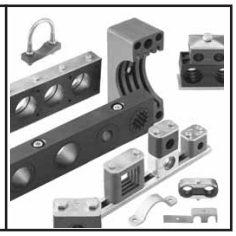
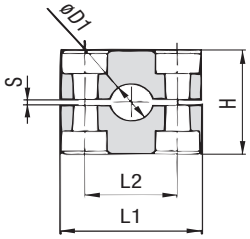
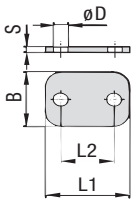
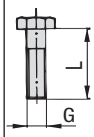
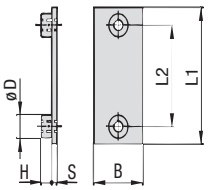
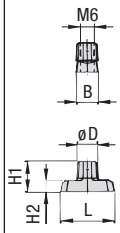
Aim-Plast
Mfrs of Plastic Injection Moulded Items

Tube clamp & Pipe clamp



PIPE CLAMPS- SINGLE SERIES — according to DIN3015, Part 1

MATERIAL & SURFACE FINISHING OF METAL PARTS	CLAMP BODY consisting of two clamp halves	COVER PLATE **CP**	HEXAGON HEAD BOLT **HB**	SINGLE WELD PLATE **SWP**	HEXAGON RAIL NUT **RN**
carbon steel St37, zinc plated **P1** stainless steel A2 - 1.4301/1.4305 (AISI304) **P2** stainless steel A4 - 1.4401/1.4571 (AISI316/316Ti) **P3** Alternative materials and surface finishings in addition to the above stated standard are available upon request.			DIN EN ISO 4014 / 4017 (DIN 931/933) 		
MATERIAL & SURFACE FINISHING CODE	SEE COMPONENT PART IDENTIFICATION				

GROUP	OUTSIDE DIAMETER PIPE IN MM ØD1	Inside Surface profiled L1	Inside Surface profiled L2	Inside Surface profiled H	Inside Surface profiled S	Inside Surface smooth H	Inside Surface smooth Width	COVER PLATE CP L1	CP L2	CP B	CP S	CP ØD	HEXAGON HEAD BOLT HB G x L	SINGLE WELD PLATE SWP L1	SWP L2	SWP B	SWP S	SWP H	SWP ØD	HEXAGON RAIL NUT RN L	RN B	RN H1	RN H2	RN ØD
1	6 8 10 12	37	20	27	0,4 min.	26	30	34	20	30	3	7	M6 x 30	36	20	30	3	6,5	12					
2	14 16 18	42	26	33	0,6 min.	32	30	40,5	26	30	3	7	M6 x 35	42	26	30	3	6,5	12					
3	20 22 25	50	33	36	0,6 min.	35,5	30	48	33	30	3	7	M6 x 40	50	33	30	3	6,5	12	25,5	10,2	13,5	5,5	12
4	28 30 32	59	40	42	0,6 min.	41,5	30	57	70	30	3	7	M6 x 45	60	40	30	3	6,5	12					
5	35 38 40 42	71	52	58	0,8 min.	56,5	30	70	52	30	3	7	M6 x 60	71	52	30	3	6,5	12					

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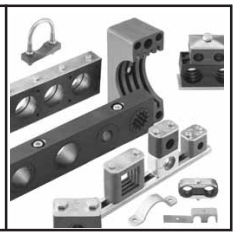
Mfrs of Plastic Injection Moulded Items

Tube clamp & Pipe clamp



PIPE CLAMPS- SINGLE SERIES — ORDER CODES - COMPLETE CLAMPS

① *** ②*** ③*** ④ ** - ** ⑤* ⑥P **

① TYPE OF INSTALLATION

no code	without mounting plate, rail adaptor or rail nuts
SWP	Single Weld Plate
RN	Hexagon Rail Nut

③ MATERIAL & DESIGN OF CLAMP BODY *1

PP	Polypropylene, profiled inside, with tension clearance
PPS	Polypropylene, smooth inside, without tension clearance
PA	Polyamide, profiled inside, with tension clearance
PAS	Polyamide, smooth inside, without tension clearance

④ MOUNTING & FITTING COMBINATION

CP - HB	Cover Plate / Hexagon Head Bolt

② GROUP & SIZE OF CLAMP BODY

Group	Tube O.D. in mm	Material Code Clamp Body (both halves)
1 DIN 0	6	***106***
	8	***108***
	10	***110***
	12	***112***
2 DIN 2	14	***214***
	16	***216***
	18	***218***
3 DIN 3	20	***320***
	22	***322***
	25	***325***
4 DIN 4	28	***428***
	30	***430***

② GROUP & SIZE OF CLAMP BODY CONTINUATION

Group	Tube O.D. in mm	Material Code Clamp Body (both halves)
5 DIN 5	32	***532***
	35	***535***
	38	***538***
	40	***540***
	42	***542***

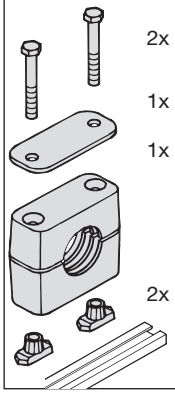
⑤ TYPE OF THREAD

M	Metric Thread

⑥ MATERIAL & SURFACE FINISHING OF METAL PARTS *2

P1	all parts are zinc plated
P2	all metal parts made of stainless steel A2 - 1.4301/1.4305 (AISI 304)
P3	all metal parts made of stainless steel A4 - 1.4401/1.4571 (AISI 316/316Ti)

RN 112 PP CP-HB M P2



2x **Hexagon Head Bolt**
Surface: P2
Thread: metric

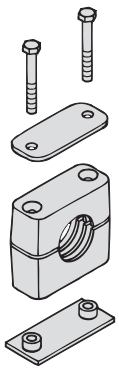
1x **Cover Plate**
Surface: P2

1x **Clamp (two halves)**
Material: Polypropylene
Design: profiled inside, with tension clearance
Group: AIMPLAST 1
Pipe-O.D.12,0 mm

2x **Hexagon Rail Nut**
Surface: P2
Thread: metric

P2 is standard for this type of installation.

SWP 112 PP CP-HB M P1



2x **Hexagon Head Bolt**
Surface: P2
Thread: metric

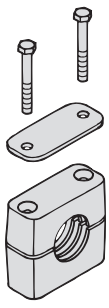
1x **Cover Plate**
Surface: P2

1x **Clamp (two halves)**
Material: Polypropylene
Design: profiled inside, with tension clearance
Group: AIMPLAST 1
Pipe-O.D.12,0 mm

1x **Single Weld Plate**
Surface: P2
Thread: metric

P1 is standard for this type of installation.

112 PP CP-HB M P1



2x **Hexagon Head Bolt**
Surface: P2
Thread: metric

1x **Cover Plate**
Surface: P2

1x **Clamp (two halves)**
Material: Polypropylene
Design: profiled inside, with tension clearance
Group: AIMPLAST 1
Pipe-O.D.12,0 mm

P1 is standard for this type of installation.

TECHNICAL NOTES

*1 SEE MATERIAL PROPERTIES ON PAGE 7. OTHER CLAMP BODY MATERIALS AND COLOURS ARE AVAILABLE UPON REQUEST.

*2 INDIVIDUAL COMBINATIONS OF ALTERNATIVE SURFACE FINISHINGS AND SPECIAL PROPERTY MATERIALS ARE AVAILABLE UPON REQUEST.

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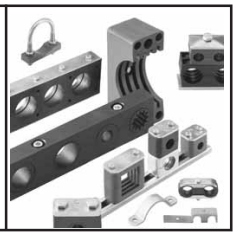
Mfrs of Plastic Injection Moulded Items

Tube clamp & Pipe clamp



PIPE CLAMPS- TWIN SERIES — according to DIN3015, Part 3

MATERIAL & SURFACE FINISHING OF METAL PARTS

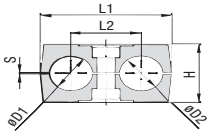
carbon steel St37, zinc plated — **P1**

stainless steel A2 - 1.4301/1.4305 (AISI304) — **P2**

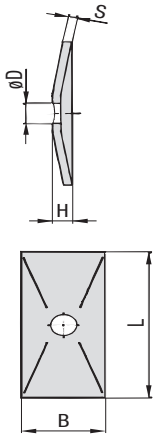
stainless steel A4 - 1.4401/1.4571 (AISI316/316Ti) — **P3**

Alternative materials and surface finishings in addition to the above stated standard are available upon request.

CLAMP BODY consisting of two clamp halves

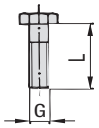


COVER PLATE **CP**

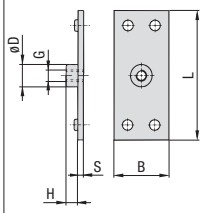


HEXAGON HEAD BOLT **HB**

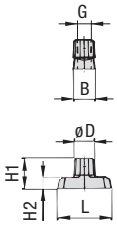
DIN EN ISO 4014 / 4017 (DIN 931/933)



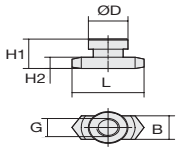
SINGLE WELD PLATE **SWP**



HEXAGON RAIL NUT **RN**



FOR GROUP 1D



FOR GROUP 2D-5D

MATERIAL & SURFACE FINISHING CODE — SEE COMPONENT PART IDENTIFICATION

GROUP	OUTSIDE DIAMETER PIPE / TUBE / HOSE Ø D1 / Ø D2 IN MM	L1	L2	Inside Surface profiled H	Inside Surface smooth S	Inside Surface smooth H	Inside Surface Width	L	B	H	S	øD	G x L	L	B	S	H	øD	G	L	B	H1	H2	øD	G
1D	6 8 10 12	36	20	27	0,6 min.	26,5	30	34	30	7	3	7	M6 x 35	37	30	3	6,5	12	M6	25,5	10,2	13,5	5,5	12	M6
2D	14 15 16 18	53	29	27	0,7 min.	26,5	30	52	30	7	3	9	M8 x 35	55	30	5	6	14	M8						
3D	20 22 25	67	36	37	0,7 min.	36,5	30	65	30	7	3	9	M8 x 45	70	30	5	6	14	M8	25,5	10,4	13	5	14	M8
4D	28 30	80	45	40	0,7 min.	38	30	79	30	7	3	9	M8 x 50	85	30	5	6	14	M8						
5D	32 35 38 40 42	106	56	53	0,7 min.	52	30	102	30	7	3	9	M8 x 60	110	30	5	6	14	M8						

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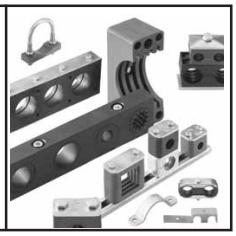
Tube clamp & Pipe clamp



PIPE CLAMPS- TWIN SERIES — ORDER CODES - COMPLETE CLAMPS

① *** | ②***/** | ③*** | ④ ** - ** | ⑤* | ⑥P **

① TYPE OF INSTALLATION

no code	without mounting plate, rail adaptor or rail nuts
SWP	Single Weld Plate
RN	Hexagon Rail Nut

③ MATERIAL & DESIGN OF CLAMP BODY *1

PP	Polypropylene, profiled inside, with tension clearance
PPS	Polypropylene, smooth inside, without tension clearance
PA	Polyamide, profiled inside, with tension clearance
PAS	Polyamide, smooth inside, without tension clearance

④ MOUNTING & FITTING COMBINATION

CP - HB	Cover Plate / Hexagon Head Bolt

② GROUP & SIZE OF CLAMP BODY

Group	Tube O.D. in mm	Material Code Clamp Body (both halves)
1D DIN 0	6	*106/06*
	8	*108/08*
	10	*110/10*
	12	*112/12*
2D DIN 2	14	*214/14*
	16	*216/16*
3D DIN 3	18	*218/18*
	20	*320/20*
	22	*322/22*
	25	*325/25*
4D DIN 4	28	*428/28*
	30	*430/30*

② GROUP & SIZE OF CLAMP BODY CONTINUATION

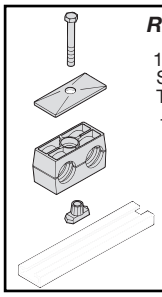
Group	Tube O.D. in mm	Material Code Clamp Body (both halves)
5D DIN 5	32	*532/32*
	35	*535/35*
	38	*538/38*
	40	*540/40*
	42	*542/42*

⑤ TYPE OF THREAD

M	Metric Thread

⑥ MATERIAL & SURFACE FINISHING OF METAL PARTS *2

P1	all parts are zinc plated
P2	all metal parts made of stainless steel A2 - 1.4301/1.4305 (AISI 304)
P3	all metal parts made of stainless steel A4 - 1.4401/1.4571 (AISI 316/316Ti)



RN 106/06 PP CP-HB M P2

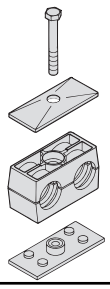
1x **Hexagon Head Bolt**
Surface: P2
Thread: metric

1x **Cover Plate**
Surface: P2

1x **Clamp (two halves)**
Material: Polypropylene
Design: profiled inside, with tension clearance
Group: AIMPLAST 1
Pipe-O.D. both 6 mm

1x **Mounting Rail Nut**
Surface: P1, Zinc plated
Thread: metric

P2 is standard for this type of installation.



SWP 106/06 PP CP-HB M P1

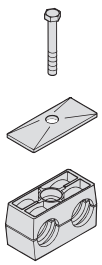
1x **Hexagon Head Bolt**
Surface: P1
Thread: metric

1x **Cover Plate**
Surface: P1

1x **Clamp (two halves)**
Material: Polypropylene
Design: profiled inside, with tension clearance
Group: AIMPLAST 1
Pipe-O.D. both 6 mm

1x **Weld Plate**
Surface: P1
Thread: metric

P1 is standard for this type of installation.



106/06 PP CP-HB M P1

1x **Hexagon Head Bolt**
Surface: P1
Thread: metric

1x **Cover Plate**
Surface: P1

1x **Clamp (two halves)**
Material: Polypropylene
Design: profiled inside, with tension clearance
Group: AIMPLAST 1
Pipe-O.D. both 6 mm

P1 is standard for this type of installation.

TECHNICAL NOTES

*1 SEE MATERIAL PROPERTIES ON PAGE 7. OTHER CLAMP BODY MATERIALS AND COLOURS ARE AVAILABLE UPON REQUEST.

*2 INDIVIDUAL COMBINATIONS OF ALTERNATIVE SURFACE FINISHINGS AND SPECIAL PROPERTY MATERIALS ARE AVAILABLE UPON REQUEST.

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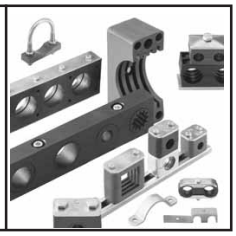
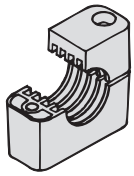
Mfrs of Plastic Injection Moulded Items

Tube clamp & Pipe clamp

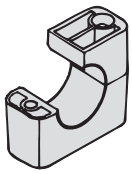


Design of Clamp Bodies

STANDARD SERIES

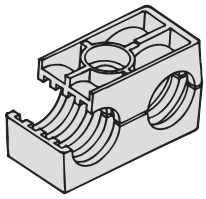


Standard design
– profiled inside –

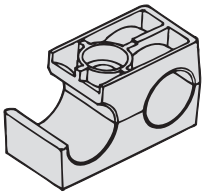


H-design
– smooth inside –
(recommended for hoses)

TWIN SERIES

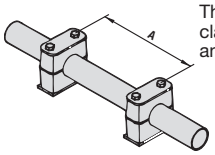


Standard design
– profiled inside –



H-design
– smooth inside –
(recommended for hoses)

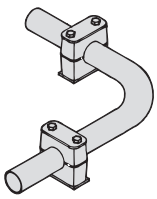
RECOMMENDED DISTANCE BETWEEN CLAMPS



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

Pipe-O.D. [mm]	Distance A [m]
6,0 – 12,7	1,0
12,7 – 22,0	1,2
22,0 – 32,0	1,5
32,0 – 38,0	2,0
38,0 – 42,0	2,7

BASIC MOUNTING INSTRUCTIONS



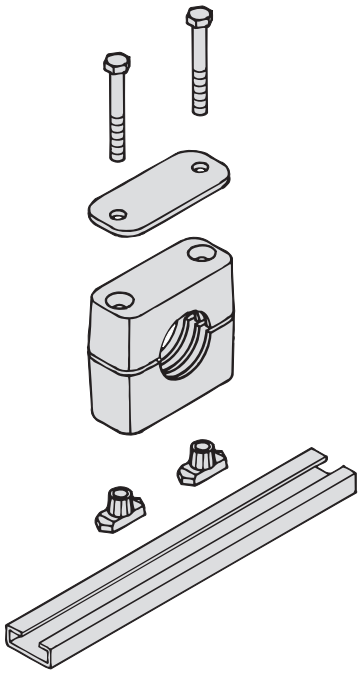
Pipe bends should be supported by AIMPLAST clamps as near to the bends as possible.
Furthermore, it is recommended to design these clamps as fixed point clamps.
The first clamp should be placed directly behind the threaded connection or coupling.
This protects the threaded connection or coupling from vibrations.
If valves are incorporated in the pipelines, it is recommended that support is provided in front of and behind these valves

INSTALLATION ON MOUNTING RAILS

Mounting C-rails can be used with the following Series:

– Standard Series
– Twin Series

The rails are either welded or bolted to the supporting construction.
For Standard and Twin Series insert hexagon rail nut and turn to lock.
For Heavy Series slide in rail nut.
Push on bottom half of clamp, install pipe, mount top half of clamp and cover plate and bolt unit together.
Clamp units can be adjusted before being firmly bolted.

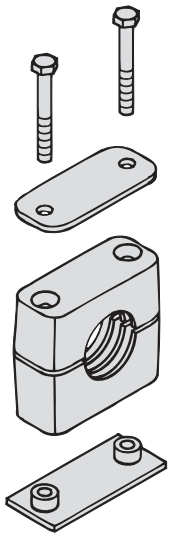


INSTALLATION ON WELD PLATES

Weld plates are available for the following Series:

– Standard Series
– Twin Series

For best alignment of clamps it is recommended to mark their location first.
Weld plates, push on bottom half of clamp, install pipe, mount top half of clamp and cover plate and bolt unit together.
In order to avoid damage to the clamp bodies it is recommended to mount the plastic clamp bodies after having welded the weld plates.



METRIC THREAD CHART

STANDARD SERIES		TWIN SERIES	
Group	Metric Thread	Group	Metric Thread
1	M6	1D	M6
2		2D	M8
3		3D	
4		4D	
5		5D	

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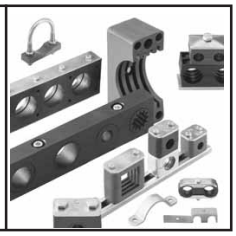
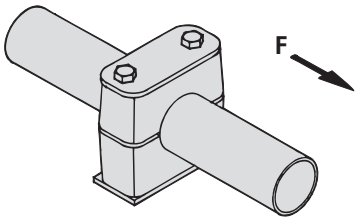


Tightening Torques And Maximum Loads In Pipe Direction



All tightening torques and maximum loads in pipe direction refer to clamps with cover plates and hexagon head bolts acc. to DIN EN ISO 4014/4017 (DIN 931/933).

The max. load in pipe direction (acc. to DIN 3015, part 10) is an average value, determined by three tests at 23° C with a steel pipe acc. to DIN 2448, St 37 – rolled surface – taking static friction into consideration.

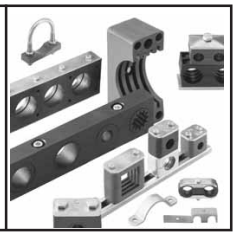
Sliding starts when the shown values **(F)** are reached.

STANDARD SERIES (according to DIN 3015, part 1)

Group	Hexagon Head Bolt DIN EN ISO 4014/4017 (DIN 931/933)	Polypropylene		Polyamide	
		Tightening torque [Nm]	Max. load in pipe direction F [kN]	Tightening torque [Nm]	Max. load in pipe direction F [kN]
1	M 6	8	1,1	10	0,7
2		8	1,3	10	1,3
3		8	1,4	10	1,6
4		8	1,5	10	1,7
5		8	1,9	10	2,0

TWIN SERIES (according to DIN 3015, part 3)

Group	Hexagon Head Bolt DIN EN ISO 4014/4017 (DIN 931/933)	Polypropylene		Polyamide	
		Tightening torque [Nm]	Max. load in pipe direction F [kN]	Tightening torque [Nm]	Max. load in pipe direction F [kN]
1 D	M 6	5	0,9	5	0,9
2 D	M 8	12	2,1	12	2,2
3 D		12	1,9	12	2,0
4 D		12	2,7	12	2,9
5 D		8	1,7	8	2,5



Materials, Material Properties and Technical Information

CLAMP BODIES

MATERIAL Other materials (according to DIN 5510, UL 94, NF F 16/101 for example) are available on request.	PP POLYPROPYLENE Copolymeric	PA POLYAMIDE 1*
COLOUR	GREEN	BLACK
MECHANICAL PROPERTIES		
Tensile E-Module	1073 N/mm² (ISO 527)	> 1400 N/mm² (ISO 527)
Notch Impact Strength	7,5 kJ/mm² at 23°C (acc. to Charpy / ISO 179/1eA)	> 15 kJ/m² at 23°C (acc. to Charpy / ISO 179/1eA)
Low Temperature Notch Impact Strength	3,1 kJ/mm² at -30°C (acc. to Charpy / ISO 179/1eA)	>3 kJ/m² at -30°C (acc. to Charpy / ISO 179/1eA)
Tensile Strength at Yield (Tensile Strength)	25 N/mm² (ISO 527)	> 55 N/mm² (ISO 527)
Ball Indentation Hardness (Brinell Hardness)	45,4 N/mm² (ISO 2039-1)	> 65 N/mm² (ISO 2039-1)
Shore Hardness	- - -	- - -
THERMAL PROPERTIES		
Recommended Temperature Range (Minimum / Maximum)	-30°C ... +90°C	-40°C ... +120°C
CHEMICAL PROPERTIES		
Weak Acids, Solvents	conditionally consistent	conditionally consistent
Benzine, Mineral Oils	conditionally consistent	consistent
Alcohol, Other Oils, Seawater	consistent	consistent

NOTES

*1 The stated information has been defined for conditions according to ISO 1110.

*2 Tensile strengths, fatigue strength (under reversed bending stress) and impact bending toughness rise constantly at decreasing temperature level, the breaking elongation normally decreases at a decreasing temperature level.

The above stated information is shown without any obligation and does not release you from own test arrangements. Tightening Torques and Maximum Loads need to be considered (see page 50).

METAL PARTS

Unless otherwise stated, all metal parts are made of carbon steel St37, surface finishing according to order code.

Surface Finishings
In addition to the standard surface finishings stated (if zinc plated, usually Fe/Zn 8 C, if phosphated, usually Fe/Znph r 10 according to DIN EN 12476) several alternative finishings (like Fe/Zn 12 C) are also available on request.

Stainless Steel Metal Parts
All metal parts are also **available ex stock** in two different stainless steel qualities:
Stainless Steel A2 - 1.4301/1.4305 (AISI 304)
Stainless Steel A4 - 1.4401/1.4571 (AISI 316/316Ti)

Threads
All threaded parts are available with METRIC