

**Alcoa
Fastening
Systems**



Industrial Distribution Group

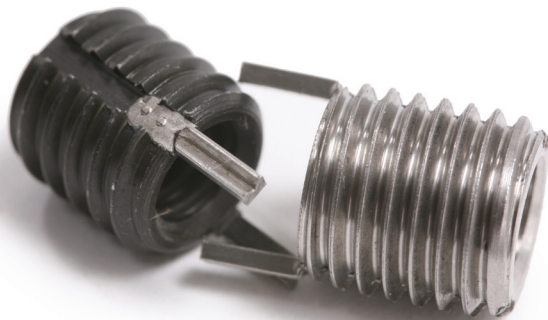


Keysert® and MS Keensert®

Commercial-Grade and Mil-Spec
Solid Threaded Inserts,
Tooling, & Kits

KEYSERT® AND MS KEENSERT®

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KEYSERT® AND MS KEENSERT® Thread Repair Inserts

The Solid Alternative for Thread Repair

Designed to repair damaged threads or for use in original equipment, Keyserts® and MS Keenserts® provide easy installation and versatility.

Featuring a key-locking action that prevents rotation due to vibration or torsion, commercial-grade Keyserts and MS Keenserts can be used in a wide range of materials and applications.

Commercial-grade Keyserts are available in carbon and stainless steel, both inch and metric series, and are supplied in Thinwall, Heavy Duty, Extra Heavy Duty, and Solid styles. Keyserts are offered individually or in kits.

Available in stainless steel, MS Keenserts® are manufactured and tested according to MIL-I-45914 rev A. This rigorous process includes testing internal and external threads (proof and pull-out), torque-out, locking torque (where applicable), non-destructive testing, and magnetic permeability testing. In addition, MS Keenserts offer complete traceability, counterbored leading internal threads, and are available in internal thread-locking and miniature sizes.

Features

- Installed with standard drills and taps
- Easy installation
- May be used in a variety of materials: aluminum, magnesium, cold rolled steel
- Easy to remove
- Passivated to enhance corrosion-resistance and finish

Typical Applications

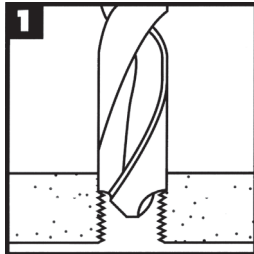
- Trucks, RVs
- Machinery, Small Engines
- Molds, Tool and Die
- MRO Tasks

Important Note

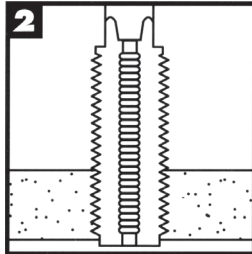
- These inserts are not recommended for use in brittle materials, such as cast iron or plastic

Installation and Removal

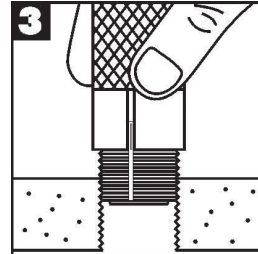
Installation



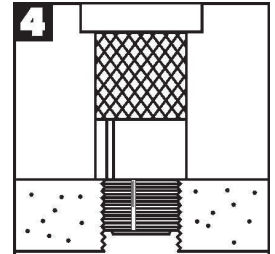
Drill out old threads with a standard drill. **Note: Drill is oversize – see charts for proper dimensions.** Chamfer the hole with a standard countersink (82°-100°).



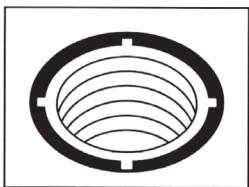
Tap new threads with a standard tap. See charts for proper size and depth.



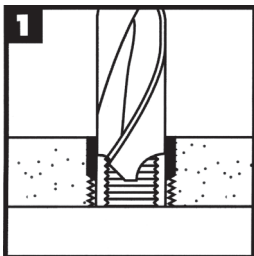
Screw in the insert until slightly below surface.



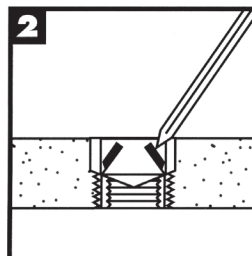
Drive keys down with several hammer taps on the proper installation tool.



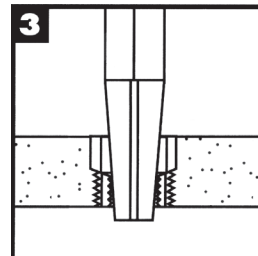
Removal



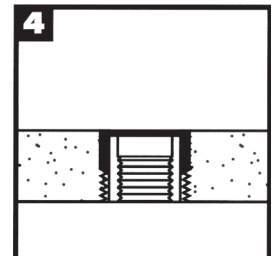
Drill out material between keys and internal thread with standard drill to specified depth (refer to charts for proper dimensions).



Deflect keys inward and break off.



Remove insert using an E-Z OUT or similar type tool.



Same size replacement insert may be installed in the original hole.



Carbon and Stainless Steel Bulk Keyserts

Thinwall – Inch Series

Insert					Installation					Removal	
Carbon Part No.	Stainless Part No.	Internal Thread Class 3B	External Thread (Mod.) Class 2A	Length in.	Installation Tool Part No.	Tap Drill Size	C'Sink Diameter +.010/-.000	Thread Tap		Drill	
								Size Class 2B	Min. Depth	Size	Depth
73601	73606	10-24	5/16-18	0.31	72190	I	0.32	5/16-18	0.37	7/32	1/8
74601	74606	10-32									
73041	73046	1/4-20	3/8-16	0.37	72250	Q	0.38	3/8-16	0.43	9/32	3/16
74041	74046	1/4-28									
73051	73056	5/16-18	7/16-14	0.43	72312	X	0.44	7/16-14	0.50	11/32	3/16
74051	74056	5/16-24									
73061	73066	3/8-16	1/2-13	0.50	72375	29/64	0.51	1/2-13	0.56	13/32	3/16
74061	74066	3/8-24									
73071	73076	7/16-14	9/16-12	0.56	72375	33/64	0.57	9/16-12	0.62	15/32	3/16
74071	74076	7/16-20									
73081	73086	1/2-13	5/8-11	0.62	72500	37/64	0.63	5/8-11	0.68	17/32	3/16
74081	74086	1/2-20									

Heavy Duty – Inch Series

Insert					Installation					Removal	
Carbon Part No.	Stainless Part No.	Internal Thread Class 3B	External Thread (Mod.) Class 2A	Length in.	Installation Tool Part No.	Tap Drill Size	C'Sink Diameter +.010/-.000	Thread Tap		Drill	
								Size Class 2B	Min. Depth	Size	Depth
73582	73587	8-32	5/16-18	0.31	70582	I	0.32	5/16-18	0.37	7/32	1/8
73602	73607	10-24	3/8-16	0.31	72190	Q	0.38	3/8-16	0.37	9/32	1/8
74602	74607	10-32									
73042	73047	1/4-20	7/16-14	0.37	72250	X	0.44	7/16-14	0.43	11/32	3/16
74042	74047	1/4-28									
73052	73057	5/16-18	1/2-13	0.43	72312	29/64	0.51	1/2-13	0.50	13/32	3/16
74052	74057	5/16-24									
73062	73067	3/8-16	9/16-12	0.50	72375	33/64	0.57	9/16-12	0.56	15/32	3/16
74062	74067	3/8-24									
73072	73077	7/16-14	5/8-11	0.62	72375	37/64	0.63	5/8-11	0.68	17/32	3/16
74072	74077	7/16-20									
73082	73087	1/2-13	3/4-16	0.62	72500	45/64	0.76	3/4-16	0.68	21/32	3/16
74082	74087	1/2-20									
73092	73097	9/16-12	3/4-16	0.81	72500	45/64	0.76	3/4-16	0.94	21/32	3/16
74092	74097	9/16-18									
73102	73107	5/8-11	7/8-14	0.87	72625	53/64	0.88	7/8-14	1.00	25/32	5/16
74102	74107	5/8-18									
73122	73127	3/4-10*	1 1/8-12	1.12	72875	1 1/16	1.14	1 1/8-12	1.31	31/32	5/16
74122	74127	3/4-16*									
73142	73147	7/8-9*	1 1/4-12	1.25	72875	1 3/16	1.27	1 1/4-12	1.44	1 3/32	5/16
74142	74147	7/8-14*									
73162	73167	1-8*	1 3/8-12	1.37	72100	1 5/16	1.39	1 3/8-12	1.56	1 7/32	5/16
74162	74167	1-12*									
74162-14		1-14*									
73182		1 1/8-7*	1 1/2-12	1.62	70182	1 7/16	1.52	1 1/2-12	1.84	1 11/32	5/16
74182		1 1/8-12*									
73202		1 1/4-7*	1 5/8-12	1.81	70202	1 9/16	1.64	1 5/8-12	2.06	1 15/32	5/16
74202		1 1/4-12*									
73242		1 1/2-6*	1 7/8-12	2.00	70242	1 13/16	1.89	1 7/8-12	2.28	1 23/32	5/16
74242		1 1/2-12*									

* Class 2B Internal Thread fit

Carbon and Stainless Steel Bulk Keyserts

Technical Notes:

Material: Inserts – C1215 or equivalent (carbon)
303 stainless steel (stainless)
Keys – 302 Stainless Steel

Finish: Carbon Steel Inserts – Zinc Phosphate and
Ferrocote 364-3 Oil
Stainless Steel Inserts – Passivated

Tolerances: ± 0.010 inch or $\pm .25$ mm unless
specified otherwise

Dimensions: Inch sizes are in inches
Metric sizes are in millimeters

Keys: Inserts with internal thread size 5/16 or M7
and larger are furnished with 4 locking keys



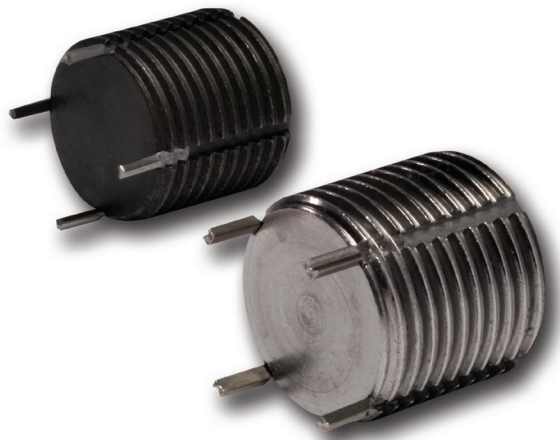
Thinwall – Metric

Insert					Installation					Removal	
Carbon Part No.	Stainless Part No.	Internal Thread Class 6H	External Thread Class 6g	Length in.	Installation Tool Part No.	Tap Drill Size	C'Sink Diameter +.25/- .00	Thread Tap		Drill	
								Size Class 6H	Min. Depth	Size	Depth
75051	75056	M5-8	M8-1.25	8.0	72190	6.9	8.25	M8-1.25	9.5	5.50	4.00
75061	75066	M6-1	M10-1.25	10.0	72250	8.8	10.25	M10-1.25	11.5	7.50	4.75
75081	75086	M8-1.25	M12-1.25	12.0	72312	10.8	12.25	M12-1.25	13.5	9.50	4.75
77081	77086	M8-1									
75101	75106	M10-1.5	M14-1.5	14.0	72375	12.8	14.25	M14-1.5	15.5	11.50	4.75
77101	77106	M10-1.25									
75121	75126	M12-1.75	M16-1.5	16.0	72500	14.75	16.25	M16-1.5	17.5	13.50	4.75
78121	78126	M12-1.25									

Heavy Duty – Metric

Insert					Installation					Removal	
Carbon Part No.	Stainless Part No.	Internal Thread Class 6H	External Thread Class 6g	Length in.	Installation Tool Part No.	Tap Drill Size	C'Sink Diameter +.25/- .00	Thread Tap		Drill	
								Size Class 6H	Min. Depth	Size	Depth
75042	75047	M4-7	M8-1.25	8.0	71042	6.90	8.25	M8-1.25	9.5	5.50	4.00
75052	75057	M5-8	M10-1.25	10.0	72190	8.80	10.25	M10-1.25	12.5	7.50	4.75
75062	75067	M6-1	M12-1.25	12.0	72250	10.80	12.25	M12-1.25	14.5	9.50	4.75
75082	75087	M8-1.25	M14-1.5	14.0	72312	12.80	14.25	M14-1.5	16.5	11.50	4.75
77082	77087	M8-1									
75102	75107	M10-1.5	M16-1.5	16.0	72375	14.75	16.25	M16-1.5	18.5	13.50	4.75
77102	77107	M10-1.25									
75122	75127	M12-1.75	M18-1.5	18.0	72500	16.75	18.25	M18-1.5	20.5	15.50	4.75
78122	78127	M12-1.25									
75142	75147	M14-2	M20-1.5	20.0	71142	18.75	20.25	M20-1.5	22.5	17.50	4.75
77142	77147	M14-1.5									
75162	75167	M16-2	M22-1.5	22.0	72625	20.50	22.25	M22-1.5	24.5	17.75	6.35
77162	77167	M16-1.5									
78182	78187	M18-1.5	M24-1.5	24.0	71182	22.50	24.25	M24-1.5	26.5	19.75	6.35
75202	75207	M20-2.5	M30-2	30.0	72875	28.00	30.25	M30-2	34.5	25.75	6.35
78202	78207	M20-1.5									
78222	78227	M22-1.5	M32-2	32.0	71222	30.00	32.25	M32-2	36.5	27.75	6.35
75242	75247	M24-3	M33-2	33.0	71242	31.00	33.25	M33-2	37.5	28.75	6.35
77242	77247	M24-2									

Solid Keyserts



Solid threaded inserts are perfect for:

- relocating holes that have been drilled or tapped in the wrong place
- plugging holes or filling in holes that are too big

Solid Inch

Insert				Installation					Removal	
Carbon Part No.	Stainless Part No.	External Thread (Mod.) Class 2A	Length in.	Installation Tool Part No.	Tap Drill Size	C'Sink Diameter +.010/-0.000	Thread Tap		Drill	
							Size Class 2B	Min. Depth	Size	Depth
73054	73059	5/16-18	0.31	70054	I	0.32	5/16-18	0.37	7/32	1/8
73064	73069	3/8-16	0.31	70064	Q	0.38	3/8-16	0.37	9/32	1/8
73074	73079	7/16-14	0.37	70074	X	0.44	7/16-14	0.43	11/32	3/16
73084	73089	1/2-13	0.43	70084	29/64	0.51	1/2-13	0.50	13/32	3/16
73094	73099	9/16-12	0.50	70094	33/64	0.57	9/16-12	0.56	15/32	3/16
73104	73109	5/8-11	0.62	70104	37/64	0.63	5/8-11	0.68	17/32	3/16
73124	73129	3/4-16	0.68	70124	45/64	0.76	3/4-16	0.68	21/32	3/16
73144	73149	7/8-14	0.87	70144	53/64	0.88	7/8-14	1.00	25/32	5/16
74164	74169	1-12	0.87	70164	15/16	1.02	1-12	1.00	27/32	5/16
74184	74189	1 1/8-12	1.12	70184	1 1/16	1.14	1 1/8-12	1.31	31/32	5/16
74204	74209	1 1/4-12	1.25	70204	1 3/16	1.27	1 1/4-12	1.44	1 3/32	5/16
74224	74229	1 3/8-12	1.37	70224	1 5/16	1.39	1 3/8-12	1.56	1 7/32	5/16

Solid Metric

Insert				Installation					Removal	
Carbon Part No.	Stainless Part No.	External Thread (Mod.) Class 6g	Length in.	Installation Tool Part No.	Tap Drill Size	C'Sink Diameter +.25/-0.00	Thread Tap		Drill	
							Size Class 6H	Min. Depth	Size	Depth
75084	75089	M8-1.25	8.0	71084	6.90	8.25	M8-1.25	9.5	5.50	4.00
77104	77109	M10-1.25	10.0	71104	8.80	10.25	M10-1.25	12.5	7.50	4.75
78124	78129	M12-1.25	12.0	71124	10.80	12.25	M12-1.25	14.5	9.50	4.75
77144	77149	M14-1.5	14.0	71144	12.80	14.25	M14-1.5	16.5	11.50	4.75
77164	77169	M16-1.5	16.0	71164	14.75	16.25	M16-1.5	18.5	13.50	4.75
78184	78189	M18-1.5	18.0	71184	16.75	18.25	M18-1.5	20.5	15.50	4.75
78204	78209	M20-1.5	20.0	71204	18.75	20.25	M20-1.5	22.5	17.50	4.75
78224	78229	M22-1.5	22.0	71224	20.50	22.25	M22-1.5	24.5	17.75	6.35
78244	78249	M24-1.5	24.0	71244	22.50	24.25	M24-1.5	26.5	19.75	6.35
77304	77309	M30-2	30.0	71304	28.00	30.25	M30-2	34.5	25.75	6.35
77324	77329	M32-2	32.0	71324	30.00	32.25	M32-2	36.5	27.75	6.35

Extra Heavy Duty Keyserts



Extra Heavy Duty Keyserts are preferred where:

- extra strength / torque out is required
- parent material has sufficient space for a heavier wall
- larger hole needs to be reduced to a smaller size

Extra Heavy Duty Inch											
Insert					Install					Removal	
Carbon Part No.	Stainless Part No.	Internal Thread Class 3B	External Thread (Mod.) Class 2A	Length in.	Installation Tool Part No.	Tap Drill Size	C'Sink Diameter +.010/-000	Thread Tap		Drill	
								Size Class 2B	Min. Depth	Size	Depth
73563	73568	6-32	5/16-18	0.31	70563	I	0.32	5/16-18	0.37	7/32	1/8
73583	73588	8-32	3/8-16	0.31	70583	Q	0.38	3/8-16	0.37	9/32	1/8
73603	73608	10-24	7/16-14	0.31	70603	X	0.44	7/16-14	0.37	11/32	3/16
74603	74608	10-32									
73043	73048	1/4-20	1/2-13	0.37	70043	29/64	0.51	1/2-13	0.43	13/32	3/16
74043	74048	1/4-28									
73053	73058	5/16-18	9/16-12	0.43	70053	33/64	0.57	9/16-12	0.50	15/32	3/16
74053	74058	5/16-24									
73063	73068	3/8-16	5/8-11	0.50	70063	37/64	0.63	5/8-11	0.56	17/32	3/16
74063	74068	3/8-24									
73073	73078	7/16-14	3/4-16	0.62	70073	45/64	0.76	3/4-16	0.68	21/32	3/16
74073	74078	7/16-20									
73083	73088	1/2-13	7/8-14	0.68	70083	53/64	0.88	7/8-14	0.75	25/32	5/16
74083	74088	1/2-20									
73093	73098	9/16-12	7/8-14	0.81	70093	53/64	0.88	7/8-14	0.94	25/32	5/16
74093	74098	9/16-18									
73103	73108	5/8-11	1-12	0.87	70103	15/16	1.02	1-12	1.00	27/32	5/16
74103	74108	5/8-18									
73123	73128	3/4-10*	1 1/4-12	1.12	70123	1 3/16	1.27	1 1/4-12	1.31	1 3/32	5/16
74123	74128	3/4-16*									
73143	73148	7/8-9*	1 3/8-12	1.25	70143	1 5/16	1.39	1 3/8-12	1.44	1 7/32	5/16
74143	74148	7/8-14*									
73163	73168	1-8*	1 1/2-12	1.37	70163	1 7/16	1.52	1 1/2-12	1.56	1 11/32	5/16
74163	74168	1-12*									

* Class 2B Internal Thread fit

Tooling & 4-Piece Range Kits

Tooling-Only Range Kit

Keysert Tooling Range Kit/72000		
Keysert Tool No.	Installs Inch Series (TW & HD)	Installs Metric Series (TW & HD)
72190	#10	M5
72250	1/4"	M6
72312	5/16"	M8
72375	3/8"-7/16"	M10
72500	1/2"-9/16"	M12
72625	5/8"	M16
72875	3/4"-7/8"	M20
72100	1"	N/A



4-Piece Range Kits

UNC Carbon Steel Thinwall/76003				
Size	Keysert Insert No.	No. of Pieces	Keysert Tool No.	No. of Pieces
1/4-20	73041	12	72250	1
5/16-18	73051	12	72312	1
3/8-16	73061	12	72375	1
1/2-13	73081	6	72500	1

UNC Stainless Steel Thinwall/76004				
Size	Keysert Insert No.	No. of Pieces	Keysert Tool No.	No. of Pieces
1/4-20	73046	12	72250	1
5/16-18	73056	12	72312	1
3/8-16	73066	12	72375	1
1/2-13	73086	6	72500	1



Metric Coarse Carbon Steel Thinwall/75003				
Size	Keysert Insert No.	No. of Pieces	Keysert Tool No.	No. of Pieces
M5-0.8	75051	12	72190	1
M6-1.0	75061	12	72250	1
M8-1.25	75081	12	72312	1
M10-1.5	75101	12	72375	1

Metric Coarse Stainless Steel Thinwall/75004				
Size	Keysert Insert No.	No. of Pieces	Keysert Tool No.	No. of Pieces
M5-0.8	75056	12	72190	1
M6-1.0	75066	12	72250	1
M8-1.25	75086	12	72312	1
M10-1.5	75106	12	72375	1

6-Piece & Master Range Kits

6-Piece Range Kits

UNC Carbon Steel Heavy-Duty/70003				
Size	Keysert Insert No.	No. of Pieces	Keysert Tool No.	No. of Pieces
1/4-20	73042	20	70042	1
5/16-18	73052	15	70052	1
3/8-16	73062	10	70062	1
1/2-13	73082	6	70082	1
5/8-11	73102	3	70102	1
3/4-10	73122	3	70122	1

UNF Carbon Steel Heavy-Duty/71003				
Size	Keysert Insert No.	No. of Pieces	Keysert Tool No.	No. of Pieces
1/4-28	74042	20	70042	1
5/16-24	74052	15	70052	1
3/8-24	74062	10	70062	1
1/2-20	74082	6	70082	1
5/8-18	74102	3	70102	1
3/4-16	74122	3	70122	1

UNC Stainless Steel Heavy-Duty/70004				
Size	Keysert Insert No.	No. of Pieces	Keysert Tool No.	No. of Pieces
1/4-20	73047	20	70042	1
5/16-18	73057	15	70052	1
3/8-16	73067	10	70062	1
1/2-13	73087	6	70082	1
5/8-11	73107	3	70102	1
3/4-10	73127	3	70122	1

UNF Stainless Steel Heavy-Duty/71004				
Size	Keysert Insert No.	No. of Pieces	Keysert Tool No.	No. of Pieces
1/4-28	74047	20	70042	1
5/16-24	74057	15	70052	1
3/8-24	74067	10	70062	1
1/2-20	74087	6	70082	1
5/8-18	74107	3	70102	1
3/4-16	74127	3	70122	1

Master Range Kits

UNC Carbon Steel Heavy-Duty/73003				
Size	Keysert Insert No.	No. of Pieces	Keysert Tool No.	No. of Pieces
1/4-20	73042	20	70042	1
5/16-18	73052	15	70052	1
3/8-16	73062	10	70062	1
7/16-14	73072	10	70072	1
1/2-13	73082	6	70082	1
9/16-12	73092	5	70092	1
5/8-11	73102	3	70102	1
3/4-10	73122	3	70122	1
7/8-9	73142	3	70142	1
1-8	73162	2	70162	1

UNF Carbon Steel Heavy-Duty/74003				
Size	Keysert Insert No.	No. of Pieces	Keysert Tool No.	No. of Pieces
1/4-28	74042	20	70042	1
5/16-24	74052	15	70052	1
3/8-24	74062	10	70062	1
7/16-20	74072	10	70072	1
1/2-20	74082	6	70082	1
9/16-18	74092	5	70092	1
5/8-18	74102	3	70102	1
3/4-16	74122	3	70122	1
7/8-14	74142	3	70142	1
1-12	74162	2	70162	1

UNC Stainless Steel Heavy-Duty/73004				
Size	Keysert Insert No.	No. of Pieces	Keysert Tool No.	No. of Pieces
1/4-20	73047	20	70042	1
5/16-18	73057	15	70052	1
3/8-16	73067	10	70062	1
7/16-14	73077	10	70072	1
1/2-13	73087	6	70082	1
9/16-12	73097	5	70092	1
5/8-11	73107	3	70102	1
3/4-10	73127	3	70122	1
7/8-9	73147	3	70142	1
1-8	73167	2	70162	1

UNF Stainless Steel Heavy-Duty/74004				
Size	Keysert Insert No.	No. of Pieces	Keysert Tool No.	No. of Pieces
1/4-28	74047	20	70042	1
5/16-24	74057	15	70052	1
3/8-24	74067	10	70062	1
7/16-20	74077	10	70072	1
1/2-20	74087	6	70082	1
9/16-18	74097	5	70092	1
5/8-18	74107	3	70102	1
3/4-16	74127	3	70122	1
7/8-14	74147	3	70142	1
1-12	74167	2	70162	1

Cross-Reference Index

Carbon Steel Cross-Reference Index							
Keysert Part No.	Alternate Part No.		Keysert Part No.	Alternate Part No.		Keysert Part No.	Alternate Part No.
73041	RKKA 1/4-20		73601	RKKA 10-24		74202	RKK1 1/4-12
73042	RKK 1/4-20		73602	RKK 10-24		74242	RKK1 1/2-12
73051	RKKA 5/16-18		74041	RKKA 1/4-28		74601	RKKA 10-32
73052	RKK 5/16-18		74042	RKK 1/4-28		74602	RKK 10-32
73061	RKKA 3/8-16		74051	RKKA 5/16-24		75051	KNM 5x0.8F
73062	RKK 3/8-16		74052	RKK 5/16-24		75061	KNM 6x1F
73071	RKKA 7/16-14		74061	RKKA 3/8-24		75081	KNM 8x1.25F
73072	RKK 7/16-14		74062	RKK 3/8-24		75101	KNM10x1.5F
73081	RKKA 1/2-13		74071	RKKA 7/16-20		75121	KNM12x1.75F
73082	RKK 1/2-13		74072	RKK 7/16-20		77081	KNM 8x1F
73092	RKK 9/16-12		74081	RKKA 1/2-20		77101	KNM 10x1.25F
73102	RKK 5/8-11		74082	RKK 1/2-20		78121	KNM 12x1.25F
73122	RKK 3/4-10		74092	RKK 9/16-18		75142	KNHM 14x2F
73142	RKK 7/8-9		74102	RKK 5/8-18		77142	KNHM 14x1.5F
73162	RKK 1-8		74122	RKK 3/4-16		77162	KNHM 16x1.5F
73182	RKK 1 1/8-7		74142	RKK 7/8-14		78182	KNHM 18x1.5F
73202	RKK1 1/4-7		74162-14	RKK 1-14		78202	KNHM 20x1.5F
73242	RKK1 1/2-6		74162	RKK 1-12		78222	KNHM 22x1.5F
73582	RKK 8-32		74182	RKK1 1/8-12		77242	KNHM 24x2F

Miniature and Lightweight MS Keenserts

Miniature Inserts

Part No.		Dimensions					Installation						Removal	
Non-Locking	Internal Thread Locking	Internal Thread Class 3B	External Thread		L	T	Tap Drill Size +.003 -.001	C'Sink Diameter +.010/-000	Thread Tap		Installation Tool Part No.	Alternate Installation Tool	Drill	
			Size	Shear Engag.					†Size UNF-2B	Min. Depth			Size	Depth
MS51830-101	MS51830-101L	2 - 56 UNJC	8 - 32 UNC-3A	.0157	.12	.088	.134	.166	† 8 - 32	.140	LDS-02	TKNC-02*	#33 (.113)	1/16
MS51830-102	MS51830-102L	4 - 40 UNJC	10 - 32 UNF-2A	.0302	.17	.125	.161	.194	10 - 32	.160	LDS-04	TKNC-04*	#29 (.136)	3/32
MS51830-103	MS51830-103L	6 - 32 UNJC	12 - 28 UNF-2A	.0329	.17	.125	.187	.220	12 - 28	.160	LDS-06	TKNC-06*	#21 (.159)	
MS51830-104	MS51830-104L	8 - 32 UNJC	1/4 - 28 UNF-2A	.0669	.22	.175	.228	.255	1/4 - 28	.210	LDS-08	TKNC-08*	#8 (.199)	1/8

Lightweight Inserts - Non-Locking

Part No.		Dimensions					Installation						Removal	
Non-Locking	Internal Thread Class 3B	External Thread		L	A	Tap Drill Diameter	C'Sink Diameter +.010/-000	Thread Tap		Installation Tool Part No.	Alternate Installation Tool	Drill		
		Size Class 2A (mod.)	Shear Engag.					Size Class 2B	Min. Depth			Size	Depth	
MS51830-201	10 - 32	5/16 - 18	.1517	.31	-	.272	.323	5/16-18	.37	LDS-3	TD1032L*	7/32	5/32	
MS51830-105	10 - 24									LDS-3	TD1024L*			
MS51830-202	1/4 - 28	3/8 - 16	.2371	.37	-	.332	.385	3/8-16	.43	LDS-4	TD428L*	9/32	3/16	
MS51830-106	1/4 - 20									LDS-4	TD420L*			
MS51830-203	5/16 - 24	7/16 - 14	.3049	.43	-	.397	.447	7/16-14	.50	LDS-5	TD524L*	11/32		
MS51830-107	5/16 - 18									LDS-5	TD518L*			
MS51830-204	3/8 - 24	1/2 - 13	.4299	.50	-	.453	.510	1/2-13	.56	LDS-6	TD624L*	13/32		
MS51830-108	3/8 - 16									LDS-6	TD616L*			
MS51830-205	7/16 - 20	9/16 - 12	.5665	.56	-	.516	.572	9/16-12	.62	LDS-7	TD720L*	15/32		
MS51830-109	7/16 - 14									LDS-7	TD714L*			
MS51830-206	1/2 - 20	5/8 - 11	.7175	.62	-	.578	.635	5/8-11	.68	LDS-8	TD820L*	17/32		
MS51830-110	1/2 - 13									LDS-8	TD813L*			

Lightweight Inserts - Locking

Part No.		Dimensions					Installation						Removal	
Internal Thread Locking	Internal Thread Class 3B	External Thread		L	A	Tap Drill Diameter	C'Sink Diameter +.010/-000	Thread Tap		Installation Tool Part No.	Alternate Installation Tool	Drill		
		Size Class 2A (mod.)	Shear Engag.					Size Class 2B	Min. Depth			Size	Depth	
MS51830-201L	10 - 32	5/16 - 18	.0945	.31	.31	.272	.323	5/16-18	.37	LDS-3	TD1032L*	7/32	5/32	
MS51830-105L	10 - 24				.31					LDS-3	TD1024L*			
MS51830-202L	1/4 - 28	3/8 - 16	.1726	.37	.33	.332	.385	3/8-16	.43	LDS-4	TD428L*	9/32	3/16	
MS51830-106L	1/4 - 20				.36					LDS-4	TD420L*			
MS51830-203L	5/16 - 24	7/16 - 14	.2321	.43	.34	.397	.447	7/16-14	.50	LDS-5	TD524L*	11/32		
MS51830-107L*	5/16 - 18				.37					LDS-5	TD518L*			
MS51830-204L	3/8 - 24	1/2 - 13	.3366	.50	.36	.453	.510	1/2-13	.56	LDS-6	TD624L*	13/32		
MS51830-108L	3/8 - 16				.40					LDS-6	TD616L*			
MS51830-205L	7/16 - 20	9/16 - 12	.4606	.56	.41	.516	.572	9/16-12	.62	LDS-7	TD720L*	15/32		
MS51830-109L	7/16 - 14				.45					LDS-7	TD714L*			
MS51830-206L*	1/2 - 20	5/8 - 11	.5906	.62	.42	.578	.635	5/8-11	.68	LDS-8	TD820L*	17/32		
MS51830-110L	1/2 - 13				.47					LDS-8	TD813L*			

* Indicates minimum activity-limited availability. Minimums may apply.

Heavy Duty MS Keenserts

Heavy Duty Inserts - Non-Locking														
Part No.	Dimensions						Installation						Removal	
Non-Locking	Internal Thread Class 3B	External Thread		L	C' Bore Depth	A	Tap Drill Diameter	C'Sink Diameter +.010/- .000	Thread Tap		Installation Tool Part No.	Alternate Installation Tool	Drill	
		* Size Class 2A (mod.)	Shear Engag.						Size Class 2B	Min. Depth			Size	Depth
MS51831-201	10-32	3/8-16	0.1901	0.31	0.07	-	0.332	0.385	3/8-16	0.37	HDS-3	THD1032L*	9/32	1/8
MS51831-101	10-24					-					HDS-3	THD1024L*		
MS51831-202*	1/4-28	7/16-14	0.2842	0.37		-	0.397	0.447	7/16-14	0.43	HDS-4	THD428L*	11/32	3/16
MS51831-102	1/4-20					-					HDS-4	THD420L*		
MS51831-203	5/16-24	1/2-13	0.3588	0.43		-	0.453	0.510	1/2-13	0.50	HDS-5	THD524L*	13/32	
MS51831-103	5/16-18					-					HDS-5	THD518L*		
MS51831-204	3/8-24	9/16-12	0.4975	0.50		-	0.516	0.572	9/16-12	0.56	HDS-6	THD624L*	15/32	
MS51831-104	3/8-16					-					HDS-6	THD616L*		
MS51831-205	7/16-20	5/8-11	0.7172	0.62		-	0.578	0.635	5/8-11	0.68	HDS-7	THD720L*	17/32	
MS51831-105	7/16-14					-					HDS-7	THD714L*		
MS51831-206	1/2-20	11/16-11 NS	0.8884	0.68	-	0.641	0.700	11/16-11 NS	0.75	HDS-8	THD820L*	19/32		
MS51831-106	1/2-13				-					HDS-8	THD813L*			
MS51831-207	9/16-18	13/16-16	1.2493	0.81	-	0.766	0.822	13/16-16 UN	0.94	HDS-9	THD918L*	23/32		
MS51831-107*	9/16-12				-					HDS-9	THD912L*			
MS51831-208	5/8-18	7/8-14	1.4866	0.87	-	0.828	0.885	7/8-14 UNF	1.00	HDS-10	THD1018L*	25/32		
MS51831-108	5/8-11				-					HDS-10	THD1011L*			
MS51831-209	3/4-16	1-1/8 - 12	2.4901	1.12	-	1.062	1.145	1-1/8 - 12 UNF	1.31	HDS-12	THD1216L*	31/32		
MS51831-109	3/4-10				-					HDS-12	THD1210L*			
MS51831-210*	7/8-14	1-1/4 - 12	3.1370	1.25	-	1.187	1.270	1-1/4 - 12 UNF	1.44	HDS-14	THD1414L*	1-3/32	5/16	
MS51831-110*	7/8-9				-					HDS-14	THD1409L*			
MS51831-211	1-12	1-3/8 - 12	3.8381	1.37	-	1.312	1.395	1-3/8 - 12 UNF	1.56	HDS-16	THD1612L*	1-7/32		
MS51831-111*	1-8				-					HDS-16	THD1608L*			

Heavy Duty Inserts - Locking														
Part No.	Dimensions						Installation						Removal	
Internal Thread Locking	Internal Thread Class 3B	External Thread		L	C' Bore Depth	A	Tap Drill Diameter	C'Sink Diameter +.010/- .000	Thread Tap		Installation Tool Part No.	Alternate Installation Tool	Drill	
		* Size Class 2A (mod.)	Shear Engag.						Size Class 2B	Min. Depth			Size	Depth
MS51831-201L	10-32	3/8-16	0.1156	0.31	0.07	0.31	0.332	0.385	3/8-16	0.37	HDS-3	THD1032L*	9/32	1/8
MS51831-101L	10-24					0.31					HDS-3	THD1024L*		
MS51831-202L	1/4-28	7/16-14	0.1970	0.37		0.33	0.397	0.447	7/16-14	0.43	HDS-4	THD428L*	11/32	3/16
MS51831-102L	1/4-20					0.36					HDS-4	THD420L*		
MS51831-203L	5/16-24	1/2-13	0.2608	0.43		0.34	0.453	0.510	1/2-13	0.50	HDS-5	THD524L*	13/32	
MS51831-103L	5/16-18					0.37					HDS-5	THD518L*		
MS51831-204L	3/8-24	9/16-12	0.3843	0.50		0.37	0.516	0.572	9/16-12	0.56	HDS-6	THD624L*	15/32	
MS51831-104L	3/8-16					0.41					HDS-6	THD616L*		
MS51831-205L*	7/16-20	5/8-11	0.5831	0.62		0.42	0.578	0.635	5/8-11	0.68	HDS-7	THD720L*	17/32	
MS51831-105L	7/16-14					0.46					HDS-7	THD714L*		
MS51831-206L	1/2-20	11/16-11 NS	0.7368	0.68	0.42	0.641	0.700	11/16-11 NS	0.75	HDS-8	THD820L*	19/32		
MS51831-106L	1/2-13				0.47					HDS-8	THD813L*			
MS51831-207L	9/16-18	13/16-16	1.0247	0.81	0.48	0.766	0.822	13/16-16 UN	0.94	HDS-9	THD918L*	23/32		
MS51831-107L*	9/16-12				0.54					HDS-9	THD912L*			
MS51831-208L*	5/8-18	7/8-14	1.2415	0.87	0.49	0.828	0.885	7/8-14 UNF	1.00	HDS-10	THD1018L*	25/32		
MS51831-108L	5/8-11				0.57					HDS-10	THD1011L*			
MS51831-209L	3/4-16	1-1/8 - 12	2.4478	1.25	0.68	1.062	1.145	1-1/8 - 12 UNF	1.44	HDS-12	THD1216L*	31/32		
MS51831-109L*	3/4-10				0.75					HDS-12	THD1210L*			
MS51831-210L*	7/8-14	1-1/4 - 12	3.0775	1.37	0.69	1.187	1.270	1-1/4 - 12 UNF	1.56	HDS-14	THD1414L*	1-3/32	5/16	
MS51831-110L*	7/8-9				0.77					HDS-14	THD1409L*			
MS51831-211L*	1-12	1-3/8 - 12	3.7929	1.50	0.78	1.312	1.395	1-3/8 - 12 UNF	1.68	HDS-16	THD1612L*	1-7/32		
MS51831-111L*	1-8				0.86					HDS-16	THD1608L*			

* Indicates minimum activity-limited availability. Minimums may apply.

Extra Heavy Duty MS Keenserts

Extra Heavy Duty Inserts - Non-Locking															
Part No.	Dimensions						Installation						Removal		
Non-Locking	Internal Thread Class 3B	External Thread		L	C' Bore Depth	A	Tap Drill Diameter	C'Sink Diameter +.010/-.000	Thread Tap		Installation Tool Part No.	Alternate Installation Tool	Drill		
		Size Class 2A	Shear Engag.						Size Class 2B	Min. Depth			Size	Depth	
MS51832-201	10-32	7/16-14	0.2299	0.31	.07	-	0.397	0.447	7/16-14	0.37	XHDS-3	THXD*	11/32	3/16	
MS51832-101*	10-24										XHDS-3	THXD*			
MS51832-202*	1/4-28	1/2-13	0.2997	0.37			-	0.453	0.510	1/2-13	0.44	XHDS-4	THXD*		15/32
MS51832-102	1/4-20											XHDS-4	THXD*		
MS51832-203*	5/16-24	9/16-12	0.4163	0.43			-	0.516	0.572	9/16-12	0.50	XHDS-5	THXD*		17/32
MS51832-103*	5/16-18											XHDS-5	THXD*		
MS51832-204*	3/8-24	5/8-11	0.5584	0.50			-	0.578	0.635	5/8-11	0.56	XHDS-6	THXD*		19/32
MS51832-104	3/8-16											XHDS-6	THXD*		
MS51832-205*	7/16-20	11/16-11 NS	0.8000	0.62			-	0.641	0.700	11/16-11 NS	0.68	XHDS-7	THXD*		23/32
MS51832-105*	7/16-14											XHDS-7	THXD*		
MS51832-206*	1/2-20	13/16-16	1.0293	0.68	-	0.766	0.822	13/16-16 UNF	0.75	XHDS-8	THXD*	25/32			
MS51832-106	1/2-13									XHDS-8	THXD*				
MS51832-207*	9/16-18	7/8-14	1.3761	0.81	-	0.828	0.885	7/8-14 UNF	0.94	XHDS-9	THXD*	27/32			
MS51832-107*	9/16-12									XHDS-9	THXD*				
MS51832-208*	5/8-18	1-12	1.6420	0.87	-	0.937	1.020	1-12 UNF	1.00	XHDS-10	THXD*	1-3/32			
MS51832-108*	5/8-11									XHDS-10	THXD*				
MS51832-209*	3/4-16	1-1/4-12	2.7966	1.12	-	1.187	1.270	1-1/4-12 UNF	1.31	XHDS-12	THXD*	1-7/32			
MS51832-109*	3/4-10									XHDS-12	THXD*				
MS51832-210*	7/8-14	1-3/8-12	3.4652	1.25	-	1.312	1.395	1-3/8-12 UNF	1.44	XHDS-14	THXD*	1-7/32			
MS51832-110*	7/8-9									XHDS-14	THXD*				
MS51832-211*	1-12	1-1/2-12	4.2374	1.37	-	1.437	1.520	1-1/2-12 UNF	1.56	XHDS-16	THXD*	1-11/32			
MS51832-111*	1-8									XHDS-16	THXD*				

Extra Heavy Duty Inserts - Locking															
Part No.	Dimensions						Installation						Removal		
Non-Locking	Internal Thread Class 3B	External Thread		L	C' Bore Depth	A	Tap Drill Diameter	C'Sink Diameter +.010/-.000	Thread Tap		Installation Tool Part No.	Alternate Installation Tool	Drill		
		Size Class 2A	Shear Engag.						Size Class 2B	Min. Depth			Size	Depth	
MS51832-2011*	10-32	7/16-14	0.1403	0.31	.07	.31	0.397	0.447	7/16-14	0.37	XHDS-3	THXD*	11/32	3/16	
MS51832-1011*	10-24										XHDS-3	THXD*			
MS51832-2021*	1/4-28	1/2-13	0.2005	0.37			.33	0.453	0.510	1/2-13	0.44	XHDS-4	THXD*		15/32
MS51832-1021*	1/4-20											XHDS-4	THXD*		
MS51832-2031*	5/16-24	9/16-12	0.3029	0.43			.34	0.516	0.572	9/16-12	0.50	XHDS-5	THXD*		17/32
MS51832-1031*	5/16-18											XHDS-5	THXD*		
MS51832-2041*	3/8-24	5/8-11	0.4243	0.50			.37	0.578	0.635	5/8-11	0.56	XHDS-6	THXD*		19/32
MS51832-1041*	3/8-16											XHDS-6	THXD*		
MS51832-2051*	7/16-20	11/16-11 NS	0.6498	0.62			.42	0.641	0.700	11/16-11 NS	0.68	XHDS-7	THXD*		23/32
MS51832-1051*	7/16-14											XHDS-7	THXD*		
MS51832-2061*	1/2-20	13/16-16	0.8642	0.68	.42	0.766	0.822	13/16-16 UNF	0.75	XHDS-8	THXD*	25/32			
MS51832-1061*	1/2-13									XHDS-8	THXD*				
MS51832-2071*	9/16-18	7/8-14	1.1131	0.81	.48	0.828	0.885	7/8-14 UNF	0.94	XHDS-9	THXD*	27/32			
MS51832-1071*	9/16-12									XHDS-9	THXD*				
MS51832-2081*	5/8-18	1-12	1.2770	0.87	.51	0.937	1.020	1-12 UNF	1.00	XHDS-10	THXD*	1-3/32			
MS51832-1081*	5/8-11									XHDS-10	THXD*				
MS51832-2091*	3/4-16	1-1/4-12	2.5505	1.25	.57	1.187	1.270	1-1/4-12 UNF	1.44	XHDS-12	THXD*	1-7/32			
MS51832-1091*	3/4-10									XHDS-12	THXD*				
MS51832-2101*	7/8-14	1-3/8-12	3.2769	1.37	.63	1.312	1.395	1-3/8-12 UNF	1.56	XHDS-14	THXD*	1-7/32			
MS51832-1101*	7/8-9									XHDS-14	THXD*				
MS51832-2111*	1-12	1-1/2-12	4.2135	1.50	.70	1.437	1.520	1-1/2-12 UNF	1.68	XHDS-16	THXD*	1-11/32			
MS51832-1111*	1-8									XHDS-16	THXD*				

* Indicates minimum activity-limited availability. Minimums may apply.

Lightweight Metric MS Keenserts

Lightweight Metric Inserts - Non-Locking

Part No.	Dimensions					Installation						Removal	
Non-Locking	Internal Thread Class 5H	External Thread		L ± 0.3	A	Tap Drill Diameter	C'Sink Diameter +.25/-00	Thread Tap		Installation Tool Part No.	Alternate Installation Tool	Drill	
		Size Class 4H	Shear Engag.					Size Class 6H	Min. Depth			Size	Depth
KNM 5x0.8	M 5x0.8	M 8x1.25	104.9	8.0	-	6.9	8.25	M 8x1.25	9.5	LDSM5	TM-5*	5.50	4.00
KNM 6x1.0	M 6x1.0	M 10x1.25	177.7	10.0	-	8.8	10.25	M 10x1.25	11.5	LDSM6	TM-6*	7.50	4.75
KNM 8x1.25	M 8x1.25	M 12x1.25	266.7	12.0	-	10.8	12.25	M 12x1.25	13.5	LDSM8	TM-8*	9.50	
KNM 8x1.0	M 8x1.0	M 12x1.25	266.7	12.0	-	10.8	12.25	M 12x1.25	13.5	LDSM8	TM-8*	9.50	
KNM 10x1.5	M 10x1.5	M 14X1.5	341.6	14.0	-	12.8	14.25	M 14X1.5	15.5	LDSM10	TM-10*	11.50	
KNM 10x1.25*	M 10x1.25	M 14X1.5	341.6	14.0	-	12.8	14.25	M 14X1.5	15.5	LDSM10	TM-10*	11.50	
KNM 12x1.75*	M 12x1.75	M 16X1.5	470.2	16.0	-	14.75	16.25	M 16X1.5	17.5	LDSM12	TM-12*	13.50	
KNM 12x1.25*	M 12x1.25	M 16X1.5	470.2	16.0	-	14.75	16.25	M 16X1.5	17.5	LDSM12	TM-12*	13.50	

Lightweight Metric Inserts - Locking

Part No.	Dimensions					Installation						Removal	
Internal Thread Locking	Internal Thread Class 5H	External Thread		L ± 0.3	A	Tap Drill Diameter	C'Sink Diameter +.25/-00	Thread Tap		Installation Tool Part No.	Alternate Installation Tool	Drill	
		Size Class 4H	Shear Engag.					Size Class 6H	Min. Depth			Size	Depth
KNML 5x0.8	M 5x0.8	M 8x1.25	83.1	8.0	7.6	6.9	8.25	M 8x1.25	9.5	LDSM5	TM-5*	5.50	4.00
KNML 6x1.0	M 6x1.0	M 10x1.25	152.7	10.0	8.2	8.8	10.25	M 10x1.25	11.5	LDSM6	TM-6*	7.50	4.75
KNML 8x1.25	M 8x1.25	M 12x1.25	242.5	12.0	9.5	10.8	12.25	M 12x1.25	13.5	LDSM8	TM-8*	9.50	
KNML 8x1.0	M 8x1.0	M 12x1.25	242.5	12.0	9.0	10.8	12.25	M 12x1.25	13.5	LDSM8	TM-8*	9.50	
KNML 10x1.5	M 10x1.5	M 14X1.5	316.4	14.0	10.0	12.8	14.25	M 14X1.5	15.5	LDSM10	TM-10*	11.50	
KNML 10x1.25*	M 10x1.25	M 14X1.5	316.4	14.0	9.5	12.8	14.25	M 14X1.5	15.5	LDSM10	TM-10*	11.50	
KNML 12x1.75	M 12x1.75	M 16X1.5	441.4	16.0	11.20	14.75	16.25	M 16X1.5	17.5	LDSM12	TM-12*	13.50	
KNML 12x1.25*	M 12x1.25	M 16X1.5	441.4	16.0	10.20	14.75	16.25	M 16X1.5	17.5	LDSM12	TM-12*	13.50	

* Indicates minimum activity-limited availability. Minimums may apply.

Heavy Duty Metric MS Keenserts

Heavy Duty Metric Inserts - Non-Locking

Part No.	Dimensions					Installation						Removal		
	Non-Locking	Internal Thread Class 5H	External Thread		L ± 0.3	A	Tap Drill Diameter	C'Sink Diameter +.25/-00	Thread Tap		Installation Tool Part No.	Alternate Installation Tool	Drill	
			Size Class 4H	Shear Engag. (MM ²)					Size Class 6H	Min. Depth			Size	Depth
KNHM 4x0.7	M 4x0.7	M 8x1.25	104.9	8.0	-	6.9	8.25	M 8x1.25	9.5	HDSM4	THM-4*	5.50	4.00	
KNHM 5x0.8	M 5x0.8	M 10x1.25	177.7	10.0	-	8.8	10.25	M 10x1.25	12.5	HDSM5	THM-5*	7.50	4.75	
KNHM 6x1.0	M 6x1.0	M 12x1.25	266.7	12.0	-	10.8	12.25	M 12x1.25	14.5	HDSM6	THM-6*	9.50		
KNHM 8x1.25	M 8x1.25	M 14X1.5	341.6	14.0	-	12.8	14.25	M 14X1.5	16.5	HDSM8	THM-8*	11.50		
KNHM 8x1.0	M 8x1.0	M 14X1.5	341.6	14.0	-	12.8	14.25	M 14X1.5	16.5	HDSM8	THM-8*	11.50		
KNHM 10x1.5	M 10x1.5	M 16X1.5	470.2	16.0	-	14.75	16.25	M 16X1.5	18.5	HDSM10	THM-10*	13.50		
KNHM 10x1.25*	M 10x1.25	M 16x1.5	470.2	16.0	-	14.75	16.25	M 16x1.5	18.5	HDSM10	THM-10*	13.50		
KNHM 12x1.75	M 12x1.75	M 18X1.5	608.5	18.0	-	16.75	18.25	M 18X1.5	20.5	HDSM12	THM-12*	15.50		
KNHM 12x1.5*	M 12x1.5	M 18x1.5	608.5	18.0	-	16.75	18.25	M 18x1.5	20.5	HDSM12	THM-12*	15.50		
KNHM 12x1.25*	M 12x1.25	M 18x1.5	608.5	18.0	-	16.75	18.25	M 18x1.5	20.5	HDSM12	THM-12*	15.50		
KNHM 14x2.0*	M 14x2.0	M 20x1.5	770.5	20.0	-	18.75	20.25	M 20x1.5	22.5	HDSM14	THM-14*	17.50		
KNHM 14x1.5*	M 14x1.5	M 20x1.5	770.5	20.0	-	18.75	20.25	M 20x1.5	22.5	HDSM14	THM-14*	17.50		
KNHM16x2.0	M 16x2.0	M 22x1.5	896.8	22.0	-	20.50	22.25	M 22x1.5	24.5	HDSM16	THM-16*	17.75	6.35	
KNHM 16x1.5*	M 16x1.5	M 22x1.5	896.8	22.0	-	20.50	22.25	M 22x1.5	24.5	HDSM16	THM-16*	17.75		
KNHM 18x1.5*	M 18x1.5	M 24x1.5	1084.4	24.0	-	22.50	24.25	M 24x1.5	26.5	HDSM18	THM-18*	19.75		
KNHM 20x2.5*	M 20x2.5	M 30x2.0	1774.3	30.0	-	28.00	30.25	M 30x2.0	34.5	HDSM20	THM-20*	25.75		
KNHM 20x1.5*	M 20x1.5	M 30x2.0	1774.3	30.0	-	28.00	30.25	M 30x2.0	34.5	HDSM20	THM-20*	25.75		
KNHM 22x1.5*	M 22x1.5	M 32x2.0	2045.9	32.0	-	30.00	32.25	M 32x2.0	36.5	HDSM22	THM-22*	27.75		
KNHM 24x3.0*	M 24x3.0	M 33x2.0	2189.4	33.0	-	31.00	33.25	M 33x2.0	37.5	HDSM24	THM-24*	28.75		
KNHM 24x2.0*	M 24x2.0	M 33x2.0	2189.4	33.0	-	31.00	33.25	M 33x2.0	37.5	HDSM24	THM-24*	28.75		

Heavy Duty Metric Inserts - Locking

Part No.	Dimensions					Installation						Removal		
	Internal Thread Locking	Internal Thread Class 5H	External Thread		L ± 0.3	A	Tap Drill Diameter	C'Sink Diameter +.25/-00	Thread Tap		Installation Tool Part No.	Alternate Installation Tool	Drill	
			Size Class 4H	Shear Engag. (MM ²)					Size Class 6H	Min. Depth			Size	Depth
KNHML 4x0.7*	M 4x0.7	M 8x1.25	83.1	8.0	8.0	6.9	8.25	M 8x1.25	9.5	HDSM4	THM-4*	5.50	4.00	
KNHML 5x0.8*	M 5x0.8	M 10x1.25	152.7	10.0	8.7	8.8	10.25	M 10x1.25	12.5	HDSM5	THM-5*	7.50	4.75	
KNHML 6x1.0	M 6x1.0	M 12x1.25	242.5	12.0	9.5	10.8	12.25	M 12x1.25	14.5	HDSM6	THM-6*	9.50		
KNHML 8x1.25	M 8x1.25	M 14X1.5	316.4	14.0	10.0	12.8	14.25	M 14X1.5	16.5	HDSM8	THM-8*	11.50		
KNHML 8x1.0*	M 8x1.0	M 14X1.5	316.4	14.0	10.0	12.8	14.25	M 14X1.5	16.5	HDSM8	THM-8*	11.50		
KNHML 10x1.5	M 10x1.5	M 16X1.5	441.4	16.0	10.0	14.75	16.25	M 16X1.5	18.5	HDSM10	THM-10*	13.50		
KNHML 10x1.25*	M 10x1.25	M 16x1.5	441.1	16.0	10.0	14.75	16.25	M 16x1.5	18.5	HDSM10	THM-10*	13.50		
KNHML 12x1.75	M 12x1.75	M 18X1.5	561.8	18.0	10.7	16.75	18.25	M 18X1.5	20.5	HDSM12	THM-12*	15.50		
KNHML 12x1.5*	M 12x1.5	M 18x1.5	561.8	18.0	10.7	16.75	18.25	M 18x1.5	20.5	HDSM12	THM-12*	15.50		
KNHML 12x1.25*	M 12x1.25	M 18x1.5	561.8	18.0	10.7	16.75	18.25	M 18x1.5	20.5	HDSM12	THM-12*	15.50		
KNHML 14x2.0*	M 14x2.0	M 20x1.5	724.4	20.0	12.4	18.75	20.25	M 20x1.5	22.5	HDSM14	THM-14*	17.50		
KNHML 14x1.5*	M 14x1.5	M 20x1.5	724.4	20.0	12.4	18.75	20.25	M 20x1.5	22.5	HDSM14	THM-14*	17.50		
KNHML 16x2.0*	M 16x2.0	M 22x1.5	855.2	22.0	12.4	20.50	22.25	M 22x1.5	24.5	HDSM16	THM-16*	17.75	6.35	
KNHML 16x1.5*	M 16x1.5	M 22x1.5	855.2	22.0	12.4	20.50	22.25	M 22x1.5	24.5	HDSM16	THM-16*	17.75		
KNHML 18x1.5*	M 18x1.5	M 24x1.5	1051.5	24.0	16.8	22.50	24.25	M 24x1.5	26.5	HDSM18	THM-18*	19.75		
KNHML 20x2.5*	M 20x2.5	M 30x2.0	1736.4	30.0	17.5	28.00	30.25	M 30x2.0	34.5	HDSM20	THM-20*	25.75		
KNHML 20x1.5*	M 20x1.5	M 30x2.0	1736.4	30.0	17.5	28.00	30.25	M 30x2.0	34.5	HDSM20	THM-20*	25.75		
KNHML 22x1.5*	M 22x1.5	M 32x2.0	2014.7	32.0	18.3	30.00	32.25	M 32x2.0	36.5	HDSM22	THM-22*	27.75		
KNHML 24x3.0*	M 24x3.0	M 33x2.0	2161.9	33.0	19.0	31.00	33.25	M 33x2.0	37.5	HDSM24	THM-24*	28.75		
KNHML 24x2.0*	M 24x2.0	M 33x2.0	2161.9	33.0	19.0	31.00	33.25	M 33x2.0	37.5	HDSM24	THM-24*	28.75		

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