



# API Ring Groover



**The Most Economical Way to Make API Ring Grooves**

**Ideal for high pressure and high temperature applications  
in the oil, gas, and petrochemical industries**

**Free cutting geometry with adjustable cartridges and  
reliable repeatability giving you lower costs per cut**



# API Ring Groover

Kyocera is the only choice for economical ring groovers.

Featuring an integral shank for maximum rigidity, Kyocera's API Ring Groovers are the most versatile ring grooving tools on the market.

## 1 Advantages

Create ring grooves per API Spec 6A for BX, R, and RX style grooves

Roughout and finish of inlay of API Ring Grooves

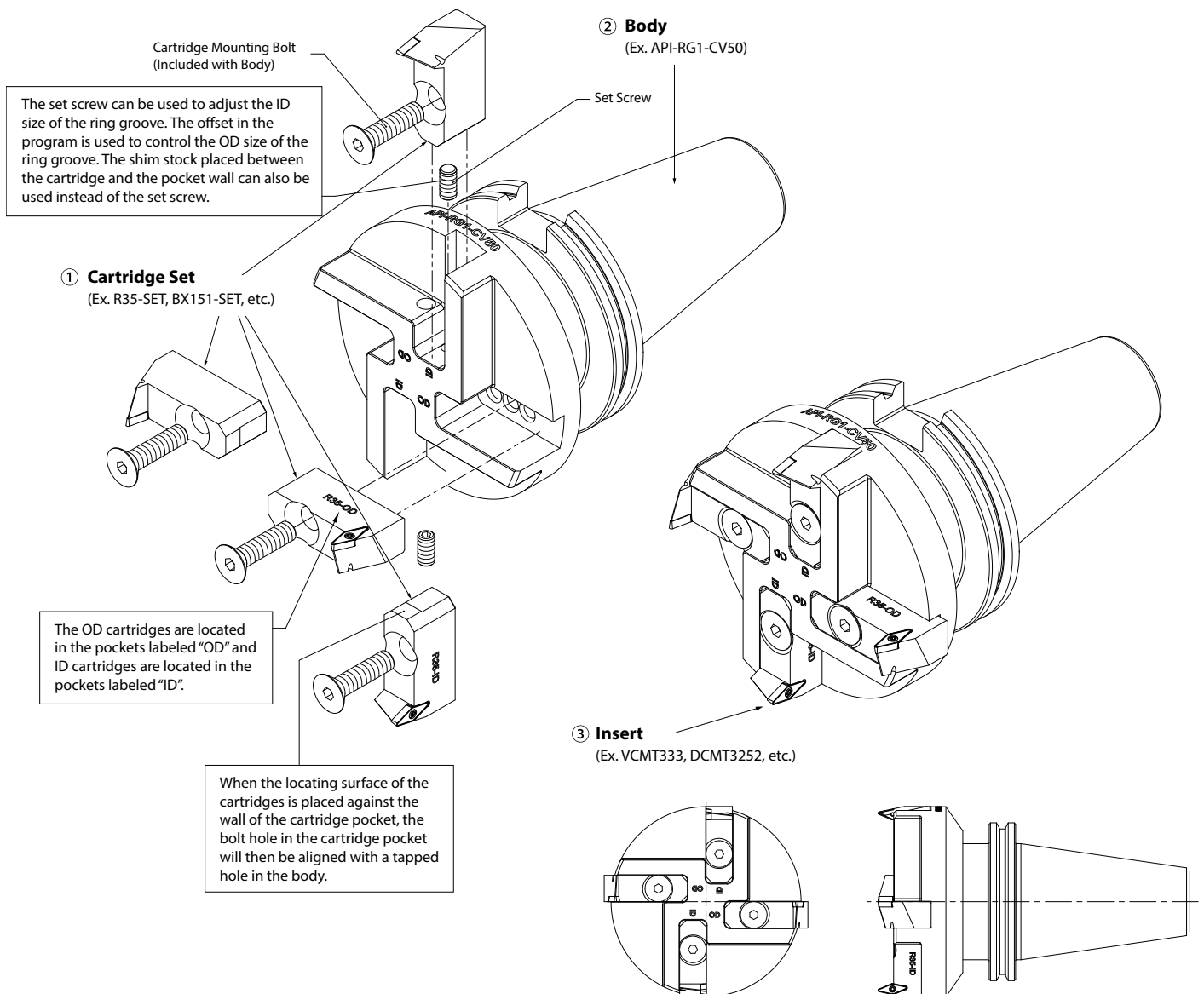
Replaceable cartridges allow a single cutter body to produce multiple size API grooves

Integral shank, multiple sizes and styles available

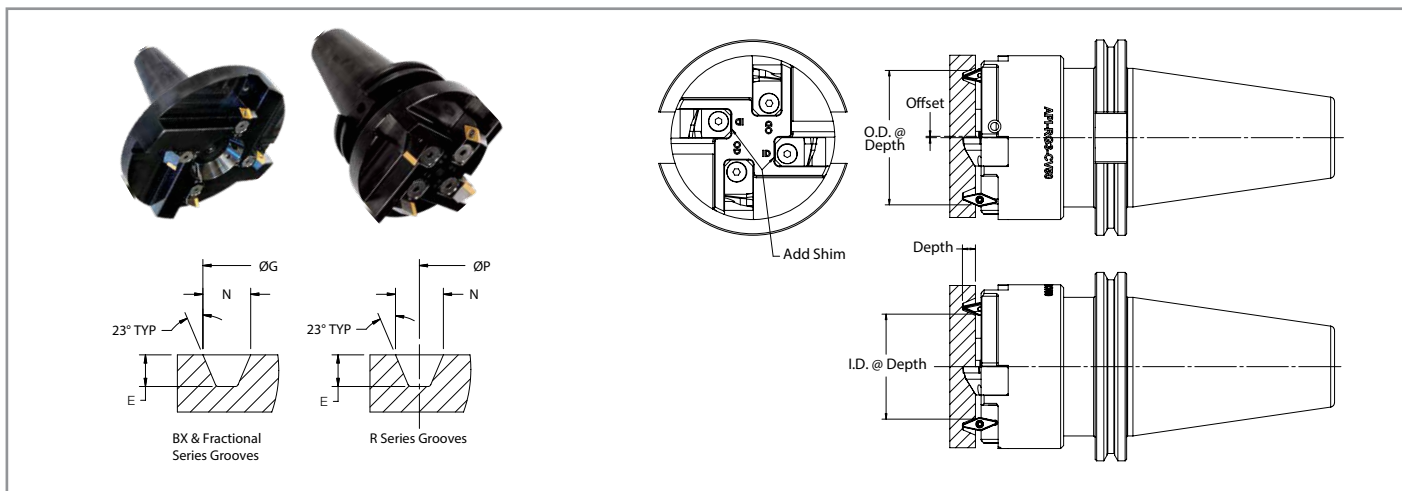
## 2 How to Order

### 3 Line Items, Ordered Separately

- ① Choose Cartridge Set (2 OD & 2 ID)
- ② Choose Body
- ③ Choose Inserts



# API Ring Groover (Body & Cartridges)



## Ring / Cartridge Set Dimensions

| Ring Specification | Cartridge Set Part Number (Choose Set) | Stock | No. of Inserts | No. of Flutes | Dimensions (in) |       |       |       |       |       |       | Roughout Cartridges  | Applicable Body Part Number  |
|--------------------|--|-------|----------------|---------------|-----------------|-------|-------|-------|-------|-------|-------|--|--|
|                    |  |       |                |               | Offset          | Pitch | OD    | Width | Depth | OD    | ID    |  |  |
|                    |  |       |                |               |                 | P     | G     | N     | E     | Depth | Depth |  |  |
| BX-150             | BX150-SET                              | ●     | 4              | 2             | 0.061           | -     | 2.893 | 0.450 | 0.220 | 2.771 | 2.115 | -  | API-RG-3-CV40<br>API-RG-3-CV50<br>API-RG-3-BT50<br>API-RG-3-DIN-69871                  |
| BX-150-R           | BX150-R-SET                            | ●     | 4              | 1             | 0.097           | -     | 3.341 | 0.841 | 0.485 | 3.147 | 1.853 | Yes  | API-RG-1-CV40<br>API-RG-1-CV50<br>API-RG-1-BT50<br>API-RG-1-BT40<br>API-RG-1-DIN-69871 |
| BX-151             | BX151-SET                              | ●     | 4              | 2             | 0.065           | -     | 3.062 | 0.466 | 0.220 | 2.932 | 2.260 | -  | API-RG-3-CV40<br>API-RG-3-CV50<br>API-RG-3-BT50<br>API-RG-3-DIN-69871                  |
| BX-151-R           | BX151-R-SET                            | ●     | 4              | 1             | 0.097           | -     | 3.496 | 0.846 | 0.485 | 3.302 | 1.998 | Yes  | API-RG-1-CV40<br>API-RG-1-CV50<br>API-RG-1-BT50<br>API-RG-1-BT40<br>API-RG-1-DIN-69871 |
| BX-152             | BX152-SET                              | ●     | 4              | 2             | 0.069           | -     | 3.395 | 0.498 | 0.230 | 3.257 | 2.537 | -  | API-RG-3-CV40<br>API-RG-3-CV50<br>API-RG-3-BT50<br>API-RG-3-DIN-69871                  |
| BX-152-R           | BX152-R-SET                            | ●     | 4              | 1             | 0.091           | -     | 3.826 | 0.876 | 0.505 | 3.644 | 2.256 | Yes  | API-RG-1-CV40<br>API-RG-1-CV50<br>API-RG-1-BT50<br>API-RG-1-BT40<br>API-RG-1-DIN-69871 |
| BX-153             | BX153-SET                              | ●     | 4              | 2             | 0.077           | -     | 4.046 | 0.554 | 0.270 | 3.892 | 3.092 | -  | API-RG-3-CV40<br>API-RG-3-CV50<br>API-RG-3-BT50<br>API-RG-3-DIN-69871                  |
| BX-153-R           | BX153-R-SET                            | ●     | 4              | 1             | 0.110           | -     | 4.486 | 0.936 | 0.535 | 4.266 | 2.834 | Yes  | API-RG-1-CV40<br>API-RG-1-CV50<br>API-RG-1-BT50<br>API-RG-1-BT40<br>API-RG-1-DIN-69871 |
| BX-154             | BX154-SET                              | ●     | 4              | 2             | 0.083           | -     | 4.685 | 0.606 | 0.300 | 4.519 | 3.639 | -  | API-RG-2-CV50<br>API-RG-2-BT50<br>API-RG-2-DIN-69871                                   |
| BX-154-R           | BX154-R-SET                            | ●     | 4              | 1             | 0.112           | -     | 5.116 | 0.971 | 0.570 | 4.892 | 3.398 | Yes  | API-RG-1-CV40<br>API-RG-1-CV50<br>API-RG-1-BT50<br>API-RG-1-BT40<br>API-RG-1-DIN-69871 |
| BX-155             | BX155-SET                              | ●     | 4              | 2             | 0.100           | -     | 5.930 | 0.698 | 0.330 | 5.730 | 4.734 | -  | API-RG-3-CV40<br>API-RG-3-CV50<br>API-RG-3-BT50<br>API-RG-3-DIN-69871                  |
| BX-155-R           | BX155-R-SET                            | ●     | 4              | 1             | 0.223           | -     | 6.366 | 1.076 | 0.595 | 5.920 | 4.660 | Yes  | API-RG-1-CV40<br>API-RG-1-CV50<br>API-RG-1-BT50<br>API-RG-1-BT40<br>API-RG-1-DIN-69871 |
| BX-156             | BX156-SET                              | ●     | 4              | 2             | 0.132           | -     | 9.521 | 0.921 | 0.440 | 9.257 | 7.943 | -  | API-RG-2-CV50<br>API-RG-2-BT50<br>API-RG-2-DIN-69871                                   |
| BX-156-R           | BX156-R-SET                            | ●     | 4              | 1             | 0.166           | -     | 9.956 | 1.306 | 0.710 | 9.624 | 7.676 | Yes  | API-RG-4-CV50<br>API-RG-4-BT50<br>API-RG-4-DIN-69871                                   |
| BX-169             | BX169-SET                              | ●     | 4              | 2             | 0.081           | -     | 6.955 | 0.666 | 0.380 | 6.793 | 5.785 | -  | API-RG-3-CV40<br>API-RG-3-CV50<br>API-RG-3-BT50<br>API-RG-3-DIN-69871                  |
| R-16               | R16-SET                                | ●     | 4              | 2             | 0.026           | 2.000 | -     | 0.344 | 0.250 | 2.292 | 1.708 | -  | API-RG-1-CV40<br>API-RG-1-CV50<br>API-RG-1-BT50<br>API-RG-1-BT40<br>API-RG-1-DIN-69871 |
| R-18               | R18-SET                                | ●     | 4              | 2             | 0.026           | 2.375 | -     | 0.344 | 0.250 | 2.667 | 2.083 | -  | API-RG-2-CV50<br>API-RG-2-BT50<br>API-RG-2-DIN-69871                                   |
| R-20               | R20-SET                                | ●     | 4              | 2             | 0.026           | 2.688 | -     | 0.344 | 0.250 | 2.980 | 2.396 | -  | API-RG-1-CV40<br>API-RG-1-CV50<br>API-RG-1-BT50<br>API-RG-1-BT40<br>API-RG-1-DIN-69871 |
| R-23               | R23-SET                                | ●     | 4              | 2             | 0.046           | 3.250 | -     | 0.469 | 0.310 | 3.627 | 2.873 | -  | API-RG-2-CV50<br>API-RG-2-BT50<br>API-RG-2-DIN-69871                                   |
| R-23-R             | R23-R-SET                              | ●     | 4              | 1             | 0.081           | 3.300 | -     | 0.856 | 0.575 | 3.994 | 2.606 | Yes  | API-RG-1-CV40<br>API-RG-1-CV50<br>API-RG-1-BT50<br>API-RG-1-BT40<br>API-RG-1-DIN-69871 |
| R-24               | R24-SET                                | ●     | 4              | 2             | 0.046           | 3.750 | -     | 0.469 | 0.310 | 4.127 | 3.373 | -  | API-RG-3-CV40<br>API-RG-3-CV50<br>API-RG-3-BT50<br>API-RG-3-DIN-69871                  |
| R-24-R             | R24-R-SET                              | ●     | 4              | 1             | 0.077           | 3.800 | -     | 0.871 | 0.590 | 4.517 | 3.083 | Yes  | API-RG-1-CV40<br>API-RG-1-CV50<br>API-RG-1-BT50<br>API-RG-1-BT40<br>API-RG-1-DIN-69871 |
| R-26               | R26-SET                                | ●     | 4              | 2             | 0.046           | 4.000 | -     | 0.469 | 0.310 | 4.377 | 3.623 | -  | API-RG-2-CV50<br>API-RG-2-BT50<br>API-RG-2-DIN-69871                                   |
| R-27               | R27-SET                                | ●     | 4              | 2             | 0.046           | 4.250 | -     | 0.469 | 0.310 | 4.627 | 3.873 | -  | API-RG-1-CV40<br>API-RG-1-CV50<br>API-RG-1-BT50<br>API-RG-1-BT40<br>API-RG-1-DIN-69871 |
| R-31               | R31-SET                                | ●     | 4              | 2             | 0.044           | 4.875 | -     | 0.469 | 0.310 | 5.256 | 4.494 | -  | API-RG-3-CV40<br>API-RG-3-CV50<br>API-RG-3-BT50<br>API-RG-3-DIN-69871                  |
| R-31-R             | R31-R-SET                              | ●     | 4              | 1             | 0.072           | 4.920 | -     | 0.856 | 0.575 | 5.632 | 4.208 | Yes  | API-RG-2-CV50<br>API-RG-2-BT50<br>API-RG-2-DIN-69871                                   |
| R-35               | R35-SET                                | ●     | 4              | 2             | 0.046           | 5.375 | -     | 0.469 | 0.310 | 5.752 | 4.998 | -  | API-RG-1-CV40<br>API-RG-1-CV50<br>API-RG-1-BT50<br>API-RG-1-BT40<br>API-RG-1-DIN-69871 |
| R-35-R             | R35-R-SET                              | ●     | 4              | 1             | 0.081           | 5.420 | -     | 0.856 | 0.575 | 6.114 | 4.726 | Yes  | API-RG-3-CV40<br>API-RG-3-CV50<br>API-RG-3-BT50<br>API-RG-3-DIN-69871                  |
| R-37               | R37-SET                                | ●     | 4              | 2             | 0.046           | 5.875 | -     | 0.469 | 0.310 | 6.252 | 5.498 | -  | API-RG-2-CV50<br>API-RG-2-BT50<br>API-RG-2-DIN-69871                                   |
| R-39               | R39-SET                                | ●     | 4              | 2             | 0.046           | 6.375 | -     | 0.469 | 0.310 | 6.752 | 5.998 | -  | API-RG-1-CV40<br>API-RG-1-CV50<br>API-RG-1-BT50<br>API-RG-1-BT40<br>API-RG-1-DIN-69871 |
| R-39-R             | R39-R-SET                              | ●     | 4              | 1             | 0.081           | 6.420 | -     | 0.856 | 0.575 | 7.114 | 5.726 | Yes  | API-RG-3-CV40<br>API-RG-3-CV50<br>API-RG-3-BT50<br>API-RG-3-DIN-69871                  |
| R-41               | R41-SET                                | ●     | 4              | 2             | 0.046           | 7.125 | -     | 0.469 | 0.310 | 7.502 | 6.748 | -  | API-RG-2-CV50<br>API-RG-2-BT50<br>API-RG-2-DIN-69871                                   |
| R-44               | R44-SET                                | ●     | 4              | 2             | 0.046           | 7.625 | -     | 0.469 | 0.310 | 8.002 | 7.248 | -  | API-RG-1-CV40<br>API-RG-1-CV50<br>API-RG-1-BT50<br>API-RG-1-BT40<br>API-RG-1-DIN-69871 |
| R-44-R             | R44-R-SET                              | ●     | 4              | 1             | 0.071           | 7.670 | -     | 0.856 | 0.575 | 8.384 | 6.956 | Yes  | API-RG-3-CV40<br>API-RG-3-CV50<br>API-RG-3-BT50<br>API-RG-3-DIN-69871                  |
| R-45               | R45-SET                                | ●     | 4              | 2             | 0.046           | 8.313 | -     | 0.469 | 0.310 | 8.690 | 7.936 | -  | API-RG-2-CV50<br>API-RG-2-BT50<br>API-RG-2-DIN-69871                                   |
| R-46               | R46-SET                                | ●     | 4              | 2             | 0.048           | -     | 0.531 | 0.380 | 8.748 | 7.878 | -     | API-RG-1-CV40<br>API-RG-1-CV50<br>API-RG-1-BT50<br>API-RG-1-BT40<br>API-RG-1-DIN-69871 |  |
| R-46-R             | R46-R-SET                              | ●     | 4              | 1             | 0.082           | 8.360 | -     | 0.916 | 0.645 | 9.112 | 7.608 | Yes  | API-RG-3-CV40<br>API-RG-3-CV50<br>API-RG-3-BT50<br>API-RG-3-DIN-69871                  |
| 1-13/16            | 1-13/16-SET                            | ●     | 4              | 2             | 0.034           | -     | 4.373 | 0.377 | 0.258 | 4.305 | 3.687 | -  | API-RG-2-CV50<br>API-RG-2-BT50<br>API-RG-2-DIN-69871                                   |
| 2-1/16-10K         | 2-1/16-10K-SET                         | ●     | 4              | 2             | 0.034           | -     | 4.623 | 0.377 | 0.258 | 4.555 | 3.937 | -  | API-RG-1-CV40<br>API-RG-1-CV50<br>API-RG-1-BT50<br>API-RG-1-BT40<br>API-RG-1-DIN-69871 |
| 2-9/16-15K         | 2-9/16-15K-SET                         | □     | 4              | 2             | 0.034           | -     | 5.873 | 0.377 | 0.258 | 5.805 | 5.187 | -  | API-RG-3-CV40<br>API-RG-3-CV50<br>API-RG-3-BT50<br>API-RG-3-DIN-69871                  |
| 3-1/16-10K         | 3-1/16-10K-SET                         | ●     | 4              | 2             | 0.034           | -     | 5.748 | 0.377 | 0.258 | 5.680 | 5.062 | -  | API-RG-2-CV50<br>API-RG-2-BT50<br>API-RG-2-DIN-69871                                   |
| 4-1/16-10K         | 4-1/16-10K-SET                         | ●     | 4              | 2             | 0.034           | -     | 7.123 | 0.377 | 0.258 | 7.055 | 6.437 | -  | API-RG-1-CV40<br>API-RG-1-CV50<br>API-RG-1-BT50<br>API-RG-1-BT40<br>API-RG-1-DIN-69871 |
| 5-1/8-10K          | 5-1/8-10K-SET                          | ●     | 4              | 2             | 0.034           | -     | 8.748 | 0.377 | 0.258 | 8.680 | 8.062 | -  | API-RG-3-CV40<br>API-RG-3-CV50<br>API-RG-3-BT50<br>API-RG-3-DIN-69871                  |

## Applicable Body Stock

| Body Part Number (Choose Body) | Stock | Shank    | Body Spare Parts |           |
|--------------------------------|-------|----------|------------------|-----------|
|                                |       |          | Mounting Bolt    | Set Screw |
| API-RG-1-CV40                  | ●     | CAT40    |                  |           |
| API-RG-1-CV50                  | ●     | CAT50    |                  |           |
| API-RG-1-BT50                  | ●     | BT50     | 01-05            | 01-08     |
| API-RG-1-BT40                  | □     | BT40     |                  |           |
| API-RG-1-DIN-69871             | □     | DIN69871 |                  |           |
| API-RG-2-CV40                  | ●     | CAT40    |                  |           |
| API-RG-2-CV50                  | ●     | CAT50    |                  |           |
| API-RG-2-BT50                  | ●     | BT50     | 01-05            | 01-08     |
| API-RG-2-DIN-69871             | □     | DIN69871 |                  |           |
| API-RG-3-CV40                  | ●     | CAT40    |                  |           |
| API-RG-3-CV50                  | ●     | CAT50    |                  |           |
| API-RG-3-BT50                  | □     | BT50     | 01-06            | 01-09     |
| API-RG-3-DIN-69871             | □     | DIN69871 |                  |           |
| API-RG-4-CV50                  | ●     | CAT50    |                  |           |
| API-RG-4-BT50                  | □     | BT50     | 01-07            | 01-10     |
| API-RG-4-DIN-69871             | □     | DIN69871 |                  |           |



### Note



The OD and ID dimensions are to set the cut diameter of a given cartridge set using a presetter. The dimensions are the cut diameter of the tool at the depth of the ring groove. By setting zero at the nose radius then moving the presetter to the depth of the API groove the OD and ID can be preset to the dimensions shown.

See illustration on **Page 2**

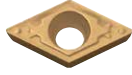


# API Ring Groover (Cartridge Spare Parts & Applicable Inserts)

## Cartridge Set Spare Parts & Applicable Inserts

| Ring Specification | Cartridge Set Part Number | Spare Parts  |   | ③<br>Applicable Inserts<br>Choose Inserts |     |          |
|--------------------|---------------------------|--|---|---|-----|----------|
|                    |                           | Clamp Screw<br> | Wrench<br> |   |     |          |
| BX-150             | BX150-SET                 | SCR-02   | T15   | DCMT3252                                  |     |          |
| BX-150-R           | BX150-R-SET               |  |   | DCMT3253                                  |     |          |
| BX-151             | BX151-SET                 |  |   | DCMT3252                                  |     |          |
| BX-151-R           | BX151-R-SET               |  |   | DCMT3253                                  |     |          |
| BX-152             | BX152-SET                 |  |   | DCMT3252                                  |     |          |
| BX-152-R           | BX152-R-SET               |  |   | DCMT3253                                  |     |          |
| BX-153             | BX153-SET                 |  |   | DCMT3252                                  |     |          |
| BX-153-R           | BX153-R-SET               |  |   | DCMT3253                                  |     |          |
| BX-154             | BX154-SET                 |  |   | DCMT3252                                  |     |          |
| BX-154-R           | BX154-R-SET               |  |   | DCMT3253                                  |     |          |
| BX-155             | BX155-SET                 |  |   | DCMT3252                                  |     |          |
| BX-155-R           | BX155-R-SET               |  |   | VCMT333                                   |     |          |
| BX-156             | BX156-SET                 |  |   | VCMT332                                   |     |          |
| BX-156-R           | BX156-R-SET               |  |   | VCMT333                                   |     |          |
| BX-169             | BX169-SET                 |  |   | VCMT332                                   |     |          |
| R-16               | R16-SET                   |  |   | SCR-01                                    | T7  | VCMT222  |
| R-18               | R18-SET                   |  |   |   |     | VCMT222  |
| R-20               | R20-SET                   |  |   |   |     | VCMT222  |
| R-23               | R23-SET                   |  |   | SCR-02                                    | T15 | DCMT3252 |
| R-23-R             | R23-R-SET                 | VCMT333  |   |   |     |          |
| R-24               | R24-SET                   | DCMT3252   |   |   |     |          |
| R-24-R             | R24-R-SET                 | VCMT333  |   |   |     |          |

| Ring Specification | Cartridge Set Part Number | Spare Parts  |   | ③<br>Applicable Inserts<br>Choose Inserts |    |         |
|--------------------|---------------------------|--|---|---|----|---------|
|                    |                           | Clamp Screw<br> | Wrench<br> |   |    |         |
| R-26               | R26-SET                   | SCR-02   | T15   | DCMT3252                                  |    |         |
| R-27               | R27-SET                   |  |   | DCMT3252                                  |    |         |
| R-31               | R31-SET                   |  |   | DCMT3252                                  |    |         |
| R-31-R             | R31-R-SET                 |  |   | VCMT333                                   |    |         |
| R-35               | R35-SET                   |  |   | DCMT3252                                  |    |         |
| R-35-R             | R35-R-SET                 |  |   | VCMT333                                   |    |         |
| R-37               | R37-SET                   |  |   | DCMT3252                                  |    |         |
| R-39               | R39-SET                   |  |   | DCMT3252                                  |    |         |
| R-39-R             | R39-R-SET                 |  |   | VCMT333                                   |    |         |
| R-41               | R41-SET                   |  |   | DCMT3252                                  |    |         |
| R-44               | R44-SET                   |  |   | DCMT3252                                  |    |         |
| R-44-R             | R44-R-SET                 |  |   | VCMT333                                   |    |         |
| R-45               | R45-SET                   |  |   | DCMT3252                                  |    |         |
| R-46               | R46-SET                   |  |   | VCMT333                                   |    |         |
| R-46-R             | R46-R-SET                 |  |   | VCMT333                                   |    |         |
| 1-13/16            | 1-13/16-SET               |  |   | SCR-01                                    | T7 | VCMT222 |
| 2-1/16-10K         | 2-1/16-10K-SET            |  |   |   |    | VCMT222 |
| 2-9/16-15K         | 2-9/16-15K-SET            |  |   |   |    | VCMT222 |
| 3-1/16-10K         | 3-1/16-10K-SET            |  |   |   |    | VCMT222 |
| 4-1/16-10K         | 4-1/16-10K-SET            | VCMT222  |   |   |    |         |
| 5-1/8-10K          | 5-1/8-10K-SET             | VCMT222  |   |   |    |         |

## Applicable Inserts

| Insert<br>(Right-hand Shown)  | ANSI Part Number | ISO Part Number | Dimensions (in) |      |       | Angle (°) | Insert Grades |                    |               |        |                         |        |                    |
|---|------------------|-----------------|-----------------|------|-------|-----------|---------------|--------------------|---------------|--------|-------------------------|--------|--------------------|
|   |                  |                 | I.C. (A)        | T    | ød    |           | rε            | CVD Coated Carbide |               |        | MEGACOAT Coated Carbide |        | PVD Coated Carbide |
|   |                  |                 |                 |      |       |           |               | CA525              | CA5525        | CA6525 | PR1225                  | PR1425 | PR660              |
|  | DCMT 3252HQ      | DCMT 11T308HQ   | 3/8             | 5/32 | 0.173 | 1/32      | 7°            | ●                  | ●             | ●      |                         | ●      | ●                  |
|  |                  |                 |                 |      |       |           |               | DCMT 3253CQ        | DCMT 11T312CQ | 3/8    | 5/32                    | 0.173  | 3/64               |
|  | VCMT 222HQ       | VCMT 110308HQ   | 1/4             | 1/8  | 0.110 | 1/32      | 7°            |                    |               |        |                         | ●      |                    |
|   | VCMT 332HQ       | VCMT 160408HQ   | 3/8             | 3/16 | 0.173 | 1/32      | 7°            | ●                  | ●             | ●      |                         |        | ●                  |
|   | VCMT 333HQ       | VCMT 160412HQ   | 3/8             | 3/16 | 0.173 | 3/64      | 7°            |                    |               |        |                         | ●      |                    |

## Sample CNC Program for the API Ring Groover

● : U.S. Stock

|  |   |
|--|---|
| <p>Sample is shown without cutter comp.<br/> N10 (Incremental Program)<br/> N20 G00 X (As required) Y (As required) Z.100 M03 S (As required)<br/> N30 G01 Z0.0 F100<br/> N40 G91 -Y (Offset) Z-.100 F (As required)<br/> N50 G03 J (Offset) Z-.100 F (As required)<br/> N60 G03 J (Offset) Z-.100<br/> Continue to Depth<br/> Last Pass<br/> N90 G03 J (Offset) Z0.00</p> | <p>Use 0.03 Depth in Z for Inconel and<br/> 0.04 Depth in Z for Steel</p> |
|--|---|



**KYOCERA Precision Tools, Inc.**

102 Industrial Park Road  
Hendersonville, NC 28792  
Customer Service | 800.823.7284 - Option 1  
Technical Support | 800.823.7284 - Option 2



Official Website | [www.kyoceraprecisiontools.com](http://www.kyoceraprecisiontools.com)  
Distributor Website | [mykpti.kyocera.com](http://mykpti.kyocera.com)  
Email | [cuttingtools@kyocera.com](mailto:cuttingtools@kyocera.com)

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