

Drilling - Metric

Date compiled May 04 2017

| SPMX 050204 | | | | | | | | |
|-------------|---------------------------------|---------------|--------------------|------|-----------|------------------|-----|-----------|
| Material | | | Cutting conditions | | | | | |
| Group | Sub Group | Hardness (HB) | Feed (mm/rev) | | | Speed Vc (m/min) | | |
| | | | Min | Max | Recommend | Min | Max | Recommend |
| P | Non Alloy | 120 | 0.06 | 0.12 | 0.10 | 180 | 270 | 220 |
| | Low Alloy | 200 | 0.06 | 0.12 | 0.10 | 120 | 230 | 175 |
| | High Alloy | 220 | 0.05 | 0.10 | 0.08 | 70 | 180 | 120 |
| M | Austenitic | 190 | 0.06 | 0.12 | 0.10 | 170 | 230 | 200 |
| | Ferritic & Martensitic | 220 | 0.04 | 0.10 | 0.07 | 50 | 130 | 80 |
| K | Nodular Cast Iron | 150 | 0.06 | 0.13 | 0.10 | 140 | 250 | 170 |
| | Grey Cast Iron | 150 | 0.07 | 0.11 | 0.09 | 140 | 220 | 180 |
| S | Heat resistant and super alloys | 240 | 0.08 | 0.11 | 0.09 | 80 | 140 | 100 |
| H | Hardened material | 45HRc | 0.06 | 0.10 | 0.08 | 90 | 130 | 110 |
| NF | Alu (<10%SI) | 100 | 0.08 | 0.14 | 0.10 | 250 | 600 | 400 |

| SPMX 060204 | | | | | | | | |
|-------------|---------------------------------|---------------|--------------------|------|-----------|------------------|-----|-----------|
| Material | | | Cutting conditions | | | | | |
| Group | Sub Group | Hardness (HB) | Feed (mm/rev) | | | Speed Vc (m/min) | | |
| | | | Min | Max | Recommend | Min | Max | Recommend |
| P | Non Alloy | 120 | 0.06 | 0.14 | 0.11 | 180 | 280 | 220 |
| | Low Alloy | 200 | 0.06 | 0.12 | 0.10 | 120 | 230 | 175 |
| | High Alloy | 220 | 0.05 | 0.10 | 0.08 | 70 | 180 | 120 |
| M | Austenitic | 190 | 0.06 | 0.12 | 0.10 | 170 | 230 | 200 |
| | Ferritic & Martensitic | 220 | 0.04 | 0.10 | 0.07 | 50 | 130 | 90 |
| K | Nodular Cast Iron | 150 | 0.06 | 0.13 | 0.10 | 150 | 250 | 180 |
| | Grey Cast Iron | 150 | 0.07 | 0.11 | 0.09 | 150 | 230 | 190 |
| S | Heat resistant and super alloys | 240 | 0.06 | 0.12 | 0.10 | 90 | 130 | 100 |
| H | Hardened material | 45HRc | 0.06 | 0.11 | 0.09 | 100 | 140 | 110 |
| NF | Alu (<10%SI) | 100 | 0.08 | 0.16 | 0.11 | 250 | 600 | 450 |

| SPMX 07T308 | | | | | | | | |
|-------------|---------------------------------|---------------|--------------------|------|-----------|------------------|-----|-----------|
| Material | | | Cutting conditions | | | | | |
| Group | Sub Group | Hardness (HB) | Feed (mm/rev) | | | Speed Vc (m/min) | | |
| | | | Min | Max | Recommend | Min | Max | Recommend |
| P | Non Alloy | 120 | 0.06 | 0.15 | 0.12 | 180 | 300 | 240 |
| | Low Alloy | 200 | 0.06 | 0.12 | 0.10 | 120 | 180 | 150 |
| | High Alloy | 220 | 0.06 | 0.10 | 0.08 | 80 | 180 | 120 |
| M | Austenitic | 190 | 0.06 | 0.12 | 0.10 | 170 | 230 | 200 |
| | Ferritic & Martensitic | 220 | 0.06 | 0.10 | 0.08 | 50 | 140 | 100 |
| K | Nodular Cast Iron | 150 | 0.08 | 0.14 | 0.10 | 150 | 250 | 180 |
| | Grey Cast Iron | 150 | 0.08 | 0.12 | 0.10 | 150 | 230 | 200 |
| S | Heat resistant and super alloys | 240 | 0.06 | 0.13 | 0.10 | 90 | 130 | 100 |
| H | Hardened material | 45HRc | 0.06 | 0.12 | 0.10 | 100 | 140 | 110 |
| NF | Alu (<10%SI) | 100 | 0.08 | 0.16 | 0.12 | 250 | 600 | 450 |

| SPMX 090408 | | | | | | | | |
|-------------|---------------------------------|---------------|--------------------|------|-----------|------------------|-----|-----------|
| Material | | | Cutting conditions | | | | | |
| Group | Sub Group | Hardness (HB) | Feed (mm/rev) | | | Speed Vc (m/min) | | |
| | | | Min | Max | Recommend | Min | Max | Recommend |
| P | Non Alloy | 120 | 0.08 | 0.16 | 0.12 | 180 | 300 | 250 |
| | Low Alloy | 200 | 0.08 | 0.14 | 0.10 | 120 | 180 | 150 |
| | High Alloy | 220 | 0.06 | 0.10 | 0.08 | 80 | 180 | 120 |
| M | Austenitic | 190 | 0.08 | 0.14 | 0.10 | 170 | 230 | 200 |
| | Ferritic & Martensitic | 220 | 0.08 | 0.14 | 0.10 | 50 | 150 | 100 |
| K | Nodular Cast Iron | 150 | 0.08 | 0.16 | 0.11 | 130 | 230 | 170 |
| | Grey Cast Iron | 150 | 0.08 | 0.12 | 0.10 | 150 | 230 | 200 |
| S | Heat resistant and super alloys | 240 | 0.08 | 0.14 | 0.11 | 90 | 130 | 100 |
| H | Hardened material | 45HRc | 0.07 | 0.13 | 0.11 | 100 | 140 | 110 |
| NF | Alu (<10%SI) | 100 | 0.08 | 0.16 | 0.12 | 250 | 600 | 450 |

| SPMX 110408 | | | | | | | | |
|-------------|---------------------------------|---------------|--------------------|------|-----------|------------------|-----|-----------|
| Material | | | Cutting conditions | | | | | |
| Group | Sub Group | Hardness (HB) | Feed (mm/rev) | | | Speed Vc (m/min) | | |
| | | | Min | Max | Recommend | Min | Max | Recommend |
| P | Non Alloy | 120 | 0.08 | 0.16 | 0.12 | 180 | 280 | 230 |
| | Low Alloy | 200 | 0.08 | 0.14 | 0.10 | 120 | 180 | 150 |
| | High Alloy | 220 | 0.06 | 0.10 | 0.08 | 80 | 180 | 120 |
| M | Austenitic | 190 | 0.08 | 0.14 | 0.10 | 170 | 230 | 200 |
| | Ferritic & Martensitic | 220 | 0.08 | 0.14 | 0.10 | 50 | 150 | 100 |
| K | Nodular Cast Iron | 150 | 0.08 | 0.16 | 0.12 | 130 | 230 | 170 |
| | Grey Cast Iron | 150 | 0.08 | 0.14 | 0.12 | 150 | 210 | 190 |
| S | Heat resistant and super alloys | 240 | 0.08 | 0.15 | 0.13 | 90 | 130 | 100 |
| H | Hardened material | 45HRc | 0.08 | 0.14 | 0.12 | 100 | 140 | 110 |
| NF | Alu (<10%SI) | 100 | 0.08 | 0.16 | 0.13 | 250 | 500 | 400 |

| SPMX 140512 | | | | | | | | |
|-------------|--|--|--------------------|--|--|--|--|--|
| Material | | | Cutting conditions | | | | | |

| Group | Sub Group | Hardness (HB) | Feed (mm/rev) | | | Speed Vc (m/min) | | |
|-------|---------------------------------|---------------|---------------|------|-----------|------------------|-----|-----------|
| | | | Min | Max | Recommend | Min | Max | Recommend |
| P | Non Alloy | 120 | 0.08 | 0.16 | 0.12 | 180 | 270 | 230 |
| | Low Alloy | 200 | 0.08 | 0.14 | 0.10 | 110 | 170 | 140 |
| | High Alloy | 220 | 0.06 | 0.10 | 0.08 | 70 | 160 | 120 |
| M | Austenitic | 190 | 0.08 | 0.16 | 0.10 | 170 | 230 | 200 |
| | Ferritic & Martensitic | 220 | 0.08 | 0.14 | 0.10 | 50 | 150 | 100 |
| K | Nodular Cast Iron | 150 | 0.08 | 0.16 | 0.12 | 130 | 230 | 170 |
| | Grey Cast Iron | 150 | 0.08 | 0.16 | 0.12 | 150 | 210 | 190 |
| S | Heat resistant and super alloys | 240 | 0.08 | 0.16 | 0.13 | 90 | 130 | 100 |
| H | Hardened material | 45HRc | 0.08 | 0.15 | 0.12 | 100 | 140 | 110 |
| NF | Alu (<10%SI) | 100 | 0.08 | 0.18 | 0.14 | 250 | 450 | 350 |

| WCMX040208 | | | | | | | | |
|------------|---------------------------------|---------------|--------------------|------|-----------|------------------|-----|-----------|
| Material | | | Cutting conditions | | | | | |
| Group | Sub Group | Hardness (HB) | Feed (mm/rev) | | | Speed Vc (m/min) | | |
| | | | Min | Max | Recommend | Min | Max | Recommend |
| P | Non Alloy | 120 | 0.06 | 0.12 | 0.10 | 180 | 270 | 220 |
| | Low Alloy | 200 | 0.06 | 0.12 | 0.10 | 120 | 230 | 175 |
| | High Alloy | 220 | 0.05 | 0.10 | 0.08 | 70 | 180 | 120 |
| M | Austenitic | 190 | 0.06 | 0.12 | 0.10 | 170 | 230 | 200 |
| | Ferritic & Martensitic | 220 | 0.04 | 0.10 | 0.07 | 50 | 130 | 80 |
| K | Nodular Cast Iron | 150 | 0.06 | 0.13 | 0.10 | 140 | 250 | 170 |
| | Grey Cast Iron | 150 | 0.07 | 0.11 | 0.09 | 140 | 220 | 180 |
| S | Heat resistant and super alloys | 240 | 0.08 | 0.11 | 0.09 | 80 | 140 | 100 |
| H | Hardened material | 45HRc | 0.06 | 0.10 | 0.08 | 90 | 130 | 110 |
| NF | Alu (<10%SI) | 100 | 0.08 | 0.14 | 0.10 | 250 | 600 | 400 |

| WCMX050308 | | | | | | | | |
|------------|---------------------------------|---------------|--------------------|------|-----------|------------------|-----|-----------|
| Material | | | Cutting conditions | | | | | |
| Group | Sub Group | Hardness (HB) | Feed (mm/rev) | | | Speed Vc (m/min) | | |
| | | | Min | Max | Recommend | Min | Max | Recommend |
| P | Non Alloy | 120 | 0.06 | 0.14 | 0.10 | 180 | 300 | 220 |
| | Low Alloy | 200 | 0.06 | 0.12 | 0.10 | 120 | 250 | 180 |
| | High Alloy | 220 | 0.05 | 0.10 | 0.08 | 70 | 180 | 120 |
| M | Austenitic | 190 | 0.06 | 0.12 | 0.10 | 170 | 230 | 200 |
| | Ferritic & Martensitic | 220 | 0.04 | 0.10 | 0.80 | 50 | 130 | 90 |
| K | Nodular Cast Iron | 150 | 0.06 | 0.13 | 0.10 | 150 | 250 | 180 |
| | Grey Cast Iron | 150 | 0.08 | 0.12 | 0.10 | 140 | 230 | 190 |
| S | Heat resistant and super alloys | 240 | 0.08 | 0.13 | 0.11 | 80 | 130 | 100 |
| H | Hardened material | 45HRc | 0.06 | 0.12 | 0.10 | 90 | 140 | 110 |
| NF | Alu (<10%SI) | 100 | 0.08 | 0.16 | 0.11 | 250 | 600 | 450 |

| WCMX06T308 | | | | | | | | |
|------------|---------------------------------|---------------|--------------------|------|-----------|------------------|-----|-----------|
| Material | | | Cutting conditions | | | | | |
| Group | Sub Group | Hardness (HB) | Feed (mm/rev) | | | Speed Vc (m/min) | | |
| | | | Min | Max | Recommend | Min | Max | Recommend |
| P | Non Alloy | 120 | 0.06 | 0.14 | 0.12 | 180 | 300 | 220 |
| | Low Alloy | 200 | 0.06 | 0.12 | 0.10 | 120 | 180 | 150 |
| | High Alloy | 220 | 0.06 | 0.10 | 0.08 | 80 | 180 | 120 |
| M | Austenitic | 190 | 0.06 | 0.12 | 0.10 | 170 | 230 | 200 |
| | Ferritic & Martensitic | 220 | 0.06 | 0.10 | 0.08 | 50 | 140 | 100 |
| K | Nodular Cast Iron | 150 | 0.08 | 0.14 | 0.10 | 150 | 250 | 180 |
| | Grey Cast Iron | 150 | 0.08 | 0.12 | 0.10 | 150 | 230 | 200 |
| S | Heat resistant and super alloys | 240 | 0.08 | 0.13 | 0.11 | 80 | 130 | 100 |
| H | Hardened material | 45HRc | 0.06 | 0.12 | 0.10 | 90 | 140 | 110 |
| NF | Alu (<10%SI) | 100 | 0.08 | 0.16 | 0.12 | 250 | 600 | 450 |

| WCMX080412 | | | | | | | | |
|------------|---------------------------------|---------------|--------------------|------|-----------|------------------|-----|-----------|
| Material | | | Cutting conditions | | | | | |
| Group | Sub Group | Hardness (HB) | Feed (mm/rev) | | | Speed Vc (m/min) | | |
| | | | Min | Max | Recommend | Min | Max | Recommend |
| P | Non Alloy | 120 | 0.08 | 0.16 | 0.12 | 180 | 280 | 230 |
| | Low Alloy | 200 | 0.08 | 0.14 | 0.10 | 110 | 180 | 150 |
| | High Alloy | 220 | 0.06 | 0.10 | 0.08 | 80 | 180 | 120 |
| M | Austenitic | 190 | 0.08 | 0.14 | 0.10 | 170 | 230 | 200 |
| | Ferritic & Martensitic | 220 | 0.08 | 0.14 | 0.10 | 50 | 150 | 100 |
| K | Nodular Cast Iron | 150 | 0.08 | 0.16 | 0.12 | 130 | 230 | 170 |
| | Grey Cast Iron | 150 | 0.08 | 0.14 | 0.12 | 150 | 210 | 190 |
| S | Heat resistant and super alloys | 240 | 0.08 | 0.14 | 0.12 | 80 | 130 | 100 |
| H | Hardened material | 45HRc | 0.06 | 0.12 | 0.10 | 90 | 140 | 110 |
| NF | Alu (<10%SI) | 100 | 0.08 | 0.16 | 0.13 | 250 | 500 | 400 |