



End Mill Holders

ERT/G/DA Collet Chucks

Shell Mill Holders

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Tap Holders



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Retention Studs

# Retention Studs

Retention studs come in many shapes and sizes. Many machining center manufacturers use different configurations on each of their models. Please provide us with the following information when ordering retention studs:

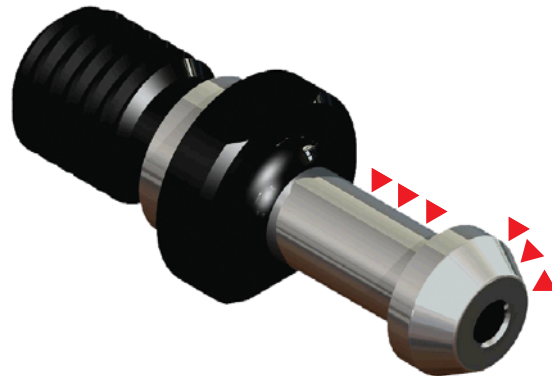
- Your machining center's taper size (40, 50, etc) and flange type (CT or BT)
- The brand name of your machining center
- Its configuration (vertical or horizontal)
- The model number

## CAT Retention Studs



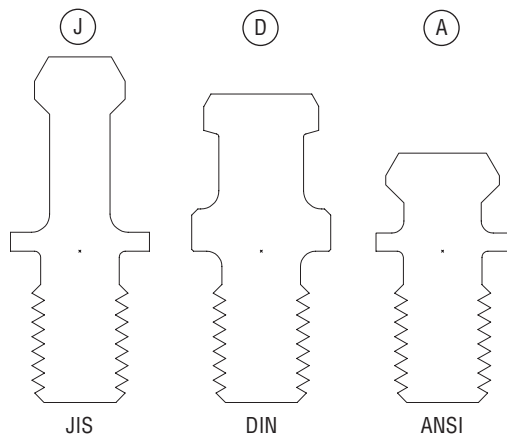
- Class 3A UNC Thread
- Magnetic particle crack tested
- Tensile and shear requirements per ISO and JIS standard
- All locations that make contact with ground spindle mechanism components are ground
- Base of pullstud flange is ground to assure perpendicular alignment between pullstud and taper of toolholder
- Tight pitch diameter tolerance helps maintain accurate concentricity between threads and knob limiting the expansion or flaring of the small end of the taper

## BT Retention Studs

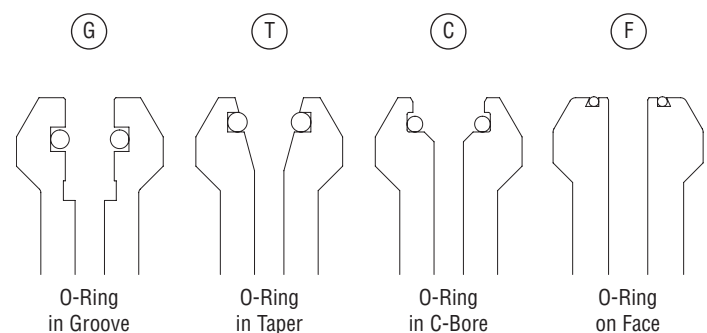


- Class 4g6g metric thread
- Magnetic particle crack tested
- Tensile and shear requirements per JIS 6339
- All locations of the pullstud that make contact with ground spindle mechanism components are ground
- Base of pullstud flange is ground to assure perpendicular alignment between pullstud and taper of toolholder
- Ground Pilot and tight pitch diameter tolerance help maintain accurate concentricity between threads and knob limiting the expansion or flaring of the small end of the taper

## Retention Knob Style



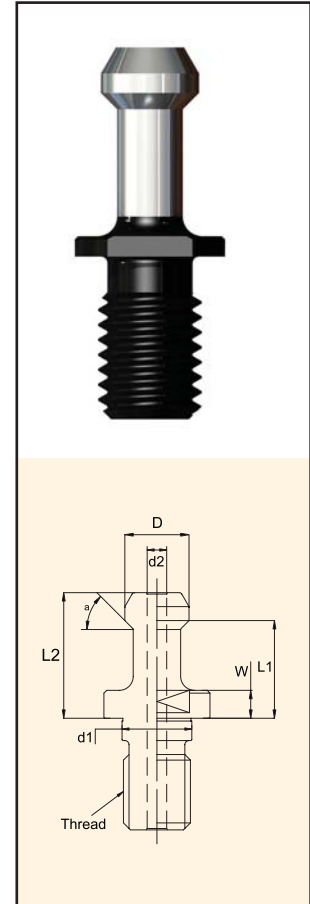
## O-Ring Type





# CAT Retention Studs

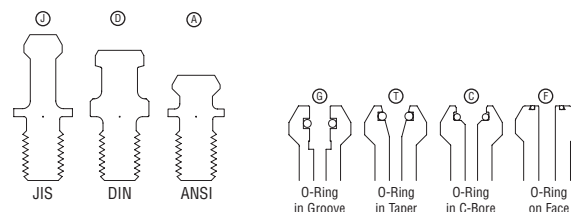
Part Number	D	d1	d2	L1	L2	Angle degree	W	Thread	O-Ring	Max Torque (Ft/lbs)	Style
C40-1500*	0.75	--	0.276	0.79	1.03	75	0.28	5/8"-11	--	85	D
C40-1500(ISO)*	0.75	--	0.276	0.79	1.03	75	0.16	5/8"-11	P9	85	D, T
C40-4500	0.59	--	--	0.99	1.26	45	0.12	5/8"-11	--	85	J
C40-4500(B)	0.59	0.64	--	0.99	1.26	45	0.12	5/8"-11	--	85	J, B
C40-4500(H)	0.59	--	0.177	0.99	1.26	45	0.12	5/8"-11	--	85	J
C40S-4500	0.59	--	--	0.99	1.26	45	0.23	5/8"-11	--	85	J
C40S-4500(H)	0.59	--	--	0.99	1.26	45	0.23	5/8"-11	--	85	J
C40-6000	0.59	--	--	0.99	1.26	60	0.12	5/8"-11	--	85	J
C40-6000(B)	0.59	0.64	--	0.99	1.26	60	0.12	5/8"-11	--	85	J, B
C40-6000(H)	0.59	--	0.177	0.99	1.26	60	0.12	5/8"-11	--	85	J
C40S-6000	0.59	--	--	0.99	1.26	60	0.23	5/8"-11	--	85	J
C40-9000	0.59	--	--	0.99	1.26	90	0.12	5/8"-11	--	85	J
C40-9000(B)	0.59	0.64	--	0.99	1.26	90	0.12	5/8"-11	--	85	J, B
C40-9000(H)	0.59	--	0.177	0.99	1.26	90	0.12	5/8"-11	--	85	J
C40S-9000	0.59	--	--	0.99	1.26	90	0.23	5/8"-11	--	85	J
C40-STD*	0.74	--	0.276	0.44	0.64	45	0.12	5/8"-11	--	85	A
C40-STD(B)	0.74	0.64	0.276	0.44	0.64	45	0.12	5/8"-11	--	85	A, B
C40-HITACHI	0.59	0.64	0.197/0.157	0.992	1.26	45	0.12	5/8"-11	S-16 / P-5	85	J, G
C40-MAZAK	0.59	0.625	--	0.777	1.05	90	0.2	5/8"-11	--	85	--
C40-MITSUI	0.59	--	--	0.59	0.87	90	0.2	5/8"-11	--	85	J
PS-381E	0.74	0.64	0.276	0.793	1.03	75	0.23	5/8"-11	S15 / P9	85	D, T
PS-B641M	0.74	0.64	0.197	0.44	0.64	45	0.118	5/8"-11	S15	85	A
PS-806-1	0.75	0.79	0.24	0.787	1.023	75	0.276	5/8"-11	--	85	D
C50-1500*	1.1	--	0.393	0.992	1.35	75	0.28	1"-8	S24	110	D
C50-1500(ISO)*	1.1	--	0.393	0.98	1.35	75	0.2	1"-8	--	110	D
C50-4500	0.9	--	--	1.386	1.78	45	0.39	1"-8	--	110	J
C50-4500(B)	0.9	1.031	--	1.386	1.78	45	0.39	1"-8	--	110	J, B
C50-4500(H)	0.9	--	0.393	1.386	1.78	45	0.39	1"-8	--	110	J
C50-6000	0.9	--	--	1.386	1.78	60	0.39	1"-8	--	110	J
C50-6000(B)	0.9	1.031	--	1.386	1.78	60	0.39	1"-8	--	110	J, B
C50-6000(H)	0.9	--	0.393	1.386	1.78	60	0.39	1"-8	--	110	J
C50-9000	0.9	--	--	1.386	1.78	90	0.39	1"-8	--	110	J
C50-9000(B)	0.9	1.031	--	1.386	1.78	90	0.39	1"-8	--	110	J, B
C50-9000(H)	0.9	--	0.393	1.386	1.78	90	0.39	1"-8	--	110	J
C50-STD*	1.14	--	0.46	0.7	1	45	0.2	1"-8	--	110	A
C50-STD(B)	1.14	1.031	0.46	0.7	1	45	0.2	1"-8	--	110	A, B
C50-HITACHI	0.9	--	--	1.385	1.78	90	0.39	1"-8	--	110	J
C50-HITACHI(OH)	0.9	--	0.118	1.385	1.78	90	0.39	1"-8	--	110	J, F
C50-MAKINO	0.9	0.984	0.236	1.378	1.772	45	0.39	1"-8	P22	110	J
C50-MAZAK	0.91	0.91	0.91	0.91	0.91	0.91	0.91	1"-8	--	110	--
C50-MITSUI	0.94	--	--	0.905	1.22	90	0.2	1"-8	--	110	J
C50-OKUMA(OH)	0.906	1.023	0.275	1.378	1.772	60	0.39	1"-8	S24	110	J
PS-P14	0.94	--	0.314	0.905	1.22	90	0.39	1"-8	PS-P13	110	D
PS-B61	0.9	1.023	0.236	1.377	1.77	60	0.39	1"-8	N24	110	J



The drawing above details the five critical dimensions needed to determine which retention stud is required. Please have these dimensions ready when you place your order, so that we may easily and quickly determine which retention stud is needed for your machining center.

Note: " \* " or "H" suffix denote retention studs supplied with a coolant hole.  
"B" suffix denotes balanceable toolholder retention studs.

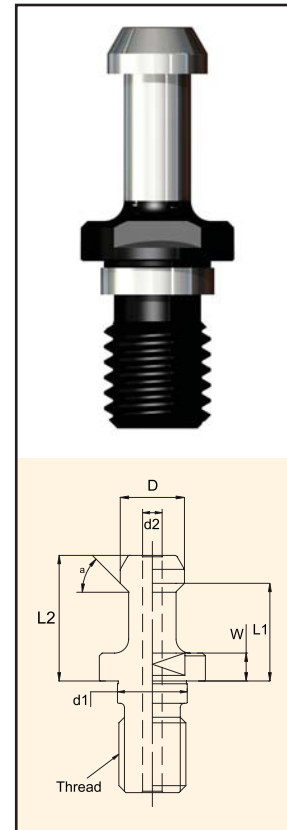
- A = ANSI Style Knob**
- B = Balanced Knob (With Pilot Dia.)**
- C = O-Ring in C-Bore**
- D = DIN Style Knob**
- F = O-Ring on Face**
- G = O-Ring in Groove**
- J = JIS Style Knob**
- T = O-Ring in Taper**



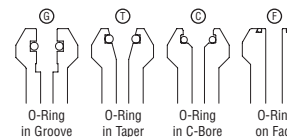
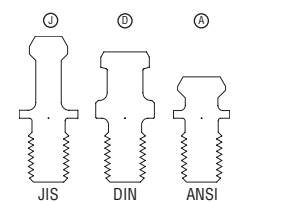
End Mill Holders  
ER/TG/DA Collet Chucks  
Shell Mill Holders  
Drill Chucks  
Tap Holders  
Stub, Boring, Blank  
R8, 5C, 3J, 16C  
Retention Studs

# BT Retention Studs

Part Number	D	d1	d2	L1	L2	Angle degree	W	Thread	O-Ring	Max Torque (Ft/lbs)	Style
PS-M10	0.55	0.492	--	0.669	0.87	45	0.12	M12P1.75	--	40	D
PS-16	0.43	0.492	--	0.709	0.905	45	0.2	M12P1.75	--	40	J
PS-17	0.43	0.492	--	0.709	0.905	60	0.2	M12P1.75	--	40	J
PS-19	0.512	0.492	--	0.886	1.102	60	0.2	M12P1.75	--	40	J
PS-130E	0.43	0.492	0.157	0.709	0.905	45	0.2	M12P1.75	P9	40	J
PS-132	0.43	0.492	0.157	0.709	0.905	45	0.2	M12P1.75	P9	40	--
PS-801	0.472	0.492	--	0.724"	0.921	75	0.2	M12P1.75	--	40	J
B30-4500	0.43	0.492	--	0.709	0.91	45	0.19	M12P1.75	--	40	J
B30-6000	0.43	0.492	--	0.709	0.91	60	0.19	M12P1.75	--	40	J
PS-1	0.591	0.669	--	1.102	1.378	45	0.23	M16P2	--	40	J
PS-70	0.748	0.669	--	1.102	1.378	45	0.2	M16P2	--	40	J
PS-P5-1	0.591	0.669	--	0.708	0.984	90	0.2	M16P2	--	40	J
PS-G5	0.591	0.669	--	1.165	1.165	90	0.2	M16P2	--	40	--
PS-G58	0.74	0.669	--	0.752	0.752	45	0.2	M16P2	--	40	A
PS-805	0.748	0.669	--	0.905	1.142	75	0.28	M16P2	--	40	J
PS-G51	0.74	0.669	0.275	0.512	0.752	45	0.12	M16P2	--	40	A
PS-G510	0.74	0.669	0.275	0.752	0.752	45	0.12	M16P2	PS-51	40	A
PS-354	0.594	0.669	0.157	0.157	1.55	45	0.19	M16P2	--	40	J
PS-G52	0.74	0.275	0.669	0.44	0.64	45	0.12	M16P2	--	40	A
PS-364	0.59	0.157	0.669	1.116	1.44	45	0.23	M16P2	--	40	J
B40-1500*	0.75	0.669	0.275	0.905	1.14	75	0.27	M16P2	--	85	D
B40-1500(R)	0.75	0.669	0.275	0.905	1.14	75	0.27	M16P2	AS568-015	85	D
B40-1500(ISO)*	0.75	0.669	0.275	0.9	1.14	75	0.16	M16P2	P9	85	D, T
B40-4500	0.59	0.669	--	1.102	1.37	45	0.23	M16P2	--	85	J
B40-4500(H)	0.59	0.669	0.181	1.102	1.37	45	0.23	M16P2	--	85	J
B40-6000	0.59	0.669	--	1.102	1.37	60	0.23	M16P2	--	85	J
B40-6000(H)	0.59	0.669	0.181	1.102	1.37	60	0.23	M16P2	--	85	J
B40-9000	0.59	0.669	--	1.102	1.37	90	0.23	M16P2	--	85	J
B40-9000(H)	0.59	0.669	0.181	1.102	1.37	90	0.23	M16P2	--	85	J
B40-BRIDGEPORT	0.74	0.669	0.275	0.552	0.75	45	0.13	M16P2	--	85	A
B40-FADAL	0.74	0.669	--	0.552	0.75	45	0.24	M16P2	--	85	A
B40-STD*	0.74	0.669	0.275	0.43	0.64	45	0.12	M16P2	--	85	A
PS-874	0.75	0.669	0.236	0.905	1.142	75	0.28	M16P2	AS568-015 / P9	85	D, T
PS-366E-1	0.75	0.669	0.276	0.905	1.142	75	0.16	M16P2	--	85	D, T
PS-50	0.906	0.984	--	0.984	2.756	45	1.38	M24P3	--	85	--
PS-G45	1.14	0.984	--	0.992	0.692	45	0.2	M24P3	--	85	A
PS-B1	0.866	0.984	--	1.063	2.835	60	1.38	M24P3	--	85	--
PS-809	1.102	0.984	--	0.984	1.339	75	0.28	M24P3	--	85	D
PS-C	0.827	0.984	--	2.169	2.484	45	1.14	M24P3	--	85	--
PS-810	1.102	0.984	0.393	0.984	1.339	75	0.28	M24P3	--	85	D
PS-816-1	1.102	0.984	0.236	0.984	1.339	75	0.28	M24P3	P21	85	D
PS-833	1.102	0.984	0.216	0.984	1.339	75	0.28	M24P3	P9 / P21	85	D, T
PS-G41	1.14	0.984	0.393	0.992	0.692	45	0.2	M24P3	--	85	A
PS-P16	0.945	0.984	0.314	0.905	1.22	90	0.2	M24P3	--	85	J
B50-4500	0.91	0.984	--	1.377	1.77	45	0.39	M24P3	--	110	J
B50-4500(H)	0.91	0.984	0.275	1.377	1.77	45	0.39	M24P3	--	110	J
B50-6000	0.91	0.984	--	1.377	1.77	60	0.39	M24P3	--	110	J
B50-6000(H)	0.91	0.984	0.275	1.377	1.77	60	0.39	M24P3	--	110	J
B50-9000	0.91	0.984	--	1.377	1.77	90	0.39	M24P3	--	110	J
B50-9000(H)	0.91	0.984	0.275	1.377	1.77	90	0.39	M24P3	--	110	J
B50-MITSUI	0.95	0.984	--	0.905	1.22	90	0.2	M24P3	--	110	J



Note: " \* " or "H" suffix denote retention studs supplied with a coolant hole. "B" suffix denotes balanceable toolholder retention studs.



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**D = DIN Style Knob**  
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**J = JIS Style Knob**  
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