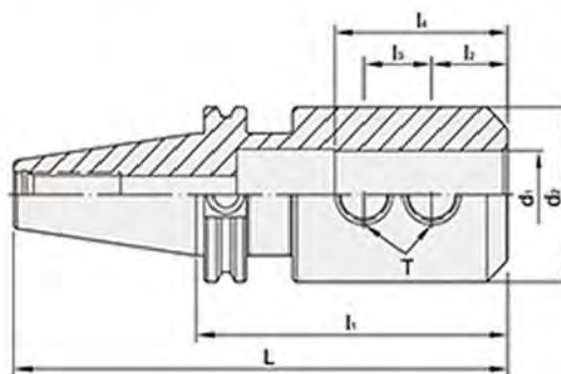


CNC Toolholders





- Taper Ground to AT3 specifications
- H5 Bore Tolerance
- Made of high quality alloy steel
- Through spindle coolant capable

CAT 40 Shank

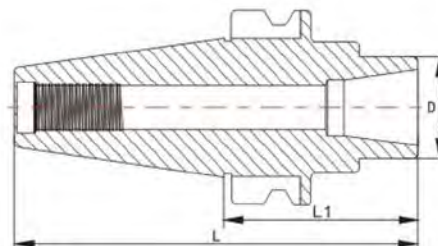
-Dynamically balanced to G6.3 @ 15,000 RPM

Part Number	Description	Bore Dia	Projection
97100	CAT40-SLN1/8-2.37	0.1250	2.37"
97101	CAT40-SLN3/16-2.5	0.1875	2.5"
97102	CAT40-SLN1/4-3	0.2500	3.0"
97103	CAT40-SLN5/16-3	0.3125	3.0"
96750	CAT40-SLN3/8-3	0.3750	3.0"
98988	CAT40-SLN7/16-3	0.4375	3.0"
98751	CAT40-SLN1/2-3	0.5000	3.0"
98752	CAT40-SLN5/8-3	0.6250	3.0"
98753	CAT40-SLN3/4-3	0.7500	3.0"
98754	CAT40-SLN7/8-3	0.8750	3.0"
98755	CAT40-SLN1-4	1.0000	4.0"

CAT 50 Shank

-Dynamically balanced to G6.3 @ 12,000 RPM

Part Number	Description	Bore Dia	Projection
98716	CAT50-SLN1/4-4	0.2500	4.0"
98717	CAT50-SLN5/16-4	0.3125	4.0"
98718	CAT50-SLN3/8-4	0.3750	4.0"
98719	CAT50-SLN1/2-4	0.5000	4.0"
98720	CAT50-SLN5/8-4	0.6250	4.0"
98721	CAT50-SLN3/4-4	0.7500	4.0"
97110	CAT50-SLN3/4-6	0.7500	6.0"
98723	CAT50-SLN1-4	1.0000	4.0"
97113	CAT50-SLN1-6	1.0000	6.0"
98724	CAT50-SLN1-1/4-4	1.2500	4.0"
97115	CAT50-SLN1-1/4-6	1.2500	6.0"



- Taper Ground to AT3 specifications
- Collet Taper T.I.R. < .0002"
- Made of high quality alloy steel
- Through spindle coolant capable

CAT 40 Shank

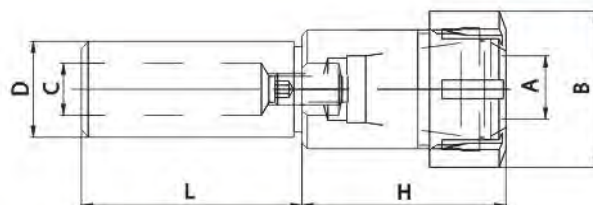
-Dynamically balanced to G6.3 @ 18,000 RPM

Part Number	Description	Projection	Nut Dia.	Max. Tool Dia.	Wrench
98733	CAT40-ER16M-2.76 Mini Nut	2.76"	0.87	0.394	97182
97134	CAT40-ER16-4.00	4.00"	1.1	0.394	97175
98734	CAT40-ER16-6.00	6.00"	1.1	0.394	97175
98735	CAT40-ER20M-2.76 Mini Nut	2.76"	1.1	0.512	97183
97135	CAT40-ER20-4.00	4.00"	1.33	0.512	97176
98736	CAT40-ER20-6.00	6.00"	1.33	0.512	97176
98737	CAT40-ER25-2.76	2.76"	1.65	0.63	97181
97136	CAT40-ER25-4.00	4.00"	1.65	0.63	97181
98738	CAT40-ER25-6.00	6.00"	1.65	0.63	97181
98739	CAT40-ER32-2.76	2.76"	1.96	0.787	97185
97137	CAT40-ER32-4.00	4.00"	1.96	0.787	97185
98740	CAT40-ER32-6.00	6.00"	1.96	0.787	97185
98741	CAT40-ER40-3.15	3.15"	2.48	1.024	97186
98742	CAT40-ER40-6.00	6.00"	2.48	1.024	97186

CAT 50 Shank

-Dynamically balanced to G6.3 @ 12,000 RPM

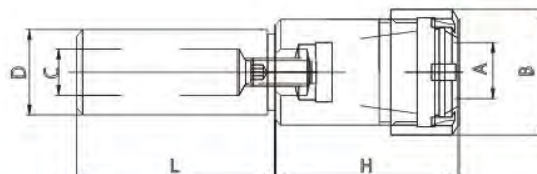
Part Number	Description	Projection	Nut Dia.	Max. Tool Dia.	Wrench
98763	CAT50-ER16M-4.00 Mini Nut	4.00"	0.87	0.394	97182
98764	CAT50-ER16M-6.00 Mini Nut	6.00"	0.87	0.394	97182
98765	CAT50-ER16-8.00	8.00"	1.1	0.394	97175
98701	CAT50-ER20M-4.00 Mini Nut	4.00"	1.1	0.551	97183
98702	CAT50-ER20M-6.00 Mini Nut	6.00"	1.1	0.551	97183
98703	CAT50-ER20-8.00	8.00"	1.33	0.551	97176
98704	CAT50-ER25-4.00	4.00"	1.65	0.63	97181
98705	CAT50-ER25-6.00	6.00"	1.65	0.63	97181
98706	CAT50-ER25-8.00	8.00"	1.65	0.63	97181
98707	CAT50-ER32-4.00	4.00"	1.96	0.787	97185
98708	CAT50-ER32-6.00	6.00"	1.96	0.787	97185
98709	CAT50-ER32-8.00	8.00"	1.96	0.787	97185
98710	CAT50-ER40-4.00	4.00"	2.48	1.024	97186
98711	CAT50-ER40-6.00	6.00"	2.48	1.024	97186
98712	CAT50-ER40-8.00	8.00"	2.48	1.024	97186



ER Straight Shank Collet Chucks

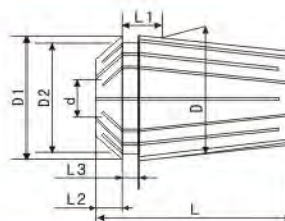
Part Number	Description	Shank Dia.	Length	Nut Dia.	Max. Tool Dia.	Wrench
97153	C5/8-ER11A-140	0.625	5.51"	0.75	0.281	97174
97152	C5/8-ER16A-60	.625"	2.36"	1.1	0.394	97175
97154	C3/4-ER16A-50	.750"	1.97"	1.1	0.394	97175
97155	C3/4-ER16A-100	.750"	3.94"	1.1	0.394	97175
97156	C3/4-ER16A-140	.750"	5.51"	1.1	0.394	97175
97160	C1-ER20A-140	1.000"	5.51"	1.33	0.551	97176
97167	C3/4-ER25-100	.750"	3.94"	1.65	0.63	97181
97157	C1-ER25-50	1.000"	1.97"	1.65	0.63	97181
97158	C1-ER32-50	1.000"	1.97"	1.96	0.787	97185
97161	C1-1/4-ER32-60	1.250"	2.36"	1.96	0.787	97185
97159	C1-ER40-50	1.000"	1.97"	2.48	1.024	97186

Cylindrical collet chucks with mini nut



ER Straight Shank Collet Chucks						
Part Number	Description	Shank Dia.	Length	Nut Dia.	Max. Tool Dia.	Wrench
97162	C3/8-ER8M-100 Mini Nut	.375"	3.94"	0.47	0.196	97177
97163	C1/2-ER11M-100 Mini Nut	.500"	3.94"	0.63	0.281	97178
97197	C1/2-ER11M-315 Mini Nut	.500"	12.40"	0.63	0.281	97178
97164	C5/8-ER11M-140 Mini Nut	.625"	5.51"	0.63	0.281	97178
97200	C1-ER11M-315 Mini Nut	1.000"	12.40"	0.63	0.281	97178
97165	C1/2-ER16M-140 Mini Nut	.500"	5.51"	0.87	0.394	97182
97166	C3/4-ER16M-140 Mini Nut	.750"	0.551	0.87	0.394	97182
97195	C3/4-ER16M-315 Mini Nut	.750"	12.40"	0.87	0.394	97182
97168	C1-ER20M-140 Mini Nut	1.000"	5.51"	1.1	0.551	97183
97196	C1-ER20M-315 Mini Nut	1.000"	12.40"	1.1	0.551	97183

ER Collet (Inch)



ER 11 Collets

Part Number	Description	Capacity
98784	ER11 1/16 Collet	1/16"
98785	ER11 3/32 Collet	3/32"
98786	ER11 1/8 Collet	1/8"
98787	ER11 5/32 Collet	5/32"
98788	ER11 3/16 Collet	3/16"
98789	ER11 1/4 Collet	1/4"

ER 16 Collets

98790	ER16 1/16 Collet	1/16"
98791	ER16 3/32 Collet	3/32"
98792	ER16 1/8 Collet	1/8"
98793	ER16 5/32 Collet	5/32"
98794	ER16 3/16 Collet	3/16"
98795	ER16 1/4 Collet	1/4"
98796	ER16 5/16 Collet	5/16"
98797	ER16 3/8 Collet	3/8"

ER 20 Collets

98798	ER20 1/16 Collet	1/16"
98799	ER20 3/32 Collet	3/32"
98800	ER20 1/8 Collet	1/8"
98801	ER20 5/32 Collet	5/32"
98802	ER20 3/16 Collet	3/16"
98803	ER20 1/4 Collet	1/4"
98804	ER20 5/16 Collet	5/16"
98805	ER20 3/8 Collet	3/8"
98806	ER20 7/16 Collet	7/16"
98807	ER20 1/2 Collet	1/2"

ER 25 Collets

98808	ER25 1/16 Collet	1/16"
98809	ER25 3/32 Collet	3/32"
98810	ER25 1/8 Collet	1/8"
98811	ER25 5/32 Collet	5/32"
98812	ER25 3/16 Collet	3/16"
89913	ER25 1/4 Collet	1/4"
98814	ER25 5/16 Collet	5/16"
98815	ER25 3/8 Collet	3/8"
98816	ER25 7/16 Collet	7/16"
98817	ER25 1/2 Collet	1/2"
98818	ER25 9/16 Collet	9/16"
98819	ER25 5/8 Collet	5/8"
98820	ER25 3/4 Collet	3/4"

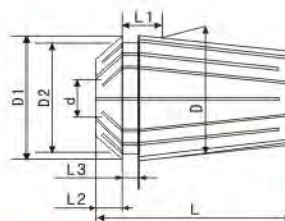
ER 32 Collets

98821	ER32 1/16 Collet	1/16"
98822	ER32 3/32 Collet	3/32"
98823	ER32 1/8 Collet	1/8"
98824	ER32 5/32 Collet	5/32"
98825	ER32 3/16 Collet	3/16"
98826	ER21 1/4 Collet	1/4"
98827	ER32 5/16 Collet	5/16"
98828	ER32 3/8 Collet	3/8"
98829	ER32 7/16 Collet	7/16"
98830	ER32 1/2 Collet	1/2"
98831	ER32 9/16 Collet	9/16"
98832	ER32 5/8 Collet	5/8"
98833	ER32 3/4 Collet	3/4"

ER 40 Collets

98834	ER40 1/16 Collet	1/16"
98835	ER40 3/32 Collet	3/32"
98836	ER40 1/8 Collet	1/8"
98837	ER40 5/32 Collet	5/32"
98838	ER40 3/16 Collet	3/16"
98839	ER40 1/4 Collet	1/4"
98840	ER40 5/16 Collet	5/16"
98841	ER40 3/8 Collet	3/8"
98842	ER40 7/16 Collet	7/16"
98843	ER40 1/2 Collet	1/2"
98844	ER40 9/16 Collet	9/16"
98845	ER40 5/8 Collet	5/8"
98846	ER40 3/4 Collet	3/4"
98847	ER40 7/8 Collet	7/8"
98848	ER40 1 Collet	1"

ER Collet (Metric)



ER Collets Metric		
ER 32 Collets		
Part Number	Description	Capacity
98767	ER32 3-4MM Collet	3-4mm
98768	ER32 4-5MM Collet	4-5mm
98769	ER32 5-6MM Collet	5-6mm
98770	ER32 6-7MM Collet	6-7mm
98771	ER32 7-8MM Collet	7-8mm
98772	ER32 8-9MM Collet	8-9mm
98773	ER32 9-10MM Collet	9-10mm
98774	ER32 10-11MM Collet	10-11mm
98775	ER32 11-12MM Collet	11-12mm
98776	ER32 12-13MM Collet	12-13mm
98778	ER32 14-15MM Collet	14-15mm
98779	ER32 15-16MM Collet	15-16mm
98780	ER32 16-17MM Collet	16-17mm
98781	ER32 17-18MM Collet	17-18mm
98782	ER32 18-19MM Collet	18-19mm
98783	ER32 19-20MM Collet	19-20mm

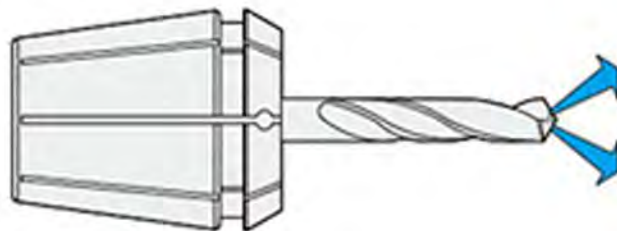
ER Collet Sets



ER Collet Sets Inch		
Part Number	Description	Pieces
98943	ER11 7PC INCH Collet Set	7 pc set
98944	ER16 8PC INCH Collet Set	8 pc set
98945	ER20 12PC INCH Collet Set	12 pc set
98946	ER25 14PC INCH Collet Set	14 pc set
98947	ER32 18PC INCH Collet Set	18 pc set
98948	ER40 23PC INCH Collet Set	23 pc set

ER Collet Sets Metric		
98942	ER11 7PC Metric Collet Set	7 pc set
98743	ER16 8PC Metric Collet Set	8 pc set
98744	ER20 11PC Metric Collet Set	12 pc set
98745	ER25 14PC Metric Collet Set	14 pc set
98746	ER32 18PC Metric Collet Set	18 pc set
98747	ER40 23PC Metric Collet Set	23 pc set

ER Sealed Collet (Inch)



ER 16 Coolant Collets Inch

Part Number	Description
98851	ER16C 1/8 Coolant Collet
98852	ER16C 5/32 Coolant Collet
98854	ER16C 3/16 Coolant Collet
98856	ER16C 1/4 Coolant Collet
98857	ER16C 5/16 Coolant Collet
98859	ER16C 3/8 Coolant Collet

ER 20 Coolant Collets Inch

98862	ER20C 1/8 Coolant Collet
98863	ER20C 5/32 Coolant Collet
98866	ER20C 3/16 Coolant Collet
98868	ER20C 1/4 Coolant Collet
98869	ER20C 5/16 Coolant Collet
98871	ER20C 3/8 Coolant Collet
98873	ER20C 7/16 Coolant Collet
98874	ER20C 15/32 Coolant Collet
98876	ER20C 1/2 Coolant Collet

ER 25 Coolant Collets Inch

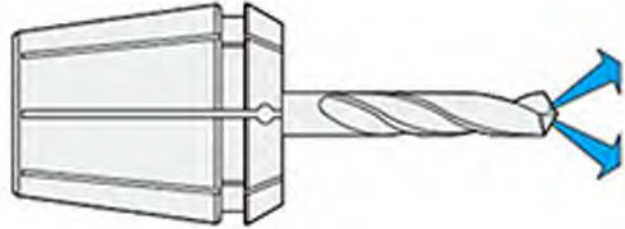
98879	ER25C 1/8 Coolant Collet
98880	ER25C 5/32 Coolant Collet
98882	ER25C 3/16 Coolant Collet
98884	ER25C 1/4 Coolant Collet
98885	ER25C 5/16 Coolant Collet
98887	ER25C 3/8 Coolant Collet
98889	ER25C 7/16 Coolant Collet
98890	ER25C 15/32 Coolant Collet
98892	ER25C 1/2 Coolant Collet
98894	ER25C 9/16 Coolant Collet
98895	ER25C 5/8 Coolant Collet

ER 32 Coolant Collets Inch

98899	ER32C 1/8 Coolant Collet
98900	ER32C 5/32 Coolant Collet
98902	ER32C 3/16 Coolant Collet
98904	ER32C 1/4 Coolant Collet
98905	ER32C 5/16 Coolant Collet
98907	ER32C 3/8 Coolant Collet
98909	ER32C 7/16 Coolant Collet
98910	ER32C 15/32 Coolant Collet
98912	ER32C 1/2 Coolant Collet
98914	ER32C 9/16 Coolant Collet
98915	ER32C 5/8 Coolant Collet
98918	ER32C 3/4 Coolant Collet

ER 40 Coolant Collets Inch

98922	ER40C 1/8 Coolant Collet
98924	ER40C 3/16 Coolant Collet
98926	ER40C 1/4 Coolant Collet
98928	ER40C 3/8 Coolant Collet
98930	ER40C 7/16 Coolant Collet
98932	ER40C 1/2 Coolant Collet
98934	ER40C 9/16 Coolant Collet
98935	ER40C 5/8 Coolant Collet
98938	ER40C 3/4 Coolant Collet
98940	ER40C 7/8 Coolant Collet
98941	ER40C 1 Coolant Collet



ER 16 Coolant Collets Metric

98849	ER16C 3MM Coolant Collet	3mm
98850	ER16C 4MM Coolant Collet	4mm
98853	ER16C 5MM Coolant Collet	5mm
98858	ER16C 8MM Coolant Collet	8mm
98860	ER16C 10MM Coolant Collet	10mm

ER 25 Coolant Collets Metric

98877	ER25C 3MM Coolant Collet	3mm
98878	ER25C 4MM Coolant Collet	4mm
98881	ER25C 5MM Coolant Collet	5mm
98883	ER25C 6MM Coolant Collet	6mm
98886	ER25C 8MM Coolant Collet	8mm
98888	ER25C 10MM Coolant Collet	10mm
98891	ER25C 12MM Coolant Collet	12mm
98893	ER25C 14MM Coolant Collet	14mm
98896	ER25C 16MM Coolant Collet	16mm

ER 40 Coolant Collets Metric

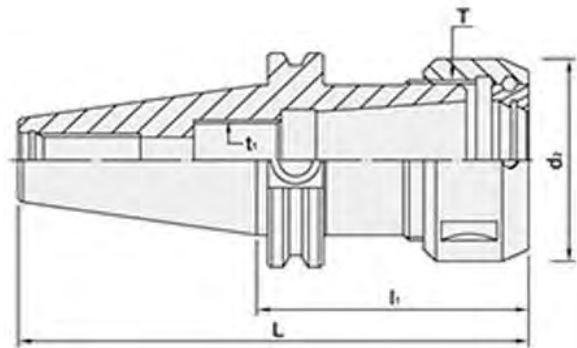
98920	ER40C 3MM Coolant Collet	3mm
98921	ER40C 4MM Coolant Collet	4mm
98923	ER40C 5MM Coolant Collet	5mm
98925	ER40C 6MM Coolant Collet	6mm
98927	ER40C 8MM Coolant Collet	8mm
98929	ER40C 10MM Coolant Collet	10mm
98931	ER40C 12MM Coolant Collet	12mm
98933	ER40C 14MM Coolant Collet	14mm
98936	ER40C 16MM Coolant Collet	16mm
98937	ER40C 18MM Coolant Collet	18mm
98939	ER40C 20MM Coolant Collet	20mm

ER 20 Coolant Collets Metric

98861	ER20C 3MM Coolant Collet	3mm
98865..	ER20C 5MM Coolant Collet	5mm
98867	ER20C 6MM Coolant Collet	6mm
98870	ER20C 8MM Coolant Collet	8mm
98872	ER20C 10MM Coolant Collet	10mm
98875	ER20C 12MM Coolant Collet	12mm

ER 32 Coolant Collets Metric

98897	ER32C 3MM Coolant Collet	3mm
98898	ER32C 4MM Coolant Collet	4mm
98901	ER32C 5MM Coolant Collet	5mm
98903	ER32C 6MM Coolant Collet	6mm
98906	ER32C 8MM Coolant Collet	8mm
98908	ER32C 10MM Coolant Collet	10mm
98911	ER32C 12MM Coolant Collet	12mm
98913	ER32C 14MM Coolant Collet	14mm
98916	ER32C 16MM Coolant Collet	16mm
98917	ER32C 18MM Coolant Collet	18mm
98919	ER32C 20MM Coolant Collet	20mm



- Taper Ground to AT3 specifications
- Collet Taper T.I.R. < .0002"
- Made of high quality alloy steel
- Through spindle coolant capable

CAT 40 Shank

Part Number	Description	Projection	Nut Dia.	Max. Tool Dia.
99003	CAT40-TG100-3	3.00"	2.48"	1.00"
99004	CAT40-TG100-4	4.00"	2.48"	1.00"
99005	CAT40-TG100-6	6.00"	2.48"	1.00"

CAT 50 Shank

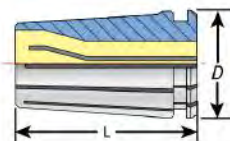
Part Number	Description	Projection	Nut Dia.	Max. Tool Dia.
99008	CAT50-TG100-3	3.00"	2.48"	1.00"
99009	CAT50-TG100-4	4.00"	2.48"	1.00"
99010	CAT50-TG100-6	6.00"	2.48"	1.00"

CAT TG 100 Collets



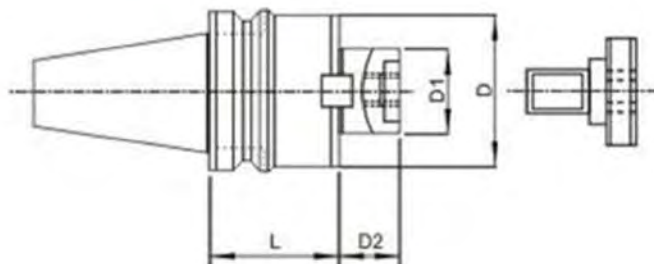
Dimensions

Series	L	A
TG100	2.375"	1.379"



TG 100 Collets

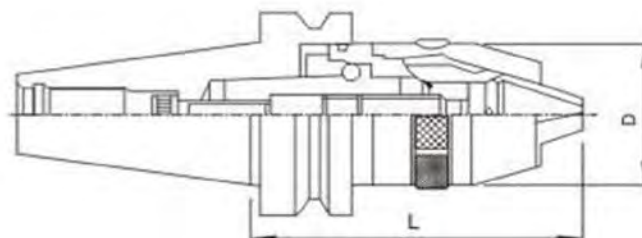
Part Number	Description
99015	TG100 1/8 Collet
99016	TG100 9/64 Collet
99017	TG100 5/32 Collet
99018	TG100 11/64 Collet
99019	TG100 3/16 Collet
99020	TG100 13/64 Collet
99021	TG100 7/32 Collet
99022	TG100 15/64 Collet
99023	TG100 1/4 Collet
99024	TG100 17/64 Collet
99025	TG100 9/32 Collet
99026	TG100 19/64 Collet
99027	TG100 5/16 Collet
99028	TG100 11/32 Collet
99029	TG100 3/8 Collet
99030	TG100 7/16 Collet
99031	TG100 1/2 Collet
99032	TG100 9/16 Collet
99033	TG100 5/8 Collet
99034	TG100 11/16 Collet
99035	TG100 3/4 Collet
99036	TG100 13/16 Collet
99037	TG100 7/8 Collet
99038	TG100 1" Collet



- Taper Ground to AT3 specifications
- Taper to Pilot runout < .0002"
- Made of high quality alloy steel
- Through spindle coolant capable

CAT 40 Shank			
Part Number	Description	Pilot Dia	Projection
98759	CAT40-FMA3/4-1.5	.750"	1.50"
98760	CAT40-FMA1-2.06	1.000"	2.06"
98761	CAT40-FMA1-1/4-2.21	1.250"	2.21"
98762	CAT40-FMA1-1/2-2.21	1.500"	2.21"

CAT 50 Shank			
Part Number	Description	Pilot Dia	Projection
98728	CAT50-FMA3/4-1.5	.750"	1.50"
97118	CAT50-FMA3/4-4.0	.750"	4.00"
97119	CAT50-FMA3/4-6.0	.750"	6.00"
97198	CAT50-FMA3/4-12.0	.750"	12.00"
98729	CAT50-FMA1-2.0	1.000"	2.00"
97122	CAT50-FMA1-4.0	1.000"	4.00"
97123	CAT50-FMA1-6.0	1.000"	6.00"
98730	CAT50-FMA1-1/4-1.5	1.250"	1.50"
97126	CAT50-FMA1-1/4-4.0	1.250"	4.00"
97127	CAT50-FMA1-1/4-6.0	1.250"	6.00"
97128	CAT50-FMA1-1/4-8.0	1.250"	8.00"
98731	CAT50-FMA1-1/2-2.0	1.500"	2.00"
98732	CAT50-FMA2-2.4	2.000"	2.40"



1/2" Keyless Drill Chuck with Integral Shank

Part Number	Description	Capacity	Projection
98758	CAT40-APU1/2-4.75	1/2"	4.75"
98727	CAT50-APU1/2-4.25	1/2"	4.25"

Keyless Drill Chucks

Part Number	Description
97139	J2213 1/32-1/2 JT6 Drill
97140	J2616 1/8-5/8 JT3 Drill Chuck
97141	J2616 1/8-5/8 JT33 Drill
97142	J2616 1/8-5/8 JT6 Drill Chuck
97143	J2216 1/32-5/8 JT3 Drill
97144	J2220 3/16-3/4 JT3 Drill