

SECTION E

CONSTANT LOAD SPRING SUPPORTS

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As a result of the collaboration agreement with the company CARPENTER AND PATERSON, leading manufacturer of this type of equipment, PIHASA supplies the market with leading edge technology elements, such as constant load spring supports.

GENERAL DESCRIPTION:

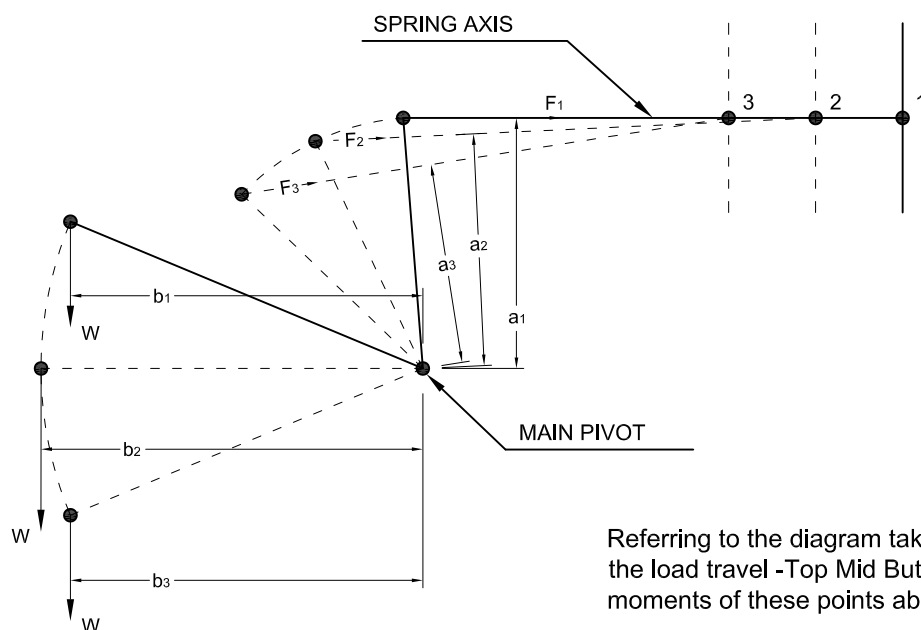
The Constant Effort Support designed and manufactured by Carpenter and Paterson incorporates the latest desing concepts, resulting in a constant supporting effort through the total travel of the unit.

The simplifield construction together with the established principle of a compression spring working in conjunction with a bell crank lever, achieves a mathematically perfect counter-balancing of spring and load moments about the main pivot point.

With a fixed spring housing of substantial construction the unit can be installed in many arrangements. The spring housing prevents the ingress of foreign bodies such as construction debris, thus reducing the danger of damage or restriction of the unit's function.

The Constant Support is based on a simple mechanical principle:

In order to produce a Constant Supporting Effect, the load moment about the Main Pivot must be counter-balanced by an equal spring moment throughout the travel range.



Referring to the diagram take three positions of the load travel -Top Mid Bottom- and equate the moments of these points about the Main Pivot.

$$F_1 a_1 = W b_1$$

$$F_2 a_2 = W b_2$$

$$F_3 a_3 = W b_3$$

$$\frac{F_1 a_1}{b_1} = \frac{F_2 a_2}{b_2} = \frac{F_3 a_3}{b_3} = W$$

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STANDARD RANGE:

Carpenter and Paterson Constant Effort Supports are constructed to accommodate loads between 10 Kg and 33500 Kg with a standard range of travels from 40 mm to 610 mm in 10 mm increments.

Constant Supports are manufactured having a deviation of ± 5 per cent of the specified load.

Upper and lower travel stops are incorporated in all units to prevent excessive overtravel.

All supports are fitted with a clearly visible travel scale.

SPECIAL RANGE:

Special Constant Supports are designed to suit customer's specific requirements, i.e. higher loads, travels and configurations other than those indicated in the standard range.

LOAD ADJUSTMENT:

Although the supports are preset to the customer's specified load and travel, it is sometimes necessary to adjust this preset load to accommodate minor variations in actual site conditions. A simple operation of turning the load adjuster screw in the appropriate direction to increase or decrease the load is all necessary. The amount of adjustment is shown on the adjacent scale calibrated in 2 per cent divisions. The maximum adjustment being ± 20 per cent of the mean load.

PRESETTING:

All Constant Supports are fitted with preset pins which are painted red. These pins are factory positioned within the unit to suit the customer's specified installation condition. On completion of installation and prior to removal of the pins, the pipework system can be hydraulically tested or acid cleaned without further deflection of the spring assembly. The preset pins must be removed before commissioning the system (refer to installation instructions).

Our standard presetting pins will enable loads of up to twice the capacity of the support to be taken during the hydraulic testing period.

Should it be necessary to carry loads in excess of this, we must be notified at time of ordering to ensure the supports are designed with adequate safety margins.

INFINITELY VARIABLE TRAVEL LOCKING MECHANISM:

The Constant Support may be fitted with an Infinitely variable locking device (within the travel limits of the unit) that will lock the supports thus preventing upward and downward movement for temporary conditions of underload or overload.

The locking mechanism is only incorporated when specified.

The locking mechanism should always be positioned at the extreme of the adjustment before the pipework system is commissioned.

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SELECTION:

To select a Constant Support, first calculate the load and travel which the support is to accommodate. It is then good practice to add overtravel to the calculated travel.

Recommended overtravel:

- Add 25 mm for travels up to 125 mm
- For travels in excess of 125 mm add 20% of the calculated travel.

This should then be rounded up to the next whole 10 mm increment giving the total travel thus enabling a standard support to be selected.

To determine the correct constant support refer to the selection table and select a support frame size to accommodate the calculated load and the total travel. It should be noted that the travel given in the table is the total travel, this being the maximum vertical travel the unit will accommodate. When selecting vertical constants, Fig. C51, these should always be selected from the right side of the heavy black line. For vertical constants, Fig. C52, these should always be selected from the right side of the heavy red line.

EXAMPLE:

Actual Load: 1020 Kg
Actual Movement (vertical): 90 mm

Total Travel = 90 + 25 = 115, rounded up to next whole 10 mm increment = 120 mm.

USING THE SELECTION TABLE (PAGES E7 TO E10):

Locate Total Travel Column of 120 mm, and follow down column for next load up from 1020 Kg. This reads 1061 Kg. Next, move horizontally to the left under column headed "Constant Support Size". In this example the selected unit would be size 22.

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FINISH:

We consider hot dip galvanized casings as our standard finish. Other corrosion resistant finishes are available if required at extra cost.

MAINTENANCE:

P.T.F.E. Dry bearings are used on all pivoting points and are totally enclosed, no maintenance or lubrication is required.

INFORMATION REQUIRED WHEN ORDERING:

- | | | |
|---|---------------------------|--------------------|
| - Quantity Required. | - Mounting Type. | - Actual travel. |
| - Figure N°. | - Operating Load. | - Total travel. |
| - Frame Size. | - Hydro Test Load. | - Travel Direction |
| - Drop Rod Size and Threaded form if not standard (standard metric coarse). | - Pre-set Position. | (Up / Down). |
| | - Finish if not standard. | |

LONG TRAVEL CONSTANTS:

On occasions it may be necessary to use a constant support with a total travel which exceeds the standard travel range shown in our selection table. To determine the size of a constant support with a total travel larger than the standard range, the following should be carried out:

Calculate revised loads

$$\text{Revised Load} = \frac{\text{Operating Load}}{100} \times \text{Total Travel}$$

Using the revised load, select the correct size constant support from the 100 mm total travel column within the selection table.

Example:

Operating Load = 146 Kg.

Total travel = 450 mm.

$$\text{Revised load} = \frac{146}{100} \times 450 = 657 \text{ Kg.}$$

Select unit from 100 total travel column.

Unit Size = 16.

Unit Required = Size 16

Total Travel 450 mm.

Operating load 146 Kg.

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INSTALLATION INSTRUCTIONS:

1.0- Attachment to Supporting Steelwork.

The Constant Support Units are attached to the supporting steelwork by means of welding or bolting.

2.0- Connecting and Loading of Constant Support Units.

2.1- In the case of Constant Support Units figures C50-C51-C52-C53 utilising sling rods, these should be connected between the equipment support attachment and the support unit connector (turnbuckle or yoke). The load is transferred from the temporary installation condition to the Constant Support Unit by adjustment of the turnbuckle or yoke arrangement.

The correct load setting is attained by adjusting the turnbuckle or yoke arrangement until the preset pin is easily removed.

2.2- In the case of Constant Support Units figure C54 and C55 where the equipment is supported from below, the Constant Support Units is positioned between the equipment support bracket and supporting steelwork, differences in height are accommodated using the height adjusting nut. The load is transferred from the temporary installation condition to the Constant Support Unit by further adjustment of the height adjusting nut. The correct load setting is attained by rotation of the height adjusting nut until the preset pin is easily removed.

3.0- Pre-Commissioning.

3.1- The red painted preset pins should normally remain in position for any pre-commissioning overload condition, but must be removed prior to operation and stored for future use.

4.0- Load Adjustment.

4.1- In the event that the load is greater or lesser than the load for which the unit is calibrated, it will be necessary to make use of the load adjustment facility. The load adjuster allows for an increase or decrease of load carrying capacity of plus or minus 20% of the mean load. Rotating the load adjuster nut in the appropriate direction will increase or decrease the load accordingly. The load adjustment scale is calibrated in 2% divisions.

5.0- Operating.

5.1- Prior to start up the following checks must be carried out:

5.1.1- All preset pins are removed and stored.

5.1.2- The unit travel indicator is set at the correct cold setting.

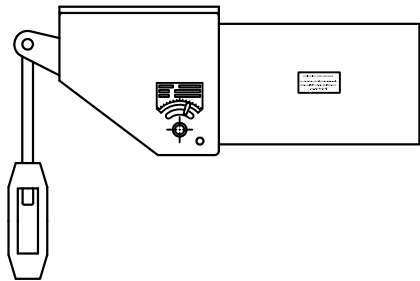
5.2- During normal running operation a check should be made to ensure that the unit travel indicator is at the correct hot position.

5.3- A periodic check during the first few months of operation should be made to ensure that equipment movement is within the travel range of the unit. Minor site adjustments may be necessary during this period.

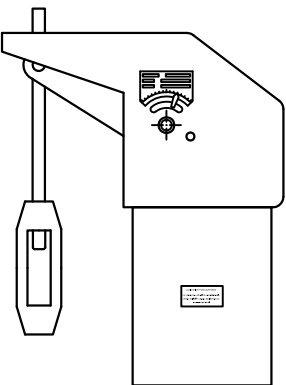
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CONSTANT LOAD SUPPORT MODELS

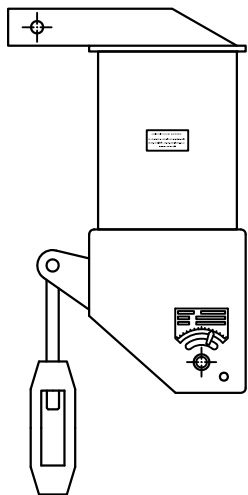
C50



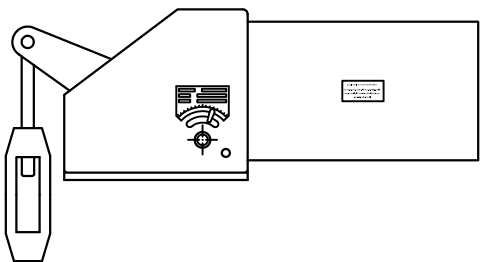
C51



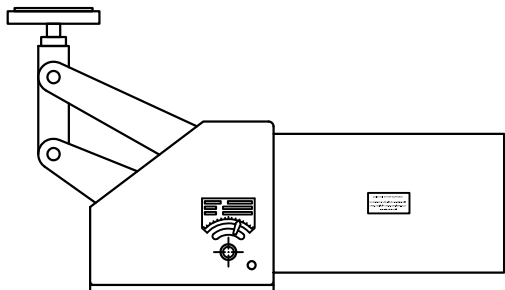
C52



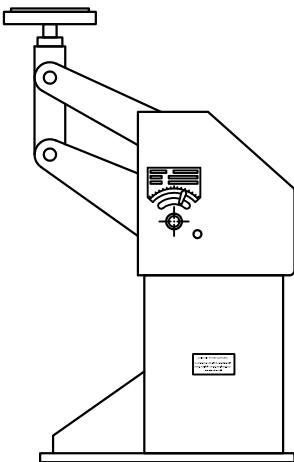
C53



C54



C55



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Constant effort supports - Selection Table
Standard travel range - Sizes 1 to 33
LOADS IN Kg.

For the selection of vertical Mod.
* C51: From right side of heavy black line.
* C52: From right side of heavy red line.

Constant Support Size	TOTAL TRAVEL IN mm.																															
	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300					
Min. Load	61	49	41	35	31	27	25	22	20	19	18	16	15	14	14	13	12	12	11	11	10	10	10	9	9	9	8					
1	78	63	52	45	39	35	31	28	26	24	22	21	20	18	17	16	16	15	14	13	13	12	12	11	11	11	10					
2	100	80	67	57	50	44	40	36	33	31	29	27	25	23	22	21	20	19	18	17	17	16	15	15	14	14	13					
3	127	101	84	72	63	56	51	46	42	39	36	34	32	30	28	27	25	24	23	22	21	20	20	19	18	17	17					
4	161	129	107	92	81	72	64	59	54	50	46	43	40	38	36	34	32	31	29	28	27	26	25	24	23	22	21					
5	204	164	136	117	102	91	82	74	68	63	58	55	51	48	45	43	41	39	37	36	34	33	32	30	29	28	27					
6	260	208	173	149	130	116	104	95	87	80	74	69	65	61	58	55	52	50	47	45	43	42	40	38	37	36	35					
7	331	265	221	189	166	147	133	121	110	102	95	88	83	78	74	70	66	63	60	58	55	53	51	49	47	46	44					
8	422	337	281	241	211	187	169	153	141	130	120	112	105	99	94	89	84	80	77	74	70	68	65	63	60	58	56					
9	537	430	358	307	269	239	215	195	179	165	153	143	134	126	119	113	107	102	98	93	90	86	83	80	77	74	72					
10	680	544	453	388	340	302	272	247	227	209	194	181	170	160	151	143	136	129	124	118	113	109	105	101	97	94	91					
11	864	691	576	494	432	384	346	314	288	266	247	230	216	203	192	182	173	165	157	150	144	138	133	128	124	119	115					
12	1097	877	731	627	548	487	439	399	366	337	313	292	274	258	244	231	219	209	200	191	183	176	169	163	157	151	146					
13				824	706	618	549	494	449	412	380	353	330	309	291	275	260	247	235	225	215	206	198	190	183	176	170	165				
14				927	795	696	618	556	506	464	428	397	371	348	327	309	293	278	265	253	242	232	223	214	206	199	192	185				
15				1041	892	781	694	624	568	520	480	446	416	390	367	347	329	312	297	284	272	260	250	240	231	223	215	208				
16				1152	988	846	768	691	628	576	532	494	461	432	407	384	364	346	329	314	301	288	277	266	256	247	238	230				
17				1271	1090	953	847	763	693	636	587	545	508	477	449	424	401	381	363	347	332	318	305	293	283	273	263	254				
18				1444	1238	1083	963	866	788	722	666	619	578	542	510	481	456	433	413	394	377	361	347	333	321	309	299	289				
19				1640	1406	1230	1093	984	894	820	757	703	656	615	579	547	518	492	469	447	428	410	394	378	364	351	339	328				
20				1786	1531	1339	1191	1071	974	893	824	765	714	670	630	595	564	536	510	487	466	446	429	412	397	383	369	357				
21				1943	1666	1457	1296	1166	1060	972	897	833	777	729	686	648	614	583	555	530	507	486	466	448	432	416	402	389				
22				2122	1819	1591	1415	1273	1157	1061	979	909	849	796	749	707	670	637	606	579	554	530	509	490	472	455	439	424				
23				2315	1984	1736	1543	1389	1263	1157	1068	992	926	868	817	772	731	694	661	631	604	579	556	534	514	496	479	463				
24				2516	2156	1887	1677	1510	1372	1258	1161	1078	1006	943	888	839	794	755	719	686	656	629	604	581	559	539	521	503				
25				2766	2371	2074	1844	1659	1508	1383	1276	1185	1106	1037	976	922	873	830	790	754	721	691	664	638	615	593	572	553				
26				3054	2617	2290	2036	1832	1666	1527	1409	1309	1221	1145	1078	1018	964	916	872	833	797	763	733	705	679	654	632	611				
27					2979	2607	2317	2085	1896	1738	1604	1490	1390	1303	1227	1159	1098	1043	993	948	907	869	834	802	772	745	719	695				
28					3374	2952	2624	2362	2147	1968	1817	1687	1575	1476	1389	1312	1243	1181	1125	1074	1027	984	945	908	875	844	814	787				
29					3687	3226	2868	2581	2346	2151	1985	1843	1721	1613	1518	1434	1358	1290	1229	1173	1122	1075	1032	993	956	922	890	860				
30					4016	3514	3124	2811	2556	2343	2162	2008	1874	1757	1654	1562	1480	1406	1339	1278	1222	1171	1124	1081	1041	1004	969	937				
31					4378	3831	3405	3065	2786	2554	2357	2189	2043	1915	1803	1703	1613	1532	1459	1393	1332	1277	1226	1179	1135	1095	1057	1022				
32					4773	4177	3712	3341	3037	2784	2570	2387	2227	2088	1965	1856	1759	1671	1591	1519	1453	1392	1336	1285	1237	1193	1152	1114				
33					5464	4781	4250	3825	3477	3188	2942	2732	2550	2391	2250	2125	2013	1913	1821	1739	1663	1594	1530	1471	1417	1366	1319	1275				

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Constant effort supports - Selection Table
Standard travel range - Sizes 34 to 66
LOAD IN Kg.

Constant support size	TOTAL TRAVEL IN mm.																											
	310	320	330	340	350	360	370	380	390	400	410	420	430	440	450	460	470	480	490	500	510	520	530	540	550	560	570	
Min. Load																												
1																												
2																												
3																												
4																												
5																												
6																												
7	43	42	40	39	38	37	36	35	34	33	32	32																
8	55	53	51	50	48	47	46	44	43	42	41	40																
9	69	67	65	63	61	60	58	57	55	54	52	51																
10	88	85	82	80	78	76	74	72	70	68	66	65																
11	112	108	105	102	99	96	94	91	89	87	84	82																
12	142	137	133	129	125	122	119	116	113	110	107	105																
13	159	154	150	145	141	137	134	130	127	124	121	118																
14	179	174	169	163	159	154	150	146	143	139	136	132																
15	201	195	189	184	178	173	169	164	160	156	152	149																
16	223	216	209	203	197	192	187	182	177	173	169	165																
17	246	238	231	224	218	212	206	201	196	191	186	182																
18	279	271	262	255	247	241	234	228	222	217	211	206																
19	317	307	298	289	281	273	266	259	252	246	240	234	229	224	219	214	209	205	201	197								
20	346	335	325	315	306	298	289	282	275	268	261	255	249	243	238	233	228	223	219	214								
21	376	364	353	343	333	324	315	307	299	292	284	278	271	265	259	253	248	243	238	233								
22	411	398	386	374	364	354	344	335	326	318	310	303	296	289	283	277	271	265	260	255								
23	448	434	421	408	397	386	375	366	356	347	339	331	323	316	309	302	296	289	283	278								
24	487	472	457	444	431	419	408	397	387	378	368	360	351	343	336	328	321	315	308	302								
25	535	519	503	488	474	461	448	437	425	415	405	395	386	377	369	361	353	346	339	332								
26	591	573	555	539	523	509	495	482	470	458	447	436	426	416	407	398	390	382	374	366								
27	673	652	632	613	596	579	564	549	535	521	509	496	485	474	463	453	444	434	426	417								
28	762	738	716	695	675	656	638	622	606	591	576	562	549	537	525	514	503	492	482	472								
29	833	807	782	759	737	717	698	679	662	645	630	615	600	587	574	561	549	538	527	516								
30	907	879	852	827	803	781	760	740	721	703	686	669	654	639	625	611	598	586	574	562								
31	989	958	929	901	876	851	828	807	786	766	748	730	713	697	681	666	652	639	626	613								
32	1078	1044	1012	983	955	928	903	879	857	835	815	795	777	759	742	726	711	696	682	668								
33	1234	1195	1159	1125	1093	1063	1034	1007	981	956	933	911	890	869	850	832	814	797	781	765								

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For the selection of Vertical Mod.
 * C51: From right hand side of heavy black line.
 * C52: From right hand side of heavy red line.

Constant effort supports - Selection Table
 Standard travel range - Sizes 34 to 66

LOAD IN Kg.

Constant support size	TOTAL TRAVEL IN mm.																									
	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340
34	4698	4228	3844	3524	3253	3020	2819	2643	2487	2349	2225	2114	2013	1922	1838	1762	1691	1626	1566	1510	1458	1409	1364	1321	1281	1244
35	5146	4632	4211	3860	3563	3308	3088	2895	2724	2573	2438	2316	2206	2105	2014	1930	1853	1781	1715	1654	1597	1544	1494	1447	1404	1362
36	5850	5265	4787	4388	4050	3761	3510	3291	3097	2925	2771	2633	2507	2393	2289	2194	2106	2025	1950	1880	1816	1755	1698	1645	1596	1549
37	6657	5991	5446	4993	4608	4279	3994	3744	3524	3328	3153	2996	2853	2723	2605	2496	2396	2304	2219	2140	2066	1997	1933	1872	1815	1762
38	7259	6533	5939	5444	5025	4666	4355	4083	3843	3629	3438	3266	3111	2969	2840	2722	2613	2513	2420	2333	2253	2178	2107	2041	1980	1921
39	7911	7120	6473	5934	5477	5086	4747	4450	4188	3956	3748	3560	3391	3236	3096	2967	2848	2739	2637	2543	2455	2373	2297	2252	2158	2094
40			7060	6471	5973	5547	5177	4853	4568	4314	4087	3883	3698	3530	3376	3236	3106	2987	2876	2773	2678	2588	2505	2427	2353	2284
41			7687	7047	6504	6040	5637	5285	4974	4698	4450	4228	4027	3844	3676	3523	3382	3252	3132	3020	2916	2819	2728	2642	2562	2487
42			8421	7719	7126	6617	6176	5790	5449	5146	4875	4632	4411	4211	4028	3860	3705	3563	3431	3308	3194	3088	2988	2895	2807	2724
43			9573	8776	8100	7522	7020	6582	6194	5850	5542	5265	5015	4787	4578	4388	4212	4050	3900	3761	3631	3510	3397	3291	3191	3097
44			10893	9985	9217	8559	7988	7489	7048	6657	6306	5991	5706	5447	5210	4993	4793	4609	4438	4279	4132	3994	3865	3744	3631	3524
45			11878	10888	10050	9332	8710	8166	7685	7259	6876	6533	6222	5939	5681	5444	5226	5025	4839	4666	4505	4355	4215	4083	3959	3843
46			12946	11867	10954	10171	9494	8900	8377	7911	7495	7120	6781	6473	6192	5934	5696	5477	5274	5086	4911	4747	4594	4450	4315	4188
47			14119	12942	11947	11094	10354	9707	9136	8628	8174	7765	7396	7060	6753	6471	6212	5973	5752	5547	5355	5177	5010	4853	4706	4568
48			15376	14095	13010	12081	11276	10571	9949	9396	8902	8457	8054	7688	7354	7047	6765	6505	6264	6041	5832	5638	5456	5285	5125	4975
49			16601	15218	14047	13044	12174	11413	10742	10145	9611	9131	8696	8301	7940	7609	7305	7024	6764	6522	6297	6087	5891	5707	5534	5371
50			18015	16514	15244	14155	13211	12386	11657	11009	10430	9908	9437	9008	8616	8257	7927	7622	7340	7077	6833	6606	6393	6193	6005	5829
51			19377	17762	16396	15225	14210	13322	12538	11842	11218	10657	10150	9689	9267	8881	8526	8198	7894	7612	7350	7105	6876	6661	6459	6269
52			20948	19202	17725	16459	15362	14402	13555	12802	12128	11521	10973	10474	10019	9601	9217	8863	8534	8230	7946	7681	7433	7201	6983	6777
53			22624	20739	19143	17776	16591	15554	14639	13826	13098	12443	11851	11312	10820	10369	9955	9572	9217	8888	8582	8295	8028	7777	7541	7320
54			24090	22083	20384	18928	17666	16562	15588	14722	13947	13250	12619	12045	11521	11041	10600	10192	9815	9464	9138	8833	8548	8281	8030	7794
55			25838	23685	21863	20301	18948	17764	16719	15790	14959	14211	13534	12919	12357	11843	11369	10932	10527	10151	9801	9474	9168	8882	8613	8359
56			27713	25404	23450	21775	20323	19053	17932	16936	16044	15242	14516	13857	13254	12702	12194	11725	11291	10887	10512	10161	9834	9526	9238	8966
57			29724	27247	25151	23354	21797	20435	19233	18164	17208	16348	15570	14862	14216	13623	13078	12575	12110	11677	11275	10899	10547	10218	9908	9616
58			31881	29224	26976	25049	23379	21918	20629	19483	18457	17534	16699	15940	15247	14612	14027	13488	12988	12524	12092	11689	11312	10959	10627	10314
59							24578	23042	21686	20482	19404	18433	17556	16758	16029	15361	14747	14180	13654	13167	12713	12289	11893	11521	11172	10843
60							25838	24224	22799	21532	20399	19379	18456	17617	16851	16149	15503	14907	14355	13842	13365	12919	12503	12112	11745	11399
61							27164	25466	23968	22637	21445	20373	19403	18521	17716	16977	16298	15671	15091	14552	14050	13582	13144	12733	12347	11984
62							28557	26772	25198	23798	22545	21418	20398	19471	18624	17848	17134	16475	15865	15299	14771	14279	13818	13386	12981	12599
63							29723	27866	26226	24769	23466	22292	21231	20266	19385	18577	17834	17148	16513	15923	15374	14862	14382	13933	13511	13113
64							30937	29003	27297	25781	24424	23203	22098	21093	20176	19336	18562	17848	17187	16573	16002	15468	14969	14502	14062	13649
65							32200	30187	28412	26833	25421	24150	23000	21954	21000	20125	19320	18577	17889	17250	16655	16100	15581	15094	14636	14206
66							33515	31420	29572	27929	26459	25136	23939	22851	21857	20947	20109	19335	18619	17954	17335	16757	16217	15710	15234	14786

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CONSTANT LOAD SUPPORT

SECTION E

10

Constant effort supports - Selection Table
Standard travel range - Sizes 34 to 66

LOAD IN Kg.

TOTAL TRAVEL IN mm.

Constant support size	350	360	370	380	390	400	410	420	430	440	450	460	470	480	490	500	510	520	530	540	550	560	570	580	590	600	610
34	1208	1175	1143	1113	1084	1057	1031	1007	983	961	940	919	900	881	863	846	829	813	798	783	769	755	742	729	717	705	693
35	1323	1287	1252	1219	1188	1158	1130	1103	1077	1053	1029	1007	986	965	945	926	908	891	874	858	842	827	813	799	785	772	759
36	1504	1463	1423	1386	1350	1316	1284	1254	1224	1197	1170	1145	1120	1097	1074	1053	1032	1013	993	975	957	940	924	908	892	876	863
37	1712	1664	1619	1577	1536	1498	1461	1426	1393	1362	1331	1302	1275	1248	1223	1198	1175	1152	1130	1109	1089	1070	1051	1033	1015	999	982
38	1866	1815	1766	1719	1675	1633	1593	1555	1519	1485	1452	1420	1390	1361	1333	1307	1281	1256	1233	1210	1188	1167	1146	1126	1107	1089	1071
39	2034	1978	1924	1874	1826	1780	1737	1695	1656	1618	1582	1548	1515	1483	1453	1424	1396	1369	1343	1319	1295	1271	1249	1228	1207	1187	1167
40	2219	2157	2099	2044	1991	1941	1894	1849	1806	1765	1726	1688	1652	1618	1585	1553	1523	1493	1465	1438	1412	1387	1362	1339	1316	1294	1273
41	2416	2349	2285	2225	2168	2114	2062	2013	1966	1922	1879	1838	1799	1762	1726	1691	1658	1626	1595	1566	1537	1510	1483	1458	1433	1409	1386
42	2647	2573	2504	2438	2375	2316	2259	2206	2154	2105	2059	2014	1971	1930	1890	1853	1816	1781	1748	1715	1684	1654	1625	1597	1570	1544	1519
43	3009	2925	2846	2771	2700	2633	2568	2507	2449	2393	2340	2289	2241	2194	2149	2106	2065	2025	1987	1950	1915	1880	1847	1816	1785	1755	1726
44	3424	3328	3238	3153	3072	2996	2923	2853	2787	2723	2663	2605	2549	2496	2445	2396	2349	2304	2261	2219	2179	2140	2102	2066	2031	1997	1964
45	3733	3629	3531	3438	3350	3266	3187	3111	3038	2969	2903	2840	2780	2722	2666	2613	2562	2513	2465	2420	2376	2333	2292	2253	2214	2178	2142
46	4069	3956	3849	3748	3651	3560	3473	3391	3312	3236	3165	3096	3030	2967	2906	2848	2792	2739	2687	2637	2589	2543	2498	2455	2414	2373	2335
47	4437	4314	4198	4087	3982	3883	3788	3698	3612	3530	3451	3376	3304	3236	3170	3106	3045	2987	2930	2876	2824	2773	2725	2678	2632	2588	2546
48	4832	4698	4571	4451	4337	4228	4125	4027	3933	3844	3759	3677	3599	3524	3452	3383	3316	3253	3191	3132	3075	3020	2967	2916	2867	2819	2773
49	5218	5073	4936	4806	4682	4565	4454	4348	4247	4150	4058	3970	3885	3804	3727	3652	3581	3512	3446	3382	3320	3261	3204	3149	3095	3044	2994
50	5662	5505	5356	5215	5081	4954	4833	4718	4609	4504	4404	4308	4216	4129	4044	3963	3886	3811	3739	3670	3603	3539	3477	3417	3359	3303	3249
51	6090	5921	5761	5609	5465	5329	5199	5075	4957	4844	4737	4634	4535	4441	4350	4263	4179	4099	4022	3947	3875	3806	3739	3675	3613	3552	3494
52	6584	6401	6228	6064	5908	5761	5620	5486	5359	5237	5121	5009	4903	4801	4703	4609	4518	4431	4348	4267	4190	4115	4043	3973	3906	3840	3778
53	7110	6913	6726	6549	6381	6222	6070	5925	5788	5656	5530	5410	5295	5185	5079	4977	4880	4786	4696	4609	4525	4444	4366	4291	4218	4148	4080
54	7571	7361	7162	6974	6795	6625	6463	6309	6163	6023	5889	5761	5638	5521	5408	5300	5196	5096	5000	4907	4818	4732	4649	4569	4491	4417	4344
55	8121	7895	7682	7479	7288	7106	6932	6767	6610	6460	6316	6179	6047	5921	5800	5684	5573	5466	5363	5263	5168	5075	4986	4900	4817	4737	4659
56	8710	8468	8239	8022	7817	7621	7435	7258	7089	6928	6774	6627	6486	6351	6221	6097	5977	5862	5752	5645	5543	5444	5348	5256	5167	5081	4997
57	9342	9082	8837	8604	8384	8174	7975	7785	7595	7415	7236	7061	6897	6744	6597	6459	6311	6188	6069	5955	5845	5739	5637	5536	5442	5349	5260
58	10019	9741	9478	9228	8992	8767	8553	8350	8155	7970	7793	7624	7461	7306	7157	7014	6876	6744	6617	6494	6376	6262	6152	6046	5944	5845	5749
59	10533	10241	9964	9702	9453	9217	8992	8778	8574	8379	8193	8015	7844	7681	7524	7373	7229	7090	6956	6827	6703	6583	6468	6356	6249	6144	6044
60	11074	10766	10475	10199	9938	9689	9453	9228	9013	8809	8613	8426	8246	8075	7910	7752	7600	7453	7313	7177	7047	6921	6800	6682	6569	6460	6354
61	11642	11318	11012	10723	10448	10186	9938	9701	9476	9260	9055	8858	8669	8489	8315	8149	7989	7836	7688	7546	7408	7276	7148	7025	6906	6791	6680
62	12239	11899	11577	11273	10984	10709	10448	10199	9962	9735	9519	9312	9114	8924	8742	8567	8399	8238	8082	7933	7788	7649	7515	7385	7260	7139	7022
63	12739	12385	12050	11733	11432	11146	10874	10615	10369	10133	9908	9692	9486	9289	9099	8917	8742	8574	8412	8256	8106	7962	7822	7687	7557	7431	7309
64	13259	12890	12542	12212	11899	11601	11318	11049	10792	10547	10312	10088	9873	9668	9470	9281	9099	8924	8756	8594	8437	8287	8141	8001	7865	7734	7607
65	13800	13417	13054	12710	12385	12075	11780	11500	11233	10977	10733	10500	10277	10062	9857	9660	9471	9288	9113	8944	8782	8625	8474	8328	8186	8050	7918
66	14363	13964	13587	13229	12890	12568	12261	11969	11691	11425	11172	10929	10696	10473	10260	10054	9857	9668	9485	9310	9140	8977	8820	8668	8521	8379	8241

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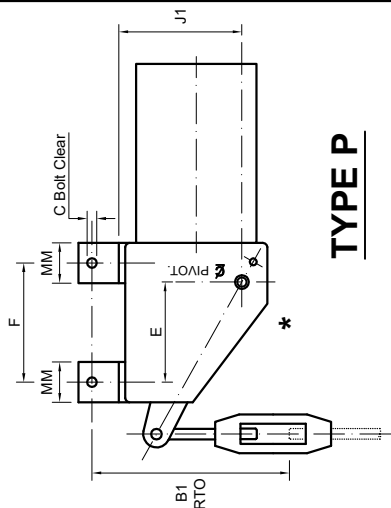
REV.



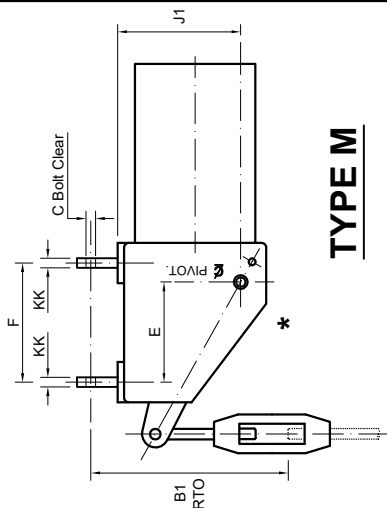
CONSTANT LOAD SUPPORT MODELS C50

SECTION E

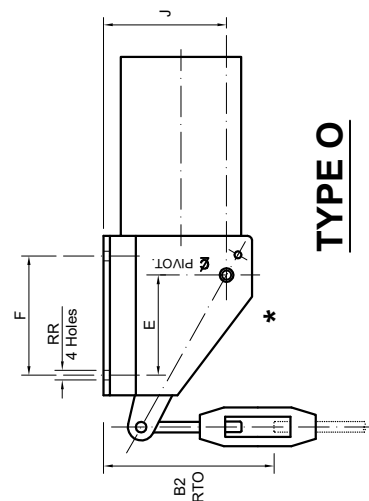
11



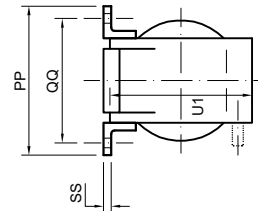
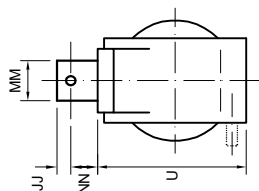
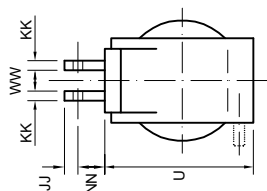
TYPE P



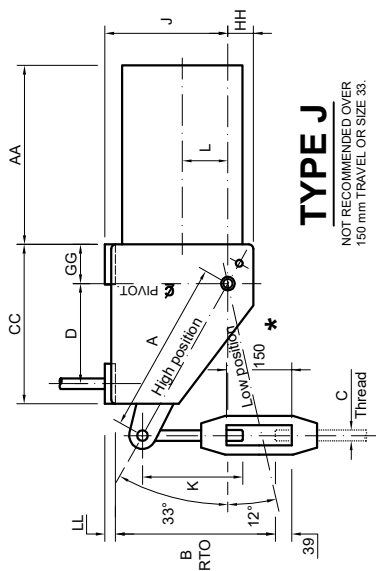
TYPE M



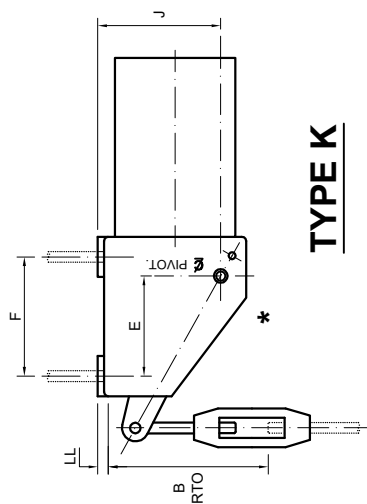
TYPE O



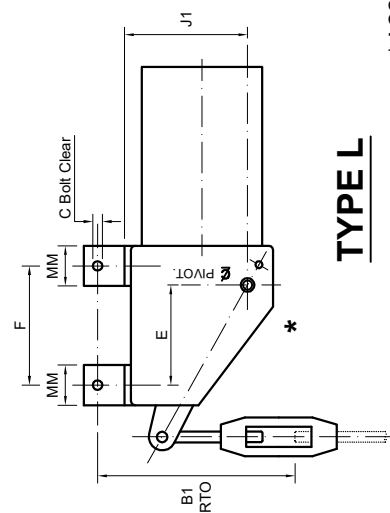
Rod take out
calculated when
load arm is in
high position.
For up travel,
rod take out
equals total up
travel plus
B, B1 or B2.



TYPE J



TYPE K



TYPE L

* ACCESS TO LOAD ADJUSTER

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CONSTANT LOAD SUPPORT MODELS C50

SECTION E

12

TABLE OF DIMENSIONS - SIZES 1 to 26

SIZE 1 to 6												
TRAVEL	A	B	B1	B2	C	D	E	F	J	J1	U	U1
40	54	311	405	326	M12	40	105	140				
50	67	304	400	319	M12	50	105	140				
60	80	296	395	317	M12	60	105	140				
70	94	289	385	304	M12	70	105	140				
80	107	282	380	297	M12	80	105	140				
90	120	275	370	290	M12	90	105	140				
100	134	267	360	282	M12	100	105	140				
110	147	260	355	275	M12	110	105	140				
120	160	253	350	268	M12	120	105	140				
130	174	245	340	260	M12	130	105	140				
140	187	238	335	253	M12	140	105	140				
150	200	231	330	246	M12	150	105	140				
160	214	224	324	240	M12	160	105	140				
170	227	217	317	233	M12	170	105	140				
180	240	210	310	226	M12	180	105	140				
190	254	203	303	219	M12	190	105	140				
200	267	196	296	212	M12	200	105	140				
210	280	189	289	205	M12	210	105	140				
220	294	182	282	198	M12	220	105	140				
230	307	175	275	191	M12	230	105	140				
240	320	168	268	184	M12	240	105	140				
250	334	161	261	177	M12	250	105	140				
260	347	154	254	170	M12	260	105	140				
270	360	147	247	163	M12	270	105	140				
280	374	140	240	156	M12	280	105	140				
290	387	133	233	149	M12	290	105	140				
300	400	126	226	142	M12	300	105	140				

CONSTANT SUPPORT 1 to 66												
-	1-6	7-12	13-18	19-26	27-33	34-40	41-48	49-56	57-64	65-72	73-80	81-88
AA	250	300	350	400	450	500	550	600	650	700	750	800
BB	150	220	295	330	390	440	525	525	525	525	525	640
CC	180	215	270	325	405	495	610	685	685	685	685	760
DD	115	120	135	150	180	225	280	345	345	345	345	455
FF	135	140	160	175	215	270	330	405	405	405	405	560
GG	55	65	75	95	115	145	198	250	250	250	250	285
HH	55	65	75	95	115	145	180	190	190	190	190	215
KK	10	12	12	25	25	30	40	40	40	40	40	40
LL	15	20	30	30	35	40	50	60	70	80	80	80
MM	40	50	70	80	100	130	150	200	200	200	200	200
NN	80	60	65	115	75	85	100	140	140	140	140	150
PP	215	220	255	280	320	425	480	745	745	745	745	855
QQ	165	180	205	220	265	335	395	520	520	520	520	685
RR	14	18	22	22	27	33	45	45	45	45	45	51
SS	6	6	8	8	10	10	15	20	20	20	20	25
WW	35	35	50	50	65	75	90	110	110	110	110	120
K	150	150	150	200	200	200	250	300	300	300	300	300
L	33	38	65	66	83	100	Table	182	182	182	Table	Table

SIZE 7 to 12												
TRAVEL	A	B	B1	B2	C	D	E	F	J	J1	U	U1
40	54	336	415	356	M20	50	120	155				
50	67	329	410	349	M16	60	120	155				
60	80	321	400	341	M16	75	120	155				
70	94	314	395	334	M16	85	120	155				
80	107	307	385	327	M12	85	120	155				
90	120	300	380	320	M12	100	120	155				
100	134	292	370	312	M12	115	120	155				
110	147	285	365	305	M12	125	120	155				
120	160	278	360	298	M12	125	120	155				
130	174	270	350	290	M12	135	120	155				
140	187	263	345	283	M12	150	120	155				
150	200	256	335	276	M12	160	120	155				
160	214	248	330	268	M12	120	155					
170	227	241	320	261	M12	120	155					
180	240	234	315	264	M12	120	155					
190	254	227	305	257	M12	120	155					
200	267	220	300	260	M12	120	155					
210	280	213	295	253	M12	120	155					
220	294	206	288	246	M12	120	155					
230	307	200	280	240	M12	120	155					
240	320	193	273	233	M12	120	155					
250	334	186	266	226	M12	120	155					
260	347	179	259	219	M12	120	155					
270	360	172	252	212	M12	120	155					
280	374	165	245	205	M12	120	155					
290	387	158	238	198	M12	120	155					
300	400	151	231	191	M12	120	155					
310	414	144	224	184	M12	120	155					
320	427	137	217	177	M12	120	155					
330	440	130	210	170	M12	120	155					
340	454	123	203	163	M12	120	155					
350	467	116	196	156	M12	120	155					
360	480	109	189	149	M12	120	155					
370	494	102	182	142	M12	120	155					
380	507	95	175	135	M12	120	155					
390	520	88	168	128	M12	120	155					
400	534	81	161	121	M12	120	155					
410	547	74	154	114	M12	120	155					
420	560	67	147	107	M12	120	155					

SIZE 13 to 18												
TRAVEL	A	B	B1	B2	C	D	E	F	J	J1	U	U1
60	80	361	450	386	M20	70	155	190	215	205		
70	94	354	445	379	M20	80	155	190	215	205		
80	107	347	435	372	M20	80	155	190	215	205		
90	120	340	430	365	M16	90	155	190	215	205		
100	134	332	425	357	M16	105	155	190	215	205		
110	147	325	415	350	M16	115	155	190	215	205		
120	160	318	410	348	M16	115	155	190	215	205		
130	174	310	400	335	M16	130	155	190	215	205		
140	187	303	395	328	M16	140	155	190	215	205		
150	200	296	385	321	M16	155	155	190	215	205		
160	214	288	380	313	M12	155	190	215	205	280	295	
170	227	281	370	306	M12	155	190	215	205			
180	240	274	365	299	M12	155	190	215	205			
190	254	267	355	292	M12	155	190	215	205			
200	267	260	350	282	M12	155	190	215	205			
210	280	253	345	278	M12	155	190	215	205			
220	294	245	335	270	M12	155	190	215	205			
230	307	238	330	263	M12	155	190	215	205			
240	320	231	320	256	M12	155	190	215	205			
250	334	223	315	248	M12	155	190	215	205			
260	347	216	305	241	M12	155	190	215	205			
270	360	209	290	230	M12	155	190	250	205	280	325	
280	374	204	290	220	M12	155	190	250	205	280	325	
290	387	235	285	265	M12	155	190	250	205	280	325	
300	400	245	275	257	M12	155	190	270	205	280	345	
310	414	240	270	270	M12	155	190	270	205	280	345	
320	427	230	260	260	M12	155	190	270	205	280	345	
330	440	245	255	275	M12	155	190	290	205	280	365	
340	454	240	250	275	M12	155	190	290	205	280	365	
350	467	230	240	260	M12	155	190	290	205	280	365	
360	480	225	235	255	M12	155	190	290	205	280	365	
370	494	260	250	290	M12	155	190	335	230	300	410	
380	507	255	245	285	M12	155	190	335	230	300	410	
390	520	245	235	275	M12	155	190	335	230	300	410	
400	534	240	230	270	M12	155	190	335	230	300	410	
410	547	230	220	260	M12	155	190	335	230	300	410	
420	560	225	215	255	M12	155	190	335	230	300	410	

CONSTANT LOAD SUPPORT MODELS C50

SECTION E

13

TABLE OF DIMENSIONS - SIZES 27 to 50

SIZE 27 to 33												
TRAVEL	A	B	B1	B2	C	D	E	F	J	J1	U	U1
70	94	495	605	530	M36	75	235	300				
80	107	485	600	520	M36	75	235	300				
90	120	480	590	515	M36	90	235	300				
100	134	470	580	505	M36	110	235	300				
110	147	465	575	500	M30	115	235	300				
120	160	460	570	495	M30	115	235	300				
130	174	450	560	485	M30	125	235	300				
140	187	445	555	480	M30	140	235	300				
150	200	435	545	470	M30	155	235	300				
160	214	430	540	465	M30		235	300				
170	227	420	530	455	M24		235	300				
180	240	415	525	450	M24		235	300				
190	254	405	515	440	M24		235	300				
200	267	400	510	435	M24		235	300				
210	280	395	505	430	M24		235	300				
220	294	395	495	420	M24		235	300				
230	307	380	490	415	M24		235	300				
240	320	370	480	405	M20		235	300				
250	334	365	475	400	M20		235	300				
260	347	355	465	390	M20		235	300				
270	360	350	460	385	M20		235	300				
280	374	340	450	375	M20		235	300				
290	387	335	445	370	M20		235	300				
300	400	325	435	360	M20		235	300				
310	414	320	430	355	M20		235	300				
320	427	315	425	350	M20		235	300				
330	440	305	415	340	M20		235	300				
340	454	300	410	335	M20		235	300				
350	467	290	400	325	M20		235	300				
360	480	285	395	320	M20		235	300				
370	494	305	385	340	M20		235	300	335	305	420	450
380	507	300	380	335	M20		235	300	335	305	420	450
390	520	290	370	325	M20		235	300	335	305	420	450
400	534	300	365	335	M20		235	300	350	305	420	465
410	547	290	355	325	M20		235	300	350	305	420	465
420	560	285	350	320	M20		235	300	350	305	420	465
430	574	300	340	330	M20		235	300	370	305	420	485
440	587	290	335	325	M20		235	300	370	305	420	485
450	600	285	330	315	M20		235	300	370	305	420	485
460	614	275	320	310	M20		235	300	370	305	420	485
470	627	290	315	325	M20		235	300	390	300	305	420
480	641	280	305	315	M20		235	300	390	300	305	420
490	654	275	300	310	M20		235	300	390	300	305	420
500	667	265	290	300	M20		235	300	390	300	305	420

SIZE 34 to 39												
TRAVEL	A	B	B1	B2	C	E	F	J	J1	U	U1	
90	120	540	665	500	M48	290	365					
100	134	530	655	570	M42	290	365					
110	147	525	650	565	M42	290	365					
120	160	520	645	560	M42	290	365					
130	174	510	635	550	M42	290	365					
140	187	505	630	545	M36	290	365					
150	200	495	620	535	M36	290	365					
160	214	490	615	530	M36	290	365					
170	227	480	605	520	M36	290	365					
180	240	475	600	515	M36	290	365					
190	254	465	590	505	M30	290	365					
200	267	460	585	500	M30	290	365					
210	280	450	580	495	M30	290	365					
220	294	445	570	485	M30	290	365					
230	307	440	565	480	M30	290	365					
240	320	430	555	470	M30	290	365					
250	334	425	550	465	M30	290	365					
260	347	415	540	455	M30	290	365					
270	360	410	535	450	M30	290	365					
280	374	400	525	440	M30	290	365					
290	387	395	520	435	M30	290	365					
300	400	385	510	425	M30	290	365					
310	414	380	505	420	M24	290	365					
320	427	375	500	415	M24	290	365					
330	440	365	490	405	M24	290	365					
340	454	360	485	400	M24	290	365					
350	467	350	475	395	M24	290	365					
360	480	345	470	385	M24	290	365					
370	494	335	460	375	M24	290	365					
380	507	330	455	370	M24	290	365					
390	520	320	445	360	M24	290	365					
400	534	315	440	355	M24	290	365					
410	547	305	430	345	M24	290	365					
420	560	330	425	370	M24	290	365	400	370	515	545	
430	574	320	415	360	M24	290	365	400	370	515	545	
440	587	315	410	355	M24	290	365	400	370	515	545	
450	600	310	405	355	M24	290	365	400	370	515	545	
460	614	300	395	340	M24	290	365	400	370	515	545	
470	627	295	390	335	M24	290	365	400	370	515	545	
480	641	335	380	375	M24	290	365	450	370	515	545	
490	654	330	375	370	M24	290	365	450	370	515	545	
500	667	325	365	360	M24	290	365	450	370	515	545	
510	680	315	360	355	M24	290	365	450	370	515	545	
520	695	305	345	345	M24	290	365	450	370	515	545	
530	709	300	340	340	M24	290	365	450	370	515	545	
540	723	295	335	335	M24	290	365	450	370	515	545	
550	734	315	330	335	M24	290	365	480	370	515	545	
560	747	310	325	330	M24	290	365	480	370	515	545	
570	761	300	315	320	M24	290	365	480	370	515	545	
580	774	295	310	315	M24	290	365	480	370	515	545	
590	787	285	300	325	M24	290	365	480	370	515	545	
600	800	280	295	320	M24	290	365	480	370	515	545	
610	815	270	285	310	M24	290	365	480	370	515	545	

SIZE 40 to 47												
TRAVEL	A	B	B1	B2	C	E	F	J	J1	U	U1	
			</									

CONSTANT LOAD SUPPORT MODELS C50

SECTION E

14

TABLE OF DIMENSIONS - SIZES 51 to 66

SIZE 51 to 54												
TRAVEL	A	B	B1	B2	C	E	F	J	J1	U	U1	
110	147	770	980	840	M80	340	480					
120	160	765	975	835	M80	340	480					
130	174	755	965	825	M80	340	480					
140	187	750	960	820	M80	340	480					
150	200	740	950	810	M80	340	480					
160	214	735	945	805	M80	340	480					
170	227	725	935	795	M80	340	480					
180	240	720	930	790	M80	340	480					
190	254	710	920	780	M80	340	480					
200	267	705	915	775	M80	340	480					
210	280	700	910	770	M80	340	480					
220	294	690	900	760	M80	340	480					
230	307	685	895	755	M80	340	480					
240	320	675	885	745	M80	340	480					
250	334	670	880	740	M80	340	480					
260	347	660	870	730	M80	340	480					
270	360	655	865	725	M80	340	480					
280	374	645	855	715	M80	340	480					
290	387	640	850	710	M80	340	480					
300	400	630	840	700	M80	340	480					
310	414	625	835	695	M80	340	480					
320	427	620	830	690	M80	340	480					
330	440	610	820	680	M80	340	480					
340	454	605	815	675	M80	340	480					
350	467	595	805	665	M80	340	480					
360	480	590	800	660	M80	340	480					
370	494	580	790	650	M80	340	480					
380	507	575	785	645	M80	340	480					
390	520	565	775	635	M80	340	480					
400	534	560	770	630	M80	340	480					
410	547	550	760	620	M80	340	480					
420	560	545	755	615	M80	340	480					
430	574	535	745	605	M80	340	480					
440	587	530	740	600	M80	340	480					
450	600	520	730	590	M80	340	480					
460	614	515	725	585	M80	340	480					
470	627	510	720	580	M80	340	480					
480	641	500	710	570	M80	340	480					
490	654	495	705	565	M80	340	480					
500	667	485	695	555	M80	340	480					
510	680	480	690	550	M80	340	480					
520	695	470	680	540	M80	340	480					
530	708	465	675	535	M80	340	480					
540	720	455	665	525	M80	340	480					
550	734	450	660	520	M80	340	480					
560	747	440	650	510	M80	340	480					
570	761	435	645	505	M80	340	480					
580	774	425	635	495	M80	340	480					
590	787	420	630	490	M80	340	480					
600	800	415	625	485	M80	340	480					
610	815	405	615	475	M80	340	480					

SIZE 55 to 58												
TRAVEL	A	B	B1	B2	C	E	F	J	J1	U	U1	
110	147	760	980	840	M90	340	480					
120	160	755	975	835	M90	340	480					
130	174	745	965	825	M90	340	480					
140	187	740	960	820	M90	340	480					
150	200	730	950	810	M90	340	480					
160	214	725	945	805	M90	340	480					
170	227	715	935	795	M90	340	480					
180	240	710	930	790	M90	340	480					
190	254	700	920	780	M90	340	480					
200	267	695	915	775	M90	340	480					
210	280	690	910	770	M90	340	480					
220	294	680	900	760	M90	340	480					
230	307	675	895	755	M90	340	480					
240	320	665	885	745	M90	340	480					
250	334	660	880	740	M90	340	480					
260	347	650	870	730	M90	340	480					
270	360	645	865	725	M90	340	480					
280	374	635	855	715	M90	340	480					
290	387	630	850	710	M90	340	480					
300	400	620	840	700	M90	340	480					
310	414	615	835	695	M90	340	480					
320	427	610	830	690	M90	340	480					
330	440	600	820	680	M90	340	480					
340	454	595	815	675	M90	340	480					
350	467	585	805	665	M90	340	480					
360	480	580	800	660	M90	340	480					
370	494	570	790	650	M90	340	480					
380	507	565	785	645	M90	340	480					
390	520	555	775	635	M90	340	480					
400	534	550	770	630	M90	340	480					
410	547	540	760	620	M90	340	480					
420	560	535	755	615	M90	340	480					
430	574	525	745	605	M90	340	480					
440	587	520	740	600	M90	340	480					
450	600	510	730	590	M90	340	480					
460	614	505	725	585	M90	340	480					
470	627	500	720	580	M90	340	480					
480	641	490	710	570	M90	340	480					
490	654	485	705	565	M90	340	480					
500	667	475	695	555	M90	340	480					
510	680	470	690	550	M90	340	480					
520	695	460	680	540	M90	340	480					
530	708	455	675	535	M90	340	480					
540	720	445	665	525	M90	340	480					
550	734	440	660	520	M90	340	480					
560	747	430	650	510	M90	340	480					
570	761	425	645	505	M90	340	480					
580	774	415	635	495	M90	340	480					
590	787	410	630	490	M90	340	480					
600	800	405	625	485	M90	340	480					
610	815	395	615	475	M90	340	480					

SIZE 59 to 62												
TRAVEL	A	B	B1	B2	C	E	F	J	J1	U	U1	
150	200	785	1015	865	M80	380	560					
160	214	780	1010	860	M80	380	560					
170	227	770	1000	850	M80	380	560					
180	240	765	995	845	M80	380	560					
190	254	760	990	840	M80	380	560					
200	267	750	980	830	M80	380	560					
210	280	745	975	825	M80	380	560					
220	294	735	965	815	M80	380	560					
230	307	730	960	810	M80	380	560					
240	320	720	950	800	M80	380	560					
250	334	715	945	795	M80	380	560					
260	347	705	935	785	M80	380	560					
270	360	700	930	780	M80	380	560					
280	374	690	920	770	M80	380	560					
290	387	685	915	765	M80	380	560					
300	400	680	910	760	M80	380	560					
310	414	670	900	750	M80	380	560					
320	427	665	890	745	M80	380	560					
330	440	655	885	735	M80	380	560					
340	454	650	880	730	M80	380	560					
350	467	640	870	720	M80	380	560					
360	480	635	865	715	M80	380	560					
370	494	625	855	705	M80	380	560					
380	507	620	850	700	M80	380	560					
390	520	610	840	690	M80	380	560					
400	534	605	835	685	M80	380	560					
410	547	600	830	680	M80	380	560					
420	560	590	820	670	M80	380	560					
430	574	580	810	660	M80	380	560					
440	587	575	805	655	M80	380	560					
450	600	565	795	645	M80	380	560					
460	614	560	790	640	M80	380	560					
470	627	555	785	635	M80	380	560					
480	641	545	775	625	M80	380	560					
490	654	540	770	620	M80	380	560					
500	667	530	760	610	M80	380	560					
510	680	525	755	605	M80	380	560					
520	695	515	745	595	M80	380	560					
530	708	510	740	590	M80	380	560					
540	720	500	730	580	M80	380	560					
550	734	495	725	575	M80	380	560					
560	747	485	715	570	M80	380	560					
570	760	480	710	560	M80	380	560					
580	774	470	700	550	M80	380	560					
590	787	465	695	545	M80	380	560					
600	800	460	690	540	M80	380	560					
610	815	450	680	530	M80	380	560					

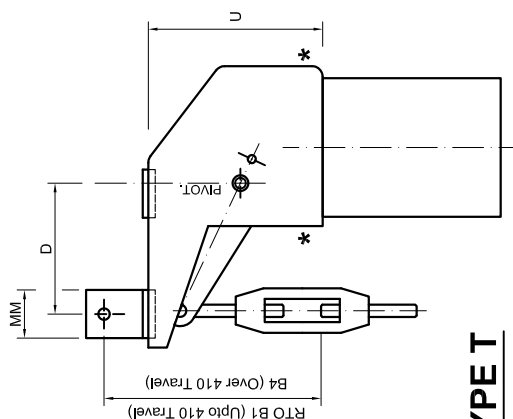
15



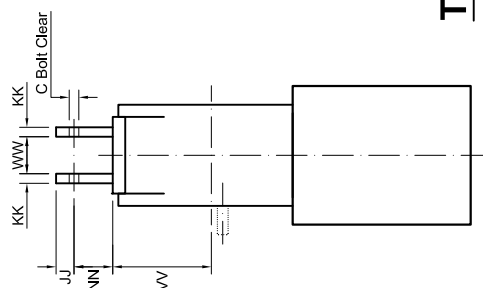
CONSTANT LOAD SUPPORT MODELS C51

SECTION E

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TYPE T

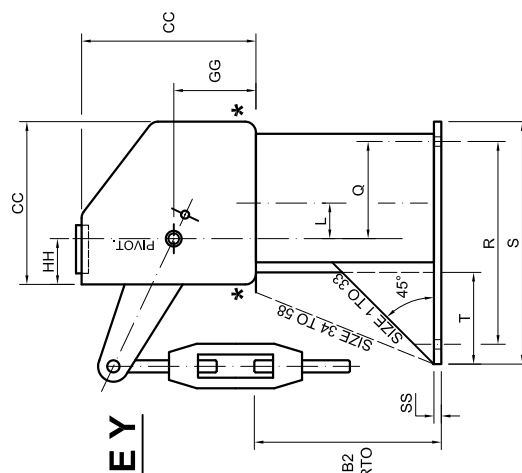


NOTE:

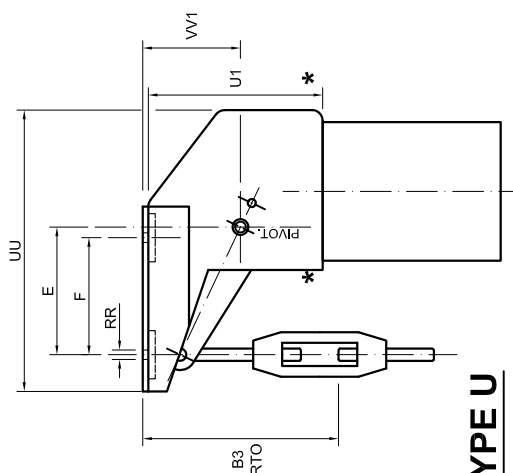
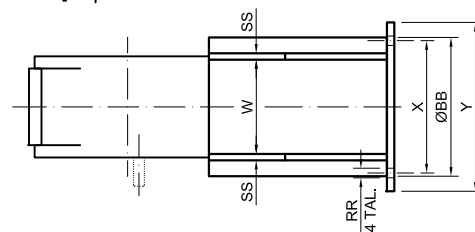
IT IS CONSIDERED EXTENDED BASE FOR TYPE Y WHEN TRAVEL IS OVER 150 MM. FOR TRAVELS UP TO 150 MM THE BASE IS SQUARE GIVEN BY YXY.

NOTE:

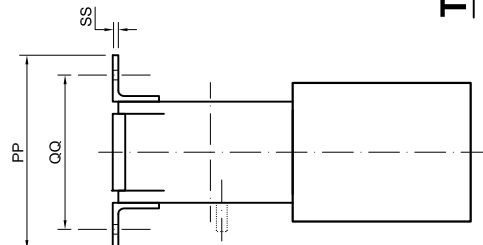
TYPE "T" NOT RECOMMENDED OVER:
* 190 TRAVEL AND SIZES 1 TO 12.
* 210 TRAVEL AND SIZES 13 TO 18.
* 290 TRAVEL AND SIZES 19 TO 26.
* 300 TRAVEL AND SIZES 27 TO 33.



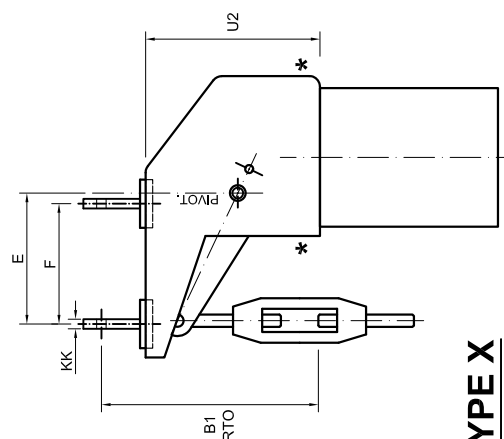
TYPE Y



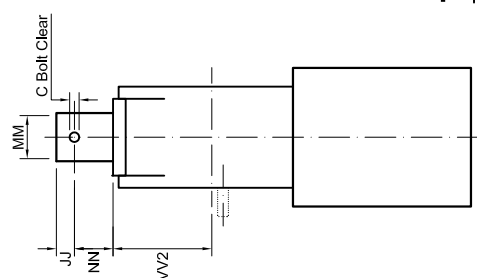
TYPE U



* ACCESS TO LOAD ADJUSTER



TYPE X



REV.	DATE	EDITED FOR :	DRAW.	REV.	
1	21/07/10	GENERAL REVISION	DDG	EAR	
0	20/10/98	INFORMATION	JMD	EAR	

CONSTANT LOAD SUPPORT MODELS C51

SECTION E

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TABLE OF DIMENSIONS - SIZES 1 to 18

SIZE 1 to 6											
TRAVEL	A	B	B1	B2	B3	C	D	E	F	W	VW1/VW2
60	80	340	393	130	355	M12	64	150	130		
70	94	335	390	135	350	M12	64	150	130		
80	107	325	380	145	340	M12	86	150	130		
90	120	320	375	150	335	M12	97	150	130		
100	134	315	365	160	330	M12	107	150	130		
110	147	305	360	165	320	M12	118	150	130		
120	160	300	355	175	315	M12	128	150	130		
130	174	290	345	180	305	M12	140	150	130		
140	187	285	340	185	300	M12	150	150	130		
150	200	275	330	195	290	M12	161	150	130		
160	214	270	325	200	285	M12	172	150	130		
170	227	260	315	210	275	M12	182	150	130		
180	240	255	310	215	270	M12	193	150	130		
190	254	245	300	225	260	M12	203	150	130		
200	267	240	295	230	255	M12		150	130		
210	280	235	290	240	250	M12		150	130		
220	294	250	280	245	265	M12		150	130		
230	307	245	275	255	260	M12		150	130		
240	320	235	265	260	250	M12		150	130		
250	334	250	260	270	265	M12		150	130		
260	347	240	250	275	255	M12		150	130		
270	360	235	245	280	250	M12		150	130		
280	374	245	235	290	260	M12		150	130		
290	387	240	230	295	255	M12		150	130		
300	400	230	220	305	245	M12		150	130		

CONSTANT SUPPORT 1 to 66											
-	1-6	7-12	13-18	19-26	27-33	34-39	40-47	48-50	51-54	55-58	59-66
AA	250	300	350	400	600	750	1100	1265	1265	1265	1620
BB	150	220	295	330	390	440	525	525	525	525	640
CC	180	215	270	325	405	495	610	685	685	685	760
DD	115	120	135	150	180	225	280	345	345	345	455
EE	135	140	160	175	215	270	330	405	405	405	560
GG	55	65	75	95	115	145	198	250	250	250	280
HH	55	65	75	95	115	145	180	190	190	190	215
KK	10	12	12	20	25	30	40	40	40	40	40
LL	15	20	30	30	35	40	50	60	70	80	80
MM	40	50	70	80	100	130	150	200	200	200	200
NN	40	40	50	65	75	90	140	140	140	140	150
PP	215	220	265	280	320	425	480	745	745	745	855
QQ	165	180	205	220	265	335	395	520	520	520	685
RR	14	18	22	22	22	27	33	45	45	45	51
SS	6	6	8	8	10	10	15	20	20	20	25
TT	5	5	10	15	10	30	15	15	15	15	40
UU	295	330	455	550	615	815	945	1080	1080	1080	1100
VVV	35	35	50	50	65	75	90	110	110	110	120
W	150	150	150	200	200	200	250	300	300	300	300
X	33	38	65	66	83	100	TABLA	182	182	182	TABLA
Y	100	130	195	215	255	285	TABLA	460	460	460	460
Z	180	255	370	395	510	510	740	830	830	830	830

SIZE 7 to 12											
TRAVEL	A	B	B1	B2	B3	C	D	E	F	VW1/VW2	U1/U2
90	120	320	380	215	340	M12	96	155	125		
100	134	310	370	220	330	M12	107	155	125		
110	147	305	365	230	325	M12	117	155	125		
120	160	300	360	235	320	M12	128	155	125		
130	174	290	350	245	310	M12	139	155	125		
140	187	285	345	250	305	M12	150	155	125		
150	200	275	335	260	295	M12	160	155	125		
160	214	270	330	265	290	M12	171	155	125		
170	227	260	320	270	280	M12	181	155	125		
180	240	255	315	280	275	M12	192	155	125		
190	254	250	310	285	270	M12	204	155	125		
200	267	240	300	295	260	M12		155	125		
210	280	235	295	300	255	M12		155	125		
220	294	255	285	305	275	M12		155	125		
230	307	250	280	315	270	M12		155	125		
240	320	240	270	320	260	M12		155	125		
250	334	255	265	330	275	M12		155	125		
260	347	245	255	335	265	M12		155	125		
270	360	240	250	340	260	M12		155	125		
280	374	245	240	350	265	M12		155	125		
290	387	240	235	355	260	M12		155	125		
300	400	230	225	365	250	M12		155	125		
310	414	270	250	370	290	M12		155	125		
320	427	260	240	380	280	M12		155	125		
330	440	255	235	385	275	M12		155	125		
340	454	250	230	395	270	M12		155	125		
350	467	240	220	400	260	M12		155	125		
360	480	275	255	405	295	M12		155	125		
370	494	265	245	415	285	M12		155	125		
380	507	260	240	420	280	M12		155	125		
390	520	250	230	430	270	M12		155	125		
400	534	245	225	435	265	M12		155	125		
410	547	235	215	445	255	M12		155	125		
420	560	230	210	450	250	M12		155	125		

CONSTANT SUPPORT 1 to 66											
-	1-6	7-12	13-18	19-26	27-33	34-39	40-47	48-50	51-54	55-58	59-66
S	220	305	420	460	565	610	840	930	930	930	-
T	80	100	170	180	230	170	300	350	350	350	-
W	102	127	203	254	305	260	567	605	605	605	-
X	170	230	280	355	410	460	560	560	560	560	-
Y	210	280	330	420	485	560	660	660	660	660	-
V	-	-	-	-	-	-	-	-	-	-	340

NOTE: Units are supplied with yokes for the aside table travels.
All other travels units are supplied with turnbuckle.

SIZE 13 to 18														
TRAVEL	A	B	B1	B2	B3	C	D	E	F	VV	VW1/VW2	U	U1	U2
100	134	345	425	280	375	M16	105	225	195					
110	147	340	420	290	370	M16	116	225	195					
120	160	335	415	295	365	M16	126	225	195					
130	174	325	405	305	355	M16	138	225	195					
140	187	320	400	310	350	M16	148	225	195					
150	200	310	390	315	340	M16	158	225	195					
160	214	305	385	325	335	M12	169	225	195					
170	227	295	375	330	325	M12	179	225	195					
180	240	290	370	340	320	M12	189	225	195					
190	254	280	360	345	310	M12	200	225	195					
200	267	275	355	355	305	M12	211	225	195					
210	280	270	350	360	300	M12	221	225	195					
220	294	260	340	370	290	M12		225	195					
230	307	255	335	375	285	M12		225	195					
240	320	245	325	380	275	M12		225	195					
250	334	240	320	390	270	M12		225	195					
260	347	230	310	395	260	M12		225	195					
270	360	255	305	405	285	M12		225	195					
280	374	245	295	410	275	M12		225	195					
290	387	240	290	420	270	M12		225	195					
300	400	255	280	425	285	M12		225	195					
310	414	250	275	435	280	M12		225	195					
320	427	240	265	440	270	M12		225	195					
330	440	255	260	450	285	M12		225	195					
340	454	250	255	455	280	M12		225	195					
350	467	240	245	460	270	M12		225	195					
360	480	235	240	470	265	M12		225	195					
370	494	260	230	475	290	M12		225	195					
380	507	255	245	485	285	M12		225	195					
390	520	245	235	490	275	M12		225	195					
400	534	240	230	500	270	M12		225	195					
410	547	230	220	505	260	M12		225	195					
				</										

CONSTANT LOAD SUPPORT MODELS C51

SECTION E

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TABLE OF DIMENSIONS - SIZES 19 to 39

SIZE 19 to 26																
TRAVEL	A	B	B1	B2	B3	C	D	E	F	W	VW	VW2	U	U1	U2	
120	160	470	565	315	500	M20	129	260	220							
130	174	460	555	325	490	M20	141	260	220							
140	187	455	550	330	485	M20	152	260	220							
150	200	445	540	335	475	M20	162	260	220							
160	214	440	535	345	470	M20	173	260	220							
170	227	430	525	350	460	M20	184	260	220							
180	240	425	520	360	455	M16	195	260	220							
190	254	415	510	365	445	M16	206	260	220							
200	267	410	505	375	440	M16	217	260	220							
210	280	405	500	380	435	M16	227	260	220							
220	294	395	490	390	425	M16	239	260	220							
230	307	390	480	395	420	M16	249	260	220							
240	320	380	475	400	410	M16	259	260	220							
250	334	375	470	410	405	M16	271	260	220							
260	347	365	460	415	395	M16	282	260	220							
270	360	360	455	425	390	M16	292	260	220							
280	374	350	445	430	380	M16	304	260	220							
290	387	345	440	440	375	M16	315	260	220							
300	400	335	430	445	365	M16		260	220							
310	414	330	425	455	360	M16		260	220							
320	427	325	420	460	355	M16		260	220							
330	440	315	410	470	345	M12		260	220							
340	454	310	405	475	340	M12		260	220							
350	467	300	395	480	330	M12		260	220							
360	480	295	390	490	325	M12		260	220							
370	494	315	380	495	345	M12		260	220	310	340	310	390	420	390	
380	507	310	375	505	340	M12		260	220	310	340	310	390	420	390	
390	520	300	365	510	330	M12		260	220	310	340	310	390	420	390	
400	534	295	360	520	325	M12		260	220	310	340	310	390	420	390	
410	547	315	350	525	345	M12		260	220	310	370	310	390	450	390	
420	560	310	345	535	340	M12		260	220	310	370	310	390	450	390	
430	574	300	335	540	330	M12		260	220	310	370	310	390	450	390	
440	587	295	330	550	325	M12		260	220	310	370	310	390	450	390	
450	600	290	325	555	320	M12		260	220	310	370	310	390	450	390	
460	614	310	315	560	340	M12		260	220	310	400	310	390	480	390	
470	627	305	310	570	335	M12		260	220	310	400	310	390	480	390	
480	641	295	300	575	325	M12		260	220	310	400	310	390	480	390	
490	654	290	295	585	320	M12		260	220	310	400	310	390	480	390	
500	667	290	285	590	310	M12		260	220	310	400	310	390	480	390	

SIZE 27 to 33																
TRAVEL	A	B	B1	B2	B3	C	D	E	F	W	VW	VW1	VW2	U	U1	U2
130	174	440	550	545	475	M30	142	285	240							
140	187	435	545	550	470	M30	153	285	240							
150	200	425	535	560	460	M30	164	285	240							
160	214	420	530	570	455	M30	175	285	240							
170	227	410	520	575	445	M24	185	285	240							
180	240	405	515	580	440	M24	196	285	240							
190	254	395	505	590	430	M24	208	285	240							
200	267	390	500	595	425	M24	219	285	240							
210	280	385	495	605	420	M24	230	285	240							
220	294	375	485	610	410	M24	241	285	240							
230	307	370	480	620	405	M24	251	285	240							
240	320	360	470	625	395	M20	262	285	240							
250	334	355	465	635	390	M20	273	285	240							
260	347	345	455	640	380	M20	284	285	240							
270	360	340	440	645	375	M20	295	285	240							
280	374	330	440	655	365	M20	306	285	240							
290	387	325	435	660	360	M20	317	285	240							
300	400	315	425	670	350	M20	327	285	240							
310	414	310	420	675	345	M20		285	240							
320	427	305	415	685	340	M20		285	240							
330	440	295	405	690	330	M20		285	240							
340	454	290	400	700	325	M20		285	240							
350	467	280	390	705	315	M20		285	240							
360	480	275	385	710	310	M20		285	240							
370	494	310	375	720	345	M20		285	240	295	340	295	405	450	405	405
380	507	305	370	725	340	M20		285	240	295	340	295	405	450	405	405
390	520	295	360	735	330	M20		285	240	295	340	295	405	450	405	405
400	534	290	355	740	325	M20		285	240	295	340	295	405	450	405	405
410	547	310	345	750	345	M20		285	240	295	370	295	405	480	405	405
420	560	305	340	755	340	M20		285	240	295	370	295	405	480	405	405
430	574	295	330	765	330	M20		285	240	295	370	295	405	480	405	405
440	587	290	325	770	325	M20		285	240	295	370	295	405	480	405	405
450	600	315	320	775	350	M20		285	240	295	400	295	405	510	405	405
460	614	305	310	785	340	M20		285	240	295	400	295	405	510	405	405
470	627	300	305	790	335	M20		285	240	295	400	295	405	510	405	405
480	641	290	295	800	325	M20		285	240	295	400	295	405	510	405	405
490	654	285	290	805	320	M20		285	240	295	400	295	405	510	405	405
500	667	275	280	810	315	M20		285	240	295	400	295	405	510	405	405

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SECTION E

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TABLE OF DIMENSIONS - SIZES 40 a 54

SIZE 40 to 47													
TRAVEL	A	B	B1	B2	B3	B4	C	E	F	W	VW	VW2	U1 U2
170	227	575	71	511	562	5				448	430	370	
180	240	570	71	511	562	5				448	430	370	
190	254	560	70	500	550	5				448	430	370	
200	267	555	69	495	545	5				448	430	370	
210	280	545	68	485	535	5				448	430	370	
220	294	540	68	480	530	5				448	430	370	
230	307	535	67	475	525	5				448	430	370	
240	320	525	66	465	515	5				448	430	370	
250	334	520	66	460	510	5				448	430	370	
260	347	510	65	450	500	5				448	430	370	
270	360	505	64	445	495	5				448	430	370	
280	374	495	63	435	485	5				448	430	370	
290	387	490	63	430	480	5				448	430	370	
300	400	480	62	420	470	5				448	430	370	
310	414	475	61	415	465	5				448	430	370	
320	427	470	61	410	460	5				448	430	370	
330	440	460	60	400	450	5				448	430	370	
340	454	455	59	395	445	5				448	430	370	
350	467	445	58	385	435	5				448	430	370	
360	480	440	58	380	430	5				448	430	370	
370	494	430	57	370	420	5				448	430	370	
380	507	425	56	365	415	5				448	430	370	
390	520	415	55	355	405	5				448	430	370	
400	534	410	55	350	400	5				448	430	370	
410	547	400	54	340	390	5				448	430	370	
420	560	470	61	390	420	5				500	500	685	685
430	574	460	60	380	410	5				500	500	685	685
440	587	455	59	375	405	5				500	500	685	685
450	600	445	58	370	400	5				500	500	685	685
460	614	440	58	365	395	5				500	500	685	685
470	627	435	57	360	390	5				500	500	685	685
480	641	425	56	355	385	5				500	500	685	685
490	654	420	56	350	380	5				500	500	685	685
500	667	410	55	345	375	5				500	500	685	685
510	680	405	54	340	370	5				500	500	685	685
520	695	395	53	335	365	5				500	500	685	685
530	708	390	53	330	360	5				500	500	685	685
540	720	380	52	320	350	5				500	500	685	685
550	734	375	51	315	345	5				500	500	685	685
560	747	365	50	305	335	5				500	500	685	685
570	761	360	50	300	330	5				500	500	685	685
580	774	350	49	295	325	5				500	500	685	685
590	787	345	48	290	320	5				500	500	685	685
600	800	340	48	280	310	5				500	500	685	685
610	815	330	47	270	300	5				500	500	685	685

SIZE 48 a 50													
TRAVEL	A	B	B1	B2	B3	B4	C	E	F	VW	VW1	VW2	U1 U2
170	227	635	83	511	562	5				540	460	365	
180	240	630	83	511	562	5				540	460	365	
190	254	620	82	500	550	5				540	460	365	
200	267	615	81	495	545	5				540	460	365	
210	280	610	81	490	540	5				540	460	365	
220	294	600	80	480	530	5				540	460	365	
230	307	595	79	475	525	5				540	460	365	
240	320	585	78	465	515	5				540	460	365	
250	334	580	78	460	510	5				540	460	365	
260	347	570	77	450	500	5				540	460	365	
270	360	565	76	445	495	5				540	460	365	
280	374	555	75	435	485	5				540	460	365	
290	387	550	75	430	480	5				540	460	365	
300	400	540	74	420	470	5				540	460	365	
310	414	535	73	415	465	5				540	460	365	
320	427	530	73	410	460	5				540	460	365	
330	440	520	72	400	450	5				540	460	365	
340	454	515	71	395	445	5				540	460	365	
350	467	505	70	385	435	5				540	460	365	
360	480	500	70	380	430	5				540	460	365	
370	494	490	69	370	420	5				540	460	365	
380	507	485	68	365	415	5				540	460	365	
390	520	475	67	355	405	5				540	460	365	
400	534	470	67	350	400	5				540	460	365	
410	547	460	66	340	390	5				540	460	365	
420	560	470	61	390	420	5				540	460	365	
430	574	530	73	475	500	740				540	460	365	
440	587	525	72	465	495	735				540	460	365	
450	600	515	71	465	495	730				540	460	365	
460	614	510	71	465	495	720				540	460	365	
470	627	505	70	455	485	715				540	460	365	
480	641	495	69	445	475	705				540	460	365	
490	654	490	69	440	470	700				540	460	365	
500	667	480	68	430	460	690				540	460	365	
510	680	475	67	420	450	680				540	460	365	
520	695	465	66	410	440	670				540	460	365	
530	708	460	66	405	435	660				540	460	365	
540	720	450	65	395	425	650				540	460	365	
550	734	445	64	390	420	640				540	460	365	
560	747	435	63	385	415	630				540	460	365	
570	761	430	63	380	410	620				540	460	365	
580	774	420	62	370	400	610				540	460	365	
590	787	415	61	365	395	600				540	460	365	
600	800	410	61	360	390	600				540	460	365	
610	815	400	60	350	380	590				540	460	365	

SIZE 51 to 54															
TRAVEL	A	B	B1	B2	B3	B4	C	E	F	W	VW	VW2	U	U1	U2
170	227	625	835	128	695										
180	240	620	830	129	690										
190	254	610	820	130	680										
200	267	605	815	130	675										
210	280	600	810	131	670										
220	294	590	800	132	660										
230	307	585	795	133	655										
240	320	575	785	133	645										
250	334	570	780	134	640										
260	347	560	770	135	630										
270	360	555	765	135	625										
280	374	545	755	136	615										
290	387	540	750	137	610										
300	400	530	740	138	600										
310	414	525	735	138	595										
320	427	520	730	139	590										
330	440	510	720	140	580										
340	454	505	715	141	575										
350	467	495	705	141	565										
360	480	490	700	142	560										
370	494	480	690	143	550										
380	507	475	685	143	545										
390	520	465	675	144	535										
400	534	460	670	145	530										
410	547	450	660	146	520										
420	560	530	740	146	600	750	M42	460	365	540					775
430	574	520	730	147	590	740	M42	460	365	540					775
440	587	515	725	148	585	735	M42	460	365	540					775
450	600	505	715	148	575	730	M42	460	365	540					775
460	614	500	710	149	570	720	M42	460	365	540					775
470	627	495	705	150	565	715	M42	460	365	540					775
480	641	485	695	151	555	705	M42	460	365	540					775
490	654	480	690	151	550	700	M42	460	365	540					775
500	667	470	680	152	540	690	M42	460	365	540					775
510	680	465	67	530	535	745	M42	460	365	600					765
520	695	455	66	540	525	735	M42	460	365	600					765
530	708	450	660	154	520	730	M42	460	365	600					765
540	720	440	650	155	510	725	M42	460	365	600					765
550	734	435	645	156	505	715	M42	460	365	600					765
560	747	425	635	156	495	710	M42	460	365	600					765
570	761	420	630	157	490	700	M42	460	365	600					765
580	774	410	620	158	480	695	M42	460	365	600					765
590	787	405	61	590	475	685	M42	460	365	600					765
600	800	400	610	159	470	680	M42	460	365	600					765
610	815	390	600	160	460	670	M42	460	365	600					765

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SECTION E

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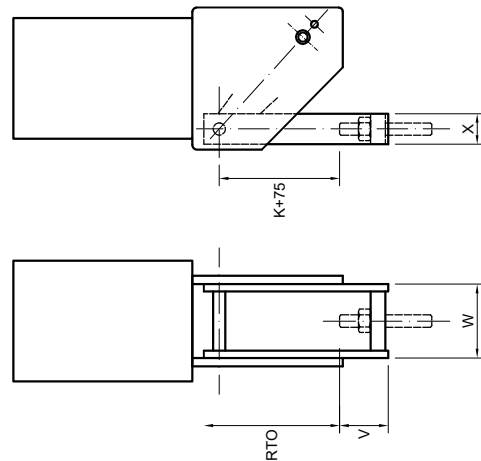
TABLE OF DIMENSIONS - SIZES 55 to 66

SIZE 55 to 58															
TRAVEL	A	B	B1	B2	B3	B4	C	E	F	VV	VV1	VV2	U	U1	U2
180	240	610	830	1290	690										
190	254	600	820	1300	680										
200	267	595	815	1305	675										
210	280	590	810	1310	670										
220	294	580	800	1320	660										
230	307	575	795	1330	655										
240	320	565	785	1335	645										
250	334	560	780	1340	640										
260	347	550	770	1350	630										
270	360	545	765	1355	625										
280	374	535	755	1365	615										
290	387	530	750	1370	610										
300	400	520	740	1380	600										
310	414	515	735	1385	595										
320	427	510	730	1395	590										
330	440	500	720	1400	580										
340	454	495	715	1410	575										
350	467	485	705	1415	565										
360	480	480	700	1420	560										
370	494	470	690	1430	550										
380	507	465	685	1435	545										
390	520	455	675	1445	535										
400	534	450	670	1450	530										
410	547	440	660	1460	520										
420	560	520	740	1465	600	750	M48	460	365	540					
430	574	510	730	1475	590	740	M48	460	365	540					
440	587	505	725	1480	585	735	M48	460	365	540					
450	600	495	715	1485	575	730	M48	460	365	540					
460	614	490	710	1495	570	720	M48	460	365	540					
470	627	485	705	1500	565	715	M48	460	365	540					
480	641	475	695	1510	555	705	M48	460	365	540					
490	654	470	690	1515	550	700	M48	460	365	540					
500	667	460	680	1525	540	690	M48	460	365	540					
510	680	455	675	1530	535	745	M48	460	365	600					
520	695	445	665	1540	525	735	M48	460	365	600					
530	708	440	660	1545	520	730	M48	460	365	600					
540	720	430	650	1550	510	725	M48	460	365	600					
550	734	425	645	1560	505	715	M48	460	365	600					
560	747	415	635	1565	495	710	M48	460	365	600					
570	761	410	630	1575	490	700	M48	460	365	600					
580	774	400	620	1580	480	695	M48	460	365	600					
590	787	395	615	1590	475	685	M48	460	365	600					
600	800	390	610	1595	470	680	M48	460	365	600					
610	815	380	600	1605	460	670	M48	460	365	600					

SIZE 59 to 62													
TRAVEL	A	B	B1	B3	C	E	F	VV	VV1	VV2	U	U1	U2
180	240	745	975	825	M80	430	500						
190	254	740	970	820	M72	430	500						
200	267	730	960	810	M72	430	500						
210	280	725	955	805	M72	430	500						
220	294	715	945	795	M72	430	500						
230	307	710	940	790	M72	430	500						
240	320	700	930	780	M64	430	500						
250	334	695	925	775	M64	430	500						
260	347	685	915	765	M64	430	500						
270	360	680	910	760	M64	430	500						
280	374	670	900	750	M64	430	500						
290	387	665	895	745	M64	430	500						
300	400	660	890	740	M64	430	500						
310	414	650	880	730	M64	430	500						
320	427	645	875	725	M56	430	500						
330	440	635	865	715	M56	430	500						
340	454	630	860	710	M56	430	500						
350	467	620	850	700	M56	430	500						
360	480	615	845	695	M56	430	500						
370	494	605	835	685	M56	430	500						
380	507	600	830	680	M56	430	500						
390	520	595	825	675	M56	430	500						
400	534	585	815	665	M56	430	500						
410	547	580	810	660	M56	430	500						
420	560	570	800	650	M56	430	500						
430	574	560	790	640	M56	430	500						
440	587	555	785	635	M56	430	500						
450	600	550	775	625	M56	430	500						
460	614	540	770	620	M56	430	500						
470	627	535	765	615	M56	430	500						
480	641	525	755	605	M56	430	500						
490	654	520	750	600	M56	430	500						
500	667	510	740	590	M56	430	500						
510	680	505	735	585	M56	430	500						
520	695	495	725	575	M56	430	500						
530	708	490	720	570	M56	430	500						
540	720	480	710	560	M56	430	500						
550	734	475	705	555	M56	430	500						
560	747	470	700	545	M56	430	500						
570	761	460	690	540	M56	430	500						
580	774	450	685	530	M56	430	500						
590	787	445	675	525	M56	430	500						
600	800	440	670	520	M56	430	500						
610	815	430	660	510	M56	430	500						

SIZE 63 to 66													
TRAVEL	A	B	B1	B3	C	E	F	VV	VV1	VV2	U	U1	U2
180	240	745	975	825	M80	430	500						
190	254	740	970	820	M80	430	500						
200	267	730	960	810	M80	430	500						
210	280	725	955	805	M80	430	500						
220	294	715	945	795	M80	430	500						
230	307	710	940	790	M72	430	500						
240	320	700	930	780	M72	430	500						
250	334	695	925	775	M72	430	500						
260	347	685	915	765	M72	430	500						
270	360	680	910	760	M72	430	500						
280	374	670	900	750	M72	430	500						
290	387	665	895	745	M64	430	500						
300	400	660	890	740	M64	430	500						
310	414	650	880	730	M64	430	500						
320	427	645	875	725	M64	430	500						
330	440	635	865	715	M64	430	500						
340	454	630	860	710	M64	430	500						
350	467	620	850	700	M64	430	500						
360	480	615	845	695	M64	430	500						
370	494	605	835	685	M64	430	500						
380	507	600	830	680	M56	430	500						
390	520	595	825	675	M56	430	500				</		

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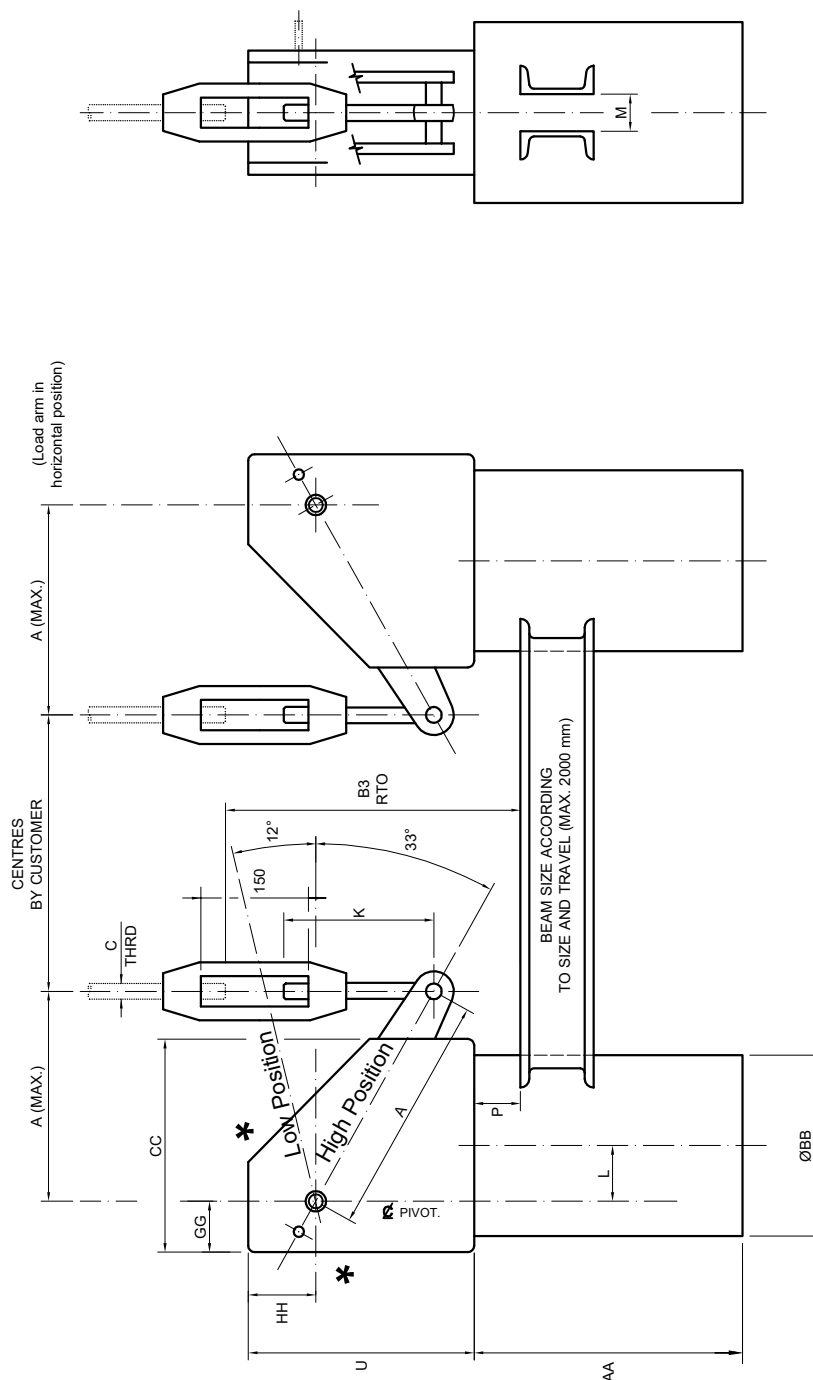


1	21/07/10	GENERAL REVISION	DDG	EAR
0	20/10/98	INFORMATION	JMD	EAR
REV.	DATE	EDITED FOR :	DRAW.	REV.

CONSTANT LOAD SUPPORT MODELS C52

SECTION E

22



TYPE G

NOTES:

WHEN USING TYPE "G" THE WORKING LOAD
MUST BE HALVED TO SELECT HANGER SIZE.
ARMS IN HIGH POSITION ALLOW DOWNWARD
PIPE MOVEMENT.

* ACCESS TO LOAD ADJUSTER

REV.	DATE	EDITED FOR :	DRAW.	REV.
1	21/07/10	GENERAL REVISION	DDG	EAR
0	20/10/98	INFORMATION	JMD	EAR

CONSTANT LOAD SUPPORT MODELS C52

SECTION E

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TABLE OF DIMENSIONS - SIZES 1 to 26

SIZE 1 to 6												
TRAVEL	A	B	B1	B2	B3	C	D	E	F	G	YY	P
40	54	620	130	375	M12	42	105	140	105	65	55	
50	67	610	125	370	M12	53	105	140	105	65	55	
60	80	605	115	360	M12	64	105	140	105	65	55	
70	94	600	110	355	M12	76	105	140	110	65	55	
80	107	590	105	345	M12	88	105	140	115	65	55	
90	120	585	95	330	M12	97	105	140	130	65	55	
100	134	575	90	320	M12	107	105	140	130	65	55	
110	147	570	80	325	M12	118	105	140	140	65	55	
120	160	560	75	320	M12	128	105	140	155	65	55	
130	174	555	65	310	M12	140	105	140	160	65	55	
140	187	550	60	305	M12	150	105	140	175	65	55	
150	200	540	50	295	M12	161	105	140	180	65	55	
160	214	530	45	290	M12	172	105	140	195	65	55	
170	227	525	35	280	M12	182	105	140	210	65	55	
180	240	520	30	275	M12	193	105	140	215	65	55	
190	254	510	25	265	M12	203	105	140	230	65	55	
200	267	505	15	260	M12	214	105	140	235	65	55	
210	280	500	10	255	M12	225	105	140	250	65	55	
220	294	490	25	275	M12	240	105	140	260	90	85	
230	307	485	30	270	M12	250	105	140	270	90	85	
240	320	475	40	260	M12	260	105	140	280	90	85	
250	334	470	60	255	M12	270	105	140	290	105	85	
260	347	N/A	70	N/A	M12	N/A	105	140	N/A	105	N/A	
270	360	N/A	75	N/A	M12	N/A	105	140	N/A	105	N/A	
280	374	N/A	85	N/A	M12	N/A	105	140	N/A	105	N/A	
290	387	N/A	90	N/A	M12	N/A	105	140	N/A	105	N/A	
300	400	N/A	100	N/A	M12	N/A	105	140	N/A	105	N/A	

CONSTANT SUPPORT 1 to 66												
-	1-6	7-12	13-18	19-26	27-33	34-40	41-47	48-50	51-54	55-58	59-66	
AA	250	300	350	400	450	500	550	600	650	700	750	TAB, TAB
BB	150	220	295	330	390	440	525	525	525	525	640	
CC	180	215	270	325	405	495	610	710	710	710	760	
DD	115	120	135	150	180	225	280	345	345	345	455	
FF	135	140	160	175	215	270	330	405	405	405	560	
GG	55	65	75	95	115	145	180	250	250	250	280	
HH	55	65	75	95	115	145	180	190	190	190	215	
KK	10	12	12	20	25	30	40	40	40	40	40	
NN	40	40	50	65	75	75	90	140	140	140	150	
PP	215	220	255	270	320	425	480	745	745	745	855	
QQ	165	180	205	220	265	335	395	520	520	520	685	
RR	14	18	22	22	22	27	33	45	45	45	51	
SS	6	6	8	8	10	10	15	20	20	20	25	
TT	10	15	20	25	30	40	40	60	60	60	80	
WW	35	35	50	50	65	75	90	110	110	110	120	
XX	220	300	380	425	480	540	625	650	650	650	780	
K	150	150	150	200	200	200	250	TAB, TAB	300	300	300	
L	33	38	65	66	83	100	TAB, TAB	182	182	182	TAB	
U	180	215	270	325	405	495	610	685	685	685	760	
V	125	155	170	190	205	225	245	275	290	290	340	
W	95	102	112	123	153	190	231	288	288	288	390	
X	40	50	65	80	90	110	130	150	160	160	220	
M	18	30	30	42	50	55	65	65	65	65	70	

SIZE 7 to 12												
TRAVEL	A	B	B1	B2	B3	C	D	E	F	G	YY	P
40	54	700	115	385	M20	41	120	155	150	80	40	
50	67	695	110	380	M18	52	120	155	150	80	40	
60	80	685	100	370	M16	63	120	155	150	80	40	
70	94	680	95	365	M16	75	120	155	150	80	40	
80	107	670	90	350	M12	88	120	155	150	80	40	
90	120	665	80	340	M12	96	120	155	150	80	40	
100	134	655	70	330	M12	107	120	155	150	80	40	
110	147	650	65	335	M12	117	120	155	150	80	40	
120	160	645	60	320	M12	128	120	155	150	80	40	
130	174	635	50	320	M12	139	120	155	170	80	40	
140	187	625	45	315	M12	150	120	155	170	80	40	
150	200	620	35	305	M12	160	120	155	190	80	40	
160	214	610	30	300	M12	171	120	155	200	80	40	
170	227	605	20	290	M12	181	120	155	215	80	40	
180	240	600	15	285	M12	192	120	155	220	80	40	
190	254	590	10	280	M12	204	120	155	235	80	40	
200	267	585	-	-	270	M12	214	120	155	245	80	40
210	280	575	10	265	M12	225	120	155	255	80	40	
220	294	570	40	285	M12	240	120	155	260	105	70	
230	307	565	45	280	M12	250	120	155	270	105	70	
240	320	555	55	270	M12	260	120	155	280	105	70	
250	334	550	60	295	M12	270	120	155	290	105	100	
260	347	540	70	285	M12	280	120	155	300	105	100	
270	360	535	75	280	M12	290	120	155	310	105	100	
280	374	525	85	270	M12	305	120	155	325	105	100	
290	387	520	90	265	M12	315	120	155	335	105	100	
300	400	510	100	255	M12	325	120	155	345	105	100	
310	414	N/A	125	N/A	M12	N/A	120	155	N/A	125	N/A	
320	427	N/A	135	N/A	M12	N/A	120	155	N/A	125	N/A	
330	440	N/A	140	N/A	M12	N/A	120	155	N/A	125	N/A	
340	454	N/A	145	N/A	M12	N/A	120	155	N/A	125	N/A	
350	467	N/A	155	N/A	M12	N/A	120	155	N/A	125	N/A	
360	480	N/A	180	N/A	M12	N/A	120	155	N/A	145	N/A	
370	494	N/A	190	N/A	M12	N/A	120	155	N/A	145	N/A	
380	507	N/A	195	N/A	M12	N/A	120	155	N/A	145	N/A	
390	520	N/A	205	N/A	M12	N/A	120	155	N/A	145	N/A	
400	534	N/A	210	N/A	M12	N/A	120	155	N/A	145	N/A	
410	547	N/A	220	N/A	M12	N/A	120	155	N/A	145	N/A	
420	560	N/A	225	N/A	M12	N/A	120	155	N/A	145	N/A	

BEAMS FOR CONSTANT SUPPORT 1 to 66												
-	1-6	7-12	13-18	19-26	27-33	34-39	40-47	48-50	51-54	55-58	59-66	
TRAVEL	100	125	125	200	200	260	300	380	380	430	x100	
≤ 190	x50	x65	x65	x75	x75	x90	x90	x100	x100	x100	x100	
TRAVEL	100	100	100	125	150	180	230	300	380	430	x100	
> 190	x50	x50	x50	x50	x65	x75	x75	x90	x90	x90	x100	

"JJ" DIMENSION ACCORDING TO "C"												
-	M12	M16	M20	M24	M30	M36	M48	M56	M64	M72	M80	M90
JJ	25	25	30	35	40	50	60	65	80	85	100	110
L	121	165	188	193	197	203	207	211	216	220		

"I" DIMENSION												
-	40-44	45-47	59	60	61	62	63	64	65	66		
L	121	165	188	193	197	203	207	211	216	220		

NOTE: Units are supplied with yokes for the
aside table travels. All other travels units
are supplied with turnbuckle.

SIZE 13 to 18													
TRAVEL	A	B	B1	B2	B3	C	D	E	F	G	YY	P	
40													
50													
60	80	790	90		415	M20	63	155	190	200	90	40	
70	94	785	85		410	M20	75	155	190	200	90	40	
80	107	780	75		400	M20	85	155	190	200	90	40	
90	120	770	70		395	M16	95	155	190	200	90	40	
100	134	765	60		385	M16	105	155	190	200	90	40	
110	147	755	55		380	M16	116	155	190	200	90	40	
120	160	750	50		375	M16	126	155	190	200	90	40	
130	174	740	40		365	M16	138	155	190	200	90	40	
140	187	735	35		360	M16	148	155	190	200	90	40	
150	200	725	25		350	M16	158	155	190	200	90	40	
160	214	720	20		345	M12	169	155	190	200	90	40	
170	227	710			335	M12	179	155	190	215	90	40	
180	240	705	5		330	M12	189	155	190	220	90	40	
190	254	700		5	320	M12	200	155	190	230	90	40	
200	267	690			310	M12	211	155	190	240	90	40	
210	280	685			300	M12	221	155	190	255	90	40	
220	294	675			295	M12	232	155	190	265	90	40	
230	307	670			30	295	M12	242	155	190	275	90	40
240	320	660			40	285	M12	253	155	190	285	90	40
250	334	655			45	280	M12	264	155	190	295	90	40
260	347	650			55	270	M12	274	155	190	305	90	40
270	360	645			85	305	M12	290	155	190	315	110	110
280	374	635			95	295	M12	305	155	190	325	115	110
290	387	630			100	290	M12	315	155	190	335	115	110
300	400	620			120	280	M12	325	155	190	345	115	110
310	414	615			135	305	M12	340	155	190	360	135	80
320	427	605			145	295	M12	350	155	190	370	135	80
330	440	600			150	290	M12	360	155	190	380	135	80
340	454	595			155	285	M12	375	155	190	395	135	80
350	467	685			165	275	M12	385	155	190	405	135	80
360	480	580			170	270	M12	395	155	190	415	135	80
370	494	N/A			180	290	M12	N/A	155	190	N/A	135	N/A
380	507	N/A			200	N/A	M12	N/A	155	190	N/A	150	N/A
390	520	N/A			210	N/A	M12	N/A	155	190	N/A	160	N/A
400	534	N/A			215	N/A	M12	N/A	155	190	N/A	150	N/A
410	547	N/A			225	N/A	M12	N/A	155	190	N/A	150	N/A
420	560	N/A			230	N/A	M12	N/A	155	190	N/A	150	N/A

CONSTANT LOAD SUPPORT MODELS C52

SECTION E

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TABLE OF DIMENSIONS - SIZES 27 to 50

SIZE 27 to 33												
TRAVEL	A	B	B1	B2	B3	C	D	E	F	G	YY	P
80	107	1210	85	550	M36	88	235	300	275	130	40	
90	120	1205	80	540	M36	99	235	300	275	130	40	
100	134	1198	70	530	M36	109	235	300	275	130	40	
110	147	1190	65	525	M30	120	235	300	275	130	40	
120	160	1185	60	520	M30	131	235	300	275	130	40	
130	174	1178	50	510	M30	142	235	300	275	130	40	
140	187	1170	45	505	M30	154	235	300	275	130	40	
150	200	1160	35	495	M30	164	235	300	275	130	40	
160	214	1158	30	490	M30	175	235	300	275	130	40	
170	227	1148	20	480	M24	184	235	300	275	130	40	
180	240	1140	15	475	M24	196	235	300	275	130	40	
190	254	1130	10	470	M24	208	235	300	275	130	40	
200	267	1125	-	460	M24	219	235	300	275	130	40	
210	280	1120	10	455	M24	230	235	300	275	130	40	
220	294	1110	15	445	M24	241	235	300	275	130	40	
230	307	1105	20	440	M20	251	235	300	265	130	40	
240	320	1095	30	430	M20	262	235	300	265	130	40	
250	334	1090	35	425	M20	273	235	300	310	130	40	
260	347	1080	45	415	M20	284	235	300	315	130	40	
270	360	1075	50	410	M20	295	235	300	330	130	40	
280	374	1065	60	400	M20	306	235	300	335	130	40	
290	387	1060	65	395	M20	317	235	300	345	130	40	
300	400	1050	70	390	M20	327	235	300	355	130	40	
310	414	1045	80	380	M20	339	235	300	370	130	40	
320	427	1040	90	370	M20	350	235	300	380	130	40	
330	440	1030	95	365	M20	361	235	300	390	130	40	
340	454	1025	100	360	M20	372	235	300	395	130	40	
350	467	1015	110	350	M20	383	235	300	415	130	40	
360	480	1010	115	345	M20	394	235	300	420	130	40	
370	494	1000	175	405	M20	405	235	300	435	180	110	
380	507	995	180	400	M20	415	235	300	445	180	110	
390	520	985	190	390	M20	425	235	300	455	180	110	
400	534	980	195	385	M20	440	235	300	470	180	110	
410	547	970	205	375	M20	450	235	300	480	180	110	
420	560	965	210	370	M20	460	235	300	490	180	110	
430	574	955	220	360	M20	470	235	300	500	180	110	
440	587	950	225	355	M20	480	235	300	510	180	110	
450	600	945	230	350	M20	495	235	300	525	180	110	
460	614	935	240	340	M20	505	235	300	535	180	110	
470	627	930	245	335	M20	515	235	300	545	180	110	
480	641	920	255	325	M20	530	235	300	560	180	110	
490	654	915	260	320	M20	540	235	300	570	180	110	
500	667	905	270	310	M20	550	235	300	580	180	110	

SIZE 34 to 39												
TRAVEL	A	B	B1	B2	B3	C	D	E	F	G	YY	P
100	134	1420	45	590	M42	110	290	365	345	155	40	
110	147	1410	40	585	M42	121	290	365	345	155	40	
120	160	1405	35	580	M42	131	290	365	345	155	40	
130	174	1395	25	570	M42	143	290	365	345	155	40	
140	187	1390	20	565	M36	154	290	365	345	155	40	
150	200	1385	10	555	M36	165	290	365	345	155	40	
160	214	1375	5	550	M36	176	290	365	345	155	40	
170	227	1370	5	540	M36	187	290	365	345	155	40	
180	240	1360	10	535	M36	197	290	365	345	155	40	
190	254	1355	20	530	M30	209	290	365	345	155	40	
200	267	1345	25	520	M30	220	290	365	345	155	40	
210	280	1340	35	515	M30	230	290	365	345	155	40	
220	294	1330	40	505	M30	242	290	365	345	155	40	
230	307	1325	45	500	M30	252	290	365	345	155	40	
240	320	1320	55	490	M30	262	290	365	345	155	40	
250	334	1310	60	485	M30	274	290	365	345	155	40	
260	347	1305	70	475	M30	285	290	365	345	155	40	
270	360	1295	75	470	M30	296	290	365	345	155	40	
280	374	1290	85	460	M30	307	290	365	345	155	40	
290	387	1280	90	455	M30	318	290	365	345	155	40	
300	400	1275	100	450	M30	328	290	365	345	155	40	
310	414	1265	105	440	M24	340	290	365	345	155	40	
320	427	1260	115	430	M24	351	290	365	345	155	40	
330	440	1250	120	425	M24	361	290	365	345	155	40	
340	454	1245	125	420	M24	373	290	365	345	155	40	
350	467	1240	135	410	M24	384	290	365	345	155	40	
360	480	1230	140	405	M24	394	290	365	345	155	40	
370	494	1225	150	395	M24	405	290	365	345	155	40	
380	507	1215	155	390	M24	416	290	365	345	155	40	
390	520	1210	165	385	M24	427	290	365	345	155	40	
400	534	1200	170	375	M24	439	290	365	345	155	40	
410	547	1195	180	370	M24	449	290	365	345	155	40	
420	560	1185	215	450	M40	460	290	365	345	185	70	
430	574	1175	225	440	M24	470	290	365	345	185	70	
440	587	1170	230	435	M24	480	290	365	345	185	70	
450	600	1165	235	430	M24	495	290	365	345	185	70	
460	614	1155	245	420	M24	505	290	365	345	185	70	
470	627	1150	250	415	M24	515	290	365	345	185	70	
480	641	1140	260	405	M24	530	290	365	345	185	70	
490	654	1135	290	400	M24	540	290	365	345	185	70	
500	667	1125	300	390	M24	550	290	365	345	185	70	
510	680	1115	305	N/A	M24	N/A	290	365	N/A	210	N/A	
520	695	N/A	315	N/A	M24	N/A	290	365	N/A	210	N/A	
530	708	N/A	320	N/A	M24	N/A	290	365	N/A	210	N/A	
540	720	N/A	325	N/A	M24	N/A	290	365	N/A	210	N/A	
550	734	N/A	335	N/A	M24	N/A	290	365	N/A	210	N/A	
560	747	N/A	340	N/A	M24	N/A	290	365	N/A	210	N/A	
570	761	N/A	350	N/A	M24	N/A	290	365	N/A	210	N/A	
580	774	N/A	355	N/A	M24	N/A	290	365	N/A	210	N/A	
590	787	N/A	365	N/A	M24	N/A	290	365	N/A	210	N/A	
600	800	N/A	370	N/A	M24	N/A	290	365	N/A	210	N/A	
610	815	N/A	380	N/A	M24	N/A	290	365	N/A	210	N/A	

SIZE 40 to 47												
TRAVEL	A	B	B1	B2	B3	C	D	E	F	G	YY	P

CONSTANT LOAD SUPPORT MODELS C52

SECTION E

25

TABLE OF DIMENSIONS - SIZES 51 to 66

SIZE 51 to 54										
TRAVEL	A	B	B2	B3	C	D	E	F	G	YY P
150	200	206	220	165	164	164	340	480	465	320 70
160	214	205	225	160	164	175	340	480	465	320 70
170	227	204	235	160	164	186	340	480	465	320 70
180	240	204	240	164	164	197	340	480	465	320 70
190	254	203	250	163	164	209	340	480	465	320 70
200	267	202	255	163	164	220	340	480	465	320 70
210	280	202	260	162	164	231	340	480	465	320 70
220	294	201	270	161	164	242	340	480	465	320 70
230	307	200	275	160	164	253	340	480	465	320 70
240	320	199	280	159	164	264	340	480	465	320 70
250	334	199	290	159	164	275	340	480	465	320 70
260	347	198	300	158	164	286	340	480	465	320 70
270	360	197	305	158	164	296	340	480	465	320 70
280	374	196	315	157	164	308	340	480	465	320 70
290	387	196	320	156	164	318	340	480	465	320 70
300	400	195	330	155	164	328	340	480	465	320 70
310	414	194	335	155	164	340	340	480	465	320 70
320	427	193	345	154	164	351	340	480	465	320 70
330	440	193	350	154	164	362	340	480	465	320 70
340	454	192	355	153	164	373	340	480	465	320 70
350	467	191	365	152	164	384	340	480	465	320 70
360	480	191	370	151	164	395	340	480	465	320 70
370	494	190	380	150	164	406	340	480	465	320 70
380	507	189	385	150	164	416	340	480	465	320 70
390	520	188	395	149	164	427	340	480	465	320 70
400	534	188	400	148	164	439	340	480	465	320 70
410	547	187	410	148	164	450	340	480	465	320 70
420	560	200	250	163	164	461	340	480	465	320 70
430	574	202	255	162	164	471	340	480	465	320 70
440	587	201	265	162	164	482	340	480	465	320 70
450	600	200	275	161	164	493	340	480	465	320 70
460	614	200	280	160	164	505	340	480	465	320 70
470	627	199	285	160	164	515	340	480	465	320 70
480	641	198	295	159	164	527	340	480	465	320 70
490	654	198	300	158	164	537	340	480	465	320 70
500	667	197	305	157	164	548	340	480	465	320 70
510	680	196	315	157	164	559	340	480	465	320 70
520	695	195	325	156	164	571	340	480	465	320 70
530	708	195	330	155	164	582	340	480	465	320 70
540	720	194	335	154	164	592	340	480	465	320 70
550	734	193	345	154	164	604	340	480	465	320 70
560	747	192	350	153	164	613	340	480	465	320 70
570	761	192	360	152	164	625	340	480	465	320 70
580	774	191	365	151	164	636	340	480	465	320 70
590	787	190	375	150	164	647	340	480	465	320 70
600	800	190	380	150	164	658	340	480	465	320 70
610	815	189	390	149	164	670	340	480	465	320 70

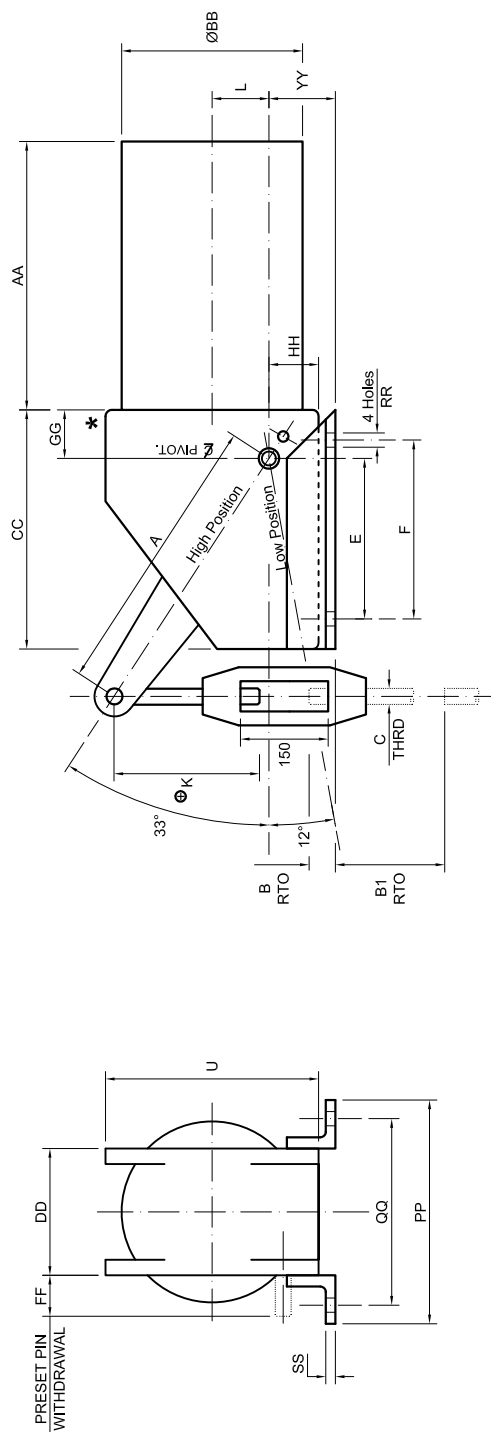
SIZE 55 to 58										
TRAVEL	A	B	B2	B3	C	D	E	F	G	YY P
170	227	259	70	81	5	172	186	340	480	465 320 70
180	240	260	75	81	5	172	197	340	480	465 320 70
190	254	260	85	80	5	172	209	340	480	465 320 70
200	267	257	90	79	5	172	220	340	480	465 320 70
210	280	257	100	79	5	172	231	340	480	465 320 70
220	294	256	105	78	5	172	242	340	480	465 320 70
230	307	255	110	77	5	172	253	340	480	465 320 70
240	320	254	120	76	5	172	264	340	480	465 320 70
250	334	254	125	76	5	172	275	340	480	465 320 70
260	347	253	135	75	5	172	286	340	480	465 320 70
270	360	252	140	74	5	172	296	340	480	465 320 70
280	374	251	150	73	5	172	308	340	480	465 320 70
290	387	251	155	73	5	172	318	340	480	465 320 70
300	400	250	165	72	5	172	328	340	480	465 320 70
310	414	249	170	71	5	172	340	340	480	465 320 70
320	427	248	180	71	5	172	351	340	480	465 320 70
330	440	248	185	70	5	172	362	340	480	465 320 70
340	454	247	190	69	5	172	373	340	480	465 320 70
350	467	246	200	68	5	172	384	340	480	465 320 70
360	480	246	205	68	5	172	395	340	480	465 320 70
370	494	245	215	67	5	172	406	340	480	465 320 70
380	507	244	220	66	5	172	416	340	480	465 320 70
390	520	243	230	66	5	172	427	340	480	465 320 70
400	534	243	235	65	5	172	439	340	480	465 320 70
410	547	242	245	64	5	172	450	340	480	465 320 70
420	560	200	250	63	5	172	461	340	480	465 320 70
430	574	202	255	62	5	172	471	340	480	465 320 70
440	587	201	265	62	5	172	482	340	480	465 320 70
450	600	200	275	61	5	172	493	340	480	465 320 70
460	614	200	280	60	5	172	505	340	480	465 320 70
470	627	199	285	60	5	172	515	340	480	465 320 70
480	641	198	295	59	5	172	527	340	480	465 320 70
490	654	198	300	58	5	172	537	340	480	465 320 70
500	667	197	305	57	5	172	548	340	480	465 320 70
510	680	196	315	57	5	172	559	340	480	465 320 70
520	695	195	325	56	5	172	571	340	480	465 320 70
530	708	195	330	55	5	172	582	340	480	465 320 70
540	720	194	335	54	5	172	592	340	480	465 320 70
550	734	193	345	54	5	172	604	340	480	465 320 70
560	747	192	350	53	5	172	613	340	480	465 320 70
570	761	192	360	52	5	172	625	340	480	465 320 70
580	774	191	365	51	5	172	636	340	480	465 320 70
590	787	190	375	51	5	172	647	340	480	465 320 70
600	800	190	380	50	5	172	658	340	480	465 320 70
610	815	189	390	49	5	172	670	340	480	465 320 70

SIZE 59 to 62										
TRAVEL	A	B	B2	B3	C	D	E	F	G	YY P
180	240	2870	75	910	180	197	380	560	530	320 120
190	254	2865	80	900	180	209	380	560	530	320 120
200	267	2855	90	895	172	220	380	560	530	320 120
210	280	2850	95	890	172	231	380	560	530	320 120
220	294	2840	105	880	172	242	380	560	530	320 120
230	307	2835	110	875	172	252	380	560	530	320 120
240	320	2825	120	865	164	263	380	560	530	320 120
250	334	2820	125	860	164	275	380	560	530	320 120
260	347	2810	135	850	164	286	380	560	530	320 120
270	360	2805	140	845	164	296	380	560	530	320 120
280	374	2795	150	835	164	308	380	560	530	320 120
290	387	2790	155	830	164	318	380	560	530	320 120
300	400	2785	160	820	164	328	380	560	530	320 120
310	414	2775	170	815	164	340	380	560	530	320 120
320	427	2770	175	810	166	351	380	560	530	320 120
330	440	2760	185	800	166	362	380	560	530	320 120
340	454	2755	190	795	166	373	380	560	530	320 120
350	467	2745	200	785	166	384	380	560	530	320 120
360	480	2740	205	780	166	395	380	560	530	320 120
370	494	2730	215	770	166	406	380	560	530	320 120
380	507	2725	220	765	166	416	380	560	530	320 120
390	520	2720	225	760	166	427	380	560	530	320 120
400	534	2710	235	750	166	439	380	560	530	320 120
410	547	2705	240	745	166	450	380	560	530	320 120
420	560	2465	250	735	166	461	380	560	545	320 120
430	574	2455	255	725	166	471	380	560	555	320 120
440	587	2450	260	720	166	482	380	560	570	320 120
450	600	2440	270	710	166	493	380	560	575	320 120
460	614	2430	280	705	166	505	380	560	645	320 120
470	627	2420	285	700	166	515	380	560	660	320 120
480	641	2420	295	690	166	527	380	560	610	320 120
490	654	2410	300	685	166	539	380	560	620	320 120
500	667	2405	305	675	166	548	380	560	630	320 120
510	680	2400	315	670	166	559	380	560	645	320 120
520	695	2390	325	660	166	571	380	560	665	320 120
530	708	2385	330	655	166	582	380	560	665	320 120
540	720	2380	335	645	166	592	380	560	675	320 120
550	734	2370	345	640	166	604	380	560	690	320 120
560	747	2360	350	630	166	613	380	560	700	320 120
570	761	2355	360	625	166	625	380	560	710	320 120
580	774	2345	365	615	166	636	380	560	720	320 120
590	787	2340	375	610	166	647	380	560	730	320 120
600	801	2335	380	605	166	658	380	560	740	320 120
610	815	2325	390	595	166	670	380	560	750	320 120

CONSTANT LOAD SUPPORT MODELS C53

SECTION E

26



ROD LENGTHS ADD B OR
SUBSTRACT B1.

ROD TAKE OUT CALCULATED WHEN
LOAD ARM IS IN HIGH POSITION.

WHEN USING B FOR UP TRAVEL,
ROD TAKE OUT EQUALS TOTAL
UP TRAVEL PLUS B.

WHEN USING B1 FOR UP TRAVEL,
ROD TAKE OUT EQUALS TOTAL
UP TRAVEL MINUS B1.

* ACCESS TO LOAD ADJUSTER

⊕ LONGER TOP RODS CAN BE
SUPPLIED ON REQUEST.

REV.	DATE	EDITED FOR :	DRAW.	REV.
1	21/07/10	GENERAL REVISION	DDG	EAR
0	20/10/98	INFORMATION	JMD	EAR

REV.	1	21/07/10	GENERAL REVISION	DDG	EAR
	0	20/10/98	INFORMATION	JMD	EAR
	DATE	EDITED FOR :		DRAW.	REV.

TABLE OF DIMENSIONS - SIZES 1 to 33

SIZE 1 to 6						
TRAVEL	A	B	B1	C	E	F YY
40	54		130	M12	105	140 65
50	67		125	M12	105	140 65
60	80		115	M12	105	140 65
70	94		110	M12	105	140 65
80	107		105	M12	105	140 65
90	120		95	M12	105	140 65
100	134		90	M12	105	140 65
110	147		80	M12	105	140 65
120	160		75	M12	105	140 65
130	174		65	M12	105	140 65
140	187		60	M12	105	140 65
150	200		50	M12	105	140 65
160	214		45	M12	105	140 65
170	227		35	M12	105	140 65
180	240		30	M12	105	140 65
190	254		25	M12	105	140 65
200	267		15	M12	105	140 65
210	280		10	M12	105	140 65
220	294		40	M12	105	140 105
230	307	45		M12	105	140 105
240	320	55		M12	105	140 105
250	334	60		M12	105	140 105
260	347	70		M12	105	140 105
270	360	75		M12	105	140 105
280	374	85		M12	105	140 105
290	387	90		M12	105	140 105
300	400	100		M12	105	140 105

SIZE 7 to 12						
TRAVEL	A	B	B1	C	E	F YY
40	54		115	M20	120	155 80
50	67		110	M16	120	155 80
60	80		100	M16	120	155 80
70	94		95	M16	120	155 80
80	107		90	M16	120	155 80
90	120		80	M12	120	155 80
100	134		70	M12	120	155 80
110	147		65	M12	120	155 80
120	160		60	M12	120	155 80
130	174		50	M12	120	155 80
140	187		45	M12	120	155 80
150	200		35	M12	120	155 80
160	214		30	M12	120	155 80
170	227		20	M12	120	155 80
180	240		15	M12	120	155 80
190	254		10	M12	120	155 80
200	267	-		M12	120	155 80
210	280	10		M12	120	155 80
220	294	40		M12	120	155 105
230	307	45		M12	120	155 105
240	320	55		M12	120	155 105
250	334	60		M12	120	155 105
260	347	70		M12	120	155 105
270	360	75		M12	120	155 105
280	374	85		M12	120	155 105
290	387	90		M12	120	155 105
300	400	100		M12	120	155 105
310	414	125		M12	120	155 125
320	427	135		M12	120	155 125
330	440	140		M12	120	155 125
340	454	145		M12	120	155 125
350	467	155		M12	120	155 125
360	480	160		M12	120	155 145
370	494	190		M12	120	155 145
380	507	195		M12	120	155 145
390	520	205		M12	120	155 145
400	534	210		M12	120	155 145
410	547	220		M12	120	155 145
420	560	225		M12	120	155 145

SIZE 13 to 18						
TRAVEL	A	B	B1	C	E	F YY
60	80		80	M20	155	190 100
70	94		75	M20	155	190 100
80	107		65	M20	155	190 100
90	120		60	M16	155	190 100
100	134		50	M16	155	190 100
110	147		45	M16	155	190 100
120	160		40	M16	155	190 100
130	174		30	M16	155	190 100
140	187		25	M16	155	190 100
150	200		15	M16	155	190 100
160	214		10	M12	155	190 100
170	227	-		M12	155	190 100
180	240	5		M12	155	190 100
190	254	15		M12	155	190 100
200	267	20		M12	155	190 100
210	280	30		M12	155	190 100
220	294	35		M12	155	190 100
230	307	40		M12	155	190 100
240	320	50		M12	155	190 100
250	334	55		M12	155	190 100
260	347	65		M12	155	190 100
270	360	100		M12	155	190 130
280	374	110		M12	155	190 130
290	387	115		M12	155	190 130
300	400	125		M12	155	190 130
310	414	130		M12	155	190 130
320	427	140		M12	155	190 130
330	440	145		M12	155	190 130
340	454	150		M12	155	190 130
350	467	160		M12	155	190 130
360	480	165		M12	155	190 130
370	494	195		M12	155	190 150
380	507	200		M12	155	190 150
390	520	210		M12	155	190 150
400	534	215		M12	155	190 150
410	547	225		M12	155	190 150
420	560	230		M12	155	190 150

SIZE 19 to 26						
TRAVEL	A	B	B1	C	E	F YY
60	80		120	M30	190	240 110
70	94		115	M30	190	240 110
80	107		105	M24	190	240 110
90	120		100	M24	190	240 110
100	134		90	M24	190	240 110
110	147		85	M24	190	240 110
120	160		80	M20	190	240 110
130	174		70	M20	190	240 110
140	187		65	M20	190	240 110
150	200		55	M20	190	240 110
160	214		50	M20	190	240 110
170	227		40	M20	190	240 110
180	240		35	M16	190	240 110
190	254		30	M16	190	240 110
200	267		20	M16	190	240 110
210	280		15	M16	190	240 110
220	294		5	M16	190	240 110
230	307	-		M16	190	240 110
240	320	10		M16	190	240 110
250	334	15		M16	190	240 110
260	347	25		M16	190	240 110
270	360	30		M16	190	240 110
280	374	40		M16	190	240 110
290	387	45		M16	190	240 110
300	400	55		M16	190	240 110
310	414	60		M16	190	240 110
320	427	70		M16	190	240 110
330	440	75		M12	190	240 110
340	454	80		M12	190	240 110
350	467	90		M12	190	240 110
360	480	95		M12	190	240 110
370	494	145		M12	190	240 150
380	507	150		M12	190	240 150
390	520	160		M12	190	240 150
400	534	165		M12	190	240 150
410	547	175		M12	190	240 150
420	560	210		M12	190	240 180
430	574	220		M12	190	240 180
440	587	225		M12	190	240 180
450	600	230		M12	190	240 180
460	614	240		M12	190	240 180
470	627	245		M12	190	240 180
480	641	255		M12	190	240 180
490	654	260		M12	190	240 180
500	667	270		M12	190	240 180

SIZE 27 to 33						
TRAVEL	A	B	B1	C	E	F YY
70	94		95	M38	235	300 130
80	107		85	M38	235	300 130
90	120		80	M38	235	300 130
100	134		70	M38	235	300 130
110	147		65	M30	235	300 130
120	160		60	M30	235	300 130
130	174		50	M30	235	300 130
140	187		45	M30	235	300 130
150	200		35	M30	235	300 130
160	214		30	M30	235	300 130
170	227		20	M24	235	300 130
180	240		15	M24	235	300 130
190	254		10	M24	235	300 130
200	267	-	-	M24	235	300 130
210	280	10		M24	235	300 130
220	294	15		M24	235	300 130
230	307	20		M24	235	300 130
240	320	30		M20	235	300 130
250	334	35		M20	235	300 130
260	347	45		M20	235	300 130
270	360	50		M20	235	300 130
280	374	60		M20	235	300 130
290	387	65		M20	235	300 130
300	400	70		M20	235	300 130
310	414	80		M20	235	300 130
320	427	90		M20	235	300 130
330	440	95		M20	235	300 130
340	454	100		M20	235	300 130
350	467	110		M20	235	300 130
360	480	115		M20	235	300 130
370	494	165		M20	235	300 170
380	507	170		M20	235	300 170
390	520	180		M20	235	300 170
400	534	185		M20	235	300 170
410	547	195		M20	235	300 170
420	560	200		M20	235	300 170
430	574	210		M20	235	300 170
440	587	215		M20	235	300 170
450	600	220		M20	235	300 170
460	614	230		M20	235	300 170
470	627	235		M20	235	300 170
480	641	245		M20	235	300 170
490	654	250		M20	235	300 170
500	667	260		M20	235	300 170

CONSTANT LOAD SUPPORT MODELS C53

SECTION E

28

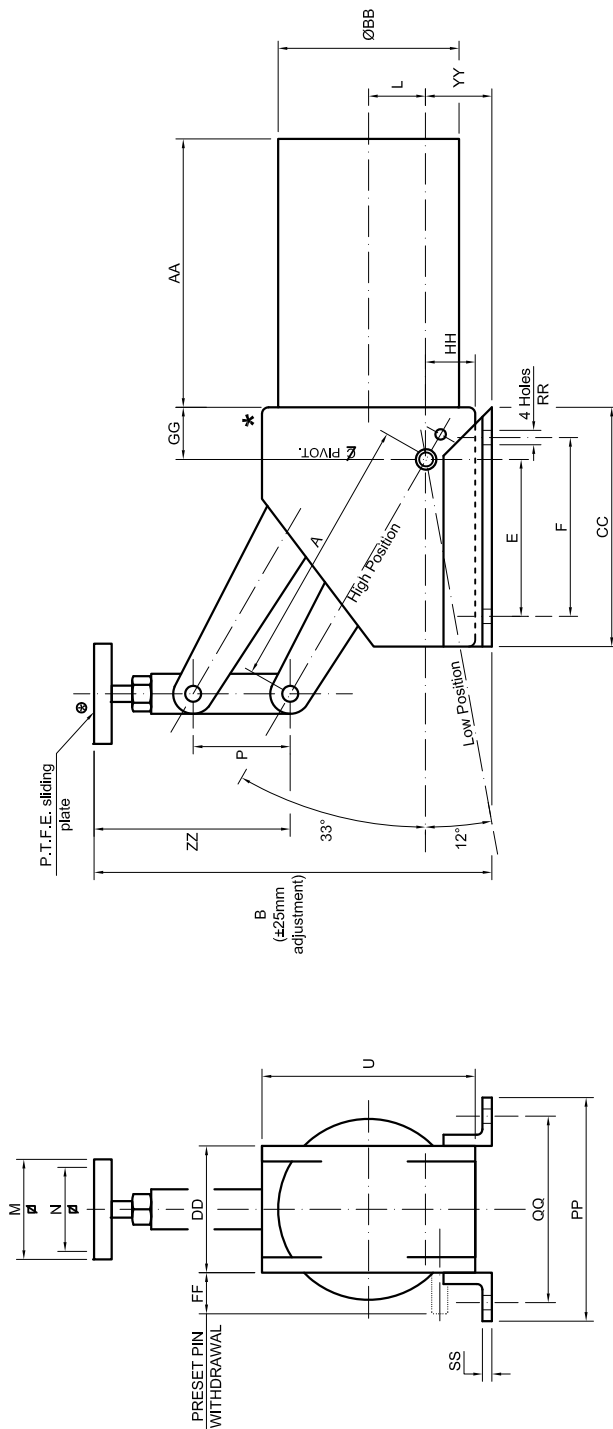
TABLE OF DIMENSIONS - SIZES 34 to 66

SIZE 34 to 39										SIZE 40 to 47										SIZE 48 to 54										SIZE 55 to 58										SIZE 59 to 62										SIZE 63 to 66																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
TRAVEL	A	B	B1	C	E	F	YY	TRAVEL	A	B	B1	C	E	F	YY	TRAVEL	A	B	C	E	F	YY	TRAVEL	A	B	C	E	F	YY	TRAVEL	A	B	C	E	F	YY	TRAVEL	A	B	C	E	F	YY																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
90	120	55	M48	290	365	155		110	147	55	M64	355	455	190		110	147	25	M60	340	480	320																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									

CONSTANT LOAD SUPPORT MODELS C54

SECTION E

29



HEIGHT B CALCULATED WHEN LOAD
ARM IS IN HIGH POSITION. FOR UP
TRAVEL, INSTALLED HEIGHT
EQUALS B MINUS UP TRAVEL.

* ACCESS TO LOAD ADJUSTER

⊗ P.T.F.E. LOW FRICTION PAD
(SLIDING)

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CONSTANT LOAD SUPPORT MODELS C54

SECTION E

30

TABLE OF DIMENSIONS

SIZE 1 to 6						SIZE 7 to 12					
TRAVEL	A	B	E	F	YY	TRAVEL	A	B	E	F	YY
40	54	325	105	140	65	40	54	370	120	155	80
50	67	330	105	140	65	50	67	375	120	155	80
60	80	340	105	140	65	60	80	385	120	155	80
70	94	345	105	140	65	70	94	390	120	155	80
80	107	355	105	140	65	80	107	400	120	155	80
90	120	360	105	140	65	90	120	405	120	155	80
100	134	370	105	140	65	100	134	415	120	155	80
110	147	375	105	140	65	110	147	420	120	155	80
120	160	380	105	140	65	120	160	425	120	155	80
130	174	390	105	140	65	130	174	435	120	155	80
140	187	400	105	140	65	140	187	440	120	155	80
150	200	405	105	140	65	150	200	450	120	155	80
160	214	410	105	140	65	160	214	455	120	155	80
170	227	420	105	140	65	170	227	465	120	155	80
180	240	425	105	140	65	180	240	470	120	155	80
190	254	435	105	140	65	190	254	480	120	155	80
200	267	440	105	140	65	200	267	485	120	155	80
210	280	450	105	140	65	210	280	495	120	155	80
220	294	455	105	140	105	220	294	525	120	155	105
230	307	500	105	140	105	230	307	530	120	155	105
240	320	510	105	140	105	240	320	540	120	155	105
250	334	515	105	140	105	250	334	545	120	155	105
260	347	525	105	140	105	260	347	555	120	155	105
270	360	530	105	140	105	270	360	560	120	155	105
280	374	540	105	140	105	280	374	570	120	155	105
290	387	545	105	140	105	290	387	575	120	155	105
300	400	555	105	140	105	300	400	580	120	155	105

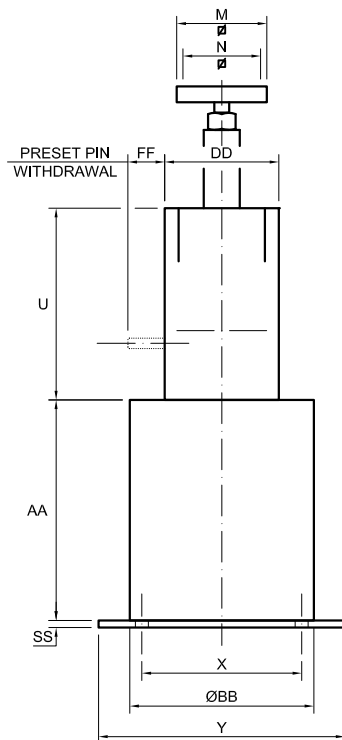
SIZE 13 to 18										
TRAVEL	A	B	E	F	YY					
60	80	460	155	190	100					
70	94	475	155	190	100					
80	107	485	155	190	100					
90	120	490	155	190	100					
100	134	490	155	190	100					
110	147	495	155	190	100					
120	160	500	155	190	100					
130	174	510	155	190	100					
140	187	515	155	190	100					
150	200	525	155	190	100					
160	214	530	155	190	100					
170	227	540	155	190	100					
180	240	545	155	190	100					
190	254	555	155	190	100					
200	267	560	155	190	100					
210	280	570	155	190	100					
220	294	575	155	190	100					
230	307	580	155	190	100					
240	320	590	155	190	100					
250	334	595	155	190	100					
260	347	605	155	190	100					
270	360	640	155	190	130					
280	374	650	155	190	130					
290	387	655	155	190	130					
300	400	665	155	190	130					
310	414	670	155	190	130					
320	427	680	155	190	130					
330	440	685	155	190	130					
340	454	690	155	190	130					
350	467	700	155	190	130					
360	480	705	155	190	130					

SIZE 27 to 33											
TRAVEL	A	B	E	F	YY						

CONSTANT LOAD SUPPORT MODELS C55

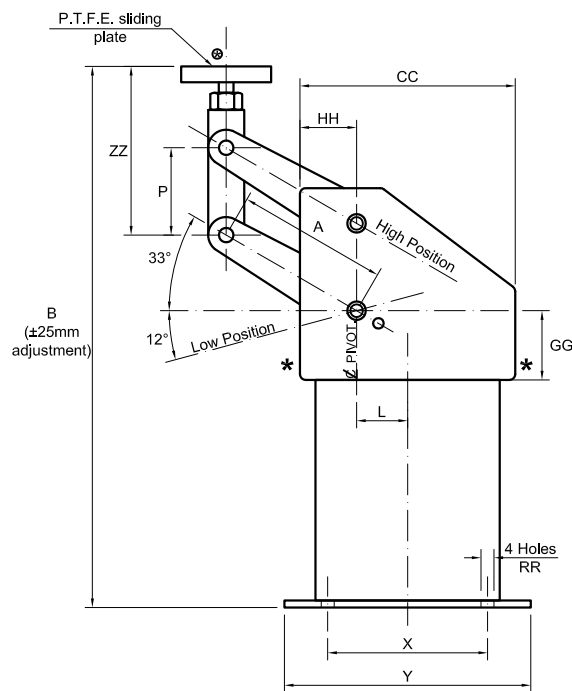
SECTION E

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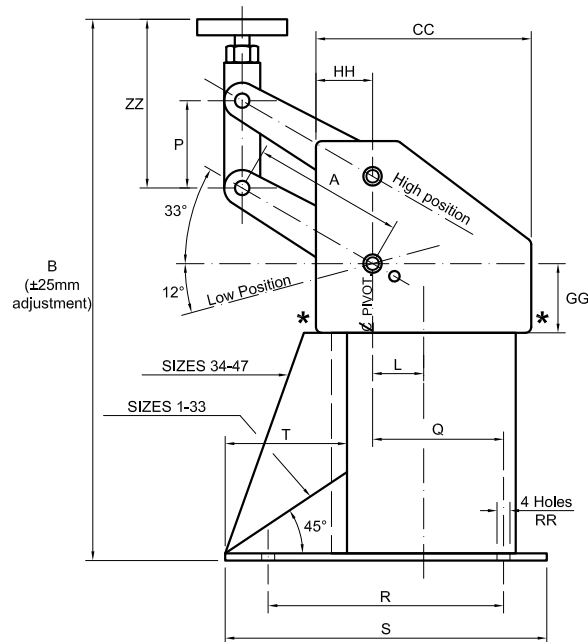
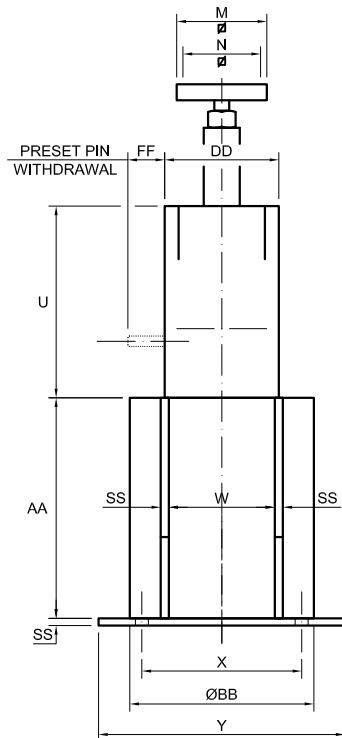
⊗ P.T.F.E. LOW FRICTION PAD (SLIDING)

* ACCESS TO LOAD ADJUSTER



SQUARE BASE PLATE USED FOR TRAVELS UP TO AND INCLUDING 150 mm.

HEIGHT B CALCULATED WHEN LOAD ARM IS IN HIGH POSITION. FOR UP TRAVEL, INSTALLED HEIGHT EQUALS B MINUS UP TRAVEL.



EXTENDED BASE PLATE USED FOR TRAVELS OVER 150 mm.

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CONSTANT LOAD SUPPORT MODELS C55

SECTION E

32

TABLE OF DIMENSIONS

SIZE 1 to 6		
TRAVEL	A	B
40	54	570
50	67	580
60	80	585
70	94	595
80	107	600
90	120	605
100	134	615
110	147	620
120	160	630
130	174	640
140	187	645
150	200	650
160	214	660
170	227	665
180	240	670
190	254	680
200	267	685
210	280	695
220	294	700
230	307	710
240	320	715
250	334	725
260	347	730
270	360	735
280	374	745
290	387	750
300	400	760

SIZE 7 to 12		
TRAVEL	A	B
40	54	660
50	67	670
60	80	675
70	94	685
80	107	690
90	120	695
100	134	705
110	147	710
120	160	720
130	174	725
140	187	735
150	200	740
160	214	750
170	227	755
180	240	760
190	254	770
200	267	775
210	280	785
220	294	790
230	307	800
240	320	805
250	334	815
260	347	820
270	360	825
280	374	835
290	387	840
300	400	850

SIZE 13 to 18		
TRAVEL	A	B
60	80	790
70	94	800
80	107	805
90	120	815
100	134	820
110	147	830
120	160	835
130	174	845
140	187	850
150	200	855
160	214	865
170	227	870
180	240	880
190	254	885
200	267	895
210	280	900
220	294	910
230	307	915
240	320	920
250	334	930
260	347	935
270	360	945
280	374	950
290	387	960
300	400	965
310	414	975
320	427	980
330	440	990
340	454	995
350	467	1000
360	480	1010

SIZE 19 to 26		
TRAVEL	A	B
60	80	925
70	94	935
80	107	940
90	120	950
100	134	955
110	147	965
120	160	970
130	174	980
140	187	985
150	200	990
160	214	1000
170	227	1005
180	240	1015
190	254	1020
200	267	1030
210	280	1035
220	294	1045
230	307	1050
240	320	1060
250	334	1065
260	347	1070
270	360	1080
280	374	1085
290	387	1095
300	400	1100
310	414	1110
320	427	1115
330	440	1125
340	454	1130
350	467	1140
360	480	1145
370	494	1150
380	507	1160
390	520	1165
400	534	1175
410	547	1180
420	560	1190
430	574	1195
440	587	1205
450	600	1210
460	614	1215
470	627	1225
480	641	1230
490	654	1240
500	667	1245

SIZE 27 to 33		
TRAVEL	A	B
70	94	1265
80	107	1275
90	120	1280
100	134	1290
110	147	1295
120	160	1300
130	174	1310
140	187	1315
150	200	1325
160	214	1330
170	227	1340
180	240	1345
190	254	1355
200	267	1360
210	280	1370
220	294	1375
230	307	1380
240	320	1390
250	334	1395
260	347	1405
270	360	1410
280	374	1420
290	387	1425
300	400	1435
310	414	1440
320	427	1450
330	440	1455
340	454	1460
350	467	1470
360	480	1475
370	494	1485
380	507	1490
390	520	1500
400	534	1505
410	547	1515
420	560	1520
430	574	1530
440	587	1535
450	600	1540
460	614	1550
470	627	1555
480	641	1565
490	654	1570
500	667	1580

SIZE 34 to 39		
TRAVEL	A	B
90	120	1575
100	134	1585
110	147	1590
120	160	1595
130	174	1605
140	187	1610
150	200	1620
160	214	1625
170	227	1635
180	240	1640
190	254	1650
200	267	1655
210	280	1665
220	294	1670
230	307	1675
240	320	1685
250	334	1690
260	347	1700
270	360	1705
280	374	1715
290	387	1720
300	400	1730
310	414	1735
320	427	1745
330	440	1750
340	454	1755
350	467	1765
360	480	1770
370	494	1780
380	507	1785
390	520	1795
400	534	1800
410	547	1810
420	560	1820
430	574	1830
440	587	1835
450	600	1840
460	614	1850
470	627	1855
480	641	1865
490	654	1870
500	667	1880
510	680	1885
520	695	1895
530	708	1900
540	720	1905
550	734	1915
560	747	1920
570	761	1930
580	774	1935
590	787	1945
600	800	1950
610	815	1960

SIZE 40 to 47		
TRAVEL	A	B
110	147	2080
120	160	2085
130	174	2095
140	187	2100
150	200	2105
160	214	2115
170	227	2120
180	240	2130
190	254	2135
200	267	2145
210	280	2150
220	294	2160
230	307	2165
240	320	2170
250	334	2180
260	347	2185
270	360	2195
280	374	2200
290	387	2210
300	400	2215
310	414	2225
320	427	2230
330	440	2240
340	454	2245
350	467	2250
360	480	2260
370	494	2275
380	507	2285
390	520	2290
400	534	2295
410	547	2300
420	560	2300
430	574	2310
440	587	2320
450	600	2325
460	614	2330
470	627	2340
480	641	2345
490	654	2355
500	667	2360
510	680	2365
520	695	2375
530	708	2385
540	720	2390
550	734	2400
560	747	2405
570	761	2410
580	774	2420
590	787	2425
600	800	2435
610	815	2440

CONSTANT SUPPORT 1 to 47												
-	1-6	7-12	13-18	19-26	27-33	34-39	40-44	45-47				
AA	250	300	350	400	600	750	1100	1100				
BB	150	220	295	330	390	440	525	525				
CC	180	215	270	325	405	495	640	640				
DD	115	120	135	150	180	225	280	280				
FF	135	140	160	175	215	270	330	330				
GG	55	65	75	95	115	145	198	198				
HH	55	65	75	95	115	145	180	180				
RR	14	18	22	22	22	27	33	33				
SS	6	6	8	8	10	10	15	15				
ZZ	230	260	315	380	490	610	685	685				
L	33	38	65	66	83	100	121	165				
M	80	100	130	150	180	200	230	230				
N	75	95	120	145	175	195	225	225				
P	105	120	155	190	240	295	390	390				
Q	100	130	195	215	225	285	360	405				
R	180	255	370	395	510	510	740	740				
S	220	305	420	460	585	610	840	840				
T	80	100	170	180	230	170	300	300				
U	180	215	270	325	405	495	640	640				
W	102	127	203	254	305	206	257	257				
X	170	230	280	355	410	460	560	560				
Y	210	280	330	420	485	560	660	660				

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APROXIMATE WEIGHTS OF CONSTANT LOAD SUPPORTS

SECTION E

33

APROXIMATE WEIGHTS BY SIZE

SIZE	WEIGHT (Kg)
1	13
2	13
3	13
4	15
5	15
6	15
7	23
8	23
9	23
10	24
11	26
12	26
13	45
14	45
15	45
16	54
17	54
18	54
19	72
20	72
21	80
22	80
23	85
24	85
25	85
26	85
27	146
28	146
29	146
30	146
31	158
32	168
33	168

SIZE	WEIGHT (Kg)
34	275
35	275
36	275
37	357
38	369
39	369
40	627
41	627
42	627
43	627
44	627
45	783
46	783
47	945
48	945
49	945
50	960
51	960
52	960
53	960
54	960
55	1140
56	1140
57	1140
58	1140
59	1185
60	1185
61	1185
62	1185
63	1320
64	1320
65	1320
66	1320

VALID WEIGHTS FOR ANY SIZE AND TYPE

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