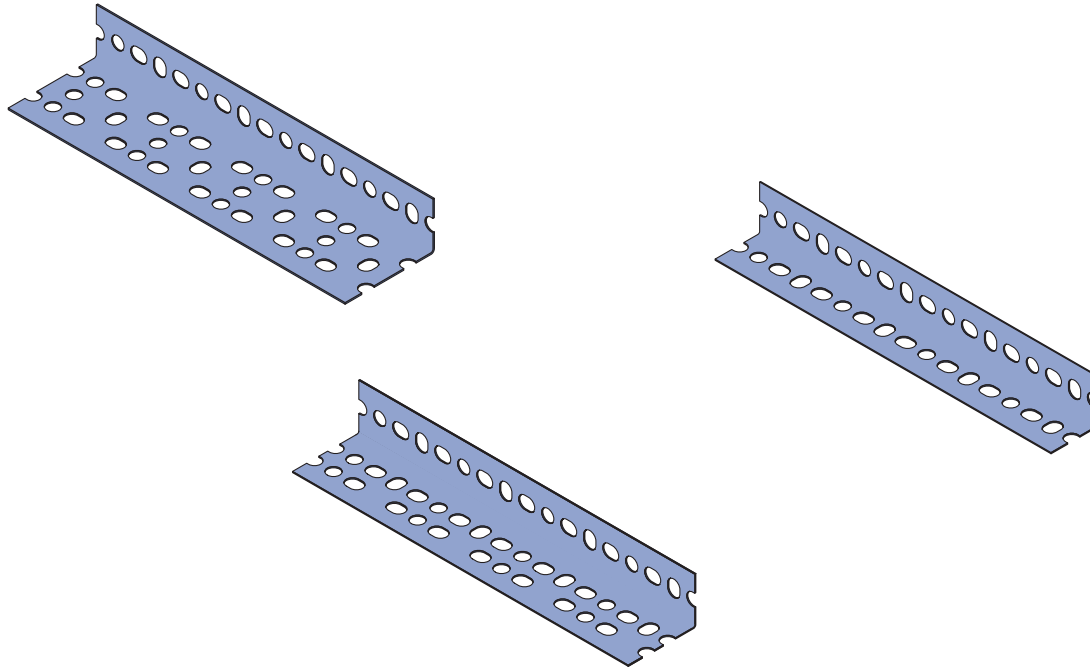




PrimeAngle™	216
Accessories	217
PrimeAngle™ Technical Data	118-220



MATERIAL

STEEL: PLAIN

12 Gauge (.105" 1.0 mm) ASTM 1011 SS GR 33,
14 Gauge (.076) ASTM 1011 SS GR 33

STEEL: PRE-GALVANIZED

12 Gauge (.105" 1.0 mm) ASTM A653 GR 33,
14 Gauge (.076) ASTM A653 GR 33

FINISHES

Available in two durable, long-lasting finishes:

Pre-Galvanized (PG) or

Perma-Green III (GR) conforming to
ASTM B633 Type III SC1.

STANDARD LENGTHS

Standard lengths are 10' and 12'. Slotted angle is shipped in ten-piece bundles complete with 75 pieces of 3/8" - 16 x 3/4" hex head bolts and 3/8" nuts.

ORDERING INFORMATION:

When ordering, add the length or size and finish to the part number.

DIMENSIONS

Imperial dimensions are illustrated in inches. Metric dimensions are shown in parenthesis or as noted. Unless noted, all metric dimensions are in millimeters and rounded to one decimal place.



1 1/2" System

1 1/4" System

1 3/16" System

Fiberglass System

Special Metals

Prime Angle

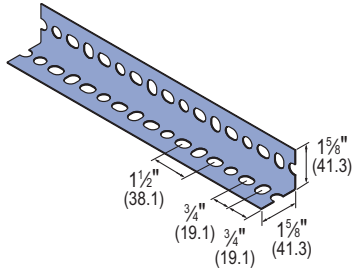
Metal Grating

Roofwalk

Index

PA 158

(1 5/8" x 1 5/8" x 14 GA.) LIGHT DUTY



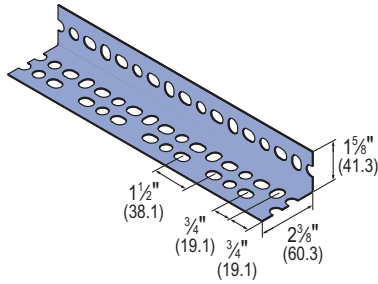
Note: Includes Serrated Nuts & Bolts

For those jobs where extra strength is not necessary. Ideal for light-duty shelving or racking.

Wt/100 Ft.: 66 lbs (29.9 kg)

PA 238

(1 5/8" x 2 3/8" x 14 GA.) MEDIUM DUTY



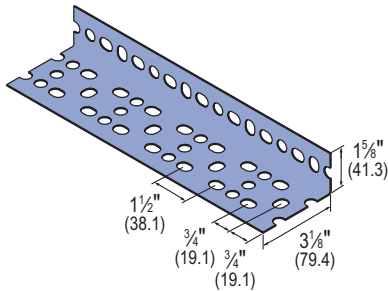
Note: Includes Serrated Nuts & Bolts

Perfect for the majority of framing needs, including shelving, racking and electrical or mechanical support jobs.

Wt/100 Ft: 80 lbs(36.3 kg)

PA 318

(1 5/8" x 3 1/8" x 12 GA.) HEAVY DUTY



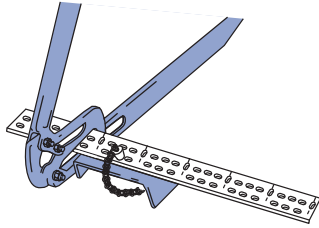
Note: Includes Serrated Nuts & Bolts

Suitable for balconies, ramps, large racks and shelving systems, as well as other structures with substantial load requirements.

Wt/100 Ft: 130 lbs (59.0 kg)

PA 1HDC

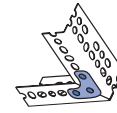
PORTABLE CUTTER



Wt/100 pcs: 17 lbs (7.7 kg)

PA 1GP

GUSSET PLATE



Wt/100 pcs: 9 lbs (4.1 kg)

PA 1SC

SWIVEL CASTER



Wt/100 pcs: 170 lbs (77.1 kg)

PA 1RC

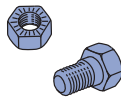
RIGID CASTER



Wt/100 pcs: 110 lbs (49.9 kg)

PA 1SNB

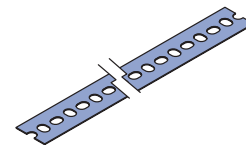
SERRATED NUTS AND BOLTS



Wt/100 pcs: 7 lbs (3.2 kg)

PA 1RP

SLOTTED STRAP



Wt/100 pcs: 35 lbs (15.9 kg)

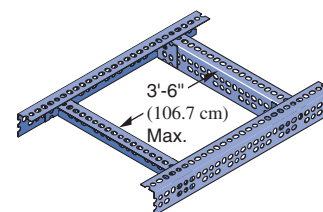
TRANSVERSE STIFFENERS

When supporting concentrated loads, the capacity of a pair of slotted-angle beams can be increased by the addition of transverse stiffeners. These should be placed immediately under the load bearing point. The slotted-angle segment used as the stiffener is bolted into place using a metal connector at each junction.

Beams that are 6' (182.9 cm) long or less require only one stiffener in the center of the span. Seven-foot beams need two stiffeners placed 2' (61.0 cm) from each end. Eight-foot beams require two stiffeners 2'6" (76.2 cm) from the ends. For beams with a nine-foot span, it is necessary to have three stiffeners at 2'3" (68.6 cm) intervals. Ten-foot beams need three stiffeners with 2'6" spacings.

For maximum effectiveness, transverse stiffeners should never be spaced more than 3'6" (106.7 cm) apart.

Note: All loads based on actual physical testing. Documentation available on request.

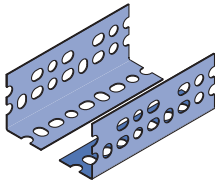




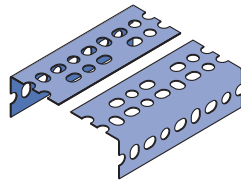
BEAM CONFIGURATIONS

(See corresponding letters in table on following page for load data)

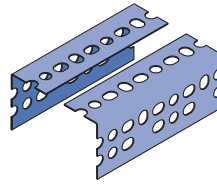
G – Two Single Pieces (Up)



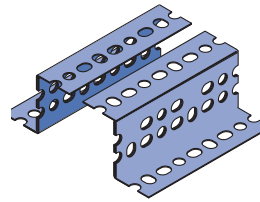
H – Two Single Pieces (Level)



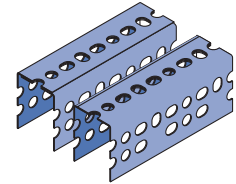
I – Two Single Pieces (Down)



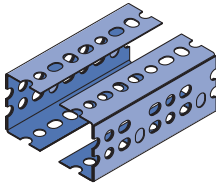
J – Two Z-Sections



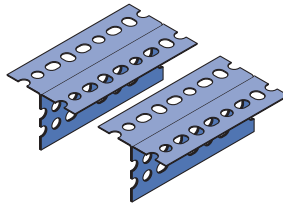
K – Two Narrow Channels



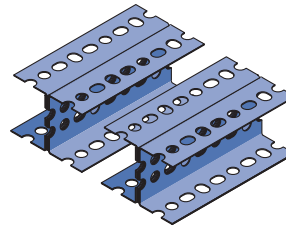
L – Two Broad Channels



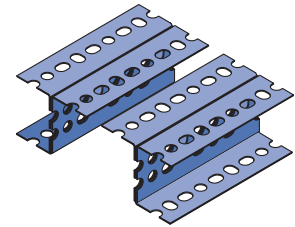
M – Two T-Sections



N – Two I-Sections



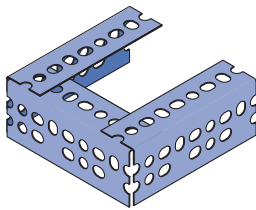
O – Two J-Sections



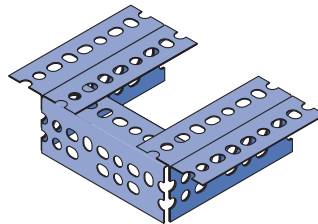
BEAM CONFIGURATIONS WITH STIFFENERS

(See corresponding letters in table on following page for load data)

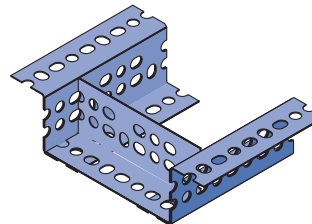
P – Single Pieces w/Stiffener



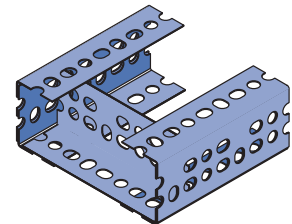
Q – T-Sections w/Stiffener



R – Z-Sections w/Stiffener



R – I-Sections w/Stiffener

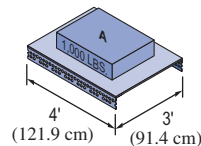


BEAM LOAD CALCULATIONS

The beam loading depends on which slotted angle is used and the manner in which the beam is constructed. The diagrams above show how individual slotted angle components can be combined to form a beam. The loading for each beam configuration is shown in the beam loading tables on the next page.

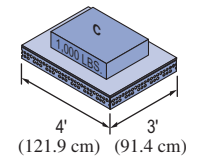
Example - Load "A"

Load "A" is supported by two 48" (121.9 cm) sections of PA-238 (1 5/8" x 2 3/8") (41.3mm x 60.3mm). The 48" row in the PA 238 table on next page indicates what each beam configuration will support. Since the columns are sorted from lowest to highest load, the first configuration that satisfies the requirement is "J" which will support 1,100 lbs (4.9 kN).



Example - Load "C"

Load "C" is supported by all four beam sections. The load is distributed uniformly on two 3' (91.4 cm) and two 4' (121.9 cm) beams which total 14' (426.7 cm) of supporting beam length. Dividing the 1,000 lbs. (4.5 kN) load by 14-feet equals 72 lbs. per foot (106.3 kg per meter). Using the two 4' (121.9 cm) longest (weakest) lengths, calculate the total weight as follows:



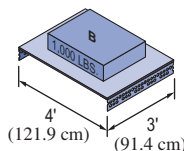
$$2 \text{ (beams)} \times 4' \text{ (length)} \times 72 \text{ lbs./ft.} = 576 \text{ lbs. total wt.}$$

$$2 \text{ (beams)} \times 121.9\text{cm (length)} \times 106.3 \text{ kg/M} = 25,915 \text{ kg total wt.}$$

The 36" (91.4 cm) row in the PA 238 table on next page indicates what each beam configuration will support. Since the columns are sorted from lowest to highest load, the first configuration that satisfies the requirement is "J" which will support 830 lbs. (3.7 kN) and is adequate for this requirement. The 3-foot beams configured in the same manner will support the load because they are shorter and stronger.

Example - Load "B"

Load "B" is supported by two 36" (91.4 cm) sections of PA-238 (1 5/8" x 2 3/8") (41.3mm x 60.3mm). The 36" row in the PA 238 table on next page indicates what each beam configuration will support. Since the columns are sorted from lowest to highest load, the first configuration that satisfies the requirement is "J" which will support 1,100 lbs (4.9 kN).

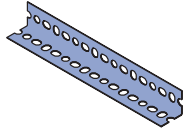


BEAM LOADS

(See corresponding letters in table on previous page for configurations)

PA 158

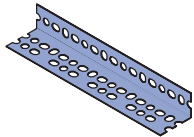
LIGHT DUTY, (1½" x 1½" x 14 GA.)



Span In. (cm)	G Lbs (kN)	H Lbs (kN)	I Lbs (kN)	P Lbs (kN)	L Lbs (kN)	R Lbs (kN)	M Lbs (kN)
24	550	830	830	920	1,600	1,700	1,840
61.0	2.45	3.69	3.69	4.09	7.12	7.56	8.18
36	370	560	560	610	1,070	1,130	1,230
91.4	1.65	2.49	2.49	2.71	4.76	5.03	5.47
48	280	420	420	460	800	850	920
121.9	1.25	1.87	1.87	2.05	3.56	3.78	4.09
60	220	330	330	370	640	680	740
152.4	0.98	1.47	1.47	1.65	2.85	3.02	3.29
72	180	280	280	310	530	570	610
182.9	0.80	1.25	1.25	1.38	2.36	2.54	2.71
84	•	240	240	260	460	490	530
213.4	•	1.07	1.07	1.16	2.05	2.18	2.36
96	•	210	210	230	400	430	460
243.8	•	0.93	0.93	1.02	1.78	1.91	2.05
108	•	•	•	•	360	380	410
274.3	•	•	•	•	1.60	1.69	1.82
120	•	•	•	•	320	340	370
304.8	•	•	•	•	1.42	1.51	1.65

PA 238

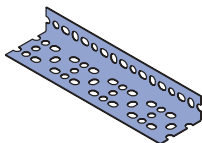
MEDIUM DUTY, (1½" x 2¾" x 14 GA.)



Span In. (cm)	G Lbs (kN)	H Lbs (kN)	I Lbs (kN)	P Lbs (kN)	J Lbs (kN)	L Lbs (kN)	R Lbs (kN)	M Lbs (kN)	K Lbs (kN)	Q Lbs (kN)	O Lbs (kN)	N Lbs (kN)
24	700	1,020	1,660	1,740	2,220	3,170	3,230	3,490	3,590	3,630	6,060	7,560
61.0	3.11	4.54	7.38	7.74	9.88	14.10	14.37	15.52	15.97	16.15	26.96	33.63
36	460	680	1,100	1,160	1,480	2,110	2,150	2,320	2,390	2,420	4,040	5,040
91.4	2.05	3.02	4.89	5.16	6.58	9.39	9.56	10.32	10.63	10.76	17.97	22.42
48	350	510	830	870	1,110	1,580	1,620	1,740	1,800	1,810	3,030	3,780
121.9	1.56	2.27	3.69	3.87	4.94	7.03	7.21	7.74	8.01	8.05	13.48	16.81
60	280	410	660	700	890	1,270	1,290	1,390	1,440	1,450	2,420	3,020
152.4	1.25	1.82	2.94	3.11	3.96	5.65	5.74	6.18	6.41	6.45	10.76	13.43
72	230	340	550	580	740	1,060	1,080	1,160	1,200	1,210	2,020	2,520
182.9	1.02	1.51	2.45	2.58	3.29	4.72	4.80	5.16	5.34	5.38	8.99	11.21
84	•	290	470	500	630	910	920	1,000	1,030	1,040	1,730	2,160
213.4	•	1.29	2.09	2.22	2.80	4.05	4.09	4.45	4.58	4.63	7.70	9.61
96	•	260	410	440	550	790	810	870	900	910	1,520	1,890
243.8	•	1.16	1.82	1.96	2.45	3.51	3.60	3.87	4.00	4.05	6.76	8.41
108	•	•	•	•	490	700	720	770	800	810	1,350	1,680
274.3	•	•	•	•	2.18	3.11	3.20	3.43	3.56	3.60	6.01	7.47
120	•	•	•	•	440	630	650	700	720	730	1,210	1,510
304.8	•	•	•	•	1.96	2.80	2.89	3.11	3.20	3.25	5.38	6.72

PA 318

HEAVY DUTY, (1½" x 3½" x 12 GA.)



Span In. (cm)	G Lbs (kN)	H Lbs (kN)	I Lbs (kN)	P Lbs (kN)	J Lbs (kN)	L Lbs (kN)	R Lbs (kN)	M Lbs (kN)	K Lbs (kN)	Q Lbs (kN)	O Lbs (kg)	N Lbs (kg)
24	1,790	1,610	4,300	4,960	6,520	7,910	8,070	9,920	9,990	10,170	14,600	16,120
61.0	7.96	7.16	19.13	22.06	29.00	35.19	35.90	44.13	44.44	45.24	64.94	71.71
36	1,200	1,070	2,870	3,310	4,350	5,270	5,380	6,610	6,660	6,780	9,730	10,750
91.4	5.34	4.76	12.77	14.72	19.35	23.44	23.93	29.40	29.63	30.16	43.28	47.82
48	900	810	2,150	2,480	3,260	3,950	4,030	4,960	4,990	5,080	7,300	8,060
121.9	4.00	3.60	9.56	11.03	14.50	17.57	17.93	22.06	22.20	22.60	32.47	35.85
60	720	640	1,720	1,980	2,610	3,160	3,230	3,970	4,000	4,070	5,840	6,450
152.4	3.20	2.85	7.65	8.81	11.61	14.06	14.37	17.66	17.79	18.10	25.98	28.69
72	600	540	1,430	1,650	2,170	2,640	2,690	3,310	3,330	3,390	4,870	5,370
182.9	2.67	2.40	6.36	7.34	9.65	11.74	11.97	14.72	14.81	15.08	21.66	23.89
84	•	460	1,230	1,420	1,860	2,260	2,300	2,830	2,850	2,910	4,170	4,610
213.4	•	2.05	5.47	6.32	8.27	10.05	10.23	12.59	12.68	12.94	18.55	20.51
96	•	400	1,080	1,240	1,630	1,980	2,020	2,480	2,500	2,540	3,650	4,030
243.8	•	1.78	4.80	5.52	7.25	8.81	8.99	11.03	11.12	11.30	16.24	17.93
108	•	•	•	1,100	1,450	1,760	1,790	2,200	2,220	2,260	3,240	3,580
274.3	•	•	•	4.89	6.45	7.83	7.96	9.79	9.88	10.05	14.41	15.92
120	•	•	•	990	1,300	1,580	1,610	1,980	2,000	2,030	2,920	3,220
304.8	•	•	•	4.40	5.78	7.03	7.16	8.81	8.90	9.03	12.99	14.32

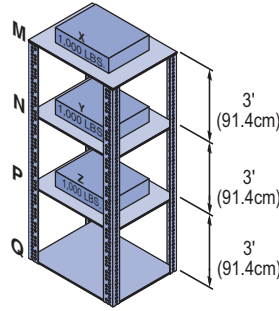


COLUMN LOADS

Column sections are calculated as described in the following example: (Assumes use of PA-238 1½" x 2¾"(41.3mm x 60.3mm), material.)

Since all load areas are supported equally by the 4-columns, the calculations are based on a single-column section.

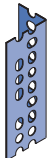
Section MN is one-fourth of "X", or 250 pounds (1.1 kN). Column section NP supports one-fourth of "Y" (250 pounds) plus the load supported by MN, or a total of 500 pounds (2.2 kN). Section PQ supports one-fourth of "Z" (250 pounds) plus the 500 pound load on section NP, or a total of 750 (3.3kN) pounds.



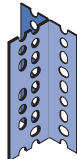
Column loads are based on free and unbraced column lengths. Since MN, NP and PQ are each 3' long, the load requirement is for a 36" section that will bear 750 pounds safely. A reference to the PA 238 table to the right indicates that all sections designated "A" will support 2,280 lbs. (10.1 kN) and meet the necessary requirements.

Note: To simplify assembly, we recommend using the same size material as for the horizontal members. This would be found in Table 2 to match the 14 gauge 1½" x 2¾" (41.3mm x 60.3mm) material selected for the beams of this structure.

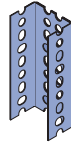
A – Single Piece



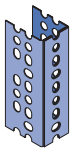
B – T-Section



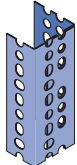
B – Broad Channel Section



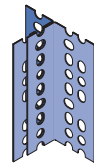
B – Narrow Channel Section



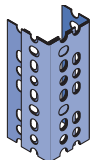
C – Uneven T-Section



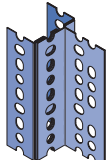
C – Uneven Channel Section



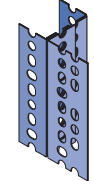
D – Dual Channel Section



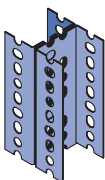
D – T-Channel Section



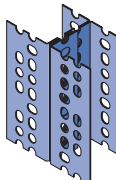
D – T-Channel Section



E – I-Section

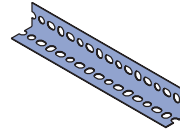


F – Uneven I-Section



PA 158

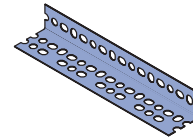
(1½" x 1½" x 14 GA.)



Span In. (cm)	A Lbs (kN)	B Lbs (kN)
36 91.4	1,450 6.45	3,850 17.13
48 121.9	1,150 5.12	3,500 15.57
60 152.4	950 4.23	3,000 13.34
72 182.9	750 3.34	2,500 11.12

PA 238

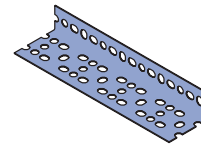
(1½" x 2¾" x 14 GA.)



Span In. (cm)	A Lbs (kN)	B Lbs (kN)	C Lbs (kN)	D Lbs (kN)	E Lbs (kN)	F Lbs (kN)
36 91.4	2,280 10.14	4,760 21.17	4,940 21.97	7,270 32.34	9,520 42.35	9,865 43.88
48 121.9	1,970 8.76	4,490 19.97	4,680 20.82	6,920 30.78	8,970 39.90	9,330 41.50
60 152.4	1,520 6.76	3,995 17.77	4,310 19.17	6,370 28.34	7,990 35.54	8,620 38.34
72 182.9	1,070 4.76	3,140 13.97	3,870 17.21	5,840 25.98	6,280 27.93	7,715 34.32
84 213.4	660 2.94	2,340 10.41	3,665 16.30	4,930 21.93	4,660 20.73	6,740 29.98
96 243.8	.	1,750 7.78	2,700 12.01	3,850 17.13	3,500 15.57	5,365 23.86
108 274.3	.	.	2,060 9.16	2,870 12.77	.	4,115 18.30
120 304.8	.	.	1,610 7.16	2,690 11.97	.	3,210 14.28

PA 318

(1½" x 3½" x 12 GA.)



Span In. (cm)	A Lbs (kN)	B Lbs (kN)	C Lbs (kN)	D Lbs (kN)	E Lbs (kN)	F Lbs (kN)
36 91.4	3,470 15.44	7,970 35.45	8,770 39.01	12,560 55.87	15,940 70.90	17,550 78.07
48 121.9	2,870 12.77	7,360 32.74	8,580 38.17	11,970 53.25	14,750 65.61	17,150 76.29
60 152.4	1,970 8.76	6,570 29.22	8,180 36.39	11,360 50.53	13,160 58.54	16,360 72.77
72 182.9	1,280 5.69	5,270 23.44	7,690 34.21	10,480 46.62	10,560 46.97	15,360 68.32
84 213.3	.	3,670 16.32	6,970 31.00	9,470 42.12	7,370 32.78	13,970 62.14
96 243.8	.	2,580 11.48	6,260 27.85	8,370 37.23	5,170 23.00	12,570 55.91
108 274.3	.	.	5,460 24.29	6,880 30.60	.	10,970 48.80
120 304.8	.	.	4,460 19.84	5,370 23.89	.	8,960 39.86