



NORTHERN PRECISION LTD



KEEPNUT® INSERTS

Keep-Nut® is a press-in threaded insert that utilises a mechanical anchoring feature, to provide permanent threads in panels made of marble, granite or other stones, as well as composites, carbon, Corian®, HPL, glass and others solid surface materials.

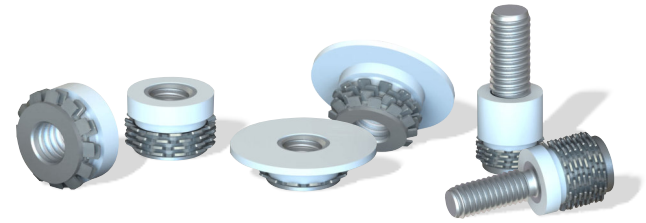
Keep-Nut is manufactured in stainless steel and consists of a threaded bush, a set of toothed spring washers (crowns), and a plastic ring holding the parts together. Available in different lengths, with or without flange, to fit several different panel thicknesses, Keep-Nut can be installed quickly since the user simply needs to drill the material with the correct hole diameter and press-in the insert. Keep-Nut can also be customised with different versions and sizes, to meet specific customer requirements.

The Keep-Nut insert is specifically developed to fasten ventilated façades, wall-coverings, décor and interiors, furniture, kitchen and sanitary elements, as well as a variety of other applications.

Keep-Nut inserts have several advantages compared to other fasteners for stone and solid materials. The preparation needed is just a cylindrical hole – an undercut hole is not required – which means that standard tools can be used. In addition, assembly by pressure is quick and easy and does not require use of any additional resins or adhesives. Keep-Nut inserts can be used for hidden assemblies without any protruding parts, facilitating the handling and installation of a variety of materials.

In use, the crowns are engaged by axial force, acting radially against the hole wall, effectively permanently locking the insert in place. In addition, the internal thread does not run completely through the bush, which prevents extraction as a result of the use of an excessively long screw.

Keep-Nut is a trademark of SPECIALINSERT S.r.l., Corian is a trademark of E. I. du Pont de Nemours and Company.



Comparison of results from tests carried out on a range of materials.

Material	Keep-Nut Type	Average pull-out load on a single insert (Kg)*
Granite 20mm	KN4 M6 H8.5	490
Marble 20mm	KN4 M6 H8.5	385
Travertine 20mm	KN4 M6 H8.5	225
Fibre cement (high density) 12mm	KN4 M6 H8.5	275
Fibre cement (high density) 10mm	KN4 M6 H8.5	239
Fibre cement (high density) 8mm	KN2 M6 H6	125
HPL 12mm	KN4 M6 H8.5	541
HPL 10mm	KN4 M6 H8.5	611
HPL 8mm	KN2 M6 H6	270
Corian 12mm	KN4 M6 H8.5	484
Corian 10mm	KN2 M6 H6	295
Agglomerate stone 15mm	KN4 M6 H8.5	305
Tempered glass 5mm	KN1 M4 H5	75

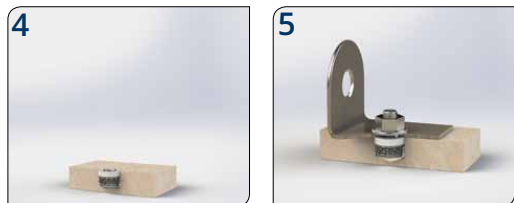
* Tests were carried out under laboratory conditions. Pull-out figures are indicative only and are offered for guidance purposes. It is recommended that you undertake your own tests in the actual application panel material.



1 Prepare hole in base material to correct specification.

2 Verify hole diameter using Go/No-Go gauge. Check hole depth against reference line on Go side of gauge.

3 To ensure correct installation it is recommended that a threaded mandrel is used. Fully screw on the insert and drive into the hole.



4 Unscrew the mandrel and the insert is installed and ready for use.

5 Example assembly



Advantages

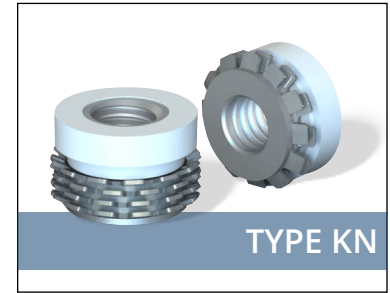
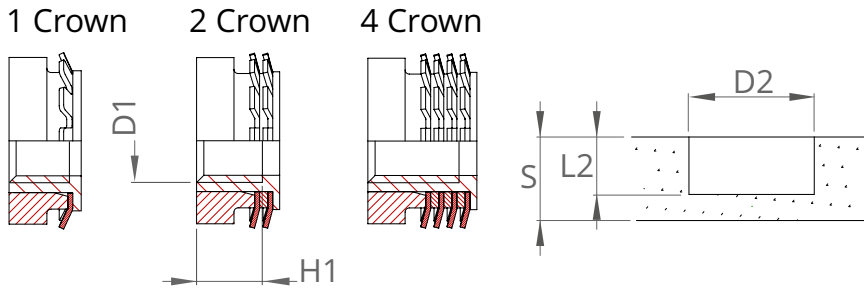
- Simple hole preparation
- Quick installation
- No need for resins or adhesives
- Radial force is produced only while the insert is under tensile load. The crowns spread the load into the parent material, allowing large loads to be carried
- Thread stops before end of insert, avoiding extraction as a result of the use of an excessively long bolt





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Specialist Fasteners for Sheet Metal



Dimensional

(Type) (Thread) (Height Code)	D1 Thread	S Min. Thickness**	H1 Thread Depth	D2 Hole Ø ±0.2	L2 Hole Depth +1.0	No. of Crowns	Installation Force (kN)*	Pull-Out Force (kN)*
KN1 M* H5	M4	8.0	4.5	12	5.5	1	0.2	0.9
	M5							
	M6							
KN2 M* H6	M4	8.5	5.5	12	6.5	2	0.4	2.5
	M5							
	M6							
KN4 M* H8.5	M4	11.0	7.5	12	9.0	4	1.0	3.5
	M5							
	M6							
KN4 M* H15	M6	17.5	14.0	12	15.5	4	1.0	4.2

*Figures are indicative only and are offered for guidance purposes. ** Minimum material thickness is related to parent material characteristics. It is recommended that you undertake your own tests in the actual application panel material.

Material & Finish

Bush: Stainless Steel
Crown: Stainless Steel
Body: Plastic

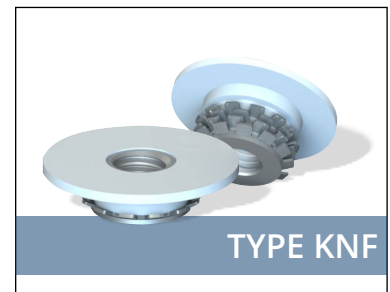
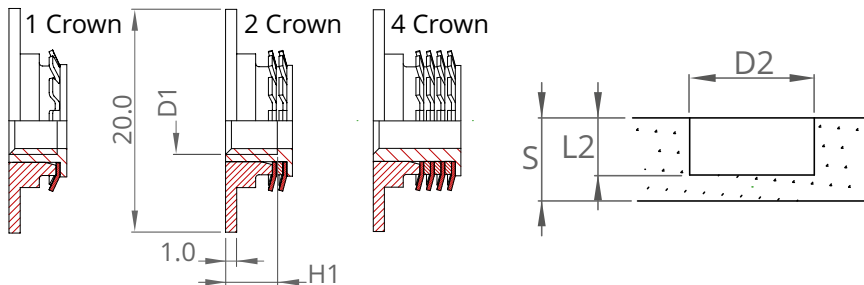
Part Number Examples

Part number is made up as follows:
(Type code)-(Thread code)-(Height code)

For example:

KN1 M5 H5 (Keep-Nut 1 crown M5 5mm overall height)

KN4 M6 H15 (Keep-Nut 4 crowns M6 15mm overall height)



Dimensional

(Type) (Thread) (Height Code)	D1 Thread	S Min. Thickness**	H1 Thread Depth	D2 Hole Ø ±0.2	L2 Hole Depth +1.0	No. of Crowns	Installation Force (kN)*	Pull-Out Force (kN)*
KNF1 M* H5	M4	7.0	4.5	12	4.5	1	0.2	0.5
	M5							
	M6							
KNF2 M* H6	M4	7.5	5.5	12	5.5	2	0.4	1.7
	M5							
	M6							
KNF4 M* H8.5	M4	10.0	7.5	12	8.0	4	1.0	2.9
	M5							
	M6							

*Figures are indicative only and are offered for guidance purposes. ** Minimum material thickness is related to parent material characteristics. It is recommended that you undertake your own tests in the actual application panel material.

Material & Finish

Bush: Stainless Steel
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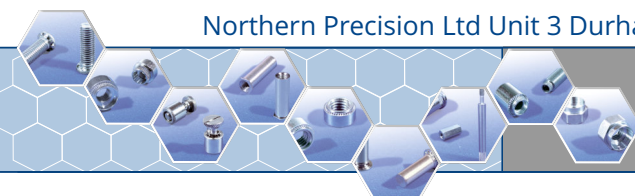
Part number is made up as follows:
(Type code)-(Thread code)-(Height code)

For example:

KNF1 M4 H5 (Keep-Nut Flanged 1 crown M4 5mm overall height)

KNF4 M6 H8.5 (Keep-Nut Flanged M6 4 crowns 8.5mm overall height)

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