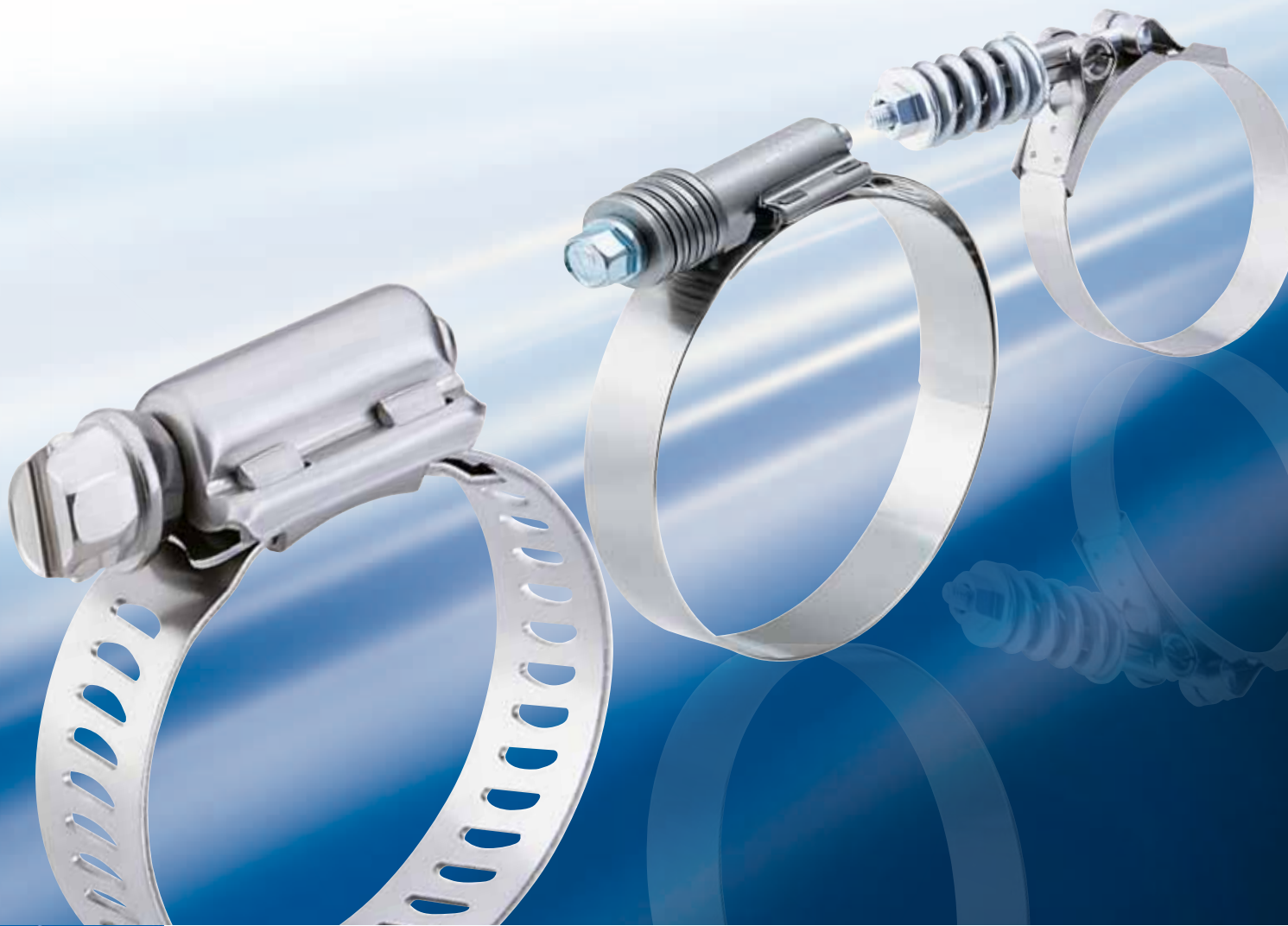


Leaders in joining technology



Your One Source for Quality Clamps



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- **Construction Vehicles**
- **Engines**
- **Buses**
- **Recreation Vehicles**
- **Heavy Truck**

BREEZE Industrial Products

Breeze introduced, pioneered and has been supplying perforated worm-gear clamps to the automotive, heavy-duty vehicle, aircraft and industrial markets for over sixty years. With the most comprehensive product line of worm-gear, T-Bolt, V-Band and specialty clamps manufactured in the U.S., Breeze clamp products enable each industry and user to meet their exact requirements with items of proven quality. Breeze is certified to ISO/TS 16949: 2002 and ISO 9001: 2000.

NORMA Group is a strategic development partner and global solution provider of Engineered Joining Technologies. Our Distribution Services combine the world's leading brands in standard hose and pipe fastenings with unrivalled applications expertise in areas such as Emission Control, Cooling System, Air Intake & Induction, Ancillary System and Infrastructure.



Table of Contents

Company overview	2
General Purpose Perforated Worm–Gear Hose Clamps	
Breeze Mini	4
Breeze Power–Seal	5
Breeze Aero BG/BGV	6
Breeze Aero HKFK	7
Constant Tension Clamps	
Breeze Constant Torque–HKF	8
Breeze T–Bolt Spring Loaded	9
Heavy Duty Clamp	
Breeze Hi–Torque	10
Breeze T–Bolt	11
Pipe Clamps	
Breeze V–Band	12
Banding Systems	
Breeze Make–A–Clamp	13

General Purpose Perforated Worm–Gear Hose Clamps

Breeze Mini

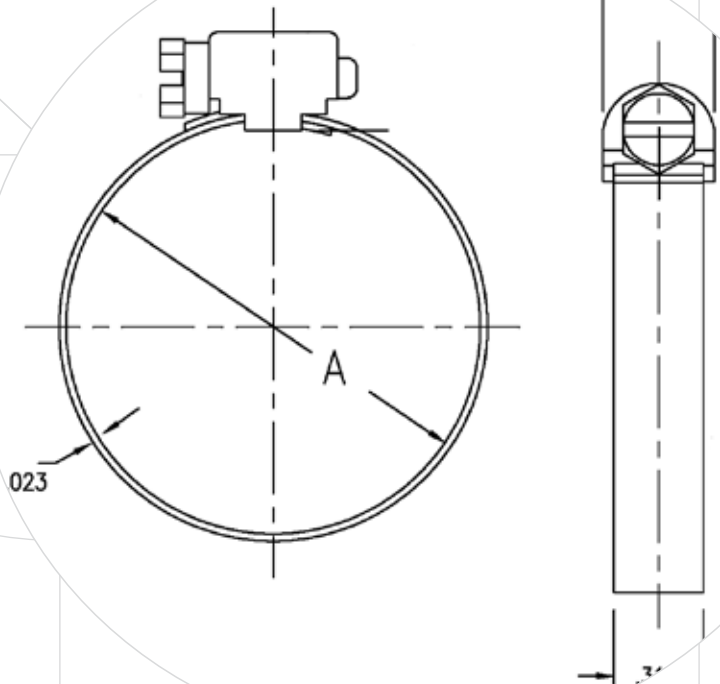
A lightweight, streamlined clamp generally used in small diameter applications such as air & fuel lines. The streamlined configuration allows for installation in tight fitting or difficult to reach areas. This clamp creates high sealing pressure with only 10 to 15 in./lbs. of installation torque.

5/16" (7.9 mm) band

1/4" (6.4 mm) slotted hex head screw

Per SAE standard J1508 Type "M"

SAE Size	EFFECTIVE DIAMETER RANGE			
	Min.		Max.	
	in.	mm	in.	mm
4	7/32	5.6	5/8	16
6	7/16	11	25/32	20
8	1/2	13	29/32	23
10	9/16	14	1-1/16	27
12	11/16	17	1-1/4	32
16	15/16	24	1-1/2	38
20	1-3/16	30	1-3/4	44
24	1-7/16	37	2	51
28	1-11/16	43	2-1/4	57
32	1-15/16	49	2-1/2	64



General Purpose Perforated Worm–Gear Hose Clamps

Breeze Power–Seal®

(Available on request)

General purpose automotive and industrial clamps. High strength 4–piece Quadra–Lock construction. Exceeds all SAE requirements. Use for all standard clamp applications.

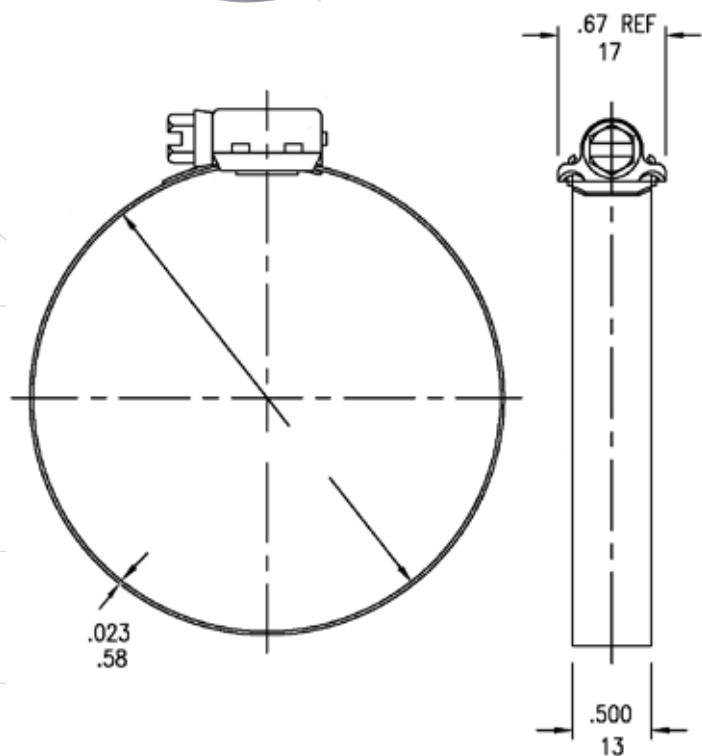
1/2" (12.7 mm) band

5/16" (7.9 mm) slotted hex head screw

Per SAE standard J1508 Type "F"



SAE Size	EFFECTIVE DIAMETER RANGE			
	Min.		Max.	
	in.	mm	in.	mm
6	7/16	11	25/32	20
8	1/2	13	29/32	23
10	9/16	14	1–1/16	27
12	11/16	17	1–1/4	32
16	13/16	21	1–1/2	38
20	13/16	21	1–3/4	44
24	1–1/16	27	2	51
28	1–5/16	33	2–1/4	57
32	1–9/16	40	2–1/2	64
36	1–13/16	46	2–3/4	70
40	2–1/16	52	3	76
44	2–5/16	59	3–1/4	83
48	2–9/16	65	3–1/2	89
52	2–13/16	71	3–3/4	95
56	3–1/16	78	4	102
60	3–5/16	84	4–1/4	108
64	3–9/16	91	4–1/2	114
72	1–7/8	48	5	127
80	2–1/2	64	5–1/2	140
88	3–1/8	79	6	152
96	3–5/8	92	6–1/2	165
104	4–1/8	105	7	178



General Purpose Perforated Worm–Gear Hose Clamps

Breeze AERO BG/BGV®

An integral extension of the band as an inner liner protects soft–surface hose (silicone and others) from damage caused by extrusion or shearing through the band slots. Liner clamps afford maximum protection to soft hoses while providing a true concentric seal.

Standard 14,3mm (1/2”) band
8mm slotted hex head screw

Per SAE standard J1508 Type “F”

EFFECTIVE DIAMETER RANGE		PART NUMBERS	
Effective diameter range		Carbon Screw	Stainless Steel Screw
Min.	Max.		
12	22	03627000017	03627009017
16	27	03627000022	03627009022
20	32	03627000026	03627009026
25	40	03627000033	03627009030
30	45	03627000038	03627009038
35	50	03627000043	03627009043
40	60	03627000050	03627009050
50	70	03627000060	03627009060
60	80	03627000070	03627009070
70	90	03627000080	03627009080
80	100	03627000090	03627009090
90	110	03627000100	03627009100
100	120	03627000110	pending
110	130	pending	03627009120
120	140	03627000130	pending
130	150	03627000140	pending
140	160	03626000150	03626009150

AERO BG/BG–C clamps also available with quick latch from diameter 25mm – 40mm – use part number xxx–V



Constant Tension Clamps

Breeze Aero HKFK

The Breeze Aero HKFK® is a breakthrough in clamping technology. A belleville spring mechanism permits the Aero HKFK® clamp to automatically increase or decrease its own diameter due to changes in operational or environmental temperatures.

This unique design eliminates “cold flow” leaks. Both the Aero–Seal and Heavy Duty construction CT clamps have an extended inner liner which protects all types of hoses from damage and helps to maintain consistent sealing pressure.

Aero–Seal Construction / All Stainless Steel				
Breeze Aero HKFK® Size table			Part Numbers	
Effective diameter range		Part Numbers	Carbon Screw	Stainless Steel
Min. mm	Max.mm			
AERO–SEAL construction for use on small diameter applications; bandwidth 14,3mm				
16	27	CT–9412	03626100022	03626101022
20	32	CT–9416	03626100026	03626101026
25	40	CT–9420	03626100033	03626101033
30	45	CT–9424	03626100038	03626101038
35	50	CT–9428	03626100043	03626101043
40	60	CT–9432	03626100050	03626101050
50	70	CT–9436	03626100060	03626101060
60	80	CT–9440	03626100070	03626101070
70	90	CT–9444	03626100080	03626101080



Constant Tension Clamps

Breeze Constant Torque HKF® Clamps

The Breeze Constant Torque® is a breakthrough in clamping technology. A Belleville spring mechanism permits the CT® clamp to automatically increase or decrease its own diameter due to changes in operational or environmental temperatures.

This unique design eliminates “cold flow” leaks. Both the Aero–Seal and Heavy Duty construction CT clamps have an extended inner liner which protects all types of hoses from damage and helps to maintain consistent sealing pressure.

Product line CT: 3/8” Hex Head

Product line HKF: 10mm Hex Head, round band edges

Per SAE standard J1508 Type “SLHD”



CONSTANT TORQUE HKF DIMENSIONS					
EFFECTIVE DIAMETER RANGE				Carbon Screw	Part Numbers
Min.		Max.			
in.	mm	in.	mm		
1–1/4	32	2–1/8	54	CT 200 L	1566003035
1–3/4	45	2–5/8	67	CT 250 L	1566003043
2–1/4	57	3–1/8	79	CT 300 L	1566003056
2–3/4	70	3–5/8	92	CT 350 L	1566003068
3–1/4	83	4–1/8	105	CT 400 L	1566003081
3–3/4	95	4–5/8	118	CT 450 L	1566003094
4–1/4	108	5–1/8	130	CT 500 L	1566003106
4–3/4	121	5–5/8	143	CT 550 L	1566003119
5–1/4	133	6–1/8	156	CT 600 L	1566003132
5–3/4	146	6–5/8	168	CT 650 L	1566003145
6–1/4	159	7–1/8	181	CT 700 L	1566003157
6–3/4	172	7–5/8	194	CT 750 L	1566003170
7–1/4	184	8–1/8	206	CT 800 L	1566003183
7–3/4	197	8–5/8	219	CT 850 L	1566003195
8–1/4	210	9–1/8	232	CT 900 L	1566003208

Constant Tension Clamps

Breeze T-Bolt Spring-Loaded

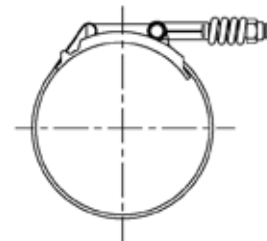
Breeze Spring-Loaded T-Bolt clamps provide comprehensive application coverage and are performance engineered. They meet the same durability, torque and quality standards as the standard Breeze T-Bolt clamps. The spring design adds constant tension performance. Available in standard and heavy duty springs.

3/4" (19mm) band

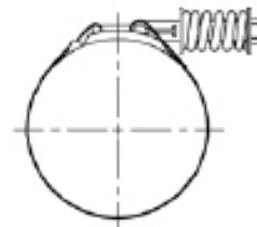
Per SAE standard J1508 Type "SLTB"



T-BOLT SPRING DIMENSIONS					
Min.		Max.		Standard Duty Part Number B9226	Heavy Duty Part Number B9224
in.	mm	in.	mm		
2.13	54	2.44	61.9	-0213	-0213
2.25	57.2	2.56	65.1	-0225	-0225
2.38	60.3	2.69	68.3	-0238	-0238
2.5	63.5	2.81	71.4	-0250	-0250
2.63	66.7	2.94	74.6	-0263	-0263
2.75	69.9	3.06	77.8	-0275	-0275
2.88	73	3.19	81	-0288	-0288
3	76.2	3.31	84.1	-0300	-0300
3.06	77.8	3.38	85.7	-0306	-0306
3.13	79.4	3.44	87.3	-0313	-0313
3.25	82.6	3.56	90.5	-0325	-0325
3.38	85.7	3.69	93.7	-0338	-0338
3.5	88.9	3.81	96.8	-0350	-0350
3.56	90.5	3.88	98.4	-0356	-0356
3.63	92.1	3.94	100	-0363	-0363
3.75	95.3	4.06	103.2	-0375	-0375
4.06	103.2	4.38	111.1	-0406	-0406
4.13	104.8	4.44	112.7	-0413	-0413
4.25	108	4.56	115.9	-0425	-0425
4.5	114.3	4.81	122.2	-0450	-0450
4.56	115.9	4.88	123.8	-0456	-0456
5	127	5.31	134.9	-0500	-0500
5.25	133.4	5.56	141.3	-0525	-0525
5.5	139.7	5.81	147.6	-0550	-0550
5.75	146.1	6.06	154	-0575	-0575
6	152.4	6.31	160.3	-0600	-0600
6.25	158.8	6.56	166.7	-0625	-0625
6.5	165.1	6.81	173	-0650	-0650
7	177.8	7.31	185.7	-0700	-0700
7.25	184.2	7.56	192.1	-0725	-0725
7.5	190.5	7.81	198.4	-0750	-0750



Standard Duty
Small Spring – B9226



Heavy Duty
Large Spring – B9224

Heavy-Duty Clamps

Breeze Hi-Torque™

The strongest worm-gear clamp made in the world today. Withstands more than 3 times the SAE torque requirements for Type F worm-gear clamps. Eight screw-threads are engaged in the band simultaneously for incredible torquing drive (over 150 in.lbs.), sealing pressure, and vibration resistance.

5/8" (15.8 mm) band
5/16" (7.9mm) hex head screw

Per SAE standard J1508 Type "HD"

Also available in 316 Stainless Steel – use HTS prefix for standard ranges and HPS prefix for extended ranges.



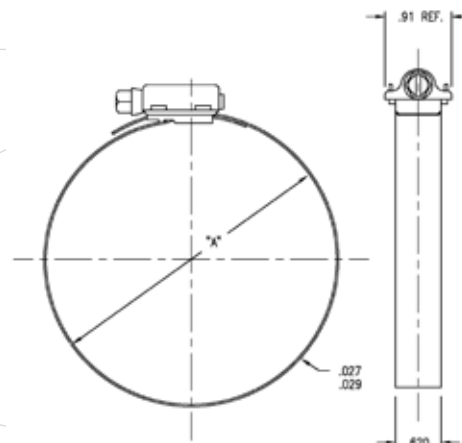
Standard Hi-Torque



Hi-Torque with Liner

SAE Size	EFFECTIVE DIAMETER RANGE				PART NUMBERS	
	Min.		Max.		410 SS*	All 300 SS
	in.	mm	in.	mm		
*	1	25	1-3/4	45	HTM-175	HTM-175 SP
212	1-1/4	32	2-1/8	54	HTM-200	HTM-200 SP
262	1-3/4	45	2-5/8	67	HTM-250	HTM-250 SP
312	2-1/4	57	3-1/8	79	HTM-300	HTM-300 SP
362	2-3/4	70	3-5/8	92	HTM-350	HTM-350 SP
412	3-1/4	83	4-1/8	105	HTM-400	HTM-400 SP
462	3-3/4	95	4-5/8	118	HTM-450	HTM-450 SP
512	4-1/4	108	5-1/8	130	HTM-500	HTM-500 SP
562	4-3/4	121	5-5/8	143	HTM-550	HTM-550 SP
612	5-1/4	133	6-1/8	156	HTM-600	HTM-600 SP
662	5-3/4	146	6-5/8	168	HTM-650	HTM-650 SP
712	6-1/4	159	7-1/8	181	HTM-700	HTM-700 SP
762	6-3/4	172	7-5/8	194	HTM-750	HTM-750 SP
812	7-1/4	184	8-1/8	206	HTM-800	HTM-800 SP
862	7-3/4	197	8-5/8	219	HTM-850	HTM-850 SP
912	8-1/4	210	9-1/8	232	HTM-900	HTM-900 SP
EXTENDED RANGE SIZES						
*	1-1/4	32	2-5/8	67	HP-2	HP-2 SP
*	2-1/8	54	4-1/8	105	HP-3	HP-3 SP
*	4	102	6-1/8	156	HP-4	HP-4 SP
*	6-1/8	156	9-1/8	232	HP-5	HP-5 SP

* Standard Hi-Torque also available with liner – use part number HTM xxx L



Heavy-Duty Clamps

Breeze T-Bolt

Breeze provides comprehensive application coverage with stainless steel T-Bolt clamps which are performance engineered for long term durability and manufactured to the highest quality standards. This high strength clamp is designed for industrial, marine and vehicle applications.

Stainless steel 3/4" (19mm) band width with "floating" bridge liner. Plated bolt and nylon insert locknut.

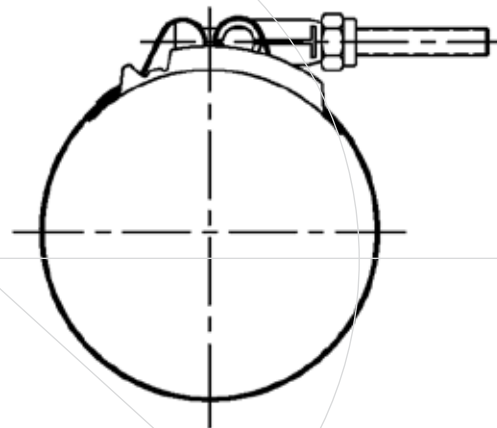
Available in a full range of sizes and materials. Custom O.E.M. designs are available.

Per SAE standard J1508 Type "TB"

Standard T-Bolt clamps are also available in 100% stainless steel. To order add suffix "SS" (ie... TB-125 SS).



BREEZE T-BOLT DIMENTIONS				
Min.		Max.		Part Number (Plated Carbon Steel Bolt)
in.	mm	in.	mm	
1.25	31.8	1.39	35.3	TB-125
1.38	34.9	1.52	39.7	TB-138
1.50	38.1	1.64	42.9	TB-150
1.63	41.3	1.88	47.6	TB-163
1.75	44.5	2.00	50.8	TB-175
1.88	47.6	2.19	55.6	TB-188
2.00	50.8	2.31	58.7	TB-200
2.13	54.0	2.44	61.9	TB-213
2.25	57.2	2.56	65.1	TB-225
2.38	60.3	2.69	68.3	TB-238
2.50	63.5	2.81	71.4	TB-250
2.63	66.7	2.94	74.6	TB-263
2.75	69.9	3.06	77.8	TB-275
2.88	73.0	3.19	81.0	TB-288
3.00	76.2	3.31	84.1	TB-300
3.06	77.8	3.38	85.7	TB-306
3.13	79.4	3.44	87.3	TB-313
3.25	82.6	3.56	90.5	TB-325
3.38	85.7	3.69	93.7	TB-338
3.50	88.9	3.81	96.8	TB-350
3.56	90.5	3.88	98.4	TB-356
3.63	92.1	3.94	100.0	TB-363
3.75	95.3	4.06	103.2	TB-375
4.00	101.6	4.31	109.5	TB-400
4.06	103.2	4.38	111.1	TB-406
4.13	104.8	4.44	112.7	TB-413
4.25	108.0	4.56	115.9	TB-425
4.50	114.3	4.81	122.2	TB-450
4.56	115.9	4.88	123.8	TB-456
4.75	120.7	5.06	128.6	TB-475
5.00	127.0	5.31	134.9	TB-500
5.25	133.4	5.56	141.3	TB-525
5.50	139.7	5.81	147.6	TB-550
5.75	146.1	6.06	154.0	TB-575
6.00	152.4	6.31	160.3	TB-600
6.25	158.8	6.56	166.7	TB-625
6.50	165.1	6.81	173.0	TB-650
6.75	171.5	7.06	179.4	TB-675
7.00	177.8	7.31	185.7	TB-700
7.25	184.2	7.56	192.1	TB-725
7.50	190.5	7.81	198.4	TB-750
7.75	196.9	8.06	204.8	TB-775
8.00	203.2	8.31	211.1	TB-800
8.25	209.6	8.56	217.5	TB-825
8.50	215.9	8.81	223.8	TB-850



Applications Include:

- Turbo
- Marine Exhaust
- Sump pump
- Diesel Exhaust
- Air Brakes
- Diaphragm Bodies
- Flanged Tanks
- Pumps
- Dairy Industry
- Cannisters
- Lab Equipment
- Bleed Air Systems
- Filter Bags
- Sanitary Systems

Custom Designs & Sizes Available

Pipe Clamps

Breeze V-Band

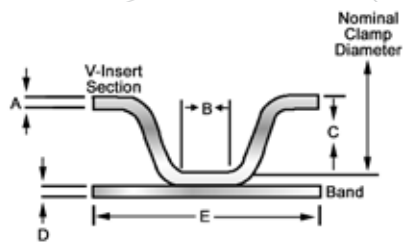
Breeze V-Band clamps provide fast, secure coupling for connecting flanged joints. The V-Band clamp features high strength and positive sealing integrity.

Custom designs and sizes available.

Typical applications include heavy duty diesel engine exhaust and turbochargers.



V-Band – Dimensions												
Nominal Diameter	V-Insert Sections						Bands				Part Number	
	A in "	A in mm	B in "	B in mm	C in "	C in mm	D in "	D in mm	E in "	E in mm		
2.88"	.060	1,52	.207	5,26	.281	7,14	.035	0,89	.750	19	VT10288	
3.21"	.050	1,27	.262	6,65	.141	3,58	.035	0,89	.750	19	VT10321	
3.50"	.080	2,03	.207	5,26	.281	7,14	.040	1,02	.875	22	VT10350	
3.82"	.077	1,96	.207	5,26	.281	7,14	.040	1,02	.875	22	VT10382	
3.88"	.050	1,27	.400	10,16	.281	7,14	.040	1,02	.875	22	VT10388	
4.06"	.077	1,96	.239	6,07	.281	7,14	.050	1,27	.875	22	VT10406	
4.13"	.050	1,27	.262	6,65	.141	3,58	.035	0,89	.750	19	VT10413	
4.19"	.050	1,27	.400	10,16	.281	7,14	.040	1,02	.875	22	VT10419	
4.25"	.050	1,27	.400	10,16	.281	7,14	.040	1,02	.875	22	VT10425	
4.50"	.077	1,96	.207	5,26	.281	7,14	.040	1,02	.875	22	VT10450-A	
4.50"	.050	1,27	.262	6,65	.141	3,58	.035	0,89	.750	19	VT10450	
4.61"	.050	1,27	.156	3,96	.218	5,54	.035	0,89	.750	19	VT10461	
4.69"	.050	1,27	.400	10,16	.281	7,14	.040	1,02	.875	22	VT10469	
4.75"	.050	1,27	.400	10,16	.281	7,14	.040	1,02	.875	22	VT10475	
4.75"	.077	1,96	.158	4,01	.310	7,87	.040	1,02	.875	22	VT10475-A	
4.81"	.077	1,96	.207	5,26	.281	7,14	.040	1,02	.875	22	VT10481	
4.91"	.040	1,02	.293	7,44	.296	7,52	.050	1,27	.875	22	VT10491	
4.94"	.060	1,52	.181	4,60	.281	7,14	.035	0,89	.750	19	VT10494	
5.10"	.050	1,27	.262	6,65	.141	3,58	.035	0,89	.750	19	VT10510	
5.25"	.050	1,27	.262	6,65	.141	3,58	.035	0,89	.750	19	VT10525	
5.30"	.050	1,27	.262	6,65	.141	3,58	.035	0,89	.750	19	VT10530	
5.65"	.050	1,27	.262	6,65	.141	3,58	.035	0,89	.750	19	VT10565	
5.81"	.077	1,96	.207	5,26	.281	7,14	.062	1,57	.875	22	VT10581	
5.88"	.050	1,27	.400	10,16	.281	7,14	.040	1,02	.875	22	VT10588	
5.88"	.050	1,27	.400	10,16	.281	7,14		0,00		0	VT10588-1	
5.92"	.090	2,29	.293	7,44	.296	7,52	.050	1,27	.875	22	VT10592	
6.88"	.060	1,52	.400	10,16	.281	7,14	.040	1,02	.875	22	VT10688	
8.08"	.050	1,27	.262	6,65	.141	3,58	.035	0,89	.750	19	VT10808	



Banding Systems

Breeze Make-A-Clamp

This is a maintenance "clamp system" in a box. By simply cutting off a piece of banding from a continuous roll, you can make any size 100% stainless steel worm-gear clamp from 3" diameter on up (10 inch or 10 foot diameter, you pick it and you do it in fifteen seconds). It's a must for anyone who's likely to encounter requirements for varying sized large clamps. Reusable. Superior to and more versatile than "crimp/buckle" banding and strapping products.

1/2" (12.7mm) band

5/16" (7mm) slotted hex head screw

9/16" (14.2mm) wide stainless steel fastener & screw/
housing assemblies

Sizes and Part Numbers			
Stock no.	Contents	Packed	WT PER CTN.
4000	Mini kit: 8-1/2 Ft. band, 3 adj. fasteners, 1 band splice	5 boxes of 10 kits to standard carton (50 kits)	28
4001	Kit with 100 Ft. band, 25 adj. fasteners, 10 band splices	6 kits to standard carton	32
4002	Kit with 50 Ft. band, 10 adj. fasteners, 5 band splices	6 kits to standard carton	18
4003	Box of 25 adj. fasteners	10 boxes to standard carton (250 fasteners)	16
4004	Box of 10 adj. fasteners	20 boxes to standard carton (200 fasteners)	13
4005	Box with 100 Ft. band, 10 band splices	6 boxes to standard carton	22
4006	Box with 50 Ft. band, 5 band splices	6 boxes to standard carton	12
4007	6" demonstrator kit with clamp	Packed by the unit	4 oz.
4008	Box of 10 band splices	50 boxes to standard carton (500 splices)	13 oz.



Quality in products and services

As a customer of NORMA Group premium hose clamps and coupling products, you will always receive:

- High quality products produced in plants certified to ISO 9001 and ISO/TS 16949.
- The broadest hose clamp product line available featuring a wide variety of sizes, strength, designs and materials to meet all customer clamping requirements.
- An established reputation for product innovation and reliability. We offer "Quality In Every Detail."

- Customized, highly engineered product development. Along with our standard product lines, we manufacture and are constantly developing specialty products to exact customer specifications.
- Technically superior engineering support and customer service.
- Worldwide manufacturing and distribution locations get our products to you when you need them.
- Our products are OEM specified and supplied to all major manufacturers in the automotive, truck, aircraft, bus, construction equipment and marine industries.

Our goal is to put our customer first – to continue to develop our product range with improved solutions and services so that we will always be your first choice for superior clamping products!

Our products are OEM

International Materials Standard

Standard	DIN	AISI/AS	BS	AFNOR NF	SS	SUS
S10, W1	<i>Completely zinc plated steel</i>					
S20	Manufacturer's choice min. 200 hours to red rust.					
W2	1. 4016 in housing and band. Screw: 72 hours to red rust.					
S30, W3	1.4016	430	430 S 17	Z8 C17	2320	430
S40, W4	1.4301	304	304 S 15	Z6 CN 18-09	2332	304
S50, W5	1.4401	316	316 S 31	Z3 CND 17-11-1	2343	316
S60	1.4436	316			2347	

SS = Swedish Standard.

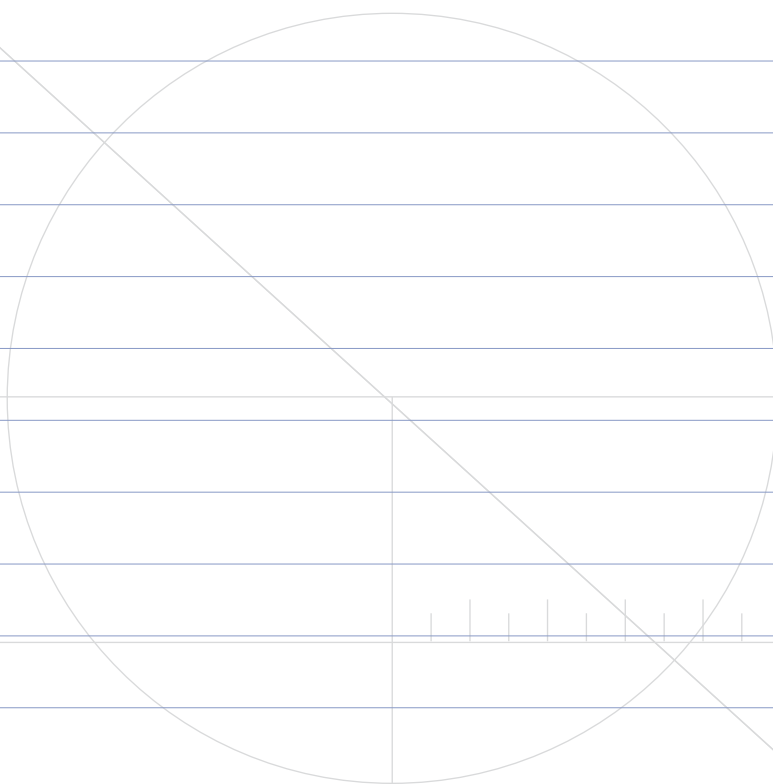
DIN = Deutsches Institut für Normung.

AISI = American Iron and Steel Institute.

Notes

A series of horizontal blue lines for writing notes, spanning the width of the page. A large, faint watermark consisting of a circle and a diagonal line is overlaid on the page.

Handwriting practice area with horizontal lines and a large circle.





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