



## A-T SERIES INSERT PROFILE

The **A-T Series Insert** is unique in that it can be installed into most any material above .030/.76 mm in thickness. As the A-T Series is installed, the threaded portion is completely swaged 360° into the sleeve portion and the hole. This permits the A-T Series to be used with Grade 8/Metric 12.9 mating screws.

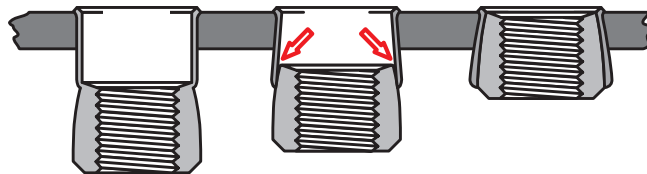
The A-T Series Insert is installed using lightweight, handheld pneumatic ARO tools that can be located at any position in your product's assembly sequence. The A-T Series Insert can be installed either prior to or after finish.



### 360° SWAGING

#### HOW IT WORKS FOR YOU

As the A-T Series Insert is installed, the threaded nut portion is drawn into the upper sleeve portion.



As this occurs a 360° swaging action takes place anchoring A-T Series Insert in the parent material.

## DESIGN BENEFITS

- **REDUCED OVERALL LENGTH** of the installed A-T Series Insert allows it to be used in limited clearance applications.
- **QUALITY INSTALLATIONS** even in variable thickness materials are assured by our spin/spin torque stall tools (featured on page 30).
- **INVENTORY REDUCTION** is possible because one A-T Series Insert will work in any thickness.
- **INSTALLS INTO MOST ANY MATERIAL** with a thickness over .030/.76 mm.
- **CAN BE USED WITH GRADE 8/METRIC CLASS 12.9 SCREWS** due to the A-T Series high shear load capability.
- **AVAILABLE** in Steel, Aluminum, Brass and Series 304 Stainless Steel are available by special order. Contact an AVK Sales Representative for details.

## ADDITIONAL DESIGN TYPES

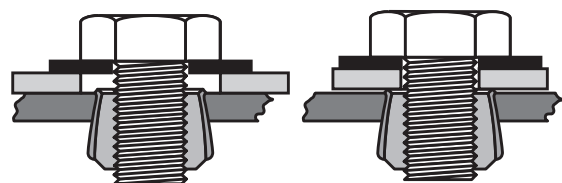
### CLOSED END

Thread area is enclosed eliminating leakage past the threads from either side of the application. See page 23.



## JOINT DESIGN PRACTICES

AVK recommends that the mating part comes in contact with the head of the A-T Series Insert. If a gap or clearance hole exists between the mating part and the A-T Series Insert, the threaded nut portion may rotate or pull through the parent material.



NOT RECOMMENDED

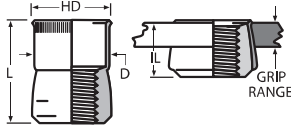
RECOMMENDED

# UNIFIED (INCH) AND METRIC THREAD SIZES

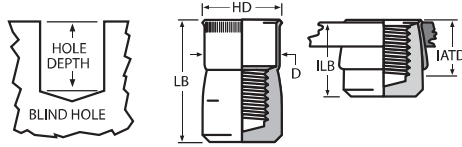


**INSERT**  
KNURLED THREADED INSERTS

## OPEN END TYPE



## CLOSED END TYPE



THREAD SIZE	THREAD CALL OUT	HD ±.005	L ±.015	D MAX.	IL REF.	LB ±.015	ILB REF.	IATD MAX.	HOLE DEPTH MIN.
4-40 UNC	440	.211	.370	.1875	.205	.660	.495	.395	.400
6-32 UNC	632	.240	.370	.2185	.205	.675	.505	.410	.400
8-32 UNC	832	.269	.370	.2495	.205	.675	.505	.410	.400
10-24 UNC	1024	.306	.370	.2805	.205	.685	.520	.385	.400
10-32 UNF	1032	.306	.370	.2805	.205	.685	.520	.385	.400
1/4-20 UNC	420	.400	.515	.3745	.275	1.005	.760	.615	.540
5/16-18 UNC	518	.528	.615	.4995	.325	1.065	.770	.630	.640
3/8-16 UNC	616	.588	.745	.5615	.390	1.450	1.095	.890	.770
1/2-13 UNC	813	.800	.935	.7485	.485	NA	NA	NA	.960

THREAD SIZE	THREAD CALL OUT	HD ±.013	L ±.038	D MAX.	IL REF.	LB ±.038	ILB REF.	IATD MAX.	HOLE DEPTH MIN.
M3 x 0,5 ISO	350	5,36	9,40	4,76	5,21	16,77	12,57	10,03	10,16
M4 x 0,7 ISO	470	6,83	9,40	6,34	5,21	17,15	12,83	10,41	10,16
M5 x 0,8 ISO	580	7,77	9,40	7,12	5,21	17,40	13,21	9,78	10,16
M6 x 1,0 ISO	610	10,16	13,08	9,51	6,99	25,53	19,30	15,62	13,72
M8 x 1,25 ISO	8125	13,41	15,62	12,69	8,26	27,05	19,56	16,00	16,26
M10 x 1,5 ISO	1015	14,94	18,92	14,26	9,91	36,83	27,81	22,61	19,56
M12 x 1,75 ISO	12175	20,32	23,75	19,01	12,32	NA	NA	NA	24,38

# HOLE SIZE / MATERIAL THICKNESS CHART

THREAD SIZE	.030 - .090 MAT. THICKNESS		.091 - .124 MAT. THICKNESS		.125 - .186 MAT. THICKNESS		.187 - OVER MAT. THICKNESS	
	DRILL SIZE	DECIMAL	DRILL SIZE	DECIMAL	DRILL SIZE	DECIMAL	DRILL SIZE	DECIMAL
4-40 UNC	3/16	.1875	#10	.1935	#10	.1935	#9	.1960
6-32 UNC	7/32	.2188	#2	.2210	#1	.2280	#1	.2280
8-32 UNC	1/4	.2500	"F"	.2570	17/64	.2656	17/64	.2656
10-24 UNC	9/32	.2812	"L"	.2900	"L"	.2900	19/64	.2969
10-32 UNF	9/32	.2812	"L"	.2900	"L"	.2900	19/64	.2969
1/4-20 UNC	3/8	.3750	3/8	.3750	"W"	.3860	25/64	.3906
5/16-18 UNC	1/2	.5000	1/2	.5000	33/64	.5156	33/64	.5156
3/8-16 UNC	9/16	.5625	9/16	.5625	37/64	.5781	37/64	.5781
1/2-13 UNC	3/4	.7500	49/64	.7656	25/32	.7810	51/64	.7970

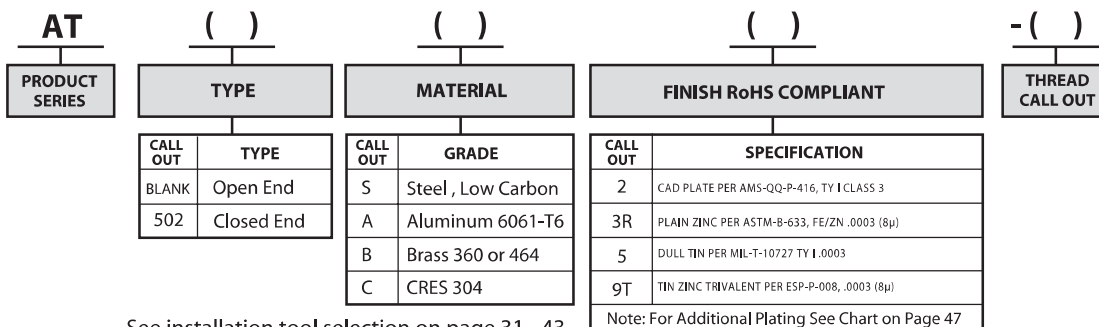
THREAD SIZE	0,76 - 2,29 MAT. THICKNESS		2,31 - 3,15 MAT. THICKNESS		3,17 - 4,72 MAT. THICKNESS		4,72 - OVER MAT. THICKNESS	
	DRILL SIZE	DECIMAL	DRILL SIZE	DECIMAL	DRILL SIZE	DECIMAL	DRILL SIZE	DECIMAL
M3 x 0,5 ISO	4,75	.1875	4,90	.1935	4,90	.1935	4,97	.1960
M4 x 0,7 ISO	6,35	.2500	6,52	.2570	6,74	.2656	6,74	.2656
M5 x 0,8 ISO	7,14	.2812	7,36	.2900	7,36	.2900	7,54	.2969
M6 x 1,0 ISO	9,52	.3750	9,52	.3750	9,80	.3860	9,92	.3906
M8 x 1,25 ISO	12,70	.5000	12,70	.5000	13,09	.5156	13,09	.5156
M10 x 1,5 ISO	14,28	.5625	14,28	.5625	14,68	.5781	14,68	.5781
M12 x 1,75 ISO	19,05	.7500	19,44	.7656	19,83	.7810	20,24	.7970

FINISH: The standard specified finish for the A-T Series Insert is tin. Alteration to this finish will reduce performance.\*THREAD CLASS: The A-T Series Insert's internal threads are manufactured oversized to compensate for resulting thread portion shrinkage during the installation swaging process. They are not gaugeable prior to or after installation but will be compatible with Class 2A/3A or 6g screws after installation.

NOTE: Hole sizes: The application should be tested before hole size is specified.

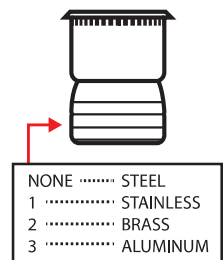
# PART NUMBERING SYSTEM

SAMPLE NUMBER: AT55-610



## MATERIAL TYPE IDENTIFICATION GROOVES

All materials for the A-T Series when plated look similar. Radial grooves are machined into the part for material identification.



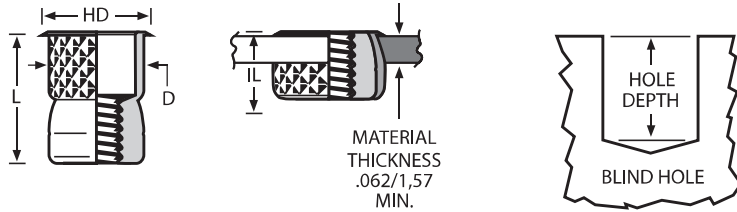
See installation tool selection on page 31 - 43.



## A-W SERIES INSERT PROFILE

The **A-W Series Insert** can be installed into most any material softer than itself that is thicker than .062/1,57. The A-W Series provides exceptional shear strength and pull out in fiberglass and plywoods. The brass A-W Series Insert is particularly useful for the fiberglass boat industry.

The A-W Series Insert is installed using lightweight, handheld pneumatic tools that can be located at any position in your product's assembly sequence. The A-W Series Insert can be installed either prior to or after finish.



## UNIFIED (INCH) AND METRIC THREAD

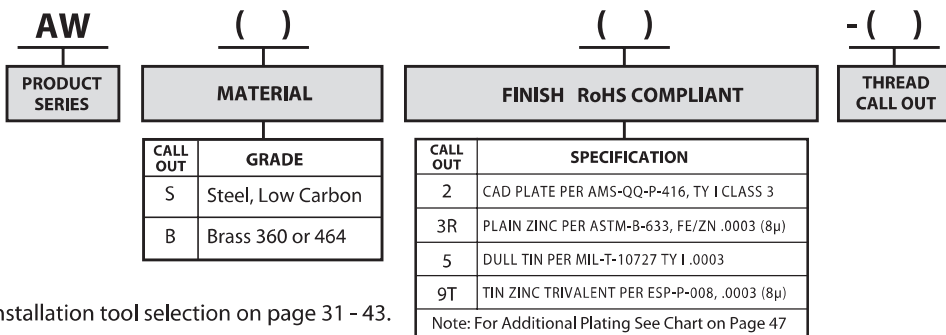
THREAD SIZE	THREAD CALL OUT	HOLE SIZE +.005 / -.000	HD ±.005	L ±.015	D MAX.	IL REF.	HOLE DEPTH MIN.
6-32 UNC	632	15/64 (.234)	.255	.370	.233	.205	.400
8-32 UNC	832	17/64 (.266)	.285	.370	.264	.205	.400
10-24 UNC	1024	19/64 (.297)	.320	.370	.295	.205	.400
10-32 UNF	1032	19/64 (.297)	.320	.370	.295	.205	.400
1/4-20 UNC	420	25/64 (.391)	.415	.515	.389	.275	.540
5/16-18 UNC	518	17/32 (.531)	.550	.615	.528	.325	.640
3/8-16 UNC	616	19/32 (.594)	.615	.740	.590	.390	.770

THREAD SIZE	THREAD CALL OUT	HOLE SIZE +0,13 / -0,00	HD ±0,13	L ±0,38	D MAX.	IL REF.	HOLE DEPTH MIN.
M4 x 0,7 ISO	470	6,75	7,24	9,40	6,71	5,21	10,16
M5 x 0,8 ISO	580	7,54	8,13	9,40	7,50	5,21	10,16
M6 x 1,0 ISO	610	9,92	10,54	13,08	9,88	6,99	13,72
M8 x 1,25 ISO	8125	13,49	13,97	15,62	13,41	8,26	16,26
M10 x 1,5 ISO	1015	15,00	15,62	18,80	14,99	9,91	19,56

NOTE 1: Additional UNF thread sizes available. Contact an AVK Sales Representative for details.  
 NOTE 2: HOLE SIZE: The A-W Series Insert hole size will be dependent on parent material density. Experimentation is required for optimum performance.  
 NOTE 3: FINISH: The standard specified finish for the A-W Series Insert is tin. Alteration to this finish will reduce performance.  
 \*THREAD CLASS: The A-W Series Insert's internal threads are manufactured oversized to compensate for resulting thread portion shrinkage during the installation swaging process. They are not gaugeable prior to or after installation but will be compatible with Class 2A/3A or 6g screws after installation.

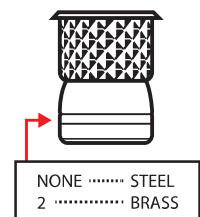
## PART NUMBERING SYSTEM

SAMPLE NUMBER: AWS5-420



### MATERIAL TYPE IDENTIFICATION GROOVES

All materials for the A-W Series when plated look similar. Radial grooves are machined into the part for material identification.



See installation tool selection on page 31 - 43.