

and Mirror

Moment of Frame, Parts above Center Plane

Parts	Weight	Distance	Moment
Mirror Sheet metal	938	3.26	3058
" ribs 72-1x4x8'	229	3.25	744
" " 18-1x4x6'	69	1.75	121
" supports 72-3/4x3/4x2 1/2'	86*	2.75	236
" " 72-3/4x3/4x1 1/2'	52*	2.25	116
" " 18-3/4x3/4x1/2'	4	1.75	7
" Washers, bolts and screws	11.6	3.26	38
" Support Washers + Bolts	9.9	1.61	16
→ D, H, I, J, L, M, V, 310'	387	1.61	622
↙ Wood A (four) W (four)	38	2.17	82
B (four)	42	0	0
C (four)	6	0	0
U	4	.75	3
→ B, C(24), E, F, I(8), O, R(8+4)	133	1.61	214
↙ metal A(2)	20	0	0
A'	37	5.17	191
X	5	0	0
Bolts D, H, I, J, L, M, V	58	1.61	93
A	3.5	2.17	8
B	3.8	0	0
C	3.8	0	0
U	1.8	.75	1
Tracks 20' x 1/2 x 1 1/2'	12.8	2.17	28
	2145.2		5578

Moment of Frame Parts below Center plane.

Parts	Weight	Distance	Moment
→ A (four) +W	38	2.17	82
A (four) +W	38	6.13	233
A (four) +W	38	9.18	349
A (four) +W	38	10.916	414
B (four)	42	7.07	297
B (two)	21	10.15	214
C (four)	6	7.31	44
C (two)	3	10.75	32
E	50	4.14	207
F	17	7.14	120
G	41	7.34	55
K	74	1.34	99
N (two)	50	10.15	508
N (two)	50	4.14	207
O (two)	32	10.15	322
O (four)	64	7.07	451
P (four)	25	10.15	251
P (eight)	50	7.07	351
Q	41	1.34	56
R	67	4.27	286
S	73	4.14	300
→ T	50	3.53	176
	<u>912</u>		<u>5104</u>

boom

Moment of Frame parts below center plane

metal

Parts	Height	Distance	Moment
A (eight)	^{10.5} 20	4.14	83
A (eight)	20	7.9	158
A (eight)	20	10.43	208
A (four)	10	11.151	112
C (four)	4.8	10.15	49
D	20	4.14	83
G	8	10.0	80
H	8	10.0	80
I (eight)	9.7	10.15	98
I (eight)	9.7	4.14	40
J (eight)	11.3	10.0	113
J (four)	15.7	4.14	24
K (eight)	14.7	10.3	152
K (four)	7.3	4.14	30
L	6	9.14	25
M	6	4.14	25
N (four)	15.7	10.15	58
N (eight)	11.3	7.07	80
P (eight)	8	0	0
Q, R & S	17	4.14	70
Y & S	10	7.2	72
Z	10	4.14	41
	<u>244.2</u>		<u>1681</u>

Moment of France parts below center Plane

Bolts for Parts	Weight	Distance	Moment	Date
A (four)	3.5	2.17	7.6	8
A (four)	3.5	6.13	21.5	1
A (four)	3.5	9.18	32.1	2
A (four)	3.5	10.92	38.2	8
B (four)	5.8	7.07	41.0	1
B (two)	2.9	10.15	29.4	0
C (four)	3.8	7.3	27.8	8
C (two)	1.9	10.75	20.4	0
E	7.5	4.14	31.1	1
F	1.8	7.14	12.9	3
G	4.5	1.34	6.0	6
K	10.9	1.34	14.6	4
N (two)	5.4	10.15	54.9	5
N (two)	5.4	4.14	22.4	2
O (two)	4.1	10.15	41.6	1
O (four)	8.2	7.07	58.0	8
P (four)	4.1	10.15	41.6	1
P (eight)	8.2	7.07	58.0	8
Q	4.5	1.34	6.0	6
R	3.5	4.27	14.9	5
S	5.5	4.14	22.8	3
T	5.3	3.53	18.7	1
Track.	51.2	7.10	363.5	4
	158.4		984	

461	235
938	3058
229	744
69	121
86	236
52	116
4	7
11.6	38
9.9	16
387	622
133	214
58	93
<hr/> 1977.5	<hr/> 5265

$$\frac{5265}{1977.5} = 2.66 \text{ ft, average.}$$

Foot lbs below center	= 984 + 1681 + 5104 = 7769
" " above "	= 5578
" " available for focus support	2191
If level of mirror dropped 8 1/2"	
.708 x 1977.5 = foot lbs added	1400
Total foot lbs available for focus	3591

This will cut approx 6" off diagonal braces.

Weight of Frame & Mirror	3459.8 #
Focus	159.6
	<hr/> 3619.4 # total