

# Type RD and RAD Tool Applications: Stepped bores and stepped shafts



## Features

- For bore tolerances up to class IT8
- Suitable for metals with tensile strength up to 1400 N/mm<sup>2</sup> and maximum hardness HRC ≤ 45
- Tools achieve a surface quality of  $R_z < 1 \mu\text{m}$  ( $R_a = 0.2 \mu\text{m}$ )
- For use on CNC-controlled lathes, drills, mills, and machining centers as well as manual machines
- Right hand rotation

## Advantages

- Short cycle time
- Eliminates the need for a second tool
- Convenient diameter adjustment
- Minimal lubrication required (oil or emulsion)
- Tool automatically collapses when retracted to prevent surface damage
- Easy to change wear parts

## Basic tool design

- Type RD and RAD tools consist of a tool body and roller head.
- Tool body includes shank and two diameter adjustment assemblies for independent adjustment.
- Roller head consists of two external or internal cones, one double cage, and two sets of rollers.
- Standard for Type RD tools are Morse taper shanks; Type RAD has cylindrical shanks.
- Roller head is designed for specific workpiece dimensions.



## Parameters

- Circumferential speed: up to 250 m/min.
- Feed rate: 0.10 - 0.4 mm/rev./roller
- Rolling length: the rolling length **h** as well as the step increment **g** is designed for specific workpiece dimensions. To avoid using more than one tool to process one workpiece, these tools can be equipped with very small step increments and up to three steps.

Tool body	Diameter range D	Setting range through blind hole	Tool shank: Morse taper or cylindrical shank $\varnothing e \times f$	a	b	c <sup>3)</sup>	d min.		k	i
	mm	- / + mm		mm	mm					
RD1	≥ 16 < 50	$\frac{-0.05}{-0.05} / \frac{+0.6}{+0.1}$	MK3 $\varnothing 25 \text{ h}6 \times 60$	53	110	3	12 and/or 0.6xD		125	99
RD2	≥ 50 < 100	$\frac{-0.05}{-0.05} / \frac{+0.8}{+0.1}$					30			
RD3	≥ 100 < 201						MK4 $\varnothing 32 \text{ h}6 \times 60$	75	150	
		Setting range (through hole)	Tool shank $\varnothing e \times f$	a1	a2	b min.	c min.	d min.	g min.	h min.
RAD1	≥ 12 < 25	-0.1 / +0.4	$\varnothing 25 \text{ h}6 \times 56$	96	65	130	30	0.8xD	depends on the workpiece	
RAD2	≥ 25 < 51	-0.1 / +0.6	$\varnothing 32 \text{ h}6 \times 60$	140	105	160				

**NOTE: 3)** No dimension **c** on blind hole tools.