



A-H SERIES INSERT PROFILE

The **A-H Series Insert** features a radius corner hex body. When installed into a corresponding hex hole, the radius corners of the A-H Series Insert expand and fill the hole corners providing exceptional resistance to spinning in the panel. The A-H Series is designed to be used with Grade 5 or Metric Class 8.8/9.8 mating screws.

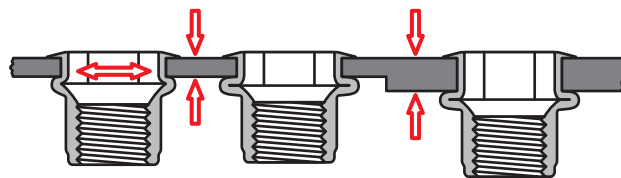
The A-H Series Insert can be installed using AVK's ARO brand pneumatic tools or AVK's SPP™ pneumatic/hydraulic tooling. These tools can be located at any position on your assembly line. The A-H Series Insert can be installed either before or after finish.



SPINWALL TECHNOLOGY™

HOW HOLE FILL WORKS FOR YOU

As the A-H Series is installed, the radius cornered hex body expands **FILLING THE HOLE**. This feature provides exceptional torque strength and vibration resistance.



The installation tool then continues to install the insert forming a backside flange even in multiple or variable thickness materials **WITHOUT ADJUSTMENT**.

DESIGN BENEFITS

- **EXCEPTIONAL** resistance to spinning in the panel is achieved as the A-H Series' hex body expands **FILLING THE HOLE**.
- **AVOID STRESS FRACTURES** of your material and prolong punch and die life by specifying a radius corner in your hex hole. This is possible when using the A-H Series radius hex body insert.
- **QUALITY INSTALLATIONS** even in variable thickness materials are assured by AVK's spin/spin ARO pneumatic tools and our pneumatic/hydraulic SPP2 Tool™.
- **SUPERIOR THREAD STRENGTH** is provided due to our internal rolled thread manufacturing process.
- **THREADS GAUGE** before and after installation due to the increased cross-sectional thickness of the thread area. Thread dilation is prevented.
- **INVENTORY REDUCTION** is possible because of the A-H Series' wide grip range capacity. It is 2.5 times greater than conventional rivet nuts.
- **SUPERIOR CORROSION RESISTANCE** is provided by our standard zinc/yellow trivalent finish (120 hours. salt spray to white corrosion). For exceptional corrosion protection we offer a trivalent tin/zinc alloy finish.
- **AVAILABLE** in steel. Additional materials such as aluminum, brass and monel are available by special order. Contact an AVK Sales Representative.

ADDITIONAL DESIGN TYPES

CLOSED END

Thread area is enclosed eliminating leakage past the threads from either side of the application. See page 15.



SEALED HEAD

A PVC foam seal is bonded to the underside of the head and when installed provides a weather tight seal. (Also available in the closed end version.) See page 19 for important grip information.



OPEN END

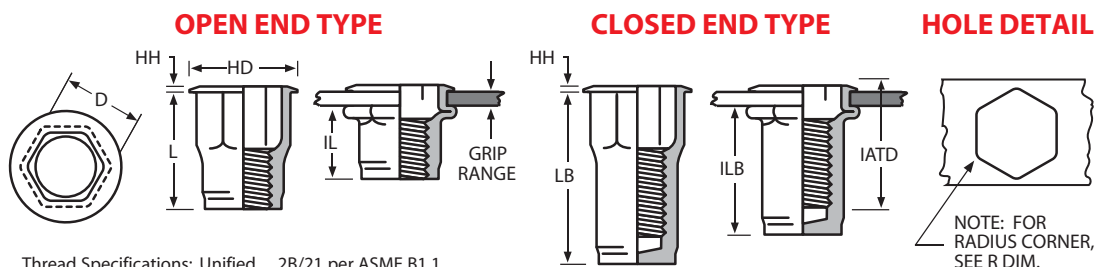
Stainless Steel Hex body insert available in specific thread ranges only. Please contact an AVK Sales Representative for more information.



UNIFIED (INCH) AND METRIC THREAD SIZES



INSERT
THREADED HEX INSERT



Thread Specifications: Unified 2B/21 per ASME B1.1
Metric 6H/21 per ASME B1.13M

THREAD SIZE	THREAD CALL OUT	GRIP RANGE	GRIP CALL OUT	HOLE SIZE (ACROSS FLATS) +0.004 / -0.000	HD ±0.010 ±0.025*	HH ±0.003	L ±0.015	D MAX.	IL MAX.	LB MAX.	ILB MAX.	IATD** MAX.	R MAX.
6-32 UNC	632	.020 - .080	80	.250	.375	.027	.385	.249	.295	.755	.640	.575	.015
6-32 UNC	632	.080 - .130	130	.250	.375	.027	.435	.249	.295	.755	.580	.640	.015
8-32 UNC	832	.020 - .080	80	.250	.375	.027	.385	.249	.295	.755	.640	.575	.015
8-32 UNC	832	.080 - .130	130	.250	.375	.027	.435	.249	.295	.755	.580	.640	.015
10-24 UNC	1024	.020 - .130	130	.281	.390	.027	.435	.280	.275	1.045	.845	.695	.020
10-24 UNC	1024	.130 - .225	225	.281	.390	.027	.535	.280	.275	1.045	.735	.805	.020
10-32 UNF	1032	.020 - .130	130	.281	.390	.027	.435	.280	.275	1.045	.845	.695	.020
10-32 UNF	1032	.130 - .225	225	.281	.390	.027	.535	.280	.275	1.045	.735	.805	.020
1/4-20 UNC	420	.027 - .165	165	.375	.510	.030	.585	.374	.400	1.205	1.015	.945	.040
1/4-20 UNC	420	.165 - .260	260	.375	.510	.030	.685	.374	.400	1.205	.915	1.085	.040
5/16-18 UNC	518	.027 - .150	150	.500	.655*	.035	.685	.499	.530	1.460	1.235	1.045	.040
5/16-18 UNC	518	.150 - .312	312	.500	.655*	.035	.845	.499	.515	1.460	1.220	1.170	.040
3/8-16 UNC	616	.027 - .150	150	.500	.655*	.035	.685	.499	.530	1.460	1.235	1.045	.040
3/8-16 UNC	616	.150 - .312	312	.500	.655*	.035	.845	.499	.515	1.460	1.220	1.170	.040
1/2-13 UNC	813	.063 - .200	200	.687	.865*	.047	1.150	.686	.850	2.380	2.070	1.505	.040
1/2-13 UNC	813	.200 - .350	350	.687	.865*	.047	1.300	.686	.850	2.380	1.920	1.505	.040
1/2-13 UNC	813	.350 - .500	500	.687	.865*	.047	1.450	.686	.860	2.380	1.770	1.505	.040

THREAD SIZE	THREAD CALL OUT	GRIP RANGE	GRIP CALL OUT	HOLE SIZE (ACROSS FLATS) +0.10 / -0.00	HD ±0.25 ±0.64*	HH ±0.08	L ±0.38	D MAX.	IL MAX.	LB MAX.	ILB MAX.	IATD** MAX.	R MAX.
M4 x 0,7 ISO	470	0,50 - 2,00	2.0	6,35	9,53	0,68	9,78	6,35	7,49	19,18	16,26	14,61	0,38
M4 x 0,7 ISO	470	2,00 - 3,30	3.3	6,35	9,53	0,68	11,05	6,35	7,49	19,18	14,73	16,26	0,38
M5 x 0,8 ISO	580	0,50 - 3,30	3.3	7,14	9,91	0,68	11,05	7,10	6,99	26,54	21,46	17,65	0,50
M5 x 0,8 ISO	580	3,30 - 5,70	5.7	7,14	9,91	0,68	13,59	7,10	6,99	26,54	18,67	20,45	0,50
M6 x 1,0 ISO	610	0,70 - 4,20	4.2	9,53	12,96	0,76	14,86	9,50	10,16	30,61	25,78	24,00	1,00
M6 x 1,0 ISO	610	4,20 - 6,60	6.6	9,53	12,96	0,76	17,40	9,50	10,16	30,61	23,24	27,56	1,00
M8 x 1,25 ISO	8125	0,70 - 3,80	3.8	12,70	16,64*	0,89	17,40	12,70	13,46	37,08	31,37	26,54	1,00
M8 x 1,25 ISO	8125	3,80 - 7,90	7.9	12,70	16,64*	0,89	21,46	12,70	13,08	37,08	30,99	29,72	1,00
M10 x 1,5 ISO	1015	0,70 - 3,80	3.8	12,70	16,64*	0,89	17,40	12,70	13,46	37,08	31,37	26,54	1,00
M10 x 1,5 ISO	1015	3,80 - 7,90	7.9	12,70	16,64*	0,89	21,46	12,70	13,08	37,08	30,99	29,72	1,00
M12 x 1,75 ISO	12175	1,60 - 5,10	5.1	17,45	21,97*	1,19	29,21	17,42	21,59	60,45	52,58	38,23	1,00
M12 x 1,75 ISO	12175	5,10 - 8,90	8.9	17,45	21,97*	1,19	33,02	17,42	21,59	60,45	48,77	38,23	1,00
M12 x 1,75 ISO	12175	8,90 - 12,7	12.7	17,45	21,97*	1,19	36,83	17,42	21,84	60,45	44,96	38,23	1,00

NOTE 1: Grip range can be affected by parent material density and actual hole size. AVK suggests trial installations to determine optimum grip.

NOTE 2: Additional UNF fine threads are available. Contact an AVK Sales Representative for details

NOTE 3: Additional grip lengths are available in certain thread sizes. Contact an AVK Sales Representative for details. **Dimensions in minimum grip condition.

PART NUMBERING SYSTEM

SAMPLE NUMBER: AHS3T-420-165

AH	()	()	-()	-()	()																														
PRODUCT SERIES	MATERIAL	FINISH	THREAD CALL OUT	GRIP CALL OUT	TYPE																														
	<table><tr><th>CALL OUT</th><th>GRADE</th></tr><tr><td>S</td><td>Steel 1010/1008</td></tr><tr><td>A</td><td>Aluminum 5056</td></tr><tr><td>B</td><td>Brass 270/260</td></tr><tr><td>M</td><td>Monel 400</td></tr><tr><td>C</td><td>CRES 302</td></tr></table>	CALL OUT	GRADE	S	Steel 1010/1008	A	Aluminum 5056	B	Brass 270/260	M	Monel 400	C	CRES 302	<table><tr><th>CALL OUT</th><th>SPECIFICATION</th></tr><tr><td>3T</td><td>ZINC TRIVALENT PER ASTM-B-633, FE/ZN .0003 (8μ) WITH CLEAR PROTECTIVE COATING</td></tr><tr><td>4T</td><td>YELLOW ZINC TRIVALENT PER ASTM-B-633, FE/ZN .0003 (8μ) WITH CLEAR PROTECTIVE COATING</td></tr><tr><td>9T</td><td>TIN ZINC TRIVALENT PER ESP-P-004, .0003 (8μ) WITH CLEAR PROTECTIVE COATING</td></tr><tr><td colspan="2">Note: For Additional Plating See Chart on Page 46</td></tr></table>	CALL OUT	SPECIFICATION	3T	ZINC TRIVALENT PER ASTM-B-633, FE/ZN .0003 (8μ) WITH CLEAR PROTECTIVE COATING	4T	YELLOW ZINC TRIVALENT PER ASTM-B-633, FE/ZN .0003 (8μ) WITH CLEAR PROTECTIVE COATING	9T	TIN ZINC TRIVALENT PER ESP-P-004, .0003 (8μ) WITH CLEAR PROTECTIVE COATING	Note: For Additional Plating See Chart on Page 46				<table><tr><th>CALL OUT</th><th>TYPE</th></tr><tr><td>BLANK</td><td>Open End</td></tr><tr><td>B</td><td>Closed End</td></tr><tr><td>S</td><td>Sealed (See Pg.19)</td></tr></table>	CALL OUT	TYPE	BLANK	Open End	B	Closed End	S	Sealed (See Pg.19)
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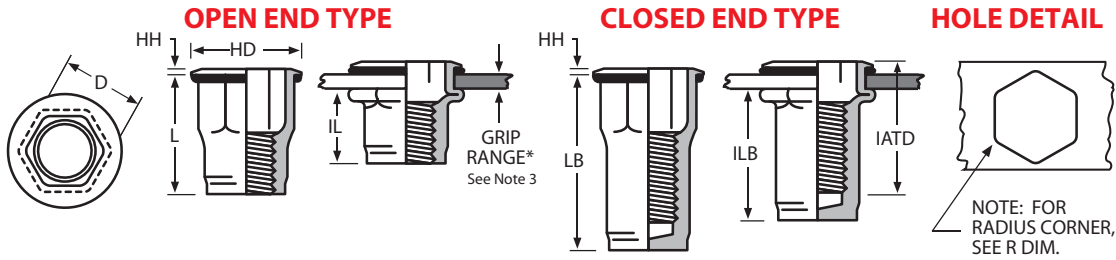
For air tool selection see pages 30 and 31

A-H SERIES SEALED HEAD INSERT PROFILE



SEALED HEAD
THREADED HEX INSERT

The **A-H Series Sealed Head Insert** provides all the features of the standard A-H Series Insert plus the addition of a PVC foam seal that is bonded to the underside head of the insert. This feature provides a weather resistant seal that will withstand 50 PSI–3.4 bars of pressure.



Thread Specifications:
Unified 2B/21 per ASME B1.1
Metric 6H/21 per ASME B1.13M

UNIFIED (INCH) AND METRIC THREAD SIZES

THREAD SIZE	THREAD CALL OUT	GRIP RANGE	GRIP CALL OUT	HOLE SIZE (ACROSS FLATS) $\pm .004 / -.000$	HD $\pm .010 \pm .025^*$	HH $\pm .003$	L $\pm .015$	D MAX.	IL MAX.	LB MAX.	ILB MAX.	IATD** MAX.	R MAX.
6-32 UNC	632	.020 - .060	80	.250	.375	.027	.385	.249	.295	.755	.640	.575	.015
6-32 UNC	632	.060 - .100	130	.250	.375	.027	.435	.249	.295	.755	.580	.640	.015
8-32 UNC	832	.020 - .060	80	.250	.375	.027	.385	.249	.295	.755	.640	.575	.015
8-32 UNC	832	.060 - .100	130	.250	.375	.027	.435	.249	.295	.755	.580	.640	.015
10-24 UNC	1024	.020 - .100	130	.281	.390	.027	.435	.280	.275	1.045	.845	.695	.020
10-24 UNC	1024	.100 - .175	225	.281	.390	.027	.535	.280	.275	1.045	.735	.805	.020
10-32 UNF	1032	.020 - .100	130	.281	.390	.027	.435	.280	.275	1.045	.845	.695	.020
10-32 UNF	1032	.100 - .175	225	.281	.390	.027	.535	.280	.275	1.045	.735	.805	.020
1/4-20 UNC	420	.027 - .125	165	.375	.510	.030	.585	.374	.400	1.205	1.015	.945	.040
1/4-20 UNC	420	.125 - .195	260	.375	.510	.030	.685	.374	.400	1.205	.915	1.085	.040
5/16-18 UNC	518	.027 - .115	150	.500	.655*	.035	.685	.499	.530	1.460	1.235	1.045	.040
5/16-18 UNC	518	.130 - .250	312	.500	.655*	.035	.845	.499	.515	1.460	1.220	1.170	.040
3/8-16 UNC	616	.027 - .115	150	.500	.655*	.035	.685	.499	.530	1.460	1.235	1.045	.040
3/8-16 UNC	616	.130 - .250	312	.500	.655*	.035	.845	.499	.515	1.460	1.220	1.170	.040
1/2-13 UNC	813	.063 - .150	200	.687	.865*	.047	1.150	.686	.850	2.380	2.070	1.505	1.505
1/2-13 UNC	813	.150 - .280	350	.687	.865*	.047	1.300	.686	.850	2.380	1.920	1.505	1.505
1/2-13 UNC	813	.280 - .400	500	.687	.865*	.047	1.450	.686	.860	2.380	1.770	1.505	1.505

THREAD SIZE	THREAD CALL OUT	GRIP RANGE	GRIP CALL OUT	HOLE SIZE (ACROSS FLATS) $\pm .010 / -.000$	HD $\pm .025 \pm .064^*$	HH $\pm .008$	L $\pm .038$	D MAX.	IL MAX.	LB MAX.	ILB MAX.	IATD** MAX.	R MAX.
M4 x 0,7 ISO	470	0,50 - 1,52	2.0	6,35	9,53	0,68	9,78	6,35	7,49	19,18	16,26	14,61	0,38
M4 x 0,7 ISO	470	1,52 - 2,54	3.3	6,35	9,53	0,68	11,05	6,35	7,49	19,18	14,73	16,26	0,38
M5 x 0,8 ISO	580	0,50 - 2,54	3.3	7,14	9,91	0,68	11,05	7,10	6,99	26,54	21,46	17,65	0,50
M5 x 0,8 ISO	580	2,54 - 4,45	5.7	7,14	9,91	0,68	13,59	7,10	6,99	26,54	18,67	20,45	0,50
M6 x 1,0 ISO	610	0,70 - 3,17	4.2	9,53	12,96	0,76	14,86	9,50	10,16	30,61	25,78	24,00	1,00
M6 x 1,0 ISO	610	3,17 - 4,95	6.6	9,53	12,96	0,76	17,40	9,50	10,16	30,61	23,24	27,56	1,00
M8 x 1,25 ISO	8125	0,70 - 2,92	3.8	12,70	16,64*	0,89	17,40	12,70	13,46	37,08	31,37	26,54	1,00
M8 x 1,25 ISO	8125	3,30 - 6,35	7.9	12,70	16,64*	0,89	21,46	12,70	13,08	37,08	30,99	29,72	1,00
M10 x 1,5 ISO	1015	0,70 - 2,92	3.8	12,70	16,64*	0,89	17,40	12,70	13,46	37,08	31,37	26,54	1,00
M10 x 1,5 ISO	1015	3,30 - 6,35	7.9	12,70	16,64*	0,89	21,46	12,70	13,08	37,08	30,99	29,72	1,00
M12 x 1,75 ISO	12175	1,60 - 3,81	5.1	17,45	21,97*	1,19	29,21	17,42	21,59	60,45	52,58	38,23	38,23
M12 x 1,75 ISO	12175	3,81 - 7,11	8.9	17,45	21,97*	1,19	33,02	17,42	21,59	60,45	48,77	38,23	38,23
M12 x 1,75 ISO	12175	7,11 - 10,16	12.7	17,45	21,97*	1,19	36,83	17,42	21,84	60,45	44,96	38,23	38,23

NOTE 1: Grip range can be affected by parent material density and actual hole size. AVK suggests trial installations to determine optimum grip.

NOTE 2: Additional UNF fine threads are available. Contact an AVK Sales Representative for details.

NOTE 3: The A-H Series shown on this page incorporates an under head seal which reduces the standard grip range of the part based on the seal thickness. The grip call out remains based on the standard part for part numbering simplicity.

NOTE 4: The PVC foam seal is not recommended for use with petroleum based liquids. **Dimensions in minimum grip condition.

PART NUMBERING SYSTEM

SAMPLE NUMBER: AHS3T-420-165S

PRODUCT SERIES	MATERIAL	FINISH	THREAD CALL OUT	GRIP CALL OUT	TYPE
AH	()	()	-()	-()	()
CALL OUT	GRADE	CALL OUT	SPECIFICATION	CALL OUT	TYPE
S	Steel 1010/1008	3T	ZINC TRIVALENT PER ASTM-B-633, FE/ZN .0003 (8µ) WITH CLEAR PROTECTIVE COATING	BLANK	Open End
A	Aluminum 5056	4T	YELLOW ZINC TRIVALENT PER ASTM-B-633, FE/ZN .0003 (8µ) WITH CLEAR PROTECTIVE COATING	B	Closed End
B	Brass 270/260	9T	TIN ZINC TRIVALENT PER ESP-P-004, .0003 (8µ) WITH CLEAR PROTECTIVE COATING	S	Sealed
M	Monel 400	Note: For Additional Plating See Chart on Page 46			
C	CRES 302				

For air tool selection see pages 30 and 31