



Reamers & Gun drills





New: Fixed size addition, 5μ increments ± 0.05 range

Tolerance class	Nominal diameter										
	2	3	4	5	6	7	8	9	10	11	12
E6	2.015	3.015	4.020	5.020	6.020	7.025	8.025	9.025	10.025	11.035	12.035
E7	2.015	3.015	4.025	5.025	6.025	7.035	8.035	9.035	10.035	11.045	12.045
E8	2.020	3.020	4.030	5.030	6.030	7.040	8.040	9.040	10.040	11.050	12.050
E9	2.030	3.030	4.045	5.045	6.045	7.050	8.050	9.050	10.050	11.050	12.050
F6			4.010	5.010	6.010	7.015	8.015	9.015	10.015	11.020	12.020
F7	2.010	3.010	4.015	5.015	6.015	7.020	8.020	9.020	10.020	11.025	12.025
F8	2.015	3.015	4.020	5.020	6.020	7.030	8.030	9.030	10.030	11.035	12.035
F9	2.025	3.025	4.035	5.035	6.035	7.040	8.040	9.040	10.040	11.050	12.050
G6			4.005	5.005	6.005	7.005	8.005	9.005	10.005	11.010	12.010
G7	2.005	3.005	4.010	5.010	6.010	7.015	8.015	9.015	10.015	11.015	12.015
G8	2.010	3.010	4.015	5.015	6.015	7.020	8.020	9.020	10.020	11.025	12.025
G9	2.020	3.020	4.025	5.025	6.025	7.035	8.035	9.035	10.035	11.040	12.040
H6	2.000	3.000	4.000	5.000	6.000	7.000	8.000	9.000	10.000	11.005	12.005
H7	See #1685, #1686 H7 series										
H8	2.005	3.005	4.010	5.010	6.010	7.015	8.015	9.015	10.015	11.020	12.020
H9	2.020	3.020	4.025	5.025	6.025	7.030	8.030	9.030	10.030	11.035	12.035
J6			4.000	5.000	6.000	7.000	8.000	9.000	10.000	11.000	12.000
J7	1.995	2.995	4.000	5.000	6.000	7.000	8.000	9.000	10.000	11.005	12.005
J8	2.000	3.000	4.005	5.005	6.005	7.005	8.005	9.005	10.005	11.010	12.010
J9/JS9	2.005	3.005	4.010	5.010	6.010	7.010	8.010	9.010	10.010	11.015	12.015
K6	1.995	2.995	3.995	4.995	5.995	6.995	7.995	8.995	9.995	10.995	11.995
K7	1.995	2.995	3.995	4.995	5.995	7.000	8.000	9.000	10.000	11.000	12.000
K8	1.995	2.995	4.000	5.000	6.000	7.000	8.000	9.000	10.000	11.000	12.000
K9	1.995	2.995	Not defined in DIN ISO 286								
M6						6.990	7.990	8.990	9.990	10.990	11.990
M7	1.990	2.990	3.995	4.995	5.995	6.995	7.995	8.995	9.995	10.995	11.995
M8	1.990	2.990	3.995	4.995	5.995	6.995	7.995	8.995	9.995	10.995	11.995
M9	1.990	2.990	3.990	4.990	5.990	6.985	7.985	8.985	9.985	10.985	11.985
N6	1.990	2.990	3.990	4.990	5.990	6.985	7.985	8.985	9.985	10.985	11.985
N7	1.990	2.990	3.990	4.990	5.990	6.990	7.990	8.990	9.990	10.990	11.990
N8	1.990	2.990	3.990	4.990	5.990	6.990	7.990	8.990	9.990	10.990	11.990
N9	1.990	2.990	3.995	4.995	5.995	6.995	7.995	8.995	9.995	10.995	11.995
P6			3.985	4.985	5.985	6.980	7.980	8.980	9.980	10.980	11.980
P7	1.985	2.985	3.985	4.985	5.985	6.985	7.985	8.985	9.985	10.980	11.980
P8	1.985	2.985	3.980	4.980	5.980	6.980	7.980	8.980	9.980	10.975	11.975
P9	1.985	2.985	3.980	4.980	5.980	6.980	7.980	8.980	9.980	10.975	11.975
R6	1.985	2.985	3.980	4.980	5.980	6.975	7.975	8.975	9.975	10.975	11.975
R7	1.985	2.985	3.980	4.980	5.980	6.980	7.980	8.980	9.980	10.975	11.975
R8	1.985	2.985	3.980	4.980	5.980	6.975	7.975	8.975	9.975	10.970	11.970
R9	1.985	2.985	3.980	4.980	5.980	6.975	7.975	8.975	9.975	10.970	11.970
S6	1.980	2.980				6.975	7.975	8.975	9.975	10.970	11.970
S7	1.980	2.980	3.980	4.980	5.980	6.975	7.975	8.975	9.975	10.970	11.970
S8	1.980	2.980	3.975	4.975	5.975	6.970	7.970	8.970	9.970	10.965	11.965
S9	1.980	2.980	3.975	4.975	5.975	6.970	7.970	8.970	9.970	10.965	11.965

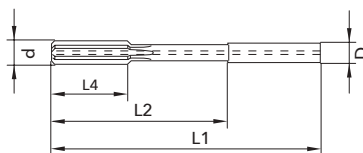


High-performance Reamers NR 500

NR500

High-performance reamers, fixed-size series

P M S H



extremely unequal flute spacing • central internal coolant supply, outlet via oil grooves on shank • 5/1000 dimension
• intermediate dimensions of $\varnothing 1.95-20.1$ mm possible • for clamping in hydraulic and shrink fit chucks

Unit: mm

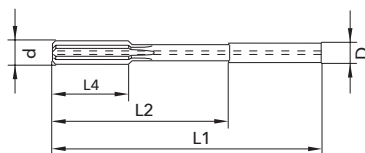
Specification	Dimensions					
	d	D	L1	L2	L4	
NR500-2.980	2.980	4	68	40	12	4
NR500-2.985	2.985	4	68	40	12	4
NR500-2.990	2.990	4	68	40	12	4
NR500-2.995	2.995	4	68	40	12	4
NR500-3.000	3.000	4	68	40	12	4
NR500-3.005	3.005	4	68	40	12	4
NR500-3.010	3.010	4	68	40	12	4
NR500-3.015	3.015	4	68	40	12	4
NR500-3.020	3.020	4	68	40	12	4
NR500-3.025	3.025	4	68	40	12	4
NR500-3.030	3.030	4	68	40	12	4
NR500-3.035	3.035	4	68	40	12	4
NR500-3.040	3.040	4	68	40	12	4
NR500-3.045	3.045	4	68	40	12	4
NR500-3.050	3.050	4	68	40	12	4
NR500-3.950	3.950	4	68	40	12	4
NR500-3.955	3.955	4	68	40	12	4
NR500-3.960	3.960	4	68	40	12	4
NR500-3.965	3.965	4	68	40	12	4
NR500-3.970	3.970	4	68	40	12	4
NR500-3.975	3.975	4	68	40	12	4
NR500-3.980	3.980	4	68	40	12	4
NR500-3.985	3.985	4	68	40	12	4
NR500-3.990	3.990	4	68	40	12	4
NR500-3.995	3.995	4	68	40	12	4
NR500-4.000	4.000	4	68	40	12	4
NR500-4.005	4.005	4	68	40	12	4

Recommended cutting data see page 18

NR500

High-performance reamers, fixed-size series

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Unit: mm

Specification	Dimensions					
	d	D	L1	L2	L4	
NR500-2.980	2.980	4	68	40	12	4
NR500-2.985	2.985	4	68	40	12	4
NR500-2.990	2.990	4	68	40	12	4
NR500-2.995	2.995	4	68	40	12	4
NR500-3.000	3.000	4	68	40	12	4
NR500-3.005	3.005	4	68	40	12	4
NR500-3.010	3.010	4	68	40	12	4
NR500-3.015	3.015	4	68	40	12	4
NR500-3.020	3.020	4	68	40	12	4
NR500-3.025	3.025	4	68	40	12	4
NR500-3.030	3.030	4	68	40	12	4
NR500-3.035	3.035	4	68	40	12	4
NR500-3.040	3.040	4	68	40	12	4
NR500-3.045	3.045	4	68	40	12	4
NR500-3.050	3.050	4	68	40	12	4
NR500-3.950	3.950	4	68	40	12	4
NR500-3.955	3.955	4	68	40	12	4
NR500-3.960	3.960	4	68	40	12	4
NR500-3.965	3.965	4	68	40	12	4
NR500-3.970	3.970	4	68	40	12	4
NR500-3.975	3.975	4	68	40	12	4
NR500-3.980	3.980	4	68	40	12	4
NR500-3.985	3.985	4	68	40	12	4
NR500-3.990	3.990	4	68	40	12	4
NR500-3.995	3.995	4	68	40	12	4
NR500-4.000	4.000	4	68	40	12	4
NR500-4.005	4.005	4	68	40	12	4

Recommended cutting data see page 18 



High-performance Reamers NR 500

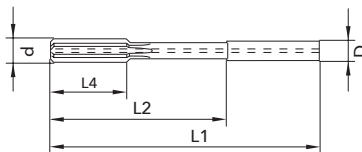
NR500

High-performance reamers, fixed-size series

P M S H



extremely unequal flute spacing • central internal coolant supply, outlet via oil grooves on shank • 5/1000 dimension
• intermediate dimensions of $\varnothing 1.95-20.1$ mm possible • for clamping in hydraulic and shrink fit chucks



Unit: mm

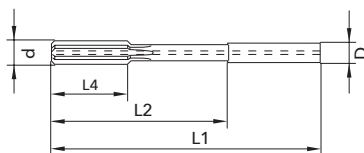
Specification	Dimensions					
	d	D	L1	L2	L4	
NR500-4.010	4.010	4	68	40	12	4
NR500-4.015	4.015	4	68	40	12	4
NR500-4.020	4.020	4	68	40	12	4
NR500-4.025	4.025	4	68	40	12	4
NR500-4.030	4.030	4	68	40	12	4
NR500-4.035	4.035	4	68	40	12	4
NR500-4.040	4.040	4	68	40	12	4
NR500-4.045	4.045	4	68	40	12	4
NR500-4.050	4.050	4	68	40	12	4
NR500-4.950	4.950	6	76	40	12	4
NR500-4.955	4.955	6	76	40	12	4
NR500-4.960	4.960	6	76	40	12	4
NR500-4.965	4.965	6	76	40	12	4
NR500-4.970	4.970	6	76	40	12	4
NR500-4.975	4.975	6	76	40	12	4
NR500-4.980	4.980	6	76	40	12	4
NR500-4.985	4.985	6	76	40	12	4
NR500-4.990	4.990	6	76	40	12	4
NR500-4.995	4.995	6	76	40	12	4
NR500-5.000	5.000	6	76	40	12	4
NR500-5.005	5.005	6	76	40	12	4
NR500-5.010	5.010	6	76	40	12	4
NR500-5.015	5.015	6	76	40	12	4
NR500-5.020	5.020	6	76	40	12	4
NR500-5.025	5.025	6	76	40	12	4
NR500-5.030	5.030	6	76	40	12	4
NR500-5.035	5.035	6	76	40	12	4

Recommended cutting data see page 18 

NR500

High-performance reamers, fixed-size series

P M S H



Unit: mm

extremely unequal flute spacing • central internal coolant supply, outlet via oil grooves on shank • 5/1000 dimension
• intermediate dimensions of $\varnothing 1.95\text{--}20.1$ mm possible • for clamping in hydraulic and shrink fit chucks

Specification	Dimensions					
	d	D	L1	L2	L4	
NR500-5.040	5.040	6	76	40	12	4
NR500-5.045	5.045	6	76	40	12	4
NR500-5.050	5.050	6	76	40	12	4
NR500-5.950	5.950	6	76	40	12	4
NR500-5.955	5.955	6	76	40	12	4
NR500-5.960	5.960	6	76	40	12	4
NR500-5.965	5.965	6	76	40	12	4
NR500-5.970	5.970	6	76	40	12	4
NR500-5.975	5.975	6	76	40	12	4
NR500-5.980	5.980	6	76	40	12	4
NR500-5.985	5.985	6	76	40	12	4
NR500-5.990	5.990	6	76	40	12	4
NR500-5.995	5.995	6	76	40	12	4
NR500-6.000	6.000	6	76	40	12	4
NR500-6.005	6.005	6	76	40	12	4
NR500-6.010	6.010	6	76	40	12	4
NR500-6.015	6.015	6	76	40	12	4
NR500-6.020	6.020	6	76	40	12	4
NR500-6.025	6.025	6	76	40	12	4
NR500-6.030	6.030	6	76	40	12	4
NR500-6.035	6.035	6	76	40	12	4
NR500-6.040	6.040	6	76	40	12	4
NR500-6.045	6.045	6	76	40	12	4
NR500-6.050	6.050	6	76	40	12	4
NR500-6.950	6.950	8	101	65	16	6
NR500-6.955	6.955	8	101	65	16	6
NR500-6.960	6.960	8	101	65	16	6

Recommended cutting data see page 18 

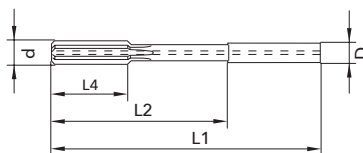


High-performance Reamers NR 500

NR500

High-performance reamers, fixed-size series

P M S H



extremely unequal flute spacing • central internal coolant supply, outlet via oil grooves on shank • 5/1000 dimension
• intermediate dimensions of $\varnothing 1.95-20.1$ mm possible • for clamping in hydraulic and shrink fit chucks

Unit: mm

Specification	Dimensions					
	d	D	L1	L2	L4	
NR500-6.965	6.965	8	101	65	16	6
NR500-6.970	6.970	8	101	65	16	6
NR500-6.975	6.975	8	101	65	16	6
NR500-6.980	6.980	8	101	65	16	6
NR500-6.985	6.985	8	101	65	16	6
NR500-6.990	6.990	8	101	65	16	6
NR500-6.995	6.995	8	101	65	16	6
NR500-7.000	7.000	8	101	65	16	6
NR500-7.005	7.005	8	101	65	16	6
NR500-7.010	7.010	8	101	65	16	6
NR500-7.015	7.015	8	101	65	16	6
NR500-7.020	7.020	8	101	65	16	6
NR500-7.025	7.025	8	101	65	16	6
NR500-7.030	7.030	8	101	65	16	6
NR500-7.035	7.035	8	101	65	16	6
NR500-7.040	7.040	8	101	65	16	6
NR500-7.045	7.045	8	101	65	16	6
NR500-7.050	7.050	8	101	65	16	6
NR500-7.950	7.950	8	101	65	16	6
NR500-7.955	7.955	8	101	65	16	6
NR500-7.960	7.960	8	101	65	16	6
NR500-7.965	7.965	8	101	65	16	6
NR500-7.970	7.970	8	101	65	16	6
NR500-7.975	7.975	8	101	65	16	6
NR500-7.980	7.980	8	101	65	16	6
NR500-7.985	7.985	8	101	65	16	6
NR500-7.990	7.990	8	101	65	16	6

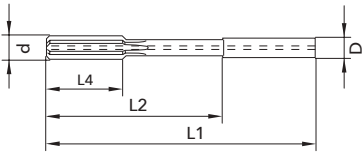
Recommended cutting data see page 18



NR500

High-performance reamers, fixed-size series

P M S H



extremely unequal flute spacing • central internal coolant supply, outlet via oil grooves on shank • 5/1000 dimension
• intermediate dimensions of Ø 1.95-20.1 mm possible • for clamping in hydraulic and shrink fit chucks

Unit: mm

Specification	Dimensions					
	d	D	L1	L2	L4	
NR500-7.995	7.995	8	101	65	16	6
NR500-8.000	8.000	8	101	65	16	6
NR500-8.005	8.005	8	101	65	16	6
NR500-8.010	8.010	8	101	65	16	6
NR500-8.015	8.015	8	101	65	16	6
NR500-8.020	8.020	8	101	65	16	6
NR500-8.025	8.025	8	101	65	16	6
NR500-8.030	8.030	8	101	65	16	6
NR500-8.035	8.035	8	101	65	16	6
NR500-8.040	8.040	8	101	65	16	6
NR500-8.045	8.045	8	101	65	16	6
NR500-8.050	8.050	8	101	65	16	6
NR500-8.950	8.950	10	101	61	19	6
NR500-8.955	8.955	10	101	61	19	6
NR500-8.960	8.960	10	101	61	19	6
NR500-8.965	8.965	10	101	61	19	6
NR500-8.970	8.970	10	101	61	19	6
NR500-8.975	8.975	10	101	61	19	6
NR500-8.980	8.980	10	101	61	19	6
NR500-8.985	8.985	10	101	61	19	6
NR500-8.990	8.990	10	101	61	19	6
NR500-8.995	8.995	10	101	61	19	6
NR500-9.000	9.000	10	101	61	19	6
NR500-9.005	9.005	10	101	61	19	6
NR500-9.010	9.010	10	101	61	19	6
NR500-9.015	9.015	10	101	61	19	6
NR500-9.020	9.020	10	101	61	19	6

Recommended cutting data see page 18

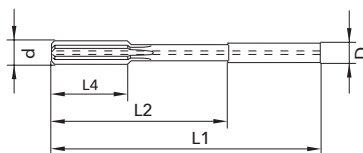


High-performance Reamers NR 500

NR500

High-performance reamers, fixed-size series

P M S H



extremely unequal flute spacing • central internal coolant supply, outlet via oil grooves on shank • 5/1000 dimension
• intermediate dimensions of $\varnothing 1.95-20.1$ mm possible • for clamping in hydraulic and shrink fit chucks

Unit: mm

Specification	Dimensions					
	d	D	L1	L2	L4	
NR500-9.025	9.025	10	101	61	19	6
NR500-9.030	9.030	10	101	61	19	6
NR500-9.035	9.035	10	101	61	19	6
NR500-9.040	9.040	10	101	61	19	6
NR500-9.045	9.045	10	101	61	19	6
NR500-9.050	9.050	10	101	61	19	6
NR500-9.950	9.950	10	101	61	19	6
NR500-9.955	9.955	10	101	61	19	6
NR500-9.960	9.960	10	101	61	19	6
NR500-9.965	9.965	10	101	61	19	6
NR500-9.970	9.970	10	101	61	19	6
NR500-9.975	9.975	10	101	61	19	6
NR500-9.980	9.980	10	101	61	19	6
NR500-9.985	9.985	10	101	61	19	6
NR500-9.990	9.990	10	101	61	19	6
NR500-9.995	9.995	10	101	61	19	6
NR500-10.000	10.000	10	101	61	19	6
NR500-10.005	10.005	10	101	61	19	6
NR500-10.010	10.010	10	101	61	19	6
NR500-10.015	10.015	10	101	61	19	6
NR500-10.020	10.020	10	101	61	19	6
NR500-10.025	10.025	10	101	61	19	6
NR500-10.030	10.030	10	101	61	19	6
NR500-10.035	10.035	10	101	61	19	6
NR500-10.040	10.040	10	101	61	19	6
NR500-10.045	10.045	10	101	61	19	6
NR500-10.050	10.050	10	101	61	19	6

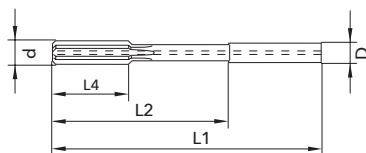
Recommended cutting data see page 18



NR500

High-performance reamers, fixed-size series

P M S H



Unit: mm

extremely unequal flute spacing • central internal coolant supply, outlet via oil grooves on shank • 5/1000 dimension
• intermediate dimensions of Ø 1.95-20.1 mm possible • for clamping in hydraulic and shrink fit chucks

Specification	Dimensions					
	d	D	L1	L2	L4	
NR500-10.950	10.950	12	130	85	19	6
NR500-10.955	10.955	12	130	85	19	6
NR500-10.960	10.960	12	130	85	19	6
NR500-10.965	10.965	12	130	85	19	6
NR500-10.970	10.970	12	130	85	19	6
NR500-10.975	10.975	12	130	85	19	6
NR500-10.980	10.980	12	130	85	19	6
NR500-10.985	10.985	12	130	85	19	6
NR500-10.990	10.990	12	130	85	19	6
NR500-10.995	10.995	12	130	85	19	6
NR500-11.000	11.000	12	130	85	19	6
NR500-11.005	11.005	12	130	85	19	6
NR500-11.010	11.010	12	130	85	19	6
NR500-11.015	11.015	12	130	85	19	6
NR500-11.020	11.020	12	130	85	19	6
NR500-11.025	11.025	12	130	85	19	6
NR500-11.030	11.030	12	130	85	19	6
NR500-11.035	11.035	12	130	85	19	6
NR500-11.040	11.040	12	130	85	19	6
NR500-11.045	11.045	12	130	85	19	6
NR500-11.050	11.050	12	130	85	19	6
NR500-11.950	11.950	12	130	85	19	6
NR500-11.955	11.955	12	130	85	19	6
NR500-11.960	11.960	12	130	85	19	6
NR500-11.965	11.965	12	130	85	19	6
NR500-11.970	11.970	12	130	85	19	6
NR500-11.975	11.975	12	130	85	19	6

Recommended cutting data see page 18 



High-performance Reamers NR 500

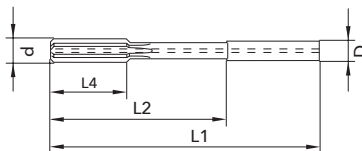
NR500

High-performance reamers, fixed-size series

P M S H



extremely unequal flute spacing • central internal coolant supply, outlet via oil grooves on shank • 5/1000 dimension
• intermediate dimensions of Ø 1.95-20.1 mm possible • for clamping in hydraulic and shrink fit chucks



Unit: mm

Specification	Dimensions					
	d	D	L1	L2	L4	
NR500-11.980	11.980	12	130	85	19	6
NR500-11.985	11.985	12	130	85	19	6
NR500-11.990	11.990	12	130	85	19	6
NR500-11.995	11.995	12	130	85	19	6
NR500-12.000	12.000	12	130	85	19	6
NR500-12.005	12.005	12	130	85	19	6
NR500-12.010	12.010	12	130	85	19	6
NR500-12.015	12.015	12	130	85	19	6
NR500-12.020	12.020	12	130	85	19	6
NR500-12.025	12.025	12	130	85	19	6
NR500-12.030	12.030	12	130	85	19	6
NR500-12.035	12.035	12	130	85	19	6
NR500-12.040	12.040	12	130	85	19	6
NR500-12.045	12.045	12	130	85	19	6
NR500-12.050	12.050	12	130	85	19	6

Recommended cutting data see page 18



NR500

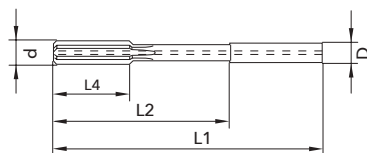
High-performance reamers, H7 series

PMS

NR 500
Short D



H7



Unit: mm

H7 series in accordance with DIN 1420 • extremely unequal flute spacing • central internal coolant supply, outlet via oil grooves on shank • intermediate dimensions of Ø 1.95-20.1 mm possible • for clamping in hydraulic and shrink fit chucks

Specification	Dimensions					
	d	D	L1	L2	L4	
NR500-3.0-H7	3.0	4	50	22	10	4
NR500-3.5-H7	3.5	4	50	22	10	4
NR500-4.0-H7	4.0	4	50	22	10	4
NR500-4.5-H7	4.5	6	58	22	10	4
NR500-5.0-H7	5.0	6	58	22	10	4
NR500-5.5-H7	5.5	6	58	22	10	4
NR500-6.0-H7	6.0	6	58	22	10	4
NR500-6.5-H7	6.5	8	76	40	16	6
NR500-7.0-H7	7.0	8	76	40	16	6
NR500-7.5-H7	7.5	8	76	40	16	6
NR500-8.0-H7	8.0	8	76	40	16	6
NR500-8.5-H7	8.5	10	76	36	19	6
NR500-9.0-H7	9.0	10	76	36	19	6
NR500-9.5-H7	9.5	10	76	36	19	6
NR500-10.0-H7	10.0	10	76	36	19	6
NR500-10.5-H7	10.5	12	80	35	19	6
NR500-11.0-H7	11.0	12	80	35	19	6
NR500-11.5-H7	11.5	12	80	35	19	6
NR500-12.0-H7	12.0	12	80	35	19	6
NR500-13.0-H7	13.0	14	90	45	22	6
NR500-14.0-H7	14.0	14	90	45	22	6

Recommended cutting data see page 18





High-performance Reamers NR 500

NR500

High-performance reamers, H7 series

PMS

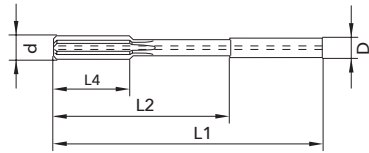
NR 500
D



H7



HA



Unit: mm

H7 series in accordance with DIN 1420 • extremely unequal flute spacing • central internal coolant supply, outlet via oil grooves on shank • intermediate dimensions of Ø 1.95-20.1 mm possible • for clamping in hydraulic and shrink fit chucks

Specification	Dimensions					
	d	D	L1	L2	L4	
NR500-2.0-H7	2.0	4	50	22	8	4
NR500-2.1-H7	2.1	4	50	22	8	4
NR500-2.2-H7	2.2	4	50	22	8	4
NR500-2.5-H7	2.5	4	50	22	8	4
NR500-2.8-H7	2.8	4	50	22	8	4
NR500-3.0-H7	3.0	4	68	40	12	4
NR500-3.1-H7	3.1	4	68	40	12	4
NR500-3.2-H7	3.2	4	68	40	12	4
NR500-3.5-H7	3.5	4	68	40	12	4
NR500-3.8-H7	3.8	4	68	40	12	4
NR500-4.0-H7	4.0	4	68	40	12	4
NR500-4.1-H7	4.1	4	68	40	12	4
NR500-4.2-H7	4.2	6	76	40	12	4
NR500-4.5-H7	4.5	6	76	40	12	4
NR500-4.8-H7	4.8	6	76	40	12	4
NR500-5.0-H7	5.0	6	76	40	12	4
NR500-5.1-H7	5.1	6	76	40	12	4
NR500-5.2-H7	5.2	6	76	40	12	4
NR500-5.5-H7	5.5	6	76	40	12	4
NR500-5.8-H7	5.8	6	76	40	12	4
NR500-6.0-H7	6.0	6	76	40	12	4
NR500-6.1-H7	6.1	6	76	40	12	4
NR500-6.2-H7	6.2	8	101	65	16	6
NR500-6.4-H7	6.4	8	101	65	16	6
NR500-6.5-H7	6.5	8	101	65	16	6
NR500-6.8-H7	6.8	8	101	65	16	6
NR500-7.0-H7	7.0	8	101	65	16	6

Recommended cutting data see page 18



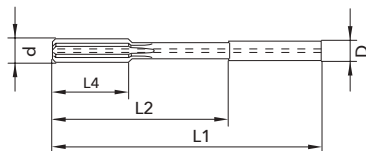
NR500

High-performance reamers, H7 series

PMS



H7 series in accordance with DIN 1420 • extremely unequal flute spacing • central internal coolant supply, outlet via oil grooves on shank • intermediate dimensions of Ø 1.95-20.1 mm possible • for clamping in hydraulic and shrink fit chucks



Unit: mm

Specification	Dimensions					
	d	D	L1	L2	L4	
NR500-7.1-H7	7.1	8	101	65	16	6
NR500-7.2-H7	7.2	8	101	65	16	6
NR500-7.5-H7	7.5	8	101	65	16	6
NR500-7.8-H7	7.8	8	101	65	16	6
NR500-8.0-H7	8.0	8	101	65	16	6
NR500-8.1-H7	8.1	8	101	65	16	6
NR500-8.2-H7	8.2	10	101	61	19	6
NR500-8.5-H7	8.5	10	101	61	19	6
NR500-8.8-H7	8.8	10	101	61	19	6
NR500-9.0-H7	9.0	10	101	61	19	6
NR500-9.1-H7	9.1	10	101	61	19	6
NR500-9.2-H7	9.2	10	101	61	19	6
NR500-9.5-H7	9.5	10	101	61	19	6
NR500-9.8-H7	9.8	10	101	61	19	6
NR500-10.0-H7	10.0	10	101	61	19	6
NR500-10.1-H7	10.1	10	101	61	19	6
NR500-10.2-H7	10.2	12	130	85	19	6
NR500-10.5-H7	10.5	12	130	85	19	6
NR500-10.8-H7	10.8	12	130	85	19	6
NR500-11.0-H7	11.0	12	130	85	19	6
NR500-11.1-H7	11.1	12	130	85	19	6
NR500-11.2-H7	11.2	12	130	85	19	6
NR500-11.5-H7	11.5	12	130	85	19	6
NR500-11.8-H7	11.8	12	130	85	19	6
NR500-12.0-H7	12.0	12	130	85	19	6
NR500-12.1-H7	12.1	12	130	85	19	6
NR500-12.2-H7	12.2	14	130	85	22	6

Recommended cutting data see page 18 



High-performance Reamers NR 500

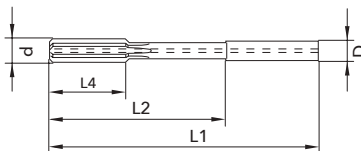
NR500

High-performance reamers, H7 series

PMS



H7 series in accordance with DIN 1420 • extremely unequal flute spacing • central internal coolant supply, outlet via oil grooves on shank • intermediate dimensions of $\varnothing 1.95\text{--}20.1\text{ mm}$ possible • for clamping in hydraulic and shrink fit chucks



Unit: mm

Specification	Dimensions					
	d	D	L1	L2	L4	
NR500-12.5-H7	12.5	14	130	85	22	6
NR500-12.7-H7	12.7	14	130	85	22	6
NR500-12.8-H7	12.8	14	130	85	22	6
NR500-13.0-H7	13.0	14	130	85	22	6
NR500-13.1-H7	13.1	14	130	85	22	6
NR500-13.2-H7	13.2	14	130	85	22	6
NR500-13.5-H7	13.5	14	130	85	22	6
NR500-13.8-H7	13.8	14	130	85	22	6
NR500-14.0-H7	14.0	14	130	85	22	6
NR500-14.5-H7	14.5	16	150	102	22	6
NR500-15.0-H7	15.0	16	150	102	22	6
NR500-15.5-H7	15.5	16	150	102	22	6
NR500-16.0-H7	16.0	16	150	102	22	6
NR500-16.5-H7	16.5	18	150	102	25	6
NR500-17.0-H7	17.0	18	150	102	25	6
NR500-17.5-H7	17.5	18	150	102	25	6
NR500-18.0-H7	18.0	18	150	102	25	6
NR500-18.5-H7	18.5	20	150	100	25	6
NR500-19.0-H7	19.0	20	150	100	25	6
NR500-19.5-H7	19.5	20	150	100	25	6
NR500-20.0-H7	20.0	20	150	100	25	6

Recommended cutting data see page 18



NR500

High-performance reamers, H7 series

N

NR 500
Alu D

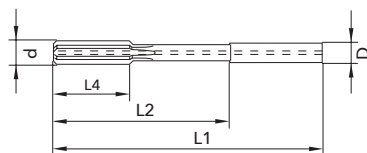
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H7

R

HA

H7 series in accordance with DIN 1420 • extremely unequal flute spacing • central internal coolant supply, outlet via oil grooves on shank • intermediate dimensions of Ø 1.95-20.1 mm possible • for clamping in hydraulic and shrink fit chucks



Unit: mm

Specification	Dimensions					
	d	D	L1	L2	L4	
NR500-2.0-H7	2.0	4	50	22	8	4
NR500-3.0-H7	3.0	4	68	40	12	4
NR500-4.0-H7	4.0	4	68	40	12	4
NR500-5.0-H7	5.0	6	76	40	12	4
NR500-6.0-H7	6.0	6	76	40	12	4
NR500-7.0-H7	7.0	8	101	65	16	6
NR500-8.0-H7	8.0	8	101	65	16	6
NR500-9.0-H7	9.0	10	101	61	19	6
NR500-10.0-H7	10.0	10	101	61	19	6
NR500-11.0-H7	11.0	12	130	85	19	6
NR500-12.0-H7	12.0	12	130	85	19	6
NR500-13.0-H7	13.0	14	130	85	22	6
NR500-14.0-H7	14.0	14	130	85	22	6
NR500-15.0-H7	15.0	16	150	102	22	6
NR500-16.0-H7	16.0	16	150	102	22	6
NR500-17.0-H7	17.0	18	150	102	25	6
NR500-18.0-H7	18.0	18	150	102	25	6
NR500-19.0-H7	19.0	20	150	100	25	6
NR500-20.0-H7	20.0	20	150	100	25	6

Recommended cutting data see page 19 



High-performance Reamers NR 500

NR500

High-performance reamers, H7 series

K

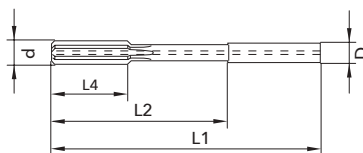
NR 500
Guss D



H7



H7 series in accordance with DIN 1420 • extremely unequal flute spacing • central internal coolant supply, outlet via oil grooves on shank • intermediate dimensions of Ø 1.95-20.1 mm possible • for clamping in hydraulic and shrink fit chucks



Unit: mm

Specification	Dimensions					
	d	D	L1	L2	L4	
NR500-3.0-H7	3.00	4.00	68.0	40.0	12.0	6
NR500-4.0-H7	4.00	4.00	68.0	40.0	12.0	6
NR500-5.0-H7	5.00	6.00	76.0	40.0	12.0	6
NR500-6.0-H7	6.00	6.00	76.0	40.0	12.0	6
NR500-7.0-H7	7.00	8.00	101.0	65.0	16.0	8
NR500-8.0-H7	8.00	8.00	101.0	65.0	16.0	8
NR500-9.0-H7	9.00	10.00	101.0	61.0	19.0	8
NR500-10.0-H7	10.00	10.00	101.0	61.0	19.0	8
NR500-11.0-H7	11.00	12.00	130.0	85.0	19.0	8
NR500-12.0-H7	12.00	12.00	130.0	85.0	19.0	8
NR500-13.0-H7	13.00	14.00	130.0	85.0	22.0	8
NR500-14.0-H7	14.00	14.00	130.0	85.0	22.0	8
NR500-15.0-H7	15.00	16.00	150.0	102.0	22.0	8
NR500-16.0-H7	16.00	16.00	150.0	102.0	22.0	8
NR500-17.0-H7	17.00	18.00	150.0	102.0	25.0	8
NR500-18.0-H7	18.00	18.00	150.0	102.0	25.0	8
NR500-19.0-H7	19.00	20.00	150.0	100.0	25.0	8
NR500-20.0-H7	20.00	20.00	150.0	100.0	25.0	8

Recommended cutting data see page 19

ISO	Machining group	f (mm/rev) with nom. Ø										
		vc (m/min)	2	3	4	6	8	10	12	14	16	20
P	Unalloyed steel, annealed, 0.15 % C, Rm 420 N/mm², 125 HB	180	0.30	0.50	0.65	1.20	1.55	1.90	2.05	2.15	2.30	2.50
	Unalloyed steel, heat-treated, 0.15 % C, Rm 420 N/mm², 125 HB	180	0.30	0.50	0.65	1.20	1.55	1.90	2.05	2.15	2.30	2.50
	Unalloyed steel, annealed, 0.45 % C, Rm 640 N/mm², 190 HB	180	0.30	0.50	0.65	1.20	1.55	1.90	2.05	2.15	2.30	2.50
	Unalloyed steel, heat-treated, 0.45 % C, Rm 640 N/mm², 190 HB	180	0.30	0.50	0.65	1.20	1.55	1.90	2.05	2.15	2.30	2.50
	Unalloyed steel, heat-treated, 0.45 % C, Rm 850 N/mm², 250 HB	162	0.30	0.50	0.65	1.20	1.55	1.90	2.05	2.15	2.30	2.50
	Unalloyed steel, annealed, 0.75 % C, Rm 915 N/mm², 270 HB	162	0.30	0.50	0.65	1.20	1.55	1.90	2.05	2.15	2.30	2.50
	Unalloyed steel, heat-treated, 0.75 % C, Rm 1020 N/mm², 300 HB	144	0.30	0.50	0.65	1.20	1.55	1.90	2.05	2.15	2.30	2.50
	Low-alloy steel, annealed, Rm 610 N/mm², 180 HB	180	0.30	0.45	0.60	1.15	1.45	1.75	1.90	2.05	2.15	2.35
	Low-alloy steel, heat-treated, Rm 930 N/mm², 275 HB	180	0.30	0.45	0.60	1.15	1.45	1.75	1.90	2.05	2.15	2.35
	Low-alloy steel, heat-treated, Rm 1020 N/mm², 300 HB	180	0.30	0.45	0.60	1.15	1.45	1.75	1.90	2.05	2.15	2.35
M	Low-alloy steel, heat-treated, Rm 1190 N/mm², 350 HB	121	0.30	0.45	0.60	1.15	1.45	1.75	1.90	2.05	2.15	2.35
	High-alloy steel and tool steel, annealed, Rm 680 N/mm², 200 HB	180	0.25	0.40	0.60	1.05	1.35	1.65	1.80	1.90	2.00	2.20
	High-alloy steel and tool steel, hardened and tempered, Rm 1100 N/mm², 325 HB	121	0.25	0.40	0.60	1.05	1.35	1.65	1.80	1.90	2.00	2.20
	Stainless steel, ferritic/martensitic, with machining additives	80	0.10	0.20	0.25	0.45	0.60	0.70	0.75	0.80	0.85	0.95
	Stainless steel, ferritic/martensitic, annealed, Rm 680 N/mm², 200 HB	62	0.10	0.20	0.25	0.45	0.60	0.70	0.75	0.80	0.85	0.95
	Stainless steel, ferritic/martensitic, heat-treated, Rm 810 N/mm², 240 HB	62	0.10	0.20	0.25	0.45	0.60	0.70	0.75	0.80	0.85	0.95
	Stainless steel, austenitic, quenched, 180 HB	80	0.10	0.20	0.25	0.45	0.60	0.70	0.75	0.80	0.85	0.95
	Duplex steel, high-strength stainless steels	50	0.10	0.20	0.25	0.45	0.60	0.70	0.75	0.80	0.85	0.95
	Grey cast iron, pearlitic/ferritic, 180 HB	80	0.25	0.35	0.50	0.90	1.15	1.40	1.55	1.65	1.70	1.90
	Grey cast iron, pearlitic/martensitic, 260 HB	72	0.25	0.35	0.50	0.90	1.15	1.40	1.55	1.65	1.70	1.90
K	Cast iron with spheroidal graphite, ferritic, 160 HB	96	0.25	0.35	0.50	0.90	1.15	1.40	1.55	1.65	1.70	1.90
	Cast iron with spheroidal graphite, pearlitic, 250 HB	96	0.25	0.35	0.50	0.90	1.15	1.40	1.55	1.65	1.70	1.90
	Malleable cast iron, ferritic, 130 HB	80	0.25	0.35	0.50	0.90	1.15	1.40	1.55	1.65	1.70	1.90
	Malleable cast iron, pearlitic, 230 HB	72	0.25	0.35	0.50	0.90	1.15	1.40	1.55	1.65	1.70	1.90
	N4.1.1 Non-metallic materials: Duroplastics, fibre-reinforced plastics	80	0.25	0.35	0.50	0.90	1.15	1.40	1.55	1.65	1.70	1.90
	N4.1.2 Non-metallic materials: Hard rubber, wood, etc.	80	0.25	0.35	0.50	0.90	1.15	1.40	1.55	1.65	1.70	1.90
N	N4.1.3 Non-metallic materials: Graphite	48	0.25	0.35	0.50	0.90	1.15	1.40	1.55	1.65	1.70	1.90
	S1.1.1 Heat-resistant alloys, Fe-based, annealed, 200 HB	40	0.10	0.20	0.25	0.45	0.60	0.70	0.75	0.80	0.85	0.95
	S1.1.2 Heat-resistant alloys, Fe-based, hardened, 280 HB	40	0.10	0.20	0.25	0.45	0.60	0.70	0.75	0.80	0.85	0.95
S	S1.1.3 Heat-resistant alloys, Ni- or Co-based, annealed, 250 HB	40	0.10	0.20	0.25	0.45	0.60	0.70	0.75	0.80	0.85	0.95
	S1.1.4 Heat-resistant alloys, Ni- or Co-based, hardened, 350 HB	40	0.10	0.20	0.25	0.45	0.60	0.70	0.75	0.80	0.85	0.95
	S1.1.5 Heat-resistant alloys, Ni- or Co-based, cast, 320 HB	40	0.10	0.20	0.25	0.45	0.60	0.70	0.75	0.80	0.85	0.95
	S2.1.1 Titanium alloys, pure titanium, Rm 400 N/mm²	40	0.10	0.20	0.25	0.45	0.60	0.70	0.75	0.80	0.85	0.95
	S2.1.2 Titanium alloys, Alpha and Beta alloys, hardened, Rm 1050 N/mm²	40	0.10	0.20	0.25	0.45	0.60	0.70	0.75	0.80	0.85	0.95
H	H1.1.1 Hardened steel, hardened and tempered, < 55 NRC	30	0.05	0.10	0.15	0.25	0.30	0.40	0.40	0.45	0.45	0.50
	H1.1.2 Hardened steel, hardened and tempered, < 60 NRC	24	0.05	0.10	0.15	0.25	0.30	0.40	0.40	0.45	0.45	0.50
	H1.1.3 Hardened steel, hardened and tempered, > 60 NRC	15	0.05	0.10	0.15	0.25	0.30	0.40	0.40	0.45	0.45	0.50
	H2.1.1 Chilled cast iron, 400 HB	40	0.10	0.20	0.25	0.45	0.60	0.70	0.75	0.80	0.85	0.95
	H2.1.2 Chilled cast iron, hardened and tempered, < 55 NRC	40	0.10	0.20	0.25	0.45	0.60	0.70	0.75	0.80	0.85	0.95



Cutting Data

ISO	Machining group	f (mm/rev) with nom. Ø									
		vc (m/min)	3	4	6	8	10	12	14	16	20
N	N1.1.1 Wrought aluminium alloys, non-hardened, 60 HB	220	0.55	0.75	1.35	1.75	2.15	2.30	2.45	2.60	2.85
	N1.1.2 Wrought aluminium alloys, hardened, 100 HB	220	0.55	0.75	1.35	1.75	2.15	2.30	2.45	2.60	2.85
	N2.1.1 Aluminium casting alloys, non-hardened, ≤ 12 % Si, 75 HB	220	0.55	0.75	1.35	1.75	2.15	2.30	2.45	2.60	2.85
	N2.1.2 Aluminium casting alloys, hardened, ≤ 12 % Si, 90 HB	200	0.55	0.75	1.35	1.75	2.15	2.30	2.45	2.60	2.85
	N2.1.3 Aluminium casting alloys, non-hardened, > 12 % Si, 130 HB	200	0.55	0.75	1.35	1.75	2.15	2.30	2.45	2.60	2.85

ISO	Machining group	f (mm/rev) with nom. Ø									
		vc (m/min)	3	4	6	8	10	12	14	16	20
K	K1.1.1 Grey cast iron, pearlitic/ferritic, 180 HB	200	0.55	0.75	1.35	1.75	2.15	2.30	2.45	2.60	2.85
	K1.1.2 Grey cast iron, pearlitic/martensitic, 260 HB	200	0.55	0.75	1.35	1.75	2.15	2.30	2.45	2.60	2.85
	K1.2.1 Cast iron with spheroidal graphite, ferritic, 160 HB	220	0.20	0.25	0.45	0.60	0.70	0.75	0.80	0.85	0.95
	K1.2.2 Cast iron with spheroidal graphite, pearlitic, 250 HB	220	0.20	0.25	0.45	0.60	0.70	0.75	0.80	0.85	0.95
	K1.3.1 Malleable cast iron, ferritic, 130 HB	100	0.20	0.25	0.45	0.60	0.70	0.75	0.80	0.85	0.95
	K1.3.2 Malleable cast iron, pearlitic, 230 HB	80	0.20	0.25	0.45	0.60	0.70	0.75	0.80	0.85	0.95
	K2.1.1 Vermicular graphite cast iron (GJV)	80	0.35	0.50	0.90	1.15	1.40	1.55	1.65	1.70	1.90
	K2.2.1 Austenitic-ferritic spheroidal graphite cast iron (ADI)	80	0.35	0.50	0.90	1.15	1.40	1.55	1.65	1.70	1.90



GD 100 M - Ratio length gun drill

- Single-piece construction w/ solid carbide flute and shank
- Precision hole making
- Extra deep hole drilling on CNC equipment
- MQL shank end

The best of both worlds

GD 100 M gun drills are a single flute tool designed to drill extra deep holes on conventional CNC machining centers without the need for specialized gun drill equipment. Drilling depths of over 75xD can be reached with Guhring's GD 100 M CNC style gun drill.

An excellent job shop selection

These precision deep hole drills have one-piece solid carbide construction from the shank to the cutting edge. The nano-ATM coated point improves abrasion- and heat-resistance at the cutting edge.. The specialized point grind is a universal design that is well suited to the job shop environment.

Performance matters

Solid carbide construction improves rigidity during operation and results in extremely precise hole size and location. GD 100 gun drills do not require peck cycles. They are best suited for hole depths that are beyond the reach of the RT 100 T twist drill. Gun drilling operations must utilize a pilot hole or guide bushing for successful application.

GD 80 - Conventional Gun Drills

- Brazed carbide head construction
- Single flute design
- TiCN coated head

Maximum drilling depths

Designed for maximum drilling depths, Guhring conventional gun drills are brazed carbide head gun drills that allow manufacturers to achieve precision holes in a wide variety of materials. These gun drills are typically used for precise drilling of deep holes when conventional style drills cannot be employed.

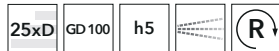
Wide range of stocked standards; special designs available

Conventional gun drills provide excellent surface finish quality and hole concentricity when properly applied. All gun drilling operations must utilize a pilot hole (conventional machines) or guide bushings (gun drilling machines) to operate successfully. Guhring offers a wide range of sizes with the series 5641 (40xD) and 5642 (80xD) highlighted in this brochure. Can't find the size you're looking for? Contact Guhring for a special design to meet your unique requirements.



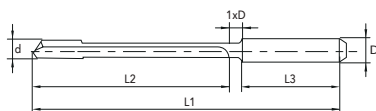
GD100M

Solid carbide gun drills



Head form G

• Solid carbide shank with tapered MQL shank end from $d = 3 \text{ mm}$ / $D = 6 \text{ mm}$



Unit: mm

Specification	Dimensions				
	d	D	L1	L2	L3
GD100M-d1.00	1.000	3	65	32	28
GD100M-d1.19	1.191	3	70	39	28
GD100M-d1.50	1.500	4	80	49	28
GD100M-d1.59	1.588	4	85	51	28
GD100M-d1.98	1.984	4	95	64	28
GD100M-d2.00	2.000	4	95	65	28
GD100M-d2.38	2.381	4	100	70	28
GD100M-d2.50	2.500	4	115	85	28
GD100M-d2.78	2.778	4	115	85	28
GD100M-d3.00	3.000	6	145	105	36
GD100M-d3.18	3.175	6	145	105	36
GD100M-d3.50	3.500	6	145	105	36
GD100M-d3.57	3.572	6	160	120	36
GD100M-d3.97	3.969	6	160	120	36
GD100M-d4.00	4.000	6	160	120	36
GD100M-d4.37	4.366	6	220	180	36
GD100M-d4.76	4.763	6	220	180	36
GD100M-d5.00	5.000	6	220	180	36
GD100M-d5.16	5.159	6	220	180	36
GD100M-d5.56	5.556	6	220	180	36

Recommended cutting data see P13

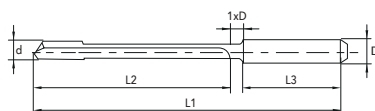
GD100M

Solid carbide gun drills









Head form G

• Solid carbide shank with tapered MQL shank end from $d = 3 \text{ mm}$ / $D = 6 \text{ mm}$

Unit: mm

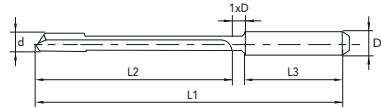
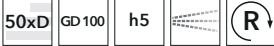
Specification	Dimensions				
	d	D	L1	L2	L3
GD100M-d5.95	5.953	6	220	180	36
GD100M-d6.00	6.000	6	220	180	36
GD100M-d6.35	6.350	8	260	210	36
GD100M-d6.50	6.500	8	260	210	36
GD100M-d6.75	6.747	8	260	210	36
GD100M-d7.00	7.000	8	260	210	36
GD100M-d7.14	7.144	8	285	240	36
GD100M-d7.54	7.541	8	285	240	36
GD100M-d7.94	7.938	8	285	240	36
GD100M-d8.00	8.000	8	285	240	36
GD100M-d9.00	9.000	10	350	300	40
GD100M-d10.00	10.000	10	350	300	40
GD100M-d11.00	11.000	12	420	360	45
GD100M-d11.11	11.113	12	420	360	45
GD100M-d12.00	12.000	12	420	360	45
GD100M-d12.70	12.700	14	455	396	45
GD100M-d14.00	14.000	14	500	437	45
GD100M-d15.00	15.000	16	535	468	48
GD100M-d15.88	15.875	16	560	495	48
GD100M-d16.00	16.000	16	565	499	48

Recommended cutting data see P13 



GD100M

Solid carbide gun drills



Head form G
• Solid carbide shank with tapered MQL shank end from $d = 3 \text{ mm}$ / $D = 6 \text{ mm}$

Unit: mm

Specification	Dimensions				
	d	D	L1	L2	L3
GD100M-d1.00	1.000	3	90	57	28
GD100M-d1.19	1.191	3	100	68	28
GD100M-d1.50	1.500	4	120	86	28
GD100M-d1.59	1.588	4	125	91	28
GD100M-d1.98	1.984	4	145	114	28
GD100M-d2.00	2.000	4	145	115	28
GD100M-d2.38	2.381	4	160	130	28
GD100M-d2.50	2.500	4	185	155	28
GD100M-d2.78	2.778	4	185	155	28
GD100M-d3.00	3.000	6	230	190	36
GD100M-d3.18	3.175	6	230	190	36
GD100M-d3.50	3.500	6	230	190	36
GD100M-d3.57	3.572	6	260	220	36
GD100M-d3.97	3.969	6	260	220	36
GD100M-d4.00	4.000	6	260	220	36
GD100M-d4.37	4.366	6	290	245	36

Recommended cutting data see P13

GD100M

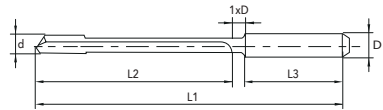
Solid carbide gun drills



50xD

GD100

h5



Head form G

• Solid carbide shank with tapered MQL shank end from $d = 3 \text{ mm} / D = 6 \text{ mm}$

Unit: mm

Specification	Dimensions				
	d	D	L1	L2	L3
GD100M-d4.76	4.763	6	310	268	36
GD100M-d5.00	5.000	6	370	330	36
GD100M-d5.16	5.159	6	370	330	36
GD100M-d5.56	5.556	6	370	330	36
GD100M-d5.95	5.953	6	370	330	36
GD100M-d6.00	6.000	6	370	330	36
GD100M-d6.35	6.350	8	430	385	36
GD100M-d6.50	6.500	8	430	385	36
GD100M-d6.75	6.747	8	430	385	36
GD100M-d7.00	7.000	8	430	385	36
GD100M-d7.14	7.144	8	485	440	36
GD100M-d7.54	7.541	8	485	440	36
GD100M-d7.94	7.938	8	485	440	36
GD100M-d8.00	8.000	8	485	440	36
GD100M-d9.00	9.000	10	555	506	40
GD100M-d10.00	10.000	10	615	562	40

Recommended cutting data see P13 



GD100M

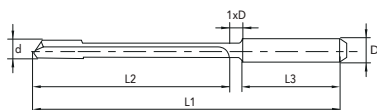
Solid carbide gun drills



75xD

GD 100

h5



Head form G

• Solid carbide shank with tapered MQL shank end from $d = 3 \text{ mm}$ / $D = 6 \text{ mm}$

Unit: mm

Specification	Dimensions				
	d	D	L1	L2	L3
GD100M-d1.00	1.000	3	115	80.50	28
GD100M-d1.19	1.191	3	130	96.21	28
GD100M-d1.50	1.500	4	155	121.75	28
GD100M-d1.59	1.588	4	165	128.62	28
GD100M-d1.98	1.984	4	195	160.02	28
GD100M-d2.00	2.000	4	195	162.00	28
GD100M-d2.38	2.381	4	220	186.43	28
GD100M-d2.50	2.500	4	255	216.25	28
GD100M-d2.78	2.778	4	255	215.83	28
GD100M-d3.00	3.000	6	290	247.00	36
GD100M-d3.18	3.175	6	320	275.24	36
GD100M-d3.50	3.500	6	320	274.75	36
GD100M-d3.57	3.572	6	360	314.64	36
GD100M-d3.97	3.969	6	360	314.05	36
GD100M-d4.00	4.000	6	360	314.00	36
GD100M-d4.37	4.366	6	395	348.45	36
GD100M-d4.76	4.763	6	430	379.86	36
GD100M-d5.00	5.000	6	450	398.50	36
GD100M-d5.16	5.159	6	465	411.26	36
GD100M-d5.56	5.556	6	525	476.67	36
GD100M-d5.95	5.953	6	525	476.07	36
GD100M-d6.00	6.000	6	525	476.00	36
GD100M-d6.35	6.350	8	560	506.48	36
GD100M-d6.50	6.500	8	575	518.25	36
GD100M-d6.75	6.747	8	595	537.88	36
GD100M-d7.00	7.000	8	615	557.50	36
GD100M-d7.14	7.144	8	625	569.28	36

Recommended cutting data see P13

GD100

Carbide fixed length gun drills
w/steel shanks

NS



Flute lengths of 45, 80, 120 & 160 mm
• Head form G

Unit: mm

Specification	Dimensions				
	d	D	L1	L2	L3
GD100-d0.90	0.900	4	90	45	28
GD100-d1.00	1.000	4	90	45	28
GD100-d1.10	1.100	4	90	45	28
GD100-d1.19	1.191	4	90	45	28
GD100-d1.20	1.200	4	90	45	28
GD100-d1.30	1.300	4	90	45	28
GD100-d1.40	1.400	4	90	45	28
GD100-d1.50	1.500	4	90	45	28
GD100-d1.59	1.588	4	90	45	28
GD100-d1.60	1.600	4	90	45	28
GD100-d1.90	1.900	4	90	45	28
GD100-d1.98	1.984	4	90	45	28
GD100-d2.00	2.000	4	90	45	28
GD100-d2.50	2.500	10	100	45	40
GD100-d2.70	2.700	10	100	45	40
GD100-d3.00	3.000	10	100	45	40
GD100-d3.20	3.200	10	100	45	40

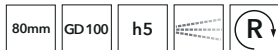
Recommended cutting data see P13 



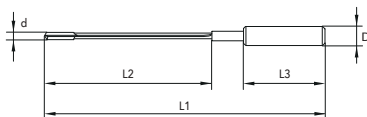
GD100

Carbide fixed length gun drills
w/steel shanks

NS



Flute lengths of 45, 80, 120 & 160 mm
• Head form G



Unit: mm

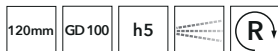
Specification	Dimensions				
	d	D	L1	L2	L3
GD100-d1.00	1.000	4	125	80	28
GD100-d1.10	1.100	4	125	80	28
GD100-d1.19	1.191	4	125	80	28
GD100-d1.20	1.200	4	125	80	28
GD100-d1.30	1.300	4	125	80	28
GD100-d1.40	1.400	4	125	80	28
GD100-d1.50	1.500	4	125	80	28
GD100-d1.59	1.588	4	125	80	28
GD100-d1.60	1.600	4	125	80	28
GD100-d1.90	1.900	4	125	80	28
GD100-d1.98	1.984	4	125	80	28
GD100-d2.00	2.000	4	125	80	28
GD100-d2.50	2.500	10	135	80	40
GD100-d2.70	2.700	10	135	80	40
GD100-d3.00	3.000	10	135	80	40
GD100-d3.20	3.200	10	135	80	40
GD100-d3.50	3.500	10	135	80	40
GD100-d4.00	4.000	10	135	80	40
GD100-d4.20	4.200	10	135	80	40
GD100-d4.50	4.500	10	135	80	40
GD100-d5.00	5.000	10	135	80	40

Recommended cutting data see P13

GD100

Carbide fixed length gun drills
w/steel shanks

NS



Flute lengths of 45, 80, 120 & 160 mm
• Head form G

Unit: mm

Specification	Dimensions				
	d	D	L1	L2	L3
GD100-d1.50	1.500	4	165	120	28
GD100-d1.59	1.588	4	165	120	28
GD100-d1.60	1.600	4	165	120	28
GD100-d1.98	1.984	4	165	120	28
GD100-d2.00	2.000	4	165	120	28
GD100-d2.50	2.500	10	175	120	40
GD100-d2.70	2.700	10	175	120	40
GD100-d3.00	3.000	10	175	120	40
GD100-d3.20	3.200	10	175	120	40
GD100-d3.50	3.500	10	175	120	40
GD100-d4.00	4.000	10	175	120	40
GD100-d4.20	4.200	10	175	120	40
GD100-d4.50	4.500	10	175	120	40
GD100-d5.00	5.000	10	175	120	40

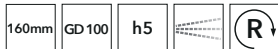
Recommended cutting data see P13 



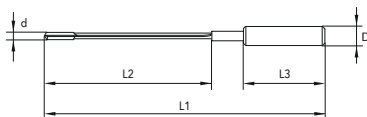
GD100

Carbide fixed length gun drills
w/steel shanks

NS



Flute lengths of 45, 80, 120 & 160 mm
• Head form G



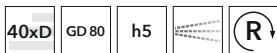
Unit: mm

Specification	Dimensions				
	d	D	L1	L2	L3
GD100-d1.50	1.500	4	205	160	28
GD100-d1.59	1.588	4	205	160	28
GD100-d1.60	1.600	4	205	160	28
GD100-d1.98	1.984	4	205	160	28
GD100-d2.00	2.000	4	205	160	28
GD100-d2.50	2.500	10	215	160	40
GD100-d2.70	2.700	10	215	160	40
GD100-d3.00	3.000	10	215	160	40
GD100-d3.20	3.200	10	215	160	40
GD100-d3.50	3.500	10	215	160	40
GD100-d4.00	4.000	10	215	160	40
GD100-d4.20	4.200	10	215	160	40
GD100-d4.50	4.500	10	215	160	40
GD100-d5.00	5.000	10	215	160	40
GD100-d6.00	6.000	16	225	160	40
GD100-d8.00	8.000	16	225	160	48

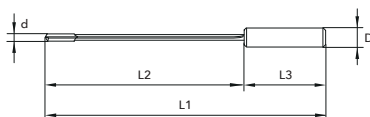
Recommended cutting data see P13

GD80

Conventional brazed head gun drills

M S


Head form G



Unit: mm

Specification	Dimensions				
	d	D	L1	L2	L3
GD80-d3.97	3.969	10	230	185	40
GD80-d4.00	4.000	12	230	185	45
GD80-d4.20	4.200	12	240	195	45
GD80-d4.50	4.500	12	250	205	45
GD80-d5.00	5.000	16	280	232	48
GD80-d5.16	5.159	16	280	232	48
GD80-d5.50	5.500	16	300	252	48
GD80-d6.00	6.000	16	320	272	48
GD80-d6.35	6.350	16	340	292	48
GD80-d6.50	6.500	16	340	292	48
GD80-d7.00	7.000	16	370	322	48
GD80-d7.94	7.938	16	420	372	48
GD80-d8.00	8.000	16	420	372	48
GD80-d9.00	9.000	16	450	402	48
GD80-d9.53	9.525	16	480	432	48
GD80-d10.00	10.000	20	510	460	50
GD80-d11.00	11.000	20	550	500	50
GD80-d11.11	11.113	20	550	500	50
GD80-d12.00	12.000	20	600	550	50
GD80-d12.70	12.700	20	635	585	50

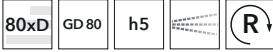
Recommended cutting data see P13 



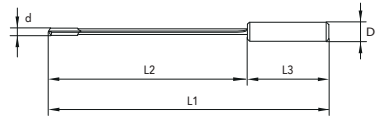
GD80

Conventional brazed head gun drills

MS



Head form G



Unit: mm

Specification	Dimensions				
	d	D	L1	L2	L3
GD80-d4.95	4.950	16	480	432	48
GD80-d5.11	5.106	16	480	432	48
GD80-d5.45	5.450	16	520	470	48
GD80-d5.95	5.953	16	560	512	48
GD80-d6.30	6.300	16	590	542	48
GD80-d6.45	6.450	16	605	556	48
GD80-d6.95	6.950	16	650	602	48
GD80-d7.89	7.888	16	740	692	48
GD80-d7.95	7.950	16	740	692	48
GD80-d8.95	8.950	16	820	772	48
GD80-d9.48	9.475	16	870	822	48
GD80-d9.95	9.950	20	910	860	50
GD80-d10.95	10.950	20	995	945	50
GD80-d11.06	11.063	20	995	945	50
GD80-d11.95	11.950	20	1080	1030	50
GD80-d12.65	12.650	20	1140	1090	50

Recommended cutting data see P13

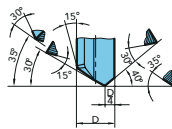
Technical Information - Gun Drills

GD100

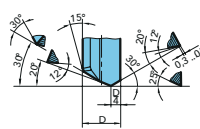
Standard point grinds

(special point grinds on request)

Ø 2...4.00 mm



Ø > 4.01...20 mm

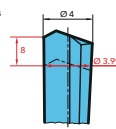


GD100

Back taper ratio

(dimensions in mm)

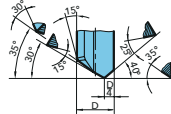
1:800 (standard)



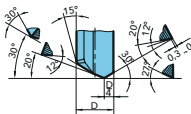
GD 80 standard point grinds

(special point grinds available)

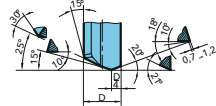
Ø 2.00-4.00 mm



Ø 4.01-20.00 mm



Ø 20.01-40.00 mm



All gun drills must utilize a pilot hole (CNC machine) or drill bushing (gun drilling machine) to guide the drill. Gun drills must never operate at full speed without support in the pilot hole or drill bushing.

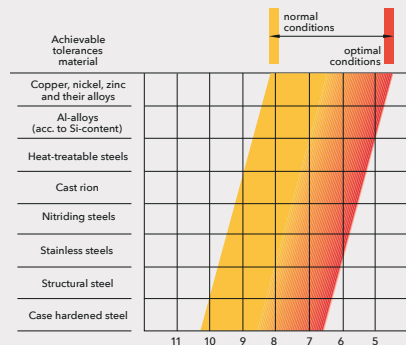
Recommended drilling procedure using gun drills on CNC machine tools:

- Machine a pilot hole using a Guhring carbide drill with an m7 tolerance (i.e., series 6400, series 5510, etc.) to a minimum pilot depth of 1.5xD to 3xD.
- Enter pilot hole at low speed, approx. 200 RPM, feed rate approx. 20 IPM, stopping just shy of the bottom of the hole. With tools for drilling depths in excess than 40xD enter the pilot hole with the spindle rotating in the counter-clockwise direction.
- Start high coolant pressure and increase RPM to the recommended value.
- Feed drill at recommended feed rate to final hole depth. No peck cycle required.
- For through holes with oblique exit, reduce the feed rate to 40% approx. 1 mm prior to break-through.
- After reaching hole depth, turn off coolant, reduce machine spindle speed to 200RPM and withdraw the drill at a maximum feed rate of 200IPM.

Single fluted gun drill accuracy

Basic tolerances*

The application of single-fluted gun drills can achieve a lower basic tolerance, as the cutting forces at the cutting edge are absorbed by the guide pads, unlike twist drills where the slightest deviation of the two cutting edges causes a larger hole.





Cutting Data

ISO	Hardness	Hardness		SFM	fz (mm/z) / φ					
		HRc	Bhn		1.590	3.170	6.350	9.520	12.700	15.870
P	Common structural steels	-	< 150	360	0.004	0.006	0.010	0.014	0.016	0.020
	Common structural steels	< 32	< 301	360	0.004	0.006	0.010	0.014	0.016	0.020
	Free-cutting steels	< 25	< 255	395	0.004	0.006	0.010	0.014	0.016	0.020
	Free-cutting steels	< 32	< 301	395	0.004	0.006	0.010	0.014	0.016	0.020
	Unalloyed heat-treatable steels	< 20	< 220	360	0.003	0.004	0.006	0.009	0.010	0.012
	Unalloyed heat-treatable steels	< 25	< 255	360	0.004	0.006	0.010	0.014	0.016	0.020
	Unalloyed heat-treatable steels	< 32	< 301	330	0.003	0.005	0.008	0.011	0.012	0.016
	Alloyed heat-treatable steels	< 32	< 301	360	0.003	0.005	0.008	0.011	0.012	0.016
	Alloyed heat-treatable steels	< 43	< 402	360	0.003	0.004	0.006	0.009	0.010	0.012
	Unalloyed case hardened steels	< 25	< 255	360	0.004	0.006	0.010	0.014	0.016	0.020
	Alloyed case hardened steels	< 32	< 301	360	0.003	0.005	0.008	0.011	0.012	0.016
	Alloyed case hardened steels	< 43	< 402	360	0.003	0.004	0.006	0.009	0.010	0.012
	Nitriding steels	< 32	< 301	330	0.002	0.003	0.005	0.007	0.008	0.010
	Nitriding steels	< 43	< 402	260	0.002	0.003	0.005	0.007	0.008	0.010
	Tool steels	< 25	< 255	330	0.003	0.004	0.006	0.009	0.010	0.012
	Tool steels	< 43	< 402	260	0.002	0.003	0.005	0.007	0.008	0.010
	High speed steels	< 43	< 402	165	0.002	0.003	0.005	0.007	0.008	0.010
	Spring steels	< 38	< 354	165	0.002	0.003	0.005	0.007	0.008	0.010
H	Hardened steels	< 48	< 460	165	0.002	0.002	0.004	0.006	0.006	0.008
	Hardened steels	< 66	-	165	0.001	0.002	0.004	0.006	0.006	0.008
M	Stainless steels, sulphured	< 28	< 273	330	0.002	0.003	0.005	0.007	0.008	0.010
	austenitic	< 36	< 337	230	0.001	0.002	0.002	0.004	0.004	0.005
K	martensitic	< 46	< 435	330	0.002	0.003	0.005	0.007	0.008	0.010
	Cast iron	< 23	< 242	460	0.004	0.006	0.010	0.014	0.016	0.020
	Cast iron	< 38	< 354	330	0.004	0.006	0.010	0.014	0.016	0.020
	Spheroidal graphite iron and	< 23	< 242	460	0.004	0.006	0.010	0.014	0.016	0.020
	malleable cast iron	< 38	< 354	330	0.004	0.006	0.010	0.014	0.016	0.020
	Chilled cast iron	< 38	< 354	-	-	-	-	-	-	-
	New cast materials GGV	< 20	< 220	330	0.0005	0.004	0.0065	0.010	0.010	0.0125
	New cast materials GGV	< 32	< 301	330	0.0005	0.004	0.0065	0.010	0.010	0.0125
	New cast materials ADI	< 32	< 301	295	0.001	0.0065	0.010	0.0155	0.0155	0.0195
	New cast materials ADI	< 43	< 402	-	-	-	-	-	-	-

ISO	Hardness	Hardness		SFM	fz (mm/z) / φ					
		HRc	Bhn		1.590	3.170	6.350	9.520	12.700	15.870
S	Special alloys	< 54	< 549	100	0.004	0.002	0.002	0.004	0.004	0.005
	Ti and Ti-alloys	< 25	< 255	-	-	-	-	-	-	-
	Ti and Ti-alloys	< 43	< 402	-	-	-	-	-	-	-
N	Aluminium and Al-alloys	-	< 120	-	-	-	-	-	-	-
	Al wrought alloys	-	< 200	-	-	-	-	-	-	-
	Al cast alloys $\leq 10\%$ Si	-	< 180	-	-	-	-	-	-	-
	$\leq 24\%$ Si	-	< 180	-	-	-	-	-	-	-
	Magnesium alloys	-	< 120	-	-	-	-	-	-	-
	Copper, low-alloyed	-	< 150	395	-	0.001	0.002	0.003	0.003	0.004
	Brass, short-chipping	-	< 180	395	0.004	0.006	0.01	0.014	0.016	0.020
	long-chipping	-	< 180	-	-	-	-	-	-	-
	Bronze, short-chipping	-	< 180	-	-	-	-	-	-	-
	Bronze, short-chipping	< 25	< 255	-	-	-	-	-	-	-
	Bronze, long-chipping	< 25	< 255	-	-	-	-	-	-	-
	Bronze, long-chipping	< 32	< 301	-	-	-	-	-	-	-



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