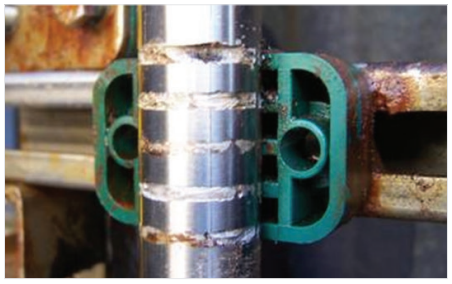

STAUFF

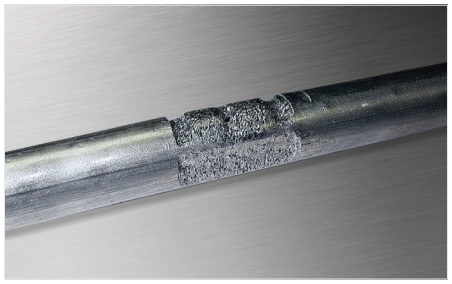
	Introduction	72
	Standard Series	74-81
	ACT Clamp Body	74
	Installation on Weld Plates	75
	Multi-Level Installation (with Weld Plate)	76
	Installation with Channel Rail Adaptors	77
	Installation in Field Trays / Cable Ladders	78
	Multi-Level Installation (with Stacking & Hammerhead Bolts)	79
	Multi-Level Installation in Field Trays / Cable Ladders (with Hammerhead Bolts)	80
	Clamp Assemblies	81
	Twin Series	82-89
	ACT Clamp Body	82
	Installation on Weld Plates	83
	Multi-Level Installation (with Weld Plate)	84
	Installation with Channel Rail Adaptors	85
	Installation in Field Trays / Cable Ladders	86
	Multi-Level Installation (with Stacking & Hammerhead Bolts)	87
	Multi-Level Installation in Field Trays / Cable Ladders (with Hammerhead Bolts)	88
	Clamp Assemblies	89

E

STAUFF ACT
Anti-Corrosion Technology



Crevice corrosion formed under a regular plastic clamp



Crevice corrosion formed under a regular plastic clamp



Stainless Steel Pipework

Stainless steel pipework on oil and gas platform and processing plants (that are located offshore and up to 50 km inland) is used over a wide range of temperature, flow and pressure conditions, e.g. for process instrumentation and sensing, as well as for chemical inhibition, hydraulic or utility lines.

The typical tubing material selected for these particular applications is AISI 316 stainless steel, although in more recent times other tube materials have been utilized to try and counteract the offshore corrosion issue.

In all major offshore oil and gas regions – including the Gulf of Mexico, the North Sea, the Gulf of Guinea and the China Sea – corrosion of AISI 316 stainless steel pipework can be observed, and has been a researched and well documented problem as well as a costly and time consuming issue with regard to maintenance processes for many years.

Pitting Corrosion

One of the most prevalent forms of localised corrosion is pitting corrosion: Under certain specific conditions – particularly involving chlorides (such as sodium chloride in seawater) and exacerbated by elevated temperatures – small pits can form in a stainless steel surface.

Dependent upon both the environment and the stainless steel itself, these pits may continue to grow and eventually lead to perforation of tubing walls and leaks, while the majority of the surface may still be totally unaffected.

Pitting corrosion is often quite easy to recognise: small individual pits and – in later stages – sometimes deeper and connected pits can be observed by visual inspection with the unaided eye.

Crevice Corrosion

Another dominant type is crevice corrosion, which is a lot more difficult to observe: It usually tends to occur in shielded areas such as crevices, formed under gaskets, washers, fastener heads, insulating material, surface deposits, disbonded coatings, threads and lap joints.

Pipe clamps made of plastic in particular have also been prone to inducing crevice corrosion in the past, because the plastic deforms around the tubing and creates even tighter crevices.

Crevice corrosion is always initiated by changes in the local chemistry within the shielded area, usually associated with a stagnant solution on the micro-environmental level:

- Trapped seawater becomes stagnant
- Depletion of inhibitor and oxygen
- A shift to acid conditions
- Build-up of aggressive ion species (such as sodium chloride in seawater)
- Accelerated corrosion process

Crevice corrosion can have serious and adverse consequences eventually leading to perforation of tubing walls and the escape of highly flammable and hazardous fluids and chemicals.

Material Selection

Hence, the selection of proper materials and the use of robust design and safe construction practices are mandatory, even if crevices are sometimes difficult or even impossible to avoid in tubing installations when using regular types of tubing supports and clamps.

This is where STAUFF ACT Clamps come into play ...

Corrosion Facts

Corrosion in general is a naturally occurring phenomenon commonly defined as the deterioration of a substance (usually a metal) or its properties because of a reaction with its environment. Like other natural hazards, corrosion can cause not only expensive but also dangerous damage to almost everything from automobiles, home appliances and drinking water systems to pipelines, bridges and public buildings.

Figures provided by the U.S. National Climatic Data Center underline that major weather related disasters the U.S. incurred total losses of averaging USD 17 billion annually (1980 – 2001). According to U.S. corrosion studies, the estimated direct cost of metallic corrosion in general was USD 276 billion on an annual basis in 1998. This represented 3,1% of the U.S. Gross Domestic Product.

Direct corrosion costs associated with the domestic oil and gas production activities in the U.S. were determined to be about USD 1,4 billion annually, with USD 0,6 billion attributed to surface piping and facility costs, USD 0,5 billion to downhole tubing, and USD 0,3 billion to capital expenditures related to corrosion.

The U.S. refineries represent approximately 23% of the world's petroleum production in 1996 supplying more than 18 million barrels of refined petroleum products per day, with a total corrosion related direct cost of USD 3,7 billion. Maintenance expenses make up USD 1,8 billion of this total, vessel expenses are USD 1,4 billion and fouling costs are approximately USD 0,5 billion annually.

Source of Information: Report No. FHWA-RD-01-156, September 2001
Corrosion Costs and Preventive Strategies in the United States
Report by CC Technologies Laboratories, Inc. to Federal Highway Administration Office of Infrastructure Research and Development

Main Features

Efficient Prevention of Crevice Corrosion under Pipe Clamps on Stainless Steel Pipework Middle- and Long-Term Cost Savings due to Extended Service and Maintenance Intervals

Technology protected by utility model patent

MP READERS' CHOICE Corrosion Innovation OF THE YEAR AWARD

Construction based on STAUFF Clamps

- Design based on Original STAUFF Clamps according to DIN 3015, Parts 1 and 3 (Standard Series and Twin Series), the tried and tested industry standard for several decades
- Covering the most commonly used metric and imperial pipe diameters from 6 mm to 42 mm (from 1/4 inch to 1 1/2 inch)
- Alternative configurations and pipe diameters on request
- Installation time reduction (compared to alternative designs)

Independent Testing and Approval

- Subject to stringent testing at the STAUFF in-house laboratories located in Werdohl (Germany)
- Salt spray tests according to ASTM B117 applied in controlled laboratory environments
- Long-term field tested on a rig in the Dutch sector of the North Sea
- Tests results independently assessed by Centre for Corrosion Technolog at Sheffield Hallam University
- Fully detailed, independent test reports available on request

Innovative Design and Materials

- Material and design in compliance with section 7.3 (Tubing Installation) of the Norwegian offshore standard Norsok Z-010 (Revision 3, published in October 2000), API RP 552 and NACE SP 0108-2008 (section 13)
- ❶ Clamp body made of flame-retardant PP-V0 plastic material; tested and V0 classified according to UL 94
- ❷ Integrated ACE anti-corrosion elastomer strips avoid the accumulation of seawater between clamp body and pipe
- ❸ Drainage channels aid the dispersal of seawater (self-draining)
- ❹ ACT Mounting Hardware is made of Stainless Steel V4A (Material Code: W55) with enhanced corrosion resistance by practically excluding metallic and non-metallic impurities during production, processing and handling (delivered in hermetically-sealed quality storage bags with 25 pieces each to avoid contamination during transport)
- High UV stability of the clamp body material; resistant against seawater, rain and oil
- Suitable for continuous exposure to temperatures from -25 °C to +80 °C (from -13 °F to +176 °F)
- To be used in sub-sea and top-side environments; alleviating the requirement for two different products





Salt-spray testing of ACT Mounting Hardware (above of the picture) compared to contaminated hardware made of Stainless Steel V4A (below of the picture)

Design

STAUFF ACT Clamps are an innovatively designed solution for the installation of instrumentation pipework where anti-corrosion properties are of paramount importance (e.g. in the fields of offshore oil and gas exploration and processing).

The design – based on the tried and tested STAUFF Clamps according to DIN 3015 – offers installation time reduction and long term cost savings due to extended service intervals.

The STAUFF ACT clamp body design is available for the Standard Series (DIN 3015, Part 1) and the Twin Series (DIN 3015, Part 3) to cover the most commonly used metric and imperial pipe diameters from 6 mm to 42 mm (1/4 inch to 1 1/2 inch).

Development

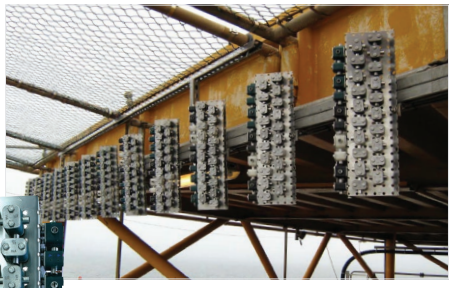
Throughout their development, STAUFF ACT Clamps have been subject to stringent testing at the STAUFF in-house laboratories located in Werdohl, Germany.

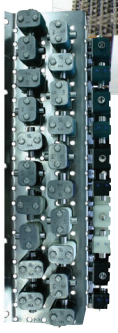
In order to ensure credibility of the product, the development process has also involved independent testing.

Sheffield Hallam University

To achieve this, the services of the *Centre for Corrosion Technology at Sheffield Hallam University's Materials and Engineering Research Institute* have been utilized, applying advanced techniques with equipment such as high resolution surface metrology and form measurement systems.

In a controlled laboratory environment, continous hot salt spray tests according to ASTM B117 have been applied for periods of 2000 hours to various clamp configurations holding AISI 316 stainless steel tubing.





In addition to that, independent field test samples – located on an oil rig in the Dutch sector of the North Sea – have also been assessed at the *Sheffield Hallam University* facilities.

Both independent tests have recorded positive results in favour of the anti-corrosion attributes of the STAUFF ACT Clamp. Fully detailed test reports are available upon request.

Conformity

Using flame-retardant PP-V0 plastic material for the clamp body and ACE anti-corrosion elastomer material for the rubber strips, STAUFF ACT Clamps have been constructed in compliance with section 7.3 (Tubing Installation) of the Norwegian offshore standard Norsok Z-010 (Revision 3, published in October 2000). They also comply with Norsok I-001 (Revision 4, published in January 2010), API RP 552 and NACE SP 0108-2008 (section 13).

The Norsok Organisation

olf · Norsk Industri · standards norway

Norsok is a Norwegian industry initiative to add value, reduce cost and lead time and remove unnecessary activities in offshore field developments and operations.

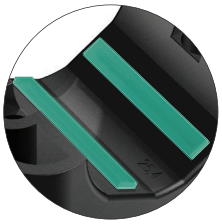
The Norsok standards are developed by the Norwegian petroleum industry and are jointly issued by the Norwegian Oil Industry Association (OLF) and the Federation of Norwegian Engineering Industries (TBL). They are administered by the Norwegian Technology Standards Institution (NTS).

The purpose of the Norsok industry standards is to replace the individual oil company specifications for use in existing and future petroleum industry developments, subject to the individual company's review and application.

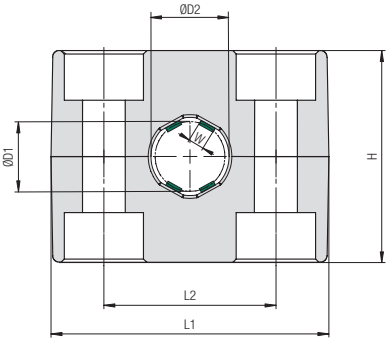
Standard Series according to DIN 3015, Part 1

ACT Clamp Body





Integrated Rubber Strips
made of Anti-Corrosion Elastomer (ACE)



Ordering Codes

Clamp Body ***2-*12.7-*ACT**
Clamp Body, STAUFF Group 1A ***1-*06.4A-*ACT**

One clamp body consists of two identical clamp halves, each with two integrated rubber strips.

- * STAUFF Group **2**
- * Exact outside diameter Ø D1 (mm) **12.7**
- * Material code **ACT**

Group Size		Outside Diameter Ø D1		Ordering Code	Packaging Unit	Dimensions (mm/in)					
STAUFF	DIN	(mm)	(in)	(2 Clamp Halves)	(in pieces / bag)	ØD2	W	L1	L2	H	Width
1A	1	6		106A-ACT	25	9 .35	1,4 .06	37 1.46	20 .79	26 1.06	30 1.18
		6,4	1/4	106.4A-ACT	25	9,4 .37	1,5 .06				
		8		108A-ACT	25	11,0 .43	1,8 .07				
		9,5	3/8	109.5A-ACT	25	12,5 .49	2,2 .09				
		10		110A-ACT	25	13 .51	2,3 .09				
		12		112A-ACT	25	15 .59	2,8 .11				
2	2	12,7	1/2	212.7-ACT	25	15,7 .62	3,5 .14	42 1.65	26 1.02	32 1.30	30 1.18
		14		214-ACT	25	17 .67	3,5 .14				
		14,3	9/16	214.3-ACT	25	17,3 .68	3,5 .14				
		15		215-ACT	25	18 .71	3,5 .14				
		16	5/8	216-ACT	25	19 .74	3,5 .14				
		18		218-ACT	25	21 .83	3,5 .14				
3	3	19	3/4	319-ACT	25	22 .87	3,5 .14	50 1.97	33 1.30	35,5 1.42	30 1.18
		20		320-ACT	25	23 .91	3,5 .14				
		21,3		321.3-ACT	25	24,3 .96	3,5 .14				
		25		325-ACT	25	28 1.10	3,5 .14				
		25,4	1	325.4-ACT	25	28,4 1.12	3,5 .14				
4	4	26,9		426.9-ACT	25	31,1 1.22	6,0 .24	59 2.32	40 1.57	42 1,65	30 1.18
		28		428-ACT	25	32,2 1.27	6,0 .24				
		30		430-ACT	25	34,2 1.35	6,0 .24				
5	5	32	1 1/4	532-ACT	25	36,2 1.43	7 .28	71 2.80	52 2.05	58 2.28	30 1.18
		35		535-ACT	25	39,2 1.54	7 .28				
		38	1 1/2	538-ACT	25	42,2 1.66	8 .31				
		42		542-ACT	25	46,2 1.82	8 .31				

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



ACT Mounting Hardware
Installation on Single Weld Plates

Required components (for use with single weld plate):

- 2 ACT Hexagon Head Bolts AS...W55
- 1 ACT Cover Plate DP...W55
- 1 ACT Clamp Body (2 Clamp Halves)
- 1 ACT Single Weld Plate SP...W55

Before welding, always make sure that the designated position of the ACT Weld Plate is suitable for the expected loads.

Material Code **W55**

ACT Mounting Hardware
Material Properties and Handling Instructions

ACT Mounting Hardware is made of Stainless Steel V4A (Material Code: W55) with enhanced corrosion resistance by practically excluding metallic and non-metallic impurities during production, processing and handling.

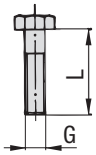
ACT Mounting Hardware is always delivered in hermetically-sealed quality storage bags with 25 pieces each to avoid contamination during transport.

Always make sure that ACT Mounting Hardware is stored separately from carbon steel and any other metals, and that appropriate tools are used to assemble the clamps.

E

ACT Hexagon Head Bolt
Type AS ... W55 (according to DIN 931 / 933)



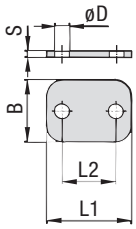


Dimensions applicable only when used with Cover Plate DP and Weld Plate SP

Group STAUFF	DIN	Dimensions (mm/in) Thread G x L	Ordering Code	Packaging Unit (in pieces / bag)
1A	1	M6 x 30 M6 x 1.18	AS-M6x30-W55	25
2	2	M6 x 35 M6 x 1.38	AS-M6x35-W55	25
3	3	M6 x 40 M6 x 1.57	AS-M6x40-W55	25
4	4	M6 x 45 M6 x 1.77	AS-M6x45-W55	25
5	5	M6 x 60 M6 x 2.36	AS-M6x60-W55	25

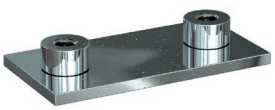
ACT Cover Plate
Type DP ... W55

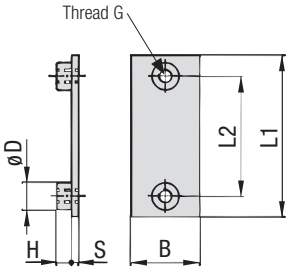




Group STAUFF	DIN	Dimensions (mm/in) L1	L2	B	S	ØD	Ordering Code	Packaging Unit (in pieces / bag)
1A	1	34 1.34	20 .79	30 1.18	3 .12	7 .28	DP-1A-W55	25
2	2	40,5 1.59	26 1.02	30 1.18	3 .12	7 .28	DP-2-W55	25
3	3	48 1.89	33 1.30	30 1.18	3 .12	7 .28	DP-3-W55	25
4	4	57 2.24	40 1.57	30 1.18	3 .12	7 .28	DP-4-W55	25
5	5	70 2.76	52 2.05	30 1.18	3 .12	7 .28	DP-5-W55	25

ACT Single Weld Plate
Type SP ... W55



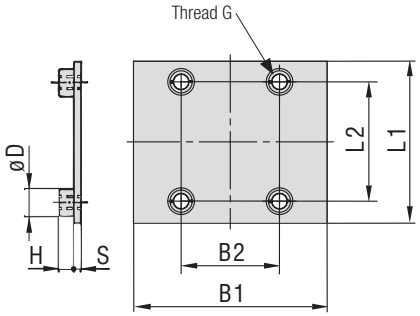


Group STAUFF	DIN	Dimensions (mm/in) G	L1	L2	B	S	H	ØD	Ordering Code	Packaging Unit (in pieces / bag)
1A	1	M6	36 1.42	20 0.79	30 1.18	3 .12	6,5 .26	12 .47	SP-1A-M-W55	25
2	2	M6	42 1.65	26 1.02	30 1.18	3 .12	6,5 .26	12 .47	SP-2-M-W55	25
3	3	M6	50 1.97	33 1.30	30 1.18	3 .12	6,5 .26	12 .47	SP-3-M-W55	25
4	4	M6	60 2.36	40 1.57	30 1.18	3 .12	6,5 .26	12 .47	SP-4-M-W55	25
5	5	M6	71 2.80	52 2.05	30 1.18	3 .12	6,5 .26	12 .47	SP-5-M-W55	25



Alternative types of weld plates are available upon request. Please contact STAUFF for further information.

ACT Double Weld Plate
Type SPD ... W55



Group STAUFF	DIN	Dimensions (mm/in) G	L1	L2	B1	B2	S	H	ØD	Ordering Code	Packaging Unit (in pieces / bag)
1A	1	M6	36 1.42	20 0.79	60 2.36	30,5 1.20	3 .12	6,5 .26	12 .47	SPD-1A-M-W55	25
2	2	M6	42 1.65	26 1.02	60 2.36	30,5 1.20	3 .12	6,5 .26	12 .47	SPD-2-M-W55	25
3	3	M6	50 1.97	33 1.30	60 2.36	30,5 1.20	3 .12	6,5 .26	12 .47	SPD-3-M-W55	25



ACT Mounting Hardware
Multi-Level Installation (with Weld Plate)

Required components for each level:

- 2 ACT Stacking Bolt AF...W55
- 1 ACT Safety Locking Plate SIG...ACT-W55
- 1 ACT Clamp Body (2 Clamp Halves)

The upper layer is secured by a cover plate and hexagon head bolts. The lower layer has to be mounted to a weld plate (with a recommended maximum of two levels in total).

Material Code **W55**

ACT Mounting Hardware
Material Properties and Handling Instructions

ACT Mounting Hardware is made of Stainless Steel V4A (Material Code: W55) with enhanced corrosion resistance by practically excluding metallic and non-metallic impurities during production, processing and handling.

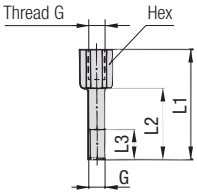
ACT Mounting Hardware is always delivered in hermetically-sealed quality storage bags with 25 pieces each to avoid contamination during transport.

Always make sure that ACT Mounting Hardware is stored separately from carbon steel and any other metals, and that appropriate tools are used to assemble the clamps.

E

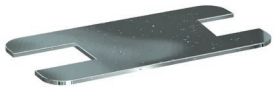
ACT Stacking Bolt
Type AF ... W55

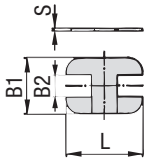




Group STAUFF	DIN	Dimensions (mm/in) G	L1	L2	L3 min.	Hex	Ordering Code	Packaging Unit (in pieces / bag)
1A	1	M6	34	20	12	11	AF-1/1A/1D-M-W55	25
			1.34	.79	.47	.43		
2	2	M6	40	26	12	11	AF-2-M-W55	25
			1.57	1.24	.47	.43		
3	3	M6	44	30	12	11	AF-3-M-W55	25
			1.73	1.18	.47	.43		
4	4	M6	49	35	12	11	AF-4-M-W55	25
			1.93	1.38	.47	.43		
5	5	M6	64	50	12	11	AF-5-M-W55	25
			2.52	1.97	.47	.43		

ACT Safety Locking Plate
Type SIG ... ACT-W55





Group STAUFF	DIN	Dimensions (mm/in) L	B1	B2	S	Ordering Code	Packaging Unit (in pieces / bag)
1A	1	33	28	11,2	2	SIG-1A-ACT-W55	25
		1.30	1.10	.44	.08		
2	2	39	28	11,2	2	SIG-2-ACT-W55	25
		1.54	1.10	.44	.08		
3	3	47	28	11,2	2	SIG-3-ACT-W55	25
		1.85	1.10	.44	.08		
4	4	56	28	11,2	2	SIG-4-ACT-W55	25
		2.20	1.10	.44	.08		
5	5	69	28	11,2	2	SIG-5-ACT-W55	25
		2.72	1.10	.44	.08		



ACT Mounting Hardware
Installation with Channel Rail Adaptors

Required components:

- 2 ACT Hexagon Head Bolts AS...W55
- 1 ACT Cover Plate DP...W55
- 1 ACT Clamp Body (2 Clamp Halves)
- 2 ACT Channel Rail Adaptors CRA...W55

Suitable for various brands and types of channel rails (including Halfen, Hilti, Unistrut® etc.).

Material Code **W55**

ACT Mounting Hardware
Material Properties and Handling Instructions

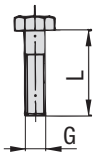
ACT Mounting Hardware is made of Stainless Steel V4A (Material Code: W55) with enhanced corrosion resistance by practically excluding metallic and non-metallic impurities during production, processing and handling.

ACT Mounting Hardware is always delivered in hermetically-sealed quality storage bags with 25 pieces each to avoid contamination during transport.

Always make sure that ACT Mounting Hardware is stored separately from carbon steel and any other metals, and that appropriate tools are used to assemble the clamps.

ACT Hexagon Head Bolt
Type AS ... W55 (according to DIN 931 / 933)



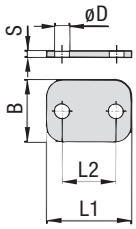


Dimensions applicable only when used with Cover Plate DP and Weld Plate SP

Group STAUFF	DIN	Dimensions (mm/in) Thread G x L	Ordering Code	Packaging Unit (in pieces / bag)
1A	1	M6 x 30 M6 x 1.18	AS-M6x30-W55	25
2	2	M6 x 35 M6 x 1.38	AS-M6x35-W55	25
3	3	M6 x 40 M6 x 1.57	AS-M6x40-W55	25
4	4	M6 x 45 M6 x 1.77	AS-M6x45-W55	25
5	5	M6 x 60 M6 x 2.36	AS-M6x60-W55	25

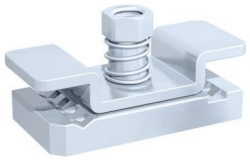
ACT Cover Plate
Type DP ... W55

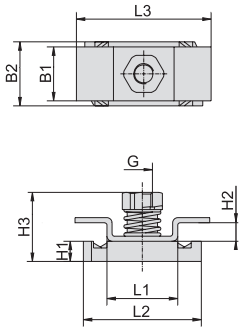




Group STAUFF	DIN	Dimensions (mm/in) L1	L2	B	S	ØD	Ordering Code	Packaging Unit (in pieces / bag)
1A	1	34 1.34	20 .79	30 1.18	3 .12	7 .28	DP-1A-W55	25
2	2	40,5 1.59	26 1.02	30 1.18	3 .12	7 .28	DP-2-W55	25
3	3	48 1.89	33 1.30	30 1.18	3 .12	7 .28	DP-3-W55	25
4	4	57 2.24	40 1.57	30 1.18	3 .12	7 .28	DP-4-W55	25
5	5	70 2.76	52 2.05	30 1.18	3 .12	7 .28	DP-5-W55	25

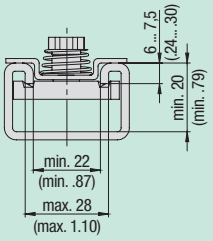
ACT Channel Rail Adaptor
Type CRA ... W55





Suitability Chart for ACT Channel Rail Adaptors in the Standard Series

The STAUFF Channel Rail Adaptor, type CRA, is suitable for various brands and types of channel rails (including Halfen, Hilti, Unistrut® etc.). The drawing describes the basic dimensional requirements for channel rails to be used with STAUFF Channel Rail Adaptors, type CRA.



In case of doubt, please do not hesitate to contact STAUFF prior to field application.

Group STAUFF	DIN	Dimensions (mm/in) G	L1	L2	L3	B1	B2	H1	H2	H3	Ordering Code	Packaging Unit (in pieces / bag)
1A	1	M6	21 .83	35 1.38	40 1.57	16 .63	19 .75	6 .24	5,5 .22	20,5 .81	CRA-1-8/1D-M-W55	25
2	2											
3	3											
4	4											
5	5											



ACT Mounting Hardware
Installation in Field Trays / Cable Ladders

Required components:

- 2 ACT Self-Locking Nuts MUS-HKS ... W55
- 1 ACT Cover Plate DP ... W55
- 1 ACT Clamp Body (2 Clamp Halves)
- 2 ACT Hammerhead Bolts HKS ... W55

Suitable for commonly used field trays and cable ladders with diagonal, lengthwise and/or crosswise slots and perforations.

Material Code **W55**

ACT Mounting Hardware
Material Properties and Handling Instructions

ACT Mounting Hardware is made of Stainless Steel V4A (Material Code: W55) with enhanced corrosion resistance by practically excluding metallic and non-metallic impurities during production, processing and handling.

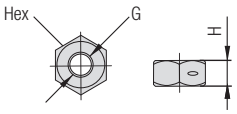
ACT Mounting Hardware is always delivered in hermetically-sealed quality storage bags with 25 pieces each to avoid contamination during transport.

Always make sure that ACT Mounting Hardware is stored separately from carbon steel and any other metals, and that appropriate tools are used to assemble the clamps.

E

All-Metal Self-Locking ACT Nut
Type MUS-HKS ... W55 (similar to DIN 980 / Biloc)



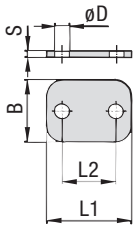


For use with ACT Hammerhead Bolts HKS ... W55

Group STAUFF	DIN	Dimensions (mm/in) Thread G	H	Hex	Ordering Code	Packaging Unit (in pieces / bag)
1A	1	M6	5 .20	10 .39	MUS-HKS-M6-W55	25
2	2					
3	3					
4	4					
5	5					

ACT Cover Plate
Type DP ... W55

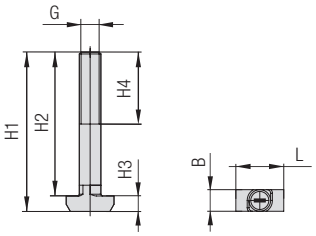




Group STAUFF	DIN	Dimensions (mm/in) L1	L2	B	S	ØD	Ordering Code	Packaging Unit (in pieces / bag)
1A	1	34 1.34	20 .79	30 1.18	3 .12	7 .28	DP-1A-W55	25
2	2	40,5 1.59	26 1.02	30 1.18	3 .12	7 .28	DP-2-W55	25
3	3	48 1.89	33 1.30	30 1.18	3 .12	7 .28	DP-3-W55	25
4	4	57 2.24	40 1.57	30 1.18	3 .12	7 .28	DP-4-W55	25
5	5	70 2.76	52 2.05	30 1.18	3 .12	7 .28	DP-5-W55	25

ACT Hammerhead Bolt
Type HKS ... W55

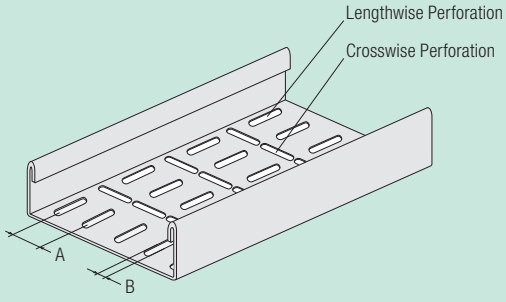




For use with Self-Locking ACT Nuts MUS-HKS ... W55

Group STAUFF	DIN	Dimensions (mm/in) G	H1	H2	H3	H4 min	B	L	Ordering Code	Packaging Unit (in pcs. / bag)
1A	1	M6	44,3 1.74	40 1.57	4,3 .17	20 .79	6,1 .24	13,3 .52	HKS-M6x40-W55	25
2	2	M6	49,3 1.94	45 1.77	4,3 .17	20 .79	6,1 .24	13,3 .52	HKS-M6x45-W55	25
3	3	M6	54,3 2.14	50 1.97	4,3 .17	20 .79	6,1 .24	13,3 .52	HKS-M6x50-W55	25
4	4	M6	59,3 2.33	55 2.17	4,3 .17	20 .79	6,1 .24	13,3 .52	HKS-M6x55-W55	25
5	5	M6	74,3 2.93	70 2.76	4,3 .17	20 .79	6,1 .24	13,3 .52	HKS-M6x70-W55	25

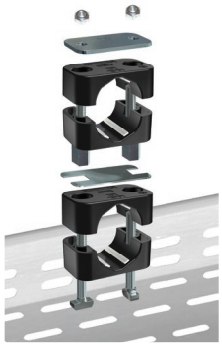
Suitability Chart for ACT Hammerhead Bolts in the Standard Series



ACT Hammerhead Bolts are suitable for field trays and cable ladders with diagonal, lengthwise and/or crosswise slots and perforations that meet the following requirements:

- **Dimension A**: Equal to the bolt center spacing of the clamp assembly
- **Dimension B**: 6,2 mm ... 7,0 mm / .24 in ... .28 in (Min ... Max)

In case of doubt, please do not hesitate to contact STAUFF prior to field application.



ACT Mounting Hardware
Multi-Level Installation (with Stacking & Hammerhead Bolts)

Required components (for a recommended maximum of two levels in total):

- 2 ACT Self-Locking Nuts MUS-HKS ... W55
- 1 ACT Cover Plate DP ... W55
- 1 ACT Clamp Body (2 Clamp Halves)
- 1 ACT Safety Locking Plate SIG...ACT-W55
- 2 ACT Stacking Bolts AF-HKSK...W55
- 1 ACT Clamp Body (2 Clamp Halves)
- 2 ACT Hammerhead Bolts HKSK ... W55

Material Code **W55**

ACT Mounting Hardware
Material Properties and Handling Instructions

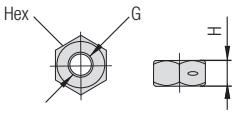
ACT Mounting Hardware is made of Stainless Steel V4A (Material Code: W55) with enhanced corrosion resistance by practically excluding metallic and non-metallic impurities during production, processing and handling.

ACT Mounting Hardware is always delivered in hermetically-sealed quality storage bags with 25 pieces each to avoid contamination during transport.

Always make sure that ACT Mounting Hardware is stored separately from carbon steel and any other metals, and that appropriate tools are used to assemble the clamps.

All-Metal Self-Locking ACT Nut
Type MUS-HKS ... W55 (similar to DIN 980 / Biloc)



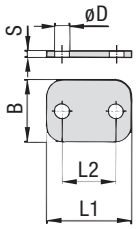


For use with ACT Stacking Bolts AF-HKS ... W55

Group STAUFF	DIN	Dimensions (mm/in) Thread G	H	Hex	Ordering Code	Packaging Unit (in pieces / bag)
1A	1	M6	5	10	MUS-HKS-M6-W55	25
			.20	.39		
2	2					
3	3					

ACT Cover Plate
Type DP ... W55

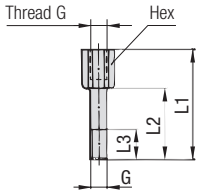




Group STAUFF	DIN	Dimensions (mm/in) L1	L2	B	S	ØD	Ordering Code	Packaging Unit (in pieces / bag)
1A	1	34	20	30	3	7	DP-1A-W55	25
		1.34	.79	1.18	.12	.28		
2	2	40,5	26	30	3	7	DP-2-W55	25
		1.59	1.02	1.18	.12	.28		
3	3	48	33	30	3	7	DP-3-W55	25
		1.89	1.30	1.18	.12	.28		

ACT Stacking Bolt
Type AF-HKSK ... W55



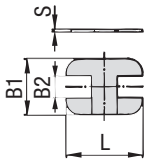


For use with Self-Locking ACT Nuts MUS-HKS ... W55

Group STAUFF	DIN	Dimensions (mm/in) G	L1	L2	L3 min.	Hex	Ordering Code	Packaging Unit (in pieces / bag)
1A	1	M6	44	30	12	11	AF-HKSK-1A-M-W55	25
			1.73	1.18	.47	.43		
2	2	M6	54	40	12	11	AF-HKSK-2-M-W55	25
			2.13	1.57	.47	.43		
3	3	M6	64	40	12	11	AF-HKSK-3-M-W55	25
			2.52	1.57	.47	.43		

ACT Safety Locking Plate
Type SIG ... ACT-W55

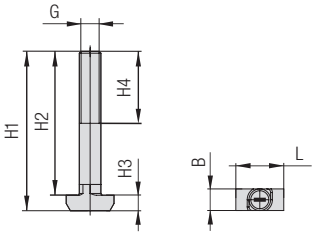




Group STAUFF	DIN	Dimensions (mm/in) L	B1	B2	S	Ordering Code	Packaging Unit (in pieces / bag)
1A	1	33	28	11,2	2	SIG-1A-ACT-W55	25
		1.30	1.10	.44	.08		
2	2	39	28	11,2	2	SIG-2-ACT-W55	25
		1.54	1.10	.44	.08		
3	3	47	28	11,2	2	SIG-3-ACT-W55	25
		1.85	1.10	.44	.08		

ACT Hammerhead Bolt
Type HKSK ... W55





Group STAUFF	DIN	Dimensions (mm/in) G	H1	H2	H3	H4 min	B	L	Ordering Code	Packaging Unit (in pcs. / bag)
1A	1	M6	29,3	25	4,3	20	6,1	13,3	HKSK-M6x25-W55	25
			1.15	.98	.17	.79	.24	.52		
2	2	M6	36,3	32	4,3	20	6,1	13,3	HKSK-M6x32-W55	25
			1.43	1.26	.17	.79	.24	.52		
3	3	M6	39,3	35	4,3	20	6,1	13,3	HKSK-M6x35-W55	25
			1.55	1.38	.17	.79	.24	.52		



ACT Mounting Hardware
Multi-Level Installation in Field Trays / Cable Ladders (with Hammerhead Bolts)

Required components (for a recommended maximum of two levels in total):

- 2 ACT Self-Locking Nuts MUS-HKS ... W55
- 1 ACT Cover Plate DP ... W55
- 1 ACT Clamp Body (2 Clamp Halves)
- 1 ACT Clamp Body (2 Clamp Halves)
- 2 ACT Hammerhead Bolts HKSV ... W55

Material Code **W55**

ACT Mounting Hardware
Material Properties and Handling Instructions

ACT Mounting Hardware is made of Stainless Steel V4A (Material Code: W55) with enhanced corrosion resistance by practically excluding metallic and non-metallic impurities during production, processing and handling.

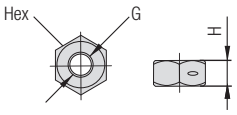
ACT Mounting Hardware is always delivered in hermetically-sealed quality storage bags with 25 pieces each to avoid contamination during transport.

Always make sure that ACT Mounting Hardware is stored separately from carbon steel and any other metals, and that appropriate tools are used to assemble the clamps.

E

All-Metal Self-Locking ACT Nut
Type MUS-HKS ... W55 (similar to DIN 980 / Biloc)



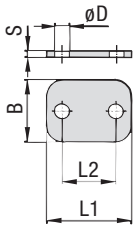


For use with ACT Hammerhead Bolts HKS ... W55

Group STAUFF	DIN	Dimensions (mm/in) Thread G	H	Hex	Ordering Code	Packaging Unit (in pieces / bag)
1A	1	M6	5 .20	10 .39	MUS-HKS-M6-W55	25
2	2					
3	3					

ACT Cover Plate
Type DP ... W55

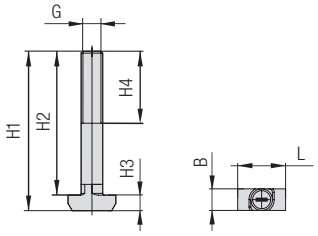




Group STAUFF	DIN	Dimensions (mm/in) L1	L2	B	S	ØD	Ordering Code	Packaging Unit (in pieces / bag)
1A	1	34 1.34	20 .79	30 1.18	3 .12	7 .28	DP-1A-W55	25
2	2	40,5 1.59	26 1.02	30 1.18	3 .12	7 .28	DP-2-W55	25
3	3	48 1.89	33 1.30	30 1.18	3 .12	7 .28	DP-3-W55	25

ACT Hammerhead Bolt
Type HKSV ... W55

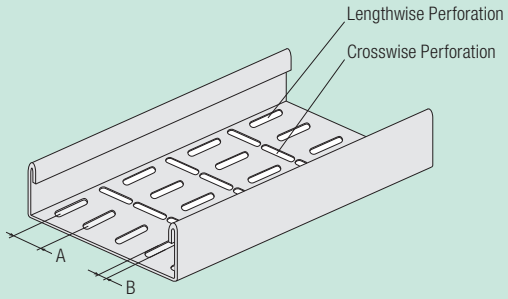




For use with Self-Locking ACT Nuts MUS-HKS ... W55

Group STAUFF	DIN	Dimensions (mm/in) G	H1	H2	H3	H4 min	B	L	Ordering Code	Packaging Unit (in pcs. / bag)
1A	1	M6	68,3 2.69	64 2.52	4,3 .17	20 .79	6,1 .24	13,3 .52	HKSV-M6x64-W55	25
2	2	M6	80,3 3.16	76 2.99	4,3 .17	20 .79	6,1 .24	13,3 .52	HKSV-M6x76-W55	25
3	3	M6	87,3 3.44	83 3.27	4,3 .17	20 .79	6,1 .24	13,3 .52	HKSV-M6x83-W55	25

Suitability Chart for ACT Hammerhead Bolts in the Standard Series



ACT Hammerhead Bolts are suitable for field trays and cable ladders with diagonal, lengthwise and/or crosswise slots and perforations that meet the following requirements:

- **Dimension A**: Equal to the bolt center spacing of the clamp assembly
- **Dimension B**: 6,2 mm ... 7,0 mm / .24 in ... .28 in (Min ... Max)

In case of doubt, please do not hesitate to contact STAUFF prior to field application.



Installation on Weld Plate

Required components:

2 Hexagon Head Bolts AS...W55
1 Cover Plate DP...W55
1 ACT Clamp Body (2 Clamp Halves)
1 Single Weld Plate SP...W55

Before welding, always make sure that the designated position of the weld plate is suitable for the expected loads.

Order Code

SP-110a-ACT-DP-AS-M-W55

W55 is the recommended option for metal hardware to be used with STAUFF ACT Clamps.



Multi-Level Installation (with Weld Plate)

Required components (for each level) for a maximum of two levels in total:

2 Stacking Bolt AF...W55
1 Safety Locking Plate SIG...ACT-W55
1 ACT Clamp Body (2 Clamp Halves)

The upper layer has to be secured by a cover plate and hexagon head bolts. The lower level has to be mounted to a weld plate.

Order Code

110a-ACT-SIG-AF-M-W55

W55 is the recommended option for metal hardware to be used with STAUFF ACT Clamps.



Installation with Channel Rail Adaptors

Required components:

2 Hexagon Head Bolts AS...W55
1 Cover Plate DP...W55
1 Clamp Body (2 Clamp Halves)
2 Channel Rail Adaptors CRA...W55

Suitable for various brands and types of channel rails (including Halfen, Hilti, Unistrut® etc.).

Order Code

CRA-110a-ACT-DP-AS-M-W55

W55 is the recommended option for metal hardware to be used with STAUFF ACT Clamps.



Installation in Field Trays / Cable Ladders

Required components:

2 Self-Locking Nuts MUS-HKS ... W55
1 Cover Plate DP ... W55
1 Clamp Body (2 Clamp Halves)
2 Hammerhead Bolts HKS ... W55

Suitable for commonly used field trays and cable ladders with diagonal, lengthwise and/or crosswise slots and perforations.

Order Code

HKS-110a-ACT-DP-MUS-M-W55

W55 is the recommended option for metal hardware to be used with STAUFF ACT Clamps.



Multi-Level Installation in Field Trays / Cable Ladders

Required components (for a maximum of two levels in total):

2 Self-Locking Nuts MUS-HKS ... W55
1 Cover Plate DP ... W55
1 ACT Clamp Body (2 Clamp Halves)
1 Safety Locking Plate SIG...ACT-W55
2 Stacking Bolts AF-HKSK...W55
1 ACT Clamp Body (2 Clamp Halves)
2 Hammerhead Bolts HKSK ... W55

Suitable for commonly used field trays and cable ladders with diagonal, lengthwise and/or crosswise slots and perforations.

Order Codes

Upper Level: **HKSK-212.7-ACT-DP-MUS-M-W55**
Lower Level: **212.7-ACT-SIG-AF-HKSK-M-W55**

W55 is the recommended option for metal hardware to be used with STAUFF ACT Clamps.



Multi-Level Installation in Field Trays / Cable Ladders

Required components (for a maximum of two levels in total):

2 Self-Locking Nuts MUS-HKS ... W55
1 Cover Plate DP ... W55
1 ACT Clamp Body (2 Clamp Halves)
1 ACT Clamp Body (2 Clamp Halves)
2 Hammerhead Bolts HKSV ... W55

Suitable for commonly used field trays and cable ladders with diagonal, lengthwise and/or crosswise slots and perforations.

Order Codes

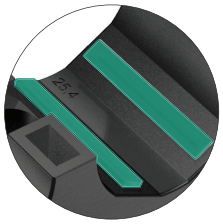
Upper Level: **212.7-ACT** (Clamp Body only)
Lower Level: **HKSV-212.7-ACT-DP-MUS-M-W55**

W55 is the recommended option for metal hardware to be used with STAUFF ACT Clamps.

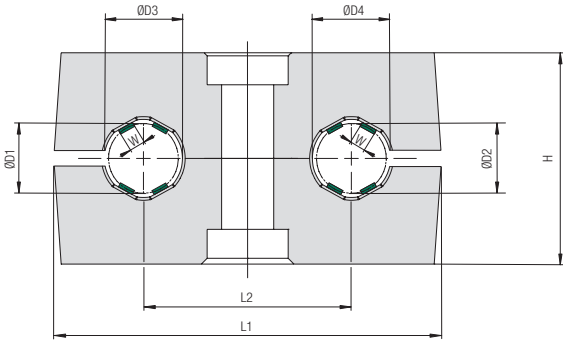
E

Twin Series according to DIN 3015, Part 3
ACT Clamp Body





Integrated Rubber Strips
made of Anti-Corrosion Elastomer (ACE)



Ordering Codes

Clamp Body ***2*12.7/12.7-*ACT**

One clamp body consists of two identical clamp halves, each with four integrated rubber strips.

- * 1st Part of STAUFF Group **2**
- * Exact outside diameters Ø D1 / Ø D2 (mm) **12.7/12.7**
- * Material code **ACT**

Group Size		Outside Diameters Ø D1 / Ø D2		Ordering Code	Packaging Unit	Dimensions (mm/in)					
STAUFF	DIN	(mm)	(in)	(2 Clamp Halves)	(in pieces / bag)	ØD3 / ØD4	W	L1	L2	H	Width
1D	1	6		**106/06-ACT**	25	9 .35	1,4 .06	36 1.42	20 .79	26,6 1.05	30 1.18
		6,4	1/4	**106.4/06.4-ACT**	25	9,4 .37	1,5 .06				
		9,5	3/8	**109.5/09.5-ACT**	25	12,5 .49	2,2 .09				
		10		**110/10-ACT**	25	13 .51	2,3 .09				
		12		**112/12-ACT**	25	15 .59	2,8 .11				
2D	2	12,7	1/2	**212.7/12.7-ACT**	25	15,7 .62	3,5 .14	53 2.09	29 1.14	26,6 1.05	30 1.18
		14		**214/14-ACT**	25	17 .67	3,5 .14				
3D	3	18		**318/18-ACT**	25	21 .83	3,5 .14	67 2.64	36 1.42	36,6 1.44	30 1.18
		19	3/4	**319/19-ACT**	25	22 .87	3,5 .14				
		20		**320/20-ACT**	25	23 .91	3,5 .14				
		21,3		**321.3/21.3-ACT**	25	24,3 .96	3,5 .14				
		25,4	1	**325.4/25.4-ACT**	25	28,4 1.12	3,5 .14				

Additional outside diameters and combinations of different outside diameters are available upon request.
Please contact STAUFF for further information.



ACT Mounting Hardware
Installation on Single Weld Plates

Required components:

- 1 ACT Hexagon Head Bolt AS...W55
- 1 ACT Cover Plate GD...W55
- 1 ACT Clamp Body (2 Clamp Halves)
- 1 ACT Single Weld Plate SP...W55

Before welding, always make sure that the designated position of the ACT Weld Plate is suitable for the expected loads.

Material Code **W55**

ACT Mounting Hardware
Material Properties and Handling Instructions

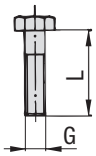
ACT Mounting Hardware is made of Stainless Steel V4A (Material Code: W55) with enhanced corrosion resistance by practically excluding metallic and non-metallic impurities during production, processing and handling.

ACT Mounting Hardware is always delivered in hermetically-sealed quality storage bags with 25 pieces each to avoid contamination during transport.

Always make sure that ACT Mounting Hardware is stored separately from carbon steel and any other metals, and that appropriate tools are used to assemble the clamps.

ACT Hexagon Head Bolt
Type AS ... W55 (according to DIN 931 / 933)



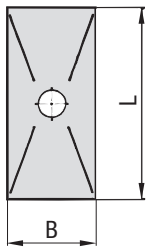


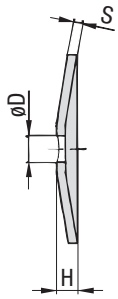
Dimensions applicable only when used with Cover Plate GD and Weld Plate SP

Group STAUFF	DIN	Dimensions (mm/in) Thread G x L	Ordering Code	Packaging Unit (in pieces / bag)
1D	1	M6 x 35	AS-M6x35-W55	25
		M6 x 1.38		
2D	2	M8 x 35	AS-M8x35-W55	25
		M8 x 1.38		
3D	3	M8 x 45	AS-M8x45-W55	25
		M8 x 1.77		

ACT Cover Plate
Type GD ... W55

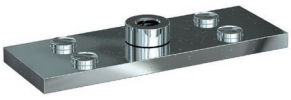


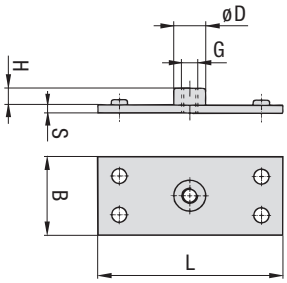




Group STAUFF	DIN	Dimensions (mm/in) L	B	H	S	ØD	Ordering Code	Packaging Unit (in pieces / bag)
1D	1	34	30	7	3	7	GD-1D-W55	25
		1.34	1.18	.28	.12	.28		
2D	2	52	30	7	3	9	GD-2D-W55	25
		2.05	1.18	.28	.12	.35		
3D	3	65	30	7	3	9	GD-3D-W55	25
		2.56	1.18	.28	.12	.35		

ACT Single Weld Plate
Type SP ... W55





Group STAUFF	DIN	Dimensions (mm/in) G	L	B	S	H	ØD	Ordering Code	Packaging Unit (in pieces / bag)
1D	1	M6	37	30	3	6,5	12	SP-1D-M-W55	25
			1.46	1.18	.12	.26	.47		
2D	2	M8	55	30	5	6	14	SP-2D-M-W55	25
			2.17	1.18	.20	.24	.55		
3D	3	M8	70	30	5	6	14	SP-3D-M-W55	25
			2.76	1.18	.20	.24	.55		



ACT Mounting Hardware
Multi-Level Installation (with Weld Plate)

Required components for each level:

- 1 ACT Stacking Bolt AF...W55
- 1 ACT Safety Locking Plate SIV...ACT
- 1 ACT Clamp Body (2 Clamp Halves)

The upper layer is secured by a cover plate and hexagon head bolts. The lower layer has to be mounted to a weld plate (with a recommended maximum of two levels in total).

Material Code **W55**

ACT Mounting Hardware
Material Properties and Handling Instructions

ACT Mounting Hardware is made of Stainless Steel V4A (Material Code: W55) with enhanced corrosion resistance by practically excluding metallic and non-metallic impurities during production, processing and handling.

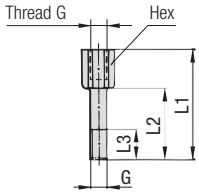
ACT Mounting Hardware is always delivered in hermetically-sealed quality storage bags with 25 pieces each to avoid contamination during transport.

Always make sure that ACT Mounting Hardware is stored separately from carbon steel and any other metals, and that appropriate tools are used to assemble the clamps.

E

ACT Stacking Bolt
Type AF ... W55

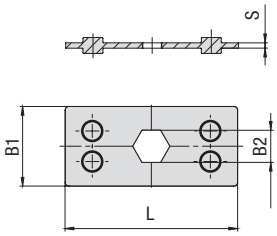




Group STAUFF	DIN	Dimensions (mm/in) G	L1	L2	L3 min.	Hex	Order Code	Packaging Unit (in pieces / bag)
1D	1	M6	34	20	12	11	AF-1/1A/1D-M-W55	25
			1.33	.78	.47	.43		
2D	2	M8	33	20	11	12	AF-2D-M-W55	25
			1.30	.78	.43	.47		
3D	3	M8	44	29	15	12	AF-3D-M-W55	25
			1.73	1.14	.59	.47		

ACT Safety Locking Plate
Type SIV ... ACT





Made of flame-retardant PP-V0 plastic material; tested and V0 classified according to UL 94

Group STAUFF	DIN	Dimensions (mm/in) L	B1	B2	S	Order Code	Packaging Unit (in pieces / bag)
1D	1	34	30	11,2	2	SIV-1D-PP-V0-ACT	25
		1.39	1.18	.44	.08		
2D	2	52	30	12,1	2	SIV-2D-PP-V0-ACT	25
		2.05	1.18	.48	.08		
3D	3	65	30	12,1	2	SIV-3D-PP-V0-ACT	25
		2.56	1.18	.48	.08		



ACT Mounting Hardware
Installation with Channel Rail Adaptors

Required components:

- 1 ACT Hexagon Head Bolt AS...W55
- 1 ACT Cover Plate GD...W55
- 1 ACT Clamp Body (2 Clamp Halves)
- 1 ACT Channel Rail Adaptor CRA...W55

Suitable for various brands and types of channel rails (including Halfen, Hilti, Unistrut® etc.).

Material Code **W55**

ACT Mounting Hardware
Material Properties and Handling Instructions

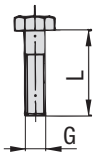
ACT Mounting Hardware is made of Stainless Steel V4A (Material Code: W55) with enhanced corrosion resistance by practically excluding metallic and non-metallic impurities during production, processing and handling.

ACT Mounting Hardware is always delivered in hermetically-sealed quality storage bags with 25 pieces each to avoid contamination during transport.

Always make sure that ACT Mounting Hardware is stored separately from carbon steel and any other metals, and that appropriate tools are used to assemble the clamps.

ACT Hexagon Head Bolt
Type AS ... W55 (according to DIN 931 / 933)



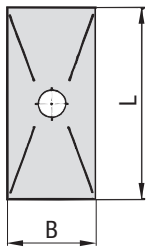


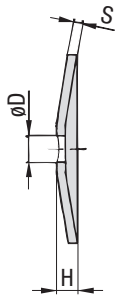
Dimensions applicable only when used with Cover Plate GD and Weld Plate SP

Group STAUFF	DIN	Dimensions (mm/in) Thread G x L	Ordering Code	Packaging Unit (in pieces / bag)
1D	1	M6 x 35 M6 x 1.38	**AS-M6x35-W55**	25
2D	2	M8 x 35 M8 x 1.38	**AS-M8x35-W55**	25
3D	3	M8 x 45 M8 x 1.77	**AS-M8x45-W55**	25

ACT Cover Plate
Type GD ... W55

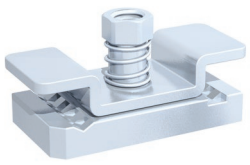


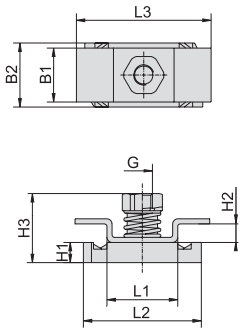




Group STAUFF	DIN	Dimensions (mm/in) L	B	H	S	ØD	Ordering Code	Packaging Unit (in pieces / bag)
1D	1	34 1.34	30 1.18	7 .28	3 .12	7 .28	**GD-1D-W55**	25
2D	2	52 2.05	30 1.18	7 .28	3 .12	9 .35	**GD-2D-W55**	25
3D	3	65 2.56	30 1.18	7 .28	3 .12	9 .35	**GD-3D-W55**	25

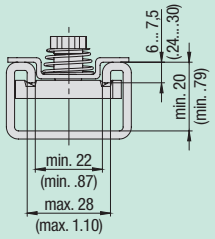
Channel Rail Adaptor
Type CRA ... W55





Suitability Chart for ACT Channel Rail Adaptors in the Twin Series

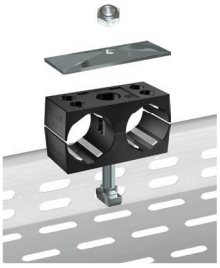
The STAUFF Channel Rail Adaptor, type CRA, is suitable for various brands and types of channel rails (including Halfen, Hilti, Unistrut® etc.). The drawing describes the basic dimensional requirements for channel rails to be used with STAUFF Channel Rail Adaptors, type CRA.



In case of doubt, please do not hesitate to contact STAUFF prior to field application.

Group STAUFF	DIN	Dimensions (mm/in) G	L1	L2	L3	B1	B2	H1	H2	H3	Order Code	Packaging Unit (in pieces / bag)
1D	1	M6	21 .83	35 1.38	40 1.57	16 .63	19 .75	6 .24	5,5 .22	20,5 .81	**CRA-1-8/1D-M-W55**	25
2D	2	M8	21	35	38	53	19	9	5,5	23,5	**CRA-2-3D-M-W55**	25
3D	3		.83	1.38	1.50	2.09	.75	.35	.22	.93		

ACT Mounting Hardware
Installation in Field Trays / Cable Ladders



Required components:

- 1 ACT Self-Locking Nut MUS-HKS ... W55
- 1 ACT Cover Plate GD ... W55
- 1 ACT Clamp Body (2 Clamp Halves)
- 1 ACT Hammerhead Bolt HKS ... W55

Suitable for commonly used field trays and cable ladders with diagonal, lengthwise and/or crosswise slots and perforations.

Material Code W55 ACT Mounting Hardware
Material Properties and Handling Instructions

ACT Mounting Hardware is made of Stainless Steel V4A (Material Code: W55) with enhanced corrosion resistance by practically excluding metallic and non-metallic impurities during production, processing and handling.

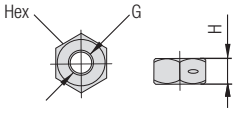
ACT Mounting Hardware is always delivered in hermetically-sealed quality storage bags with 25 pieces each to avoid contamination during transport.

Always make sure that ACT Mounting Hardware is stored separately from carbon steel and any other metals, and that appropriate tools are used to assemble the clamps.

E

All-Metal Self-Locking ACT Nut
Type MUS-HKS ... W55 (similar to DIN 980 / Biloc)



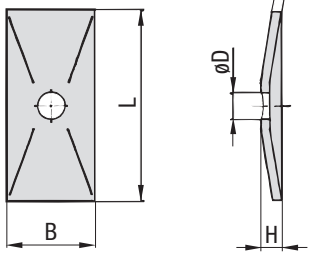


For use with ACT Hammerhead Bolts HKS ... W55

Group STAUFF	DIN	Dimensions (mm/in) Thread G	H	Hex	Ordering Code	Packaging Unit (in pieces / bag)
1D	1	M6	5	10	MUS-HKS-M6-W55	25
			.20	.39		
2D	2	M8	6,5	13	MUS-HKS-M8-W55	25
3D	3		.26	.51		

ACT Cover Plate
Type GD ... W55

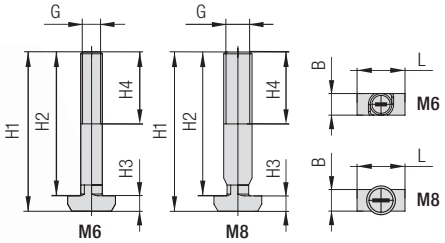




Group STAUFF	DIN	Dimensions (mm/in) L	B	H	S	ØD	Ordering Code	Packaging Unit (in pieces / bag)
1D	1	34	30	7	3	7	GD-1D-W55	25
		1.34	1.18	.28	.12	.28		
2D	2	52	30	7	3	9	GD-2D-W55	25
		2.05	1.18	.28	.12	.35		
3D	3	65	30	7	3	9	GD-3D-W55	25
		2.56	1.18	.28	.12	.35		

ACT Hammerhead Bolt
Type HKS ... W55

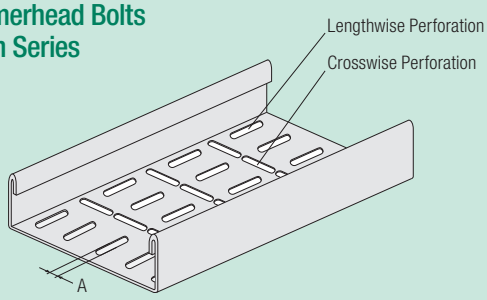




For use with Self-Locking ACT Nuts MUS-HKS ... W55

Group STAUFF	DIN	Dimensions (mm/in) G	H1	H2	H3	H4 min	B	L	Ordering Code	Packaging Unit (in pcs. / bag)
1D	1	M6	49,3	45	4,3	20	6,1	13,3	HKS-M6x45-W55	25
			1.94	1.77	.17	.79	.24	.52		
2D	2	M8	49,3	45	4,3	20	6	13,3	HKS-M8x45-W55	25
			1.94	1.77	.17	.79	.24	.52		
3D	3	M8	59,3	55	4,3	20	6	13,3	HKS-M8x55-W55	25
			2.33	2.17	.17	.79	.24	.52		

Suitability Chart for ACT Hammerhead Bolts in the Twin Series



ACT Hammerhead Bolts are suitable for field trays and cable ladders with diagonal, lengthwise and/or crosswise slots and perforations that meet the following requirements:

- **Dimension A**: 6,2 mm ... 7,0 mm / .24 in ... .28 in (Min ... Max)

In case of doubt, please do not hesitate to contact STAUFF prior to field application.



ACT Mounting Hardware
Multi-Level Installation (with Stacking & Hammerhead Bolts)

Required components (for a recommended maximum of two levels in total):

- 1 ACT Self-Locking Nut MUS-HKS ... W55
- 1 ACT Cover Plate GD ... W55
- 1 ACT Clamp Body (2 Clamp Halves)
- 1 ACT Stacking Bolt AF-HKSK...W55
- 1 ACT Safety Locking Plate SIV...ACT
- 1 ACT Clamp Body (2 Clamp Halves)
- 1 ACT Hammerhead Bolt HKSK ... W55

Material Code **W55**

ACT Mounting Hardware
Material Properties and Handling Instructions

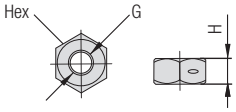
ACT Mounting Hardware is made of Stainless Steel V4A (Material Code: W55) with enhanced corrosion resistance by practically excluding metallic and non-metallic impurities during production, processing and handling.

ACT Mounting Hardware is always delivered in hermetically-sealed quality storage bags with 25 pieces each to avoid contamination during transport.

Always make sure that ACT Mounting Hardware is stored separately from carbon steel and any other metals, and that appropriate tools are used to assemble the clamps.

All-Metal Self-Locking ACT Nut
Type MUS-HKS ... W55 (similar to DIN 980 / Biloc)



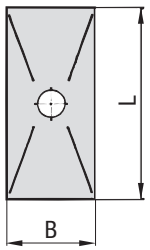


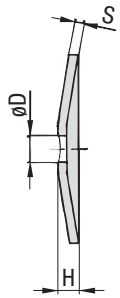
For use with ACT Stacking Bolts AF-HKS ... W55

Group STAUFF	DIN	Dimensions (mm/in) Thread G	H	Hex	Ordering Code	Packaging Unit (in pieces / bag)
1D	1	M6	5	10	MUS-HKS-M6-W55	25
			.20	.39		
2D	2	M8	6,5	13	MUS-HKS-M8-W55	25
3D	3		.26	.51		

ACT Cover Plate
Type GD ... W55



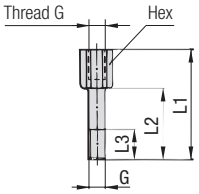




Group STAUFF	DIN	Dimensions (mm/in) L	B	H	S	ØD	Ordering Code	Packaging Unit (in pieces / bag)
1D	1	34	30	7	3	7	GD-1D-W55	25
		1.34	1.18	.28	.12	.28		
2D	2	52	30	7	3	9	GD-2D-W55	25
		2.05	1.18	.28	.12	.35		
3D	3	65	30	7	3	9	GD-3D-W55	25
		2.56	1.18	.28	.12	.35		

ACT Stacking Bolt
Type AF-HKSK ... W55



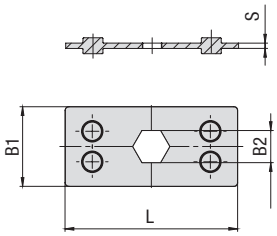


For use with Self-Locking ACT Nuts MUS-HKS ... W55

Group STAUFF	DIN	Dimensions (mm/in) G	L1	L2	L3 min.	Hex	Order Code	Packaging Unit (in pieces / bag)
1D	1	M6	49	35	12	11	AF-HKSK-1D-M-W55	25
			1.93	1.38	.47	.43		
2D	2	M8	50	37	11	12	AF-HKSK-2D-M-W55	25
			1.97	1.47	.43	.47		
3D	3	M8	61	46	15	12	AF-HKSK-3D-M-W55	25
			2.40	1.81	.59	.47		

ACT Safety Locking Plate
Type SIV ... ACT



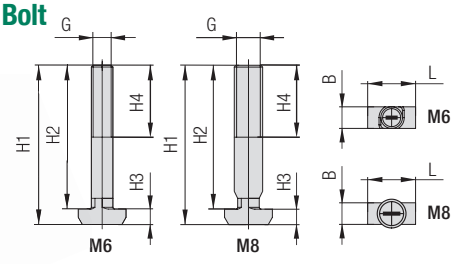


Made of flame-retardant PP-V0 plastic material; tested and V0 classified according to UL 94

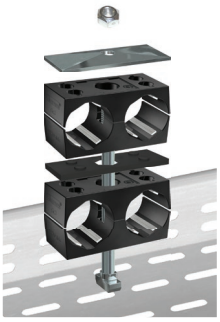
Group STAUFF	DIN	Dimensions (mm/in) L	B1	B2	S	Order Code	Packaging Unit (in pieces / bag)
1D	1	34	30	11,2	2	SIV-1D-PP-V0-ACT	25
		1.39	1.18	.44	.08		
2D	2	52	30	12,1	2	SIV-2D-PP-V0-ACT	25
		2.05	1.18	.48	.08		
3D	3	65	30	12,1	2	SIV-3D-PP-V0-ACT	25
		2.56	1.18	.48	.08		

ACT Hammerhead Bolt
Type HKSK ... W55





Group STAUFF	DIN	Dimensions (mm/in) G	H1	H2	H3	H4 min	B	L	Ordering Code	Packaging Unit (in pcs. / bag)
1D	1	M6	29,3	25	4,3	20	6,1	13,3	HKSK-M6x25-W55	25
			1.15	.98	.17	.79	.24	.52		
2D	2	M8	32,3	28	4,3	20	6	13,3	HKSK-M8x28-W55	25
			1.27	1.10	.17	.79	.24	.52		
3D	3	M8	42,3	38	4,3	20	6	13,3	HKSK-M8x38-W55	25
			1.67	1.50	.17	.79	.24	.52		



ACT Mounting Hardware
Multi-Level Installation in Field Trays / Cable Ladders (with Hammerhead Bolts)

Required components (for a recommended maximum of two levels in total):

- 1 ACT Self-Locking Nut MUS-HKS ... W55
- 1 ACT Cover Plate GD ... W55
- 1 ACT Clamp Body (2 Clamp Halves)
- 1 ACT Safety Locking Plate SIV-ACT
- 1 ACT Clamp Body (2 Clamp Halves)
- 1 ACT Hammerhead Bolt HKSV ... W55

Material Code **W55**

ACT Mounting Hardware
Material Properties and Handling Instructions

ACT Mounting Hardware is made of Stainless Steel V4A (Material Code: W55) with enhanced corrosion resistance by practically excluding metallic and non-metallic impurities during production, processing and handling.

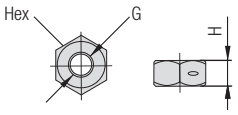
ACT Mounting Hardware is always delivered in hermetically-sealed quality storage bags with 25 pieces each to avoid contamination during transport.

Always make sure that ACT Mounting Hardware is stored separately from carbon steel and any other metals, and that appropriate tools are used to assemble the clamps.

E

All-Metal Self-Locking ACT Nut
Type MUS-HKS ... W55 (similar to DIN 980 / Biloc)



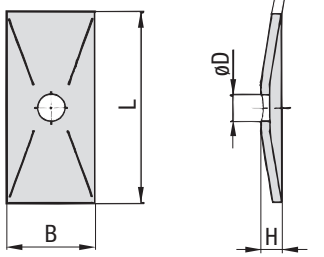


For use with ACT Hammerhead Bolts HKS ... W55

Group STAUFF	DIN	Dimensions (mm/in) Thread G	H	Hex	Ordering Code	Packaging Unit (in pieces / bag)
1D	1	M6	5	10	MUS-HKS-M6-W55	25
			.20	.39		
2D	2	M8	6,5	13	MUS-HKS-M8-W55	25
3D	3		.26	.51		

ACT Cover Plate
Type GD ... W55

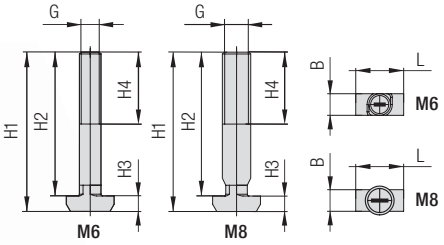




Group STAUFF	DIN	Dimensions (mm/in) L	B	H	S	ØD	Ordering Code	Packaging Unit (in pieces / bag)
1D	1	34	30	7	3	7	GD-1D-W55	25
		1.34	1.18	.28	.12	.28		
2D	2	52	30	7	3	9	GD-2D-W55	25
		2.05	1.18	.28	.12	.35		
3D	3	65	30	7	3	9	GD-3D-W55	25
		2.56	1.18	.28	.12	.35		

ACT Hammerhead Bolt
Type HKSV ... W55



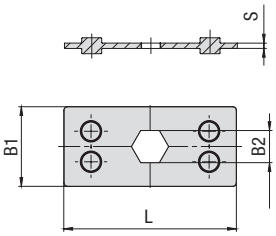


For use with Self-Locking ACT Nuts MUS-HKS ... W55

Group STAUFF	DIN	Dimensions (mm/in) G	H1	H2	H3	H4 min	B	L	Ordering Code	Packaging Unit (in pcs. / bag)
1D	1	M6	76,3	72	4,3	20	6,1	13,3	HKSV-M6x72-W55	25
			3.00	2.83	.17	.79	.24	.52		
2D	2	M8	77,3	73	4,3	20	6	13,3	HKSV-M8x73-W55	25
			3.04	2.87	.17	.79	.24	.52		
3D	3	M8	97,3	93	4,3	20	6	13,3	HKSV-M8x93-W55	25
			3.83	3.66	.17	.79	.24	.52		

ACT Safety Locking Plate
Type SIV ... ACT





Made of flame-retardant PP-V0 plastic material; tested and V0 classified according to UL 94

Group STAUFF	DIN	Dimensions (mm/in) L	B1	B2	S	Order Code	Packaging Unit (in pieces / bag)
1D	1	34	30	11,2	2	SIV-1D-PP-V0-ACT	25
		1.39	1.18	.44	.08		
2D	2	52	30	12,1	2	SIV-2D-PP-V0-ACT	25
		2.05	1.18	.48	.08		
3D	3	65	30	12,1	2	SIV-3D-PP-V0-ACT	25
		2.56	1.18	.48	.08		



Installation on Weld Plate

Required components:

1 Hexagon Head Bolt AS...W55
1 Cover Plate GD...W55
1 ACT Clamp Body (2 Clamp Halves)
1 Single Weld Plate SP...W55

Before welding, always make sure that the designated position of the weld plate is suitable for the expected loads.

Order Code

SP-110/10-ACT-GD-AS-M-W55

W55 is the recommended option for metal hardware to be used with STAUFF ACT Clamps.



Multi-Level Installation (with Weld Plate)

Required components (for each level) for a maximum of two levels in total:

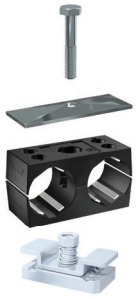
1 Stacking Bolt AF...W55
1 Safety Locking Plate SIG...W55
1 ACT Clamp Body (2 Clamp Halves)

The upper layer has to be secured by a cover plate and hexagon head bolts. The lower level has to be mounted to a weld plate.

Order Code

110/10-ACT-SIV-ACT-AF-M-W55

W55 is the recommended option for metal hardware to be used with STAUFF ACT Clamps.



Installation with Channel Rail Adaptors

Required components:

1 Hexagon Head Bolt AS...W55
1 Cover Plate GD...W55
1 ACT Clamp Body (2 Clamp Halves)
1 Channel Rail Adaptor CRA...W55

Suitable for various brands and types of channel rails (including Halfen, Hilti, Unistrut® etc.).

Order Code

CRA-110/10-ACT-GD-AS-M-W55

W55 is the recommended option for metal hardware to be used with STAUFF ACT Clamps.



Installation in Field Trays / Cable Ladders

Required components:

1 Self-Locking Nut MUS-HKS ... W55
1 Cover Plate GD ... W55
1 ACT Clamp Body (2 Clamp Halves)
1 Hammerhead Bolt HKS ... W55

Suitable for commonly used field trays and cable ladders with diagonal, lengthwise and/or crosswise slots and perforations.

Order Code

HKS-110/10-ACT-GD-MUS-M-W55

W55 is the recommended option for metal hardware to be used with STAUFF ACT Clamps.



Multi-Level Installation in Field Trays / Cable Ladders

Required components (for a maximum of two levels in total):

1 Self-Locking Nut MUS-HKS ... W55
1 Cover Plate GD ... W55
1 ACT Clamp Body (2 Clamp Halves)
1 Stacking Bolt AF-HKSK...W55
1 Safety Locking Plate SIV...ACT
1 ACT Clamp Body (2 Clamp Halves)
1 Hammerhead Bolt HKSK ... W55

Suitable for commonly used field trays and cable ladders with diagonal, lengthwise and/or crosswise slots and perforations.

Order Codes

Upper Level: **HKSK-212.7/12.7-ACT-GD-MUS-M-W55**
Lower Level: **212.7/12.7-ACT-SIV-ACT-AF-HKSK-M-W55**

W55 is the recommended option for metal hardware to be used with STAUFF ACT Clamps.



Multi-Level Installation in Field Trays / Cable Ladders

Required components (for a maximum of two levels in total):

1 Self-Locking Nut MUS-HKS ... W55
1 Cover Plate GD ... W55
1 ACT Clamp Body (2 Clamp Halves)
1 Safety Locking Plate SIV-ACT
1 ACT Clamp Body (2 Clamp Halves)
1 Hammerhead Bolt HKSV ... W55

Suitable for commonly used field trays and cable ladders with diagonal, lengthwise and/or crosswise slots and perforations.

Order Codes

Upper Level: **212.7/12.7-ACT-SIV-ACT**
Lower Level: **HKSV-212.7/12.7-ACT-GD-MUS-M-W55**

W55 is the recommended option for metal hardware to be used with STAUFF ACT Clamps.