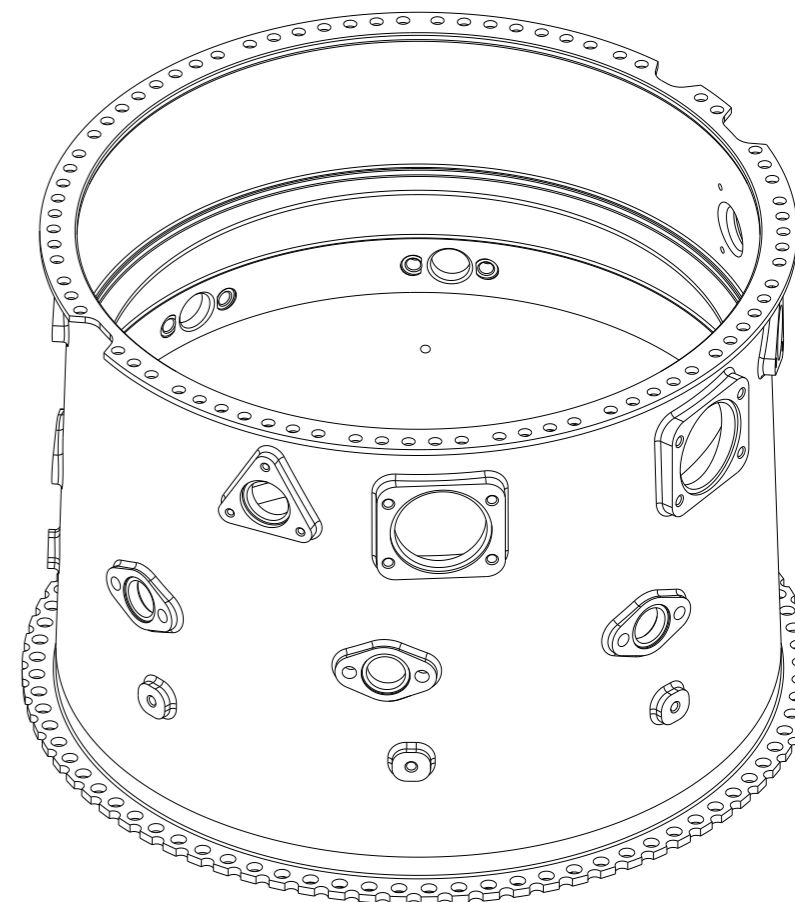
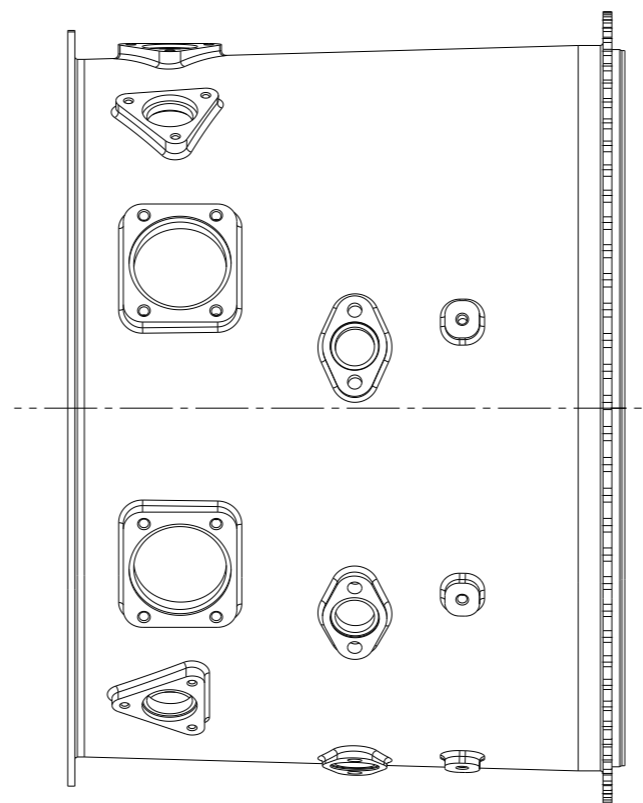
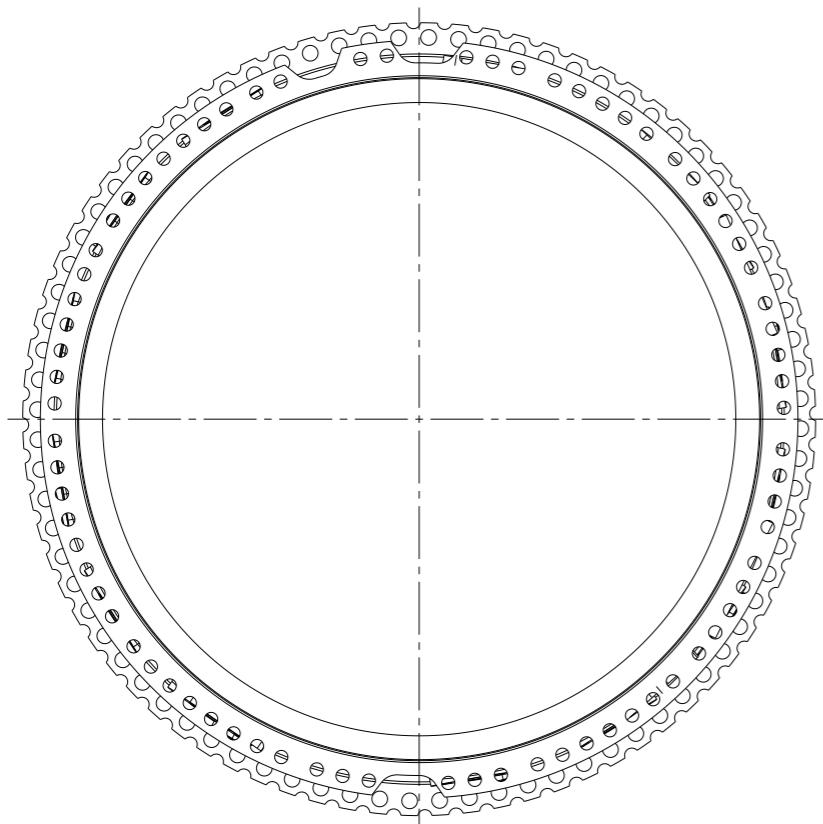


MODEL IN SCALE 1:5



Isometric view
Scale: 1:5

LATHE MACHINE : Vertical lathe
M/C : 5 axis M/C

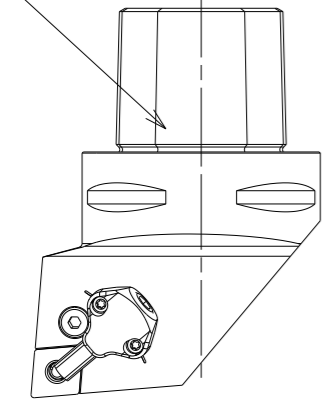
ENGINE CASE

WORKPIECE MATERIAL - INCONEL 718

Unspecified Tolerances	Draw		Customer: TUNGALOY	Japan	
	Design				
Dim.s:	Check		LAYOUT-ENGINE CASE		32449775-HCL
Angles:	Appr.		Process	Layout.	Page 1
	Scale	-.-	Lead Drawing		Of 1
	© 2019 Tungaloy Corporation Copyrights Notice				Rev. No.
			FL-40034530		Reg. No. 62316/1
					A3L

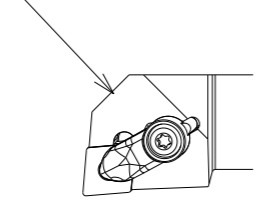
MODEL IN SCALE 1:3 TOOLS IN SCALE 1:2

CUT 101
ID Turning Rough
 C6PCLNL45065-12-CHP
 CNMG120412-HRM AH8015



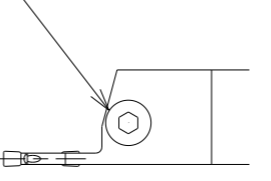
TungCap
TungTurn-Jet
AH8000

CUT 101/103
OD Turning Rough
 ACLNR2525X-12-CHP-MC
 CNMG120412HRM AH8015



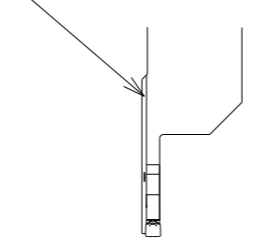
TungTurn-Jet
AH8000

CUT102/106 ¹
OD Grooving Rough
 CTER2525-4T25-CHP
 DGS4-030 AH8005



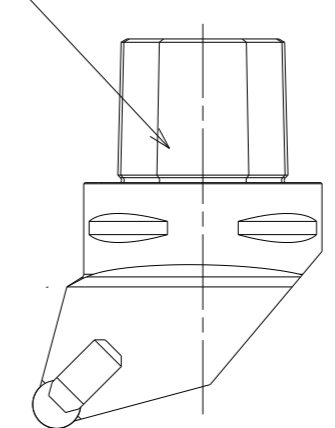
TungCut
TungTurn-Jet
AH8000

CUT 107 ¹
Face Grooving Rough
 ETFR2525-4T25-200500-CHP
 ETX4-040 AH725



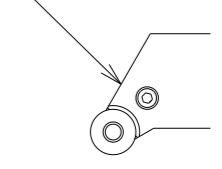
EasyMultiCut

CUT 101/103
OD Turning Rough
 C6-JE-LF45L65 (Special)
 RCGX120700-T1 TS300



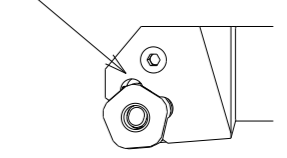
TungCap
TS300

CUT 103
OD Turning Rough
 PRGCR2525M12
 RCMT1204M0-RS AH8015



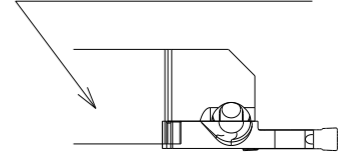
TungTurn
AH8000

CUT 103
OD Turning Rough
 PPXOR2525M11-HF
 POMG110612-MNW AH8015



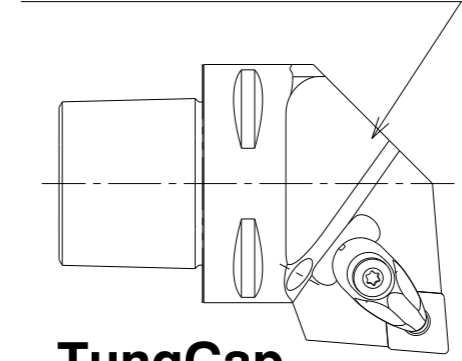
TurnTenFeed
AH8000

CUT 105
ID Turning Rough
 CHSL2525-CHP-MC
 CAEL-6T20-CHP
 DTX6-080 AH8005

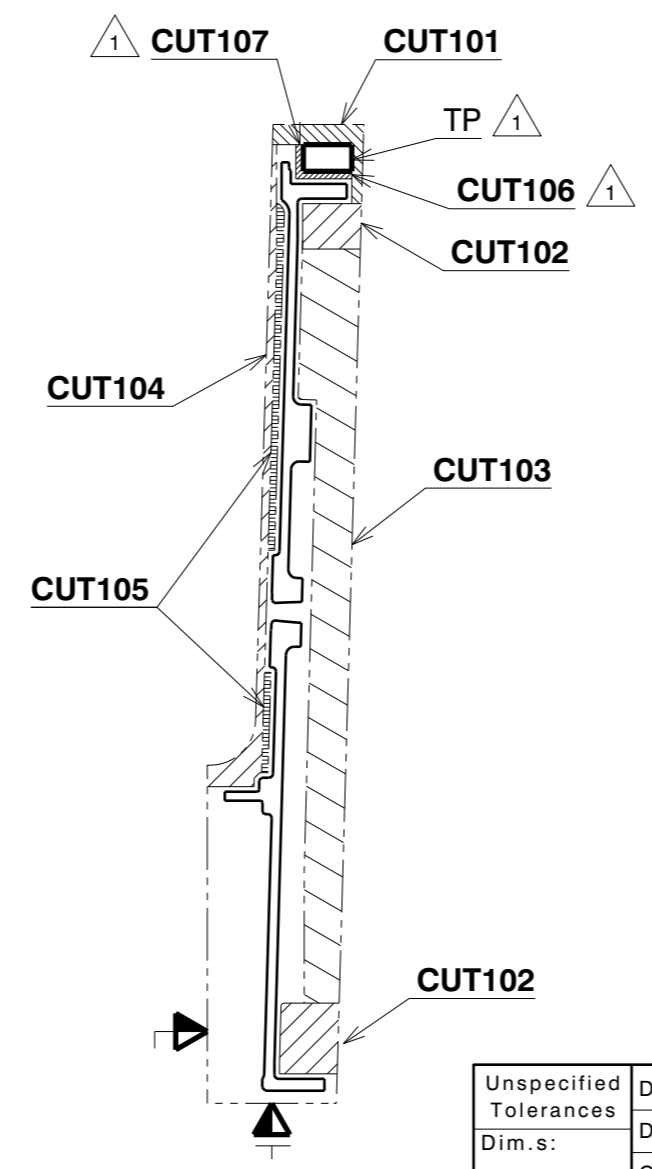
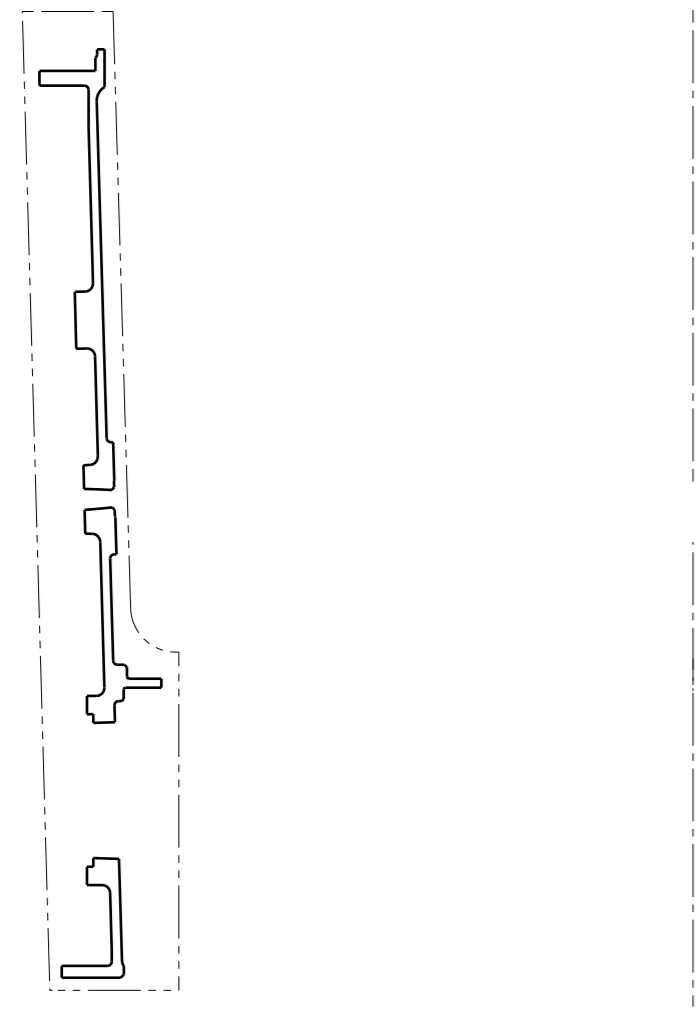


TungCut
TungTurn-Jet
TungModularSystem

CUT104
ID Turning Rough
 C6ACLNL45065-16N
 CNMG160612-HRM AH8015



TungCap
TungTurn-Jet
AH8000

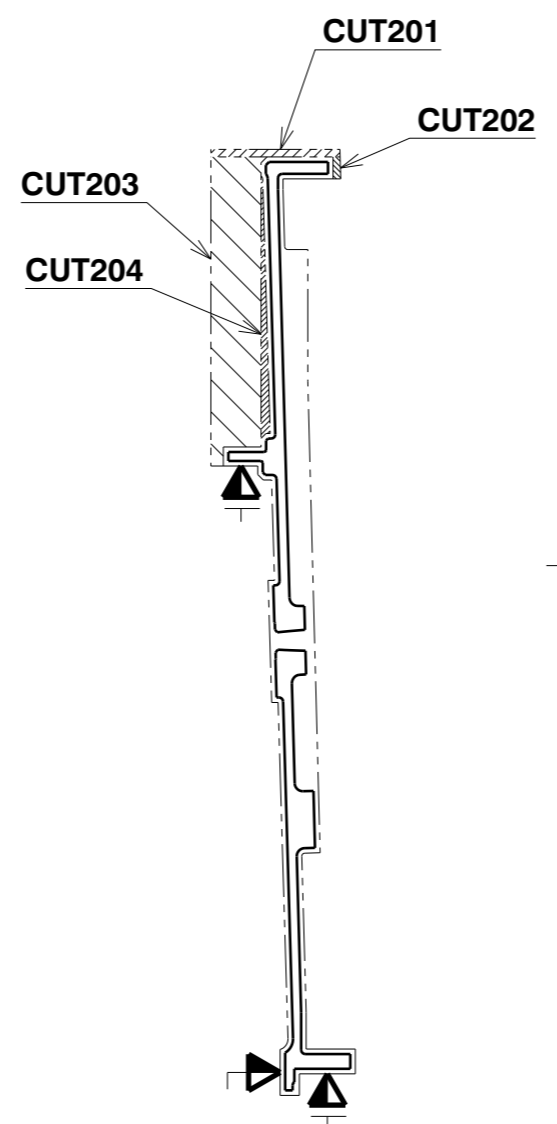
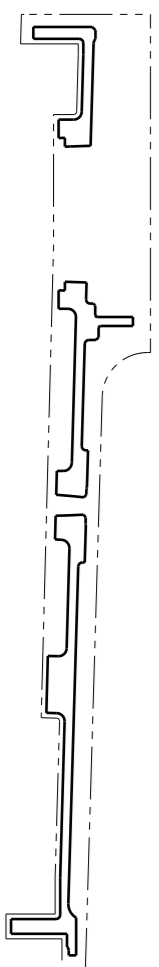


Lathe : O.D./I.D. Rough Turning

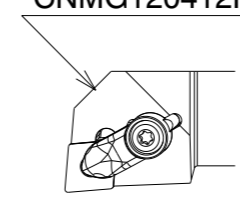
Unspecified Tolerances	Draw		Customer: TUNGALOY	Japan	
	Design		Designation: LAYOUT OP100-ENGINE CASE		
Dim.s: -.-	Check		Process		Page 1
	Appr.		Concept		Rev. No. ¹
Angles: -.-	Scale	-	Layout.		Of 1
			-		Reg.No. 62316/1
				A3L	




MODEL IN SCALE 1:3 TOOLS IN SCALE 1:2

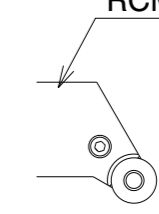


CUT 201/202
OD Turning Rough
 ACLNR2525X-12-CHP-MC
 CNMG120412HRM AH8015



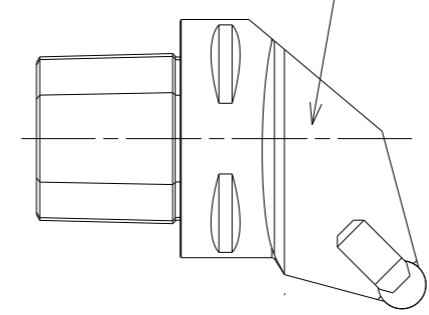
TungTurn-Jet
AH8000

CUT 203 
ID Turning Rough
 PRGCL2525M12
 RCMT1204M0-RS AH8015



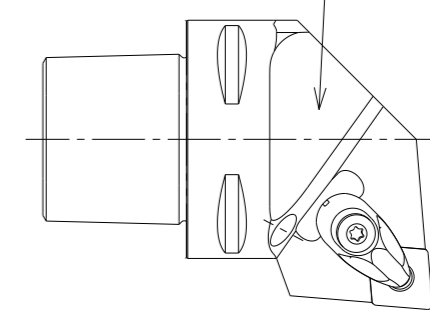
TungTurn
AH8000

CUT203
ID Turning Rough
 C6-JE-LF45L65 (Special)
 RCGX120700-T1 TS300



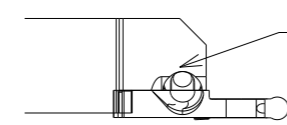
TungCap
TS300

CUT203
ID Turning Rough
 C6ACLNL45065-16N
 CNMG160612-HRM AH8015







TungCap
TungTurn-Jet
AH8000

CUT 204
ID Turning Rough
 CHSL2525-CHP-MC
 CAEL-6T20-CHP
 DTR6-300 AH8005



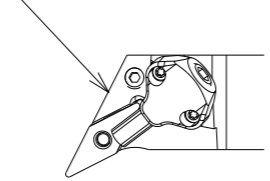
TungCut
TungTurn-Jet
TungModularSystem
AH8000

Lathe : O.D./I.D. Rough Turning

Unspecified Tolerances	Draw		Customer: TUNGALOY	Japan	
	Design		Designation:		
Dim.s:	Check		LAYOUT OP200-ENGINE CASE		32449775-HC1
	Appr.		Process	Layout.	Page 1
Angles:	Scale	-	Concept		Rev. 
			-		Of 1
	© 2019 Tungaloy Corporation Copyrights Notice		FL-40034530		Reg.No.
					62316/1
					A3L

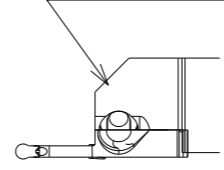
MODEL IN SCALE 1:3 TOOLS IN SCALE 1:2

CUT 301/302 ¹
Face Turning Finish
 PVQNR2525M16-CHP
 VNMG160408-HRF AH8005



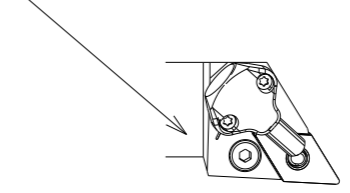
**TungTurn-Jet
 AH8000**

CUT 303 ¹
OD Turning Finish
 CHSR2525-CHP-MC
 CAER-4T20-CHP
 DTR4-200 AH8005



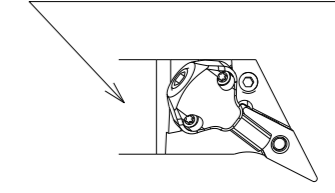
**TungCut
 TungTurn-Jet
 TungModularSystem
 AH8000**

CUT 304/305/306 ¹
ID Turning Finish
 PDJNL2525M15-CHP
 DNMG150408-HRF AH8005
 2QP-DNGA150412-LT BX815

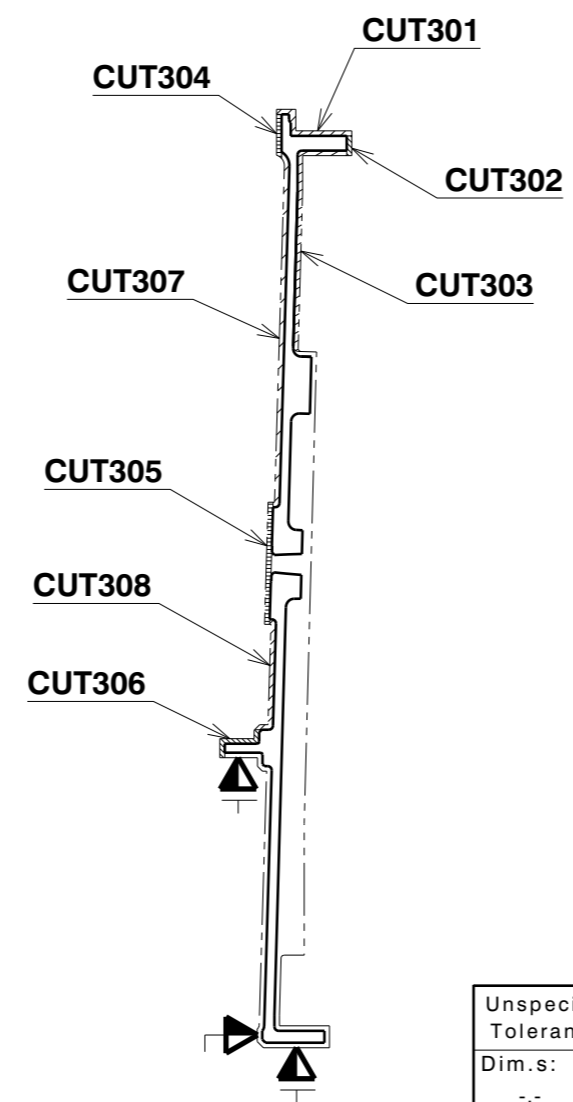
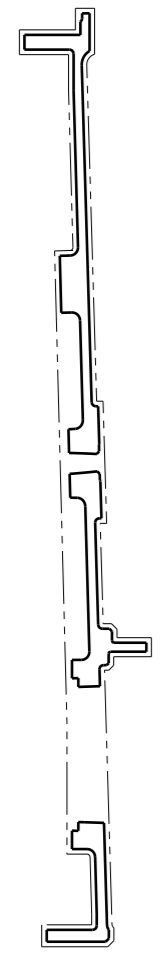


**TungTurn-Jet
 AH8000
 BX815**

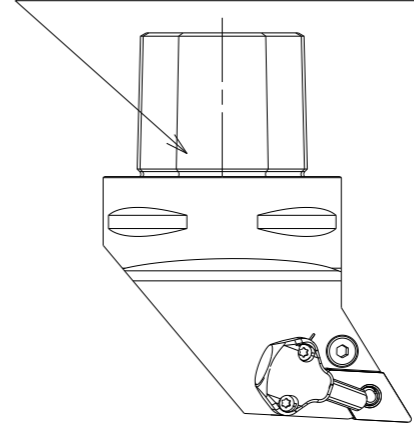
CUT 304/305/306 ¹
ID Turning Finish
 PVQNL2525M16-CHP
 VNMG160408-HRF AH8005



**TungTurn-Jet
 AH8000**

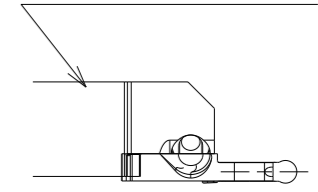


CUT 304/305/306 ¹
ID Turning Rough
 C6-JN-RF50L60-CHP (Special)
 DNMG150408-HRF AH8005
 2QP-DNGA150412-LT BX815



**TungCap
 TungTurn-Jet
 AH8000
 BX815**

CUT 307/308
ID Turning Finish
 CHSL2525-CHP-MC
 CAEL-5T20-CHP
 DTR5-250 AH8005

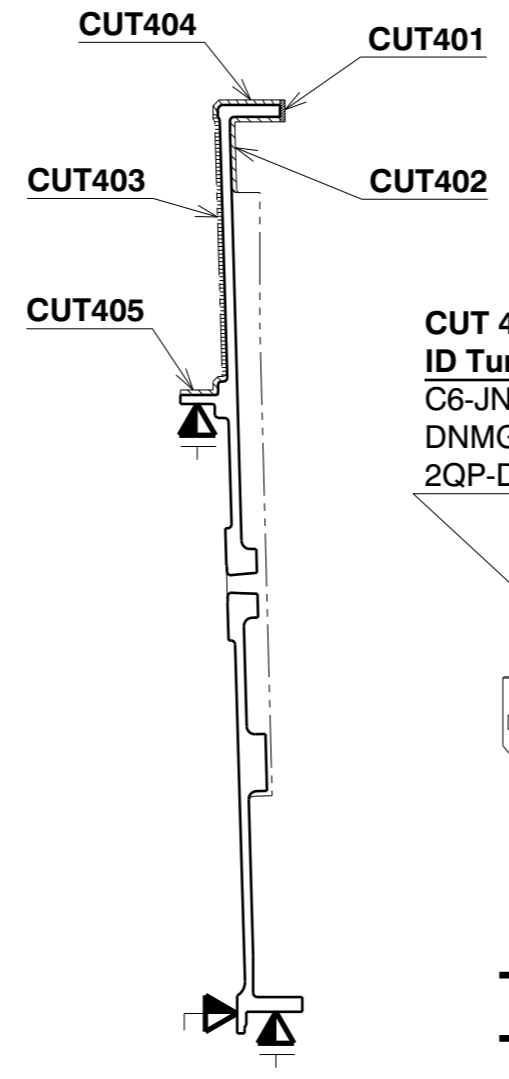
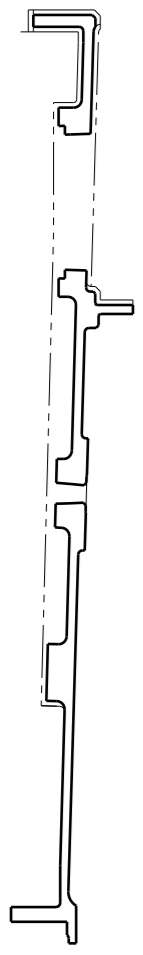


**TungCut
 TungTurn-Jet
 TungModularSystem
 AH8000**

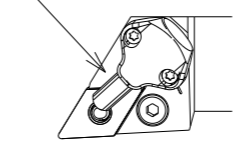
Lathe : O.D./I.D. Finish Turning

Unspecified Tolerances	Draw		Customer: TUNGALOY	Japan	
Dim.s:	Design		Designation: LAYOUT OP300-ENGINE CASE		
Angles:	Check		Process		Page 1
	Appr.		Concept		Of 1
	Scale	-	-		Rev. No. ¹
	© 2019 Tungaloy Corporation - Copyrights Notice		FL-40034530		Reg.No. 62316/1
					A3L

MODEL IN SCALE 1:3 TOOLS IN SCALE 1:2

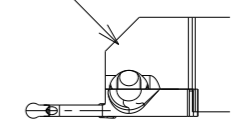


CUT 401 ¹
Face Turning Finish
 PDJNR2525M15-CHP
 DNMG150408-HRF AH8005



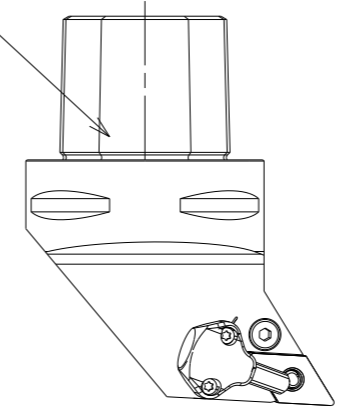
**TungTurn-Jet
 AH8000**

CUT 402
OD Turning Finish
 CHSR2525-CHP-MC
 CAER-4T20-CHP
 DTR4-200 AH8005



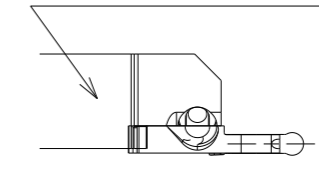
**TungCut
 TungTurn-Jet
 TungModularSystem
 AH8000**

CUT 404/405 ¹
ID Turning Finish
 C6-JN-RF50L60-CHP (Special)
 DNMG150408-HRF AH8005
 2QP-DNGA150412-LT BX815



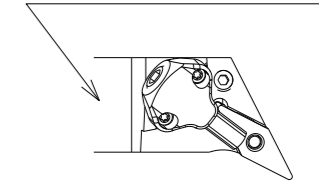
**TungCap
 TungTurn-Jet
 AH8000
 BX815**

CUT 403
ID Turning Finish
 CHSL2525-CHP-MC
 CAEL-5T20-CHP
 DTR5-250 AH8005



**TungCut
 TungTurn-Jet
 TungModularSystem
 AH8000**

CUT 404/405 ¹
ID Turning Finish
 PVQNL2525M16-CHP
 VNMG160408-HRF AH8005

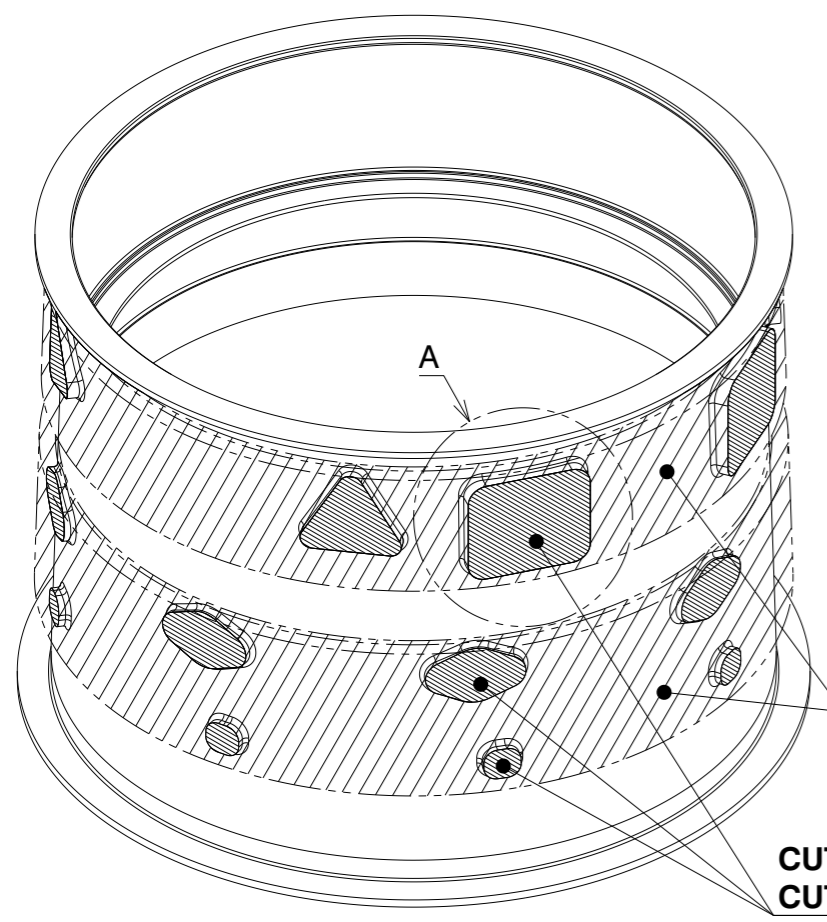


**TungTurn-Jet
 AH8000**

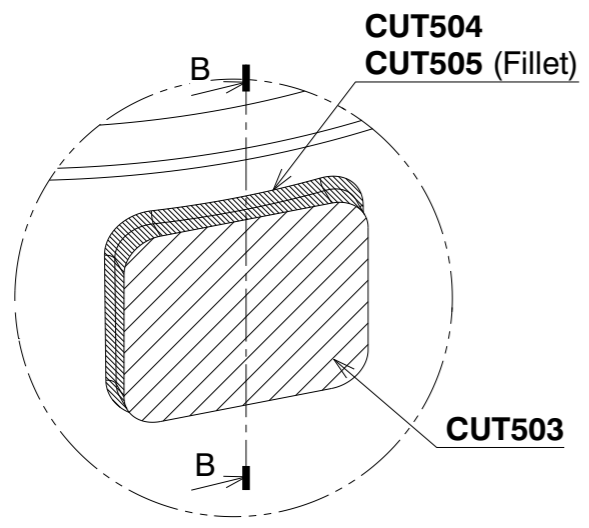
Lathe : O.D./I.D. Finish Turning

Unspecified Tolerances	Draw		Customer: TUNGALOY	Japan	
Dim.s:	Design		Designation: LAYOUT OP400-ENGINE CASE		
Angles:	Check		Process	Layout.	Page 1 Rev. ¹
	Appr.		Concept		Of 1 No. 1
	Scale	-			Reg.No. 62316/1
				FL-40034530	A3L

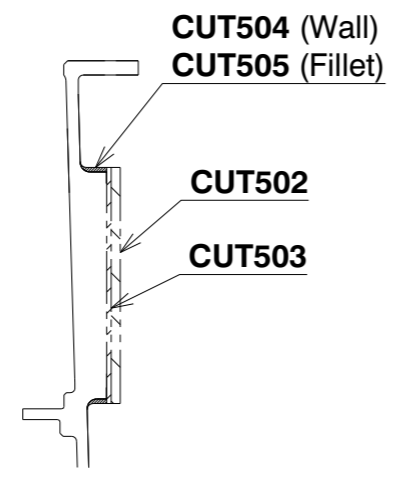
MODEL IN SCALE 1:5 TOOLS IN SCALE 1:2



Isometric view
Scale: 1:5

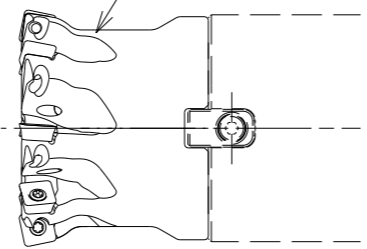


Detail A
Scale: 2:5



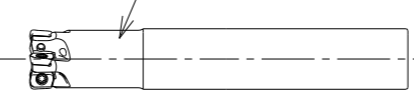
Section cut B-B
Scale: 2:5

CUT 501/502
Out Side Milling Rough
TXSW09M063B22.0R08
SWMT0904UER-MM AH8015



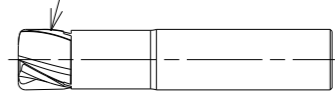
MillQuadFeed
AH8000

CUT 501
Out Side Milling Rough
EXLS02M016C16.0LH30R05
LSMT0202ZER-HM AH8015



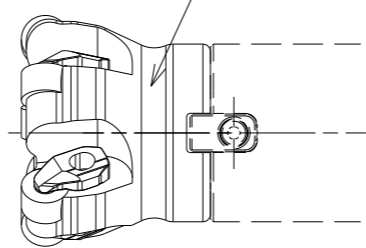
TungForceFeed
AH8000

CUT 501
Out Side Milling Rough
TCFF160A3-12/35C16-83 FX510



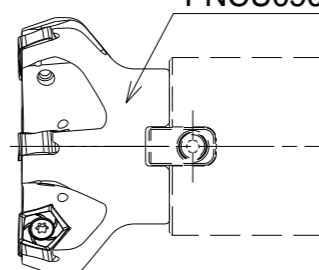
SolidMeister
FeedMeister
FX510

CUT 501/502
Face Milling Rough
TFMRN563-22R-12FL
RNGN120700-E TS300



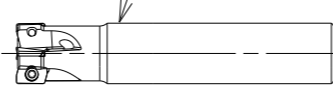
CeramicSpeedMill
TS300

CUT 503
Face Milling Finish
TEN09R063M22.0E06
PNCU0905GNER-MJ AH725



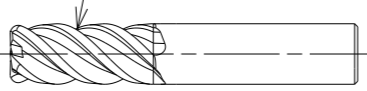
DoPent

CUT504
Shoulder Milling Finish
EPO07R016M16.0-04
AOMT070216PDPR-MJ AH725



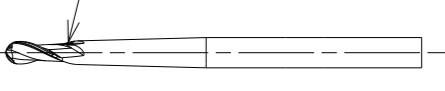
TungRec

CUT 504
Shoulder Milling Finish
TEC160B4-32C16R3-92 AH725






SolidMeister

CUT 505
Profile Milling Finish
TEB060A2-12/15/1.5C08M110

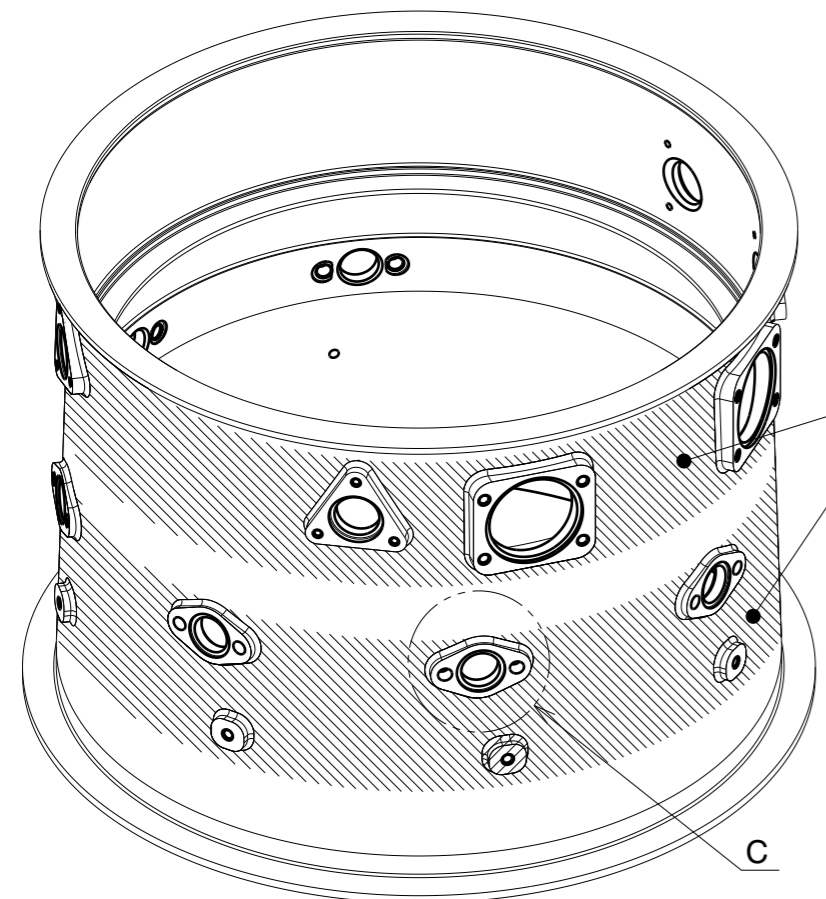


SolidMeister

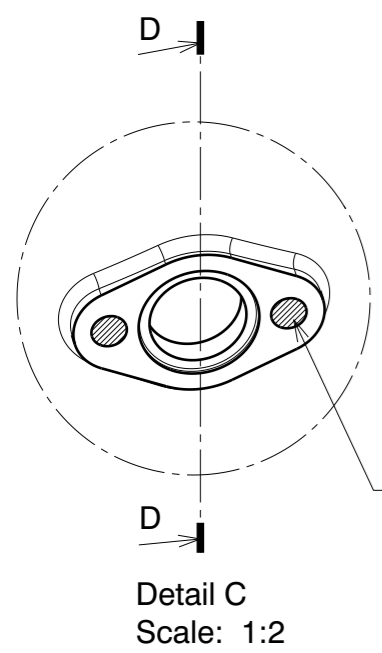
M/C : Shoulder Milling / Face Milling

Unspecified Tolerances	Draw		Customer: TUNGALOY	Japan	
	Design				
Dim.s:	Check		LAYOUT OP500-ENGINE CASE	Layout.	32449775-HC4
Angles:	Appr.				Process
	Scale	-	Concept	Of 1	No. 1
	© 2019 Tungaloy Corporation Copyrights Notice		FL-40034530	Reg.No.	62316/1
					A3L

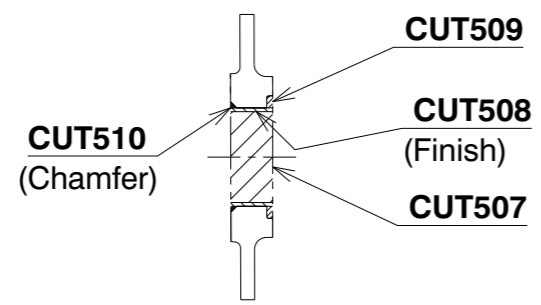
MODEL IN SCALE 1:5 TOOLS IN SCALE 1:2



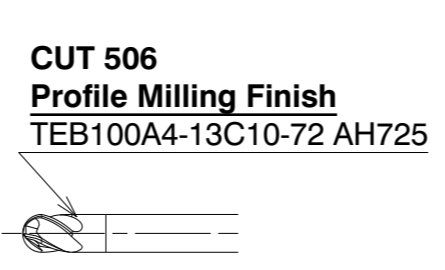
Isometric view
Scale: 1:5



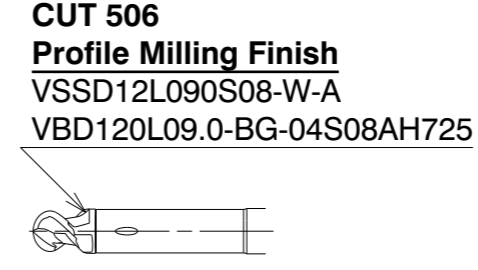
Detail C
Scale: 1:2



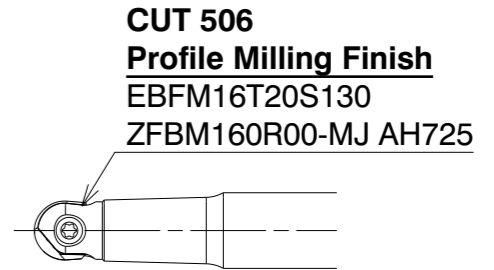
Section cut D-D
Scale: 1:2



SolidMeister

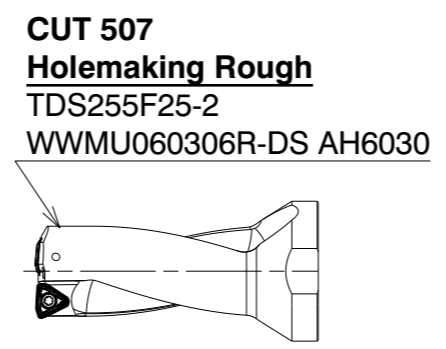


TungMeister

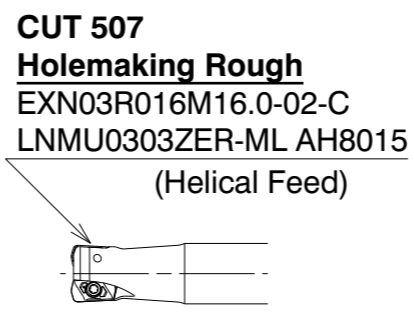


BallFinishNose

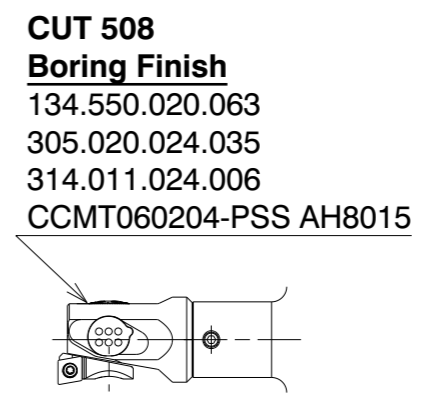
CUT506
(Out side Wall Finish)



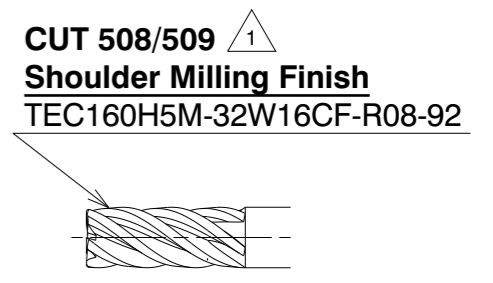
TungSix-Drill



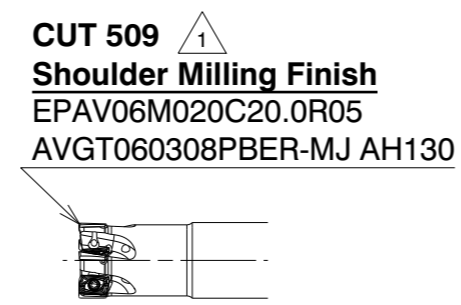
**DoFeed
AH8000**



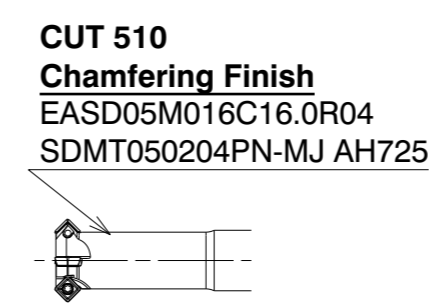
**SwissBore
AH8000**



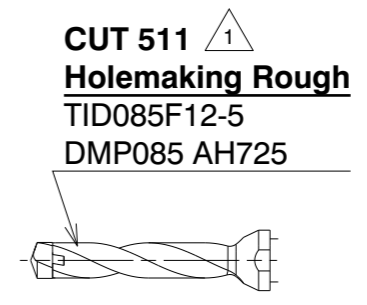
**SolidMeister
VariableMeister**



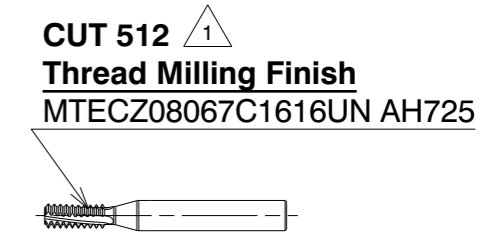
**TungForceRec
AH130**



TungQuad



DrillMeister

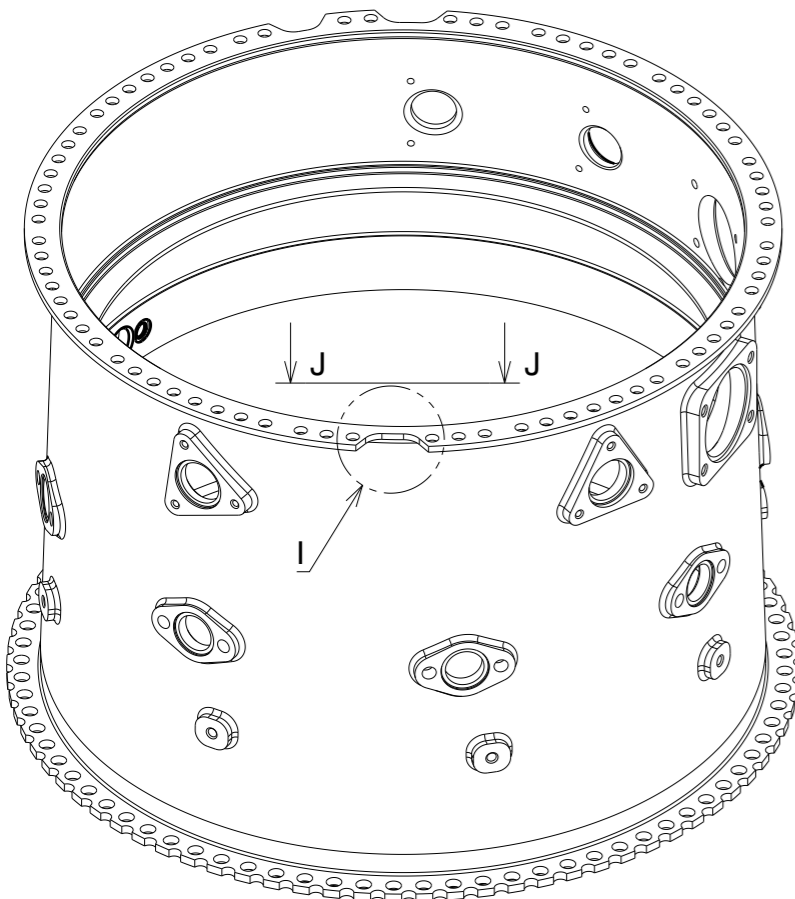


SolidThread

**M/C : Profile Millig / Holemaking
/ Shoulder Milling / Thread Milling**

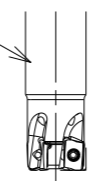
Unspecified Tolerances	Draw		Customer: TUNGALOY	Japan	
Dim.s:	Design		Designation: LAYOUT OP500-ENGINE CASE		
Angles:	Check		Process		Page 1
	Appr.		Concept		Of 1
	Scale	-	-		Rev. No.
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					A3L

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



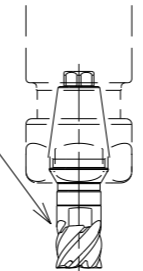
Isometric view
Scale: 1:5

CUT 518/519
Shoulder Milling Rough/Finish
EPAV06M016C16.0R04
AVGT060302PBER-MJ AH130



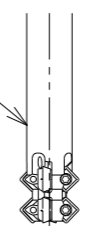
TungForceRec
AH130

CUT 518/519
Shoulder Milling Finish
VER16CL020S08-S
VEE120L09.0R00-06S08 AH725



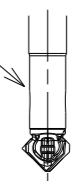
TungMeister

CUT 520/521
Chamfering Finish
CHAMFERING CUTTER (Special)
SDMT050204PN-MJ AH725

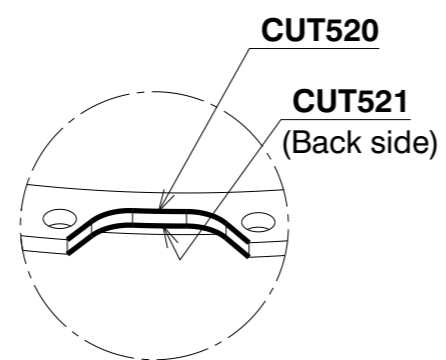


TungQuad

CUT 520/521/523
Chamfering Finish
VSSD10L070S06-W-A
VCW118L05.0A45-02S06AH725

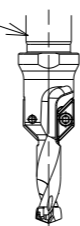


TungMeister



Detail I
Scale: 1:2

CUT 522/523
Holemaking and Chamfering Finish
TID078L25L45S12 (Special)
DMP078 AH725
AOMT060204-C45



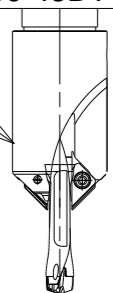
DrillMeister

CUT 522
Holemaking Finish
DSW078-029-08DE3 AH725

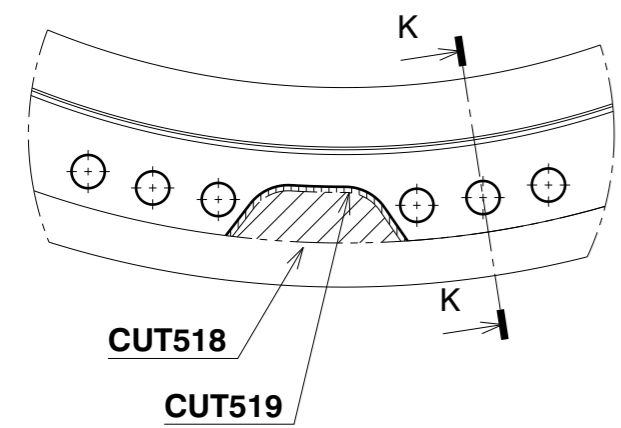


SolidDrill

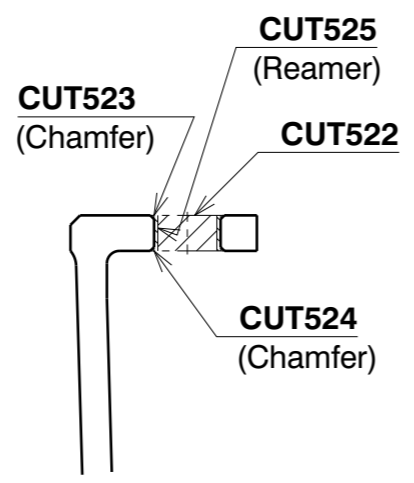
CUT 522/523
Holemaking and Chamfering Finish
TIDCF080-W20
TIDC075C8-3
DMP078 AH725
XCGT060300-45DT GH730



DrillMeister

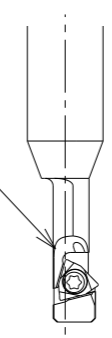


Auxiliary view J
Scale: 1:2



Section cut K-K
Scale: 1:1

CUT 524
Chamfering Finish
KBM-D8.9A45L60S10 (Special)
WBGT030102R-W08 SH730



TungMill

CUT 525
Reaming Finish
LK-7.94L70S8Z6 (Special)



Reamer

M/C : Shoulder Milling / Holemaking

Unspecified Tolerances	Draw		Customer: TUNGALOY	Japan	
	Design		Designation: LAYOUT OP500-ENGINE CASE		
Dim.s: -.-	Check		Process		Page 1
	Appr.		Concept		Rev. No. 1
Angles: -.-	Scale	-	Layout.		Reg.No. 62316/1
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