

General Purpose Perforated Worm-Gear Hose Clamps

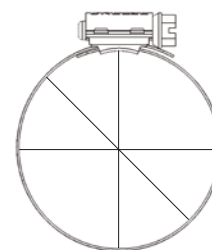
Breeze Power-Seal®

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"



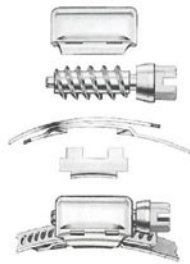
SAE Size	EFFECTIVE DIAMETER RANGE				PART NUMBERS			
	Min.		Max.		Plated Hex Screw	410 SS Hex Screw	300 SS Hex Screw	All 316 SS
	in.	mm	in.	mm				
6	7/16	11	25/32	20	62006	64006	63006	66006
8	1/2	13	29/32	23	62008	64008	63008	66008
10	9/16	14	1-1/16	27	62010	64010	63010	66010
12	11/16	17	1-1/4	32	62012	64012	63012	66012
16	13/16	21	1-1/2	38	62016	64016	63016	66016
20	13/16	21	1-3/4	44	62020	64020	63020	66020
24	1-1/16	27	2	51	62024	64024	63024	66024
28	1-5/16	33	2-1/4	57	62028	64028	63028	66028
32	1-9/16	40	2-1/2	64	62032	64032	63032	66032
36	1-13/16	46	2-3/4	70	62036	64036	63036	66036
40	2-1/16	52	3	76	62040	64040	63040	66040
44	2-5/16	59	3-1/4	83	62044	64044	63044	66044
48	2-9/16	65	3-1/2	89	62048	64048	63048	66048
52	2-13/16	71	3-3/4	95	62052	64052	63052	66052
56	3-1/16	78	4	102	62056	64056	63056	66056
60	3-5/16	84	4-1/4	108	62060	64060	63060	66060
64	3-9/16	91	4-1/2	114	62064	64064	63064	66064
72	1-7/8	48	5	127	62072	64072	63072	66072
80	2-1/2	64	5-1/2	140	62080	64080	63080	66080
88	3-1/8	79	6	152	62088	64088	63088	66088
96	3-5/8	92	6-1/2	165	62096	64096	63096	66096
104	4-1/8	105	7	178	62104	64104	63104	66104

BREEZE POWER-SEAL WORM DRIVE HOSE CLAMPS

“The quality choice of demanding professionals”

The BREEZE worm-gear clamp with heavy duty 4-piece Quadra-lock construction are designed for use in general-purpose, industrial & automotive applications. The BREEZE Quadra-lock clamp is a significant upgrade from common 3 piece SAE worm-gear designs, delivering the ultimate in quality & value.

- BREEZE Stainless Steel 4 piece housing design



Quadra-Lock – 4 pieces locked together provide strength and stability
 300 series stainless housing and saddle ‘clinched’ at 4 points virtually eliminates housing ‘lift’ and ‘twist’
 Saddle interlocks into band for even greater strength

- Breeze Screws



Buttressed screw thread reinforced for extra strength and smoother engagement
 More threads per screw and increased torque strength
 Thicker, stronger shaft
 Shoulder prevents jamming into housing

- Breeze Stainless Steel Bands
- Breeze Circumferential Pressures



Arcial Slots – More steel between perforations for added strength and smoother worm-gear engagement
 Concave band seals from centre to outside resulting in a uniform seal



QC'd to comply with military std. specs for circumferential pressure without leakage
 Even distribution of sealing pressure with no excessive pressure points
 Higher sealing pressure with lower applied torque

“ In Every Comparison, BREEZE Delivers the Best Clamps in the Business”

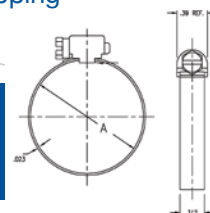
TECHNICAL FACTS:

- Exceeds SAE J1508 Specifications
- High Clamping Force
- High destruction torque
- Low idle torque
- Made in USA
- 3 material Grades
- OEM Approved & Fleet Specified

MINIATURES:

- Compact streamlined design for fuel, air and transmission hose lines.
- Slotted 1/4” Hex head screw with screwdriver slot installs easily with flexdriver or virtually any screwdriver.
- 5/16” bandwidth created higher sealing pressure with lower applied installation torque
- High quality Stainless Steel bands and housings for durability
- Arcial slots in band provide added strength against stripping
- Exceeds SAE J 1508 specification.

Nominal Installation Torque
 Recommendations: 15 in-lb (1.7Nm)
 Recommended speed <200 RPM

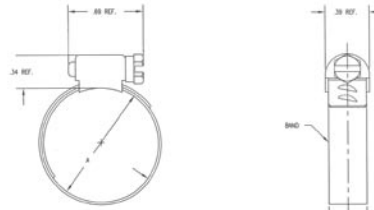


MINIATURES: EFI LINER CLAMPS

- All the features of the Miniature clamps as detailed
- Extended internal liner to cover the clamp band slots, protecting the hose surface and to avoid extrusion of soft EFI/Fuel hose when tightening the clamp.

Nominal Installation Torque

Recommendations: 15 in-lb (1.7Nm)
Recommended speed <200 RPM

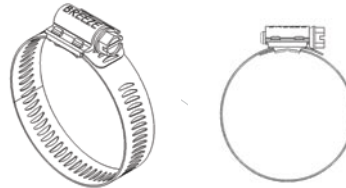


FULL SIZE POWER-SEAL Quadra-Lock

- Design features heavy-duty four-piece, industrial-aircraft construction.
- Housing is clinched at 4 points for extra strength and stability enabling clamp to resist twist and housing tilt common during installation.
- Stainless Steel Bands, housings and saddles for ultimate durability is a BREEZE standard.
- Arcial slots give added strength against stripping
- Reinforced buttresses screw threads coupled with the arcial band slots create smooth, positive worm gear engagement
- Five screw threads engage in the band – more than any other brand- for increased torque strength
- 5/16" Hex headed screw with blade driver slot for ease of installation
- Smooth housing underside ensures more even distribution of sealing pressure.
- Exceeds SAE J 1508 specifications

Nominal Installation Torque

Recommendations: 15 in-lb (5 Nm)
Recommended speed <200 RPM



Material Grades:

W2 - Stainless Steel Band & Housing with plated screw.
Series 3 500, 62000

W3 - All Stainless Steel 410 series series 3600, 63000,

W4 - All Stainless Steel Marine grade 300 series 3700, 63000

Fits Hose I.D. Std. 3/16" Wall	Popularity
Best fit	
5/16"	A
3/8	A
3/8"	C
1/2	C
5/8	A
3/4	A
1	B
1-1/4	A
1-1/2	B
1-3/4	A
2	B
2-1/4	A
2-1/2	C
2-3/4	C
3	C
3-1/4	C
3-1/2	C
3-3/4	C
4	C
4-1/2	C
5	D
5-1/2	D
6	D
6-1/2	D

* Larger sizes available

NORMACLAMP® GBS

Heavy-duty clamps for multiple applications

NORMACLAMP® GBS are designed primarily for use in applications where hose clamps must meet stringent requirements. In particular if suction and pressure hoses – complete with plastic or steel inserts and high shore hardness values – are to be connected and attached. They are therefore particularly suitable for use on commercial and special vehicles. Their standout feature is the exceptionally high levels of band tensile force they demonstrate. NORMACLAMP® GBS clamps are also extremely easy to install, whether you're using manual, pneumatic or electrical standard tools.

1 W1/W2/W4

- New specially designed bolt with integrated spacer
- improved performance; captive **W5**
 - Socket head cap bolt

2 Reinforced band loops

- ability to withstand much higher torques

3 Mechanically locked closure

- no welding spots and no contact corrosion

4 Bridge

- hose protection

5 Robust band with rounded edges

- prevents injuries and damage to hoses.

6 Hollow trunnions

- reduces the tensile forces on the bolt and to the mechanical lock



Advantages at a glance

- Failure torques improved twice over
- Band tensile force levels improved three times over

Applications

- Machine building
- Chemical industry
- Irrigation systems
- Ship manufacturing
- Railway industry
- Agricultural machines
- Building machines
- Engine manufacturing
- Pump and filter
- Mining Industry

NORMACLAMP® GBS

Versions

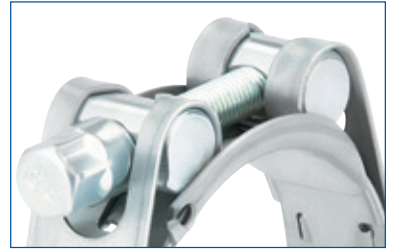
NORMACLAMP® GBS Hollow trunnions

The hollow trunnion has a double benefit: when the extreme tensile forces are applied to the bolt, the deformation of the hollow trunnion reduces the tensile forces on the bolt and the mechanical lock, drastically extends the time until destruction. Since neither the band nor the bolt is deformed, the clamp can be re-used - a unique characteristic on the market.



NORMACLAMP® GBS Solid trunnions

To suit the requirements of all markets, NORMACLAMP GBS is in sizes 17 to 23 mm available with solid trunnions and welded band.



NORMACLAMP® GBS with QRC

NORMACLAMP® GBS clamps are also available with a QRC (QUICK Release Closure) on request. The bolt on the closure is easy to release, ensuring straightforward installation and removal.



Only available in W1 and W2.

NORMACLAMP® GBS 2-part

The two-part NORMACLAMP® GBS is another of the versions available.



Materials

W1	W2	W3	W4	W5
x	x		x	x

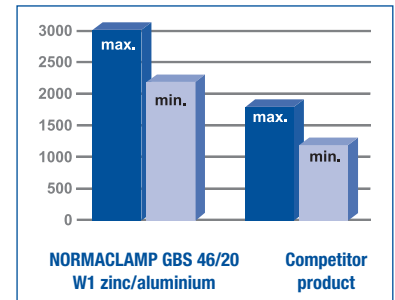
Material	Corrosion resistance in salt spray testing
W1	Min. 72 h
W2	Min. 72 h
W4	Min. 240 h
W5	Min. 400 h

NORMACLAMP® GBS						
Band width	Material thickness in mm					
	W1	W2	W4	W5	M	SW
18	0.8	0.6	0.6	0.6	6	8
20	1.0	0.8	0.8	0.8	7	10
25	1.0	1.0	1.0	1.0	8	13
30	1.3	1.0	1.0	1.0	10	17

NORMACLAMP® GBS

Band tensile force

The results of numerous series of tests have underlined the technical superiority of NORMACLAMP® GBS products over their competitors:



Ordering information

When submitting requests and orders, please specify the data in the following way

	1. Type	2. Clamping range	3. Band width	4. Material	5. Parts
Example	GBS QRC	43-47	20	W1	1-part

Table of torques

NORMACLAMP® GBS					
Band width	Failure torque (minimum) Nm				Recommended tightening torque Nm
	W1	W2	W4	W5	
18	15	15	15	15	8
20	25	20	20	20	10
25	35	30	30	30	20
30	50	45	45	45	25

NORMACLAMP® GBS QRC			
Band width	Failure torque (minimum) Nm		Recommended tightening torque Nm
	W1	W2	
18	10	10	6
20	15	15	8
25	25	25	18
30	40	40	22

NORMACLAMP® GBS

Sizes, band widths & materials

NORMACLAMP® GBS							
Width	Designation	Clamping ranges		W1	W2	W4	W5
		in mm	in inches				
18	GBS M17-19/18 SK*	17-19	1 1/16-3/4	X	X	X	X
	GBS M19-21/18 SK*	19-21	3/4-13/16	X	X	X	X
	GBS M21-23/18 SK*	21-23	1 3/16-7/8	X	X	X	X
	GBS M23-25/18 SK*	23-25	7/8-1	X	X	X	X
	GBS M25-27/18 SK	25-27	1-1 1/16	X	X	X	X
	GBS M27-29/18 SK	27-29	1 1/16-1 1/8	X	X	X	X
	GBS M29-31/18 SK	29-31	1 1/8-1 1/4	X	X	X	X
	GBS M31-34/18 SK	31-34	1 1/4-1 5/16	X	X	X	X
	GBS M34-37/18 SK	34-37	1 5/16-1 7/16	X	X	X	X
	GBS M37-40/18 SK	37-40	1 7/16-1 9/16	X	X	X	X
20	GBS M40-43/18 SK	40-43	1 9/16-1 11/16	X	X	X	X
	GBS M43-47/20 SK	43-47	1 11/16-2 7/8	X	X	X	X
	GBS M47-51/20 SK	47-51	1 7/8-2	X	X	X	X
	GBS M51-55/20 SK	51-55	2-2 3/16	X	X	X	X
	GBS M55-59/20 SK	55-59	2 3/16-2 5/16	X	X	X	X
	GBS M59-63/20 SK	59-63	2 5/16-2 1/2	X	X	X	X
25	GBS M63-68/20 SK	63-68	2 1/2-2 11/16	X	X	X	X
	GBS M68-73/25 SK	68-73	2 11/16-2 7/8	X	X	X	X
	GBS M73-79/25 SK	73-79	2 7/8-3 1/8	X	X	X	X
	GBS M79-85/25 SK	79-85	3 1/8-3 3/8	X	X	X	X
	GBS M85-91/25 SK	85-91	3 3/8-3 9/16	X	X	X	X
	GBS M91-97/25 SK	91-97	3 9/16-3 13/16	X	X	X	X
	GBS M97-104/25 SK	97-104	3 13/16-4 1/8	X	X	X	X
	GBS M104-112/25 SK	104-112	4 1/8-4 7/16	X	X	X	X
30	GBS M112-121/25 SK	112-121	4 7/16-4 3/4	X	X	X	X
	GBS M121-130/25 SK	121-130	4 3/4-5 1/8	X	X	X	X
	GBS M130-140/30 SK	130-140	5 1/8-5 1/2	X	X	X	X
	GBS M140-150/30 SK	140-150	5 1/2-5 7/8	X	X	X	X
	GBS M150-162/30 SK	150-162	5 7/8-6 3/8	X	X	X	X
	GBS M162-174/30 SK	162-174	6 3/8-6 7/8	X	X	X	X
	GBS M174-187/30 SK	174-187	6 7/8-7 3/8	X	X	X	X
	GBS M187-200/30 SK	187-200	7 3/8-7 7/8	X	X	X	X
GBS M200-213/30 SK	200-213	7 7/8-8 3/8	X	X	X	X	
GBS M213-226/30 SK	213-226	8 3/8-8 7/8	X	X	X	X	
GBS M226-239/30 SK	226-239	8 7/8-9 3/8	X	X	X	X	
GBS M239-252/30 SK	239-252	9 3/8-9 15/16	X	X	X	X	

* These diameters have solid trunnions and do not feature a mechanically locked closure, but are instead spot-welded.

NORMACLAMP® GBS 2-part							
Width	Designation	Clamping ranges		W1	W2	W4	W5
		in mm	in inches				
18	GBS M59-67/18 SK 2T	59-67	23/16-25/8	X	X	X	X
	GBS M67-75/18 SK 2T	67-75	25/8-2 15/16	X	X	X	X
20	GBS M67-75/20 SK 2T	67-75	25/8-2 15/16	X	X	X	X
	GBS M75-83/20 SK 2T	75-83	2 15/16-3 1/4	X	X	X	X
	GBS M83-91/20 SK 2T	83-91	3 1/4-3 9/16	X	X	X	X
25	GBS M88-100/25 SK 2T	88-100	33/8-4	X	X	X	X
	GBS M100-116/25 SK 2T	100-116	4-4 9/16	X	X	X	X
	GBS M116-136/25 SK 2T	116-136	4 9/16-5 3/8	X	X	X	X
	GBS M136-156/25 SK 2T	136-156	5 3/8-6 5/32	X	X	X	X
	GBS M156-176/25 SK 2T	156-176	6 5/32-7 3/32	X	X	X	X
30	GBS M125-145/30 SK 2T	125-145	4 15/16-5 11/16	X	X	X	X
	GBS M145-168/30 SK 2T	145-168	5 11/16-6 5/8	X	X	X	X
	GBS M168-193/30 SK 2T	168-193	6 5/8-7 19/32	X	X	X	X
	GBS M193-220/30 SK 2T	193-220	7 19/32-8 21/32	X	X	X	X
	GBS M220-245/30 SK 2T	220-245	8 21/32-9 21/32	X	X	X	X
	GBS M245-270/30 SK 2T	245-270	9 21/32-10 3/5	X	X	X	X
	GBS M270-295/30 SK 2T	270-295	10 3/5-11 10/16	X	X	X	X
	GBS M295-320/30 SK 2T	295-320	11 10/16-12 3/5	X	X	X	X
	GBS M320-345/30 SK 2T	320-345	12 3/5-13 7/12	X	X	X	X



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