

GÜHRING



***EB 80 CROSS
single-fluted
deep hole drill***

Application specialist for crossing gaps



EB 80 CROSS

Reliable in gaps and cross holes

Specialist for gaps
and cross holes

The EB 80 Cross is our solution for demanding deep hole drilling with gaps-process-reliable, precise and for universal application in all ISO groups.

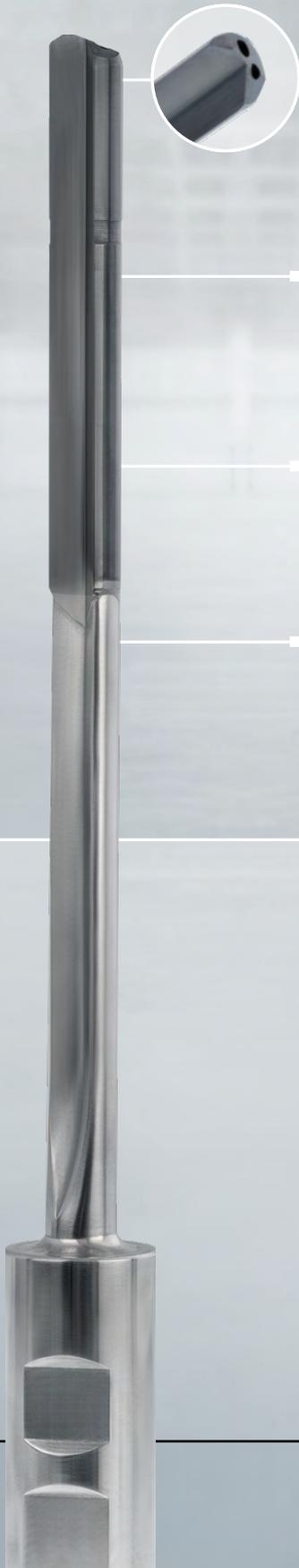
Thanks to its extended carbide head with with combined cutting edge and guide, additional corner chamfer and hardened tube, the tool remains dimensionally stable and precise, even under the most difficult conditions.

The optimised tool geometry ensures process-secure drilling, maximum straightness and hole quality up to IT6, even with multiple interruptions.

The result? Up to 50 % longer tool lives and straightness of holes down to just 0.05 mm per 100 mm of machining depth – consistent over the entire tool life.

x **31,8 % faster** per hole
x **10 more holes** per tool

- X** increased tool life by up to 50% in applications with gaps in all ISO groups
- X** improved drilling and spot drilling stability thanks to optimised tool design
- X** process-secure deep hole drilling for multiple drilling operations thanks to additional corner chamfer



tip geometry
with corner chamfer

cylindrical guide part
allows for optimum straightness of holes
and the best possible tool guidance

available in nine different total tool lengths
200 – 1,600 mm

improved tool stability
thanks to hardened tubes

Application example

Component: Press tool 40CrMnNiMo8-6-4 (1.2738), drilling depth 516 mm

Tool: #9194, Ø 12,000 mm, 600 mm

Customer target: Reliable increase in tool performance

Difficulty: Cutting edge load due to cross holes and coolant loss

| Cutting data: | Gühring | Competition |
|---------------|--------------|--------------|
| v_c | 55 m/min | 50 m/min |
| f | 0.040 mm/rev | 0.030 mm/rev |

| | | |
|-------------------|----------------------------|---------------------------|
| Tool life: | 8 m (15 holes per tool) | 3 m (5 holes per tool) |
|-------------------|----------------------------|---------------------------|

| | | |
|------------------------|-----------------------|------------------------|
| Machining time: | 9 Minuten pro Bohrung | 13 Minuten pro Bohrung |
|------------------------|-----------------------|------------------------|



Brazed single-fluted gun drills

EB 80 CROSS single-fluted gun drills

Article no. **9190**

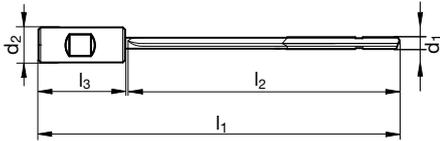


cutting data see page 13



adapted circumferential shape • with additional guide part • ideal for gaps

| | | | | | |
|----------|----------|----------|----------|----------|----------|
| P | M | K | N | S | H |
| ● | ● | ○ | ○ | ○ | ○ |



Article no. **9190**

Article no. **9190**

| d1 mm | inch | d2 h6 mm | l1 mm | l2 mm | l3 mm | Order no. |
|----------|------|-------------|----------|----------|----------|------------|
| 3.000 | | 16.0 | 200.0 | 149.0 | 48.0 | 9190 3.000 |
| 3.020 | | 16.0 | 200.0 | 149.0 | 48.0 | 9190 3.020 |
| 3.500 | | 16.0 | 200.0 | 149.0 | 48.0 | 9190 3.500 |
| 4.000 | | 16.0 | 200.0 | 149.0 | 48.0 | 9190 4.000 |
| 4.020 | | 16.0 | 200.0 | 149.0 | 48.0 | 9190 4.020 |
| 4.500 | | 16.0 | 200.0 | 149.0 | 48.0 | 9190 4.500 |
| 5.000 | | 16.0 | 200.0 | 149.0 | 48.0 | 9190 5.000 |
| 5.020 | | 16.0 | 200.0 | 149.0 | 48.0 | 9190 5.020 |
| 5.500 | | 16.0 | 200.0 | 149.0 | 48.0 | 9190 5.500 |
| 6.000 | | 16.0 | 200.0 | 149.0 | 48.0 | 9190 6.000 |
| 6.020 | | 16.0 | 200.0 | 149.0 | 48.0 | 9190 6.020 |
| 6.250 | | 16.0 | 200.0 | 149.0 | 48.0 | 9190 6.250 |

| d1 mm | inch | d2 h6 mm | l1 mm | l2 mm | l3 mm | Order no. |
|----------|------|-------------|----------|----------|----------|-------------|
| 6.500 | | 16.0 | 200.0 | 149.0 | 48.0 | 9190 6.500 |
| 7.000 | | 16.0 | 200.0 | 149.0 | 48.0 | 9190 7.000 |
| 7.500 | | 16.0 | 200.0 | 149.0 | 48.0 | 9190 7.500 |
| 8.000 | | 16.0 | 200.0 | 149.0 | 48.0 | 9190 8.000 |
| 8.020 | | 16.0 | 200.0 | 149.0 | 48.0 | 9190 8.020 |
| 8.500 | | 16.0 | 200.0 | 149.0 | 48.0 | 9190 8.500 |
| 9.000 | | 16.0 | 200.0 | 149.0 | 48.0 | 9190 9.000 |
| 9.420 | | 16.0 | 200.0 | 149.0 | 48.0 | 9190 9.420 |
| 9.500 | | 16.0 | 200.0 | 149.0 | 48.0 | 9190 9.500 |
| 10.000 | | 16.0 | 200.0 | 149.0 | 48.0 | 9190 10.000 |

EB 80 CROSS single-fluted gun drills

Article no. **9191**

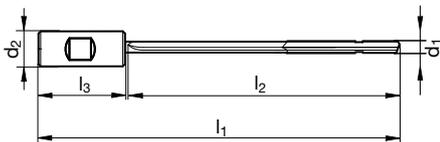


cutting data see page 13



adapted circumferential shape • with additional guide part • ideal for gaps

| | | | | | |
|----------|----------|----------|----------|----------|----------|
| P | M | K | N | S | H |
| ● | ● | ○ | ○ | ○ | ○ |



Article no. **9191**

Article no. **9191**

| d1 mm | inch | d2 h6 mm | l1 mm | l2 mm | l3 mm | Order no. |
|----------|------|-------------|----------|----------|----------|------------|
| 3.000 | | 16.0 | 300.0 | 249.0 | 48.0 | 9191 3.000 |
| 3.020 | | 16.0 | 300.0 | 249.0 | 48.0 | 9191 3.020 |
| 3.500 | | 16.0 | 300.0 | 249.0 | 48.0 | 9191 3.500 |
| 4.000 | | 16.0 | 300.0 | 249.0 | 48.0 | 9191 4.000 |
| 4.020 | | 16.0 | 300.0 | 249.0 | 48.0 | 9191 4.020 |
| 4.500 | | 16.0 | 300.0 | 249.0 | 48.0 | 9191 4.500 |
| 5.000 | | 16.0 | 300.0 | 249.0 | 48.0 | 9191 5.000 |
| 5.020 | | 16.0 | 300.0 | 249.0 | 48.0 | 9191 5.020 |
| 5.500 | | 16.0 | 300.0 | 249.0 | 48.0 | 9191 5.500 |
| 6.000 | | 16.0 | 300.0 | 249.0 | 48.0 | 9191 6.000 |
| 6.020 | | 16.0 | 300.0 | 249.0 | 48.0 | 9191 6.020 |
| 6.250 | | 16.0 | 300.0 | 249.0 | 48.0 | 9191 6.250 |
| 6.500 | | 16.0 | 300.0 | 249.0 | 48.0 | 9191 6.500 |
| 7.000 | | 16.0 | 300.0 | 249.0 | 48.0 | 9191 7.000 |
| 7.500 | | 16.0 | 300.0 | 249.0 | 48.0 | 9191 7.500 |
| 8.000 | | 16.0 | 300.0 | 249.0 | 48.0 | 9191 8.000 |
| 8.020 | | 16.0 | 300.0 | 249.0 | 48.0 | 9191 8.020 |
| 8.500 | | 16.0 | 300.0 | 249.0 | 48.0 | 9191 8.500 |

| d1 mm | inch | d2 h6 mm | l1 mm | l2 mm | l3 mm | Order no. |
|----------|------|-------------|----------|----------|----------|-------------|
| 9.000 | | 16.0 | 300.0 | 249.0 | 48.0 | 9191 9.000 |
| 9.420 | | 16.0 | 300.0 | 249.0 | 48.0 | 9191 9.420 |
| 9.500 | | 16.0 | 300.0 | 249.0 | 48.0 | 9191 9.500 |
| 10.000 | | 16.0 | 300.0 | 249.0 | 48.0 | 9191 10.000 |
| 10.020 | | 16.0 | 300.0 | 249.0 | 48.0 | 9191 10.020 |
| 10.500 | | 16.0 | 300.0 | 249.0 | 48.0 | 9191 10.500 |
| 11.000 | | 25.0 | 300.0 | 241.0 | 56.0 | 9191 11.000 |
| 11.500 | | 25.0 | 300.0 | 241.0 | 56.0 | 9191 11.500 |
| 12.000 | | 25.0 | 300.0 | 241.0 | 56.0 | 9191 12.000 |
| 12.020 | | 25.0 | 300.0 | 241.0 | 56.0 | 9191 12.020 |
| 12.500 | | 25.0 | 300.0 | 241.0 | 56.0 | 9191 12.500 |
| 12.600 | | 25.0 | 300.0 | 241.0 | 56.0 | 9191 12.600 |
| 13.000 | | 25.0 | 300.0 | 241.0 | 56.0 | 9191 13.000 |
| 13.500 | | 25.0 | 300.0 | 241.0 | 56.0 | 9191 13.500 |
| 14.000 | | 25.0 | 300.0 | 241.0 | 56.0 | 9191 14.000 |



EB 80 CROSS single-fluted gun drills

Article no. 9192

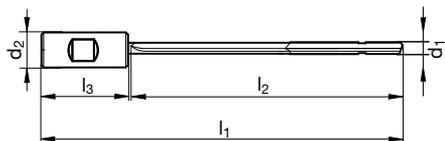


cutting data see page 13



adapted circumferential shape • with additional guide part • ideal for gaps

| | | | | | |
|----------|----------|----------|----------|----------|----------|
| P | M | K | N | S | H |
| ● | ● | ○ | ○ | ○ | ○ |



Article no. **9192**

| d1 mm | inch | d2 h6 mm | l1 mm | l2 mm | l3 mm | Order no. |
|----------|------|-------------|----------|----------|----------|-------------|
| 3.000 | | 16.0 | 400.0 | 349.0 | 48.0 | 9192 3.000 |
| 3.020 | | 16.0 | 400.0 | 349.0 | 48.0 | 9192 3.020 |
| 3.500 | | 16.0 | 400.0 | 349.0 | 48.0 | 9192 3.500 |
| 4.000 | | 16.0 | 400.0 | 349.0 | 48.0 | 9192 4.000 |
| 4.020 | | 16.0 | 400.0 | 349.0 | 48.0 | 9192 4.020 |
| 4.500 | | 16.0 | 400.0 | 349.0 | 48.0 | 9192 4.500 |
| 5.000 | | 16.0 | 400.0 | 349.0 | 48.0 | 9192 5.000 |
| 5.020 | | 16.0 | 400.0 | 349.0 | 48.0 | 9192 5.020 |
| 5.500 | | 16.0 | 400.0 | 349.0 | 48.0 | 9192 5.500 |
| 6.000 | | 16.0 | 400.0 | 349.0 | 48.0 | 9192 6.000 |
| 6.020 | | 16.0 | 400.0 | 349.0 | 48.0 | 9192 6.020 |
| 6.250 | | 16.0 | 400.0 | 349.0 | 48.0 | 9192 6.250 |
| 6.500 | | 16.0 | 400.0 | 349.0 | 48.0 | 9192 6.500 |
| 7.000 | | 16.0 | 400.0 | 349.0 | 48.0 | 9192 7.000 |
| 7.500 | | 16.0 | 400.0 | 349.0 | 48.0 | 9192 7.500 |
| 8.000 | | 16.0 | 400.0 | 349.0 | 48.0 | 9192 8.000 |
| 8.020 | | 16.0 | 400.0 | 349.0 | 48.0 | 9192 8.020 |
| 8.500 | | 16.0 | 400.0 | 349.0 | 48.0 | 9192 8.500 |
| 9.000 | | 16.0 | 400.0 | 349.0 | 48.0 | 9192 9.000 |
| 9.420 | | 16.0 | 400.0 | 349.0 | 48.0 | 9192 9.420 |
| 9.500 | | 16.0 | 400.0 | 349.0 | 48.0 | 9192 9.500 |
| 10.000 | | 16.0 | 400.0 | 349.0 | 48.0 | 9192 10.000 |
| 10.020 | | 16.0 | 400.0 | 349.0 | 48.0 | 9192 10.020 |
| 10.500 | | 16.0 | 400.0 | 349.0 | 48.0 | 9192 10.500 |

Article no. **9192**

| d1 mm | inch | d2 h6 mm | l1 mm | l2 mm | l3 mm | Order no. |
|----------|------|-------------|----------|----------|----------|-------------|
| 11.000 | | 25.0 | 400.0 | 341.0 | 56.0 | 9192 11.000 |
| 11.500 | | 25.0 | 400.0 | 341.0 | 56.0 | 9192 11.500 |
| 12.000 | | 25.0 | 400.0 | 341.0 | 56.0 | 9192 12.000 |
| 12.020 | | 25.0 | 400.0 | 341.0 | 56.0 | 9192 12.020 |
| 12.500 | | 25.0 | 400.0 | 341.0 | 56.0 | 9192 12.500 |
| 12.600 | | 25.0 | 400.0 | 341.0 | 56.0 | 9192 12.600 |
| 13.000 | | 25.0 | 400.0 | 341.0 | 56.0 | 9192 13.000 |
| 13.500 | | 25.0 | 400.0 | 341.0 | 56.0 | 9192 13.500 |
| 14.000 | | 25.0 | 400.0 | 341.0 | 56.0 | 9192 14.000 |
| 14.500 | | 25.0 | 400.0 | 341.0 | 56.0 | 9192 14.500 |
| 15.000 | | 25.0 | 400.0 | 341.0 | 56.0 | 9192 15.000 |
| 15.500 | | 25.0 | 400.0 | 341.0 | 56.0 | 9192 15.500 |
| 16.000 | | 25.0 | 400.0 | 341.0 | 56.0 | 9192 16.000 |
| 16.500 | | 25.0 | 400.0 | 341.0 | 56.0 | 9192 16.500 |
| 17.000 | | 25.0 | 400.0 | 341.0 | 56.0 | 9192 17.000 |
| 17.500 | | 25.0 | 400.0 | 341.0 | 56.0 | 9192 17.500 |
| 18.000 | | 25.0 | 400.0 | 341.0 | 56.0 | 9192 18.000 |



Brazed single-fluted gun drills

EB 80 CROSS single-fluted gun drills

Article no. **9193**

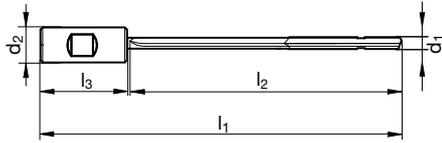


cutting data see page 13



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|----------|----------|----------|----------|----------|----------|
| P | M | K | N | S | H |
| ● | ● | ○ | ○ | ○ | ○ |

adapted circumferential shape • with additional guide part • ideal for gaps



Article no. **9193**

Article no. **9193**

| d1 mm | inch | d2 h6 mm | l1 mm | l2 mm | l3 mm | Order no. | d1 mm | inch | d2 h6 mm | l1 mm | l2 mm | l3 mm | Order no. |
|----------|------|-------------|----------|----------|----------|-------------|----------|------|-------------|----------|----------|----------|-------------|
| 3.000 | | 16.0 | 600.0 | 549.0 | 48.0 | 9193 3.000 | 11.000 | | 25.0 | 600.0 | 541.0 | 56.0 | 9193 11.000 |
| 3.020 | | 16.0 | 600.0 | 549.0 | 48.0 | 9193 3.020 | 11.500 | | 25.0 | 600.0 | 541.0 | 56.0 | 9193 11.500 |
| 3.500 | | 16.0 | 600.0 | 549.0 | 48.0 | 9193 3.500 | 12.000 | | 25.0 | 600.0 | 541.0 | 56.0 | 9193 12.000 |
| 4.000 | | 16.0 | 600.0 | 549.0 | 48.0 | 9193 4.000 | 12.020 | | 25.0 | 600.0 | 541.0 | 56.0 | 9193 12.020 |
| 4.020 | | 16.0 | 600.0 | 549.0 | 48.0 | 9193 4.020 | 12.500 | | 25.0 | 600.0 | 541.0 | 56.0 | 9193 12.500 |
| 4.500 | | 16.0 | 600.0 | 549.0 | 48.0 | 9193 4.500 | 12.600 | | 25.0 | 600.0 | 541.0 | 56.0 | 9193 12.600 |
| 5.000 | | 16.0 | 600.0 | 549.0 | 48.0 | 9193 5.000 | 13.000 | | 25.0 | 600.0 | 541.0 | 56.0 | 9193 13.000 |
| 5.020 | | 16.0 | 600.0 | 549.0 | 48.0 | 9193 5.020 | 13.500 | | 25.0 | 600.0 | 541.0 | 56.0 | 9193 13.500 |
| 5.500 | | 16.0 | 600.0 | 549.0 | 48.0 | 9193 5.500 | 14.000 | | 25.0 | 600.0 | 541.0 | 56.0 | 9193 14.000 |
| 6.000 | | 16.0 | 600.0 | 549.0 | 48.0 | 9193 6.000 | 14.500 | | 25.0 | 600.0 | 541.0 | 56.0 | 9193 14.500 |
| 6.020 | | 16.0 | 600.0 | 549.0 | 48.0 | 9193 6.020 | 15.000 | | 25.0 | 600.0 | 541.0 | 56.0 | 9193 15.000 |
| 6.250 | | 16.0 | 600.0 | 549.0 | 48.0 | 9193 6.250 | 15.500 | | 25.0 | 600.0 | 541.0 | 56.0 | 9193 15.500 |
| 6.500 | | 16.0 | 600.0 | 549.0 | 48.0 | 9193 6.500 | 16.000 | | 25.0 | 600.0 | 541.0 | 56.0 | 9193 16.000 |
| 7.000 | | 16.0 | 600.0 | 549.0 | 48.0 | 9193 7.000 | 16.500 | | 25.0 | 600.0 | 541.0 | 56.0 | 9193 16.500 |
| 7.500 | | 16.0 | 600.0 | 549.0 | 48.0 | 9193 7.500 | 17.000 | | 25.0 | 600.0 | 541.0 | 56.0 | 9193 17.000 |
| 8.000 | | 16.0 | 600.0 | 549.0 | 48.0 | 9193 8.000 | 17.500 | | 25.0 | 600.0 | 541.0 | 56.0 | 9193 17.500 |
| 8.020 | | 16.0 | 600.0 | 549.0 | 48.0 | 9193 8.020 | 18.000 | | 25.0 | 600.0 | 541.0 | 56.0 | 9193 18.000 |
| 8.500 | | 16.0 | 600.0 | 549.0 | 48.0 | 9193 8.500 | 18.500 | | 25.0 | 600.0 | 541.0 | 56.0 | 9193 18.500 |
| 9.000 | | 16.0 | 600.0 | 549.0 | 48.0 | 9193 9.000 | 19.000 | | 25.0 | 600.0 | 541.0 | 56.0 | 9193 19.000 |
| 9.420 | | 16.0 | 600.0 | 549.0 | 48.0 | 9193 9.420 | 19.500 | | 25.0 | 600.0 | 541.0 | 56.0 | 9193 19.500 |
| 9.500 | | 16.0 | 600.0 | 549.0 | 48.0 | 9193 9.500 | 20.000 | | 25.0 | 600.0 | 541.0 | 56.0 | 9193 20.000 |
| 10.000 | | 16.0 | 600.0 | 549.0 | 48.0 | 9193 10.000 | | | | | | | |
| 10.020 | | 16.0 | 600.0 | 549.0 | 48.0 | 9193 10.020 | | | | | | | |
| 10.500 | | 16.0 | 600.0 | 549.0 | 48.0 | 9193 10.500 | | | | | | | |



EB 80 CROSS single-fluted gun drills

Article no. 9194

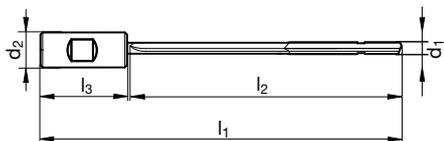


cutting data see page 13



adapted circumferential shape • with additional guide part • ideal for gaps

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|---|---|---|---|---|---|
| P | M | K | N | S | H |
| ● | ● | ○ | ○ | ○ | ○ |



Article no. 9194

Article no. 9194

| d1 mm | inch | d2 h6 mm | l1 mm | l2 mm | l3 mm | Order no. |
|--------|------|----------|-------|-------|-------|-------------|
| 3.000 | | 16.0 | 800.0 | 749.0 | 48.0 | 9194 3.000 |
| 3.020 | | 16.0 | 800.0 | 749.0 | 48.0 | 9194 3.020 |
| 3.500 | | 16.0 | 800.0 | 749.0 | 48.0 | 9194 3.500 |
| 4.000 | | 16.0 | 800.0 | 749.0 | 48.0 | 9194 4.000 |
| 4.020 | | 16.0 | 800.0 | 749.0 | 48.0 | 9194 4.020 |
| 4.500 | | 16.0 | 800.0 | 749.0 | 48.0 | 9194 4.500 |
| 5.000 | | 16.0 | 800.0 | 749.0 | 48.0 | 9194 5.000 |
| 5.020 | | 16.0 | 800.0 | 749.0 | 48.0 | 9194 5.020 |
| 5.500 | | 16.0 | 800.0 | 749.0 | 48.0 | 9194 5.500 |
| 6.000 | | 16.0 | 800.0 | 749.0 | 48.0 | 9194 6.000 |
| 6.020 | | 16.0 | 800.0 | 749.0 | 48.0 | 9194 6.020 |
| 6.250 | | 16.0 | 800.0 | 749.0 | 48.0 | 9194 6.250 |
| 6.500 | | 16.0 | 800.0 | 749.0 | 48.0 | 9194 6.500 |
| 7.000 | | 16.0 | 800.0 | 749.0 | 48.0 | 9194 7.000 |
| 7.500 | | 16.0 | 800.0 | 749.0 | 48.0 | 9194 7.500 |
| 8.000 | | 16.0 | 800.0 | 749.0 | 48.0 | 9194 8.000 |
| 8.020 | | 16.0 | 800.0 | 749.0 | 48.0 | 9194 8.020 |
| 8.500 | | 16.0 | 800.0 | 749.0 | 48.0 | 9194 8.500 |
| 9.000 | | 16.0 | 800.0 | 749.0 | 48.0 | 9194 9.000 |
| 9.420 | | 16.0 | 800.0 | 749.0 | 48.0 | 9194 9.420 |
| 9.500 | | 16.0 | 800.0 | 749.0 | 48.0 | 9194 9.500 |
| 10.000 | | 16.0 | 800.0 | 749.0 | 48.0 | 9194 10.000 |
| 10.020 | | 16.0 | 800.0 | 749.0 | 48.0 | 9194 10.020 |
| 10.500 | | 16.0 | 800.0 | 749.0 | 48.0 | 9194 10.500 |

| d1 mm | inch | d2 h6 mm | l1 mm | l2 mm | l3 mm | Order no. |
|--------|------|----------|-------|-------|-------|-------------|
| 11.000 | | 25.0 | 800.0 | 741.0 | 56.0 | 9194 11.000 |
| 11.500 | | 25.0 | 800.0 | 741.0 | 56.0 | 9194 11.500 |
| 12.000 | | 25.0 | 800.0 | 741.0 | 56.0 | 9194 12.000 |
| 12.020 | | 25.0 | 800.0 | 741.0 | 56.0 | 9194 12.020 |
| 12.500 | | 25.0 | 800.0 | 741.0 | 56.0 | 9194 12.500 |
| 12.600 | | 25.0 | 800.0 | 741.0 | 56.0 | 9194 12.600 |
| 13.000 | | 25.0 | 800.0 | 741.0 | 56.0 | 9194 13.000 |
| 13.500 | | 25.0 | 800.0 | 741.0 | 56.0 | 9194 13.500 |
| 14.000 | | 25.0 | 800.0 | 741.0 | 56.0 | 9194 14.000 |
| 14.500 | | 25.0 | 800.0 | 741.0 | 56.0 | 9194 14.500 |
| 15.000 | | 25.0 | 800.0 | 741.0 | 56.0 | 9194 15.000 |
| 15.500 | | 25.0 | 800.0 | 741.0 | 56.0 | 9194 15.500 |
| 16.000 | | 25.0 | 800.0 | 741.0 | 56.0 | 9194 16.000 |
| 16.500 | | 25.0 | 800.0 | 741.0 | 56.0 | 9194 16.500 |
| 17.000 | | 25.0 | 800.0 | 741.0 | 56.0 | 9194 17.000 |
| 17.500 | | 25.0 | 800.0 | 741.0 | 56.0 | 9194 17.500 |
| 18.000 | | 25.0 | 800.0 | 741.0 | 56.0 | 9194 18.000 |
| 18.500 | | 25.0 | 800.0 | 741.0 | 56.0 | 9194 18.500 |
| 19.000 | | 25.0 | 800.0 | 741.0 | 56.0 | 9194 19.000 |
| 19.500 | | 25.0 | 800.0 | 741.0 | 56.0 | 9194 19.500 |
| 20.000 | | 25.0 | 800.0 | 741.0 | 56.0 | 9194 20.000 |



Brazed single-fluted gun drills

EB 80 CROSS single-fluted gun drills

Article no. **9195**

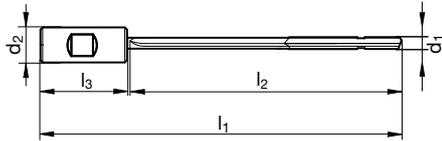


cutting data see page 13



adapted circumferential shape • with additional guide part • ideal for gaps

| | | | | | |
|----------|----------|----------|----------|----------|----------|
| P | M | K | N | S | H |
| ● | ● | ○ | ○ | ○ | ○ |



Article no. **9195**

Article no. **9195**

| d1 mm | inch | d2 h6 mm | l1 mm | l2 mm | l3 mm | Order no. | d1 mm | inch | d2 h6 mm | l1 mm | l2 mm | l3 mm | Order no. |
|----------|------|-------------|----------|----------|----------|-------------|----------|------|-------------|----------|----------|----------|-------------|
| 3.000 | | 16.0 | 1000.0 | 949.0 | 48.0 | 9195 3.000 | 11.000 | | 25.0 | 1000.0 | 941.0 | 56.0 | 9195 11.000 |
| 3.020 | | 16.0 | 1000.0 | 949.0 | 48.0 | 9195 3.020 | 11.500 | | 25.0 | 1000.0 | 941.0 | 56.0 | 9195 11.500 |
| 3.500 | | 16.0 | 1000.0 | 949.0 | 48.0 | 9195 3.500 | 12.000 | | 25.0 | 1000.0 | 941.0 | 56.0 | 9195 12.000 |
| 4.000 | | 16.0 | 1000.0 | 949.0 | 48.0 | 9195 4.000 | 12.020 | | 25.0 | 1000.0 | 941.0 | 56.0 | 9195 12.020 |
| 4.020 | | 16.0 | 1000.0 | 949.0 | 48.0 | 9195 4.020 | 12.500 | | 25.0 | 1000.0 | 941.0 | 56.0 | 9195 12.500 |
| 4.500 | | 16.0 | 1000.0 | 949.0 | 48.0 | 9195 4.500 | 12.600 | | 25.0 | 1000.0 | 941.0 | 56.0 | 9195 12.600 |
| 5.000 | | 16.0 | 1000.0 | 949.0 | 48.0 | 9195 5.000 | 13.000 | | 25.0 | 1000.0 | 941.0 | 56.0 | 9195 13.000 |
| 5.020 | | 16.0 | 1000.0 | 949.0 | 48.0 | 9195 5.020 | 13.500 | | 25.0 | 1000.0 | 941.0 | 56.0 | 9195 13.500 |
| 5.500 | | 16.0 | 1000.0 | 949.0 | 48.0 | 9195 5.500 | 14.000 | | 25.0 | 1000.0 | 941.0 | 56.0 | 9195 14.000 |
| 6.000 | | 16.0 | 1000.0 | 949.0 | 48.0 | 9195 6.000 | 14.500 | | 25.0 | 1000.0 | 941.0 | 56.0 | 9195 14.500 |
| 6.020 | | 16.0 | 1000.0 | 949.0 | 48.0 | 9195 6.020 | 15.000 | | 25.0 | 1000.0 | 941.0 | 56.0 | 9195 15.000 |
| 6.250 | | 16.0 | 1000.0 | 949.0 | 48.0 | 9195 6.250 | 15.500 | | 25.0 | 1000.0 | 941.0 | 56.0 | 9195 15.500 |
| 6.500 | | 16.0 | 1000.0 | 949.0 | 48.0 | 9195 6.500 | 16.000 | | 25.0 | 1000.0 | 941.0 | 56.0 | 9195 16.000 |
| 7.000 | | 16.0 | 1000.0 | 949.0 | 48.0 | 9195 7.000 | 16.500 | | 25.0 | 1000.0 | 941.0 | 56.0 | 9195 16.500 |
| 7.500 | | 16.0 | 1000.0 | 949.0 | 48.0 | 9195 7.500 | 17.000 | | 25.0 | 1000.0 | 941.0 | 56.0 | 9195 17.000 |
| 8.000 | | 16.0 | 1000.0 | 949.0 | 48.0 | 9195 8.000 | 17.500 | | 25.0 | 1000.0 | 941.0 | 56.0 | 9195 17.500 |
| 8.020 | | 16.0 | 1000.0 | 949.0 | 48.0 | 9195 8.020 | 18.000 | | 25.0 | 1000.0 | 941.0 | 56.0 | 9195 18.000 |
| 8.500 | | 16.0 | 1000.0 | 949.0 | 48.0 | 9195 8.500 | 18.500 | | 25.0 | 1000.0 | 941.0 | 56.0 | 9195 18.500 |
| 9.000 | | 16.0 | 1000.0 | 949.0 | 48.0 | 9195 9.000 | 19.000 | | 25.0 | 1000.0 | 941.0 | 56.0 | 9195 19.000 |
| 9.420 | | 16.0 | 1000.0 | 949.0 | 48.0 | 9195 9.420 | 19.500 | | 25.0 | 1000.0 | 941.0 | 56.0 | 9195 19.500 |
| 9.500 | | 16.0 | 1000.0 | 949.0 | 48.0 | 9195 9.500 | 20.000 | | 25.0 | 1000.0 | 941.0 | 56.0 | 9195 20.000 |
| 10.000 | | 16.0 | 1000.0 | 949.0 | 48.0 | 9195 10.000 | | | | | | | |
| 10.020 | | 16.0 | 1000.0 | 949.0 | 48.0 | 9195 10.020 | | | | | | | |
| 10.500 | | 16.0 | 1000.0 | 949.0 | 48.0 | 9195 10.500 | | | | | | | |



EB 80 CROSS single-fluted gun drills

Article no. **9196**

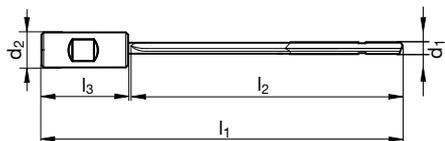


cutting data see page 13



adapted circumferential shape • with additional guide part • ideal for gaps

| | | | | | |
|----------|----------|----------|----------|----------|----------|
| P | M | K | N | S | H |
| ● | ● | ○ | ○ | ○ | ○ |



Article no. **9196**

Article no. **9196**

| d1 mm | inch | d2 h6 mm | l1 mm | l2 mm | l3 mm | Order no. |
|----------|------|-------------|----------|----------|----------|-------------|
| 3.000 | | 16.0 | 1200.0 | 1149.0 | 48.0 | 9196 3.000 |
| 3.020 | | 16.0 | 1200.0 | 1149.0 | 48.0 | 9196 3.020 |
| 3.500 | | 16.0 | 1200.0 | 1149.0 | 48.0 | 9196 3.500 |
| 4.000 | | 16.0 | 1200.0 | 1149.0 | 48.0 | 9196 4.000 |
| 4.020 | | 16.0 | 1200.0 | 1149.0 | 48.0 | 9196 4.020 |
| 4.500 | | 16.0 | 1200.0 | 1149.0 | 48.0 | 9196 4.500 |
| 5.000 | | 16.0 | 1200.0 | 1149.0 | 48.0 | 9196 5.000 |
| 5.020 | | 16.0 | 1200.0 | 1149.0 | 48.0 | 9196 5.020 |
| 5.500 | | 16.0 | 1200.0 | 1149.0 | 48.0 | 9196 5.500 |
| 6.000 | | 16.0 | 1200.0 | 1149.0 | 48.0 | 9196 6.000 |
| 6.020 | | 16.0 | 1200.0 | 1149.0 | 48.0 | 9196 6.020 |
| 6.250 | | 16.0 | 1200.0 | 1149.0 | 48.0 | 9196 6.250 |
| 6.500 | | 16.0 | 1200.0 | 1149.0 | 48.0 | 9196 6.500 |
| 7.000 | | 16.0 | 1200.0 | 1149.0 | 48.0 | 9196 7.000 |
| 7.500 | | 16.0 | 1200.0 | 1149.0 | 48.0 | 9196 7.500 |
| 8.000 | | 16.0 | 1200.0 | 1149.0 | 48.0 | 9196 8.000 |
| 8.020 | | 16.0 | 1200.0 | 1149.0 | 48.0 | 9196 8.020 |
| 8.500 | | 16.0 | 1200.0 | 1149.0 | 48.0 | 9196 8.500 |
| 9.000 | | 16.0 | 1200.0 | 1149.0 | 48.0 | 9196 9.000 |
| 9.420 | | 16.0 | 1200.0 | 1149.0 | 48.0 | 9196 9.420 |
| 9.500 | | 16.0 | 1200.0 | 1149.0 | 48.0 | 9196 9.500 |
| 10.000 | | 16.0 | 1200.0 | 1149.0 | 48.0 | 9196 10.000 |
| 10.020 | | 16.0 | 1200.0 | 1149.0 | 48.0 | 9196 10.020 |
| 10.500 | | 16.0 | 1200.0 | 1149.0 | 48.0 | 9196 10.500 |

| d1 mm | inch | d2 h6 mm | l1 mm | l2 mm | l3 mm | Order no. |
|----------|------|-------------|----------|----------|----------|-------------|
| 11.000 | | 25.0 | 1200.0 | 1141.0 | 56.0 | 9196 11.000 |
| 11.500 | | 25.0 | 1200.0 | 1141.0 | 56.0 | 9196 11.500 |
| 12.000 | | 25.0 | 1200.0 | 1141.0 | 56.0 | 9196 12.000 |
| 12.020 | | 25.0 | 1200.0 | 1141.0 | 56.0 | 9196 12.020 |
| 12.500 | | 25.0 | 1200.0 | 1141.0 | 56.0 | 9196 12.500 |
| 12.600 | | 25.0 | 1200.0 | 1141.0 | 56.0 | 9196 12.600 |
| 13.000 | | 25.0 | 1200.0 | 1141.0 | 56.0 | 9196 13.000 |
| 13.500 | | 25.0 | 1200.0 | 1141.0 | 56.0 | 9196 13.500 |
| 14.000 | | 25.0 | 1200.0 | 1141.0 | 56.0 | 9196 14.000 |
| 14.500 | | 25.0 | 1200.0 | 1141.0 | 56.0 | 9196 14.500 |
| 15.000 | | 25.0 | 1200.0 | 1141.0 | 56.0 | 9196 15.000 |
| 15.500 | | 25.0 | 1200.0 | 1141.0 | 56.0 | 9196 15.500 |
| 16.000 | | 25.0 | 1200.0 | 1141.0 | 56.0 | 9196 16.000 |
| 16.500 | | 25.0 | 1200.0 | 1141.0 | 56.0 | 9196 16.500 |
| 17.000 | | 25.0 | 1200.0 | 1141.0 | 56.0 | 9196 17.000 |
| 17.500 | | 25.0 | 1200.0 | 1141.0 | 56.0 | 9196 17.500 |
| 18.000 | | 25.0 | 1200.0 | 1141.0 | 56.0 | 9196 18.000 |
| 18.500 | | 25.0 | 1200.0 | 1141.0 | 56.0 | 9196 18.500 |
| 19.000 | | 25.0 | 1200.0 | 1141.0 | 56.0 | 9196 19.000 |
| 19.500 | | 25.0 | 1200.0 | 1141.0 | 56.0 | 9196 19.500 |
| 20.000 | | 25.0 | 1200.0 | 1141.0 | 56.0 | 9196 20.000 |



EB 80 CROSS single-fluted gun drills

Article no. **9197**

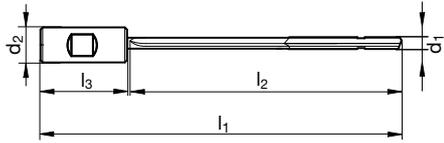


cutting data see page 13



adapted circumferential shape • with additional guide part • ideal for gaps

| | | | | | |
|----------|----------|----------|----------|----------|----------|
| P | M | K | N | S | H |
| ● | ● | ○ | ○ | ○ | ○ |



Article no. **9197**

Article no. **9197**

| d1 mm | inch | d2 h6 mm | l1 mm | l2 mm | l3 mm | Order no. |
|----------|------|-------------|----------|----------|----------|-------------|
| 4.000 | | 16.0 | 1400.0 | 1349.0 | 48.0 | 9197 4.000 |
| 4.020 | | 16.0 | 1400.0 | 1349.0 | 48.0 | 9197 4.020 |
| 4.500 | | 16.0 | 1400.0 | 1349.0 | 48.0 | 9197 4.500 |
| 5.000 | | 16.0 | 1400.0 | 1349.0 | 48.0 | 9197 5.000 |
| 5.020 | | 16.0 | 1400.0 | 1349.0 | 48.0 | 9197 5.020 |
| 5.500 | | 16.0 | 1400.0 | 1349.0 | 48.0 | 9197 5.500 |
| 6.000 | | 16.0 | 1400.0 | 1349.0 | 48.0 | 9197 6.000 |
| 6.020 | | 16.0 | 1400.0 | 1349.0 | 48.0 | 9197 6.020 |
| 6.250 | | 16.0 | 1400.0 | 1349.0 | 48.0 | 9197 6.250 |
| 6.500 | | 16.0 | 1400.0 | 1349.0 | 48.0 | 9197 6.500 |
| 7.000 | | 16.0 | 1400.0 | 1349.0 | 48.0 | 9197 7.000 |
| 7.500 | | 16.0 | 1400.0 | 1349.0 | 48.0 | 9197 7.500 |
| 8.000 | | 16.0 | 1400.0 | 1349.0 | 48.0 | 9197 8.000 |
| 8.020 | | 16.0 | 1400.0 | 1349.0 | 48.0 | 9197 8.020 |
| 8.500 | | 16.0 | 1400.0 | 1349.0 | 48.0 | 9197 8.500 |
| 9.000 | | 16.0 | 1400.0 | 1349.0 | 48.0 | 9197 9.000 |
| 9.420 | | 16.0 | 1400.0 | 1349.0 | 48.0 | 9197 9.420 |
| 9.500 | | 16.0 | 1400.0 | 1349.0 | 48.0 | 9197 9.500 |
| 10.000 | | 16.0 | 1400.0 | 1349.0 | 48.0 | 9197 10.000 |
| 10.020 | | 16.0 | 1400.0 | 1349.0 | 48.0 | 9197 10.020 |
| 10.500 | | 16.0 | 1400.0 | 1349.0 | 48.0 | 9197 10.500 |
| 11.000 | | 25.0 | 1400.0 | 1341.0 | 56.0 | 9197 11.000 |
| 11.500 | | 25.0 | 1400.0 | 1341.0 | 56.0 | 9197 11.500 |
| 12.000 | | 25.0 | 1400.0 | 1341.0 | 56.0 | 9197 12.000 |

| d1 mm | inch | d2 h6 mm | l1 mm | l2 mm | l3 mm | Order no. |
|----------|------|-------------|----------|----------|----------|-------------|
| 12.020 | | 25.0 | 1400.0 | 1341.0 | 56.0 | 9197 12.020 |
| 12.500 | | 25.0 | 1400.0 | 1341.0 | 56.0 | 9197 12.500 |
| 12.600 | | 25.0 | 1400.0 | 1341.0 | 56.0 | 9197 12.600 |
| 13.000 | | 25.0 | 1400.0 | 1341.0 | 56.0 | 9197 13.000 |
| 13.500 | | 25.0 | 1400.0 | 1341.0 | 56.0 | 9197 13.500 |
| 14.000 | | 25.0 | 1400.0 | 1341.0 | 56.0 | 9197 14.000 |
| 14.500 | | 25.0 | 1400.0 | 1341.0 | 56.0 | 9197 14.500 |
| 15.000 | | 25.0 | 1400.0 | 1341.0 | 56.0 | 9197 15.000 |
| 15.500 | | 25.0 | 1400.0 | 1341.0 | 56.0 | 9197 15.500 |
| 16.000 | | 25.0 | 1400.0 | 1341.0 | 56.0 | 9197 16.000 |
| 16.500 | | 25.0 | 1400.0 | 1341.0 | 56.0 | 9197 16.500 |
| 17.000 | | 25.0 | 1400.0 | 1341.0 | 56.0 | 9197 17.000 |
| 17.500 | | 25.0 | 1400.0 | 1341.0 | 56.0 | 9197 17.500 |
| 18.000 | | 25.0 | 1400.0 | 1341.0 | 56.0 | 9197 18.000 |
| 18.500 | | 25.0 | 1400.0 | 1341.0 | 56.0 | 9197 18.500 |
| 19.000 | | 25.0 | 1400.0 | 1341.0 | 56.0 | 9197 19.000 |
| 19.500 | | 25.0 | 1400.0 | 1341.0 | 56.0 | 9197 19.500 |
| 20.000 | | 25.0 | 1400.0 | 1341.0 | 56.0 | 9197 20.000 |



EB 80 CROSS single-fluted gun drills

Article no. **9198**

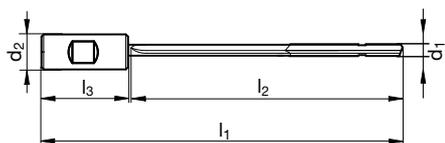


cutting data see page 13



adapted circumferential shape • with additional guide part • ideal for gaps

| | | | | | |
|----------|----------|----------|----------|----------|----------|
| P | M | K | N | S | H |
| ● | ● | ○ | ○ | ○ | ○ |



Article no. **9198**

| d1 mm | inch | d2 h6 mm | l1 mm | l2 mm | l3 mm | Order no. |
|----------|------|-------------|----------|----------|----------|-------------|
| 4.000 | | 16.0 | 1600.0 | 1549.0 | 48.0 | 9198 4.000 |
| 4.020 | | 16.0 | 1600.0 | 1549.0 | 48.0 | 9198 4.020 |
| 4.500 | | 16.0 | 1600.0 | 1549.0 | 48.0 | 9198 4.500 |
| 5.000 | | 16.0 | 1600.0 | 1549.0 | 48.0 | 9198 5.000 |
| 5.020 | | 16.0 | 1600.0 | 1549.0 | 48.0 | 9198 5.020 |
| 5.500 | | 16.0 | 1600.0 | 1549.0 | 48.0 | 9198 5.500 |
| 6.000 | | 16.0 | 1600.0 | 1549.0 | 48.0 | 9198 6.000 |
| 6.020 | | 16.0 | 1600.0 | 1549.0 | 48.0 | 9198 6.020 |
| 6.250 | | 16.0 | 1600.0 | 1549.0 | 48.0 | 9198 6.250 |
| 6.500 | | 16.0 | 1600.0 | 1549.0 | 48.0 | 9198 6.500 |
| 7.000 | | 16.0 | 1600.0 | 1549.0 | 48.0 | 9198 7.000 |
| 7.500 | | 16.0 | 1600.0 | 1549.0 | 48.0 | 9198 7.500 |
| 8.000 | | 16.0 | 1600.0 | 1549.0 | 48.0 | 9198 8.000 |
| 8.020 | | 16.0 | 1600.0 | 1549.0 | 48.0 | 9198 8.020 |
| 8.500 | | 16.0 | 1600.0 | 1549.0 | 48.0 | 9198 8.500 |
| 9.000 | | 16.0 | 1600.0 | 1549.0 | 48.0 | 9198 9.000 |
| 9.420 | | 16.0 | 1600.0 | 1549.0 | 48.0 | 9198 9.420 |
| 9.500 | | 16.0 | 1600.0 | 1549.0 | 48.0 | 9198 9.500 |
| 10.000 | | 16.0 | 1600.0 | 1549.0 | 48.0 | 9198 10.000 |
| 10.020 | | 16.0 | 1600.0 | 1549.0 | 48.0 | 9198 10.020 |
| 10.500 | | 16.0 | 1600.0 | 1549.0 | 48.0 | 9198 10.500 |
| 11.000 | | 25.0 | 1600.0 | 1541.0 | 56.0 | 9198 11.000 |
| 11.500 | | 25.0 | 1600.0 | 1541.0 | 56.0 | 9198 11.500 |
| 12.000 | | 25.0 | 1600.0 | 1541.0 | 56.0 | 9198 12.000 |

Article no. **9198**

| d1 mm | inch | d2 h6 mm | l1 mm | l2 mm | l3 mm | Order no. |
|----------|------|-------------|----------|----------|----------|-------------|
| 12.020 | | 25.0 | 1600.0 | 1541.0 | 56.0 | 9198 12.020 |
| 12.500 | | 25.0 | 1600.0 | 1541.0 | 56.0 | 9198 12.500 |
| 12.600 | | 25.0 | 1600.0 | 1541.0 | 56.0 | 9198 12.600 |
| 13.000 | | 25.0 | 1600.0 | 1541.0 | 56.0 | 9198 13.000 |
| 13.500 | | 25.0 | 1600.0 | 1541.0 | 56.0 | 9198 13.500 |
| 14.000 | | 25.0 | 1600.0 | 1541.0 | 56.0 | 9198 14.000 |
| 14.500 | | 25.0 | 1600.0 | 1541.0 | 56.0 | 9198 14.500 |
| 15.000 | | 25.0 | 1600.0 | 1541.0 | 56.0 | 9198 15.000 |
| 15.500 | | 25.0 | 1600.0 | 1541.0 | 56.0 | 9198 15.500 |
| 16.000 | | 25.0 | 1600.0 | 1541.0 | 56.0 | 9198 16.000 |
| 16.500 | | 25.0 | 1600.0 | 1541.0 | 56.0 | 9198 16.500 |
| 17.000 | | 25.0 | 1600.0 | 1541.0 | 56.0 | 9198 17.000 |
| 17.500 | | 25.0 | 1600.0 | 1541.0 | 56.0 | 9198 17.500 |
| 18.000 | | 25.0 | 1600.0 | 1541.0 | 56.0 | 9198 18.000 |
| 18.500 | | 25.0 | 1600.0 | 1541.0 | 56.0 | 9198 18.500 |
| 19.000 | | 25.0 | 1600.0 | 1541.0 | 56.0 | 9198 19.000 |
| 19.500 | | 25.0 | 1600.0 | 1541.0 | 56.0 | 9198 19.500 |
| 20.000 | | 25.0 | 1600.0 | 1541.0 | 56.0 | 9198 20.000 |



NEW

FEB 80
CROSS



Single-fluted gun drills EB 80 Cross



| Machining group | A v _c (m/min) | f (mm/rev) with nom. Ø | | | | | | | | | |
|---------------------------------------------------------------------------------------------------|-----------------------------|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | 3 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 |
| P1.1.1 Unalloyed steel, annealed, 0.15 % C, Rm 420 N/mm ² , 125 HB | 85 | 0.015 | 0.020 | 0.030 | 0.040 | 0.045 | 0.050 | 0.060 | 0.065 | 0.070 | 0.080 |
| P1.1.2 Unalloyed steel, heat-treated, 0.15 % C, Rm 420 N/mm ² , 125 HB | 75 | 0.015 | 0.020 | 0.025 | 0.035 | 0.040 | 0.045 | 0.055 | 0.060 | 0.065 | 0.070 |
| P1.1.3 Unalloyed steel, annealed, 0.45 % C, Rm 640 N/mm ² , 190 HB | 75 | 0.015 | 0.020 | 0.025 | 0.035 | 0.040 | 0.045 | 0.055 | 0.060 | 0.065 | 0.070 |
| P1.1.4 Unalloyed steel, heat-treated, 0.45 % C, Rm 640 N/mm ² , 190 HB | 70 | 0.015 | 0.020 | 0.025 | 0.030 | 0.040 | 0.045 | 0.050 | 0.055 | 0.060 | 0.065 |
| P1.1.5 Unalloyed steel, heat-treated, 0.45 % C, Rm 850 N/mm ² , 250 HB | 70 | 0.015 | 0.020 | 0.025 | 0.030 | 0.040 | 0.045 | 0.050 | 0.055 | 0.060 | 0.065 |
| P1.1.6 Unalloyed steel, annealed, 0.75 % C, Rm 915 N/mm ² , 270 HB | 65 | 0.015 | 0.015 | 0.025 | 0.030 | 0.035 | 0.040 | 0.045 | 0.050 | 0.060 | 0.065 |
| P1.1.7 Unalloyed steel, heat-treated, 0.75 % C, Rm 1020 N/mm ² , 300 HB | 65 | 0.015 | 0.015 | 0.020 | 0.030 | 0.035 | 0.040 | 0.045 | 0.050 | 0.055 | 0.060 |
| P2.1.1 Low-alloy steel, annealed, Rm 610 N/mm ² , 180 HB | 75 | 0.015 | 0.020 | 0.025 | 0.035 | 0.040 | 0.045 | 0.050 | 0.060 | 0.065 | 0.070 |
| P2.1.2 Low-alloy steel, heat-treated, Rm 930 N/mm ² , 275 HB | 75 | 0.015 | 0.020 | 0.025 | 0.035 | 0.040 | 0.045 | 0.050 | 0.060 | 0.065 | 0.070 |
| P2.1.3 Low-alloy steel, heat-treated, Rm 1020 N/mm ² , 300 HB | 60 | 0.015 | 0.015 | 0.025 | 0.030 | 0.035 | 0.040 | 0.045 | 0.050 | 0.055 | 0.060 |
| P2.1.4 Low-alloy steel, heat-treated, Rm 1190 N/mm ² , 350 HB | 55 | 0.011 | 0.015 | 0.020 | 0.025 | 0.030 | 0.035 | 0.040 | 0.045 | 0.050 | 0.050 |
| P3.1.1 High-alloy steel and tool steel, annealed, Rm 680 N/mm ² , 200 HB | 65 | 0.015 | 0.020 | 0.025 | 0.035 | 0.040 | 0.045 | 0.050 | 0.060 | 0.065 | 0.070 |
| P3.1.2 High-alloy steel and tool steel, hardened and tempered, Rm 1100 N/mm ² , 325 HB | 55 | 0.015 | 0.015 | 0.025 | 0.030 | 0.035 | 0.040 | 0.045 | 0.050 | 0.055 | 0.060 |
| M1.1.1 Stainless steel, ferritic/martensitic, with machining additives | 55 | 0.011 | 0.015 | 0.020 | 0.025 | 0.030 | 0.035 | 0.040 | 0.045 | 0.050 | 0.050 |
| M1.1.2 Stainless steel, ferritic/martensitic, annealed, Rm 680 N/mm ² , 200 HB | 45 | 0.010 | 0.015 | 0.020 | 0.025 | 0.025 | 0.030 | 0.035 | 0.040 | 0.045 | 0.045 |
| M1.1.3 Stainless steel, ferritic/martensitic, heat-treated, Rm 810 N/mm ² , 240 HB | 45 | 0.010 | 0.012 | 0.015 | 0.020 | 0.025 | 0.030 | 0.035 | 0.035 | 0.040 | 0.045 |
| M2.1.1 Stainless steel, austenitic, quenched, 180 HB | 40 | 0.010 | 0.012 | 0.015 | 0.020 | 0.025 | 0.030 | 0.035 | 0.035 | 0.040 | 0.045 |
| M2.2.1 Duplex steel, high-strength stainless steels | 35 | 0.008 | 0.010 | 0.015 | 0.020 | 0.020 | 0.025 | 0.030 | 0.030 | 0.035 | 0.035 |
| K1.1.1 Grey cast iron, pearlitic/ferritic, 180 HB | 85 | 0.025 | 0.030 | 0.040 | 0.050 | 0.060 | 0.070 | 0.080 | 0.085 | 0.095 | 0.105 |
| K1.1.2 Grey cast iron, pearlitic/martensitic, 260 HB | 70 | 0.020 | 0.025 | 0.035 | 0.045 | 0.050 | 0.060 | 0.065 | 0.075 | 0.080 | 0.090 |
| K1.2.1 Cast iron with spheroidal graphite, ferritic, 160 HB | 70 | 0.020 | 0.025 | 0.035 | 0.045 | 0.050 | 0.060 | 0.065 | 0.075 | 0.080 | 0.090 |
| K1.2.2 Cast iron with spheroidal graphite, pearlitic, 250 HB | 65 | 0.020 | 0.025 | 0.030 | 0.040 | 0.050 | 0.055 | 0.065 | 0.070 | 0.075 | 0.085 |
| K1.3.1 Malleable cast iron, ferritic, 130 HB | 65 | 0.020 | 0.025 | 0.030 | 0.040 | 0.050 | 0.055 | 0.065 | 0.070 | 0.075 | 0.085 |
| K1.3.2 Malleable cast iron, pearlitic, 230 HB | 60 | 0.015 | 0.020 | 0.030 | 0.035 | 0.040 | 0.050 | 0.055 | 0.060 | 0.065 | 0.075 |
| K2.1.1 Vermicular graphite cast iron (GJV) | 70 | 0.020 | 0.025 | 0.035 | 0.040 | 0.050 | 0.060 | 0.065 | 0.075 | 0.080 | 0.085 |
| K2.2.1 Austenitic-ferritic spheroidal graphite cast iron (ADI) | 50 | 0.015 | 0.020 | 0.025 | 0.030 | 0.040 | 0.045 | 0.050 | 0.055 | 0.060 | 0.065 |
| N1.1.1 Wrought aluminium alloys, non-hardened, 60 HB | 85 | 0.025 | 0.035 | 0.045 | 0.060 | 0.070 | 0.080 | 0.090 | 0.100 | 0.110 | 0.120 |
| N1.1.2 Wrought aluminium alloys, hardened, 100 HB | 85 | 0.025 | 0.035 | 0.045 | 0.060 | 0.070 | 0.080 | 0.090 | 0.100 | 0.110 | 0.120 |
| N2.1.1 Aluminium casting alloys, non-hardened, ≤ 12 % Si, 75 HB | 125 | 0.075 | 0.095 | 0.135 | 0.165 | 0.200 | 0.230 | 0.260 | 0.290 | 0.320 | 0.350 |
| N2.1.2 Aluminium casting alloys, hardened, ≤ 12 % Si, 90 HB | 125 | 0.075 | 0.095 | 0.135 | 0.165 | 0.200 | 0.230 | 0.260 | 0.290 | 0.320 | 0.350 |
| N2.1.3 Aluminium casting alloys, non-hardened, > 12 % Si, 130 HB | 105 | 0.065 | 0.080 | 0.115 | 0.140 | 0.170 | 0.195 | 0.225 | 0.250 | 0.270 | 0.295 |
| N3.1.1 Copper and copper alloys: Free-machining alloy, Pb > 1 % | 75 | 0.030 | 0.040 | 0.055 | 0.065 | 0.080 | 0.095 | 0.105 | 0.115 | 0.130 | 0.140 |
| N3.1.2 Copper and copper alloys: CuZn, CuSnZn | 60 | 0.025 | 0.035 | 0.045 | 0.055 | 0.070 | 0.080 | 0.090 | 0.100 | 0.110 | 0.120 |
| N3.1.3 Copper and copper alloys: CuSn, lead-free copper and copper electrolyte | 60 | 0.025 | 0.030 | 0.045 | 0.055 | 0.065 | 0.075 | 0.085 | 0.095 | 0.100 | 0.110 |
| N4.1.1 Non-metallic materials: Duroplastics, fibre-reinforced plastics | 65 | 0.020 | 0.025 | 0.035 | 0.040 | 0.050 | 0.060 | 0.065 | 0.075 | 0.080 | 0.085 |
| N4.1.2 Non-metallic materials: Hard rubber, wood, etc. | 65 | 0.020 | 0.025 | 0.035 | 0.040 | 0.050 | 0.060 | 0.065 | 0.075 | 0.080 | 0.085 |
| N4.1.3 Non-metallic materials: Graphite | 65 | 0.020 | 0.025 | 0.035 | 0.040 | 0.050 | 0.060 | 0.065 | 0.075 | 0.080 | 0.085 |
| S1.1.1 Heat-resistant alloys, Fe-based, annealed, 200 HB | 40 | 0.008 | 0.010 | 0.015 | 0.015 | 0.020 | 0.025 | 0.025 | 0.030 | 0.030 | 0.035 |
| S1.1.2 Heat-resistant alloys, Fe-based, hardened, 280 HB | 35 | 0.006 | 0.008 | 0.011 | 0.015 | 0.015 | 0.020 | 0.020 | 0.025 | 0.025 | 0.030 |
| S1.1.3 Heat-resistant alloys, Ni- or Co-based, annealed, 250 HB | 25 | 0.006 | 0.007 | 0.010 | 0.015 | 0.015 | 0.015 | 0.020 | 0.020 | 0.025 | 0.025 |
| S1.1.4 Heat-resistant alloys, Ni- or Co-based, hardened, 350 HB | 25 | 0.005 | 0.007 | 0.009 | 0.012 | 0.015 | 0.015 | 0.020 | 0.020 | 0.020 | 0.025 |
| S1.1.5 Heat-resistant alloys, Ni- or Co-based, cast, 320 HB | 20 | 0.005 | 0.006 | 0.009 | 0.011 | 0.015 | 0.015 | 0.015 | 0.020 | 0.020 | 0.025 |
| S2.1.1 Titanium alloys, pure titanium, Rm 400 N/mm ² | 30 | 0.006 | 0.007 | 0.010 | 0.015 | 0.015 | 0.015 | 0.020 | 0.020 | 0.025 | 0.025 |
| S2.1.2 Titanium alloys, Alpha and Beta alloys, hardened, Rm 1050 N/mm ² | 30 | 0.005 | 0.006 | 0.009 | 0.011 | 0.015 | 0.015 | 0.020 | 0.020 | 0.020 | 0.025 |
| H1.1.1 Hardened steel, hardened and tempered, < 55 HRC | 30 | 0.006 | 0.007 | 0.010 | 0.015 | 0.015 | 0.015 | 0.020 | 0.020 | 0.025 | 0.025 |
| H1.1.2 Hardened steel, hardened and tempered, < 60 HRC | 20 | 0.005 | 0.006 | 0.008 | 0.010 | 0.012 | 0.015 | 0.015 | 0.015 | 0.020 | 0.020 |
| H1.1.3 Hardened steel, hardened and tempered, > 60 HRC | 20 | 0.004 | 0.005 | 0.007 | 0.009 | 0.011 | 0.015 | 0.015 | 0.015 | 0.020 | 0.020 |
| H2.1.1 Chilled cast iron, 400 HB | 20 | 0.006 | 0.007 | 0.010 | 0.015 | 0.015 | 0.015 | 0.020 | 0.020 | 0.025 | 0.025 |
| H2.1.2 Chilled cast iron, hardened and tempered, < 55 HRC | 15 | 0.004 | 0.005 | 0.007 | 0.009 | 0.011 | 0.012 | 0.015 | 0.015 | 0.015 | 0.020 |



EB 80 CROSS single-fluted deep hole drill

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