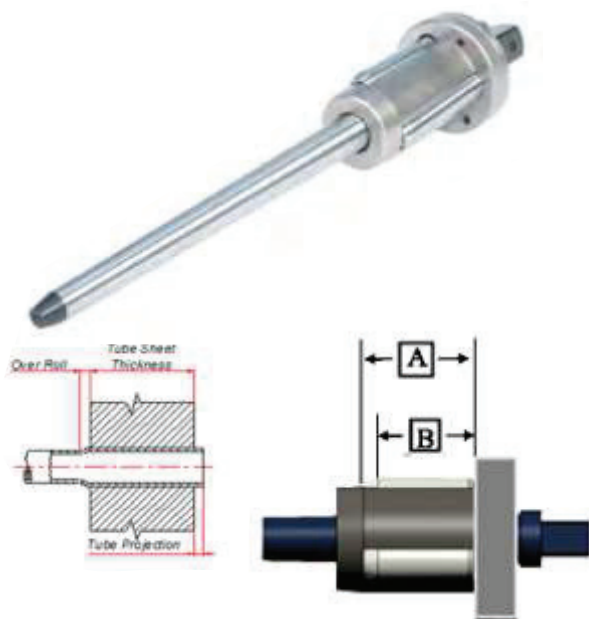


TUBE EXPANDER A SERIES



Features

- Commonly used tool through-out the world for parallel expansion of tubes.
- Self positioned rolls in the cage body.
- Economical tool used for only parallel expansion of the Boiler, Economizer, and air heater tubes. Sturdy & durable Design

Tube Sheet Thickness	Roller Length	Effective Rolling Length
1/2" - 7/8" (12.7 - 22.22mm)	2.1/4" (57.10 mm)	1.7/8" (47.50mm)
3/4" - 1.1/8" (19.05 - 28.58mm)	2.1/2" (63.50 mm)	2.5/32" (54.8 mm)
1.1/8" - 1.5/8" (28.58 - 41.30mm)	3" (76.20 mm)	2.5/8" (66.70 mm)
1.5/8" - 2.1/8" (41.30 - 54.0mm)	3.1/2" (88.80 mm)	3.5/32" (80.0 mm)
2.1/8" - 2.5/8" (54.0 - 66.70mm)	4" (101.50 mm)	3.5/8" (92.0 mm)

TUBE EXPANDERS SPECIFICATION

Tube O.D inch	TUBE THICKNESS		Tube O.D inch	TUBE THICKNESS		Min. I.D.		Max. Exp.		Expander Model	Roll Model	Mandrel Model	Mandrel Square Drive
	BWG	inch		BWG	inch	mm	inch	mm	inch				
7/8	15	.072	1	10	.134	18.1	0.713	20.4	0.803	A - 31	15-RS	DM - 11	3/8
7/8	16	.065	-	-	-	18.4	0.724	20.7	0.815	A - 32	15-RS	DM - 12	3/8
7/8	17	.058	1	11	.120	18.8	0.740	21.1	0.831	A - 33	16-RS	DM - 12	3/8
7/8	18	.049	1	12	.109	19.4	0.764	21.6	0.850	A - 34	20-RS	DM - 12	3/8
7/8	19-20	.042/.035	1.1/8	8	.165	19.7	0.776	22.3	0.878	A - 35	17-RS	DM - 13	3/8
1	13	.095	-	-	-	20.1	0.791	22.4	0.882	A - 36	18-RS	DM - 12	3/8
1	14	.083	1.1/8	9	.148	20.6	0.811	23.1	0.909	A - 37	18-RS	DM - 13	3/8
1	15-16	.072/.065	1.1/8	10	.134	21.3	0.839	23.8	0.937	A - 38	19-RS	DM - 13	3/8
1	17-18	.058/.048	1.1/8	11	.120	22.0	0.866	24.5	0.965	A - 39	21-RS	DM - 13	3/8
1	19-20	.042/.035	1.1/8	12	.109	22.4	0.882	25.0	0.984	A - 40	21-RS	DM - 14	3/8
1.1/4	8	.165	1.1/8	13	.095	23.3	0.917	25.9	1.020	A - 41	22-RS	DM - 14	3/8
1.1/4	9	.148	1.1/8	14	.083	23.8	0.937	26.5	1.043	A - 42	23-RS	DM - 15	1/2
1.1/4	10	.134	1.1/8	15-16	.072/.065	24.4	0.961	27.2	1.071	A - 43	24-RS	DM - 15	1/2
1.1/4	11	.120	-	-	-	25.2	0.992	28.0	1.102	A - 44	26-RS	DM - 16	1/2
1.1/4	12	.109	-	-	-	25.7	1.012	28.5	1.122	A - 45	27-RS	DM - 16	1/2
1.1/4	13	.095	1.3/8	8	.165	26.1	1.028	28.8	1.134	A - 46	31-RS	DM - 16	1/2
1.1/4	14	.083	-	-	-	26.4	1.039	29.2	1.150	A - 47	28-RS	DM - 17	1/2
1.1/4	15	.072	1.3/8	9	.148	26.9	1.059	29.7	1.169	A - 48	29-RS	DM - 17	1/2
1.1/4	16	.065	1.3/8	10	.134	27.6	1.087	30.4	1.197	A - 49	30-RS	DM - 17	1/2
1.1/2	7	.180	1.3/8	11	.120	28.3	1.114	31.2	1.228	A - 50	30-RS	DM - 18	1/2
1.1/2	8	.165	1.3/8	12	.109	28.8	1.134	31.7	1.248	A - 51	32-RS	DM - 18	1/2
1.1/2	9	.148	1.3/8	13-14	.095/.083	29.5	1.161	33.4	1.315	A - 52	28-RS	DM - 20	1/2
1.1/2	10	.134	1.3/8	15-16	.072/.065	30.0	1.181	34.1	1.343	A - 53	29-RS	DM - 20	1/2
1.1/2	11-12	.120/.109	-	-	-	30.6	1.205	34.8	1.370	A - 54	30-RS	DM - 20	1/2
1.1/2	13	.095	1.3/4	5	.220	31.4	1.236	35.6	1.402	A - 55	33-RS	DM - 20	1/2
1.1/2	14-15	.083/.072	1.3/4	6	.203	32.6	1.283	36.8	1.449	A - 56	32-RS	DM - 21	1/2
-	-	-	1.3/4	7	.180	33.4	1.315	38.1	1.500	A - 57	36-RS	DM - 21	1/2
-	-	-	1.3/4	8	.165	34.2	1.346	38.7	1.524	A - 58	37-RS	DM - 21	1/2
2	3	.259	1.3/4	9-10	.148/.134	35.0	1.378	40.6	1.598	A - 59	33-RS	DM - 22	3/4
2	4	.238	1.3/4	11-12	.120/.109	36.6	1.441	42.2	1.661	A - 60	37-RS	DM - 22	3/4
2	5-6	.220/.203	1.3/4	13-14	.095/.083	38.2	1.504	43.8	1.724	A - 61	38-RS	DM - 22	3/4
2	7-8	.180/.165	1.3/4	15-16	.072/.065	39.8	1.567	45.4	1.787	A - 62	39-RS	DM - 22	3/4
2	9-10	.148/.134	2.1/4	3	.259	41.4	1.630	47.0	1.850	A - 63	40-RS	DM - 22	3/4
2	11-13	.120/.095	2.1/4	4	.238	42.9	1.689	49.5	1.949	A - 64	40-RS	DM - 23	3/4
2	14-16	.083/.065	2.1/4	6-7	.203/.180	44.5	1.752	51.1	2.012	A - 65	41-RS	DM - 23	3/4
2	17-18	.058/.049	2.1/4	8-9	.165/.148	46.1	1.815	52.7	2.075	A - 66	42-RS	DM - 23	3/4

TUBE EXPANDER A SERIES



Features

- Commonly used tool through-out the world for parallel expansion of tubes.
- Self positioned rolls in the cage body.
- Economical tool used for only parallel expansion of the Boiler, Economizer, and air heater tubes. Sturdy & durable Design

Tube Sheet Thickness	Roller Length (A)	Effective Rolling Length (B)	When ordering Expander add Prefix
1/2" - 7/8" (12.7 - 22.22mm)	2 1/4" (57.10 mm)	1 1/2" (38.0 mm)	A - 67/2
3/4" - 1 1/8" (19.05 - 28.58mm)	2 1/2" (63.50 mm)	1 3/4" (45.0 mm)	A - 67/3
1 1/8" - 1 5/8" (28.58 - 41.30mm)	3" (76.20 mm)	2 1/4" (57.0 mm)	A - 67/4
1 5/8" - 2 1/8" (41.30 - 54.0mm)	3 1/2" (88.80 mm)	2 3/4" (70.0 mm)	A - 67/5
2 1/8" - 2 5/8" (54.0 - 66.70mm)	4" (101.50 mm)	3 1/4" (82.5 mm)	A - 67/6

TUBE EXPANDERS SPECIFICATION

Tube O.D inch	TUBE THICKNESS		Tube O.D inch	TUBE THICKNESS		Min. I.D.		Max. Exp.		Expander Model	Roll Model	Mandrel Model	Mandrel Square Drive
	BWG	inch		BWG	inch	mm	inch	mm	inch				
2 1/2	3	.259	2 1/4	10-11	.134/.120	47.7	1.878	54.3	2.138	A - 67	43-RS	DM - 23	3/4
2 1/2	4-5	.238/.220	2 1/4	12-13	.109/.095	49.3	1.941	55.9	2.201	A - 68	44-RS	DM - 23	3/4
2 1/2	6-7	.203/.180	2 1/4	14-16	.083/.065	50.8	2.000	57.8	2.276	A - 69	43-RS	DM - 24	3/4
2 1/2	8-9	.165/.148	2 3/4	3	.259	52.4	2.063	59.4	2.339	A - 70	44-RS	DM - 24	3/4
2 1/2	10-11	.134/.120	2 3/4	4	.238	54.0	2.126	61.0	2.402	A - 71	45-RS	DM - 24	3/4
2 1/2	12-14	.109/.083	2 3/4	5-6	.220/.203	55.6	2.189	64.0	2.520	A - 72	47-RS	DM - 24	3/4
2 1/2	15-16	.072/.065	2 3/4	7-8	.180/.165	57.2	2.252	65.6	2.583	A - 73	46-RS	DM - 25	1
3	3	.259	2 3/4	9-10	.148/.134	58.6	2.307	67.0	2.638	A - 74	47-RS	DM - 25	1
3	4	.238	2 3/4	11-13	.120/.095	60.4	2.378	68.8	2.709	A - 75	48-RS	DM - 25	1
3	5-6	.220/.203	2 3/4	14-16	.083/.065	62.2	2.449	70.4	2.772	A - 76	49-RS	DM - 25	1
3	7-8	.180/.165	-	-	-	63.6	2.504	72.0	2.835	A - 77	50-RS	DM - 25	1
3	9-10	.148/.134	3 1/4	3	.259	65.0	2.559	73.4	2.890	A - 78	51-RS	DM - 25	1
3	11-13	.120/.095	3 1/4	4	.238	66.6	2.622	75.0	2.953	A - 79	52-RS	DM - 25	1
3	14-16	.083/.065	3 1/4	5-6	.220/.203	68.3	2.689	76.9	3.028	A - 80	51-RS	DM - 26	1
3 1/2	2	.284	3 1/4	7-8	.180/.165	69.9	2.752	78.5	3.091	A - 81	52-RS	DM - 26	1
3 1/2	3	.259	3 1/4	9-10	.148/.134	71.5	2.815	80.1	3.154	A - 82	53-RS	DM - 26	1
3 1/2	4	.238	3 1/4	11-13	.120/.095	73.1	2.878	81.7	3.217	A - 83	54-RS	DM - 26	1
3 1/2	5-6	.220/.203	3 1/4	14-16	.083/.065	74.6	2.937	84.2	3.315	A - 84	54-RS	DM - 26	1
3 1/2	7-8	.180/.165	3 3/4	2	.084	76.2	3.000	85.5	3.366	A - 85	55-RS	DM - 27	1
3 1/2	9-11	.148/.120	3 3/4	3	.259	77.8	3.063	87.4	3.441	A - 86	56-RS	DM - 27	1
3 1/2	12-6	.109/.065	3 3/4	4	.238	79.4	3.126	89.0	3.504	A - 87	57-RS	DM - 27	1
-	-	-	3 3/4	5-6	.220/.203	81.0	3.189	90.6	3.567	A - 88	58-RS	DM - 27	1
4	2	.284	3 3/4	7-8	.180/.165	82.6	3.252	92.2	3.630	A - 89	59-RS	DM - 27	1
4	3	.259	3 3/4	9-10	.148/.134	84.2	3.315	93.8	3.693	A - 90	60-RS	DM - 27	1
4	4	.238	3 3/4	11-13	.120/.095	85.8	3.378	96.2	3.787	A - 91	59-RS	DM - 28	1
4	5-6	.220/.203	3 3/4	14-16	.083/.065	87.4	3.441	97.8	3.850	A - 92	60-RS	DM - 28	1
4	7-8	.180/.165	4 1/4	2	.084	89.0	3.504	99.4	3.913	A - 93	61-RS	DM - 28	1
4	9-11	.148/.120	4 1/4	3	.284	90.4	3.559	100.8	3.969	A - 94	62-RS	DM - 28	1
4	12-16	.109/.065	4 1/4	4	.238	92.0	3.622	102.4	4.031	A - 95	63-RS	DM - 28	1
-	-	-	4 1/4	5-6	.220/.203	93.4	3.677	103.8	4.087	A - 96	62-RS	DM - 29	1
4 1/2	2	.284	4 1/4	7-8	.180/.165	95.0	3.740	105.4	4.150	A - 97	63-RS	DM - 29	1
4 1/2	3	.259	4 1/4	9-10	.148/.120	96.6	3.803	107.0	4.213	A - 98	64-RS	DM - 29	1
4 1/2	4-5	.238/.220	4 1/4	11-13	.120/.095	98.2	3.866	108.6	4.276	A - 99	63-RS	DM - 30	1
4 1/2	6-7	.203/.180	-	-	-	101.2	3.984	110.0	4.331	A - 100	64-RS	DM - 30	1
4 1/2	8-9	.165/.148	-	-	-	102.8	4.047	111.6	4.394	A - 101	65-RS	DM - 30	1
4 1/2	10-12	.134/.109	-	-	-	104.4	4.110	113.2	4.457	A - 102	66-RS	DM - 30	1

Features

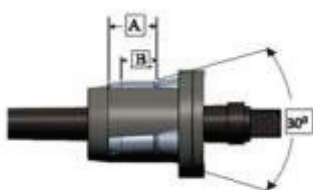
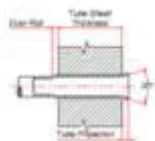
- Commonly used tool through-out the world for parallel expansion with flaring of tubes.
- Self positioned rolls in the cage body.
- Economical tool used for parallel expansion with flaring of the Boiler, Economizer, Air heater tubes.
- Overlapping of rolls prevent tube ridging. Sturdy & durable Design



Tube Sheet Thickness	Plain Roller Length (A)	Plain Roller Effective Length (B)	When ordering Expander add Prefix
1/2" - 7/8" (12.7 - 22.22mm)	1.1/8" (28.5 mm)	7/8" (22.2 mm)	AF3 - 31/2
3/4" - 1.1/8" (19.05 - 28.58mm)	1.3/8" (39.5 mm)	1.1/8" (28.5 mm)	AF3 - 31/3
1.1/8" - 1.5/8" (28.58 - 41.30mm)	1.7/8" (47.5 mm)	1.5/8" (41.0 mm)	AF3 - 31/4
1.5/8" - 2.1/8" (41.30 - 54.0mm)	2.3/8" (60.0 mm)	2.1/8" (54.0 mm)	AF3 - 31/5
2.1/8" - 2.5/8" (54.0 - 66.70mm)	2.7/8" (73.0 mm)	2.5/8" (66.5 mm)	AF3 - 31/6

TUBE EXPANDERS SPECIFICATION

Tube O.D inch	TUBE THICKNESS		Tube O.D inch	TUBE THICKNESS		Min. I.D.		Max. Exp.		Expander Model	Roll Model	Mandrel Model	Mandrel Square Drive
	BWG	inch		BWG	inch	mm	inch	mm	inch				
7/8	15	.072	1	10	.134	18.1	0.713	20.4	0.803	AF3 - 31	15-F3S	DM - 11	3/8
7/8	16	.065	-	-	-	18.4	0.724	20.7	0.815	AF3 - 32	15-F3S	DM - 12	3/8
7/8	17	.058	1	11	.120	18.8	0.740	21.1	0.831	AF3 - 33	16-F3S	DM - 12	3/8
7/8	18	.049	1	12	.109	19.4	0.764	21.6	0.850	AF3 - 34	20-F3S	DM - 12	3/8
7/8	19-20	.042/.035	1.1/8	8	.165	19.7	0.776	22.3	0.878	AF3 - 35	17-F3S	DM - 13	3/8
1	13	.095	-	-	-	20.1	0.791	22.4	0.882	AF3 - 36	18-F3S	DM - 12	3/8
1	14	.083	1.1/8	9	.148	20.6	0.811	23.1	0.909	AF3 - 37	18-F3S	DM - 13	3/8
1	15-16	.072/.065	1.1/8	10	.134	21.3	0.839	23.8	0.937	AF3 - 38	19-F3S	DM - 13	3/8
1	17-18	.058/.048	1.1/8	11	.120	22.0	0.866	24.5	0.965	AF3 - 39	21-F3S	DM - 13	3/8
1	19-20	.042/.035	1.1/8	12	.109	22.4	0.882	25.0	0.984	AF3 - 40	21-F3S	DM - 14	3/8
1.1/4	8	.165	1.1/8	13	.095	23.3	0.917	25.9	1.020	AF3 - 41	22-F3S	DM - 14	3/8
1.1/4	9	.148	1.1/8	14	.083	23.8	0.937	26.5	1.043	AF3 - 42	23-F3S	DM - 15	1/2
1.1/4	10	.134	1.1/8	15-16	.072/.065	24.4	0.961	27.2	1.071	AF3 - 43	24-F3S	DM - 15	1/2
1.1/4	11	.120	-	-	-	25.2	0.992	28.0	1.102	AF3 - 44	26-F3S	DM - 16	1/2
1.1/4	12	.109	-	-	-	25.7	1.012	28.5	1.122	AF3 - 45	27-F3S	DM - 16	1/2
1.1/4	13	.095	1.3/8	8	.165	26.1	1.028	28.8	1.134	AF3 - 46	31-F3S	DM - 16	1/2
1.1/4	14	.083	-	-	-	26.4	1.039	29.2	1.150	AF3 - 47	28-F3S	DM - 17	1/2
1.1/4	15	.072	1.3/8	9	.148	26.9	1.059	29.7	1.169	AF3 - 48	29-F3S	DM - 17	1/2
1.1/4	16	.065	1.3/8	10	.134	27.6	1.087	30.4	1.197	AF3 - 49	30-F3S	DM - 17	1/2
1.1/2	7	.180	1.3/8	11	.120	28.3	1.114	31.2	1.228	AF3 - 50	30-F3S	DM - 18	1/2
1.1/2	8	.165	1.3/8	12	.109	28.8	1.134	31.7	1.248	AF3 - 51	32-F3S	DM - 18	1/2
1.1/2	9	.148	1.3/8	13-14	.095/.083	29.5	1.161	33.4	1.315	AF3 - 52	28-F3S	DM - 20	1/2
1.1/2	10	.134	1.3/8	15-16	.072/.065	30.0	1.181	34.1	1.343	AF3 - 53	29-F3S	DM - 20	1/2
1.1/2	11-12	.120/.109	-	-	-	30.6	1.205	34.8	1.370	AF3 - 54	30-F3S	DM - 20	1/2
1.1/2	13	.095	1.3/4	5	.220	31.4	1.236	35.6	1.402	AF3 - 55	33-F3S	DM - 20	1/2
1.1/2	14-15	.083/.072	1.3/4	6	.203	32.6	1.283	36.8	1.449	AF3 - 56	32-F3S	DM - 21	1/2
-	-	-	1.3/4	7	.180	33.4	1.315	38.1	1.500	AF3 - 57	36-F3S	DM - 21	1/2
-	-	-	1.3/4	8	.165	34.2	1.346	38.7	1.524	AF3 - 58	37-F3S	DM - 21	1/2
2	3	.259	1.3/4	9-10	.148/.134	35.0	1.378	40.6	1.598	AF3 - 59	33-F3S	DM - 22	3/4
2	4	.238	1.3/4	11-12	.120/.109	36.6	1.441	42.2	1.661	AF3 - 60	37-F3S	DM - 22	3/4
2	5-6	.220/.203	1.3/4	13-14	.095/.083	38.2	1.504	43.8	1.724	AF3 - 61	38-F3S	DM - 22	3/4
2	7-8	.180/.165	1.3/4	15-16	.072/.065	39.8	1.567	45.4	1.787	AF3 - 62	39-F3S	DM - 22	3/4
2	9-10	.148/.134	2.1/4	3	.259	41.4	1.630	47.0	1.850	AF3 - 63	40-F3S	DM - 22	3/4
2	11-13	.120/.095	2.1/4	4	.238	42.9	1.689	49.5	1.949	AF3 - 64	40-F3S	DM - 23	3/4
2	14-16	.083/.065	2.1/4	6-7	.203/.180	44.5	1.752	51.1	2.012	AF3 - 65	41-F3S	DM - 23	3/4
2	17-18	.058/.049	2.1/4	8-9	.165/.148	46.1	1.815	52.7	2.075	AF3 - 66	42-F3S	DM - 23	3/4



Features :-

- Commonly used tool through-out the world for parallel expansion with laring of tubes.
- Self positioned rolls in the cage body.
- Economical tool used for parallel expansion with flaring of the Boiler, Economizer, Air heater tubes.
- Overlapping of rolls prevent tube ridging. Sturdy & durable Design

Tube Sheet Thickness	Plain Roller Length (A)	Plain Roller Effective Length (B)	When ordering Expander add Prefix
1/2" - 7/8" (12.7 - 22.22mm)	1.1/8" (28.5 mm)	7/8" (22.2 mm)	AF3 - 67/2
3/4" - 1.1/8" (19.05 - 28.58mm)	1.3/8" (39.5 mm)	1.1/8" (28.5 mm)	AF3 - 67/3
1.1/8" - 1.5/8" (28.58 - 41.30mm)	1.7/8" (47.5 mm)	1.5/8" (41.0 mm)	AF3 - 67/4
1.5/8" - 2.1/8" (41.30 - 54.0mm)	2.3/8" (60.0 mm)	2.1/8" (54.0 mm)	AF3 - 67/5
2.1/8" - 2.5/8" (54.0 - 66.70mm)	2.7/8" (73.0 mm)	2.5/8" (66.5 mm)	AF3 - 67/6

TUBE EXPANDERS SPECIFICATION

Tube O.D inch	TUBE THICKNESS		Tube O.D inch	TUBE THICKNESS		Min. I.D.		Max. Exp.		Expander Model	Roll Model	Mandrel Model	Mandrel Square Drive
	BWG	inch		BWG	inch	mm	inch	mm	inch				
2.1/2	3	.259	2.1/4	10-11	.134/.120	47.7	1.878	54.3	2.138	AF3 - 67	43-F3S	DM - 23	3/4
2.1/2	4-5	.238/.220	2.1/4	12-13	.109/.095	49.3	1.941	55.9	2.201	AF3 - 68	44-F3S	DM - 23	3/4
2.1/2	6-7	.203/.180	2.1/4	14-16	.083/.065	50.8	2.000	57.8	2.276	AF3 - 69	43-F3S	DM - 24	3/4
2.1/2	8-9	.165/.148	2.3/4	3	.259	52.4	2.063	59.4	2.339	AF3 - 70	44-F3S	DM - 24	3/4
2.1/2	10-11	.134/.120	2.3/4	4	.238	54.0	2.126	61.0	2.402	AF3 - 71	45-F3S	DM - 24	3/4
2.1/2	12-14	.109/.083	2.3/4	5-6	.220/.203	55.6	2.189	64.0	2.520	AF3 - 72	47-F3S	DM - 24	3/4
2.1/2	15-16	.072/.065	2.3/4	7-8	.180/.165	57.2	2.252	65.6	2.583	AF3 - 73	46-F3S	DM - 25	1
3	3	.259	2.3/4	9-10	.148/.134	58.6	2.307	67.0	2.638	AF3 - 74	47-F3S	DM - 25	1
3	4	.238	2.3/4	11-13	.120/.095	60.4	2.378	68.8	2.709	AF3 - 75	48-F3S	DM - 25	1
3	5-6	.220/.203	2.3/4	14-16	.083/.065	62.2	2.449	70.4	2.772	AF3 - 76	49-F3S	DM - 25	1
3	7-8	.180/.165	-	-	-	63.6	2.504	72.0	2.835	AF3 - 77	50-F3S	DM - 25	1
3	9-10	.148/.134	3.1/4	3	.259	65.0	2.559	73.4	2.890	AF3 - 78	51-F3S	DM - 25	1
3	11-13	.120/.095	3.1/4	4	.238	66.6	2.622	75.0	2.953	AF3 - 79	52-F3S	DM - 25	1
3	14-16	.083/.065	3.1/4	5-6	.220/.203	68.3	2.689	76.9	3.028	AF3 - 80	51-F3S	DM - 26	1
3.1/2	2	.284	3.1/4	7-8	.180/.165	69.9	2.752	78.5	3.091	AF3 - 81	52-F3S	DM - 26	1
3.1/2	3	.259	3.1/4	9-10	.148/.134	71.5	2.815	80.1	3.154	AF3 - 82	53-F3S	DM - 26	1
3.1/2	4	.238	3.1/4	11-13	.120/.095	73.1	2.878	81.7	3.217	AF3 - 83	54-F3S	DM - 26	1
3.1/2	5-6	.220/.203	3.1/4	14-16	.083/.065	74.6	2.937	84.2	3.315	AF3 - 84	54-F3S	DM - 26	1
3.1/2	7-8	.180/.165	3.3/4	2	.084	76.2	3.000	85.5	3.366	AF3 - 85	55-F3S	DM - 27	1
3.1/2	9-11	.148/.120	3.3/4	3	.259	77.8	3.063	87.4	3.441	AF3 - 86	56-F3S	DM - 27	1
3.1/2	12-6	.109/.065	3.3/4	4	.238	79.4	3.126	89.0	3.504	AF3 - 87	57-F3S	DM - 27	1
-	-	-	3.3/4	5-6	.220/.203	81.0	3.189	90.6	3.567	AF3 - 88	58-F3S	DM - 27	1
4	2	.284	3.3/4	7-8	.180/.165	82.6	3.252	92.2	3.630	AF3 - 89	59-F3S	DM - 27	1
4	3	.259	3.3/4	9-10	.148/.134	84.2	3.315	93.8	3.693	AF3 - 90	60-F3S	DM - 27	1
4	4	.238	3.3/4	11-13	.120/.095	85.8	3.378	96.2	3.787	AF3 - 91	59-F3S	DM - 28	1
4	5-6	.220/.203	3.3/4	14-16	.083/.065	87.4	3.441	97.8	3.850	AF3 - 92	60-F3S	DM - 28	1
4	7-8	.180/.165	4.1/4	2	.084	89.0	3.504	99.4	3.913	AF3 - 93	61-F3S	DM - 28	1
4	9-11	.148/.120	4.1/4	3	.284	90.4	3.559	100.8	3.969	AF3 - 94	62-F3S	DM - 28	1
4	12-16	.109/.065	4.1/4	4	.238	92.0	3.622	102.4	4.031	AF3 - 95	63-F3S	DM - 28	1
-	-	-	4.1/4	5-6	.220/.203	93.4	3.677	103.8	4.087	AF3 - 96	62-F3S	DM - 29	1
4.1/2	2	.284	4.1/4	7-8	.180/.165	95.0	3.740	105.4	4.150	AF3 - 97	63-F3S	DM - 29	1
4.1/2	3	.259	4.1/4	9-10	.148/.120	96.6	3.803	107.0	4.213	AF3 - 98	64-F3S	DM - 29	1
4.1/2	4-5	.238/.220	4.1/4	11-13	.120/.095	98.2	3.866	108.6	4.276	AF3 - 99	63-F3S	DM - 30	1
4.1/2	6-7	.203/.180	-	-	-	101.2	3.984	110.0	4.331	AF3 - 100	64-F3S	DM - 30	1
4.1/2	8-9	.165/.148	-	-	-	102.8	4.047	111.6	4.394	AF3 - 101	65-F3S	DM - 30	1
4.1/2	10-12	.134/.109	-	-	-	104.4	4.110	113.2	4.457	AF3 - 102	66-F3S	DM - 30	1