

WATER JET CUTTING

mvt AG offers a comprehensive, economically-priced range of sapphire nozzles for the most varied of applications in the field of water jet cutting. All of our nozzles consist of a stainless steel nozzle body with a sapphire orifice. Their special design gives them a high degree of stability and safety. Special designs and customer-specific solutions are available on request.

PROPERTIES AND ADVANTAGES

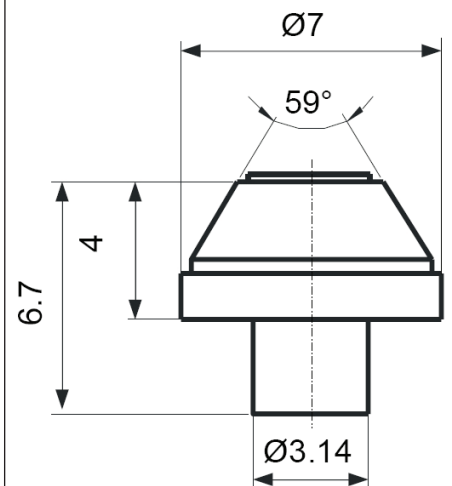
- ▶ Long lifetime
- ▶ Consistent jet quality
- ▶ Precision cutting accuracy
- ▶ Narrow cut width
- ▶ High cutting performance
- ▶ Longer lifetime of focusing tube
- ▶ Excellent price-to-performance ratio
- ▶ Swiss quality

CUSTOMER BENEFITS

- ▶ High productivity
- ▶ Minimal downtime
- ▶ Cost-effective manufacturing
- ▶ High quality standard
- ▶ Expert advice
- ▶ Reliable service

APPLICATIONS

- ▶ Clear water: paper, carton, corrugated cardboard, wood, plastics, foodstuffs, baked goods, frozen foods, meat, fish, composites, automotive parts such as carpets, door panels, dashboards, shock absorbers, instrument panels, parcel shelves, etc.
- ▶ Abrasive: metal, titanium, aluminium, stone, marble, granite, ceramics, reinforced concrete, plaster, rock wool, laminated glass, safety glass, bullet-proof glass, wood, plastics, composites, automotive and aircraft parts, etc



DESCRIPTION

- R = Pure waterjet cutting nozzles, aiming accuracy 100% tested
 RX = Pure waterjet cutting nozzles, aiming accuracy not tested
 P = Polymer cutting nozzles, aiming accuracy 100% tested
 PX = Polymer cutting nozzles, aiming accuracy not tested
 A = Abrasive cutting nozzles, aiming accuracy 100% tested
 AX = Abrasive cutting nozzles, aiming accuracy not tested

ON REQUEST THE AIMING ACCURACY OF NOZZLES CAN BE TESTED ACCORDING TO THE FOLLOWING CRITERIA

- The distance from the nozzle to the target mark is 100 mm
- The target mark has a \varnothing of 0.50 mm in the case of nozzles with a \varnothing of up to 0.20 mm
- The target mark has a \varnothing of 0.80 mm in the case of nozzles with a \varnothing of > 0.20 mm
- The target mark has a \varnothing of 1.10 mm in the case of nozzles with a \varnothing of > 0.30 mm
- The test pressure is 50 bar
- 100% testing is only carried out if requested by the customer

PERFORMANCE DATA

| Water density at 20° C | 2500 bar | Jet force | Jet speed |
|--------------------------|------------------------------|-----------|-----------|
| | kg/m ³ 1085.68 | | |
| Nozzles \varnothing mm | l/min | N | m/sec |
| 0.08 | 0.139 | 1.6 | 707 |
| 0.10 | 0.217 | 2.6 | 707 |
| 0.12 | 0.313 | 3.7 | 707 |
| 0.15 | 0.489 | 5.8 | 707 |
| 0.17 | 0.628 | 7.4 | 707 |
| 0.20 | 0.870 | 10.3 | 707 |
| 0.25 | 1.359 | 16.1 | 707 |
| 0.30 | 1.957 | 23.1 | 707 |
| 0.35 | 2.664 | 31.5 | 707 |
| 0.40 | 3.479 | 41.1 | 707 |
| 0.45 | 4.403 | 52.0 | 707 |

| Water density at 20° C | 3000 bar | Jet force | Jet speed |
|--------------------------|------------------------------|-----------|-----------|
| | kg/m ³ 1100.30 | | |
| Nozzles \varnothing mm | l/min | N | m/sec |
| 0.08 | 0.151 | 2.0 | 775 |
| 0.10 | 0.237 | 3.1 | 775 |
| 0.12 | 0.341 | 4.4 | 775 |
| 0.15 | 0.532 | 6.9 | 775 |
| 0.17 | 0.684 | 8.9 | 775 |
| 0.20 | 0.946 | 12.3 | 775 |
| 0.25 | 1.479 | 19.1 | 775 |
| 0.30 | 2.130 | 27.6 | 775 |
| 0.35 | 2.899 | 37.5 | 775 |
| 0.40 | 3.786 | 49.0 | 775 |
| 0.45 | 4.792 | 62.0 | 775 |

| Water density at 20° C | 3500 bar | Jet force | Jet speed |
|--------------------------|------------------------------|-----------|-----------|
| | kg/m ³ 1114.28 | | |
| Nozzles \varnothing mm | l/min | N | m/sec |
| 0.08 | 0.163 | 2.3 | 837 |
| 0.10 | 0.254 | 3.6 | 837 |
| 0.12 | 0.366 | 5.1 | 837 |
| 0.15 | 0.571 | 8.0 | 837 |
| 0.17 | 0.734 | 10.3 | 837 |
| 0.20 | 1.016 | 14.2 | 837 |
| 0.25 | 1.587 | 22.2 | 837 |
| 0.30 | 2.286 | 32.0 | 837 |
| 0.35 | 3.111 | 43.5 | 837 |
| 0.40 | 4.064 | 56.8 | 837 |
| 0.45 | 5.143 | 71.9 | 837 |

| Water density at 20° C | 4000 bar | Jet force | Jet speed |
|--------------------------|------------------------------|-----------|-----------|
| | kg/m ³ 1127.60 | | |
| Nozzles \varnothing mm | l/min | N | m/sec |
| 0.08 | 0.173 | 2.6 | 894 |
| 0.10 | 0.270 | 4.0 | 894 |
| 0.12 | 0.389 | 5.8 | 894 |
| 0.15 | 0.607 | 9.1 | 894 |
| 0.17 | 0.780 | 11.7 | 894 |
| 0.20 | 1.080 | 16.1 | 894 |
| 0.25 | 1.687 | 25.2 | 894 |
| 0.30 | 2.429 | 36.3 | 894 |
| 0.35 | 3.306 | 49.4 | 894 |
| 0.40 | 4.318 | 64.6 | 894 |
| 0.45 | 5.465 | 81.7 | 894 |