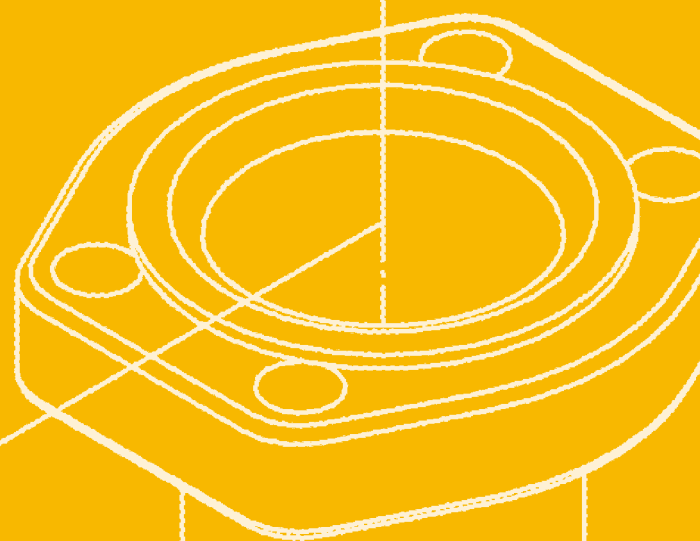


# CLAMPS

H



## Product

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# CLAMPS

**GS-Hydro's tube clamps conform to DIN 3015 and are designed to support all pipes, tubes and hoses up to 12" NB (324 mm OD). The clamps consist of two polypropylene, polyamide, aluminum or rubber clamp halves, held to a steel welding plate or mounting rail by one or more bolts through a cover plate.**

The GS-multipipe clamp allows several tubes or pipes of the same group to be stacked on top of each other.

The GS-tube clamp range includes the light (A), twin (B) and heavy (C) series.

### Size Range



GS Tube Clamps Series A (Light)			
Clamp Group	O.D. mm	Tube N.B.	Inch O.D.
0	6– 12	1/8	1/4– 3/8
1	6– 12	1/8	1/4– 3/8
2	12.7– 18	1/4– 3/8	1/2– 5/8
3	19– 25	1/2	3/4– 1
4	26.9– 30	3/4	
5	32– 42	1– 1 1/4	1 1/4– 1 1/2

GS Tube Clamps Series B (Twin)			
Clamp Group	O.D. mm	Tube N.B.	Inch O.D.
1	6– 12	1/8	1/4– 3/8
2	12.7– 18	1/4– 3/8	1/2– 5/8
3	19– 25	1/2	3/4– 1
4	26.9– 30	3/4	
5	32– 42	1– 1 1/4	1 1/4– 1 1/2

GS Tube Clamps Series C (Heavy)			
Clamp Group	O.D. mm	Tube N.B.	Inch O.D.
1	6– 18	1/8– 3/8	5/16– 5/8
2	19– 30	1/2– 3/4	3/4– 1
3	30– 42	1– 1 1/4	1 1/4– 1 1/2
4	38– 70	1 1/4– 2	1 1/2– 2 1/2
5	70– 90	2 1/2– 3	3– 3 1/2
6	90– 127	3 1/2– 4	4– 5
7	127– 168.3	5– 6	5– 6 5/8
8	168.3– 220	8	6 5/8– 8 5/8
9	250– 324	10– 12	9 7/8– 12 3/4

# CLAMPS

## General Information

### Clamp Body Material

Clamp Body Material Properties	Copolymeric Polypropylene PP Colour: green	Polyamide PA Colour: black	Aluminium Al Si 12	Santoprene SA Colour: black
<b>Mechanical Properties</b>				
Flexural Deflection DIN 53452*	36 N/mm <sup>2</sup>	130—200 N/mm <sup>2</sup>		
Impact Resistance DIN 53453*	no failure	60 KJ/m <sup>2</sup>		
Compressive Strength DIN 53454*	90 N/mm <sup>2</sup>	120 N/mm <sup>2</sup>	60—80 HB 5/250	Hardness 73—87 Shore A
Modulus of Elasticity DIN 53452*	1150 N/mm <sup>2</sup>	3000 N/mm <sup>2</sup>	7000 N/mm <sup>2</sup>	3.5—6.9 N/mm <sup>2</sup>
Tensile Stress DIN 53455*	28 N/mm <sup>2</sup>	140 N/mm <sup>2</sup>	220—300 N/mm <sup>2</sup>	8.5—15.9 N/mm <sup>2</sup>
<b>Thermal Properties</b>				
Max. Temperature Resistance	-30 — +90°C	-40 — +120°C	up to 300°C	-40 — +120°C
<b>Chemical Properties</b>				
Weak acids, solvents	cond. consistent	cond. consistent	cond. consistent	consistent
Benzine, mineral oils	cond. consistent	consistent	consistent	cond. consistent
Alcohol, seawater	consistent	consistent	consistent	consistent

\* = DIN specifications refer to plastics only

Other thermoplastics and materials for clamp bodies on request.

### Metal Parts

Surface Finishing	
• Steel cover plates	zinc/nickel
• Bolts	electric zinc chromated
Materials	
• Carbon steel	St37
• Stainless steel	1.4301/1.4305 (AISI 304) 1.4401/1.4571 (AISI 316/316Ti)
Threads	
All threads are available with UNC-threads upon request.	

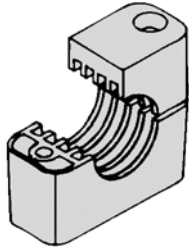
### Thread Chart

Standard-Series			Heavy-Series			Twin-Series		
Group	Metric Thread	UNC Thread	Group	Metric Thread	UNC Thread	Group	Metric Thread	UNC Thread
0	M6	1/4-20 UNC	3S	M10	3/8-16UNC	1D	M6	1/4-20UNC
1			4S			2D		
2			5S			3D	M8	5/16-18UNC
3			6S	4D				
4			7S	5D				
5			8S					
6			9S					
7			10S					
8	11S							
			12S	M30	1 1/4-7UNC			

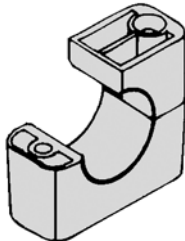
Material Properties Anti Corrosion Clamp			
Material Property	Test Method	Unit	Value
Density	ISO 1133	g/cm <sup>3</sup>	0.908
Flexural Modulus	ISO 178	MPa	1170
Tensile E. Modulus	ISO 527-2	MPa	1170
Yield Strength	ISO 527-2	MPa	26
Yield Strain	ISO 527-2	%	7.9
Tensile Strength at Break	ISO 527-2	MPa	14.1
Izod-Imact notched 23°C	ISO 180/1A	KJ/m <sup>2</sup>	6.1
Izod-Imact notched 0°C	ISO 180/1A	KJ/m <sup>2</sup>	4.5
Izod-Imact notched -20°C	ISO 180/1A	KJ/m <sup>2</sup>	3.6
Ball Intendation Hardness	ISO 2039	MPa	57
Softening Temperature Vicat 10 N	ISO 306A	°C	149
Heat S distortion Temp. HDT 0.45 MPa	ISO 75B	°C	72.5

### Design of Clamp Bodies

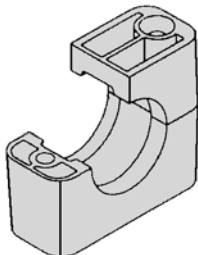
#### Standard-Series



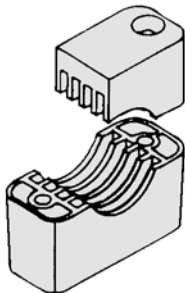
Standard design  
– profiled inside –



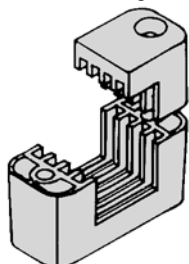
H-design  
– smooth inside –  
(recommended for hoses)



RI-design  
for rubber inserts

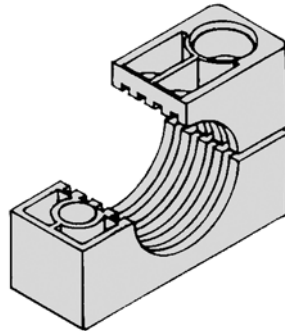


Oval design

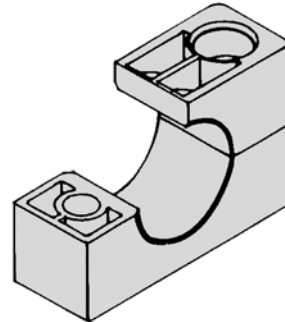


Rectangular-design

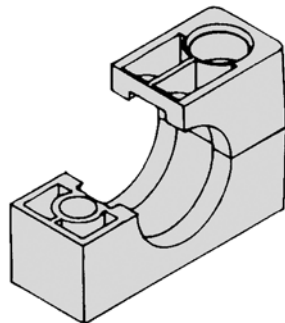
#### Heavy-Series



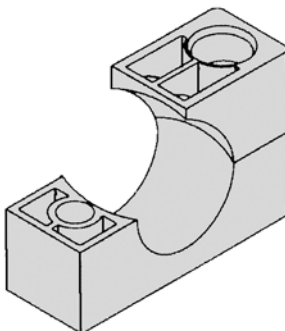
Standard design  
– profiled inside –



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

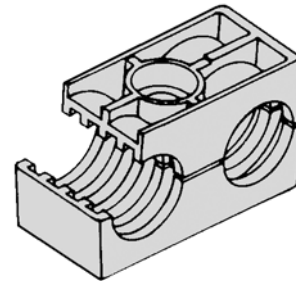


RI-design  
for rubber inserts

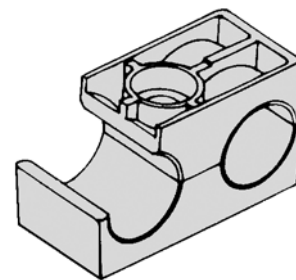


WAG-design  
for ball inserts

#### Twin-Series



Standard design  
– profiled inside –



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

# CLAMPS

## Installation and Assembly

The following provides the installation principles for clamps. For detailed installation instructions kindly refer to GS-Hydro's installation manuals.

### Installation Information

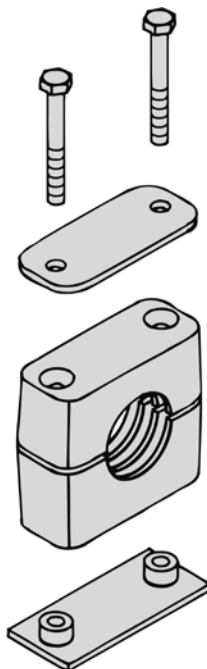
#### Installation on Weld Plates

GS-Hydro weld plates are available for the following Series:

- Standard-Series
- Heavy-Series
- Twin-Series
- Special Clamps

For best alignment of GS-Hydro 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.



#### Installation on Mounting Rails

GS-Hydro mounting rails can be used with the following Series:

- Standard-Series
- Heavy-Series (Group 3S – 6S)
- Twin-Series
- Special Clamps

GS-Hydro mounting rails are available in four different height sizes.

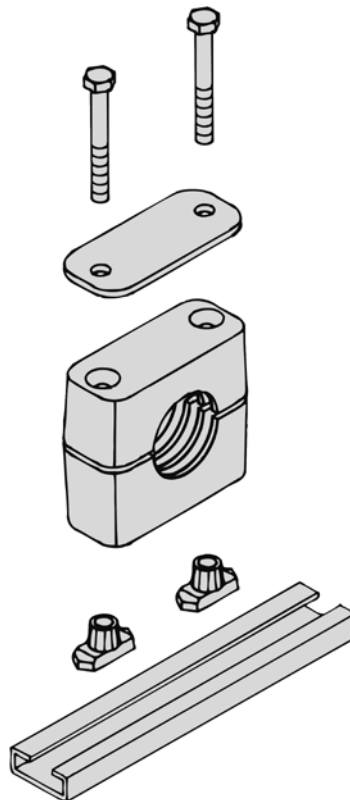
The rails are either welded or bolted to the supporting construction.

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 bolt unit together.

Clamp units can be adjusted before being firmly bolted.



#### Multi-Level Assembly

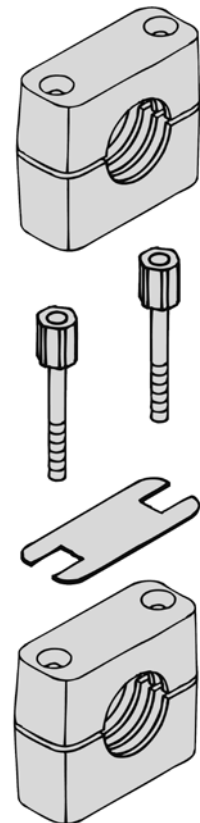
GS-Hydro multi-level pipe clamps permit easy stacking of several tubes or pipes of the group.

(Twin-Clamps group 2 – 5 allow stacking of different group sizes.)

The clamps are connected by stacking bolts (AF).

Safety plates (SIG/SIP/SI) inserted between the clamps prevent stacking bolts from turning.

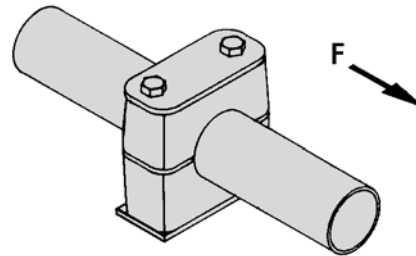
GS-Hydro stacking assembly can be fitted to weld plates or to rails.



### Tightening Torques and Maximum Loads in Pipe Direction

All tightening torques and max. loads in pipe direction refer to clamps with cover plates and hexagon head bolts acc. to DIN 931/933.

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



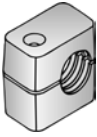


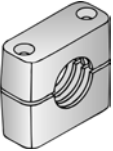
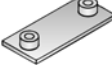
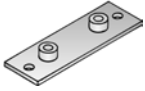
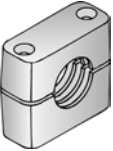
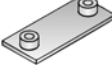
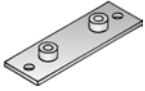
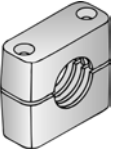
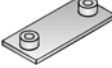
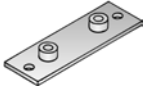
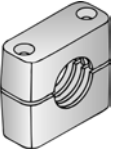
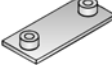
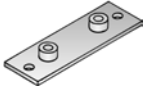
Standard-Series (acc. to DIN 3015, part 1)							
Clamp Group	Hexagon Head Bolt DIN 931/933	Polypropylene		Polyamide		Aluminum	
		Tightening Torque (Nm)	Max. load in pipe direction F (kN)	Tightening Torque (Nm)	Max. load in pipe direction F (kN)	Tightening Torque (Nm)	Max. load in pipe direction F (kN)
0	M6	8	0.6	10	0.6	12	3.5
1		8	1.1	10	0.7	12	4.2
2		8	1.3	10	0.8	12	4.3
3		8	1.4	10	1.6	12	4.9
4		8	1.5	10	1.7	12	5.0
5		8	1.9	10	2.0	12	7.3
6		8	2.0	10	2.5	12	8.9

Heavy-Series (acc. to DIN 3015, part 2)							
Clamp Group	Hexagon Head Bolt DIN 931/933	Polypropylene		Polyamide		Aluminum	
		Tightening Torque (Nm)	Max. load in pipe direction F (kN)	Tightening Torque (Nm)	Max. load in pipe direction F (kN)	Tightening Torque (Nm)	Max. load in pipe direction F (kN)
3S	M10	12	1.6	20	4.2	30	12.1
4S		12	2.9	20	4.5	30	15.1
5S		15	3.3	25	5.1	35	15.5
6S	M12	30	8.2	40	9.3	55	29.4
7S	M16	45	11.0	55	25.8	120	34.9
8S	M20	80	14.0	150	21.0	220	70.6
9S	M24	110	28.0	200	32.0	250	50.0
10S	M30	180	40.0	350	48.0	500	84.5
11S		200	119.0	370	125.0	500	181.5
12S		270	168.0	450	180.0	600	244.5

Twin-Series (acc. to DIN 3015, part 3)					
Clamp Group	Hexagon Head Bolt 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)
1D	M6	5	0.9	5	0.9
2D	M8	12	2.1	12	2.2
3D		12	1.9	12	2.0
4D		12	2.7	12	2.9
5D		8	1.7	8	2.5

# CLAMPS

## Standard-Series – Components

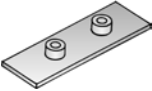
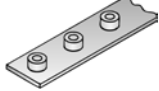

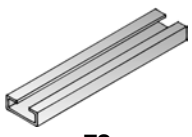
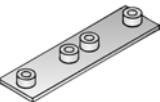
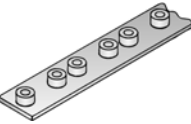
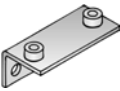
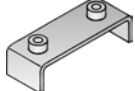
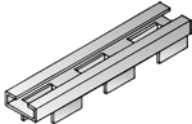

Material Code							
Materials and designs of clamps bodies					Group 1	Group 1	Group 1
Polypropylene, profiled inside, with tension clearance							
Polypropylene, smooth inside, without tension clearance							
Polyamide, profiled inside, with tension clearance							
Polyamide, smooth inside, without tension clearance							
Santoprene, profiled inside, with tension clearance							
Santoprene, smooth inside, without tension clearance							
Aluminum, profiled inside, with tension clearance (AL group 1 A – 6 only)							
Other thermoplastics and O.D. on request.							
Surface finishing (see technical appendix)					–	DIN 50942 Fe/Znph r 10	DIN 50942 Fe/Znph r 10
GSH Group	DIN Group	Outside O.D. Tube or Hose		Nominal Bore Pipe inch	Clamp Body (2 halves) (xxx -see material code)	Single Weld Plate SP	Elongated Weld Plate SPV
		mm	inch				
1	0	6			106 xxx	SP 1	SPV 1
		6.4	1/4		106.4 xxx		
		8	5/16		108 xxx		
		9.5	3/8		109.5 xxx		
		10		1/8	110 xxx		
		12			112 xxx		
1A	1	6			106 Axxx	SP 1 A	SPV 1 A
		6.4	1/4		106.4Axxx		
		8	5/16		108 Axxx		
		9.5	3/8		109.5Axxx		
		10		1/8	110 Axxx		
		12			112 Axxx		
2	2	12.7	1/2		212.7 xxx	SP 2	SPV 2
		13.5		1/4	213.5 xxx		
		14			214 xxx		
		15			215 xxx		
		16	5/8		216 xxx		
		17.2		3/8	217.2 xxx		
3	3	19	3/4		319 xxx	SP 3	SPV 3
		20			320 xxx		
		21.3		1/2	321.3 xxx		
		22	7/8		322 xxx		
		25	1		325 xxx		
4	4	26.9		3/4	426.9 xxx	SP 4	SPV 4
		28			428 xxx		
		30			430 xxx		
		32	1 1/4		532 xxx		
5	5	33.7		1	533.7 xxx	SP 5	SPV 5
		35			535 xxx		
		38	1 1/2		538 xxx		
		40			540 xxx		
		42		1 1/4	542 xxx		
6	6	44.5	1 3/4		644.5 xxx	SP 6	SPV 6
		48.3		1 1/2	648.3 xxx		
		50.8	2		650.8 xxx		
7	7	57.2	2 1/4		757.2 xxx	SP 7	SPV 7
		60.3		2	760.3 xxx		
		63.5	2 1/2		763.5 xxx		
		70	2 3/4		770 xxx		
		73	2 7/8	2 1/2*	773 xxx		
76.1	3	2 1/2**	776.1 xxx				
8	8	88.9		3	888.9 xxx	SP 8	SPV 8
		102	4		8102 Lxxx		

\* = (except DIN 2448)

\*\* = (DIN 2448 only)

# CLAMPS

## Standard-Series – Components

					
<b>Group 1</b>	<b>Group 1</b>	<b>Group 1</b>		<b>TS</b>	
					
<b>Group 1 A – 6</b>	<b>Group 1 A – 6</b>	<b>Group 1 A – 6</b>	<b>Group 1 A – 6</b>	<b>TSL</b>	<b>Group 1 – 8</b>
DIN 50942 Fe/Znph r 10	–	–	–	– (TSL z.p.)	–
Twin Weld Plate	Group Weld Plate	Weld Plate, angled	Bridge Weld Plate	Mounting Rail	Hexagon Rail Nut
<b>DSP</b>	<b>RAP</b>	<b>WSP</b>	<b>BSP</b>	<b>TS/TSL</b>	<b>SM</b>
DSP 1/40	RAP 1/30/10	WSP 1			
DSP 1 A/37	RAP 1 A/37/10	WSP 1 A	BSP 1 A		
DSP 2/44	RAP 2/44/10	WSP 2	BSP 2		
DSP 3/52	RAP 3/52/10	WSP 3	BSP 3	TS 11 TS 14 TS 30 TSL 11	SM
DSP 4/60	RAP 4/60/5	WSP 4	BSP 4	(available in 1 and 2 m lengths)	
DSP 5/75	RAP 5/75/5	WSP 5	BSP 5		
DSP 6/90	RAP 6/90/5	WSP 6	BSP 6		

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GS-FLANGE SYSTEM

TUBES & PIPES

CLAMPS

VALVES

BITE TYPE FITTINGS

SAE J514 JIC FLARE FITTINGS

HOSES & HOSE COUPLINGS

ADAPTORS

SPECIAL SOLUTIONS









MACHINES

TECHNICAL INFORMATION



# CLAMPS

## Standard-Series – Components

		 Group 1	 Group 1 A – 8					 Group 1	 Group 1 – 8	Only for hexa- gon head bolts as DIN 931/933
		DIN 50942 Fe/Znph r 10								
		Cover Plate DP	Hexagon Head Bolt AS DIN 931/933	Socket Cap Screw IS DIN 912	Slotted Head Screw LI DIN 84	Stacking Bolt AF	Safety Locking Plate SIG	Safety Washer SI DIN 93		
VALVES	BITE TYPE FITTINGS	DP 1	AS 1/1 A (M6x30)	IS 1/1 A (M6x20)	LI 1/1 A (M6x20)	AF 1/1 A	SIG 1	SI 6.4		
		DP 1 A					SIG 1 A			
SAE J514 JIC FLARE FITTINGS	HOSES & COUPLINGS	DP 2	AS 2 (M6x35)	IS 2 (M6x25)	LI 2 (M6x25)	AF 2	SIG 2			
		DP 3	AS 3 (M6x40)	IS 3 (M6x30)	LI 3 (M6x30)	AF 3	SIG 3			
ADAPTORS	SPECIAL SOLUTIONS	DP 4	AS 4 (M6x45)	IS 4 (M6x35)	LI 4 (M6x35)	AF 4	SIG 4			
		DP 5	AS 5 (M6x60)	IS 5 (M6x50)	LI 5 (M6x50)	AF 5	SIG 5			
MACHINES	TECHNICAL INFORMATION	DP 6	AS 6 (M6x70)	IS 6 (M6x60)	LI 6 (M6x60)	AF 6	SIG 6			
		DP 7	AS 7 (M6x100)	IS 7 (M6x90)		AF 7	SIG 7			
		DP 8	AS 8 (M6x125)	IS 8 (M6x110)		AF 8	SIG 8			

Material Code			Group 1							Group 1							Group 1						
<b>Materials and designs of clamp bodies</b> Polypropylene, profiled inside, with tension clearance Polypropylene, smooth inside, without tension clearance Polyamide, profiled inside, with tension clearance Polyamide, smooth inside, without tension clearance Santoprene, profiled inside, with tension clearance Santoprene, smooth inside, without tension clearance Aluminum, profiled inside, with tension clearance (AL group 1 A – 6 only) <b>Other thermoplastics and O.D. on request.</b>																							
			XXX -PP -PPH -PA -PAH -SA -SAH -AL							Group 1 Group 1 Group 1							Group 1 Group 1 Group 1						
Surface finishing (see also techn. appendix)			-							DIN 50942 Fe/Znph r 10							DIN 50942 Fe/Znph r 10						
GSH Group	DIN Group	Pipe-O.D. Ø D1 [mm]	Clamp Body (2 halves)						Single Weld Plate SP						Elongated Weld Plate SPV								
			L1	L2	Inside surface		Width	L1	L2	B	S	H	øD	L1	L2	L3	B	S	H	øD1	øD2		
					profiled	smooth																	
			H	S	H																		
1	0	6	28	9,5	27	0,4 min.	26	30	31,5	10	30	3	6,5	12	58	24,5	44	30	3	6,5	12	6,5	
		6,4																					
		8																					
		9,5																					
		10																					
1A	1	6	37	20	27	0,4 min.	26	30	36	20	30	3	6,5	12	64	20	50	30	3	6,5	12	6,5	
		6,4																					
		8																					
		9,5																					
		10																					
2	2	12,7	42	26	33	0,6 min.	32	30	42	26	30	3	6,5	12	70	26	56	30	3	6,5	12	6,5	
		13,5																					
		14																					
		15																					
		16																					
3	3	17,2	50	33	36	0,6 min.	35,5	30	50	33	30	3	6,5	12	78	33	64	30	3	6,5	12	6,5	
		18																					
		19																					
		20																					
		21,3																					
4	4	21,3	59	40	42	0,6 min.	41,5	30	60	40	30	3	6,5	12	87	40	73	30	3	6,5	12	6,5	
		22																					
		25																					
		26,9																					
		28																					
5	5	28	71	52	58	0,8 min.	56,5	30	71	52	30	3	6,5	12	100	52	86	30	3	6,5	12	6,5	
		30																					
		32																					
		33,7																					
		35																					
6	6	32	86	66	66	0,8 min.	64,5	30	88	66	30	3	6,5	12	115	66	100	30	3	6,5	12	6,5	
		33,7																					
		35																					
		38																					
		40																					
7	7	38	121	94	93	0,8 min.	92	30	122	94	30	5	6,5	12	150	94	136	30	5	6,5	12	6,5	
		42																					
		44,5																					
		60,3																					
		63,5																					
8	8	70	147	120	118	08, min.	116	30	148	120	30	5	6,5	12	178	120	162	30	5	6,5	12	6,5	
		73																					
		76,1																					
		88,9																					
		102																					

# CLAMPS

## Standard-Series – Components

GS-FLANGE  
SYSTEM

TUBES & PIPES

CLAMPS

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VALVES

BITE TYPE  
FITTINGS

SAE J514 JIC  
FLARE FITTINGS

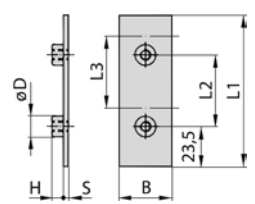
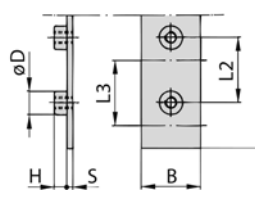
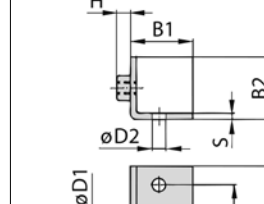

HOSES &  
HOSE COUPLINGS

ADAPTORS

SPECIAL  
SOLUTIONS

MACHINES

TECHNICAL  
INFORMATION

 Group 1								 Group 1								 Group 1A - 6								 Group 1A - 6									
DIN 50942 Fe/Znph r 10								-								-								-									
Twin Weld Plate DSP								Group Weld Plate RAP								Weld Plate, angled WSP								Bridge Weld Plate BSP									
L1	L2	L3	B	S	H	øD		L1	L2	L3	B	S	H	øD		L1	L2	B1	B2	S	H	øD1	øD2			L1	L2	B	S	H1	H2	øD	
87	40	40	30	3	6,5	12		314	31	31	30	4	6,5	12		30	14	30	30	3	6,5	12	6,5										
77	20	37	30	3	6,5	12		373	20	37	30	4	6,5	12		36	20	30	30	3	6,5	12	6,5	48	20	30	3	13	6,5	12			
86	26	44	30	3	6,5	12		442	26	44	30	4	6,5	12		42	26	30	30	3	6,5	12	6,5	54	26	30	3	13	6,5	12			
102	33	52	30	3	6,5	12		521	33	52	30	4	6,5	12		50	33	30	30	3	6,5	12	6,5	62	33	30	3	13	6,5	12			
120	40	60	30	3	6,5	12		300	40	60	30	4	6,5	12		60	40	30	30	3	6,5	12	6,5	71	40	30	3	13	6,5	12			
145	52	75	30	3	6,5	12		378	52	75	30	4	6,5	12		70	52	30	30	3	6,5	12	6,5	85	52	30	3	13	6,5	12			
178	66	90	30	3	6,5	12		450	66	90	30	4	6,5	12		88	66	30	30	3	6,5	12	6,5	98	66	30	3	13	6,5	12			

# CLAMPS

## Standard-Series – Components

GS-FLANGE SYSTEM

TUBES & PIPES

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CLAMPS

VALVES

BITE TYPE FITTINGS

SAE J514 JIC FLARE FITTINGS

HOSES & HOSE COUPLINGS

ADAPTORS

SPECIAL SOLUTIONS

MACHINES

TECHNICAL INFORMATION

Mounting Rail TS/TSL		Hexagon Rail Nut SM		Cover Plate DP		Hexagon Head Bolt AS DIN 931/933		Socket Cap Screw IS DIN 912		Slotted Head Screw LI DIN 84		Stacking Bolt AF		Safety Locking Plate SIG		Safety Washer SI DIN 93													
B1	B2	S	L	B	H1	H2	øD	L1	L2	B	S	øD	G x L	D	S	G	L1	L2	L3	SW	L	B1	B2	S	øD				
								28	9,5	30	3	7	M6x30	M6x20	11	0,8	M6x20	11	0,8	M6	34	20	12 min.	11	17	32	11,1	1	6,4
								34	20	30	3	7	M6x30	M6x20	11	0,8	M6x20	11	0,8	M6	34	20	12 min.	11	34	28	11,1	1	6,4
								40,5	26	30	3	7	M6x35	M6x25	11	0,8	M6x25	11	0,8	M6	40	25	12 min.	11	40	28	11,1	1	6,4
28	11	2	25,4	10,4	13	5	12	48	33	30	3	7	M6x40	M6x30	11	0,8	M6x30	11	0,8	M6	44	30	12 min.	11	47	28	11,1	1	6,4
								57	40	30	3	7	M6x45	M6x35	11	0,8	M6x35	11	0,8	M6	48	35	12 min.	11	56	28	11,1	1	6,4
								70	52	30	3	7	M6x60	M6x50	11	0,8	M6x50	11	0,8	M6	64	50	12 min.	11	69	28	11,1	1	6,4
								86	66	30	3	7	M6x70	M6x60	11	0,8	M6x60	11	0,8	M6	73	60	12 min.	11	85	28	11,1	1	6,4
								118	94	30	5	7	M6x100	M6x90	11	0,8				M6	99	85	12 min.	11	117	28	11,1	1	6,4
								144	120	30	5	7	M6x125	M6x110	11	0,8				M6	124	110	12 min.	11	143	28	11,1	1	6,4

# CLAMPS

## Standard-Series – Complete Clamps

GSH Group	Pipe-O.D. [mm]	Order Code
1	6	106 xxx
	6,4	106,4 xxx
	8	108 xxx
	9,5	109,5 xxx
	10	110 xxx
	12	112 xxx
1A	6	106 A xxx
	6,4	106,4 A xxx
	8	108 A xxx
	9,5	109,5 A xxx
	10	110 A xxx
	12	112 A xxx
2	12,7	212,7 xxx
	13,5	213,5 xxx
	14	214 xxx
	15	215 xxx
	16	216 xxx
	17,2	217,2 xxx
3	18	218 xxx
	19	319 xxx
	20	320 xxx
	21,3	321,3 xxx
4	22	322 xxx
	25	325 xxx
	26,9	426,9 xxx
	28	428 xxx
5	30	430 xxx
	32	532 xxx
	33,7	533,7 xxx
	35	535 xxx
	38	538 xxx
	40	540 xxx
6	42	542 xxx
	44,5	644,5 xxx
	48,3	648,3 xxx
7	50,8	650,8 xxx
	57,2	757,2 xxx
	60,3	760,3 xxx
	63,5	763,5 xxx
	70	770 xxx
8	73	773 xxx
	76,1	776,1 xxx
	88,9	888,9 xxx
	102	8102 L xxx

### Material Code

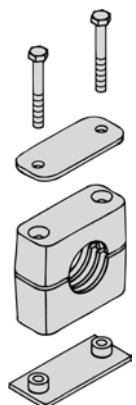
#### Materials and designs of clamp bodies

	XXX
Polypropylene, profiled inside, with tension clearance	- PP
Polypropylene, smooth inside, without tension clearance	- PPH
Polyamide, profiled inside, with tension clearance	- PA
Polyamide, smooth inside, without tension clearance	- PAH
Santoprene, profiled inside, with tension clearance	- SA
Santoprene, smooth inside, without tension clearance	- SAH
Aluminum, profiled inside, with tension clearance (AL group 1 A – 6 only)	- AL

Other thermoplastics and O.D. on request.

Design of clamp bodies see technical appendix, page 209.

**Order Code**



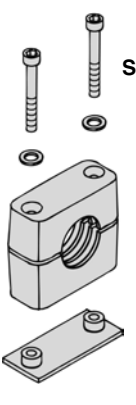
**SP \* \*\*, \* xxx DP-AS**

- Material and design of clamp body
- Pipe-O.D.
- GSH Group

**Clamp consisting of:**

- 1 x Single Weld Plate
- 1 x Clamp Body (2 halves)
- 1 x Cover Plate
- 2 x Hexagon Head Bolt DIN 931/933

**Order Code**



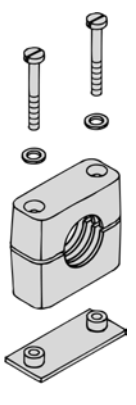
**SP \* \*\*, \* xxx IS**

- Material and design of clamp body
- Pipe-O.D.
- GSH Group

**Clamp consisting of:**

- 1 x Single Weld Plate
- 1 x Clamp Body (2 halves)
- 2 x Socket Cap Screw DIN 912 with washer

**Order Code**



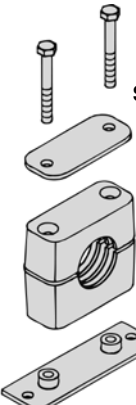
**SP \* \*\*, \* xxx LI**

- Material and design of clamp body
- Pipe-O.D.
- GSH Group

**Clamp consisting of:**

- 1 x Single Weld Plate
- 1 x Clamp Body (2 halves)
- 2 x Slotted Head Screw DIN 84 with washer

**Order Code**



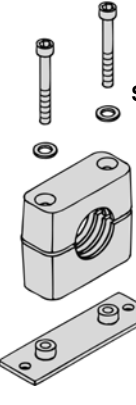
**SPV \* \*\*, \* xxx DP-AS**

- Material and design of clamp body
- Pipe-O.D.
- GSH Group

**Clamp consisting of:**

- 1 x Elongated Weld Plate
- 1 x Clamp Body (2 halves)
- 1 x Cover Plate
- 2 x Hexagon Head Bolt DIN 931/933

**Order Code**



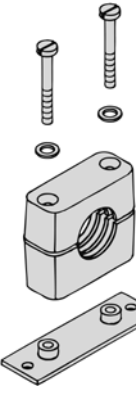
**SPV \* \*\*, \* xxx IS**

- Material and design of clamp body
- Pipe-O.D.
- GSH Group

**Clamp consisting of:**

- 1 x Elongated Weld Plate
- 1 x Clamp Body (2 halves)
- 2 x Socket Cap Screw DIN 912 with washer

**Order Code**



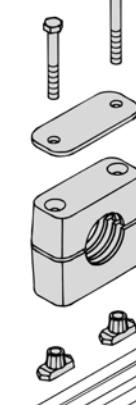
**SPV \* \*\*, \* xxx LI**

- Material and design of clamp body
- Pipe-O.D.
- GSH Group

**Clamp consisting of:**

- 1 x Elongated Weld Plate
- 1 x Clamp Body (2 halves)
- 2 x Slotted Head Screw DIN 84 with washer

**Order Code**



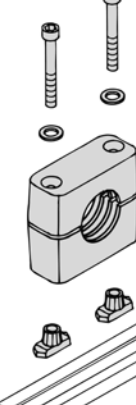
**SM \* \*\*, \* xxx DP-AS**

- Material and design of clamp body
- Pipe-O.D.
- GSH Group

**Clamp consisting of:**

- 1 x Hexagon Rail Nut
- 1 x Clamp Body (2 halves)
- 1 x Cover Plate
- 2 x Hexagon Head Bolt DIN 931/933

**Order Code**



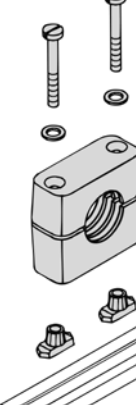
**SM \* \*\*, \* xxx IS**

- Material and design of clamp body
- Pipe-O.D.
- GSH Group

**Clamp consisting of:**

- 1 x Hexagon Rail Nut
- 1 x Clamp Body (2 halves)
- 2 x Socket Cap Screw DIN 912 with washer

**Order Code**



**SM \* \*\*, \* xxx LI**

- Material and design of clamp body
- Pipe-O.D.
- GSH Group

**Clamp consisting of:**

- 1 x Hexagon Rail Nut
- 1 x Clamp Body (2 halves)
- 2 x Slotted Head Screw DIN 84 with washer

# CLAMPS

## Standard-Series – Complete Clamps

GS-FLANGE SYSTEM

TUBES & PIPES

CLAMPS

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VALVES

BITE TYPE FITTINGS

SAE J514 JIC FLARE FITTINGS

HOSES & HOSE COUPLINGS

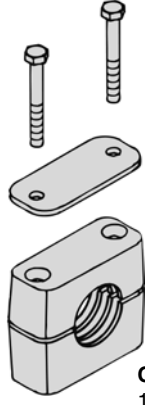
ADAPTORS

SPECIAL SOLUTIONS

MACHINES

TECHNICAL INFORMATION

**Order Code**



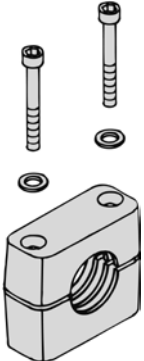
\* \*\*, \* xxx DP-AS

- Material and design of clamp body
- Pipe-O.D.
- GSH Group

**Clamp consisting of:**

- 1 x Clamp Body (2 halves)
- 1 x Cover Plate
- 2 x Hexagon Head Bolt DIN 931/933

**Order Code**



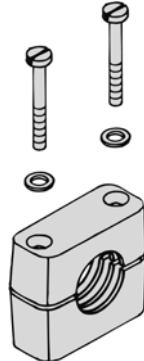
\* \*\*, \* xxx IS

- Material and design of clamp body
- Pipe-O.D.
- GSH Group

**Clamp consisting of:**

- 1 x Clamp Body (2 halves)
- 2 x Socket Cap Screw DIN 912 with washer

**Order Code**



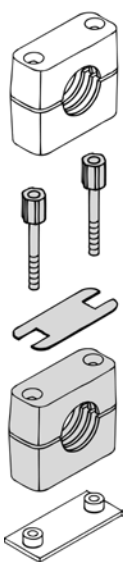
\* \*\*, \* xxx LI

- Material and design of clamp body
- Pipe-O.D.
- GSH Group

**Clamp consisting of:**

- 1 x Clamp Body (2 halves)
- 2 x Slotted Head Screw DIN 84 with washer

**Order Code**



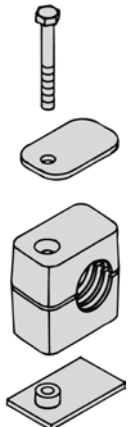
\* \*\*, \* xxx SIG-AF

- Material and design of clamp body
- Pipe-O.D.
- GSH Group

**Clamp consisting of:**

- 1 x Clamp Body (2 halves)
- 1 x Safety Locking Plate
- 2 x Stacking Bolt

**Order Code**



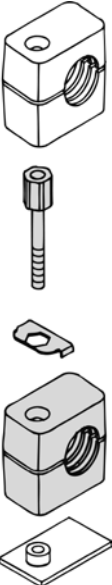
SP1 \* \*\*, \* xxx DP-AS

- Material and design of clamp body
- Pipe-O.D.
- GSH Group

**Clamp consisting of:**

- 1 x Elongated Weld Plate
- 1 x Clamp Body (2 halves)
- 2 x Socket Cap Screw DIN 912 with washer

**Order Code**



1 \* \*\*, \* xxx SI-AF

- Material and design of clamp body
- Pipe-O.D.
- GSH Group

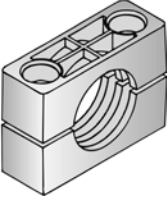
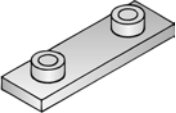
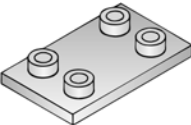
**Clamp consisting of:**

- 1 x Elongated Weld Plate
- 1 x Clamp Body (2 halves)
- 2 x Slotted Head Screw DIN 84 with washer

### Information

In order to protect hexagon head bolts against unscrew caused by vibrations safety washers acc. to DIN 93 are recommended.

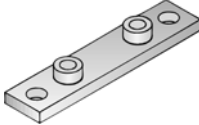
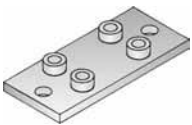
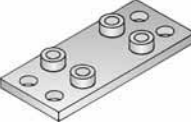
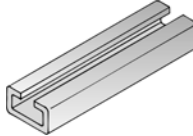

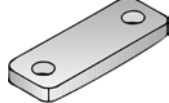
Items are supplied non-assembled.

Material Code											
Materials and designs of clamps bodies											
Polypropylene, profiled inside, with tension clearance - <b>PP</b> Polypropylene, smooth inside, without tension clearance - <b>PPH</b> (up to Gr. 6S) Polyamide, profiled inside, with tension clearance - <b>PA</b> Polyamide, smooth inside, without tension clearance - <b>PAH</b> (up to Gr. 6S) Santoprene, profiled inside, with tension clearance - <b>SA</b> (up to Gr. 6S) Santoprene, smooth inside, without tension clearance - <b>SAH</b> (up to Gr. 6S) Aluminum, profiled inside, with tension clearance - <b>AL</b>					XXX - <b>PP</b> - <b>PPH</b> (up to Gr. 6S) - <b>PA</b> - <b>PAH</b> (up to Gr. 6S) - <b>SA</b> (up to Gr. 6S) - <b>SAH</b> (up to Gr. 6S) - <b>AL</b>		Other thermoplastics and O.D. on request.				
Surface finishing (see also technical appendix)					-	Group 3 S - 7 S: DIN 50942 Fe/Znph r 10	Group 3 S - 7 S: DIN 50942 Fe/Znph r 10				
GSH Group	DIN Group	Outside diameter Tube or Hose		Nominal bore Pipe inch	Clamp Body (2 halves) (xxx - see material code)	Weld Plate for Single Clamps SPAL	Weld Plate for Double Clamps SPAS				
		mm	inch								
3S	1	6			3006 xxx	SPAL 3 S	SPAS 3 S				
		6,4	1/4		3006,4 xxx						
		8			3008 xxx						
		9,5	3/8		3008 xxx						
		10		1/8	3009,5 xxx						
		12			3012 xxx						
		12,7	1/2		3012,7 xxx						
		13,5		1/4	3013,5 xxx						
		14			3014 xxx						
		15			3015 xxx						
		16	5/8		3016 xxx						
		17,2		3/8	3017,2 xxx						
4S	2	18			3018 xxx	SPAL 4 S	SPAS 4 S				
		19	3/4		4019 xxx						
		20			4020 xxx						
		21,3		1/2	4012,3 xxx						
		22	7/8		4022 xxx						
		25			4025 xxx						
		26,9		3/4	4026,9 xxx						
		28			4028 xxx						
		30			4030 xxx						
		30			5030 xxx						
5S	3	32	1 1/4		5032 xxx	SPAL 5 S	SPAS 5 S				
		33,7		1	5033,7 xxx						
		35			5035 xxx						
		38	1 1/2		5038 xxx						
		40			5040 xxx						
		42		1 1/4	5042 xxx						
6S	4	38	1 1/2		6038 xxx	SPAL 6 S	SPAS 6 S				
		42		1 1/4	6042 xxx						
		44,5	1 3/4		6044,5 xxx						
		48,3		1 1/2	6048,3 xxx						
		50,8	2		6050,8 xxx						
		55			6055 xxx						
		57	2 1/4		6057 xxx						
		60,3		2	6060,3 xxx						
		63,5	2 1/2		6063,5 xxx						
		65			6065 xxx						
70			6070 xxx								
7S	5	65			7065 xxx	SPAL 7 S	SPAS 7 S				
		70			7070 xxx						
		73	2 7/8	2 1/2	7073 xxx						
		75			7075 xxx						
		76,1	3	2 1/2	7076,1 xxx						
		80			7080 xxx						
		82,5	3 1/4		7082,5 xxx						
		88,9		3	7088,9 xxx						
8S	6	88,9		3	8088,9 xxx	SPAL 8 S	SPAS 8 S				
		100			8100 xxx						
		102		3 1/2	8102 xxx						
		108	4 1/4		8108 xxx						
		114		4	8114 xxx						
		127	5		8127 xxx						
		133	5 1/4		8133 xxx						
9S	7	133	5 1/4		9133 xxx	SPAL 9 S	SPAS 9 S				
		140		5	9140 xxx						
		152	6		9152 xxx						
		159	6 1/4		9159 xxx						
		165	6 1/2		9165 xxx						
		168		6	9168 xxx						
10S	8	168		6	10168 xxx	SPAL 10 S	SPAS 10 S				
		177,8	7		10177,8 xxx						
		193,7	7 5/8		10193,7 xxx						
		216	8 1/2		10216 xxx						
11S	9	219		8	10219 xxx	SPAL 11 S	SPAS 11 S				
		219		8	11219 xxx						
		273		10	11273 xxx						
		324		12	11324 xxx						
12S	10	356		14	12356 xxx	SPAL 12 S	SPAS 12 S				
		406		16	12406 xxx						



# CLAMPS

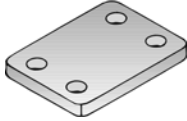



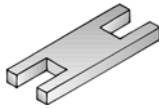

## Heavy-Series – Components

						
	<b>Group 3S - 9S</b>		<b>Group 10S - 12S</b>	<b>up to Group 6 S only</b>	<b>up to Group 6 S only</b>	
	Group 3 S - 7 S: DIN 50942 Fe/Znph r 10	Group 3 S - 7 S: DIN 50942 Fe/Znph r 10	-	-	-	Group 3 S - 7 S: DIN 50942 Fe/Znph r 10
	<b>Elongated Weld Plate for Single Clamps SPAL/DUB</b>	<b>Elongated Weld Plate for Double Clamps SPAS/DUB</b>	<b>Elongated Weld Plate for Double Clamps SPAS/DUB</b>	<b>Mounting Rail STSV</b>	<b>Mounting Rail Nut GMV</b>	<b>Cover Plate for Single Clamps DPAL</b>
SPAL/DUB 3 S	SPAS/DUB 3 S					DPAL 3 S
SPAL/DUB 4 S	SPAS/DUB 4 S			STSV (available in 1 and 2 m lengths)	GMV 10	DPAL 4 S
SPAL/DUB 5 S	SPAS/DUB 5 S					DPAL 5 S
SPAL/DUB 6 S	SPAS/DUB 6 S				GMV 12	DPAL 6 S
SPAL/DUB 7 S	SPAS/DUB 7 S					DPAL 7 S
SPAL/DUB 8 S	SPAS/DUB 8 S					DPAL 8 S
SPAL/DUB 9 S	SPAS/DUB 9 S					DPAL 9 S
SPAL/DUB 10 S		SPAS/DUB 10 S				DPAL 10 S
SPAL/DUB 11 S		SPAS/DUB 11 S				DPAL 11 S
SPAL/DUB 12 S		SPAS/DUB 12 S				DPAL 12 S

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# CLAMPS

## Heavy-Series – Components

					<p>Only for Hexagon Head Bolts AS DIN 931/933</p> 
		<b>Group 3S - 6S</b>	<b>Group 3S - 10S</b>	<b>Group 3S - 10S</b>	
Group 3 S - 7 S: DIN 50942 Fe/Znph r 10	–	–	–	Group 3 S - 7 S: DIN 50942 Fe/Znph r 10	DIN 50961 Fe/Znph 8 C
<b>Cover Plate for Double Clamps DPAS</b>	<b>Hexagon Head Bolt AS</b> DIN 931/933	<b>Socket Cap Screw IS</b> DIN 912	<b>Stacking Bolt AF</b>	<b>Safety Locking Plate SIP</b>	<b>Safety Washer SI</b> DIN 93
DPAS 3 S	AS 3 S (M10 x 45)	IS 3 S (M10 x 30)	AF 3 S	SIP 3 S	SI 10,5
DPAS 4 S	AS 4 S (M10 x 60)	IS 4 S (M10 x 40)	AF 4 S	SIP 4 S	
DPAS 5 S	AS 5 S (M10 x 70)	IS 5 S (M10 x 50)	AF 5 S	SIP 5 S	
DPAS 6 S	AS 6 S (M12 x 100)	IS 6 S (M12 x 80)	AF 6 S	SIP 6 S	SI 13
DPAS 7 S	AS 7 S (M16 x 130)		AF 7 S	SIP 7 S	SI 17
DPAS 8 S	AS 8 S (M20 x 190)		AF 8 S	SIP 8 S	SI 21
DPAS 9 S	AS 9 S (M24 x 220)		AF 9 S	SIP 9 S	SI 25
DPAS 10 S	AS 10 S (M30 x 300)		AF 10 S	SIP 10 S	SI 31
DPAS 11 S	AS 11 S (M30 x 450)				
DPAS 12 S	AS 12 S (M30 x 560)				

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GS-FLANGE SYSTEM

TUBES & PIPES

CLAMPS

VALVES

BITE TYPE FITTINGS

SAE J514 JIC FLARE FITTINGS

HOSES & HOSE COUPLINGS

ADAPTORS

SPECIAL SOLUTIONS

MACHINES

TECHNICAL INFORMATION

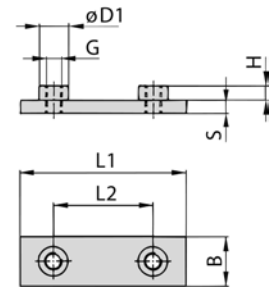
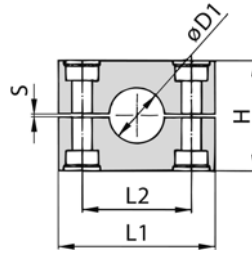
# CLAMPS

## Heavy-Series – Components

### Material Code

Materials and designs of clamps bodies			XXX
Polypropylene,	profiled inside,	with tension clearance	- PP
Polypropylene,	smooth inside,	without tension clearance	- PPH (up to Gr. 6S)
Polyamide,	profiled inside,	with tension clearance	- PA
Polyamide,	smooth inside,	without tension clearance	- PAH (up to Gr. 6S)
Santoprene,	profiled inside,	with tension clearance	- SA (up to Gr. 6S)
Santoprene,	smooth inside,	without tension clearance	- SAH (up to Gr. 6S)
Aluminum,	profiled inside,	with tension clearance	- AL

Other thermoplastics and O.D. on request.



Surface finishing (see also technical appendix)

-

Group 3 S - 7 S:  
DIN 50942 Fe/Znph r 10

GSH Group	DIN Group	Pipe-O.D. øD1 [mm]	Clamp Body (2 halves)							Weld Plate for Single Clamps SPAL								
			L1		L2	Inside surface			Width	L1	L2	B	S	H	G	D1		
			PP/PA	AL		profiled	smooth	H										
3 S	1	6																
		6,4																
		8																
		9,5																
		10																
		12																
		12,7			55	56	33	32	0,6 min.	30,5	30,5	74	33	30	8	8	M10	18
		13,5																
		14																
		15																
		16																
		4 S	2	17,2														
18																		
19																		
20																		
21,3																		
22					70	70	45	48	0,6 min.	46,5	30,5	86	45	30	8	8	M10	18
25																		
26,9																		
28																		
30																		
30																		
5 S	3			32														
		33,7																
		35			85	85	60	60	0,6 min.	58	30,5	100	60	30	8	8	M10	18
		38																
		40																
		42																
		42																
		44,5																
		48,3																
		50,8			115	120	90	89	2 min.	87	45	140	90	45	10	8	M12	20
		57																
		60,3																
6 S	4	63,5																
		65																
		70																
		65																
		70																
		75																
		76,1			152	150	122	120	2 min.		60	180	122	60	10	12	M16	24
		80																
		82,5																
		88,9																
		88,9																
		100																
8 S	6	102																
		108																
		114			206	208	168	167	2 min.		80	226	168	80	15	18	M20	30
		127																
		133																
		133																
		140																
		152			251	255	205	200	3 min.		91	270	205	90	15	21	M24	35
		159																
		165																
		168																
		168																
10 S	8	177,8																
		193,7			336	326	265	270	3 min.		120	340	265	120	25	21	M30	50
		216																
		219																
		219																
11 S	9	273			470	470	395	410	8 min.		162	520	395	160	30	38	M30	50
		324																
		356																
12 S	10	406			630	630	534	530	20 min.		182	680	534	180	30	38	M30	50

GS-FLANGE SYSTEM  
TUBES & PIPES  
CLAMPS  
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VALVES  
BITE TYPE FITTINGS  
SAE J514 JIC FLARE FITTINGS  
HOSES & HOSE COUPLINGS  
ADAPTORS  
SPECIAL SOLUTIONS  
MACHINES  
TECHNICAL INFORMATION

# CLAMPS

## Heavy-Series – Components

Group 3 S - 7 S: DIN 50942 Fe/Znph r 10											Group 3 S - 7 S: DIN 50942 Fe/Znph r 10											Group 3 S - 7 S: DIN 50942 Fe/Znph r 10											-										
Weld Plate for Double Clamps SPAS											Elongated Weld Plate for Single Clamps SPAL/DUB											Elongated Weld Plate for Double Clamps SPAS/DUB											Elongated Weld Plate for Double Clamps SPAS/DUB										
L1	L2	B1	B2	S	H	G	øD1	L1	L2	L3	B	S	H	G	øD1	øD2	L1	L2	L3	B1	B2	S	H	G	øD1	øD2	L1	L2	L3	B1	B2	S	H	G	øD1	øD2							
74	33	60	30,5	8	8	M10	18	113	33	85	30	8	8	M10	18	13	113	33	85	60	30,5	8	8	M10	18	13																	
86	45	60	30,5	8	8	M10	18	125	45	97	30	8	8	M10	18	13	125	45	97	60	30,5	8	8	M10	18	13																	
100	60	60	30,5	8	8	M10	18	140	60	112	30	8	8	M10	18	13	140	60	112	60	30,5	8	8	M10	18	13																	
140	90	90	46	10	8	M12	20	187	90	155	45	10	8	M12	20	16	187	90	155	90	46	10	8	M12	20	16																	
180	122	120	61	10	12	M16	24	238	122	198	60	12	12	M16	24	21	238	122	198	120	61	10	12	M16	24	21																	
226	168	160	81	15	18	M20	30	309	168	259	80	15	18	M20	30	26	309	168	259	160	81	15	18	M20	30	26																	
270	205	180	91	15	21	M24	35	370	205	310	90	15	21	M24	35	31	370	205	310	180	91	15	21	M24	35	31																	
340	265	240	121	25	21	M30	45	440	265	380	120	25	21	M30	45	31											440	265	380	240	121	25	21	M30	45	31							
520	395	324	166	30	38	M30	50	590	395	530	160	30	38	M30	50	31											590	395	530	324	166	30	38	M30	50	31							
680	534	364	186	30	38	M30	50	750	534	690	180	30	38	M30	50	31											750	534	690	394	186	30	38	M30	50	31							

# CLAMPS

## Heavy-Series – Components

GS-FLANGE SYSTEM

TUBES & PIPES

CLAMPS

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VALVES

BITE TYPE FITTINGS

SAE J514 JIC FLARE FITTINGS

HOSES & HOSE COUPLINGS

ADAPTORS

SPECIAL SOLUTIONS

MACHINES

TECHNICAL INFORMATION

up to Group 6S only				up to Group 6S only				Group 3 S - 7S: DIN 50942 Fe /Znph r 10				Group 3 S - 7S: DIN 50942 Fe /Znph r 10				Group 3S -6S		Group 3S-10S				Group 3S-10S				DIN 50961 Fe/Zn 8 C								
Mounting Rail STSV				Mounting Rail Nut GMV				Cover Plate for Single Clamps DPAL				Cover Plate for Double Clamps DPAS				Hexagon Head Bolt AS DIN 912		Socket Cap Screw IS DIN 912		Stacking Bolt AF				Safety Locking Plate SIP				Safety Washer SI DIN 93						
B1	B2	H	S	L	B	H1	H2	H3	G	øD	L1	L2	B	s	øD	L1	L2	B1	B2	S	øD	G x L	G x L	G	L1	L2	L3	SW	L1	L2	B1	B2	S	øD
40	14	22	5	26	23	19	6	6	M10	18	55	33	30	8	11	56	33	60	30	8	11	M10 X 45	M10 X 30	M10	49	25	15 min.	15	56	13	30	15	8	10,5
											70	45	30	8	11	70	45	60	30	8	11	M10 x 60	M10 X 40	M10	65	40	15 min.	15	70	26	30	15	8	10,5
											85	60	30	8	11	84	60	60	30	8	11	M10 X 70	M10 X 50	M10	77	51	15 min.	15	85	40	30	15	8	10,5
				26	23	22	7,5	6	M12	20	115	90	45	10	14	116	90	90	46	10	14	M12 X 100	M12 X 80	M12	110	82	18 min.	17	116	69	45	17	10	13
											152	122	60	10	19	153	122	120	61	10	19	M16 X 130		M16	144	110	24 min.	21	153	97	60	22	10	17
											206	168	80	15	22	206	168	160	81	15	22	M20 X 190		M20	200	150	30 min.	27	206	130	80	28	15	21
											251	205	90	15	26	251	205	180	91	15	26	M24 X 220		M24	240	180	50 min.	30	251	166	90	31	15	25
											320	265	120	25	35	320	265	240	120	25	35	M30 X 300		M30	331	256	62 min.	46	317	205	120	49	25	31
											470	395	160	30	35	470	395	321	166	30	35													31
											630	534	180	30	35	630	534	361	186	30	35	M30 X 560												31

### Material Code

Materials and designs of clamp bodies **XXX**

Polypropylene, profiled inside, with tension clearance **- PP**

Polypropylene, smooth inside, without tension clearance **- PPH**  
(up to Gr. 6S)

Polyamide, profiled inside, with tension clearance **- PA**

Polyamide, smooth inside, without tension clearance **- PAH**  
(up to Gr. 6S)

Santoprene, profiled inside, with tension clearance **- SA**

Santoprene, smooth inside, without tension clearance **- SAH**  
(up to Gr. 6S)

Aluminum, profiled inside, with tension clearance **- AL**  
(AL group 1 A – 6 only)

Other thermoplastics and O.D. on request.

GSH Group	Pipe-O.D. [mm]	Order Code
3 S	6	3006 xxx
	6,4	3006,4 xxx
	8	3008 xxx
	9,5	3009,5 xxx
	10	3010 xxx
	12	3012 xxx
	12,7	3012,7 xxx
	13,5	3013,5 xxx
	14	3014 xxx
	15	3015 xxx
	16	3016 xxx
4 S	17,2	3017,2 xxx
	18	3018 xxx
	19	4019 xxx
	20	4020 xxx
	21,3	4021,3 xxx
	22	4022 xxx
	25	4025 xxx
	26,9	4026,9 xxx
	28	4028 xxx
	30	4030 xxx
	5 S	30
32		5032 xxx
33,7		5033,7 xxx
35		5035 xxx
38		5038 xxx
40		5040 xxx
42		5042 xxx
6 S	38	6038 xxx
	42	6042 xxx
	44,5	6044,5 xxx
	48,3	6048,3 xxx
	50,8	6050,8 xxx
	55	6055 xxx
	57	6057 xxx
	60,3	6060,3 xxx
	63,5	6063,5 xxx
	65	6065 xxx
7 S	70	6070 xxx
	65	7065 xxx
	70	7070 xxx
	75	7075 xxx
	76,1	7076,1 xxx
	80	7080 xxx
8 S	82,5	7082,5 xxx
	88,9	7088,9 xxx
	88,9	8088,9 xxx
	100	8100 xxx
	102	8102 xxx
	108	8108 xxx
	114	8114 xxx
9 S	127	8127 xxx
	133	8133 xxx
	133	9133 xxx
	140	9140 xxx
	152	9152 xxx
10 S	159	9159 xxx
	165	9165 xxx
	168	9168 xxx
	168	10168 xxx
	177,8	10177,8 xxx
11 S	193,7	10193,7 xxx
	216	10216 xxx
	219	10219 xxx
12 S	219	11219 xxx
	273	11273 xxx
	324	11324 xxx
	356	12356 xxx
	406	12406 xxx

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Design of clamp bodies see technical appendix, page 209.

# CLAMPS

## Heavy-Series – Complete Clamps

GS-FLANGE  
SYSTEM

TUBES & PIPES

CLAMPS

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VALVES

BITE TYPE  
FITTINGS

SAE J514 JIC  
FLARE FITTINGS

HOSES &  
HOSE COUPLINGS

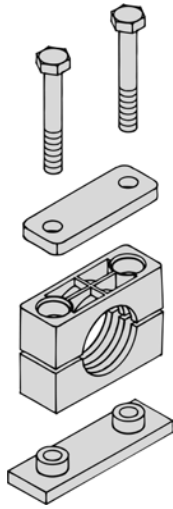
ADAPTORS

SPECIAL  
SOLUTIONS

MACHINES

TECHNICAL  
INFORMATION

### Order Code



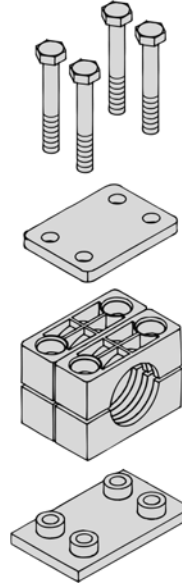
SPAL \*\* \*\*\*,\* xxx DPAL-AS

Material and design of clamp body  
Pipe-O.D.  
GSH Group

#### Clamp consisting of:

- 1 x Weld Plate for Single Clamp
- 1 x Clamp Body (2 halves)
- 1 x Cover Plate for Single Clamp
- 2 x Hexagon Head Bolt  
DIN 931/933

### Order Code



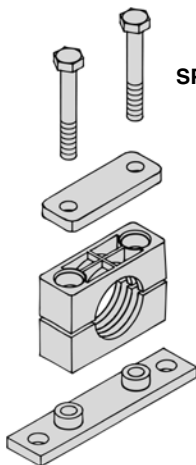
SPAS \*\* \*\*\*,\* xxx DPAS-AS

Material and design of clamp body  
Pipe-O.D.  
GSH Group

#### Clamp consisting of:

- 1 x Weld Plate for Double Clamp
- 1 x Clamp Body (2 halves)
- 2 x Cover Plate for Double Clamp
- 4 x Hexagon Head Bolt  
DIN 931/933

### Order Code



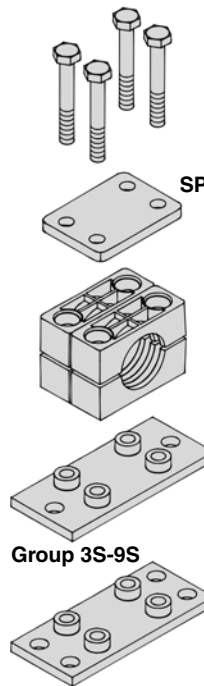
SPAL/DUB \*\* \*\*\*,\* xxx DPAL-AS

Material and design of clamp body  
Pipe-O.D.  
GSH Group

#### Clamp consisting of:

- 1 x Elongated Weld Plate for Single Clamp
- 1 x Clamp Body (2 halves)
- 1 x Cover Plate for Single Clamp
- 2 x Hexagon Head Bolt  
DIN 931/933

### Order Code



SPAS/DUB \*\* \*\*\*,\* xxx DPAS-AS

Material and design of clamp body  
Pipe-O.D.  
GSH Group

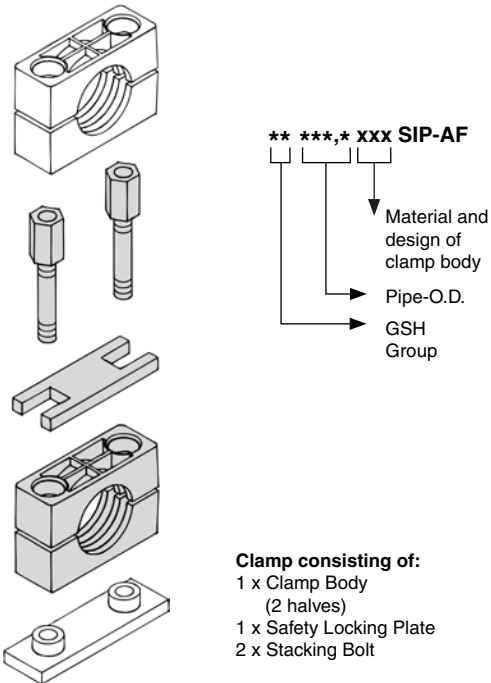
#### Group 3S-9S

#### Group 10S-12S

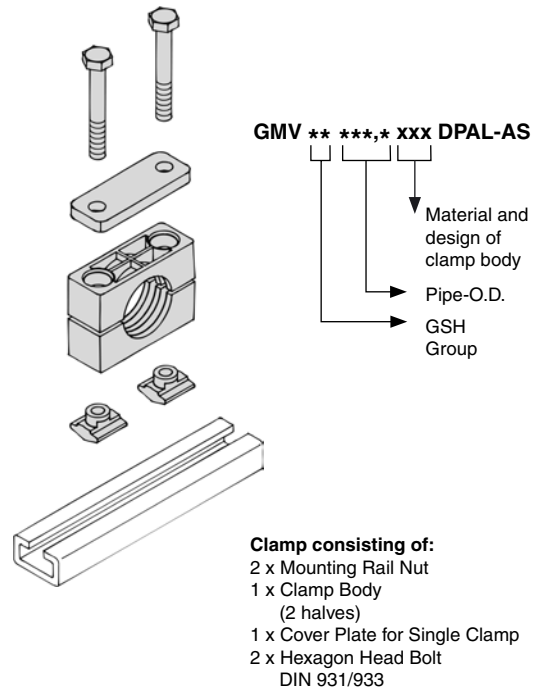
#### Clamp consisting of:

- 1 x Elongated Weld Plate for Double Clamp
- 2 x Clamp Body (2 halves)
- 1 x Cover Plate for Double Clamp
- 4 x Hexagon Head Bolt  
DIN 931/933

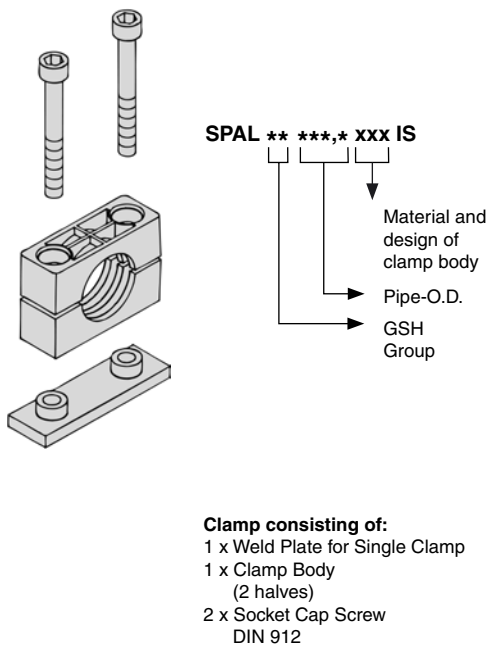
### Order Code



### Order Code



### Order Code



### Information

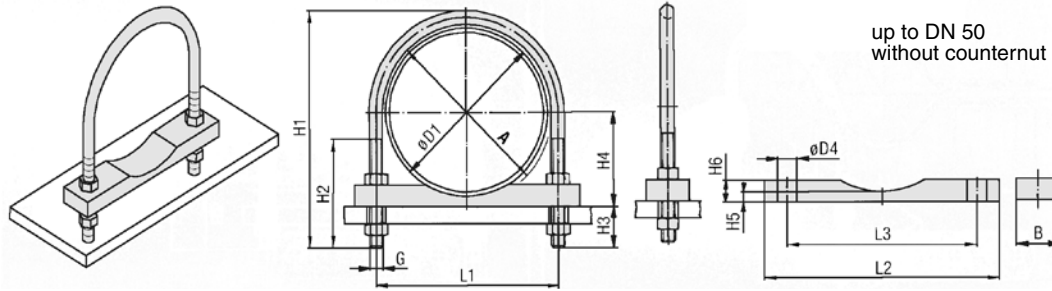
In order to protect hexagon head bolts against unscrew caused by vibrations safety washers acc. to DIN 93 are recommended.

Items are supplied non-assembled.



# CLAMPS

## U-Bolt – Type RB/RUL



230

DN	Pipe-O.D. $\phi D1$		Round Steel U-Bolt RB							Plastic Pipe Saddle RUL					
	mm	Nominal Bore	A	L1	H1	H2	H3	H4	G	L2	L3	B	H5	H6	$\phi D4$
20	25	3/4	30	40	73,5	46		17,5							
	26,9							18,5							
25	30	1	38	48	81			20							
	33,7							22							
32	38	1 1/4	46	56	89			24							
	42,4							26,2							
40	44,5	1 1/2	52	62	100	55	35	27,2							
	48,3							29							
50	57	2	64	76	118	63		33,5							
	60,3							35,2							
65	76,1	2 1/2	82	94	135	77	39	43	M12	110	76	35		15	14
80	88,9	3	94	106	152	82		54,5							
	108	64													
100	114,3	4	120	136	190			67							
	133	76,5													
125	139,7	5	148	164	217	105	47	80							
	159	91,5													
150	168,3	6	176	192	247			96							
	193,7	109													
175	219,1	8	228	248	311			120							
	267	121,5													
200	273	10	282	302	364	125	55	145,5							
	318	148,5													
300	323,9	12	332	352	418			174							
	355,6	177													
350	368	14	378	402	475			193							
	406,4	199													
400	419	16	428	452	526	145	63	218							
	457	224,5													
500	508	20	530	554	627			236,5							
	521	269													
								276	M24	540	452	60	15	30	26

### Order Code

#### RB + RUL complete

RB xxxx RUL/ xx \*\*\*,\*

Pipe-O.D.  $\phi D1$  (mm)  
 PP - Polypropylene  
 PA - Polyamide

#### Material:

St 37 no surface finishing - no further information required  
 St 37 Fe/Zn 8 C - zinc plated  
 St 37 plastic coated - plastic coated  
 Stainless steel 1.4571 - 1.4571

#### Clamp consisting of:

1 x Round Steel U-Bolt, 4 x Nuts DIN 934,  
 1 x Plastic Pipe Saddle RUL/xx

#### Round Steel U-Bolt

RB xxxx A \*\*\*,\* complete

Dimension A

#### Material:

St 37 no surface finishing - no further information required  
 St 37 Fe/Zn 8 C - zinc plated  
 St 37 plastic coated - plastic coated  
 Stainless steel 1.4571 - 1.4571

#### Clamp consisting of:

1 x Round Steel U-Bolt  
 4 x Nuts DIN 934

#### Plastic Pipe Saddle

RUL \*\*\*,\* xx

PP - Polypropylene  
 PA - Polyamide  
 Pipe-O.D.  $\phi D1$   
 (mm)

#### Information:

Items are supplied non-assembled.  
 Other materials and surface finishings  
 on request.