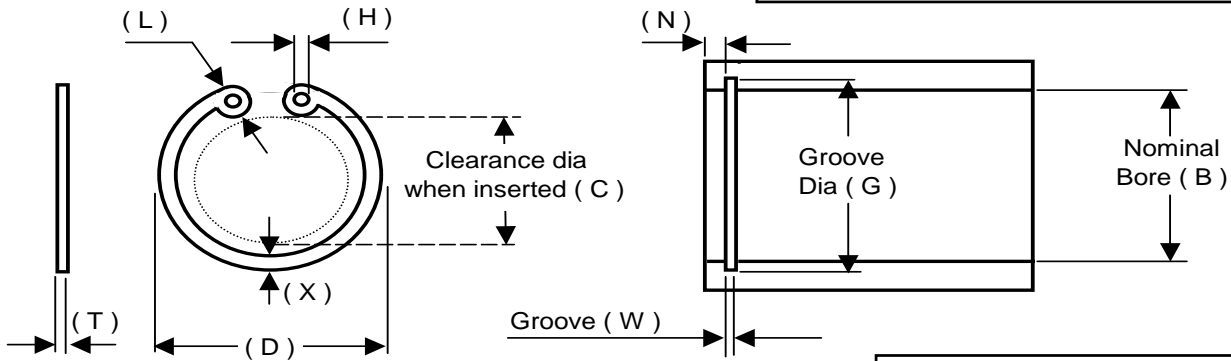


Standard Internal Circlip - DIN 472



Standard Material: Carbon Spring Steel
Standard Finish: Black and oil

Circlip Dimensions

Part no	Bore	(T)	Tolerance	(D)	Tolerance	(C)	(X)	(L)	(H)	Fr KN
472008	8	0.80	+0.00 -0.05	8.7	+0.36 -0.10	3.0	1.1	2.4	1.0	2.0
472009	9	0.80	+0.00 -0.05	9.8	+0.36 -0.10	3.7	1.3	2.5	1.0	2.0
472010	10	1.00	+0.00 -0.06	10.8	+0.36 -0.10	3.3	1.4	3.2	1.2	4.0
472011	11	1.00	+0.00 -0.06	11.8	+0.36 -0.10	4.1	1.5	3.3	1.2	4.0
472012	12	1.00	+0.00 -0.06	13.0	+0.36 -0.10	4.9	1.7	3.4	1.5	4.0
472013	13	1.00	+0.00 -0.06	14.1	+0.36 -0.10	5.4	1.8	3.6	1.5	4.2
472014	14	1.00	+0.00 -0.06	15.1	+0.36 -0.10	6.2	1.9	3.7	1.7	4.5
472015	15	1.00	+0.00 -0.06	16.2	+0.36 -0.10	7.2	2.0	3.7	1.7	5.0
472016	16	1.00	+0.00 -0.06	17.3	+0.36 -0.10	8.0	2.0	3.8	1.7	5.5
472017	17	1.00	+0.00 -0.06	18.3	+0.42 -0.13	8.8	2.1	3.9	1.7	6.0
472018	18	1.00	+0.00 -0.06	19.5	+0.42 -0.13	9.4	2.2	4.1	2.0	6.5
472019	19	1.00	+0.00 -0.06	20.5	+0.42 -0.13	10.4	2.2	4.1	2.0	6.8
472020	20	1.00	+0.00 -0.06	21.5	+0.42 -0.13	11.2	2.3	4.2	2.0	7.2
472021	21	1.00	+0.00 -0.06	22.5	+0.42 -0.13	12.2	2.4	4.2	2.0	7.6
472022	22	1.00	+0.00 -0.06	23.5	+0.42 -0.13	13.2	2.5	4.2	2.0	8.0
472023	23	1.20	+0.00 -0.06	24.6	+0.42 -0.21	14.2	2.5	4.2	2.0	13.8
472024	24	1.20	+0.00 -0.06	25.9	+0.42 -0.21	14.8	2.6	4.4	2.0	13.9
472025	25	1.20	+0.00 -0.06	26.9	+0.42 -0.21	15.5	2.7	4.5	2.0	14.6
472026	26	1.20	+0.00 -0.06	27.9	+0.42 -0.21	16.1	2.8	4.7	2.0	13.9
472027	27	1.20	+0.00 -0.06	29.1	+0.42 -0.21	17.1	2.9	4.7	2.0	13.3
472028	28	1.20	+0.00 -0.06	30.1	+0.50 -0.25	17.9	2.9	4.8	2.0	13.3
472029	29	1.20	+0.00 -0.06	31.1	+0.50 -0.25	18.9	3.0	4.8	2.0	13.6
472030	30	1.20	+0.00 -0.06	32.1	+0.50 -0.25	19.9	3.0	4.8	2.0	13.7
472031	31	1.20	+0.00 -0.06	33.4	+0.50 -0.25	20.0	3.2	5.2	2.5	13.8
472032	32	1.20	+0.00 -0.06	34.4	+0.50 -0.25	20.6	3.2	5.4	2.5	13.8
472033	33	1.20	+0.00 -0.06	35.5	+0.50 -0.25	21.6	3.3	5.4	2.5	14.3
472034	34	1.50	+0.00 -0.06	36.5	+0.50 -0.25	22.6	3.3	5.4	2.5	26.2
472035	35	1.50	+0.00 -0.06	37.8	+0.50 -0.25	23.6	3.4	5.4	2.5	26.9
472036	36	1.50	+0.00 -0.06	38.8	+0.50 -0.25	24.6	3.5	5.4	2.5	26.4
472037	37	1.50	+0.00 -0.06	39.8	+0.50 -0.25	25.4	3.6	5.5	2.5	27.1
472038	38	1.50	+0.00 -0.06	40.8	+0.50 -0.25	26.4	3.7	5.5	2.5	28.2
472039	39	1.50	+0.00 -0.06	42.0	+0.90 -0.39	27.2	3.8	5.6	2.5	28.8
472040	40	1.75	+0.00 -0.06	43.5	+0.90 -0.39	27.8	3.9	5.8	2.5	44.6
472041	41	1.75	+0.00 -0.06	44.5	+0.90 -0.39	28.6	4.0	5.9	2.5	45.0
472042	42	1.75	+0.00 -0.06	45.5	+0.90 -0.39	29.6	4.1	5.9	2.5	44.7
472043	43	1.75	+0.00 -0.06	46.5	+0.90 -0.39	30.6	4.2	5.9	2.5	44.5
472044	44	1.75	+0.00 -0.06	47.5	+0.90 -0.39	31.4	4.2	6.0	2.5	43.3
472045	45	1.75	+0.00 -0.06	48.5	+0.90 -0.39	32.0	4.3	6.2	2.5	43.1
472046	46	1.75	+0.00 -0.06	49.5	+0.90 -0.39	32.7	4.4	6.3	2.5	42.9
472047	47	1.75	+0.00 -0.06	50.5	+1.10 -0.46	33.5	4.4	6.4	2.5	43.5

Groove Dimensions

(G)	Tolerance	(W)	(N)	Fn KN
8.4	+0.09 -0.00	0.9	0.6	0.9
9.4	+0.09 -0.00	0.9	0.6	1.0
10.4	+0.11 -0.00	1.1	0.6	1.1
11.4	+0.11 -0.00	1.1	0.6	1.2
12.5	+0.11 -0.00	1.1	0.8	1.6
13.6	+0.11 -0.00	1.1	0.9	2.1
14.6	+0.11 -0.00	1.1	0.9	2.3
15.7	+0.11 -0.00	1.1	1.1	2.8
16.8	+0.11 -0.00	1.1	1.2	3.4
17.8	+0.11 -0.00	1.1	1.2	3.6
19.0	+0.13 -0.00	1.1	1.5	4.8
20.0	+0.13 -0.00	1.1	1.5	5.1
21.0	+0.13 -0.00	1.1	1.5	5.4
22.0	+0.13 -0.00	1.1	1.5	5.7
23.0	+0.13 -0.00	1.1	1.5	5.9
24.1	+0.21 -0.00	1.3	1.5	6.8
25.2	+0.21 -0.00	1.3	1.8	7.7
26.2	+0.21 -0.00	1.3	1.8	8.0
27.2	+0.21 -0.00	1.3	1.8	8.4
28.4	+0.21 -0.00	1.3	2.1	10.1
29.4	+0.21 -0.00	1.3	2.1	10.5
30.4	+0.25 -0.00	1.3	2.1	10.9
31.4	+0.25 -0.00	1.3	2.1	11.3
32.7	+0.25 -0.00	1.3	2.6	14.1
33.7	+0.25 -0.00	1.3	2.6	14.6
34.7	+0.25 -0.00	1.3	2.6	15.0
35.7	+0.25 -0.00	1.6	2.6	15.4
37.0	+0.25 -0.00	1.6	3.0	18.8
38.0	+0.25 -0.00	1.6	3.0	19.4
39.0	+0.25 -0.00	1.6	3.0	19.8
40.0	+0.25 -0.00	1.6	3.0	22.5
41.0	+0.25 -0.00	1.6	3.0	26.0
42.5	+0.25 -0.00	1.9	3.8	27.0
43.5	+0.25 -0.00	1.9	3.8	27.6
44.5	+0.25 -0.00	1.9	3.8	28.4
45.5	+0.25 -0.00	1.9	3.8	28.8
46.5	+0.25 -0.00	1.9	3.8	29.5
47.5	+0.25 -0.00	1.9	3.8	30.2
48.5	+0.25 -0.00	1.9	3.8	30.8
49.5	+0.25 -0.00	1.9	3.8	31.4

472048	48	1.75	+0.00	-0.06	51.5	+1.10	-0.46	34.5	4.5	6.4	2.5	43.2	50.5	+0.30	-0.00	1.9	3.8	32.0
472050	50	2.00	+0.00	-0.07	54.2	+1.10	-0.46	36.3	4.6	6.5	2.5	60.8	53.0	+0.30	-0.00	2.2	4.5	40.5
472051	51	2.00	+0.00	-0.07	55.2	+1.10	-0.46	37.3	4.7	6.5	2.5	60.2	54.0	+0.30	-0.00	2.2	4.5	41.2
472052	52	2.00	+0.00	-0.07	56.2	+1.10	-0.46	37.9	4.7	6.7	2.5	60.3	55.0	+0.30	-0.00	2.2	4.5	42.0
472053	53	2.00	+0.00	-0.07	57.2	+1.10	-0.46	38.9	4.9	6.7	2.5	60.7	56.0	+0.30	-0.00	2.2	4.5	42.9
472054	54	2.00	+0.00	-0.07	58.2	+1.10	-0.46	39.9	5.0	6.7	2.5	60.4	57.0	+0.30	-0.00	2.2	4.5	43.6
472055	55	2.00	+0.00	-0.07	59.2	+1.10	-0.46	40.7	5.0	6.8	2.5	60.3	58.0	+0.30	-0.00	2.2	4.5	44.4
472058	58	2.00	+0.00	-0.07	62.2	+1.10	-0.46	43.5	5.2	6.9	2.5	60.8	61.0	+0.30	-0.00	2.2	4.5	46.7
472060	60	2.00	+0.00	-0.07	64.2	+1.10	-0.46	44.7	5.4	7.3	2.5	61.0	63.0	+0.30	-0.00	2.2	4.5	48.3
472062	62	2.00	+0.00	-0.07	66.2	+1.10	-0.46	46.7	5.5	7.3	2.5	60.9	65.0	+0.30	-0.00	2.2	4.5	49.8
472063	63	2.00	+0.00	-0.07	67.2	+1.10	-0.46	47.7	5.6	7.3	2.5	60.8	66.0	+0.30	-0.00	2.2	4.5	50.6
472064	64	2.00	+0.00	-0.07	68.2	+1.10	-0.46	48.7	5.7	7.5	2.5	60.6	67.0	+0.30	-0.00	2.2	4.5	51.4
472065	65	2.50	+0.00	-0.07	69.2	+1.10	-0.46	49.0	5.8	7.6	3.0	121.0	68.0	+0.30	-0.00	2.7	4.5	51.8
472067	67	2.50	+0.00	-0.07	71.5	+1.10	-0.46	50.8	6.0	7.7	3.0	121.0	70.0	+0.30	-0.00	2.7	4.5	53.8
472068	68	2.50	+0.00	-0.07	72.5	+1.10	-0.46	51.6	6.1	7.8	3.0	121.5	71.0	+0.30	-0.00	2.7	4.5	54.5
472070	70	2.50	+0.00	-0.07	74.5	+1.10	-0.46	53.6	6.2	7.8	3.0	119.0	73.0	+0.30	-0.00	2.7	4.5	56.2
472072	72	2.50	+0.00	-0.07	76.5	+1.10	-0.46	55.6	6.4	7.8	3.0	119.2	75.0	+0.30	-0.00	2.7	4.5	58.0
472075	75	2.50	+0.00	-0.07	79.5	+1.10	-0.46	58.6	6.6	7.8	3.0	118.0	78.0	+0.30	-0.00	2.7	4.5	60.0
472077	77	2.50	+0.00	-0.07	81.5	+1.10	-0.46	60.4	6.7	7.9	3.0	121.1	80.0	+0.30	-0.00	2.7	4.5	61.6
472078	78	2.50	+0.00	-0.07	82.5	+1.30	-0.54	60.1	6.8	8.5	3.0	122.5	81.0	+0.35	-0.00	2.7	4.5	62.3
472080	80	2.50	+0.00	-0.07	85.5	+1.30	-0.54	62.1	7.0	8.5	3.0	120.9	83.5	+0.35	-0.00	2.7	5.3	74.6
472082	82	2.50	+0.00	-0.07	87.5	+1.30	-0.54	64.1	7.0	8.5	3.0	119.0	85.5	+0.35	-0.00	2.7	5.3	76.6
472085	85	3.00	+0.00	-0.08	90.5	+1.30	-0.54	66.9	7.2	8.6	3.5	201.4	88.5	+0.35	-0.00	3.2	5.3	79.5
472087	87	3.00	+0.00	-0.08	92.5	+1.30	-0.54	68.9	7.3	8.6	3.5	204.5	90.5	+0.35	-0.00	3.2	5.3	81.3
472088	88	3.00	+0.00	-0.08	93.5	+1.30	-0.54	69.9	7.4	8.6	3.5	209.4	91.5	+0.35	-0.00	3.2	5.3	82.1
472090	90	3.00	+0.00	-0.08	95.5	+1.30	-0.54	71.9	7.6	8.6	3.5	199.0	93.5	+0.35	-0.00	3.2	5.3	84.0
472092	92	3.00	+0.00	-0.08	97.5	+1.30	-0.54	73.7	7.8	8.7	3.5	201.0	95.5	+0.35	-0.00	3.2	5.3	85.8
472095	95	3.00	+0.00	-0.08	100.5	+1.30	-0.54	76.5	8.1	8.8	3.5	195.0	98.5	+0.35	-0.00	3.2	5.3	88.6
472097	97	3.00	+0.00	-0.08	102.5	+1.30	-0.54	78.5	8.2	8.8	3.5	193.0	100.5	+0.35	-0.00	3.2	5.3	90.5
472098	98	3.00	+0.00	-0.08	103.5	+1.30	-0.54	79.0	8.3	9.0	3.5	191.0	101.5	+0.35	-0.00	3.2	5.3	91.3
472100	100	3.00	+0.00	-0.08	105.5	+1.30	-0.54	80.6	8.4	9.2	3.5	188.0	103.5	+0.35	-0.00	3.2	5.3	93.1
472102	102	4.00	+0.00	-0.10	108.0	+1.30	-0.54	82.0	8.5	9.5	3.5	439.0	106.0	+0.54	-0.00	4.2	6.0	108.8
472105	105	4.00	+0.00	-0.10	112.0	+1.30	-0.54	85.0	8.7	9.5	3.5	436.0	109.0	+0.54	-0.00	4.2	6.0	112.0
472108	108	4.00	+0.00	-0.10	115.0	+1.30	-0.54	89.0	8.9	9.5	3.5	419.0	112.0	+0.54	-0.00	4.2	6.0	115.0
472110	110	4.00	+0.00	-0.10	117.0	+1.30	-0.54	88.2	9.0	10.4	3.5	415.0	114.0	+0.54	-0.00	4.2	6.0	117.0
472112	112	4.00	+0.00	-0.10	119.0	+1.30	-0.54	90.0	9.1	10.5	3.5	418.0	116.0	+0.54	-0.00	4.2	6.0	119.0
472115	115	4.00	+0.00	-0.10	122.0	+1.50	-0.63	93.0	9.3	10.5	3.5	409.0	119.0	+0.54	-0.00	4.2	6.0	122.0
472120	120	4.00	+0.00	-0.10	127.0	+1.50	-0.63	96.9	9.7	11.0	3.5	396.0	124.0	+0.63	-0.00	4.2	6.0	127.0
472125	125	4.00	+0.00	-0.10	132.0	+1.50	-0.63	101.9	10.0	11.0	4.0	385.0	129.0	+0.63	-0.00	4.2	6.0	132.0
472130	130	4.00	+0.00	-0.10	137.0	+1.50	-0.63	106.9	10.2	11.0	4.0	374.0	134.0	+0.63	-0.00	4.2	6.0	138.0
472135	135	4.00	+0.00	-0.10	142.0	+1.50	-0.63	111.5	10.5	11.2	4.0	358.0	139.0	+0.63	-0.00	4.2	6.0	143.0
472140	140	4.00	+0.00	-0.10	147.0	+1.50	-0.63	116.5	10.7	11.2	4.0	350.0	144.0	+0.63	-0.00	4.2	6.0	148.0
472145	145	4.00	+0.00	-0.10	152.0	+1.50	-0.63	121.0	10.9	11.4	4.0	336.0	149.0	+0.63	-0.00	4.2	6.0	153.0
472150	150	4.00	+0.00	-0.10	158.0	+1.50	-0.63	124.8	11.2	12.0	4.0	326.0	155.0	+0.63	-0.00	4.2	7.5	191.0
472155	155	4.00	+0.00	-0.10	164.0	+1.50	-0.63	129.8	11.4	12.0	4.0	324.0	160.0	+0.63	-0.00	4.2	7.5	206.0
472160	160	4.00	+0.00	-0.10	169.0	+1.50	-0.63	132.7	11.6	13.0	4.0	321.0	165.0	+0.63	-0.00	4.2	7.5	212.0
472165	165	4.00	+0.00	-0.10	174.5	+1.50	-0.63	137.7	11.8	13.0	4.0	319.0	170.0	+0.63	-0.00	4.2	7.5	219.0
472170	170	4.00	+0.00	-0.10	179.5	+1.50	-0.63	141.6	12.2	13.5	4.0	349.0	175.0	+0.63	-0.00	4.2	7.5	225.0
472175	175	4.00	+0.00	-0.10	184.5	+1.70	-0.72	146.6	12.7	13.5	4.0	351.0	180.0	+0.63	-0.00	4.2	7.5	232.0
472180	180	4.00	+0.00	-0.10	189.5	+1.70	-0.72	150.2	13.2	14.2	4.0	347.0	185.0	+0.72	-0.00	4.2	7.5	238.0
472185	185	4.00	+0.00	-0.10	194.5	+1.70	-0.72	155.2	13.7	14.2	4.0	349.0	190.0	+0.72	-0.00	4.2	7.5	245.0
472190	190	4.00	+0.00	-0.10	199.5	+1.70	-0.72	160.2	13.8	14.2	4.0	340.0	195.0	+0.72	-0.00	4.2	7.5	251.0
472195	195	4.00	+0.00	-0.10	204.5	+1.70	-0.72	165.2	13.8	14.2	4.0	330.0	200.0	+0.72	-0.00	4.2	7.5	258.0
472200	200	4.00	+0.00	-0.10	209.5	+1.70	-0.72	170.2	14.0	14.2	4.0	325.0	205.0	+0.72	-0.00	4.2	7.5	265.0
472205	205	5.00	+0.00	-0.12	217.0	+1.70	-0.72	175.2	14.0	14.2	4.0	616.0	211.0	+0.72	-0.00	5.2	9.0	326.0
472210	210	5.00	+0.00	-0.12	222.0	+1.70	-0.72	180.2	14.0	14.2	4.0	601.0	216.0	+0.72	-0.00	5.2	9.0	333.0
472215	215	5.00	+0.00	-0.12	227.0	+1.70	-0.72	185.2	14.0	14.2	4.0	586.0	221.0	+0.72	-0.00	5.2	9.0	341.0
472220	220	5.00	+0.00	-0.12	232.0	+1.70	-0.72	190.2	14.0	14.2	4.0	574.0	226.0	+0.72	-0.00	5.2	9.0	349.0
472225	225	5.00	+0.00	-0.12	237.0	+1.70	-0.72	195.2	14.0	14.2	4.0	560.0	231.0	+0.72	-0.00	5.2	9.0	357.0
472230	230	5.00	+0.00	-0.12	242.0	+1.70	-0.72	200.2	14.0	14.2	4.0	549.0	236.0	+0.72	-0.00	5.2	9.0	365.0

472235	235	5.00	+0.00	-0.12	247.0	+1.70	-0.72	205.2	14.0	14.2	4.0	536.0	241.0	+0.72	-0.00	5.2	9.0	373.0
472240	240	5.00	+0.00	-0.12	252.0	+2.00	-0.81	210.2	14.0	14.2	4.0	525.0	246.0	+0.72	-0.00	5.2	9.0	380.0
472245	245	5.00	+0.00	-0.12	257.0	+2.00	-0.81	215.2	14.0	14.2	4.0	514.0	251.0	+0.81	-0.00	5.2	9.0	389.0
472250	250	5.00	+0.00	-0.12	262.0	+2.00	-0.81	220.2	14.0	14.2	4.0	504.0	256.0	+0.81	-0.00	5.2	9.0	396.0
472255	255	5.00	+0.00	-0.12	270.0	+2.00	-0.81	221.0	16.0	16.2	5.0	549.0	263.0	+0.81	-0.00	5.2	12.0	541.0
472260	260	5.00	+0.00	-0.12	275.0	+2.00	-0.81	226.0	16.0	16.2	5.0	538.0	268.0	+0.81	-0.00	5.2	12.0	553.0
472265	265	5.00	+0.00	-0.12	280.0	+2.00	-0.81	231.0	16.0	16.2	5.0	528.0	273.0	+0.81	-0.00	5.2	12.0	563.0
472270	270	5.00	+0.00	-0.12	285.0	+2.00	-0.81	236.0	16.0	16.2	5.0	518.0	278.0	+0.81	-0.00	5.2	12.0	573.0
472275	275	5.00	+0.00	-0.12	290.0	+2.00	-0.81	241.0	16.0	16.2	5.0	509.0	283.0	+0.81	-0.00	5.2	12.0	585.0
472280	280	5.00	+0.00	-0.12	295.0	+2.00	-0.81	246.0	16.0	16.2	5.0	499.0	288.0	+0.81	-0.00	5.2	12.0	593.0
472285	285	5.00	+0.00	-0.12	300.0	+2.00	-0.81	251.0	16.0	16.2	5.0	491.0	293.0	+0.81	-0.00	5.2	12.0	605.0
472290	290	5.00	+0.00	-0.12	305.0	+2.00	-0.81	256.0	16.0	16.2	5.0	482.0	298.0	+0.81	-0.00	5.2	12.0	615.0
472295	295	5.00	+0.00	-0.12	310.0	+2.00	-0.81	261.0	16.0	16.2	5.0	474.0	303.0	+0.81	-0.00	5.2	12.0	625.0
472300	300	5.00	+0.00	-0.12	315.0	+2.00	-0.81	266.0	16.0	16.2	5.0	466.0	308.0	+0.81	-0.00	5.2	12.0	636.0
472310	310	5.00	+0.00	-0.18	327.0	+2.50	-1.00	268.0	20.0	20.2	6.0	947.0	320.0	+0.89	-0.00	6.2	15.0	823.0
472320	320	5.00	+0.00	-0.18	337.0	+2.50	-1.00	278.0	20.0	20.2	6.0	919.0	330.0	+0.89	-0.00	6.2	15.0	850.0
472330	330	5.00	+0.00	-0.18	347.0	+2.50	-1.00	288.0	20.0	20.2	6.0	894.0	340.0	+0.89	-0.00	6.2	15.0	876.0
472340	340	5.00	+0.00	-0.18	357.0	+2.50	-1.00	298.0	20.0	20.2	6.0	869.0	350.0	+0.89	-0.00	6.2	15.0	903.0
472350	350	5.00	+0.00	-0.18	367.0	+2.50	-1.00	308.0	20.0	20.2	6.0	846.0	360.0	+0.89	-0.00	6.2	15.0	929.0
472360	360	5.00	+0.00	-0.18	377.0	+2.50	-1.00	318.0	20.0	20.2	6.0	823.0	370.0	+0.89	-0.00	6.2	15.0	955.0
472370	370	5.00	+0.00	-0.18	387.0	+2.50	-1.00	328.0	20.0	20.2	6.0	803.0	380.0	+0.89	-0.00	6.2	15.0	981.0
472380	380	5.00	+0.00	-0.18	397.0	+2.50	-1.00	338.0	20.0	20.2	6.0	784.0	390.0	+0.89	-0.00	6.2	15.0	1008.0
472390	390	5.00	+0.00	-0.18	407.0	+2.50	-1.00	348.0	20.0	20.2	6.0	764.0	400.0	+0.89	-0.00	6.2	15.0	1033.0
472400	400	5.00	+0.00	-0.18	417.0	+2.50	-1.00	358.0	20.0	20.2	6.0	746.0	410.0	+1.00	-0.00	6.2	15.0	1060.0
472400	400	5.00	+0.00	-0.18	417.0	+2.50	-1.00	358.0	20.0	20.2	6.0	746.0	410.0	+1.00	-0.00	6.2	15.0	1060.0