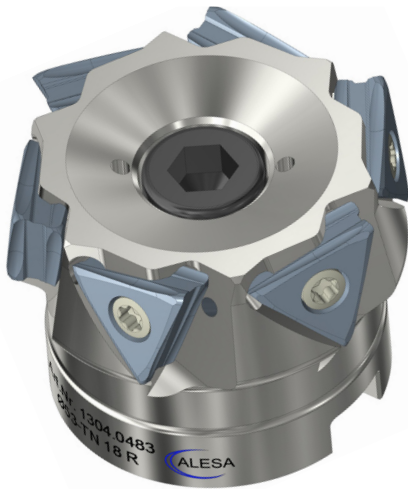


## ALESA Delta Milling Cutters

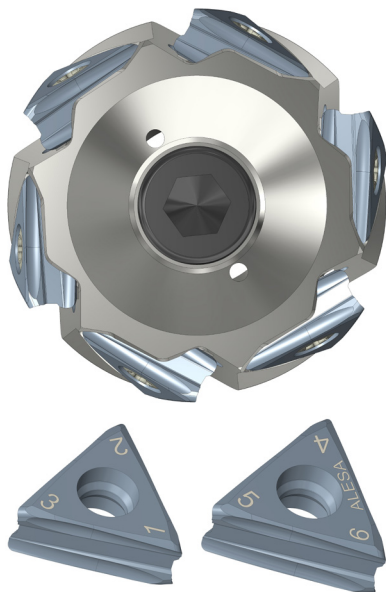
### Less Vibration even with Longer Tools



The new "Delta" indexable inserts have six ground cutting edges and are mounted tangentially on the milling body. Various features of "Twist" have been incorporated, including the 20° positive helix angle and the completely ground surfaces and angles. This high positive cutting approach not only means reduced cutting forces but also allows higher productivity on modern machining centres as this combination has a positive effect on the spindle load. Depending on the material, the workpiece is also less affected by work hardening and deformations due to strain. The tangential arrangement of the inserts produces maximum stiffness in the milling body thanks to stronger cross sections. The large support surface in the insert seat allows good heat transfer and thermal stability, even in dry cutting. It has been demonstrated in practice that a good compromise between hardness (wear resistance), toughness (edge stability) and high-temperature strength is achieved. Combined with the proven AlCrN-VA coating, the high positive-ground cutting edges offer a very long tool life and high process stability.

#### Features

- Six ground cutting edges
- Mounted tangentially on the milling body
- Completely ground surfaces and angles
- Maximum stiffness
- Good heat transfer



#### Advantages

- Higher productivity with six ground cutting edges
- The economics of six cutting edges gives lower cost per edge
- The high helix angle in combination with greatly reduced cutting forces has a positive effect on the spindle load
- Less vibration even with longer tools, body diameters designed to allow use on extensions without interference (available diameters Ø43, 53, 66, 83mm)
- Less swarf volume due to the more compact chip form attributed to the cutting edge geometry
- One insert grade covers most material classifications

### Delta Machining Data Examples

#### Material 6082 Aluminium Alloy - Machine Hurco VMX30Mi 15Kw SK40

New Process	Previous Process
Alesa Delta Ø43 - 4 Inserts NFU18	Sandvik Ø32 - 2 Flute
Vc = 1215m/min	Vc = 904m/min
n = 9000 RPM	n = 9000 RPM
Fz = 0.15	Fz = 0.165
Vf = 5400	Vf = 3000
ap = 11.2	ap = 4.5
ae = 8	ae = 8
Q = 483cm <sup>3</sup> /min	Q = 108cm <sup>3</sup> /min
hm = 0.062	

#### Material 6082 Aluminium Alloy

New Process	Previous Process
Alesa Delta Ø66 - 7 Inserts TFU18	Koroloy Ø63 - 5 Inserts
Vc = 1244m/min	Vc = 990m/min
n = 6000 RPM	n = 5000 RPM
Fz = 0.15	Fz = 0.11
Vf = 7840	Vf = 4000
ap = 7.2	ap = 3.5
ae = 17.8	ae = 53.5
Q = 837cm <sup>3</sup> /min	Q = 748cm <sup>3</sup> /min
hm = 0.083	