



QUAD-TWIST™

EXPANDED DIAMETERS AND LONGER SHANKS

Drill Diameters:
.563" ~ 2.000" (14.3 - 50.8mm)

Drill Bodies:
2xD
3xD
4xD
5xD

Grades:
IN2505
IN6505
IN1030
IN2510
IN10K - NEW

- Features:**
- Side coolant port
 - Twisted flute for maximum chip evacuation



Ingersoll Cutting Tools is proud to announce that the Quad-Twist line has grown. The diameter range includes 14.3mm (.563") - 50.8mm (2.000"). The same unique insert design to break up hard to machine, gummy materials including low carbon steels, stainless and exotics is available in 2, 3, 4 and 5xD.

We have also implemented a new shank design. The new longer shank will give the Quad-Twist drill additional stability when used in stationary applications, allowing two-screw contact on the shank flat and a more rigid setup. The Quad-Twist does not include a brass coolant plug for lathes that do not provide coolant through so please order separately. We have included a cutoff notch to shorten the shank for rotating applications, if necessary. The new shank design is designated "R02" at the end of the item description. The original shank style will remain "R01" and will be phased out as stock levels zero out.

NEW!!! Grade IN10K for ALUMINUM to compliment our existing grades IN2505, IN6505, IN1030 and IN2510.

-R01

-R02

CARBIDE GRADES

IN2505 (PVD) - GENERAL PURPOSE

- Sub-micron grade with high hardness and toughness
- New Multi-layered coating for higher chipping resistance
- Post-coat surface treatment improves chipping resistance and reduces cutting forces
- First choice for general applications
- Inboard and outboard pockets



IN2510 (PVD) - CAST IRON

- Sub-micron grade with high hardness and toughness
- New Multi-layered coating for higher chipping resistance
- Post-coat surface treatment improves chipping resistance and reduces cutting forces
- Inboard and outboard pockets



IN6505 (CVD) - STEEL APPLICATION

- Multi-layered CVD coating along with post coat surface treatment provides excellent wear resistance and improves chipping resistance
- Peripheral (Outboard) pocket only



BLACK color

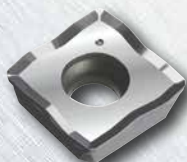
IN1030 (PVD) - C.I., ALU., STAINLESS, TITANIUM

- Tough, slower speed applications
- If inboard chipping is an issue, IN1030 can tolerate low SFM
- More forgiving when machine rigidity is an issue



NEW! IN10K (UNCOATED) - ALUMINUM

- Polished
- Upsharp



MAXIMUM OFFSET DIMENSIONS

Drill Diameter	Insert	X-Max: Radial Adjustment	Max Offset Diameter
0.563" (14.3mm)	SOMT 050204	0.015	0.593
0.594" (15.0mm)	SOMT 050204	0.013	0.620
0.626" (15.9mm)	SOMT 050204	0.011	0.648
0.657" (16.7mm)	SOMT 060204	0.018	0.693
0.688" (17.5mm)	SOMT 060204	0.013	0.714
0.719" (18.3mm)	SOMT 060204	0.011	0.741
0.750" (19.1mm)	SOMT 060204	0.010	0.770
0.781" (19.8mm)	SOMT 070306	0.020	0.821
0.813" (20.6mm)	SOMT 070306	0.015	0.843
0.843" (21.4mm)	SOMT 070306	0.011	0.865
0.875" (22.2mm)	SOMT 070306	0.008	0.891
0.906" (23.0mm)	SOMT 08T306	0.025	0.956
0.938" (23.8mm)	SOMT 08T306	0.022	0.982
0.969" (24.6mm)	SOMT 08T306	0.018	1.005
0.984" (25.0mm)	SOMT 08T306	0.015	1.014
1.000" (25.4mm)	SOMT 08T306	0.015	1.030
1.031" (26.2mm)	SOMT 08T306	0.011	1.053
1.063" (27.0mm)	SOMT 090308	0.028	1.119
1.094" (27.8mm)	SOMT 090308	0.024	1.142
1.125" (28.6mm)	SOMT 090308	0.015	1.155
1.156" (29.4mm)	SOMT 090308	0.015	1.186
1.187" (30.2mm)	SOMT 090308	0.011	1.209
1.219" (31.0mm)	SOMT 090308	0.008	1.235
1.250" (31.8mm)	SOMT 11T308	0.035	1.320
1.281" (32.5mm)	SOMT 11T308	0.031	1.343
1.312" (33.3mm)	SOMT 11T308	0.031	1.374
1.343" (34.1mm)	SOMT 11T308	0.028	1.399
1.375" (34.9mm)	SOMT 11T308	0.024	1.423
1.406" (35.7mm)	SOMT 11T308	0.015	1.436
1.437" (36.5mm)	SOMT 130408	0.047	1.531
1.468" (37.3mm)	SOMT 130408	0.047	1.562
1.500" (38.1mm)	SOMT 130408	0.039	1.578
1.531" (38.9mm)	SOMT 130408	0.035	1.601
1.562" (39.7mm)	SOMT 130408	0.028	1.618
1.594" (40.5mm)	SOMT 130408	0.024	1.642
1.625" (41.3mm)	SOMT 130408	0.024	1.673
1.687" (42.8mm)	SOMT 130408	0.012	1.711
1.719" (43.7mm)	SOMT 150510	0.047	1.813
1.750" (44.5mm)	SOMT 150510	0.043	1.836
1.781" (45.2mm)	SOMT 150510	0.043	1.867
1.813" (46.0mm)	SOMT 150510	0.039	1.891
1.875" (47.6mm)	SOMT 150510	0.028	1.931
1.937" (49.2mm)	SOMT 150510	0.024	1.985
1.969" (50.0mm)	SOMT 150510	0.020	2.009
2.000" (50.8mm)	SOMT 150510	0.015	2.030

Note: Only Recommended For 2xD and 3xD Drill Bodies

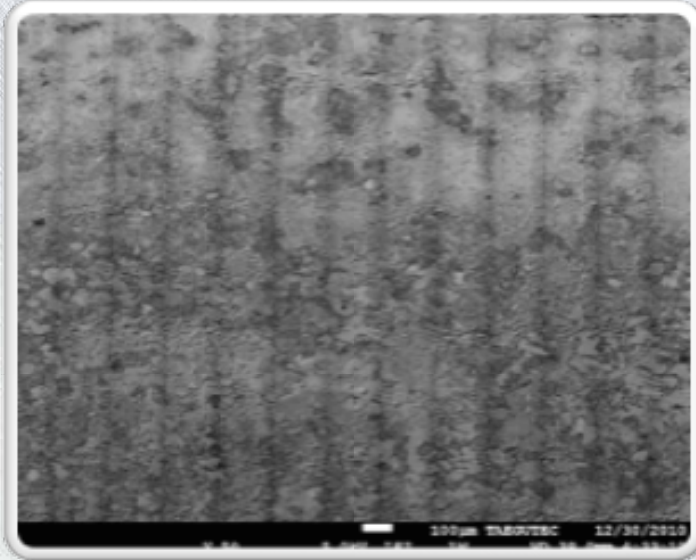
IMPROVED BODY RIGIDITY & PROLONGED TOOL LIFE

Drill Body Hardness - over HRc 50

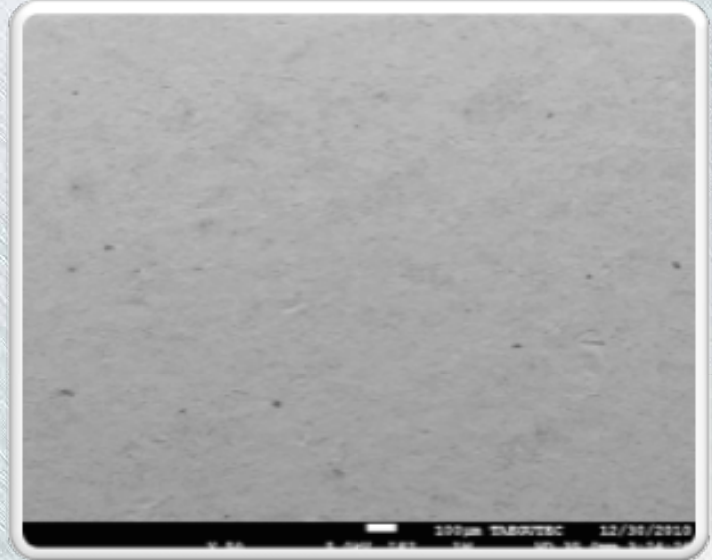
Special Surface Treatment

- Surface hardening & smooth chip flow
- Increases resistance to fatigue failure, corrosion and stress cracking

[Before treatment]

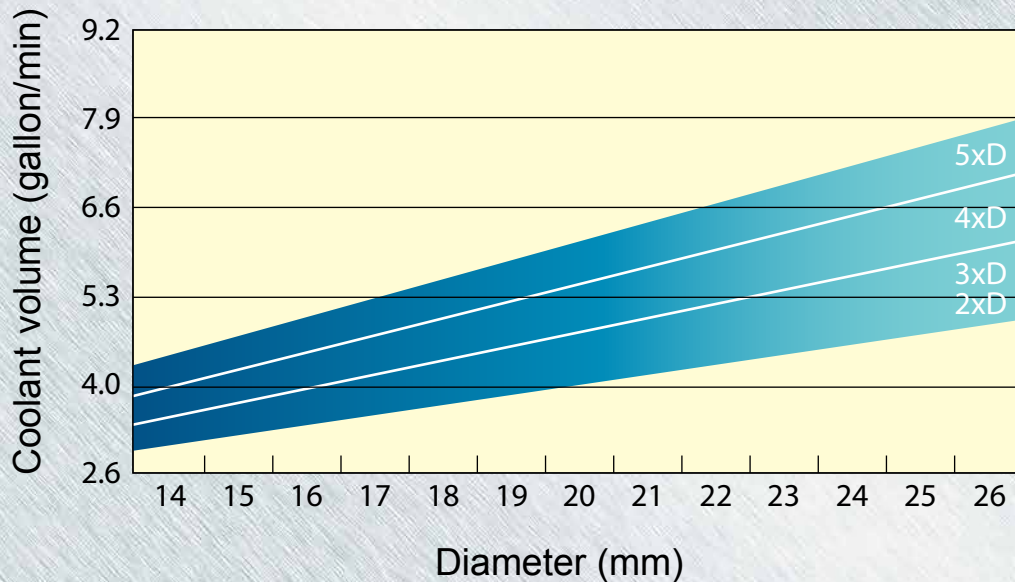


[After treatment]



INTERNAL COOLING

Recommended Coolant Flow Rate (gallons/min)



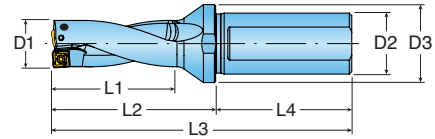
QR SERIES 2XD INDEXABLE DRILL (-R01 SHANK)

R01



NOTE: Coolant plugs PF0012 & PF0013 are ordered separately.

R01



2xD Bodies		Dimensions (inch)							Insert	Screw	Torx	Plug	Torque (in. lbs.)
Drill Number	D1 (mm)	D1 (inch)	D2 Shank Dia	D3 Flange Dia	L1 Max. DOC	L2 Ext From Holder	L3 OAL	L4 Shank Length					
* QR0143029N5R01	14.3	0.563	1.00	1.26	1.10	2.13	4.33	2.21	SOMT 050204	SM20-043-00	DS-TP06S-NEU	PF-0012	5.0-6.5
* QR0150030N5R01	15.0	0.591	1.00	1.26	1.20	2.24	4.45	2.21					
* QR0159032N5R01	15.9	0.626	1.00	1.26	1.30	2.36	4.57	2.21					
* QR0167033N5R01	16.7	0.658	1.00	1.26	1.30	2.44	4.65	2.21					
* QR0175035N5R01	17.5	0.689	1.00	1.26	1.40	2.56	4.77	2.21					
* QR0183037N5R01	18.3	0.721	1.00	1.26	1.40	2.56	4.77	2.21	SOMT 060204	TS 22052I/HG-P	DS-TP07S	PF-0012	7.5-9.0
* QR0191038N5R01	19.0	0.750	1.00	1.26	1.50	2.64	4.84	2.21					
* QR0198040N5R01	19.8	0.780	1.00	1.26	1.60	2.80	5.00	2.21	SOMT 070306	TS 22052I/HG-P	DS-TP07S	PF-0012	7.5-9.0
* QR0206041N5R01	20.6	0.811	1.00	1.26	1.60	2.87	5.08	2.21					
* QR0214042N5R01	21.4	0.843	1.00	1.26	1.70	2.95	5.16	2.21					
* QR0222044N5R01	22.2	0.874	1.00	1.26	1.70	2.95	5.16	2.21					
* QR0230046N6R01	23.0	0.906	1.25	1.77	1.80	3.19	5.55	2.36	SOMT 08T306	SO 25065I	HZS.0004	PF-0013	7.5-9.0
* QR0238048N6R01	23.8	0.937	1.25	1.77	1.90	3.31	5.67	2.36					
* QR0246049N6R01	24.6	0.969	1.25	1.77	1.90	3.43	5.79	2.36					
* QR0254051N6R01	25.4	1.000	1.25	1.77	2.00	3.50	5.87	2.36					
* QR0262052N6R01	26.2	1.031	1.25	1.77	2.10	3.50	5.87	2.36					

* Standard shank (R01) will be phased out and replaced by R02.

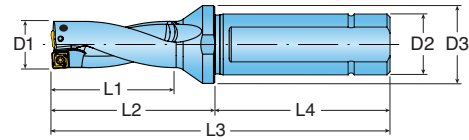
QR SERIES 2XD INDEXABLE DRILL (-R02 SHANK)

R02



NOTE: Coolant plugs PF0012, PF0013 & PF0015 are ordered separately.

R02



2xD Bodies	Dimensions (inch)								Insert	Screw	Torx	Plug	Torque (in. lbs.)
	Drill Number	D1 (mm)	D1 (inch)	D2 Shank Dia	D3 Flange Dia	L1 Max. DOC	L2 Ext From Holder	L3 OAL					
QR0143029N5R02	14.3	0.563	1.00	1.26	1.10	2.13	5.28	3.16					
QR0150030N5R02	15.0	0.591	1.00	1.26	1.20	2.24	5.39	3.16	SOMT050204	SM20-043-00	DS-TP06S-NEU	PF-0012	5.0-6.5
QR0159032N5R02	15.9	0.626	1.00	1.26	1.30	2.36	5.51	3.16					
QR0167033N5R02	16.7	0.658	1.00	1.26	1.30	2.44	5.59	3.16					
QR0175035N5R02	17.5	0.689	1.00	1.26	1.40	2.56	5.71	3.16	SOMT060204	TS 22052I/HG-P	DS-TP07S	PF-0012	7.5-9.0
QR0183037N5R02	18.3	0.721	1.00	1.26	1.40	2.56	5.71	3.16					
QR0191038N5R02	19.1	0.750	1.00	1.26	1.50	2.64	5.79	3.16					
QR0198040N5R02	19.8	0.781	1.00	1.26	1.60	2.80	5.95	3.16					
QR0206041N5R02	20.6	0.813	1.00	1.26	1.60	2.87	6.02	3.16	SOMT070306	TS 22052I/HG-P	DS-TP07S	PF-0012	7.5-9.0
QR0214042N5R02	21.4	0.843	1.00	1.26	1.70	2.95	6.10	3.16					
QR0222044N5R02	22.2	0.875	1.00	1.26	1.80	2.95	6.10	3.16					
QR0230046N6R02	23.0	0.906	1.25	1.77	1.80	3.19	6.34	3.16					
QR0238048N6R02	23.8	0.938	1.25	1.77	1.90	3.31	6.46	3.16					
QR0246049N6R02	24.6	0.969	1.25	1.77	1.90	3.43	6.58	3.16	SOMT08T306	SO 25065I	HZS.0004	PF-0013	7.5-9.0
QR0250050N6R02	25.0	0.984	1.25	1.77	1.97	3.43	6.58	3.16					
QR0254051N6R02	25.4	1.000	1.25	1.77	2.00	3.50	6.65	3.16					
QR0262052N6R02	26.2	1.031	1.25	1.77	2.10	3.50	6.65	3.16					
QR0270054N6R02	27.0	1.063	1.25	1.77	2.10	3.60	6.75	3.16					
QR0278056N6R02	27.8	1.094	1.25	1.77	2.20	3.70	6.85	3.16					
QR0286057N6R02	28.6	1.125	1.25	1.77	2.30	3.80	6.95	3.16	SOMT09T308	SM35-088-60	TD 10	PF-0013	25.5-29.0
QR0294059N6R02	29.4	1.156	1.25	2.16	2.30	3.97	7.12	3.16					
QR0302060N6R02	30.2	1.187	1.25	2.16	2.40	3.97	7.12	3.16					
QR0310062N6R02	31.0	1.219	1.25	2.16	2.40	4.09	7.24	3.16					
QR0318063N6R02	31.8	1.250	1.25	2.16	2.50	4.17	7.32	3.16					
QR0325065N6R02	32.5	1.281	1.25	2.16	2.60	4.29	7.44	3.16					
QR0333067N6R02	33.3	1.312	1.25	2.16	2.60	4.29	7.44	3.16	SOMT11T308	SM35-088-60	TD 10	PF-0013	25.5-29.0
QR0341068N6R02	34.1	1.343	1.25	2.16	2.70	4.37	7.52	3.16					
QR0349070N6R02	34.9	1.375	1.25	2.16	2.80	4.50	7.65	3.16					
QR0357071N6R02	35.7	1.406	1.25	2.16	2.80	4.60	7.75	3.16					
QR0365073N6R02	36.5	1.437	1.25	2.16	2.90	4.70	7.85	3.16					
QR0373075N6R02	37.3	1.468	1.25	2.16	2.90	4.70	7.85	3.16					
QR0381076N6R02	38.1	1.500	1.25	2.16	3.00	4.80	7.95	3.16					
QR0389078N6R02	38.9	1.531	1.25	2.16	3.10	4.90	8.05	3.16	SOMT130408	SE02-82	TD 15	PF-0013	30.5-33.0
QR0397079N6R02	39.7	1.562	1.25	2.36	3.10	5.03	8.18	3.16					
QR0405081N6R02	40.5	1.594	1.25	2.36	3.20	5.16	8.31	3.16					
QR0413083N6R02	41.3	1.625	1.25	2.36	3.30	5.16	8.31	3.16					
QR0428086N6R02	42.8	1.687	1.25	2.36	3.40	5.35	8.50	3.16					
QR0437087N7R02	43.7	1.719	1.50	2.36	3.40	5.43	8.58	3.16					
QR0445089N7R02	44.5	1.750	1.50	2.36	3.50	5.60	8.75	3.16					
QR0452090N7R02	45.2	1.781	1.50	2.36	3.60	5.60	8.75	3.16					
QR0460092N7R02	46.0	1.813	1.50	2.36	3.60	5.70	8.85	3.16	SOMT150510	SM50-113-20	DS-0034	PF-0015	47.0-49.0
QR0476095N7R02	47.6	1.875	1.50	2.36	3.80	5.90	9.05	3.16					
QR0492098N7R02	49.2	1.937	1.50	2.36	3.90	6.00	9.15	3.16					
QR0500100N7R02	50.0	1.969	1.50	2.36	3.90	6.10	9.25	3.16					
QR0508102N7R02	50.8	2.000	1.50	2.36	4.00	6.22	9.37	3.16					

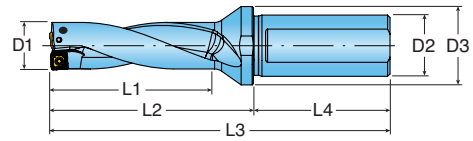
QR SERIES 3xD INDEXABLE DRILL (-R01 SHANK)

R01



NOTE: Coolant plugs PF0012 & PF0013 are ordered separately.

R01



Drill Number	Dimensions (inch)								Insert	Screw	Torx	Plug	Torque (in. lbs.)
	D1 (mm)	D1 (inch)	D2 Shank Dia	D3 Flange Dia	L1 Max. DOC	L2 Ext From Holder	L3 OAL	L4 Shank Length					
* QR0143043N5R01	14.3	0.563	1.00	1.26	1.70	2.68	4.88	2.21					
* QR0150045N5R01	15.0	0.591	1.00	1.26	1.80	2.84	5.04	2.21	SOMT 050204	SM20-043-00	DS-TP06S-NEU	PF-0012	5.0-6.5
* QR0159048N5R01	15.9	0.626	1.00	1.26	1.90	2.99	5.20	2.21					
* QR0167050N5R01	16.7	0.658	1.00	1.26	2.00	3.11	5.32	2.21					
* QR0175053N5R01	17.5	0.689	1.00	1.26	2.10	3.27	5.47	2.21					
* QR0183055N5R01	18.3	0.721	1.00	1.26	2.20	3.27	5.47	2.21	SOMT 060204	TS 22052I/HG-P	DS-TP07S	PF-0012	7.5-9.0
* QR0191057N5R01	19.0	0.750	1.00	1.26	2.30	3.39	5.59	2.21					
* QR0198059N5R01	19.8	0.780	1.00	1.26	2.30	3.58	5.79	2.21					
* QR0206062N5R01	20.6	0.811	1.00	1.26	2.40	3.70	5.91	2.21					
* QR0214064N5R01	21.4	0.843	1.00	1.26	2.50	3.82	6.02	2.21	SOMT 070306	TS 22052I/HG-P	DS-TP07S	PF-0012	7.5-9.0
* QR0222067N5R01	22.2	0.874	1.00	1.26	2.60	3.82	6.02	2.21					
* QR0230069N6R01	23.0	0.906	1.25	1.77	2.70	4.09	6.46	2.36					
* QR0238071N6R01	23.8	0.937	1.25	1.77	2.80	4.25	6.61	2.36					
* QR0246074N6R01	24.6	0.969	1.25	1.77	2.90	4.41	6.77	2.36	SOMT 08T306	SO 25065I	HZS.0004	PF-0013	7.5-9.0
* QR0254076N6R01	25.4	1.000	1.25	1.77	3.00	4.53	6.89	2.36					
* QR0262079N6R01	26.2	1.031	1.25	1.77	3.10	4.53	6.89	2.36					

* Standard shank (R01) will be phased out and replaced by R02.

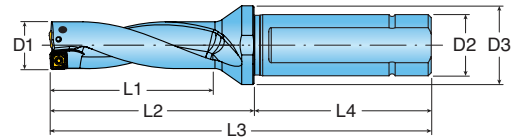
QR SERIES 3XD INDEXABLE DRILL (-R02 SHANK)

R02



NOTE: Coolant plugs PF0012, PF0013 & PF0015 are ordered separately.

R02



3xD Bodies	Dimensions (inch)								Insert	Screw	Torx	Plug	Torque (in. lbs.)
	Drill Number	D1 (mm)	D1 (inch)	D2 Shank Dia	D3 Flange Dia	L1 Max. DOC	L2 Ext From Holder	L3 OAL					
QR0143043N5R02	14.3	0.563	1.00	1.26	1.70	2.68	5.83	3.16					
QR0150045N5R02	15.0	0.591	1.00	1.26	1.80	2.83	5.98	3.16	SOMT050204	SM20-043-00	DS-TP06S-NEU	PF-0012	5.0-6.5
QR0159048N5R02	15.9	0.626	1.00	1.26	1.90	2.99	6.14	3.16					
QR0167050N5R02	16.7	0.658	1.00	1.26	2.00	3.11	6.26	3.16					
QR0175053N5R02	17.5	0.689	1.00	1.26	2.10	3.27	6.42	3.16					
QR0183055N5R02	18.3	0.721	1.00	1.26	2.20	3.27	6.42	3.16	SOMT060204	TS 22052I/HG-P	DS-TP07S	PF-0012	7.5-9.0
QR0191057N5R02	19.1	0.750	1.00	1.26	2.30	3.39	6.54	3.16					
QR0198059N5R02	19.8	0.781	1.00	1.26	2.30	3.59	6.74	3.16					
QR0206062N5R02	20.6	0.813	1.00	1.26	2.40	3.70	6.85	3.16					
QR0214064N5R02	21.4	0.843	1.00	1.26	2.50	3.82	6.97	3.16	SOMT070306	TS 22052I/HG-P	DS-TP07S	PF-0012	7.5-9.0
QR0222067N5R02	22.2	0.875	1.00	1.26	2.60	3.82	6.97	3.16					
QR0230069N6R02	23.0	0.906	1.25	1.77	2.70	4.09	7.24	3.16					
QR0238071N6R02	23.8	0.938	1.25	1.77	2.80	4.25	7.40	3.16					
QR0246074N6R02	24.6	0.969	1.25	1.77	2.90	4.41	7.56	3.16					
QR0250075N6R02	25.0	0.984	1.25	1.77	2.95	4.41	7.56	3.16	SOMT08T306	SO 25065I	HZS.0004	PF-0013	7.5-9.0
QR0254076N6R02	25.4	1.000	1.25	1.77	3.00	4.53	7.68	3.16					
QR0262079N6R02	26.2	1.031	1.25	1.77	3.10	4.53	7.68	3.16					
QR0270081N6R02	27.0	1.063	1.25	1.77	3.20	4.65	7.80	3.16					
QR0278083N6R02	27.8	1.094	1.25	1.77	3.30	4.80	7.95	3.16					
QR0286086N6R02	28.6	1.125	1.25	1.77	3.40	4.92	8.07	3.16					
QR0294088N6R02	29.4	1.156	1.25	2.16	3.50	5.16	8.31	3.16	SOMT09T308	SM35-088-60	TD 10	PF-0013	25.5-29.0
QR0302090N6R02	30.2	1.187	1.25	2.16	3.60	5.16	8.31	3.16					
QR0310093N6R02	31.0	1.219	1.25	2.16	3.70	5.31	8.46	3.16					
QR0318095N6R02	31.8	1.250	1.25	2.16	3.80	5.43	8.58	3.16					
QR0325098N6R02	32.5	1.281	1.25	2.16	3.80	5.59	8.74	3.16					
QR0333100N6R02	33.3	1.312	1.25	2.16	3.90	5.59	8.74	3.16					
QR0341102N6R02	34.1	1.343	1.25	2.16	4.00	5.71	8.86	3.16	SOMT11T308	SM35-088-60	TD 10	PF-0013	25.5-29.0
QR0349105N6R02	34.9	1.375	1.25	2.16	4.10	5.87	9.02	3.16					
QR0357107N6R02	35.7	1.406	1.25	2.16	4.20	6.02	9.17	3.16					
QR0365110N6R02	36.5	1.437	1.25	2.16	4.30	6.18	9.33	3.16					
QR0373112N6R02	37.3	1.468	1.25	2.16	4.40	6.18	9.33	3.16					
QR0381114N6R02	38.1	1.500	1.25	2.16	4.50	6.34	9.49	3.16					
QR0389117N6R02	38.9	1.531	1.25	2.16	4.60	6.46	9.61	3.16					
QR0397119N6R02	39.7	1.562	1.25	2.36	4.70	6.61	9.76	3.16	SOMT130408	SE02-82	TD 15	PF-0013	30.5-33.0
QR0405122N6R02	40.5	1.594	1.25	2.36	4.80	6.77	9.92	3.16					
QR0413124N6R02	41.3	1.625	1.25	2.36	4.90	6.77	9.92	3.16					
QR0428128N6R02	42.8	1.687	1.25	2.36	5.10	7.05	10.20	3.16					
QR0437131N7R02	43.7	1.719	1.50	2.36	5.20	7.17	10.32	3.16					
QR0445134N7R02	44.5	1.750	1.50	2.36	5.30	7.36	10.51	3.16					
QR0452136N7R02	45.2	1.781	1.50	2.36	5.30	7.36	10.51	3.16					
QR0460138N7R02	46.0	1.813	1.50	2.36	5.40	7.52	10.67	3.16					
QR0476143N7R02	47.6	1.875	1.50	2.36	5.60	7.80	10.95	3.16					
QR0492148N7R02	49.2	1.937	1.50	2.36	5.80	7.91	11.06	3.16					
QR0500150N7R02	50.0	1.969	1.50	2.36	5.90	8.07	11.22	3.16	SOMT150510	SM50-113-20	DS-0034	PF-0015	47.0-49.0
QR0508152N7R02	50.8	2.000	1.50	2.36	6.00	8.23	11.38	3.16					

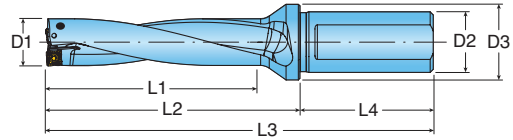
QR SERIES 4XD INDEXABLE DRILL (-R01 SHANK)

R01



NOTE: Coolant plugs PF0012 & PF0013 are ordered separately.

R01



4xD Bodies		Dimensions (inch)								Insert	Screw	Torx	Plug	Torque (in. lbs.)
Drill Number	D1 (mm)	D1 (inch)	D2 Shank Dia	D3 Flange Dia	L1 Max. DOC	L2 Ext From Holder	L3 OAL	L4 Shank Length						
* QR0143057N5R01	14.3	0.563	1.00	1.26	2.30	3.23	5.43	2.21	SOMT050204	SM20-043-00	DS-TP06S-NEU	PF-0012	5.0-6.5	
* QR0150060N5R01	15.0	0.591	1.00	1.26	2.40	3.43	5.63	2.21						
* QR0159064N5R01	15.9	0.626	1.00	1.26	2.50	3.62	5.83	2.21						
* QR0167067N5R01	16.7	0.658	1.00	1.26	2.60	3.78	5.98	2.21						
* QR0175070N5R01	17.5	0.689	1.00	1.26	2.80	3.98	6.18	2.21						
* QR0183073N5R01	18.3	0.721	1.00	1.26	2.90	3.98	6.18	2.21	SOMT060204	TS 22052I/HG-P	DS-TP07S	PF-0012	7.5-9.0	
* QR0191076N5R01	19.0	0.750	1.00	1.26	3.00	4.13	6.34	2.21						
* QR0198079N5R01	19.8	0.780	1.00	1.26	3.10	4.37	6.58	2.21	SOMT070306	TS 22052I/HG-P	DS-TP07S	PF-0012	7.5-9.0	
* QR0206082N5R01	20.6	0.811	1.00	1.26	3.20	4.53	6.73	2.21						
* QR0214086N5R01	21.4	0.843	1.00	1.26	3.40	4.69	6.89	2.21						
* QR0222089N5R01	22.2	0.874	1.00	1.26	3.50	4.69	6.89	2.21						
* QR0230092N6R01	23.0	0.906	1.25	1.77	3.60	5.00	7.36	2.36						
* QR0238095N6R01	23.8	0.937	1.25	1.77	3.70	5.20	7.56	2.36	SOMT08T306	SO 25065I	HZS.0004	PF-0013	7.5-9.0	
* QR0246098N6R01	24.6	0.969	1.25	1.77	3.90	5.39	7.76	2.36						
* QR0254102N6R01	25.4	1.000	1.25	1.77	4.00	5.55	7.91	2.36						
* QR0262105N6R01	26.2	1.031	1.25	1.77	4.10	5.55	7.91	2.36						

* Standard shank (R01) will be phased out and replaced by R02.

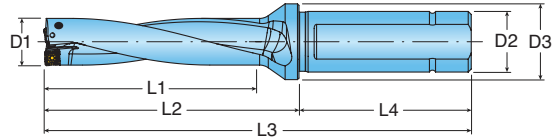
QR SERIES 4XD INDEXABLE DRILL (-R02 SHANK)

R02



NOTE: Coolant plugs PF0012, PF0013 & PF0015 are ordered separately.

R02



4xD Bodies

Drill Number	Dimensions (inch)								Insert	Screw	Torx	Plug	Torque (in. lbs.)
	D1 (mm)	D1 (inch)	D2 Shank Dia	D3 Flange Dia	L1 Max. DOC	L2 Ext From Holder	L3 OAL	L4 Shank Length					
QR0143057N5R02	14.3	0.563	1.00	1.26	2.30	3.23	6.38	3.16	SOMT050204	SM20-043-00	DS-TP06S-NEU	PF-0012	5.0-6.5
QR0150060N5R02	15.0	0.591	1.00	1.26	2.40	3.43	6.58	3.16					
QR0159064N5R02	15.9	0.626	1.00	1.26	2.50	3.62	6.77	3.16					
QR0167067N5R02	16.7	0.658	1.00	1.26	2.60	3.78	6.93	3.16	SOMT060204	TS 22052I/HG-P	DS-TP07S	PF-0012	7.5-9.0
QR0175070N5R02	17.5	0.689	1.00	1.26	2.80	3.98	7.13	3.16					
QR0183073N5R02	18.3	0.721	1.00	1.26	2.90	3.98	7.13	3.16					
QR0191076N5R02	19.1	0.750	1.00	1.26	3.00	4.13	7.28	3.16	SOMT070306	TS 22052I/HG-P	DS-TP07S	PF-0012	7.5-9.0
QR0198079N5R02	19.8	0.781	1.00	1.26	3.10	4.37	7.52	3.16					
QR0206082N5R02	20.6	0.813	1.00	1.26	3.30	4.53	7.68	3.16					
QR0214086N5R02	21.4	0.843	1.00	1.26	3.40	4.69	7.84	3.16	SOMT08T306	SO 25065I	HZS.0004	PF-0013	7.5-9.0
QR0222089N5R02	22.2	0.875	1.00	1.26	3.50	4.69	7.84	3.16					
QR0230092N6R02	23.0	0.906	1.25	1.77	3.60	5.00	8.15	3.16					
QR0238095N6R02	23.8	0.938	1.25	1.77	3.80	5.20	8.35	3.16	SOMT09T308	SM35-088-60	TD 10	PF-0013	25.5-29.0
QR0246098N6R02	24.6	0.969	1.25	1.77	3.90	5.39	8.54	3.16					
QR0250100N6R02	25.0	0.984	1.25	1.77	3.94	5.39	8.54	3.16					
QR0254102N6R02	25.4	1.000	1.25	1.77	4.00	5.55	8.70	3.16	SOMT11T308	SM35-088-60	TD 10	PF-0013	25.5-29.0
QR0262105N6R02	26.2	1.031	1.25	1.77	4.10	5.55	8.70	3.16					
QR0270108N6R02	27.0	1.063	1.25	1.77	4.30	5.71	8.86	3.16					
QR0278111N6R02	27.8	1.094	1.25	1.77	4.40	5.91	9.06	3.16	SOMT130408	SE02-82	TD 15	PF-0013	30.5-33.0
QR0286114N6R02	28.6	1.125	1.25	1.77	4.50	6.06	9.21	3.16					
QR0294118N6R02	29.4	1.156	1.25	2.16	4.60	6.34	9.49	3.16					
QR0302120N6R02	30.2	1.187	1.25	2.16	4.70	6.34	9.49	3.16	SOMT150510	SM50-113-20	DS-0034	PF-0015	47.0-49.0
QR0310124N6R02	31.0	1.219	1.25	2.16	4.90	6.54	9.69	3.16					
QR0318127N6R02	31.8	1.250	1.25	2.16	5.00	6.69	9.84	3.16					
QR0325130N6R02	32.5	1.281	1.25	2.16	5.10	6.89	10.04	3.16	SOMT150510	SM50-113-20	DS-0034	PF-0015	47.0-49.0
QR0333133N6R02	33.3	1.312	1.25	2.16	5.20	6.89	10.04	3.16					
QR0341136N6R02	34.1	1.343	1.25	2.16	5.40	7.04	10.19	3.16					
QR0349140N6R02	34.9	1.375	1.25	2.16	5.50	7.24	10.39	3.16	SOMT150510	SM50-113-20	DS-0034	PF-0015	47.0-49.0
QR0357143N6R02	35.7	1.406	1.25	2.16	5.60	7.44	10.59	3.16					
QR0365146N6R02	36.5	1.437	1.25	2.16	5.70	7.64	10.79	3.16					
QR0373149N6R02	37.3	1.468	1.25	2.16	5.90	7.64	10.79	3.16	SOMT150510	SM50-113-20	DS-0034	PF-0015	47.0-49.0
QR0381152N6R02	38.1	1.500	1.25	2.16	6.00	7.83	10.98	3.16					
QR0389156N6R02	38.9	1.531	1.25	2.16	6.10	7.99	11.14	3.16					
QR0397159N6R02	39.7	1.562	1.25	2.36	6.20	8.19	11.34	3.16	SOMT150510	SM50-113-20	DS-0034	PF-0015	47.0-49.0
QR0405162N6R02	40.5	1.594	1.25	2.36	6.40	8.39	11.54	3.16					
QR0413165N6R02	41.3	1.625	1.25	2.36	6.50	8.39	11.54	3.16					
QR0428171N6R02	42.8	1.687	1.25	2.36	6.70	8.74	11.89	3.16	SOMT150510	SM50-113-20	DS-0034	PF-0015	47.0-49.0
QR0437175N7R02	43.7	1.719	1.50	2.36	6.90	8.90	12.05	3.16					
QR0445178N7R02	44.5	1.750	1.50	2.36	7.00	9.13	12.28	3.16					
QR0452181N7R02	45.2	1.781	1.50	2.36	7.10	9.13	12.28	3.16	SOMT150510	SM50-113-20	DS-0034	PF-0015	47.0-49.0
QR0460184N7R02	46.0	1.813	1.50	2.36	7.30	9.33	12.48	3.16					
QR0476190N7R02	47.6	1.875	1.50	2.36	7.50	9.69	12.84	3.16					
QR0492197N7R02	49.2	1.937	1.50	2.36	7.70	9.84	12.99	3.16	SOMT150510	SM50-113-20	DS-0034	PF-0015	47.0-49.0
QR0500200N7R02	50.0	1.969	1.50	2.36	7.90	10.04	13.19	3.16					
QR0508203N7R02	50.8	2.000	1.50	2.36	8.00	10.24	13.39	3.16					

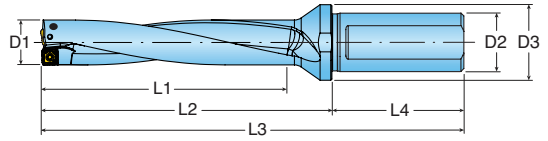
QR SERIES 5XD INDEXABLE DRILL (-R01 SHANK)

R01



NOTE: Coolant plugs PF0012 & PF0013 are ordered separately.

R01



5xD Bodies		Dimensions (inch)							Insert	Screw	Torx	Plug	Torque (in. lbs.)
Drill Number	D1 (mm)	D1 (inch)	D2 Shank Dia	D3 Flange Dia	L1 Max. DOC	L2 Ext From Holder	L3 OAL	L4 Shank Length					
* QR0143072N5R01	14.3	0.563	1.00	1.26	2.80	3.78	5.99	2.21	SOMT 050204	SM20-043-00	DS-TP06S-NEU	PF-0012	5.0-6.5
* QR0150075N5R01	15.0	0.591	1.00	1.26	3.00	4.02	6.22	2.21					
* QR0159080N5R01	15.9	0.626	1.00	1.26	3.10	4.25	6.46	2.21					
* QR0167084N5R01	16.7	0.658	1.00	1.26	3.30	4.45	6.65	2.21					
* QR0175088N5R01	17.5	0.689	1.00	1.26	3.40	4.69	6.89	2.21					
* QR0183092N5R01	18.3	0.721	1.00	1.26	3.60	4.69	6.89	2.21	SOMT 060204	TS 22052I/HG-P	DS-TP07S	PF-0012	7.5-9.0
* QR0191095N5R01	19.0	0.750	1.00	1.26	3.80	4.88	7.09	2.21					
* QR0198099N5R01	19.8	0.780	1.00	1.26	3.90	5.16	7.36	2.21	SOMT 070306	TS 22052I/HG-P	DS-TP07S	PF-0012	7.5-9.0
* QR0206103N5R01	20.6	0.811	1.00	1.26	4.10	5.35	7.56	2.21					
* QR0214107N5R01	21.4	0.843	1.00	1.26	4.20	5.55	7.76	2.21					
* QR0222111N5R01	22.2	0.874	1.00	1.26	4.40	5.55	7.76	2.21					
* QR0230115N6R01	23.0	0.906	1.25	1.77	4.50	5.91	8.27	2.36	SOMT 08T306	SO 25065I	HZS.0004	PF-0013	7.5-9.0
* QR0238119N6R01	23.8	0.937	1.25	1.77	4.70	6.14	8.50	2.36					
* QR0246123N6R01	24.6	0.969	1.25	1.77	4.80	6.38	8.74	2.36					
* QR0254127N6R01	25.4	1.000	1.25	1.77	5.00	6.58	8.94	2.36					
* QR0262131N6R01	26.2	1.031	1.25	1.77	5.20	6.58	8.94	2.36					

* Standard shank (R01) will be phased out and replaced by R02.

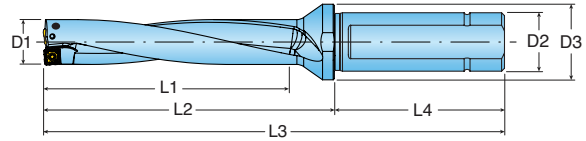
QR SERIES 5XD INDEXABLE DRILL (-R02 SHANK)

R02



NOTE: Coolant plugs PF0012 & PF0013 are ordered separately.

R02



5xD Bodies	Dimensions (inch)								Insert	Screw	Torx	Plug	Torque (in. lbs.)
	Drill Number	D1 (mm)	D1 (inch)	D2 Shank Dia	D3 Flange Dia	L1 Max. DOC	L2 Ext From Holder	L3 OAL					
QR0143072N5R02	14.3	0.563	1.00	1.26	2.80	3.79	6.94	3.16					
QR0150075N5R02	15.0	0.591	1.00	1.26	3.00	4.02	7.17	3.16	SOMT050204	SM20-043-00	DS-TP06S-NEU	PF-0012	5.0-6.5
QR0159080N5R02	15.9	0.626	1.00	1.26	3.10	4.25	7.40	3.16					
QR0167084N5R02	16.7	0.658	1.00	1.26	3.30	4.45	7.60	3.16					
QR0175088N5R02	17.5	0.689	1.00	1.26	3.40	4.69	7.84	3.16	SOMT060204	TS 22052I/HG-P	DS-TP07S	PF-0012	7.5-9.0
QR0183092N5R02	18.3	0.721	1.00	1.26	3.60	4.69	7.84	3.16					
QR0191095N5R02	19.1	0.750	1.00	1.26	3.80	4.88	8.03	3.16					
QR0198099N5R02	19.8	0.781	1.00	1.26	3.90	5.16	8.31	3.16					
QR0206103N5R02	20.6	0.813	1.00	1.26	4.10	5.35	8.50	3.16	SOMT070306	TS 22052I/HG-P	DS-TP07S	PF-0012	7.5-9.0
QR0214107N5R02	21.4	0.843	1.00	1.26	4.20	5.55	8.70	3.16					
QR0222111N5R02	22.2	0.875	1.00	1.26	4.40	5.55	8.70	3.16					
QR0230115N6R02	23.0	0.906	1.25	1.77	4.50	5.91	9.06	3.16					
QR0238119N6R02	23.8	0.938	1.25	1.77	4.70	6.14	9.29	3.16					
QR0246123N6R02	24.6	0.969	1.25	1.77	4.80	6.38	9.53	3.16	SOMT08T306	SO 25065I	HZS.0004	PF-0013	7.5-9.0
QR0250125N6R02	25.0	0.984	1.25	1.77	4.92	6.38	9.53	3.16					
QR0254127N6R02	25.4	1.000	1.25	1.77	5.00	6.57	9.72	3.16					
QR0262131N6R02	26.2	1.031	1.25	1.77	5.20	6.57	9.72	3.16					
QR0270135N6R02	27.0	1.063	1.25	1.77	5.30	6.77	9.92	3.16					
QR0278139N6R02	27.8	1.094	1.25	1.77	5.50	7.00	10.15	3.16					
QR0286143N6R02	28.6	1.125	1.25	1.77	5.60	7.19	10.34	3.16	SOMT09T308	SM35-088-60	TD 10	PF-0013	25.5-29.0
QR0294147N6R02	29.4	1.156	1.25	2.16	5.80	7.49	10.64	3.16					
QR0302151N6R02	30.2	1.187	1.25	2.16	5.90	7.53	10.68	3.16					
QR0310155N6R02	31.0	1.219	1.25	2.16	6.10	7.75	10.90	3.16					
QR0318159N6R02	31.8	1.250	1.25	2.16	6.30	7.94	11.09	3.16					
QR0325163N6R02	32.5	1.281	1.25	2.16	6.40	8.17	11.32	3.16					
QR0333167N6R02	33.3	1.312	1.25	2.16	6.60	8.20	11.35	3.16	SOMT11T308	SM35-088-60	TD 10	PF-0013	25.5-29.0
QR0341171N6R02	34.1	1.343	1.25	2.16	6.70	8.39	11.54	3.16					
QR0349175N6R02	34.9	1.375	1.25	2.16	6.90	8.62	11.77	3.16					
QR0357179N6R02	35.7	1.406	1.25	2.16	7.00	8.85	12.00	3.16					
QR0365182N6R02	36.5	1.437	1.25	2.16	7.20	9.09	12.24	3.16					
QR0373186N6R02	37.3	1.468	1.25	2.16	7.30	9.09	12.24	3.16					
QR0381191N6R02	38.1	1.500	1.25	2.16	7.50	9.11	12.26	3.16	SOMT130408	SE02-82	TD 15	PF-0013	30.5-33.0
QR0389194N6R02	38.9	1.531	1.25	2.16	7.70	9.52	12.67	3.16					
QR0397198N6R02	39.7	1.562	1.25	2.36	7.80	9.76	12.91	3.16					
QR0405202N6R02	40.5	1.594	1.25	2.36	8.00	10.00	13.15	3.16					
QR0413206N6R02	41.3	1.625	1.25	2.36	8.10	10.00	13.15	3.16					
QR0428214N6R01	42.8	1.687	1.25	2.36	8.43	10.00	13.15	3.16					
QR0437218N7R01	43.7	1.719	1.50	2.36	8.59	10.24	13.40	3.16					
QR0445222N7R01	44.5	1.750	1.50	2.36	8.75	10.24	13.40	3.16					
QR0452226N7R01	45.2	1.781	1.50	2.36	8.91	10.43	13.58	3.16					
QR0460230N7R01	46.0	1.813	1.50	2.36	9.06	10.63	13.78	3.16	SOMT150510	SM50-113-20	DS-0034	PF-0015	47.0-49.0
QR0476238N7R01	47.6	1.875	1.50	2.36	9.37	11.02	14.17	3.16					
QR0492246N7R01	49.2	1.937	1.50	2.36	9.69	11.22	14.37	3.16					
QR0500250N7R01	50.0	1.969	1.50	2.36	9.84	11.42	14.57	3.16					
QR0508254N7R01	50.8	2.000	1.50	2.36	10.00	11.61	14.76	3.16					

SOMT OFFERINGS

-SK

GRADE: IN2505
For General Purpose



-NG

GRADE: IN2510
For Cast Iron



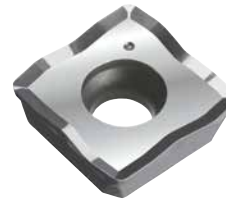
-SK

GRADE: IN6505
For Steel Applications
For Peripheral Pockets Only



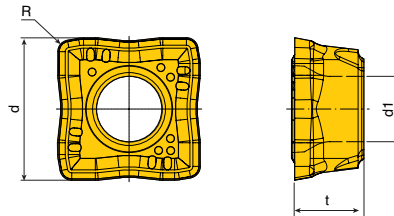
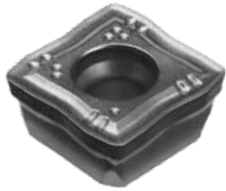
-HP **NEW!**

GRADE: IN10K
For Aluminum



-SK

GRADE: IN1030
For Cast Iron, Stainless
and Titanium Applications



Designation	Dimension (inch)			d1	Tool Dia. Range Min-Max	Carbide Grades				
	d	t	R			IN1030	IN2505	IN6505	IN2510	IN10K
SOMT 050204 SK	0.193	0.094	0.016	0.089	14.3mm(.563") - 15.9mm(.626")	■	■	■		
SOMT 060204 SK	0.224	0.094	0.016	0.102	16.7mm(.658") - 19.05mm(.750")	■	■	■		
SOMT 070306 SK	0.268	0.110	0.024	0.102	19.8mm(.780") - 22.22mm(.875")	■	■	■		
SOMT 08T306 SK	0.311	0.156	0.024	0.112	23.0mm(.906") - 26.2mm(1.031")	■	■	■		
SOMT 09T308 SK	0.362	0.156	0.031	0.149	27.0mm(1.063") - 31.0mm(1.219")	■	■	■		
SOMT 11T308 SK	0.433	0.156	0.031	0.149	31.8mm(1.250") - 35.7mm(1.406")	■	■	■		
SOMT 130408 SK	0.504	0.173	0.031	0.173	36.5mm(1.437") - 42.8mm(1.687")	■	■	■		
SOMT 150510 SK	0.590	0.189	0.039	0.212	43.7mm(1.720") - 50.8mm(2.000")	■	■	■		
SOMT 050204 NG	0.193	0.094	0.016	0.089	14.3mm(.563") - 15.9mm(.626")				■	
SOMT 060204 NG	0.224	0.094	0.016	0.102	16.7mm(.658") - 19.05mm(.750")				■	
SOMT 070306 NG	0.268	0.110	0.024	0.102	19.8mm(.780") - 22.22mm(.875")				■	
SOMT 08T306 NG	0.311	0.156	0.024	0.112	23.0mm(.906") - 26.2mm(1.031")				■	
SOMT 09T308 NG	0.362	0.156	0.031	0.149	27.0mm(1.063") - 31.0mm(1.219")				■	
SOMT 11T308 NG	0.433	0.156	0.031	0.149	31.8mm(1.250") - 35.7mm(1.406")				■	
SOMT 130408 NG	0.504	0.173	0.031	0.173	36.5mm(1.437") - 42.8mm(1.687")				■	
SOMT 150510 NG	0.590	0.189	0.039	0.212	43.7mm(1.720") - 50.8mm(2.000")				■	
NEW! SOMT 050204 HP	0.193	0.094	0.016	0.089	14.3mm(.563") - 15.9mm(.626")					■
NEW! SOMT 060204 HP	0.224	0.094	0.016	0.102	16.7mm(.658") - 19.05mm(.750")					■
NEW! SOMT 070306 HP	0.268	0.110	0.024	0.102	19.8mm(.780") - 22.22mm(.875")					■
NEW! SOMT 08T306 HP	0.311	0.156	0.024	0.112	23.0mm(.906") - 26.2mm(1.031")					■
NEW! SOMT 09T308 HP	0.362	0.156	0.031	0.149	27.0mm(1.063") - 31.0mm(1.219")					■
NEW! SOMT 11T308 HP	0.433	0.156	0.031	0.149	31.8mm(1.250") - 35.7mm(1.406")					■
NEW! SOMT 130408 HP	0.504	0.173	0.031	0.173	36.5mm(1.437") - 42.8mm(1.687")					■
NEW! SOMT 150510 HP	0.590	0.189	0.039	0.212	43.7mm(1.720") - 50.8mm(2.000")					■

2xD, 3xD, 4xD RECOMMENDED CUTTING CONDITIONS

ISO	Material	Condition	Tensile Strength Rm (N/mm²)	Hardness (HB)	Matl No.	Cutting Speed Vc (SFM)	Feed v.s. Drill Diameter In/Rev Drill Length 2, 3, 4xD								
							SOMT 05 Ø.551-.645 (inch)	SOMT 06 Ø.649-.763 (inch)	SOMT 07 Ø.767-.882 (inch)	SOMT 08 Ø.886-1.039 (inch)	SOMT 09 Ø 1.063-1.220 (inch)	SOMT 11 Ø 1.250-1.460 (inch)	SOMT 13 Ø 1.437-1.687 (inch)	SOMT 15 Ø 1.719-2.000 (inch)	
P	Non-alloy steel < 0.25% C & cast steel, > = 0.25% C free cutting < 0.55% C steel > = 0.55% C	Annealed	420	125	1	700-1200	.002-.003	.002-.003	.002-.004	.002-.004	.003-.004	.003-.005	.003-.005	.003-.005	
		Annealed	650	190	2	600-950	.003-.004	.003-.004	.003-.005	.003-.005	.003-.006	.003-.006	.003-.0065	.003-.0065	
		Quenched & Tempered	850	250	3	450-800	.003-.005	.003-.005	.003-.006	.003-.006	.004-.006	.004-.006	.004-.007	.004-.007	
		Annealed	750	220	4	450-800	.003-.005	.003-.005	.003-.006	.003-.006	.004-.007	.004-.007	.004-.007	.004-.007	
		Quenched & Tempered	1000	300	5	450-800	.003-.005	.003-.005	.003-.006	.003-.006	.004-.007	.004-.007	.004-.007	.004-.007	
	Low alloy steel & cast steel (less than 5% alloying elements)	Annealed	600	200	6	450-800	.003-.006	.003-.006	.003-.007	.003-.007	.004-.007	.004-.009	.004-.009	.004-.0095	
		Quenched & Tempered	930	275	7	325-600	.003-.006	.003-.006	.003-.008	.003-.008	.004-.008	.004-.0085	.004-.0085	.004-.0085	
			1000	300	8	325-600	.003-.006	.003-.006	.003-.008	.003-.008	.004-.008	.004-.0085	.004-.0085	.004-.0085	
	High alloy steel, cast steel, & tool steel	Annealed	680	200	10	450-675	.002-.005	.0025-.005	.0025-.005	.003-.006	.004-.007	.004-.007	.004-.008	.004-.008	
		Quenched & Tempered	1100	325	11	325-525	.0025-.005	.0025-.005	.003-.006	.003-.006	.0035-.007	.0035-.008	.004-.008	.004-.008	
M	Stainless steel & cast stainless steel	Ferritic/martensitic	680	200	12	500-800	.0025-.005	.0025-.005	.003-.006	.003-.006	.003-.007	.0035-.008	.004-.008	.004-.008	
		Martensitic	820	240	13	500-800	.0025-.005	.0025-.005	.003-.006	.003-.006	.003-.007	.0035-.008	.004-.008	.004-.008	
		Austenitic	600	180	14	500-800	.0025-.005	.0025-.005	.003-.006	.003-.006	.003-.007	.0035-.008	.004-.008	.004-.008	
K	GreyCast Iron (GG)	Ferritic		160	15	525-850	.003-.007	.003-.007	.004-.008	.004-.008	.004-.008	.004-.008	.004-.0085	.004-.0085	
		Pearlitic		250	16	525-850	.003-.007	.003-.007	.004-.008	.004-.008	.004-.008	.004-.008	.004-.0085	.004-.0085	
	Cast Iron Nodular (GGG)	Ferritic		180	17	525-850	.003-.007	.003-.007	.004-.008	.004-.008	.004-.008	.004-.008	.004-.0085	.004-.0085	
		Pearlitic		260	18	525-850	.003-.007	.003-.007	.004-.008	.004-.008	.004-.008	.004-.008	.004-.0085	.004-.0085	
	Malleable Cast Iron	Ferritic		130	19	400-725	.003-.0055	.003-.0055	.004-.006	.004-.006	.004-.0065	.004-.007	.004-.007	.004-.007	
Pearlitic			230	20	400-725	.003-.0055	.003-.0055	.004-.006	.004-.006	.004-.0065	.004-.007	.004-.007	.004-.007		
N	Aluminum - wrought alloy	Not cureable		60	21	650-1150	.0025-.006	.0025-.006	.003-.0065	.003-.0065	.0035-.007	.0035-.007	.004-.0075	.004-.0075	
		Cured		100	22	650-1150	.0025-.006	.0025-.006	.003-.0065	.003-.0065	.0035-.007	.0035-.007	.004-.0075	.004-.0075	
	Aluminum - cast, alloyed	Not cureable		75	23	650-1150	.0025-.006	.0025-.006	.003-.0065	.003-.0065	.0035-.007	.0035-.007	.004-.0075	.004-.0075	
		Cured		90	24	650-1150	.0025-.006	.0025-.006	.003-.0065	.003-.0065	.0035-.007	.0035-.007	.004-.0075	.004-.0075	
		High temperature		130	25	650-1150	.0025-.006	.0025-.006	.003-.0065	.003-.0065	.0035-.007	.0035-.007	.004-.0075	.004-.0075	
	Copper alloys	Free cutting		110	26	490-825	.0025-.006	.0025-.006	.003-.0065	.003-.0065	.004-.007	.004-.007	.004-.008	.004-.008	
		Brass		90	27	490-825	.0025-.006	.0025-.006	.003-.0065	.003-.0065	.004-.007	.004-.007	.004-.008	.004-.008	
		Electrolitic copper		100	28	490-825	.0025-.006	.0025-.006	.003-.0065	.003-.0065	.004-.007	.004-.007	.004-.008	.004-.008	
	Non-metallic	Duro & fiber plastics			29	490-825	.0025-.006	.0025-.006	.003-.0065	.003-.0065	.004-.007	.004-.007	.004-.008	.004-.008	
		Hard rubber			30	490-825	.0025-.006	.0025-.006	.003-.0065	.003-.0065	.004-.007	.004-.007	.004-.008	.004-.008	
S	High temp alloys	Fe based	Annealed		200	31	100-200	.002-.003	.002-.003	.002-.0035	.002-.0035	.003-.004	.003-.004	.003-.005	.003-.005
			Cured		280	32	100-200	.002-.003	.002-.003	.002-.0035	.002-.0035	.003-.004	.003-.004	.003-.005	.003-.005
		Ni or Co based	Annealed		250	33	100-200	.002-.003	.002-.003	.002-.0035	.002-.0035	.003-.004	.003-.004	.003-.005	.003-.005
			Cured		350	34	100-200	.002-.003	.002-.003	.002-.0035	.002-.0035	.003-.004	.003-.004	.003-.005	.003-.005
		Cast			320	35	100-200	.002-.003	.002-.003	.002-.0035	.002-.0035	.003-.004	.003-.004	.003-.005	.003-.005
	Titanium, Ti alloys		Rm 400		36	165-265	.0025-.0035	.0025-.0035	.003-.004	.003-.004	.003-.004	.003-.004	.003-.004	.003-.004	
Alpha+beta alloys cured		Rm 1050		37	165-265	.0025-.0035	.0025-.0035	.003-.004	.003-.004	.003-.004	.003-.004	.003-.004	.003-.004		
H	Hardened steel	Hardened		55 HRC	38	100-200	.002-.0035	.002-.0035	.002-.004	.002-.004	.002-.0045	.002-.0045	.002-.0045	.002-.0045	
		Hardened		60 HRC	39	100-200	.002-.0035	.002-.0035	.002-.004	.002-.004	.002-.0045	.002-.0045	.002-.0045	.002-.0045	
	Chilled cast iron	Cast		400	40	100-200	.002-.0035	.002-.0035	.002-.004	.002-.004	.002-.0045	.002-.0045	.002-.0045	.002-.0045	
	Cast iron nodular	Hardened		55 HRC	41	100-200	.002-.0035	.002-.0035	.002-.004	.002-.004	.002-.0045	.002-.0045	.002-.0045	.002-.0045	

5xD RECOMMENDED CUTTING CONDITIONS

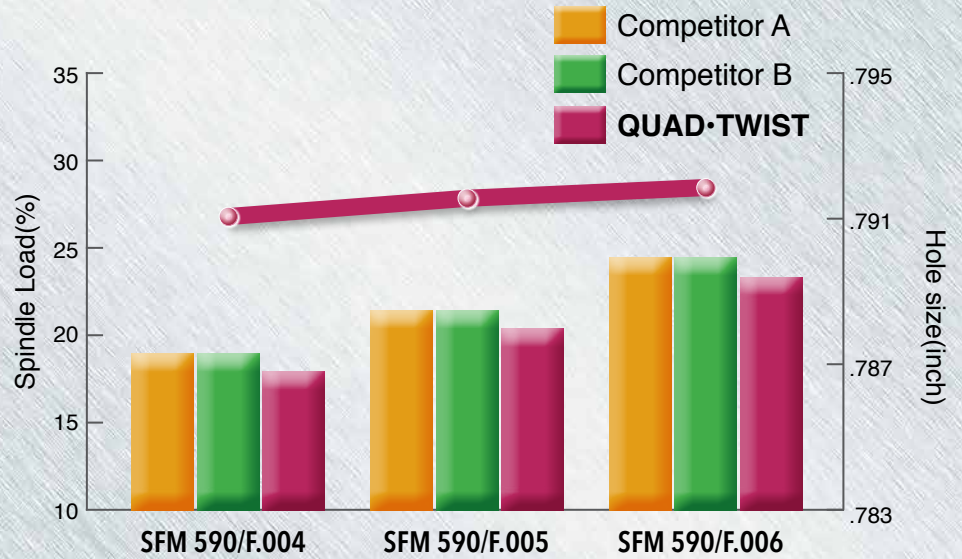
ISO	Material	Condition	Tensile Strength Rm (N/mm ²)	Hardness (HB)	Matl No.	Cutting Speed Vc (SFM)	Feed v.s. Drill Diameter In/Rev Drill Length 5xD							
							SOMT 05 Ø.551-.645 (inch)	SOMT 06 Ø.649-.763 (inch)	SOMT 07 Ø.767-.882 (inch)	SOMT 08 Ø.886-1.039 (inch)	SOMT 09 Ø 1.063-1.220 (inch)	SOMT 11 Ø 1.250-1.460 (inch)	SOMT 13 Ø 1.437-1.687 (inch)	SOMT 15 Ø 1.719-2.000 (inch)
P	Non-alloy steel <0.25% C & cast steel, > = 0.25% C free cutting <0.55% C steel > = 0.55% C	Annealed	420	125	1	700-1200	.0015-.002	.0015-.002	.0015-.002	.0015-.002	.0025-.0035	.0025-.0035	.0025-.004	.0025-.004
		Annealed	650	190	2	600-950	.002-.003	.002-.003	.002-.004	.002-.004	.003-.005	.003-.005	.003-.0055	.003-.0055
		Quenched & Tempered	850	250	3	450-800	.002-.004	.002-.004	.003-.005	.003-.005	.003-.007	.003-.006	.004-.007	.004-.007
		Annealed	750	220	4	450-800	.002-.004	.002-.004	.003-.005	.003-.005	.003-.007	.003-.006	.004-.007	.004-.007
		Quenched & Tempered	1000	300	5	450-800	.002-.004	.002-.004	.003-.005	.003-.005	.003-.007	.003-.006	.004-.007	.004-.007
	Low alloy steel & cast steel (less than 5% alloying elements)	Annealed	600	200	6	450-800	.002-.005	.002-.005	.003-.006	.003-.006	.003-.007	.003-.008	.003-.008	.004-.0085
		Quenched & Tempered	930	275	7	325-600	.002-.005	.002-.005	.003-.006	.003-.006	.003-.007	.003-.008	.003-.008	.004-.0085
			1000	300	8	325-600	.002-.005	.002-.005	.003-.006	.003-.006	.003-.007	.003-.008	.003-.008	.004-.0085
			1200	350	9	325-600	.002-.005	.002-.005	.003-.006	.003-.006	.003-.007	.003-.008	.003-.008	.004-.0085
	High alloy steel, cast steel, & tool steel	Annealed	680	200	10	450-675	.002-.004	.002-.004	.003-.005	.003-.005	.003-.006	.003-.007	.003-.007	.004-.008
		Quenched & Tempered	1100	325	11	325-525	.002-.004	.002-.004	.003-.005	.003-.005	.003-.006	.003-.007	.004-.007	.004-.008
	M	Stainless steel & cast stainless steel	Ferritic/martensitic	680	200	12	500-800	.002-.004	.002-.004	.003-.005	.003-.005	.003-.006	.003-.007	.004-.007
Martensitic			820	240	13	500-800	.002-.004	.002-.004	.003-.005	.003-.005	.003-.006	.003-.007	.004-.007	.004-.008
Austenitic			600	180	14	500-800	.002-.004	.002-.004	.003-.005	.003-.005	.003-.006	.003-.007	.004-.007	.004-.008
K	GreyCast Iron (GG)	Ferritic		160	15	525-850	.003-.0055	.003-.0055	.003-.006	.003-.006	.004-.007	.004-.007	.004-.008	.004-.008
		Pearlitic		250	16	525-850	.003-.0055	.003-.0055	.003-.006	.003-.006	.004-.007	.004-.007	.004-.008	.004-.008
	Cast Iron Nodular (GGG)	Ferritic		180	17	525-850	.003-.0055	.003-.0055	.003-.006	.003-.006	.004-.007	.004-.007	.004-.008	.004-.008
		Pearlitic		260	18	525-850	.003-.0055	.003-.0055	.003-.006	.003-.006	.004-.007	.004-.007	.004-.008	.004-.008
	Malleable Cast Iron	Ferritic		130	19	400-725	.0025-.0045	.0025-.0045	.003-.0055	.003-.0055	.004-.006	.004-.006	.004-.0065	.004-.0065
Pearlitic			230	20	400-725	.0025-.0045	.0025-.0045	.003-.0055	.003-.0055	.004-.006	.004-.006	.004-.0065	.004-.0065	
N	Aluminum - wrought alloy	Not cureable		60	21	650-1150	.002-.0055	.002-.0055	.0025-.006	.0025-.006	.003-.006	.003-.006	.0035-.007	.0035-.007
		Cured		100	22	650-1150	.002-.0055	.002-.0055	.0025-.006	.0025-.006	.003-.006	.003-.006	.0035-.007	.0035-.007
	Aluminum - cast, alloyed	Not cureable		75	23	650-1150	.002-.0055	.002-.0055	.0025-.006	.0025-.006	.003-.006	.003-.006	.0035-.007	.0035-.007
		Cured		90	24	650-1150	.002-.0055	.002-.0055	.0025-.006	.0025-.006	.003-.006	.003-.006	.0035-.007	.0035-.007
		High temperature		130	25	650-1150	.002-.0055	.002-.0055	.0025-.006	.0025-.006	.003-.006	.003-.006	.0035-.007	.0035-.007
	Copper alloys	Free cutting		110	26	490-825	.002-.0055	.002-.0055	.003-.006	.003-.006	.003-.0065	.003-.0065	.0035-.0075	.0035-.0075
		Brass		90	27	490-825	.002-.0055	.002-.0055	.003-.006	.003-.006	.003-.0065	.003-.0065	.0035-.0075	.0035-.0075
		Electrolitic copper		100	28	490-825	.002-.0055	.002-.0055	.003-.006	.003-.006	.003-.0065	.003-.0065	.0035-.0075	.0035-.0075
	Non-metallic	Duro & fiber plastics			29	490-825	.002-.0055	.002-.0055	.0025-.006	.0025-.006	.003-.006	.0035-.006	.0035-.0075	.0035-.0075
		Hard rubber			30	490-825	.002-.0055	.002-.0055	.0025-.006	.0025-.006	.003-.006	.0035-.006	.0035-.0075	.0035-.0075
S	High temp alloys Fe based Ni or Co based	Annealed		200	31	100-200	.0015-.0025	.0015-.0025	.0015-.0025	.0015-.0025	.0025-.0035	.0025-.0035	.0025-.004	.0025-.004
		Cured		280	32	100-200	.0015-.0025	.0015-.0025	.0015-.0025	.0015-.0025	.0025-.0035	.0025-.0035	.0025-.004	.0025-.004
		Annealed		250	33	100-200	.0015-.0025	.0015-.0025	.0015-.0025	.0015-.0025	.0025-.0035	.0025-.0035	.0025-.004	.0025-.004
		Cured		350	34	100-200	.0015-.0025	.0015-.0025	.0015-.0025	.0015-.0025	.0025-.0035	.0025-.0035	.0025-.004	.0025-.004
		Cast		320	35	100-200	.0015-.0025	.0015-.0025	.0015-.0025	.0015-.0025	.0025-.0035	.0025-.0035	.0025-.004	.0025-.004
	Titanium, Ti alloys		Rm 400		36	165-265	.002-.003	.002-.003	.0025-.0035	.0025-.0035	.0025-.0035	.0025-.0035	.0025-.0035	.0025-.0035
		Alpha+beta alloys cured	Rm 1050		37	165-265	.002-.003	.002-.003	.0025-.0035	.0025-.0035	.0025-.0035	.0025-.0035	.0025-.0035	.0025-.0035
H	Hardened steel	Hardened		55 HRC	38	100-200	.0015-.003	.0015-.003	.0015-.0035	.0015-.0035	.0015-.004	.0015-.004	.0015-.004	.0015-.004
		Hardened		60 HRC	39	100-200	.0015-.003	.0015-.003	.0015-.0035	.0015-.0035	.0015-.004	.0015-.004	.0015-.004	.0015-.004
	Chilled cast iron	Cast		400	40	100-200	.0015-.003	.0015-.003	.0015-.0035	.0015-.0035	.0015-.004	.0015-.004	.0015-.004	.0015-.004
	Cast iron nodular	Hardened		55 HRC	41	100-200	.0015-.003	.0015-.003	.0015-.0035	.0015-.0035	.0015-.004	.0015-.004	.0015-.004	.0015-.004

Note: For 5xD, reduce feed rate by 40% for first .150" to stabilize and then up to 100% programmed feed.

TEST RESULTS

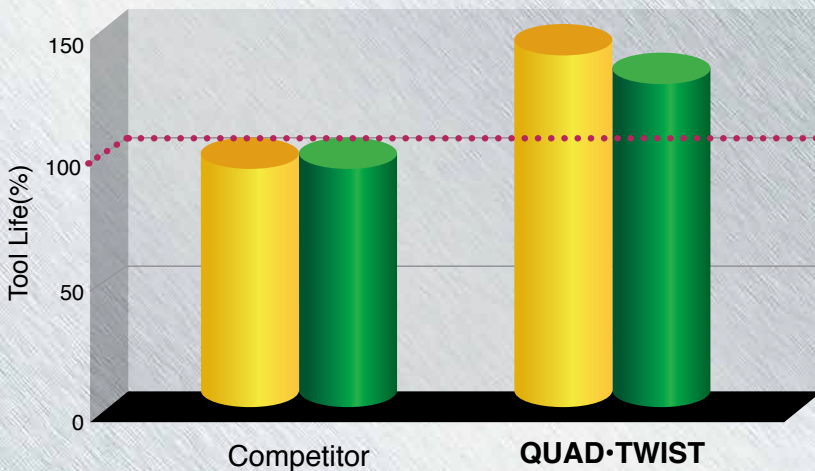
TEST RESULT 1

- Machine: Machining Center (Vertical/BT50)
- Material: Alloy Steel (AISI 4140)
- Tool: .787" X 4D (SOMT 070306 SK IN2505)
- Coolant supply: Internal coolant (145PSI)



TEST RESULT 2

- Machine: Machining Center (Vertical/BT50)
- Material: Alloy Steel (AISI 4140)
- Tool: .709" X 3D (SOMT 060204 SK IN2505)



Cutting condition

- Speed(V): 590 SFM
- Feed(f): .005 in/rev
- Depth(Ap): 2.0 in
- Internal coolant: 145 PSI

AHB Tooling & Machinery, Inc.

ISO Certified
 (800) 991-4225
 www.ahbinc.com
 customerservice@ahbinc.com

Complete Metalworking Solutions
 Roseville Saginaw & Jackson, MI