

## Pneumatic Installation Guidelines Appendix K

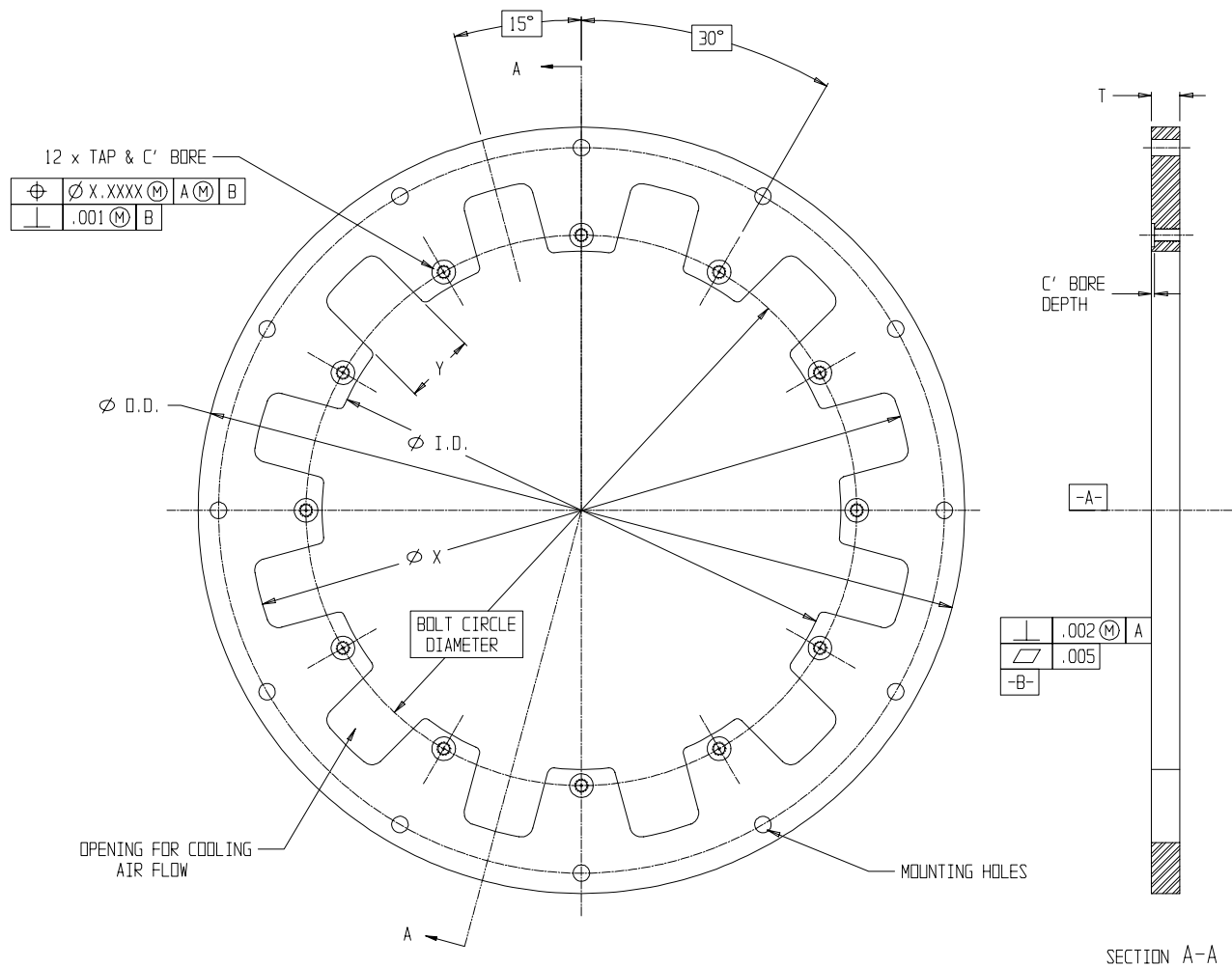
### 12 Point Plate Adaptor

When an installation requires the use of an *Ortlinghaus* 0-420, 0-406, 0-400, 0-440, or 0-450 Series clutch/brake, clutch or brake with a 12 Point Plate and an adaptor is required to mount the 12 Point Plate to the flywheel or brake anchor, special care must be taken to make sure that provisions are made to allow proper air flow around the 12 Point Plate.

The design of the adaptor is the responsibility of the designer of the application, but to assist in this, Figure K1 and Tables K1 through K3 are provided. Tables K1 and K2 duplicate the information that is in Tables 4a and 4b in the Installation Guidelines for Pneumatic Clutch/Brakes, Clutches & Brakes. This is the dimensional data for bolt circle diameter, bushing c' bore data, size of tapped holes, and tolerances. Table K3 shows minimum dimensions for the openings required to provide the proper cooling air flow around the 12 Point Plate. The O.D. of the adaptor and the quantity, size, and position of the mounting holes shown on Figure K1 are the responsibility of the designer, as is the thickness of the adaptor. These dimension are specific to the particular installation.

Failure to provide allowance for proper air flow will result in overheating of the linings and of unit, as well as possible malfunction and shorter life of the clutch/brake, clutch, or brake.

If you have any questions on the installation of a 12 Point Plate please contact Orttech.



**Figure K1**  
**12 Point Plate Mounting Adaptor**

**Notes:**

1. The preferred method for tolerancing the tapped hole & C' bore locations is the positional tolerance method with the bolt circle dia. and angular spacing as the basic dimensions. The alternate method is to determine the X and Y coordinates for the locations and apply the JS10 tolerance to these. (See Table K1)
2. Tolerance on C' bore is H10 on diameter and  $-0 / +.25$  mm (.010 inch) on depth.
3. Outside diameter (O.D.) and thickness (T) are dependent on the application.
4. Inside diameter (I.D.) is based on the outside diameter of the Clutch/Brake, Clutch, or Brake body.

**Table K1**  
**12 Point Plate Adaptor Dimensions and Tolerances**  
**Bushing Location and Tolerance**

Size	Bolt Circle Dia.		Bush. C' Bore Dia.		JS 10 Tolerance		Positional Tolerance	
	mm	inches	mm	inches	mm	inches	mm	inches
23	182	7.1654	10	0.3937	± .0925	± .0035	Ø 0.2616	Ø 0.0099
29	205	8.0709	10	0.3937	± .0925	± .0035	Ø 0.2616	Ø 0.0099
40	255	10.0394	12	0.4724	± .105	± .0040	Ø 0.2970	Ø 0.0113
50	325	12.7953	15	0.5906	± .115	± .0045	Ø 0.3253	Ø 0.0127
61/62	408	16.0630	18	0.7087	± .125	± .0050	Ø 0.3536	Ø 0.0141
67	450	17.7165	22	0.8661	± .125	± .0050	Ø 0.3536	Ø 0.0141
71/72	500	19.6850	25	0.9843	± .125	± .0050	Ø 0.3536	Ø 0.0141
74	536	21.1024	25	0.9843	± .140	± .0060	Ø 0.3960	Ø 0.0170
76/77	584	22.9921	25	0.9843	± .140	± .0060	Ø 0.3960	Ø 0.0170
79/80	640	25.1969	30	1.1811	± .160	± .0060	Ø 0.4525	Ø 0.0170
82/83	725	28.5433	35	1.3780	± .160	± .0060	Ø 0.4525	Ø 0.0170
85/87	810	31.8898	40	1.5748	± .180	± .0070	Ø 0.5091	Ø 0.0198
90	890	35.0394	45	1.7717	± .180	± .0070	Ø 0.5091	Ø 0.0198
91	965	37.9921	45	1.7717	± .180	± .0070	Ø 0.5091	Ø 0.0198
92	1080	42.5197	50	1.9685	± .210	± .0080	Ø 0.5940	Ø 0.0226
93	1215	47.8346	55	2.1654	± .210	± .0080	Ø 0.5940	Ø 0.0226

This table is for Series 420, 406, 400, 440, & 450

**Table K2**  
**12 Point Plate Adaptor Dimensions and Tolerances**  
**Bushing Counterbore Diameter and Depth**

Size		Bush. Mtg. Dia.		Counterbore Dia. Limits		C' Bore Depth		Tap
420 / 400	406	mm	inches	mm	inches	mm	inches	metric
23/29	---	10	0.394	10.000 / 10.058	0.3937 / 0.3959	2	0.079	M 5 x 0.8
---	29	10	0.394	10.000 / 10.058	0.3937 / 0.3959	1.7	0.067	M 5 x 0.8
40	40	12	0.472	12.000 / 12.070	0.4724 / 0.4752	2	0.079	M 6 x 1
50	50	15	0.591	15.000 / 15.070	0.5906 / 0.5934	3	0.118	M 8 x 1.25
61/62	61	18	0.709	18.000 / 18.070	0.7087 / 0.7115	3	0.118	M 10 x 1.5
67	---	22	0.866	22.000 / 22.084	0.8661 / 0.8696	3	0.118	M 12 x 1.75
71/72	71	25	0.984	25.000 / 25.084	0.9843 / 0.9878	3	0.118	M 14 x 2
74	---	25	0.984	25.000 / 25.084	0.9843 / 0.9878	3	0.118	M 14 x 2
76/77	76	25	0.984	25.000 / 25.084	0.9843 / 0.9878	3	0.118	M 14 x 2
79/80	---	30	1.181	30.000 / 30.084	1.1811 / 1.1846	5	0.197	M 16 x 2
---	79	30	1.181	30.000 / 30.084	1.1811 / 1.1846	3	0.118	M 16 x 2
82/83	---	35	1.378	35.000 / 35.100	1.3780 / 1.3820	5	0.197	M 20 x 2.5
---	82	35	1.378	35.000 / 35.100	1.3780 / 1.3820	4	0.157	M 20 x 2.5
85/87	---	40	1.575	40.000 / 40.100	1.5748 / 1.5788	5	0.197	M 24 x 3
90/91	---	45	1.772	45.000 / 45.100	1.7717 / 1.7757	10	0.394	M 24 x 3
---	90	45	1.772	45.000 / 45.100	1.7717 / 1.7757	4	0.157	M 24 x 3
92	---	50	1.969	50.000 / 50.100	1.9685 / 1.9725	10	0.394	M 27 x 3
93	---	55	2.165	55.000 / 55.120	2.1654 / 2.1699	10	0.394	M 30 x 3.5

Notes:

1. Tolerance on counterbore depth is  $-0 / +.25$  mm;  $-0 / +.010$  inch.
2. Tolerance on counterbore diameter is H10.
3. Tapped holes must be the metric coarse thread specified to accommodate the fasteners supplied with the Clutch/Brake, Clutch, or Brake.

**Table K3**  
**12 Point Plate Adaptor Dimensions and Tolerances**  
**Dimensions of Openings for Cooling Air**

Size	Plate Dia.		I.D.		" X " Dimension		" Y " Width	
	mm	inches	mm	inches	mm	inches	mm	inches
23	198	7.80	168.5	6.63	226	8.90	20	0.79
29	220	8.66	191	7.52	252	9.92	25	0.98
40	275	10.83	240	9.45	325	12.80	30	1.18
50	347	13.66	308	12.13	395	15.55	40	1.57
61/62	435	17.13	385	15.16	495	19.49	50	1.97
67	482	18.98	424	16.69	550	21.65	57	2.24
71/72	535	21.06	471	18.54	610	24.02	65	2.56
74	570	22.44	502	19.76	650	25.59	65	2.56
76/77	620	24.41	550	21.65	705	27.76	75	2.95
79/80	680	26.77	601	23.66	780	30.71	82	3.23
82/83	775	30.51	684	26.93	890	35.04	92	3.62
85/87	865	34.06	763	30.04	995	39.17	104	4.09
90	950	37.40	838	32.99	1090	42.91	114	4.49
91	1025	40.35	913	35.94	1180	46.46	122	4.80
92	1145	45.08	1022	40.24	1320	51.97	135	5.31
93	1285	50.59	1150	45.28	1480	58.27	155	6.10

Notes:

Openings are necessary to allow cooling air flow around the plate and body of the unit.  
 The unit must not be completely shrouded by a solid adaptor with no openings.