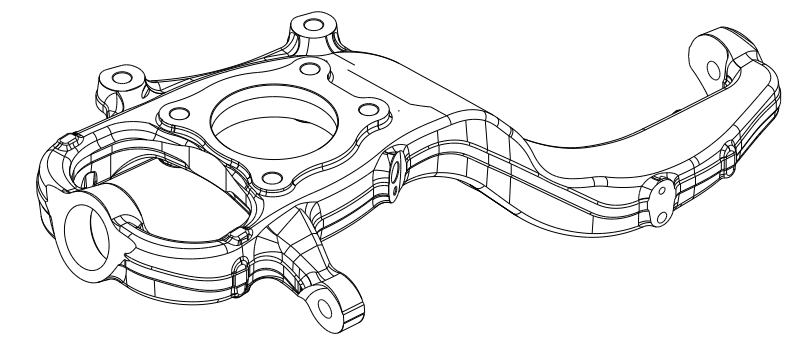
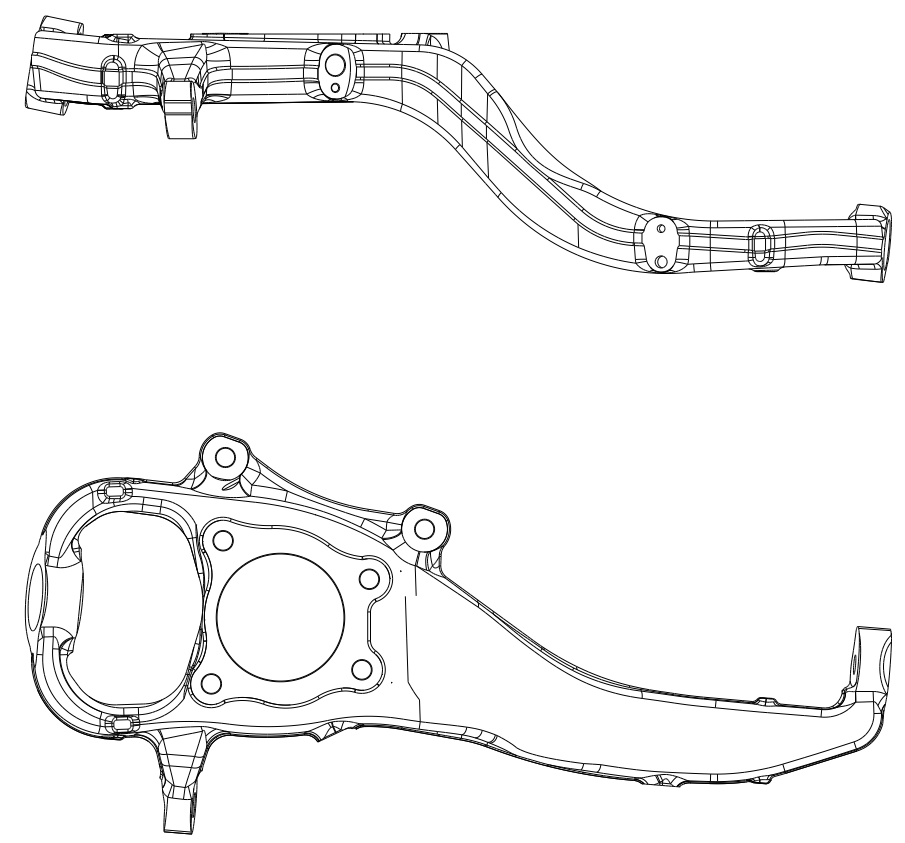


MODEL IN SCALE 1:5







Isometric view
Scale: 1:5

MACHINE : 5AXIS HORIZONTAL M/C

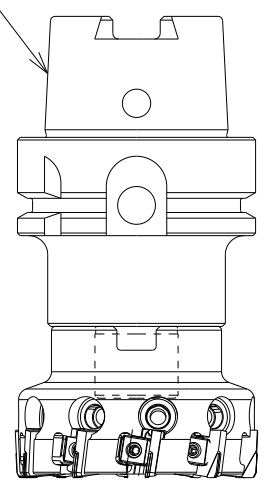
KNUCKLE

WORKPIECE MATERIAL - AL

Unspecified Tolerances	Draw		Customer: TUNGALOY	Japan	 Dwg.No. 32447496-HCL
	Design		Designation: LAYOUT-KNUCKLE-61141		
Dim.s: --	Check		Process	Layout.	Page 1 Of 1
Angles: --	Appr.		Lead Drawing		Rev. No.  0
	Scale				Reg.No.
	© 2019 Tungaloy Corporation - Copyrights Notice			FL-40029659	61141/1

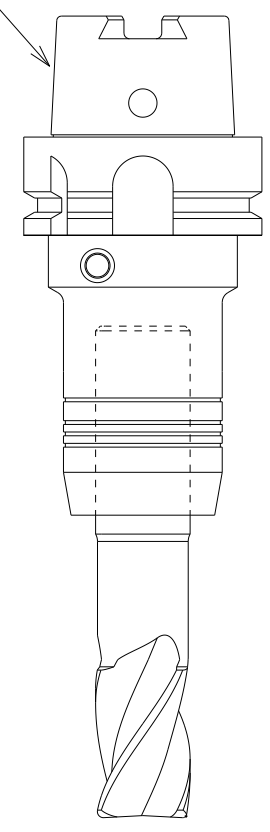
MODEL IN SCALE 1:5 TOOLS IN SCALE 1:2

1
CUT 101
Face Milling (Finish)
 HSKA63SEM22X50
 TPYD06M063B22.0R10
 YDEN0603PDSR-D



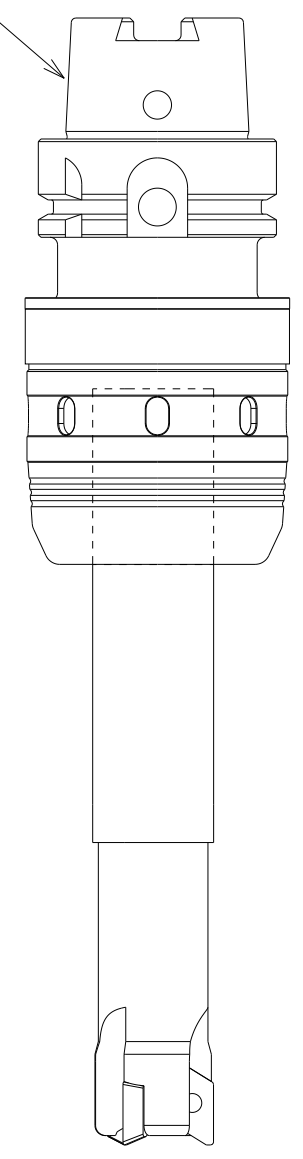
TungSpeedMill

CUT 102
Shoulder Milling (Finish)
 HSKA63HYDRO25X120
 TECA250H3-38/75C25CF-R20



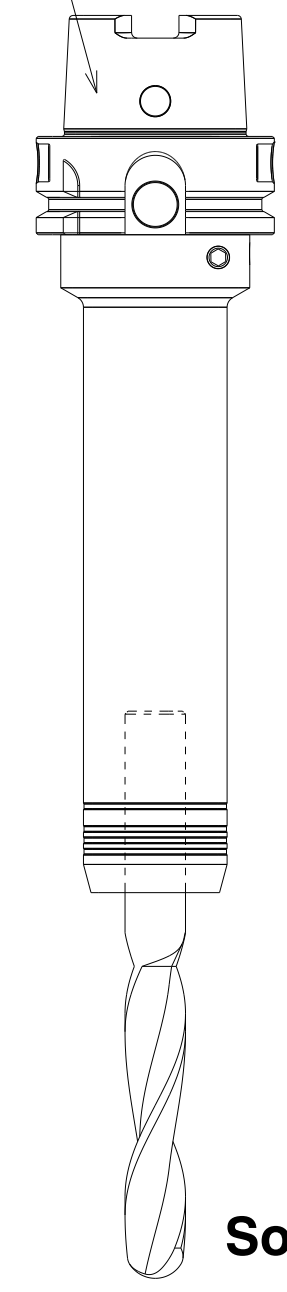
SolidMeister
VariableMeister

CUT 103
Shoulder Milling (Finish)
 HSKA63MAXIN32X113
 EPV16R032M32.0-03L240(SPECIAL)
 XVCT160512R-AJ



Tung-AluMill

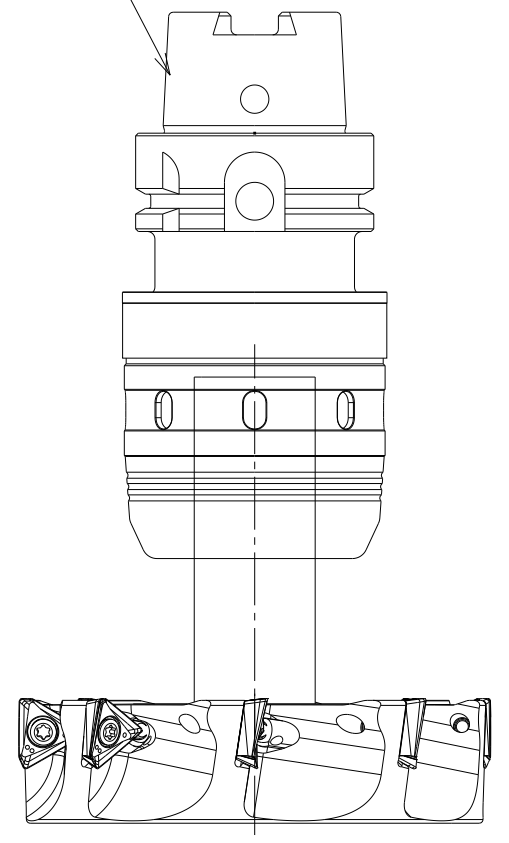
CUT 104
Shoulder milling (Finish)
 HSKA63HYDRO16X200
 KBB-16L150S16(SPECIAL)



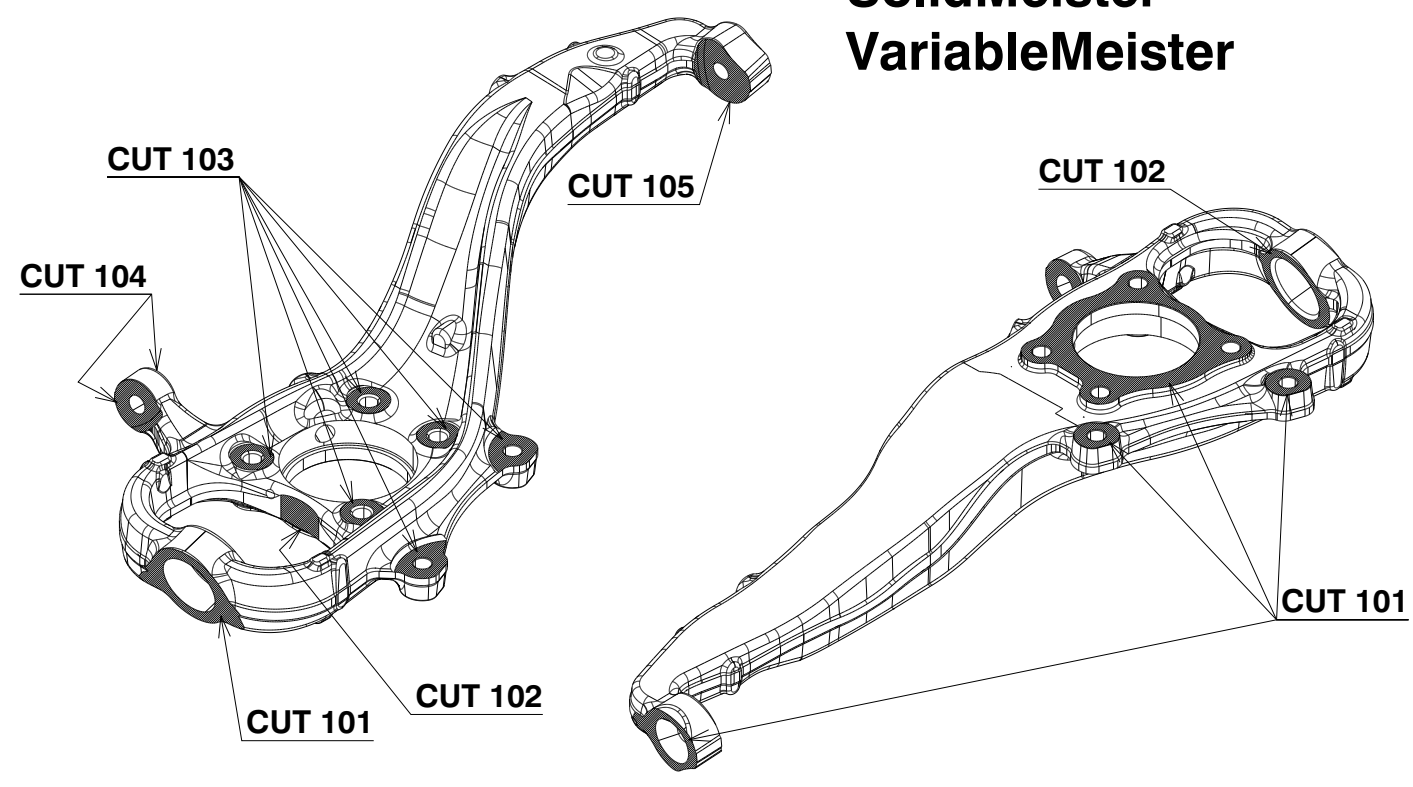
SolidMeister

1
CUT 105
Back Facing (Finish)
 HSKA63MAXIN32X113
 SIDE-SLOT D125-8(SPECIAL)
 TOGT150608PDRF-AJ

※Direction of rotation Reversal



Tung-Tri (SPECIAL)

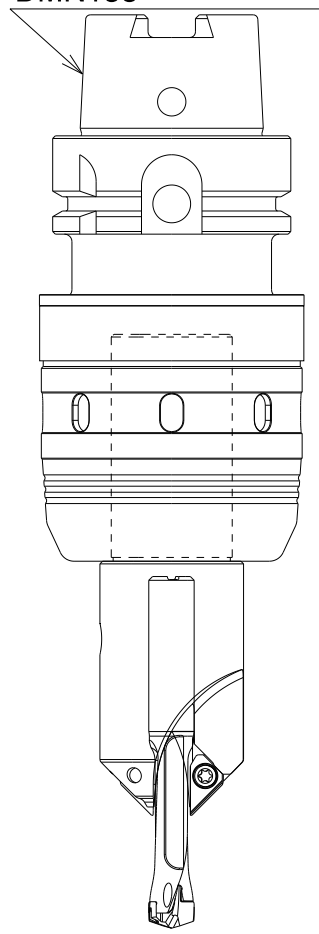


M/C : Face milling

Unspecified Tolerances	Draw		Customer: TUNGALOY	Japan	
	Design				
Dim.s:	Check		LAYOUT OP100-KNUCKLE-61141		Page 1
	Appr.		Process	Layout.	Rev. No. 1
Angles:	Scale		Concept		Reg.No. 61141/1
			-		
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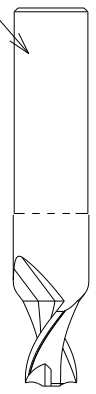
MODEL IN SCALE 1:5 TOOLS IN SCALE 1:2

CUT 106
Holemaking / Chamfering (Finish)
 HSKA63MAXIN32X113
 TIDCF140-W32
 TIDC135C14-5
 XHGR090300-45A
 DMN138



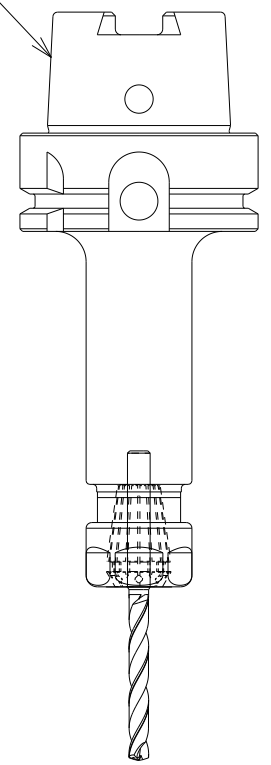
DrillMeister

CUT 107
Reaming (Finish)



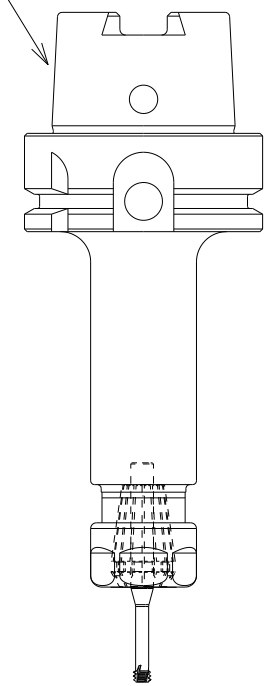
Reamer

CUT 108
Pre-Holemaking (Rough)
 HSKA63 ER16X120
 ER16SEAL5-6
 DSC052FL



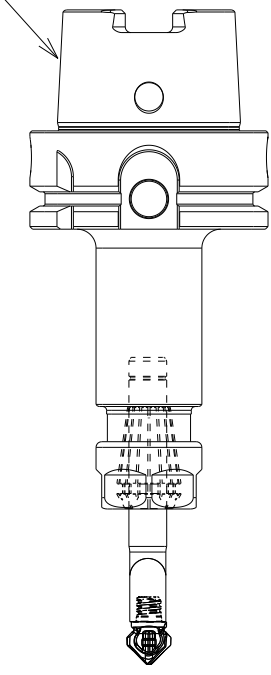
SolidDrill

CUT 109
Thread Milling (Finish)
 HSKA63 ER16X120
 ER16SPR6-7AA
 MTECS06047C201.0ISO



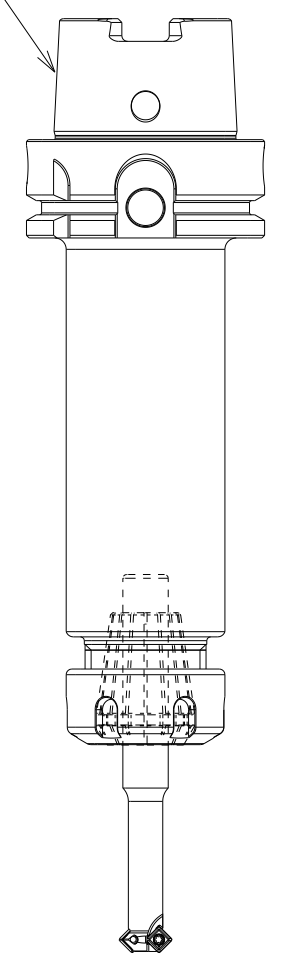
SolidThread

CUT 110
Chamfering (Finish)
 HSKA63ER16X100
 ER16SPR9-10AA
 VSSD10L070S06-C
 VCV118L05.0A45-02S06

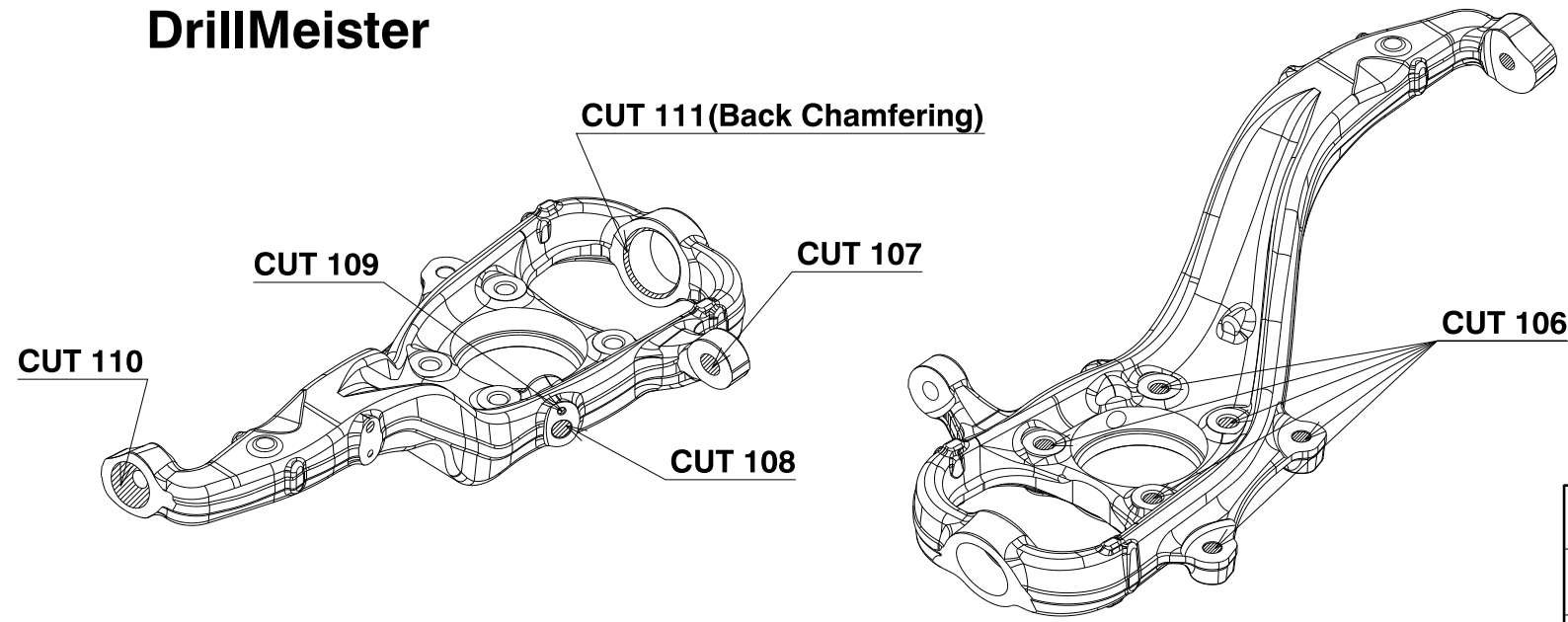


TungMeister

CUT 111
Chamfering (Finish)
 HSKA63ER25X160
 ER25SPR7-8AA
 EASD05M008C12.0R02
 SDHT050204FN-AJ




TungQuad

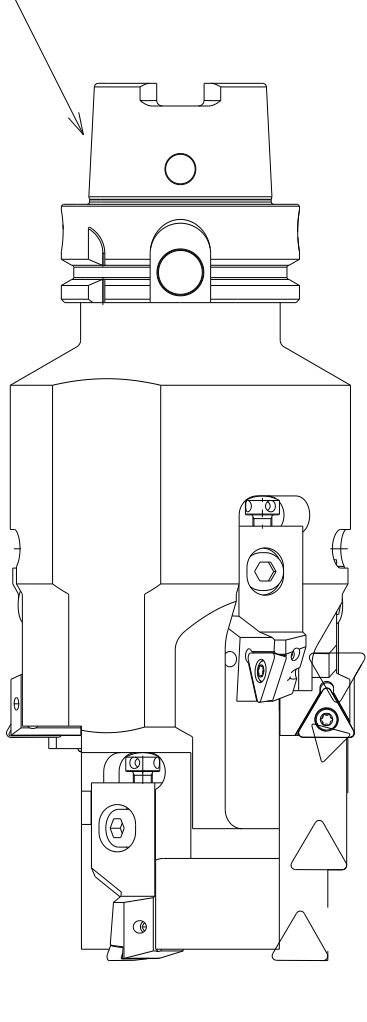


M/C : Holemaking / Thread milling

Unspecified Tolerances	Draw		Customer: TUNGALOY	Japan	
Dim.s:	Design		Designation:		
Angles:	Check		LAYOUT OP200-KNUCKLE-61141		Page 1
	Appr.		Process	Layout.	Of 1
	Scale		Concept		Rev. No. 0
					Reg.No. 61141/1
					A3L

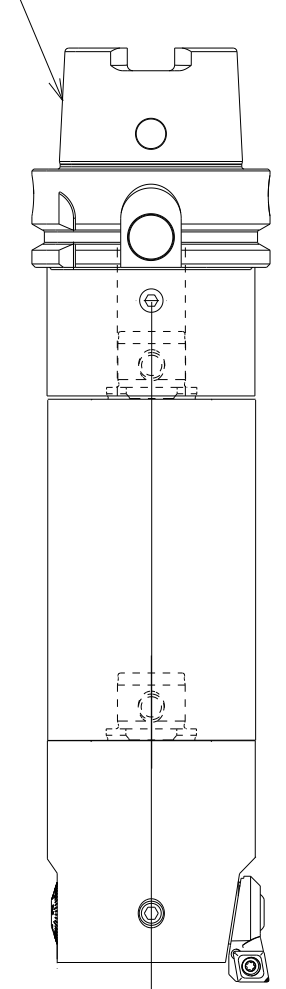
MODEL IN SCALE 1:5 TOOLS IN SCALE 1:2

CUT 112
Boring (Rough) 
 HSKA63D92-D83 (SPECIAL)
 TPGW16T312
 TPGW110204




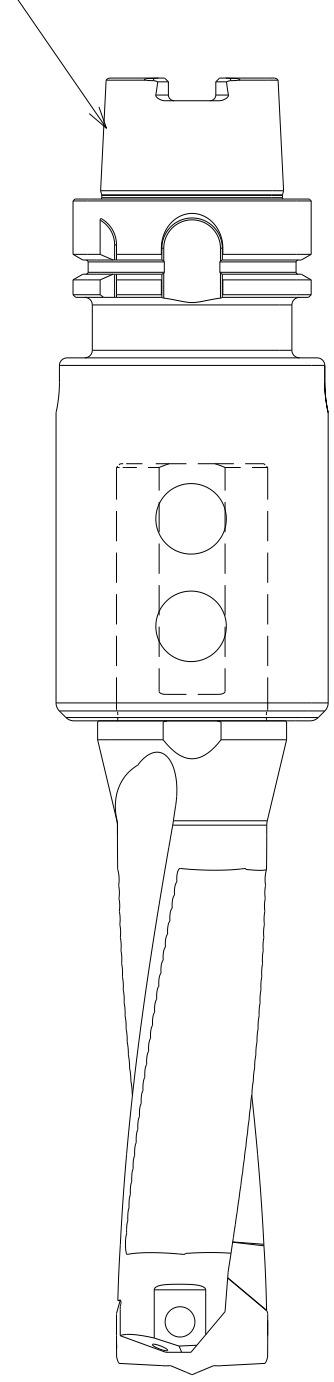
Special Tool

CUT 113
Boring (Finish)
 144.806.050.059
 164.050.050.090
 304.050.067.080
 CCGW09T304-DIA



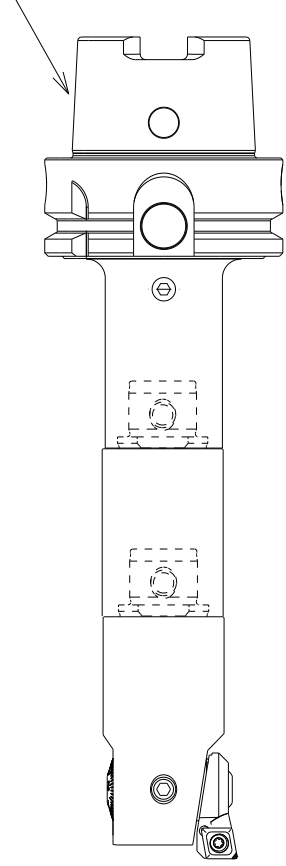
SwissBore

CUT 114 
Pre-Holemaking (Rough)
 HSKA63EM40
 TIS400F40-3
 SMF400



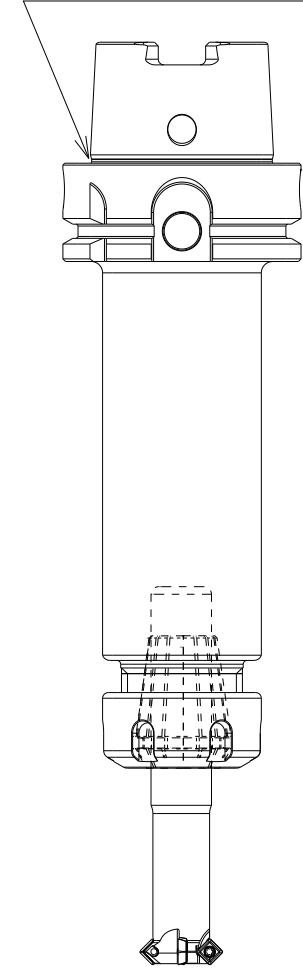
DrillForceMeister

CUT 115
Boring (Finish)
 144.806.032.044
 304.032.040.047
 164.032.032.045
 CCGW060204-DIA

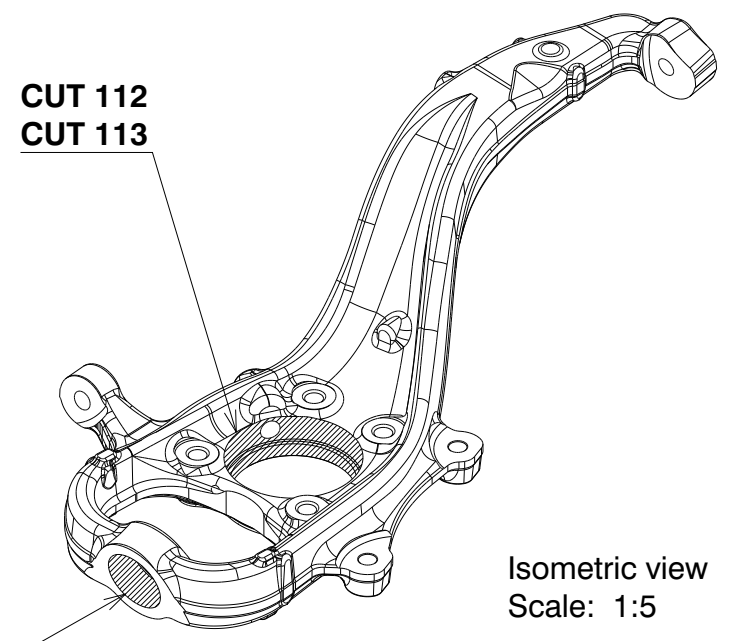


SwissBore

CUT 116
Chamfering (Finish)
 HSKA63ER25X160
 ER25SPR15-16AA
 EASD05M016C16.0R04
 SDHT050204FN-AJ







TungQuad



Isometric view
 Scale: 1:5

M/C : Boring

Unspecified Tolerances	Draw		Customer: TUNGALOY	Japan	
	Design				
Dim.s:	Check		LAYOUT OP300-KNUCKLE-61141		32447496-HC2
	Appr.		Process	Layout.	Page 1
Angles:	Scale		Concept		Rev. No. 
			-		Of 1
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					A3L