

# MK TOOLS

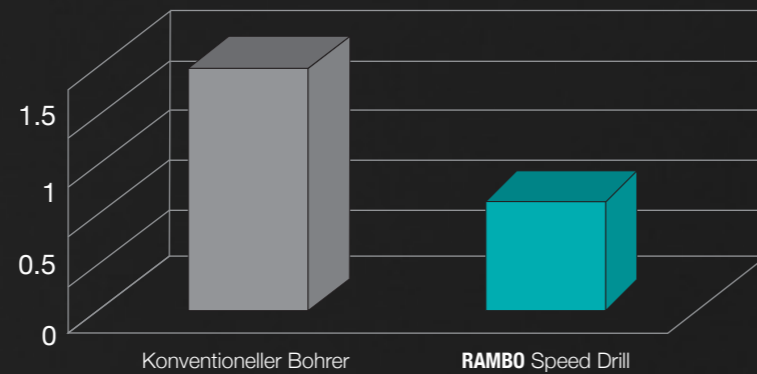


**MONAGHAN**  
TOOLING GROUP

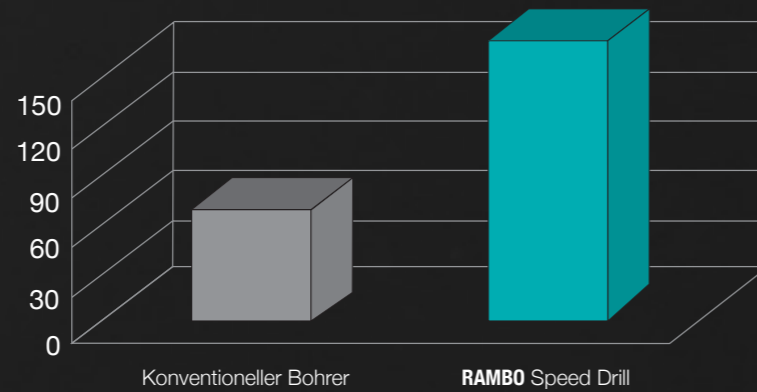
**RAMBO**  
SPEED DRILL

## RAMBO SPEED DRILL

Machining time [sec]



Tool life [m]



### APPLICATION SAMPLE

MATERIAL TO BE MACHINED // **STEEL 1.1191**

HOLE Ø // **10 MM**

HOLE DEPTH // **20 MM**

### CONVENTIONAL DRILL

VC = **100 M/MIN**

f = **0,25 MM/REV**

MACHINING TIME // **1,5 SEC.**

TOOL LIFE // **60 M**

### RAMBO SPEED DRILL

VC = **100 M/MIN**

f = **0,6 MM/REV**

MACHINING TIME // **0,62 SEC.**

TOOL LIFE // **150 M**

## THE NEW GENERATION OF SOLID DRILLING

First drill ever with 4 cutting edges for drilling into solid

2-3 times higher feed rates

Halving of cycle times

Best centering due to special point thinning

High tool life due to new special coating

Drilling depth up to 6xD with external coolant only

// **NEW**, UNIQUE DRILLING GEOMETRY

// **UNBEATABLE** FEED RATES

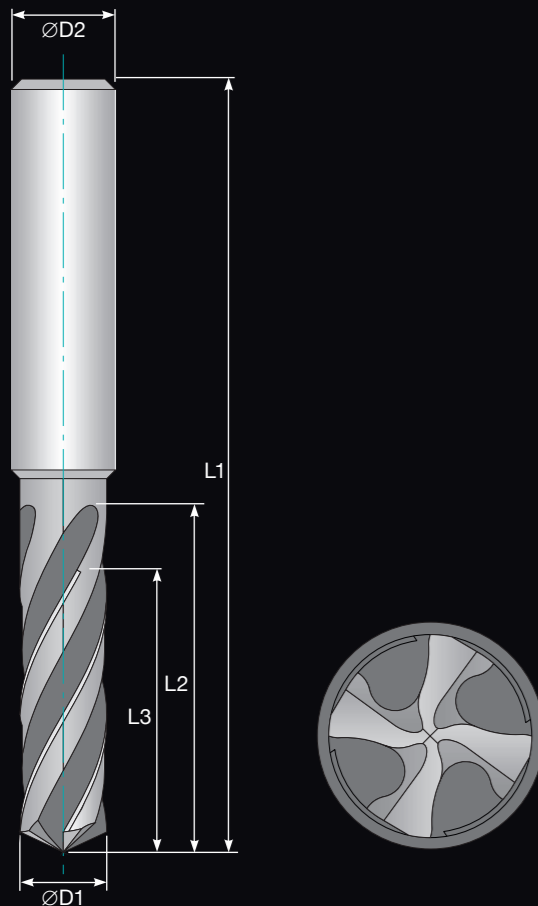
// **PERFECT** CENTERING OF DRILL DUE TO CUTTING CHISEL EDGE

// **MAXIMUM** TOOL LIFE DUE TO NEW COATING

// **IMPROVED** HOLE ROUNDNESS AND HOLE SURFACE FINISH



# RAMBO SPEED DRILL 4xD MK29004

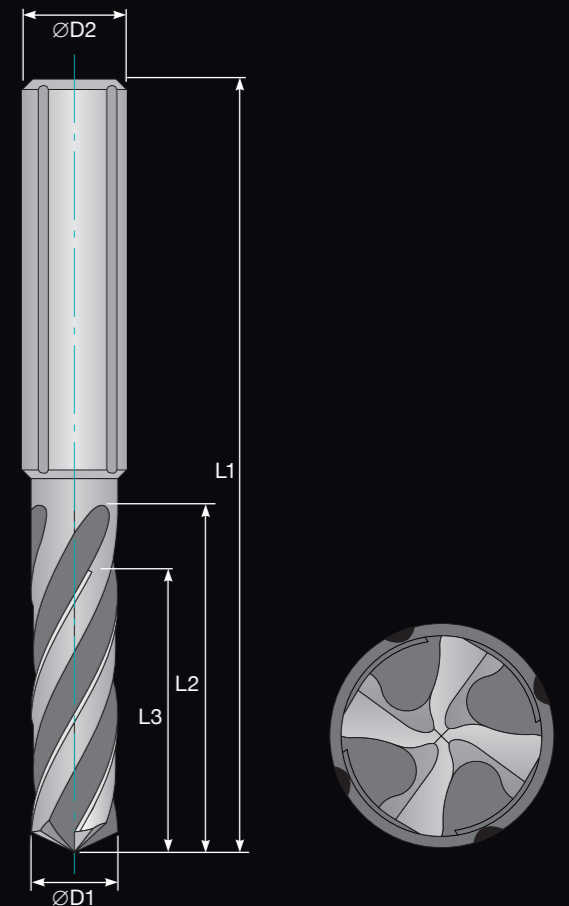


## DESIGN

HELIX // 30° RIGHT HELIX  
CUTTING DIRECTION // R.H.C.  
POINT ANGLE // 130°  
POINT GRINDING // RELIEVED CONE  
COATING // XX3  
COOLANT // EXTERNAL  
SHANK // DIN 6535 HA

Art. Nr.	D1	D2	L1	L2	L3
Order No.	m7	h6	L1	L2	L3
MK29004-0600	6,0	8	79	41	29
MK29004-0610	6,1	10	89	47	35
MK29004-0620	6,2	10	89	47	35
MK29004-0630	6,3	10	89	47	35
MK29004-0640	6,4	10	89	47	35
MK29004-0650	6,5	10	89	47	35
MK29004-0660	6,6	10	89	47	35
MK29004-0670	6,7	10	89	47	35
MK29004-0680	6,8	10	89	47	35
MK29004-0690	6,9	10	89	47	35
MK29004-0700	7,0	10	89	47	35
MK29004-0710	7,1	10	89	47	35
MK29004-0720	7,2	10	89	47	35
MK29004-0730	7,3	10	89	47	35
MK29004-0740	7,4	10	89	47	35
MK29004-0750	7,5	10	89	47	35
MK29004-0760	7,6	10	89	47	35
MK29004-0770	7,7	10	89	47	35
MK29004-0780	7,8	10	89	47	35
MK29004-0790	7,9	10	89	47	35
MK29004-0800	8,0	10	89	47	35
MK29004-0810	8,1	12	102	55	40
MK29004-0820	8,2	12	102	55	40
MK29004-0830	8,3	12	102	55	40
MK29004-0840	8,4	12	102	55	40
MK29004-0850	8,5	12	102	55	40
MK29004-0860	8,6	12	102	55	40
MK29004-0870	8,7	12	102	55	40
MK29004-0880	8,8	12	102	55	40
MK29004-0890	8,9	12	102	55	40
MK29004-0900	9,0	12	102	55	40
MK29004-0910	9,1	12	102	55	40
MK29004-0920	9,2	12	102	55	40
MK29004-0930	9,3	12	102	55	40
MK29004-0940	9,4	12	102	55	40
MK29004-0950	9,5	12	102	55	40
MK29004-0960	9,6	12	102	55	40
MK29004-0970	9,7	12	102	55	40
MK29004-0980	9,8	12	102	55	40
MK29004-0990	9,9	12	102	55	40
MK29004-1000	10,0	12	102	55	40
MK29004-1020	10,2	14	107	60	43
MK29004-1050	10,5	14	107	60	43
MK29004-1100	11,0	14	107	60	43
MK29004-1150	11,5	14	107	60	43
MK29004-1200	12,0	14	107	60	43
MK29004-1250	12,5	16	115	65	45
MK29004-1300	13,0	16	115	65	45
MK29004-1400	14,0	16	115	65	45
MK29004-1450	14,5	18	123	73	51
MK29004-1500	15,0	18	123	73	51
MK29004-1600	16,0	18	123	73	51
MK29004-1650	16,5	20	131	79	55
MK29004-1700	17,0	20	131	79	55
MK29004-1800	18,0	20	131	79	55
MK29004-1850	18,5	25	142	84	59
MK29004-1900	19,0	25	142	84	59
MK29004-2000	20,0	25	142	84	59

# RAMBO SPEED DRILL 4xD MK29084

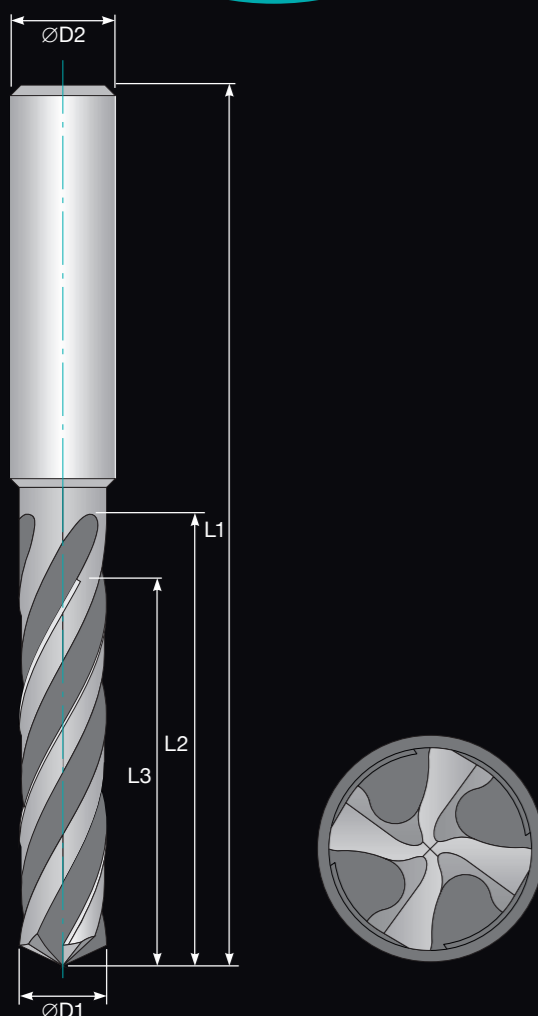


## DESIGN

HELIX // 30° RIGHT HELIX  
CUTTING DIRECTION // R.H.C.  
POINT ANGLE // 130°  
POINT GRINDING // RELIEVED CONE  
COATING // XX3  
COOLANT // 4 BYPASS SLOTS  
SHANK // DIN 6535 HA

Art. Nr.	D1	D2	L1	L2	L3
Order No.	m7	h6	L1	L2	L3
MK29084-0600	6,0	8	79	41	29
MK29084-0610	6,1	10	89	47	35
MK29084-0620	6,2	10	89	47	35
MK29084-0630	6,3	10	89	47	35
MK29084-0640	6,4	10	89	47	35
MK29084-0650	6,5	10	89	47	35
MK29084-0660	6,6	10	89	47	35
MK29084-0670	6,7	10	89	47	35
MK29084-0680	6,8	10	89	47	35
MK29084-0690	6,9	10	89	47	35
MK29084-0700	7,0	10	89	47	35
MK29084-0710	7,1	10	89	47	35
MK29084-0720	7,2	10	89	47	35
MK29084-0730	7,3	10	89	47	35
MK29084-0740	7,4	10	89	47	35
MK29084-0750	7,5	10	89	47	35
MK29084-0760	7,6	10	89	47	35
MK29084-0770	7,7	10	89	47	35
MK29084-0780	7,8	10	89	47	35
MK29084-0790	7,9	10	89	47	35
MK29084-0800	8,0	10	89	47	35
MK29084-0810	8,1	12	102	55	40
MK29084-0820	8,2	12	102	55	40
MK29084-0830	8,3	12	102	55	40
MK29084-0840	8,4	12	102	55	40
MK29084-0850	8,5	12	102	55	40
MK29084-0860	8,6	12	102	55	40
MK29084-0870	8,7	12	102	55	40
MK29084-0880	8,8	12	102	55	40
MK29084-0890	8,9	12	102	55	40
MK29084-0900	9,0	12	102	55	40
MK29084-0910	9,1	12	102	55	40
MK29084-0920	9,2	12	102	55	40
MK29084-0930	9,3	12	102	55	40
MK29084-0940	9,4	12	102	55	40
MK29084-0950	9,5	12	102	55	40
MK29084-0960	9,6	12	102	55	40
MK29084-0970	9,7	12	102	55	40
MK29084-0980	9,8	12	102	55	40
MK29084-0990	9,9	12	102	55	40
MK29084-1000	10,0	12	102	55	40
MK29084-1020	10,2	14	107	60	43
MK29084-1050	10,5	14	107	60	43
MK29084-1100	11,0	14	107	60	43
MK29084-1150	11,5	14	107	60	43
MK29084-1200	12,0	14	107	60	43
MK29084-1250	12,5	16	115	65	45
MK29084-1300	13,0	16	115	65	45
MK29084-1400	14,0	16	115	65	45
MK29084-1450	14,5	18	123	73	51
MK29084-1500	15,0	18	123	73	51
MK29084-1600	16,0	18	123	73	51
MK29084-1650	16,5	20	131	79	55
MK29084-1700	17,0	20	131	79	55
MK29084-1800	18,0	20	131	79	55
MK29084-1850	18,5	25	142	84	59
MK29084-1900	19,0	25	142	84	59
MK29084-2000	20,0	25	142	84	59

# RAMBO SPEED DRILL 6xD MK29006

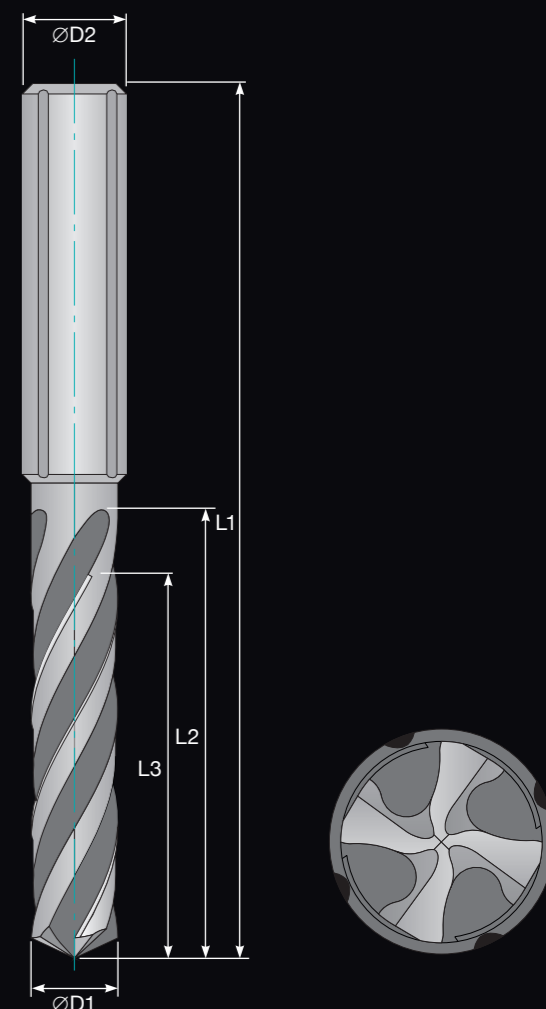


### DESIGN

HELIX // 30° RIGHT HELIX  
 CUTTING DIRECTION // R.H.C.  
 POINT ANGLE // 130°  
 POINT GRINDING // RELIEVED CONE  
 COATING // XX3  
 COOLANT // EXTERNAL  
 SHANK // DIN 6535 HA

Art. Nr.	D1	D2	L1	L2	L3
Order No.	m7	h6	L1	L2	L3
MK29006-0600	6,0	8	89	51	40
MK29006-0610	6,1	10	102	59	47
MK29006-0620	6,2	10	102	59	47
MK29006-0630	6,3	10	102	59	47
MK29006-0640	6,4	10	102	59	47
MK29006-0650	6,5	10	102	59	47
MK29006-0660	6,6	10	102	59	47
MK29006-0670	6,7	10	102	59	47
MK29006-0680	6,8	10	102	59	47
MK29006-0690	6,9	10	102	59	47
MK29006-0700	7,0	10	102	59	47
MK29006-0710	7,1	10	102	59	47
MK29006-0720	7,2	10	102	59	47
MK29006-0730	7,3	10	102	59	47
MK29006-0740	7,4	10	102	59	47
MK29006-0750	7,5	10	102	59	47
MK29006-0760	7,6	10	102	59	47
MK29006-0770	7,7	10	102	59	47
MK29006-0780	7,8	10	102	59	47
MK29006-0790	7,9	10	102	59	47
MK29006-0800	8,0	10	102	59	47
MK29006-0810	8,1	12	118	70	55
MK29006-0820	8,2	12	118	70	55
MK29006-0830	8,3	12	118	70	55
MK29006-0840	8,4	12	118	70	55
MK29006-0850	8,5	12	118	70	55
MK29006-0860	8,6	12	118	70	55
MK29006-0870	8,7	12	118	70	55
MK29006-0880	8,8	12	118	70	55
MK29006-0890	8,9	12	118	70	55
MK29006-0900	9,0	12	118	70	55
MK29006-0910	9,1	12	118	70	55
MK29006-0920	9,2	12	118	70	55
MK29006-0930	9,3	12	118	70	55
MK29006-0940	9,4	12	118	70	55
MK29006-0950	9,5	12	118	70	55
MK29006-0960	9,6	12	118	70	55
MK29006-0970	9,7	12	118	70	55
MK29006-0980	9,8	12	118	70	55
MK29006-0990	9,9	12	118	70	55
MK29006-1000	10,0	12	118	70	55
MK29006-1020	10,2	14	124	76	60
MK29006-1050	10,5	14	124	76	60
MK29006-1100	11,0	14	124	76	60
MK29006-1150	11,5	14	124	76	60
MK29006-1200	12,0	14	124	76	60
MK29006-1250	12,5	16	142	91	73
MK29006-1300	13,0	16	142	91	73
MK29006-1400	14,0	16	142	91	73
MK29006-1450	14,5	16	142	91	73
MK29006-1500	15,0	18	142	91	73
MK29006-1600	16,0	18	142	91	73
MK29006-1650	16,5	20	162	109	88
MK29006-1700	17,0	20	162	109	88
MK29006-1800	18,0	20	162	109	88
MK29006-1850	18,5	25	189	130	102
MK29006-1900	19,0	25	189	130	102
MK29006-2000	20,0	25	189	130	102

# RAMBO SPEED DRILL 6xD MK29086

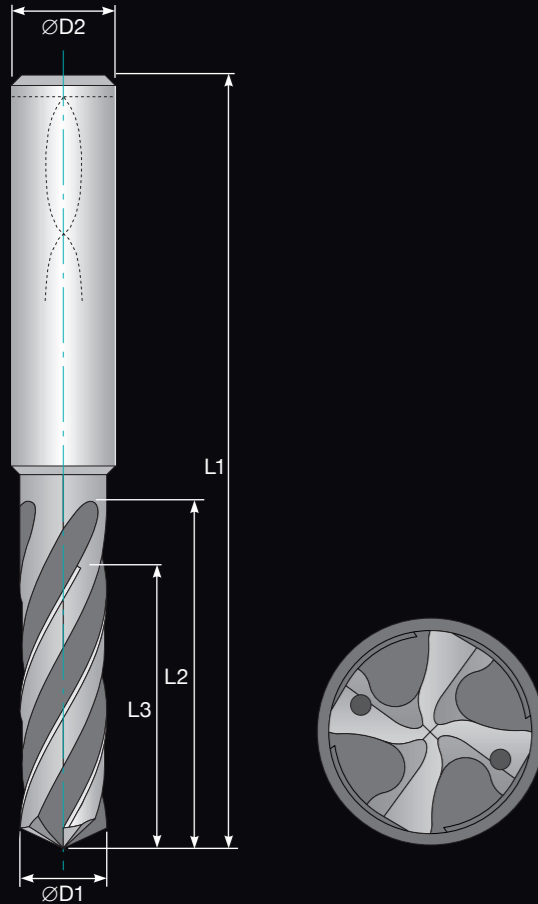


### DESIGN

HELIX // 30° RIGHT HELIX  
 CUTTING DIRECTION // R.H.C.  
 POINT ANGLE // 130°  
 POINT GRINDING // RELIEVED CONE  
 COATING // XX3  
 COOLANT // 4 BYPASS SLOTS  
 SHANK // DIN 6535 HA

Art. Nr.	D1	D2	L1	L2	L3
Order No.	m7	h6	L1	L2	L3
MK29086-0600	6,0	8	89	51	40
MK29086-0610	6,1	10	102	59	47
MK29086-0620	6,2	10	102	59	47
MK29086-0630	6,3	10	102	59	47
MK29086-0640	6,4	10	102	59	47
MK29086-0650	6,5	10	102	59	47
MK29086-0660	6,6	10	102	59	47
MK29086-0670	6,7	10	102	59	47
MK29086-0680	6,8	10	102	59	47
MK29086-0690	6,9	10	102	59	47
MK29086-0700	7,0	10	102	59	47
MK29086-0710	7,1	10	102	59	47
MK29086-0720	7,2	10	102	59	47
MK29086-0730	7,3	10	102	59	47
MK29086-0740	7,4	10	102	59	47
MK29086-0750	7,5	10	102	59	47
MK29086-0760	7,6	10	102	59	47
MK29086-0770	7,7	10	102	59	47
MK29086-0780	7,8	10	102	59	47
MK29086-0790	7,9	10	102	59	47
MK29086-0800	8,0	10	102	59	47
MK29086-0810	8,1	12	118	70	55
MK29086-0820	8,2	12	118	70	55
MK29086-0830	8,3	12	118	70	55
MK29086-0840	8,4	12	118	70	55
MK29086-0850	8,5	12	118	70	55
MK29086-0860	8,6	12	118	70	55
MK29086-0870	8,7	12	118	70	55
MK29086-0880	8,8	12	118	70	55
MK29086-0890	8,9	12	118	70	55
MK29086-0900	9,0	12	118	70	55
MK29086-0910	9,1	12	118	70	55
MK29086-0920	9,2	12	118	70	55
MK29086-0930	9,3	12	118	70	55
MK29086-0940	9,4	12	118	70	55
MK29086-0950	9,5	12	118	70	55
MK29086-0960	9,6	12	118	70	55
MK29086-0970	9,7	12	118	70	55
MK29086-0980	9,8	12	118	70	55
MK29086-0990	9,9	12	118	70	55
MK29086-1000	10,0	12	118	70	55
MK29086-1020	10,2	14	124	76	60
MK29086-1050	10,5	14	124	76	60
MK29086-1100	11,0	14	124	76	60
MK29086-1150	11,5	14	124	76	60
MK29086-1200	12,0	14	124	76	60
MK29086-1250	12,5	16	142	91	73
MK29086-1300	13,0	16	142	91	73
MK29086-1400	14,0	16	142	91	73
MK29086-1450	14,5	16	142	91	73
MK29086-1500	15,0	18	142	91	73
MK29086-1600	16,0	18	142	91	73
MK29086-1650	16,5	20	162	109	88
MK29086-1700	17,0	20	162	109	88
MK29086-1800	18,0	20	162	109	88
MK29086-1850	18,5	25	189	130	102
MK29086-1900	19,0	25	189	130	102
MK29086-2000	20,0	25	189	130	102

# RAMBO SPEED DRILL 4xD MK29104

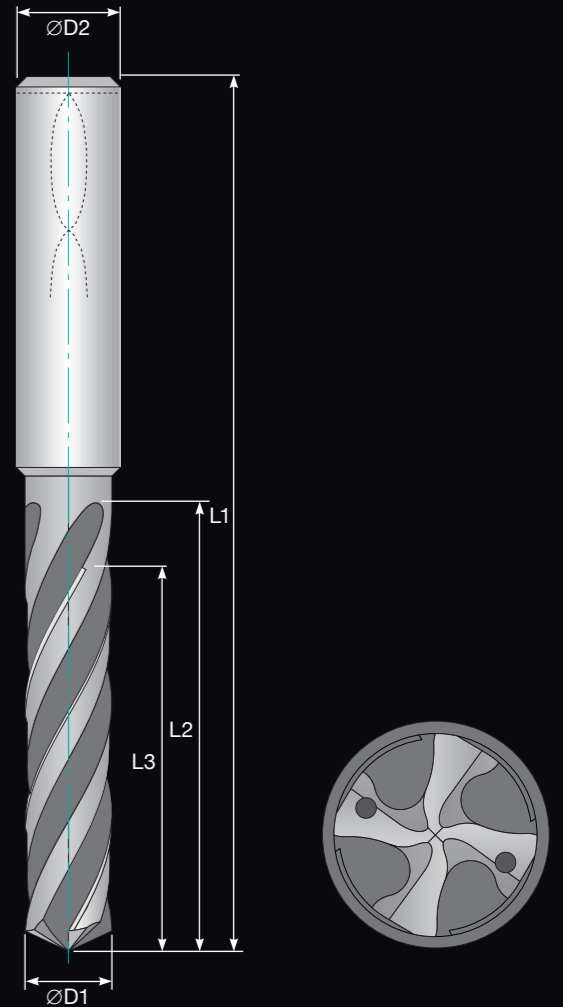


### DESIGN

HELIX // 30° RIGHT HELIX  
CUTTING DIRECTION // R.H.C.  
POINT ANGLE // 130°  
POINT GRINDING // RELIEVED CONE  
COATING // XX3  
COOLANT // INTERNAL  
SHANK // DIN 6535 HA

Art. Nr.	D1	D2	L1	L2	L3
Order No.	m7	h6	L1	L2	L3
MK29104-0600	6,0	8	79	41	29
MK29104-0610	6,1	10	89	47	35
MK29104-0620	6,2	10	89	47	35
MK29104-0630	6,3	10	89	47	35
MK29104-0640	6,4	10	89	47	35
MK29104-0650	6,5	10	89	47	35
MK29104-0660	6,6	10	89	47	35
MK29104-0670	6,7	10	89	47	35
MK29104-0680	6,8	10	89	47	35
MK29104-0690	6,9	10	89	47	35
MK29104-0700	7,0	10	89	47	35
MK29104-0710	7,1	10	89	47	35
MK29104-0720	7,2	10	89	47	35
MK29104-0730	7,3	10	89	47	35
MK29104-0740	7,4	10	89	47	35
MK29104-0750	7,5	10	89	47	35
MK29104-0760	7,6	10	89	47	35
MK29104-0770	7,7	10	89	47	35
MK29104-0780	7,8	10	89	47	35
MK29104-0790	7,9	10	89	47	35
MK29104-0800	8,0	10	89	47	35
MK29104-0810	8,1	12	102	55	40
MK29104-0820	8,2	12	102	55	40
MK29104-0830	8,3	12	102	55	40
MK29104-0840	8,4	12	102	55	40
MK29104-0850	8,5	12	102	55	40
MK29104-0860	8,6	12	102	55	40
MK29104-0870	8,7	12	102	55	40
MK29104-0880	8,8	12	102	55	40
MK29104-0890	8,9	12	102	55	40
MK29104-0900	9,0	12	102	55	40
MK29104-0910	9,1	12	102	55	40
MK29104-0920	9,2	12	102	55	40
MK29104-0930	9,3	12	102	55	40
MK29104-0940	9,4	12	102	55	40
MK29104-0950	9,5	12	102	55	40
MK29104-0960	9,6	12	102	55	40
MK29104-0970	9,7	12	102	55	40
MK29104-0980	9,8	12	102	55	40
MK29104-0990	9,9	12	102	55	40
MK29104-1000	10,0	12	102	55	40
MK29104-1020	10,2	14	107	60	43
MK29104-1050	10,5	14	107	60	43
MK29104-1100	11,0	14	107	60	43
MK29104-1150	11,5	14	107	60	43
MK29104-1200	12,0	14	107	60	43
MK29104-1250	12,5	16	115	65	45
MK29104-1300	13,0	16	115	65	45
MK29104-1400	14,0	16	115	65	45
MK29104-1450	14,5	18	123	73	51
MK29104-1500	15,0	18	123	73	51
MK29104-1600	16,0	18	123	73	51
MK29104-1650	16,5	20	131	79	55
MK29104-1700	17,0	20	131	79	55
MK29104-1800	18,0	20	131	79	55
MK29104-1850	18,5	25	142	84	59
MK29104-1900	19,0	25	142	84	59
MK29104-2000	20,0	25	142	84	59

# RAMBO SPEED DRILL 6xD MK29106



### DESIGN

HELIX // 30° RIGHT HELIX  
CUTTING DIRECTION // R.H.C.  
POINT ANGLE // 130°  
POINT GRINDING // RELIEVED CONE  
COATING // XX3  
COOLANT // INTERNAL  
SHANK // DIN 6535 HA

Art. Nr.	D1	D2	L1	L2	L3
Order No.	m7	h6	L1	L2	L3
MK29106-0600	6,0	8	89	51	40
MK29106-0610	6,1	10	102	59	47
MK29106-0620	6,2	10	102	59	47
MK29106-0630	6,3	10	102	59	47
MK29106-0640	6,4	10	102	59	47
MK29106-0650	6,5	10	102	59	47
MK29106-0660	6,6	10	102	59	47
MK29106-0670	6,7	10	102	59	47
MK29106-0680	6,8	10	102	59	47
MK29106-0690	6,9	10	102	59	47
MK29106-0700	7,0	10	102	59	47
MK29106-0710	7,1	10	102	59	47
MK29106-0720	7,2	10	102	59	47
MK29106-0730	7,3	10	102	59	47
MK29106-0740	7,4	10	102	59	47
MK29106-0750	7,5	10	102	59	47
MK29106-0760	7,6	10	102	59	47
MK29106-0770	7,7	10	102	59	47
MK29106-0780	7,8	10	102	59	47
MK29106-0790	7,9	10	102	59	47
MK29106-0800	8,0	10	102	59	47
MK29106-0810	8,1	12	118	70	55
MK29106-0820	8,2	12	118	70	55
MK29106-0830	8,3	12	118	70	55
MK29106-0840	8,4	12	118	70	55
MK29106-0850	8,5	12	118	70	55
MK29106-0860	8,6	12	118	70	55
MK29106-0870	8,7	12	118	70	55
MK29106-0880	8,8	12	118	70	55
MK29106-0890	8,9	12	118	70	55
MK29106-0900	9,0	12	118	70	55
MK29106-0910	9,1	12	118	70	55
MK29106-0920	9,2	12	118	70	55
MK29106-0930	9,3	12	118	70	55
MK29106-0940	9,4	12	118	70	55
MK29106-0950	9,5	12	118	70	55
MK29106-0960	9,6	12	118	70	55
MK29106-0970	9,7	12	118	70	55
MK29106-0980	9,8	12	118	70	55
MK29106-0990	9,9	12	118	70	55
MK29106-1000	10,0	12	118	70	55
MK29106-1020	10,2	14	124	76	60
MK29106-1050	10,5	14	124	76	60
MK29106-1100	11,0	14	124	76	60
MK29106-1150	11,5	14	124	76	60
MK29106-1200	12,0	14	124	76	60
MK29106-1250	12,5	16	142	91	73
MK29106-1300	13,0	16	142	91	73
MK29106-1400	14,0	16	142	91	73
MK29106-1450	14,5	16	142	91	73
MK29106-1500	15,0	18	142	91	73
MK29106-1600	16,0	18	142	91	73
MK29106-1650	16,5	20	162	109	88
MK29106-1700	17,0	20	162	109	88
MK29106-1800	18,0	20	162	109	88
MK29106-1850	18,5	25	189	130	102
MK29106-1900	19,0	25	189	130	102
MK29106-2000	20,0	25	189	130	102

# RAMBO SPEED DRILL

## MAIN APPLICATION

- unalloyed steel
- cast steel
- alloyed steel up to 1000 N/mm<sup>2</sup>
- Cast iron (>= GGG50)
- Reduction of cycle time in mass production

## GEOMETRY

- Special cone relief point
- Special web thinning with cutting chisel edge
- 4 cutting edges
- Honed cutting edges

## CUTTING DATA

Zu bearbeitendes Material Material to be machined	Zugfestigkeit Tensile strength [N/mm <sup>2</sup> ]	Beispiel Example	Schnittgeschwindigkeit V <sub>c</sub> Cutting speed V <sub>c</sub> [m/min]	Vorschub f <sub>feed</sub> [mm/rev]					
				Ø6	Ø8	Ø10	Ø12	Ø16	Ø20
P Unlegierter Stahl, Stahlguss non-alloy steels, cast steels	< 600 N/mm <sup>2</sup>	St37, C22, GS38	120-140	0,3	0,4	0,6	0,7	0,8	0,8
	< 700 N/mm <sup>2</sup>	St52, C35, GS52	100-120	0,3	0,4	0,6	0,7	0,8	0,8
	> 700 N/mm <sup>2</sup>	St52, C35, GS52	80-100	0,3	0,4	0,6	0,7	0,8	0,8
	< 900 N/mm <sup>2</sup>	St52, C35, GS52	80-95	0,3	0,4	0,6	0,7	0,8	0,8
	< 1000 N/mm <sup>2</sup>	90MnCrV8, 100Cr6	65-80	0,3	0,4	0,6	0,7	0,8	0,8
	> 1000 N/mm <sup>2</sup>	90MnCrV8, 100Cr6	45-65	0,24	0,3	0,4	0,5	0,6	0,7
M Legierter Stahl alloyed steel		X5 CrNi 18 9 (V2A) X 10 CrNiMoTi 18 10							
K Grauguss, legierter Grauguss Grey cast iron, grey cast iron alloy	< 200 HB	GG20 GG25, GTS45	120-140	0,3	0,4	0,6	0,7	0,8	0,8
	< 250 HB	GG30, GTW40	100-120	0,3	0,4	0,6	0,7	0,8	0,8
	> 250 HB	GG40, GTS70	100-120	0,3	0,4	0,6	0,7	0,8	0,8
	< 600 N/mm <sup>2</sup>	GGG40, GGG50	100-120	0,3	0,4	0,6	0,7	0,8	0,8
	> 600 N/mm <sup>2</sup>	GGG60, GGV (CGI)	80-100	0,3	0,4	0,6	0,7	0,8	0,8
		AlCuMgPb, AlMgSi 0.5							
N Aluminium (Si < 10%)		GD-AlSi9Cu3, AlSi7Mg 0.6							
	Aluminium (Si > 10%)	GB.AlSi12 (Cu)							
S Titanlegierungen Titanium alloys		Ti6Al4V							
	Nickellegierungen Nickel alloys	Inconel, Monel, Hasteloy							

