Shaping/Planing
Turning

ME312: Manufacturing Technologies - II
Instructor: R K Mittal
Cutting Tools for Lathe

Single point cutting tool

Insert cutting tool
Tool Geometry Description System

• Tool-in-hand System
• Machine Reference System (ASA)
• Tool Reference System
  • Orthogonal Rake System (ORS)
  • Normal Rake System (NRS)
• Work Reference System (WRS)
Tool Nomenclature

Tool-in-hand System
ASA System
ASA System

Section along $\pi y$

Back Rake Angle $\pi R$

Back Clearance Angle $\pi X$
ASA System

Section along $\pi x$

Side Rake Angle

$\pi R$

Side Clearance Angle

$\pi y$

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Orthogonal Rake System
Orthogonal Rake System

Section along πc
Orthogonal Rake System

Section along $\pi_0$

Rake Angle

Clearance Angle

$\pi_R$ $\pi_C$