

Model R Fig. 80-V, C-80-V Vertical Constant Support Model R Fig. 81-H, C-81-H Horizontal Constant Support



Model R Fig. 80-V, Vertical

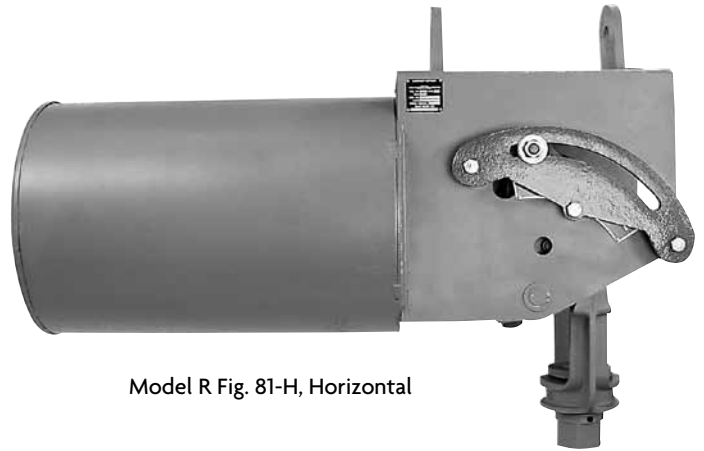
Finish: Standard finish; painted with semi gloss primer. Corrosion resistant; galvanized with coated coil or painted with CZ11 and coated coil.

Recommended Service: When piping stress is critical and pipe is subject to vertical movement in excess of 1/2" due to thermal expansion, and also at locations where it is necessary to avoid any transfer of stress from support or onto critical terminals or connecting equipment.

Approvals: WW-H-171E (Types 52, 58 and 59), ANSI/MSS SP-69 and MSS SP-58 (Types 54, 55 and 56).

Features:

- Because of exclusive geometric design, mathematically perfect constancy of support is maintained throughout the full range of load adjustment.
- Compactness – design provides smaller and more versatile units.
- Increased load and travel capacity.
- Each hanger is individually calibrated before shipment to support the exact load specified.
- All model R constant supports have a wide range of load adjustability. No less than 10% of this adjustability is provided either side of the calibrated load.
- White button marked "C" denotes cold setting of hanger; red button marked "H" denotes hot or operating setting.
- Field load adjustment is made by turning the single load adjustment bolt.
- Covered spring provides protection and good appearance.
- J-rod swings at least 4° from vertical.
- Non-resonant to all vertical vibrations.



Model R Fig. 81-H, Horizontal

Size Range: Anvil Model R constant support hangers are made in two basic designs, 80- V (vertical design) and 81-H (horizontal design). Combined, the 80-V and 81-H constant supports are made in nine different frame sizes and 110 spring sizes to accommodate travels from 1 1/2" to 20" and loads from 27 lbs to 87,500 lbs.

Single rod suspension: Available in Types A, B and C, Fig. 80-V (see page 190 through 192) and Fig. 81-H (see page 198 through 200).

How to select hanger sizes: Determine the total load to be supported by the hanger as well as the actual travel – that is, the actual vertical movement of the pipe at the point of hanger location. Refer to the Load-Travel table for constant support hangers (see page 186 through 189) and select a size hanger which will accommodate the known load and actual travel. It must be noted that the travel shown in the table is a total travel – that is, the maximum vertical movement which the hanger will accommodate. The total travel of the hanger should always be greater than the calculated travel of pipe line to allow for some discrepancy between calculated travel and actual travel.

It is suggested that the total travel for constant supports should be equal to "actual travel" plus 1" or 20% whichever is greater.

How to determine type: After the size of the constant support is determined, consideration of available room for suspending the pipe and hanger will indicate whether a vertical (80-V series, page 190 - 197) or horizontal (81-H series, page 198 - 204) hanger is desirable.

How to determine design: After the hanger size and design are determined, the type of constant support to be used depends upon the physical installation required by the suspension problem, i.e., whether the hanger is to be installed above, between or below steel members (see line cuts referring to Types A, B, C, etc.). It will be noted that the Type F is made in horizontal design only and the type G is made in the vertical design only. **Special constant support hangers can be fabricated for unusual conditions.**

J-rod and K-hole diameter: Tapping or drilling for standard rod size will be furnished as shown in the J-rod and K-hole selection charts unless otherwise specified. Upper attachments, turnbuckles and clamps should be tapped to agree with the rod as shown in the selection chart. Standard rod diameters are based on the load to be carried by the upper rod which includes the weight of the hanger assembly as well as the pipe line. Tapped connections for hanger rod sizes 3" and smaller are UNC-Thread Series, Class 2 fit. 3 1/4" and large rod tappings are 8UN Series Threads.

Model R

(Continued)

Ordering: Specify:

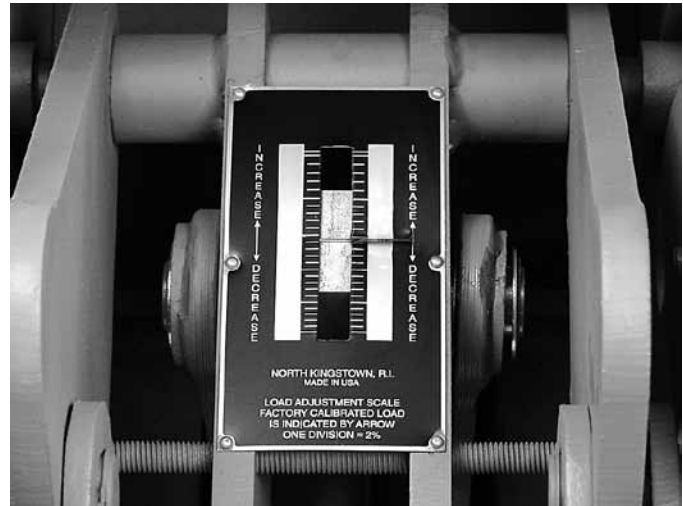
- (1) Hanger size number
- (2) Figure number
- (3) Type
- (4) Name of hanger
- (5) Loads to be supported (pounds)
- (6) Total travel (inches)
- (7) Actual travel (inches)
- (8) Direction of movement "cold to hot"
- (9) Customer's hanger mark.
- (10) When ordering Type G, specify C-C rod dimension as well as load per spring and total load.
- (11) For Types A, B, C, Fig. 81-H when required specify "for single rod suspension."
- (12) Constant Support Hangers are also available corrosion-resistant as figures C-80-V and C-81-H.

Installation:

- (1) Securely attach the hanger to the building structure at a point where the load coupling is directly over the desired point of attachment to the pipe in the operating position.
- (2) Make certain that the moving parts of the hanger will be unobstructed.
- (3) Attach the lower J-rod between the pipe attachment and the load coupling. Make certain that the lower J-rod has enough thread engagement before taking up the load. A sight hole is provided for this.
- (4) Turn the load coupling, as you would a turnbuckle, until the travel indicator rotates to the desired cold setting (white button) marked "C" indicated on the position scale. If the constant support incorporates a travel stop see below.
- (5) After the line is in operation, check hanger for indicated hot setting. If necessary, make adjustment by turning the load coupling to bring the indicator to the hot position (red button) marked "H". No other adjustment is normally required since the load as calibrated at the factory is equal to the load specified to be supported.

Adjustment: When the hanger is installed, its supporting force should be in balance with the portion of the piping weight assigned to it. Each hanger is individually calibrated before shipment to support the exact load specified. All model "R" Constant Supports have a wide range of load adjustability. Special instructions for field recalibration of individual hangers may be obtained from Anvil representatives. No less than 10% adjustability is provided either side of the calibrated load for plus or minus field load adjustment. The percentage increase or decrease from the factory calibrated load should be carefully calculated. The calibrated load setting of each hanger is indicated by a die-stamp on the load adjustment scale. Load adjustments should be made from this reference point, with each division on the patented scale equal to 2% except sizes 84-110 where each division is valued at 1%. The load adjustment is made by turning the single load adjustment bolt. For example, a calibrated load of 3,000 pounds revised to 2,760 pounds is a decrease of 240 pounds. $240/3,000 = 8\%$. By turning the load adjusting bolt the arrow moves in the "Decrease" direction four divisions.

Note: Field Recalibration of load does not decrease total travel.



Load adjustment scale shown applies to size 1 through 83 only. The load adjustment scale for sizes 84 through 110 1 division equals 1%.

Travel stop: The functional design of the Constant Support Hanger permits the incorporation of a travel stop that will lock the hanger against upward or downward movement for temporary conditions of underload or overload, such as may exist during erection, hydrostatic test or chemical clean-out. Anvil Constant Supports are designed for hydrostatic test load of at least 2 times the normal operating load for the Constant Support. The travel stop for sizes 19 - 110 consists of two plates, with matched serrations, attached to the hanger frame with two or more cap screws and with a socketed piece which engages the position indicator. It is installed at the factory to hold the hanger in the "cold" position. A series of serrations can be engaged to lock the hanger at any position along the total travel range. The travel stop, which is furnished only when specified, is painted red. The stop must be removed before the piping system is put into operation, but not before the hanger is installed and fully loaded. The travel stop is released by removing the cap screws. A tag marked "Caution" and containing instructions for removal of the travel stop is attached to the hanger.

Note: See installation procedures PE-217-80 for a travel stop description on sizes 1-18.



Model R

(Continued)

Model R lifting lugs:

To help alleviate the problem of lifting large size Constant Supports into position for installation, this product is available with lifting lugs (if requested) on sizes ten and larger.

Lifting Lugs (Figure 81-H): Not available on Type F.

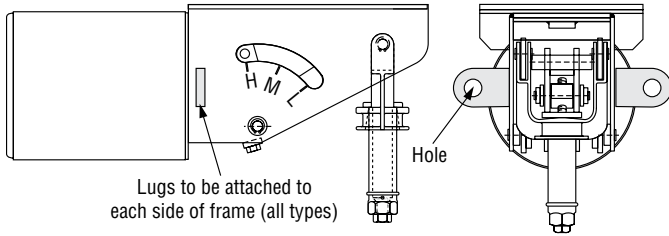
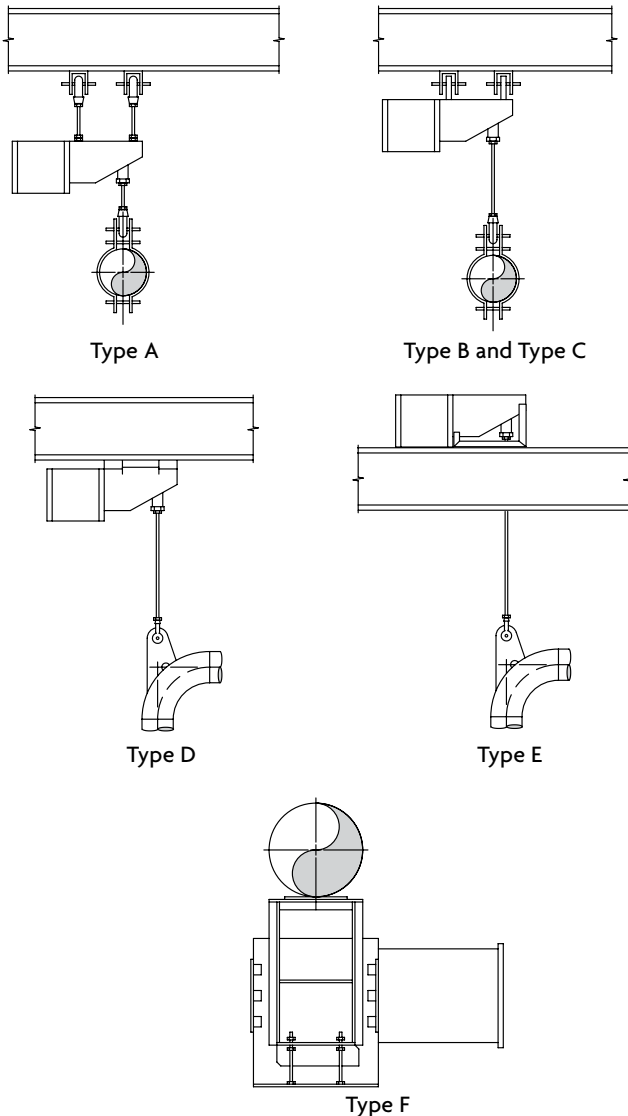
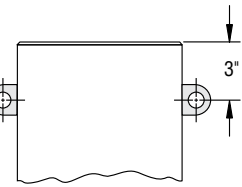


Fig. 81-H (Horizontal): Typical Applications

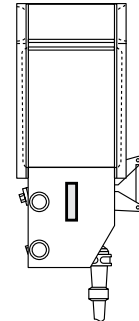
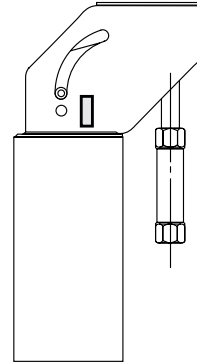


Lifting Lugs (Fig 80-V):

LUGS TO BE 90° FROM CHANNEL ON TYPE D



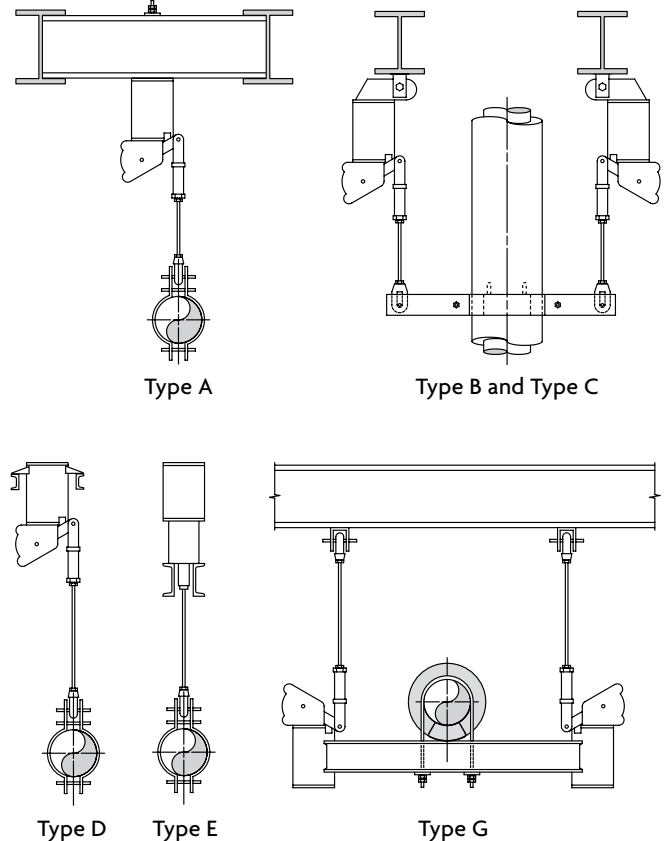
Types A, B, C, D, & E
sizes 10 thru 63



sizes 84 thru 110

sizes 64 thru 83
Lugs to be attached to each side of frame and will need stabilizing rigging when being lifted

Fig. 80V (Vertical): Typical Applications



- Straps
- Pipe Supports
- Trapeze
- Pipe Shields & Saddles
- Pipe Roll
- Pipe Guides & Slides
- Sway Brace Seismic
- Spring Hangers
- Constant Supports
- Vibration Control & Sway Brace
- Sway Strut Assembly
- Snubbers
- Special Design Products
- Application Examples
- Master Format 3 Part Specs.
- Technical Data
- Index

CONSTANT SUPPORTS

Table Continued on Facing Page

Hanger Size No.	TOTAL TRAVEL* (IN); LOAD (LBS) SEE NOTES ON PAGE 189															
	9	9½	10	10½	11	11½	12	12½	13	13½	14	14½	15	15½	16	
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																
17																
18																
19	423	401	381													
	450	426	405													
20	477	452	429													
21	519	492	467													
22	561	532	505													
23	602	571	542													
24	647	613	582													
25	691	655	622													
26	736	697	662													
27	807	764	726													
28	878	832	790													
29	949	899	854													
30	1,008	955	907													
31	1,066	1,009	959													
32	1,124	1,065	1,012													
33	1,177	1,115	1,059													
34	1,228	1,163	1,105													
35	1,304	1,236	1,174	1,053	1,005	962	922	885	851	819	790					
				1,118	1,067	1,021	978	939	903	870	838					
36	1,380	1,307	1,242	1,183	1,129	1,080	1,035	994	955	920	887					
37	1,456	1,379	1,310	1,248	1,191	1,139	1,092	1,048	1,008	970	936					
38	1,560	1,478	1,404	1,337	1,276	1,221	1,170	1,123	1,080	1,040	1,003					
39	1,663	1,576	1,497	1,426	1,361	1,302	1,247	1,198	1,151	1,109	1,069					
40	1,767	1,674	1,590	1,514	1,445	1,383	1,325	1,272	1,223	1,178	1,136					
41	1,938	1,836	1,744	1,661	1,585	1,516	1,453	1,395	1,341	1,292	1,246					
42	2,108	1,997	1,897	1,807	1,724	1,649	1,581	1,518	1,459	1,405	1,355					
43	2,278	2,158	2,050	1,952	1,863	1,782	1,708	1,640	1,577	1,518	1,464					
44	2,423	2,296	2,181	2,077	1,983	1,896	1,817	1,745	1,678	1,615	1,558					
45	2,579	2,443	2,321	2,210	2,110	2,018	1,934	1,857	1,785	1,719	1,658					
46	2,711	2,568	2,440	2,324	2,218	2,122	2,033	1,952	1,877	1,807	1,743					
47	2,882	2,730	2,594	2,470	2,358	2,255	2,162	2,075	1,995	1,921	1,853					
48	3,052	2,891	2,747	2,616	2,497	2,389	2,289	2,198	2,113	2,035	1,962					
49	3,222	3,053	2,900	2,762	2,636	2,522	2,417	2,320	2,231	2,148	2,071					
50	3,456	3,274	3,110	2,962	2,827	2,704	2,592	2,488	2,392	2,304	2,221	2,001	1,934	1,871	1,813	
												2,145	2,073	2,006	1,944	
51	3,689	3,495	3,320	3,162	3,018	2,887	2,767	2,656	2,554	2,459	2,371	2,289	2,213	2,142	2,075	
52	3,949	3,741	3,554	3,384	3,231	3,090	2,962	2,843	2,734	2,632	2,538	2,451	2,369	2,293	2,221	
53	4,208	3,986	3,787	3,606	3,442	3,293	3,156	3,030	2,913	2,805	2,705	2,612	2,524	2,443	2,367	
54	4,467	4,231	4,020	3,828	3,654	3,495	3,350	3,216	3,092	2,978	2,871	2,772	2,680	2,593	2,513	
55	4,904	4,646	4,414	4,203	4,012	3,838	3,678	3,531	3,395	3,269	3,152	3,044	2,942	2,847	2,759	
56	5,341	5,060	4,807	4,518	4,370	4,180	4,006	3,846	3,698	3,561	3,433	3,315	3,204	3,101	3,004	
57	5,778	5,474	5,200	4,952	4,727	4,521	4,333	4,160	4,000	3,852	3,714	3,586	3,466	3,355	3,250	
58	6,141	5,818	5,527	5,263	5,024	4,806	4,606	4,422	4,251	4,094	3,947	3,811	3,684	3,565	3,454	
59	6,503	6,161	5,853	5,574	5,320	5,089	4,877	4,682	4,502	4,335	4,180	4,036	3,902	3,776	3,658	
60	6,867	6,505	6,180	5,885	5,618	5,374	5,150	4,944	4,754	4,578	4,414	4,262	4,120	3,987	3,863	
61	7,297	6,912	6,567	6,254	5,969	5,710	5,472	5,254	5,051	4,864	4,690	4,529	4,378	4,236	4,104	
62	7,725	7,319	6,953	6,621	6,320	6,046	5,794	5,562	5,348	5,150	4,965	4,795	4,635	4,485	4,346	
63	8,154	7,725	7,339	6,989	6,671	6,381	6,116	5,871	5,645	5,436	5,242	5,061	4,892	4,734	4,587	
"B" (avg. in.)	8¼	8¾	9¼	9½	10½	10½	11	11½	12	12¾	12¾	13¾	13¾	14¼	14¼	

Shading in gray indicates this item is available upon request.



CONSTANT SUPPORTS

Table Continued on Facing Page

Hanger Size No.	TOTAL TRAVEL * (IN); LOAD (LBS)															
	12½	13	13½	14	14½	15	15½	16	16½	17	17½	18	18½	19	19½	20
64	6,152	5,915	5,696	5,492	5,303	5,126	4,961	4,806								
65	6,432	6,184	5,955	5,742	5,544	5,359	5,187	5,025								
66	7,062	6,790	6,538	6,304	6,087	5,884	5,694	5,517								
67	7,690	7,394	7,120	6,966	6,629	6,408	6,201	6,008								
68	8,320	8,000	7,703	7,428	7,172	6,933	6,709	6,500								
69	8,843	8,503	8,188	7,895	7,623	7,369	7,131	6,909								
70	9,366	9,005	8,671	8,361	8,073	7,804	7,552	7,317								
71	9,888	9,507	9,155	8,828	8,523	8,239	7,973	7,725								
72	10,507	10,103	9,728	9,380	9,057	8,755	8,473	8,209								
73	11,126	10,697	10,301	9,932	9,590	9,270	8,971	8,692								
74	11,744	11,292	10,873	10,484	10,123	9,786	9,470	9,175								
75	12,416	11,938	11,496	11,084	10,703	10,346	10,012	9,700								
76	13,088	12,584	12,118	11,684	11,282	10,906	10,554	10,225								
77	13,760	13,230	12,740	12,284	11,861	11,466	11,096	10,750								
78	14,507	13,949	13,432	12,951	12,505	12,088	11,698	11,334								
79	15,254	14,666	14,123	13,618	13,149	12,710	12,300	11,917								
80	16,000	15,384	14,814	14,284	13,792	13,332	12,902	12,500								
81	16,800	16,153	15,555	14,998	14,482	14,000	13,547	13,125								
82	17,600	16,922	16,295	15,712	15,171	14,665	14,192	13,750								
83	18,400	17,692	17,036	16,427	15,861	15,332	14,837	14,375								
84	19,680	18,922	18,221	17,569	16,964	16,398	15,869	15,375								
85	20,960	20,153	19,406	18,712	18,068	17,465	16,902	16,375								
86	22,160	21,307	20,517	19,783	19,102	18,465	17,869	17,313								
87	23,360	22,461	21,628	20,855	20,136	19,465	18,837	18,250								
88	24,560	23,614	22,739	21,926	21,171	20,465	19,805	19,188								
89	26,400	25,384	24,443	23,569	22,757	21,998	21,288	20,626								
90	29,440	28,307	27,258	26,283	25,377	24,531	23,740	23,000								
91	32,240	31,000	29,850	28,782	27,791	26,864	25,998	25,188								
92	35,280	33,922	32,665	31,496	30,411	29,397	28,449	27,563								
93	38,800	37,306	35,924	34,639	33,446	32,330	31,287	30,313								
94	42,400	40,768	39,257	37,583	36,549	35,330	34,190	33,125								
95	44,200	42,498	40,924	39,460	38,100	36,830	35,642	34,531	32,119	31,175	30,285	29,442	28,647	27,894	27,179	26,500
									33,482	32,498	31,570	30,691	29,863	29,078	28,332	27,625
96	46,000	44,230	42,590	41,067	39,652	38,330	37,093	35,938	34,845	33,822	32,856	31,941	31,080	30,262	29,486	28,750
97	47,800	45,960	44,257	42,673	41,204	39,829	39,545	37,344	36,209	35,145	34,141	33,191	32,295	31,446	30,640	29,875
98	49,600	47,690	45,923	44,280	42,755	41,329	40,000	38,750	37,572	36,468	35,427	34,441	33,511	32,631	31,794	31,000
99	51,600	49,613	47,775	46,066	44,479	42,996	41,609	40,313	39,087	37,939	36,855	35,830	34,862	33,946	33,076	32,250
100	53,600	51,536	49,627	47,851	46,203	44,662	43,221	41,875	40,602	39,409	38,284	37,219	36,214	35,262	34,358	33,500
101	55,600	53,459	51,479	49,637	47,927	46,329	44,834	43,438	42,117	40,880	39,712	38,607	37,565	36,578	35,640	34,750
102	57,600	56,382	53,330	51,422	49,651	47,995	46,447	45,000	43,632	42,350	41,141	39,996	38,916	37,894	36,922	36,000
103	60,200	57,882	55,738	53,744	51,892	50,162	48,544	47,031	45,602	44,262	42,998	41,801	40,673	39,604	38,588	37,625
104	62,800	60,382	58,145	56,065	54,134	52,328	50,640	49,063	47,571	46,174	44,855	43,607	42,429	41,315	40,255	39,250
105	65,400	62,882	60,552	58,386	56,375	54,495	52,737	51,094	49,541	48,085	46,712	45,412	44,186	43,025	41,921	40,875
106	68,000	65,382	62,960	60,707	58,616	56,661	54,834	53,125	51,510	50,000	48,569	47,218	45,943	44,736	43,588	42,500
107	70,960	68,228	65,700	63,350	61,168	59,127	57,220	55,438	53,752	52,173	50,683	49,273	47,942	46,683	45,485	44,350
108	73,920	71,074	68,441	65,992	63,719	61,594	59,607	57,750	55,994	54,350	52,797	51,328	49,942	48,630	47,383	46,200
109	76,960	74,000	71,255	68,706	66,340	64,127	62,059	60,125	58,297	56,585	54,969	53,439	52,000	50,630	49,331	48,100
110	80,000	76,920	74,070	71,420	68,960	66,660	64,510	62,500	60,600	58,820	57,140	55,550	54,050	52,630	51,280	50,000
"B" dim Sizes 64 to 83	11½	12	12¾	12¾	13¾	13¾	14¼	14¾	-	-	-	-	-	-	-	-
"B" dim Sizes 84 to 110	10¾	10¾/16	11¾/16	11¾	12¾/16	12½	12¾	13¾/16	13¾/16	14½	14¾/16	14¾/16	15¾	15¾	16¾/16	16¾

Shading in gray indicates this item is available upon request.

- (1) * Note: Total travel equals actual travel plus 1" or 20% (whichever is greater), rounded up to nearest ½" as applicable.
- (2) Constant supports are readily available for travel and load not listed in this table. Dimensions and lug locations may vary from those shown on the following pages.
- (3) For Type F Upthrust see page 203 for standard travel and sizes.
- (4) Fig. 80-V are not available for sizes 1 thru 9.

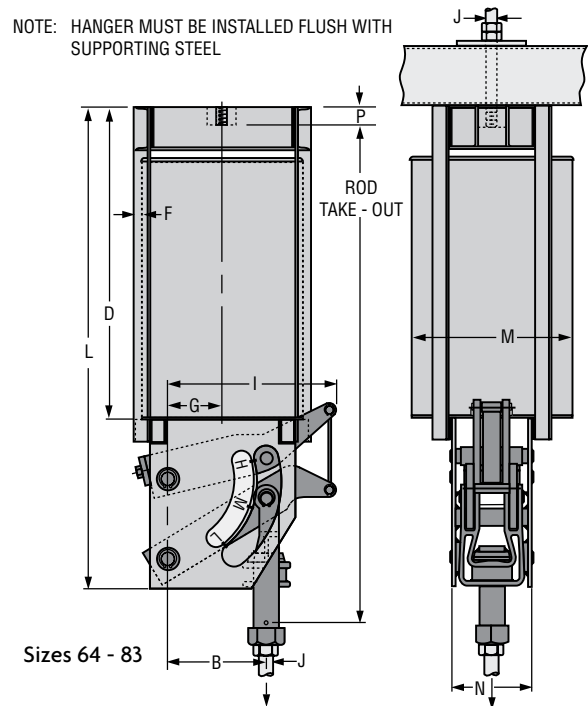
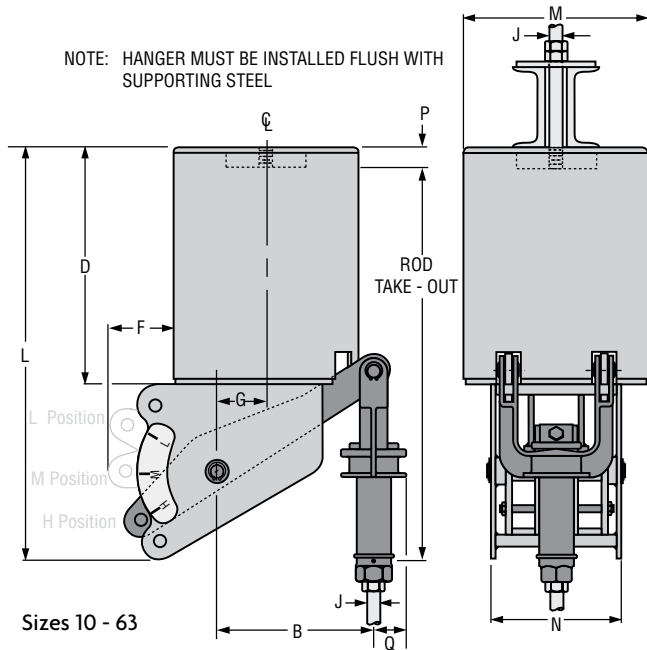


Straps
Pipe Supports
Trapeze
Pipe Shields & Saddles
Pipe Roll
Pipe Guides & Slides
Pipe Guides & Slides
Sway Brace Seismic
Spring Hangers
Constant Supports
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CONSTANT SUPPORTS

Fig. 80-V Type A

Model R



Type A of the figure 80-V vertical design model R Constant Support Hanger is designed for attachment to its supporting member by screwing a rod into a tapped hole in the top cap of hanger a distance equal to the "P" dimension plus $\frac{3}{8}$ ". Sight holes are provided near the top of the casing to allow visible inspection for correct thread engagement of upper hanger rod.

Notes: See load travel tables, page 186 through 189 for "B" dimension. For weights see page 205. Location of travel indicator and contour of side plate may vary from that shown.

FIG. 80-V, TYPE A: DIMENSIONS (IN)

Hanger Sizes	L	D	F	G	I	Dia. M	N	P	Q	Total Travel TT	Factors	J-rod		
												Min Thd Length	Rod Dia.	
													Min	Max
1 - 9	Available in Fig. 81-H only													
10 - 18	18 $\frac{7}{8}$	8 $\frac{7}{8}$	2	1 $\frac{1}{2}$	•	8 $\frac{5}{8}$	6 $\frac{7}{16}$	$\frac{7}{8}$	1 $\frac{3}{8}$	5 or less 5 $\frac{1}{2}$ or more	16 $\frac{15}{16}$ 19 $\frac{1}{4}$	1 $\frac{3}{4}$ + TT	$\frac{1}{2}$	$\frac{3}{4}$
19 - 34	28 $\frac{1}{2}$	16	2 $\frac{1}{8}$	2 $\frac{5}{8}$	•	12 $\frac{3}{4}$	8 $\frac{9}{16}$	1 $\frac{1}{8}$	1 $\frac{5}{8}$	5 or less 5 $\frac{1}{2}$ or more	27 $\frac{15}{16}$ 30 $\frac{1}{16}$	2 $\frac{3}{8}$ + TT	$\frac{1}{2}$	1 $\frac{1}{4}$
35 - 49	32 $\frac{3}{4}$	18 $\frac{1}{4}$	4 $\frac{3}{4}$	3 $\frac{3}{4}$	•	14	9 $\frac{13}{16}$	1 $\frac{1}{2}$	2 $\frac{1}{2}$	6 or less 6 $\frac{1}{2}$ or more	32 $\frac{3}{8}$ 37	3 $\frac{1}{4}$ + TT	$\frac{1}{2}$	1 $\frac{3}{4}$
50 - 63	46 $\frac{7}{8}$	28 $\frac{3}{8}$	8 $\frac{5}{16}$	5 $\frac{7}{8}$	•	18	11 $\frac{1}{4}$	2	3	11 or less 11 $\frac{1}{2}$ or more	46 $\frac{1}{2}$ 51 $\frac{3}{4}$	4 $\frac{1}{4}$ + TT	$\frac{3}{4}$	2 $\frac{1}{4}$
64 - 74	67 $\frac{1}{2}$	44 $\frac{1}{4}$	1 $\frac{1}{16}$	7 $\frac{1}{2}$	25 $\frac{3}{8}$	22 $\frac{3}{16}$	11	2 $\frac{1}{2}$	-	10 $\frac{1}{2}$ or less 11 or more	77 $\frac{3}{8}$ 77 $\frac{3}{4}$	5 $\frac{3}{4}$ + TT	1 $\frac{1}{4}$	2 $\frac{3}{4}$
75 - 83	69 $\frac{1}{2}$	46 $\frac{1}{4}$	1 $\frac{1}{2}$	7 $\frac{1}{2}$	25 $\frac{3}{8}$	27 $\frac{3}{16}$	11	3	-	10 $\frac{1}{2}$ or less 11 or more	78 $\frac{3}{16}$ 78 $\frac{3}{16}$	5 $\frac{3}{4}$ + TT	1 $\frac{1}{2}$	3 $\frac{1}{4}$
84-110	See page 197													

Rod take-out = (factor) - (TT / 2), for lever in high position.

• "I" dimension for sizes 10 through 63 equals "B" + "Q" Note: See the size selection chart (page 186 through 189) for the "B" dimension.

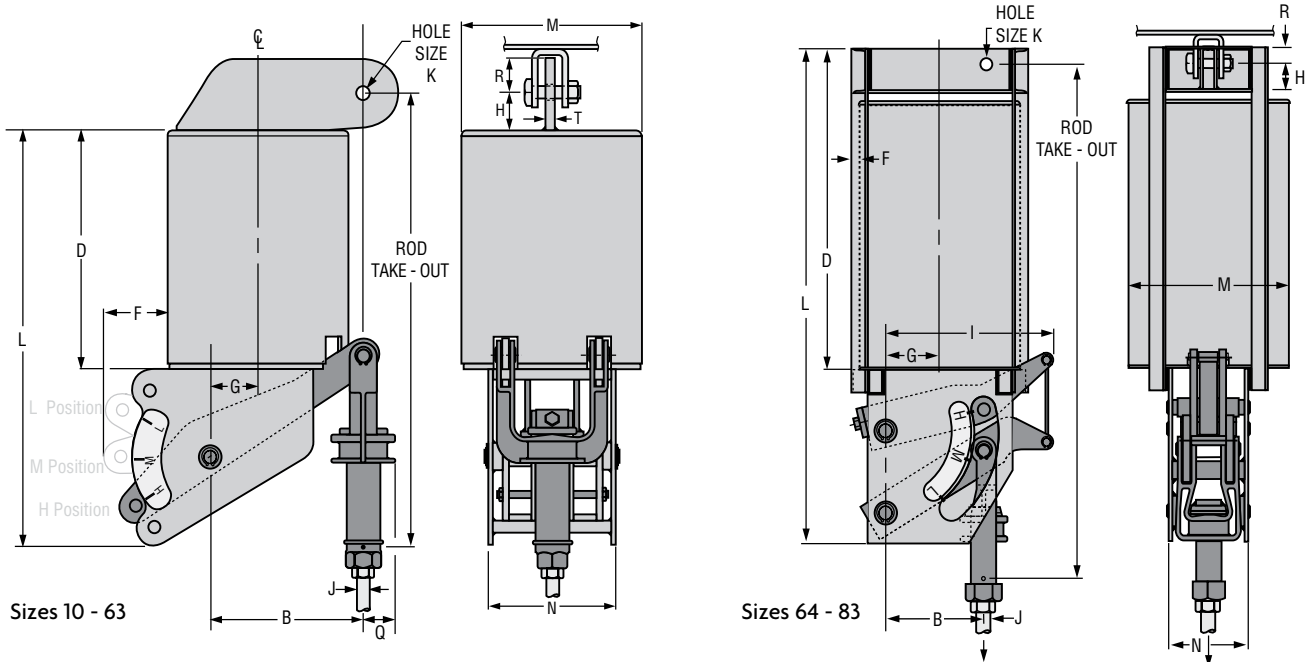
J-ROD SELECTION CHART

Load (lbs)	0 800	801 1,500	1,501 2,540	2,541 4,000	4,001 6,100	6,101 9,400	9,401 13,400	13,401 18,300	18,301 24,700	24,701 31,000	31,001 39,000	39,001 48,000	48,001 58,000
J Rod Size	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	1 $\frac{3}{4}$	2	2 $\frac{1}{4}$	2 $\frac{1}{2}$	2 $\frac{3}{4}$	3	3 $\frac{1}{4}$ *

* 3 $\frac{1}{4}$ is furnished with 4 UNC series thread.

Fig. 80-V Type B

Model R



Type B is furnished with a single lug for attachment to the building structure. The lug permits use of a figure 66* welded beam attachment, a figure 299 clevis or a pair of angles for attachment where headroom is limited.

Notes: See load travel tables, page 186 through 189 for "B" dimension. For weights see page 205. Location of travel indicator and contour of side plate may vary from that shown.

FIG. 80-V, TYPE B: DIMENSIONS (IN)

Hanger Size	L	D	F	G	H	I	Dia. M	N	Q	R	T	Total Travel TT	Factors	J-rod		
														Min Thd Length	Rod Dia. Min	Max
1-9	Available in Fig. 81-H only															
10-18	18 ⁷ / ₈	8 ⁷ / ₈	2	1 ¹ / ₂	1 ¹ / ₂	•	8 ⁵ / ₈	6 ⁷ / ₁₆	1 ³ / ₈	1 ¹ / ₂	3 ⁸ / ₁₆	5 or less 5 ¹ / ₂ or more	19 ⁵ / ₁₆ 21 ⁵ / ₈	1 ³ / ₄ + TT	1 ¹ / ₂	3 ⁴ / ₈
19-34	28 ¹ / ₂	16	2 ¹ / ₈	2 ⁵ / ₈	2	•	12 ³ / ₄	8 ⁹ / ₁₆	1 ⁵ / ₈	1 ¹ / ₂	5 ⁸ / ₁₆	5 or less 5 ¹ / ₂ or more	31 ¹ / ₁₆ 33 ³ / ₁₆	2 ³ / ₈ + TT	1 ¹ / ₂	1 ¹ / ₄
35-49	32 ³ / ₄	18 ¹ / ₄	4 ³ / ₄	3 ³ / ₄	3	•	14	9 ¹³ / ₁₆	2 ¹ / ₂	1 ¹ / ₄ K-hole & smaller, 1 ¹ / ₂ 1 ³ / ₈ K-hole and larger, 2	3 ⁴ / ₁₆	6 or less 6 ¹ / ₂ or more	36 ⁷ / ₈ 41 ¹ / ₂	3 ³ / ₄ + TT	1 ¹ / ₂	1 ¹ / ₄
50-63	46 ⁷ / ₈	28 ³ / ₈	8 ⁵ / ₁₆	5 ⁵ / ₈	4	•	18	11 ¹ / ₄	3	1 ¹⁵ / ₁₆ K-hole, 1 ¹ / ₂ 1 ¹ / ₈ thru 1 ¹ / ₂ K-hole, 2 1 ³ / ₄ K-hole and larger, 3	1	11 or less 11 ¹ / ₂ or more	52 ¹ / ₂ 57 ³ / ₄	4 ¹ / ₄ + TT	3 ⁴ / ₈	2 ¹ / ₄
64-74	68	37 ¹ / ₄	1 ³ / ₁₆	7 ¹ / ₂	4 ¹ / ₂	25 ³ / ₈	22 ³ / ₁₆	11	3 ³ / ₄	1 ¹ / ₂ K-hole, 2 1 ³ / ₄ K-hole and larger, 3	2	10 ¹ / ₂ or less 11 or more	77 ¹ / ₄ 77 ³ / ₈	5 ³ / ₄ + TT	1 ¹ / ₄	2 ³ / ₄
75-83	69 ¹ / ₂	38	1 ¹ / ₂	7 ¹ / ₂	3 ⁵ / ₈	25 ³ / ₈	27 ³ / ₁₆	11		3 ³ / ₄	2 ¹ / ₂	10 ¹ / ₂ or less 11 or more	77 ¹⁵ / ₁₆ 78 ¹ / ₁₆	5 ³ / ₄ + TT	1 ¹ / ₂	3 ³ / ₄
84-110	See page 197															

Rod take-out = (factor) - (TT / 2), for lever in high position. • "I" dimension for sizes 10 through 63 equals "B" + "Q"

* For constant support sizes 50-63 and 64-74 where 1¹/₄" rod is required, check the "R" dimensions versus the Fig. 66 welded beam attachment dimensions for compatibility. Note: See the size selection chart (page 186 through 189) for the "B" dimension. K hole center line location is determined by the formula of "B - G = K Center Line".

J-ROD SELECTION CHART

Load (lbs)	0 800	801 1,500	1,501 2,540	2,541 4,000	4,001 6,100	6,101 9,400	9,401 13,400	13,401 18,300	18,301 24,700	24,701 31,000	31,001 39,000	39,001 48,000	48,001 58,000
J-Rod Size	1/2	5/8	3/4	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/4*
K-Hole	1 1/16	1 3/16	1 5/16	1 1/4	1 1/2	1 3/4	2	2 3/8	2 5/8	2 7/8	3 1/8	3 3/8	3 5/8

* 3¹/₄" is furnished with 4 UNC series thread.

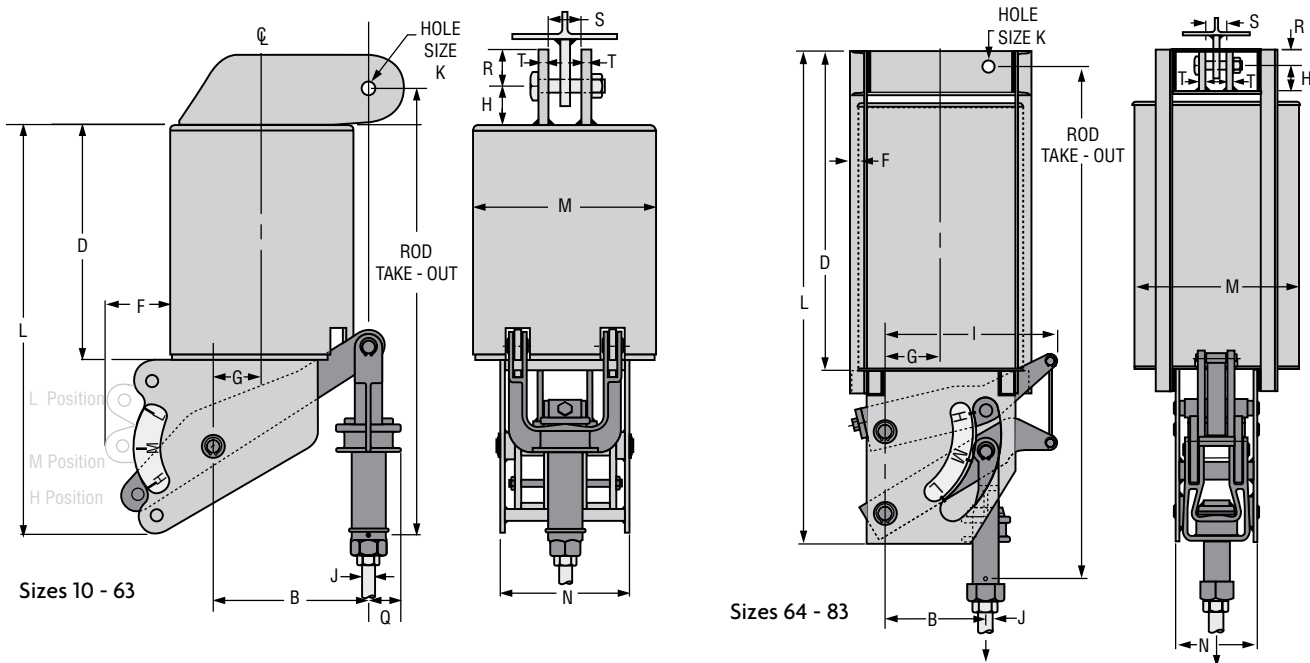


Straps
Pipe Supports
Trapeze
Pipe Shields & Saddles
Pipe Roll
Pipe Guides & Slides
Sway Brace Seismic
Spring Hangers
Constant Supports
Vibration Control & Sway Brace
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CONSTANT SUPPORTS

Fig. 80-V Type C

Model R



Type C is furnished with a pair of lugs for attachment to the building structure. These lugs permit the use of an eye rod or a single plate for attachment where headroom is limited.

Notes: See load travel tables, page 186 through 189 for “B” dimension. For weights see page 205. Location of travel indicator and contour of side plate may vary from that shown.

FIG. 80-V, TYPE C: DIMENSIONS (IN)

Hanger Size	L	D	F	G	H	I	Dia. M	N	Q	R	T	Total Travel TT	Factors	J-rod		
														Min	Thd Length	Rod Dia. Min Max
1-9	Available in Fig. 81-H only															
10-18	18 ⁷ / ₈	8 ⁷ / ₈	2	1 ¹ / ₂	1 ¹ / ₂	•	8 ⁵ / ₈	6 ⁷ / ₁₆	1 ³ / ₈	1 ¹ / ₂	3 ³ / ₈	5 or less 5 ¹ / ₂ or more	19 ⁵ / ₁₆ 21 ⁵ / ₈	1 ³ / ₄ + TT	1 ¹ / ₂	3 ³ / ₄
19-34	28 ¹ / ₂	16	2 ¹ / ₈	2 ⁵ / ₈	2	•	12 ³ / ₄	8 ⁹ / ₁₆	1 ⁵ / ₈	1 ¹ / ₂	5 ¹ / ₈	5 or less 5 ¹ / ₂ or more	31 ¹ / ₁₆ 33 ³ / ₁₆	2 ³ / ₈ + TT	1 ¹ / ₂	1 ¹ / ₄
35-49	32 ³ / ₄	18 ¹ / ₄	4 ³ / ₄	3 ³ / ₄	3	•	14	9 ¹³ / ₁₆	2 ¹ / ₂	1 ¹ / ₄ K-hole & smaller, 1 ¹ / ₂ 1 ³ / ₈ K-hole and larger, 2	3 ³ / ₄	6 or less 6 ¹ / ₂ or more	36 ³ / ₈ 41 ¹ / ₂	3 ¹ / ₄ + TT	1 ¹ / ₂	1 ³ / ₄
50-63	46 ⁷ / ₈	28 ³ / ₈	8 ⁵ / ₁₆	5 ⁷ / ₈	4	•	18	11 ¹ / ₄	3	1 ¹⁵ / ₁₆ K-hole, 1 ¹ / ₂ 1 ¹ / ₈ thru 1 ³ / ₈ K-hole, 2 1 ¹ / ₂ K-hole and larger, 3	1	11 or less 11 ¹ / ₂ or more	52 ¹ / ₂ 57 ³ / ₄	4 ¹ / ₄ + TT	3 ³ / ₄	2 ¹ / ₄
64-74	68	36 ³ / ₄	1 ³ / ₁₆	7 ¹ / ₂	5	25 ³ / ₈	22 ³ / ₁₆	11	3 ³ / ₄	3	1 ¹ / ₂	10 ¹ / ₂ or less 11 or more	77 ¹ / ₄ 77 ³ / ₈	5 ³ / ₄ + TT	1 ¹ / ₄	2 ³ / ₄
75-83	69 ¹ / ₂	37 ¹ / ₄	1 ¹ / ₂	7 ¹ / ₂	6 ¹ / ₄	25 ³ / ₈	27 ¹ / ₁₆	11	3 ³ / ₄	3 ³ / ₄	1	10 ¹ / ₂ or less 11 or more	77 ¹⁵ / ₁₆ 78 ¹ / ₁₆	5 ³ / ₄ + TT	1 ¹ / ₂	3 ³ / ₄ *
84-110	See page 197															

Rod take-out = (factor) - (TT / 2), for lever in high position. • “I” dimension for sizes 10 through 63 equals “B” + “Q”

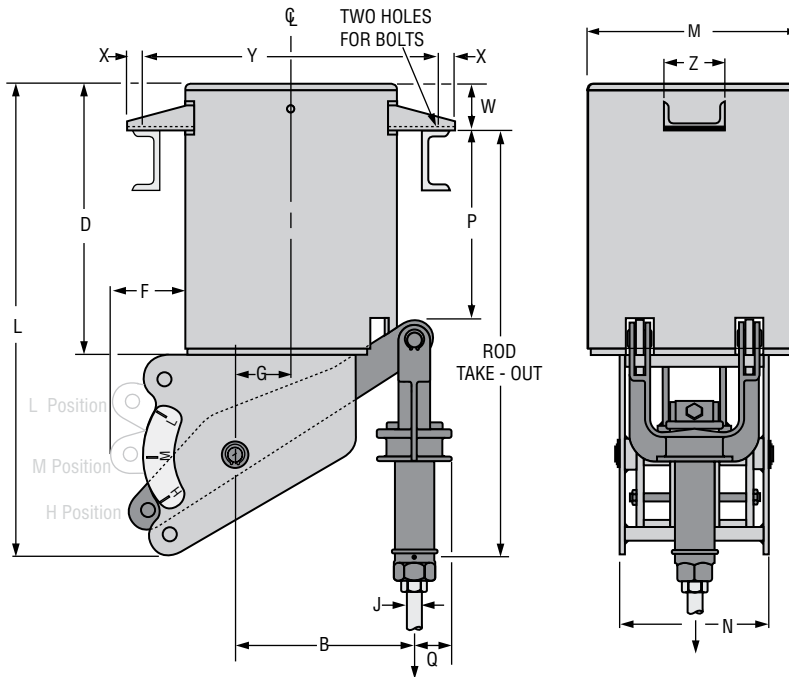
Note: See the size selection chart (page 186 through 189) for the “B” dimension. K hole center line location is determined by the formula of “B - G = K Center Line”.

Load (lbs)	0 800	801 1,500	1,501 2,540	2,541 4,000	4,001 6,100	6,101 9,400	9,401 13,400	13,401 18,300	18,301 24,700	24,701 31,000	31,001 39,000	39,001 48,000	48,001 58,000
J-Rod Size	1 ¹ / ₂	5 ⁵ / ₈	3 ³ / ₄	1	1 ¹ / ₄	1 ¹ / ₂	1 ³ / ₄	2	2 ¹ / ₄	2 ¹ / ₂	2 ³ / ₄	3	3 ¹ / ₄ *
K-Hole Size	1 ¹¹ / ₁₆	1 ¹³ / ₁₆	1 ¹⁵ / ₁₆	1 ¹ / ₄	1 ¹ / ₂	1 ³ / ₄	2	2 ³ / ₈	2 ⁵ / ₈	2 ⁷ / ₈	3 ¹ / ₈	3 ³ / ₈	3 ⁵ / ₈
S	7 ⁷ / ₈	1 ¹ / ₁₆	1 ¹ / ₄	1 ¹ / ₈	2	2 ³ / ₈	2 ⁵ / ₈	2 ⁷ / ₈	3 ¹ / ₈	3 ³ / ₈	3 ⁵ / ₈	3 ⁷ / ₈	4 ¹ / ₈

* 3¹/₄" is furnished with 4 UNC series thread.

Fig. 80-V Type D

Model R



Type D rests on top of structural steel while most of the Constant Support itself hangs between or below the supporting beams. The depth of the beam is limited by the “P” dimension. Dimension “P” can be varied on special order, however, “P” dimension shown is maximum for the hanger.

Notes: See load travel tables, page 186 through 189 for “B” dimension. For weights see page 205. Location of travel indicator and contour of side plate may vary from that shown.

FIG. 80-V: DIMENSIONS (IN)

Hanger Sizes	L	D	F	G	Dia. M	N	Q	P	W	X	Y	Z	Bracket Hole Dia.	Total Travel TT	Factors	J-Rod		
																Min Thd Length	Min Dia.	Max Dia.
1-9	Available in Fig. 81-H only																	
10-18	18 ⁷ / ₈	8 ⁷ / ₈	2	1 ¹ / ₂	8 ⁵ / ₈	6 ⁷ / ₁₆	1 ³ / ₈	4 ¹⁵ / ₁₆	2 ³ / ₈	1 ¹ / ₂	10 ³ / ₄	3	3/4	5 or less 5 ¹ / ₂ or more	15 ¹ / ₂ 17 ³ / ₁₆	1 ³ / ₄ + TT	1/2	3/4
19-34	28 ¹ / ₂	16	2 ¹ / ₂	2 ⁵ / ₈	12 ³ / ₄	8 ⁹ / ₁₆	1 ¹ / ₈	12 ¹ / ₂	2 ³ / ₈	1 ¹ / ₂	14 ⁷ / ₈	3	7/8	5 or less 5 ¹ / ₂ or more	26 ¹¹ / ₁₆ 28 ¹³ / ₁₆	2 ³ / ₈ + TT	1/2	1 ¹ / ₄
35-49	32 ³ / ₄	18 ¹ / ₄	4 ³ / ₄	3 ³ / ₄	14	9 ¹ / ₁₆	2 ¹ / ₂	13 ¹ / ₄	2 ⁵ / ₈	2	16 ³ / ₄	4	1 ¹ / ₈	6 or less 6 ¹ / ₂ or more	31 ¹ / ₄ 35 ⁷ / ₈	3 ¹ / ₄ + TT	1/2	1 ³ / ₄
50-63	46 ⁷ / ₈	28 ⁵ / ₈	8 ⁵ / ₁₆	5 ⁷ / ₈	18	11 ¹ / ₄	3	24 ¹ / ₂	2 ⁷ / ₈	3	21	6	1 ³ / ₈	11 or less 11 ¹ / ₂ or more	45 ⁹ / ₁₆ 50 ⁷ / ₈	4 ¹ / ₄ + TT	3/4	2 ¹ / ₄
64-83	Available in Fig. 81-H only.																	
84-110	Not Available																	

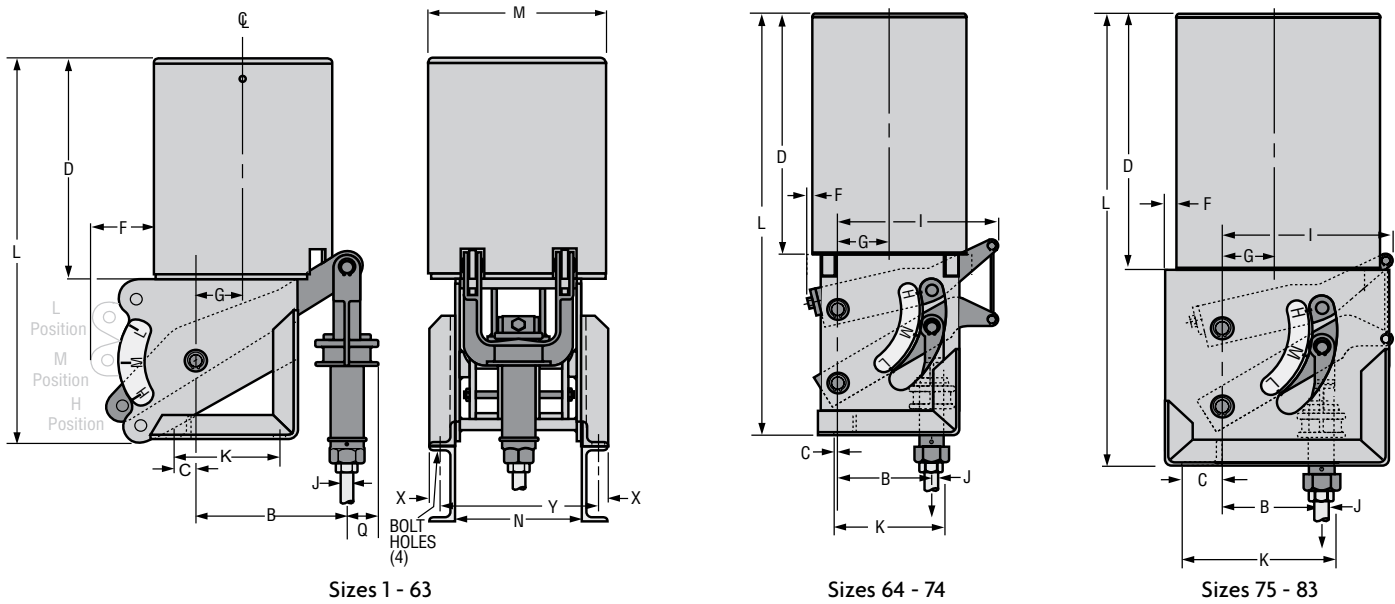
*Rod take-out = (factor) - (TT / 2), for lever in high position. • “L” dimension for sizes 10 through 63 equals “B” + “Q”
Note: See the size selection chart (page 186 through 189) for the “B” dimension.

Load (lbs)	0 800	801 1,500	1,501 2,540	2,541 4,000	4,001 6,100	6,101 9,400	9,401 13,400	13,401 18,300	18,301 24,700
J Rod Size	1/2	5/8	3/4	1	1 1/4	1 1/2	1 3/4	2	2 1/4

CONSTANT SUPPORTS

Fig. 80-V Type E

Model R



Type E rests on top flange of structural steel and the constant support itself is entirely above the supporting beams. If the rod takeout does not exceed the depth of the supporting steel and the rod coupling must extend below the steel, specify the depth of the supporting steel. Increase the rod take-out by the depth of the steel.

Notes: See load travel tables, page 186 through 189 for "B" dimension. For weights see page 205. Location of travel indicator and contour of side plate may vary from that shown.

FIG. 80-V, TYPE E: DIMENSIONS (IN)

Hanger Size	L	C	D	F	G	I	K	Dia. M	X	Y	N	Q	Angle Size	Bracket Hole Dia.	Total Travel TT	Factors	J-Rod		
																	Min Thd Length	Rod Dia Min	Max
1-9	Available in Fig. 81-H Only																		
10-18	18 ⁷ / ₈	1 ¹ / ₂	8 ⁷ / ₈	2	1 ¹ / ₂	•	4 ⁵ / ₁₆	8 ⁵ / ₈	5/8	8 ¹⁵ / ₁₆	6 ⁷ / ₁₆	1 ³ / ₈	1 ¹ / ₂ x 2 x 1/4	3/4	5 or less 5 ¹ / ₂ or more	1 ⁷ / ₁₆ 3 ³ / ₄	1 ³ / ₄ + TT	1/2	3/4
19-34	28 ¹ / ₂	1 ³ / ₁₆	16	2 ¹ / ₈	2 ⁵ / ₈	•	6 ¹¹ / ₁₆	12 ³ / ₄	5/8	11 ³ / ₁₆	8 ⁹ / ₁₆	1 ⁵ / ₈	1 ¹ / ₂ x 2 ¹ / ₂ x 1/4	3/4	5 or less 5 ¹ / ₂ or more	2 ¹³ / ₁₆ 4 ¹⁵ / ₁₆	2 ³ / ₈ + TT	1/2	1 ¹ / ₄
35-49	32 ³ / ₄	1 ⁷ / ₈	18 ¹ / ₄	4 ³ / ₄	3 ³ / ₄	•	8 ⁵ / ₁₆	14	1 ³ / ₁₆	13 ⁵ / ₁₆	9 ¹³ / ₁₆	2 ¹ / ₂	3 x 2 x 3/8	7/8	6 or less 6 ¹ / ₂ or more	2 ¹ / ₂ 7 ¹ / ₈	3 ¹ / ₄ + TT	1/2	1 ³ / ₄
50-63	46 ⁷ / ₈	3 ³ / ₄	28 ¹ / ₈	8 ⁵ / ₁₆	5 ⁷ / ₈	•	12 ¹³ / ₁₆	18	1 ⁵ / ₁₆	14 ¹¹ / ₁₆	11 ¹ / ₄	3	3 x 3 x 3/8	1 ³ / ₈	11 or less 11 ¹ / ₂ or more	1 ⁵ / ₈ 7	4 ¹ / ₄ + TT	3/4	2 ¹ / ₄
64-74	62	3/8	35 ³ / ₄	3/8	7 ¹ / ₂	25 ³ / ₈	15 ³ / ₄	22 ³ / ₁₆	1 ⁹ / ₁₆	14 ¹⁵ / ₁₆	11	3	3 ¹ / ₂ x 3 ¹ / ₂ x 1/2		1 ⁵ / ₈	10 ¹ / ₂ or less 11 or more	9 ¹ / ₈ 9 ¹ / ₄	5 ³ / ₄ + TT	1 ¹ / ₄
75-83	62 ¹ / ₂	5 ¹ / ₄	35 ³ / ₄	1 ¹ / ₂	7 ¹ / ₂	25 ³ / ₈	25 ³ / ₈	27 ³ / ₁₆	1 ¹ / ₄	15 ¹ / ₂	11	3	4 x 4 x 3/8	1 ⁵ / ₈	10 ¹ / ₂ or less 11 or more	8 ³ / ₄ 8 ⁷ / ₈	5 ³ / ₄ + TT	1 ¹ / ₂	3 ¹ / ₄
84-110	Not Available																		

Rod take-out = (factor) - (TT / 2), for lever in high position. Rod take-out is measured from the bottom of the supporting angles to the center of the load coupling site hole.
 • "I" dimension for sizes 10 through 63 equals "B" + "Q" Note: See the size selection chart (page 186 through 189) for the "B" dimension.

J-ROD SELECTION CHART

Load (lbs)	0 800	801 1,500	1,501 2,540	2,541 4,000	4,001 6,100	6,101 9,400	9,401 13,400	13,401 18,300	18,301 24,700	24,701 31,000	31,001 39,000	39,001 48,000	48,001 58,000
J Rod Size	1/2	5/8	3/4	1	1 ¹ / ₄	1 ¹ / ₂	1 ³ / ₄	2	2 ¹ / ₄	2 ¹ / ₂	2 ³ / ₄	3	3 ¹ / ₄ *

* 3¹/₄" is furnished with 4 UNC series thread.

Fig. 80-V Type F

Model R

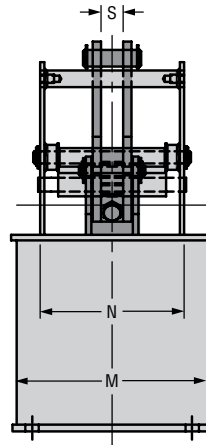
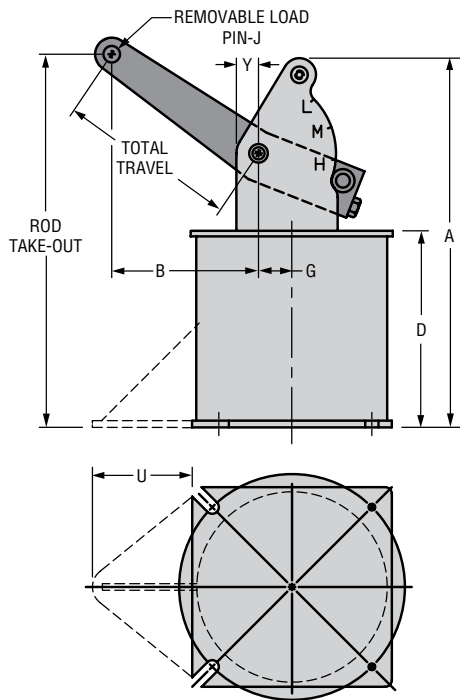


FIG. 80-V, TYPE F: TOTAL TRAVEL (IN)		
Hanger Size	Total Travel	U
10-18	1½ - 4½	—
	5 - 8	5
19-34	2 - 6½	—
	7 - 10	7¼
35-49	2½ - 6	—
	6½ - 9	7
50-63	9½ - 14	11½
	3 - 6½	—
50-63	7 - 10	8½
	10½ - 16	14

Type F is for support of piping or equipment from below. It has a base flange for fastening to the floor or to beams. The load arm is furnished with a removable load pin. The intermediate strut which runs from the load arm to the piping is not furnished and must be ordered separately, designed to the specific requirement.

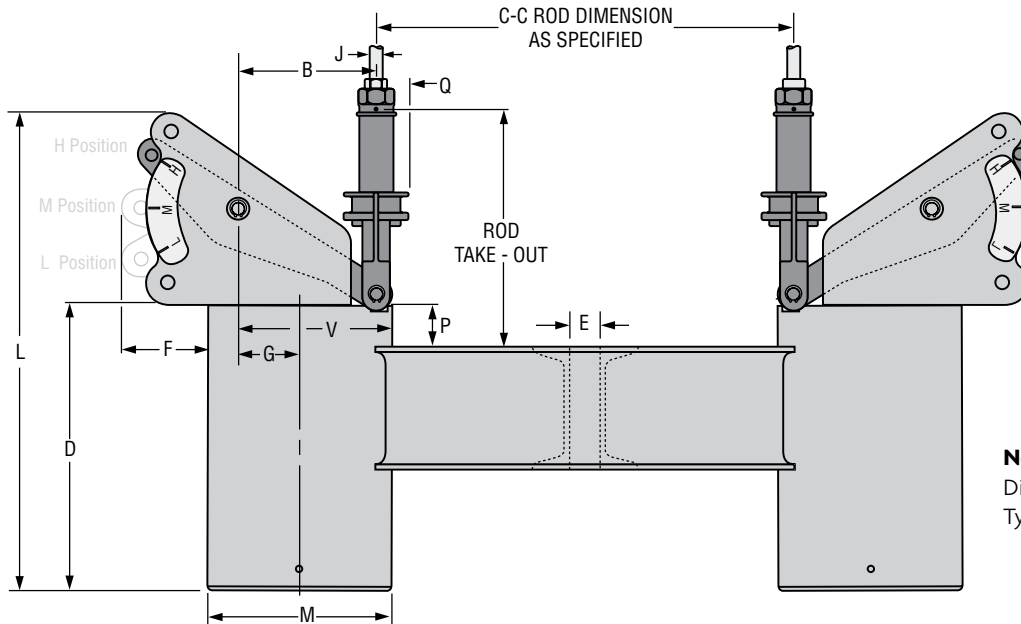
Note: See load travel table for “B” dimension.

FIG. 80-V, TYPE F: DIMENSIONS (IN)														
Hanger Size	A	D	G	M	N	S	Y	Bottom Flange Square	Bottom Flange Bolt Circle	Flange Hole and Slot Dia.	Flange Thickness	Factor	Total Travel	J Dia.
1-9	Not Available													
10-18	16⅝	8¾	1½	8⅝	6¼	1	1	9	10	⅞	¼	12⅝	5½ or less	¾
													6 or more	½
19-34	25⅜	14⅞	2⅝	12¾	8⅝	1⅝	1	13¼	15	⅝	⅜	20⅞	4 or less	1⅞
													4½ or more	⅞
35-49	32⅝	18½	3⅞	14	9⅝	2¼	1½	14½	17	⅞	⅝	25½	7 or less	1½
													7½ or more	1⅞
50-63	48¾	28⅝	5⅞	18	11¼	2¼	1⅝	18½	21	1⅞	¾	38½	8 or less	2
													8½ or more	1½
64-110	Not Available													

CONSTANT SUPPORTS

Fig. 80-V Type G

Model R



Note: For orientation of "N" Dimension, see Fig. 80-V Type D on page 171.

Type G is a complete trapeze assembly. The hanger consists of two vertical type Constant Support units plus a pair of channels, back-to-back, welded at each end to the hanger casing. In sizing a Type G hanger, it must be remembered that each standard spring unit carries one-half of the total pipe load. Furthermore, the weights of the hanger itself must be considered as part of the overall load. Therefore, using one-half the total pipe load, select the required hanger size from the Load Travel Table and add one-half the weight of the size hanger selected to one-half the total pipe load. If the load now exceeds the maximum load at the required total travel for the hanger size selected, it is necessary to go to the next larger hanger. If the pipe line is designed so as not to be centered on the channel, one

spring of the trapeze will carry a heavier load than the other and care must be taken in sizing the individual hanger units. The center-to-center rod dimension must be specified when ordering. The minimum C-C dimension can be determined as follows:
 $B \text{ plus } Q > Y: (\text{O.D. of pipe covering}) + 2Q.$
 $B \text{ plus } Q < Y: (\text{O.D. of pipe covering}) + 2(Y - B).$
Note: If U-bolt is used to fasten pipe to channels, C-C of U-bolt tangents plus one washer plate width cannot be greater than C-C of the hanger rods minus 2 (V minus B). See load travel tables, page 186 through 189 for "B" dimension.
 For weights see page 205. Location of travel indicator and contour of side plate may vary from that shown.

FIG. 80-V, TYPE G: DIMENSIONS (IN)

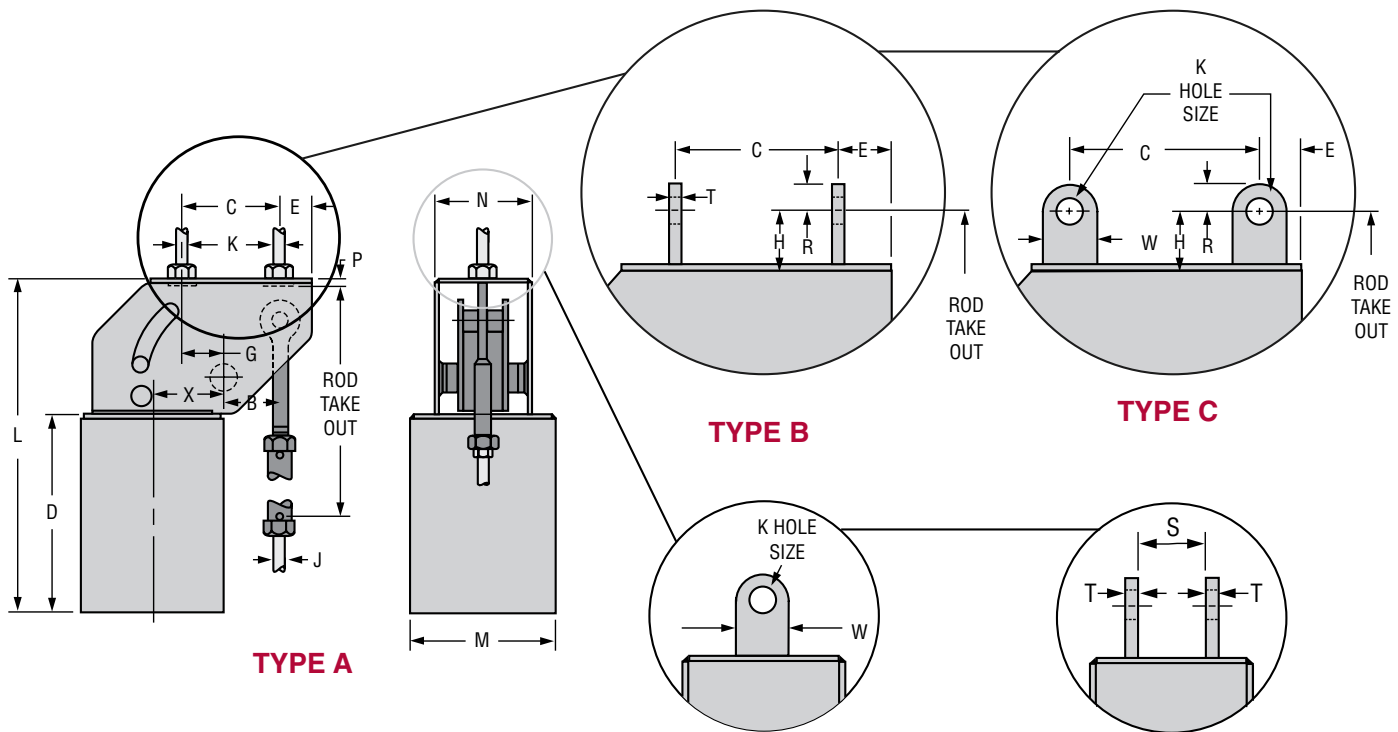
Hanger Size	L	D	E	F	G	Dia M	N	P	Q	V	Y	Channel Size (lbs/ft)	C - C	Total Travel TT	Factors	J-Rod		
																Min Thread Length	Min Rod Dia.	Max Rod Dia.
1-9	Not available																	
10-18	18 ⁷ / ₈	8 ⁷ / ₈	1	2	1 ¹ / ₂	8 ⁵ / ₁₆	6 ⁷ / ₁₆	2 ⁹ / ₁₆	3 ¹ / ₂	5 ¹³ / ₁₆	3 ¹⁵ / ₁₆	4 @ 5.4	30	5 or less 5 ¹ / ₂ or more	11 ¹¹ / ₁₆ 14	1 ³ / ₄ + TT	1/2	3/4
19-34	28 ¹ / ₂	16	1 ¹ / ₄	2 ¹ / ₈	2 ⁵ / ₈	12 ³ / ₄	8 ⁹ / ₁₆	3 ⁹ / ₁₆	4	9	6 ¹ / ₈	6 @ 10.5	42	5 or less 5 ¹ / ₂ or more	16 ¹³ / ₁₆ 18 ³ / ₄	2 ³ / ₈ + TT	1/2	1 ¹ / ₄
35-49	32 ³ / ₄	18 ¹ / ₄	1 ¹ / ₂	4 ¹ / ₄	3 ³ / ₄	14	9 ¹³ / ₁₆	3 ¹ / ₁₆	5 ¹ / ₂	10 ³ / ₄	8	10 @ 15.3	48	6 or less 6 ¹ / ₂ or more	19 ¹ / ₄ 23 ³ / ₈	3 ¹ / ₄ + TT	1/2	1 ³ / ₄
50-63	46 ⁷ / ₈	28 ³ / ₈	2 ¹ / ₈	8 ⁵ / ₁₆	5 ⁷ / ₈	18	11 ¹ / ₄	4	6 ¹ / ₂	14 ³ / ₄	10 ¹⁵ / ₁₆	12 @ 20.7	48	11 or less 11 ¹ / ₂ or more	24 ⁵ / ₈ 30	4 ¹ / ₄ + TT	3/4	2 ¹ / ₄
64-110	Not available																	

Rod take-out = (factor) - (TT / 2), for lever in high position.
 Note: See the size selection chart (see page 186 through 189) for the "B" dimension.

Load (lbs)	0 800	801 1,500	1,501 2,540	2,541 4,000	4,001 6,100	6,101 9,400	9,401 13,400	13,401 18,300	18,301 24,700
J Rod Size	1/2	5/8	3/4	1	1 1/4	1 1/2	1 3/4	2	2 1/4

Fig. 80-V Types A, B and C

Model R, Sizes 84 to 110



Note: "B" Dimensions is a function of total travel ("G" + "B" should not be assumed as equal to "C" Dimension)

Types A, B, and C sizes 84 through 110, for large loads and long travels, provide for basically the same methods of upper attachment as sizes 10 to 83 shown Type A on page 190, Type B page 191 and Type C see page 192.

Notes: See load travel tables, page 186 through 189 for "B" dimension. For weights see page 205.

FIG. 80-V, TYPES A,B,C SIZES 84 TO 110: DIMENSIONS (IN)

Hanger Sizes	L	C		D	E				G	H	M	N	P	X	Total Travel TT	Factor			J - Rod	
		Type A & B	Type C		Type A & B	Type C	Type A & B	Type C								Type A	Type B & C	Min Thread Length	Min	Max
84-94	78¾	16	15	49¾	4	4½	1½	1	6	24	10½	3	12	9½ or less	45¾	54¾	10	2	3¾	
															55½	64½	13			
95-110	100	24	23	64	4	4½	7½	7	6	24	11½	3½	13½	14 or less	51⅞	60⅝	12	2½	3¾	
														14½ or more	60⅞	69⅞	15			

*Rod take-out = (factor) - (.75 x TT), for Lever in high position
 Note: See the size selection chart (page 186 through 189) for the "B" dimension.

Load (lbs)	14,376 18,300	18,301 24,700	24,701 31,000	31,001 39,000	39,001 48,000	48,001 58,000	58,001 69,000	69,001 87,500
J & K-Rods	2	2¼	2½	2¾	3	3¼*	3½*	3¾*
K-Hole	2⅝	2⅞	2⅞	3⅞	3⅞	3⅞	3⅞	4⅞
R	3	3	4	4	4	4½	4½	4½
S	2⅞	3⅞	3⅞	3⅞	3⅞	4⅞	4⅞	4⅞
T (Type B)	¾	¾	1	1	1	1	1½	1¾
T (Type C)								
W	6	6	8	8	8	9	9	9

*¾ and larger is furnished with 4 UNC series thread.

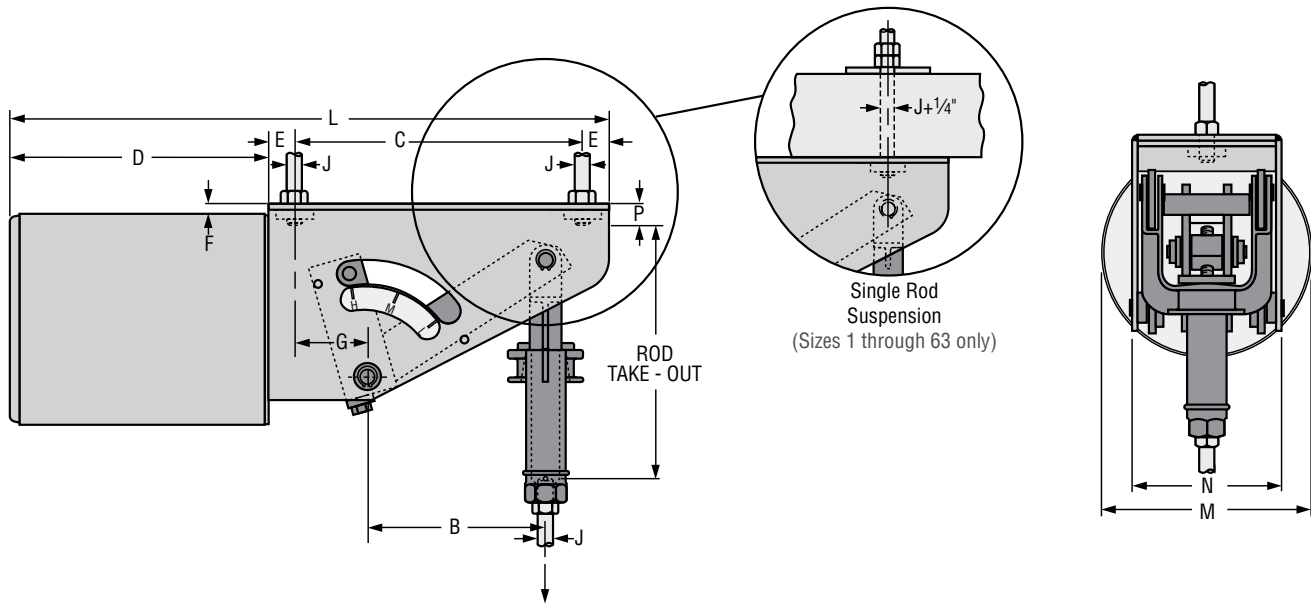


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CONSTANT SUPPORTS

Fig. 81-H Type A

Model R



Type A of the Figure 81- H Horizontal Design Model R Constant Support Hanger is designed for attaching to its supporting member by screwing two rods into tapped holes in the top of the hanger from a distance equal to the “P” dimension plus $\frac{3}{8}$ ”. Sizes 1 to 9 are furnished with swivel eye and turnbuckle instead of yoke and coupling.

Notes: Also available for single rod suspension as indicated above. When ordering specify “ for single rod suspension”. See load travel tables, page 186 through 189 for “B” dimension. For weights see page 205. Location of travel indicator and contour of side plate may vary from that shown.

FIG. 81-H TYPE A: DIMENSIONS (IN)

Hanger Sizes	D	E	F	G	M	N	P	Total Travel TT	L	C	Factors	J-Rod		
												Min Thread Length	Rod Dia.	
													Min	Max
1-9	8 $\frac{1}{4}$	1	7 $\frac{1}{8}$	2	6 $\frac{1}{8}$	4 $\frac{1}{8}$	1 $\frac{3}{16}$	4 or less	16 $\frac{1}{4}$	6	12 $\frac{3}{4}$	1 $\frac{3}{4}$ + TT	1 $\frac{1}{2}$	1 $\frac{1}{2}$
								4 $\frac{1}{2}$ or more	20 $\frac{1}{4}$	10	15 $\frac{5}{16}$			
10-18	8 $\frac{7}{16}$	1	1 $\frac{1}{2}$	2 $\frac{9}{16}$	8 $\frac{5}{16}$	6 $\frac{7}{16}$	1 $\frac{1}{16}$	5 or less	18 $\frac{7}{16}$	8	10 $\frac{7}{8}$	1 $\frac{3}{4}$ + TT	1 $\frac{1}{2}$	3 $\frac{1}{4}$
								5 $\frac{1}{2}$ or more	21 $\frac{7}{16}$	11	13 $\frac{1}{4}$			
19-34	14 $\frac{7}{16}$	1 $\frac{1}{4}$	5 $\frac{1}{8}$	3 $\frac{3}{8}$	12 $\frac{7}{16}$	8 $\frac{9}{16}$	1 $\frac{1}{8}$	5 or less	26 $\frac{15}{16}$	10	16 $\frac{3}{4}$	2 $\frac{3}{8}$ + TT	1 $\frac{1}{2}$	1 $\frac{1}{4}$
								5 $\frac{1}{2}$ or more	31 $\frac{1}{16}$	14 $\frac{1}{8}$	18 $\frac{1}{8}$			
35-49	17 $\frac{7}{16}$	1 $\frac{3}{4}$	1 $\frac{1}{16}$	4 $\frac{3}{4}$	13 $\frac{3}{4}$	9 $\frac{13}{16}$	1 $\frac{3}{8}$	6 or less	31 $\frac{9}{16}$	11	21 $\frac{1}{8}$	3 $\frac{1}{4}$ + TT	1 $\frac{1}{2}$	1 $\frac{3}{4}$
								6 $\frac{1}{2}$ or more	39 $\frac{9}{16}$	19	25 $\frac{3}{4}$			
50-63	26 $\frac{3}{16}$	1 $\frac{11}{16}$	1 $\frac{5}{16}$	7 $\frac{11}{16}$	17 $\frac{11}{16}$	11 $\frac{1}{4}$	1 $\frac{3}{4}$	8 or less	45 $\frac{9}{16}$	16	24 $\frac{15}{16}$	4 $\frac{1}{4}$ + TT	3 $\frac{1}{4}$	2 $\frac{1}{4}$
								8 $\frac{1}{2}$ to 11	53 $\frac{9}{16}$	24	24 $\frac{15}{16}$			
								11 $\frac{1}{2}$ or more	53 $\frac{9}{16}$	24	30 $\frac{1}{4}$			
64-74	35 $\frac{3}{4}$	3	3 $\frac{1}{4}$	5 $\frac{1}{4}$	22 $\frac{3}{16}$	11	3 $\frac{7}{16}$	10 $\frac{1}{2}$ or less	57 $\frac{1}{2}$	15 $\frac{3}{4}$	34 $\frac{7}{16}$	5 $\frac{1}{4}$ + TT	1 $\frac{1}{4}$	2 $\frac{3}{4}$
								11 or more	63	21 $\frac{1}{4}$	34 $\frac{9}{16}$			
75-83	35 $\frac{3}{4}$	3 $\frac{1}{4}$	3 $\frac{5}{8}$	5	27 $\frac{3}{16}$	11	4 $\frac{1}{4}$	10 $\frac{1}{2}$ or less	57 $\frac{1}{2}$	15 $\frac{3}{4}$	36 $\frac{1}{2}$	5 $\frac{1}{4}$ + TT	1 $\frac{1}{2}$	3 $\frac{1}{4}$
								11 or more	63	20 $\frac{3}{4}$	36 $\frac{5}{8}$			
84-110	See page 204													

*Rod take-out = (factor)-(TT / 2) for lever in high position.

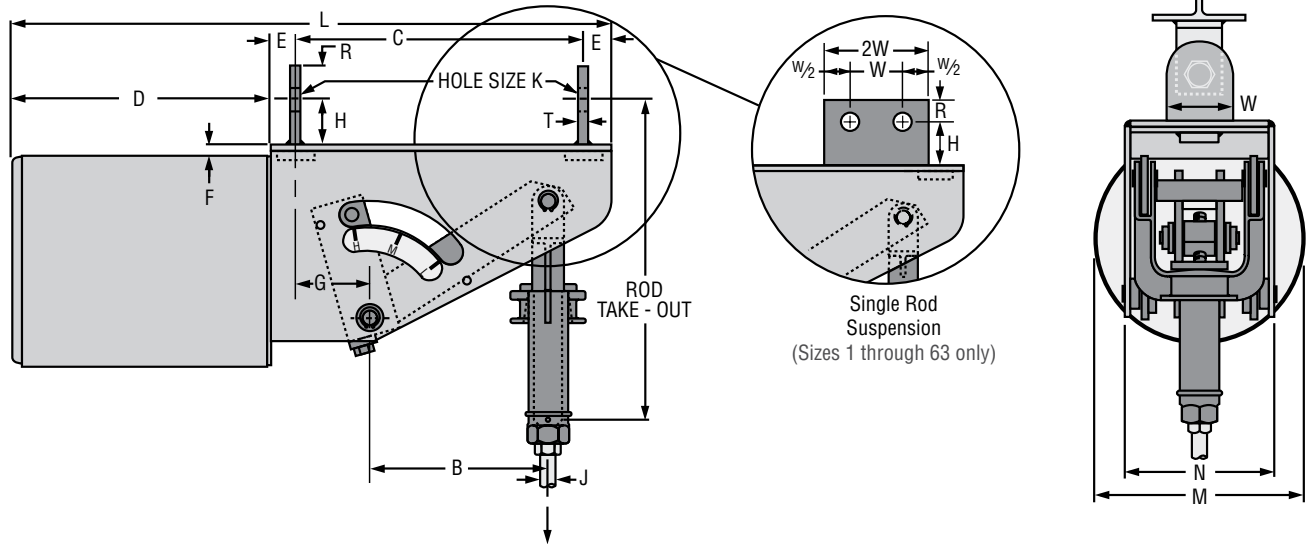
J-ROD SELECTION CHART

Load (lbs)	0 800	801 1,500	1,501 2,540	2,541 4,000	4,001 6,100	6,101 9,400	9,401 13,400	13,401 18,300	18,301 24,700	24,701 31,000	31,001 39,000	39,001 48,000	48,001 58,000
Rod Size	1/2	5/8	3/4	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/4*

* 3 1/4" is furnished with 4 UNC series thread.

Fig. 81-H Type B

Model R



Type B is furnished with two lugs – one at each end of the hanger frame. These lugs permit use of Fig. 66 welded beam attachments, clevises or angle clips for attachment where headroom is limited. Sizes 1 to 9 are furnished with swivel eye and turnbuckle instead of yoke and coupling.

Notes: Also available for single rod suspension as indicated above. When ordering specify “for single rod suspension.” See load travel tables, page 186 through 189 for “B” dimension. For weights see page 205. Location of travel indicator and contour of side plate may vary from that shown.

FIG. 81-H TYPE B: DIMENSIONS (IN)

Hanger Sizes	D	E	F	G	H	M	N	Total Travel TT	L	C	Factors	J-Rod		
												Min Thd Length	Rod Dia. Min Max	
1 - 9	8 1/4	1 1/4	7/8	1 3/4	1 1/2	6 1/8	4 1/8	4 or less	16 1/4	5 1/2	14 5/8	1 3/4 + TT	1/2	1/2
								4 1/2 or more	20 1/4	9 1/2	17 3/16			
10 - 18	8 7/16	1 1/4	1/2	2 5/16	1 1/2	8 5/16	6 7/16	5 or less	18 1/16	7 1/2	13 1/4	1 3/4 + TT	1/2	3/4
								5 1/2 or more	21 1/16	10 1/2	15 1/16			
19 - 34	14 7/16	1 3/8	5/8	3 3/4	2	12 7/16	8 9/16	5 or less	26 15/16	9 3/4	19 7/8	2 3/8 + TT	1/2	1 1/4
								5 1/2 or more	31 1/16	13 3/8	22			
35 - 49	16 13/16	2	1 1/16	4 1/2	3	13 3/4	9 13/16	6 or less	31 1/16	10 1/2	25 5/8	3 1/4 + TT	1/2	1 3/4
								6 1/2 or more	39 9/16	18 1/2	30 1/8			
50 - 63	26 3/16	3	1 5/16	6 3/8	4	17 3/8	11 1/4	8 or less	45 5/16	13 3/8	30 11/16	4 1/4 + TT	3/4	2 1/4
								8 1/2 to 11	53 3/16	21 3/8	30 11/16			
64 - 74	35 3/4	3 3/4	3 3/4	5	4 1/2	22 3/16	11	11 1/2 or more	53 3/16	21 3/8	36	5 3/4 + TT	1 1/4	2 3/4
								10 1/2 or less	57 1/2	15 1/4	42 3/8			
75 - 83	35 3/4	3 1/2	3 5/8	4 3/4	5	27 3/16	11	10 1/2 or less	57 1/2	14 3/4	45 3/4	5 3/4 + TT	1 1/2	3 1/4**
								11 or more	63	20 1/4	45 7/8			
84 - 110	See page 204													

* Rod take-out = (factor) - (TT / 2), for lever in high position.

J-ROD AND K-HOLE SELECTION CHART

Load (lbs)	0 800	801 1,500	1,501 2,540	2,541 4,000	4,001 6,100	6,101 9,400	9,401 13,400	13,401 18,300	18,301 24,700	24,701 31,000	31,001 39,000	39,001 48,000	48,001 58,000
J-rod	1/2	5/8	3/4	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/4**
K-Hole Size	1 1/16	1 3/16	1 5/16	1 1/4	1 1/2	1 3/4	2	2 3/8	2 5/8	2 7/8	3 1/8	3 3/8	3 5/8
R	1 1/4	1 1/4	1 1/4	1 1/2	2	2 1/2	2 1/2	3	3	4	4	4	4 1/2
T	1/4*	1/4*	3/8	1/2	5/8	3/4	3/4	3/4	3/4	1	1	1	1
W	2 1/2	2 1/2	2 1/2	3	4	5	5	6	6	8	8	8	9

* 3/8" for single rod suspension ** 3 1/4" is furnished with 4 UNC series thread.

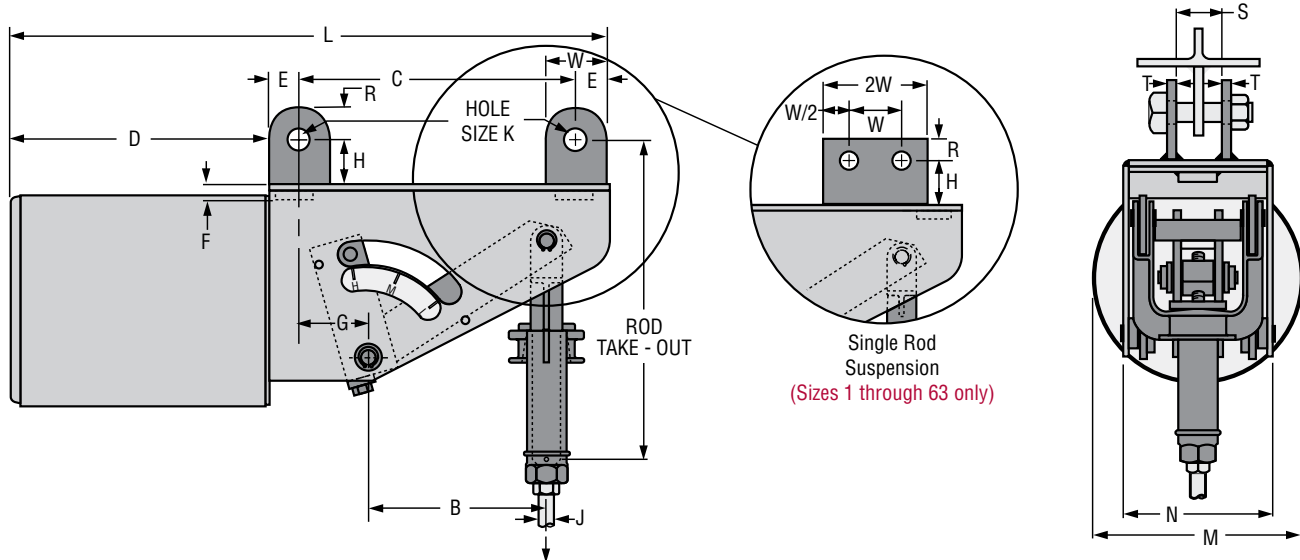


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CONSTANT SUPPORTS

Fig. 81-H Type C

Model R



Type C is furnished with two pair of lugs, one pair of lugs at each of the hanger frame. These lugs permit the use of two eye rods or two single plates for attachment where headroom is limited. Sizes 1 to 9 are furnished with swivel eye and turnbuckle instead of yoke and coupling.

Notes: Also available for single rod suspension as indicated above. When ordering specify "for single rod suspension." See load travel tables, page 186 through 189 for "B" dimension. For weights see page 205. Location of travel indicator and contour of side plate may vary from that shown.

FIG. 81-H TYPE C: DIMENSIONS (INCHES)

Hanger Sizes	D	E	F	G	H	M	N	Total Travel TT	L	C	Factors	J-Rod		
												Min Thd Length	Rod Dia.	
												Min	Max	
1 - 9	8 ¹ / ₄	1 ¹ / ₄	7 ⁷ / ₈	1 ³ / ₄	1 ¹ / ₂	6 ⁵ / ₈	4 ¹ / ₈	4 or less	16 ¹ / ₄	5 ¹ / ₂	14 ³ / ₈	1 ³ / ₄ + TT	1/2	1/2
								4 ¹ / ₂ or more	20 ¹ / ₄	9 ¹ / ₂	17 ³ / ₁₆			
10 - 18	8 ⁷ / ₁₆	1 ¹ / ₄	1/2	2 ⁵ / ₁₆	1 ¹ / ₂	8 ⁵ / ₁₆	6 ⁷ / ₁₆	5 or less	18 ⁷ / ₁₆	7 ¹ / ₂	13 ¹ / ₁₆	1 ³ / ₄ + TT	1/2	3/4
								5 ¹ / ₂ or more	21 ¹ / ₁₆	10 ¹ / ₂	15 ⁷ / ₁₆			
19 - 34	14 ⁷ / ₁₆	2	5/8	3 ³ / ₈	2	12 ⁷ / ₁₆	8 ⁹ / ₁₆	5 or less	26 ¹⁵ / ₁₆	8 ¹ / ₂	19 ⁹ / ₈	2 ³ / ₈ + TT	1/2	1 ¹ / ₄
								5 ¹ / ₂ or more	31 ¹ / ₁₆	12 ⁵ / ₈	22			
35 - 49	17 ¹ / ₁₆	2 ¹ / ₂	1 ¹ / ₁₆	4	3	13 ³ / ₄	9 ¹³ / ₁₆	6 or less	31 ¹ / ₁₆	9 ¹ / ₂	25 ⁵ / ₈	3 ¹ / ₄ + TT	1/2	1 ³ / ₄
								6 ¹ / ₂ or more	39 ⁹ / ₁₆	17 ¹ / ₂	30 ⁷ / ₈			
50 - 63	26 ³ / ₁₆	3	1 ⁵ / ₁₆	6 ³ / ₈	4	17 ¹¹ / ₁₆	11 ¹ / ₄	8 or less	45 ⁵ / ₁₆	13 ³ / ₈	30 ¹¹ / ₁₆	4 ¹ / ₄ + TT	3/4	2 ¹ / ₄
								8 ¹ / ₂ to 11	53 ⁵ / ₁₆	21 ³ / ₈	30 ¹¹ / ₁₆			
								11 ¹ / ₂ or more	53 ⁵ / ₁₆	21 ³ / ₈	36			
64 - 74	35 ³ / ₄	4	3 ¹ / ₄	4 ¹ / ₄	4 ¹ / ₂	22 ³ / ₁₆	11	10 ¹ / ₂ or less	57 ¹ / ₂	13 ³ / ₄	42 ³ / ₈	5 ³ / ₄ + TT	1 ¹ / ₄	2 ³ / ₄
								11 or more	63	19 ¹ / ₄	42 ¹ / ₂			
75 - 83	35 ³ / ₄	4 ¹ / ₂	3 ⁵ / ₈	3 ³ / ₄	5	27 ³ / ₁₆	11	10 ¹ / ₂ or less	57 ¹ / ₂	12 ³ / ₄	45 ³ / ₄	5 ³ / ₄ + TT	1 ¹ / ₂	3 ¹ / ₄
								11 or more	63	18 ¹ / ₄	45 ³ / ₄			
84 - 110	See page 204													

* Rod take-out = (factor) - (TT / 2), for lever in high position.

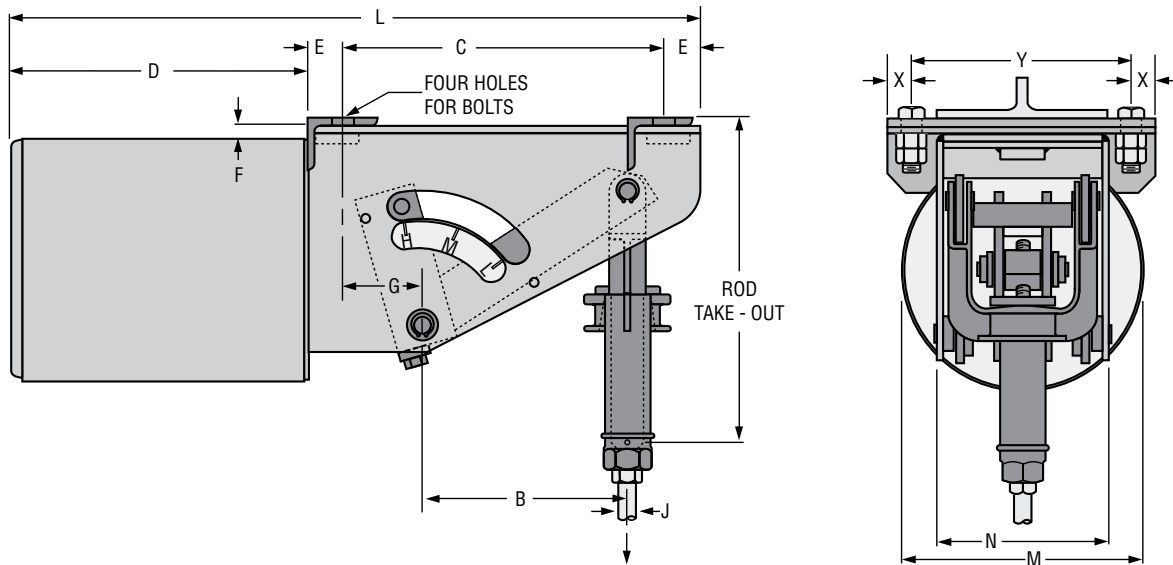
J-ROD AND K-HOLE SELECTION CHART

Load (lbs)	0 800	801 1,500	1,501 2,540	2,541 4,000	4,001 6,100	6,101 9,400	9,401 13,400	13,401 18,300	18,301 24,700	24,701 31,000	31,001 39,000	39,001 48,000	48,001 58,000
J-Rod	1/2	5/8	3/4	1	1 ¹ / ₄	1 ¹ / ₂	1 ³ / ₄	2	2 ¹ / ₄	2 ¹ / ₂	2 ³ / ₄	3	3 ¹ / ₄ **
K-Hole Size	1 ¹ / ₁₆	1 ³ / ₁₆	1 ⁵ / ₁₆	1 ¹ / ₄	1 ¹ / ₂	1 ³ / ₄	2	2 ³ / ₈	2 ⁵ / ₈	2 ⁷ / ₈	3 ¹ / ₈	3 ³ / ₈	3 ⁵ / ₈
R	1 ¹ / ₄	1 ¹ / ₄	1 ¹ / ₄	1 ¹ / ₂	2	2 ¹ / ₂	2 ¹ / ₂	3	3	4	4	4	4 ¹ / ₂
S	7/8	1 ¹ / ₁₆	1 ¹ / ₄	1 ⁵ / ₈	2	2 ³ / ₈	2 ³ / ₈	2 ⁷ / ₈	3 ¹ / ₈	3 ³ / ₈	3 ⁵ / ₈	3 ⁷ / ₈	4 ¹ / ₈
T	1/4*	1/4*	3/8	1/2	5/8	3/4	3/4	3/4	3/4	1	1	1	1
W	2 ¹ / ₂	2 ¹ / ₂	2 ¹ / ₂	3	4	5	5	6	6	8	8	8	9

* 3/8" for single rod suspension ** 3¹/₄" is furnished with 4 UNC series thread.

Fig. 81-H Type D

Model R



Type D may be bolted directly under steel. Sizes 1 to 9 are furnished with swivel eye and turnbuckle instead of yoke and coupling.

Notes: See load travel tables, page 186 through 189 for "B" dimension. For weights see page 205. Location of travel indicator and contour of side plate may vary from that shown.

FIG. 81-H TYPE D: DIMENSIONS (INCHES)

Hanger Sizes	D	E	F	G	M	N	X	Y	Angle Size	Bracket Hole Dia.	Total Travel TT	L	C	Factors	J-Rod		
															Min Thd Length	Rod Dia.	
																Min	Max
1 - 9	8 ³ / ₄	1	7 ¹ / ₈	2	6 ¹ / ₈	4 ¹ / ₈	3 ¹ / ₄	5 ⁵ / ₈	2 x 2 x 1/4	9 ¹ / ₁₆	4 or less	16 ¹ / ₄	6	13 ³ / ₈	1 ³ / ₄ + TT	1/2	1/2
											4 ¹ / ₂ or more	20 ¹ / ₄	10	15 ¹⁵ / ₁₆			
10 - 18	8 ⁷ / ₁₆	3 ¹ / ₄	1/2	2 ⁹ / ₁₆	8 ⁵ / ₁₆	6 ⁷ / ₁₆	7 ¹ / ₈	8 ¹ / ₁₆	1 1/2 x 1 1/2 x 1/4	3/4	5 or less	18 ⁷ / ₁₆	3 1/2	11 ¹³ / ₁₆	1 ³ / ₄ + TT	1/2	3/4
											5 1/2 or more	21 ⁷ / ₁₆	6	14 ³ / ₁₆			
19 - 34	14 ⁷ / ₁₆	1 1/2	5/8	3 ⁵ / ₈	12 ⁷ / ₁₆	8 ⁹ / ₁₆	1 1/8	11 ⁵ / ₁₆	3 x 3 1/2 x 1/4	3/4	5 or less	26 ¹⁵ / ₁₆	9 1/2	17 ³ / ₄	2 ³ / ₈ + TT	1/2	1 1/4
											5 1/2 or more	31 ¹ / ₁₆	13 ⁵ / ₈	19 ⁷ / ₈			
35 - 49	17 ¹ / ₁₆	2	1 1/16	4 1/2	13 ³ / ₄	9 ⁹ / ₁₆	1 3/8	13	3 x 4 x 3/8	7/8	6 or less	31 ¹ / ₁₆	10 1/2	20 ¹³ / ₁₆	3 1/4 + TT	1/2	1 1/4
											6 1/2 or more	39 ⁹ / ₁₆	18 1/2	25 ¹ / ₁₆			
50 - 63	26 ³ / ₁₆	2	1 5/16	7 3/8	17 ¹¹ / ₁₆	11 1/4	1 5/8	14 ⁵ / ₈	4 x 4 x 3/8	1 3/8	8 or less	45 ⁵ / ₁₆	15 ³ / ₈	27 ¹ / ₁₆	4 1/4 + TT	3/4	2 1/4
											8 1/2 to 11	53 ³ / ₁₆	23 ³ / ₈	27 ¹ / ₁₆			
											11 or more	53 ³ / ₁₆	23 ³ / ₈	32 ³ / ₈			
64 - 74	35 ³ / ₄	3	3 3/4	5 1/4	22 ³ / ₁₆	11	2	15	4 x 6 x 1/2	1 5/8	10 1/2 or less	57 1/2	15 ³ / ₄	38 ³ / ₈	5 3/4 + TT	1 1/4	2 3/4
											11 or more	63	21 1/4	38 1/2			
75 - 83	35 ³ / ₄	3	3 3/8	4 3/4	27 ³ / ₁₆	11	2	15	4 x 6 x 1/2	1 5/8	10 1/2 or less	57 1/2	15 ³ / ₄	41 1/4	5 3/4 + TT	1 1/2	3 1/4
											11 or more	63	21 1/4	41 ³ / ₈			
84 - 110	Not available																

* Rod take-out = factor - (TT / 2), for lever in high position.

J-ROD SELECTION CHART

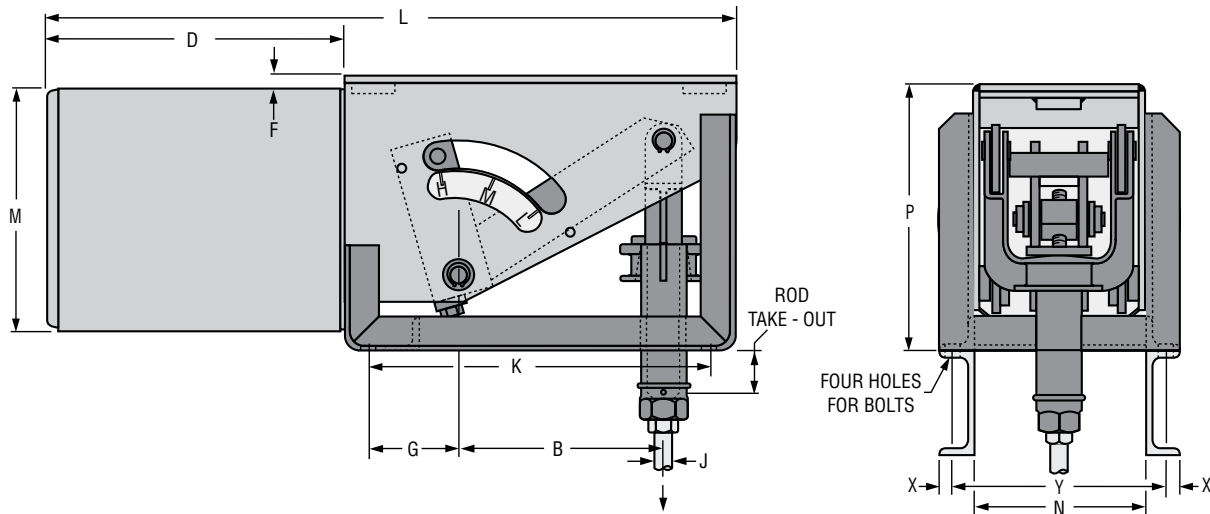
Load (lbs)	0 800	801 1,500	1,501 2,540	2,541 4,000	4,001 6,100	6,101 9,400	9,401 13,400	13,401 18,300	18,301 24,700	24,701 31,000	31,001 39,000	39,001 48,000	48,001 58,000
J Rod Size	1/2	5/8	3/4	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/4*

*3 1/4" is furnished with 4 UNC series thread.

CONSTANT SUPPORTS

Fig. 81-H Type E

Model R



Type E incorporates two brackets as part of its frame, permitting the bolting of the constant support to the top of structural steel. Sizes 1 to 9 are furnished with swivel eye and turnbuckle instead of yoke and coupling. If rod take-out does not exceed the depth of the supporting steel and rod coupling is required to extend below the steel,

specify the depth of the supporting steel. Increase rod take-out by the depth of the steel.

Notes: See load travel tables, page 186 through 189 for "B" dimension. For weights see page 205. Location of travel indicator and contour of side plate may vary from that shown.

FIG. 81-H TYPE E: DIMENSIONS (IN)

Hanger Sizes	D	F	G	M	N	P	X	Y	Angle Size	Bkt. Hole Dia.	Total Travel TT	L	K	Factors	J-Rod		
															Min Thd Length	Rod Dia.	
																Min	Max
1 - 9	8 ³ / ₄	1 ¹ / ₄	2	6 ¹ / ₈	4 ¹ / ₈	8 ¹ / ₂	5 ⁵ / ₈	5 ¹⁵ / ₁₆	1 ¹ / ₂ x 1 ¹ / ₂ x 1 ¹ / ₄	9 ¹ / ₁₆	4 or less	16 ¹ / ₄	6	5 ¹ / ₈	1 ³ / ₄ + TT	1 ¹ / ₂	1 ¹ / ₂
											4 ¹ / ₂ or more	20 ¹ / ₄	10	7 ¹ / ₁₆			
10 - 18	8 ⁷ / ₁₆	1	2 ¹ / ₁₆	8 ⁵ / ₁₆	6 ⁷ / ₁₆	11 ⁷ / ₁₆	5 ⁵ / ₈	8 ¹⁵ / ₁₆	1 ¹ / ₂ x 2 x 1 ¹ / ₄	3 ³ / ₄	5 or less	18 ⁷ / ₁₆	7 ¹ / ₂	1 ³ / ₄	1 ³ / ₄ + TT	1 ¹ / ₂	3 ³ / ₄
											5 ¹ / ₂ or more	21 ⁷ / ₁₆	7 ¹ / ₂	4 ¹ / ₁₆			
19 - 34	14 ⁷ / ₁₆	5 ⁵ / ₈	3 ⁵ / ₈	12 ⁷ / ₁₆	8 ⁹ / ₁₆	15 ⁵ / ₈	5 ⁵ / ₈	11 ³ / ₁₆	1 ¹ / ₂ x 2 ¹ / ₂ x 1 ¹ / ₄	3 ³ / ₄	5 or less	26 ¹⁵ / ₁₆	10	3 ³ / ₈	2 ³ / ₈ + TT	1 ¹ / ₂	1 ¹ / ₄
											5 ¹ / ₂ or more	31 ¹ / ₁₆	10	5 ¹ / ₂			
35 - 49	17 ¹ / ₁₆	1 ¹ / ₁₆	4 ¹ / ₂	13 ³ / ₄	9 ¹³ / ₁₆	19 ⁵ / ₈	1 ³ / ₁₆	13 ⁵ / ₁₆	3 x 2 x 3 ³ / ₈	7 ⁵ / ₈	6 or less	31 ¹ / ₁₆	11 ⁵ / ₈	4 ⁷ / ₈	3 ¹ / ₄ + TT	1 ¹ / ₂	1 ³ / ₄
											6 ¹ / ₂ or more	39 ⁹ / ₁₆	11 ⁵ / ₈	9 ¹ / ₂			
50 - 63	26 ³ / ₁₆	1 ⁵ / ₁₆	7 ⁵ / ₈	17 ¹ / ₁₆	11 ¹ / ₄	19 ³ / ₄	1 ⁵ / ₁₆	14 ¹ / ₁₆	3 x 3 x 3 ³ / ₈	1 ³ / ₈	8 or less	45 ⁹ / ₁₆	15 ⁵ / ₈	6 ⁷ / ₈	4 ¹ / ₄ + TT	3 ³ / ₄	2 ¹ / ₄
											8 ¹ / ₂ to 11	53 ⁹ / ₁₆	23 ³ / ₈	6 ⁷ / ₈			
											11 ¹ / ₂ or more	53 ⁹ / ₁₆	23 ³ / ₈	12 ¹ / ₄			
64 - 74	35 ³ / ₄	3 ³ / ₄	5 ¹ / ₄	22 ³ / ₁₆	11	26 ⁷ / ₈	1 ⁹ / ₁₆	14 ¹⁵ / ₁₆	3 ¹ / ₂ x 3 ¹ / ₂ x 1 ¹ / ₂	1 ⁵ / ₈	10 ¹ / ₂ or less	57 ¹ / ₂	17 ¹ / ₂	11 ¹ / ₈	5 ³ / ₄ + TT	1 ¹ / ₄	2 ¹ / ₄
											11 or more	63	23	11 ¹ / ₄			
75 - 83	35 ³ / ₄	3 ⁵ / ₈	4 ³ / ₄	27 ³ / ₁₆	11	31 ⁷ / ₈	1 ⁹ / ₁₆	14 ¹⁵ / ₁₆	3 ¹ / ₂ x 3 ¹ / ₂ x 1 ¹ / ₂	1 ⁵ / ₈	10 ¹ / ₂ or less	57 ¹ / ₂	17 ¹ / ₂	9	5 ³ / ₄ + TT	1 ¹ / ₂	3 ³ / ₄
											11 or more	63	23	9 ¹ / ₈			
84 - 110	Refer to page 204																

* Rod take-out = (factor) - (TT / 2), for lever in high position.

J-ROD SELECTION CHART

Load (lbs)	0 800	801 1,500	1,501 2,540	2,541 4,000	4,001 6,100	6,101 9,400	9,401 13,400	13,401 18,300	18,301 24,700	24,701 31,000	31,001 39,000	39,001 48,000	48,001 58,000
J Rod Size	1/2	5/8	3/4	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/4*

*3/4" is furnished with 4 UNC series thread.