

GIGA-Drill –

The high precision drill with four margins

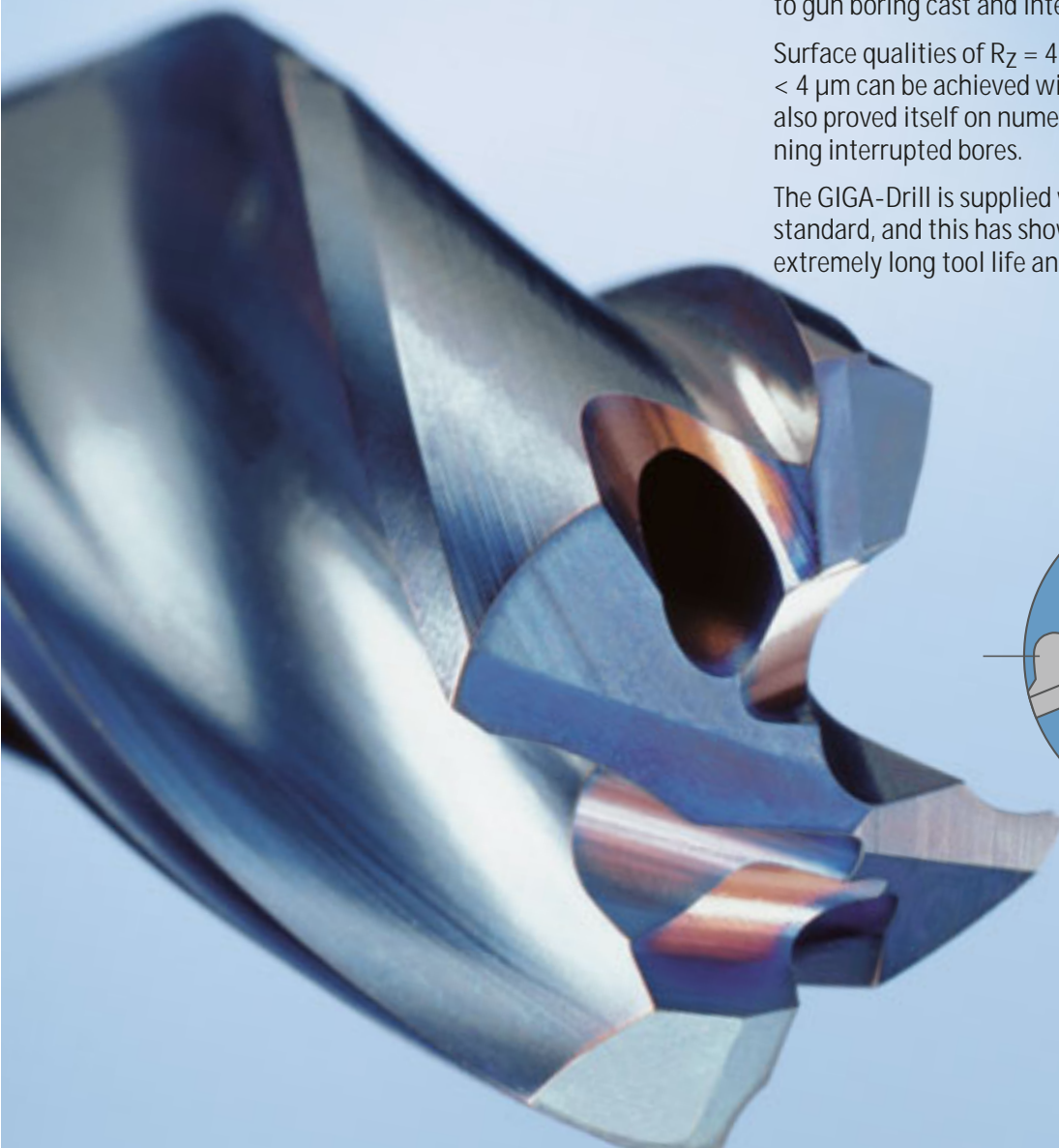
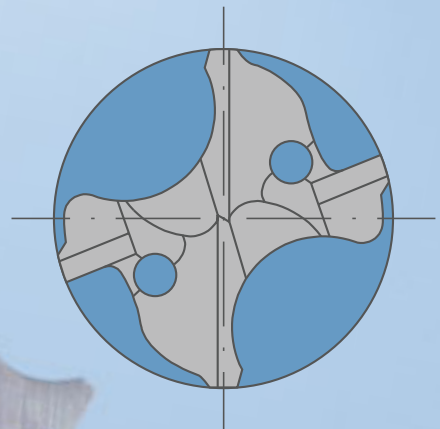
Drilling technology today is still mainly characterized by drills with two cutting edges reaching to the center of the tool and two margins along the body of the drill. With four cutting edges and four guide margins, the MAPAL GIGA-Drill represents a quantum-leap in performance and quality of the finished bore.

The advantages of the four margins which support the drill in the bore and produce greater accuracy and quality, are also one of the main features of this unique drill.

Distributing the cutting effort between two solid boring and two gun boring margins allows the feed rate and tool life to be doubled. In addition to drilling into the solid, the GIGA-Drill is also very well suited to gun boring cast and interrupted bores.

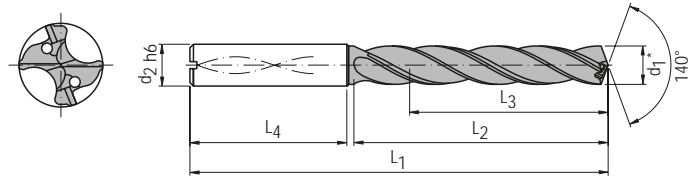
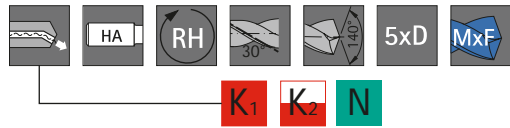
Surface qualities of $R_z = 4 \mu\text{m}$ and concentricities of $< 4 \mu\text{m}$ can be achieved with the GIGA-Drill. It has also proved itself on numerous occasions for machining interrupted bores.

The GIGA-Drill is supplied with the MxF coating as a standard, and this has shown to be excellent with extremely long tool life and low wear.



GIGA-Drill

M2195



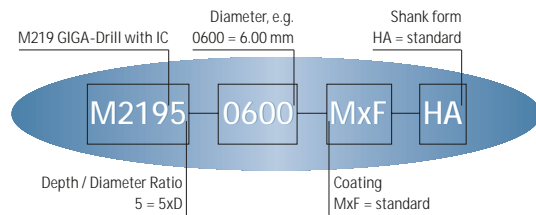
Design:

Drill diameter: 6.00 – 20.04 mm
0.2362 – 0.7890 Inch

Bore tolerance: IT 9 (achievable)

No. of margins: 4

To order, use the code given in the table and supplement it with the required coating and shank form.
Complete order code:




Drill diameter			Dimensions					M2195
mm	Inch / Wire / Letter	Dec. equivalent Inch	Shank diameter d ₂ h ₆ mm	Total length L ₁ mm	Margin length L ₂ mm	Maximum drilling depth L ₃ mm	Shank length L ₄ mm	
6.00		0.2362	6	82	44	35	36	M2195-0600 ●
6.03		0.2374	6	82	44	35	36	M2195-0603 ○
6.10		0.2402	8	91	53	43	36	M2195-0610 ○
6.20		0.2441	8	91	53	43	36	M2195-0620 ●
6.30		0.2480	8	91	53	43	36	M2195-0630 ○
6.35	1/4	0.2500	8	91	53	43	36	M2195-0635 ●
6.40		0.2520	8	91	53	43	36	M2195-0640 ○
6.50		0.2559	8	91	53	43	36	M2195-0650 ●
6.60		0.2598	8	91	53	43	36	M2195-0660 ●
6.70		0.2638	8	91	53	43	36	M2195-0670 ○
6.75	17/64	0.2656	8	91	53	43	36	M2195-0675 ●
6.80		0.2677	8	91	53	43	36	M2195-0680 ●
6.90	I	0.2717	8	91	53	43	36	M2195-0690 ●
7.00		0.2756	8	91	53	43	36	M2195-0700 ●
7.10		0.2795	8	91	53	43	36	M2195-0710 ○
7.14	9/32	0.2812	8	91	53	43	36	M2195-0714 ●
7.20		0.2835	8	91	53	43	36	M2195-0720 ●
7.30		0.2874	8	91	53	43	36	M2195-0730 ●
7.40		0.2913	8	91	53	43	36	M2195-0740 ●
7.50		0.2953	8	91	53	43	36	M2195-0750 ●
7.54	19/64	0.2969	8	91	53	43	36	M2195-0754 ●
7.60		0.2992	8	91	53	43	36	M2195-0760 ●
7.70		0.3031	8	91	53	43	36	M2195-0770 ●
7.80		0.3071	8	91	53	43	36	M2195-0780 ○
7.90		0.3110	8	91	53	43	36	M2195-0790 ○

For machining values see Page 76.

* The bore diameter tolerance d₁ is within the bore tolerance field H7.

GIGA-Drill M2195

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Drill diameter d ₁ *		Dimensions						 M2195	Order code Form / Diameter	
mm	Inch / Wire / Letter	Dec. equivalent Inch	Shank diameter d ₂ h ₆ mm	Total length L ₁ mm	Margin length L ₂ mm	Maximum drilling depth L ₃ mm	Shank length L ₄ mm			
7.94	5/16	0.3125	8	91	53	43	36	M2195-0794	●	
8.00		0.3150	8	91	53	43	36	M2195-0800	●	
8.03		0.3161	8	91	53	43	36	M2195-0803	○	
8.10		0.3189	10	103	61	49	40	M2195-0810	○	
8.20	P	0.3228	10	103	61	49	40	M2195-0820	●	
8.30		0.3268	10	103	61	49	40	M2195-0830	○	
8.33	21/64	0.3281	10	103	61	49	40	M2195-0833	●	
8.40		0.3307	10	103	61	49	40	M2195-0840	○	
8.50		0.3346	10	103	61	49	40	M2195-0850	●	
8.60		0.3386	10	103	61	49	40	M2195-0860	○	
8.70		0.3425	10	103	61	49	40	M2195-0870	○	
8.73	11/32	0.3438	10	103	61	49	40	M2195-0873	●	
8.80		0.3465	10	103	61	49	40	M2195-0880	●	
8.90		0.3504	10	103	61	49	40	M2195-0890	○	
9.00		0.3543	10	103	61	49	40	M2195-0900	●	
9.10		0.3583	10	103	61	49	40	M2195-0910	○	
9.13	23/64	0.3594	10	103	61	49	40	M2195-0913	●	
9.20		0.3622	10	103	61	49	40	M2195-0920	○	
9.30		0.3661	10	103	61	49	40	M2195-0930	●	
9.40		0.3701	10	103	61	49	40	M2195-0940	○	
9.50		0.3740	10	103	61	49	40	M2195-0950	●	
9.53	3/8	0.3750	10	103	61	49	40	M2195-0953	●	
9.60		0.3780	10	103	61	49	40	M2195-0960	●	
9.70		0.3819	10	103	61	49	40	M2195-0970	○	
9.80	W	0.3858	10	103	61	49	40	M2195-0980	○	
9.90		0.3898	10	103	61	49	40	M2195-0990	●	
9.92	25/64	0.3906	10	103	61	49	40	M2195-0992	●	
10.00		0.3937	10	103	61	49	40	M2195-1000	●	
10.03		0.3949	10	103	61	49	40	M2195-1003	○	
10.10		0.3976	12	118	71	56	45	M2195-1010	○	
10.20		0.4016	12	118	71	56	45	M2195-1020	●	
10.30		0.4055	12	118	71	56	45	M2195-1030	●	
10.32	13/32	0.4062	12	118	71	56	45	M2195-1032	●	
10.40		0.4094	12	118	71	56	45	M2195-1040	○	
10.50		0.4134	12	118	71	56	45	M2195-1050	●	
10.60		0.4173	12	118	71	56	45	M2195-1060	○	
10.70		0.4213	12	118	71	56	45	M2195-1070	●	
10.72	27/64	0.4219	12	118	71	56	45	M2195-1072	●	
10.80		0.4252	12	118	71	56	45	M2195-1080	○	
10.90		0.4291	12	118	71	56	45	M2195-1090	○	
11.00		0.4331	12	118	71	56	45	M2195-1100	●	
11.10		0.4370	12	118	71	56	45	M2195-1110	○	
11.11	7/16	0.4375	12	118	71	56	45	M2195-1111	●	
11.20		0.4409	12	118	71	56	45	M2195-1120	●	
11.30		0.4449	12	118	71	56	45	M2195-1130	●	


* The bore diameter tolerance d₁ is within the bore tolerance field H7.

For machining values see Page 84.

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5xD


Drill diameter d ₁ *		Dimensions						 M2195 Order code Form / Diameter	
		Inch / Wire / Letter	Dec. equivalent Inch	Shank diameter d ₂ h ₆ mm	Total length L ₁ mm	Margin length L ₂ mm	Maximum drilling depth L ₃ mm		
mm									
11.40		0.4488	12	118	71	56	45	M2195-1140	●
11.50	29/64	0.4528	12	118	71	56	45	M2195-1150	●
11.60		0.4567	12	118	71	56	45	M2195-1160	○
11.70		0.4606	12	118	71	56	45	M2195-1170	○
11.80		0.4646	12	118	71	56	45	M2195-1180	●
11.90	15/32	0.4685	12	118	71	56	45	M2195-1190	○
12.00		0.4724	12	118	71	56	45	M2195-1200	●
12.30	31/64	0.4843	14	124	77	60	45	M2195-1230	●
12.50		0.4921	14	124	77	60	45	M2195-1250	●
12.70	1/2	0.5000	14	124	77	60	45	M2195-1270	●
12.80		0.5039	14	124	77	60	45	M2195-1280	●
13.00		0.5118	14	124	77	60	45	M2195-1300	●
13.10	33/64	0.5157	14	124	77	60	45	M2195-1310	●
13.40		0.5276	14	124	77	60	45	M2195-1340	●
13.50		0.5315	14	124	77	60	45	M2195-1350	●
13.80		0.5433	14	124	77	60	45	M2195-1380	○
14.00		0.5512	14	124	77	60	45	M2195-1400	●
14.04		0.5528	14	124	77	60	45	M2195-1404	○
14.29		0.5626	16	133	83	63	48	M2195-1429	●
14.50		0.5709	16	133	83	63	48	M2195-1450	●
14.68	37/64	0.5780	16	133	83	63	48	M2195-1468	●
14.80		0.5827	16	133	83	63	48	M2195-1480	●
15.00		0.5906	16	133	83	63	48	M2195-1500	●
15.08	19/32	0.5937	16	133	83	63	48	M2195-1508	●
15.50		0.6102	16	133	83	63	48	M2195-1550	●
15.80		0.6220	16	133	83	63	48	M2195-1580	○
15.88	5/8	0.6250	16	133	83	63	48	M2195-1588	●
16.00		0.6299	16	133	83	63	48	M2195-1600	●
16.04		0.6315	16	133	83	63	48	M2195-1604	○
16.50		0.6496	18	143	93	71	48	M2195-1650	●
16.67	21/32	0.6563	18	143	93	71	48	M2195-1667	●
16.80		0.6614	18	143	93	71	48	M2195-1680	○
17.00		0.6693	18	143	93	71	48	M2195-1700	●
17.46	11/16	0.6874	18	143	93	71	48	M2195-1746	●
17.50		0.6890	18	143	93	71	48	M2195-1750	●
17.80		0.7008	18	143	93	71	48	M2195-1780	○
17.86	45/64	0.7031	18	143	93	71	48	M2195-1786	●
18.00		0.7087	18	143	93	71	48	M2195-1800	●
18.04		0.7102	18	143	93	71	48	M2195-1804	○
18.26	23/32	0.7189	20	153	101	77	50	M2195-1826	●
18.50		0.7283	20	153	101	77	50	M2195-1850	○
18.80		0.7402	20	153	101	77	50	M2195-1880	○
19.00		0.7480	20	153	101	77	50	M2195-1900	●
19.05	3/4	0.7500	20	153	101	77	50	M2195-1905	●
19.50		0.7677	20	153	101	77	50	M2195-1950	●

For machining values see Page 84.

* The bore diameter tolerance d₁ is within the bore tolerance field H7.

GIGA-Drill M2195

5xD

Drill diameter d_1^*		Dimensions						 M2195 Order code Form / Diameter	
mm	Inch / Wire / Letter	Dec. equivalent Inch	Shank diameter d_2 h6 mm	Total length L_1 mm	Margin length L_2 mm	Maximum drilling depth L_3 mm	Shank length L_4 mm		
19.80		0.7795	20	153	101	77	50	M2195-1980	<input type="radio"/>
20.00		0.7874	20	153	101	77	50	M2195-2000	<input checked="" type="radio"/>
20.04		0.7890	20	153	101	77	50	M2195-2004	<input type="radio"/>

* The bore diameter tolerance d_1 is within the bore tolerance field H7.

For machining values see Page 84.