Philidas®

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Philidas®

Automotive and Industrial Fasteners

About Philidas

Philidas are the leading all-metal self-locking nut manufacturer in the world. Their plant houses cold forging and bar turning facilities enabling small, medium and large batch production runs to be supplied through the distributor network to the industrial and automotive markets.

Philidas specializes in the design and manufacture of self-locking nuts for numerous industrial and domestic applications, including automotive, railways, earth moving equipment, electrical appliances, off highway vehicles, mining and aerospace.

Philidas nuts lock at any position on a bolt and are, therefore, the most convenient and practical fastening method for modern industry, particularly where vibration is a problem. They also help reduce assembly time, are less expensive and use fewer components than alternative methods.

Also onsite they have a fully equipped toolroom using the latest technology with 3D CAD and forging simulation for the design of all machine tooling.

Philidas produce both their standard range and specials in Grades 8, 10 and 12 subject to MMQs. A new CNC turning centre has recently been installed adding further scope to their business development.

Philidas take great pride in the quality of their product which are specified by network rail and other OEMs for use in safety critical applications.

Philidas Distribution stock a full range of metric Philidas nuts from M4 to M48 with a limited range of imperial sizes also available or made to order.

Additional Product Range

COMBY NUTS

- Available in self-locking and non-locking form Combination of nut body variations to washer styles are numerous
- One-part component - simple order plus cost effective storage
- Simplifies and speeds assembly while ensuring correct washer is fitted
- Facilitates automatic assembly where separate items, especially washers would be difficult to orientate, feed and locate

FLANGE NUTS - PLAIN & SERRATED

- Available in Metric, Imperial Series to Specifications and Customer Requirements
- Eliminates the need for a separate Washer
- Larger Bearing Surface results in Stronger Grip
- Serration reduce the Loosening Effect

WHEEL NUTS

- Available in Metric, Imperial Series to Specifications and Customer Requirements
- Provides a uniform distribution of load across the vehicles wheel mounting surface
- Produced to manufacturers torque specifications

DOME NUTS – ONE PIECE CONSTRUCTION

- Available in Metric, Imperial Series to Specifications and Customer Requirements
- Formed or Cut threads
- Leak Proof Seal
- Enhances Appearance

CASTLE & SLOTTED NUTS

- Available in Metric, Imperial Series to Specifications and Customer Requirements
- Secured with a cotter pin or safety wire engaged through a pre-determined hole in the mating bolt
- Available With 2 slots, 4 slots, 6 slots, 8 slots, 10slots or 12 Slots

HEX NUTS

- Available in Metric, Imperial Series to Specifications and Customer Requirements
- Full and Half Nuts
- Low cost product with multiple uses

COLD FORGED COMPONENTS

- As per Customer requirements
- Diameter – 5mm – 34mm, Collar Dia: 42mm max, Length: 6mm – 40mm
- Fulfills High Volume Requirement that cannot be fulfilled always with Machined Parts
- Results in Cost Savings when converted from turned parts

SPECIAL NUTS

- Weld Nuts
- Hose Pipe Fitting / Coupling Nuts
- Stake Nuts
- Star Nuts
- Aerospace Nuts
- As per Customer Specifications/ Drgs

Materials and Finishes

Philidas self-locking nuts can be supplied in the following materials subject to availability and quant ity required.

Steel - Metric Series

Part Reference Suffix	Specification	British Standard Grade
/8	BS 3692 & BS 4929 (Part 1) ISO 898/2	8
/10	BS 3692 & BS 4929 (Part 1) ISO 898/6	10
/12	BS 3692 & BS 4929 (Part 1) ISO 2320	12

Steel - Imperial Sizes

Part Reference Suffix	Specification	British Standard Grade
/1	BS 4929 (Part 2) & BS 1768	1
/1R	45/55 UK ton/in^2	
/1T	55/65 UK ton/in^2	
/G3	BS 1768	3
/G5	BS 1768	5
	ISO 2320	

Other Materials

Part Reference Suffix	Specification	British Standard Grade
/2C	Corrosion Resisting Steel	EN57
/2S	Stainless Steel	EN58

Quotations will be given for other material specifications on request.

Correction Factors for Plated Finish

The tightening torques given on the previous page are for unplated nuts and bolts.

As finish and lubrication materially affect tightening torque by increasing or reducing friction, it is necessary to apply correction factors to achieve the required bolt loading when one (or both) of the components is plated.

The following correction factors should be applied to the basic tightening torque for plated finish.

	Bolt Finish	
Nut Finish	Self-Colour	Zinc
Self-Colour	1·00	1·00
Zinc	1·15	1·20

Example of correction:

Nut finish (self-colour): S-grade bolt finish (zinc)

Correct tightening torque 5/16 in. UNF = 192 x1.0
= 192 lbf/in.

Finish

Philidas self-locking nuts can be supplied finished, as detailed below.

	Material	
Finish	Steel	Stainless Steel
Self-Colour	•	•
Zinc	•	
Cadmium	•	•
Zinc and Chrome Passivation	•	
Organic Finishes	On Request	
Zinc Phosphate and Oil	•	
Nickel	•	
Chrome	•	
Copper	•	
Silver		•

Reasons for Using Self-Locking Nuts

When an ordinary nut and bolt are used to secure an assembly, the action of tightening the nut creates pressure on the bolt thread and between the abutment face of the member being secured and the nut. These pressures induce a state of tension in the bolt which holds the nut in position and ensures full contact of the assembly mating faces.

In many applications bolts are required to be stretched by a pre-determined factor sufficient to hold the mating members of the assembly firmly in contact under all working conditions. To achieve this a force commonly known as the Tightening Torque is applied, which will initially extend the bolt by the amount necessary to maintain this condition.

Research has shown that initial tension should be at least equal to the maximum operating load. Failure to ensure this initial tension and to maintain it in service are major causes of fatigue failure .

The foregoing principles apply to static load conditions - where an assembly is subjected to vibration an additional alternating stress is superimposed over the static stress. This alternating stress causes the bearing pressure on the bolts to be increased at one instant in one position and decreased at the next, thus producing a 'bedding-down' effect. If frequent checks are not made, creep and wear will soon result in loss of static stress in the bolt so that, when alternating stress is applied, the bearing load vanishes at part of the stress cycle. At this instant the nut is free to rotate and will, therefore, loosen.

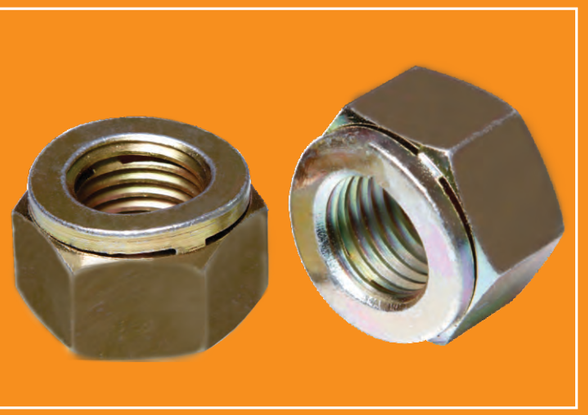
Many methods are used to secure nuts, such as split pins, jam pins, and locking washers. Many such devices are prone to failure or damage in service. Other disadvantages include the cost of these additional items, storage space, design, assembly and maintenance.

Self-locking nuts have definite advantages and economies are effected with obvious improvement in efficiency and quality of the product.

Benefits of the Philidas Self-Locking Nuts

- The most versatile self-locking nut
- Suitable for use in High or Low temperature with no affect on performance, even from chemicals
- Low prevailing torques & can be applied on multiple occasions
- Turret Nut can be assembled with the locking element leading onto a male thread

Industrial Self-Locking Nuts



The most versatile self-locking nut in the Philidas range is the Philidas Industrial which can be confidently recommended as the first choice for most industrial applications. The Philidas Industrial is an all-metal one piece nut with a collar above the hexagon. Two slots, in the same plane, are cut in the collar and the metal above the slots set to depitch the threads. When the nut is tightened on to a bolt, the thread is gripped on the flank - the point at which it is designed to take the thrust.

The all-metal Philidas Industrial nut is suitable for use in high or low temperature conditions, and the locking performance is unaffected by oil, petrol or other liquids and vapours. It is easily assembled with hand or power tools, and will lock effectively either to a face or unsupported.

Standard finishes are zinc and chromate passivation or self colour for metric threads and zinc or self colour for other threads. Special grades of material, finish and design are available subject to minimum manufacturing quantities.

A minimum protusion of two bolt threads is recommended.

Benefits of the Industrial Self-Locking Nuts

- Most versatile and reliable
- Low prevailing torque
- Can be re-used at least five times
- Unaffected by chemicals or temperature
- ISO coarse, UNF, UNC, BA, BSF and BSW threads
- 4mm to 48mm, 8-32 (2BA) to 2in

ISO Metric Coarse/Standard

Size (mm)	Order Reference	Dimensions (mm) A a/f	B (nom)	C (nom)
5	5 MCI	8,0	6,5	4,3
6	6 MCI	10,0	7,5	5,0
8	8 MCI	13,0	8,5	5,7
10	10 MCI	17,0	11,0	8,0
12	12 MCI	19,0	13,0	9,5
14	14 MCI	22,0	15,0	11,0
16	16 MCI	24,0	17,0	12,8
18	18 MCI	27,0	20,0	15,5
20	20 MCI	30,0	22,0	17,5
22	22 MCI	32,0	23,0	18,0
24	24 MCI	36,0	25,0	19,5
27	27 MCI	41,0	28,0	22,0
30	30 MCI	46,0	31,0	24,5
33	33 MCI	50,0	33,0	26,2
36	36 MCI	55,0	36,0	28,6
39	39 MCI	60,0	39,0	31,1
42	42 MCI	65,0	42,0	33,5
45	45 MCI	70,0	45,0	36,0
48	48 MCI	75,0	48,0	38,0
52	52 MCI	80,0	52,0	41,5

UNF and UNC /Standard and Thin

Size (in)	Order Reference UNF Standard	UNF Thin	UNC Standard	UNC Thin	Dimensions (in) A a/f	B (nom) Standard	B (nom) Thin	C (nom) Standard	C (nom) Thin
6-32	-	-	BCVS	-	0,312	0,170	-	0,100	-
8-32	-	-	CCVS	-	0,344	0,205	-	0,125	-
10-32	DUVS	-	-	-	0,375	0,225	-	0,150	-
1/4	EUVS	EUVT	ECVS	ECVT	0,437	0,285	0,245	0,210	0,170
5/16	GUVS	GUVT	GCVS	GCVT	0,500	0,335	0,290	0,235	0,190
3/8	JUVS	JUVT	JCVS	JCVT	0,562	0,390	0,320	0,255	0,185
7/16	LUVS	LUVT	LCVS	LCVT	0,687	0,460	0,375	0,310	0,225
1/2	NUVS	NUVT	NCVS	NCVT	0,750	0,525	0,435	0,375	0,285
9/16	PUVS	PUVT	PCVS	PCVT	0,875	0,585	0,485	0,410	0,310
5/8	QUVS	QUVT	QCVS	QCVT	0,937	0,635	0,515	0,435	0,315
3/4	SUVS	SUVT	SCVS	SCVT	1,125	0,755	0,590	0,535	0,450
7/8	UUVS	UUVT	UCVS	UCVT	1,312	0,880	0,685	0,625	0,510
1	WUVS	WUVT	WCVS	WCVT	1,500	1,005	0,775	0,750	0,600
11/8	XUVS	XUVT	XCVS	XCVT	1,687	1,130	0,865	0,840	0,655
11/4	YUVS	YUVT	YCVS	YCVT	1,875	1,255	0,970	0,940	0,735
13/8	ZUVS	ZUVT	ZCVS	ZCVT	2,062	1,380	1,050	1,040	0,790
11/2	H2UVS	H2UVT	H2CVS	H2CVT	2,250	1,505	1,140	1,140	0,855

Prevailing Torque Specifications : Metric Coarse Pitch Series/Property Class 8

Nominal Size and Thread Diameter (d)	Pitch of Thread	Tensile Stress Area (As)	Proof Load kgf	Proof Load N	Clamp Load kgf	Clamp Load N	Prevailing Torque (Nm) First Install. (max)	First Removal Highest Reading (min)	First Removal Lowest Reading (min)	Fifth Removal Highest Reading (min)	Fifth Removal Lowest Reading (min)
M4	0,7	8,78	700	6860	384	3765	0,9	0,18	0,09	0,12	0,06
M5	0,8	14,2	1140	11200	620	6080	1,6	0,29	0,14	0,23	0,10
M6	1,0	20,1	1610	15800	880	8600	3,0	0,45	0,2	0,30	0,15
M8	1,25	36,6	2930	28700	1600	15690	6,0	0,85	0,4	0,60	0,3
M10	1,5	58,0	4640	45500	2530	24800	10,5	1,5	0.7	1,0	0,5
M12	1,75	84,3	6740	66100	3680	36080	15,5	2,3	1,0	1,6	0,8
(M14)	2	115	9200	90220	5015	49180	23,5	3,3	1,5	2,3	1,0
M16	2	157	12600	123500	6850	67170	31,5	4,5	2,0	3,0	1,5
M20	2,5	245	19600	192200	10700	104900	54,0	7,5	3,5	5,3	2,5
(M22)	2,5	303	24200	237000	13200	129400	67,5	9,5	4,5	6,5	3,0
M24	3,0	353	28200	276500	15400	151000	80,0	11,5	5,5	8,0	4,0
M30	3,5	561	44900	440000	24500	240200	108	16,0	8,0	12,0	6,0
M36	4	817	65400	642000	35600	348000	136	20,5	10,0	16,0	8,0

Note 1: Sizes shown in brackets are non 'preferred.
Note 2: Clamp loads equal 75% of proof loads specified by BS3692 (ISO/R898) for grade 8.8 bolts or screws.

e.g. Clamp load= Stress under proof load X Tensile stress area X $\frac{75}{100}$ For 8.8 bolts or screws = 58.2 x As x $\frac{75kgf}{100}$ Or=571 x As x $\frac{75N}{100}$

Prevailing Torque Specifications : Inch Series/Property Class 1 /Unified Threads

Nut Size (In)	Prevailing Torque (lbf in) First Install. (max)	First Removal Highest Reading (min)	First Removal Lowest Reading (min)	Fifth Removal Highest Reading (min)	Fifth Removal Lowest Reading (min)	Nut Size (in)	First Install. (max) lbf ft	Prevailing Torque (lbf in) First Removal Highest Reading (min)	First Removal Lowest Reading (min)	Fifth Removal Highest Reading (min)	Fifth Removal Lowest Reading (min)
No. 8	12	2,0	1,0	1,5	0,5	9/16	17	30	15	21	10
No.10	13	2,5	1,0	2,0	1,0	5/8	25	39	17,5	27	12,5
1/4	30	5,0	2,5	3,5	1,5	3/4	35	58	25	41	20
5/16	60	8,0	4,0	5,5	2,5	7/8	50	89	40	62	30
3/8	80	12,0	5,0	8,5	4,0	1	70	120	60	84	40
7/16	100	17,0	7,5	12,0	5,0	11/8	75	150	70	105	50
1/4	150	22,0	10,0	15,0	7,5	11/4	85	188	90	132	60
-	-	-		-		13/8	100	220	110	150	70
-	-	-		-		11/2	110	260	130	182	90

Note 1: Proof loads as ISO R898/11 for property class 8 nuts, i.e. based on a proof load stress of 120,000 lbf/in2.

Note 2 Clamp loads equal 75% of the proof loads calculated on a proof stress of 85,000 psi sizes through to 1" and on a proof stress of 74,000 psi sizes above 1".

e.g. Clamp load= Stress under proof load X Tensile stress area X $\frac{75}{100}$ = 85.000 x A x $\frac{75ibf}{100}$

Mark V Self-Locking Nuts

Philidas Mark V self-locking nuts are a proven, economical method of ensuring reliable assembly, even under extremes of movement, stress or vibration.

The integral collar section above the hexagon is accurately deformed in two places to effect both radial and axial depitching of the top threads. This design provides flexibility within the locking element. On assembly, the bolt threads are fully gripped by the axial depitching of the nut threads, whilst the radial deflection effectively controls the application torque. The locking elements are effective only on the top two or three threads, providing simple assembly with either hand or power tools.

Philidas Mark V nuts are reliable and re-usable. All threads are fully load bearing and close control of the combined locking elements allows for normal variations in screw thread tolerance. The all-metal nut is not affected by temperature variations or by liquids and vapours.

Metric nuts are supplied with zinc and chromate passivation finish whilst zinc is standard for other threads. Special grades of material, finish and design are available subject to minimum manufacturing quantities.

A minimum protusion of two bolt threads is recommended.

Benefits of the Mark V Self-Locking Nuts

- Low cost product most suited for high volume application
- Relatively high prevailing torque obtained by two - point deforming for consistent characteristics to BS 4929
- All threads are load bearing
- ISO coarse, UNF, UNC, BA, BSF and BSW threads
- 4mm to 48mm, 6-32 (2BA) to 2in

UNF and UNC/Standard and Thin

Size (in)	Order Reference UNF Standard	Order Reference UNF Thin	Order Reference UNC Standard	Order Reference UNC Thin	Dimensions (in) A a/f	Dimensions (in) B (max) Standard	Dimensions (in) B (max) Thin	Dimensions (in) C (nom) Standard	Dimensions (in) C (nom) Thin
8-32			CUCI	CUCJ	0,312	0,235	0,170	0,157	0,092
10-32	DUFI	DUFJ			0,344	0,267	0,203	0,174	0,110
1/4	EUFI	EU FJ	EUCI	EUCJ	0,437	0,270	0,203	0,175	0,108
5/16	GUFI	GUFJ	GUCI	GUCJ	0,500	0,330	0,246	0,225	0,141
3/8	JUFI	JUFJ	JUCI	JUCJ	0,562	0,400	0,296	0,285	0,183
7/16	LUFI	LUFJ	LUCI	LUCJ	0,687	0,480	0,340	0,345	0,205
1/2	NUFI	NUFJ	NUCI	NUCJ	0,750	0,546	0,404	0,395	0,253
9/16	PUFI	PUFJ	PUCI	PUCJ	0,875	0,600	0,433	0,438	0,266
5/8	QUFI	QUFJ	QUCI	QUCJ	0,937	0,672	0,493	0,503	0,319
3/4	SUFI	SUFJ	SUCI	SUCJ	1,125	0,785	0,593	0,593	0,401
7/8	UUFI	UUFJ	UUCI	UUCJ	1,312	0,913	0,650	0,698	0,435
1	WUFI	WUFJ	WUCI	WUCJ	1,500	1,032	0,743	0,788	0,499
1 1/8	XUFI	XUFJ	XUCI	XUCJ	1,687	1,160	0,881	0,897	0,618
1 1/4	YUFI	YUFJ	YUCI	YUCJ	1,875	1,280	0,991	1,000	0,711
1 3/8	ZUFI	ZUFJ	ZUCI	ZUCJ	2,062	1,400	1,120	1,105	0,825
1 1/2	H2UFI	H2UFJ	H2UCI	H2UCJ	2,250	1,530	1,250	1,210	0,930
1 3/4	H3UFI	H3UFJ	H3UCI	H3UCJ	2,625	1,780	1,500	1,410	1,130
2	H4UFI	H4UFJ	H4UCI	H4UCJ	3,000	2,020	1,740	1,620	1,340
2 1/4	H5UFI	H5U FJ	H5UCI	H5UCJ	3,375	2,215	1,940	1,745	1,470
2 1/2	H6UFI	H6UFJ	H6UCI	H6UCJ	3,750	2,470	2,140	2,000	1,670
2 3/4	H7UFI	H7UFJ	H7UCI	H7UCJ	4,125	2,762	2,340	2,275	1,853
3	H8UFI	H8UFJ	H8UCI	H8UCJ	4,500	2,962	2,540	2,450	2,028

BA, BSF and BSW/Standard and Thin

Size (in)	Order Reference BA / BSF Standard	Order Reference BA / BSF Thin	Order Reference BSW Standard	Order Reference BSW Thin	Dimensions (in) A a/f	Dimensions (in) B (max) Standard	Dimensions (in) B (max) Thin	Dimensions (in) C (nom) Standard	Dimensions (in) C (nom) Thin
2 BA	CFI	CFJ			0,324	0,235	0,170	0,162	0,097
0 BA	DFI	DFJ			0,413	0,267	0,203	0,174	0,113
3/16	3/16 FI	3/16 FJ	3/16 WI	3/16 WJ	0,324	0,235	0,170	0,162	0,097
1/4	EFI	EFJ	EWI	EWJ	0,445	0,270	0,203	0,175	0,108
5/16	GFI	GFJ	GWI	GWJ	0,525	0,330	0,246	0,225	0,141
3/8	JFI	JFJ	JWI	JWJ	0,600	0,400	0,296	0,285	0,181
7/16	LFI	LFJ	LWI	LWJ	0,710	0.465	0,340	0,340	0,215
1/2	NFI	NFJ	NVVI	NWJ	0,820	0,550	0,404	0,410	0,264
9/16	PFI	PFJ	PWI	PWJ	0,920	0,600	0,433	0,433	0,266
5/8	QFI	QFJ	QWI	QWJ	1,010	0,680	0,493	0,503	0,316
3/4	SFI	SFJ	SWI	SWJ	1,200	0,825	0,593	0,633	0,401
7/8	UFI	UFJ	UWI	UWJ	1,300	0,900	0,650	0,693	0,443
1	WFI	WFJ	WWI	WWJ	1,480	1,035	0,743	'0,813	0,521
1 1/8	XFI	XFJ	XW1	XWJ	1,670	1,180	0,850	0,905	0,571
1 1/4	YFI	YFJ	YWI	YWJ	1,860	1,300	0,925	1,010	0,635
1 3/8	ZFI	ZFJ	ZWI	ZWJ	2,050	1,410	1,035	1,100	0,725
1 1/2	H2FI	H2FJ	H2WI	H2WJ	2,220	1,525	1,150	1,200	0,825
1 3/4	H3FI	H3FJ	H3WI	H3WJ	2,580	1,740	1,270	1,365	0,895
2	H4FI	H4FJ	H4WI	H4VVJ	2,760	1,960	1,490	1,565	1,095
2 1/4	H5FI	H5FJ	H5WI	H5WJ	3,150	2,215	1,750	1,770	1,305
2 1/2	H6FI	H6FJ	H6WI	H6WJ	3,550	2,470	2,095	2,005	1,630
2 3/4	H7FI	H7FJ	H7WI	H7WJ	3,890	2.765	2,295	2,275	1,805
3	H8FI	H8FJ	H8WI	H8WJ	4,180	2,965	2,490	2,455	1,980

ISO Metric Coarse/Standard

Size (mm)	Order Reference	Dimensions (mm) A a/f	Dimensions (mm) B (nom)	Dimensions (mm) C (nom)
4	4MCV	7,0	4,5	3,0
5	5MCV	8,0	5,0	3,5
6	6MCV	10,0	6,0	4,4
8	8MCV	13,0	8,0	5,9
10	10MCV	17,0	10,0	7,3
12	12MCV	19,0	12,0	8,8
14	14MCV	22,0	14,0	9,6
16	16MCV	24,0	16,0	10,9
18	18MCV	27,0	18,0	12,7
20	20MCV	30,0	20,0	14,4
22	22M CV	32,0	22,0	16,3
24	24MCV	36,0	24,0	17,7
27	27MCV	41,0	27,0	19,7
30	30MCV	46,0	30,0	22,4
33	33MCV	50,0	33,0	25,0
36	36MCV	55,0	36,0	27,3

BA, BSF and BSW/Standard

Size (in)	Order Reference BA/BSF BSW		Dimensions (in) A a/f	Dimensions (in) B (nom)	Dimensions (in) C (nom)
2 BA	CFVS	-	0,324	0,225	0,150
3/16	3/16 FVS	3/16 WVS	0,324	0,225	0,150
1/4	EFVS	EWVS	0,445	0,285	0,210
5/16	GFVS	GWVS	0,525	0,335	0,205
3/8	JFVS	JWVS	0,600	0,390	0,255
7/16	LFVS	LWVS	0,710	0,460	0,310
1/2	N FVS	NWVS	0,820	0,525	0,375
9/16	PFVS	PWVS	0,920	0,585	0,410
5/8	QFVS	QWVS	1,010	0,635	0,435
3/4	SFVS	SWVS	1,200	0,755	0,535
7/8	UFVS	UWVS	1,300	0,880	0,625
1	WFVS	WWVS	1,480	1,005	0,750
1 1/8	XFVS	XWVS	1,670	1,130	0,840
1 1/4	YFVS	YWVS	1,860	1,255	0,940
1 3/8	ZFVS	ZWVS	2,050	1,380	1,040
1 1/2	H2FVS	H2WVS	2,220	1,505	1,140

Turret Self-Locking Nuts

The design concept of the Philidas Turret nut is similar to that of the universally adopted Philidas Industrial nut where the locking function is provided by a slotted collar or turret section above the hexagon. Whilst both types of nuts have two slots, those on the Turret nut are positioned one above the other.

The metal above these slots is set to depitch the threads such that when the nut is tightened on to a bolt the thread is gripped on the flank - the point at which it is designed to take the thrust.

Special features of the Turret nut are a lower prevailing torque than the Industrial nut, and higher re-usability. Further, it can when required be fitted to a male thread locking element end first.

The All-Metal Philidas Turret nut is suitable for use in high or low temperature conditions, and the locking performance is unaffected by oil, petrol or other liquids and vapours. It is easily assembled with hand or power tools, and will lock effectively either to a face or unsupported.

Standard finishes are zinc and chromate passivation or self colour for metric threads and zinc or self colour for other threads. Special grades of material, finish and design are available subject to minimum manufacturing quantities.

A minimum protusion of two bolt threads is recommended.

ISO Metric Coarse/Standard

Size (mm)	Order Reference	Dimensions (mm) A a/f	B (nom)	c (nom)
2,5	2,5 MCP	5,0	4,5	2,4
3,0	3 MCP	5,5	4.75	2,45
3,5	3,5 MCP	7,0	5,0	2,5
4,0	4 MCP	7,0	5,6	3,3
5,0	5 MCP	8,0	6,8	3,9
6,0	6 MCP	10,0	8,5	5,0
8,0	8 MCP	13,0	10,5	6,0
10,0	10 MCP	17,0	13,0	7,6
12,0	12 MCP	19,0	15,0	8,5
14,0	14 MCP	22,0	17,0	10,0
16,0	16 MCP	24,0	19,5	12,0
18,0	18 MCP	27,0	22,0	14,0
20,0	20 MCP	30,0	24,0	15,5
22,0	22 MCP	32,0	26,5	17,5
24,0	24 MCP	36,0	29,0	19,0
27,0	27 MCP	41,0	33,0	22,0
30,0	30 MCP	46,0	39,0	26,0
33,0	33 MCP	50,0	43,0	30,0
36,0	36 MCP	55,0	47,0	32,5
39,0	39 MCP	60,0	50,0	35,0
42,0	42 MCP	65,0	54,0	37,5
45,0	45 MCP	70,0	58,0	41,0
48,0	48 MCP	75,0	62,0	42,5
52,0	52 MCP	80,0	67,0	46,5

UNF and UNC/Standard and Thin

Size (in)	Order Reference UNF Standard	UNF Thin	UNC Standard	UNC Thin	Dimensions (in) A a/f	B(max) Standard	B(max) Thin	C (nom) Standard	C (nom) Thin
4-40	-	-	AUCP	AUCN	0,188	0,175	0,143	0,087	0,055
6-32	-	-	BUCP	BUCN	0,250	0,215	0,179	0,107	0,072
8-32	-	-	CUCP	CU CN	0,312	0,275	0,233	0,137	0,095
10-32	DU FP	DUFN	-	-	0,344	0,285	0,241	0,151	0,107
1/4	EU FP	EU FN	EU CP	EU CN	0,437	0,340	0,273	0,182	0,115
5/16	GUFP	GU FN	GUCP	GUCN	0,500	0,410	0,326	0,232	0,148
3/8	JUFP	JUFN	JU CP	JUCN	0,562	0,490	0,386	0,292	0,190
7/16	LUFP	LUFN	LU CP	LUCN	0,687	0,570	0,445	0,357	0,232
1/2	NUFP	NUFN	NUCP	NUCN	0,750	0,660	0,514	0,420	0,274
9/16	PUFP	PUFN	PUCP	PUCN	0,875	0,725	0,558	0,483	0,316
5/8	QUFP	QUFN	QUCP	QUCN	0,937	0,810	0,623	0,545	0,358
3/4	SUFP	SUFN	SUCP	SUCN	1,125	0,975	0,746	0,670	0,441
7/8	UUFP	UUFN	UUCP	UUCN	1,312	1,051	0,855	0,703	0,507
1	WUFP	WU FN	WUCP	WUCN	1,500	1,185	0,970	0,792	0,577
1 1/8	XU FP	XUFN	XUCP	XUCN	1,687	1,358	1,145	0,870	0,655
1 1/4	YU FP	YUFN	YU CP	YU CN	1,875	1,498	1,285	0,960	0,747
1 3/8	ZUFP	ZUFN	ZUCP	ZUCN	2,062	1,646	1,430	1,055	0,835
1 1/2	H2UFP	H2UFN	H2U CP	H2UCN	2,250	1,799	1,585	1,150	0,938
1 3/4	H3UFP	H3UFN	H3 UCP	H3UCN	2,625	2,101	1,890	1,365	1,150
2	H4UFP	H4U FN	H4UCP	H4UCN	3,000	2,226	2,000	1,425	1,199
2 1/4	H5UFP	H5UFN	H5UCP	H5UCN	3,375	2,340	2,100	1,510	1,270
2 1/2	H6UFP	H6UFN	H6UCP	H6UCN	3,750	2,550	2,300	1,685	1,435
2 3/4	H7UFP	H7UFN	H7UCP	H7UCN	4,125	2,845	2,600	1,930	1,685
3	H8UFP	HBUFN	HBUCP	H8UCN	4,500	3,062	2,800	2,150	1,888

BA, BSF and BSW/Standard and Thin

Size (in)	Order Reference BA/BSF Standard	BA/BSF Thin	BSW Standard	BSW Thin	Dimensions (in) A a/f	B (max) Standard	B (max) Thin	C (nom) Standard	C (nom) Thin
6 BA	APP	ATP	-	-	0,193	0,176	0,131	0,093	0,047
4 BA	B PP	BTP	-	-	0,248	0,217	0,169	0,116	0,066
2 BA	CPP	CT P	-	-	0,324	0,290	0,218	0,163	0,092
0 BA	DPP	DTP	-	-	0,413	0,340	0,251	0,175	0,086
3/16	3/16 PP	3/16 T P	3/16 WP	3/16 WN	0,324	0,290	0,218	0,163	0,092
1/4	EPP	ETP	EWP	EWN	0,445	0,340	0,251	0,175	0,085
5/16	GPP	GTP	GWP	GWN	0,525	0,400	0,305	0,227	0,132
3/8	JPP	JTP	JWP	JWN	0,600	0,490	0,361	0,289	0,160
7/16	LPP	LTP	LWP	LWN	0,710	0,555	0,420	0,352	0,217
1/2	NPP	NTP	NWP	NWN	0,820	0,665	0,481	0,415	0,230
9/16	PPP	PTP	PWP	PWN	0,920	0,728	0,562	0,428	0,262
5/8	QPP	QTP	QWP	QWN	1,010	0,799	0,612	0,475	0,288
3/4	SPP	STP	SWP	SWN	1,200	0,961	0,732	0,583	0,354
7/8	UPP	UT P	UWP	UWN	1,300	1,046	0,796	0,638	0,388
1	WPP	WTP	WWP	WWN	1,480	1,199	0,907	0,730	0,440
1 1/8	XPP	XTP	XWP	XWN	1,670	1,358	1,070	0,870	0,581
1 1/4	YPP	YTP	YWP	YWN	1,860	1,498	1,210	0,960	0,669
1 3/8	ZPP	ZTP	ZWP	ZWN	2,050	1,646	1,355	1,055	0,764
1 1/2	H2PP	H2TP	H2WP	H2WN	2,220	1,799	1,510	1,153	0,863
1 3/4	H3PP	H3TP	H3WP	H3WN	2,580	2,101	1,800	1,367	1,066
2	H4PP	H4TP	H4WP	H4WN	2,760	2,226	1,935	1,429	1,138
2 1/4	H5PP	H5TP	H5WP	H5WN	3,150	2,340	2,035	1,510	1,205
2 1/2	H6PP	H6TP	H6WP	H6WN	3,550	2,550	2,240	1,686	1,375
2 3/4	H7PP	H7TP	H7WP	H7WN	3,890	2,845	2,530	1,932	1,617
3	H8PP	H8TP	H8WP	H8WN	4,180	3,062	2,750	2,151	1,839

Benefits of the Turret Self-Locking Nut

- Designed for aircraft application and commercial use
- Can be assembled with the locking element leading onto the male thread
- Lower prevailing torque than Industrial type
- Higher re-use factor than Industrial type
- Unaffected by chemicals or temperature
- ISO coarse, UNF, UNC, BA, BSF and BSW threads
- 4mm to 48mm, 4-40 (6BA) to 2in