

Automatic tube expanders AUTOMA / ULTRA

The series AL 82, KL 84, ALA 82 and KLA 84 are custom series, which are only manufactured **upon the special request of the customer**. The expansion of the tube is accomplished in all types by three or more cone-shaped rolls, which are pressed radially outwards by the axial shift of a similarly cone-shaped mandrel. Since the taper of the mandrel is twice as large as that of the rolls, the rolls grouped around the mandrel produce a cylindrical surface once again.

The axial shift of the mandrel is achieved in all automatic sealing machines by means of a thread. The feeding of the mandrel is naturally resisted by the rolls running along the interior surface of the tube. As the expanding mandrel is turned, this resistance is expressed as increased flank pressure in the thread of the expanding mandrel and the surrounding nut. As the flank pressure in the thread increases - i.e. increased thread friction - the expanding mandrel attempts to take the surrounding nut - threaded sleeve - with it as it turns.

Uncontrolled turning of the nut sleeve is prevented by the coupling. The outer hexagonal nut enables the coupling surfaces to be pressed more or less tightly together by tightening with a greater or lesser force and, hence, to precisely control the disabling of the expanding mandrel feed - i.e. the expansion pressure.

TECHNICAL DATA – AUTOMATIC TUBE EXPANDER ULTRA

SERIES A 81

Tube expander	Expanding mandrel	Threaded spindle	Spare rolls	Spare body	Spare nut	Size	Exp.	b	c	d
Order no.	Order no.	Order no.	Order no.	Order no.	Order no.		inch	inch	inch	inch
0817800	1817800	2817800	3817800	4817800	5817800	A 7,8	0.307 - 0.374	0.79	7.36	1.50
0819000	1819000	2819000	3819000	4819000	5819000	A 9,0	0.354 - 0.433	0.98	8.07	1.50
0811000	1811000	2811000	3811000	4811000	5811000	A 10	0.394 - 0.472	0.98	8.07	1.50
0811100	1811100	2811100	3811100	4811100	5811100	A 11	0.433 - 0.512	0.98	8.07	1.50
0811200	1811200	2811200	3811200	4811200	5811200	A 12	0.472 - 0.571	0.98	8.46	1.50
0811300	1811300	2811300	3811300	4811300	5811300	A 13	0.512 - 0.610	0.98	8.46	1.50
0811400	1811400	2811400	3811400	4811400	5811400	A 14	0.551 - 0.669	0.98	8.66	1.50
0811500	1811500	2811500	3811500	4811500	5811500	A 15	0.591 - 0.728	0.98	9.06	1.50
0811600	1811600	2811600	3811600	4811600	5811600	A 16	0.630 - 0.768	0.98	9.06	1.50
0811700	1811700	2811700	3811700	4811700	5811700	A 17	0.669 - 0.827	1.18	9.88	1.89
0811800	1811800	2811800	3811800	4811800	5811800	A 18	0.709 - 0.866	1.18	9.88	1.89
0812000	1812000	2812000	3812000	4812000	5812000	A 20	0.787 - 0.945	1.18	10.08	1.89
0812200	1812200	2812200	3812200	4812200	5812200	A 22	0.866 - 1.063	1.18	10.28	1.89
0812400	1812400	2812400	3812400	4812400	5812400	A 24	0.945 - 1.142	1.18	10.28	1.89

Expanding mandrel and threaded spindle are separated in this version; however, they can be supplied in one piece.



SERIES A 82 FOR LOW-LYING EXPANSION POINTS

The expansion ranges are the same as for the series A81, similarly with a divided spindle. For the series AL82 the order numbers remain as listed above for the series A81.

For the usable depth, however, the 3rd, 6th and 7th numbers change.

Example: 0827810 – usable depth 3.937 inch, 0827815 – usable depth 5.906 inch, 0827820 – usable depth 7.874 inch

The same applies to the spare parts.

Order numbers for spare rolls and nuts are the same as for A81, however.

SERIES K 83 (CONTINUATION OF SERIES 81)

Tube expander	Expanding mandrel	Threaded spindle	Spare rolls	Spare body	Spare nut	Size	Exp.	b	c	d
Order no.	Order no.	Order no.	Order no.	Order no.	Order no.		inch	inch	inch	inch
0832600	1832600	2832600	3832600	4832600	5832600	K 26	1.024 - 1.220	1.65	10.63	2.05
0832900	1832900	2832900	3832900	4832900	5832900	K 29	1.142 - 1.339	1.65	10.63	2.05
0833050	1833050	2833050	3833050	4833050	5833050	K30,5	1.201 - 1.398	1.65	10.63	2.05
0833200	1833200	2833200	3833200	4833200	5833200	K 32	1.260 - 1.457	1.65	10.63	2.05
0833350	1833350	2833350	3833350	4833350	5833350	K33,5	1.319 - 1.594	1.65	11.73	2.36
0833500	1833500	2833500	3833500	4833500	5833500	K 35	1.378 - 1.654	1.65	11.73	2.36
0833750	1833750	2833750	3833750	4833750	5833750	K37,5	1.476 - 1.752	1.65	11.73	2.36
0834000	1834000	2834000	3834000	4834000	5834000	K 40	1.575 - 1.850	1.65	11.73	2.36
0834200	1834200	2834200	3834200	4834200	5834200	K 42	1.654 - 1.969	1.77	12.99	2.56
0834400	1834400	2834400	3834400	4834400	5834400	K 44	1.732 - 2.047	1.77	12.99	2.56
0834550	1834550	2834550	3834550	4834550	5834550	K45,5	1.791 - 2.106	1.77	12.99	2.56
0834750	1834750	2834750	3834750	4834750	5834750	K47,5	1.870 - 2.185	1.77	12.99	2.56
0835000	1835000	2835000	3835000	4835000	5835000	K 50	1.969 - 2.283	1.77	12.99	2.56
0835600	1835600	2835600	3835600	4835600	5835600	K 56	2.205 - 2.638	1.77	14.96	2.95
0836000	1836000	2836000	3836000	4836000	5836000	K 60	2.362 - 2.795	1.77	14.96	2.95
0836300	1836300	2836300	3836300	4836300	5836300	K 63	2.480 - 2.913	1.77	14.96	2.95
0836800	1836800	2836800	3836800	4836800	5836800	K 68	2.677 - 3.189	1.97	16.93	3.15
0837400	1837400	2837400	3837400	4837400	5837400	K 74	2.913 - 3.425	1.97	16.93	3.15

Expanding mandrel and threaded spindle are separated in this version; however, they can be supplied in one piece.



SERIES KL 84 FOR LOW-LYING EXPANSION POINTS

The expansion ranges are the same as for the series K83, similarly with a divided spindle. For the series KL84 the order numbers remain as listed above for the series K83.

For the usable depth, however, the 3rd, 6th and 7th numbers change.

Example: 0842601 – usable depth 3.937 inch, 0842602 – usable depth 7,874 inch
0842603 – usable depth 11,811 inch

The same applies to the spare parts.

Order numbers for spare rolls and nuts are the same as for K83, however.

SERIES NA89

Group	Size	Expansion from diameter „a“ to	b	c	d	f
		inch	inch	inch	inch	inch
I	NA 24 - NA 32	as for series N87	1.50	16.97	2.05	2.87
II	NA 34 - NA 42		1.57	20.87	2.36	3.07
III	NA 46 - NA 58		1.81	21.18	2.56	4.09
IV	NA 62 - NA 80		1.77	23.23	3.11	4.80
V	NA 85 - NA 102		1.97	25.51	3.35	5.04
VI	NA106 - NA 130		1.97	25.51	3.58	5.63

As for series N87, but with adjustable, ball bearing mounted stop, which ensures even flanging.

SERIES SS 85

Tube expander	Expanding mandrel	Threaded spindle	Spare rolls	Spare body	Spare nut	Size	Exp.	b	c	d
Order no.	Order no.	Order no.	Order no.	Order no.	Order no.		inch	inch	inch	inch
0852400	1832400	2832400	3832400	4832400	5832400	SS 24	0.94 - 1.26	1.65	11.22	2.05
0852500	1832500	2832500	3832500	4832500	5832500	SS 25	0.98 - 1.30	1.65	11.22	2.05
0852600	1832600	2832600	3832600	4832600	5832600	SS 26	1.02 - 1.34	1.65	11.22	2.05
0852800	1832800	2832800	3832800	4832800	5832800	SS 28	1.10 - 1.42	1.65	11.22	2.05
0853000	1833000	2833000	3833000	4833000	5833000	SS 30	1.18 - 1.65	1.65	13.39	2.36
0853200	1833200	2833200	3833200	4833200	5833200	SS 32	1.26 - 1.73	1.65	13.39	2.36
0853400	1833400	2833400	3833400	4833400	5833400	SS 34	1.34 - 1.81	1.65	13.39	2.36
0853600	1833600	2833600	3833600	4833600	5833600	SS 36	1.42 - 1.89	1.65	13.39	2.36
0853700	1833700	2833700	3833700	4833700	5833700	SS 37	1.46 - 2.09	1.77	15.43	2.76
0854200	1834200	2834200	3834200	4834200	5834200	SS 42	1.65 - 2.28	1.77	15.43	2.76
0854800	1834800	2834800	3834800	4834800	5834800	SS 48	1.89 - 2.52	1.77	17.05	2.95

The AUTOMA series SS85, like the SE86, are improved as follows:

1. Large expansion ranges (compare series K83)
2. Expanding spindle subdivided into grub screw and expanding mandrel
3. Trapezoidal thread in all sizes



SERIES SE 86 (CONTINUATION OF SERIES SS 85)

Tube expander	Expanding mandrel	Threaded spindle	Spare rolls	Spare body	Spare nut	Size	Exp.	b	c	d
Order no.	Order no.	Order no.	Order no.	Order no.	Order no.		inch	inch	inch	inch
0865600	1865600	2865600	3865600	4865600	5865600	SE 56	2.20 - 2.80	1.77	16.22	3.35
0866400	1866400	2866400	3866400	4866400	5866400	SE 64	2.44 - 3.23	1.97	18.50	3.35
0866900	1866900	2866900	3866900	4866900	5866900	SE 69	2.72 - 3.43	1.97	18.50	3.35
0868000	1868000	2868000	3868000	4868000	5868000	SE 80	3.15 - 3.94	1.97	20.67	3.35
0868500	1868500	2868500	3868500	4868500	5868500	SE 85	3.35 - 4.21	1.97	21.26	3.35
0869200	1869200	2869200	3869200	4869200	5869200	SE 92	3.62 - 4.49	1.97	21.26	3.35
0861040	1861040	2861040	3861040	4861040	5861040	SE104	4.09 - 5.00	1.97	22.24	3.54
0861210	1861210	2861210	3861210	4861210	5861210	SE121	4.76 - 5.71	1.97	22.24	3.54
0861300	1861300	2861300	3861300	4861300	5861300	SE130	5.12 - 6.06	1.97	22.24	3.54
0861400	1861400	2861400	3861400	4861400	5861400	SE140	5.51 - 6.50	2.36	24.61	4.80
0861600	1861600	2861600	3861600	4861600	5861600	SE160	6.30 - 7.28	2.36	24.61	4.80

The AUTOMA series SS85, like the SE86, are improved as follows:

1. Large expansion ranges (compare series K83)
2. Expanding spindle subdivided into grub screw and expanding mandrel
3. Trapezoidal thread in all sizes



SERIES N 87

Tube expander	Expanding mandrel	Threaded spindle	Spare rolls	Spare body	Spare nut	Size	Exp.	b	c	d
Order no.	Order no.	Order no.	Order no.	Order no.	Order no.		inch	inch	inch	inch
0872400	1872400	2872400	3872400	4872400	5872400	N 24	0.94 - 1.10	1.50	16.97	2.05
0872600	1872600	2872600	3872600	4872600	5872600	N 26	1.02 - 1.18	1.50	16.97	2.05
0872800	1872800	2872800	3872800	4872800	5872800	N 28	1.10 - 1.26	1.50	16.97	2.05
0873000	1873000	2873000	3873000	4873000	5873000	N 30	1.18 - 1.34	1.50	16.97	2.05
0873200	1873200	2873200	3873200	4873200	5873200	N 32	1.26 - 1.50	1.50	16.97	2.05
0873400	1873400	2873400	3873400	4873400	5873400	N 34	1.34 - 1.65	1.57	20.87	2.36
0873700	1873700	2873700	3873700	4873700	5873700	N 37	1.46 - 1.77	1.57	20.87	2.36
0874000	1874000	2874000	3874000	4874000	5874000	N 40	1.57 - 1.89	1.57	20.87	2.44
0874200	1874200	2874200	3874200	4874200	5874200	N 42	1.65 - 1.97	1.57	20.87	2.36
0874600	1874600	2874600	3874600	4874600	5874600	N 46	1.81 - 2.13	1.81	21.18	2.56
0875000	1875000	2875000	3875000	4875000	5875000	N 50	1.97 - 2.28	1.81	21.18	2.56
0875400	1875400	2875400	3875400	4875400	5875400	N 54	2.13 - 2.44	1.81	21.18	2.56
0875800	1875800	2875800	3875800	4875800	5875800	N 58	2.28 - 2.60	1.81	21.18	2.56
0876200	1876200	2876200	3876200	4876200	5876200	N 62	2.44 - 2.80	1.77	23.23	2.95
0876700	1876700	2876700	3876700	4876700	5876700	N 67	2.64 - 2.99	1.77	23.23	2.95
0877200	1877200	2877200	3877200	4877200	5877200	N 72	2.83 - 3.19	1.77	23.23	2.95
0877700	1877700	2877700	3877700	4877700	5877700	N 77	3.03 - 3.39	1.77	23.23	2.95
0878000	1878000	2878000	3878000	4878000	5878000	N 80	3.15 - 3.50	1.77	23.23	2.95
0878500	1878500	2878500	3878500	4878500	5878500	N 85	3.35 - 3.74	1.97	25.51	3.15
0879000	1879000	2879000	3879000	4879000	5879000	N 90	3.54 - 3.94	1.97	25.51	3.15
0879400	1879400	2879400	3879400	4879400	5879400	N 94	3.70 - 4.09	1.97	25.51	3.15
0879800	1879800	2879800	3879800	4879800	5879800	N 98	3.86 - 4.25	1.97	25.51	3.15
0871020	1871020	2871020	3871020	4871020	5871020	N 102	4.02 - 4.41	1.97	25.51	3.15
0871060	1871060	2871060	3871060	4871060	5871060	N 106	4.17 - 4.57	1.97	25.51	3.54
0871100	1871100	2871100	3871100	4871100	5871100	N 110	4.33 - 4.72	1.97	25.51	3.54
0871180	1871180	2871180	3871180	4871180	5871180	N 118	4.65 - 5.04	1.97	25.51	3.54
0871240	1871240	2871240	3871240	4871240	5871240	N 124	4.88 - 5.28	1.97	25.51	3.54
0871300	1871300	2871300	3871300	4871300	5871300	N 130	5.12 - 5.51	1.97	25.51	3.54

If you need to flange, our series N87 and NL88 are available. It goes without saying that these types also expand at the same time. Here also, the AUTOMA design is used, i.e. flanging and expanding in one working step!
Flanging angle up to 30° on both sides of the tube axis.



SERIES NL 88 FOR LOW-LYING EXPANSION POINTS

For the series NL88 the order numbers remain as listed for the series N87.

For the usable depth, however, the 3rd, 6th and 7th numbers change.
Example: 0882410 – usable depth 3.937 inch, 0882420 – usable depth 7.874 inch,
0882430 – usable depth 11.811 inch

The expansion ranges are the same as for the series N87.