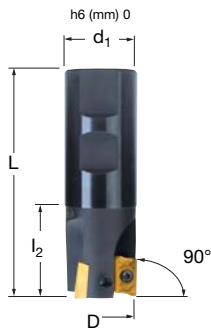
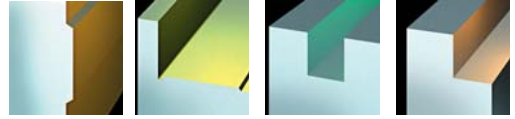
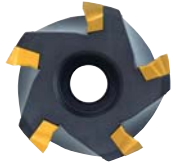
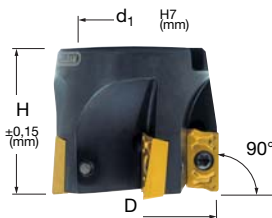


# 7690 VA 16 Milling Cutter



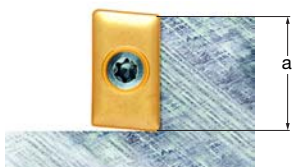
Weldon Shank



Shell Mill Fixation



Morse Taper Shank



Depth of Cut (a)

## 7690 VA 16 Weldon Shank

| EDP #  | Part Number      | Dimensions (mm) |     |                |                |                |                   |      | No. of Inserts | Spares |        |     |
|--------|------------------|-----------------|-----|----------------|----------------|----------------|-------------------|------|----------------|--------|--------|-----|
|        |                  | D               | L/H | l <sub>2</sub> | l <sub>3</sub> | d <sub>1</sub> | a <sub>max.</sub> | EDP# |                | EDP#   | EDP#   |     |
| 021707 | 7690VA 16 WA025R | 25              | 96  | 40             | -              | 25             | 16                | 2    | 015260         | D4008T | 015240 | T15 |
| 021708 | 7690VA 16 WA032R | 32              | 100 | 40             | -              | 32             | 16                | 3    | 015262         | D4010T | 015240 | T15 |
| 021709 | 7690VA 16 WA040R | 40              | 110 | 50             | -              | 32             | 16                | 4    | 015262         | D4010T | 015240 | T15 |

## 7690 VA 16 Shell Mill Fixation

| EDP #  | Part Number      | Dimensions (mm) |     |                |                |                |                   |      | No. of Inserts | Spares |        |     |
|--------|------------------|-----------------|-----|----------------|----------------|----------------|-------------------|------|----------------|--------|--------|-----|
|        |                  | D               | L/H | l <sub>2</sub> | l <sub>3</sub> | d <sub>1</sub> | a <sub>max.</sub> | EDP# |                | EDP#   | EDP#   |     |
| 017985 | 7690VA 16 -A040R | 40              | 40  | -              | -              | 16             | 16                | 4    | 015262         | D4010T | 015240 | T15 |
| 021700 | 7690VA 16 -A050R | 50              | 40  | -              | -              | 22             | 16                | 5    | 015262         | D4010T | 015240 | T15 |
| 021701 | 7690VA 16 -A063R | 63              | 40  | -              | -              | 22             | 16                | 5    | 015262         | D4010T | 015240 | T15 |
| 021702 | 7690VA 16 -A080R | 80              | 50  | -              | -              | 27             | 16                | 6    | 015262         | D4010T | 015240 | T15 |
| 021703 | 7690VA 16 -A100R | 100             | 50  | -              | -              | 32             | 16                | 7    | 015262         | D4010T | 015240 | T15 |
| 021704 | 7690VA 16 -A125R | 125             | 63  | -              | -              | 40             | 16                | 8    | 015262         | D4010T | 015240 | T15 |

## 7690 VA 16 Morse Taper Shank

| EDP #  | Part Number     | Dimensions (mm) |     |                |                |                |                   |      | No. of Inserts | Spares |        |     |
|--------|-----------------|-----------------|-----|----------------|----------------|----------------|-------------------|------|----------------|--------|--------|-----|
|        |                 | D               | L/H | l <sub>2</sub> | l <sub>3</sub> | d <sub>1</sub> | a <sub>max.</sub> | EDP# |                | EDP#   | EDP#   |     |
| 018291 | 7690VA 16 M025R | 25              | 124 | 38             | 43             | MT3            | 16                | 2    | 015260         | D4008T | 015240 | T15 |
| 021705 | 7690VA 16 M032R | 32              | 124 | 38             | 43,5           | MT3            | 16                | 3    | 015262         | D4010T | 015240 | T15 |
| 021706 | 7690VA 16 M040R | 40              | 157 | 48             | 54,5           | MT4            | 16                | 4    | 015262         | D4010T | 015240 | T15 |



## 7690 VA 16 Technical Advice

Milling Cutter Order Example: **7690VA16WA025R**  
 Milling Insert Order Example: **APHT1604PDTR-42 PFZ**  
 For complete cutting conditions refer to page: **264**

When using inserts with a radius larger than 2 mm, the cutter body has to be modified.

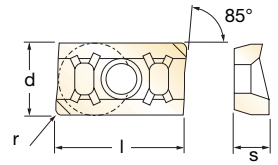
## AP\_16 Recommended Cutting Conditions

| Material                  | ▼ Roughing                   |                          |                            | ▼ Semi-Finishing             |                          |                            | ▼ Finishing                  |                          |                            |
|---------------------------|------------------------------|--------------------------|----------------------------|------------------------------|--------------------------|----------------------------|------------------------------|--------------------------|----------------------------|
|                           | Speed V <sub>C</sub> (m/min) | Feed h <sub>m</sub> (mm) | D.O.C. a <sub>p</sub> (mm) | Speed V <sub>C</sub> (m/min) | Feed h <sub>m</sub> (mm) | D.O.C. a <sub>p</sub> (mm) | Speed V <sub>C</sub> (m/min) | Feed h <sub>m</sub> (mm) | D.O.C. a <sub>p</sub> (mm) |
| ◆ Unalloyed Steels        | 180 - 220                    | 0,14 - 0,40              | 8,0 - 16,0                 | 220 - 260                    | 0,12 - 0,35              | 3,0 - 8,0                  | 220 - 300                    | 0,15 - 0,45              | 0,2 - 3,0                  |
| ◆ Alloyed Steels          | 70 - 110                     | 0,14 - 0,35              | 8,0 - 16,0                 | 100 - 150                    | 0,12 - 0,30              | 3,0 - 8,0                  | 100 - 195                    | 0,15 - 0,40              | 0,2 - 3,0                  |
| ◆ Stainless Steels        | -                            | -                        | -                          | 140 - 180                    | 0,12 - 0,25              | 3,0 - 8,0                  | 180 - 230                    | 0,15 - 0,28              | 0,2 - 3,0                  |
| ◆ PH Stainless            | -                            | -                        | -                          | 70 - 85                      | 0,10 - 0,20              | 3,0 - 8,0                  | 80 - 100                     | 0,10 - 0,20              | 0,2 - 3,0                  |
| ◆ Cast Irons              | 140 - 280                    | 0,14 - 0,28              | 8,0 - 16,0                 | 180 - 300                    | 0,12 - 0,25              | 3,0 - 8,0                  | 200 - 350                    | 0,18 - 0,30              | 0,2 - 3,0                  |
| ◆ Aluminium & Alloys      | 275 - 450                    | 0,06 - 0,25              | 8,0 - 16,0                 | 400 - 750                    | 0,04 - 0,20              | 3,0 - 8,0                  | 700 - 1000                   | 0,08 - 0,30              | 0,2 - 3,0                  |
| ◆ High Temp. Alloys       | -                            | -                        | -                          | 35 - 50                      | 0,10 - 0,20              | 3,0 - 8,0                  | 45 - 60                      | 0,10 - 0,20              | 0,2 - 3,0                  |
| ◆ Hard Steels (52-56 HRC) | -                            | -                        | -                          | 50 - 85                      | 0,04 - 0,08              | 1,5 - 3,5                  | 50 - 100                     | 0,06 - 0,10              | 0,2 - 1,5                  |

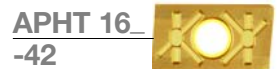
h<sub>m</sub> = average chip thickness



# Inserts for 7690 VA 16



| EDP#   | Part Number        | Grade  | Application & Material |                      |                  | Dimensions (mm) |       |      |       |                    |
|--------|--------------------|--------|------------------------|----------------------|------------------|-----------------|-------|------|-------|--------------------|
|        |                    |        | Roughing<br>▼          | Semi-Finishing<br>▼▼ | Finishing<br>▼▼▼ | d               | l     | s    | r     | h <sub>m</sub> min |
| 017621 | APEX 16 04PDER-701 | PFZ    |                        |                      |                  | 9,52            | 16,66 | 4,76 | Facet | 0,02               |
| 017623 | APEX 16 04PDR-701  | SFZ    |                        |                      |                  | 9,52            | 16,66 | 4,76 | Facet | 0,02               |
| 014066 | APEX 16 04PDR-701  | GH1    |                        |                      |                  | 9,52            | 16,66 | 4,76 | Facet | 0,02               |
| 017291 | APFW 16 04PDER     | MP91M  |                        |                      |                  | 9,52            | 16,66 | 4,76 | Facet | 0,04               |
| 017627 | APFW 16 04PDTR     | X44    |                        |                      |                  | 9,52            | 16,66 | 4,76 | Facet | 0,1                |
| 017628 | APFW 16 04PDTR     | GH1    |                        |                      |                  | 9,52            | 16,66 | 4,76 | Facet | 0,1                |
| 018030 | APFW 16 04PDTR     | CN35   |                        |                      |                  | 9,52            | 16,66 | 4,76 | Facet | 0,1                |
| 017626 | APFW 16 04PDTR     | SF30   |                        |                      |                  | 9,52            | 16,66 | 4,76 | Facet | 0,1                |
| 017629 | APFW 16 04PDTR     | SFZ    |                        | ◆                    | ◆                | 9,52            | 16,66 | 4,76 | Facet | 0,1                |
| 017633 | APHT 16 04PDER     | SFZ    |                        |                      |                  | 9,52            | 16,66 | 4,76 | Facet | 0,05               |
| 015154 | APHT 16 04PDR      | GH1    | ◆                      | ◆                    | ◆                | 9,52            | 16,66 | 4,76 | Facet | 0,02               |
| 017293 | APHT 16 04PDTR-42  | MP91M  |                        |                      |                  | 9,52            | 16,66 | 4,76 | Facet | 0,1                |
| 017634 | APHT 16 04PDTR-42  | PFZ    |                        |                      |                  | 9,52            | 16,66 | 4,76 | Facet | 0,1                |
| 015155 | APHT 16 04PDTR-42  | X500   |                        |                      |                  | 9,52            | 16,66 | 4,76 | Facet | 0,1                |
| 027718 | APHT 16 04PDTR-42  | SP6564 |                        |                      |                  | 9,52            | 16,66 | 4,76 | Facet | 0,1                |
| 011649 | APKT 16 04PDER-3M  | MP91M  |                        |                      |                  | 9,52            | 16,66 | 4,76 | Facet | 0,1                |
| 017294 | APKT 16 04PDER-43  | MP91M  | ◆                      |                      |                  | 9,52            | 16,66 | 4,76 | Facet | 0,08               |
| 014067 | APKT 16 04PDER-43  | PFZ    |                        |                      |                  | 9,52            | 16,66 | 4,76 | Facet | 0,08               |
| 015156 | APKT 16 04PDER-43  | X500   |                        |                      |                  | 9,52            | 16,66 | 4,76 | Facet | 0,08               |
| 027720 | APKT 16 04PDER-43  | SP6564 | ◆◆                     |                      |                  | 9,52            | 16,66 | 4,76 | Facet | 0,08               |
| 023115 | APKT 16 04PDER-45  | X500   |                        | ◆◆                   | ◆◆               | 9,52            | 16,66 | 4,76 | Facet | 0,06               |
| 023114 | APKT 16 04PDER-45  | MP91M  |                        | ◆◆                   | ◆◆               | 9,52            | 16,66 | 4,76 | Facet | 0,06               |
| 027721 | APKT 16 04PDER-45  | SP6564 | ◆◆                     | ◆◆                   | ◆◆               | 9,52            | 16,66 | 4,76 | Facet | 0,06               |
| 023102 | APET 16 0402TR-42  | PFZ    |                        |                      |                  | 9,52            | 16,66 | 4,76 | 0,2   | 0,1                |
| 023103 | APET 16 0408TR-42  | PFZ    |                        |                      |                  | 9,52            | 16,66 | 4,76 | 0,8   | 0,1                |
| 023104 | APET 16 0410TR-42  | PFZ    |                        |                      |                  | 9,52            | 16,66 | 4,76 | 1,0   | 0,1                |
| 023105 | APET 16 0415TR-42  | PFZ    |                        |                      |                  | 9,52            | 16,66 | 4,76 | 1,5   | 0,1                |
| 023106 | APET 16 0420TR-42  | PFZ    |                        |                      |                  | 9,52            | 16,66 | 4,76 | 2,0   | 0,1                |
| 017618 | APET 16 0425TR-42  | MP91M  |                        |                      |                  | 9,52            | 16,66 | 4,76 | 2,5   | 0,1                |
| 017619 | APET 16 0425TR-42  | X500   |                        |                      |                  | 9,52            | 16,66 | 4,76 | 2,5   | 0,1                |
| 023107 | APET 16 0430TR-42  | PFZ    |                        |                      |                  | 9,52            | 16,66 | 4,76 | 3,0   | 0,1                |
| 017290 | APET 16 0440TR-42  | MP91M  |                        |                      |                  | 9,52            | 16,66 | 4,76 | 4,0   | 0,1                |
| 024921 | APET 16 0440TR-42  | PFZ    |                        |                      |                  | 9,52            | 16,66 | 4,76 | 4,0   | 0,1                |
| 017620 | APET 16 0440TR-42  | X500   |                        |                      |                  | 9,52            | 16,66 | 4,76 | 4,0   | 0,1                |
| 025804 | APET 16 0460TR-42  | PFZ    |                        |                      |                  | 9,52            | 16,66 | 4,76 | 6,0   | 0,1                |
| 017636 | APHW 16 0440TR     | X44    |                        |                      |                  | 9,52            | 16,66 | 4,76 | 4,0   | 0,1                |
| 011488 | APKT 16 0408E-2C   | MP91M  |                        |                      |                  | 9,52            | 16,66 | 4,76 | 0,8   | 0,10               |
| 010796 | APKT 16 0408E-2C   | PFZ    |                        |                      |                  | 9,52            | 16,66 | 4,76 | 0,8   | 0,10               |
| 017228 | APMT 16 0412E-2C   | MP91M  |                        |                      |                  | 9,52            | 16,66 | 4,76 | 1,2   | 0,1                |
| 013944 | APMT 16 0416E-2C   | MP91M  |                        |                      |                  | 9,52            | 16,66 | 4,76 | 1,6   | 0,1                |
| 013945 | APMT 16 0424E-2C   | MP91M  |                        |                      |                  | 9,52            | 16,66 | 4,76 | 2,4   | 0,1                |
| 013946 | APMT 16 0432E-2C   | MP91M  |                        |                      |                  | 9,52            | 16,66 | 4,76 | 3,2   | 0,1                |
| 017229 | APMT 16 0440E-2C   | MP91M  |                        |                      |                  | 9,52            | 16,66 | 4,76 | 4,0   | 0,1                |
| 017230 | APMT 16 0448E-2C   | MP91M  |                        |                      |                  | 9,52            | 16,66 | 4,76 | 4,8   | 0,1                |
| 013947 | APMT 16 0464E-2C   | MP91M  |                        |                      |                  | 9,52            | 16,66 | 4,76 | 6,4   | 0,1                |



## Star Guide Key to Recommended Tools

| Material Designations |                             |                             |                               |                              |  |
|-----------------------|-----------------------------|-----------------------------|-------------------------------|------------------------------|--|
|                       | <b>P</b> ◆ Unalloyed Steels | <b>M</b> ◆ Stainless Steels | <b>K</b> ◆ Cast Irons         | <b>S</b> ◆ High Temp. Alloys |  |
|                       | <b>P</b> ◆ Alloyed Steels   | <b>M</b> ◆ PH Stainless     | <b>N</b> ◆ Aluminium & Alloys | <b>H</b> ◆ Hard Materials    |  |