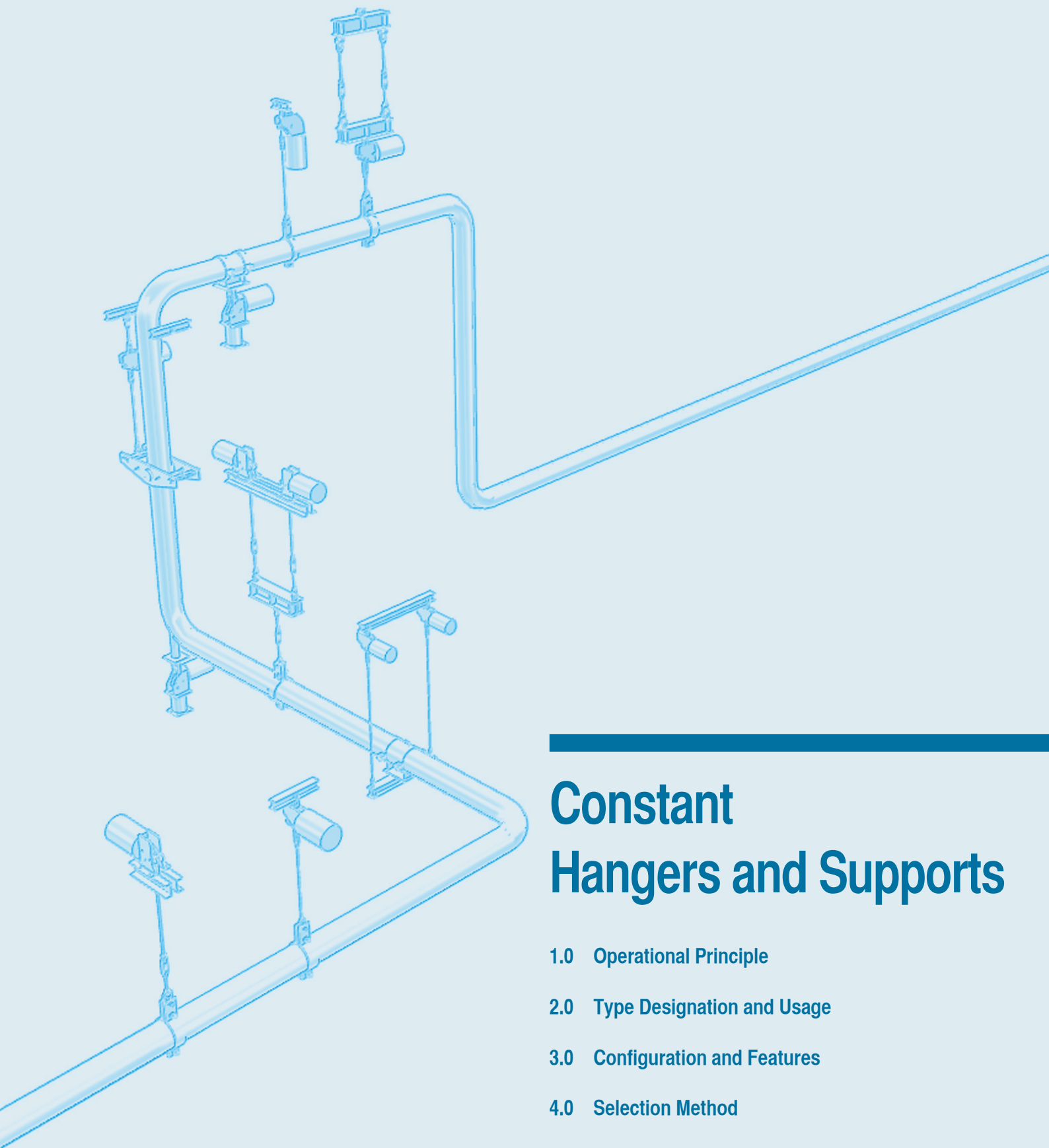




Constant Hangers and Supports

- 1.0 Operational Principle
- 2.0 Type Designation and Usage
- 3.0 Configuration and Features
- 4.0 Selection Method
- 5.0 Dimensions

Constant Hangers and Supports

Constant Hanger and Support will be used where the thermal movement of the piping system is large. This can release the secondary stress induced from restraining the thermal movements of the piping system. Constant hanger and support should be used when the variable hanger and support can not satisfy the variability requirement specified in Code/Standard (normally, maximum 25%) or Customer's Specification.

1.0 Operational Principle

This section explains the operational principle of constant hanger assembled with coil spring and link mechanism.

Constant hanger is mechanism which guarantee constancy of the load regardless of travel, and the operational principle should be fully understood in order to select and handle this product.

To begin with, consider the operational principle without regard to weight of hanger

In case that the structure is connected on the top P of Frame ① and load is acted on Eyebolt ④ installed in point A of Rotated Arm ③ (Refer to Fig. 1.1).

Fig. 1.2 and 1.3 are schematic diagrams to explain operational principle for minimum travel and maximum one, respectively.

Moment(M_w) about rotational center O due to constant load, W is given by

$$M_w = W \overline{AD} = Wa \sin \theta \quad (1)$$

Moment(M_s) about rotational center O by compressible spring load, P is given by

$$M_s = P \overline{OE} = k\delta \overline{OE} \quad (2)$$

where δ is the displacement of spring coil and k is spring constant.

In the triangular $\triangle OBC$,

$$\begin{aligned} \overline{OE} \cdot \overline{BC} &= \overline{OC} \cdot \overline{BF} \\ \overline{OE} &= \frac{\overline{OC} \cdot \overline{BF}}{\overline{BC}} = \frac{cb \sin \varphi}{d} \end{aligned} \quad (3)$$

Substituting eq.(3) into eq.(2), then

$$M_s = P \overline{OE} = k\delta \frac{cb \sin \varphi}{d} \quad (4)$$

For moment equilibrium about the rotational center O,

$$M_w = M_s$$

From eq.(1) and eq.(4)

$$Wa \sin \theta = k\delta \frac{cb \sin \varphi}{d} \quad (5)$$

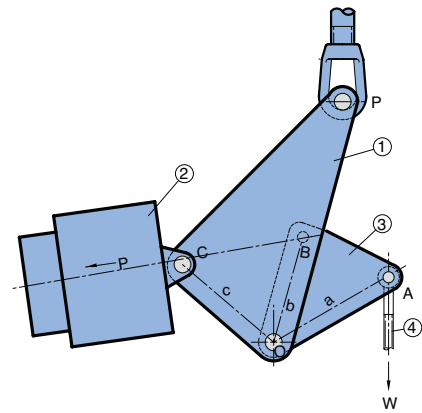


Fig. 1.1

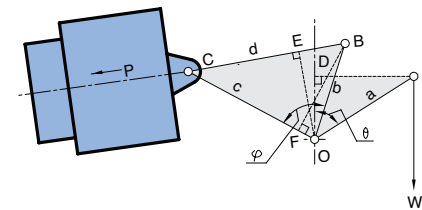


Fig. 1.2

In eq.(5), θ will be always equal to φ regardless of travel, on the condition that OA, OB and OC were positioned so that $\theta = \varphi$ in Fig. 1.2

In this case eq.(5) can be simplified as eq.(6);

$$W = \frac{kcb}{a} \cdot \frac{\delta}{d} \quad (6)$$

The dimension d is always equal to displacement of spring coil δ for all travel range, if $BC=d$ at the maximum displacement.

Accordingly, eq.(6) can be simplified as eq.(7);

$$W = \frac{kcb}{a} \quad (7)$$

Where dimensions a , b and c are arm lengths of OA, OB and OC, respectively and always constant values.

Additionally, spring constant k is constant value, and theoretically eq.(7) is constant for all travel range.

Actually, when the hanger is suspended on the rod(Refer to Fig. 1.4), the weight of the hanger and its center of gravity should be considered.

In Fig. 1.4, Point G and Weight Q indicate the center of gravity of the hanger and its weight, respectively.

For moment equilibrium about point P,

$$\ell_1 Q = \ell_2 W \quad \ell_1 = \ell_2 \frac{W}{Q} \quad (8)$$

Point P should be determined for eq.(8).

Point G can be obtained, and length Z and weight Q can be determined by calculation.

Y can be calculated if the total travel is determined,

$$\ell_1 = X + Z, \quad \ell_2 = Y - X \text{ and input these parameters in eq.(8),}$$

$$X + Z = \frac{W}{Q}(Y - X),$$

$$X = \frac{mY - Z}{1 + m} \quad (9)$$

$$m = W / Q.$$

X will be determined by m , Y , Z in eq.(9).

Actually, empirical equation is used in order to determine X for each hanger type, if the travel were given.

Even if eq.(7) were correct, care should be taken because it doesn't guarantee the constancy of the load, in case X is inaccurate.

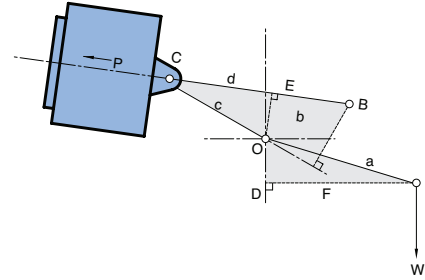


Fig. 1.3

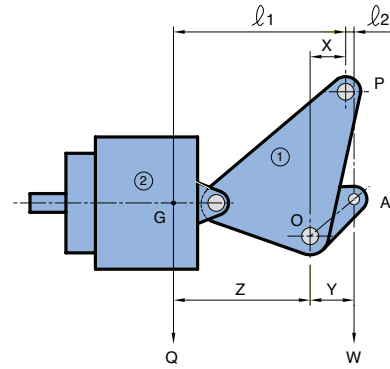


Fig. 1.4

Constant Hangers and Supports

2.0 Type Designation and Usage

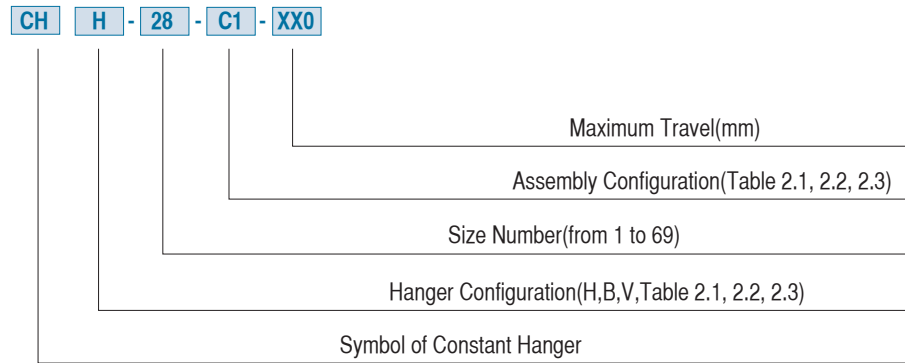


Table 2.1 Usage and Capacity for CHH

Assembly Configuration	Appearance	Connection and Usage	Max. Capacity Constant, Load and Travel
A1		Easy to install Rod directly connected	. 37,638(kN-mm) . 289.5(kN) at 130(mm) . 94.1(kN) at 400(mm)
A1A		Easy to install Eye nut connected Commonly used	. 64,135(kN-mm) . 320.7(kN) at 200(mm) . 160.3(kN) at 400(mm)
B1		Directly connected to structure with eye plate	. 64,135(kN-mm) . 320.7(kN) at 200(mm) . 160.3(kN) at 400(mm)
B1A		Directly connected to structure with eye plate	. 64,135(kN-mm) . 320.7(kN) at 200(mm) . 160.3(kN) at 400(mm)
B2		Rod directly connected	. 25,890(kN-mm) . 235.4(kN) at 110(mm) . 64.7(kN) at 400(mm)
C1		Hanging type, but seated on the structure	. 25,890(kN-mm) . 235.4(kN) at 110(mm) . 64.7(kN) at 400(mm)
F1		Supporting type	. 25,890(kN-mm) . 235.4(kN) at 110(mm) . 64.7(kN) at 400(mm)

Table 2.2 Usage and Capacity for CHB

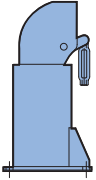
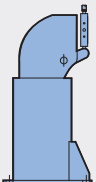
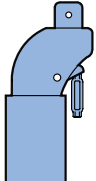
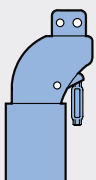
Assembly Configuration	Appearance	Connection and Usage	Max. Capacity Constant, Load and Travel
C1		Hanging type for narrow space, but seated on the structure	. 9,218(kN-mm) . 54.2(kN) at 170(mm) . 23(kN) at 400(mm)
D1		Supporting type	. 9,218(kN-mm) . 70.9(kN) at 130(mm) . 23(kN) at 400(mm)

Table 2.3 Usage and Capacity for CHV

Assembly Configuration	Appearance	Connection and Usage	Max Capacity Constant, Load and Travel
LB1		Directly connected to structure with eye plate for narrow space	. 47,000(kN-mm) . 174.0(kN) at 270(mm) . 117.5(kN) at 400(mm)
LB2		Directly connected to structure with eye plate for narrow space	. 47,000(kN-mm) . 174.0(kN) at 270(mm) . 120.5(kN) at 390(mm)

note 1) Capacity Constant = Max Travel x Load at a given hanger

Constant Hangers and Supports

3.0 Configuration and Features

Most configuration of standardized constant hanger is similar, but upper connecting part and direction of spring case are slightly different according to each type.

Fig. 3.1 show the schematic diagram and main items of the constant hanger.

Several features are described as follows;

- 1) Use the pre-relaxed spring coil in order to guarantee spring characteristics for plant life.
- 2) The casing is strong enough to withstand the external impact during erection.
- 3) Adequately enclose the spring coil to prevent from the dirt, the snow and the water which can degrade the spring characteristics.
- 4) Use dry bearing to reduce the friction parts and withstand overload in the rotating part.
- 5) The hole of the load blocks tapered to absorb the swing of the rod about up to 4° due to horizontal movement of the pipe.
- 6) Universal locking device used.
- 7) Turnbuckle placed to adjust the pipe elevation.
- 8) Load adjusted by turning the nut placed in the spring plate, but by turning the load adjust bolt for safety.
- 9) Lifting lug attached to handle and install easily.
- 10) Designed as follows to protect the hanger from the abnormal operation or overstress;
 - a) To prevent the spring coil from the overstress by limiting the spring travel range.
 - b) All the items are strong enough to withstand the double load of the normal operating load or more when blocked for hydro test or cleaning.

Part No.	Item Name
1	Frame
2	Roller Guide
3	Top Connecting Assembly
4	Travel Scale
5	Travel Stop Plate
6	Travel Stop
7	Locking Pin
8	Spring Case
9	Name Plate
10	Lifting Lug
11	Rotation Arm Arm</td
12	Link Plate
13	Travel Indicator
14	Load Transmission Bolt
15	Load Block
16	Turnbuckle
17	Main Shaft
18	Load Adjust Bolt
19	Load Adjust Nut
20	Load Scale
21	Roller Shaft
22	Roller
23	Coil Spring
24	Spring Plate
25	Tension Bolt

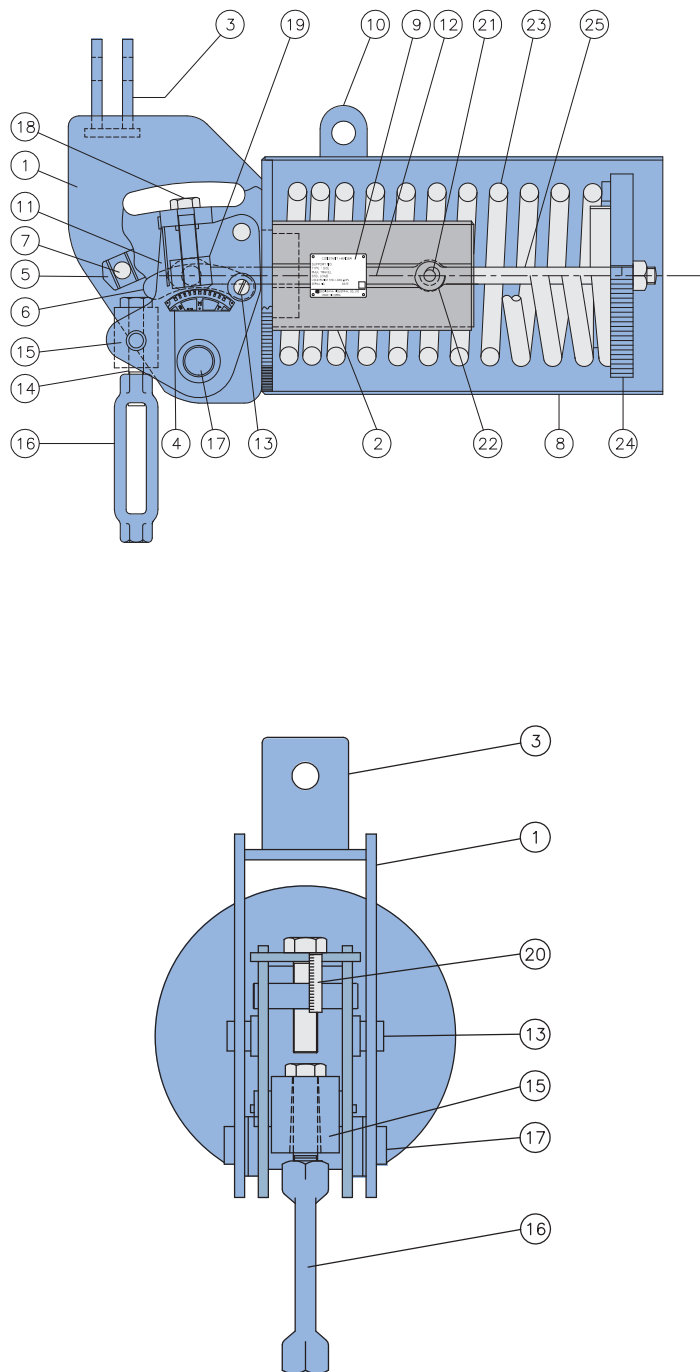


Fig. 3.1 Schematic Diagram and Main Items

Constant Hangers and Supports

4.0 Selection Method

This section explains how to select constant hanger size step by step.

Step 1. Input Data

Load : $W = 49(\text{kN})$

Actual Travel : $AT = -70(\text{mm})(\text{downward})$

Type CHH-C1 to be applicable

Required Travel Margin : 20% of actual travel and additionally 20(mm).

Step 2. Determination of Maximum Travel, $T_{\max}$

$$T_{\max} = 1.2(AT) + 20 = 1.2(70) + 20 = 104(\text{mm})$$

By Truncation, set $T_{\max} = 110(\text{mm})$

Step 3. Selection of Hanger Size

From constant hanger selection table, Size 40 selected, i.e, CHH-40-C1-110

Step 4. Selection of Rod Size

M36 from Rod Size Table

Step 5. Determination of Blocking Position , L_p

$$L_p = (T_{\max} \pm AT) / 2 = (110 - 70) / 2 = 20(\text{mm})$$

Refer to selection table for detail selection

Rod Size Table

Travel (cm)	Travel(cm)																																								Travel (cm)
	Size	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	Size			
	1																																						1		
	2																																						2		
	3																																						3		
	4																																						4		
	5																																						5		
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Size	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	Size				
Travel (cm)	Travel(cm)																																								Travel (cm)

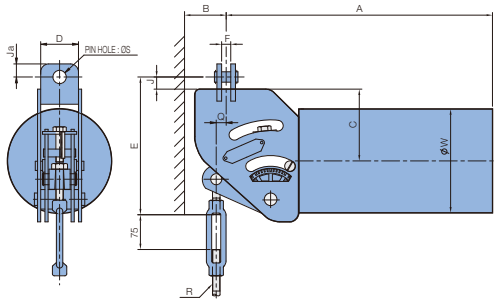
note 1) When the Travel is more than 40, or the Size is more than 69, our products can be made to order specially.

Constant Hangers and Supports

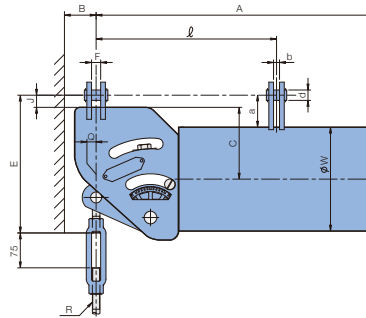
5.0 Dimensions

5.1 Type CHH-A1A

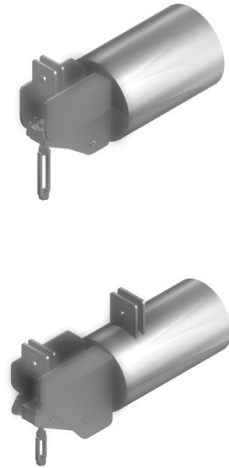
► Refer to Rod Size Table in page CH-8 for rod diameter



(SIZE 1 ~ 46)



(SIZE 48 ~ 69)



Dimension for Type CHH-A1A

Size No.	Main Dimension(mm)											
	B	C	D	F	S	J	Ja	ΦW	a	b	d	l
1-3	**	**	50	20	16	**	25	136				
4-7	**	**	65	20	16		25	151				
8-12	**	**	65	20	16		25	191				
14-20	194	166	102	*	*	40	50	289				
22-28	189	166	102	*	*	40	50	289				
30-36	264	228	120	*	*	30, 40	50,60	339				
38-46	259	305	172	*	*	15	60,95	419				
48-52	322	365	230	*	*	15	60,105	512	124	50	24	800
54-56	322	365	230	*	*	15	60,105	522	119	50	24	800
58-60	322	365	230	*	*	15	60,105	562	109	50	24	800
62-64	389	393	254	*	*	15	105,110	572	122	50	30	800
66	321	453	254	80	80	15	110	630	75	50	30	850
68-69	429	475	311	80	85	20	125	682	75	50	30	1150

note 1) Dimension B : workable space of hanger

2) Dimension F and S according to R-size(marked as *)

Dimension : mm

R	M16	M20	M24	M30	M36	M42	M48	M56	M64	M72	M80
F	20	25	29	35	41	47	55	90	90	90	90
S	16	24	30	36	42	50	60	65	75	80	85

3) Dimension B, C and J

according to hanger size and travel(marked as **)

Dimension : mm

Size \ Travel		50 - 90	100 - 200	210 - 300	310 - 400
1-3	B	152	165	239	380
	C	110	110	110	165
	J	15	30	30	30
4-7	B	135	154	195	292
	C	120	120	120	170
	J	10	30	30	30
8-12	B	171	151	170	229
	C	147	147	147	197
	J	10	35	35	35

Dimension A, E and Q

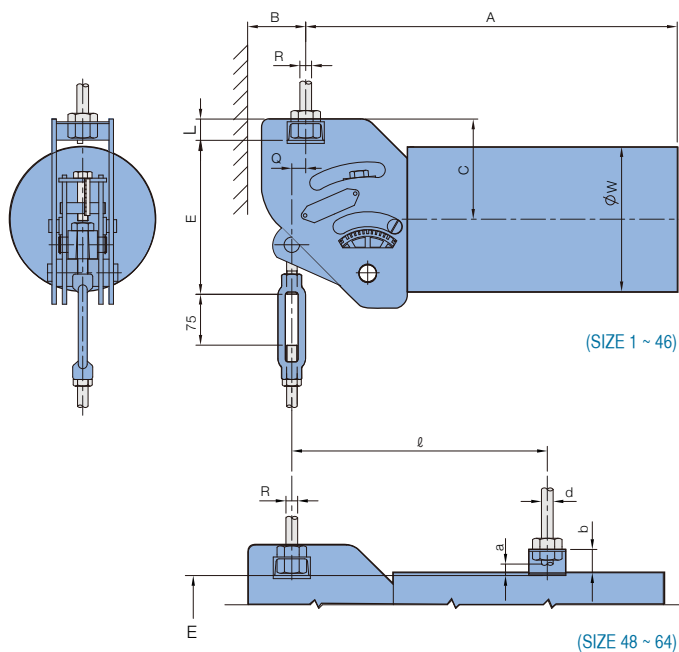
Dimension : mm

Size	Dimension	Maximum Travel(mm)																																			
		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	310	320	330	340	350	360	370	380	390	400
1	A	370	375	380	384	389	394	398	403	409	413	417	421	423	426	428	428	429	430	429	429	429	427	426	425	422	420	418	414	411	408	403	399	395	389	384	379
	E	240	235	230	225	220	230	225	220	215	210	205	200	185	190	185	180	175	170	165	160	155	150	145	140	135	130	180	175	170	165	160	155	150	145	140	135
	Q	8	12	16	20	24	28	32	36	39	43	48	53	59	65	72	80	88	96	105	114	123	133	143	153	164	175	186	198	210	222	235	248	261	275	289	302
2-3	A	369	377	384	390	397	403	408	414	421	426	431	436	440	444	447	451	455	459	461	464	467	468	470	472	472	473	474	473	473	473	471	470	469	466	464	462
	E	240	235	230	225	220	230	225	220	215	210	205	200	185	190	185	180	175	170	165	160	155	150	145	140	135	130	180	175	170	165	160	155	150	145	140	135
	Q	9	10	12	14	16	19	22	25	27	30	34	38	42	47	53	57	62	67	73	79	85	92	99	106	114	122	129	139	148	156	167	177	186	198	209	219
4-5	A	401	409	416	421	428	433	439	445	450	454	461	467	472	476	480	484	488	492	494	497	500	501	503	505	505	506	507	507	506	506	504	503	502	499	497	495
	E	250	245	240	235	230	245	240	235	230	225	220	215	210	205	200	195	190	185	180	175	170	165	160	155	150	145	190	185	180	175	170	165	160	155	150	145
	Q	7	8	10	13	15	19	21	24	28	32	34	37	40	45	50	54	59	64	70	76	82	89	96	102	111	119	126	135	145	153	164	174	183	195	206	216
6-7	A	402	410	418	424	431	438	445	453	460	466	473	480	485	491	496	500	510	515	520	525	530	545	550	550	555	560	565	565	570	575	580	580	585	590	590	595
	E	250	245	240	235	230	245	240	235	230	225	220	215	210	205	200	195	190	185	180	175	170	165	160	155	150	145	190	185	180	175	170	165	160	155	150	145
	Q	6	7	8	10	12	14	15	16	18	20	22	24	27	30	34	38	37	41	44	48	52	45	49	57	61	65	69	77	81	84	88	97	100	104	113	116
8-12	A	419	427	435	442	450	458	465	472	479	485	492	499	505	511	517	523	529	535	541	548	555	560	566	571	576	576	580	584	588	591	594	602	604	606	608	615
	E	270	265	260	255	250	280	275	270	265	260	255	250	245	240	235	230	225	220	215	210	205	200	195	190	185	180	225	220	215	210	205	200	195	190	185	180
	Q	5	6	7	8	9	10	11	13	15	17	26	28	30	33	37	38	34	38	39	41	44	46	49	52	56	65	69	74	79	84	90	91	97	104	111	112
14-16	A	561	569	576	583	592	599	606	614	621	628	634	640	646	653	658	664	669	674	679	685	690	695	697	702	707											
	E	350	345	340	335	330	325	320	315	310	305	300	295	290	285	280	275	270	265	260	255	250	245	240	235	230											
	Q	6	7	8	10	10	11	13	14	15	17	20	22	25	27	30	33	36	40	44	47	50	54	60	64	68											
18-24	A	561	569	576	583	592	599	606	614	621	630	635	643	651	658	664	671	677	685	692	699	704	712	718	726	733											
	E	350	345	340	335	330	325	320	315	310	305	300	295	290	285	280	275	270	265	260	255	250	245	240	235	230											
	Q	6	7	8	10	10	11	13	14	15	15	18	19	20	22	24	26	28	29	31	33	36	37	39	40	42											
26-28	A	591	599	606	613	622	629	636	644	651	660	665	673	681	688	694	701	707	715	722	729	734	742	748	756	763											
	E	350	345	340	335	330	325	320	315	310	305	300	295	290	285	280	275	270	265	260	255	250	245	240	235	230											
	Q	6	7	8	10	10	11	13	14	15	15	18	19	20	22	24	26	28	29	31	33	36	37	39	40	42											
30-32	A	705	710	716	724	732	740	746	754	762	770	776	786	794	802	808	816	824	832	838	846	854	862	870	878	886	894	902	910	918	924	932	940	946			
	E	465	460	455	450	445	440	435	430	425	420	415	410	405	400	395	390	385	380	375	370	365	360	355	350	345	340	335	330	325	320	315	310	305			
	Q	4	8	11	11	12	13	15	16	17	17	19	19	20	23	23	24	25	27	28	28	29	30	30	31	32	32	33	34	36	37	38	40				
34-36	A	705	710	716	724	732	740	746	754	762	770	776	786	794	802	808	816	824	832	838	846	854	862	870	878	886	894	902	910	918	924	932	940	946			
	E	475	460	455	450	445	440	435	430	425	420	415	410	405	400	395	390	385	380	375	370	365	360	355	350	345	340	335	330	325	320	315	310	305			
	Q	4	8	11	11	12	13	15	16	17	17	20	19	19	20	23	23	24	25	27	28	28	29	30	30	31	32	32	33	34	36	37	38	40			
38-46	A	875	883	891	900	907	916	923	932	941	949	958	965	974	982	990	998	1004	1018	1020	1029	1036	1045	1052	1060	1067	1075	1082	1089	1096	1104	1111					
	E	555	550	545	540	535	530	525	520	515	510	505	500	495	490	485	480	475	470	465	460	455	450	445	440	435	430	425	420	415	410	405					
	Q	7	7	8	8	9	9	10	10	10	10	10	11	11	12	13	14	16	16	17	17	18.5	19	20	21	22	23	25	26	28	29	30					
48-50	A	1282	1291	1300	1309	1318	1327	1336	1345	1354	1363	1372	1381	1389	1399	1407	1416	1425	1434	1443	1452	1460	1469	1478	1487	1494	1502	1511	1518	1528	1536						
	E	735	730	725	720	715	710	700	695	690	685	680	675	670	660	655	650	645	640	635	630	620	615	610	605	600	595	590	580	575	570						
	Q	-12	-13	-14	-14	-15	-16	-17	-16	-18	-19	-20	-21	-21	-22	-22	-23	-24	-25	-25	-26	-26	-27	-27	-28	-28	-27	-27	-28	-27	-29	-28					
52	A	1392	1401	1410	1419	1428	1437	1446	1455	1464	1473	1482	1491	1499	1509	1517	1526	1535	1544	1553	1562	1570	1579	1588	1597	1604	1612	1621	1628	1638	1646						
	E	735	730	725	720	715	710	700	695	690	685	680	675	670	660	655	650	645	640	635	630	620	615	610	605	600	595	590	580	575	570						
	Q	-12	-13	-14	-14	-15	-16	-17	-16	-18	-19	-20	-21	-21	-22	-22	-23	-24	-25	-25	-26	-26	-27	-27	-28	-28	-27	-27	-28	-27	-29	-28					
54-56	A	1312	1321	1330	1339	1348	1357	1366	1375	1384	1393	1402	1411	1419	1429	1437	1446	1455	1464	1473	1482	1490	1499	1508	1517	1524	1532	1541	1548	1558	1566						
	E	735	730	725	720	715	710	700	695	690	685	680	675	670	660	655	650	645	640	635	630	6															

Constant Hangers and Supports

5.2 Type CHH-A1

► Refer to Rod Size Table in page CH-8 for rod diameter



Dimension for Type CHH-A1

Size No.	Main Dimension(mm)							
	B	C	L	Φw	a	b	d	ℓ
1-3	*	*	35	136				
4-7	*	*	35	151				
8-12	*	*	45	191				
14-20	194	166	50	289				
22-28	189	166	50	289				
30-36	264	228	75	339				
38-46	259	305	105	419				
48-52	322	365	105	512	11	65	24	800
54-56	322	365	105	522	11	65	24	800
58-60	322	365	105	562	26	65	24	800
62-64	389	393	110	572	6	65	30	800

note 1) Dimension B : workable space of hanger

2) Dimension B and C according to hanger size and travel(marked as *)

Dimension : mm

Travel		50 - 90	100 - 200	210 - 300	310 - 400
Size	B	152	165	239	380
	C	90	110	110	165
4-7	B	135	154	199	292
	C	105	120	120	170
8-12	B	171	151	180	229
	C	122	147	147	197

Dimension A, E and Q

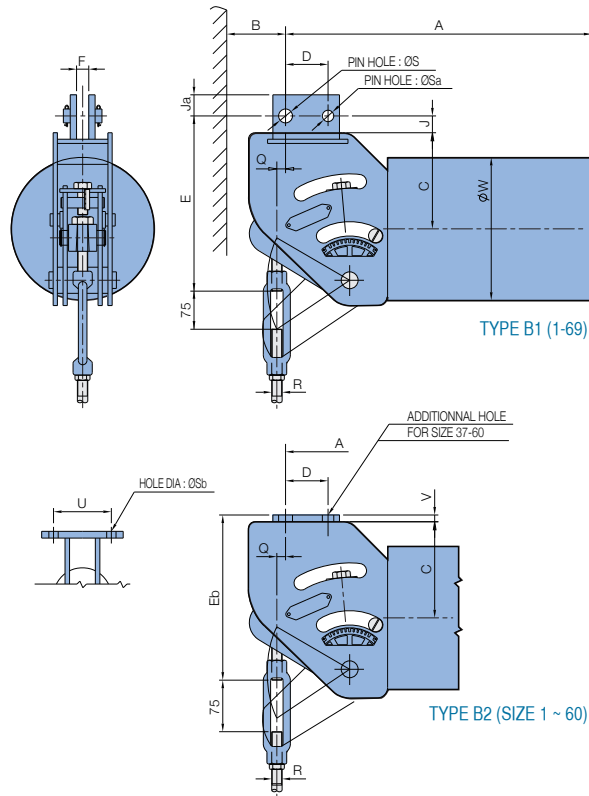
Dimension : mm

Size	Dimension	Maximum Travel(mm)																																			
		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	310	320	330	340	350	360	370	380	390	400
1	A	370	375	380	384	389	394	398	403	409	413	417	421	423	426	428	428	429	430	429	429	429	427	426	425	422	420	418	414	411	408	403	399	395	389	384	379
	E	190	185	180	175	170	165	160	155	150	145	140	135	130	125	120	115	110	105	100	95	90	85	80	75	70	65	115	110	105	100	95	90	85	80	75	70
	Q	8	12	16	20	24	28	32	36	39	43	48	53	59	65	72	80	88	96	105	114	123	133	143	153	164	175	186	198	210	221	235	248	260	275	289	302
2-3	A	369	377	384	390	397	403	408	414	421	426	431	436	440	444	447	451	455	459	461	464	467	468	470	472	472	473	474	473	473	473	471	470	469	466	464	462
	E	190	185	180	175	170	165	160	155	150	145	140	135	130	125	120	115	110	105	100	95	90	85	80	75	70	65	115	110	105	100	95	90	85	80	75	70
	Q	9	10	12	14	16	19	22	25	27	30	34	38	42	47	53	57	62	67	73	79	85	92	99	105	114	122	129	139	148	156	167	177	186	198	209	219
4-5	A	401	409	416	421	428	433	439	445	450	454	461	467	472	476	480	484	488	492	494	497	500	501	503	505	505	506	507	507	506	506	504	503	502	499	497	495
	E	205	200	195	190	185	180	175	170	165	160	155	150	145	140	135	130	125	120	115	110	105	100	95	90	85	80	125	120	115	110	105	100	95	90	85	80
	Q	7	8	10	13	15	19	21	24	28	32	34	37	40	45	50	54	59	64	70	76	82	89	96	102	111	119	126	135	145	153	164	174	183	195	206	216
6-7	A	402	410	418	424	431	438	445	453	460	466	473	480	485	491	496	500	510	515	520	525	530	545	550	550	555	560	565	565	570	575	580	580	585	590	590	595
	E	205	200	195	190	185	180	175	170	165	160	155	150	145	140	135	130	125	120	115	110	105	100	95	90	85	80	125	120	115	110	105	100	95	90	85	80
	Q	6	7	8	10	12	14	15	16	18	20	22	24	27	30	34	38	37	41	44	48	52	45	49	57	61	65	68	77	81	84	88	97	100	104	113	116
8-12	A	419	427	435	442	450	458	465	472	479	485	492	499	505	511	517	523	529	535	541	548	554	560	566	571	576	576	580	584	588	591	594	602	604	606	608	615
	E	225	220	215	210	205	200	195	190	185	180	175	170	165	160	155	150	145	140	135	130	125	120	115	110	105	100	145	140	135	130	125	120	115	110	105	100
	Q	5	6	7	8	9	10	11	13	15	17	26	28	30	33	36	38	34	38	39	41	44	46	49	52	56	65	69	74	79	84	90	91	97	104	111	112
14-16	A		561	569	576	583	594	599	606	614	621	630	635	643	651	658	664	671	677	685	692	699	704	712	718	726	733										
	E		260	255	250	245	240	235	230	225	220	215	210	205	200	195	190	185	180	175	170	165	160	155	150	145	140										
	Q		6	7	8	10	10	11	13	14	15	17	20	22	25	27	30	33	36	40	44	47	50	54	60	64	68										
18-24	A		561	569	576	583	592	599	606	614	621	630	635	643	651	658	664	671	677	685	692	699	704	712	718	726	733										
	E		260	255	250	245	240	235	230	225	220	215	210	205	200	195	190	185	180	175	170	165	160	155	150	145	140										
	Q		6	7	8	10	10	11	13	14	15	15	18	19	20	22	24	26	28	29	31	33	36	37	39	40	42										
26-28	A		591	599	606	613	622	629	636	644	651	660	665	673	681	688	694	701	707	715	722	729	734	742	748	756	763										
	E		260	255	250	245	240	235	230	225	220	215	210	205	200	195	190	185	180	175	170	165	160	155	150	145	140										
	Q		6	7	8	10	10	11	13	14	15	15	18	19	20	22	24	26	28	29	31	33	36	37	39	40	42										
30-36	A			705	710	716	724	732	740	746	754	762	770	776	786	794	802	808	816	824	832	838	846	854	862	870	878	886	894	902	910	918	924	932	940	946	
	E			360	355	350	345	340	335	330	325	320	315	310	305	300	295	290	285	280	275	270	265	260	255	250	245	240	235	230	225	220	215	210	205	200	
	Q			4	8	11	11	12	13	15	16	17	17	20	19	19	20	23	23	24	25	27	28	28	29	30	30	31	32	32	33	34	36	37	38	40	
38-46	A					875	883	891	900	907	916	923	932	941	949	958	965	974	982	990	998	1004	1018	1020	1029	1036	1045	1052	1060	1067	1075	1082	1089	1096	1104	1111	
	E					435	430	425	420	415	410	405	400	395	390	385	380	375	370	365	360	355	350	345	340	335	330	325	320	315	310	305	300	295	290	285	
	Q					7	7	8	8	9	9	10	10	10	10	10	10	11	12	13	14	16	16	17	17	18.5	19	20	21	22	23	25	26	28	29	30	
48-50	A					1282	1291	1300	1309	1318	1327	1336	1345	1354	1363	1372	1381	1389	1399	1407	1416	1425	1434	1443	1452	1460	1469	1478	1487	1494	1502	1511	1518	1528	1536		
	E					615	610	605	600	595	590	580	575	570	565	560	555	550	540	535	530	525	520	515	510	500	495	490	485	480	475	470	460	455	450		
	Q					-12	-13	-14	-14	-15	-16	-17	-16	-18	-19	-20	-21	-21	-22	-22	-23	-24	-25	-25	-26	-26	-27	-28	-28	-27	-27	-28	-27	-29	-28		
52	A					1392	1401	1410	1419	1428	1437	1446	1455	1464	1473	1482	1491	1499	1509	1517	1526	1535	1544	1553	1562	1570	1579	1588	1597	1604	1612	1621	1628	1638	1646		
	E					615	610	605	600	595	590	580	575	570	565	560	555	550	540	535	530	525	520	515	510	500	495	490	485	480	475	470	460	455	450		
	Q					-12	-13	-14	-14	-15	-16	-17	-16	-18	-19	-20	-21	-21	-22	-22	-23	-24	-25	-25	-26	-26	-27	-28	-28	-27	-27	-28	-27	-29	-28		
54-56	A					1312	1321	1330	1339	1348	1357	1366	1375	1384	1393	1402	1411	1419	1429	1437	1446	1455	1464	1473	1482	1490	1499	1508	1517	1524	1532	1541	1548	1558	1566		
	E					615	610	605	600	595	590	580	575	570	565	560	555	550	540	535	530	525	520	515	510	500	495	490	485	480	475	470	460	455	450		
	Q					-12	-13	-14	-14	-15	-16	-17	-16	-18	-19	-20	-21	-21	-22	-22	-23	-24	-25	-25	-26	-26	-27	-28	-28	-27	-27	-28	-27	-29	-28		
58-60	A					1362	1361	1370	1379	1388	1397	1406	1415	1424	1433	1442	1451	1459	1469	1477	1486	1495	1504	1513	1522	1530	1539	1548	1557	1564	1572	1581	1588	1598	1606		
	E					615	610	605	600	595	590	580	575	570	565	560	555	550	540	535	530	525	520	515	510	500	495	490	485	480	475	470	460	455	450		
	Q																																				

Constant Hangers and Supports

5.3 Type CHH-B1, B2

► Refer to Rod Size Table in page CH-8 for rod diameter



Dimension for Type CHH-B1, B2

Size No.	Main Dimension(mm)											
	B	C	D	F	J	Ja	ΦS	ΦSa	ΦSb	U	V	Φw
1-3	*	*	65	15	30	25	16	16	18	115	9	136
4-7	*	*	65	15	30	25	16	16	18	135	12	151
8-12	*	*	75	15	35	25	16	16	18	135	12	191
14-20	167	136	75	25	40	40	24	24	22	190	19	289
22-28	167	136	75	25	40	40	24	24	22	190	19	289
30-36	241	178	100	25	50	50	30	24	26	215	25	339
38-46	247	245	125	30	85	75	42	24	39	280	25	419
48-52	322	310	150	45	95	90	65	24	52	380	32	512
54-56	322	310	150	45	95	90	65	24	52	380	32	522
58-60	322	310	150	45	95	90	65	24	52	380	32	562
62-64	389	353	200	55	100	100	75	30				572
66	321	388	200	55	100	100	75	30				630
68-69	429	415	240	55	120	120	80	36				682

note 1) Dimension B : workable space of hanger

2) Dimension B and C according to hanger size and travel(marked as *)

Dimension : mm

Size \ Travel		50 - 90	100 - 200	210 - 300	310 - 400
1-3	B	125	134	142	155
	C	90	110	110	165
4-7	B	129	127	140	153
	C	105	120	120	170
8-12	B	165	123	146	159
	C	122	147	147	197

Dimension A, E and Q

Size	Dimen- sion	Maximum Travel(mm)																																							
		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	310	320	330	340	350	360	370	380	390	400				
1 - 3	A	378	387	396	404	413	422	430	439	448	456	465	474	482	491	500	508	517	517	517	517	517	517	517	517	517	517	604	604	604	604	604	604	604	604	604	604	604			
	E	235	230	225	220	215	230	225	220	215	210	205	200	195	190	185	180	175	170	165	160	155	150	145	140	135	130	180	175	170	165	160	155	150	145	140	135				
	Q	0	0	0	0	0	-3	0	0	0	0	0	0	0	0	0	0	0	9	17	26	35	43	52	60	69	78	-1	8	17	25	34	43	51	60	69	77				
4 - 7	A	408	417	426	434	443	452	460	469	478	486	495	504	512	521	530	538	547	547	547	547	547	547	547	547	547	547	634	634	634	634	634	634	634	634	634	634	634			
	E	255	250	245	240	235	245	240	235	230	225	220	215	210	205	200	195	190	185	180	175	170	165	160	155	150	145	190	185	180	175	170	165	160	155	150	145				
	Q	0	0	0	0	0	-8	0	0	0	0	0	0	0	0	0	8	0	9	17	26	35	43	52	60	69	78	-1	8	17	25	34	43	51	60	69	77				
8-12	A	424	433	442	450	459	468	476	485	494	502	511	520	528	537	546	554	563	572	580	589	598	563	563	563	563	563	650	650	650	650	650	650	650	650	650	650	650			
	E	280	275	270	265	260	280	275	270	265	260	255	250	245	240	235	230	225	220	215	210	205	200	195	190	185	180	225	220	215	210	205	200	195	190	185	180				
	Q	0	0	0	0	0	-18	-10	-1	0	0	0	0	0	0	0	8	0	9	17	26	35	43	52	60	69	78	-1	8	17	25	34	43	51	60	69	77				
14-24	A	567	576	584	593	602	610	619	628	636	645	654	662	671	680	688	697	706	714	723	732	740	749	757	766	775															
	E	320	315	310	305	300	295	290	285	280	275	270	265	260	255	250	245	240	235	230	225	220	215	210	205	200															
26-28	A	597	606	614	623	632	640	649	658	666	675	684	692	701	710	718	727	736	744	753	762	770	779	787	796	805															
	E	320	315	310	305	300	295	290	285	280	275	270	265	260	255	250	245	240	235	230	225	220	215	210	205	200															
30-36	A					709	718	727	735	744	753	761	770	779	787	796	805	813	822	831	839	848	857	865	874	882	891	900	908	917	926	934	943	952	960	969	978	986			
	E					435	430	425	420	415	410	405	400	395	390	385	380	375	370	365	360	355	350	345	340	335	330	325	320	315	310	305	300	295	290	285	280	275			
38-46	A						882	890	899	908	916	925	934	942	951	960	968	977	986	994	1003	1012	1020	1029	1037	1046	1055	1063	1072	1081	1089	1098	1107	1115	1124	1133	1141				
	E						565	560	555	550	545	540	535	530	525	520	515	510	505	500	495	490	485	480	475	470	465	460	455	450	445	440	435	430	425	420	415				
48-50	A						1272	1281	1290	1299	1308	1317	1326	1335	1344	1353	1362	1371	1379	1389	1397	1406	1415	1424	1433	1442	1450	1459	1468	1477	1484	1492	1501	1508	1518	1526					
	E						760	755	750	745	740	735	725	720	715	710	705	700	695	685	680	675	670	665	660	655	645	640	635	630	625	620	615	605	600	595					
52	A						1382	1391	1400	1409	1418	1427	1436	1445	1454	1463	1472	1481	1489	1499	1507	1516	1525	1534	1543	1552	1560	1569	1578	1587	1594	1602	1611	1618	1628	1636					
	E						760	755	750	745	740	735	725	720	715	710	705	700	695	685	680	675	670	665	660	655	645	640	635	630	625	620	615	605	600	595					
54-56	A						1290	1298	1306	1315	1323	1331	1339	1347	1356	1364	1372	1380	1388	1397	1405	1413	1421	1429	1438	1446	1454	1462	1470	1479	1487	1495	1503	1511	1519	1528					
	E						760	755	750	745	740	735	725	720	715	710	705	700	695	685	680	675	670	665	660	655	645	640	635	630	625	620	615	605	600	595					
58-60	A						1330	1338	1346	1355	1363	1371	1379	1387	1396	1404	1412	1420	1428	1437	1445	1453	1461	1469	1478	1486	1494	1502	1510	1519	1527	1535	1543	1551	1559	1568					
	E						760	755	750	745	740	735	725	720	715	710	705	700	695	685	680	675	670	665	660	655	645	640	635	630	625	620	615	605	600	595					
62-64	A																1451	1460	1468	1476	1484	1492	1501	1509	1517	1525	1533	1542	1550	1558	1566	1574	1583	1591	1599	1607					
	E																885	880	875	870	860	855	850	845	840	835	830	825	815	810	805	800	795	790	780	775					
66	A																																								
	E																																								
	R																																								
68	A																																								
	E																																								
	R																																								
69	A																																								
	E																																								
	R																																								

note 1) Dimension E applies to uppermost blocking position. For other positions, E increases accordingly.

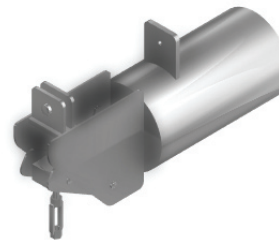
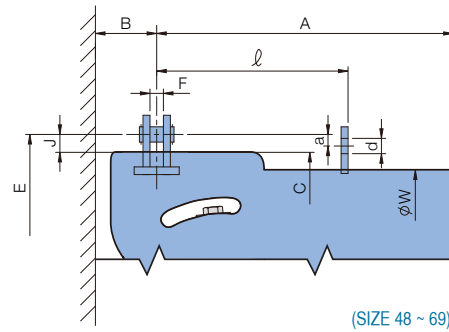
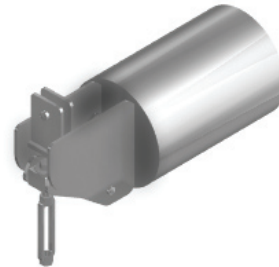
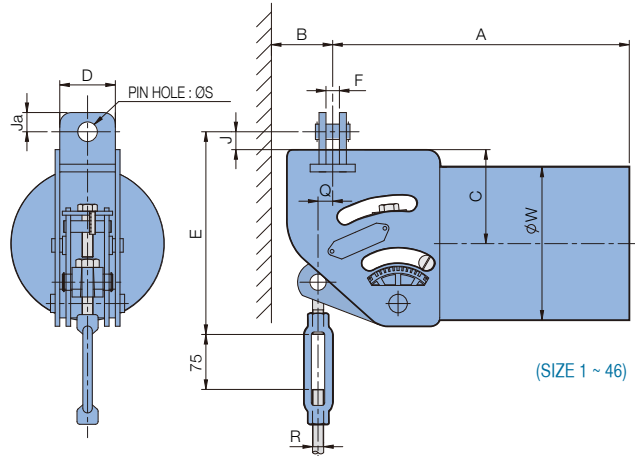
2) Dimension Q is equal to zero for size 14 or larger at TOP & Bottom.

3) Dimension Q at TOP for size 1 to 12.

Constant Hangers and Supports

5.4 Type CHH-B1A

► Refer to Rod Size Table in page CH-8 for rod diameter



Dimension for Type CHH-B1A

Size No.	Main Dimension(mm)										
	B	C	D	F	J	J _a	ϕS	ϕW	a	d	ℓ
1-3	*	*	50	*	30	25	16	136			
4-7	*	*	50	*	30	25	16	151			
8-12	*	*	50	*	35	25	16	191			
14-20	194	136	70	25	40	40	24	289			
22-28	189	136	70	25	40	40	24	289			
30-36	264	178	100	25	50	50	30	339			
38-46	259	245	140	30	85	75	42	419			
48-52	322	310	200	45	95	90	65	512	49	26	800
54-56	322	310	200	45	95	90	65	522	49	26	800
58-60	322	310	200	45	95	90	65	562	59	26	800
62-64	389	353	230	55	100	100	75	572	92	33	800
66	321	388	230	55	100	100	75	630	90	33	850
68-69	429	415	240	55	120	120	80	682	110	33	1150

note 1) Dimension B : workable space of hanger

2) Dimension B, C and F according to hanger size and travel(marked as *)

Dimension : mm

Size Travel		50 - 90	100 - 200	210 - 300	310 - 400
1-3	B	152	165	239	380
	C	90	110	110	165
	F	15	20	20	20
4-7	B	135	154	199	292
	C	105	120	120	170
	F	15	20	20	20
8-12	B	171	151	180	229
	C	122	147	147	197
	F	15	20	20	20

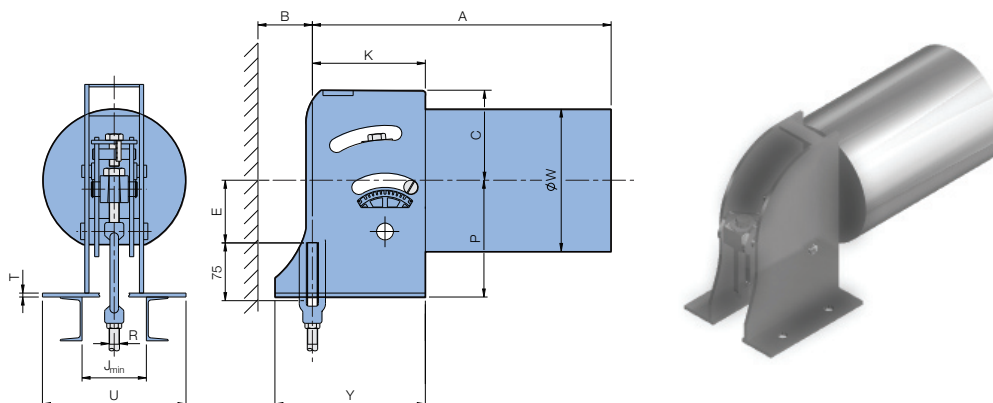
Dimension A, E and Q

Size	Dimen-sion	Maximum Travel(mm)																																			
		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	310	320	330	340	350	360	370	380	390	400
1	A	370	375	380	384	389	394	398	403	409	413	417	421	423	426	428	428	429	430	429	429	429	427	426	425	422	420	418	414	411	408	403	399	395	389	384	379
	E	235	230	225	220	215	230	225	220	215	210	205	200	195	190	185	180	175	170	165	160	155	150	145	140	135	130	180	175	170	165	160	155	150	145	140	135
	Q	8	12	16	20	24	28	32	36	39	43	48	53	59	65	72	80	88	96	105	114	123	133	143	152	164	175	186	198	210	221	235	248	260	275	289	302
2-3	A	369	377	384	390	397	403	408	414	421	426	431	436	440	444	447	451	455	459	461	464	467	468	470	472	472	473	474	473	473	473	471	470	469	466	464	462
	E	235	230	225	220	215	230	225	220	215	210	205	200	195	190	185	180	175	170	165	160	155	150	145	140	135	130	180	175	170	165	160	155	150	145	140	135
	Q	9	10	12	14	16	19	22	25	27	30	34	38	42	47	53	57	62	67	73	79	85	92	99	105	114	122	129	139	148	156	167	177	186	198	209	219
4-5	A	401	409	416	421	428	433	439	445	450	454	461	467	472	476	480	484	488	492	494	497	500	501	503	505	505	506	507	507	506	506	504	503	502	499	497	495
	E	255	250	245	240	235	245	240	235	230	225	220	215	210	205	200	195	190	185	180	175	170	165	160	155	150	145	190	185	180	175	170	165	160	155	150	145
	Q	7	8	10	13	15	19	21	24	28	32	34	37	40	45	50	54	59	64	70	76	82	89	96	102	111	119	126	135	145	153	164	174	183	195	206	216
6-7	A	402	410	418	424	431	438	445	453	460	466	473	480	485	491	496	500	510	515	520	525	530	545	550	550	555	560	565	565	570	575	580	580	585	590	590	595
	E	255	250	245	240	235	245	240	235	230	225	220	215	210	205	200	195	190	185	180	175	170	165	160	155	150	145	190	185	180	175	170	165	160	155	150	145
	Q	6	7	8	10	12	14	15	16	18	20	22	24	27	30	34	38	37	41	44	48	52	45	49	57	61	65	68	77	81	84	88	97	100	104	113	116
8-12	A	419	427	435	442	450	458	465	472	479	485	492	499	505	511	517	523	529	535	541	548	555	560	566	571	576	576	580	584	588	591	594	602	604	606	608	615
	E	280	275	270	265	260	280	275	270	265	260	255	250	245	240	235	230	225	220	215	210	205	200	195	190	185	180	225	220	215	210	205	200	195	190	185	180
	Q	5	6	7	8	9	10	11	13	15	17	26	28	30	33	37	38	34	38	39	41	44	46	49	52	56	65	69	74	79	84	90	91	97	104	111	112
14-16	A	561	569	576	583	592	599	606	614	621	630	635	643	651	658	664	671	677	685	692	699	704	712	718	726	733											
	E	320	315	310	305	300	295	290	285	280	275	270	265	260	255	250	245	240	235	230	225	220	215	210	205	200											
	Q	6	7	8	10	10	11	13	14	15	17	20	22	25	27	30	33	36	40	44	47	50	54	60	64	68											
18-24	A	561	569	576	583	592	599	606	614	621	630	635	643	651	658	664	671	677	685	692	699	704	712	718	726	733											
	E	320	315	310	305	300	295	290	285	280	275	270	265	260	255	250	245	240	235	230	225	220	215	210	205	200											
	Q	6	7	8	10	10	11	13	14	15	16	18	19	20	22	24	26	28	29	31	33	36	37	39	40	42											
26-28	A	591	599	606	613	622	629	636	644	651	660	665	673	681	688	694	701	707	715	722	729	734	742	748	756	763											
	E	320	315	310	305	300	295	290	285	280	275	270	265	260	255	250	245	240	235	230	225	220	215	210	205	200											
	Q	6	7	8	10	10	11	13	14	15	16	18	19	20	22	24	26	28	29	31	33	36	37	39	40	42											
30-36	A				705	710	716	724	732	740	746	754	762	770	776	786	794	802	808	816	824	832	838	846	854	862	870	878	886	894	902	910	918	924	932	940	946
	E				435	430	425	420	415	410	405	400	395	390	385	380	375	370	365	360	355	350	345	340	335	330	325	320	315	310	305	300	295	290	285	280	275
	Q				4	8	11	11	12	13	15	16	17	17	20	23	28	28	29	30	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
38-46	A					875	883	891	900	907	916	923	932	941	949	958	965	974	982	990	998	1004	1018	1020	1029	1036	1045	1052	1060	1067	1075	1082	1089	1096	1104	1111	
	E					565	560	555	550	545	540	535	530	525	520	515	510	505	500	495	490	485	480	475	470	465	460	455	450	445	440	435	430	425	420	415	
	Q					7	7	8	8	9	9	10	10	10	10	10	11	11	12	13	14	16	16	17	17	18.5	19	20	21	22	23	25	26	28	29	30	
48-50	A					1282	1291	1300	1309	1318	1327	1336	1345	1354	1363	1372	1381	1389	1399	1407	1416	1425	1434	1443	1452	1460	1469	1478	1487	1494	1502	1511	1518	1528	1536		
	E					760	755	750	745	740	735	725	720	715	710	705	700	695	685	680	675	670	665	660	655	645	640	635	630	625	620	615	605	600	595		
	Q					-12	-13	-14	-14	-15	-16	-17	-16	-18	-19	-20	-21	-21	-22	-22	-23	-24	-25	-25	-26	-26	-27	-28	-28	-27	-27	-28	-27	-29	-28		
52	A					1392	1401	1410	1419	1428	1437	1446	1455	1464	1473	1482	1491	1499	1509	1517	1526	1535	1544	1553	1562	1570	1579	1588	1597	1604	1612	1621	1628	1638	1646		
	E					760	755	750	745	740	735	725	720	715	710	705	700	695	685	680	675	670	665	660	655	645	640	635	630	625	620	615	605	600	595		
	Q					-12	-13	-14	-14	-15	-16	-17	-16	-18	-19	-20	-21	-21	-22	-22	-23	-24	-25	-25	-26	-26	-27	-28	-28	-27	-27	-28	-27	-29	-28		
54-56	A					1312	1321	1330	1339	1348	1357	1366	1375	1384	1393	1402	1411	1419	1429	1437	1446	1455	1464	1473	1482	1490	1499	1508	1517	1524	1532	1541	1548	1558	1566		
	E					760	755	750	745	740	735	725	720	715	710	705	700	695	685	680	675	670	665	660	655	645	640	635	630	625	620	615	605	600	595		
	Q					-12	-13	-14	-14	-15	-16	-17	-16	-18	-19	-20	-21	-21	-22	-22	-23	-24	-25	-25	-26	-26	-27	-28	-28	-27	-27	-28	-27	-29	-28		
58-60	A					1352	1361	1370	1379	1388	1397	1406	1415	1424	1433	1442	1451	1459	1469	1477	1486	1495	1504	1513	1522	1530	1539	1548	1557	1564	1572	1581	1588	1598	1606		
	E					760	755	750	745	740	735	725	720	715	710	705	700	695	685	680	675	670	665	660	655	645	640	635	630	625	620	615	605	600	595		
	Q																																				

Constant Hangers and Supports

5.5 Type CHH-C1

► Refer to Rod Size Table in page CH-8 for rod diameter



Dimension for Type CHH-C1

Size No.	Main Dimension(mm)					
	B	C	U	T	J _{min}	ØW
8-12	165	115	200	6	90	191
14-20	167	170	270	9	110	289
22-28	167	170	270	9	110	289
30-36	241	180	300	9	140	339
38-46	247	230	360	12	200	419
48-52	322	280	460	19	250	512
54-56	322	280	460	19	250	522
58-60	322	280	460	19	250	562

note 1) Dimension B : workable space of hanger

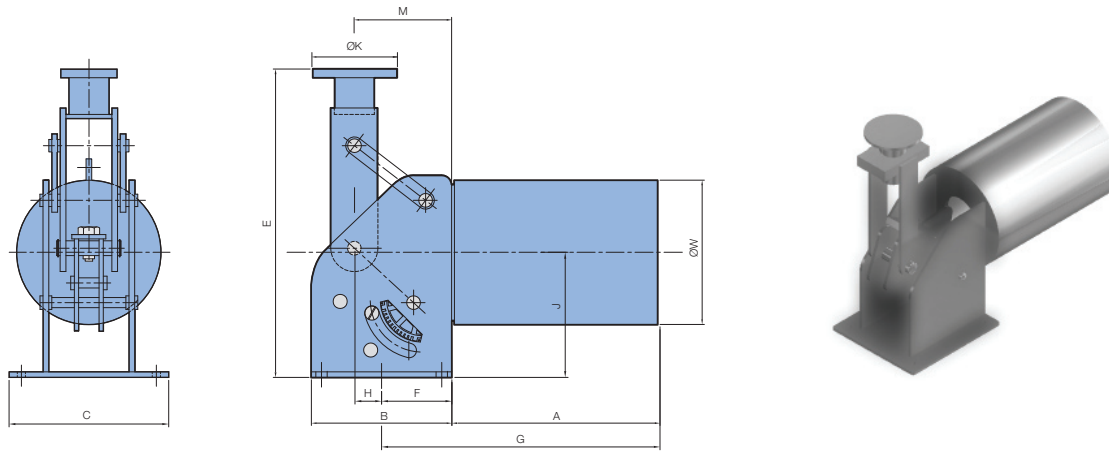
Dimension A, E, K, L, P and Y

[illegible]

note 1) Dimension E applies to uppermost blocking position. For other positions, E increases accordingly.

Constant Hangers and Supports

5.6 Type CHH-F1



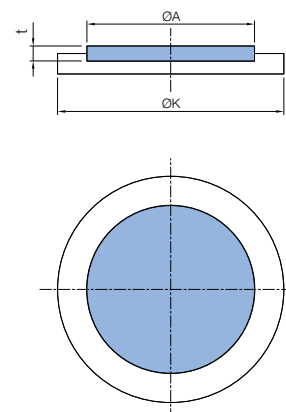
Dimension for Type CHH-F1

Size No.	Main Dimension(mm)							
	Travel(mm)	A	B	C	ØW	F	G	ØK
8-12	50~130	305	205	220	191	103	408	90
	140~160	305	235	220	191	118	423	
	170~190	305	260	220	191	130	435	
	200~220	305	285	220	191	143	448	
	230~250	305	310	220	191	155	460	
14-20	60~180	430	270	290	289	135	565	150
	190~240	430	315	290	289	158	588	
	250~270	430	340	290	289	170	600	
	280~300	430	365	290	289	183	613	
22-24	60~180	430	270	290	289	135	565	150
	190~240	430	315	290	289	158	588	
	250~270	430	340	290	289	170	600	
	280~300	430	365	290	289	183	613	
26-28	60~180	460	270	290	289	135	595	150
	190~240	460	315	290	289	158	618	
	250~270	460	340	290	289	170	630	
	280~300	460	365	290	289	183	643	
30-36	80~300	550	370	370	339	185	735	250
	310~350	550	420	370	339	210	760	
	360~400	550	460	370	339	230	780	
38-46	100	688	420	440	419	210	898	250
	110~300	688	420	440	419	210	898	
	310~400	688	510	440	419	255	943	
48-52	110~400	950	610	520	512	305	1255	300
54-56	110~400	1060	610	520	522	305	1365	300
58-60	110~400	1110	610	520	562	305	1415	300

Sliding Plate

Type	Size (ØAxt)	ØK	Applicable Hanger Size	Weight(kg)
CP-XP-C-50	Ø50x6t	90	CHH-F1-8~12	0.03
CP-XP-C-80	Ø80x6t	150	CHH-F1-14~28	0.07
CP-XP-C-150	Ø150x6t	250	CHH-F1-30~46	0.23
CP-XP-C-180	Ø180x6t	300	CHH-F1-48~60	0.34

note 1) X=T stand for Teflon, G for Graphite



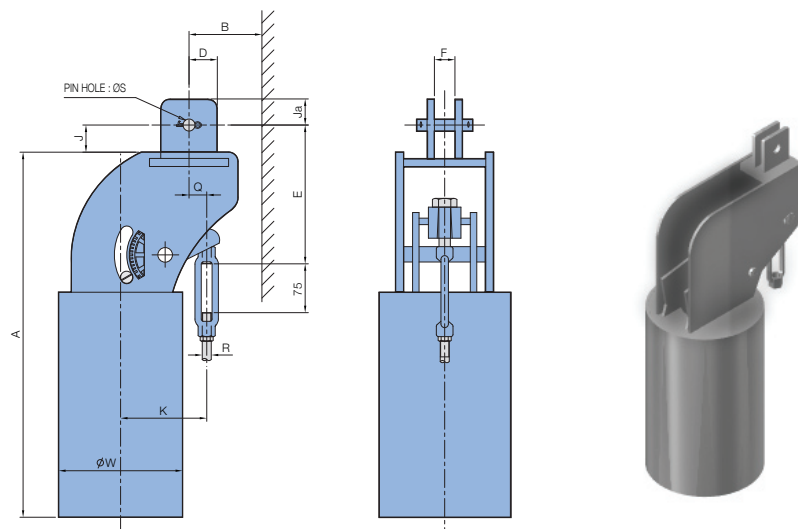
Dimension E, J,M and H

Size	Dimen- sion		Maximum Travel(mm)																																							
			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	310	320	330	340	350	360	370	380	390	400				
8-12	H		16.5	25.5	34.5	42.5	51.5	60.5	68.5	77.5	86.5	79.5	88.5	97.5	93	102	111	106.5	115.5	124.5	120	129	138																			
	J		194	194	194	194	194	194	194	194	194	194	194	194	209	209	209	224	224	224	239	239	239																			
	M		119	128	137	145	154	163	171	180	189	197	206	215	223	232	241	249	258	267	275	284	293																			
	E	BOT	415	405	405	395	390	390	380	380	370	370	360	360	370	360	360	370	360	360	370	360	350																			
		TOP	465	465	475	475	480	490	490	500	500	510	510	520	540	540	550	570	570	580	600	600	600																			
14-20	H		2	11	19		28	37	45	54	63	71	80	89	97	106	92.5	100.5	109.5	118.5	126.5	135.5	132	140	149	144		153	163													
	J		263	263	263		263	263	263	263	263	263	263	263	263	263	263	263	263	263	263	263	278	278	278	293		293	293													
	M		137	146	154		163	172	180	189	198	206	215	224	232	241	250	258	267	276	284	293	302	310	319	327		336	345													
	E	BOT	530	530	520		520	510	510	500	500	490	490	480	480	470	470	460	460	450	450	440	450	450	440	450		450	440													
		TOP	590	600	600		610	610	620	620	630	630	640	640	650	650	660	660	670	670	680	680	700	710	710	730		740	740													
22-24	H		2	11	19		28	37	45	54	63	71	80	89	97	106	92.5	100.5	109.5	118.5	126.5	135.5	132	140	149	144.5		153.5	162.5													
	J		263	263	263		263	263	263	263	263	263	263	263	263	263	263	263	263	263	263	263	278	278	278	293		293	293													
	M		137	146	154		163	172	180	189	198	206	215	224	232	241	250	258	267	276	284	293	302	310	319	327		336	345													
	E	BOT	530	530	520		520	510	510	500	500	490	490	480	480	470	470	460	460	450	450	440	450	450	440	450		450	440													
		TOP	590	600	600		610	610	620	620	630	630	640	640	650	650	660	660	670	670	680	680	700	710	710	730		740	740													
26-28	H		2	11	19		28	37	45	54	63	71	80	89	97	106	92.5	100.5	109.5	118.5	126.5	135.5	132	140	149	144.5		153.5	162.5													
	J		263	263	263		263	263	263	263	263	263	263	263	263	263	263	263	263	263	263	263	278	278	278	293		293	293													
	M		137	146	154		163	172	180	189	198	206	215	224	232	241	250	258	267	276	284	293	302	310	319	327		336	345													
	E	BOT	530	530	520		520	510	510	500	500	490	490	480	480	470	470	460	460	450	450	440	450	450	440	450		450	440													
		TOP	590	600	600		610	610	620	620	630	630	640	640	650	650	660	660	670	670	680	680	700	710	710	730		740	740													
30-36	H						-26	-17	-8	0	9	18	26	35	44	52	61	70	78	87	96	104	113	122	130	139	147		156	165	148	157		166	174	183	172	180	189	198	206	
	J						341	341	341	341	341	341	341	341	341	341	341	341	341	341	341	341	341	341	341	341		341	341	366	366		366	366	366	391	391	391	391			
	M						159	168	177	185	194	203	211	220	229	237	246	255	263	272	281	289	298	307	315	324	332		341	350	358	367		376	384	393	402	410	419	428	436	
	E	BOT					640	640	630	630	620	620	610	610	600	600	590	590	580	580	570	570	560	560	550	550	540		540	530	550	550		540	540	530	550	550	540	540	530	
						720	730	730	740	740	750	750	760	760	770	770	780	780	790	790	800	800	810	810	820	820		830	830	860	870		870	880	880	910	920	920	930	930		
38-46	H						-8	0	9		18	26	35	44	52	61	70	78	87	96	104	113	122	130	139	147		156	165	128	137		146	154	163	172	180	189	198	206		
	J						382	382	382		382	382	382	382	382	382	382	382	382	382	382	382	382	382	382		382	382	432	432		432	432	432	432	432	432	432	432			
	M						202	210	219		228	236	245	254	262	271	280	288	297	306	314	323	332	340	349	357		366	375	383	392		401	409	418	427	435	444	453	461		
	E	BOT					760	750	750		740	730	730	730	720	710	700	700	700	690	690	680	680	670	670	660		660	650	700	690		690	680	680	670	670	660	660	650		
						860	860	870		870	870	880	890	890	890	890	900	900	910	910	920	920	930	940	940		950	950	1010	1010		1020	1020	1030	1030	1040	1040	1050	1050			
48-52	H										25	34	43	52	61	70	79	88	97	106	115	124	133	143	152	161	170	179		188	197	206	215		224	233	242	251	260	269	278	288
	J										15	23	31	40	48	56	64	72	81	89	97	105	113	122	130	138	146	154		163	171	179	187		195	204	212	220	228	236	244	253
	M										549	549	549	549	549	549	549	549	549	549	549	549	549	549	549	549		549	549	549	549		549	549	549	549	549	549	549	549		
	E	BOT									330	339	348	357	366	375	384	393	402	411	420	429	438	448	457	466	475	484		493	502	511	520		529	538	547	556	565	574	583	593
											320	328	336	345	353	361	369	377	386	394	402	410	418	427	435	443	451	459		468	476	484	492		500	509	517	525	533	541	549	558
54-56	H																																									
	J																																									
	M																																									
	E	BOT																																								
58-60	H																																									
	J																																									
	M																																									
	E	BOT																																								

Constant Hangers and Supports

5.7 Type CHV-LB1

► Refer to Rod Size Table in page CH-8 for rod diameter



Dimension for Type CHV-LB1

Size No.	Main Dimension(mm)							
	A	B	D	F	J	J _a	ØS	ØW
8-12	519	113	25	15	35	25	16	191
14-20	720	153	35	25	45	40	24	289
22-24	720	153	35	25	45	40	24	289
26-28	750	153	35	25	45	40	24	289
30-36	926	151	50	25	50	50	30	339
38-46	1118	259	70	30	85	75	42	419
48-50	1615	290	100	45	95	90	65	512
52	1725	290	100	45	95	90	65	512
54-56	1645	290	100	45	95	90	65	522
58-60	1685	284	100	45	95	90	65	562
62-64	1840	282	115	55	100	100	75	572
66	1858	267	115	55	100	100	75	630

note 1) Dimension B : workable space of hanger

Dimension E, K and Q

Size	Dimen- sion		Maximum Travel(mm)																																							
			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	310	320	330	340	350	360	370	380	390	400					
8-12	E				203	198	193	188	183	178																																
	K				142	151	160	168	177	186																																
	Q				9	12	15	17	18	20																																
14-20	E							268	263	258	253	248																														
	K							189	198	207	215	224																														
	Q							15	17	19	21	23																														
22-24	E									258	253	248																														
	K									207	215	224																														
	Q									14	15	17																														
26-28	E									258	253	248																														
	K									207	215	224																														
	Q									14	15	17																														
30-36	E										383	378	373	368	363	358																										
	K										243	252	261	269	278	287																										
	Q										13	14	15	17	19	21																										
38-44	E												445	440	435	430	425	420	415	410	405	400	395	390	385	380	375	370	365	360	355	350	345	340	335							
	K												306	315	323	332	341	349	358	367	375	384	392	401	410	418	427	436	444	453	462	470	479	488	496							
	Q												21	22	24	25	26	27	28	29	31	33	35	37	39	41	43	45	47	50	53	55	57	59	62							
46	E												445	440	435	430	425	420	415	410	405	400	395	390	385	380	375	370	365	360	355	350	345	340	335							
	K												306	315	323	332	341	349	358	367	375	384	392	401	410	418	427	436	444	453	462	470	479	488	496							
	Q												21	22	24	25	26	27	28	29	31	33	35	37	39	41	43	45	47	50	53	55	57	59	62							
48-52	E																																									
	K																																									
	TOP																																									
	BOT																																									
	Q																																									
54-56	E																																									
	K																																									
	TOP																																									
	BOT																																									
	Q																																									
58-60	E																																									
	K																																									
	TOP																																									
	BOT																																									
	Q																																									
62-64	E																																									
	K																																									
	TOP																																									
	BOT																																									
	Q																																									
66	E																																									
	K																																									
	TOP																																									
	BOT																																									
	Q																																									

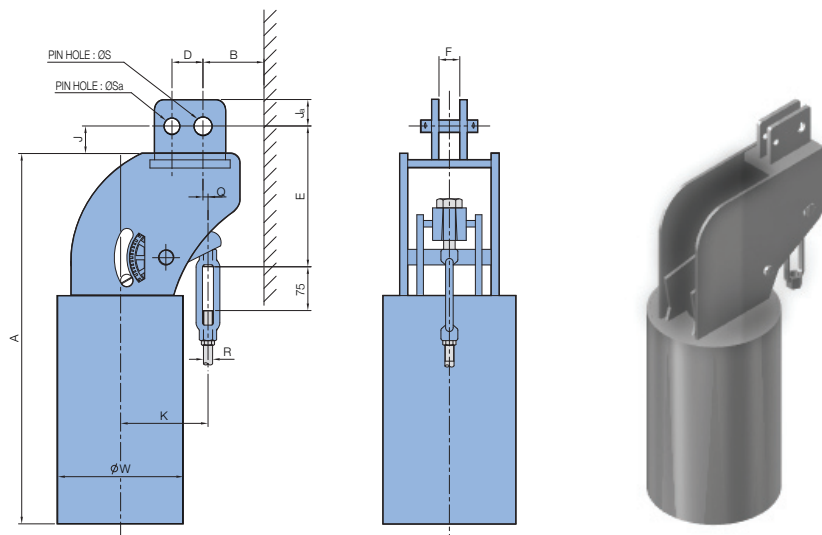
note 1) Dimension E applies to uppermost blocking position. For other positions, E increases accordingly.

2) Dimension Q at TOP, unless mentioned

Constant Hangers and Supports

5.8 Type CHV-LB2

► Refer to Rod Size Table in page CH-8 for rod diameter



Dimension for Type CHV-LB2

Size No.	Main Dimension(mm)								
	A	B	D	F	J	Ja	ØS	ØSa	ØW
8-12	519	103	65	15	35	25	16	12	191
14-20	720	153	70	25	45	40	24	16	289
22-24	720	153	70	25	45	40	24	16	289
26-28	750	153	70	25	45	40	24	16	289
30-36	926	151	90	25	50	50	30	20	339
38-46	1118	259	115	30	85	75	42	24	429
48-50	1615	290	145	45	95	90	65	24	512
52	1725	290	145	45	95	90	65	24	512
54-56	1645	290	145	45	95	90	65	24	522
58-60	1685	284	145	45	95	90	65	24	562
62-64	1840	282	185	55	100	100	75	30	572
66	1858	226	185	55	100	100	75	30	630

note 1) Dimension B : workable space of hanger

Dimension E, K and Q

Size	Dimen- sion		Maximum Travel(mm)																																							
			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	310	320	330	340	350	360	370	380	390	400					
8-12	E		203 198 193					188 183 178																																		
	K		142 151 160					168 177 186																																		
	Q		0 0 0					0 4 12																																		
14-20	E							268 263 258					253 248																													
	K							189 198 207					215 224																													
	Q							0 0 0					0 0 0																													
22-24	E												258 253 248																													
	K												207 215 224																													
	Q												0 0 0																													
26-28	E												258 253 248																													
	K												207 215 224																													
	Q												0 0 0																													
30-36	E												373 368 363 358																													
	K												261 269 278 282																													
	Q												0 0 0 0																													
38-44	E												445 440 435					430 425 420 415 410					405 400 395 390 385					380 375 370 365 360					355									
	K												306 315 323					332 341 349 358 367					375 384 392 401 410					418 427 436 444 453					462									
	Q												0 0 0					0 0 0 0 0					0 0 0 0 0					0 0 0 0 0					0									
46	E												445 440 435					430 425 420 415 410					405 400 395 390 385					380 375 370 365 360					355									
	K												306 315 323					332 341 349 358 367					375 384 392 401 410					418 427 436 444 453					462									
	Q												0 0 0					0 0 0 0 0					0 0 0 0 0					0 0 0 0 0					0									
48-52	E	TOP BOT TOP BOT											605					599 594 588 582 576					571 565 559 554 548					542 536 531 525 519					513									
	K												394					402 410 418 427 435					443 451 459 468 476					484 492 500 509 517					525									
	BOT												411					420 429 438 448 457					466 475 484 492 502					511 520 529 538 547					556									
	TOP												0					0 0 0 0 0					0 0 0 0 0					0 0 0 0 0					0									
	BOT												17					18 19 20 21 22					23 24 24 25 26					27 28 29 30 31					31									
54-56	E	TOP BOT TOP BOT											605					599 594 588 582 576					571 565 559 554 548					542 536 531 525 519					513									
	K												394					402 410 418 427 435					443 451 459 468 476					484 492 500 509 517					525									
	BOT												411					420 429 438 448 457					466 475 484 492 502					511 520 529 538 547					556									
	TOP												0					0 0 0 0 0					0 0 0 0 0					0 0 0 0 0					0									
	BOT												17					18 19 20 21 22					23 24 24 25 26					27 28 29 30 31					31									
58-60	E	TOP BOT TOP BOT																594 588 582 576					571 565 559 554 548					542 536 531 525 519					513									
	K																	410 418 427 435					443 451 459 468 476					484 492 500 509 517					525									
	BOT																	429 438 448 457					466 475 484 492 502					511 520 529 538 547					556									
	TOP																	0 0 0 0 0					0 0 0 0 0					0 0 0 0 0					0									
	BOT																	19 20 21 22					23 24 24 25 26					27 28 29 30 31					31									
62-64	E	TOP BOT TOP BOT																709 703 697 691					686 680 674 669 663					657 651 646 640 634					628 623 617									
	K																	437 445 454 462					470 478 486 495 503					511 519 527 536 544					552 560 568									
	BOT																	456 465 474 484					493 502 511 520 529					538 547 556 565 574					583 592 601									
	TOP																	0 0 0 0					0 0 0 0 0					0 0 0 0 0					0 0 0 0									
	BOT																	19 20 21 22					23 24 24 25 26					27 28 29 30 31					31 32 33									
66	E	TOP BOT TOP BOT																					697 691 686 680					674 668 663 657 651					646 640 634 628									
	K																						478 486 495 503					511 519 527 536 544					552 560 568 576									
	BOT																						502 511 520 529					538 547 556 565 574					583 592 601 610									
	TOP																						0 0 0 0					0 0 0 0 0					0 0 0 0									
	BOT																						24 24 25 26					27 28 29 30 31					31 32 33 34									

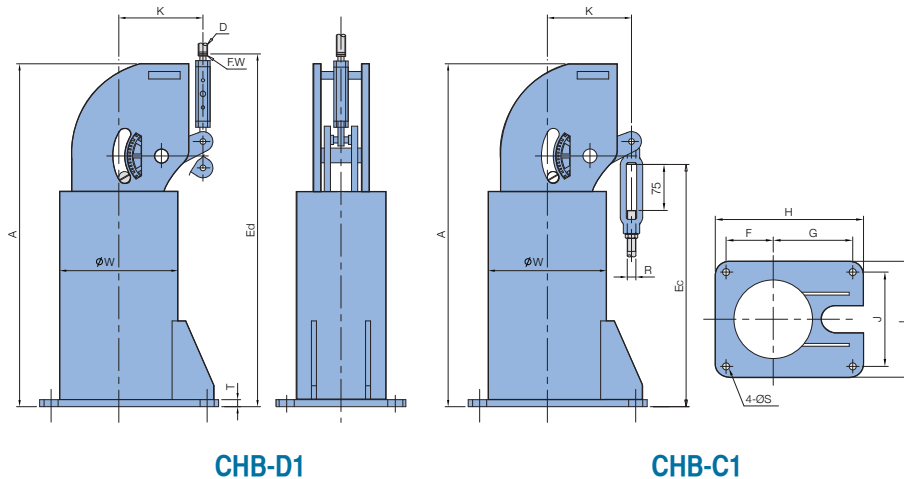
note 1) Dimension E applies to uppermost blocking position. For other positions, E increases accordingly.

2) Dimension Q at TOP, unless mentioned

Constant Hangers and Supports

5.9 Type CHB-C1, D1

► Refer to Rod Size Table in page CH-8 for rod diameter



Dimension for Type CHB-C1, D1

Size No.	Main Dimension(mm)									
	A	D	F	G	H	J	L	ØS	T	ØW
8-12	570	42.7	90	165	305	160	210	18	6	191
14-20	749	60.5	135	205	390	270	320	22	9	289
22-24	749	60.5	135	205	390	270	320	22	9	289
26-28	789	60.5	135	205	390	270	320	22	9	289
30-36	1008	76.3	150	240	450	300	360	22	12	339
38-46	1216	89.1	175	295	550	350	430	26	16	407

Dimension Ec, Ed and K

Size	Dimen- sion	Maximum Travel(mm)																																							
		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	310	320	330	340	350	360	370	380	390	400					
8-12	E _c			402	407	412	417	422	427																																
	E _d			731	783	741	746	751	756																																
	K			142	151	160	168	177	186																																
14-20	E _c						526	531	536	541	546	551	556	561	566	571	576	581	586	591	596	601	606	611	616	621															
	E _d			919	924	929	934	939	944	949	954	959	964	969	974	979	984	989	994	999	1004	1009	1014	1019	1024	1029															
	K			163	172	181	189	198	207	215	224	233	241	250	259	267	276	285	293	302	311	319	328	336	345	354															
22-24	E _c							526	531	536	541	546	551	556	561	566	571	576	581	586	591	596	601	606	611																
	E _d				919	924	929	934	939	944	949	954	956	964	969	974	979	984	989	994	999	1004	1009	1014	1019																
	K				181	189	198	207	215	224	233	241	250	259	267	276	285	293	302	311	319	328	336	345	354																
26-28	E _c							576	581	586	591	596	601	606	611	616	621	626	631	636	641	646	651	656	661																
	E _d				969	974	979	984	989	994	999	1004	1009	1014	1019	1024	1029	1034	1039	1044	1049	1054	1059	1064	1069																
	K				181	189	198	207	215	224	233	241	250	259	267	276	285	293	302	311	319	328	336	345	354																
30-36	E _c								675	680	685	690	695	700	705	710	715	720	725	730	735	740	745	750	755		760	765	770	775	780	785	790	795	800	805					
	E _d				1218	1223	1228	1233	1238	1243	1248	1253	1258	1263	1268	1273	1278	1283	1288	1293	1298	1303	1308	1313	1318		1323	1328	1333	1338	1343	1348	1353	1358	1363	1368					
	K				209	217	226	235	243	252	261	269	278	287	295	304	313	321	330	339	347	356	364	373	382		390	399	408	416	425	434	442	451	460	468					
38-44	E _c											856	861	866	871	876	881	886	891	896	901	906	911	916		921	926	931	936	941	946	951	956	961	966						
	E _d										1521	1526	1531	1536	1541	1546	1551	1556	1561	1566	1571	1576	1581	1586	1591	1596	1601	1606	1611	1616	1621	1626	1631	1636	1641	1645	1651	1656			
	K											263	271	280	289	297	306	315	323	332	341	349	358	367	375	384	392	401	410	418	427	436	444	453	462	470	479	488	496		
46	E _c											856	861	866	871	876	881	886	891	896	901	906	911	916		921	926	931	936	941	946	951	956	961	966						
	E _d											1521	1526	1531	1536	1541	1546	1551	1556	1561	1566	1571	1576	1581	1586	1591	1596	1601	1606	1611	1616	1621	1626	1631	1636	1641	1646	1651	1656		
	K											263	271	280	289	297	306	315	323	332	341	349	358	367	375	384	392	401	410	418	427	436	444	453	462	470	479	488	496		

note 1) Dimension E applies to uppermost blocking position. For other positions, E decreases accordingly.

Weight(approx.) of Constant Hanger

Unit : kg

Size	CHH-A1A	CHH-A1	CHH-B1	CHH-B2	CHH-B1A	CHH-C1	CHH-F1	CHV-LB1	CHV-LB2	CHB-C1	CHB-D1
1	11	11	11	11	11						
2	12	12	12	12	12						
3	12	12	12	12	12						
4	17	17	17	17	17						
5	17	17	17	17	17						
6	18	18	18	18	18						
7	18	18	18	18	18						
8	26	26	26	26	26	42	36	42	42	42	42
9	27	27	27	27	27	49	37	49	49	49	49
10	28	28	28	28	28	50	38	50	50	50	50
12	29	29	29	29	29	51	39	51	51	51	51
14	58	58	58	58	58	74	68	74	74	74	74
16	61	61	61	61	61	83	71	83	83	83	83
18	44	44	48	48	48	64	58	64	64	64	64
20	51	51	51	51	51	72	61	72	72	72	72
22	70	70	70	70	70	86	100	86	86	86	86
24	75	75	75	75	75	91	105	91	91	91	91
26	81	81	81	81	81	97	111	97	97	97	97
28	78	78	78	78	78	94	108	94	94	94	94
30	130	130	130	130	130	146	160	146	146	146	146
32	135	135	135	135	135	151	165	151	151	151	151
34	143	143	143	143	143	159	173	159	159	159	159
36	144	144	148	148	148	164	178	164	164	164	164
38	218	218	225	225	225	241	299	241	241	241	241
40	229	229	240	240	240	256	314	256	256	256	256
42	242	242	249	249	249	265	323	265	265	265	265
44	252	252	259	259	259	275	333	275	275	275	275
46	264	264	274	274	274	290	348	290	290	290	290
48	492	492	501	501	501	517	575	517	517		
50	518	518	527	527	527	543	601	543	543		
52	523	523	531	531	531	547	605	547	547		
54	582	582	590	590	590	606	664	606	606		
56	608	608	616	616	616	632	690	632	632		
58	663	663	670	670	670	686	744	686	686		
60	696	696	703	703	703	719	777	719	719		
62	956	956	969		969			985	985		
64	1020	1020	1033		1033			1049	1049		
66	1252		1269		1269			1285	1285		
68	1803		1827		1827						
69	1870		1896		1896						

**CHH Type
Selection Table**

CHH A1	
A1A	
B1	
B1A	
CHH B2	
C1, F1	
CHV LB1	
LB2	
CHB C1	
D1	

Refer to other
sheets for
CHV and CHB

Size	Travel (mm)	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	Travel (mm)	Size
1		0.468	0.390	0.334	0.293	0.260	0.234	0.213	0.195	0.180	0.167	0.156	0.146	0.138	0.130	0.123	0.117		1
2		0.530	0.441	0.378	0.331	0.294	0.265	0.241	0.221	0.204	0.189	0.177	0.166	0.156	0.147	0.139	0.132		2
3		0.816	0.680	0.583	0.510	0.453	0.408	0.371	0.340	0.314	0.291	0.272	0.255	0.240	0.227	0.215	0.204		3
4		1.09	0.909	0.779	0.682	0.606	0.545	0.496	0.454	0.419	0.389	0.363	0.341	0.321	0.303	0.287	0.273		4
5		1.50	1.25	1.07	0.938	0.834	0.750	0.682	0.625	0.577	0.536	0.500	0.469	0.441	0.417	0.395	0.375		5
6		2.05	1.71	1.46	1.28	1.14	1.03	0.932	0.854	0.788	0.732	0.683	0.641	0.603	0.569	0.539	0.513		6
7		2.78	2.32	1.99	1.74	1.55	1.39	1.27	1.16	1.07	0.994	0.928	0.870	0.819	0.773	0.733	0.696		7
8		3.48	2.90	2.49	2.18	1.94	1.74	1.58	1.45	1.34	1.24	1.16	1.09	1.02	0.968	0.917	0.871		8
9		4.16	3.47	2.97	2.60	2.31	2.08	1.89	1.73	1.60	1.49	1.39	1.30	1.22	1.16	1.09	1.04		9
10		4.98	4.15	3.56	3.11	2.77	2.49	2.26	2.08	1.92	1.78	1.66	1.56	1.47	1.38	1.31	1.25		10
11		5.99	4.99	4.28	3.74	3.33	2.99	2.72	2.49	2.30	2.14	2.00	1.87	1.76	1.66	1.58	1.50		11
12		6.67	5.56	4.76	4.17	3.71	3.34	3.03	2.78	2.57	2.38	2.22	2.08	1.96	1.85	1.76	1.67		12
14		7.36	6.13	5.26	4.60	4.09	3.68	3.34	3.07	2.83	2.63	2.45	2.30	2.16	2.04	1.94	1.84		14
16			7.60	6.51	5.70	5.06	4.56	4.14	3.80	3.51	3.26	3.04	2.85	2.68	2.53	2.40	2.28		16
18			9.39	8.05	7.04	6.26	5.64	5.12	4.70	4.33	4.03	3.76	3.52	3.31	3.13	2.97	2.82		18
20			11.6	9.95	8.71	7.74	6.97	6.33	5.81	5.36	4.98	4.64	4.35	4.10	3.87	3.67	3.48		20
22			14.1	12.1	10.6	9.41	8.47	7.70	7.06	6.52	6.05	5.65	5.30	4.98	4.71	4.46	4.24		22
24			17.0	14.6	12.8	11.3	10.2	9.27	8.50	7.85	7.29	6.80	6.38	6.00	5.67	5.37	5.10		24
26			20.4	17.5	15.3	13.6	12.2	11.1	10.2	9.42	8.74	8.16	7.65	7.20	6.80	6.44	6.12		26
28			24.6	21.1	18.5	16.4	14.8	13.4	12.3	11.4	10.5	9.84	9.23	8.68	8.20	7.77	7.38		28
30			29.6	25.3	22.2	19.7	17.7	16.1	14.8	13.6	12.7	11.8	11.1	10.4	9.85	9.33	8.87		30
32				27.0	24.0	21.6	19.6	18.0	16.6	15.4	14.4	13.5	12.7	12.0	11.4	10.8			32
34				33.3	29.6	26.7	24.2	22.2	20.5	19.1	17.8	16.7	15.7	14.8	14.0	13.3			34
36				40.7	36.2	32.6	29.6	27.1	25.0	23.3	21.7	20.4	19.2	18.1	17.1	16.3			36
38				49.8	44.2	39.8	36.2	33.2	30.6	28.4	26.5	24.9	23.4	22.1	21.0	19.9			38
40					48.6	44.2	40.5	37.4	34.7	32.4	30.4	28.6	27.0	25.6	24.3				40
42					59.6	54.2	49.7	45.9	42.6	39.7	37.3	35.1	33.1	31.4	29.8				42
44					71.2	64.7	59.3	54.8	50.9	47.5	44.5	41.9	39.6	37.5	35.6				44
46					80.0	72.7	66.7	61.6	57.2	53.3	50.0	47.1	44.5	42.1	40.0				46
48					92.2	83.8	76.8	70.9	65.8	61.5	57.6	54.2	51.2	48.5	46.1				48
50						99.8	91.5	84.5	78.5	73.2	68.6	64.6	61.0	57.8	54.9				50
52						115.7	106.1	97.9	90.9	84.9	79.6	74.9	70.7	67.0	63.6				52
54						135.9	124.5	115.0	106.8	99.6	93.4	87.9	83.0	78.7	74.7				54
56						159.2	146.0	134.7	125.1	116.8	109.5	103.0	97.3	92.2	87.6				56
58						181.9	166.7	153.9	142.9	133.4	125.0	117.7	111.1	105.3	100.0				58
60						206.5	189.3	174.7	162.2	151.4	142.0	133.6	126.2	119.5	113.6				60
62						235.4	215.8	199.2	184.9	172.6	161.8	152.3	143.8	136.3	129.5				62
64								237.8	220.8	206.1	193.2	181.8	171.7	162.7	154.6				64
66								289.5	268.8	250.9	235.2	221.4	209.1	198.1	188.2				66
68																235.0			68
69																296.6			69
																320.7			69
Size	Travel (mm)	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	Travel (mm)	Size

- Note 1) This table is to be applied to select Seonghwa's standardized constant hanger.
- 2) Values of this table for the given maximum travel and hanger size indicate maximum load.
- 3) Load of preceding size means minimum load.
For example, load range for size 38 will become 16.6 to 20.3(kN) if maximum travel is 240(mm).
- 4) Following color codes were used.
- 5) Unit : mm for travel, kN for load.

Size Travel (mm)	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360	370	380	390	400	Travel (mm) Size
1	0.111	0.106	0.102	0.098	0.094	0.090	0.087	0.084	0.081	0.078	0.076	0.073	0.071	0.069	0.067	0.065	0.063	0.062	0.060	0.059	1
2	0.126	0.120	0.115	0.110	0.106	0.102	0.098	0.095	0.091	0.088	0.085	0.083	0.080	0.078	0.076	0.074	0.072	0.070	0.068	0.066	2
3	0.194	0.185	0.177	0.170	0.163	0.157	0.151	0.146	0.141	0.136	0.132	0.128	0.124	0.120	0.117	0.113	0.110	0.107	0.105	0.102	3
4	0.260	0.248	0.237	0.227	0.218	0.210	0.202	0.195	0.188	0.182	0.176	0.170	0.165	0.160	0.156	0.151	0.147	0.143	0.140	0.136	4
5	0.357	0.341	0.326	0.313	0.300	0.289	0.278	0.268	0.259	0.250	0.242	0.234	0.227	0.221	0.214	0.208	0.203	0.197	0.192	0.188	5
6	0.488	0.466	0.446	0.427	0.410	0.394	0.380	0.366	0.353	0.342	0.331	0.320	0.311	0.301	0.293	0.285	0.277	0.270	0.263	0.256	6
7	0.663	0.633	0.605	0.580	0.557	0.535	0.516	0.497	0.480	0.464	0.449	0.435	0.422	0.409	0.398	0.387	0.376	0.366	0.357	0.348	7
8	0.830	0.792	0.757	0.726	0.697	0.670	0.645	0.622	0.601	0.581	0.562	0.544	0.528	0.512	0.498	0.484	0.471	0.458	0.447	0.436	8
9	0.990	0.945	0.904	0.866	0.832	0.800	0.770	0.743	0.717	0.693	0.671	0.650	0.630	0.611	0.594	0.578	0.562	0.547	0.533	0.520	9
10	1.19	1.13	1.08	1.04	0.996	0.958	0.923	0.890	0.859	0.830	0.804	0.778	0.755	0.733	0.712	0.692	0.673	0.656	0.639	0.623	10
11	1.43	1.36	1.30	1.25	1.20	1.15	1.11	1.07	1.03	0.998	0.965	0.935	0.907	0.880	0.855	0.831	0.809	0.788	0.767	0.748	11
12	1.59	1.52	1.45	1.39	1.33	1.28	1.24	1.19	1.15	1.11	1.08	1.04	1.01	0.981	0.953	0.926	0.901	0.878	0.855	0.834	12
14	1.75	1.67	1.60	1.53	1.47	1.42	1.36	1.31	1.27	1.23	1.19	1.15	1.11	1.08	1.05	1.02	0.994	0.968	0.943	0.920	14
16	2.17	2.07	1.98	1.90	1.82	1.75	1.69	1.63	1.57	1.52											16
18	2.68	2.56	2.45	2.35	2.25	2.17	2.09	2.01	1.94	1.88											18
20	3.32	3.17	3.03	2.90	2.79	2.68	2.58	2.49	2.40	2.32											20
22	4.03	3.85	3.68	3.53	3.39	3.26	3.14	3.03	2.92	2.82											22
24	4.86	4.64	4.43	4.25	4.08	3.92	3.78	3.64	3.52	3.40											24
26	5.83	5.56	5.32	5.10	4.90	4.71	4.53	4.37	4.22	4.08											26
28	7.03	6.71	6.42	6.15	5.90	5.68	5.47	5.27	5.09	4.92	5.72	5.54	5.37	5.21	5.07	4.93	4.79	4.67	4.55	4.43	28
30	8.44	8.06	7.71	7.39	7.09	6.82	6.57	6.33	6.11	5.91	6.96	6.74	6.54	6.34	6.16	5.99	5.83	5.68	5.53	5.39	30
32	10.3	9.80	9.38	8.99	8.63	8.30	7.99	7.70	7.44	7.19	8.60	8.33	8.08	7.84	7.62	7.41	7.21	7.02	6.84	6.67	32
34	12.7	12.1	11.6	11.1	10.7	10.3	9.88	9.53	9.20	8.89	10.5	10.2	9.87	9.58	9.30	9.04	8.80	8.57	8.35	8.14	34
36	15.5	14.8	14.2	13.6	13.0	12.5	12.1	11.6	11.2	10.9	12.8	12.4	12.1	11.7	11.4	11.1	10.8	10.5	10.2	9.95	36
38	19.0	18.1	17.3	16.6	15.9	15.3	14.7	14.2	13.7	13.3	15.2	14.8	14.7	14.3	13.9	13.5	13.1	12.8	12.5	12.2	38
40	23.2	22.1	21.1	20.3	19.5	18.7	18.0	17.4	16.8	16.2	18.6	18.2	18.1	17.5	17.0	16.6	16.1	15.7	15.3	14.9	40
42	28.4	27.1	25.9	24.8	23.8	22.9	22.1	21.3	20.6	19.9	22.3	21.9	21.6	20.9	20.3	19.8	19.2	18.7	18.3	17.8	42
44	33.9	32.4	31.0	29.7	28.5	27.4	26.4	25.4	24.6	23.7	25.8	25.0	24.2	23.5	22.9	22.2	21.6	21.1	20.5	20.0	44
46	38.1	36.4	34.8	33.3	32.0	30.8	29.6	28.6	27.6	26.7	28.8	28.8	27.9	27.1	26.3	25.6	24.9	24.3	23.6	23.0	46
48	43.9	41.9	40.1	38.4	36.9	35.5	34.1	32.9	31.8	30.7	32.9	32.8	32.9	32.1	31.4	30.5	29.7	28.9	28.2	27.5	48
50	52.3	49.9	47.8	45.8	43.9	42.2	40.7	39.2	37.9	36.6	38.4	38.3	38.6	37.4	36.4	35.4	34.4	33.5	32.6	31.8	50
52	60.6	57.9	55.3	53.0	50.9	49.0	47.1	45.5	43.9	42.4	44.1	43.9	45.3	44.0	42.7	41.5	40.4	39.3	38.3	37.4	52
54	71.2	67.9	65.0	62.3	59.8	57.5	55.4	53.4	51.5	49.8	51.6	51.7	53.1	51.5	50.0	48.7	47.3	46.1	44.9	43.8	54
56	83.4	79.6	76.2	73.0	70.1	67.4	64.9	62.6	60.4	58.4	60.1	60.2	60.6	58.8	57.2	55.6	54.1	52.6	51.3	50.0	56
58	95.3	90.9	87.0	83.4	80.0	76.9	74.1	71.5	69.0	66.7	68.4	68.5	68.8	66.8	64.9	63.1	61.4	59.8	58.2	56.8	58
60	108.2	103.2	98.7	94.6	90.8	87.4	84.1	81.1	78.3	75.7	77.3	77.0	78.5	76.1	74.0	71.9	70.0	68.1	66.4	64.7	60
62	123.3	117.7	112.6	107.9	103.6	99.6	95.9	92.5	89.3	86.3	88.0	87.9	93.7	90.9	88.3	85.9	83.5	81.3	79.3	77.3	62
64	147.2	140.5	134.4	128.8	123.6	118.9	114.5	110.4	106.6	103.0	104.7	104.6	111.4	110.7	107.5	104.6	101.7	99.0	96.5	94.1	64
66	179.2	171.1	163.6	156.8	150.6	144.8	139.4	134.4	129.8	125.5	127.1	127.6	142.4	138.2	134.3	130.5	127.0	123.7	120.5	117.5	66
68	223.8	213.6	204.3	195.8	188.0	180.7	174.0	167.8	162.0	156.6	158.3	158.3	179.7	174.4	169.5	164.8	160.3	156.1	152.1	148.3	68
69	282.4	269.6	257.9	247.1	237.2	228.1	219.7	211.8	204.5	197.7	200.4	200.4	194.3	188.6	183.2	178.2	173.3	168.8	164.4	160.3	69
305.4	291.5	278.8	267.2	256.5	246.7	237.5	229.1	221.2	213.8	206.9	200.4	200.4	194.3	188.6	183.2	178.2	173.3	168.8	164.4	160.3	69
Size Travel (mm)	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360	370	380	390	400	Travel (mm) Size

CHV Type Selection Table		Travel mm	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	Travel mm	Size
		Size																		
CHH	A1	1	0.468 0.530	0.390 0.441	0.334 0.378	0.293 0.331	0.260 0.294	0.234 0.265	0.213 0.241	0.195 0.221	0.180 0.204	0.167 0.189	0.156 0.177	0.146 0.166	0.138 0.156	0.130 0.147	0.123 0.139	0.117 0.132	1	
	2	0.816	0.680	0.583	0.510	0.453	0.408	0.371	0.340	0.314	0.291	0.272	0.255	0.240	0.227	0.215	0.204	2		
	3	1.09	0.909	0.779	0.682	0.606	0.545	0.496	0.454	0.419	0.389	0.363	0.341	0.321	0.303	0.287	0.273	3		
	4	1.50	1.25	1.07	0.938	0.834	0.750	0.682	0.625	0.577	0.536	0.500	0.469	0.441	0.417	0.395	0.375	4		
	5	2.05	1.71	1.46	1.28	1.14	1.03	0.932	0.854	0.788	0.732	0.683	0.641	0.603	0.569	0.539	0.513	5		
	6	2.78	2.32	1.99	1.74	1.55	1.39	1.27	1.16	1.07	0.994	0.928	0.870	0.819	0.773	0.733	0.696	6		
	7	3.48	2.90	2.49	2.18	1.94	1.74	1.58	1.45	1.34	1.24	1.16	1.09	1.02	0.968	0.917	0.871	7		
	8	4.16	3.47	2.97	2.60	2.31	2.08	1.89	1.73	1.60	1.49	1.39	1.30	1.22	1.16	1.09	1.04	8		
	9	4.98	4.15	3.56	3.11	2.77	2.49	2.26	2.08	1.92	1.78	1.66	1.56	1.47	1.38	1.31	1.25	9		
	10	5.99	4.99	4.28	3.74	3.33	2.99	2.72	2.49	2.30	2.14	2.00	1.87	1.76	1.66	1.58	1.50	10		
	11	6.67	5.56	4.76	4.17	3.71	3.34	3.03	2.78	2.57	2.38	2.22	2.08	1.96	1.85	1.76	1.67	11		
	12	7.36	6.13	5.26	4.60	4.09	3.68	3.34	3.07	2.83	2.63	2.45	2.30	2.16	2.04	1.94	1.84	12		
	14		7.60	6.51	5.70	5.06	4.56	4.14	3.80	3.51	3.26	3.04	2.85	2.68	2.53	2.40	2.28	14		
	16		9.39	8.05	7.04	6.26	5.64	5.12	4.70	4.33	4.50	3.76	3.52	3.31	3.13	2.97	2.82	16		
	18		11.6	9.95	8.71	7.74	6.97	6.33	5.81	5.36	4.98	4.64	4.35	4.10	3.87	3.67	3.48	18		
	20		14.1	12.1	10.6	9.41	8.47	7.70	7.06	6.52	6.05	5.65	5.30	4.98	4.71	4.46	4.24	20		
	22		17.0	14.6	12.8	11.3	10.2	9.27	8.50	7.85	7.29	6.80	6.38	6.00	5.67	5.37	5.10	22		
	24		20.4	17.5	15.3	13.6	12.2	11.1	10.2	9.42	8.74	8.16	7.65	7.20	6.80	6.44	6.12	24		
	26		24.6	21.1	18.5	16.4	14.8	13.4	12.3	11.4	10.5	9.84	9.23	8.68	8.20	7.77	7.38	26		
	28		29.6	25.3	22.2	19.7	17.7	16.1	14.8	13.6	12.7	11.8	11.1	10.4	9.85	9.33	8.87	28		
CHH	B1	30				27.0	24.0	21.6	19.6	18.0	16.6	15.4	14.4	13.5	12.7	12.0	11.4	10.8	30	
	B1A	32				33.3	29.6	26.7	24.2	22.2	20.5	19.1	17.8	16.7	15.7	14.8	14.0	13.3	32	
	B2	34				40.7	36.2	32.6	29.6	27.1	25.0	23.3	21.7	20.4	19.2	18.1	17.1	16.3	34	
	C1, F1	36				49.8	44.2	39.8	36.2	33.2	30.6	28.4	26.5	24.9	23.4	22.1	21.0	19.9	36	
		38						48.6	44.2	40.5	37.4	34.7	32.4	30.4	28.6	27.0	25.6	24.3	38	
		40						59.6	54.2	49.7	45.9	42.6	39.7	37.3	35.1	33.1	31.4	29.8	40	
		42						71.2	64.7	59.3	54.8	50.9	47.5	44.5	41.9	39.6	37.5	35.6	42	
		44						80.0	72.7	66.7	61.6	57.2	53.3	50.0	47.1	44.5	42.1	40.0	44	
		46						92.2	83.8	76.8	70.9	65.8	61.5	57.6	54.2	51.2	48.5	46.1	46	
		48							99.8	91.5	84.5	78.5	73.2	68.6	64.6	61.0	57.8	54.9	48	
CHV	LB1	50							115.7	106.1	97.9	90.9	84.9	79.6	74.9	70.7	67.0	63.6	50	
	LB2	52							135.9	124.5	115.0	106.8	99.6	93.4	87.9	83.0	78.7	74.7	52	
		54							159.2	146.0	134.7	125.1	116.8	109.5	103.0	97.3	92.2	87.6	54	
		56							181.9	166.7	153.9	142.9	133.4	125.0	117.7	111.1	105.3	100.0	56	
		58							206.5	189.3	174.7	162.2	151.4	142.0	133.6	126.2	119.5	113.6	58	
		60							235.4	215.8	199.2	184.9	172.6	161.8	152.3	143.8	136.3	129.5	60	
		62									237.8	220.8	206.1	193.2	181.8	171.7	162.7	154.6	62	
		64									289.5	268.8	250.9	235.2	221.4	209.1	198.1	188.2	64	
		66																235.0	66	
		68																296.6	68	
CHB	C1	69																320.7	69	
	D1	Size	Travel mm	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	Travel mm

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- Note 1) This table is to be applied to select Seonghwa's standardized constant hanger.
- 2) Values of this table for the given maximum travel and hanger size indicate maximum load.
- 3) Load of preceding size means minimum load.
For example, load range for size 38 will become 16.6 to 20.3(kN) if maximum travel is 240(mm).
- 4) Following color codes were used.
- 5) Unit : mm for travel, kN for load.

Size Travel mm	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360	370	380	390	400	Travel mm Size
1	0.111	0.106	0.102	0.098	0.094	0.090	0.087	0.084	0.081	0.078	0.076	0.073	0.071	0.069	0.067	0.065	0.063	0.062	0.060	0.059	1
2	0.126	0.120	0.115	0.110	0.106	0.102	0.098	0.095	0.091	0.088	0.085	0.083	0.080	0.078	0.076	0.074	0.072	0.070	0.068	0.066	2
3	0.194	0.185	0.177	0.170	0.163	0.157	0.151	0.146	0.141	0.136	0.132	0.128	0.124	0.120	0.117	0.113	0.110	0.107	0.105	0.102	3
4	0.260	0.248	0.237	0.227	0.218	0.210	0.202	0.195	0.188	0.182	0.176	0.170	0.165	0.160	0.156	0.151	0.147	0.143	0.140	0.136	4
5	0.357	0.341	0.326	0.313	0.300	0.289	0.278	0.268	0.259	0.250	0.242	0.234	0.227	0.221	0.214	0.208	0.203	0.197	0.192	0.188	5
6	0.488	0.466	0.446	0.427	0.410	0.394	0.380	0.366	0.353	0.342	0.331	0.320	0.311	0.301	0.293	0.285	0.277	0.270	0.263	0.256	6
7	0.663	0.633	0.605	0.580	0.557	0.535	0.516	0.497	0.480	0.464	0.449	0.435	0.422	0.409	0.398	0.387	0.376	0.366	0.357	0.348	7
8	0.830	0.792	0.757	0.726	0.697	0.670	0.645	0.622	0.601	0.581	0.562	0.544	0.528	0.512	0.498	0.484	0.471	0.458	0.447	0.436	8
9	0.990	0.945	0.904	0.866	0.832	0.800	0.770	0.743	0.717	0.693	0.671	0.650	0.630	0.611	0.594	0.578	0.562	0.547	0.533	0.520	9
10	1.19	1.13	1.08	1.04	0.996	0.958	0.923	0.890	0.859	0.830	0.804	0.778	0.755	0.733	0.712	0.692	0.673	0.656	0.639	0.623	10
11	1.43	1.36	1.30	1.25	1.20	1.15	1.11	1.07	1.03	0.998	0.965	0.935	0.907	0.880	0.855	0.831	0.809	0.788	0.767	0.748	11
12	1.59	1.52	1.45	1.39	1.33	1.28	1.24	1.19	1.15	1.11	1.08	1.04	1.01	0.981	0.953	0.926	0.901	0.878	0.855	0.834	12
14	1.75	1.67	1.60	1.53	1.47	1.42	1.36	1.31	1.27	1.23	1.19	1.15	1.11	1.08	1.05	1.02	0.994	0.968	0.943	0.920	14
16	2.17	2.07	1.98	1.90	1.82	1.75	1.69	1.63	1.57	1.52											16
18	2.68	2.56	2.45	2.35	2.25	2.17	2.09	2.01	1.94	1.88											18
20	3.32	3.17	3.03	2.90	2.79	2.68	2.58	2.49	2.40	2.32											20
22	4.03	3.85	3.68	3.53	3.39	3.26	3.14	3.03	2.92	2.82											22
24	4.86	4.64	4.43	4.25	4.08	3.92	3.78	3.64	3.52	3.40											24
26	5.83	5.56	5.32	5.10	4.90	4.71	4.53	4.37	4.22	4.08											26
28	7.03	6.71	6.42	6.15	5.90	5.68	5.47	5.27	5.09	4.92											28
30	8.44	8.06	7.71	7.39	7.09	6.82	6.57	6.33	6.11	5.91	5.72	5.54	5.37	5.21	5.07	4.93	4.79	4.67	4.55	4.43	30
32	10.3	9.80	9.38	8.99	8.63	8.30	7.99	7.70	7.44	7.19	6.96	6.74	6.54	6.34	6.16	5.99	5.83	5.68	5.53	5.39	32
34	12.7	12.1	11.6	11.1	10.7	10.3	9.88	9.53	9.20	8.89	8.60	8.33	8.08	7.84	7.62	7.41	7.21	7.02	6.84	6.67	34
36	15.5	14.8	14.2	13.6	13.0	12.5	12.1	11.6	11.2	10.9	10.5	10.2	9.87	9.58	9.30	9.04	8.80	8.57	8.35	8.14	36
38	19.0	18.1	17.3	16.6	15.9	15.3	14.7	14.2	13.7	13.3	12.8	12.4	12.1	11.7	11.4	11.1	10.8	10.5	10.2	9.95	38
40	23.2	22.1	21.1	20.3	19.5	18.7	18.0	17.4	16.8	16.2	15.7	15.2	14.7	14.3	13.9	13.5	13.1	12.8	12.5	12.2	40
42	28.4	27.1	25.9	24.8	23.8	22.9	22.1	21.3	20.6	19.9	19.2	18.6	18.1	17.5	17.0	16.6	16.1	15.7	15.3	14.9	42
44	33.9	32.4	31.0	29.7	28.5	27.4	26.4	25.4	24.6	23.7	23.0	22.3	21.6	20.9	20.3	19.8	19.2	18.7	18.3	17.8	44
46	38.1	36.4	34.8	33.3	32.0	30.8	29.6	28.6	27.6	26.7	25.8	25.0	24.2	23.5	22.9	22.2	21.6	21.1	20.5	20.0	46
48	43.9	41.9	40.1	38.4	36.9	35.5	34.1	32.9	31.8	30.7	29.7	28.8	27.9	27.1	26.3	25.6	24.9	24.3	23.6	23.0	48
50	52.3	49.9	47.8	45.8	43.9	42.2	40.7	39.2	37.9	36.6	35.4	34.3	33.3	32.3	31.4	30.5	29.7	28.9	28.2	27.5	50
52	60.6	57.9	55.3	53.0	50.9	49.0	47.1	45.5	43.9	42.4	41.1	39.8	38.6	37.4	36.4	35.4	34.4	33.5	32.6	31.8	52
54	71.2	67.9	65.0	62.3	59.8	57.5	55.4	53.4	51.5	49.8	48.2	46.7	45.3	44.0	42.7	41.5	40.4	39.3	38.3	37.4	54
56	83.4	79.6	76.2	73.0	70.1	67.4	64.9	62.6	60.4	58.4	56.5	54.7	53.1	51.5	50.0	48.7	47.3	46.1	44.9	43.8	56
58	95.3	90.9	87.0	83.4	80.0	76.9	74.1	71.5	69.0	66.7	64.5	62.5	60.6	58.8	57.2	55.6	54.1	52.6	51.3	50.0	58
60	108.2	103.2	98.7	94.6	90.8	87.4	84.1	81.1	78.3	75.7	73.3	71.0	68.8	66.8	64.9	63.1	61.4	59.8	58.2	56.8	60
62	123.3	117.7	112.6	107.9	103.6	99.6	95.9	92.5	89.3	86.3	83.5	80.9	78.5	76.1	74.0	71.9	70.0	68.1	66.4	64.7	62
64	147.2	140.5	134.4	128.8	123.6	118.9	114.5	110.4	106.6	103.0	99.7	96.6	93.7	90.9	88.3	85.9	83.5	81.3	79.3	77.3	64
66	179.2	171.1	163.6	156.8	150.6	144.8	139.4	134.4	129.8	125.5	121.4	117.6	114.1	110.7	107.5	104.6	101.7	99.0	96.5	94.1	66
68	223.8	213.6	204.3	195.8	188.0	180.7	174.0	167.8	162.0	156.6	151.6	146.9	142.4	138.2	134.3	130.5	127.0	123.7	120.5	117.5	68
69	282.4	269.6	257.9	247.1	237.2	228.1	219.7	211.8	204.5	197.7	191.3	185.3	179.7	174.4	169.5	164.8	160.3	156.1	152.1	148.3	69
70	305.4	291.5	278.8	267.2	256.5	246.7	237.5	229.1	221.2	213.8	206.9	200.4	194.3	188.6	183.2	178.2	173.3	168.8	164.4	160.3	70
Size Travel mm	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360	370	380	390	400	Travel mm Size

CHB Type Selection Table		Travel Size	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	Travel Size
		1	0.468 0.530	0.390 0.441	0.334 0.378	0.293 0.331	0.260 0.294	0.234 0.265	0.213 0.241	0.195 0.221	0.180 0.204	0.167 0.189	0.156 0.177	0.146 0.166	0.138 0.156	0.130 0.147	0.123 0.139	0.117 0.132	1
CHH	A1	2	0.816	0.680	0.583	0.510	0.453	0.408	0.371	0.340	0.314	0.291	0.272	0.255	0.240	0.227	0.215	0.204	2
	A1A	3	1.09	0.909	0.779	0.682	0.606	0.545	0.496	0.454	0.419	0.389	0.363	0.341	0.321	0.303	0.287	0.273	3
	B1	4	1.50	1.25	1.07	0.938	0.834	0.750	0.682	0.625	0.577	0.536	0.500	0.469	0.441	0.417	0.395	0.375	4
	B1A	5	2.05	1.71	1.46	1.28	1.14	1.03	0.932	0.854	0.788	0.732	0.683	0.641	0.603	0.569	0.539	0.513	5
	B2	6	2.78	2.32	1.99	1.74	1.55	1.39	1.27	1.16	1.07	0.994	0.928	0.870	0.819	0.773	0.733	0.696	6
	C1, F1	7	3.48	2.90	2.49	2.18	1.94	1.74	1.58	1.45	1.34	1.24	1.16	1.09	1.02	0.968	0.917	0.871	7
		8	4.16	3.47	2.97	2.60	2.31	2.08	1.89	1.73	1.60	1.49	1.39	1.30	1.22	1.16	1.09	1.04	8
		9	4.98	4.15	3.56	3.11	2.77	2.49	2.26	2.08	1.92	1.78	1.66	1.56	1.47	1.38	1.31	1.25	9
		10	5.99	4.99	4.28	3.74	3.33	2.99	2.72	2.49	2.30	2.14	2.00	1.87	1.76	1.66	1.58	1.50	10
		11	6.67	5.56	4.76	4.17	3.71	3.34	3.03	2.78	2.57	2.38	2.22	2.08	1.96	1.85	1.76	1.67	11
		12	7.36	6.13	5.26	4.60	4.09	3.68	3.34	3.07	2.83	2.63	2.45	2.30	2.16	2.04	1.94	1.84	12
		14		7.60	6.51	5.70	5.06	4.56	4.14	3.80	3.51	3.26	3.04	2.85	2.68	2.53	2.40	2.28	14
		16		9.39	8.05	7.04	6.26	5.64	5.12	4.70	4.33	4.03	3.76	3.52	3.31	3.13	2.97	2.82	16
		18		11.6	9.95	8.71	7.74	6.97	6.33	5.81	5.36	4.98	4.64	4.35	4.10	3.87	3.67	3.48	18
		20		14.1	12.1	10.6	9.41	8.47	7.70	7.06	6.52	6.05	5.65	5.30	4.98	4.71	4.46	4.24	20
		22		17.0	14.6	12.8	11.3	10.2	9.27	8.50	7.85	7.29	6.80	6.38	6.00	5.67	5.37	5.10	22
		24		20.4	17.5	15.3	13.6	12.2	11.1	10.2	9.42	8.74	8.16	7.65	7.20	6.80	6.44	6.12	24
		26		24.6	21.1	18.5	16.4	14.8	13.4	12.3	11.4	10.5	9.84	9.23	8.68	8.20	7.77	7.38	26
		28		29.6	25.3	22.2	19.7	17.7	16.1	14.8	13.6	12.7	11.8	11.1	10.4	9.85	9.33	8.87	28
	CHV	LB1	30				27.0	24.0	21.6	19.6	18.0	16.6	15.4	14.4	13.5	12.7	12.0	11.4	10.8
LB2		32				33.3	29.6	26.7	24.2	22.2	20.5	19.1	17.8	16.7	15.7	14.8	14.0	13.3	32
		34				40.7	36.2	32.6	29.6	27.1	25.0	23.3	21.7	20.4	19.2	18.1	17.1	16.3	34
		36				49.8	44.2	39.8	36.2	33.2	30.6	28.4	26.5	24.9	23.4	22.1	21.0	19.9	36
		38						48.6	44.2	40.5	37.4	34.7	32.4	30.4	28.6	27.0	25.6	24.3	38
		40						59.6	54.2	49.7	45.9	42.6	39.7	37.3	35.1	33.1	31.4	29.8	40
		42						71.2	64.7	59.3	54.8	50.9	47.5	44.5	41.9	39.6	37.5	35.6	42
		44						80.0	72.7	66.7	61.6	57.2	53.3	50.0	47.1	44.5	42.1	40.0	44
		46						92.2	83.8	76.8	70.9	65.8	61.5	57.6	54.2	51.2	48.5	46.1	46
		48							99.8	91.5	84.5	78.5	73.2	68.6	64.6	61.0	57.8	54.9	48
CHB	C1	50							115.7	106.1	97.9	90.9	84.9	79.6	74.9	70.7	67.0	63.6	50
	D1	52							135.9	124.5	115.0	106.8	99.6	93.4	87.9	83.0	78.7	74.7	52
		54							159.2	146.0	134.7	125.1	116.8	109.5	103.0	97.3	92.2	87.6	54
		56							181.9	166.7	153.9	142.9	133.4	125.0	117.7	111.1	105.3	100.0	56
		58							206.5	189.3	174.7	162.2	151.4	142.0	133.6	126.2	119.5	113.6	58
		60							235.4	215.8	199.2	184.9	172.6	161.8	152.3	143.8	136.3	129.5	60
		62									237.8	220.8	206.1	193.2	181.8	171.7	162.7	154.6	62
		64									289.5	268.8	250.9	235.2	221.4	209.1	198.1	188.2	64
		66																235.0	66
		68																296.6	68
	69																320.7	69	
		Size Travel (mm)	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	(mm) Size

- Note 1) This table is to be applied to select Seonghwa's standardized constant hanger.
- 2) Values of this table for the given maximum travel and hanger size indicate maximum load.
- 3) Load of preceding size means minimum load.
For example, load range for size 38 will become 16.6 to 20.3(kN) if maximum travel is 240(mm).
- 4) Following color codes were used.
- 5) Unit : mm for travel, kN for load.

Size Travel (mm)	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360	370	380	390	400	Travel (mm) Size
1	0.111	0.106	0.102	0.098	0.094	0.090	0.087	0.084	0.081	0.078	0.076	0.073	0.071	0.069	0.067	0.065	0.063	0.062	0.060	0.059	1
2	0.126	0.120	0.115	0.110	0.106	0.102	0.098	0.095	0.091	0.088	0.085	0.083	0.080	0.078	0.076	0.074	0.072	0.070	0.068	0.066	2
3	0.194	0.185	0.177	0.170	0.163	0.157	0.151	0.146	0.141	0.136	0.132	0.128	0.124	0.120	0.117	0.113	0.110	0.107	0.105	0.102	3
4	0.260	0.248	0.237	0.227	0.218	0.210	0.202	0.195	0.188	0.182	0.176	0.170	0.165	0.160	0.156	0.151	0.147	0.143	0.140	0.136	4
5	0.357	0.341	0.326	0.313	0.300	0.289	0.278	0.268	0.259	0.250	0.242	0.234	0.227	0.221	0.214	0.208	0.203	0.197	0.192	0.188	5
6	0.488	0.466	0.446	0.427	0.410	0.394	0.380	0.366	0.353	0.342	0.331	0.320	0.311	0.301	0.293	0.285	0.277	0.270	0.263	0.256	6
7	0.663	0.633	0.605	0.580	0.557	0.535	0.516	0.497	0.480	0.464	0.449	0.435	0.422	0.409	0.398	0.387	0.376	0.366	0.357	0.348	7
8	0.830	0.792	0.757	0.726	0.697	0.670	0.645	0.622	0.601	0.581	0.562	0.544	0.528	0.512	0.498	0.484	0.471	0.458	0.447	0.436	8
9	0.990	0.945	0.904	0.866	0.832	0.800	0.770	0.743	0.717	0.693	0.671	0.650	0.630	0.611	0.594	0.578	0.562	0.547	0.533	0.520	9
10	1.19	1.13	1.08	1.04	0.996	0.958	0.923	0.890	0.859	0.830	0.804	0.778	0.755	0.733	0.712	0.692	0.673	0.656	0.639	0.623	10
11	1.43	1.36	1.30	1.25	1.20	1.15	1.11	1.07	1.03	0.998	0.965	0.935	0.907	0.880	0.855	0.831	0.809	0.788	0.767	0.748	11
12	1.59	1.52	1.45	1.39	1.33	1.28	1.24	1.19	1.15	1.11	1.08	1.04	1.01	0.981	0.953	0.926	0.901	0.878	0.855	0.834	12
14	1.75	1.67	1.60	1.53	1.47	1.42	1.36	1.31	1.27	1.23	1.19	1.15	1.11	1.08	1.05	1.02	0.994	0.968	0.943	0.920	14
16	2.17	2.07	1.98	1.90	1.82	1.75	1.69	1.63	1.57	1.52											16
18	2.68	2.56	2.45	2.35	2.25	2.17	2.09	2.01	1.94	1.88											18
20	3.32	3.17	3.03	2.90	2.79	2.68	2.58	2.49	2.40	2.32											20
22	4.03	3.85	3.68	3.53	3.39	3.26	3.14	3.03	2.92	2.82											22
24	4.86	4.64	4.43	4.25	4.08	3.92	3.78	3.64	3.52	3.40											24
26	5.83	5.56	5.32	5.10	4.90	4.71	4.53	4.37	4.22	4.08											26
28	7.03	6.71	6.42	6.15	5.90	5.68	5.47	5.27	5.09	4.92											28
30	8.44	8.06	7.71	7.39	7.09	6.82	6.57	6.33	6.11	5.91	5.72	5.54	5.37	5.21	5.07	4.93	4.79	4.67	4.55	4.43	30
32	10.3	9.80	9.38	8.99	8.63	8.30	7.99	7.70	7.44	7.19	6.96	6.74	6.54	6.34	6.16	5.99	5.83	5.68	5.53	5.39	32
34	12.7	12.1	11.6	11.1	10.7	10.3	9.88	9.53	9.20	8.89	8.60	8.33	8.08	7.84	7.62	7.41	7.21	7.02	6.84	6.67	34
36	15.5	14.8	14.2	13.6	13.0	12.5	12.1	11.6	11.2	10.9	10.5	10.2	9.87	9.58	9.30	9.04	8.80	8.57	8.35	8.14	36
38	19.0	18.1	17.3	16.6	15.9	15.3	14.7	14.2	13.7	13.3	12.8	12.4	12.1	11.7	11.4	11.1	10.8	10.5	10.2	9.95	38
40	23.2	22.1	21.1	20.3	19.5	18.7	18.0	17.4	16.8	16.2	15.7	15.2	14.7	14.3	13.9	13.5	13.1	12.8	12.5	12.2	40
42	28.4	27.1	25.9	24.8	23.8	22.9	22.1	21.3	20.6	19.9	19.2	18.6	18.1	17.5	17.0	16.6	16.1	15.7	15.3	14.9	42
44	33.9	32.4	31.0	29.7	28.5	27.4	26.4	25.4	24.6	23.7	23.0	22.3	21.6	20.9	20.3	19.8	19.2	18.7	18.3	17.8	44
46	38.1	36.4	34.8	33.3	32.0	30.8	29.6	28.6	27.6	26.7	25.8	25.0	24.2	23.5	22.9	22.2	21.6	21.1	20.5	20.0	46
48	43.9	41.9	40.1	38.4	36.9	35.5	34.1	32.9	31.8	30.7	29.7	28.8	27.9	27.1	26.3	25.6	24.9	24.3	23.6	23.0	48
50	52.3	49.9	47.8	45.8	43.9	42.2	40.7	39.2	37.9	36.6	35.4	34.3	33.3	32.3	31.4	30.5	29.7	28.9	28.2	27.5	50
52	60.6	57.9	55.3	53.0	50.9	49.0	47.1	45.5	43.9	42.4	41.1	39.8	38.6	37.4	36.4	35.4	34.4	33.5	32.6	31.8	52
54	71.2	67.9	65.0	62.3	59.8	57.5	55.4	53.4	51.5	49.8	48.2	46.7	45.3	44.0	42.7	41.5	40.4	39.3	38.3	37.4	54
56	83.4	79.6	76.2	73.0	70.1	67.4	64.9	62.6	60.4	58.4	56.5	54.7	53.1	51.5	50.0	48.7	47.3	46.1	44.9	43.8	56
58	95.3	90.9	87.0	83.4	80.0	76.9	74.1	71.5	69.0	66.7	64.5	62.5	60.6	58.8	57.2	55.6	54.1	52.6	51.3	50.0	58
60	108.2	103.2	98.7	94.6	90.8	87.4	84.1	81.1	78.3	75.7	73.3	71.0	68.8	66.8	64.9	63.1	61.4	59.8	58.2	56.8	60
62	123.3	117.7	112.6	107.9	103.6	99.6	95.9	92.5	89.3	86.3	83.5	80.9	78.5	76.1	74.0	71.9	70.0	68.1	66.4	64.7	62
64	147.2	140.5	134.4	128.8	123.6	118.9	114.5	110.4	106.6	103.0	99.7	96.6	93.7	90.9	88.3	85.9	83.5	81.3	79.3	77.3	64
66	179.2	171.1	163.6	156.8	150.6	144.8	139.4	134.4	129.8	125.5	121.4	117.6	114.1	110.7	107.5	104.6	101.7	99.0	96.5	94.1	66
68	223.8	213.6	204.3	195.8	188.0	180.7	174.0	167.8	162.0	156.6	151.6	146.9	142.4	138.2	134.3	130.5	127.0	123.7	120.5	117.5	68
69	282.4	269.6	257.9	247.1	237.2	228.1	219.7	211.8	204.5	197.7	191.3	185.3	179.7	174.4	169.5	164.8	160.3	156.1	152.1	148.3	69
70	305.4	291.5	278.8	267.2	256.5	246.7	237.5	229.1	221.2	213.8	206.9	200.4	194.3	188.6	183.2	178.2	173.3	168.8	164.4	160.3	70
Size Travel (mm)	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360	370	380	390	400	Travel (mm) Size