SFEEDUP™ HIGH SPEED & FEED

INDUSTRY 4.0 NEW PRODUCT ANNOUNCEMENT 2021

GOLDTWIST™

DRILLING PRODUCTS

Tip Sizes:
.2362"-1.0197" (6.0-25.9mm)

Grade:
IN2505

Designation:
TPC...

Applications:
Steel
Cast Iron

Premium Hole Machining with Unique, Self-Centering TPC Geometry

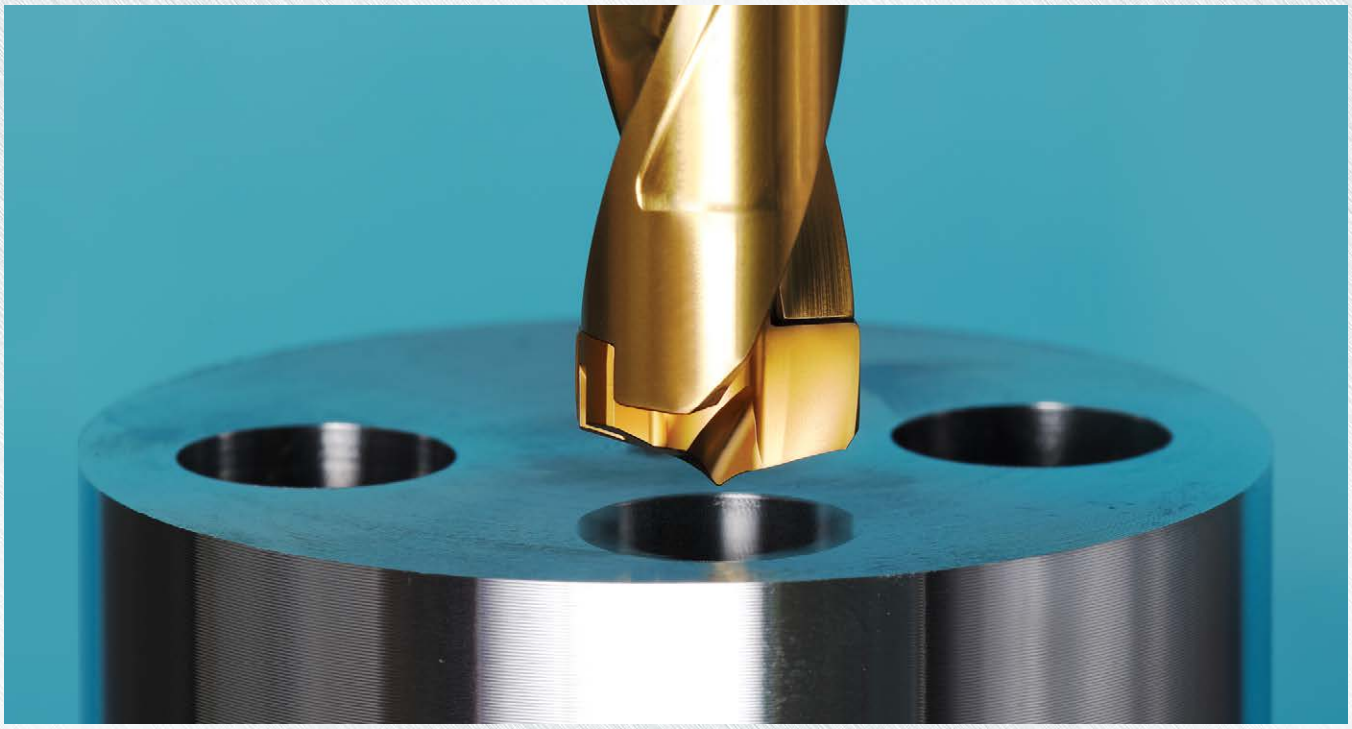
Ingersoll is proud to introduce the newly designed TPC tip for the GoldTwist product line, offering optimal solutions for improving productivity and reducing costs with exceptional performance and extended tool life. Due to the unique edge design, drilling applications 8xD and longer can now be produced without piloting, thus improving productivity as well as achieving excellent hole precision and surface finishes. TPC tips are fully compatible with existing GoldTwist bodies and due to the unique cutting edge and the latest multi-layer coating IN2505, ensures improved tool life thus increasing productivity.

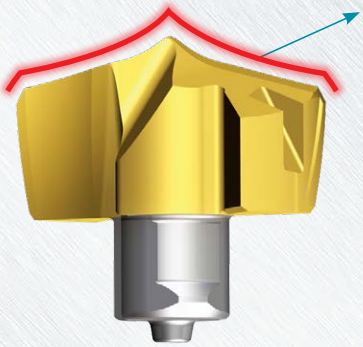
Features & Benefits:

- Unique self-centering geometry eliminates piloting resulting in increased productivity
- Excellent surface finish, hole cylindricity and straightness is achieved with unique geometry
- Fully compatible with existing GoldTwist drill bodies
- Diameter range: .236"- 1.020" (D6.0-25.9mm)
- For the machining of steel and cast iron applications

Member IMC Group
Ingersoll Cutting Tools

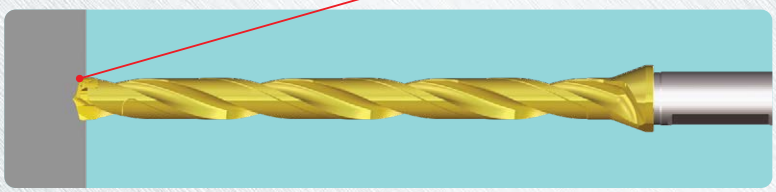
GOLDTWIST™ FEATURES





Self-centering Geometry:
- Excellent hole precision due to its unique cutting edge
- Premium surface finish, hole cylindricity and straightness

Direct deep hole machining without the pilot hole (over 8xD)
- Reduced cycle time and increased productivity



GOLDTWIST™ REFERENCE

The unique cutting edge design of the TPC enables better surface finish, hole cylindricity and straightness. The table below for a 12xD holder has been measured and machined without the pilot hole. (Results may vary depending on the cutting conditions)

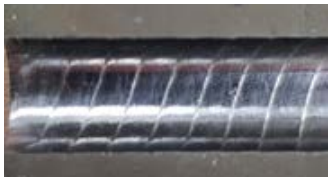
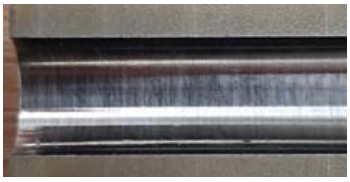
Material: 4140 Alloy Steel			
Hole from tolerance		TPC	TPA
Straightness	-	0.1 mm (.004")	0.2 mm (.008")
Circular form	0	0.02 mm (.0008")	0.04 mm (.0016")
Cylindrical form	⌭	0.02 mm (.0008")	0.04 mm (.0016")

GOLDTWIST™ SURFACE FINISH

	Ingersoll	Ingersoll
Material	1045 Carbon Steel	
Drill	TD1350162S6R01	TD1350162S6R01
Head	TPA1350R01 IN2505	TPC1350R01 IN2505
Drilling depth (inch)	2.50"	2.50"
Hole diameter (inch)	.531"	.531"
Coolant	Emulsion	Emulsion
Remark	Pilot hole with 1.5xD GoldTwist body	No pilot hole
Surface finish		

* The TPC provides excellent surface finish without the required pilot drill when compared to current product lines

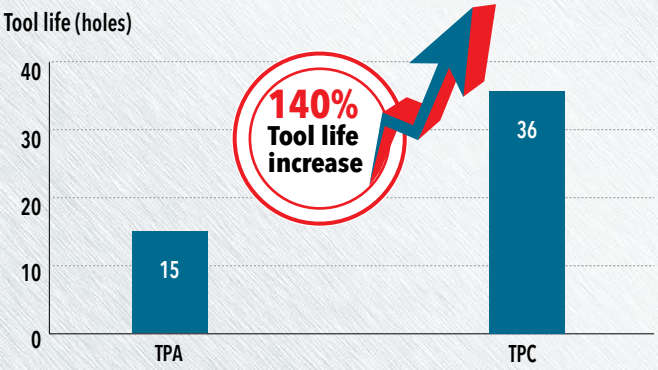
GOLDTWIST™ CASE STUDY 1

		Ingersoll	Ingersoll
Material		1045 Carbon Steel	
Drill		TD0950076B9R01	TD0950076B9R01
Head		TPA0970R01 IN2505	TPC0970R01 IN2505
Drilling depth (inch)		2.750"	2.750"
Cutting speed	V (sfm)	230	230
Feed	f (ipr)	.004"	.004"
Coolant		217 PSI	217 PSI
Remark		Direct drilling on the lathe (no pilot hole)	
Surface finish			

* The TPC provides excellent surface finish without the required pilot drill when compared to current product lines

GOLDTWIST™ CASE STUDY 2

		Ingersoll	Ingersoll
Material		4140 Alloy Steel	
Drill		TD1900152S1R01	TD1900152S1R01
Head		TPA1900R01 IN2505	TPC1900R01 IN2505
Drilling depth (inch)		6.00"	6.00"
Cutting speed	V (sfm)	330	330
Feed	f (ipr)	.012"	.012"
Coolant		217 PSI	217 PSI
Tool life (inch)		590	1,417

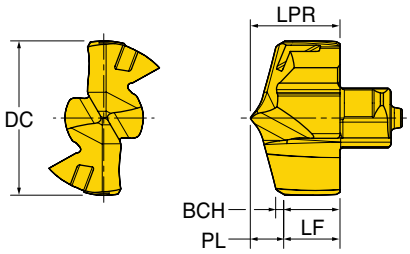


GOLDTWIST™ SERIES TPC

SELF-CENTERING DRILL TIPS

Drilling

Coolant



Part Number	DC Cutting Diameter		SSC Seat Size Code	PL Point Length	LPR Projection Length	LF Functional Length	BCH Chamfer Length	Grade
	(inch)	(mm)						IN2505
TPC0600R01	0.2362	6.00	6	0.057	0.157	0.100	0.020	•
TPC0635R01	0.2500	6.35	6	0.059	0.169	0.108	0.020	•
TPC0650R01	0.2559	6.50	6.5	0.061	0.169	0.108	0.020	•
TPC0680R01	0.2677	6.80	6.5	0.063	0.169	0.107	0.020	•
TPC0700R01	0.2756	7.00	7	0.065	0.181	0.117	0.020	•
TPC0750R01	0.2953	7.50	7.5	0.067	0.181	0.114	0.020	•
TPC0790R01	0.3110	7.90	7.5	0.069	0.181	0.112	0.020	•
TPC0800R01	0.3150	8.00	8	0.071	0.213	0.141	0.020	•
TPC0850R01	0.3346	8.50	8.5	0.074	0.213	0.139	0.020	•
TPC0860R01	0.3386	8.60	8.5	0.074	0.213	0.138	0.020	•
TPC0870R01	0.3425	8.70	8.5	0.075	0.213	0.138	0.020	•
TPC0880R01	0.3465	8.80	8.5	0.076	0.213	0.137	0.020	•
TPC0890R01	0.3504	8.90	8.5	0.076	0.213	0.136	0.020	•
TPC0900R01	0.3543	9.00	9	0.078	0.228	0.150	0.020	•
TPC0950R01	0.3740	9.50	9.5	0.081	0.228	0.148	0.020	•
TPC0960R01	0.3780	9.60	9.5	0.081	0.228	0.147	0.020	•
TPC0970R01	0.3819	9.70	9.5	0.081	0.228	0.147	0.020	•
TPC0980R01	0.3858	9.80	9.5	0.082	0.228	0.146	0.020	•
TPC0990R01	0.3898	9.90	9.5	0.083	0.228	0.146	0.020	•
TPC1000R01	0.3937	10.00	10	0.092	0.244	0.152	0.028	•
TPC1020R01	0.4016	10.20	10	0.093	0.244	0.151	0.028	•
TPC1030R01	0.4055	10.30	10	0.093	0.244	0.151	0.028	•
TPC1040R01	0.4094	10.40	10	0.094	0.244	0.150	0.028	•
TPC1050R01	0.4134	10.50	10.5	0.094	0.244	0.150	0.028	•
TPC1060R01	0.4173	10.60	10.5	0.095	0.244	0.149	0.028	•
TPC1070R01	0.4213	10.70	10.5	0.095	0.244	0.149	0.028	•
TPC1080R01	0.4252	10.80	10.5	0.096	0.244	0.148	0.028	•
TPC1090R01	0.4291	10.90	10.5	0.096	0.244	0.148	0.028	•
TPC1100R01	0.4331	11.00	11	0.098	0.260	0.161	0.028	•
TPC1111R01	0.4374	11.11	11	0.099	0.260	0.161	0.028	•

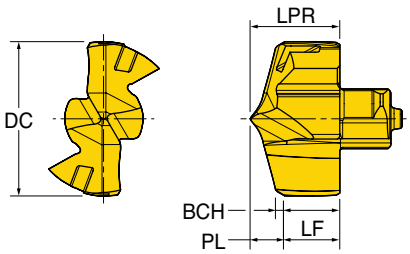
• : Standard items

GOLDTWIST™ SERIES TPC

SELF-CENTERING DRILL TIPS

Drilling

Coolant



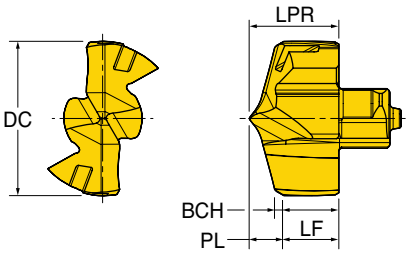
Part Number	DC Cutting Diameter		SSC Seat Size Code	PL Point Length	LPR Projection Length	LF Functional Length	BCH Chamfer Length	Grade
	(inch)	(mm)						IN2505
TPC1120R01	0.4409	11.20	11	0.100	0.260	0.160	0.028	•
TPC1130R01	0.4449	11.30	11	0.100	0.260	0.160	0.028	•
TPC1140R01	0.4488	11.40	11	0.100	0.260	0.159	0.028	•
TPC1150R01	0.4528	11.50	11.5	0.101	0.260	0.159	0.028	•
TPC1160R01	0.4567	11.60	11.5	0.102	0.260	0.158	0.028	•
TPC1170R01	0.4606	11.70	11.5	0.102	0.260	0.158	0.028	•
TPC1180R01	0.4646	11.80	11.5	0.103	0.260	0.157	0.028	•
TPC1190R01	0.4685	11.90	11.5	0.103	0.260	0.157	0.028	•
TPC1200R01	0.4724	12.00	12	0.105	0.276	0.170	0.028	•
TPC1210R01	0.4764	12.10	12	0.106	0.276	0.170	0.028	•
TPC1220R01	0.4803	12.20	12	0.106	0.276	0.169	0.028	•
TPC1230R01	0.4843	12.30	12	0.107	0.276	0.169	0.028	•
TPC1240R01	0.4882	12.40	12	0.107	0.276	0.169	0.028	•
TPC1250R01	0.4921	12.50	12.5	0.108	0.276	0.168	0.028	•
TPC1260R01	0.4961	12.60	12.5	0.108	0.276	0.167	0.028	•
TPC1270R01	0.5000	12.70	12.5	0.109	0.276	0.167	0.028	•
TPC1280R01	0.5039	12.80	12.5	0.109	0.276	0.166	0.028	•
TPC1300R01	0.5118	13.00	13	0.112	0.299	0.187	0.028	•
TPC1310R01	0.5157	13.10	13	0.113	0.299	0.187	0.028	•
TPC1320R01	0.5197	13.20	13	0.113	0.299	0.186	0.028	•
TPC1340R01	0.5276	13.40	13	0.114	0.299	0.185	0.028	•
TPC1350R01	0.5315	13.50	13.5	0.115	0.299	0.184	0.028	•
TPC1370R01	0.5394	13.70	13.5	0.116	0.299	0.183	0.028	•
TPC1380R01	0.5433	13.80	13.5	0.117	0.299	0.183	0.028	•
TPC1390R01	0.5472	13.90	13.5	0.117	0.299	0.182	0.028	•
TPC1400R01	0.5512	14.00	14	0.119	0.321	0.202	0.028	•
TPC1410R01	0.5551	14.10	14	0.119	0.321	0.202	0.028	•
TPC1420R01	0.5591	14.20	14	0.120	0.321	0.201	0.028	•
TPC1430R01	0.5630	14.30	14	0.120	0.321	0.200	0.028	•
TPC1440R01	0.5669	14.40	14	0.121	0.321	0.200	0.028	•
TPC1450R01	0.5709	14.50	14.5	0.122	0.321	0.199	0.028	•

• : Standard items

GOLDTWIST™ SERIES TPC

SELF-CENTERING DRILL TIPS

Drilling Coolant



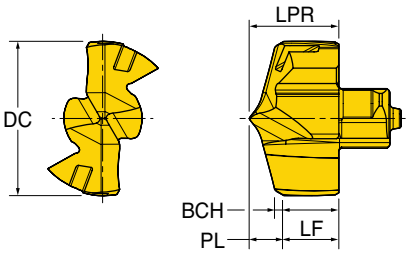
Part Number	DC Cutting Diameter		SSC Seat Size Code	PL Point Length	LPR Projection Length	LF Functional Length	BCH Chamfer Length	Grade
	(inch)	(mm)						IN2505
TPC1460R01	0.5748	14.60	14.5	0.122	0.321	0.199	0.028	•
TPC1470R01	0.5787	14.70	14.5	0.122	0.321	0.198	0.028	•
TPC1480R01	0.5827	14.80	14.5	0.123	0.321	0.198	0.028	•
TPC1500R01	0.5906	15.00	15	0.126	0.344	0.218	0.028	•
TPC1510R01	0.5945	15.10	15	0.126	0.344	0.218	0.028	•
TPC1520R01	0.5984	15.20	15	0.127	0.344	0.217	0.028	•
TPC1530R01	0.6024	15.30	15	0.127	0.344	0.217	0.028	•
TPC1540R01	0.6063	15.40	15	0.128	0.344	0.216	0.028	•
TPC1550R01	0.6102	15.50	15	0.128	0.344	0.215	0.028	•
TPC1560R01	0.6142	15.60	15	0.129	0.344	0.215	0.028	•
TPC1570R01	0.6181	15.70	15	0.129	0.344	0.215	0.028	•
TPC1580R01	0.6220	15.80	15	0.130	0.344	0.214	0.028	•
TPC1590R01	0.6260	15.90	15	0.130	0.344	0.213	0.028	•
TPC1600R01	0.6299	16.00	16	0.136	0.366	0.230	0.031	•
TPC1610R01	0.6339	16.10	16	0.137	0.366	0.229	0.031	•
TPC1620R01	0.6378	16.20	16	0.137	0.366	0.229	0.031	•
TPC1630R01	0.6417	16.30	16	0.138	0.366	0.228	0.031	•
TPC1640R01	0.6457	16.40	16	0.138	0.366	0.228	0.031	•
TPC1650R01	0.6496	16.50	16	0.139	0.366	0.227	0.031	•
TPC1660R01	0.6535	16.60	16	0.139	0.366	0.227	0.031	•
TPC1670R01	0.6575	16.70	16	0.140	0.366	0.226	0.031	•
TPC1680R01	0.6614	16.80	16	0.141	0.366	0.226	0.031	•
TPC1700R01	0.6693	17.00	17	0.143	0.390	0.247	0.031	•
TPC1710R01	0.6732	17.10	17	0.143	0.390	0.246	0.031	•
TPC1720R01	0.6772	17.20	17	0.144	0.390	0.246	0.031	•
TPC1730R01	0.6811	17.30	17	0.144	0.390	0.245	0.031	•
TPC1740R01	0.6850	17.40	17	0.145	0.390	0.245	0.031	•
TPC1750R01	0.6890	17.50	17	0.146	0.390	0.244	0.031	•
TPC1760R01	0.6929	17.60	17	0.146	0.390	0.244	0.031	•
TPC1770R01	0.6969	17.70	17	0.146	0.390	0.243	0.031	•
TPC1780R01	0.7008	17.80	17	0.147	0.390	0.243	0.031	•

• : Standard items

GOLDTWIST™ SERIES TPC

SELF-CENTERING DRILL TIPS

Drilling Coolant



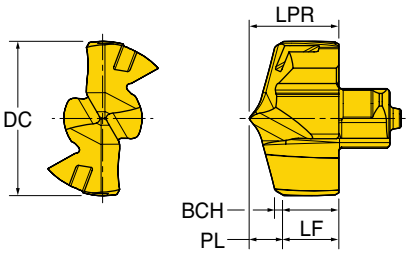
Part Number	DC Cutting Diameter		SSC Seat Size Code	PL Point Length	LPR Projection Length	LF Functional Length	BCH Chamfer Length	Grade
	(inch)	(mm)						IN2505
TPC1790R01	0.7047	17.90	17	0.148	0.390	0.242	0.031	•
TPC1800R01	0.7087	18.00	18	0.150	0.413	0.263	0.031	•
TPC1810R01	0.7126	18.10	18	0.150	0.413	0.263	0.031	•
TPC1820R01	0.7165	18.20	18	0.151	0.413	0.262	0.031	•
TPC1830R01	0.7205	18.30	18	0.152	0.413	0.262	0.031	•
TPC1850R01	0.7283	18.50	18	0.153	0.413	0.261	0.031	•
TPC1860R01	0.7323	18.60	18	0.153	0.413	0.260	0.031	•
TPC1870R01	0.7362	18.70	18	0.154	0.413	0.260	0.031	•
TPC1880R01	0.7402	18.80	18	0.154	0.413	0.259	0.031	•
TPC1900R01	0.7480	19.00	19	0.157	0.433	0.276	0.031	•
TPC1905R01	0.7500	19.05	19	0.157	0.433	0.276	0.031	•
TPC1910R01	0.7520	19.10	19	0.157	0.433	0.276	0.031	•
TPC1920R01	0.7559	19.20	19	0.158	0.433	0.275	0.031	•
TPC1930R01	0.7598	19.30	19	0.158	0.433	0.275	0.031	•
TPC1940R01	0.7638	19.40	19	0.159	0.433	0.274	0.031	•
TPC1950R01	0.7677	19.50	19	0.159	0.433	0.274	0.031	•
TPC1960R01	0.7717	19.60	19	0.160	0.433	0.273	0.031	•
TPC1970R01	0.7756	19.70	19	0.160	0.433	0.273	0.031	•
TPC1980R01	0.7795	19.80	19	0.161	0.433	0.272	0.031	•
TPC1990R01	0.7835	19.90	19	0.161	0.433	0.272	0.031	•
TPC2000R01	0.7874	20.00	20	0.163	0.457	0.293	0.031	•
TPC2010R01	0.7913	20.10	20	0.164	0.457	0.293	0.031	•
TPC2020R01	0.7953	20.20	20	0.165	0.457	0.292	0.031	•
TPC2050R01	0.8071	20.50	20	0.166	0.457	0.291	0.031	•
TPC2060R01	0.8110	20.60	20	0.167	0.457	0.290	0.031	•
TPC2070R01	0.8150	20.70	20	0.167	0.457	0.290	0.031	•
TPC2100R01	0.8268	21.00	21	0.170	0.480	0.309	0.031	•
TPC2110R01	0.8307	21.10	21	0.170	0.480	0.309	0.031	•
TPC2120R01	0.8346	21.20	21	0.171	0.480	0.308	0.031	•
TPC2140R01	0.8425	21.40	21	0.172	0.480	0.307	0.031	•
TPC2150R01	0.8465	21.50	21	0.173	0.480	0.307	0.031	•

• : Standard items

GOLDTWIST™ SERIES TPC

SELF-CENTERING DRILL TIPS

Drilling | Coolant



Part Number	DC Cutting Diameter		SSC Seat Size Code	PL Point Length	LPR Projection Length	LF Functional Length	BCH Chamfer Length	Grade
	(inch)	(mm)						IN2505
TPC2200R01	0.8661	22.00	22	0.177	0.502	0.325	0.031	•
TPC2222R01	0.8748	22.22	22	0.178	0.502	0.324	0.031	•
TPC2250R01	0.8858	22.50	22	0.180	0.502	0.322	0.031	•
TPC2290R01	0.9016	22.90	22	0.182	0.502	0.320	0.031	•
TPC2300R01	0.9055	23.00	23	0.184	0.525	0.341	0.031	•
TPC2350R01	0.9252	23.50	23	0.187	0.525	0.338	0.031	•
TPC2380R01	0.9370	23.80	23	0.188	0.525	0.337	0.031	•
TPC2400R01	0.9449	24.00	24	0.191	0.547	0.357	0.031	•
TPC2450R01	0.9646	24.50	24	0.193	0.547	0.354	0.031	•
TPC2500R01	0.9843	25.00	25	0.197	0.571	0.374	0.031	•
TPC2540R01	1.0000	25.40	25	0.199	0.571	0.372	0.031	•
TPC2550R01	1.0039	25.50	25	0.200	0.571	0.371	0.031	•
TPC2560R01	1.0078	25.60	25	0.201	0.571	0.370	0.031	•
TPC2590R01	1.0197	25.90	25	0.202	0.571	0.369	0.031	•

• : Standard items

GOLDTWIST™ OPERATING GUIDELINES

ISO	Material		Condition	Tensile Strength (N/mm²)	Hardness HB	Material Group No	Cutting Speed Vc (sfm)	Feed vs. Drill Diameter (ipr)			
								.236"-.311" (6.0-7.9mm)	.315"-.390" (8.0-9.9mm)	.394"-.469" (10.0-11.9mm)	.472"-.547" (12.0-13.9mm)
P	Non-alloy steel and cast steel, free cutting steel	<0.25%C	Annealed	420	125	1	265-465	.003-.005	.005-.009	.006-.011	.007-.012
		>=0.25%C	Annealed	650	190	2	265-430	.003-.005	.005-.009	.006-.011	.007-.012
		<0.55%C	Quenched and tempered	850	250	3	265-400	.003-.005	.005-.009	.006-.011	.007-.012
		>=0.55%C	Annealed	750	220	4	230-365	.003-.005	.005-.009	.006-.011	.007-.012
			Quenched and tempered	1000	300	5	165-300	.003-.005	.005-.009	.006-.011	.007-.012
	Low alloy steel and cast steel (less than 5% of alloying elements)		Annealed	600	200	6	230-400	.003-.006	.005-.010	.005-.011	.006-.013
			Quenched and tempered	930	275	7	230-365	.003-.006	.005-.010	.005-.011	.006-.013
				1000	300	8	165-300	.003-.006	.005-.010	.005-.011	.006-.013
				1200	350	9	135-230	.003-.006	.005-.010	.005-.011	.006-.013
	High alloy steel, cast steel and tool steel		Annealed	680	200	10	165-300	.003-.005	.005-.008	.005-.009	.006-.010
			Quenched and tempered	1100	325	11	135-265	.003-.005	.005-.008	.005-.009	.006-.010
K	Grey cast iron (GG)		Ferritic / pearlitic		180	15	300-530	.005-.007	.006-.012	.008-.014	.010-.016
			Pearlitic		260	16	265-465	.005-.007	.006-.012	.008-.014	.010-.016
	Cast iron nodular (GGG)		Ferritic		160	17	300-595	.005-.007	.006-.012	.008-.014	.010-.016
			Pearlitic		250	18	265-465	.005-.007	.006-.012	.008-.014	.010-.016
	Malleable cast iron		Ferritic		130	19	300-595	.005-.007	.006-.012	.008-.014	.010-.016
			Pearlitic		230	20	265-465	.005-.007	.006-.012	.008-.014	.010-.016

ISO	Material		Condition	Tensile Strength (N/mm²)	Hardness HB	Material Group No	Cutting Speed Vc (sfm)	Feed vs. Drill Diameter (ipr)		
								.551"-.626" (14.0-15.9mm)	.630"-.783" (16.0-19.9mm)	.787"-1.019" (20.0-25.9mm)
P	Non-alloy steel and cast steel, free cutting steel	<0.25%C	Annealed	420	125	1	265-465	.008-.014	.010-.018	.010-.018
		>=0.25%C	Annealed	650	190	2	265-430	.008-.014	.010-.018	.010-.018
		<0.55%C	Quenched and tempered	850	250	3	265-400	.008-.014	.010-.018	.010-.018
		>=0.55%C	Annealed	750	220	4	230-365	.008-.014	.010-.018	.010-.018
			Quenched and tempered	1000	300	5	165-300	.008-.014	.010-.018	.010-.018
	Low alloy steel and cast steel (less than 5% of alloying elements)		Annealed	600	200	6	230-400	.007-.014	.009-.016	.010-.018
			Quenched and tempered	930	275	7	230-365	.007-.014	.009-.016	.010-.018
				1000	300	8	165-300	.007-.014	.009-.016	.010-.018
				1200	350	9	135-230	.007-.014	.009-.016	.010-.018
	High alloy steel, cast steel and tool steel		Annealed	680	200	10	165-300	.007-.011	.008-.012	.009-.013
			Quenched and tempered	1100	325	11	135-265	.007-.011	.008-.012	.009-.013
K	Grey cast iron (GG)		Ferritic / pearlitic		180	15	300-530	.013-.018	.012-.022	.014-.024
			Pearlitic		260	16	265-465	.013-.018	.012-.022	.014-.024
	Cast iron nodular (GGG)		Ferritic		160	17	300-595	.013-.018	.012-.022	.014-.024
			Pearlitic		250	18	265-465	.013-.018	.012-.022	.014-.024
	Malleable cast iron		Ferritic		130	19	300-595	.013-.018	.012-.022	.014-.024
			Pearlitic		230	20	265-465	.013-.018	.012-.022	.014-.024

Steel Cast iron