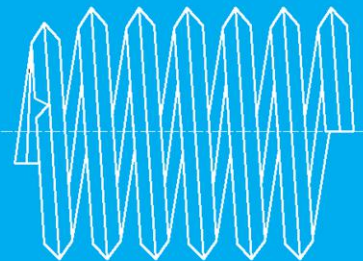




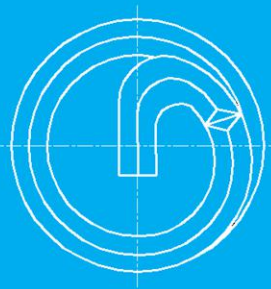
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AVIC-Flight Thread Technology

Wire thread inserts technology

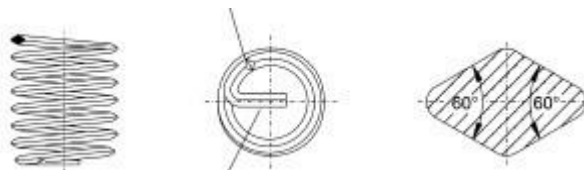
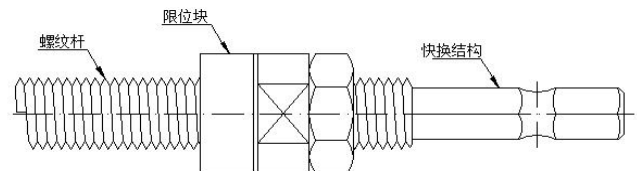
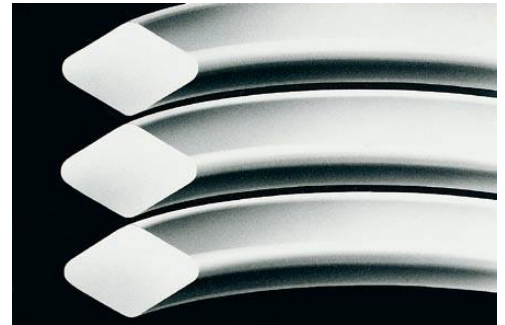
Thread inserts achieve a heavy-duty connection capability in low-strength metal materials and have been proven practice for over sixty years. These thread inserts, made from a well-proven and tested quality stainless steel are formed from rhomboidally profiled wire into a resilient spiral. After installation the tang is broken off at the notch (pre-set breakoff point).



The latest generation for this technology is called AVIC-Flight Thread inserts

Due to its optimal fitting structural shape, installation has been made far more simple. This is guaranteed by the installation area, which facilitates that the AVIC-Flight Thread inserts can be utilised as a screw and screwed-in. The tool sleeve required until now with its leader cartridge is no longer necessary.

Only a fitting mandrel is now required for screwing-in. But the acceptable available structural form tools can still be utilised.



Rm = tensile strength minimum 1400 N/mm²

HV = Vickers hardness minimum 425 HV 0,2

RZ = roughness depth approximately 2,5 μm

μG = reduced thread friction, results in a heightened pre-stressing force FV

T t = reduction in the torsion stress in the screw shank

Advantage

AVIC-Flight Thread inserts distinguish themselves through a high wearing tensile strength, low thread friction with tight tolerances, a high surface quality as well as corrosive and heat resistance.

The material and nut thread strength pre-determined performance limits are increased through the Internationally tried and tested AVIC-Flight thread technology.

AVIC-Flight Thread Technology

The Type

AVIC-Flight thread inserts are available in two versions: free running and SCREWLOCK: Both variations distinguish themselves due to an optimal design. As with a screw the threaded inserts are simply screwed in by means of a fitting mandrel. The fitting time is reduced by up to 40% due to the fact that the program of utilisable tools has been so radically extended compared to previous methods of operations.

FR-Free Running

The thread insert with its precision-formed rhomboidal profile is coil for coil free running. The result is a true-to-gauge internal thread, double sided utilisable. The dimensional accuracy of the ISO thread conforms to DIN 6H, and 5H for special requirements. The AVIC-Flight free running is coloured green for better identification in its fitted condition and the colour does not come off.



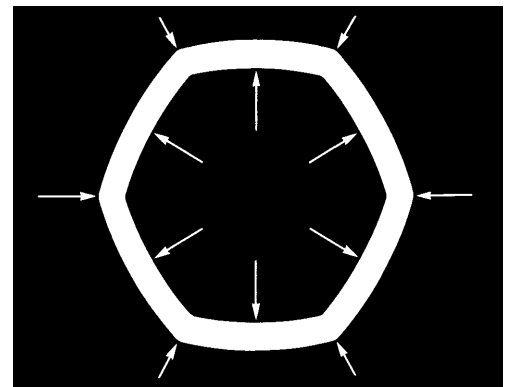
Every original AVIC-Flight free running thread insert is unmistakably identified by means of a diamond shaped quality embossing at the end of the final coil.

SL-ScrewLock

AVIC-Flight SCREWLOCK offers the same thread technological advantages as free running. In addition, a screw gripping section is worked in, which serves as a screw-gripping device. The gripping of the screw is achieved by means of one or several polygons formed coils, which grip the threads of the installed screw. In this way an elastically resilient friction lock is created. The locking moment achieved in this way is comparable with the specifications in DIN 267 Part 15, ISO 2320 or can be individually adapted to problem solutions. Standard values for the lock moments can be found in the table on page 5.



The red coloured AVIC-Flight SCREWLOCK thread insert, also stamped with the diamond formed embossing, should only be utilised with higher grade screws (starting from 8.8). High grade alloyed screws should be lubricated according to the recommendations of the manufacturer. The same torque should be applied as for the AVIC-Flight free running.



AVIC-Flight Thread Technology

The Applications

AVIC-Flight thread insert provides high strength threads, by means of transferring the stress from flank to flank into the holding thread. A system of high reliability, AVIC-Flight is a guarantee for standardised material and quality requirements for manufactured thread inserts. They are the basis of national standards, aeronautical standards, military standards, and also for in-house standards of leading major users.



■ Design Element

Anywhere where materials of low shearing strength are utilised (for example aluminium, alu-magnesium alloys), AVIC-Flight thread insert is indispensable for thread reinforcement. Branches that are especially effected by this are machine and plant construction, the automobile industry, electronic and medicine technology as well as aeronautics and the astronautics industries. By use of the thread reinforcement, wear and tear of the nut thread can be ruled out even with regular functions.

AVIC-Flight thread insert makes the development of miniaturisation and lightweight design for volume parts possible. Stability is guaranteed by the use of threading reinforcement with AVIC-Flight thread insert.

■ Reject Reclamation and Repairing of Threads

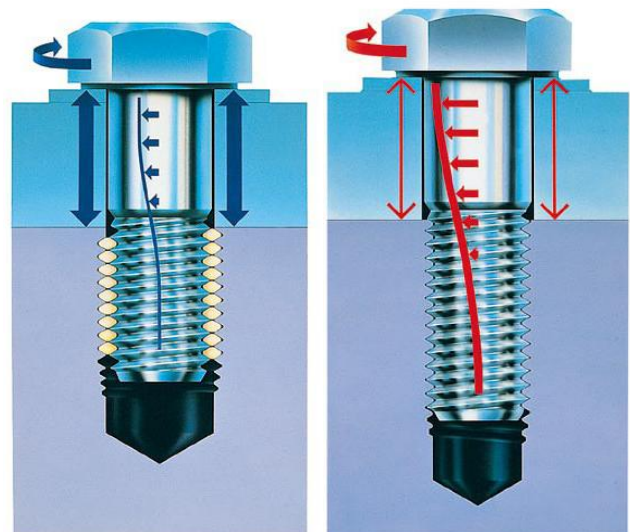
AVIC-Flight thread inserts have been released world-wide for the economical and lasting repairing of damaged or worn out threads.

Alongside the repair of valuable individual components, the possibility of recycling damaged threads of rejected large production volume component parts, allowing for the feed back into the production process, is of major importance.

The Advantages

■ Wear and Tear Stability

AVIC-Flight thread inserts are manufactured from austenitic chrome-nickel-steel (tensile strength of a minimum 1400 N/mm²). The formed thread provides a high surface quality. This guarantees a heavy-duty, wear and tear resistant thread with an extremely low constant thread friction force. This allows for a constant pre-stressing being achieved with the identical tightening torque upon repeated re-screwing. This leads simultaneously to a better utilisation of the yield point for high strength screws. The torsion stress is noticeably reduced hereby: In comparison with cut threads, the surface roughness depth is up to 90% lower with AVIC-Flight thread inserts.

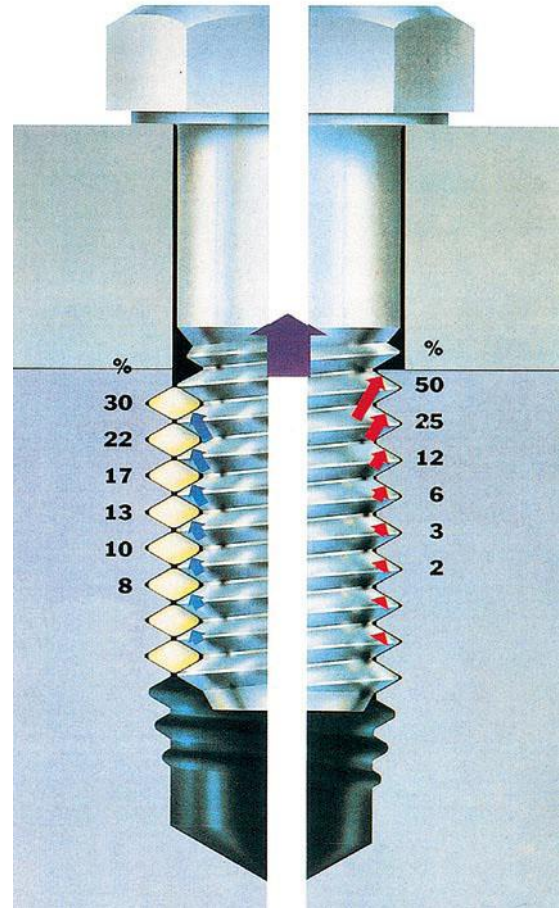
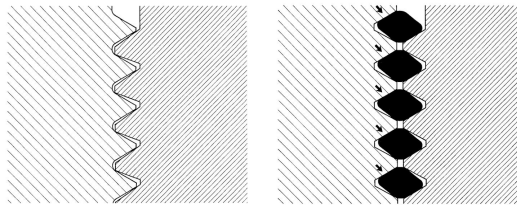


AVIC-Flight Thread Technology

The Advantages

■ Stronger Assemblies

The flexible characteristics of the AVIC-Flight thread inserts provide an even loading and tension distribution and with that, a perfect thread pitch angle. Pitch and angle defects are balanced out over the entire length of the thread insert. Therefore an ideal force transfer is achieved between the bolt and the nut thread. The durability of the thread connection is significantly increased. This applies to both static and dynamic work loads.



■ Corrosion Resistance, wide Temperature Range

The material properties of the AVIC-Flight thread inserts ensure that locking and tight gripping of screws under normal environmental conditions does not occur. AVIC-Flight thread inserts made from nickel based materials (INCONEL and NIMONIC 90) are available for thermal high stressed thread connections, with or without any coating. Elasticity and springiness is preserved even under high temperatures.



AVIC-Flight thread inserts from high-strength hard coated aluminium has been specially developed for utilisation with materials liable to high corrosion such as magnesium. Contact corrosion is hereby ruled out.

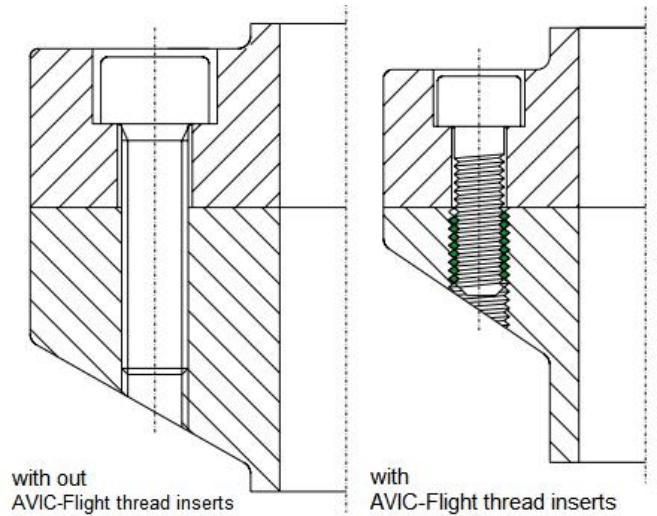


AVIC-Flight Thread Technology

The Advantages

Freedom of design

AVIC-Flight thread inserts allow a wide range for the designer in the choice of materials and material thickness. The actual trend towards lightweight design (for example from magnesium) is fulfilled by AVIC-Flight thread inserts with highest loading capacity by means of thread reinforcement with its simultaneous low area requirement. Due to fewer connection points and a reduction in screw sizes, the saving of materials, size and weight with the same or higher requirements AVIC-Flight thread inserts leads to a substantial reduction in costs.

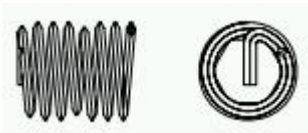


Fitting Stability

The outer diameter of the AVIC-Flight thread insert is larger than that of the tapped thread by a precisely calculated value in the non-fitted condition. This difference ensures, in addition to the inherent spring action of the AVIC-Flight thread insert material radial expansion, a stable, play-free positioning in the nut thread. Additional fixing elements adhesives – such as required for fixed bushes – are no longer necessary. For utilisation of hammer driven screws please consult our technical consultant.



Enhanced Screw Gripping by using of AVIC-Flight SCREWLOCK



Thread technology and the polygonal coils of the AVIC-Flight SCREWLOCK ensure a high enhanced screw gripping and with that a counteraction of the self-loosening of the screws. An additional fixing connector such as of a splint, wire or washer is not necessary. This reduces costs and ensures easier assembly.

Reference values for clamping torque to DIN 267 Part 15 or ISO 2320
Applicable to standard and fine threads
Values in Nm for strength category 8

Thread	M3	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20
1th tightening, max	0.43	0.90	1.60	3.00	6.00	10.5	15.5	24.0	32.0	42.0	54.0
1th loosening, min.	0.12	0.18	0.29	0.45	0.85	1.5	2.3	3.3	4.5	6.0	7.5
5th loosening, min.	0.08	0.12	0.20	0.30	0.60	1.0	1.6	2.3	3.0	4.2	5.3

AVIC-Flight Thread Technology

Materials

Thread insert Materials ^①	Temperature resistance	Minimum tensile strength at room temperature	Available surface treatment ^①	Examples of use	
X5 CrNi 18 10 Stoff no. 1.4301	425°C short-time 315°C long-time	1400 N/mm ²	– without – waxed – dry lubrica- ting film – cadmium plated – silver plated	standard uses for all strength categories > 8,8 and materials ^②	general light construction, e.g. aluminium or aluminium alloys ^③
X6 CrNiMoTi 17 12 2 ^④ Stoff no. 1.4571	425°C short-time 315°C long-time	1400 N/mm ²	– without – waxed – dry lubrica- ting film – cadmium plated – silver plated	– increased corro- sive protection – high grade alloy CrNi steel screws ^② – low thread friction	general light construction, sea water / chlorinated water
CuSN 6 Stoff no. 2.1020.34	300°C short-time 250°C long-time	1000 N/mm ²	– without – cadmium plated	– Cu work pieces – expansion threads – CrNi screws	
NiCr 15 Fe 7 TiAl ^④ Inconel X 750 Stoff no. 2.4669	750°C short-time 550°C long-time	1150 N/mm ²	– without – silver plated	– thermal stress in conjunction with corrosive protection	– astronautics – aeronautics – turbo-chargers
NiCr 20 Co 18 Ti Nimonic 90 Stoff no.- 2.4632	900°C short-time 600°C long-time				
AlZnMgCu 1,5 ^④ Stoff no. 3.4365	170°C short-time 150°C long-time	500 N/mm ²	– hard plated – dry lubrica- ting film	– magnesium work pieces	– vehicle technology – lightweight construction

① Other materials or surface upon enquiry

② Special anti-corrosive measures must be made when utilising magnesium alloys

③ If CrNi screws are utilised, a commercially available lubricant must be used

④ Non-stock item, delivery upon enquiry

Thread Types

Thread	free running		SCREWLOCK	
	Nominal diameter	Nominal length	Nominal diameters	Nominal length
Metric ISO thread standard thread	M 2 to M 68	0,5 d to 3 d	M 2 to M 39	0,75 d to 3 d ^⑤
Metric ISO thread fine thread	M 8 x 1 to M 160 x 6	0,5 d to 3 d	M 8 x 1 to M 64 x 4	0,75 d to 3 d
Pipe thread ISO 228/1 British Standard Pipe thread = BSP	G ½ to G 1½ ¼" to 1½"	1 d to 2,5 d	–	–
UNIFIED or American National Course thread = UNC/NC	2-56 to 1½"-6	1 d to 2,5 d	2-56 to ¾"-16	1 d to 2,5 d
UNIFIED or American National fine thread = UNF/NF	3-56 to 1½"-12	1 d to 2,5 d	3-56 to ¾"-16	1 d to 2,5 d
British Standard Whitworth Thread = BSW	¼" to 1½"	1 d to 2,5 d	¾" to ¾"	1 d to 3 d
British Standard Fine Thread = BSF	¾" to 1½"	1 d to 2,5 d	¾" to ¾"	1 d to 2,5 d
Britisches Association Standard Thread = BA	OBA to 6BA	1 d to 2,5 d	OBA 2BA 4BA 6BA	1 d to 2,5 d

⑤ Not possible for M 2 and M 2,5.

AVIC-Flight Thread Technology Design Guidelines

Determination of the Nominal Lengths

Guideline values for determining the length of the AVIC-Flight thread insert relative to the parent material and the screw yield point, valid for temperatures of 20° C

Strength of the parent material Shear strength R_m (N/mm ²)	Screw quality category									
	3.6 4.6	4.8 5.6	5.8 6.6	6.8 6.9	8.8	9.8	10.9	12.9	14.9	
up to 100	1,5 d	1,5 d	2 d	2,5 d	3 d	3 d	-	-	-	
> 100 – 150	1,5 d	1,5 d	2 d	2 d	2,5 d	2,5 d	2,5 d	2,5 d	3 d	
> 150 – 200	1 d	1,5 d	1,5 d	1,5 d	2 d	2 d	2 d	2,5 d	2,5 d	
> 200 – 250	1 d	1 d	1,5 d	1,5 d	1,5 d	1,5 d	2 d	2,5 d	2,5 d	
> 250 – 300	1 d	1 d	1 d	1 d	1,5 d	1,5 d	1,5 d	2 d	2 d	
> 300 – 350	1 d	1 d	1 d	1 d	1 d	1,5 d	1,5 d	1,5 d	2 d	
> 350 – 400	1 d	1 d	1 d	1 d	1 d	1 d	1,5 d	1,5 d	1,5 d	
> 400	1 d	1 d	1 d	1 d	1 d	1 d	1,5 d	1,5 d	1,5 d	

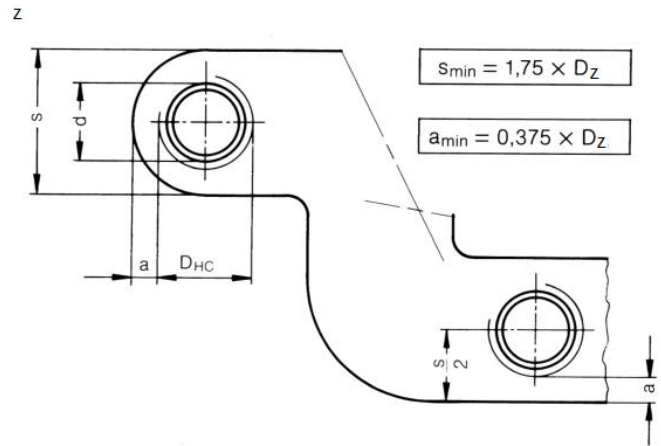
The guideline values must be assessed so that the screw is always the weakest connection member. Falling short of recommended nominal lengths is acceptable, provided it is proven as acceptable by testing. Intermediate lengths are also available.

Temperature limits for validity: Aluminium alloys $T_{max} = 300^\circ C$, Magnesium alloys $T_{max} = 100^\circ C$.

The rating of the temperature stressed screw connection must take the change of temperature dependant materials into consideration.

Minimum Wall Thickness

Assessment of the minimum wall thickness is mainly pre-determined by the individual operating data. These in turn determine the strength of the material and the length of the thread. The quoted guideline value formula applies to aluminium, cast and wrought alloys and a AVIC-Flight screw-in thread length of 1.5 d.



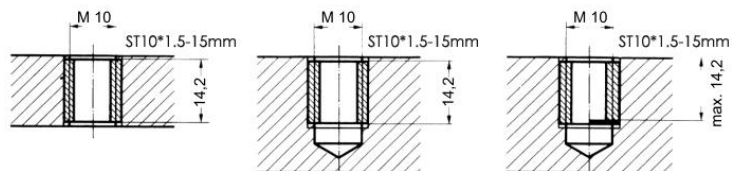
d = nominal diameter

Dz = AVIC-Flight thread insert outer diameter

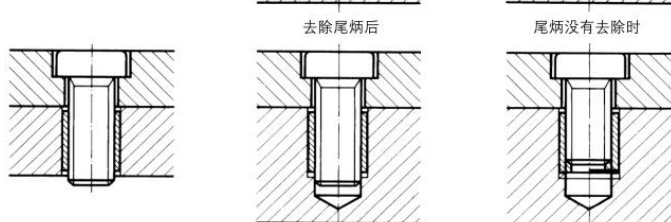
a = remaining wall thickness

Graphic representation for the example M 10 x 15:

AVIC-Flight thread insert, inserted

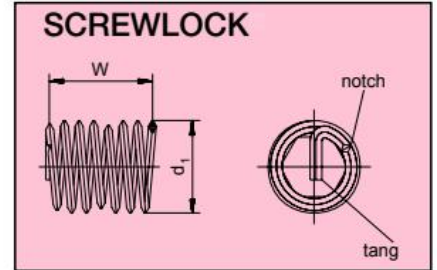
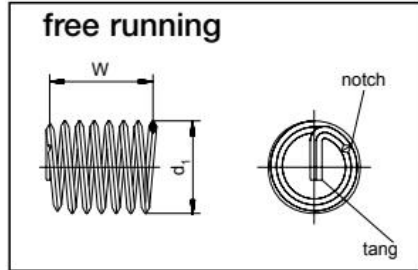
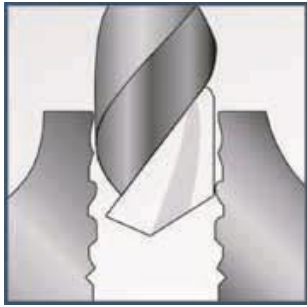


AVIC-Flight thread insert, inserted with screw



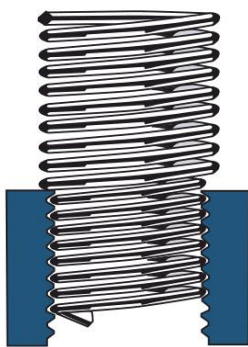
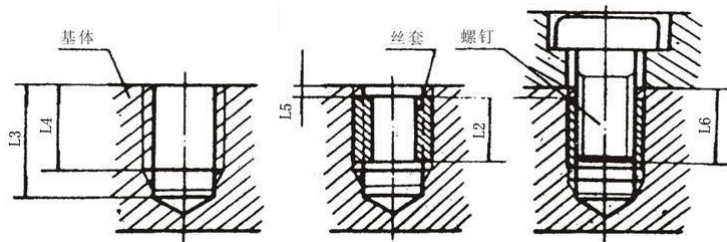
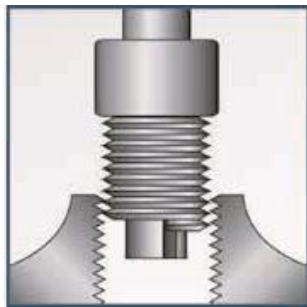
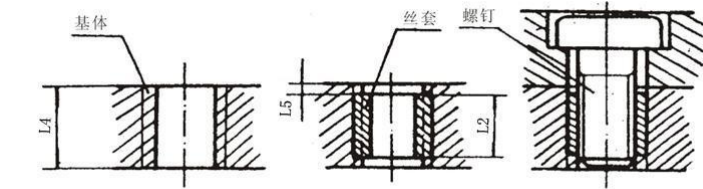
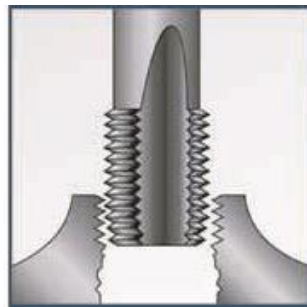
AVIC-Flight Thread insert Assembly technical data

AVIC-Flight Thread insert



The free running and SCREWLOCK thread insert control values are W and d1, when not inserted.

Its length can only be measured when the insert is in position.



- P =pitch
- W =number of coils prior to installation
- D =thread diameter
- d1 =outer diameter of thread insert prior to installation
- d0 =thread core diameter
- L1 =Nominal length of thread insert
- L2 =Actual length of thread insert after installation
- L3 =Drilling depth
- L4 =Thread depth of internal thread hole for installing thread insert (the same as L1)
- L5 =Distance between thread insert and mounting surface ($L5=0.5P \pm 0.25P$)
- L6 =When the mounting handle is not removed, the maximum screw in depth of the bolt (the same as L2)

■ When countersinking or burring:

The maximum countersinking diameter \leq outer thread diameter

■ By utilisation of AVIC-Flight thread inserts in series production it is recommended that the values t1 and t2 at a minimum however the size of $1 \times P$ is always added.

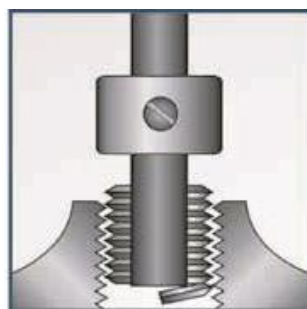
▲ AVIC-Flight thread inserts Identification example:

◎ Materials:

- ① CN → 304/A2
- ② TN → Inconel X 750
- ③ BN → Brass
- ④ AN → 316

◎ Finish:

- ① Blank → None
- ② Y → Cadmium (Cd)
- ③ V → Silver (Ag)
- ④ W → Dry Film Lubricant
- ⑤ S → tin (Sn)
- ⑥ G → Green
- ⑦ R → Red
- ⑧ B → Blue



D	P	L ₄		W	d ₁	do	L3	L2	Kg/ kpcs
		×d	L ₁						
2	0.4	1d	2.0	2.9	2.60~2.80	2.1	3.6	1.6	0.02
		1.5d	3.0	4.9			4.6	2.6	0.03
		2d	4.0	6.9			5.6	3.6	0.05
		2.5d	5.0	8.9			6.6	4.6	0.06
		3d	6.0	10.9			7.6	5.6	0.07
2.5	0.45	1d	2.5	3.5	3.30~3.50	2.6	4.3	2.1	0.03
		1.5d	3.75	5.9			5.6	3.3	0.06
		2d	5.0	8.1			6.8	4.6	0.08
		2.5d	6.25	10.5			8.1	5.8	0.10
		3d	7.5	12.9			9.3	7.0	0.12
3	0.5	1d	3.0	3.9	3.80~4.00	3.2	5.0	2.5	0.07
		1.5d	4.5	6.3			6.5	4.0	0.11
		2d	6.0	8.7			8.0	5.5	0.14
		2.5d	7.5	11.1			9.5	7.0	0.18
		3d	9.0	13.5			11.0	8.5	0.22
3.5	0.6	1d	3.5	3.7	4.42~4.60	3.7	5.9	2.9	0.10
		1.5d	5.25	6.3			7.65	4.75	0.18
		2d	7.0	8.7			9.4	6.4	0.25
		2.5d	8.75	11.2			11.15	8.15	0.33
		3d	10.5	13.3			12.9	9.9	0.39
4	0.7	1d	4.0	3.7	5.05~5.25	4.2	6.8	3.3	0.12
		1.5d	6.0	6.1			8.8	5.3	0.20
		2d	8.0	8.4			10.8	7.3	0.27
		2.5d	10.0	10.9			12.8	9.3	0.38
		3d	12.0	13.2			14.8	11.3	0.45
5	0.8	1d	5.0	4.3	6.35~6.60	5.2	8.2	4.2	0.22
		1.5d	7.5	6.9			10.7	6.7	0.36
		2d	10.0	9.7			13.2	9.2	0.49
		2.5d	12.5	12.3			15.7	11.7	0.68
		3d	15.0	14.8			18.2	14.2	0.80
6	1	1d	6.0	4.2	7.60~7.85	6.3	10.0	5.0	0.41
		1.5d	9.0	6.9			13.0	8.0	0.67
		2d	12.0	9.6			16.0	11.0	0.91
		2.5d	15.0	12.3			19.0	14.0	1.20
		3d	18.0	14.6			22.0	17.0	1.50
7	1	1d	7.0	5.3	8.65~8.90	7.3	11.0	6.0	0.80
		1.5d	10.5	8.2			14.5	9.5	1.23
		2d	14.0	11.1			18.0	13.0	1.66
		2.5d	17.5	14.3			21.5	16.5	2.00
		3d	21.0	17.4			25.5	20.5	2.40
8	1.25	1d	8.0	4.7	9.85~10.10	8.4	13.0	6.8	0.94
		1.5d	12.0	7.4			17.0	10.8	1.51
		2d	16.0	10.6			21.0	14.8	2.07
		2.5d	20.0	13.5			25.0	18.8	2.80
		3d	24.0	16.4			29.0	22.8	3.40

D	P	L ₄		W	d ₁	d ₀	L3	L2	Kg/ kpcs
		×d	L ₁						
8	1	1d	8.0	6.1	9.85~10.10	8.3	12.0	7.0	0.78
		1.5d	12.0	9.5			16.0	11.0	1.19
		2d	16.0	12.9			20.0	15.0	1.60
		2.5d	20.0	16.5			24.0	19.0	2.63
		3d	24	19.9			28.0	23.0	3.60
9	1.25	1d	9.0	5.3	10.85~11.1	9.4	14.0	7.75	0.75
		1.5d	13.5	8.6			18.5	12.25	1.83
		2d	18.0	11.9			23.0	16.75	2.90
		2.5d	22.5	15.3			27.5	21.25	4.01
		3d	27.0	18.1			32.0	25.75	4.92
10	1.5	1d	10.0	5.0	12.10~12.50	10.5	16.0	8.5	1.80
		1.5d	15.0	8.1			21.0	13.5	2.85
		2d	20.0	11.2			26.0	18.5	3.90
		2.5d	25.0	14.2			31.0	23.5	5.47
		3d	30.0	17.2			36.0	28.5	6.60
10	1.25	1d	10.0	6.0	12.10~12.50	10.4	15.0	8.8	1.75
		1.5d	15.0	9.7			20.0	13.8	3.05
		2d	20.0	13.1			25.0	18.8	4.36
		2.5d	25.0	16.9			30.0	23.75	5.66
		3d	30.0	20.1			35.0	28.75	7.00
10	1	1d	10.0	7.6	12.10~12.50	10.3	14.0	9.0	1.24
		1.5d	15.0	12.1			19.0	14.0	1.90
		2d	20.0	16.3			24.0	19.0	2.55
		2.5d	25	20.7			29.0	24.0	3.10
		3d	30	25.0			34.0	29.0	3.70
11	1.5	1d	11.0	5.6	13.10~13.50	11.5	17.0	9.5	2.44
		1.5d	16.5	9.0			22.5	15.0	4.36
		2d	22.0	12.3			28.0	20.5	6.29
		2.5d	27.5	15.7			33.5	26.0	8.20
		3d	33.0	19.1			39.0	31.5	10.2
12	1.75	1d	12.0	5.2	14.40~14.80	12.5	19.0	10.3	2.95
		1.5d	18.0	8.4			25.0	16.3	4.91
		2d	24.0	11.7			31.0	22.3	6.67
		2.5d	30.0	14.7			39.0	30.3	8.47
		3d	36.0	18.0			43.0	34.3	11.00
12	1.5	1d	12.0	6.2	14.40~14.80	12.5	18.0	10.5	2.68
		1.5d	18.0	9.8			24.0	16.5	4.17
		2d	24.0	13.5			30.0	22.5	5.70
		2.5d	30.0	17.1			38.0	30.5	8.28
		3d	36.0	20.8			42.0	34.5	10.8
12	1.25	1d	12.0	7.4	14.40~14.80	12.4	17.0	10.8	2.22
		1.5d	18.0	11.6			23.0	16.8	3.44
		2d	24.0	15.9			29.0	22.8	4.69
		2.5d	30.0	20.0			35.0	28.75	5.90
		3d	36.0	24.3			41.0	34.75	6.10

D	P	L ₄		W	d ₁	d ₀	L3	L2	Kg/ kpcs
		×d	L ₁						
12	1	1d	12.0	9.3	14.40~14.80	12.3	16.0	11.0	2.19
		1.5d	18.0	14.5			22.0	17.0	3.66
		2d	24.0	19.5			28.0	23.0	5.09
		2.5d	30.0	24.8			34.0	29.0	6.50
		3d	36.0	30.0			40.0	35.0	8.00
13	1.25	1d	13.0	8.2	15.40~15.80	13.4	18.0	11.8	3.09
		1.5d	19.5	12.7			24.5	18.3	5.22
		2d	26.0	17.2			31.0	24.8	7.36
14	2	1d	14.0	5.6	16.80~17.20	14.5	22.0	12.0	4.70
		1.5d	21.0	8.8			29.0	19.0	7.35
		2d	28.0	12.0			36.0	26.0	10.1
		2.5d	35.0	15.2			43.0	33.0	13.0
14	1.5	1d	14.0	7.4	16.80~17.20	14.5	20.0	12.5	3.72
		1.5d	21.0	11.6			27.0	19.5	5.79
		2d	28.0	15.7			34.0	26.5	7.86
		2.5d	35.0	19.9			41.0	33.5	9.96
14	1.25	Spark plug thread	8.4	4.6	16.80~17.20	14.3	13.4	7.15	1.46
			12.4	7.4			17.4	11.15	2.88
			14.4	9.1			19.4	13.15	3.74
			16.4	10.2			21.4	15.15	4.29
14	1	1d	14.0	11.2	16.80~17.20	14.3	18.0	13.0	3.07
		1.5d	21.0	17.2			25.0	20.0	5.01
		2d	28.0	23.2			32.0	27.0	6.95
		2.5d	35.0	29.2			39.0	34.0	8.88
16	2	1d	16.0	6.5	19.00~19.40	16.5	24.0	14.0	6.35
		1.5d	24.0	10.1			32.0	22.0	9.99
		2d	32.0	13.8			40.0	30.0	13.3
		2.5d	40.0	17.5			48.0	38.0	17.0
16	1.5	0.75d	12.0	6.1	19.00~19.40	16.4	18.0	10.5	3.20
		1d	16.0	8.7			22.0	14.5	4.92
		1.5d	24.0	13.4			30.0	22.5	7.62
		2d	32.0	18.1			38.0	30.5	10.4
		2.5d	40.0	22.9			46.0	38.5	13.2
18	2.5	0.75d	13.5	3.8	21.50~22.0	18.7	23.5	7.0	5.50
		1d	18.0	5.6			28.0	15.5	9.80
		1.5d	27.0	9.0			37.0	24.5	18.3
		2d	36.0	12.3			46.0	33.5	27.1
18	1.5	0.5d	9.0	4.2	21.50~22.0	18.5	15.0	7.5	2.25
		0.75d	13.5	7.0			19.5	12.0	4.69
		1d	18.0	9.5			24.0	16.5	6.25
		1.5d	27.0	14.9			33.0	25.5	9.70
		2d	36.0	20.2			42.0	34.5	13.2

D	P	L ₄		W	d ₁	d ₀	L3	L2	Kg/ kpcs
		×d	L ₁						
18	2	0.75d	13.5	5.1	21.50~22.0	18.5	21.5	11.5	5.29
		1d	18.0	7.1			26.0	16.0	8.76
		1.5d	27.0	11.2			35.0	25.0	15.2
		2d	36.0	15.1			44.0	34.0	21.6
20	2.5	0.5d	10.0	2.7	23.70~24.20	20.7	20.0	7.5	6.7
		0.75d	15.0	4.5			25.0	12.5	9.7
		1d	20.0	6.3			30.0	17.5	13.0
		1.5d	30.0	10.0			40.0	27.5	19.3
		2d	40.0	13.7			50.0	37.5	26.6
20	2	0.5d	10.0	3.5	23.70~24.20	20.5	18.0	8.0	3.00
		0.75d	15.0	5.8			23.0	13.0	6.74
		1d	20.0	8.0			28.0	18.0	10.9
		1.5d	30.0	12.5			38.0	28.0	19.1
		2d	40.0	16.8			48.0	38.0	27.0
20	1.5	0.5d	10.0	4.9	23.70~24.20	20.5	16.0	8.5	2.87
		0.75d	15.0	7.9			21.0	13.5	5.83
		1d	20.0	10.7			26.0	18.5	7.77
		1.5d	30.0	16.7			36.0	28.5	12.0
		2d	40.0	22.4			46.0	38.5	16.3
22	2.5	0.5d	11.0	3.0	26.30~26.80	22.7	21.0	8.5	6.80
		0.75d	16.5	5.0			26.5	14.0	9.20
		1d	22.0	6.9			32.0	19.5	15.3
		1.5d	33.0	10.9			43.0	30.5	23.8
		2d	44.0	15.0			54.0	41.5	32.6
22	2	0.5d	11.0	3.9	26.30~26.80	22.5	19.0	9.0	3.10
		0.75d	16.5	6.4			24.5	14.5	8.29
		1d	22.0	8.7			30.0	20.0	13.2
		1.5d	33.0	13.6			41.0	31.0	23.1
		2d	44.0	18.4			52.0	42.0	33.1
22	1.5	0.5d	11.0	5.5	26.30~26.80	22.5	17.0	9.5	3.53
		0.75d	16.5	8.6			22.5	15.0	7.10
		1d	22.0	11.7			28.0	20.5	9.46
		1.5d	33.0	18.1			39.0	31.5	14.6
		2d	44.0	24.5			50.0	41.5	19.5
24	3	0.75d	18.0	4.5	28.6~29.1	24.8	30.0	15.0	14.0
		1d	24.0	6.2			36.0	21.0	24.0
		1.5d	36.0	10.0			48.0	33.0	43.0
		2d	48.0	14.0			60.0	45.0	62.0
24	2	0.5d	12.0	4.3	28.6~29.1	24.5	20.0	10.0	8.58
		0.75d	18.0	7.0			26.0	16.0	14.5
		1d	24.0	9.6			32.0	22.0	20.2
		1.5d	36.0	15.0			44.0	34.0	32.1
		2d	48.0	20.2			56.0	46.0	43.6

D	P	L ₄		W	d ₁	d ₀	L3	L2	Kg/ kpcs
		×d	L ₁						
24	1.5	0.5d	12.0	6.0	28.6~29.1	24.5	18.0	10.5	5.70
		0.75d	18.0	9.5			24.0	16.5	8.55
		1d	24.0	12.9			30.0	22.5	11.4
		1.5d	36.0	19.8			42.0	34.5	17.4
		2d	48.0	26.7			54.0	46.5	23.5
26	1.5	0.5d	13.0	6.5	31.00~31.50	26.5	19.0	11.5	5.77
		0.75d	19.5	10.3			25.5	18.0	10.7
		1d	26.0	14.0			32.0	24.5	15.8
		1.5d	39.0	21.6			45.0	37.5	25.8
		2d	52.0	29.1			58.0	50.5	35.8
27	3	0.75d	20.3	5.0	32.20~32.70	27.8	32.3	17.3	25.0
		1d	27.0	7.1			39.0	24.0	33.5
		1.5d	40.5	11.4			52.5	37.5	50.2
		2d	54.0	15.4			66.0	51.0	66.9
		2.5d	67.5	19.5			79.5	64.5	83.6
27	2	0.5d	13.5	5.1	32.20~32.70	27.5	21.5	11.5	9.90
		0.75d	20.3	7.9			28.3	18.3	16.7
		1d	27.0	10.8			35.0	25.0	22.3
		1.5d	40.5	16.8			48.5	38.5	33.3
		2d	54.0	22.6			62.0	52.0	44.5
27	1.5	0.5d	13.5	6.7	32.20~32.70	27.5	19.5	12.0	7.70
		0.75d	20.3	10.7			26.3	18.8	11.6
		1d	27.0	14.6			33.0	25.5	15.4
		1.5d	40.5	22.6			46.5	39.0	23.1
		2d	54.0	30.0			60.0	52.5	30.8
28	1.5	0.5d	14.0	7.1	33.10~33.60	28.5	20.0	12.5	8.99
		0.75d	21.0	11.1			27.0	19.5	13.5
		1d	28.0	15.2			34.0	26.5	18.0
		1.5d	42.0	23.3			48.0	40.5	27.0
		2d	56.0	31.4			62.0	50.0	36.0
30	3.5	0.75d	22.5	4.9	35.20~35.70	31.0	36.5	19.0	23.2
		1d	30.0	7.0			44.0	26.5	40.3
		1.5d	45.0	11.0			59.0	41.5	62.5
		2d	60.0	14.9			74.0	56.5	84.1
30	2	0.5d	15.0	5.7	35.20~35.70	30.5	23.0	13.0	13.8
		0.75d	22.5	9.0			30.5	20.5	20.6
		1d	30.0	12.3			38.0	28.0	27.5
		1.5d	45.0	19.0			53.0	43.0	41.3
		2d	60.0	25.5			68.0	58.0	55.1
30	1.5	0.5d	15.0	7.8	35.20~35.70	30.5	21.0	13.5	10.3
		0.75d	22.5	12.2			28.5	21.0	15.5
		1d	30.0	16.5			36.0	28.5	20.6
		1.5d	45.0	25.3			51.0	43.5	31.0
		2d	60.0	34.0			66.0	58.5	41.4

D	P	L ₄		W	d ₁	do	L3	L2	Kg/ kpcs
		xd	L ₁						
33	3.5	0.75d	24.8	5.6	38.30~38.80	34.0	38.8	21.3	30.7
		1d	33.0	7.8			47.0	29.5	35.2
		1.5d	49.5	12.2			63.5	46.0	75.8
		2d	66.0	16.5			80.0	62.5	115.5
33	2	0.5d	16.5	6.4	38.30~38.80	33.5	24.5	14.5	14.4
		0.75d	24.8	10.1			32.8	22.8	21.6
		1d	33.0	13.7			41.0	31.0	28.8
		1.5d	49.5	21.2			57.5	47.5	43.4
		2d	66.0	28.4			74.0	64.0	58.0
33	1.5	0.5d	16.5	8.9	38.30~38.80	33.5	22.5	15.0	11.0
		0.75d	24.8	13.8			30.8	23.3	16.4
		1d	33.0	18.3			39.0	31.5	21.8
		1.5d	49.5	28			55.5	48.0	33.2
36	4	0.75d	27.0	5.0	42.10~42.60	37.0	43.0	23.0	59.5
		1d	36.0	7.0			52.0	32.0	79.3
		1.5d	54.0	11.1			70.0	50.0	118.9
		2d	72.0	15.2			88.0	68.0	158.5
36	3	0.5d	18.0	4.4	42.10~42.60	37.0	30.0	15.0	29.7
		0.75d	27.0	7.2			39.0	24.0	44.6
		1d	36.0	9.9			48.0	33.0	59.5
		1.5d	54.0	15.3			66.0	51.0	89.2
		2d	72.0	20.5			84.0	69.0	119.0
36	2	0.5d	18.0	6.8	42.10~42.60	36.5	26.0	16.0	19.8
		0.75d	27.0	10.3			35.0	25.0	29.7
		1d	36.0	14.1			44.0	34.0	39.6
		1.5d	54.0	21.9			62.0	52.0	59.5
		2d	72.0	31.1			80.0	70.0	79.5
36	1.5	0.5d	18.0	9.5	42.10~42.60	36.5	24.0	16.5	14.9
		0.75d	27.0	14.7			33.0	25.5	22.3
		1d	36.0	19.9			42.0	34.5	29.7
		1.5d	54.0	30.5			60.0	52.5	48.2
		2d	72.0	41.0			78.0	70.5	66.7
39	4	0.75d	29.3	5.5	45.10~45.60	40.00	45.3	25.3	27.8
		1d	39.0	7.7			55.0	35.0	58.3
		1.25d	48.8	9.9			64.8	44.8	88.8
		1.5d	58.5	12.3			74.5	54.5	122.1
		2d	78.0	16.6			94.0	74.0	181.7
39	3	0.5d	19.5	4.9	45.10~45.60	40.00	31.5	16.5	10.9
		0.75d	29.3	7.8			41.3	26.3	33.6
		1d	39.0	10.8			51.0	36.0	56.9
		1.25d	48.8	13.7			60.8	45.8	79.6
		1.5d	58.5	16.8			70.5	55.5	103.8

D	P	L ₄		W	d ₁	d ₀	L3	L2	Kg/ kpcs
		×d	L ₁						
39	2	0.5d	19.5	7.5	45.10~45.60	39.5	27.5	17.5	23.3
		0.75d	29.3	11.9			37.3	27.3	34.9
		1d	39.0	16.3			47.0	37.0	46.5
		1.25d	48.8	20.6			56.8	46.8	58.1
		1.5d	58.5	25.0			66.5	56.5	69.7
42	4.5	0.5d	21.0	4	48.0~48.5	43.5	39.0	16.5	42.0
		0.75d	31.5	6			49.5	27.0	63.0
		1d	42.0	8			60.0	37.5	84.0
		1.5d	63.0	12			81.0	58.5	126.0
42	3	0.5d	21.0	6	48.0~48.5	43.0	33.0	18.0	42.0
		0.75d	31.5	9			43.5	28.5	58.2
		1d	42.0	12			54.0	39.0	74.8
		1.5d	63.0	18.3			75.0	60.0	127.1
42	1.5	0.5d	21.0	12	48.0~48.5	42.5	27.0	19.5	22.8
		0.75d	31.5	18.3			37.5	30.0	33.9
		1d	42.0	24.5			48.0	40.5	44.6
		1.5d	63.0	36.5			69.0	61.5	69.6
48	5	0.5d	24.0	4	55.0~55.5	49.5	44.0	19.0	56.5
		0.75d	36.0	6.2			56.0	31.0	84.5
		1d	48.0	8.4			68.0	43.0	118.3
		1.5d	72.0	12.5			92.0	67.0	176.0
48	3	0.5d	24.0	6.2	55.0~55.5	49.0	36.0	21.0	52.8
		0.75d	36.0	9.9			48.0	33.0	79.3
		1d	48.0	13.6			60.0	45.0	105.7
		1.5d	72.0	20			84.0	69.0	161.8
48	1.5	0.5d	24.0	14.0	55.0~55.5	48.5	30.0	22.5	54.0
		0.75d	36.0	21.0			42.0	34.5	81.0
		1d	48.0	28.0			54.0	46.5	108.0
56	5.5	0.5d	28.0	4.5	64.0~65.0	57.5	50.0	22.5	104.0
		0.75d	42.0	6.7			64.0	36.5	154.8
		1d	56.0	8.9			78.0	50.5	198.7
		1.5d	84.0	13.3			106.0	78.5	307.2
56	4	0.5d	28.0	5.4	64.0~65.0	57.0	44.0	24.0	95.9
		0.75d	42.0	8.6			58.0	38.0	143.9
		1d	56.0	11.8			72.0	52.0	191.8
		1.5d	84.0	18			100.0	80.0	295.3
60	3	0.5d	30.0	7.9	69.0~70.0	61.0	42.0	27.0	82.6
		0.75d	45.0	12.4			57.0	42.0	123.9
		1d	60.0	16.9			72.0	57.0	165.1
		1.5d	90.0	25.9			102.0	87.0	247.7
60	4	0.5d	30.0	5.8	69.0~70.0	61.0	46.0	26.0	110.1
		0.75d	45.0	9.2			61.0	41.0	165.1
		1d	60.0	12.6			76.0	56.0	220.2
		1.5d	90.0	19.5			106.0	86.0	330.3

◇Unified UNC coarse thread

D	P	L ₄		W	d ₁	d ₀	L3	L2
		×d	L1					
2-56 (0.086)	0.435	1d	2.2	3.0	2.7~2.9	2.4	3.9	1.8
		1.5d	3.3	5.25			5.0	2.9
		2d	4.4	7.4			6.1	3.9
		2.5d	5.5	9.6			7.2	5.0
4-40 (0.112)	0.635	1d	2.9	2.8	3.6~4.0	3.1	5.4	2.5
		1.5d	4.3	4.8			6.8	3.9
		2d	5.8	6.8			8.3	5.4
		2.5d	7.2	8.8			9.7	6.8
5-40 (0.125)	0.635	1d	3.2	3.3	4.0~4.4	3.4	5.7	2.8
		1.5d	4.8	5.5			7.3	4.3
		2d	6.4	7.8			8.9	6.0
		2.5d	7.9	10.0			10.4	7.5
6-32 (0.138)	0.794	1d	3.5	2.8	4.5~4.9	3.8	6.7	3.1
		1.5d	5.3	4.8			8.5	4.9
		2d	7.0	6.7			10.2	6.6
		2.5d	8.3	8.7			11.5	8.4
8-32 (0.164)	0.794	1d	4.2	3.5	5.2~5.6	4.4	7.4	3.8
		1.5d	6.3	5.9			9.5	5.9
		2d	8.3	8.3			11.5	8.0
		2.5d	10.5	10.7			13.7	10.1
10-24 (0.190)	1.058	1d	4.8	2.9	6.2~6.6	5.2	9.0	4.3
		1.5d	7.2	5.0			11.4	6.7
		2d	9.6	7.1			13.8	9.1
		2.5d	12.1	9.2			16.3	11.6
12-24 (0.216)	1.058	1d	5.5	3.5	6.8~7.2	5.8	9.7	5.0
		1.5d	8.2	5.9			12.4	7.7
		2d	11	8.3			15.2	10.5
		2.5d	13.7	10.7			17.9	13.2
1/4"-20	1.27	1d	6.4	3.4	8.0~8.4	6.7	11.5	5.8
		1.5d	9.5	5.7			14.6	8.9
		2d	12.7	8.0			17.8	12.1
		2.5d	15.9	10.3			21.0	15.3
5/16"-18	1.411	1d	7.9	4.0	9.7~10.2	8.4	13.5	7.2
		1.5d	11.9	6.6			17.5	11.2
		2d	15.9	9.3			21.5	15.2
		2.5d	19.8	11.9			25.4	19.1
3/8"-16	1.588	1d	9.5	4.4	11.5~12.0	10	15.9	8.7
		1.5d	14.3	7.2			20.7	13.5
		2d	19.1	10.1			25.5	18.3
		2.5d	23.8	12.9			30.2	23.0
7/16"-14	1.814	1d	11.1	4.5	13.4~14.0	11.6	18.4	10.2
		1.5d	16.7	7.4			24.0	15.8
		2d	22.2	10.3			29.5	21.3
		2.5d	27.8	13.1			35.1	26.9

D	P	L ₄		W	d ₁	d ₀	L3	L2
		×d	L1					
1/2"-13	1.954	1d	12.7	4.8	15.2~15.8	13.2	20.5	11.7
		1.5d	19.1	7.9			26.9	18.1
		2d	25.4	10.9			33.2	24.4
		2.5d	31.8	13.9			39.6	30.8
9/16"-12	2.117	1d	14.3	5.1	17.0~17.6	14.9	22.8	13.2
		1.5d	21.5	8.3			30.0	20.4
		2d	28.6	11.5			37.1	27.5
		2.5d	35.7	14.7			44.2	34.6
5/8"-11	2.309	1d	15.9	5.3	18.9~19.5	16.6	25.1	14.7
		1.5d	23.8	8.3			33.0	22.6
		2d	31.8	11.8			41.0	30.6
		2.5d	39.7	15.0			48.9	38.5
3/4"-10	2.540	1d	19.1	5.9	22.4~23.0	19.7	29.3	17.8
		1.5d	28.6	9.4			38.8	27.3
		2d	38.1	13.0			48.3	36.8
		2.5d	47.6	16.6			57.8	46.3
7/8"-9	2.822	1d	22.2	6.3	26.0~26.7	23.0	33.5	20.8
		1.5d	33.3	10.0			44.6	31.9
		2d	44.5	13.7			55.8	43.1
		2.5d	55.6	17.4			66.9	54.2
1"-8	3.175	1d	25.4	6.4	29.6~30.4	26.2	38.1	23.8
		1.5d	38.1	10.2			50.8	36.5
		2d	50.8	14.0			63.5	49.2
		2.5d	63.5	17.8			76.2	61.9
1 1/8"-7	3.629	1d	28.6	6.3	33.4~34.4	29.5	43.1	26.8
		1.5d	42.9	10.0			57.4	41.1
		2d	57.2	13.8			71.7	55.4
1 1/4"-7	3.629	1d	31.8	7.1	36.7~37.7	33.0	46.3	30.0
		1.5d	47.6	11.3			62.1	45.8
		2d	63.5	15.4			78.0	61.7
1 3/8"-6	4.234	1d	34.9	6.6	40.6~41.7	36.0	51.8	32.8
		1.5d	52.4	10.6			69.3	50.3
		2d	69.9	14.4			86.8	67.8
1 1/2"-6	4.234	1d	38.1	7.4	43.9~45.0	39.5	55.0	36.0
		1.5d	57.2	11.6			74.1	55.1
		2d	76.2	15.9			93.1	74.1

◇ Unified UNF fine thread

D	P	L ₄		W	d ₁	d ₀	L ₃	L ₂
		×d	L ₁					
4-48 (0.112)	0.529	1d	2.8	3.4	3.7~4.1	3.0	4.9	2.5
		1.5d	4.3	5.6			6.4	4.0
		2d	5.7	7.9			7.8	5.4
		2.5d	7.1	10.3			9.2	6.7
6-40 (0.138)	0.635	1d	3.5	3.6	4.5~4.9	3.8	6.0	3.1
		1.5d	5.3	6.0			7.8	4.9
		2d	7.0	8.4			9.5	6.6
		2.5d	8.8	10.8			11.3	8.4
8-36 (0.164)	0.706	1d	4.2	4.0	5.3~5.7	4.4	7.0	3.8
		1.5d	6.3	6.6			9.1	5.9
		2d	8.3	9.1			11.1	7.9
		2.5d	10.5	11.7			13.3	10.1
10-32 (0.190)	0.794	1d	4.8	4.1	6.1~6.5	5.1	8.0	4.4
		1.5d	7.2	6.8			10.4	6.8
		2d	9.6	9.5			12.8	9.2
		2.5d	12.1	12.1			15.3	11.7
1/4"-28	0.907	1d	6.4	5.0	7.8~8.3	6.7	10.0	5.9
		1.5d	9.5	8.1			13.1	9.0
		2d	12.7	11.3			16.3	12.2
		2.5d	15.9	14.4			19.5	15.4
5/16"-24	1.058	1d	7.9	5.5	9.7~10.2	8.2	12.1	7.4
		1.5d	11.9	8.9			16.1	11.4
		2d	15.9	12.2			20.1	15.4
		2.5d	19.8	15.6			24.0	19.3
3/8"-24	1.058	1d	9.5	6.9	11.4~11.9	9.8	13.7	9.0
		1.5d	14.3	10.9			18.5	13.8
		2d	19.1	14.9			23.3	18.6
		2.5d	23.8	19.0			28.0	23.3
7/16"-20	1.27	1d	11.1	6.6	13.4~13.9	11.5	16.2	10.5
		1.5d	16.7	10.6			21.8	16.1
		2d	22.2	14.5			27.3	21.6
		2.5d	27.8	18.4			32.9	27.2
1/2"-20	1.27	1d	12.7	7.8	15.1~15.7	13.1	17.8	12.1
		1.5d	19.1	12.3			24.2	18.5
		2d	25.4	16.8			30.5	24.8
		2.5d	31.8	21.3			36.9	31.2
9/16"-18	1.411	1d	14.3	7.9	16.9~17.6	14.7	19.9	13.6
		1.5d	21.5	12.5			27.1	20.8
		2d	28.6	17.1			34.2	27.9
		2.5d	35.7	21.6			41.3	35.0
5/8"-18	1.411	1d	15.9	8.9	18.6~19.3	16.3	21.5	15.2
		1.5d	23.8	14.1			29.4	23.1
		2d	31.8	19.1			37.4	31.1
		2.5d	39.7	24.3			45.3	39.0

D	P	L ₄		W	d ₁	d ₀	L ₃	L ₂
		×d	L ₁					
3/4"-16	1.588	1d	19.1	9.7	22.2~22.9	19.5	25.5	18.3
		1.5d	28.6	15.1			35.0	27.8
		2d	38.1	20.6			44.5	37.3
		2.5d	47.7	26.0			54.1	46.9
7/8"-14	1.814	1d	22.2	9.9	26.0~26.7	22.7	29.5	21.3
		1.5d	33.3	15.4			40.6	32.4
		2d	44.5	21.0			51.8	43.6
		2.5d	55.6	26.6			62.9	54.7
1"-14	1.814	1d	25.4	11.5	29.4~30.1	26.0	32.7	24.5
		1.5d	38.1	17.9			45.4	37.2
		2d	50.8	24.3			58.1	49.9
		2.5d	63.5	30.6			70.8	62.6
1"-12	2.117	1d	25.4	9.7	29.7~30.4	26.0	33.9	24.3
		1.5d	38.1	15.1			46.6	37.0
		2d	50.8	20.6			59.3	49.7
		2.5d	63.5	26.1			72.0	62.4
1 1/8"-12	2.117	1d	28.6	10.1	33.2~33.9	29.0	37.1	27.5
		1.5d	42.9	17.3			51.4	41.8
		2d	57.2	23.4			65.7	56.1
1 1/4"-12	2.117	1d	31.8	12.4	36.6~37.3	32.5	40.3	30.7
		1.5d	47.6	19.3			56.1	46.5
		2d	63.5	26.1			72.0	62.4
1 3/8"-12	2.117	1d	34.9	13.8	40.0~40.9	35.5	43.4	33.8
		1.5d	52.4	21.3			60.9	51.3
		2d	69.9	28.9			78.4	68.8
1 1/2"-12	2.117	1d	38.1	15.2	43.4~44.3	38.5	46.6	37.0
		1.5d	57.2	23.4			65.7	56.1
		2d	76.2	31.6			84.7	75.1

Installation of AVIC-Flight Thread Inserts

Preparation of Work Piece

■ Drilling of the core hole

Standard commercial twist drills are used.

Reference points for diameters and core hole depths are found on pages 9 to 19.

When countersinking or burring:

maximum countersinking diameter \leq outer thread diameter



■ Tapping

System adapted original AVIC-Flight taps must be used for tapping the thread. Recommendations for the selection of suitable manual and machine taps are listed on pages 21. AVIC-Flight internal thread limit gauges must be used for checking that the thread is true to gauge.

■ Thread forming

Non-tapping production of female threads by the use of thread formers is the rational method of production for many materials today; this also applies to AVIC-Flight (refer to pages 21).

Installation process

■ Fitting the thread insert

Installation is possible either from hand or by the use of a mechanical installation tool or an automatic installation machine. The AVIC-Flight thread insert is screwed onto the installation mandrel with its tang pointing downwards (3A), fitted into the pre-stressing cartridge (3B) or placed onto the fly-over tool (3C) and the equipment is then placed over the tapped hole.



■ Installation

By means of revolving the thread tang (4A), the mandrel (4B) or the fly-over tool (4C) by hand or starting the driver the thread insert is screwed in. It must be installed with a minimum of 0.25 P underneath the surface.



■ Breaking the tang off

For creation of a through-hole thread the tang is broken off at the notch. This is completed by the use of a tang break-off tool (5A and 5B). For threads of M14 fine and normal gradients, a pair of pointed pliers' (5C) can break off the tang. The tang must not be removed for blind hole threads if the maximum screw-in depth L6 of the screw is adhered to.



AVIC-Flight Thread Inserts Tools

Taps



■ Straight groove

cutting angle of 10° , rotary cutting head, for through hole,
At the initial stage of tapping, it is necessary to screw in 4 times the pitch,
and a deep hole shall be drilled in advance for the blind hole.
For materials with strength less than or exceeding 700 n/mm^2 .
For tapping through holes.



■ spiral groove

Machine tap, 45° Spiral groove, right rotation, cutting angle 15° ,
For blind holes, it is necessary to screw in twice the pitch at the initial
stage of tapping.
For materials with strength less than 700 n/mm^2 .
It can be used to tap blind holes.



■ Extrusion tap

Suitable for processing non-ferrous metals with high toughness,
especially copper and aluminum alloy castings;
Realize chip free machining, strengthen the strength of the tapping teeth,
and there is no transition thread;
The internal thread hole processed by extrusion process has high tensile
and shear strength and good surface roughness.

Internal Thread Gauges for AVIC-Flight Holding Thread



It is used to inspect the internal thread of the installation bottom hole of
steel wire thread insert

Tail handle punch



Manual type



Automatic type

Breaking the steel wire thread insert
mounting handle by instantaneous
impulse

AVIC-Flight Thread Inserts Tools

Manual installation tools

Hand mounting tool with pre installed guide nut.

It is used to install AVIC-Flight Thread Inserts for special applications and fine thread.

It is not the only manual installation tool of AVIC-Flight Thread Inserts.



Threaded mandrel,
Sleeve with pitch guide.



Slotted mandrel,
Sleeve with pitch guide.



Fly-over tool for
Above M20



Manual Installation Mandrel
With square drive, without bit gauge
Only suitable for free running

Extracting tools



It is used to take out the AVIC-Flight Thread Inserts
installed in the internal thread of the bottom hole

AVIC-Flight Thread Inserts Tools

Electric installation tools



■ Model:AM-CI 8

Used in conjunction with AVIC-Flight Thread Inserts installation mandrel, Carry out quick installation of AVIC-Flight Thread Inserts M2 - M10.

Technical parameters:

Idling speed: 0-1000 R / min

Wide volt design: 100 V ~ 240 V

Plug type:Adaptation

Torque: 8-30 kgf.cm

Torque adjustment: stepless (adjusted by rotating the torque adjusting nut)

Fixed spindle part: 1 / 4 "hexagonal sleeve type quick change clamping collet with radial bearing

■ Model:AM-CL 8

Used in conjunction with AVIC-Flight Thread Inserts installation mandrel, Carry out quick installation of AVIC-Flight Thread Inserts M12 - M20.

Technical parameters:

Idling speed: 0-1000 R / min

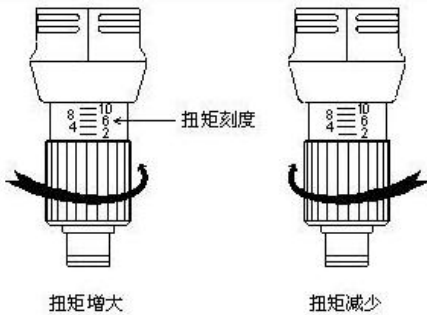
Wide volt design: 100 V ~ 240 V

Plug type: Adaptation

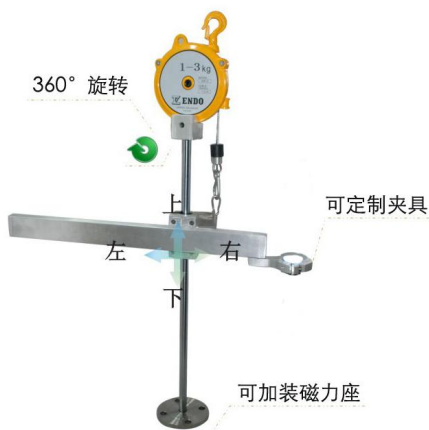
Torque: 10-40 kgf.cm

Torque adjustment: stepless (adjusted by rotating the torque adjusting nut)

Fixed spindle part: 1 / 4 "hexagonal sleeve type quick change clamping collet with radial bearing



Mechanical parallel rail mounted suspension



Delivery status

- ◇ three axis guidance system
- ◇ tool fixture
- ◇ 1-3kg balancer
- ◇ fixed base

type	Product description	
FH600	Working radius	140 mm~600 mm
	Working height	50 mm~430 mm
	Net weight	8 kg
	Max installation torque	Max. 15 Nm

advantage

- ◇ fast and accurate positioning
- ◇ multi direction precise installation
- ◇ no reverse torque
- ◇ tools are fixed reliably
- ◇ lightweight, easy to install, conducive to improving efficiency and reducing work intensity
- ◇ flexibility
- ◇ suitable for pneumatic or electric threaded sleeve installation tools
- ◇ it can be used for quick switching of tools
- ◇ 360 ° rotate
- ◇ safe and reliable working platform

AVIC-Flight Thread Inserts Tools

Pneumatic installation tools



■ **Model:304A1**

Used in conjunction with AVIC-Flight Thread Inserts installation mandrel, Carry out quick installation of AVIC-Flight Thread Inserts M4 - M16.

Technical parameters:

Idling speed: 1700 R / min

Working pressure: 0.6MPa

Torque: 3 N.m

Torque adjustment: use air pressure for adjustment

Fixed spindle part: 1 / 4 "hexagonal sleeve type quick change clamping collet with radial bearing

Weight: 0.61 kg

Length: 235mm

Installation mandrel with depth stop



Profile 1

■ **With 1 / 4 "hex head**

The installation tool is also suitable for manual installation

It is suitable for installing AVIC-Flight Thread Inserts Free Running. With outer 1 / 4 "hex head

Outline 1 applicable installation specification: M2 ~ M5

Outline 2 applicable installation specification: M6 ~ M20



Profile 2

The electric mounting mandrel suitable for installing AVIC-Flight Thread Inserts ScrewLock needs to be ordered separately.

■ **Flattened with "ears"**

The installation tool is also suitable for manual installation

It is suitable for installing AVIC-Flight Thread Inserts Free Running.

Flattened with "ears"

Outline 3 applicable installation specification: M25 ~ M12



Profile 3

The electric mounting mandrel suitable for installing AVIC-Flight Thread Inserts ScrewLock needs to be ordered separately.

Thread Repair Kit

Single specification box



■ 1 set (Items in the box)

- 1pcs installation tools
- 1pcs Break Pin Tools
- 1pcs Twist Drills
- 1pcs Taps
- 25pcs Thread inserts

■ Overall dimension

10X17.2X3.7 cm

■ Weight/Kg

0.80 kg

88Pcs Thread Repair Kit



Size specification	1 set Items in the box	package size Weight
M5 M6 M8	3pcs installation tools 3pcs Break Pin Tools 3pcs Twist Drills 1pcs Hex Key 3pcs Taps 75pcs Thread inserts	24X17.2X3.7 cm 1.50 kg

131Pcs Thread Repair Kit



Size specification	1 set Items in the box	package size Weight
M5 M6 M8 M10 M12	5pcs installation tools 5pcs Break Pin Tools 5pcs Twist Drills 1pcs Hex Key 5pcs Taps 110pcs Thread inserts	38X17.2X3.7 cm 2.00 kg

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