STAUFF 416-PP profiled pipe clamp body, 16 mm

Manufacturer: STAUFF

Manufacturer part number / published order designation: 1130011067

Published model: 416-PP

About this compilation

Prepared by Hydmaster from selected manufacturer documentation. Original technical pages follow without cropped drawings, rewritten data or altered units. This cover and index are Hydmaster editorial material, not a manufacturer-issued exact-execution datasheet.

Coverage: selected pages relevant to the identified size and configuration. Other options or neighbouring models retained on an original page apply only where explicitly identified.

Execution notes and conditions

Exact factory card fixes custom bore diameter and material/group; catalogue may list only standard bores. Do not substitute a nearby standard bore or transfer its code.

Body article does not include a full mounting kit unless exact primary BOM says so.

Source-page index

Source page numbers below are physical pages of each complete original PDF. The original printed page labels and technical content remain unchanged. Compiled page numbers count this cover/index.

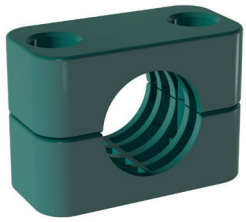
Source A: Stauff Din 3015 Pipe Clamps

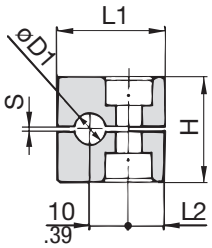
Original pages	Compiled pages	Relevant content
14	2	Correct profiled clamp body construction and matching group envelope dimension table.
178	3	Confirmed PP clamp-body material properties and their test/temperature context.
182	4	Correct profiled/H/RI purpose and tension-clearance distinction.
184-185	5-6	Basic mounting options and line-support spacing; hardware illustration does not establish included hardware.; Conditional tightening torque/axial-load tables explicitly restricted to profiled bodies with tension clearance, cover plates and specified bolts.

A

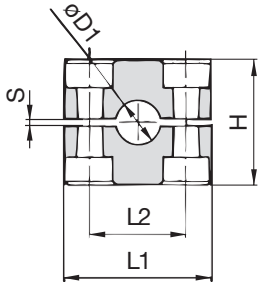
Clamp Body ▪ Profiled Design

Profiled Inside Surface with Tension Clearance





STAUFF Group 1



STAUFF Group 1A to 8

Ordering Codes

Clamp Body *1*06-*PP
Clamp Body, STAUFF Group 1A *1*06A-*PP

One clamp body is consisting of two clamp halves.

* STAUFF Group	1
* Exact outside diameter Ø D1 (mm)	06
* Material code (see below)	PP

Standard Materials



Polypropylene
Colour: Green
Material code: **PP**



Polypropylene
Colour: Black
Material code: **PP-BK**



Polyamide
Colour: Black
Material code: **PA**



Thermoplastic Elastomer (87 Shore-A)
Colour: Black
Material code: **SA87**



Aluminium
Colour: Self-Colour
Material code: **AL** (STAUFF Group 1A to 6)

See pages 178 / 179 for material properties and technical information.

Special Materials

Please contact STAUFF for further details on fire-proof clamp body materials, tested and approved according to several international fire-protection standards (such as BS 6853, EN 45545-2, UL 94 and many more).

See pages 180 / 181 for material properties and technical information.

Product Features

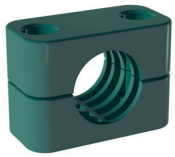
- Proven, tested and trusted product in various markets
- Recommended for the safe installation of rigid pipes and tubes
- Available for all commonly used pipe and tube outside diameters
- Environmental protection due to vibration/noise reducing design
- Excellent weathering resistance, even under extreme conditions

Group STAUFF	Group DIN	Outside Diameter Pipe / Tube Ø D1 (mm)	Outside Diameter Pipe / Tube Ø D1 (in)	Nominal Bore Pipe (in)	Nominal Bore Copper Tube ASTM B88 (in)	Ordering Codes (2 Clamp Halves) (** = Material)	Dimensions (mm / in) L1	L2	H	S min.	Width
1	0	6				106-**					
		6,4	1/4			106.4-**					
		8	5/16			108-**	28	9,5	27	0,4	30
		9,5	3/8		1/4	109.5-**	1.10	.37	1.06	.02	1.18
		10		1/8		110-**					
		12				112-**					
1A	1	6				106A-**					
		6,4	1/4			106.4A-**					
		8	5/16			108A-**	37	20	27	0,4	30
		9,5	3/8		1/4	109.5A-**	1.46	.79	1.06	.02	1.18
		10		1/8		110A-**					
		12				112A-**					
2	2	12,7	1/2		3/8	212.7-**					
		13,5		1/4		213.5-**					
		14				214-**	42	26	33	0,6	30
		15				215-**	1.65	1.02	1.30	.02	1.18
		16	5/8		1/2	216-**					
		17,2		3/8		217.2-**					
		18				218-**					
3	3	19	3/4			319-**					
		20				320-**					
		21,3		1/2		321.3-**	50	33	36	0,6	30
		22	7/8		3/4	322-**	1.97	1.30	1.42	.02	1.18
		25				325-**					
		25,4	1			325.4-**					
4	4	26,9		3/4		426.9-**					
		28				428-**	59	40	42	0,6	30
		28,6			1	428.6-**	2.32	1.57	1.65	.02	1.18
		30				430-**					
		32				432-**					
5	5	32	1-1/4			532-**					
		33,7		1		533.7-**					
		35			1-1/4	535-**	71	52	58	0,8	30
		38	1-1/2			538-**	2.80	2.05	2.28	.03	1.18
		40				540-**					
		41,3			1-1/2	541.3-**					
		42		1-1/4		542-**					
6	6	44,5	1-3/4			644.5-**					
		48,3		1-1/2		648.3-**	86	66	66	0,8	30
		50,8	2			650.8-**	3.39	2.60	2.60	.03	1.18
		54			2	654-**					
7	7	57,2	2-1/4			757.2-**					
		60,3		2		760.3-**					
		63,5	2-1/2			763.5-**	121	94	93	0,8	30
		70	2-3/4			770-**	4.76	3.70	3.66	.03	1.18
		73		2-1/2 (ANSI B 36-10)		773-**					
		76,1	3	2-1/2 (DIN EN 10220)		776.1-**					
8	8	88,9		3		888.9-**	147	120	118	0,8	30
		102	4	3-1/2		8102L-**	5.79	4.72	4.65	.03	1.18

Additional outside diameters are available upon request. Please contact STAUFF for further information.

Dimensional drawings: All dimensions in mm (in).

Standard Clamp Body Materials






Material Code	PP	PA	AL	SA
Basic Material	Copolymeric Polypropylene	Polyamide	Aluminium AlSi12	Thermoplastic Elastomer
Standard Colour	Green	Black	Natural	Black
Mechanical Properties				
Tensile E-Module	1073 N/mm² (ISO 527)	> 1400 N/mm² (ISO 527)	> 65000 N/mm²	113 N/mm² at +23 °C / +73.4 °F (ASTM D412)
Notch Impact Strength	8 kJ/m² at +23 °C / +73.4 °F (acc. to Charpy / ISO 179 / 1eU)	> 15 kJ/m² at 23 °C / +73.4 °F (acc. to Charpy / ISO 179 / 1eU)		
Low Temperature Notch Impact Strength	3 kJ/m² at -20 °C / -4.0 °F (acc. to Charpy / ISO 179 / 1eU)	> 3 kJ/m² at -30 °C / -22.0 °F (acc. to Charpy / ISO 179 / 1eU)		
Tensile Strength at Yield (Tensile Strength)	26 MPa (ISO 527-2)	> 55 MPa (ISO 527)	> 240 MPa (ISO EN 10002)	15,9 MPa (ASTM D412)
Ball Indentation Hardness (Brinell Hardness)	45,4 MPa (ISO 2039-1)	> 65 MPa (ISO 2039-1)	> 70 HBS	
Shore Hardness				87 A (ISO 868) — Alternative hardnesses are available upon request! Contact STAUFF for details.
Thermal Properties				
Temperature Resistance (Min ... Max)	-30 °C ... +90 °C / -22 °F ... +194 °F	-40 °C ... +120 °C / -40 °F ... +248 °F (Brief exposure up to +140 °C / +284 °F)	up to +300 °C / up to +572 °F	-40 °C ... +125 °C / -40 °F ... +257 °F
Chemical Properties				
Weak Acids	conditionally consistent	conditionally consistent	conditionally consistent	consistent
Solvents	conditionally consistent	conditionally consistent	conditionally consistent	conditionally consistent
Benzine	conditionally consistent	consistent	consistent	conditionally consistent
Mineral Oils	conditionally consistent	consistent	consistent	conditionally consistent
Other Oils	consistent	consistent	consistent	consistent
Alcohols	consistent	consistent	consistent	consistent
Seawater	consistent	consistent	consistent	consistent



Special Clamp Body Materials

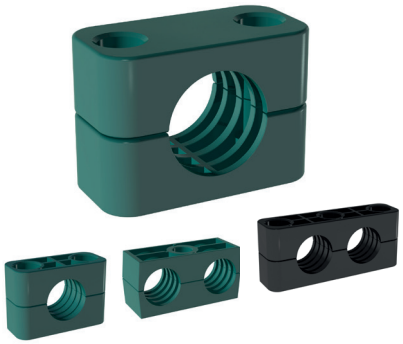
Please contact STAUFF for further details on fire-proof clamp body materials, tested and approved according to several international fire-protection standards (such as BS 6853, EN 45545-2, UL 94 and many more).

See pages 180 / 181 for material properties and technical information.

The information for the Polyamide material PA have been determined in a conditioned state according to ISO 1110.
For Aluminium, the tensile strength (under reversed bending stress) and impact bending strength both rise constantly at decreasing temperatures whilst the value for breaking elongation decreases.

STAUFF preserves the right to supply products made from alternative, but comparable materials with matching technical characteristics.

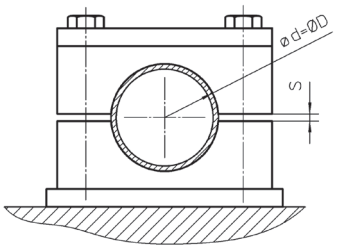
Standard Clamp Body Designs

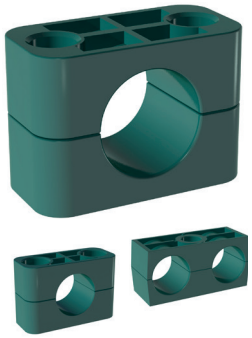


Profiled Design

Profiled Inside Surface with Tension Clearance

- Available in the Standard, Heavy, Twin and Heavy Twin Series
- Recommended for the safe installation of rigid pipes or tubes
- Available for all commonly used outside diameters and nominal sizes
- Vibration/noise reducing and impact absorbing effect towards the direction of the line provided by the grooves on the inside of the clamp bodies
- Clearance S between the clamp halves provides tension of the tube or pipe
- To be used as fixed point clamp preventing the line from sliding (see page 161 for Maximum Loads in Pipe Direction)

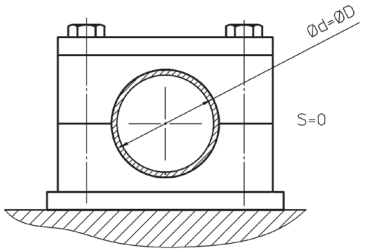




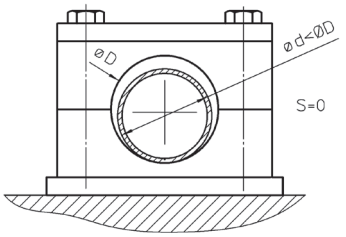
Type H (Smooth)

Smooth Inside Surface w/o Tension Clearance

- Available in the Standard, Heavy and Twin Series
- Recommended for the safe installation of hoses or cables
- Available for all commonly used outside diameters and nominal sizes
- Smooth inside surface and chamfered edges avoid damaging of the hose or cable



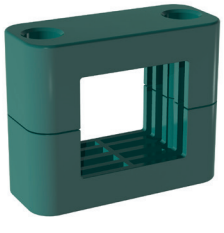
- Choose the diameter ØD of the clamp body slightly larger (in accordance to your specific requirements) than the outside diameter Ød of the pipe, tube, hose or cable in order to use it as a longitudinal guide allowing the line to slide





Type RI (with Elastomer Insert)

- Available in the Standard, Heavy and Heavy Twin Series
- Recommended for the extra-gentle installation of pipes, tubes, hoses or cables
- Available for all commonly used outside diameters and nominal sizes
- Elastomer insert made of Thermoplastic Elastomer with a hardness of 73 Shore-A provides most effective reduction of vibration and noise caused by vibration



Rectangular Design ▪ Type VK

- Available in the Standard Series (STAUFF Group 5)
- Recommended for the safe installation of proximity switches according to DIN EN 60947-5-2 or similar, rectangular construction, with a square of 40 mm x 40 mm (1.57 in x 1.57 in) or 40 mm x 36 mm (1.57 in x 1.42 in)

Basic Installation Instructions







Installation on Weld Plate

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

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

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

Installation on Mounting Rail

STAUFF Mounting Rails are available in different heights. STAUFF Rail Nuts are available for all STAUFF Clamps according to DIN 3015 (Heavy Series up to STAUFF Group 6S only) as well as for many custom-designed special clamps.

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

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

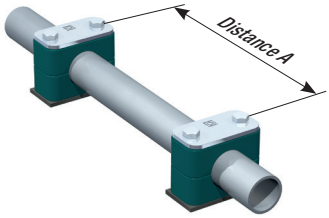
Multi-Level (Stacking) Installation

Stacking bolts permit the multi-level assembly of clamps of identical group sizes. Safety locking plates inserted between the levels prevent the stacking bolts from turning. The Twin Series also allows stacking of different group sizes (STAUFF Groups 2D to 5D).

- Push bottom clamp half onto weld plate or rail nuts.
- Insert pipe, tube, hose, cable or any other type of line.
- Place second clamp half.
- Insert stacking bolts into the clamp assembly and tighten using the following tightening torques (or in a way that the clamp halves are in contact with the line over the entire internal contact surface):
  Standard Series 1 ... 2 N·m / .75 ... 1.5 ft·lb (hand-tightened)
  Heavy Series 5 N·m / 3.75 ft·lb
  Twin Series 1 ... 2 N·m / .75 ... 1.5 ft·lb (hand-tightened)
- Place safety locking plate on top of clamp assembly.
- Proceed with next levels. Top level to be assembled with cover plate and hexagon head bolts using the tightening torques as indivated on page 185.

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

Recommended Distance between Clamps

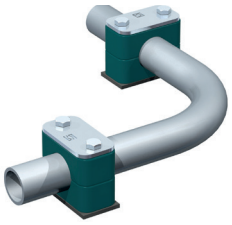


Please note: The recommended distances between clamps stated below are standard values and valid for static loads only.

Outside Diameter (mm)	(in)	Distance A (m)	(ft)
6,0 ... 12,7	.23 ... .50	1,00	3,28
12,7 ... 22,0	.50 ... .86	1,20	3,94
22,0 ... 32,0	.86 ... 1.25	1,50	4,92
32,0 ... 38,0	1.25 ... 1.50	2,00	6,56
38,0 ... 57,0	1.5 ... 2.25	2,70	8,86
57,0 ... 75,0	2.25 ... 2.95	3,00	9,84
75,0 ... 76,1	2.95 ... 3.00	3,50	11,48
76,1 ... 88,9	3.00 ... 3.50	3,70	12,14
88,9 ... 102,0	3.50 ... 4.00	4,00	13,12
102,0 ... 114,0	4.00 ... 4.50	4,50	14,76

Outside Diameter (mm)	(in)	Distance A (m)	(ft)
114,0 ... 168,0	4.50 ... 6.60	5,00	16,40
168,0 ... 219,0	6.60 ... 8.60	6,00	19,68
219,0 ... 324,0	8.60 ... 12.70	6,70	21,98
324,0 ... 356,0	12.70 ... 14.00	7,00	22,96
356,0 ... 406,0	14.00 ... 16.00	7,50	24,60
406,0 ... 419,0	16.00 ... 16.50	8,20	26,90
419,0 ... 508,0	16.50 ... 20.00	8,50	27,88
508,0 ... 521,0	20.00 ... 20.50	9,00	29,52
521,0 ... 558,0	20.50 ... 22.00	10,00	32,80
558,0 ... 800,0	22.00 ... 31.50	12,50	41,00

Installation next to Pipe Bends, Connectors / Couplings and Valves



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

Pipe Bends

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

Connections / Couplings

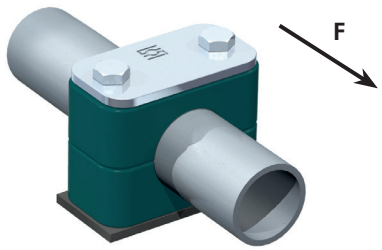
The first clamp should be placed directly next to the connector / coupling. This protects the connector / coupling from vibrations.

Valves

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

Contact STAUFF for further information.

Tightening Torques and Maximum Loads In Pipe Direction



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

The max. load in pipe direction (according to DIN 3015-10:1999) is an average value, determined by three tests at +23 °C / +73.4 °F with a steel pipe according to DIN EN 10220, St37 – rolled surface – taking static friction into consideration.

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

Standard Series (DIN 3015-1:1999)

Group		Hexagon Head Bolt DIN EN ISO 4014/4017 (DIN 931/933)		Polypropylene (PP)				Polyamide (PA)				Aluminium (AL)			
		Metric	Unified Coarse	Tightening Torque		Maximum Load in Pipe Direction F		Tightening Torque		Maximum Load in Pipe Direction F		Tightening Torque		Maximum Load in Pipe Direction F	
STAUFF	DIN	ISO Thread	(UNC) Thread	(N·m)	(ft·lb)	(kN)	(lbf)	(N·m)	(ft·lb)	(kN)	(lbf)	(N·m)	(ft·lb)	(kN)	(lbf)
1	0	M6	1/4–20 UNC	8	6	0,6	135	10	7	0,6	135	12	9	3,5	787
1A	1	M6	1/4–20 UNC	8	6	1,1	247	10	7	0,7	157	12	9	4,2	944
2	2	M6	1/4–20 UNC	8	6	1,3	292	10	7	0,8	180	12	9	4,3	967
3	3	M6	1/4–20 UNC	8	6	1,4	315	10	7	1,6	360	12	9	4,9	1101
4	4	M6	1/4–20 UNC	8	6	1,5	337	10	7	1,7	382	12	9	5,0	1124
5	5	M6	1/4–20 UNC	8	6	1,9	427	10	7	2,0	450	12	9	7,3	1641
6	6	M6	1/4–20 UNC	8	6	2,0	450	10	7	2,5	562	12	9	8,9	2000
7	7	M6	1/4–20 UNC	8	6	2,3	517	10	7	3,2	719				
8	8	M6	1/4–20 UNC	8	6	2,6	585	10	7	3,5	787				

Heavy Series (DIN 3015-2:1999)

Group		Hexagon Head Bolt DIN EN ISO 4014/4017 (DIN 931/933)		Polypropylene (PP)				Polyamide (PA)				Aluminium (AL)			
		Metric	Unified Coarse	Tightening Torque		Maximum Load in Pipe Direction F		Tightening Torque		Maximum Load in Pipe Direction F		Tightening Torque		Maximum Load in Pipe Direction F	
STAUFF	DIN	ISO Thread	(UNC) Thread	(N·m)	(ft·lb)	(kN)	(lbf)	(N·m)	(ft·lb)	(kN)	(lbf)	(N·m)	(ft·lb)	(kN)	(lbf)
3S	1	M10	3/8–16 UNC	12	9	1,6	360	20	15	4,2	944	30	22	12,1	2720
4S	2	M10	3/8–16 UNC	12	9	2,9	652	20	15	4,5	1044	30	22	15,1	3395
5S	3	M10	3/8–16 UNC	15	11	3,3	742	25	18	5,1	1146	35	26	15,5	3485
6S	4	M12	7/16–14 UNC	30	22	8,2	1843	40	30	9,3	2090	55	41	29,5	6609
7S	5	M16	5/8–11 UNC	45	33	11,0	2472	55	41	15,8	3551	120	86	34,9	7845
8S	6	M20	3/4–10 UNC	80	59	14,0	3147	150	111	21,0	4720	220	162	50,0	11240
9S	7	M24	7/8–9 UNC	110	81	28,0	6300	200	148	32,0	7193	250	184	70,6	15871
10S	8	M30	1-1/8–7 UNC	180	133	40,0	8992	350	258	48,0	10790	500	369	84,5	18996
11S	9	M30	1-1/4–7 UNC	200	148	119,0	26752	370	273	125,0	27650	500	369	181,5	40802
12S	10	M30	1-1/4–7 UNC	270	199	168,0	37767	450	332	180,0	40465	600	443	244,5	54965

Twin Series (DIN 3015-2:1999)

Group		Hexagon Head Bolt DIN EN ISO 4014/4017 (DIN 931/933)		Polypropylene (PP)				Polyamide (PA)			
		Metric	Unified Coarse	Tightening Torque		Maximum Load in Pipe Direction F		Tightening Torque		Maximum Load in Pipe Direction F	
STAUFF	DIN	ISO Thread	(UNC) Thread	(N·m)	(ft·lb)	(kN)	(lbf)	(N·m)	(ft·lb)	(kN)	(lbf)
1D	1	M6	1/4–20 UNC	5	4	0,9	202	5	4	0,9	202
2D	2	M8	5/16–18 UNC	12	9	2,1	472	12	9	2,2	495
3D	3	M8	5/16–18 UNC	12	9	1,9	427	12	9	2,0	450
4D	4	M8	5/16–18 UNC	12	9	2,7	607	12	9	2,9	652
5D	5	M8	5/16–18 UNC	8	6	1,7	382	8	6	2,5	562

Only for the standard clamp body materials which are listed on page 154. In case of doubt, please contact STAUFF in advance.