

Part number:

HYDROMA

HYDRAULICKÉ SYSTÉMY

**HIDROMA
SYSTEMS**

UKŁADY HYDRAULICZNE

HYDROMA

ГИДРАВЛИЧЕСКИЕ СИСТЕМЫ

Hydraulic Pipe Clamps



- » Endüstriyel ve Mobil Hidrolik / Industrial and Mobile Hydraulics
- » Marin Sektörü / Marine Industry
- » Demir Çelik Sektörü / Iron Steel Industry
- » Maden Sektörü / Mining Industry
- » Petrol ve Gaz Sektörü / Oil and Gas Industry
- » İş Makinaları Sektörü / Construction Machinery Industry
- » Enerji Sektörü / Energy Industry
- » Makina Sektörü / Machine Industry
- » Otomasyon / Automation
- » Yağlama Sistemleri / Lubrication Systems
- » Raylı Sistemler / Railway Systems

COMPLETE CLAMPS

Type	Fitting Components	Clamp Body	Dimension
**	**	*	**
Cins / Type CD Demonte / Unmounted CM Montajlı / Assembled	Vida Tipi / Thread Type C UNC F UNF M Metrik / Metric W Whitworth T Tanımsız / Undefined	Renk / Colour H Siyah / Black M Mavi / Blue S Sarı / Yellow T Natürel / Natural Y Yeşil / Green	Ölçü / Size 006.0 mm ---- ---- 406.4 mm
Cıvata + Altlık Tipi / Screw - Bolt Types + Weld Plate 00 GB + Standart Altlık / Standard Weld Plate 01 GB + Montaj Delikli Altlık / Elongated Weld Plate 28 GB + Altlıksız / Without Weld Plate 30 GB + Ray Somunlu / With Rail Nut 40 AKB + Standart Altlık / Standard Weld Plate 41 AKB + Montaj Delikli Altlık / Elongated Weld Plate 60 AKB + Sırt Sırt Altlık / Weld Plate for Double Clamps 61 AKB + Sırt Sırt Montaj Delikli Altlık / Elongated Weld Plate for Double Clamps 68 AKB + Altlıksız / Without Weld Plate 70 AKB + Ray Somunlu / With Rail Nut aa Altlıksız Cıvatasız / Without Weld Plate and Without Screw-Bolt GB : Gömme Başlı Cıvata (Imbus) / Socket Cap Screw AKB : Altı Köşe Başlı Cıvata / Hexagon Head Bolt	Üstlük + Ara Plaka Tipi / Cover Plates + Connection Types 0 Üstlüksüz / Without Cover Plate 1 Üstlüklü / With Cover Plate 6 Ara Plakalı, Ara Cıvatalı / With Safety Locking Plate, Stacking Bolt	Gövde Tipi / Clamp Body Design 1 Kanallı / Profiled 2 Düz / Smooth 4 Elastomerli / For Elastomer Insert 5 Tırtırlı / Serrated	
	Metal+Kaplama Tipi / Metal+Surface Finishing 0 Kaplamsız / Uncoated 1 Fosfat / Phosphated 2 Delta DMS 3 Fe/Zn 8C Cr3-B / Galvaniz / Galvanised 4 CrNi 304 / AISI 304 6 CrNi 316 / AISI 316 9 Çinko Nikel (Fe/ZnNi) / Zinc/Nickel	Gövde Malzemesi / Clamp Body Material A Alüminyum / Aluminum N Polyamid / Polyamide T TPE (Thermoplastic Elastomer) P Polipropilen / Polypropylene	Grup / Group G0-G1.....G7-G8 Standart Seri / Standard Series A1-A2.....A9-A0 Ağır Seri / Heavy Series H2-H3 Ağır Seri İkiz Keleççeler / Heavy Series Twin Design I1-I2-I3-I4-I5 İkiz Seri / Twin Series

CLAMP BODY

Cins / Type	Gövde Malzemesi / Clamp Body Material	Renk / Colour	Ölçü / Size
**	*	*	**
C1 Tek Gövde / Clamp Halve C2 Gövde Takım / Clamp Body	A Alüminyum / Aluminum N Polyamid / Polyamide T TPE (Thermoplastic Elastomer) P Polipropilen / Polypropylene	H Siyah / Black M Mavi / Blue S Sarı / Yellow T Natürel / Natural Y Yeşil / Green	006.0 mm ---- ---- 406.4 mm
	Gövde Tipi / Clamp Body Design 1 Kanallı / Profiled 2 Düz / Smooth 3 Sarı / Yellow 4 Elastomerli / For Elastomer Insert 5 Tırtırlı / Serrated	Grup / Group G0-G1.....G7-G8 Standart Seri / Standard Series A1-A2.....A9-A0 Ağır Seri / Heavy Series H2-H3 Ağır Seri İkiz Keleççeler / Heavy Series Twin Design I1-I2-I3-I4-I5 İkiz Seri / Twin Series	

ELASTOMER INSERT

Cins / Type	Grup / Group	Malzeme / Material	Ölçü / Size
**	*	**	**
C4 Elastomer Göbek / Elastomer Insert	G4-G6 Standart Seri / Standard Series A2.....A7-A8 Ağır Seri / Heavy Series	T TPE (Thermoplastic Elastomer)	006.0 mm ---- ---- 168.3 mm

Kısa / Short Finishing		Clamp Body Material	
0	Kaplamasız / Uncoated	A	Alüminyum / Aluminum
1	Fosfat / Phosphated / Fe/Znph	N	Polyamid / Polyamide
3	Galvaniz / Galvanized / Fe/Zn 8C Cr3-B	T	TPE
4	CrNi 304 / AISI 304	P	Polipropilen / Polypropylene
6	CrNi 316 / AISI 316		
9	Çinko Nikel / Zinc Nickel / Fe/ZnNi		

Clamp Body + Bolt + Cover Plate

Genişlik / Width: 30 mm

Double Plated Clamp

Genişlik / Width: 30 mm

For different material request please consult

C D 6 8 M 1 3 P 1 S G 1 X X X . X

Metal + Kaplama Tipi / Metal + Surface Finishing
 Gövde Malzemesi / Clamp Body Material
 Gövde Renk / Clamp Body Colour
 Grup / Group
 Ölçü / Size

C M 4 0 M 1 3 P 1 S G 1 X X X . X

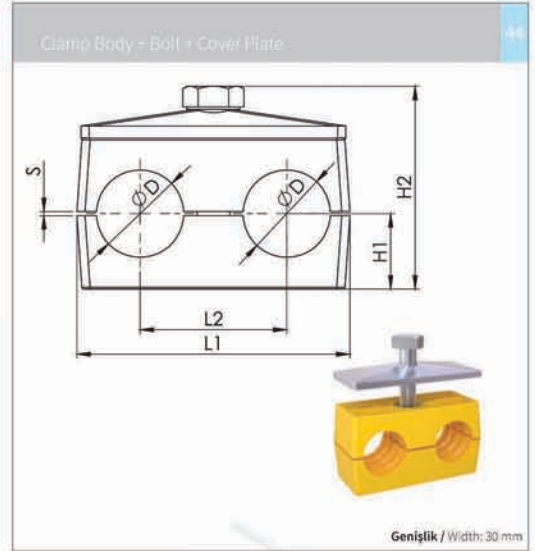
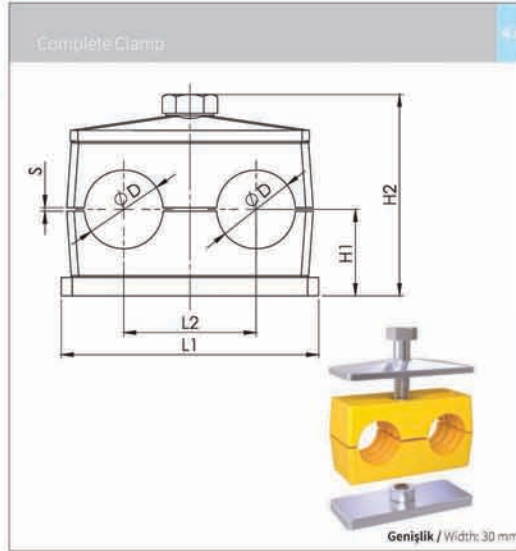
Metal + Kaplama Tipi / Metal + Surface Finishing
 Gövde Malzemesi / Clamp Body Material
 Gövde Renk / Clamp Body Colour
 Grup / Group
 Ölçü / Size

Group	O.D. of Pipe / Tube / Hose mm	Nominal Bore Pipe Inch	O.D. of Pipe / Tube / Hose Inch
G0	6		1/4
	6.4		5/16
	8		3/8
	9.5	R 1/8	
	10		
G1	12		
	6		1/4
	6.4		5/16
	8		3/8
	9.5	R 1/8	
G2	10		
	12		
	12.7		1/2
	13.5	R 1/4	
	14		
G3	15		
	16		5/8
	17.2	R 3/8	
	18		
	19		3/4
G4	20		
	21.3	R 1/2	
	22		7/8
	23		
	25		
G5	25.4		1
	26.9	R 3/4	
	28		
	30		
	32		1 1/4
G6	33.7	R 1	
	35		
	38		1 1/2
	40		
	42	R 1 1/4	
G7	44.5		1 3/4
	48.3	R 1 1/2	
	50.8		2
	57.2		2 1/4
	60.3	R 2	
G8	63.5		2 1/2
	70		2 3/4
	73		
	76.1	R 2 1/2	3
	88.9	R 3	3 1/2
101.6		4	

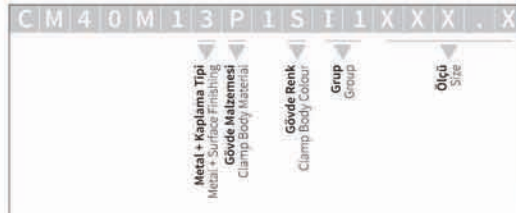
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L1	L2	H1	H2	S min.	
28	9.5	13.5	34	0.4	CD68M13P1SG0006.0
					CD68M13P1SG0006.4
					CD68M13P1SG0008.0
					CD68M13P1SG0009.5
					CD68M13P1SG0010.0
					CD68M13P1SG0012.0
37	20	13.5	34	0.4	CD68M13P1SG1006.0
					CD68M13P1SG1006.4
					CD68M13P1SG1008.0
					CD68M13P1SG1009.5
					CD68M13P1SG1010.0
CD68M13P1SG1012.0					
42	26	16.5	40	0.6	CD68M13P1SG2012.7
					CD68M13P1SG2013.5
					CD68M13P1SG2014.0
					CD68M13P1SG2015.0
					CD68M13P1SG2016.0
CD68M13P1SG2017.2					
CD68M13P1SG2018.0					
50	33	18	43	0.6	CD68M13P1SG3019.0
					CD68M13P1SG3020.0
					CD68M13P1SG3021.3
					CD68M13P1SG3022.0
					CD68M13P1SG3023.0
CD68M13P1SG3025.0					
CD68M13P1SG3025.4					
59	40	21	49	0.6	CD68M13P1SG4026.9
					CD68M13P1SG4028.0
					CD68M13P1SG4030.0
71	52	29	65	0.8	CD68M13P1SG5032.0
					CD68M13P1SG5033.7
					CD68M13P1SG5035.0
					CD68M13P1SG5038.0
					CD68M13P1SG5040.0
CD68M13P1SG5042.0					
86	66	33	73	0.8	CD68M13P1SG6044.5
					CD68M13P1SG6048.3
					CD68M13P1SG6050.8
121	94	46.5	102	0.8	CD68M13P1SG7057.2
					CD68M13P1SG7060.3
					CD68M13P1SG7063.5
					CD68M13P1SG7070.0
					CD68M13P1SG7073.0
CD68M13P1SG7076.1					
147	120	59	127	0.8	CD68M13P1SG8088.9
					CD68M13P1SG8101.6

Dimension Table					Order Code
L1	L2	H1	H2	S min.	
31.5	9.5	16.5	37	0.4	CM40M13P1SG0006.0
					CM40M13P1SG0006.4
					CM40M13P1SG0008.0
					CM40M13P1SG0009.5
					CM40M13P1SG0010.0
					CM40M13P1SG0012.0
36	20	16.5	37	0.4	CM40M13P1SG1006.0
					CM40M13P1SG1006.4
					CM40M13P1SG1008.0
					CM40M13P1SG1009.5
					CM40M13P1SG1010.0
CM40M13P1SG1012.0					
42	26	19.5	43	0.6	CM40M13P1SG2012.7
					CM40M13P1SG2013.5
					CM40M13P1SG2014.0
					CM40M13P1SG2015.0
					CM40M13P1SG2016.0
CM40M13P1SG2017.2					
CM40M13P1SG2018.0					
50	33	21	46	0.6	CM40M13P1SG3019.0
					CM40M13P1SG3020.0
					CM40M13P1SG3021.3
					CM40M13P1SG3022.0
					CM40M13P1SG3023.0
CM40M13P1SG3025.0					
CM40M13P1SG3025.4					
60	40	24	52	0.6	CM40M13P1SG4026.9
					CM40M13P1SG4028.0
					CM40M13P1SG4030.0
71	52	32	68	0.8	CM40M13P1SG5032.0
					CM40M13P1SG5033.7
					CM40M13P1SG5035.0
					CM40M13P1SG5038.0
					CM40M13P1SG5040.0
CM40M13P1SG5042.0					
86	66	36	76	0.8	CM40M13P1SG6044.5
					CM40M13P1SG6048.3
					CM40M13P1SG6050.8
122	94	51.5	107	0.8	CM40M13P1SG7057.2
					CM40M13P1SG7060.3
					CM40M13P1SG7063.5
					CM40M13P1SG7070.0
					CM40M13P1SG7073.0
CM40M13P1SG7076.1					
148	120	64	132	0.8	CM40M13P1SG8088.9
					CM40M13P1SG8101.6

Metal / Tube Finishing		Clamp Body Material	
0	Kaplamasız / Uncoated	A	Alüminyum / Aluminum
1	Fosfat / Phosphated / Fe/Znph	N	Polyamid / Polyamide
3	Galvaniz / Galvanized / Fe/Zn 8C Cr3-B	T	TPE
4	CrNi 304 / AISI 304	P	Polipropilen / Polypropylene
6	CrNi 316 / AISI 316		
9	Çinko Nikel / Zinc Nickel / Fe/ZnNi		



For different material request please consult.



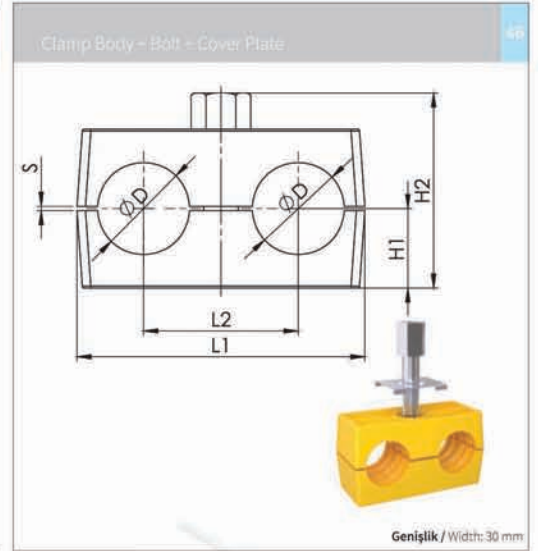
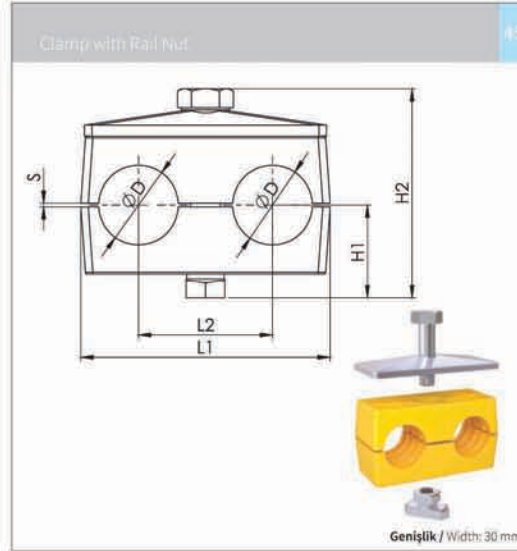
Group	O.D. of Pipe / Tube/Hose mm	Nominal Bore Pipe inch	O.D. of Pipe / Tube/Hose inch
I1	6		
	6.4		1/4
	8		5/16
	9.5		3/8
	10	R 1/8	
	12		
I2	12.7		1/2
	13.5	R 1/4	
	14		
	15		
	16		3/8
	17.2	R 3/8	
18			
I3	19		3/4
	20		
	21.3	R 1/2	
	22		7/8
	23		
	25		
25.4		1	
I4	26.9	R 3/4	
	28		
	30		
I5	32		1 1/4
	33.7	R 1	
	35		
	38		1 1/2
	40		
	42	R 1 1/4	

Dimension Table					Order Code
L1	L2	H1	H2	S min.	
37	20	16.5	41	0.6	CM40M13P1S1I1006.0
					CM40M13P1S1I1006.4
					CM40M13P1S1I1008.0
					CM40M13P1S1I1009.5
					CM40M13P1S1I1010.0
					CM40M13P1S1I1012.0
55	29	18.5	44.5	0.7	CM40M13P1S1I2012.7
					CM40M13P1S1I2013.5
					CM40M13P1S1I2014.0
					CM40M13P1S1I2015.0
					CM40M13P1S1I2016.0
					CM40M13P1S1I2017.2
70	36	23.5	54.5	0.7	CM40M13P1S1I3019.0
					CM40M13P1S1I3020.0
					CM40M13P1S1I3021.3
					CM40M13P1S1I3022.0
					CM40M13P1S1I3023.0
					CM40M13P1S1I3025.0
85	45	25.5	58.5	0.7	CM40M13P1S1I4026.9
					CM40M13P1S1I4028.0
					CM40M13P1S1I4030.0
					CM40M13P1S1I5032.0
110	56	32	71.5	0.7	CM40M13P1S1I5033.7
					CM40M13P1S1I5035.0
					CM40M13P1S1I5038.0
					CM40M13P1S1I5040.0
					CM40M13P1S1I5042.0

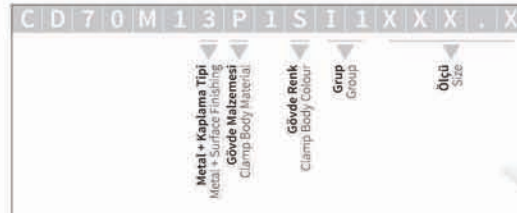
Dimension Table					Order Code
L1	L2	H1	H2	S min.	
36	20	13.5	38	0.6	CD68M13P1S1I1006.0
					CD68M13P1S1I1006.4
					CD68M13P1S1I1008.0
					CD68M13P1S1I1009.5
					CD68M13P1S1I1010.0
					CD68M13P1S1I1012.0
53	29	13.5	39.5	0.7	CD68M13P1S1I2012.7
					CD68M13P1S1I2013.5
					CD68M13P1S1I2014.0
					CD68M13P1S1I2015.0
					CD68M13P1S1I2016.0
					CD68M13P1S1I2017.2
67	36	18.5	49.5	0.7	CD68M13P1S1I3019.0
					CD68M13P1S1I3020.0
					CD68M13P1S1I3021.3
					CD68M13P1S1I3022.0
					CD68M13P1S1I3023.0
					CD68M13P1S1I3025.0
82	45	20.5	53.5	0.7	CD68M13P1S1I4026.9
					CD68M13P1S1I4028.0
					CD68M13P1S1I4030.0
106	56	27	66.5	0.7	CD68M13P1S1I5032.0
					CD68M13P1S1I5033.7
					CD68M13P1S1I5035.0
					CD68M13P1S1I5038.0
					CD68M13P1S1I5040.0
					CD68M13P1S1I5042.0

* In twin series pipe clamps, the diameter of each pipe hole can be produced with different sizes upon request.

Metal / Kaplama / Finishing		Clamp Body / Malzeme	
0	Kaplamasız / Uncoated	A	Alüminyum / Aluminum
1	Fosfat / Phosphated / Fe/Znph	N	Polyamid / Polyamide
3	Galvaniz / Galvanized / Fe/Zn 8C Cr3-B	T	TPE
4	CrNi 304 / AISI 304	P	Polipropilen / Polypropylene
6	CrNi 316 / AISI 316		
9	Çinko Nikel / Zinc Nickel / Fe/ZnNi		



For different material request please consult



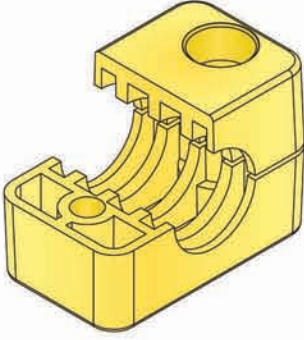
Group	O.D. of Pipe / Tube/Hose mm	Nominal Bore Pipe Inch	O.D. of Pipe / Tube/Hose inch
I1	6		
	6.4		1/4
	8		5/16
	9.5		3/8
	10	R 1/8	
	12		
I2	12.7		1/2
	13.5	R 1/4	
	14		
	15		
	16		3/8
	17.2	R 3/8	
I3	18		
	19		3/4
	20		
	21.3	R 1/2	
	22		7/8
	23		
I4	25		
	25.4		1
	26.9	R 3/4	
I5	28		
	30		
	32		1 1/4
	33.7	R 1	
	35		
	38		1 1/2
	40		
	42	R 1 1/4	

Dimension Table						Order Code
L1	L2	H1	H2	S min.		
36	20	20.5	45	0.6	CD70M13P1S11006.0	
					CD70M13P1S11006.4	
					CD70M13P1S11008.0	
					CD70M13P1S11009.5	
					CD70M13P1S11010.0	
					CD70M13P1S11012.0	
53	29	20.5	46.5	0.7	CD70M13P1S12012.7	
					CD70M13P1S12013.5	
					CD70M13P1S12014.0	
					CD70M13P1S12015.0	
					CD70M13P1S12016.0	
					CD70M13P1S12017.2	
67	36	25.5	56.5	0.7	CD70M13P1S13019.0	
					CD70M13P1S13020.0	
					CD70M13P1S13021.3	
					CD70M13P1S13022.0	
					CD70M13P1S13023.0	
					CD70M13P1S13025.0	
82	45	27.5	60.5	0.7	CD70M13P1S14026.9	
					CD70M13P1S14028.0	
					CD70M13P1S14030.0	
106	56	34	73.5	0.7	CD70M13P1S15032.0	
					CD70M13P1S15033.7	
					CD70M13P1S15035.0	
					CD70M13P1S15038.0	
					CD70M13P1S15040.0	
					CD70M13P1S15042.0	

Dimension Table						Order Code
L1	L2	H1	H2	S min.		
36	20	13.5	33	0.6	CDaaM63P1S11006.0	
					CDaaM63P1S11006.4	
					CDaaM63P1S11008.0	
					CDaaM63P1S11009.5	
					CDaaM63P1S11010.0	
					CDaaM63P1S11012.0	
53	29	13.5	33	0.7	CDaaM63P1S12012.7	
					CDaaM63P1S12013.5	
					CDaaM63P1S12014.0	
					CDaaM63P1S12015.0	
					CDaaM63P1S12016.0	
					CDaaM63P1S12017.2	
67	36	18.5	43	0.7	CDaaM63P1S13019.0	
					CDaaM63P1S13020.0	
					CDaaM63P1S13021.3	
					CDaaM63P1S13022.0	
					CDaaM63P1S13023.0	
					CDaaM63P1S13025.0	
82	45	20.5	47	0.7	CDaaM63P1S14026.9	
					CDaaM63P1S14028.0	
					CDaaM63P1S14030.0	
106	56	27	60	0.7	CDaaM63P1S15032.0	
					CDaaM63P1S15033.7	
					CDaaM63P1S15035.0	
					CDaaM63P1S15038.0	
					CDaaM63P1S15040.0	
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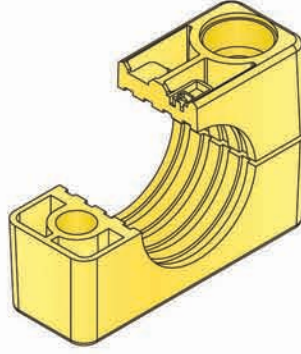
* In twin series pipe clamps, the diameter of each pipe hole can be produced with different sizes upon request.

Standart Seri / Standard Series



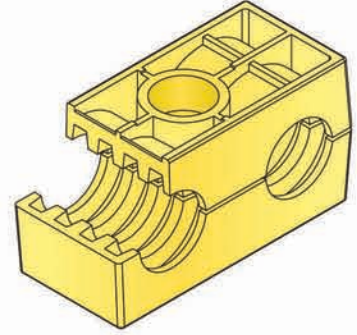
Standart Tasarım
Standard Design

Ađır Seri / Heavy Series

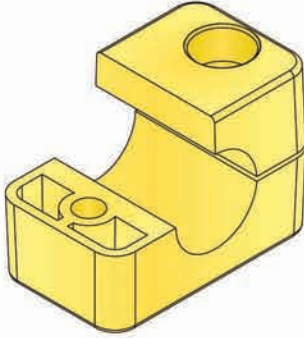


Standart Tasarım
Standard Design

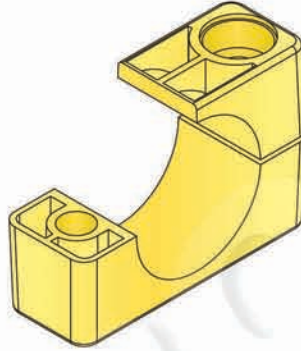
İkiz Seri / Twin Series



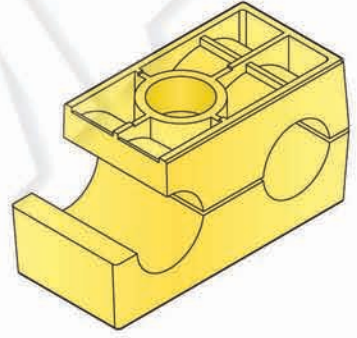
Standart Tasarım
Standard Design



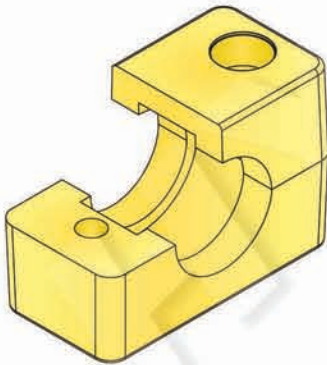
G Biçimli Tasarım
(Hortumlar için önerilir)
Form G Design
(Recommended for Hoses)



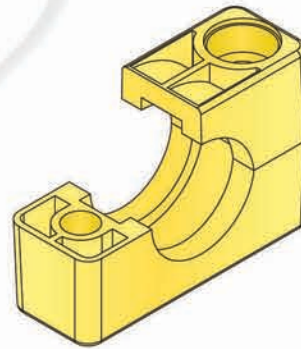
G Biçimli Tasarım
(Hortumlar için önerilir)
Form G Design
(Recommended for Hoses)



G Biçimli Tasarım
(Hortumlar için önerilir)
Form G Design
(Recommended for Hoses)



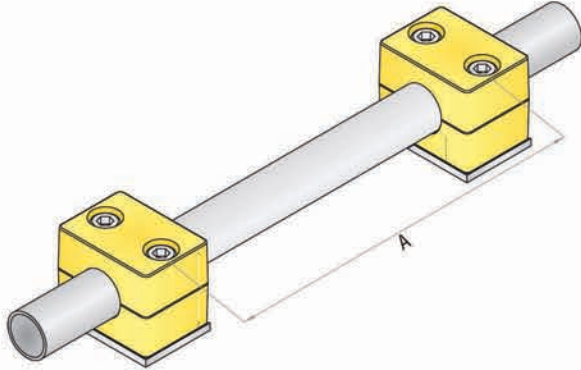
E Biçimli Tasarım
(Elastomerli Kelepçeler için)
Form E Design
(For Elastomer Inserts)



E Biçimli Tasarım
(Elastomerli Kelepçeler için)
Form E Design
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Spacings for Clamps

The given distances between the clamps are standart values that are valid for static loading. Choosing shorter distances between the clamps is recommended to have a secure operation. If the clamps are used as pipe fitting support for high pipe lines then half of the given distances must be used.

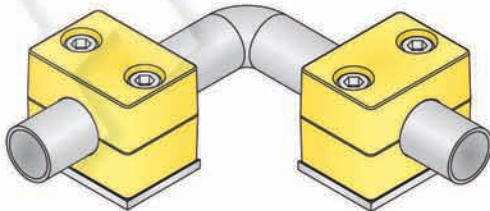


Boru Dış Çapı / Pipe O.D. mm	Uzaklık / Distance A m
6.0 - 12.7	1.0
12.7 - 22.0	1.2
22.0 - 32.0	1.5
32.0 - 38.0	2.0
38.0 - 57.0	2.7
57.0 - 75.0	3.0
75.0 - 76.1	3.5
76.1 - 88.9	3.7
88.9 - 102.0	4.0
102.0 - 114.0	4.5
114.0 - 168.0	5.0
168.0 - 219.0	6.0
219.0 - 324.0	6.7
324.0 - 356.0	7.0
356.0 - 406.0	7.5
406.0 - 419.0	8.2
419.0 - 508.0	8.5
508.0 - 521.0	9.0
521.0 - 558.0	10.0
558.0 - 800.0	12.5

Boru Dış Çapı / Pipe O.D. mm	Uzaklık / 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 - 57.0	2.7
57.0 - 75.0	3.0
75.0 - 76.1	3.5
76.1 - 88.9	3.7
88.9 - 102.0	4.0
102.0 - 114.0	4.5
114.0 - 168.0	5.0
168.0 - 219.0	6.0
219.0 - 324.0	6.7
324.0 - 356.0	7.0
356.0 - 406.0	7.5
406.0 - 419.0	8.2
419.0 - 508.0	8.5
508.0 - 521.0	9.0
521.0 - 558.0	10.0
558.0 - 800.0	12.5

Pipe Bend Installation

Clamps that are used at the bends must be located as close as possible to the bends at both sides.



Suggestions for Pipe Installations

In order to fulfill their purpose, clamps must be fixed strongly in situ for all types of connections.

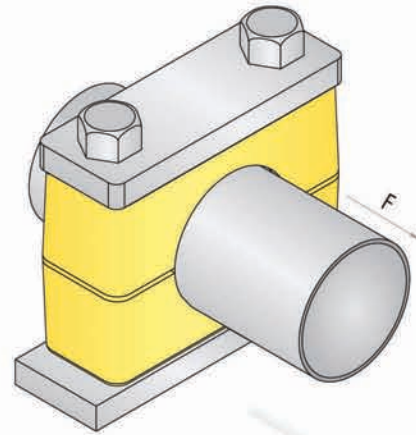
For the pipelines where fittings are used, to prevent the threads to be affected and loosen up, the first clamp must be placed right after the fitting.

If there are valves on pipeline, the pipes must be fixed using clamps right before and after the valves in order to provide safe operation of the system.

Thread Chart		
Standard Series		
Group No.	Metric Thread	UNC Thread
G0		
G1		
G2		
G3		
G4	M6	1/4" - 20 UNC
G5		
G6		
G7		
G8		

Thread Chart		
Heavy Series		
Group No.	Metric Thread	UNC Thread
A1		
A2	M10	3/8" -16 UNC
A3		
A4	M12	7/16" -14 UNC
A5	M16	5/8" -11 UNC
A6	M20	3/4" -10 UNC
A7	M24	7/8" -9 UNC
A8		
A9	M30	1 1/8" -7 UNC
A10		

Thread Chart		
Twin Series		
Group No.	Metric Thread	UNC Thread
I1	M6	1/4" - 20 UNC
I2		
I3		
I4	M8	5/16" -18 UNC
I5		



Tightening Torques and Maximum Loads in Pipe Direction

All values supplied for tightening torques and maximum loads in pipe direction are given for clamps with cover plates and hexagon head bolts acc. to (DIN 931/933).

Maximum loads in pipe direction (acc. to DIN 3015 part 10) given below are average values, obtained from three tests at 23°C with a steel pipe. (acc. to DIN 2448, St 37)

When the values (F) given below are reached, sliding starts.

Standard Series (DIN 3015/1)

Group No.	Hexagon Head Bolt	Polypropilen		Polyamide		Aluminium	
		Tightening Torque (Nm)	Max. Load (F) kN	Tightening Torque (Nm)	Max. Load (F) kN	Tightening Torque (Nm)	Max. Load (F) kN
G0	M6	8	0.6	10	0.6	-	-
G1		8	1.1	10	0.7	12	4.2
G2		8	1.3	10	0.8	12	4.3
G3		8	1.4	10	1.6	12	4.9
G4		8	1.5	10	1.7	12	5.0
G5		8	1.9	10	2.0	12	7.3
G6		8	2.0	10	2.5	12	8.9

Heavy Series (DIN 3015/2)

Group No.	Hexagon Head Bolt	Polypropilen		Polyamide		Aluminium	
		Tightening Torque (Nm)	Max. Load (F) kN	Tightening Torque (Nm)	Max. Load (F) kN	Tightening Torque (Nm)	Max. Load (F) kN
A1	M10	12	1.6	20	4.2	30	12.1
A2		12	2.9	20	4.5	30	15.1
A3		15	3.3	25	5.1	35	15.5
A4	M12	30	8.2	40	9.3	55	29.4
A5	M16	45	11.0	55	25.8	120	34.8
A6	M20	80	14.0	150	21.0	220	50.0
A7	M24	110	28.0	200	32.0	250	70.6
A8	M30	180	40.0	350	48.0	500	84.5
A9		200	119.0	370	125.0	500	181.5
A10		270	168.0	470	180.0	600	244.5

Twist Series (DIN 3015/3)

Group No.	Hexagon Head Bolt	Polypropilen		Polyamide	
		Sıkma Torku Tightening Torque (Nm)	Max. Yük Max. Load (F) kN	Tightening Torque (Nm)	Max. Load (F) kN
I1	M6	5	0.9	5	0.95
I2					2.20
I3	M8	12	1.9	12	2.00
I4			2.7		2.95
I5		8	1.7	8	2.50

Clamp Body Materials and Materials Properties				
	P	N	A	T
Kelepçe Gövde Malzemeleri Clamp Body Materials	Polipropilen (Kopolimer) PP Polypropilene (Copolymer) PP	Polyamid PA Polyamide PA	Alüminyum AL Aluminium AL	Termoplastik Elastomer TPE Thermoplastic Elastomer TPE
Mekanik Özellikler Mechanical Properties				
Izod Darbe Dayanımı (Çentikli, 23°C) Izod Impact Strength (Notched, 23°C)	> 40 KJ/m ² ISO 180	> 5 KJ/m ² ISO 180	---	---
Izod Darbe Dayanımı (Çentikli, -30°C) Izod Impact Strength (Notched, -30°C)	> 6 KJ/m ² ISO 180	> 2 KJ/m ² ISO 180	---	---
Elastisite Modülü Modulus of Elasticity	1200 - 1250 N/mm ² ISO 527-2	> 2000 N/mm ² ISO 527-2	70.000 N/mm ²	3.6 N/mm ² (Modulus @100) ASTM D 412
Çekme Dayanımı Tensile Strength at Yield	> 23 N/mm ² ISO 527-2	> 60 N/mm ² ISO 527-2	> 160 N/mm ² DIN EN 10002	> 3.95 N/mm ² ASTM D 412
Sertlik Hardness	> 80 ISO 2039-2 (Rockwell-R)	> 70 ISO 868 (Shore D)	> 80 Brinell Hardness	> 85 ASTM D 2240 (Shore A)
Isıl Özellikler Thermal Properties				
Önerilen Sıcaklık Aralığı Recommended Temperature Range	-30°C + 90°C	-40°C + 120°C	Max. 300°C	-40°C + 120°C
Kimyasal Özellikler Chemical Properties				
Zayıf Asitler, Solventler Weak Acids, Solvents	Koşula Bağlı Dayanıklı Conditionally Consistent	Koşula Bağlı Dayanıklı Conditionally Consistent	Koşula Bağlı Dayanıklı Conditionally Consistent	Dayanıklı Consistent
Benzin, Madeni Yağlar Benzine, Mineral Oils	Koşula Bağlı Dayanıklı Conditionally Consistent	Dayanıklı Consistent	Dayanıklı Consistent	Koşula Bağlı Dayanıklı Conditionally Consistent
Alkol, Diğer Yağlar, Deniz Suyu Alcohol, Other Oils, Seawater	Dayanıklı Consistent	Dayanıklı Consistent	Dayanıklı Consistent	Dayanıklı Consistent

All Metal Parts

- Are made of carbon steel St 37-2 (S235JR-EN 10025) as a standard. Stainless steel (AISI 304, AISI 316) is also available upon request.
- Coated with Fe/Zn 8C Cr3-B galvanized as standard. Untreated, phosphated, zinc-nickel or other alternative surface finishing are available upon request.
- Are metric threaded as a standard. Other alternative threads such as UNC, UNF are available upon request.

Plastic Parts

- Polypropilene, Polyamide and TPE plastic parts could be V-0 resistant acc. to UL 94 upon request.

Malzeme ve Kaplama Çeşitleri
Material and Surface Finishing

	CrNi 316 Paslanmaz Çelik AISI 316 Stainless Steel
	CrNi 304 Paslanmaz Çelik AISI 304 Stainless Steel
	Karbon Çelik, Delta DMS Kaplamalı , Kırmızı Pas Dayanımı: 1.000 saat Carbon Steel, Delta DMS coated, Red Rust Resistance: 1.000h. DELTA DÖRKEN
	Karbon Çelik, Çinko Nikel(Fe/ZnNi) Kaplama , Kırmızı Pas Dayanımı: 720 saat Carbon Steel, Zinc/nickel(Fe/ZnNi) coated, Red Rust Resistance: 720h.
	Karbon Çelik Fe/Znph Fosfat Kaplamalı Carbon Steel Fe/Znph Phosphated
	Karbon Çelik Fe/Zn 8C Galvaniz ve Mavi Krom Kaplamalı Carbon Fe/Zn 8C Galvanized and Blue-Chromating

