



## High Performance Centres for Turning and Grinding

## Conventional turning

( ) = catalogue pages

Operation requirements	Recommended series/types			
Workpiece accuracy $\geq 0.004$ mm	<b>S Series</b> (9-15)		<b>Bokö Series</b> (26/27)	
Workpiece accuracy $\leq 0.003$ mm	<b>S Series 3<math>\mu</math>m</b> (9-15)		<b>LK Series 3<math>\mu</math>m</b> (22-25)	
High workpiece surface finish	<b>LK Series</b> (22-25)			
Hard workpieces (hard turning)				
High live centre rigidity				
Elimination of or minimum vibrations during operation				
Heavy coolant flow	<b>NC Series</b> (18-21)			
High r.p.m. (> 5.000 1/min.)	<b>NC Series</b> (18-21)		<b>LK Series</b> (22-25)	
Long shafts	<b>LR Series</b> (28-33)		<b>LD Series</b> (34-37)	
Thermal expansion of workpiece due to machining	<b>ZA Series</b> (48-53)			
Large workpiece centres/bores				
Variable clamping possibilities for different workpieces	<b>Types SE/SEG</b>	<b>Type NCE</b>	<b>Type LRE</b>	<b>Type LDE</b>
High rate of wear on the 60° centre point angle	(14/15)	(20/21)	(32/33)	(36/37)
Wear reduction on the 60° angle by carbide tipping	<b>Types SH/SHG</b>	<b>Types SV/SVG</b>	<b>Types LKH/LKHG</b>	
	(12)	(13)	(25)	
Tailstock without hydraulic force adjustment	<b>LR Series</b> (28-33)			
Controlling the axial force				
Face driver application with mechanical tailstock				
Face driver application with hydraulic tailstock	<b>S Series</b> (9-15)	<b>LD Series</b> (34-37)	<b>NC Series</b> (18-21)	
Tailstock sleeve design prevents convenient removal of live centre	<b>A Series</b> (16/17)	<b>NC Series</b> (18-21)	<b>LK Series</b> (22-25)	

## CNC turning

Operation requirements	Recommended series/types			
Workpiece accuracy $\geq 0.004$ mm	<b>S Series</b> (9-15)	<b>NC Series</b> (18-21)	<b>Bokö Series</b> (26/27)	
Workpiece accuracy $\leq 0.003$ mm	<b>S Series 3<math>\mu</math>m</b> (9-15)		<b>LK Series 3<math>\mu</math>m</b> (22-25)	
High workpiece surface finish	<b>LK Series</b> (22-25)			
Hard workpieces (hard turning)				
Elimination of or minimum vibrations during operation				
Heavy coolant flow				
High r.p.m. (> 5.000 1/min.)	<b>NC Series</b> (18-21)		<b>LK Series</b> (22-25)	
Long shafts	<b>LR Series</b> (28-33)		<b>LD Series</b> (34-37)	
Thermal expansion of workpiece due to machining	<b>ZA Series</b> (48-53)			
Large workpiece centres/bores				
Variable clamping possibilities for different workpieces	<b>Types SE/SEG</b>	<b>Type NCE</b>	<b>Type LRE</b>	<b>Type LDE</b>
High rate of wear on the 60° centre point angle	(14/15)	(20/21)	(32/33)	(36/37)
Wear reduction on the 60° angle by carbide tipping	<b>Types SH/SHG</b>	<b>Types SV/SVG</b>	<b>Types LKH/LKHG</b>	
	(12)	(13)	(25)	
Tailstock without hydraulic force adjustment	<b>LR Series</b> (28-33)			
Controlling the axial force				
Face driver application with mechanical tailstock				
Face driver application with hydraulic tailstock	<b>S Series</b> (9-15)	<b>LD Series</b> (34-37)	<b>NC Series</b> (18-21)	
Compensation for varying centre depths and length tolerances of the workpiece at fixed preset tailstock and turret positions	<b>LR Series</b> (28-33)		<b>T-Line</b> (38-41)	
Centre in second counter spindle	<b>A Series</b> (16/17) <b>NC Series</b> (18-21) <b>LK Series</b> (22-25)			
Tailstock sleeve design prevents convenient removal of live centre				

## Cylindrical grinding

( ) = catalogue pages

Operation requirements	Recommended series/types	
Workpiece accuracy	<b>S Series 3µm with additional sealing</b> (9-15)	<b>LK Series 3µm</b> (22-25)
High workpiece surface finish	<b>LK Series 3µm</b> (22-25)	
Elimination of or minimum vibrations during operation	<b>LK Series 3µm</b> (22-25)	
Heavy coolant flow	<b>S Series 3µm, with additional sealing</b> (9-15)	
Long shafts	<b>S Series 3µm with additional sealing</b> (9-15)	<b>LK Series 3µm</b> (22-25)
Large workpiece centres/bores	<b>ZA Series 3µm</b> (48-53)	
Variable clamping possibilities for different workpieces	<b>Type SEG with additional sealing</b> (14/15)	
Wear reduction on the 60° angle by carbide tipping	<b>Type SHG with additional sealing</b> (12)	<b>Type SVG with additional sealing</b> (13)
Tailstock sleeve design prevents convenient removal of live centre	<b>A Series 3µm with additional sealing</b> (16/17)	<b>LK Series 3µm</b> (22-25)

## Heavy-duty machining

Operation requirements	Recommended series/types	
Without tailstock sleeve support, without expansion compensation	<b>Types M/MG, Type AM/AMG</b> (44)	
Without tailstock sleeve support, with expansion compensation and pressure indication	<b>Types MZ/AMZ</b> (46/47)	
With tailstock sleeve support, without expansion compensation	<b>Types MR/MRG</b> (45)	
With tailstock sleeve support, with expansion compensation and pressure indication	<b>Type MZR</b> (46/47)	
High workpiece surface finish	<b>Types MR/MRG</b> (45)	<b>Type MZR</b> (46/47)
Thermal expansion of workpiece due to machining	<b>Types MZ/AMZ</b> (46/47)	
Large workpiece centres/bores	<b>ZA Series</b> (48-53)	
Tailstock sleeve design prevents convenient removal of live centre	<b>Types AM/AMG</b> (44)	<b>Type AMZ</b> (46/47)
Interrupted cut/out of balance workpiece	<b>Types MR/MRG</b> (45)	<b>Type MZR</b> (46/47)

## Measuring/testing

Operation requirements	Recommended series/types		
Workpiece accuracy $\leq 0.003$ mm and more	<b>S Series 3µm</b> (9-15)	<b>LD Series 3µm</b> (34-37)	
Long shafts	<b>S Series 3µm</b> (9-15)	<b>LK Series 3µm</b> (22-25)	
Large workpiece centres/bores	<b>ZA Series 3µm</b> (48-53)		
Variable clamping possibilities for different workpieces	<b>Type SEG</b> (14/15)		
Wear reduction on the 60° angle by carbide tipping	<b>Type SHG</b> (12)	<b>Type SVG</b> (13)	<b>Type LKHG</b> (25)
Tailstock sleeve design prevents convenient removal of live centre	<b>A Series 3µm</b> (16/17)	<b>LK Series 3µm</b> (22-25)	

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