

NACHI

SG DRILL SERIES

POWDERED METAL COBALT DRILLS



**HIGH PRECISION DRILLING
FOR A WIDE RANGE OF MATERIALS**

Contributing to Progress in the World of Product Manufacturing

NACHI Cutting Tools

NACHI-FUJIKOSHI CORP. is a pioneer of precision cutting tools in Japan and one of the leading manufacturers of tools worldwide. No manufacturer of cutting tools anywhere in the world, exercises greater control over the quality of its products than NACHI. NACHI quality starts with the material itself because the High Speed Steel, premium Cobalt High Speed Steel, Powder High Speed Steel, and Cermet we use comes from our own mills. The technology of the coating, such as Mixed Component multi-layer coating and Diamond coating (thin film diamond) has been developed specifically for our cutting tools.

Cutting tools are basic products for the machine industries. Successful performance of machine tools cannot be expected without precise cutting tools and high quality. NACHI pursues the highest quality 100% of the time. NACHI is the first Japanese cutting tool manufacturer to be awarded the prestigious honor of the Deming Award for Quality.

NACHI AMERICA'S CUTTING TOOL DIVISION produces drills, endmills and taps designed to meet and exceed the exacting requirements of the industry's highest-precision machine tools. NACHI has long been a leader not only in tool design but in coatings that add durability and extend cutting life. Our tools are built to perform with precision and provide our customers with efficient, cost-effective solutions.



HEADQUARTERS AND MAIN WAREHOUSE

715 Pushville Road, Greenwood, Indiana, 46143, U.S.A.

Phone: 317-530-1003 Toll Free Phone: 1-888-340-8665

Fax: 317-530-1013 Toll Free Fax: 1-888-383-8665

Web Site URL : <http://www.nachiamerica.com>

WEST COAST BRANCH

12652 E. Alondra Blvd. Cerritos, California, 90703, U.S.A

Phone: 562-802-0055 Toll Free Phone: 1-800-548-3903

Fax: 562-802-2455

LATIN AMERICA BRANCH

2315 NW 107th Ave., Miami, FL 33172

Phone: 305-591-0054

Fax: 305-591-3110

TECHNICAL INFORMATION

Features

- 4-Facet self-centering point for stable and precise positioning
- Made from premium powdered metal cobalt substrate
- Composite Multi-layer SG Coating (Tin+TiCN)
- Precision ground end mill style shank for accurate and precise drilling

Work Materials

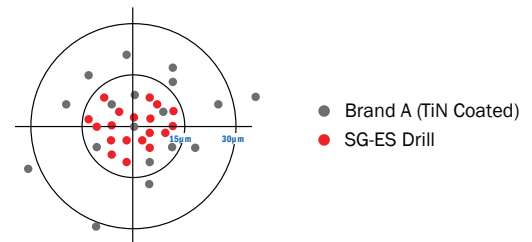
- Hi-temp Alloys
- Carbon Steels
- Stainless Steels
- Cast Irons
- Alloy Steels
- Structural Steels
- Aluminum Alloys
- Brass & Bronze

Performance

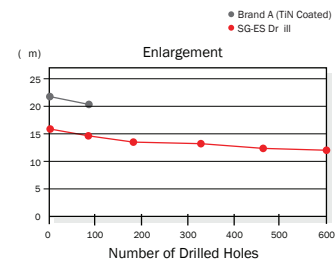
- Equals solid carbide drill in performance due to tough PM cobalt substrate
- Great substitute for carbide drills for short production runs
- 40-50% more tool life than HSS-Co drills
- Stable positioning within 0.0005"(12μm)
- Self-centering point eliminates need for center drill operations
- Streamlines the process & reduces machining time dramatically



Positioning



Performance and Cutting Data of SG Drill Series



Cutting Condition

Drill Dia : 9.0mm.
Hole Depth : 32mm
Cutting Speed : 20m/min. (65.6 SFM)
Feed : 142mm/min (5.6 IPM)
Work piece Material : Alloy steel (300HB)
Machine : Vertical machining center

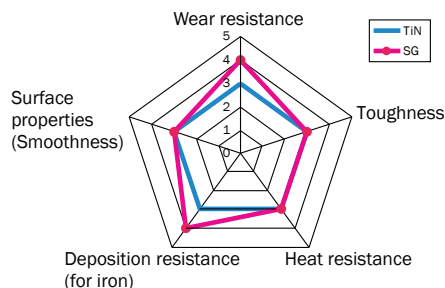
SG-ESS Drills (stub length)
Self centering point:



SG-ES Drill
(jobber length):



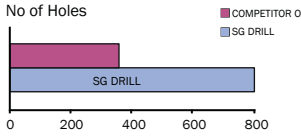
Characteristics of SG Coating

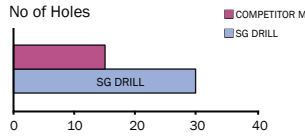


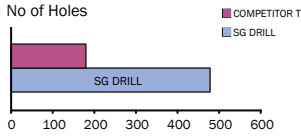
Composite multi-layer film coating method characterized by improved wear resistance as compared to TiN.

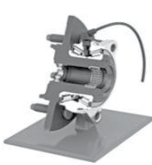
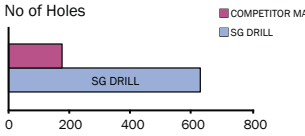
Stocked Size		Drill Name	List No.
SG-ESS Drill	Metric Sizes		7572P
	Fractional, Wire & Letter Sizes		7573P
SG-ESR Drill	Metric Sizes		7574P
	Fractional Sizes		7575P
SG-ES Drill	Metric Sizes		7570P
	Fractional, Wire & Letter Sizes		7571P
SG-OH Drill	Metric Sizes		7596P
	Fractional Sizes		7591P

SG-ESS Micro Drills

Drill		• SG - ESS
WORK PIECE		
INDUSTRY		Aerospace
COMPONENT		Circular Aerospace/Defense Connectors
CUTTING CONDITIONS	DRILL DIAMETER	#38(0.1015")
	CUTTING SPEED (SFM)	80
	RPM	3000
	FEED (IPR)	0.001
	FEED (mm/rev)	0.025
	DOC	.554"(14mm)
	HOLE DESCRIPTION	Blind
COOLANT		Cutting Oil
MATERIAL		316L Stainless Steel
HARDNESS		20-22 HRC
MACHINE		CNC Lathe
PERFORMANCE		 No of Holes COMPETITOR O SG DRILL
RESULT		15% Cheaper than HSS-PM (Competitor) 3.5 - Times more tool life than Competitor

Drill		• SG - ESS
WORK PIECE		
INDUSTRY		Aerospace
COMPONENT		Turbine Engine Components
CUTTING CONDITIONS	DRILL DIAMETER	1/4" (.250")
	CUTTING SPEED (SFM)	30
	RPM	450
	FEED (IPR)	0.004
	FEED (mm/rev)	0.101
	DOC	.7"(18mm)
	HOLE DESCRIPTION	Thru
COOLANT		Water Soluble
MATERIAL		Inconel 645
HARDNESS		28-32 HRC
MACHINE		CNC Vertical Mill
PERFORMANCE		 No of Holes COMPETITOR M SG DRILL
RESULT		45% Cheaper Cost than Carbide 2-times more tool life than Carbide

Drill		SG - ESS
WORK PIECE		
INDUSTRY		Hardness Testing Equipment
COMPONENT		Micro Hardness Tester Parts
CUTTING CONDITIONS	DRILL DIAMETER	2.8mm
	CUTTING SPEED (SFM)	45
	RPM	1600
	FEED (IPR)	0.002
	FEED (mm/rev)	0.05
	DOC	.400"(10.1mm)
	HOLE DESCRIPTION	Thru
COOLANT		Water Soluble
MATERIAL		304 Stainless Steel
HARDNESS		25-28 HRC
MACHINE		CNC Vertical Mill
PERFORMANCE		 No of Holes COMPETITOR T SG DRILL
RESULT		Same Price as Comp carbide TIALN Drill 3-Times more tool life than Competitor Drill

Drill		• SG - ESS
WORK PIECE		
INDUSTRY		Bearing
COMPONENT		Integrated Bearing Assemblies
CUTTING CONDITIONS	DRILL DIAMETER	1.2mm
	CUTTING SPEED (SFM)	40
	RPM	3000
	FEED (IPR)	0.0012
	FEED (mm/rev)	0.03
	DOC	.24"(6.2mm)
	HOLE DESCRIPTION	Thru
COOLANT		Water Soluble
MATERIAL		H-10 Tool Steel
HARDNESS		20-25 HRC
MACHINE		CNC lathe
PERFORMANCE		 No of Holes COMPETITOR MA SG DRILL
RESULT		40% Cheaper Cost than Carbide 3.5 - Times more tool life than Carbide

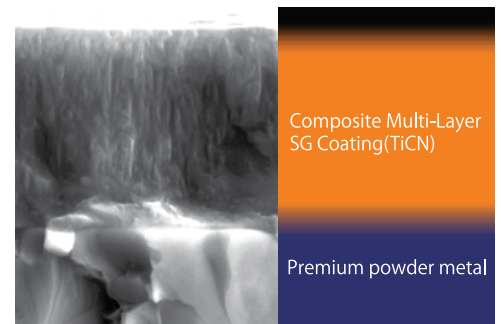
SG-ESS Micro Drills

Diameter Range 0.5 to 0.99 mm (0.01mm increments)

- Premium PM-Cobalt Substrate with composite SG Coating (TiN + TiCN)
- Equals Solid Carbide Drill in performance due to tough PM Cobalt Substrate
- 30 - 40% more tool life than conventional HSS/HSCo micro drills
- 3mm diameter end mill style shanks for highly precise and accurate drilling
- Precision ground end mill style shank for accurate and precision drilling



SG Coating (Tin + TiCN)



Drilling Performance of SG-ESS Micro Drill

Diameter	Carbon Steel	304 Stainless Steel
0.5mm		
	SFM (RPM) 80 (15,500) Feed 0.0006 ipr / 9.3 ipm Hole Depth 1.5mm (Blind Hole) Cutting Fluid Water soluble	SFM (RPM) 26 (5000) Feed 0.0004 ipr / 2.0 ipm Hole Depth 1.5mm (Blind Hole) Cutting Fluid 0.25mm-peck depth Water Soluble
0.99mm		
	SFM (RPM) 80 (8,000) Feed 0.0015 ipr / 12 ipm Hole Depth 1.5mm (Blind Hole) Cutting Fluid Water Soluble	SFM (RPM) 30 (3,200) Feed 0.001 ipr / 2.5 ipm Hole Depth 3mm (Blind Hole) Cutting Fluid 0.5mm-peck depth Water Soluble

SG-ESS Drills made with Tough PM Material Suitable for drilling of wide variety materials from Steel to Stainless Steel.



SG-ESS 0.5mm (material: 304 SS)
Cutting edge after drilling 1080 holes

Well Suited for Drilling:

◎: Great ○: Good ✕: Not recommended

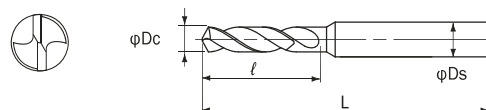
Drill name	Structural Steels	Carbon Steels	Alloy Steels Pre-hardened Steels	Hardened Steels Mold Steels	Hardened Steels	Stainless Steels	Titanium Alloys Nickel Alloys	Cast Irons	Aluminum Alloys	Copper Alloys
SGESS	◎	◎	◎	◎	✕	◎	○	◎	◎	◎

SG-ESS Drill Micro

High Performance (3xD)



SG-ESS Drill Stub Length



LIST 7572P

Metric: Micro & Stub Length

LIST 7573P

Fractional, Wire & Letter

Metric Range .50 to 20.0

*Replacing AG-SUS Drill Short L6596P

EDP No.	Size	Decimal	Wire/Fractional Equivalent	Flute Length	Overall Length	Shank Dia.
EDP	Dc			ℓ	L	Ds
0716602	0.50	0.0197		3	38	3
0716705	0.51	0.0201	#76			
0716711	0.52	0.0205				
0716728	0.53	0.0209				
0716734	0.54	0.0213				
0716619	0.55	0.0217				
0716740	0.56	0.0220				
0716757	0.57	0.0224				
0716763	0.58	0.0228				
0716770	0.59	0.0232				
0716625	0.60	0.0236		3.5		
0716786	0.61	0.0240	#73			
0716792	0.62	0.0244				
0716808	0.63	0.0248				
0716814	0.64	0.0252				
0716631	0.65	0.0256				
0716820	0.66	0.0260	#71			
0716837	0.67	0.0264				
0716843	0.68	0.0268				
0716850	0.69	0.0272				
0716648	0.70	0.0276		4.5		
0716866	0.71	0.0280	#70			
0716872	0.72	0.0283				
0716889	0.73	0.0287				
0716895	0.74	0.0291				
0716654	0.75	0.0295				
0716900	0.76	0.0299				
0716917	0.77	0.0303				
0716923	0.78	0.0307	#68			
0716930	0.79	0.0311				
0716660	0.80	0.0315		5		
0716946	0.81	0.0319				
0716952	0.82	0.0323	#67			
0716969	0.83	0.0327				
0716975	0.84	0.0331	#66			
0716677	0.85	0.0335				
0716981	0.86	0.0339				
0716998	0.87	0.0343				
0717002	0.88	0.0346				
0717019	0.89	0.0350	#65			
0716683	0.90	0.0354		5.5		
0717025	0.91	0.0358				
0717031	0.92	0.0362				
0717048	0.93	0.0366				
0717054	0.94	0.0370	#63			
0716690	0.95	0.0374				
0717060	0.96	0.0378				
0717077	0.97	0.0382				
0717083	0.98	0.0386				
0717090	0.99	0.0390	#61			

EDP No.	Size	Decimal	Wire/Fractional Equivalent	Flute Length	Overall Length	Shank Dia.
EDP	Dc			ℓ	L	Ds
0573780	1.00	0.0394		6	38	3
0693862	1.01	0.0398				
0693879	1.02	0.0402	#60			
0693885	1.03	0.0406				
0693891	1.04	0.0409	#59			
0575347	1.05	0.0413				
0693907	1.06	0.0417				
0693913	1.07	0.0421	#58			
0693920	1.08	0.0425				
0693936	1.09	0.0429	#57			
0573797	1.10	0.0433		7	39	
0693942	1.11	0.0437				
0693959	1.12	0.0441				
0693965	1.13	0.0445				
0693971	1.14	0.0449				
0575353	1.15	0.0453				
0693988	1.16	0.0457				
0693994	1.17	0.0461				
0694009	1.18	0.0465	#56			
0694015	1.19	0.0469	3/64			
0573802	1.20	0.0472				
0694021	1.21	0.0476				
0694038	1.22	0.0480				
0694044	1.23	0.0484				
0694050	1.24	0.0488				
0575360	1.25	0.0492				
0694067	1.26	0.0496				
0694073	1.27	0.0500				
0694080	1.28	0.0504				
0694096	1.29	0.0508		9	41	
0573819	1.30	0.0512				
0694101	1.31	0.0516				
0694118	1.32	0.0520	#55			
0694124	1.33	0.0524				
0694130	1.34	0.0528				
0575376	1.35	0.0531				
0694147	1.36	0.0535				
0694153	1.37	0.0539				
0694160	1.38	0.0543				
0694176	1.39	0.0547				
0573825	1.40	0.0551		9	41	
0694182	1.41	0.0555				
0694199	1.42	0.0559				
0694204	1.43	0.0563				
0694210	1.44	0.0567				
0575382	1.45	0.0571				
0694227	1.46	0.0575				
0694233	1.47	0.0579				
0694240	1.48	0.0583				
0694256	1.49	0.0587				

SG-ESS Drill Stub Length

L7572P Metric

L7573P Fractional, Wire & Letter

*Replacing AG-SUS Drill Short L6596P

EDP No.	Size	Decimal	Wire/Fractional Equivalent	Flute Length	Overall Length	Shank Dia.
EDP	Dc			ℓ	L	Ds
0573831	1.50	0.0591		9	41	3
0694262	1.51	0.0594	#53	10	42	
0694279	1.52	0.0598				
0694285	1.53	0.0602				
0694291	1.54	0.0606				
0575399	1.55	0.0610				
0694307	1.56	0.0614				
0694313	1.57	0.0618				
0694320	1.58	0.0622				
0694336	1.59	0.0626	1/16			
0573848	1.60	0.0630				
0694342	1.61	0.0634	#52			
0694359	1.62	0.0638				
0694365	1.63	0.0642				
0694371	1.64	0.0646				
0575404	1.65	0.0650				
0694388	1.66	0.0654				
0694394	1.67	0.0657				
0694400	1.68	0.0661				
0694416	1.69	0.0665				
0573854	1.70	0.0669				
0694422	1.71	0.0673				
0694439	1.72	0.0677				
0694445	1.73	0.0681				
0694451	1.74	0.0685				
0575410	1.75	0.0689				
0694468	1.76	0.0693				
0694474	1.77	0.0697				
0694480	1.78	0.0701	#50			
0694497	1.79	0.0705				
0573860	1.80	0.0709				
0694502	1.81	0.0713				
0694519	1.82	0.0717				
0694525	1.83	0.0720	#49			
0694531	1.84	0.0724				
0575427	1.85	0.0728				
0694548	1.86	0.0732				
0694554	1.87	0.0736				
0694560	1.88	0.0740				
0694577	1.89	0.0744				
0573877	1.90	0.0748				
0694583	1.91	0.0752				
0694590	1.92	0.0756				
0694605	1.93	0.0760	#48			
0694611	1.94	0.0764				
0575433	1.95	0.0768				
0694628	1.96	0.0772				
0694634	1.97	0.0776				
0694640	1.98	0.0780	5/64			
0694657	1.99	0.0783	#47			
0572514	2.00	0.0787				
0694663	2.01	0.0791				
0694670	2.02	0.0795				
0694686	2.03	0.0799				
0694692	2.04	0.0803				
0575440	2.05	0.0807				
0694708	2.06	0.0811	#46			
0694714	2.07	0.0815				
0694720	2.08	0.0819				
1363043	2.08	0.0820	#45	3/4	2	1/8
0694737	2.09	0.0823		12	44	3

• USA Stock Size

EDP No.	Size	Decimal	Wire/Fractional Equivalent	Flute Length	Overall Length	Shank Dia.
EDP	Dc			ℓ	L	Ds
0572520	2.10	0.0827		12	44	3
0694743	2.11	0.0831				
0694750	2.12	0.0835				
0694766	2.13	0.0839		13	45	
0694772	2.14	0.0843				
0575456	2.15	0.0846				
0694789	2.16	0.0850				
0694795	2.17	0.0854				
0694800	2.18	0.0858		3/4	2	1/8
1363050	2.18	0.0860	#44			
0694817	2.19	0.0862				
0572537	2.20	0.0866		13	45	3
0694823	2.21	0.0870				
0694830	2.22	0.0874				
0694846	2.23	0.0878				
0694852	2.24	0.0882				
0575462	2.25	0.0886				
0694869	2.26	0.0890				
1363066	2.26	0.0890	#43			
0694875	2.27	0.0894		13	45	3
0694881	2.28	0.0898				
0694898	2.29	0.0902				
0572543	2.30	0.0906				
0694903	2.31	0.0909				
0694910	2.32	0.0913				
0694926	2.33	0.0917				
0694932	2.34	0.0921				
0575479	2.35	0.0925				
0694949	2.36	0.0929				
0694955	2.37	0.0933		14	46	1/8
1363072	2.37	0.0935	#42	3/4	2	
0694961	2.38	0.0937		14	46	
1245365	2.38	0.0938	3/32	1/2	1-3/4	1/8
0694978	2.39	0.0941		14	46	3
0572550	2.40	0.0945				
0694984	2.41	0.0949				
0694990	2.42	0.0953				
0695005	2.43	0.0957		13/16	2-1/16	1/8
1363089	2.44	0.0960	#41			
0695011	2.44	0.0961				
0575485	2.45	0.0965		14	46	3
0695028	2.46	0.0969				
0695034	2.47	0.0972				
0695040	2.48	0.0976				
0695057	2.49	0.0980		13/16	2-1/16	1/8
1280931	2.49	0.0980	#40			
0572566	2.50	0.0984				
0695063	2.51	0.0988		14	46	3
0695070	2.52	0.0992		13/16	2-1/4	1/8
1363095	2.53	0.0995	#39			
0695086	2.53	0.0996				
0695092	2.54	0.1000		14	46	3
0575491	2.55	0.1004				
0695108	2.56	0.1008				
0695114	2.57	0.1012				
1363100	2.58	0.1015	#38	13/16	2-1/4	1/8
0695120	2.58	0.1016		14	46	3
0695137	2.59	0.1020				
0572572	2.60	0.1024				
0695143	2.61	0.1028				
0695150	2.62	0.1031				

0.01mm size Diameter Tolerance : 0~-.009mm

SG-ESS Drill Stub Length

L7572P

Metric

L7573P

Fractional, Wire & Letter

*Replacing AG-SUS Drill Short L6596P

EDP No.	Size	Decimal	Wire/Fractional Equivalent	Flute Length	Overall Length	Shank Dia.
EDP	Dc			ℓ	L	Ds
0695166	2.63	0.1035				
0695172	2.64	0.1039		14	46	3
1363117	2.64	0.1040	#37	13/16	2-1/4	1/8
0575507	2.65	0.1043		14	46	
0695189	2.66	0.1047				
0695195	2.67	0.1051				
0695200	2.68	0.1055		16	48	3
0695217	2.69	0.1059				
0572589	2.70	0.1063				
1245823	2.71	0.1065	#36	13/16	2-1/4	1/8
0695223	2.71	0.1067				
0695230	2.72	0.1071				
0695246	2.73	0.1075				
0695252	2.74	0.1079		16	48	3
0575513	2.75	0.1083				
0695269	2.76	0.1087				
0695275	2.77	0.1091				
0695281	2.78	0.1094				
1245371	2.78	0.1094	7/64	5/8	1-7/8	1/8
0695298	2.79	0.1098				
0572595	2.80	0.1102				
0695303	2.81	0.1106		16	48	3
0695310	2.82	0.1110				
1363130	2.82	0.1110	#34	7/8	2-5/16	1/8
0695326	2.83	0.1114				
0695332	2.84	0.1118				
0575520	2.85	0.1122		16	48	3
0695349	2.86	0.1126				
0695355	2.87	0.1130				
1363146	2.87	0.1130	#33	7/8	2-5/16	1/8
0695361	2.88	0.1134				
0695378	2.89	0.1138				
0572600	2.90	0.1142				
0695384	2.91	0.1146				
0695390	2.92	0.1150				
0695406	2.93	0.1154				
0695412	2.94	0.1157		16	48	3
0575536	2.95	0.1161				
0695429	2.96	0.1165				
0695435	2.97	0.1169				
0695441	2.98	0.1173				
0695458	2.99	0.1177				
0572617	3.00	0.1181				
0695464	3.01	0.1185				
0695470	3.02	0.1189				
0695487	3.03	0.1193				
0695493	3.04	0.1197				
0575542	3.05	0.1201				
0695509	3.06	0.1205				
0695515	3.07	0.1209				
0695521	3.08	0.1213				
0695538	3.09	0.1217				
0572623	3.10	0.1220				
0695544	3.11	0.1224				
0695550	3.12	0.1228				
0695567	3.13	0.1232				
0695573	3.14	0.1236				
0575559	3.15	0.1240				
0695580	3.16	0.1244				
0695596	3.17	0.1248				
1245388	3.18	0.1250	1/8	3/4	2	1/8
0695601	3.18	0.1252				
0695618	3.19	0.1256				
0572630	3.20	0.1260				
0695624	3.21	0.1264				
0695630	3.22	0.1268		18	50	4
0695647	3.23	0.1272				
0695653	3.24	0.1276				
0575565	3.25	0.1280				
0695660	3.26	0.1283				
1289836	3.26	0.1285	#30	15/16	2-3/8	3/16
0695676	3.27	0.1287				
0695682	3.28	0.1291				
0695699	3.29	0.1295		18	50	4
0572646	3.30	0.1299				

• USA Stock Size

EDP No.	Size	Decimal	Wire/Fractional Equivalent	Flute Length	Overall Length	Shank Dia.
EDP	Dc			ℓ	L	Ds
0695704	3.31	0.1303				
0695710	3.32	0.1307				
0695727	3.33	0.1311		18	50	
0695733	3.34	0.1315				
0575571	3.35	0.1319				
0695740	3.36	0.1323				
0695756	3.37	0.1327				
0695762	3.38	0.1331				
0695779	3.39	0.1335				
0572652	3.40	0.1339				
0695785	3.41	0.1343				
0695791	3.42	0.1346				
0695807	3.43	0.1350				
0695813	3.44	0.1354				
0575588	3.45	0.1358				
0695820	3.46	0.1362				
1245817	3.46	0.1365	#29	15/16	2-3/8	3/16
0695836	3.47	0.1366				
0695842	3.48	0.1370				
0695859	3.49	0.1374				
0572669	3.50	0.1378				
0695865	3.51	0.1382				
0695871	3.52	0.1386				
0695888	3.53	0.1390				
0695894	3.54	0.1394				
0575594	3.55	0.1398				
0695900	3.56	0.1402				
1363169	3.57	0.1405	#28	15/16	2-3/8	3/16
0695916	3.57	0.1406		20	52	4
1245394	3.57	0.1406	9/64	13/16	2-1/8	3/16
0695922	3.58	0.1409				
0695939	3.59	0.1413				
0572675	3.60	0.1417				
0695945	3.61	0.1421				
0695951	3.62	0.1425				
0695968	3.63	0.1429				
0695974	3.64	0.1433				
0575600	3.65	0.1437				
1363175	3.66	0.1440	#27	1	2-7/16	3/16
0695980	3.66	0.1441				
0695997	3.67	0.1445				
0696001	3.68	0.1449				
0696018	3.69	0.1453				
0572681	3.70	0.1457		20	52	4
0696024	3.71	0.1461				
0696030	3.72	0.1465				
0696047	3.73	0.1469				
1363181	3.73	0.1470	#26	1	2-7/16	3/16
0696053	3.74	0.1472		20	52	
0575616	3.75	0.1476				
0696060	3.76	0.1480				
0696076	3.77	0.1484		22	54	4
0696082	3.78	0.1488				
0696099	3.79	0.1492				
1245800	3.80	0.1495	#25	1	2-7/16	3/16
0572698	3.80	0.1496				
0696104	3.81	0.1500				
0696110	3.82	0.1504				
0696127	3.83	0.1508		22	54	4
0696133	3.84	0.1512				
0575622	3.85	0.1516				
0696140	3.86	0.1520	#24	1	2-7/16	3/16
1363198	3.86	0.1520				
0696156	3.87	0.1524				
0696162	3.88	0.1528				
0696179	3.89	0.1531		22	54	4
0572703	3.90	0.1535				
0696185	3.91	0.1539				
1363203	3.91	0.1540	#23	1	2-7/16	3/16
0696191	3.92	0.1543				
0696207	3.93	0.1547				
0696213	3.94	0.1551		22	54	4
0575639	3.95	0.1555				
0696220	3.96	0.1559				

0.01mm size Diameter Tolerance : 0 ~-.009mm

SG-ESS Drill Stub Length

L7572P

Metric

L7573P

Fractional, Wire & Letter

*Replacing AG-SUS Drill Short L6596P

EDP No.	Size	Decimal	Wire/Fractional Equivalent	Flute Length	Overall Length	Shank Dia.
EDP	Dc			ℓ	L	Ds
0696236	3.97	0.1563		22	54	4
1245400	3.97	0.1563	5/32	13/16	2-1/8	3/16
0696242	3.98	0.1567		22	54	4
1363210	3.99	0.1570	#22	1-1/16	2-7/16	3/16
0696259	3.99	0.1571			54	4
0572710	4.00	0.1575		22		
0696265	4.01	0.1579			66	6
0696271	4.02	0.1583				
0696288	4.03	0.1587				
1245795	4.04	0.1590	#21	1-1/16	2-7/16	3/16
0696294	4.04	0.1591				
0575645	4.05	0.1594				
0696300	4.06	0.1598		22	66	6
0696316	4.07	0.1602				
0696322	4.08	0.1606				
0696339	4.09	0.1610				
1363226	4.09	0.1610	#20	1-1/16	2-7/16	3/16
0572726	4.10	0.1614				
0696345	4.11	0.1618				
0696351	4.12	0.1622				
0696368	4.13	0.1626				
0696374	4.14	0.1630				
0575651	4.15	0.1634		22	66	6
0696380	4.16	0.1638				
0696397	4.17	0.1642				
0696402	4.18	0.1646				
0696419	4.19	0.1650				
0572732	4.20	0.1654				
0696425	4.21	0.1657				
1363232	4.22	0.1660	#19	1-1/16	2-7/16	3/16
0696431	4.22	0.1661				
0696448	4.23	0.1665		22		
0696454	4.24	0.1669				
0575668	4.25	0.1673				
0696460	4.26	0.1677				
0696477	4.27	0.1681				
0696483	4.28	0.1685				
0696490	4.29	0.1689				
0572749	4.30	0.1693				
0696505	4.31	0.1697		24	68	6
0696511	4.32	0.1701				
0696528	4.33	0.1705				
0696534	4.34	0.1709				
0575674	4.35	0.1713				
0696540	4.36	0.1717				
1245416	4.37	0.1719	11/64	1	2-3/8	3/16
0696557	4.37	0.1720				
0696563	4.38	0.1724				
0696570	4.39	0.1728				
0572755	4.40	0.1732				
0696586	4.41	0.1736				
0696592	4.42	0.1740				
0696608	4.43	0.1744				
0696614	4.44	0.1748				
0575680	4.45	0.1752				
0696620	4.46	0.1756				
0696637	4.47	0.1760		24	68	6
0696643	4.48	0.1764				
0696650	4.49	0.1768				
0572761	4.50	0.1772				
0696666	4.51	0.1776				
0696672	4.52	0.1780				
0696689	4.53	0.1783				
0696695	4.54	0.1787				
0575697	4.55	0.1791				
0696700	4.56	0.1795				
0696717	4.57	0.1799				
1363278	4.57	0.1800	#15	1-1/8	2-9/16	3/16
0696723	4.58	0.1803				
0696730	4.59	0.1807				
0572778	4.60	0.1811		24	68	6
0696746	4.61	0.1815				
0696752	4.62	0.1819				
1363284	4.62	0.1820	#14	1-1/8	2-9/16	3/16

• USA Stock Size

EDP No.	Size	Decimal	Wire/Fractional Equivalent	Flute Length	Overall Length	Shank Dia.
EDP	Dc			ℓ	L	Ds
0696769	4.63	0.1823				
0696775	4.64	0.1827				
0575702	4.65	0.1831				
0696781	4.66	0.1835				
0696798	4.67	0.1839				
0696803	4.68	0.1843				
0696810	4.69	0.1846		24	68	6
0572784	4.70	0.1850				
0696826	4.71	0.1854				
0696832	4.72	0.1858				
0696849	4.73	0.1862				
0696855	4.74	0.1866				
0575719	4.75	0.1870				
0696861	4.76	0.1874		26	70	6
1245422	4.76	0.1875	3/16	1	2-3/8	3/16
0696878	4.77	0.1878				
0696884	4.78	0.1882				
0696890	4.79	0.1886				
0572790	4.80	0.1890				
0696906	4.81	0.1894				
0696912	4.82	0.1898				
0696929	4.83	0.1902				
0696935	4.84	0.1906				
0575725	4.85	0.1909				
0696941	4.86	0.1913				
0696958	4.87	0.1917				
0696964	4.88	0.1921				
0696970	4.89	0.1925				
0572806	4.90	0.1929				
0696987	4.91	0.1933				
1363329	4.91	0.1935	#10	1-3/16	3	1/4
0696993	4.92	0.1937				
0697008	4.93	0.1941				
0697014	4.94	0.1945		26	70	6
0575731	4.95	0.1949				
0697020	4.96	0.1953				
0697037	4.97	0.1957				
1363335	4.98	0.1960	#9	1-3/16	3	1/4
0697043	4.98	0.1961				
0697050	4.99	0.1965				
0572812	5.00	0.1969				
0697066	5.01	0.1972				
0697072	5.02	0.1976				
0697089	5.03	0.1980				
0697095	5.04	0.1984				
0575748	5.05	0.1988				
1280954	5.05	0.1990	#8	1-3/16	3	1/4
0697100	5.06	0.1992				
0697117	5.07	0.1996				
0697123	5.08	0.2000				
0697130	5.09	0.2004				
0572829	5.10	0.2008				
1245789	5.11	0.2010	#7	1-3/16	3	1/4
0697146	5.11	0.2012				
0697152	5.12	0.2016				
0697169	5.13	0.2020				
0697175	5.14	0.2024				
0575754	5.15	0.2028				
0697181	5.16	0.2031				
1245439	5.16	0.2031	13/64	1-1/8	2-7/8	1/4
0697198	5.17	0.2035				
0697203	5.18	0.2039		26	70	6
1280960	5.18	0.2040	#6	1-1/4	3-1/16	1/4
0697210	5.19	0.2043				
0572835	5.20	0.2047				
0697226	5.21	0.2051				
0697232	5.22	0.2055				
1363341	5.22	0.2055	#5	1-1/4	3-1/16	1/4
0697249	5.23	0.2059				
0697255	5.24	0.2063				
0575760	5.25	0.2067				
0697261	5.26	0.2071		26	70	6
0697278	5.27	0.2075				
0697284	5.28	0.2079				

0.01mm size Diameter Tolerance : 0 ~ -.009mm

SG-ESS Drill Stub Length

L7572P Metric

L7573P Fractional, Wire & Letter

*Replacing AG-SUS Drill Short L6596P

EDP No.	Size	Decimal	Wire, Fractional & Letter Equivalent	Flute Length	Overall Length	Shank Dia.
EDP	Dc			ℓ	L	Ds
0697290	5.29	0.2083				
0572841	5.30	0.2087		26	70	6
1363358	5.31	0.2090	#4	1-1/4	3-1/16	1/4
0697306	5.31	0.2091				
0697312	5.32	0.2094				
0697329	5.33	0.2098				
0697335	5.34	0.2102				
0575777	5.35	0.2106				
0697341	5.36	0.2110		28	72	6
0697358	5.37	0.2114				
0697364	5.38	0.2118				
0697370	5.39	0.2122				
0572858	5.40	0.2126				
0697387	5.41	0.2130				
1363364	5.41	0.2130	#3	1-1/4	3-1/16	1/4
0697393	5.42	0.2134				
0697409	5.43	0.2138				
0697415	5.44	0.2142				
0575783	5.45	0.2146				
0697421	5.46	0.2150				
0697438	5.47	0.2154				
0697444	5.48	0.2157				
0697450	5.49	0.2161		28	72	6
0572864	5.50	0.2165				
0697467	5.51	0.2169				
0697473	5.52	0.2173				
0697480	5.53	0.2177				
0697496	5.54	0.2181				
0575790	5.55	0.2185				
1245445	5.56	0.2188	7/32	1-1/8	2-7/8	1/4
0697501	5.56	0.2189				
0697518	5.57	0.2193				
0697524	5.58	0.2197				
0697530	5.59	0.2201		28	72	6
0572870	5.60	0.2205				
0697547	5.61	0.2209				
1363370	5.61	0.2210	#2	1-5/16	3-1/8	1/4
0697553	5.62	0.2213				
0697560	5.63	0.2217				
0697576	5.64	0.2220				
0575805	5.65	0.2224				
0697582	5.66	0.2228				
0697599	5.67	0.2232				
0697604	5.68	0.2236				
0697610	5.69	0.2240				
0572887	5.70	0.2244				
0697627	5.71	0.2248		28	72	6
0697633	5.72	0.2252				
0697640	5.73	0.2256				
0697656	5.74	0.2260				
0575811	5.75	0.2264				
0697662	5.76	0.2268				
0697679	5.77	0.2272				
0697685	5.78	0.2276				
0697691	5.79	0.2280				
1363387	5.79	0.2280	#1	1-5/16	3-1/8	1/4
0572893	5.80	0.2283				
0697707	5.81	0.2287				
0697713	5.82	0.2291				
0697720	5.83	0.2295				
0697736	5.84	0.2299				
0575828	5.85	0.2303				
0697742	5.86	0.2307				
0697759	5.87	0.2311				
0697765	5.88	0.2315				
0697771	5.89	0.2319				
0572909	5.90	0.2323				
0697788	5.91	0.2327				
0697794	5.92	0.2331				
0697800	5.93	0.2335				
0697816	5.94	0.2339				
0575834	5.95	0.2343				
1245451	5.95	0.2344	15/64	1-1/4	3	1/4
0697822	5.96	0.2346				
0697839	5.97	0.2350				
0697845	5.98	0.2354		28	72	6
0697851	5.99	0.2358				
0572915	6.00	0.2362				
1363409	6.05	0.2380	B	1-3/8	3-3/16	1/4

• USA Stock Size

EDP No.	Size	Decimal	Wire/Letter Equivalent	Flute Length	Overall Length	Shank Dia.
EDP	Dc			ℓ	L	Ds
0572921	6.10	0.2402		31	75	8
1363415	6.15	0.2420	C	1-3/8	3-3/16	1/4
0572938	6.20	0.2441		31	75	8
1363421	6.25	0.2460	D	1-3/8	3-3/16	1/4
0572944	6.30	0.2480		31	75	8
1245468	6.35	0.2500	1/4	1-1/4	3	1/4
0572950	6.40	0.2520		31	75	8
0572967	6.50	0.2559		31	75	8
1245830	6.53	0.2570	F	1-7/16	3-1/4	3/8
0572973	6.60	0.2598		31	75	8
1363444	6.63	0.2610	G	1-7/16	3-1/4	3/8
0572980	6.70	0.2638		31	75	8
1245474	6.75	0.2656	17/64	1-3/8	3-3/16	3/8
0572996	6.80	0.2677		34	78	8
0573000	6.90	0.2717		34	78	8
1363450	6.91	0.2720	I	1-1/2	3-5/16	3/8
0573017	7.00	0.2756		34	78	8
1363467	7.04	0.2770	J	1-1/2	3-5/16	3/8
0573023	7.10	0.2795		34	78	8
1245480	7.14	0.2813	9/32	1-3/8	3-3/16	3/8
0573030	7.20	0.2835		34	78	8
0573046	7.30	0.2874		34	78	8
1363473	7.37	0.2900	L	1-9/16	3-3/8	3/8
0573052	7.40	0.2913		34	78	8
1363480	7.49	0.2950	M	1-9/16	3-3/8	3/8
0573069	7.50	0.2953		34	78	8
1245497	7.54	0.2969	19/64	1-3/8	3-3/16	3/8
0573075	7.60	0.2992		37	81	8
1363496	7.67	0.3020	N	1-5/8	3-7/16	3/8
0573081	7.70	0.3031				
0573098	7.80	0.3071		37	81	8
0573103	7.90	0.3110				
1245502	7.94	0.3125	5/16	1-1/2	3-3/8	3/8
0573110	8.00	0.3150		37	81	8
1363501	8.03	0.3160	O	1-11/16	3-1/2	3/8
0573126	8.10	0.3189				
0573132	8.20	0.3228		37	87	10
0573149	8.30	0.3268				
1245519	8.33	0.3281	21/64	1-1/2	3-3/8	3/8
0573155	8.40	0.3307		37	87	10
1363524	8.43	0.3320	Q	1-11/16	3-1/2	3/8
0573161	8.50	0.3346		37	87	10
0573178	8.60	0.3386		40	90	10
1363530	8.61	0.3390	R	1-11/16	3-1/2	3/8
0573184	8.70	0.3425		40	90	10
1245525	8.73	0.3438	11/32	1-5/8	3-1/2	3/8
0573190	8.80	0.3465				
0573206	8.90	0.3504				
0573212	9.00	0.3543		40	90	10
0573229	9.10	0.3583				
1245531	9.13	0.3594	23/64	1-5/8	3-1/2	3/8
0573235	9.20	0.3622		40	90	10
0573241	9.30	0.3661		40	90	10
1280977	9.35	0.3680	U	1-13/16	3-5/8	3/8
0573258	9.40	0.3701		40	90	10
0573264	9.50	0.3740		40	90	10
1245548	9.53	0.3750	3/8	1-5/8	3-1/2	3/8
1363560	9.58	0.3770	V	1-7/8	3-31/32	1/2
0573270	9.60	0.3780				
0573287	9.70	0.3819				
0573293	9.80	0.3858		43	93	10
0573309	9.90	0.3898				
1245554	9.92	0.3906	25/64	1-11/16	3-7/8	1/2
0573315	10.00	0.3937		43	93	10
1363582	10.08	0.3970	X	1-15/16	4-1/32	1/2
0573321	10.10	0.3976		43	93	10
0573338	10.20	0.4016		43	100	12
1363599	10.26	0.4040	Y	1-15/16	4-1/32	1/2
0573344	10.30	0.4055		43	100	12
1245560	10.32	0.4063	13/32	1-11/16	3-7/8	1/2
0573350	10.40	0.4094		43	100	12
1363604	10.49	0.4130	Z	2	4-3/32	1/2
0573367	10.50	0.4134		43	100	12
0573373	10.60	0.4173		43	100	12
0573380	10.70	0.4213		47	104	12
1245577	10.72	0.4219	27/64	1-7/8	4-1/8	1/2
0573396	10.80	0.4252				
0573401	10.90	0.4291		47	104	12
0573418	11.00	0.4331				

0.01mm size Diameter Tolerance : 0 ~ -.009mm

SG-ESS Drill Stub Length

L7572P Metric

L7573P Fractional, Wire & Letter

EDP No.	Size	Decimal	Wire/Fractional Equivalent	Flute Length	Overall Length	Shank Dia.
EDP	Dc			ℓ	L	Ds
0573424	11.10	0.4370		47	104	12
1245583	11.11	0.4375	7/16	1-7/8	4-1/8	1/2
0573430	11.20	0.4409				
0573447	11.30	0.4449		47	104	12
0573453	11.40	0.4488				
0573460	11.50	0.4528				
1245590	11.51	0.4531	29/64	1-7/8	4-1/8	1/2
0573476	11.60	0.4567				
0573482	11.70	0.4606		47	104	12
0573499	11.80	0.4646				
0573504	11.90	0.4685		51	108	12
1245605	11.91	0.4688	15/32	2	4-1/4	1/2
0573510	12.00	0.4724				
0573527	12.10	0.4764		51	108	12
0573533	12.20	0.4803				
0573540	12.30	0.4843				
1245611	12.30	0.4844	31/64	2	4-1/4	1/2
0573556	12.40	0.4882				
0573562	12.50	0.4921		51	108	12
0573579	12.60	0.4961				
0573585	12.70	0.5000				
1245628	12.70	0.5000	1/2	2	4-1/4	1/2
0573591	12.80	0.5039		51	108	12
0573607	12.90	0.5079				

*Replacing AG-SUS Drill Short L6596P

EDP No.	Size	Decimal	Wire/Fractional Equivalent	Flute Length	Overall Length	Shank Dia.
EDP	Dc			ℓ	L	Ds
0573613	13.00	0.5118		51	108	12
1280851	13.49	0.5313	17/32	2-7/8	5-3/16	5/8
0573620	13.50	0.5315		72	132	16
0573636	14.00	0.5512		72	132	16
1280868	14.29	0.5625	9/16	3	5-3/8	1/2
0573642	14.50	0.5709		76	136	16
0573659	15.00	0.5906		76	142	20
1280874	15.08	0.5938	19/32	3	5-5/8	3/4
0573665	15.50	0.6102		80	146	20
1280880	15.88	0.6250	5/8	3-3/16	5-3/4	3/4
0573671	16.00	0.6299		80	146	20
0573688	16.50	0.6496		84	150	20
1280897	16.67	0.6563	21/32	3-3/8	5-15/16	3/4
0573694	17.00	0.6693		84	150	20
1280902	17.46	0.6875	11/16	3-7/16	6	3/4
0573700	17.50	0.6890		87	153	20
0573716	18.00	0.7087		87	153	20
1280919	18.26	0.7188	23/32	3-7/16	6	7/8
0573722	18.50	0.7283		90	156	20
0573739	19.00	0.7480		90	164	25
1280925	19.05	0.7500	3/4	3-9/16	6-1/2	7/8
0573745	19.50	0.7677		94	168	25
0573751	20.00	0.7874		94	168	25

1 per tube

⚠ WARNING: Cancer - www.P65Warnings.ca.gov

Standard Micro Drilling Conditions - see Standard Drilling Conditions p. 13

Work Material	Structural Steel Carbon Steels		Alloy Steels Hardened Steels		Die Steels Hardened Steels		Stainless Steels 300-Series		Cast Iron		Aluminum Alloys Copper Alloys		Nickel Alloys Titanium Alloys	
Diameter (mm)	RPM	IPR	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM
0.5	16000	0.0006	13000	0.0005	9500	0.0003	5100	0.0004	20000	0.0006	23000	0.0005	2500	0.0003
0.99	9500	0.0012	8000	0.0009	6400	0.0008	3500	0.0007	12000	0.0013	15000	0.0013	1600	0.0006

- 1) Adjust drilling condition according to the rigidity of machine or work clamp state.
- 2) The table values are for drilling with water soluble cutting fluid.
- 3) Provide suffice amount cutting fluid to the cutting point and in the flute.
- 4) When for stainless drilling, add step feed.
- 5) A work material and drilling condition to chip removal may be worse. In that case, add step feed.
- 6) In step feed, return to the entrance hole.
- 7) Step feed interval is about 0.5 ~ 1 x d. In small diameter, about 0.2 ~ 0.5 x d.
- 8) Use a collet chuck, milling chuck.

Material Performance

Drilling Depth				Workpiece Material																
≤3D	≤5D	≤7D	>7D	Carbon Steel		Alloy Steel	Die Steel	Hardened Steel			Stainless Steel		Titanium Alloys	Nickel Alloys	Cast Iron		Aluminum			Copper Alloys
				Low Carbon	H			up to 35	35 to 45	45 to 65	Austenitic 300 Series	Martensitic 400 Series			Soft < 200HB	Hard > 200HB	6061 7075	Casting Si ≤ 12%	High Si Si > 13%	
●				●	●	●	●	○			●	●	●	●	●	△	●	○		●

Selection Chart

● :Great

○ :Good

△ :OK

SG-ESR Drill

Features

- 4-Facet self-centering point
- Designed & engineered for drilling Stainless Steel & Hi-temp Alloys
- Made from premium powdered metal cobalt substrate
- Composite Multi-layer SG Coating (Tin+TiCN)
- Precision ground end mill style shank for accurate and precision drilling

Work Materials

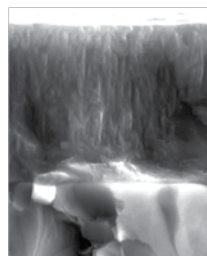
- Hi-temp Alloys
- Stainless Steels
- Alloy Steels
- Aluminum Alloys
- Carbon Steels
- Cast Irons
- Structural Steels
- Brass & Bronze

Performance

- Equals Solid Carbide drill in performance in Stainless, Inconel & Titanium
- 30 ~ 40% Cheaper than Carbide Drills
- Self-centering point eliminates need for center drill operations



SG Coating

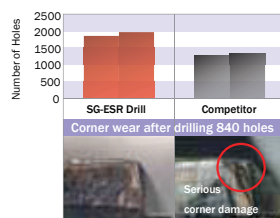


Composite Multi-Layer
SG Coating (TiCN)
Premium Powder
Metal

SG Coating (Tin+TiCN)

Well Suited for Drilling:

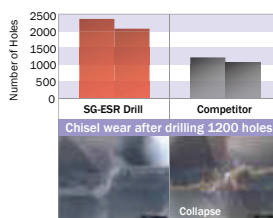
Tool life in Carbon Steel



Cutting Conditions

Drill Diameter 6mm
SFM (RPM) 130 (2100)
Feed 0.008 ipr / 16.5 ipm
Work Material Carbon Steel
Hole Depth 19mm (Through Hole)
Cutting Fluid Water soluble

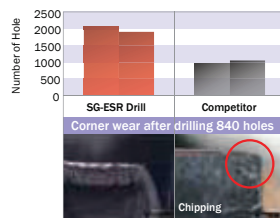
Tool life in Alloy Steel



Cutting Conditions

Drill Diameter 2mm
SFM (RPM) 90 (4,400)
Feed 0.004 ipr / 15.7 ipm
Work Material Alloy Steel (32HRC)
Hole Depth 6mm (Blind Hole)
Cutting Fluid Water Soluble

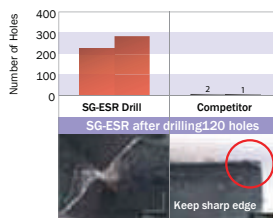
Tool life in 400-Series Stainless



Cutting Conditions

Drill Diameter 6mm
SFM (RPM) 130 (2100)
Feed 0.007 ipr / 15.7 ipm
Work Material 400-Series Stainless
Hole Depth 19mm (Through Hole)
Cutting Fluid Water soluble

Tool life in 304 Stainless Steel



Cutting Conditions

Drill Diameter 12mm
SFM (RPM) 40 (320)
Feed 0.010 ipr / 3.1 ipm
Work Material 304 Stainless Steel
Hole Depth 28mm (Through Hole)
Cutting Fluid Water soluble

Well Suited for Drilling:

◎: Great ○: Good ✕: Not recommended

Drill name	Structural Steels	Carbon Steels	Alloy Steels Pre-hardened Steels	Hardened Steels Mold Steels	Hardened Steels		Stainless Steels		Titanium Alloys Nickel Alloys	Cast Irons	Aluminum Alloys	Copper Alloys
							304SS/316SS	400-Series				
SGESR Drill	◎	◎	◎	○	✕	✕	◎	◎	○	◎	◎	◎

HIGH PERFORMANCE DRILLS

SG-ESR Drill



L7574P Metric

L7575P Fractional, Wire & Letter

Metric Range 2.0 to 32.0
Fractional Range 3/32 to 3/4

EDP No.	Size	Decimal Equivalent	Wire / Fractional Equivalent	Flute Length	Overall Length	Shank Dia.
EDP	Dc			ℓ	L	Ds
0721821	2.00	0.0787		24	56	3
1464190	2.08	0.0820	#45	1-1/8	2-3/8	1/8
0721838	2.10	0.0827		24	56	3
1464206	2.18	0.0860	#44	1-1/8	2-3/8	1/8
0721844	2.20	0.0866		25	56	3
1464212	2.26	0.0890	#43	1-1/4	2-1/2	1/8
0721850	2.30	0.0906		25	56	3
1464229	2.37	0.0935	#42	1-1/4	2-1/2	1/8
1464739	2.38	0.0938	3/32	1-1/8	2-3/8	1/8
0721867	2.40	0.0945		30	61	3
1464235	2.44	0.0960	#41	1-3/8	2-5/8	1/8
1464241	2.49	0.0980	#40			
0721873	2.50	0.0984		30	61	3
1464258	2.53	0.0995	#39	1-3/8	2-13/16	1/8
1464264	2.58	0.1015	#38	1-7/16	2-7/8	1/8
0721880	2.60	0.1024		30	61	3
1464270	2.64	0.1040	#37	1-7/16	2-7/8	1/8
0721896	2.70	0.1063		33	64	3
1464287	2.71	0.1065	#36	1-7/16	2-7/8	1/8
1464745	2.78	0.1094	7/64	1-1/4	2-1/2	1/8
0721901	2.80	0.1102		33	64	3
1464293	2.82	0.1110	#34	1-1/2	2-15/16	1/8
1464309	2.87	0.1130	#33			
0721918	2.90	0.1142		33	64	3
0721924	3.00	0.1181				
0721930	3.10	0.1220		36	68	4
1464751	3.18	0.1250	1/8	1-3/8	2-5/8	1/8
0721947	3.20	0.1260		36	68	4
1464315	3.26	0.1285	#30	1-5/8	3-1/16	3/16
0721953	3.30	0.1299		36	68	4
0721960	3.40	0.1339		39	71	4
1464321	3.47	0.1365	#29	1-3/4	3-3/16	3/16
0721976	3.50	0.1378		39	71	4
1464338	3.57	0.1405	#28	1-3/4	3-3/16	3/16
1464768	3.57	0.1406	9/64	1-1/2	2-7/8	3/16
0721982	3.60	0.1417		39	71	4
1464344	3.66	0.1440	#27	1-7/8	3-5/16	3/16
0721999	3.70	0.1457		39	71	4
1464350	3.73	0.1470	#26	1-7/8	3-5/16	3/16
1464367	3.80	0.1495	#25			
0722003	3.80	0.1496		43	75	4
1464373	3.86	0.1520	#24	2	3-7/16	3/16
0722010	3.90	0.1535		43	75	4
1464380	3.91	0.1540	#23	2	3-7/16	3/16
1464774	3.97	0.1563	5/32	1-3/4	3-1/8	3/16
1464396	3.99	0.1570	#22	2	3-7/16	3/16
0722026	4.00	0.1575		43	75	4
1464401	4.04	0.1590	#21	2-1/8	3-9/16	3/16
1464418	4.09	0.1610	#20			
0722032	4.10	0.1614		43	85	6
0722049	4.20	0.1654				
1464424	4.22	0.1660	#19	2-1/8	3-9/16	3/16
0722055	4.30	0.1693		47	89	6
1464780	4.37	0.1719	11/64	1-7/8	3-1/4	3/16
0722061	4.40	0.1732		47	89	6
0722078	4.50	0.1772				
1464430	4.57	0.1800	#15	2-3/16	3-5/8	3/16

• USA Stock Size

EDP No.	Size	Decimal Equivalent	Wire / Fractional Equivalent	Flute Length	Overall Length	Shank Dia.
EDP	Dc			ℓ	L	Ds
0722084	4.60	0.1811		47	89	6
1464447	4.62	0.1820	#14	2-3/16	3-5/8	3/16
0722090	4.70	0.1850		47	89	6
1464797	4.76	0.1875	3/16	2	3-3/8	3/16
0722106	4.80	0.1890		52	94	6
0722112	4.90	0.1929				
1464453	4.91	0.1935	#10	2-7/16	4-1/4	1/4
1464460	4.98	0.1960	#9			
0722129	5.00	0.1969		52	94	6
1464476	5.05	0.1990	#8	2-7/16	4-1/4	1/4
0722135	5.10	0.2008		52	94	6
1464482	5.11	0.2010	#7	2-7/16	4-1/4	1/4
1464802	5.16	0.2031	13/64	2-1/16	3-7/8	1/4
1464499	5.18	0.2040	#6	2-7/16	4-1/4	1/4
0722141	5.20	0.2047		52	94	6
1464504	5.22	0.2055	#5	2-1/2	4-5/16	1/4
0722158	5.30	0.2087		52	94	6
1464510	5.31	0.2090	#4	2-1/2	4-5/16	1/4
0722164	5.40	0.2126		57	99	6
1464527	5.41	0.2130	#3	2-1/2	4-5/16	1/4
0722170	5.50	0.2165		57	99	6
1464819	5.56	0.2188	7/32	2-1/16	3-7/8	1/4
0722187	5.60	0.2205		57	99	6
1464533	5.61	0.2210	#2	2-5/8	4-7/16	1/4
0722193	5.70	0.2244		57	99	6
1464540	5.79	0.2280	#1	2-5/8	4-7/16	1/4
0722209	5.80	0.2283		57	99	6
0722215	5.90	0.2323				
1464825	5.95	0.2344	15/64	2-3/8	4-1/4	1/4
0722221	6.00	0.2362		57	99	6
1464556	6.05	0.2380	B	2-3/4	4-9/16	1/4
0722238	6.10	0.2402		63	107	8
1464562	6.15	0.2420	C	2-3/4	4-9/16	1/4
0722244	6.20	0.2441		63	107	8
1464579	6.25	0.2460	D	2-3/4	4-9/16	1/4
0722250	6.30	0.2480		63	107	8
1464831	6.35	0.2500	1/4	2-3/8	4-1/4	1/4
0722267	6.40	0.2520				
0722273	6.50	0.2559		63	107	8
1464585	6.53	0.2570	F	2-7/8	4-11/16	3/8
0722280	6.60	0.2598		63	107	8
1464591	6.63	0.2610	G	2-7/8	4-11/16	3/8
0722296	6.70	0.2638		63	107	8
1464848	6.75	0.2656	17/64	2-3/4	4-5/8	3/8
0722301	6.80	0.2677		69	113	8
0722318	6.90	0.2717				
1464607	6.91	0.2720	I	2-7/8	4-11/16	3/8
0722324	7.00	0.2756		69	113	8
1464613	7.04	0.2770	J	2-7/8	4-11/16	3/8
0722330	7.10	0.2795		69	113	8
1464854	7.15	0.2813	9/32	2-3/4	4-5/8	3/8
0722347	7.20	0.2835				
0722353	7.30	0.2874		69	113	8
1464620	7.37	0.2900	L	2-15/16	4-3/4	3/8
0722360	7.40	0.2913		69	113	8
1464636	7.49	0.2950	M	3-1/16	4-7/8	3/8
0722376	7.50	0.2953		69	113	8

1 per tube

HIGH PERFORMANCE DRILLS

L7574P
L7575P

Metric
Fractional

Metric Range 2.0 to 32.0
Fractional Range 3/32 to 3/4

EDP No.	Size	Decimal Equivalent	Wire / Fractional Equivalent	Flute Length	Overall Length	Shank Dia.
EDP	Dc			ℓ	L	Ds
1464860	7.54	0.2969	19/64	2-7/8	4-3/4	3/8
0722382	7.60	0.2992		75	119	8
1464642	7.67	0.3020	N	3-1/16	4-7/8	3/8
0722399	7.70	0.3031				
0722404	7.80	0.3071		75	119	8
0722410	7.90	0.3110				
1464877	7.94	0.3125	5/16	2-7/8	4-3/4	3/8
0722427	8.00	0.3150		75	119	8
1464659	8.03	0.3160	O	3-3/16	5	3/8
0722433	8.10	0.3189				
0722440	8.20	0.3228		75	125	10
0722456	8.30	0.3268				
1464883	8.33	0.3281	21/64	2-7/8	4-3/4	3/8
0722462	8.40	0.3307		75	125	10
1464665	8.43	0.3320	Q	3-7/16	5-1/4	3/8
0722479	8.50	0.3346		75	125	10
0722485	8.60	0.3386		81	131	10
1464671	8.61	0.3390	R	3-7/16	5-1/4	3/8
0722491	8.70	0.3425		81	131	10
1464890	8.73	0.3438	11/32	3-1/4	5-1/8	3/8
0722507	8.80	0.3465				
0722513	8.90	0.3504		81	131	10
0722520	9.00	0.3543				
0722536	9.10	0.3583				
1464905	9.13	0.3594	23/64	3-1/4	5-1/8	3/8
0722542	9.20	0.3622		81	131	10
0722559	9.30	0.3661				
1464688	9.35	0.3680	U	3-5/8	5-7/16	3/8
0722565	9.40	0.3701		81	131	10
0722571	9.50	0.3740				
1464911	9.53	0.3750	3/8	3-1/4	5-1/8	3/8
1464694	9.58	0.3770	V	3-5/8	5-23/32	1/2
0722588	9.60	0.3780				
0722594	9.70	0.3819		87	137	10
0722600	9.80	0.3858				
0722616	9.90	0.3898				
1464928	9.92	0.3906	25/64	3-3/8	5-1/2	1/2
0722622	10.00	0.3937		87	137	10
1464700	10.08	0.3970	X	3-3/4	5-27/32	1/2
0722639	10.10	0.3976		87	144	12
0722645	10.20	0.4016				
1464716	10.26	0.4040	Y	3-7/8	5-31/32	1/2
0722651	10.30	0.4055		87	144	12
1464934	10.32	0.4063	13/32	3-3/8	5-1/2	1/2
0722668	10.40	0.4094		87	144	12
1464722	10.49	0.4130	Z	3-7/8	5-31/32	1/2
0722674	10.50	0.4134		87	144	12
0722680	10.60	0.4173				
0722697	10.70	0.4213		94	151	12
1464940	10.72	0.4219	27/64	3-3/4	5-7/8	1/2
0722702	10.80	0.4252				
0722719	10.90	0.4291		94	151	12
0722725	11.00	0.4331				
0722731	11.10	0.4370				
1464957	11.11	0.4375	7/16	3-3/4	5-7/8	1/2
0722748	11.20	0.4409				
0722754	11.30	0.4449		94	151	12
0722760	11.40	0.4488				
0722777	11.50	0.4528				
1464963	11.51	0.4531	29/64	3-3/4	5-7/8	1/2
0722783	11.60	0.4567				
0722790	11.70	0.4606		94	151	12
0722805	11.80	0.4646				

• USA Stock Size

EDP No.	Size	Decimal Equivalent	Wire / Fractional Equivalent	Flute Length	Overall Length	Shank Dia.
EDP	Dc			ℓ	L	Ds
0722811	11.90	0.4685		101	158	12
1464970	11.91	0.4688	15/32	4	6-1/4	1/2
0722828	12.00	0.4724				
0722834	12.10	0.4764		101	158	12
0722840	12.20	0.4803				
0722857	12.30	0.4843				
1464986	12.30	0.4844	31/64	4	6-1/4	1/2
0722863	12.40	0.4882				
0722870	12.50	0.4921		101	158	12
0722886	12.60	0.4961				
0722892	12.70	0.5000				
1464992	12.70	0.5000	1/2	4	6-1/4	1/2
0722908	12.80	0.5039				
0722914	12.90	0.5079		101	158	12
0722920	13.00	0.5118				
1465007	13.50	0.5313	17/32	4-1/4	6-3/4	5/8
0722937	13.50	0.5315		108	168	16
0722943	14.00	0.5512				
1465013	14.29	0.5625	9/16	4-1/2	7	5/8
0722950	14.50	0.5709		114	173	16
1465020	14.68	0.5781	37/64	4-1/2	7	5/8
0722966	15.00	0.5906		114	180	20
1465036	15.08	0.5938	19/32	4-3/4	7-1/4	3/4
0722972	15.50	0.6102		120	185	20
1465042	15.88	0.6250	5/8	4-3/4	7-1/4	3/4
0722989	16.00	0.6299		120	185	20
0722995	16.50	0.6496		125	189	20
1465059	16.67	0.6563	21/32	5	7-1/2	3/4
0723000	17.00	0.6693		125	189	20
1465065	17.46	0.6875	11/16	5-1/8	7-5/8	3/4
0723016	17.50	0.6890		130	194	20
0723022	18.00	0.7087		135	206	20
1465071	18.26	0.7188	23/32	5-3/8	7-3/4	7/8
0723039	18.50	0.7283		140	210	20
0723045	19.00	0.7480		135	206	25
1465088	19.05	0.7500	3/4	5-1/2	7-7/8	7/8
0723051	19.50	0.7677				
0723068	20.00	0.7874		140	210	25
0723074	20.50	0.8071			214	
0723080	21.00	0.8268		145		
0723097	21.50	0.8465		150	218	
0723102	22.00	0.8661				
0723119	22.50	0.8858				
0723125	23.00	0.9055		155	223	
0723131	23.50	0.9252				
0723148	24.00	0.9449		160	237	
0723154	24.50	0.9646				
0723160	25.00	0.9843				
0723177	25.50	1.0039		165	241	
0723183	26.00	1.0236				
0723190	26.50	1.0433				
0723205	27.00	1.0630				
0723211	27.50	1.0827		170	245	32
0723228	28.00	1.1024				
0723234	28.50	1.1220				
0723240	29.00	1.1417		175	248	
0723257	29.50	1.1614				
0723263	30.00	1.1811				
0723270	30.50	1.2008				
0723286	31.00	1.2205		180	252	
0723292	31.50	1.2402				
0723308	32.00	1.2598		185		

1 per tube

⚠ WARNING: Cancer - www.P65Warnings.ca.gov

HIGH PERFORMANCE DRILLS

Standard Drilling Conditions

List 7574P, 7575P

Workpiece Material			Structural Steels Carbon Steels		Alloy Steels		Mold Steels Stainless Steels 300 - 400 Series		Nickel Alloys Titanium Alloys		Cast Irons		Aluminum Alloys Copper Alloys Nonferrous Alloys	
Speed (SFM)			115 - 135 SFM		95 - 105 SFM		40 - 50 SFM		20 SFM		115 - 135 SFM		115 - 135 SFM	
Drill Diameter														
Fractional	Metric mm	Decimal	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)
—	2.000	0.0787	5,700	0.002	4,600	0.002	1,800	0.001	800	0.001	6,300	0.003	9,700	0.003
3/32	2.381	0.0937	5,000	0.003	4,100	0.002	1,500	0.002	700	0.001	5,600	0.003	8,500	0.003
—	3.000	0.1181	4,200	0.004	3,400	0.003	1,100	0.002	580	0.002	4,700	0.004	7,200	0.004
1/8	3.175	0.1250	4,000	0.004	3,300	0.003	1,100	0.002	550	0.002	4,500	0.005	6,900	0.005
5/32	3.969	0.1563	3,200	0.005	2,600	0.004	900	0.003	430	0.002	3,600	0.006	5,500	0.006
3/16	4.763	0.1875	2,700	0.005	2,200	0.005	790	0.004	340	0.003	3,000	0.007	4,600	0.007
—	5.000	0.1969	2,500	0.006	2,000	0.005	760	0.004	320	0.003	2,800	0.007	4,300	0.007
1/4	6.350	0.2500	2,000	0.007	1,700	0.006	610	0.005	260	0.004	2,300	0.008	3,400	0.008
5/16	7.938	0.3125	1,700	0.008	1,400	0.006	490	0.007	210	0.004	1,900	0.010	2,800	0.010
—	8.000	0.3150	1,600	0.008	1,300	0.006	480	0.007	200	0.004	1,800	0.010	2,700	0.010
3/8	9.525	0.3750	1,400	0.008	1,100	0.007	400	0.008	170	0.005	1,500	0.011	2,300	0.011
—	10.000	0.3937	1,300	0.008	1,000	0.007	380	0.008	160	0.005	1,400	0.011	2,200	0.011
—	12.000	0.4724	1,100	0.009	850	0.008	320	0.010	132	0.006	1,200	0.012	1,800	0.012
1/2	12.700	0.5000	1,100	0.010	810	0.009	310	0.010	130	0.007	1,200	0.012	1,800	0.013
—	16.000	0.6299	800	0.012	640	0.010	240	0.011	100	0.008	880	0.015	1,400	0.014
—	20.000	0.7874	640	0.014	510	0.012	190	0.012	80	0.009	700	0.017	1,100	0.016
—	25.000	0.9843	510	0.015	410	0.013	150	0.013	64	0.011	560	0.019	870	0.019
—	32.000	1.2598	400	0.015	320	0.014	120	0.015	50	0.012	440	0.019	680	0.019

- 1) The above values apply when coolant is used in vertical machine & horizontal machine. When drilling in stainless steel and hard to cut material using pecking.
2) Adjust drilling condition when unusual vibration or different sound occurs.
3) Recommended feeds & speeds are starting points only. Actual performance will be determined by specific material, the condition of equipment being used and coolant.
- Formulas: $RPM = \frac{SFM \times 3.82}{\text{Drill Diam.}}$ Feed Rate (in/min) = RPM x IPR

Standard Drilling Conditions

List 7572P, 7573P

Workpiece Material			Structural Steels Carbon Steels		Alloy Steels		Mold Steels Stainless Steels 300 - 400 Series		Nickel Alloys Titanium Alloys		Cast Irons		Aluminum Alloys Copper Alloys Nonferrous Alloys	
Speed (SFM)			115 - 135 SFM		95 - 105 SFM		40 - 50 SFM		20 SFM		115 - 135 SFM		115 - 135 SFM	
Drill Diameter														
Fractional	Metric mm	Decimal	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)
—	1.000	0.0039	9,500	0.001	8,000	0.001	3,500	0.001	1,600	0.001	12,000	0.001	15,000	0.001
—	2.000	0.0787	5,700	0.002	4,600	0.002	1,900	0.002	800	0.001	6,300	0.003	9,700	0.003
3/32	2.381	0.0938	5,000	0.003	4,100	0.003	1,700	0.002	680	0.002	5,600	0.004	8,500	0.004
—	3.000	0.1181	4,200	0.004	3,400	0.004	1,300	0.003	530	0.002	4,700	0.005	7,200	0.005
1/8	3.175	0.1250	4,000	0.005	3,300	0.004	1,300	0.003	510	0.002	4,500	0.006	6,900	0.006
5/32	3.969	0.1563	3,200	0.006	2,600	0.005	980	0.003	410	0.003	3,600	0.007	5,500	0.007
3/16	4.763	0.1875	2,700	0.006	2,200	0.005	810	0.004	340	0.003	3,000	0.008	4,600	0.008
—	5.000	0.1969	2,500	0.007	2,000	0.006	760	0.004	320	0.003	2,800	0.008	4,300	0.008
1/4	6.350	0.2500	2,000	0.008	1,700	0.007	610	0.005	260	0.004	2,300	0.010	3,400	0.010
5/16	7.938	0.3125	1,700	0.009	1,400	0.008	490	0.006	210	0.005	1,900	0.012	2,800	0.011
—	8.000	0.3150	1,600	0.009	1,300	0.008	480	0.006	200	0.005	1,800	0.012	2,700	0.012
3/8	9.525	0.3750	1,400	0.010	1,100	0.009	400	0.007	170	0.006	1,500	0.013	2,300	0.013
—	10.000	0.3937	1,300	0.010	1,000	0.009	380	0.008	160	0.006	1,400	0.013	2,200	0.013
—	12.000	0.4724	1,100	0.011	850	0.010	320	0.009	130	0.008	1,200	0.014	1,800	0.015
1/2	12.700	0.5000	1,100	0.012	810	0.010	310	0.009	130	0.008	1,200	0.015	1,800	0.015
—	16.000	0.6299	800	0.014	640	0.012	240	0.010	100	0.009	880	0.017	1,400	0.017
—	20.000	0.7874	640	0.016	510	0.014	190	0.012	80	0.010	700	0.020	1,100	0.020
—	25.000	0.9843	510	0.019	410	0.015	150	0.013	64	0.012	560	0.023	870	0.023
—	32.000	1.2598	400	0.018	320	0.015	120	0.013	50	0.013	440	0.022	680	0.022

- 1) The above values apply when coolant is used in vertical machine & horizontal machine. When drilling in stainless steel and hard to cut material using pecking.
2) Adjust drilling condition when unusual vibration or different sound occurs.
3) Recommended feeds & speeds are starting points only. Actual performance will be determined by specific material, the condition of equipment being used and coolant.
- Formulas: $RPM = \frac{SFM \times 3.82}{\text{Drill Diam.}}$ Feed Rate (in/min) = RPM x IPR

SG Drill Oil Hole



L7596P Metric Range 5.0 to 20.0 mm

L7591P Fractional Range 15/64 to 3/4

EDP No.	Size	Decimal Equivalent	Fractional Equivalent	Flute Length	Overall Length
EDP	Dc			ℓ	L
1314751	5.0	0.1969		52	94
1314768	5.5	0.2165		57	99
1315065		0.2344	15/64	2-3/8	4-1/4
1314774	6.0	0.2362		57	99
1315071		0.2500	1/4	2-3/8	4-1/4
1314780	6.5	0.2559		63	107
1315088		0.2656	17/64	2-3/4	4-5/8
1314797	7.0	0.2756		69	113
1315094		0.2813	9/32	2-3/4	4-5/8
1314802	7.5	0.2953		69	113
1315100		0.2969	19/64	2-7/8	4-3/4
1315116		0.3125	5/16	2-7/8	4-3/4
1314819	8.0	0.3150		75	119
1315122		0.3281	21/64	2-7/8	4-3/4
1314825	8.5	0.3346		75	125
1315139		0.3438	11/32	3-1/4	5-1/8
1314831	9.0	0.3543		81	131
1315145		0.3594	23/64	3-1/4	5-1/8
1314848	9.5	0.3740		81	131
1315151		0.3750	3/8	3-1/4	5-1/8
1315168		0.3906	25/64	3-3/8	5-1/2
1314854	10.0	0.3937		87	137
1315174		0.4063	13/32	3-3/8	5-1/2
1314860	10.5	0.4134		87	144
1315180		0.4219	27/64	3-3/4	5-7/8
1314877	11.0	0.4331		94	151
1315197		0.4375	7/16	3-3/4	5-7/8
1314883	11.5	0.4528		94	151
1315202		0.4531	29/64	3-3/4	5-7/8

• USA Stock Size

EDP No.	Size	Decimal Equivalent	Fractional Equivalent	Flute Length	Overall Length
EDP	Dc			ℓ	L
1315219		0.4688	15/32	4	6-1/4
1314890	12.0	0.4724		101	158
1315225		0.4844	31/64	4	6-1/4
1314905	12.5	0.4921		101	158
1315231		0.5000	1/2	4	6-1/4
1314911	13.0	0.5118		101	158
1315248		0.5313	17/32	4-1/4	6-3/4
1314928	13.5	0.5315		108	168
1314934	14.0	0.5512		108	168
1315254		0.5625	9/16	4-1/2	7
1314940	14.5	0.5709		114	173
1315260		0.5781	37/64	4-1/2	7
1314957	15.0	0.5906		114	180
1315277		0.5938	19/32	4-3/4	7-1/4
1314963	15.5	0.6102		120	185
1315283		0.6250	5/8	4-3/4	7-1/4
1314970	16.0	0.6299		120	185
1314986	16.5	0.6496		125	189
1315290		0.6563	21/32	5	7-1/2
1314992	17.0	0.6693		125	189
1315305		0.6875	11/16	5-1/8	7-5/8
1315007	17.5	0.6890		130	194
1315013	18.0	0.7087		130	194
1315311		0.7188	23/32	5-3/8	7-3/4
1315020	18.5	0.7283		135	198
1315036	19.0	0.7480		135	206
1315328		0.7500	3/4	5-1/2	7-7/8
1315042	19.5	0.7677		140	210
1315059	20.0	0.7874			

⚠ WARNING: Cancer - www.P65Warnings.ca.gov

Standard Drilling Conditions

Workpiece Material			Structural Steels Carbon Steels		Alloy Steels		Die Steels Hardened Steels (35-45HRc)		Stainless Steels		Cast Irons		Aluminum Alloys Copper Alloys Nonferrous Alloys	
Speed (SFM)			120 - 130 SFM		105 - 110 SFM		40 - 50 SFM		60 - 70 SFM		130 - 150 SFM		200 - 230 SFM	
Drill Diameter			RPM		RPM		RPM		RPM		RPM		RPM	
Fractional	Metric mm	Decimal	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)
—	5.000	0.1969	2,400	0.007	1,900	0.006	850	0.005	1,200	0.005	2,700	0.009	4,100	0.009
1/4	6.350	0.2500	1,900	0.008	1,500	0.008	650	0.006	1,000	0.006	2,100	0.011	3,300	0.011
5/16	7.938	0.3125	1,500	0.008	1,250	0.008	550	0.007	800	0.007	1,700	0.013	2,650	0.013
—	8.000	0.3150	1,500	0.009	1,200	0.009	550	0.009	750	0.008	1,700	0.014	2,600	0.014
3/8	9.525	0.3750	1,250	0.010	1,000	0.010	500	0.009	700	0.009	1,500	0.014	2,200	0.014
—	10.000	0.3937	1,200	0.011	950	0.011	450	0.010	650	0.010	1,400	0.016	2,000	0.016
—	12.000	0.4724	1,000	0.011	800	0.011	400	0.010	550	0.010	1,200	0.016	1,700	0.016
1/2	12.700	0.5000	950	0.013	750	0.013	350	0.012	500	0.013	1,100	0.019	1,600	0.019
—	16.000	0.6299	750	0.014	600	0.014	250	0.014	400	0.015	850	0.021	1,300	0.021
—	20.000	0.7874	600	0.015	450	0.015	200	0.014	300	0.015	650	0.022	1,000	0.021

1) The above values apply when coolant is used in vertical machine & horizontal machine. When drilling in stainless steel and hard to cut material using pecking.

2) Adjust drilling condition when unusual vibration or different sound occurs.

3) Recommended feeds & speeds are starting points only. Actual performance will be determined by specific material, the condition of equipment being used and coolant.

Formulas: $RPM = \frac{SFM \times 3.82}{\text{Drill Diam.}}$ Feed Rate (in/min) = RPM x IPR