BULTEN

FLANGEFORM® NUTS

PROVIDES ONE OF THE FASTENER INDUSTRY'S STRONGEST ATTACHMENT POINTS, MAKING IT IDEAL FOR AUTOMOTIVE, APPLIANCE, SOLAR RACKING, AND GENERAL INDUSTRIAL APPLICATIONS.

A STRONGER SOLUTION

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Flangeform Clinch Nuts are threaded fasteners with unique ribs designed for installation into thin gauge materials. The fastener plunges the pre-punched hole and wraps itself around the material whilst the ribs embed themselves providing an integral high strength attachment point.

ADVANTAGES

- High strength attachment point in thin materials.
- Accurate & positive positioning.
- High bending moment resistance.
- One fastener type per size covering material thickness range.
- No weld splatter / fumes – environmentally friendly process.
- Provides a flush mounting surface.
- Provides exceptional strength from both sides of the mating sheet, unlike traditional clinch fasteners which provide exceptional strength from only one side of the mating sheet.
- Can be installed into 2 layers of material.
- Ideally suited to multiple insertion and automated assembly in die or off line.

PROCESS

HOLE PREPERATION

A pre-punched or drilled hole is required with a tolerance of +/- 0.1mm. Refer to product data sheet for hole sizes.

SHEET PREPERATION

Flangeform is suited up to 80Rb.

SHEET THICKNESS

Refer to the product data sheet for material thickness range.

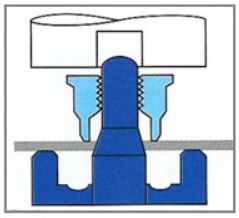
INSTALLATION

Can be used on progression, transfer, off-line mechanical / hydraulic presses using auto-fed or manual technique.

TOOLING

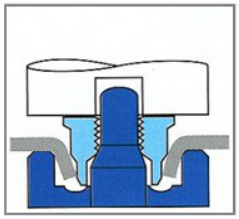
Mini-Die (bottom tool) will vary depending upon the material thickness, hole size and hardness.

LOCATION



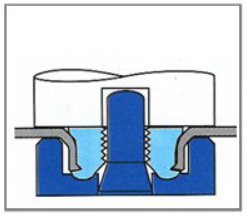
Material is placed over the mini-die and radially located on the pin.

PLUNGING



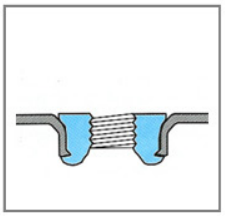
Force is applied to the nut/ stud which enables it to plunge the material.

WRAPPING



The nut/stud is formed around the parent material by the profile of the mini-die.

INSTALLED



The nut is flush and integral with the component.

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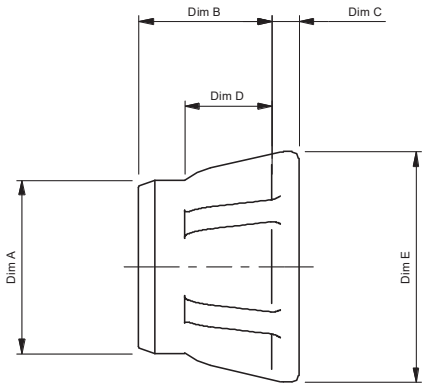
TECHNICAL DATA



Thread Size		Can Dia. A	Overall Height B	Spline Length D	Flange Dia. E	Material mm	Hole Size Typical	Tonnage Typical
Unified	Metric							
-	M4	6.63	5.13	2.85	8.8	0.7	4.6	3
						1	4.6	3
						1.2	4.6	3
						1.5	4.7	3.5
10-32	M5	8.25	7.68	4.25	10.9	0.7	4.8	3.5
						1	4.8	3.5
						1.2	5.5	4
						1.5	5.7	4.5
						2	5.8	5
1/4	M6	9.9	9.18	5	13.17	0.7	5.1	4
						1	5.1	4
						1.2	5.9	4.5
						1.5	6.5	5.5
						2	6.5	6
						2.5	6.6	8
5/16	M8	13.29	10.85	5.65	17.6	0.7	6.9	5
						1	6.9	5
						1.2	8	5.5
						1.5	8	7.5
						2	8.5	8
						2.5	8.6	9.5
						3	8.9	10
7/16	M10	16.48	12.58	6.45	21.75	1	9.4	8
						1.2	9.4	8.5
						1.5	10	9.5
						2	10.3	10
						2.5	11.4	11.5
						3	11.6	12
1/2	M12	19.9	16.23	8.75	26.3	1.5	11.1	16
						2	12.1	16.5
						2.5	13.1	17
						3	13.1	17.5

MATERIAL

Nuts
Steel BS EN ISO 10263-2.
Finished nuts to conform to BS3692 Grade 8 mechanical properties. Other materials are available.

THREAD

Standard ISO Metric coarse pitch series to ISO 965/BS 3643-6H. Gauge tolerances in accordance with ISO 1502 / BS919 used to determine thread acceptability. After plating, threads must be capable of accepting a Go gauge of basic size. Other thread forms available.

FINISH

Zinc & Clear trivalent passivation as standard, other plating finishes available.

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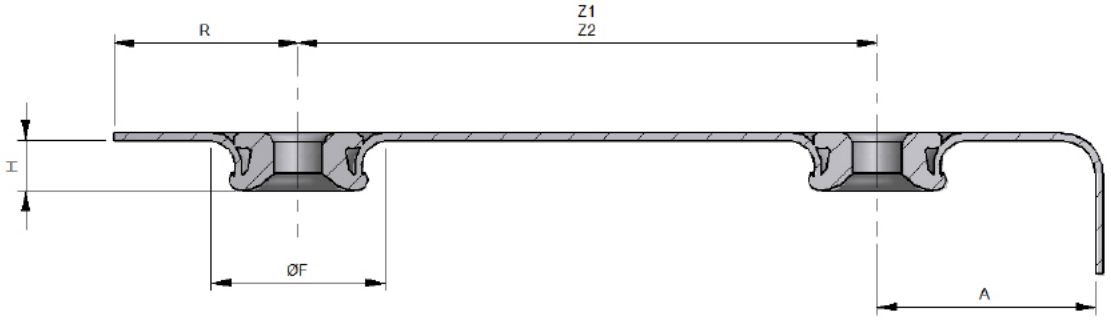
INSTALLATION DATA



Flangeform studs manual emplacement data.						
Nut size	Dimension H	Dimension ØF	Dimension R min	Dimension A min	*Dimension Z1	*Dimension Z2
M4	2.5	9.5	7.0	9.0	16.0	13.0
M5	3.8	12.5	8.5	10.0	19.0	16.0
M6	4.00-5.0	15.0	10.0	12.0	22.0	19.0
M8	5.5-7.5	19.0	14.0	15.0	28.5	24.0
M10	6.5-8.5	25.4	17.0	20.0	38.0	32.0
M12	10.2-10.7	35.0	25.0	27.0	48.0	44.0

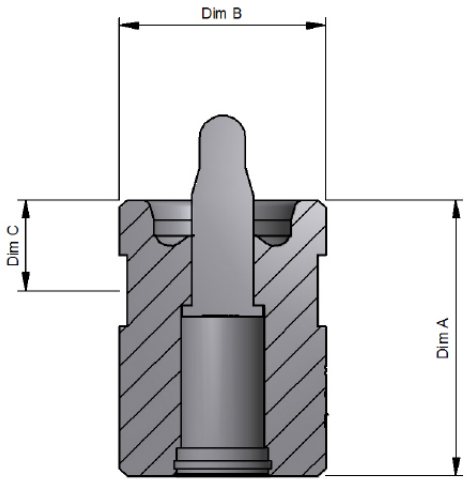
*Dimension Z1 When nuts are emplaced manua ly simultaneously.
*Dimension Z2 When nuts are emplaced manua ly one at a time.

These dimensions relate to when standard mini-dies are used. Mini-dies can be modified & tailored to cus-tomer needs to achieve closer A & Z dimensions.

MINI DIE INSERTION TOOL DIMENSIONS

Mini-die tools are specific for each metric / imperial size of Flangeform nut and material thickness. This data is required to choose the correct mini-die for the application.

Size	Height A	Diameter B	Groove Centre C
M4	20.70/20.80	15.989/16.000	8
M5	27.55/27.65	18.989/19.000	8
M6	32.00/32.10	21.963/21.975	12.5
M8	38.00/38.10	28.463/28.475	12.5
M10	54.00/54.10	37.963/37.975	12.5
M12	66.10/66.00	44.980/45.000	21



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HOW TO SPECIFY

- **Product code** – High Torque Spline feature is product code 10, the standard spline feature is product code 20.
- **Thread code** – Refer to thread code matrix.
- **Grade & plating code**-Grade 8 is H, 9 is J. Standard plating is Zinc & Clear trivalent passivation (W).

Part Number Layout / Meaning		
Product	Thread	Grade & Finish
10	M06	HW
10	**M06**	HW
10	M06	**HW**

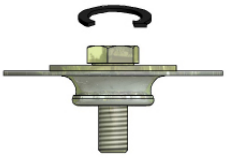
THREAD CODE MATRIX

		M					
		4	5	6	8	10	12
Metric	Coarse - 6H	M04	M05	M06	M08	M10	M12
	Coarse - 6E	**E04**	**E05**	**E06**	**E08**	**E10**	**E12**
	Fine	**N04**	**N05**	**N06**	**N08**	**N10**	**N12**

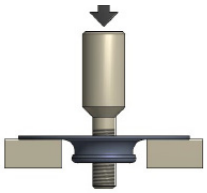
Unified	Coarse	8-32	10-24	12-24	1/4-20	5/16-18	3/8-16	7/16-14	1/2-13
		CEG	**CTE**	**CTV**	**C04**	**C05**	**C06**	**C07**	**C08**
	Fine	8-36	10-32	12-28	1/4-28	5/16-24	3/8-24	7/16-20	1/2-20
		FEG	**FTE**	**FTV**	**F04**	**F05**	**F06**	**F07**	**F08**

PERFORMANCE DATA

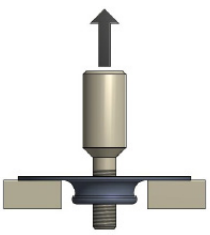
Nut Size	Material Thickness mm	Cold Rolled Mild Steel		
		Push-out Kn	Pull-out Kn	Torque-out Nm
M5	0.7	3	4	9
	1	7	7	9
	1.5	9	10	9
M6	0.7	3.9	4.7	19
	1	7.3	7.4	19
	1.5	11.9	11	19
	2	14	11.5	19
M8	0.7	4.8	4.5	
	1	6.5	9.7	36
	1.5	13.1	16	36
	2	17	16	36
	2.5	27.9	18	36
M10	1	7.3	9.6	
	1.5	10.8	15.2	80
	2	16.7	20	81
	2.5	28	20	84
	3	29	20	86
M12	1.5	26	18	100
	2	44	24	114
	2.5	44	28	140
	3	45	31	140



Torque Out



Push Out



Pull Out

Note: The data provided above is for general guidance only and may vary depending upon material, hole size, tonnages & tooling.
For specific advice and data please contact BAS Components technical centre.