



**Material**

- Plaster for impression taking (type I)
- Alabaster plaster (type II)
- Hard plaster (type III)
- Extra hard plaster (type IV)



**Material properties**

- Easy to cut
- Super hard plaster can easily chip when trimming
- Wet plaster tends to smear
- Blade configuration needs to allow for easy chip removal

**Plaster  
Fabrication of models**

<b>1 Working on stone dies</b>		
<p>TC cutters with coarse tothing</p> <p>🔄<sub>opt.</sub> 15.000 rpm</p>	<ul style="list-style-type: none"> <li>● H79SGFA.104.070</li> <li>● H251GEA.104.060</li> </ul>	
<b>2 Cutting segments</b>		
<p>Diamond discs</p> <p>🔄<sub>opt.</sub> 10.000 rpm</p>	<p>987P.104.400</p> <p>987P.104.480</p>	
<b>3 Exposing the dowel pins</b>		
<p>TC cutter</p> <p>🔄<sub>opt.</sub> 10.000 rpm</p>	<p>H98.104.040</p>	
<b>4 Trimming model teeth</b>		
<p>TC cutter with E tothing</p> <p>🔄<sub>opt.</sub> 15.000 rpm</p>	<p>H79E.104.040</p>	
<b>5 Shaping preparation margins</b>		
<p>TC cutter with EF tothing</p> <p>🔄<sub>opt.</sub> 15.000 rpm</p>	<p>● H77EF.104.023</p>	



### Material properties

alloy with high gold content  
 < 120 HV  
 soft/medium hard – difficult to cut



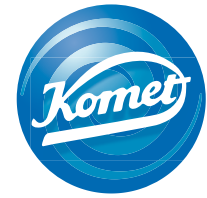
Alloy with contents of gold  
 120 – 160 HV  
 Hard/extra-hard – difficult to cut  
 Increased penetration resistance






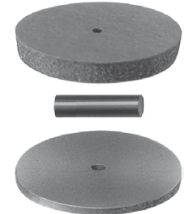


Reduced alloys 260 – 300 HV  
 Slightly smearing – easy to cut  
 Increased heat generation



## Precious metals Crown and bridge technique



<b>1 Separating sprues</b>		
Elastic fibre-reinforced separating disc ⌚ <sub>opt.</sub> 20.000 rpm	<b>9528.900.220</b>	
<b>2 Eliminating sprue residues</b>		
TC cutters with e tothing ⌚ <sub>opt.</sub> 15.000 rpm (< 120 +> 260 HV) ⌚ <sub>opt.</sub> 25.000 rpm (120 – 260 HV)	<b>H351E.104.040</b> <b>H71.104.010</b> (eliminating sprue residues)	
<b>3 Fine/ultra-fine cutting</b>		
TC cutters with UM tothing ⌚ <sub>opt.</sub> 15.000 rpm (< 120 +> 260 HV) ⌚ <sub>opt.</sub> 25.000 rpm (120 – 260 HV)	<b>● H138UM.104.023</b> <b>● H77UM.104.023</b>	
<b>4 Roughening veneer surfaces</b>		
TC cutter with DF tothing ⌚ <sub>opt.</sub> 15.000 rpm (< 120 +> 260 HV) ⌚ <sub>opt.</sub> 25.000 rpm (120 – 260 HV)	<b>● H138DF.104.023</b>	
<b>5 Shaping occlusal surfaces</b>		
TC finishing instruments ⌚ <sub>opt.</sub> 15.000 rpm (< 120 +> 260 HV) ⌚ <sub>opt.</sub> 25.000 rpm (120 – 260 HV)	<b>H390E.104.016 / ● H390EF.104.016</b> <b>H23RS.104.009</b> <b>H349.104.005</b>	
<b>6 Polishing</b>		
⌚ <sub>opt.</sub> 6.000 rpm	<b>9572.900.220 / 9661.000.030</b> (blue: universal polishing) <b>9614.900.220 / 9522M.900.030</b> (brown: silky finish) <b>9624.900.220 / 9522F.900.030</b> (green: high-shine finish)	

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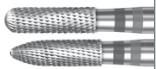

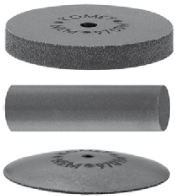



### Material properties

- Hard, tough
- Difficult to cut
- Increased penetration resistance
- Increased heat generation



## Non-precious metal alloys Crown and bridge technique

<b>1 Separating sprues</b>		
Elastic fibre-reinforced separating disc 🔄 <sub>opt.</sub> 20.000 rpm	<b>9529.900.220</b>	
<b>2 Initial trimming</b>		
TC cutters with NE/NEX tothing 🔄 <sub>opt.</sub> 15.000 rpm	<ul style="list-style-type: none"> <li>●● <b>H 79 NE.104.040</b></li> <li>● <b>H 129 NEX.104.023</b></li> <li>● <b>H 138 NEX.104.023</b></li> <li><b>H 71.104.010</b> (Eliminating sprue residues)</li> </ul>	
<b>3 Fine/ultra-fine trimming</b>		
TC cutters with NEX/NEF tothing 🔄 <sub>opt.</sub> 15.000 – 20.000 rpm	<ul style="list-style-type: none"> <li>●● <b>H 129 NEF.104.023</b></li> <li>●● <b>H 139 NEF.104.023</b></li> </ul>	
<b>4 Shaping occlusal surfaces</b>		
TC finishing instruments 🔄 <sub>opt.</sub> 15.000 rpm	<ul style="list-style-type: none"> <li><b>H 349.104.005</b></li> <li>● <b>H 33 FRS.104.010</b></li> <li>●● <b>H 390 Q.104.014</b></li> <li>● <b>H 136 ES.104.016</b></li> </ul>	
<b>5 Polishing</b>		
for non-precious metal alloys Polishers 🔄 <sub>opt.</sub> 6.000 rpm	<p>purple: polishing</p> <ul style="list-style-type: none"> <li><b>9703M.900.220</b></li> <li><b>9702M.900.060</b></li> <li><b>9701M.900.220</b></li> <li><b>9704M.900.030</b></li> </ul> <p>light purple: high-shine polishing</p> <ul style="list-style-type: none"> <li><b>9703F.900.220</b></li> <li><b>9702F.900.060</b></li> <li><b>9701F.900.220</b></li> <li><b>9704F.900.030</b></li> </ul>	
<b>6 Fine corrections</b>		
silver wire brush 🔄 <sub>opt.</sub> 6.000 rpm	<b>9637.900.220</b>	



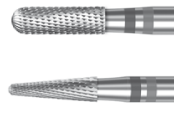




### Material properties

- Hard, tough
- Difficult to cut
- Increased penetration resistance
- Increased heat generation



## Model cast

<b>1 Separating sprues</b>		
Fibre-reinforced separating disc  ⌚ <sub>opt.</sub> 10.000 rpm	<b>9530.900.400</b>  Mandrel <b>305.104.080</b>	
<b>2 Initial cutting</b>		
TC cutters with NE/NEX tothing ⌚ <sub>opt.</sub> 15.000 – 20.000 rpm	<b>● H 79 NE.104.040</b>  <b>● H 25 1NEX.104.060</b>	
<b>3 Fine/ultra-fine cutting</b>		
TC cutters with NeF tothing ⌚ <sub>opt.</sub> 20.000 rpm	<b>● H 129 NEF.104.023</b>  <b>● H 138 NEF.104.023</b>	
<b>4 Shaping occlusal surface</b>		
TC burs ⌚ <sub>opt.</sub> 15.000 rpm	<b>H 71.104.010</b>  <b>H 30.104.008 – 016</b>  <b>● H 33 FRS.104.009</b>	
<b>5 Polishing</b>		
for non-precious metal alloys Polishers ⌚ <sub>opt.</sub> 6.000 rpm	purple: polishing <b>9703M.900.220</b> <b>9702M.900.060</b> <b>9701M.900.220</b> <b>9704M.900.030</b>	light purple: high-shine polishing <b>9703F.900.220</b> <b>9702F.900.060</b> <b>9701F.900.220</b> <b>9704F.900.030</b>
		



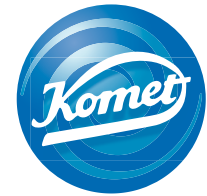
### Material

Pure titanium/Grade 5







### Material properties

Hard, tough

Spark generation possible



# Titanium Crown and bridge Technique

<b>1 Separating sprues</b>												
Elastic fibre-reinforced separating disc ⌚ <sub>opt.</sub> 20.000 rpm	<b>9529.900.220</b>											
<b>2 Initial trimming</b>												
TC cutters with GTi tothing ⌚ <sub>opt.</sub> 15.000 rpm	<ul style="list-style-type: none"> <li>● <b>H 79 GTi.104.040</b></li> <li>● <b>H 129 GTi.104.023</b></li> <li>● <b>H 138 GTi.104.023</b></li> <li><b>H 71.104.008</b> (eliminating sprue residues)</li> </ul>											
<b>3 Fine trimming</b>												
TC cutters with NE- and GTi tothing ⌚ <sub>opt.</sub> 15.000 rpm	<ul style="list-style-type: none"> <li>●● <b>H 129 NE.104.023</b></li> <li>●● <b>H 138 NE.104.023</b></li> <li>● <b>H 136 GTi.104.016</b></li> </ul>											
<b>4 Ultra-fine trimming</b>												
TC cutters with NEF tothing ⌚ <sub>opt.</sub> 15.000 rpm	<ul style="list-style-type: none"> <li>●● <b>H 129 NEF.104.023</b></li> <li>●● <b>H 138 NEF.104.023</b></li> </ul>											
<b>5 Shaping occlusal surfaces</b>												
TC finishing instruments ⌚ <sub>opt.</sub> 15.000 rpm	<ul style="list-style-type: none"> <li><b>H 349.104.005</b></li> <li>● <b>H 33 FRS.104.010</b></li> <li>●● <b>H 390 Q.104.014</b></li> </ul>											
<b>6 Polishing</b>												
for non-precious metal alloys Polishers ⌚ <sub>opt.</sub> 6.000 rpm	<table border="0"> <tr> <td>purple: polishing</td> <td>light purple: high-shine polishing</td> </tr> <tr> <td><b>9703M.900.220</b></td> <td><b>9703F.900.220</b></td> </tr> <tr> <td><b>9702M.900.060</b></td> <td><b>9702F.900.060</b></td> </tr> <tr> <td><b>9701M.900.220</b></td> <td><b>9701F.900.220</b></td> </tr> <tr> <td><b>9704M.900.030</b></td> <td><b>9704F.900.030</b></td> </tr> </table>	purple: polishing	light purple: high-shine polishing	<b>9703M.900.220</b>	<b>9703F.900.220</b>	<b>9702M.900.060</b>	<b>9702F.900.060</b>	<b>9701M.900.220</b>	<b>9701F.900.220</b>	<b>9704M.900.030</b>	<b>9704F.900.030</b>	
purple: polishing	light purple: high-shine polishing											
<b>9703M.900.220</b>	<b>9703F.900.220</b>											
<b>9702M.900.060</b>	<b>9702F.900.060</b>											
<b>9701M.900.220</b>	<b>9701F.900.220</b>											
<b>9704M.900.030</b>	<b>9704F.900.030</b>											


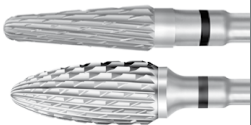

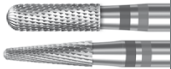

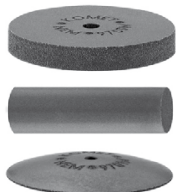
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**Material**  
Pure titanium/Grade 5  
**Material properties**  
Hard, tough  
spark generation possible



## Titanium Partial prosthetics

<p><b>1 Separating sprues</b></p> <p>Fibre-reinforced separating disc            ⌚<sub>opt.</sub> 10.000 rpm</p>	<p><b>9530.900.400</b></p>	
<p><b>2 Initial trimming</b></p> <p>TC cutters with GTi tothing            ⌚<sub>opt.</sub> 15.000 rpm</p>	<p>● <b>H 79GTi.104.040</b>            ● <b>H 251GTi.104.060</b></p>	
<p><b>3 Fine trimming</b></p> <p>TC cutters with NE tothing            ⌚<sub>opt.</sub> 15.000 rpm</p>	<p>●● <b>H 129 NE.104.023</b>            ●● <b>H 138 NE.104.023</b></p>	
<p><b>4 Ultra-fine trimming</b></p> <p>TC cutters with NEF tothing            ⌚<sub>opt.</sub> 15.000 rpm</p>	<p>●● <b>H 129 NEF.104.023</b>            ●● <b>H 138 NEF.104.023</b></p>	
<p><b>5 Fine corrections</b></p> <p>TC burs and finishing instruments            ⌚<sub>opt.</sub> 15.000 rpm</p>	<p>● <b>H 71.104.010</b>  <b>H 30.104.008 - 016</b>            ● <b>H 33 FRS.104.009</b></p>	
<p><b>6 Polishing</b></p> <p>for non-precious metal alloys Polishers            ⌚<sub>opt.</sub> 6.000 rpm</p>	<p>purple: polishing  <b>9703M.900.220</b>  <b>9702M.900.060</b>  <b>9701M.900.220</b>  <b>9704M.900.030</b></p> <p>light purple: high-shine polishing  <b>9703F.900.220</b>  <b>9702F.900.060</b>  <b>9701F.900.220</b>  <b>9704F.900.030</b></p>	



**Material properties**

Hard, brittle  
Difficult to cut  
Very high penetration resistance



**Ceramics  
Veneers**

1 Shaping																	
DCB abrasives ⌚ <sub>opt.</sub> 12.000 rpm	<p>DCB1.104.025</p> <p>DCB2.104.065 / ● DCB2C.104.065</p> <p>DCB3.104.040 / ● DCB3C.104.040</p> <p>DCB4.104.120 / ● DCB4C.104.120</p>																
Soft ceramics TC cutters with UK toothing ⌚ <sub>opt.</sub> 25.000 rpm	<p>○ H 129 UK.104.023</p> <p>○ H 139 UK.104.023</p>																
2 Occlusal shaping																	
TC burs	<p>H97BZ.314.011</p> <p>H99.104.008</p>																
Diamond abrasive tools ⌚ <sub>opt.</sub> 25.000 rpm	<p>805A.104.023</p> <p>805.104.012</p>																
3 Interdental – Fine trimming																	
Hyperflex diamond disc ⌚ <sub>opt.</sub> 15.000 rpm	<p>● 6934.104.220</p>																
4 Polishing																	
Polishers interspersed with diamond grit ⌚ <sub>opt.</sub> 6.000 rpm	<table border="0"> <tr> <td>blue (pre-polishing)</td> <td>pink (polishing)</td> <td>grey (high-shine polishing)</td> </tr> <tr> <td>9697.900.180</td> <td>9698.900.180</td> <td>9699.900.180</td> </tr> <tr> <td>94001C.104.055</td> <td>94001M.104.055</td> <td>94001F.104.055</td> </tr> <tr> <td>94003C.104.260</td> <td>94003M.104.260</td> <td>94003F.104.260</td> </tr> </table>	blue (pre-polishing)	pink (polishing)	grey (high-shine polishing)	9697.900.180	9698.900.180	9699.900.180	94001C.104.055	94001M.104.055	94001F.104.055	94003C.104.260	94003M.104.260	94003F.104.260				
blue (pre-polishing)	pink (polishing)	grey (high-shine polishing)															
9697.900.180	9698.900.180	9699.900.180															
94001C.104.055	94001M.104.055	94001F.104.055															
94003C.104.260	94003M.104.260	94003F.104.260															
5 Rework																	
Goat hair brush ⌚ <sub>opt.</sub> 6.000 rpm	<p>9638.900.220 (removal of polishing paste residues)</p>																



**Material properties**  
 easy-medium to cut  
 Low penetration resistance



## Composite Veneers

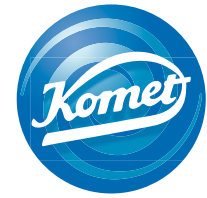
<b>1 Shaping</b>		
TC cutters with UK tothing ⌚ <sub>opt.</sub> 25.000 rpm	○ <b>H 138UK.104.023</b> ○ <b>H 139UK.104.023</b>	
<b>2 Occlusal shaping</b>		
Triangular TC cutters ⌚ <sub>opt.</sub> 15.000 rpm	<b>H97.104.010</b> <b>H349.104.005</b> <b>H30.104.008-016</b>	
<b>3 Interdental – Fine trimming</b>		
Hyperflex diamond disc ⌚ <sub>opt.</sub> 15.000 rpm	<b>● 6924.104.180</b>	
<b>4 Polishing</b>		
Polishers interspersed with diamond grit ⌚ <sub>opt.</sub> 6.000 rpm	<b>9687.900.180</b> (light blue: pre-polishing of proximal surfaces)  <b>9688.900.180</b> (light pink: polishing of proximal surfaces)  <b>9689.900.180</b> (light grey: high-shine polishing of proximal surfaces)	
<b>5 Rework</b>		
Goat hair brush ⌚ <sub>opt.</sub> 6.000 rpm	<b>9638.900.220</b> (removal of polishing paste residues)	





**Material properties**

Easy to cut  
Low penetration resistance



**Denture acrylics  
Full dentures**

1 Shaping		
TC and ceramic cutters with FSQ/EQ/ACR tothing ⌚ <sub>opt.</sub> 15.000 rpm	e.g. ● <b>H 79 FSQ.104.070</b>  e.g. ● <b>H 251 EQ.104.060</b> (Dual cutter: coarse, fine tip)  e.g. ● <b>K 251 ACR.104.060</b>	
2 Labial/buccal frenum		
TC cutter with FSQ or Q tothing ⌚ <sub>opt.</sub> 15.000 rpm	● <b>H 261 FSQ.104.023</b>	
3 Preparation of dental pockets		
TC cutter with EF tothing ⌚ <sub>opt.</sub> 15.000 rpm	● <b>H 136 EF.104.016</b>	
4 Interdental – fine trimming		
Hyperflex diamond disc ⌚ <sub>opt.</sub> 15.000 rpm	<b>946.104.220</b>	
5 Shaping the occlusion		
Diamond grinding instrument ⌚ <sub>opt.</sub> 15.000 rpm	<b>801.104.035</b>	
6 Polishing		
Acrylic polisher ⌚ <sub>opt.</sub> 6.000 rpm	<b>9603.104.100</b> (green: initial polishing) <b>9641.104.100</b> (grey: polishing) <b>9644.104.100</b> (yellow: high-shine polishing)	



**Material properties**

- Elastic
- Difficult to cut
- Increased resistance to penetration



**Relines  
Positioner/Gingiva masks**

<b>Relines</b>			
<b>1 Shaping</b>			
TC cutters with FSQ tothing ⌚ <sub>opt.</sub> 15.000 rpm	e.g.	● <b>H 79 FSQ.104.040/070</b>	
	e.g.	● <b>H 25 1 FSQ.104.060</b>	
<b>2 Labial/buccal frenum</b>			
TC cutter with FSQ tothing ⌚ <sub>opt.</sub> 15.000 rpm		● <b>H 26 1 FSQ.104.023</b>	
<b>Positioner/Gingiva masks</b>			
<b>1 Shaping</b>			
TC and ceramic cutters with GSQ tothing ⌚ <sub>opt.</sub> 15.000 rpm	e.g.	●● <b>K 79 GSQ.104.040</b> ●● <b>H 79 GSQ.104.070</b> ●● <b>H 25 1 GSQ.104.060</b>	
<b>2 Labial/buccal frenum</b>			
TC and ceramic cutters with GSQ tothing ⌚ <sub>opt.</sub> 15.000 rpm		●● <b>K 26 1 GSQ.104.023</b> ●● <b>H 26 1 GSQ.104.023</b>	



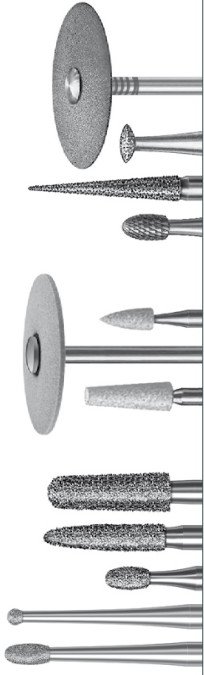


**Material properties**

very hard  
difficult to cut  
increased resistance  
to penetration  
temperature sensitive



**Zirconium oxide ZrO<sub>2</sub>**  
**Crowns and bridges**  
**Work on abutments**

1 Separation of holding pins		
Diamond discs		
<b>Green body:</b> handpiece, $\varnothing_{opt.}$ 20.000 rpm	● 6924.104.180	
<b>Sintered:</b>		
Turbine with spray, $\varnothing_{opt.}$ 160.000 rpm	●○ ZR943.314.100	
2 Trimming		
Cutters/diamond abrasives		
<b>Green body:</b>	● K6974.104.220	
Handpiece	825.104.060	
$\varnothing_{opt.}$ 20.000 rpm	859.104.018	
	○ H73EUF.104.014	
<b>In hard condition:</b>	DCB1.104.025	
Handpiece	DCB3.104.040 / ● DCB3C.104.040	
$\varnothing_{opt.}$ 12.000 rpm	DCB5.104.220	
Turbine with spray	●○ ZR6856.314.025	
$\varnothing_{opt.}$ 160.000 rpm	● ZR862.314.016	
	● ZR379.314.014	
	●○ ZR8801L.315.008/010/014/018	
	●○ ZR8379L.315.014/023	
3 Polishing (sintered only!)		
Diamond polishers		
$\varnothing_{opt.}$ 6.000 rpm	blue: pre-polishing	grey: high-shine polishing
	94011C.104.260	94011F.104.260
	94012C.104.110	94012F.104.110
	94013C.104.170	94013F.104.170
	94018C.104.055	94018F.104.055



**Material properties**

- hard
- difficult to cut
- increased resistance to penetration
- temperature sensitive



**Pressed ceramics  
Crowns and bridges**

<p><b>1 Deflasking</b></p> <p>Stable diamond disc  <math>\odot_{opt.}</math> 10.000 rpm</p>	<p>● <b>924XC.104.400</b></p>	
<p><b>2 Separation of casting sprues</b></p> <p>Diamond discs  Handpiece, <math>\odot_{opt.}</math> 15.000 rpm</p> <p>Turbine with spray, <math>\odot_{opt.}</math> 160.000 rpm</p>	<p><b>918PB.104.220</b></p> <p>●○ <b>ZR943.314.100</b></p>	
<p><b>3 Trimming</b></p> <p>Diamond abrasives  Handpiece  <math>\odot_{opt.}</math> 12.000 rpm</p> <p>Turbine with spray  <math>\odot_{opt.}</math> 160.000 rpm</p>	<p><b>DCB1.104.025</b>  <b>DCB2.104.065 / DCB2.104.048 / ● DCB2C.104.065</b>  <b>DCB3.104.040 / ● DCB3C.104.040</b>  <b>DCB4.104.120 / ● DCB4C.104.120</b>  <b>DCB5.104.220</b>  <b>DCB6.104.120</b></p> <p>●○ <b>ZR6856.314.025</b>  ●○ <b>ZR862.314.016</b>  ●○ <b>ZR379.314.014</b>  ●○ <b>ZR8801L.315.008/010/014/018</b>  ●○ <b>ZR8379L.315.014/023</b></p>	
<p><b>4 Polishing</b></p> <p>Diamond polishers  <math>\odot_{opt.}</math> 6.000 rpm</p>	<p>blue: pre-polishing      grey: high-shine polishing</p> <p><b>94011C.104.260</b>      <b>94011F.104.260</b>  <b>94012C.104.110</b>      <b>94012F.104.110</b>  <b>94013C.104.170</b>      <b>94013F.104.170</b>  <b>94018C.104.055</b>      <b>94018F.104.055</b></p>	