Clamp Supports – Heavy Series Reference Guide

Clamp Supports for Piping Projects

Pipe, Tube, Hose Clamp Supports – Heavy Series

¼" Through 12" Diameter – DIN 3015 Specification

ASSEMBLY ORDERING INSTRUCTIONS

1. Add "CLHA" for Heavy Series Assembly;
2. List DIN Group Number;
3. Choose Clamp Material;
4. Choose Mounting Style;
5. Choose Carbon or Stainless Hardware;
6. List Size

EXAMPLE

1″ Heavy Series - Polypropylene clamp on weld plate - **plated carbon steel: CLHA-3-PP10-G033.7**

1 | Heavy Series Clamp Assembly	2 | DIN Group	3 | Clamp Material	4 | Mounting Style	5 | Hardware Material	6 | Size
CLHA	Use Chart Below	☐ **PP** = Polypropylene ☐ **PA** = Polyamide ☐ **AL** = Aluminum	☐ **10** = Weld Plate ☐ **11** = Rail Mount ☐ **12** = Stacking	☐ **G** = Plated Carbon Steel ☐ **K** = 316 Stainless Steel	Use Chart Below

DIN Group 1

6 mm		006.0
12 mm		012.0
14 mm		014.0
15 mm		015.0
18 mm		018.0
1/4″	T	006.4
5/16″	T	008.0
3/8″	T	009.5
1/2″	T	012.7
5/8″	T	016.0
1/8″	P	010.0
1/4″	P	013.5
3/8″	P	017.2

DIN Group 2

20 mm		020.0
25 mm		025.0
28 mm		028.0
30 mm		030.0
3/4″	T	019.0
7/8″	T	022.0
1″	T	025.4
1/2″	P	021.3
3/4″	P	026.9

Size
Pipe or Tube
Actual Bore (mm)

DIN Group 3

30 mm		030.0
35 mm		035.0
40 mm		040.0
42 mm		042.0
1-1/4″	T	032.0
1-1/2″	T	038.0
1″	P	033.7
1-1/4″	P	042.0

DIN Group 4

55 mm		055.0
65 mm		065.0
70 mm		070.0
1-1/2″	T	038.4
1-3/4″	T	044.5
2″	T	050.8
2-1/4″	T	057.0
2-1/2″	T	063.5
2-3/4″	T	070.0
1-1/2″	P	048.3
2″	P	060.3

DIN Group 5

80 mm		080.0
3″	T	076.1
3-1/4″	T	082.5
2-1/2″	P	073.0
3″	P	088.9

DIN Group 6

100 mm		100.0
4-1/4"	T	108.0
5"	T	127.0
5-1/4"	T	133.0
3"	P	088.9
3-1/2″	P	101.6
4″	P	114.3

DIN Group 7

133 mm		133.0
6"	T	152.4
6-1/4"	T	159.0
6-1/2"	T	165.0
5"	P	139.7
6″	P	168.3

DIN Group 8

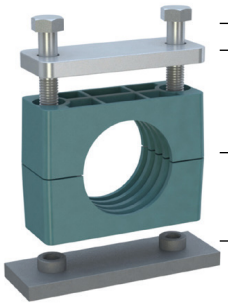
7"	T	177.8
7-5/8"	T	193.7
8-1/2"	T	216.0
6"	P	168.3
8″	P	219.3

DIN Group 9

244 mm		244.0
8"	P	219.1
10"	P	273.0
12"	P	323.9

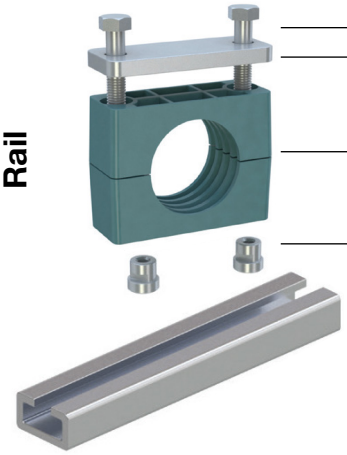
Assembly **Components**

Weld Plate



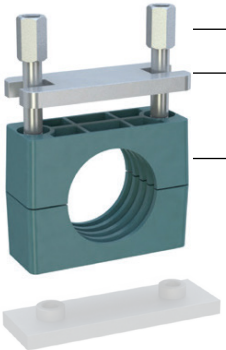
HB = Hex Bolt
CP = Cover Plate
PP/PA/AL
WP = Weld Plate

Rail



HB = Hex Bolt
CP = Cover Plate
PP/PA/AL
RN = Rail Nut
RL = Rail
Rail not included in assembly - sold separately

Stacking



SB = Stacking Bolt
SP = Safety Plate
PP/PA/AL

3D step models available upon request

Clamp Supports for Piping Projects

Clamp Support Components – Heavy Series

¼" Through 12" Diameter – DIN 3015 Specification

EXAMPLE

1″ Pipe - Polypropylene

CLH-3-PP-033.7

1 | Heavy Series Componenets	2 | DIN Group	3 | Part Nunber	4 | Size
CLH	Use Chart on Other Page	☐ **PP** = Polypropylene ☐ **PA** = Polyamide ☐ **AL** = Aluminum	Use Chart on Other Page

1 | Heavy Series Componenets	2 | DIN Group	3 | Part Nunber	4 | Hardware Material
CLH	Use Chart on Other Page	☐ **WP** = Weld Plate ☐ **CP** = Cover Plate ☐ **HB** = Hex Bolt ☐ **SP** = Safety Plate ☐ **SB** = Stacking Bolt	☐ **G** = Plated Carbon Steel ☐ **K** = 316 Stainless Steel

WELD PLATE

EXAMPLE

DIN Group 2 – Stainless Steel

CLH-2-WP-K

COVER PLATE

EXAMPLE

DIN Group 3 – Plated Carbon Steel

CLH-3-CP-G

SAFETY PLATE

EXAMPLE

DIN Group 3 – Plated Carbon Steel

CLH-3-SP-G

STACKING BOLT

EXAMPLE

DIN Group 3 – Plated Carbon Steel

CLH-3-SB-G

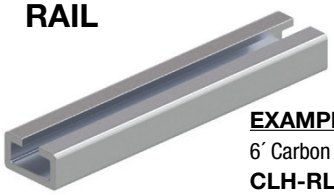
HEX BOLT

EXAMPLE

DIN Group 3 – Plated Carbon Steel

CLH-3-HB-G

RAIL



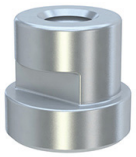
EXAMPLE

6´ Carbon Rail

CLH-RL-G-2M

1 | Heavy Series Componenets	2 | DIN Group	3 | Hardware Material	4 | Length
CLH	**RL**	☐ **G** = Plated Carbon Steel ☐ **K** = 316 Stainless Steel	☐ **1m** = 1 meter ☐ **2m** = 2 meters

RAIL NUT



EXAMPLE

Rail Nut for 1″ Clamp

CLH-RN-1/3-G

1 | Heavy Series Componenets	2 | DIN Group	3 | Part Number	4 | Hardware Material
CLH	1/3 = Groups 1 to 3 4 = Group 4	**RN**	☐ **G** = Plated Carbon Steel ☐ **K** = 316 Stainless Steel

3D step models available upon request

Installation and Distance Between Clamps

Basic Installation Instructions

Installation on Weld Plate

Different types of weld plates are available for all Clamps according to DIN 3015 as well as for most of the other series and many custom-designed special clamps

- Place weld plates in there designated positions. Please make sure these positions are suitable for the expected loads.
- Mark the postitions of the weld plates to ensure best alignment.
- Weld the weld plates into position. Elongated weld plates can also be mounted to their positions by using screws or bolts.
- Push bottom clamp half onto weld plate.
- Insert pipe, tube, hose, cable or any other type of line.
- Place second clamp half and cover plate (optional) on top and mount clamp assembly by using screws or bolts.

Unless otherwise stated, the bolt lengths indicated for clamps according to DIN 3015 refer to the installation on the weld plates and mounting rails as well as multi-level (stacking) installation. For direct installation, different lengths may be required.

Installation on Mounting Rail

Rail Nuts are available for all Clamps according to DIN 3015 (Heavy Series up to DIN 4 only) as well as for many custom-designed special clamps.

- Place mounting rails in their designated positions. Please make sure these bases are suitable for the expected loads.
- Mark the positions of the mounting rails to ensure best alignment.
- Weld the mounting rails into position. Mounting rails can also be moutned to their positions by using side-mounting brackets with screws or bolts.
- Insert rail nuts into mouting rail and turn until stop to lock (Standard and Twin Series) or slide in rail nut (Heavy Series).
- Push bottom clamp half onto rail nuts
- Insert pipe, tube, hose, cable or any other type of line.
- Place second clamp half and cover plate (optional) on top and mount clamp assembly by using screws and bolts.

The exact positions of the clamp assemblies can still be adjusted before being firmly bolted.

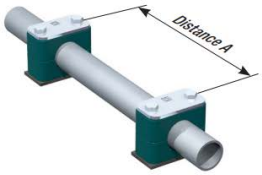
Multi-Level (Stacking) Installation

Stacking bolts permit the multi-level assembly of clamps of identical group sizes. Safety locking plates inserted between the levels prevent the stacking bolts from turning. The Twin Series also allows stacking of different group sizes (DIN 1 to 3)

- Push bottom clamp half onto weld plate or rail nuts.
- Insert pipe, tube, hose, cable or any other type of line.
- Place second clamp half.
- Insert stacking bolts into the clamp assembly and tighten using the following tightening torques (or in a way that the clamp halves are in contact with the line over the entire internal contact surface):
  Heavy Series 5N·m/3.75ft·lb
- Place safety locking plate on top of clamp assembly.
- Proceed with next levels. Top level to be assembled with cover plate and hexagon head bolts using the tightening torques as indicated on page K18.

Multi-level clamp assemblies can be mounted both to weld plates or to mounting rails (with rail nuts).

Recommended Distance Between Clamps



Please note: The recommended distances between clamps stated below are standard values and valid for static loads only.

Outside Diameter		Distance A	
(mm)	(in)	(m)	(ft)
6,0 ... 12,7	.23 ... .50	1,00	3.28
12,7 ... 22,0	.50 ... .86	1,20	3.94
22,0 ... 32,0	.86 ... 1.25	1,50	4.92
32,0 ... 38,0	1.25 ... 1.50	2,00	6.56
38,0 ... 57,0	1.5 ... 2.25	2,00	6.56
57,0 ... 75,0	2.25 ... 2.95	3,00	9.84
75,0 ... 76,1	2.95 ... 3.00	3,50	11.48
76,1 ... 88,9	3.00 ... 3.50	3,70	12,14
88,9 ... 102,0	3.50 ... 4.00	4,00	13.12

Outside Diameter		Distance A	
(mm)	(in)	(m)	(ft)
114,0 ... 168,0	4.50 ... 6.60	5,00	16.40
168,0 ... 219,0	6.60 ... 8.60	6,00	19.68
219,0 ... 324,0	8.60 ... 12.70	6,70	21,98
324,0 ... 356,0	12.70 ... 14.00	7,00	22,96
356,0 ... 406,0	14.00 ... 16.00	7,50	24,60
406,0 ... 419,0	16.00 ... 16.50	8,20	26.90
419,0 ... 508,0	16.50 ... 20.00	8,50	27.88
508,0 ... 521,0	20.00 ... 20.50	9,00	29.52
521, 0 ... 558,0	20.50 ... 22.00	10,00	32.80

Installation next to Pipe Bends, Connectors / Couplings and Valves

Please note the following information on the installation of Clamps next to pipe bends, connectors/ couplings and valves:

Pipe Bends

Pipe bends should be supported by Clamps as close to the bends as possible. Furthermore, it is recommended to design these clamps as fixed point clamps.

Connection/Couplings

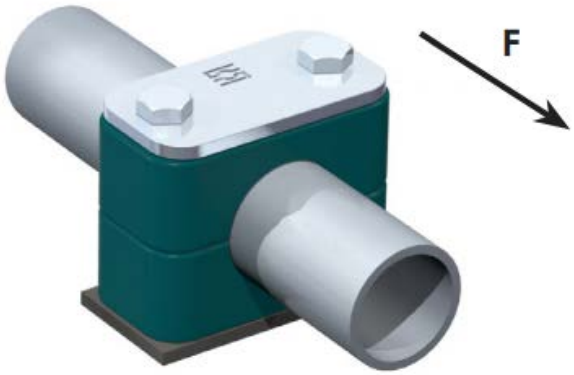
The first clamp should be placed directly next to the connector/coupling. This protects the connector/ coupling from vibrations.

Valves

If valves are incorporated in the pipelines, it is recommended that support is provided in front of and behind these valves.

3D step models available upon request

Tightening Torques and Maximum Loads in Pipe Direction



All tightening torques and maximum loads in pipe direction refer to Clamp Bodies (profiled inside surface with tension clearance) with Cover Plates and Hexagon Head Bolts according to DIN EN ISO 4014/4017 (DIN 931/933)

The max. load in pipe direction (according to DIN 3015-10.1999) is an average value, determined by three tests at +23°C/+73°F with a steel pipe according to DIN EN 10220, St37 - rolled surface - taking static friction into consideration.

Sliding starts when the shown values (F) are reached.

DIN	Hexagon Head Bolt DIN EN ISO 4014.4017 (DIN 931/933)		Polypropylene				Polyamide				Aluminium			
			Tightening Torque		Maximum Load in Pipe Direction F		Tightening Torque		Maximum Load in Pipe Direction F		Tightening Torque		Maximum Load in Pipe Direction F	
	Metric ISO Thread	Unified Coarse (UNC) Thread	(N·m)	(ft·lb)	(kN)	(lbf)	(N·m)	(ft·lb)	(kN)	(lbf)	(N·m)	(ft·lb)	(kN)	(lbf)
1	M10	3/8-16 UNC	12	9	1,6	360	20	15	4,2	944	30	22	12,1	2720
2	M10	3/8-16 UNC	12	9	2,9	652	20	15	4,5	1044	30	22	15,1	3395
3	M10	3/8-16 UNC	15	11	3,3	742	25	18	5,1	1146	35	26	15,5	3485
4	M12	7/16-14 UNC	30	22	8,2	1843	40	30	9,3	2090	55	41	29,5	6609
5	M16	5/8-11 UNC	45	33	11,0	2472	55	41	15,8	3551	120	86	34,9	7845
6	M20	3/4-10 UNC	80	59	14,0	3147	150	111	21,0	4720	220	162	50,0	11240
7	M24	7/8-9 UNC	110	81	28,0	6300	200	148	32,0	7193	250	184	70,6	15871
8	M30	1-1/8-7 UNC	180	133	40,0	8992	350	258	48,0	10790	500	369	84,5	18966
9	M30	1-1/4 UNC	200	148	119,0	26752	370	273	125,0	27650	500	369	181,5	40802
10	M30	1-1/4 UNC	270	199	168,0	37767	450	332	180,0	40465	600	443	244,5	54965

3D step models available upon request

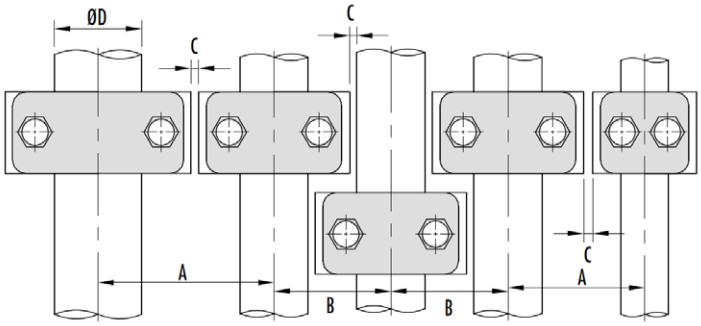
Pipe and Clamp Spacing

Assumption:

Inline clamping - MInimum spacing C between weld-plates:
DIN 2 to 3 1/4" (6.5 mm)
DIN 4 to 5 1/2" (13 mm)
DIN 6 to 7 5/8" (16 mm)
DIN 8 to 9 1" (26 mm)

Staggered clamping - Minimum spacing between Tube OD and clamp body:
DIN 2 to 3 1/4" (6.5 mm)
DIN 4 to 5 1/2" (13 mm)
GDIN 6 to 7 5/8" (16 mm)
GDIN 8 to 9 1" (26 mm)

Easy to read center line spacing for side to side and staggered installation when placing same or various size pipe on drawings or installing.



Note:
The minimum Center Distances referred to above don't take into account space requirement for flange connections, valves and other fittings.

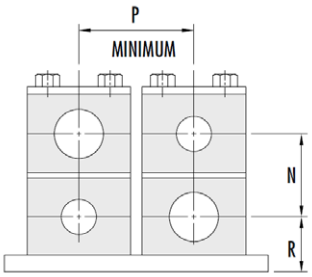
A= Inline - Side to Side clamping

B= Staggered clamping

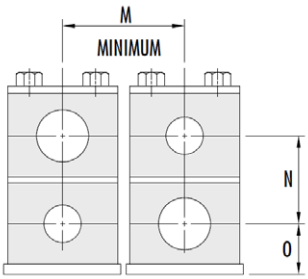
DIN	DIN	2		3	4			5		6		7		8	9	
	d=Size in inch and mm	1/2 21.3	3/4 26.9	1 33.7	1-1/4 42	1-1/2 48.3	2 60.3	2-1/2 73	3 88.9	3-1/2 102	4 114	5 140	6 168	8 219	10 273	12 324
2	1/2 21.3		3-5/8 91.5	3-15/16 99	5 127			6 152		7-1/8 181		9 203		9-9/16 242	12-3/8 314	
	3/4 26.9	2-1/16 52	2-3/16													
3	1 33.7	2-5/16 59	61.5	4-3/16 2-9/16	5-9/16 135			6-5/16 160		7-3/8 188		8-1/4 210		9-7/8 25-	12-11/16	
4	1-1/4 42	3-1/16 78	3-3/16 81	3-5/16 84	3-5/8		6-7/16 163	7-1/16 188		8-9/16 217		9-7/16 239		10-15/16 278	13-3/4 350	
	1-1/2 48.3				3-3/4 95											
	2 60.3				4 101											
5	2-1/2 73	3-13/16 96.5	3-1/8 99	4-1/16 103	4-3/8 110	4-1/2 113	4-11/16 119	5	8-3/8 213	9-9/16 242		10-7/16 264		11-15/16 303	14-13/16 375	
	3 88.9							5-1/4 134								
6	3-1/2 102	4-7/8 125	5 128	5-1/8 138	5-7/16 138	5-9/16 141	5-3/4 147	6-1/16 154	6-3/8 161	6-5/8	10-5/8 270	11-1/2 292		13-1/16 354	16-3/4 426	
	4 114									6-7/8 174						
7	5 140	5-13/16 147	5-15/16 150	6-1/16 153	6-3/16 153	6-5/16 160	6-9/16 166	6-13/16 154	7-1/8 181	7-9/16 192	7-13/16 198	8-5/16	12-3/8 314	13-15/16 354	16-3/4 426	
	6 168											8-7/8 225				
8	8 219	7-7/8 200		8-1/8 205	8-5/16 210			8-1/2 216	8-7/8 224	9-1/8 232	9-3/8 238	9-7/8 250	10-7/16 265	15-1/2 11-58	18-15/16 465	
9	10 273	10-13/16 275		11 280	10-13/16 275	10-15/16 278	11-3/16 284	11-1/2 292	11-13/16 300	12-1/16 306	12-5/16 312	12-13/16 325	13-3/8 339	14-9/16 370	15-5/8	21-3/16 537
	12 324														16-5/8 422	

3D step models available upon request

Clamp Stacking



RAIL MOUNTING

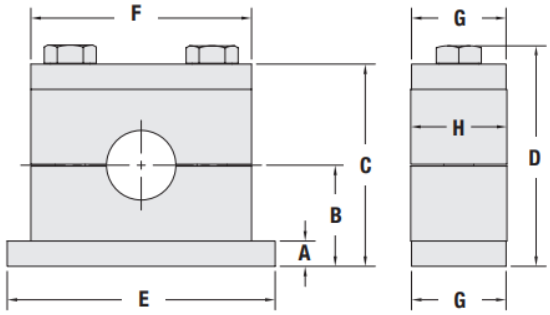


WITH WELD PLATE

DIN	Size Range Ød	Installation Dimensions (in)					WT (lbs)
		M	N	O	P	R	
2	3/4 - 1-3/16	3-1/2	2-3/16	1-1/4	2-7/8	1-13/16	.92
3	1-3/16 - 1-37/64	4-1/16	2-11/16	1-1/2	3-7/16	2-1/16	1.12
4	1-1/2 - 2-3/4	5-7/8	3-7/8	2-1/8	4-5/8	2-5/8	2.86
5	2-9/16 - 3-1/2	7-1/8	5-1/16	2-3/4	*		5.35
6	3-1/2 - 5-15/64	10-5/8	7-1/16	3-3/16	N/A		13.11
7	5-15/64 - 6-5/8	11-1/8	8-3/8	4-7/16	N/A		17.16
8	6-5/8 - 8-5/8	13-7/8	11-3/8	6-1/16	N/A		46.20
9	8-5/8 - 12-3/4	21-1/16	17-1/8	9-1/16	N/A		108.90

*For DIN 5 Rail Mounting - Contact Factory

Dimensions and Weights of Clamp Assemblies



Heavy Series (DIN 3015, Part 2)

DIN	Dimensions (mm/in)												Weight per 1 pc. (kg/lb)
	A	B		C		D		E	F		G	H	
		Profiled Design	Type H (Smooth)	Profiled Design	Type H (Smooth)	Profiled Design	Type H (Smooth)		PP/PA	AL			
1	8	24	23,25	48	46,5	54,4	52,9	74	55	56	30	30,5	0,32
	.31	.94	.92	1.89	1.83	2.14	2.09	2.91	2.16	2.20	1.18	1.20	.70
2	8	32	32,25	64	62,5	70,4	68,9	86	70	70	30	30,5	0,40
	.31	1.26	1.23	2.52	2.46	2.77	2.72	3.39	2.76	2.76	1.18	1.20	.88
3	8	38	37	76	74	82.4	80.4	100	85	85	30	30,5	0,49
	.31	1.50	1.46	2.99	2.91	3.24	3.17	3.94	3.35	3.35	1.18	1.20	1.08
4	10	54,5	53,5	109	107	116,5	114,5	140	115	120	45	45	1,21
	.39	2.15	2.11	4.29	4.21	4.59	4.51	5.51	4.53	4.72	1.77	1.77	2.66
5	10	70		140		150		180	154	152	60	60	2,30
	.39	2.76		5.51		5.91		7.09	6.06	5.98	2.36	2.36	5.06
6	15	99		198		210,5		226	206	208	80	80	5,56
	.59	3.90		7.80		8.29		8.90	8.11	8.19	3.15	3.15	12.26
7	15	115		230		245		270	251	255	90	91	7.97
	.59	4.53		9.06		9.65		10.63	9.88	10.04	3.54	3.58	17.58
8	25	160		320		338,7		340	336	326	120	120	22,16
	.98	6.30		12.60		13.33		13.39	13.22	12.83	4.72	4.72	48.75
9	30	235		470		488,7		520	470	470	160	162	54,11
	1.18	9.25		18.50		19.24		20.47	18.50	18.50	6.30	6.38	119.04

3D step models available upon request

Notes