

**power** generation

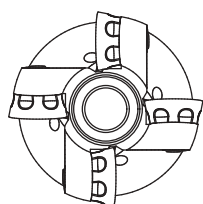
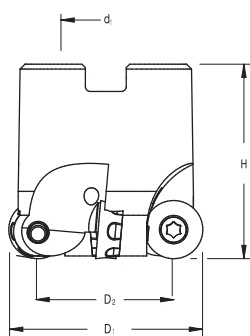
## **7710**VR12 – New Insert Location Design for RP 12 Inserts





### **PERFORMANCE FEATURES**

- Anti-rotation system for maximum stability at high feed rates.
- Maximum number of teeth for heavy feed operations.
- Pocket design maximises swarf evacuation.
- New insert indexation (insert locking) for exact positioning.
- Wide range of grades and geometries for all material applications.

# 7710VR12 Milling Cutter



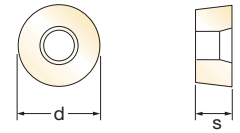
Shell Mill Fixation

7710VR12 Shell Mill Fixation		Dimensions mm						No. of inserts	Spares		
EDP #	Part Number	$D_1$	$D_2$	L/H	$d_1$	a max.	EDP #			EDP #	
029051	<b>7710VR12-A040R</b>	40	28	40	16	6	4	015262	D4010T	015240	T15
029052	<b>7710VR12-A052R</b>	52	40	40	22	6	5	015262	D4010T	015240	T15
029053	<b>7710VR12-A066R</b>	66	54	50	27	6	6	015262	D4010T	015240	T15

## 7710VR12 Technical Advice

Milling Cutter Order Example: **7710VR12-A040R**  
 Milling Insert Order Example: **RPET1204M0E-X4 SP4036**

# Inserts for 7710VR12



EDP #	Part Number	Grade	Application & Material			Dimensions (mm)				
			Roughing ▼	Semi-Finishing ▼▼	Finishing ▼▼▼	d	l	s	r	h <sub>m</sub> min
<b>RPET: Ground circumference one face pressed chip-breaker</b>										
029271	RPET1204M0E-X4	SP4036			◆	12,0	-	4,76	-	0,03
029279	RPET1204M0E-X4	X44				12,0	-	4,76	-	0,03
029280	RPET1204M0E-X4	SFZ		◆	◆	12,0	-	4,76	-	0,03

RPET 12  
-X4



<b>RPEX: Completely ground concave cutting face</b>										
029282	RPEX1204M0E-701-X4	X500		◆	◆	12,0	-	4,76	-	0,02
029283	RPEX1204M0F-701-X4	SFZ			◆◆	12,0	-	4,76	-	0,02
029284	RPEX1204M0F-701-X4	GH1	◆	◆	◆	12,0	-	4,76	-	0,02

RPEX 12  
-701



<b>RPHT: Ground circumference one face pressed chip-breaker</b>										
029286	RPHT1204M0E-421-X4	X500		◆◆		12,0	-	4,76	-	0,04
029287	RPHT1204M0E-421-X4	MP91M		◆	◆◆	12,0	-	4,76	-	0,04

RPHT 12  
-421



029289	RPHT1204M0T-X4	X500	◆◆	◆◆		12,0	-	4,76	-	0,10
029290	RPHT1204M0T-X4	SP6564	◆◆	◆◆		12,0	-	4,76	-	0,10

RPHT 12



<b>RPMT: As pressed circumference one face pressed chip-breaker</b>										
029272	RPMT1204M0E-41-X4	X500		◆	◆	12,0	-	4,76	-	0,05
029291	RPMT1204M0E-41-X4	MP91M	◆◆	◆◆		12,0	-	4,76	-	0,05
029293	RPMT1204M0E-41-X4	SP6564	◆◆	◆◆		12,0	-	4,76	-	0,05

RPMT 12  
-41



<b>RPMW: As pressed circumference without chip-breaker</b>										
029294	RPMW1204M0T-X4	MP91M	◆◆			12,0	-	4,76	-	0,13
029295	RPMW1204M0T-X4	X500				12,0	-	4,76	-	0,13
029296	RPMW1204M0T-X4	SP6564	◆◆			12,0	-	4,76	-	0,13

RPMW 12



Note: For modular extended applications, T-Landed inserts are recommended.

## Recommended Cutting Data

Material	▼ Roughing			▼▼ Semi-finishing			▼▼▼ Finishing		
	Speed V <sub>C</sub> (m/min)	Feed f <sub>z</sub> (mm/tooth)	D.O.C a <sub>p</sub> (mm)	Speed V <sub>C</sub> (m/min)	Feed f <sub>z</sub> (mm/tooth)	D.O.C a <sub>p</sub> (mm)	Speed V <sub>C</sub> (m/min)	Feed f <sub>z</sub> (mm/tooth)	D.O.C a <sub>p</sub> (mm)
◆ Unalloyed Steels	180 - 220	0,16 - 0,30	2,5 - 6,0	220 - 260	0,14 - 0,22	1,0 - 3,0	220 - 300	0,12 - 0,18	0,1 - 1,0
◆ Alloyed Steels	70 - 110	0,14 - 0,25	2,5 - 6,0	100 - 150	0,12 - 0,20	1,0 - 3,0	100 - 195	0,08 - 0,16	0,1 - 1,0
◆ Stainless Steels	120 - 140	0,10 - 0,20	2,5 - 6,0	140 - 180	0,08 - 0,14	-	180 - 280	0,08 - 0,12	0,1 - 1,0
◆ PH Stainless	55 - 70	0,08 - 0,14	2,5 - 6,0	70 - 85	0,08 - 0,12	-	80 - 100	0,08 - 0,10	0,1 - 1,0
◆ Cast Irons	140 - 280	0,14 - 0,25	2,5 - 6,0	180 - 300	0,12 - 0,20	-	200 - 350	0,08 - 0,16	0,1 - 1,0
◆ Aluminium & Alloys	275 - 450	0,06 - 0,12	2,5 - 6,0	400 - 750	0,06 - 0,10	-	700 - 1000	0,04 - 0,08	0,1 - 1,0
◆ High Temp. Alloys	25 - 40	0,08 - 0,14	2,5 - 4,0	35 - 50	0,08 - 0,12	-	45 - 60	0,08 - 0,10	0,1 - 1,0
◆ Hard Steels (52-56 HRc)	-	-	-	-	-	-	50 - 100	0,03 - 0,06	0,1 - 0,5

### Star Guide

### Key to Recommended Inserts

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



## Test reports

	<b>Stellram</b>	<i>Competition</i>
<i>Material:</i>	Stainless steel-ST12T	Stainless steel-ST12T
<i>Application:</i>	Roughing turbine blade	Roughing turbine blade
<i>Tool:</i>	7710VR12-A040R	Competition Tool
<i>Insert:</i>	RPHT1204M0T-X4 X500	Competition Insert
<i>Diameter:</i>	40	40
<i>Number of teeth:</i>	4	4
<i>Cutting Depth <math>a_p</math> (mm):</i>	2,0	2,0
<i>Length of cut (mm)</i>	10-125	10-125
<i>Cutting Speed: <math>V_c</math> (m/min)</i>	200	200
<i>Spindle Speed: <math>N</math></i>	1592 RPM	1592 RPM
<i>Feed per tooth: <math>F_z</math> (mm/tooth)</i>	0,5 ( $h_m = 0,2$ )	0,5 ( $h_m = 0,2$ )
<i>Feedrate (mm/min)</i>	3182	3182
<i>Reached components pieces</i>	<b>28</b>	<b>15</b>

## Test reports

	<b>Stellram</b>	<i>Competition</i>
<i>Material:</i>	Stainless steel-X20CR13 (750-950 N/mm <sup>2</sup> )	Stainless steel-X20CR13 (750-950 N/mm <sup>2</sup> )
<i>Application:</i>	Roughing turbine blade	Roughing turbine blade
<i>Tool:</i>	7710VR12-A066R	Competition Tool
<i>Insert:</i>	RPHT1204M0T-X4 X500	Competition Insert
<i>Diameter:</i>	66	63
<i>Number of teeth:</i>	6	6
<i>Cutting Depth <math>a_p</math> (mm):</i>	2,5	5,0
<i>Length of cut (mm)</i>	220	220
<i>Cutting Speed: <math>V_c</math> (m/min)</i>	280	260
<i>Spindle Speed: <math>N</math></i>	1351 RPM	1314 RPM
<i>Feed per tooth: <math>F_z</math> (mm/tooth)</i>	0,50	0,19
<i>Feedrate (mm/min)</i>	4053	1497
<i>Reached components pieces</i>	<b>2</b>	<b>1</b>