.049	1	12	.109	19.4	.763	21.6	.850	ABF3-34/2	ABF3-34/3	-	-	-
7/8	19 & 20	.042 & .035	1.1/8	8	.165	19.7	.775	22.3	.877	ABF3-35/2	ABF3-35/3	-	-	-
1	13	.095	-	-	-	20.1	.791	22.4	.881	ABF3-36/2	ABF3-36/3	-	-	-
1	14	.083	1.1/8	9	.148	20.6	.811	23.1	.909	ABF3-37/2	ABF3-37/3	ABF3-37/4	-	-
1	15 & 16	.072 & .065	1.1/8	10	.134	21.3	.838	23.8	.937	ABF3-38/2	ABF3-38/3	ABF3-38/4	-	-
1	17 & 18	.058 & .048	1.1/8	11	.120	22.0	.866	24.5	.964	ABF3-39/2	ABF3-39/3	ABF3-39/4	-	-
1	19 & 20	.042 & .035	1.1/8	12	.109	22.4	.881	25.0	.984	ABF3-40/2	ABF3-40/3	ABF3-40/4	-	-
1.1/4	8	.165	1.1/8	13	.095	23.3	.917	25.9	1.019	ABF3-41/2	ABF3-41/3	ABF3-41/4	-	-
1.1/4	9	.148	1.1/8	14	.083	23.8	.937	26.5	1.043	ABF3-42/2	ABF3-42/3	ABF3-42/4	-	-
1.1/4	10	.134	1.1/8	15 & 16	.072 & .065	24.4	.960	27.2	1.070	ABF3-43/2	ABF3-43/3	ABF3-43/4	-	-
1.1/4	11	.120	-	-	-	25.2	.992	28.0	1.102	ABF3-44/2	ABF3-44/3	ABF3-44/4	-	-
1.1/4	12	.109	-	-	-	25.7	1.011	28.5	1.122	ABF3-45/2	ABF3-45/3	ABF3-45/4	-	-
1.1/4	13	.095	1.3/8	8	.165	26.1	1.027	28.8	1.133	ABF3-46/2	ABF3-46/3	ABF3-46/4	-	-
1.1/4	14	.083	-	-	-	26.4	1.039	29.2	1.149	ABF3-47/2	ABF3-47/3	ABF3-47/4	-	-
1.1/4	15	.072	1.3/8	9	.148	26.9	1.059	29.7	1.169	ABF3-48/2	ABF3-48/3	ABF3-48/4	-	-
1.1/4	16	.065	1.3/8	10	.134	27.6	1.086	30.4	1.196	ABF3-49/2	ABF3-49/3	ABF3-49/4	ABF3-49/5	ABF3-49/6
1.1/2	7	.180	1.3/8	11	.120	28.3	1.114	31.2	1.228	ABF3-50/2	ABF3-50/3	ABF3-50/4	ABF3-50/5	ABF3-50/6
1.1/2	8	.165	1.3/8	12	.109	28.8	1.133	31.7	1.248	ABF3-51/2	ABF3-51/3	ABF3-51/4	ABF3-51/5	ABF3-51/6
1.1/2	9	.148	1.3/8	13 & 14	.095 & .083	29.5	1.161	33.4	1.314	ABF3-52/2	ABF3-52/3	ABF3-52/4	ABF3-52/5	ABF3-52/6
1.1/2	10	.134	1.3/8	15 & 16	.072 & .065	30.0	1.181	34.1	1.342	ABF3-53/2	ABF3-53/3	ABF3-53/4	ABF3-53/5	ABF3-53/6
1.1/2	11 & 12	.120 & .109	-	-	-	30.6	1.204	34.8	1.370	ABF3-54/2	ABF3-54/3	ABF3-54/4	ABF3-54/5	ABF3-54/6
1.1/2	13	.095	1.3/4	5	.220	31.4	1.236	35.6	1.401	ABF3-55/2	ABF3-55/3	ABF3-55/4	ABF3-55/5	ABF3-55/6
1.1/2	14 & 15	.083 & .072	1.3/4	6	.203	32.6	1.283	36.8	1.448	ABF3-56/2	ABF3-56/3	ABF3-56/4	ABF3-56/5	ABF3-56/6
-	-	-	1.3/4	7	.180	33.4	1.314	38.1	1.500	ABF3-57/2	ABF3-57/3	ABF3-57/4	ABF3-57/5	ABF3-57/6
-	-	-	1.3/4	8	.165	34.2	1.346	38.7	1.523	ABF3-58/2	ABF3-58/3	ABF3-58/4	ABF3-58/5	ABF3-58/6
2	3	.259	1.3/4	9 & 10	.148 & .134	35.0	1.377	40.6	1.598	ABF3-59/2	ABF3-59/3	ABF3-59/4	ABF3-59/5	ABF3-59/6
2	4	.238	1.3/4	11 & 12	.120 & .109	36.6	1.440	42.2	1.661	ABF3-60/2	ABF3-60/3	ABF3-60/4	ABF3-60/5	ABF3-60/6
2	5 & 6	.200 & .203	1.3/4	13 & 14	.095 & .083	38.2	1.503	43.8	1.712	ABF3-61/2	ABF3-61/3	ABF3-61/4	ABF3-61/5	ABF3-61/6
2	7 & 8	.180 & .165	1.3/4	15 & 16	.072 & .065	39.8	1.566	45.4	1.787	ABF3-62/2	ABF3-62/3	ABF3-62/4	ABF3-62/5	ABF3-62/6
2	9 & 10	.148 & .134	2.1/4	3	.259	41.4	1.629	47.0	1.850	ABF3-63/2	ABF3-63/3	ABF3-63/4	ABF3-63/5	ABF3-63/6
2	11 - 13	.120 - .095	2.1/4	4	.238	42.9	1.688	49.5	1.948	ABF3-64/2	ABF3-64/3	ABF3-64/4	ABF3-64/5	ABF3-64/6
2	14 - 16	.083 - .065	2.1/4	6 & 7	.203 & .180	44.5	1.751	51.1	2.011	ABF3-65/2	ABF3-65/3	ABF3-65/4	ABF3-65/5	ABF3-65/6
2	17 & 18	.085 & .049	2.1/4	8 & 9	.165 & .148	46.1	1.814	52.7	2.074	ABF3-66/2	ABF3-66/3	ABF3-66/4	ABF3-66/5	ABF3-66/6



Boiler Tube Expanders P-1000 Series

We are offering **Boiler Tube Expanders P-1000 Series 1"- 4 1/2" O.D.**



Tube O.D.	Tube Thickness		Tube O.D.	Tube Thickness		Minimum I.D. Tool Enters		Maximum Expansion of Tool		Tube Expander Model Number Tube Sheet Thickness Range				
	inch	bwg		inch	bwg	mm	inch	mm	inch	1/2" To 3/4"	7/8" To 1.1/4"	1.3/8" To 1.3/4"	1.7/8" To 2.1/4"	2.3/8" To 2.3/4"
1	13 & 14	.095 & .083	1.1/8	9	.148	19.7	.775	23.4	.921	P1079/3	P1079/5	-	-	-
1	15 & 16	.072 & .065	1.1/8	10	.134	20.7	.814	24.4	.961	P1083/3	P1083/5	-	-	-
1.1/4	7	.180	1.1/8	11 & 12	.120 & .109	21.7	.854	25.5	1.004	P1087/3	P1087/5	-	-	-
1.1/4	8 & 9	.165 & .148	1.1/8	13 & 14	.095 & .083	22.7	.893	26.5	1.043	P1091/3	P1091/5	-	-	-
1.1/4	10	.134	1.1/8	15 & 16	.072 & .065	23.7	.933	28.1	1.105	P1095/3	P1095/5	-	-	-
1.1/4	11 - 13	.120 - .095	1.3/8	8	.165	24.7	.972	29.0	1.142	P1099/3	P1099/5	-	-	-
1.1/4	14 & 15	.083 & .072	1.3/8	9	.148	25.7	1.011	30.0	1.181	P1103/3	P1103/5	-	-	-
1.1/4	16	.065	1.3/8	10	.134	27.8	1.094	33.0	1.299	P1111/3	P1111/5	-	-	-
1.1/2	10 - 12	.134 - .109	1.3/8	15 & 16	.072 & .065	30.7	1.208	35.0	1.378	P1118/3	P1118/5	-	-	-
1.1/2	13 - 16	.095 - .065	1.3/4	6 & 7	.203 & .180	32.7	1.287	38.0	1.496	P1126/3	P1126/5	-	-	-
2	3	.259	1.3/4	8 & 9	.165 & .148	34.7	1.366	40.0	1.575	P1134/3	P1134/5	P1134/7	P1134/9	P1134/11
2	4 & 5	.238 & .220	1.3/4	10 - 12	.134 - .109	36.7	1.444	42.5	1.673	P1142/3	P1142/5	P1142/7	P1142/9	P1142/11
2	6	.203	1.3/4	13 - 16	.096 - .065	38.7	1.523	44.5	1.752	P1150/3	P1150/5	P1150/7	P1150/9	P1150/11
2	7 - 9	.180 - .148	2.1/4	3	.259	40.7	1.602	47.0	1.850	P1158/3	P1158/5	P1158/7	P1158/9	P1158/11
2	10 - 12	.134 - .109	2.1/4	4	.238	42.7	1.681	49.0	1.929	P1166/3	P1166/5	P1166/7	P1166/9	P1166/11
2	13 - 15	.095 - .072	2.1/4	5 & 6	.220 & .203	44.7	1.760	51.5	2.027	P1174/3	P1174/5	P1174/7	P1174/9	P1174/11
2	13 - 15	.095 - .072	2.1/4	5 & 6	.220 & .203	44.7	1.760	51.5	2.027	P1174/3	P1174/5	P1174/7	P1174/9	P1174/11
2	16	.065	2.1/4	7 - 9	.180 - .148	46.7	1.838	54.0	2.126	P1181/3	P1181/5	P1181/7	P1181/9	P1181/11
2.1/2	4 & 5	.238 & .220	2.1/4	10 - 13	.134 - .095	48.7	1.917	56.0	2.205	P1189/3	P1189/5	P1189/7	P1189/9	P1189/11
2.1/2	6	.203	2.1/4	14 - 16	.083 - .065	50.7	1.996	60.0	2.362	P1197/3	P1197/5	P1197/7	P1197/9	P1197/11
2.1/2	7 - 10	.180 - .134	2.3/4	2 & 3	.284 & .259	52.7	2.074	62.0	2.441	P1205/3	P1205/5	P1205/7	P1205/9	P1205/11
2.1/2	11 - 13	.120 - .095	2.3/4	4 & 5	.238 & .220	54.7	2.153	64.0	2.530	P1213/3	P1213/5	P1213/7	P1213/9	P1213/11
2.1/2	14 - 16	.083 - .065	2.3/4	6 - 8	.203 - .165	56.7	2.232	66.0	2.598	P1221/3	P1221/5	P1221/7	P1221/9	P1221/11
3	2	.284	2.3/4	7 - 9	.180 - .148	58.7	2.311	68.0	2.677	P1229/3	P1229/5	P1229/7	P1229/9	P1229/11
3	3 & 4	.259 & .238	2.3/4	10 - 12	.134 - .109	60.7	2.389	70.0	2.756	P1237/3	P1237/5	P1237/7	P1237/9	P1237/11
3	5 & 6	.220 & .203	2.3/4	13 - 16	.095 - .065	62.7	2.468	72.0	2.835	P1244/3	P1244/5	P1244/7	P1244/9	P1244/11
3	7 & 8	.180 & .165	-	-	-	64.7	2.547	74.0	2.913	P1252/3	P1252/5	P1252/7	P1252/9	P1252/11
3	10 - 12	.134 - .109	3.1/4	3	.259	66.7	2.625	76.0	2.992	P1260/3	P1260/5	P1260/7	P1260/9	P1260/11
3	13 & 14	.095 & .083	3.1/4	4	.238	68.7	2.704	78.0	3.071	P1268/3	P1268/5	P1268/7	P1268/9	P1268/11
3	15 & 16	.072 & .065	3.1/4	5 & 6	.220 & .203	70.7	2.783	80.0	3.150	P1276/3	P1276/5	P1276/7	P1276/9	P1276/11
3.1/2	2 & 3	.284 & .259	3.1/4	7 - 11	.180 - .120	72.7	2.862	82.0	3.228	P1284/3	P1284/5	P1284/7	P1284/9	P1284/11
3.1/2	4 - 6	.259 - .203	3.1/4	12 - 14	.109 - .480	74.7	2.940	84.0	3.307	P1292/3	P1292/5	P1292/7	P1292/9	P1292/11
3.1/2	7 - 9	.180 - .148	3.1/4	15 & 16	.072 & .065	76.7	3.019	86.0	3.386	P1300/3	P1300/5	P1300/7	P1300/9	P1300/11
3.1/2	10 - 12	.134 - .109	3.3/4	2 & 3	.284 & .259	78.7	3.098	88.0	3.465	P1308/3	P1308/5	P1308/7	P1308/9	P1308/11
3.1/2	13 - 15	.095 - .072	3.3/4	4 - 6	.259 - .203	80.7	3.177	92.0	3.622	P1315/3	P1315/5	P1315/7	P1315/9	P1315/11
3.1/2	16	.065	3.3/4	7 & 8	.180 & .165	82.7	3.255	94.0	3.701	P1323/3	P1323/5	P1323/7	P1323/9	P1323/11
4	3	.259	3.3/4	9 - 12	.148 - .109	84.7	3.334	96.0	3.780	P1331/3	P1331/5	P1331/7	P1331/9	P1331/11
4	4 - 6	.259 - .203	3.3/4	13 - 16	.095 - .065	86.7	3.143	98.0	3.858	P1339/3	P1339/5	P1339/7	P1339/9	P1339/11
4	7 & 8	.180 & .165	4.1/4	2	.284	88.7	3.492	100.0	3.937	P1347/3	P1347/5	P1347/7	P1347/9	P1347/11
4	9 - 12	.148 - .109	4.1/4	3	.259	90.7	3.570	102.0	4.016	P1355/3	P1355/5	P1355/7	P1355/9	P1355/11
4	13 - 15	.095 - .072	4.1/4	4	.238	92.7	3.649	104.0	4.094	P1363/3	P1363/5	P1363/7	P1363/9	P1363/11
4	16	.065	4.1/4	7 & 8	.180 & .165	94.7	3.728	106.0	4.173	P1370/3	P1370/5	P1370/7	P1370/9	P1370/11
4.1/2	3	.259	4.1/4	9 - 11	.148 - .120	96.7	3.807	108.0	4.252	P1378/3	P1378/5	P1378/7	P1378/9	P1378/11
4.1/2	4 - 6	.259 - .203	4.1/4	12 - 16	.109 - .065	98.7	3.885	110.0	4.331	P1386/3	P1386/5	P1386/7	P1386/9	P1386/11
4.1/2	7 - 14	.180 - .083	-	-	-	100.7	3.964	111.0	4.407	P1394/3	P1394/5	P1394/7	P1394/9	P1394/11





Boiler Tube Expanders P-2000 Series

We are offering **Boiler Tube Expanders P-2000 Series 1"- 4 1/2" O.D.**

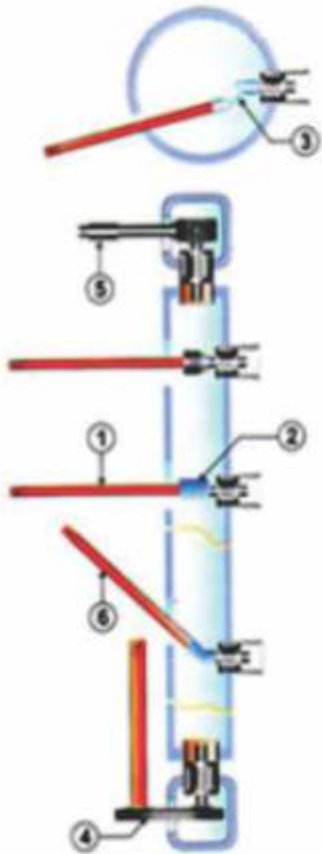


Tube O.D.	Tube Thickness		Tube O.D.	Tube Thickness		Minimum I.D. Tool Enters		Maximum Expansion of Tool		Tube Expander Model Number Tube Sheet Thickness Range				
inch	bwg	inch	inch	bwg	inch	mm	inch	mm	inch	1/2" To 3/4"	7/8" To 1.1/4"	1.3/8" To 1.3/4"	1.7/8" To 2.1/4"	2.3/8" To 2.3/4"
1	13 & 14	.095 & .083	1.1/8	9	.148	18.7	.736	23.4	.921	P2079/3	P2079/5	-	-	-
1	15 & 16	.072 & .065	1.1/8	10	.134	19.7	.775	24.4	.961	P2083/3	P2083/5	-	-	-
1.1/4	7	.180	1.1/8	11& 12	.120 & .109	20.7	.814	25.5	1.004	P2087/3	P2087/5	-	-	-
1.1/4	8 & 9	.165 & .148	1.1/8	13 & 14	.095 & .083	21.7	.854	26.5	1.043	P2091/3	P2091/5	-	-	-
1.1/4	10	.134	1.1/8	15 & 16	.072 & .065	22.7	.893	28.1	1.105	P2095/3	P2095/5	-	-	-
1.1/4	11 - 13	.120 - .095	1.3/8	8	.165	23.7	.933	29.0	1.142	P2099/3	P2099/5	-	-	-
1.1/4	14 & 15	.083 & .072	1.3/8	9	.148	24.7	.972	30.0	1.181	P2103/3	P2103/5	-	-	-
1.1/4	16	.065	1.3/8	10	.134	26.8	1.055	33.0	1.299	P2111/3	P2111/5	-	-	-
1.1/2	10 - 12	.134 - .109	1.3/8	15 & 16	.072 & .065	29.7	1.169	35.0	1.378	P2118/3	P2118/5	-	-	-
1.1/2	13 - 16	.095 - .065	1.3/4	6 & 7	.203 & .180	31.7	1.248	38.0	1.496	P2126/3	P2126/5	-	-	-
2	3	.259	1.3/4	8 & 9	.165 & .148	33.7	1.326	40.0	1.575	P2134/3	P2134/5	P2134/7	P2134/9	P2134/11
2	4 & 5	.238 & .220	1.3/4	10 - 12	.134 - .109	35.7	1.405	42.5	1.673	P2142/3	P2142/5	P2142/7	P2142/9	P2142/11
2	6	.203	1.3/4	13 - 16	.096 - .065	37.7	1.484	44.5	1.752	P2150/3	P2150/5	P2150/7	P2150/9	P2150/11
2	7 - 9	.180 - .148	2.1/4	3	.259	39.7	1.562	47.0	1.850	P2158/3	P2158/5	P2158/7	P2158/9	P2158/11
2	13 - 15	.095 - .072	2.1/4	5 & 6	.220 & .203	43.7	1.720	51.5	2.027	P2174/3	P2174/5	P2174/7	P2174/9	P2174/11
2	16	.065	2.1/4	7 - 9	.180 - .148	45.7	1.799	54.0	2.126	P2181/3	P2181/5	P2181/7	P2181/9	P2181/11
2.1/2	4 & 5	.238 & .220	2.1/4	10 - 13	.134 - .095	47.7	1.877	56.0	2.205	P2189/3	P2189/5	P2189/7	P2189/9	P2189/11
2.1/2	6	.203	2.1/4	14 - 16	.083 - .065	49.7	1.956	60.0	2.362	P2197/3	P2197/5	P2197/7	P2197/9	P2197/11
2.1/2	7 - 10	.180 - .134	2.3/4	2 & 3	.284 & .259	51.7	2.035	62.0	2.441	P2205/3	P2205/5	P2205/7	P2205/9	P2205/11
2.1/2	11 - 13	.120 - .095	2.3/4	4 & 5	.238 & .220	53.7	2.114	64.0	2.530	P2213/3	P2213/5	P2213/7	P2213/9	P2213/11
2.1/2	14 - 16	.083 - .065	2.3/4	6 - 8	.203 - .165	55.7	2.192	66.0	2.598	P2221/3	P2221/5	P2221/7	P2221/9	P2221/11
3	2	.284	2.3/4	7 - 9	.180 - .148	57.7	2.271	68.0	2.677	P2229/3	P2229/5	P2229/7	P2229/9	P2229/11
3	3 & 4	.259 & .238	2.3/4	10 - 12	.134 - .109	59.7	2.350	70.0	2.756	P2237/3	P2237/5	P2237/7	P2237/9	P2237/11
3	5 & 6	.220 & .203	2.3/4	13 - 16	.095 - .065	61.7	2.429	72.0	2.835	P2244/3	P2244/5	P2244/7	P2244/9	P2244/11
3	7 & 8	.180 & .165	-	-	-	63.7	2.507	74.0	2.913	P2252/3	P2252/5	P2252/7	P2252/9	P2252/11
3	10 - 12	.134 - .109	3.1/4	3	.259	65.7	2.586	76.0	2.992	P2260/3	P2260/5	P2260/7	P2260/9	P2260/11
3	13 & 14	.095 & .083	3.1/4	4	.238	67.7	2.665	78.0	3.071	P2268/3	P2268/5	P2268/7	P2268/9	P2268/11
3	15 & 16	.072 & .065	3.1/4	5 & 6	.220 & .203	69.7	2.744	80.0	3.150	P2276/3	P2276/5	P2276/7	P2276/9	P2276/11
3.1/2	2 & 3	.284 & .259	3.1/4	7 - 11	.180 - .120	71.7	2.822	82.0	3.228	P2284/3	P2284/5	P2284/7	P2284/9	P2284/11
3.1/2	4 - 6	.259 - .203	3.1/4	12 - 14	.109 - .480	73.7	2.901	84.0	3.307	P2292/3	P2292/5	P2292/7	P2292/9	P2292/11
3.1/2	7 - 9	.180 - .148	3.1/4	15 & 16	.072 & .065	75.7	2.980	86.0	3.386	P2300/3	P2300/5	P2300/7	P2300/9	P2300/11
3.1/2	10 - 12	.134 - .109	3.3/4	2 & 3	.284 & .259	77.7	3.059	88.0	3.465	P2308/3	P2308/5	P2308/7	P2308/9	P2308/11
3.1/2	13 - 15	.095 - .072	3.3/4	4 - 6	.259 - .203	79.7	3.137	92.0	3.622	P2315/3	P2315/5	P2315/7	P2315/9	P2315/11
3.1/2	16	.065	3.3/4	7 & 8	.180 & .165	81.7	3.216	94.0	3.701	P2323/3	P2323/5	P2323/7	P2323/9	P2323/11
4	3	.259	3.3/4	9 - 12	.148 - .109	83.7	3.295	96.0	3.780	P2331/3	P2331/5	P2331/7	P2331/9	P2331/11
4	4 - 6	.259 - .203	3.3/4	13 - 16	.095 - .065	85.7	3.374	98.0	3.858	P2339/3	P2339/5	P2339/7	P2339/9	P2339/11
4	7 & 8	.180 & .165	4.1/4	2	.284	87.7	3.452	100.0	3.937	P2347/3	P2347/5	P2347/7	P2347/9	P2347/11
4	9 - 12	.148 - .109	4.1/4	3	.259	89.7	3.531	102.0	4.016	P2355/3	P2355/5	P2355/7	P2355/9	P2355/11
4	13 - 15	.095 - .072	4.1/4	4	.238	91.7	3.610	104.0	4.094	P2363/3	P2363/5	P2363/7	P2363/9	P2363/11
4	16	.065	4.1/4	7 & 8	.180 & .165	93.7	3.688	106.0	4.173	P1370/3	P1370/5	P1370/7	P1370/9	P2370/11
4.1/2	3	.259	4.1/4	9 - 11	.148 - .120	95.7	3.767	108.0	4.252	P1378/3	P1378/5	P1378/7	P1378/9	P2378/11
4.1/2	4 - 6	.259 - .203	4.1/4	12 - 16	.109 - .065	97.7	3.846	110.0	4.331	P1386/3	P1386/5	P1386/7	P1386/9	P2386/11
4.1/2	7 - 14	.180 - .083	-	-	-	99.7	3.925	111.0	4.407	P1394/3	P1394/5	P1394/7	P1394/9	P2394/11



## Boiler Tube Expanding Accessories

We are offering **Boiler Tube Expanding Accessories**



- 1) **Drive Extensions:**  
Are used with universal joints and parallel gear train drives as well as extension couplings for extending expander mandrel reach through water legs, headers etc.
- 2) **Extension Coupling:**  
Are available in plain or reducing type and are used to connect drive extension, mandrels, and universal joints.
- 3) **Universal Joints:**  
Female x Female are most common and are used to create flexibility in reaching hard to get to stop.  
Double Universal Joints:  
Allow more deflection than Female x Female universal joints.  
Male x Male: are suitable for use in sugar heater headers.
- 4) **Parallel Gear Train Drive:**  
Have high strength gears with bronze bushings to expand tubes in hard to reach places.
- 5) **Right Angle Worm Gear Drive:**  
Used for operating in very confined areas of boiler headers. Has a one piece construction for maximum life.
- 6) **Extension Universal Joint:**  
Integral design eliminates couplings an extension with a universal joint and are used when expanding tubes through water wall headers, super heater headers, water legs etc.



Boiler and Condenser Tube Cleaning Equipment

We are a well-established manufacturer of tube cleaning equipment, tube cleaning machine, dry tub cleaning equipment suitable for dry application & wet application. The different types of dry tube cleaning equipment that we offer includes wire brushes, tool head cutters, electrical tube cleaners and more. Precise, effective and cost-saving are the Tube Cleaning Equipment offered. The cleaning machine is easy to use & require little training / experience to operate. We supply variety of tube cleaning equipment, flexible shaft machine, tube cleaning machine, flexible shaft, flexible shaft tools, tube cleaners, flex shafts, flexible shafting equipment, flexible shafting machine etc.

BOILER TUBE CLEANERS :-

FLEXIBLE SHAFT MACHINE (NFM SERIES)



It is a 3 phase electric motor (2800 rpm) mounted on 3 wheel trolley fitted with a carrying trolley. Horse power of motor is selected depending upon the length & size of shaft, and type of scaling. Push button starter is provided to control the motor. Each machine is fully wired, carefully tested & fitted with a 10 ft. Length (Or longer if required) PVC cable to main supply.

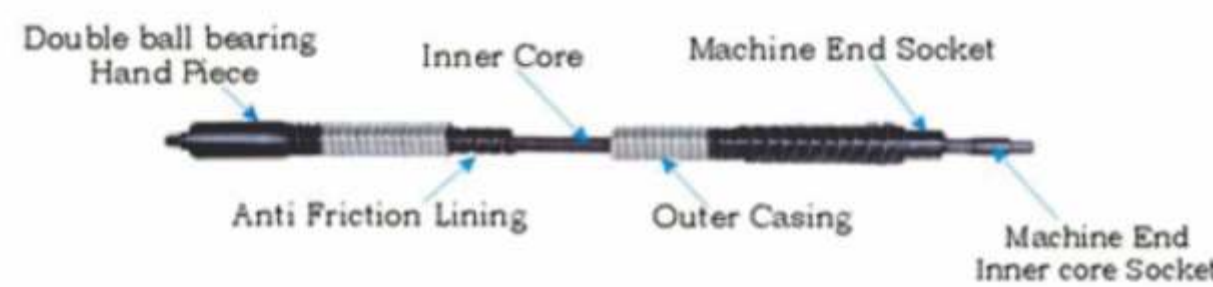
Motors are available in enclosed system as well as in open system (i.e. Without covering of above motor).

Please contact us if your electrical specification is different from below mentioned. Machine for alternate supply are also available.

Model No.	Motor Power		Electric Supply	Speed RPM	Tube I. D.	
	HP	kW			Mm.	Inch
NFM -10	1.0	0.746	440 V 3 Phase 50 C/S A/C	1400	15.87- 22.0	5/8-0.82
NFM -30	3.0	2.238		2900	22.0- 38.10	0.86-1.1/2
NFM -50	5.0	3.730		2900	38.10-152.40	1.1/2-6.0

NIKSFLEX' FLEXIBLE SHAFT (NFS SERIES)

It is used for cleaning of tube by transmitting power in terms of rotation from the motor unit to tool head cutter or brush within tube.



**Inner Core** : It is flexible wire with multiple wound opposite layer. It is made of high tensile spring steel or stainless steel (as per requirement) and

**Inner Core** : It is flexible wire with multiple wound opposite layer. It is made of high tensile spring steel or stainless steel (as per requirement) and passed through heat treatment processes to make it absolutely vibration free.

**Outer Casing** : It is flexible, double interlocked, circular rounded, made of galvanized steel strip, Special spring steel lining is provided within outer casing to avoid any friction between inner core & outer casing.

**Connection** : One end of shaft with machine end socket is attached to suitable motor and other end is attached to tool end.

INNER CORE DIA MM (INCH)		6.4MM (1/4")	9.5MM (3/8)	11.0 MM (7/16)	13MM	15MM	19.0 MM (3/4)
OUTER CASING MM (INCH)		14.5 MM (0.57")	19.0 MM (3/4)	22.0 MM (7/8)	24.0 MM (15/16)	29.0 MM (1.14)	33.0 MM (1.3)
LENGTH							
Mtrs.	Feet	Sr. No.	MODEL NO.	MODEL NO.	MODEL NO.	MODEL NO.	MODEL NO.
6.0	20.0	1	NFS-101-20	NFS-102-20	NFS-104-20	NFS-105-20	NFS-106-20
7.5	25.0	2	NFS-101-25	NFS-102-25	NFS-104-25	NFS-105-25	NFS-106-25
8.0	27.0	3	NFS-101-27	NFS-102-27	NFS-104-27	NFS-105-27	NFS-106-27
9.0	30.0	4	NFS-101-30	NFS-102-30	NFS-104-30	NFS-105-30	NFS-106-30
10.0	33.0	5	NFS-101-33	NFS-102-33	NFS-104-33	NFS-105-33	NFS-106-33
12.0	40.0	6	NFS-101-40	NFS-102-40	NFS-104-40	NFS-105-40	NFS-106-40
15.0	50.0	7	NFS-101-50	NFS-102-50	NFS-104-50	NFS-105-50	NFS-106-50
18.0	60.0	8		NFS-102-60	NFS-104-60	NFS-105-60	NFS-106-60
20.0	65.0	9		NFS-102-65	NFS-104-65	NFS-105-65	NFS-106-65
25.0	82.5	10		NFS-102-82	NFS-104-82	NFS-105-82	NFS-106-82
30.0	100.0	11		NFS-102-100	NFS-104-100	NFS-105-100	NFS-106-100
Spare Inner Core Per Meter			NIC-102	NIC-104	NIC-105	NIC-106	NIC-107
Spare Outer Casing Per Meter			NOC-102	NOC-104	NOC-105	NOC-106	NOC-107
Spare Hand Piece			NHP-102	NHP-104	NHP-105	NHP-106	NHP-107

TOOL HEAD CUTTERS

CT Series Tool Head Cutters



**Purpose** : For rapid removal of hard scale.

**Description** : It has 15 cutter wheels (4 straight wheels, 4 left wheel, 4 right wheel & 3 bevel wheels). They are spring loaded & selfexpanding.

**Size** : For tube I. D. From 31mm to 53mm.

Serial No.	Tube I. D.		Tool Head	Cutters Wheel Set of 15 rollers	Spare Arms
	Mm.	Inch			
1	31.7	1.1/4	CT-10	CTW-1	CTA-1
2	33.3	1.5/16	CT-10A	CTW-1	CTA-1
3	35.0	1.3/8	CT-11	CTW-1	CTA-1
4	36.5	1.7/16	CT-11A	CTW-1	CTA-1
5	38.1	1.1/2	CT-12	CTW-2	CTA-2
6	39.7	1.9/16	CT-12A	CTW-2	CTA-2
7	41.3	1.5/8	CT-13	CTW-2	CTA-2
8	42.9	1.11/16	CT-13A	CTW-2	CTA-2
9	44.5	1.3/4	CT-14	CTW-3	CTA-3
10	46.0	1.13/16	CT-14A	CTW-3	CTA-3
11	47.6	1.7/8	CT-15	CTW-3	CTA-3
12	49.2	1.15/16	CT-15A	CTW-3	CTA-3
13	51.0	2	CT-16	CTW-3	CTA-3

T Series Tool Head Cutters



**Purpose** : For cleaning straight and curved tubes as found in boiler, air heaters.

**Description** : This head cutter is provided with three wheels, one each of straight teeth, teeth cut right hand, teeth cut left hand for quicker cleaning and to prevent grooving of scale.

**Size** : Tube I. D. From 31mm to 102mm

**NOTE** : '2 Layer & 3 Layer tool head cutters also available in 'T' series cutters.

Serial No.	Tube I. D.		Tool Head	Cutters Wheel Set of 3 rollers	Spare Arms
	Mm.	Inch			
1	31.7	1.1/4	Model No.	Model No.	Model No.
2	35.0	1.3/8	T-10	TW-1	TA-1
3	38.1	1.1/2	T-11	TW-1	TA-1
4	41.3	1.5/8	T-12	TW-1	TA-1
5	44.5	1.3/4	T-13	TW-2	TA-2
6	47.6	1.7/8	T-14	TW-2	TA-2
7	51.4	2	T-15	TW-2	TA-2
8	54.0	2.1/8	T-16	TW-2	TA-2
9	57.1	2.1/4	T-17	TW-2	TA-2
10	60.3	2.1/2	T-18	TW-3	TA-3
11	63.5	2.1/2	T-19	TW-3	TA-3
12	70.0	2.3/4	T-20	TW-3	TA-3
13	76.2	3	T-21	TW-4	TA-4
14	82.5	3.1/4	T-22	TW-4	TA-4
15	88.9	3.1/2	T-23	TW-4	TA-4
16	95.2	3.3/4	T-24	TW-5	TA-5
17	101.6	4	T-25	TW-5	TA-5
18			T-26	TW-6	TA-6
19			T-27	TW-6	TA-6
20			T-28	TW-6	TA-6
21			T-29	TW-6	TA-6
22			T-30	TW-6	TA-6
23			T-31	TW-6	TA-6
24			T-32	TW-6	TA-6

TUBE CLEANING EQUIPMENTS

Wire Brushes

TURK HEAD BRUSH



**Max. Size of brush:** 6" (152.4mm)

**Purpose:** For removal of light scale from pan, evaporator, juice heaters tube.

CUP SHAPE BRUSH



**Max. Size of brush:** 6" (152.4mm)

**Purpose:** For cleaning more space or where rotary cleaning can not be used.

CIRCULAR WHEEL BRUSH



**Max. Size of brush:** 6" (152.4mm)  
**Thickness:** 1/2" to 2"

**Purpose:** For polishing, deburring & cleaning of tube

Serial No.	Size		Turk Head Brush Model Nos.	'NCS' Cup Shape Brush Model Nos.	Circular Wheel Brush Model Nos.
	Mm.	Inch			

Serial No.	Size		Turk Head Brush Model Nos.	'NCS' Cup Shape Brush Model Nos.	Circular Wheel Brush Model Nos.
	Mm.	Inch			
1	31.7	1.1/4	NT-10	-----	NCW-10
2	35.0	1.3/8	NT-11	-----	NCW-11
3	38.1	1.1/2	NT-12	-----	NCW-12
4	41.3	1.5/8	NT-13	-----	NCW-13
5	44.5	1.3/4	NT-14	-----	NCW-14
6	47.6	1.7/8	NT-15	-----	NCW-15
7	51.0	2	NT-16	NCS-16	NCW-16
8	54.0	2.1/8	NT-17	NCS-17	NCW-17
9	57.1	2.1/4	NT-18	NCS-18	NCW-18
10	60.3	2.3/8	NT-19	NCS-19	NCW-19
11	63.5	2.5/8	NT-20	NCS-20	NCW-20
12	66.7	2.5/8	NT-21	NCS-21	NCW-21
13	69.8	2.3/4	NT-22	NCS-22	NCW-22
14	73.0	2.7/8	NT-23	NCS-23	NCW-23
15	76.2	3	NT-24	NCS-24	NCW-24
16	79.4	3.1/8	NT-25	NCS-25	NCW-25
17	82.5	3.1/4	NT-26	NCS-26	NCW-26
18	85.7	3.3/8	NT-27	NCS-27	NCW-27
19	88.9	3.1/2	NT-28	NCS-28	NCW-28
20	92.1	3.5/8	NT-29	NCS-29	NCW-29
21	95.2	3.3/4	NT-30	NCS-30	NCW-30
22	98.4	3.7/8	NT-31	NCS-31	NCW-31
23	101.6	4	NT-32	NCS-32	NCW-32

Condenser Tube Cleaners

Electric Tube cleaners	Portable Electrical Tube Cleaners	Chiller Tube Cleaning Equipment's
Pneumatic Tube Cleaners	Portable Pneumatic Tube Cleaners	Tube Cleaning Accessories
Hand Held Pneumatic Tube Cleaners		