



# KNURLING WHEELS



# FORM KNURLING WHEELS 壓花輪

non-cutting process



AA

zeus knurling wheels according to DIN 403 for profiles according to DIN 82, with chamfer 45°, PM

## Profile AA

| Item no. | Product group | Profile | Spiral angle | Ø (mm) | Width (mm) | Bore (mm) | Pitch (mm) |
|----------|---------------|---------|--------------|--------|------------|-----------|------------|
| 41014502 | 11            | AA      | 0            | 10     | 4          | 4         | 0.3        |
| 41009690 | 11            | AA      | 0            | 10     | 4          | 4         | 0.4        |
| 41008170 | 11            | AA      | 0            | 10     | 4          | 4         | 0.5        |
| 41008452 | 11            | AA      | 0            | 10     | 4          | 4         | 0.6        |
| 41010150 | 11            | AA      | 0            | 10     | 4          | 4         | 0.7        |
| 41007356 | 11            | AA      | 0            | 10     | 4          | 4         | 0.8        |
| 41010136 | 11            | AA      | 0            | 10     | 4          | 4         | 1          |
| 41011071 | 11            | AA      | 0            | 10     | 4          | 4         | 1.2        |
| 41015697 | 11            | AA      | 0            | 10     | 4          | 4         | 1.5        |
| 41013392 | 11            | AA      | 0            | 15     | 4          | 4         | 0.3        |
| 41012169 | 11            | AA      | 0            | 15     | 4          | 4         | 0.4        |
| 41007191 | 11            | AA      | 0            | 15     | 4          | 4         | 0.5        |
| 41007312 | 11            | AA      | 0            | 15     | 4          | 4         | 0.6        |
| 41011113 | 11            | AA      | 0            | 15     | 4          | 4         | 0.7        |
| 41007807 | 11            | AA      | 0            | 15     | 4          | 4         | 0.8        |
| 41015073 | 11            | AA      | 0            | 15     | 4          | 4         | 0.9        |
| 41007737 | 11            | AA      | 0            | 15     | 4          | 4         | 1          |
| 41007748 | 11            | AA      | 0            | 15     | 4          | 4         | 1.2        |
| 41007739 | 11            | AA      | 0            | 15     | 4          | 4         | 1.5        |
| 41012009 | 11            | AA      | 0            | 15     | 6          | 4         | 0.3        |
| 41015306 | 11            | AA      | 0            | 15     | 6          | 4         | 0.4        |
| 41012066 | 11            | AA      | 0            | 15     | 6          | 4         | 0.5        |
| 41011047 | 11            | AA      | 0            | 15     | 6          | 4         | 0.6        |
| 41012783 | 11            | AA      | 0            | 15     | 6          | 4         | 0.8        |
| 41015307 | 11            | AA      | 0            | 15     | 6          | 4         | 0.9        |
| 41011375 | 11            | AA      | 0            | 15     | 6          | 4         | 1          |
| 41014956 | 11            | AA      | 0            | 15     | 6          | 4         | 1.2        |
| 41014958 | 11            | AA      | 0            | 15     | 6          | 4         | 1.5        |
| 41015963 | 11            | AA      | 0            | 15     | 6          | 6A8       | 0.6        |
| 41012084 | 11            | AA      | 0            | 15     | 6          | 6A8       | 0.8        |
| 41015390 | 11            | AA      | 0            | 15     | 6          | 6A8       | 1          |
| 41014708 | 11            | AA      | 0            | 15     | 6          | 6A11      | 0.5        |
| 41011751 | 11            | AA      | 0            | 15     | 6          | 6A11      | 0.6        |
| 41010869 | 11            | AA      | 0            | 15     | 6          | 6A11      | 0.8        |
| 41010201 | 11            | AA      | 0            | 15     | 6          | 6A11      | 1          |
| 41012902 | 11            | AA      | 0            | 15     | 6          | 6A11      | 1.2        |
| 41015060 | 11            | AA      | 0            | 20     | 6          | 6         | 0.4        |
| 41012734 | 11            | AA      | 0            | 20     | 6          | 6         | 0.5        |
| 41012735 | 11            | AA      | 0            | 20     | 6          | 6         | 0.6        |
| 41008306 | 11            | AA      | 0            | 20     | 6          | 6         | 0.8        |
| 41007514 | 11            | AA      | 0            | 20     | 6          | 6         | 1          |
| 41007802 | 11            | AA      | 0            | 20     | 6          | 6         | 1.2        |
| 41007948 | 11            | AA      | 0            | 20     | 6          | 6         | 1.5        |
| 41007041 | 11            | AA      | 0            | 20     | 6          | 6         | 1.6        |

| Item no. | Product group | Profile | Spiral angle | Ø (mm) | Width (mm) | Bore (mm) | Pitch (mm) |
|----------|---------------|---------|--------------|--------|------------|-----------|------------|
| 41015173 | 11            | AA      | 0            | 20     | 8          | 6         | 0.3        |
| 41015174 | 11            | AA      | 0            | 20     | 8          | 6         | 0.4        |
| 41007303 | 11            | AA      | 0            | 20     | 8          | 6         | 0.5        |
| 41007304 | 11            | AA      | 0            | 20     | 8          | 6         | 0.6        |
| 41010305 | 11            | AA      | 0            | 20     | 8          | 6         | 0.7        |
| 41008208 | 11            | AA      | 0            | 20     | 8          | 6         | 0.8        |
| 41015175 | 11            | AA      | 0            | 20     | 8          | 6         | 0.9        |
| 41007357 | 11            | AA      | 0            | 20     | 8          | 6         | 1          |
| 41008603 | 11            | AA      | 0            | 20     | 8          | 6         | 1.2        |
| 41008354 | 11            | AA      | 0            | 20     | 8          | 6         | 1.5        |
| 41012327 | 11            | AA      | 0            | 20     | 8          | 6         | 1.6        |
| 41010418 | 11            | AA      | 0            | 20     | 8          | 6         | 2          |
| 41013770 | 11            | AA      | 0            | 20     | 8          | 6A13      | 0.5        |
| 41015455 | 11            | AA      | 0            | 20     | 8          | 6A13      | 0.6        |
| 41011477 | 11            | AA      | 0            | 20     | 8          | 6A13      | 0.8        |
| 41009204 | 11            | AA      | 0            | 20     | 8          | 6A13      | 1          |
| 41012892 | 11            | AA      | 0            | 20     | 8          | 6A13      | 1.2        |
| 41012893 | 11            | AA      | 0            | 20     | 8          | 6A13      | 1.5        |
| 41007741 | 11            | AA      | 0            | 20     | 10         | 6         | 0.5        |
| 41013841 | 11            | AA      | 0            | 20     | 10         | 6         | 0.6        |
| 41008281 | 11            | AA      | 0            | 20     | 10         | 6         | 0.8        |
| 41008672 | 11            | AA      | 0            | 20     | 10         | 6         | 1          |
| 41011395 | 11            | AA      | 0            | 20     | 10         | 6         | 1.2        |
| 41008564 | 11            | AA      | 0            | 20     | 10         | 6         | 1.5        |
| 41015934 | 11            | AA      | 0            | 25     | 6          | 6         | 0.6        |
| 41007361 | 11            | AA      | 0            | 25     | 6          | 6         | 0.8        |
| 41008030 | 11            | AA      | 0            | 25     | 6          | 6         | 1          |
| 41007716 | 11            | AA      | 0            | 25     | 6          | 6         | 1.2        |
| 41016215 | 11            | AA      | 0            | 25     | 6          | 6         | 1.5        |
| 41016224 | 11            | AA      | 0            | 25     | 8          | 6         | 0.6        |
| 41010169 | 11            | AA      | 0            | 25     | 8          | 6         | 0.8        |
| 41007421 | 11            | AA      | 0            | 25     | 8          | 6         | 1          |
| 41007554 | 11            | AA      | 0            | 25     | 8          | 6         | 1.2        |
| 41009373 | 11            | AA      | 0            | 25     | 8          | 6         | 1.5        |



FORM KNURLING WHEELS 壓花輪

non-cutting process



BL30°



BL45°

zeus knurling wheels according to DIN 403 for profiles according to DIN 82, with chamfer 45°, PM

Profile BL

| Item no. | Product group | Profile | Spiral angle | Ø (mm) | Width (mm) | Bore (mm) | Pitch (mm) |
|----------|---------------|---------|--------------|--------|------------|-----------|------------|
| 41015698 | 11            | BL      | 30           | 10     | 4          | 4         | 0.3        |
| 41015699 | 11            | BL      | 30           | 10     | 4          | 4         | 0.4        |
| 41010091 | 11            | BL      | 30           | 10     | 4          | 4         | 0.5        |
| 41008997 | 11            | BL      | 30           | 10     | 4          | 4         | 0.6        |
| 41008673 | 11            | BL      | 30           | 10     | 4          | 4         | 0.7        |
| 41011077 | 11            | BL      | 30           | 10     | 4          | 4         | 0.8        |
| 41010803 | 11            | BL      | 30           | 10     | 4          | 4         | 1          |
| 41011078 | 11            | BL      | 30           | 10     | 4          | 4         | 1.2        |
| 41015701 | 11            | BL      | 30           | 10     | 4          | 4         | 1.5        |
| 41015702 | 11            | BL      | 45           | 10     | 4          | 4         | 0.3        |
| 41015703 | 11            | BL      | 45           | 10     | 4          | 4         | 0.4        |
| 41014711 | 11            | BL      | 45           | 10     | 4          | 4         | 0.5        |
| 41013953 | 11            | BL      | 45           | 10     | 4          | 4         | 0.6        |
| 41010089 | 11            | BL      | 45           | 10     | 4          | 4         | 0.8        |
| 41013954 | 11            | BL      | 45           | 10     | 4          | 4         | 1          |
| 41013000 | 11            | BL      | 45           | 10     | 4          | 4         | 1.2        |
| 41011664 | 11            | BL      | 30           | 15     | 4          | 4         | 0.5        |
| 41007033 | 11            | BL      | 30           | 15     | 4          | 4         | 0.6        |
| 41011079 | 11            | BL      | 30           | 15     | 4          | 4         | 0.8        |
| 41008148 | 11            | BL      | 30           | 15     | 4          | 4         | 1          |
| 41011080 | 11            | BL      | 30           | 15     | 4          | 4         | 1.2        |
| 41007691 | 11            | BL      | 30           | 15     | 4          | 4         | 1.5        |
| 41015252 | 11            | BL      | 45           | 15     | 4          | 4         | 0.5        |
| 41015253 | 11            | BL      | 45           | 15     | 4          | 4         | 0.6        |
| 41015254 | 11            | BL      | 45           | 15     | 4          | 4         | 0.8        |
| 41015256 | 11            | BL      | 45           | 15     | 4          | 4         | 1          |
| 41008146 | 11            | BL      | 45           | 15     | 4          | 4         | 1.2        |
| 41012730 | 11            | BL      | 30           | 15     | 6          | 4         | 0.5        |
| 41010784 | 11            | BL      | 30           | 15     | 6          | 4         | 0.6        |
| 41012731 | 11            | BL      | 30           | 15     | 6          | 4         | 0.8        |
| 41015312 | 11            | BL      | 30           | 15     | 6          | 4         | 1          |
| 41015313 | 11            | BL      | 30           | 15     | 6          | 4         | 1.2        |
| 41015316 | 11            | BL      | 45           | 15     | 6          | 4         | 0.4        |
| 41011684 | 11            | BL      | 45           | 15     | 6          | 4         | 0.8        |
| 41013332 | 11            | BL      | 45           | 15     | 6          | 4         | 1          |
| 41015320 | 11            | BL      | 45           | 15     | 6          | 4         | 1.2        |
| 41016114 | 11            | BL      | 30           | 15     | 6          | 6A8       | 0.6        |
| 41016115 | 11            | BL      | 30           | 15     | 6          | 6A8       | 0.8        |
| 41016116 | 11            | BL      | 30           | 15     | 6          | 6A8       | 1          |
| 41009186 | 11            | BL      | 30           | 15     | 6          | 6A11      | 0.5        |
| 41016144 | 11            | BL      | 30           | 15     | 6          | 6A11      | 0.8        |
| 41016145 | 11            | BL      | 30           | 15     | 6          | 6A11      | 1          |
| 41014710 | 11            | BL      | 45           | 15     | 6          | 6A11      | 0.5        |
| 41012904 | 11            | BL      | 45           | 15     | 6          | 6A11      | 0.8        |
| 41012906 | 11            | BL      | 45           | 15     | 6          | 6A11      | 1          |
| 41012910 | 11            | BL      | 45           | 15     | 6          | 6A11      | 1.2        |

| Item no. | Product group | Profile | Spiral angle | Ø (mm) | Width (mm) | Bore (mm) | Pitch (mm) |
|----------|---------------|---------|--------------|--------|------------|-----------|------------|
| 41011558 | 11            | BL      | 30           | 20     | 6          | 6         | 0.6        |
| 41010919 | 11            | BL      | 30           | 20     | 6          | 6         | 0.8        |
| 41012655 | 11            | BL      | 30           | 20     | 6          | 6         | 1          |
| 41012736 | 11            | BL      | 30           | 20     | 6          | 6         | 1.2        |
| 41014277 | 11            | BL      | 30           | 20     | 6          | 6         | 1.5        |
| 41015102 | 11            | BL      | 45           | 20     | 6          | 6         | 0.8        |
| 41013021 | 11            | BL      | 45           | 20     | 6          | 6         | 1          |
| 41013023 | 11            | BL      | 45           | 20     | 6          | 6         | 1.2        |
| 41015104 | 11            | BL      | 45           | 20     | 6          | 6         | 1.5        |
| 41012738 | 11            | BL      | 30           | 20     | 8          | 6         | 0.5        |
| 41011081 | 11            | BL      | 30           | 20     | 8          | 6         | 0.6        |
| 41015178 | 11            | BL      | 30           | 20     | 8          | 6         | 0.7        |
| 41008999 | 11            | BL      | 30           | 20     | 8          | 6         | 0.8        |
| 41015179 | 11            | BL      | 30           | 20     | 8          | 6         | 0.9        |
| 41008918 | 11            | BL      | 30           | 20     | 8          | 6         | 1          |
| 41010393 | 11            | BL      | 30           | 20     | 8          | 6         | 1.2        |
| 41010397 | 11            | BL      | 30           | 20     | 8          | 6         | 1.5        |
| 41010102 | 11            | BL      | 30           | 20     | 8          | 6         | 1.6        |
| 41015180 | 11            | BL      | 30           | 20     | 8          | 6         | 1.8        |
| 41014360 | 11            | BL      | 30           | 20     | 8          | 6         | 2          |
| 41026032 | 11            | BL      | 30           | 20     | 8          | 6A13      | 0.5        |
| 41016168 | 11            | BL      | 30           | 20     | 8          | 6A13      | 0.6        |
| 41014603 | 11            | BL      | 30           | 20     | 8          | 6A13      | 0.8        |
| 41008375 | 11            | BL      | 30           | 20     | 8          | 6A13      | 1          |
| 41014841 | 11            | BL      | 30           | 20     | 8          | 6A13      | 1.2        |
| 41013684 | 11            | BL      | 30           | 20     | 8          | 6A13      | 1.5        |
| 41014351 | 11            | BL      | 45           | 20     | 8          | 6         | 0.5        |
| 41010279 | 11            | BL      | 45           | 20     | 8          | 6         | 0.6        |
| 41007644 | 11            | BL      | 45           | 20     | 8          | 6         | 0.8        |
| 41008565 | 11            | BL      | 45           | 20     | 8          | 6         | 1          |
| 41008343 | 11            | BL      | 45           | 20     | 8          | 6         | 1.2        |
| 41009011 | 11            | BL      | 45           | 20     | 8          | 6         | 1.5        |
| 41007385 | 11            | BL      | 45           | 20     | 8          | 6         | 2          |
| 41008582 | 11            | BL      | 45           | 20     | 8          | 6A13      | 1          |
| 41012213 | 11            | BL      | 45           | 20     | 8          | 6A13      | 1.2        |
| 41016235 | 11            | BL      | 30           | 25     | 8          | 6         | 0.8        |
| 41007742 | 11            | BL      | 30           | 25     | 8          | 6         | 1          |
| 41009849 | 11            | BL      | 30           | 25     | 8          | 6         | 1.2        |
| 41007745 | 11            | BL      | 30           | 25     | 8          | 6         | 1.5        |
| 41012286 | 11            | BL      | 45           | 25     | 8          | 6         | 0.8        |
| 41008538 | 11            | BL      | 45           | 25     | 8          | 6         | 1          |
| 41015577 | 11            | BL      | 45           | 25     | 8          | 6         | 1.2        |
| 41014944 | 11            | BL      | 45           | 25     | 8          | 6         | 1.5        |



FORM KNURLING WHEELS 壓花輪

non-cutting process



BR30°



BR45°

zeus knurling wheels according to DIN 403 for profiles according to DIN 82, with chamfer 45°, PM

Profile BR

| Item no. | Product group | Pro-file | Spiral angle | Ø (mm) | Width (mm) | Bore (mm) | Pitch (mm) |
|----------|---------------|----------|--------------|--------|------------|-----------|------------|
| 41015707 | 11            | BR       | 30           | 10     | 4          | 4         | 0.3        |
| 41015708 | 11            | BR       | 30           | 10     | 4          | 4         | 0.4        |
| 41010092 | 11            | BR       | 30           | 10     | 4          | 4         | 0.5        |
| 41008998 | 11            | BR       | 30           | 10     | 4          | 4         | 0.6        |
| 41008674 | 11            | BR       | 30           | 10     | 4          | 4         | 0.7        |
| 41011072 | 11            | BR       | 30           | 10     | 4          | 4         | 0.8        |
| 41010805 | 11            | BR       | 30           | 10     | 4          | 4         | 1          |
| 41011073 | 11            | BR       | 30           | 10     | 4          | 4         | 1.2        |
| 41015710 | 11            | BR       | 30           | 10     | 4          | 4         | 1.5        |
| 41015711 | 11            | BR       | 45           | 10     | 4          | 4         | 0.3        |
| 41015712 | 11            | BR       | 45           | 10     | 4          | 4         | 0.4        |
| 41014712 | 11            | BR       | 45           | 10     | 4          | 4         | 0.5        |
| 41013958 | 11            | BR       | 45           | 10     | 4          | 4         | 0.6        |
| 41010090 | 11            | BR       | 45           | 10     | 4          | 4         | 0.8        |
| 41013955 | 11            | BR       | 45           | 10     | 4          | 4         | 1          |
| 41012999 | 11            | BR       | 45           | 10     | 4          | 4         | 1.2        |
| 41011665 | 11            | BR       | 30           | 15     | 4          | 4         | 0.5        |
| 41007032 | 11            | BR       | 30           | 15     | 4          | 4         | 0.6        |
| 41011074 | 11            | BR       | 30           | 15     | 4          | 4         | 0.8        |
| 41008147 | 11            | BR       | 30           | 15     | 4          | 4         | 1          |
| 41011075 | 11            | BR       | 30           | 15     | 4          | 4         | 1.2        |
| 41007690 | 11            | BR       | 30           | 15     | 4          | 4         | 1.5        |
| 41015262 | 11            | BR       | 45           | 15     | 4          | 4         | 0.5        |
| 41015263 | 11            | BR       | 45           | 15     | 4          | 4         | 0.6        |
| 41008106 | 11            | BR       | 45           | 15     | 4          | 4         | 0.8        |
| 41015265 | 11            | BR       | 45           | 15     | 4          | 4         | 1          |
| 41008145 | 11            | BR       | 45           | 15     | 4          | 4         | 1.2        |
| 41012732 | 11            | BR       | 30           | 15     | 6          | 4         | 0.5        |
| 41010783 | 11            | BR       | 30           | 15     | 6          | 4         | 0.6        |
| 41012733 | 11            | BR       | 30           | 15     | 6          | 4         | 0.8        |
| 41013882 | 11            | BR       | 30           | 15     | 6          | 4         | 1          |
| 41015425 | 11            | BR       | 30           | 15     | 6          | 4         | 1.2        |
| 41015427 | 11            | BR       | 45           | 15     | 6          | 4         | 0.4        |
| 41011683 | 11            | BR       | 45           | 15     | 6          | 4         | 0.8        |
| 41013333 | 11            | BR       | 45           | 15     | 6          | 4         | 1          |
| 41015431 | 11            | BR       | 45           | 15     | 6          | 4         | 1.2        |
| 41016127 | 11            | BR       | 30           | 15     | 6          | 6A8       | 0.6        |
| 41016128 | 11            | BR       | 30           | 15     | 6          | 6A8       | 0.8        |
| 41016129 | 11            | BR       | 30           | 15     | 6          | 6A8       | 1          |
| 41009187 | 11            | BR       | 30           | 15     | 6          | 6A11      | 0.5        |
| 41016149 | 11            | BR       | 30           | 15     | 6          | 6A11      | 0.8        |
| 41016150 | 11            | BR       | 30           | 15     | 6          | 6A11      | 1          |
| 41014709 | 11            | BR       | 45           | 15     | 6          | 6A11      | 0.5        |
| 41012905 | 11            | BR       | 45           | 15     | 6          | 6A11      | 0.8        |
| 41012907 | 11            | BR       | 45           | 15     | 6          | 6A11      | 1          |
| 41012908 | 11            | BR       | 45           | 15     | 6          | 6A11      | 1.2        |

| Item no. | Product group | Pro-file | Spira angle | Ø (mm) | Width (mm) | Bore (mm) | Pitch (mm) |
|----------|---------------|----------|-------------|--------|------------|-----------|------------|
| 41011559 | 11            | BR       | 30          | 20     | 6          | 6         | 0.6        |
| 41010917 | 11            | BR       | 30          | 20     | 6          | 6         | 0.8        |
| 41012729 | 11            | BR       | 30          | 20     | 6          | 6         | 1          |
| 41012737 | 11            | BR       | 30          | 20     | 6          | 6         | 1.2        |
| 41014278 | 11            | BR       | 30          | 20     | 6          | 6         | 1.5        |
| 41015146 | 11            | BR       | 45          | 20     | 6          | 6         | 0.8        |
| 41015146 | 11            | BR       | 45          | 20     | 6          | 6         | 1          |
| 41015146 | 11            | BR       | 45          | 20     | 6          | 6         | 1.2        |
| 41015146 | 11            | BR       | 45          | 20     | 6          | 6         | 1.5        |
| 41012739 | 11            | BR       | 30          | 20     | 8          | 6         | 0.5        |
| 41011076 | 11            | BR       | 30          | 20     | 8          | 6         | 0.6        |
| 41015201 | 11            | BR       | 30          | 20     | 8          | 6         | 0.7        |
| 41009000 | 11            | BR       | 30          | 20     | 8          | 6         | 0.8        |
| 41015202 | 11            | BR       | 30          | 20     | 8          | 6         | 0.9        |
| 41008917 | 11            | BR       | 30          | 20     | 8          | 6         | 1          |
| 41010392 | 11            | BR       | 30          | 20     | 8          | 6         | 1.2        |
| 41010398 | 11            | BR       | 30          | 20     | 8          | 6         | 1.5        |
| 41010101 | 11            | BR       | 30          | 20     | 8          | 6         | 1.6        |
| 41015203 | 11            | BR       | 30          | 20     | 8          | 6         | 1.8        |
| 41014359 | 11            | BR       | 30          | 20     | 8          | 6         | 2          |
| 41026033 | 11            | BR       | 30          | 20     | 8          | 6A13      | 0.5        |
| 41016170 | 11            | BR       | 30          | 20     | 8          | 6A13      | 0.6        |
| 41014604 | 11            | BR       | 30          | 20     | 8          | 6A13      | 0.8        |
| 41008374 | 11            | BR       | 30          | 20     | 8          | 6A13      | 1          |
| 41014842 | 11            | BR       | 30          | 20     | 8          | 6A13      | 1.2        |
| 41013685 | 11            | BR       | 30          | 20     | 8          | 6A13      | 1.5        |
| 41015206 | 11            | BR       | 45          | 20     | 8          | 6         | 0.5        |
| 41010274 | 11            | BR       | 45          | 20     | 8          | 6         | 0.6        |
| 41007637 | 11            | BR       | 45          | 20     | 8          | 6         | 0.8        |
| 41008839 | 11            | BR       | 45          | 20     | 8          | 6         | 1          |
| 41008346 | 11            | BR       | 45          | 20     | 8          | 6         | 1.2        |
| 41009010 | 11            | BR       | 45          | 20     | 8          | 6         | 1.5        |
| 41007384 | 11            | BR       | 45          | 20     | 8          | 6         | 2          |
| 41008584 | 11            | BR       | 45          | 20     | 8          | 6A13      | 1          |
| 41012214 | 11            | BR       | 45          | 20     | 8          | 6A13      | 1.2        |
| 41016238 | 11            | BR       | 30          | 25     | 8          | 6         | 0.8        |
| 41007743 | 11            | BR       | 30          | 25     | 8          | 6         | 1          |
| 41009850 | 11            | BR       | 30          | 25     | 8          | 6         | 1.2        |
| 41007744 | 11            | BR       | 30          | 25     | 8          | 6         | 1.5        |
| 41016240 | 11            | BR       | 45          | 25     | 8          | 6         | 0.8        |
| 41008537 | 11            | BR       | 45          | 25     | 8          | 6         | 1          |
| 41016126 | 11            | BR       | 45          | 25     | 8          | 6         | 1.2        |
| 41014945 | 11            | BR       | 45          | 25     | 8          | 6         | 1.5        |



**FORM** KNURLING WHEELS 壓花輪  
non-cutting process



GE30°



GE45°



GV30°



GV45°

zeus knurling wheels according to DIN 403 for profiles according to DIN 82, with chamfer 45°, PM

**Profile GE**

| Item no. | Product group | Profile | Spiral angle | Ø (mm) | Width (mm) | Bore (mm) | Pitch (mm) |
|----------|---------------|---------|--------------|--------|------------|-----------|------------|
| 41015267 | 11            | GE      | 30           | 15     | 4          | 4         | 0.5        |
| 41013348 | 11            | GE      | 30           | 15     | 4          | 4         | 0.6        |
| 41014787 | 11            | GE      | 30           | 15     | 4          | 4         | 0.8        |
| 41014788 | 11            | GE      | 30           | 15     | 4          | 4         | 1          |
| 41014789 | 11            | GE      | 30           | 15     | 4          | 4         | 1.2        |
| 41015786 | 11            | GE      | 30           | 15     | 6          | 4         | 0.5        |
| 41014077 | 11            | GE      | 30           | 15     | 6          | 4         | 0.6        |
| 41015857 | 11            | GE      | 30           | 15     | 6          | 4         | 0.8        |
| 41014037 | 11            | GE      | 30           | 15     | 6          | 4         | 1          |
| 41016100 | 11            | GE      | 45           | 15     | 6          | 4         | 1          |
| 41014595 | 11            | GE      | 30           | 20     | 6          | 6         | 0.8        |
| 41015155 | 11            | GE      | 30           | 20     | 6          | 6         | 1          |
| 41015166 | 11            | GE      | 45           | 20     | 6          | 6         | 0.8        |
| 41015217 | 11            | GE      | 30           | 20     | 8          | 6         | 0.5        |
| 41013960 | 11            | GE      | 30           | 20     | 8          | 6         | 0.6        |
| 41013060 | 11            | GE      | 30           | 20     | 8          | 6         | 0.8        |
| 41007788 | 11            | GE      | 30           | 20     | 8          | 6         | 1          |
| 41013061 | 11            | GE      | 30           | 20     | 8          | 6         | 1.2        |
| 41013062 | 11            | GE      | 30           | 20     | 8          | 6         | 1.5        |
| 41015223 | 11            | GE      | 30           | 20     | 8          | 6         | 2          |
| 41015224 | 11            | GE      | 45           | 20     | 8          | 6         | 0.3        |
| 41015196 | 11            | GE      | 45           | 20     | 8          | 6         | 0.5        |
| 41012085 | 11            | GE      | 45           | 20     | 8          | 6         | 0.8        |
| 41008500 | 11            | GE      | 45           | 20     | 8          | 6         | 1          |
| 41008675 | 11            | GE      | 45           | 20     | 8          | 6         | 1.2        |
| 41014950 | 11            | GE      | 45           | 20     | 8          | 6         | 1.5        |

**Profile GV**

| Item no. | Product group | Profile | Spiral angle | Ø (mm) | Width (mm) | Bore (mm) | Pitch (mm) |
|----------|---------------|---------|--------------|--------|------------|-----------|------------|
| 41020546 | 21            | GV      | 45           | 10     | 4          | 4         | 0.3        |
| 41016943 | 21            | GV      | 45           | 10     | 4          | 4         | 0.4        |
| 41020547 | 21            | GV      | 45           | 10     | 4          | 4         | 0.5        |
| 41015461 | 21            | GV      | 45           | 10     | 4          | 4         | 0.6        |
| 41007192 | 21            | GV      | 30           | 15     | 4          | 4         | 0.5        |
| 41011393 | 21            | GV      | 30           | 15     | 4          | 4         | 0.6        |
| 41014087 | 21            | GV      | 30           | 15     | 4          | 4         | 0.8        |
| 41013229 | 21            | GV      | 30           | 15     | 4          | 4         | 1          |
| 41015621 | 21            | GV      | 30           | 15     | 4          | 4         | 1.2        |
| 41015625 | 21            | GV      | 45           | 15     | 4          | 4         | 0.5        |
| 41011846 | 21            | GV      | 45           | 15     | 4          | 4         | 0.6        |
| 41015629 | 21            | GV      | 45           | 15     | 4          | 4         | 1          |
| 41015630 | 21            | GV      | 45           | 15     | 4          | 4         | 1.2        |
| 41023634 | 21            | GV      | 30           | 15     | 6          | 4         | 0.5        |
| 41015446 | 21            | GV      | 30           | 15     | 6          | 4         | 0.6        |
| 41014830 | 21            | GV      | 30           | 15     | 6          | 4         | 0.8        |
| 41013787 | 21            | GV      | 30           | 15     | 6          | 4         | 1          |
| 41015644 | 21            | GV      | 30           | 15     | 6          | 4         | 1.2        |
| 41015197 | 21            | GV      | 30           | 20     | 6          | 6         | 0.6        |
| 41015673 | 21            | GV      | 30           | 20     | 6          | 6         | 0.8        |
| 41013622 | 21            | GV      | 30           | 20     | 6          | 6         | 1          |
| 41015684 | 21            | GV      | 30           | 20     | 8          | 6         | 0.5        |
| 41015685 | 21            | GV      | 30           | 20     | 8          | 6         | 0.6        |
| 41014562 | 21            | GV      | 30           | 20     | 8          | 6         | 0.8        |
| 41013436 | 21            | GV      | 30           | 20     | 8          | 6         | 1          |
| 41015688 | 21            | GV      | 30           | 20     | 8          | 6         | 1.2        |
| 41015689 | 21            | GV      | 30           | 20     | 8          | 6         | 1.5        |
| 41015498 | 21            | GV      | 45           | 20     | 8          | 6         | 0.5        |
| 41015383 | 21            | GV      | 45           | 20     | 8          | 6         | 0.6        |
| 41013170 | 21            | GV      | 45           | 20     | 8          | 6         | 0.8        |
| 41010183 | 21            | GV      | 45           | 20     | 8          | 6         | 1          |
| 41015695 | 21            | GV      | 45           | 20     | 8          | 6         | 1.2        |
| 41015351 | 21            | GV      | 45           | 20     | 8          | 6         | 1.5        |
| 41016070 | 21            | GV      | 30           | 25     | 8          | 6         | 0.8        |
| 41008338 | 21            | GV      | 30           | 25     | 8          | 6         | 1          |



**CUT** KNURLING WHEELS  
cutting process



AA

zeus knurling wheels according to DIN 403  
for profiles according to DIN 82,  
without chamfer, PM

**Profile AA**

| Item no. | Product group | Profile | Spiral angle | Ø (mm) | Width (mm) | Bore (mm) | Pitch (mm) |
|----------|---------------|---------|--------------|--------|------------|-----------|------------|
| 41015794 | 16            | AA      | 0            | 8.9    | 2,5        | 4         | 0.3        |
| 41013748 | 16            | AA      | 0            | 8.9    | 2,5        | 4         | 0.5        |
| 41008427 | 16            | AA      | 0            | 8.9    | 2,5        | 4         | 0.6        |
| 41010772 | 16            | AA      | 0            | 8.9    | 2,5        | 4         | 0.7        |
| 41012043 | 16            | AA      | 0            | 8.9    | 2,5        | 4         | 0.8        |
| 41015136 | 16            | AA      | 0            | 8.9    | 2,5        | 4         | 1          |
| 41010879 | 16            | AA      | 0            | 10     | 3          | 6         | 0.5        |
| 41010724 | 16            | AA      | 0            | 10     | 3          | 6         | 0.6        |
| 41010727 | 16            | AA      | 0            | 10     | 3          | 6         | 0.8        |
| 41009767 | 16            | AA      | 0            | 10     | 3          | 6         | 1          |
| 41015135 | 16            | AA      | 0            | 10     | 3          | 6         | 1.2        |
| 41015860 | 16            | AA      | 0            | 14.5   | 3          | 5         | 0.5        |
| 41010740 | 16            | AA      | 0            | 14.5   | 3          | 5         | 0.6        |
| 41015864 | 16            | AA      | 0            | 14.5   | 3          | 5         | 0.7        |
| 41009300 | 16            | AA      | 0            | 14.5   | 3          | 5         | 0.8        |
| 41008428 | 16            | AA      | 0            | 14.5   | 3          | 5         | 1          |
| 41010741 | 16            | AA      | 0            | 14.5   | 3          | 5         | 1.2        |
| 41008406 | 16            | AA      | 0            | 15     | 4          | 8         | 0.5        |
| 41008407 | 16            | AA      | 0            | 15     | 4          | 8         | 0.6        |
| 41008408 | 16            | AA      | 0            | 15     | 4          | 8         | 0.7        |
| 41007464 | 16            | AA      | 0            | 15     | 4          | 8         | 0.8        |
| 41008409 | 16            | AA      | 0            | 15     | 4          | 8         | 1          |
| 41007053 | 16            | AA      | 0            | 15     | 4          | 8         | 1.2        |
| 41010443 | 16            | AA      | 0            | 15     | 4          | 8         | 1.5        |
| 41008554 | 16            | AA      | 0            | 21.5   | 5          | 8         | 0.6        |
| 41010502 | 16            | AA      | 0            | 21.5   | 5          | 8         | 0.8        |
| 41010503 | 16            | AA      | 0            | 21.5   | 5          | 8         | 1          |
| 41010743 | 16            | AA      | 0            | 21.5   | 5          | 8         | 1.2        |
| 41008595 | 16            | AA      | 0            | 21.5   | 5          | 8         | 1.5        |
| 41011886 | 16            | AA      | 0            | 21.5   | 5          | 8         | 2          |
| 41001104 | 16            | AA      | 0            | 25     | 6          | 8         | 0.5        |
| 41001105 | 16            | AA      | 0            | 25     | 6          | 8         | 0.6        |
| 41001107 | 16            | AA      | 0            | 25     | 6          | 8         | 0.8        |
| 41001109 | 16            | AA      | 0            | 25     | 6          | 8         | 1          |
| 41001110 | 16            | AA      | 0            | 25     | 6          | 8         | 1.2        |
| 41001111 | 16            | AA      | 0            | 25     | 6          | 8         | 1.5        |
| 41001112 | 16            | AA      | 0            | 25     | 6          | 8         | 1.6        |
| 41001114 | 16            | AA      | 0            | 25     | 6          | 8         | 2          |



CUT KNURLING WHEELS 車花輪

cutting process



BL15°



BL30°

zeus knurling wheels according to DIN 403 for profiles according to DIN 82, without chamfer, PM

Profile BL

| Item no. | Product group | Profile | Spiral angle | Ø (mm) | Width (mm) | Bore (mm) | Pitch (mm) |
|----------|---------------|---------|--------------|--------|------------|-----------|------------|
| 41015785 | 16            | BL      | 30           | 8,9    | 2,5        | 4         | 0.8        |
| 41015809 | 16            | BL      | 30           | 8,9    | 2,5        | 4         | 1          |
| 41011615 | 16            | BL      | 15           | 10     | 3          | 6         | 0.5        |
| 41010733 | 16            | BL      | 15           | 10     | 3          | 6         | 0.6        |
| 41010409 | 16            | BL      | 15           | 10     | 3          | 6         | 0.8        |
| 41008687 | 16            | BL      | 15           | 10     | 3          | 6         | 1          |
| 41015835 | 16            | BL      | 30           | 10     | 3          | 6         | 0.5        |
| 41010728 | 16            | BL      | 30           | 10     | 3          | 6         | 0.6        |
| 41015836 | 16            | BL      | 30           | 10     | 3          | 6         | 0.7        |
| 41010466 | 16            | BL      | 30           | 10     | 3          | 6         | 0.8        |
| 41010729 | 16            | BL      | 30           | 10     | 3          | 6         | 1          |
| 41015838 | 16            | BL      | 30           | 10     | 3          | 6         | 1.2        |
| 41015868 | 16            | BL      | 15           | 14,5   | 3          | 5         | 0.5        |
| 41010752 | 16            | BL      | 15           | 14,5   | 3          | 5         | 0.6        |
| 41015869 | 16            | BL      | 15           | 14,5   | 3          | 5         | 0.7        |
| 41010753 | 16            | BL      | 15           | 14,5   | 3          | 5         | 0.8        |
| 41018680 | 16            | BL      | 15           | 14,5   | 3          | 5         | 1          |
| 41000754 | 16            | BL      | 15           | 14,5   | 3          | 5         | 1.2        |
| 41010671 | 16            | BL      | 30           | 14,5   | 3          | 5         | 0.5        |
| 41010132 | 16            | BL      | 30           | 14,5   | 3          | 5         | 0.6        |
| 41010405 | 16            | BL      | 30           | 14,5   | 3          | 5         | 0.8        |
| 41009779 | 16            | BL      | 30           | 14,5   | 3          | 5         | 1          |
| 41010193 | 16            | BL      | 30           | 14,5   | 3          | 5         | 1.2        |
| 41011754 | 16            | BL      | 15           | 15     | 4          | 8         | 0.5        |
| 41009251 | 16            | BL      | 15           | 15     | 4          | 8         | 0.6        |
| 41007333 | 16            | BL      | 15           | 15     | 4          | 8         | 0.8        |
| 41007382 | 16            | BL      | 15           | 15     | 4          | 8         | 1          |
| 41007639 | 16            | BL      | 15           | 15     | 4          | 8         | 1.2        |
| 41008013 | 16            | BL      | 15           | 15     | 4          | 8         | 1.5        |
| 41015894 | 16            | BL      | 30           | 15     | 4          | 8         | 0.3        |
| 41015895 | 16            | BL      | 30           | 15     | 4          | 8         | 0.4        |
| 41010764 | 16            | BL      | 30           | 15     | 4          | 8         | 0.5        |
| 41008587 | 16            | BL      | 30           | 15     | 4          | 8         | 0.6        |
| 41010445 | 16            | BL      | 30           | 15     | 4          | 8         | 0.7        |
| 41007857 | 16            | BL      | 30           | 15     | 4          | 8         | 0.8        |
| 41015896 | 16            | BL      | 30           | 15     | 4          | 8         | 0.9        |
| 41007043 | 16            | BL      | 30           | 15     | 4          | 8         | 1          |
| 41010517 | 16            | BL      | 30           | 15     | 4          | 8         | 1.2        |
| 41010730 | 16            | BL      | 30           | 15     | 4          | 8         | 1.5        |

| Item no. | Product group | Profile | Spiral angle | Ø (mm) | Width (mm) | Bore (mm) | Pitch (mm) |
|----------|---------------|---------|--------------|--------|------------|-----------|------------|
| 41009960 | 16            | BL      | 15           | 21,5   | 5          | 8         | 0.8        |
| 41008513 | 16            | BL      | 15           | 21,5   | 5          | 8         | 1          |
| 41010758 | 16            | BL      | 15           | 21,5   | 5          | 8         | 1.2        |
| 41009132 | 16            | BL      | 15           | 21,5   | 5          | 8         | 1.5        |
| 41009561 | 16            | BL      | 30           | 21,5   | 5          | 8         | 0.8        |
| 41008591 | 16            | BL      | 30           | 21,5   | 5          | 8         | 1          |
| 41010332 | 16            | BL      | 15           | 25     | 6          | 8         | 0.5        |
| 41010495 | 16            | BL      | 15           | 25     | 6          | 8         | 0.6        |
| 41009607 | 16            | BL      | 15           | 25     | 6          | 8         | 0.8        |
| 41007044 | 16            | BL      | 15           | 25     | 6          | 8         | 1          |
| 41006373 | 16            | BL      | 15           | 25     | 6          | 8         | 1.2        |
| 41007299 | 16            | BL      | 15           | 25     | 6          | 8         | 1.5        |
| 41008502 | 16            | BL      | 15           | 25     | 6          | 8         | 1.6        |
| 41007300 | 16            | BL      | 15           | 25     | 6          | 8         | 2          |
| 41012128 | 16            | BL      | 30           | 25     | 6          | 8         | 0.5        |
| 41009147 | 16            | BL      | 30           | 25     | 6          | 8         | 0.6        |
| 41008501 | 16            | BL      | 30           | 25     | 6          | 8         | 0.8        |
| 41007031 | 16            | BL      | 30           | 25     | 6          | 8         | 1          |
| 41007209 | 16            | BL      | 30           | 25     | 6          | 8         | 1.2        |
| 41007424 | 16            | BL      | 30           | 25     | 6          | 8         | 1.5        |
| 41010807 | 16            | BL      | 30           | 25     | 6          | 8         | 1.6        |
| 41010620 | 16            | BL      | 30           | 25     | 6          | 8         | 2          |



CUT KNURLING WHEELS 車花輪

cutting process



BR15°



BR30°

zeus knurling wheels according to DIN 403 for profiles according to DIN 82, without chamfer, PM

Profile BR

| Item no. | Product group | Profile | Spiral angle | Ø (mm) | Width (mm) | Bore (mm) | Pitch (mm) |
|----------|---------------|---------|--------------|--------|------------|-----------|------------|
| 41011952 | 16            | BR      | 30           | 8,9    | 2,5        | 4         | 0.8        |
| 41015823 | 16            | BR      | 30           | 8,9    | 2,5        | 4         | 1          |
| 41011616 | 16            | BR      | 15           | 10     | 3          | 6         | 0.5        |
| 41010734 | 16            | BR      | 15           | 10     | 3          | 6         | 0.6        |
| 41010408 | 16            | BR      | 15           | 10     | 3          | 6         | 0.8        |
| 41008688 | 16            | BR      | 15           | 10     | 3          | 6         | 1          |
| 41012951 | 16            | BR      | 30           | 10     | 3          | 6         | 0.5        |
| 41010731 | 16            | BR      | 30           | 10     | 3          | 6         | 0.6        |
| 41015844 | 16            | BR      | 30           | 10     | 3          | 6         | 0.7        |
| 41009757 | 16            | BR      | 30           | 10     | 3          | 6         | 0.8        |
| 41010732 | 16            | BR      | 30           | 10     | 3          | 6         | 1          |
| 41015846 | 16            | BR      | 30           | 10     | 3          | 6         | 1.2        |
| 41015877 | 16            | BR      | 15           | 14,5   | 3          | 5         | 0.5        |
| 41010736 | 16            | BR      | 15           | 14,5   | 3          | 5         | 0.6        |
| 41015878 | 16            | BR      | 15           | 14,5   | 3          | 5         | 0.7        |
| 41010737 | 16            | BR      | 15           | 14,5   | 3          | 5         | 0.8        |
| 41008682 | 16            | BR      | 15           | 14,5   | 3          | 5         | 1          |
| 41010738 | 16            | BR      | 15           | 14,5   | 3          | 5         | 1.2        |
| 41015882 | 16            | BR      | 30           | 14,5   | 3          | 5         | 0.5        |
| 41010133 | 16            | BR      | 30           | 14,5   | 3          | 5         | 0.6        |
| 41010750 | 16            | BR      | 30           | 14,5   | 3          | 5         | 0.8        |
| 41010751 | 16            | BR      | 30           | 14,5   | 3          | 5         | 1          |
| 41010299 | 16            | BR      | 30           | 14,5   | 3          | 5         | 1.2        |
| 41011753 | 16            | BR      | 15           | 15     | 4          | 8         | 0.5        |
| 41009252 | 16            | BR      | 15           | 15     | 4          | 8         | 0.6        |
| 41007332 | 16            | BR      | 15           | 15     | 4          | 8         | 0.8        |
| 41007381 | 16            | BR      | 15           | 15     | 4          | 8         | 1          |
| 41010735 | 16            | BR      | 15           | 15     | 4          | 8         | 1.2        |
| 41007423 | 16            | BR      | 15           | 15     | 4          | 8         | 1.5        |
| 41009516 | 16            | BR      | 30           | 15     | 4          | 8         | 0.3        |
| 41015899 | 16            | BR      | 30           | 15     | 4          | 8         | 0.4        |
| 41007309 | 16            | BR      | 30           | 15     | 4          | 8         | 0.5        |
| 41008402 | 16            | BR      | 30           | 15     | 4          | 8         | 0.6        |
| 41010446 | 16            | BR      | 30           | 15     | 4          | 8         | 0.7        |
| 41007045 | 16            | BR      | 30           | 15     | 4          | 8         | 0.8        |
| 41013942 | 16            | BR      | 30           | 15     | 4          | 8         | 0.9        |
| 41007046 | 16            | BR      | 30           | 15     | 4          | 8         | 1          |
| 41008403 | 16            | BR      | 30           | 15     | 4          | 8         | 1.2        |
| 41007230 | 16            | BR      | 30           | 15     | 4          | 8         | 1.5        |

| Item no. | Product group | Profile | Spiral angle | Ø (mm) | Width (mm) | Bore (mm) | Pitch (mm) |
|----------|---------------|---------|--------------|--------|------------|-----------|------------|
| 41010172 | 16            | BR      | 15           | 21,5   | 5          | 8         | 0.8        |
| 41008514 | 16            | BR      | 15           | 21,5   | 5          | 8         | 1          |
| 41010173 | 16            | BR      | 15           | 21,5   | 5          | 8         | 1.2        |
| 41009133 | 16            | BR      | 15           | 21,5   | 5          | 8         | 1.5        |
| 41010746 | 16            | BR      | 30           | 21,5   | 5          | 8         | 0.8        |
| 41008592 | 16            | BR      | 30           | 21,5   | 5          | 8         | 1          |
| 41011088 | 16            | BR      | 15           | 25     | 6          | 8         | 0.5        |
| 41010496 | 16            | BR      | 15           | 25     | 6          | 8         | 0.6        |
| 41009624 | 16            | BR      | 15           | 25     | 6          | 8         | 0.8        |
| 41007047 | 16            | BR      | 15           | 25     | 6          | 8         | 1          |
| 41006374 | 16            | BR      | 15           | 25     | 6          | 8         | 1.2        |
| 41006375 | 16            | BR      | 15           | 25     | 6          | 8         | 1.5        |
| 41008518 | 16            | BR      | 15           | 25     | 6          | 8         | 1.6        |
| 41007301 | 16            | BR      | 15           | 25     | 6          | 8         | 2          |
| 41009788 | 16            | BR      | 30           | 25     | 6          | 8         | 0.5        |
| 41008637 | 16            | BR      | 30           | 25     | 6          | 8         | 0.6        |
| 41007752 | 16            | BR      | 30           | 25     | 6          | 8         | 0.8        |
| 41007465 | 16            | BR      | 30           | 25     | 6          | 8         | 1          |
| 41008240 | 16            | BR      | 30           | 25     | 6          | 8         | 1.2        |
| 41007197 | 16            | BR      | 30           | 25     | 6          | 8         | 1.5        |
| 41014036 | 16            | BR      | 30           | 25     | 6          | 8         | 1.6        |
| 41007369 | 16            | BR      | 30           | 25     | 6          | 8         | 2          |



# SPECIAL KNURLING WHEELS 特殊壓花輪

## Bead knurl – Nr. 60

Note: Please indicate the bead diameter when ordering.



HV

## Conical knurling wheels – Nr. 70

Note: The completeness of the teeth on the workpiece is always dependent on the width / pitch of the knurling wheel.



KAA



KGE



KBR



KBL

## Concave and convex knurling wheels – Nr. 80

\* Only radiuses > 3 mm are possible.



C\*



DL 20° \*



DR 20° \*



E



FL 20°



FR 20°

## Special knurling wheels – Nr. 90 / 92 / 93



Nr. 90



Nr. 92

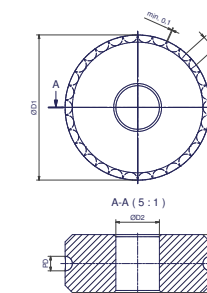


Nr. 93

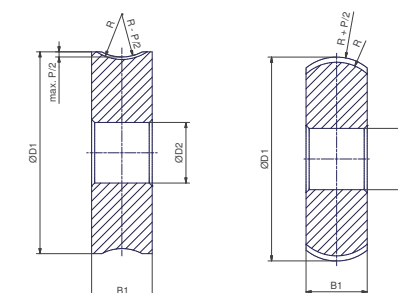
Note: The picture of knurling wheel no. 90 is provided as an example. It represents all special forms not covered by no. 92 (single stepped) and no. 93 (double stepped).

# RADGEOMETRIEN

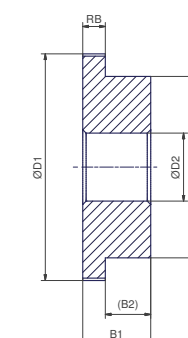
| Designation               | Abbreviation |
|---------------------------|--------------|
| Outer diameter            | D1           |
| Bore diameter             | D2           |
| Width                     | B1           |
| Pitch                     | p            |
| Stepped diameter          | D3           |
| Stepped diameter          | D4           |
| Collar stud bore diameter | D5           |
| Radius                    | R            |
| Total angle               | GW           |



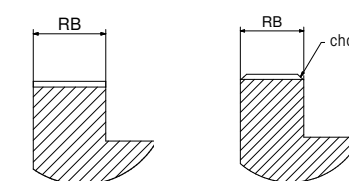
## Bead knurl – Nr. 60



## Concave / convex knurling wheels – Nr. 80

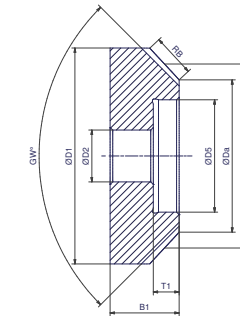


## One-sided stepped knurling wheels – Nr. 92

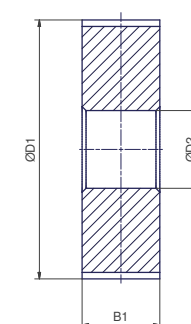


## Knurl width and chamfer

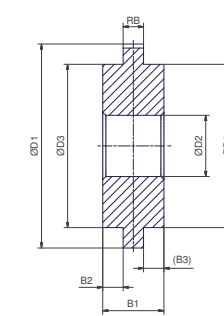
| Designation           | Abbreviation |
|-----------------------|--------------|
| Smallest diameter     | Da           |
| Average diameter      | Dm           |
| Bore depth            | T1           |
| Step width            | B2           |
| Step width            | B3           |
| Knurl width           | RB           |
| Knurl width + chamfer | RBF          |
| Pearl diameter        | PD           |



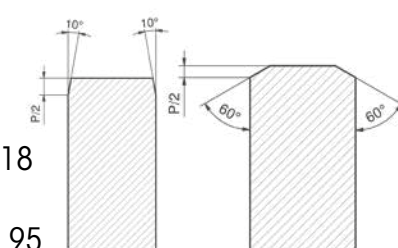
## Conical knurling wheels – Nr. 70



## Special knurling wheels – Nr. 90



## Double-sided stepped knurling wheels – Nr. 93



## With 10° chamfer – Nr. 18

## With 60° chamfer – Nr. 95