

设计/Designer
审核/Checked
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日期/Date

名称/Name	图号/Drawing No.
曲轴 crankshaft	612600020865
材料/Material	重量/Weight
42CrMoA-GB/T3077	101.2kg
Z 101	比例/Scale 1:1
潍柴动力股份有限公司 WEICHAI POWER CO., LTD.	

技术要求

- 无裂纹按JB/T 6729, 全检。
- 用样板检查轴颈与曲轴的过渡圆角, 清洗油孔, 不得有任何污物, 所有主轴颈的跳动应投影在120°范围内, 未注倒角光洁度Z
- 未注尺寸公差按照GB/T1804-m
- 毛坯标记按Q/WCG005.4第2章。
- 动平衡, 各动平衡平面的最大不平衡量60g·cm。
- 毛坯: 锻造后调质处理, 抗拉强度(800-950)N/mm², 跳动量大于3mm要冷校直, 校直后的曲轴应进行退火消除应力, 620°C, 5h空气冷却, 根据需要可重复校直和消除应力。
- 在制品: 粗加工校直后退火消除应力(必须在每道校直工序后), 620°C, 保温3h, 在3h内冷却到350°C, 然后在空气中冷却, 应无氧化皮。
- 成品: 液体渗氮软氮化最少3小时, 在AB-1溶液中冷却, HV10最小450, 去除疏松层以后化合层不小于12μm, 每次修理研磨后的曲轴应重新渗氮处理, 渗氮后不允许校直。
- 当非标准曲轴时, 应在 e 处分别打上SI、SIH或SIL标志, 非标准曲轴各轴颈的尺寸如下:

图号	e处标记	连杆轴颈	主轴颈
612600020865	SI	81.9 ^{-0.03}	99.9 ^{-0.03}
612600020865	SIH	91.9 ^{-0.03}	100 ^{-0.03}
612600020865	SIL	82 ^{-0.03}	99.9 ^{-0.03}

- 氮化之前各主轴颈的跳动应控制在0.05以内;
- 表面粗糙度:

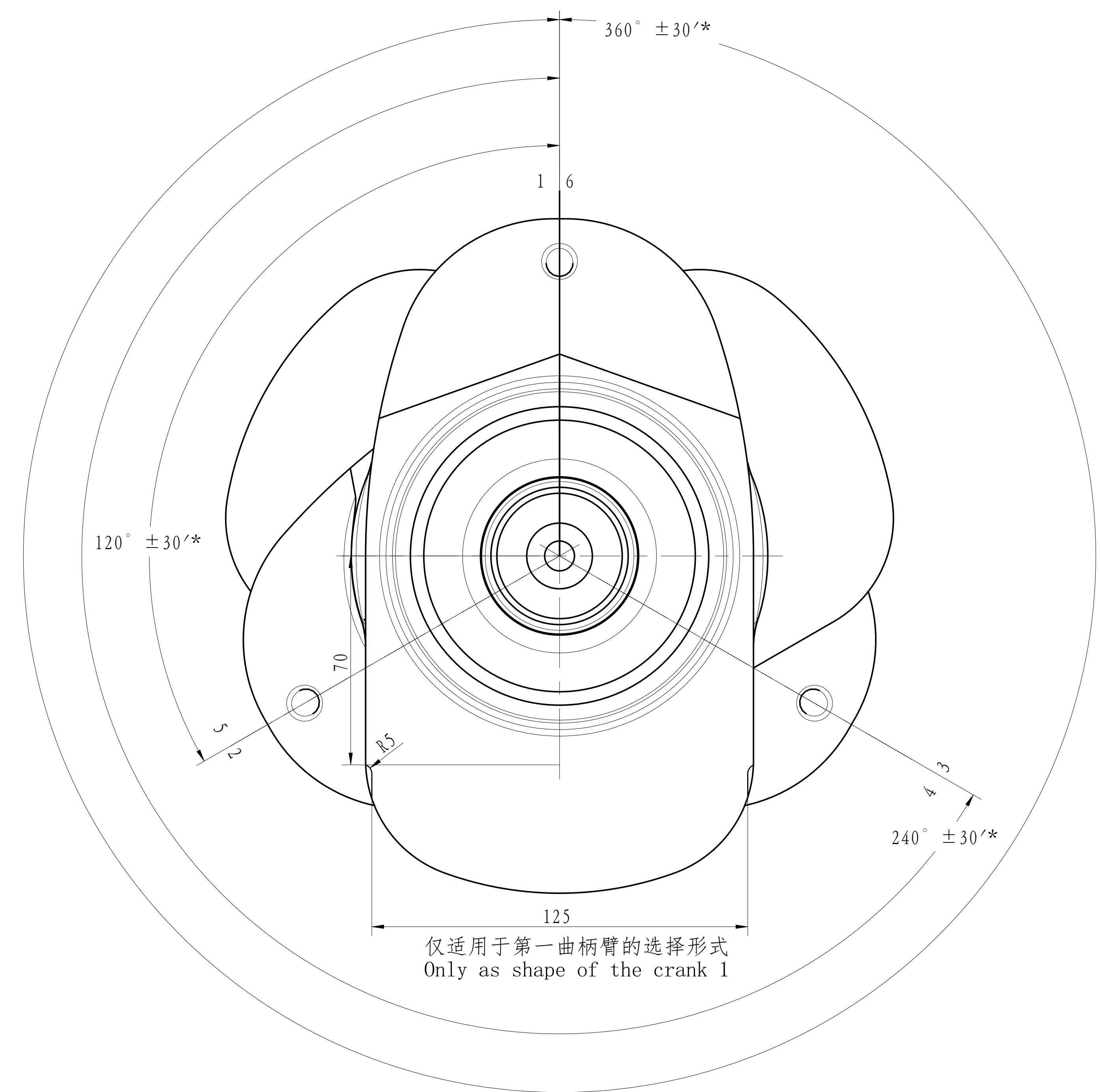
\sqrt{z}	$\sqrt{12.5}$	$\sqrt{Rz100}$	\sqrt{s}	$\sqrt{0.4}$	$\sqrt{Rz2.5}$	过渡圆角R5处研磨
\sqrt{x}	$\sqrt{3.2}$	$\sqrt{Rz25}$	\sqrt{T}	$\sqrt{12.5}$	$\sqrt{Rz100}$	粗加工表面允许深0.5的缺陷
\sqrt{v}	$\sqrt{0.8}$	$\sqrt{Rz6.3}$				

- 在考虑中间轴承跳动 $\sqrt{0.3 A-B}$ 情况下, 法兰和前端平面与径向跳动增加, 按照对支撑点A或B的检验位置距离其跳动最大到0.075。
- 本图样被612600020857、612600020866、612600020867参见。

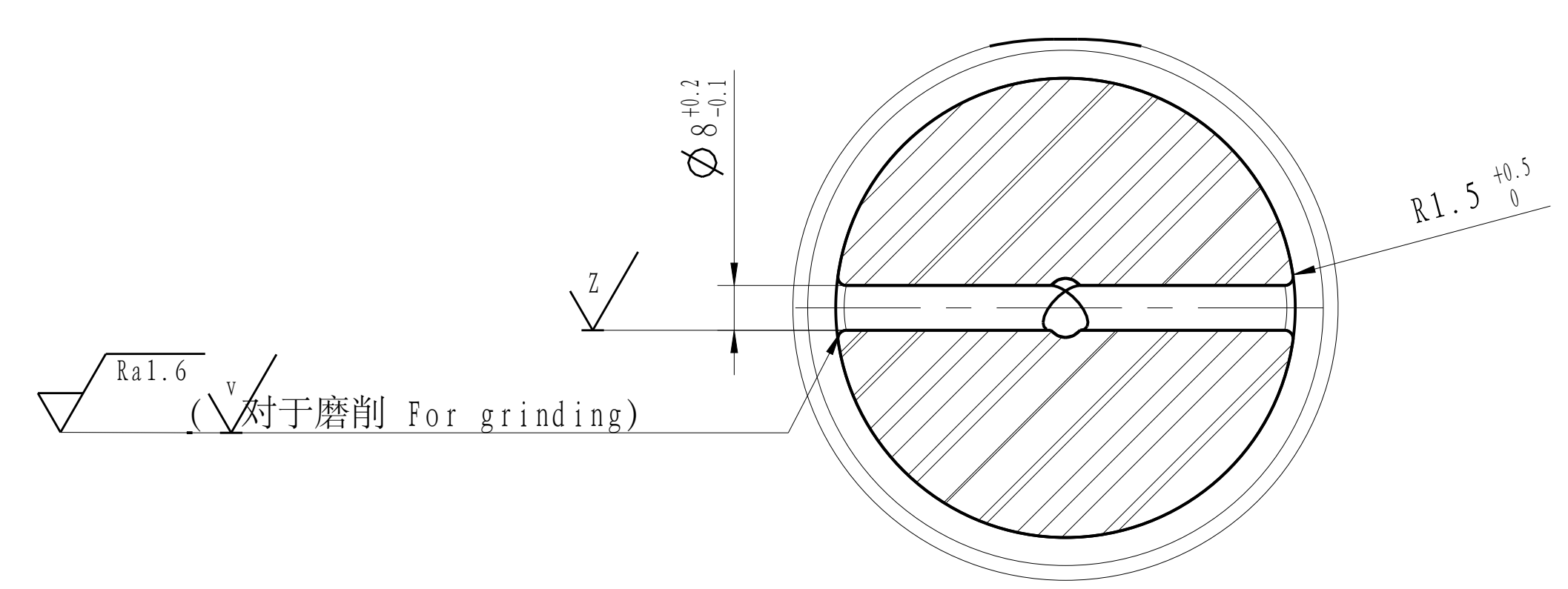
Technical criterion

- Flawless acc. to JB/T6729
- Check the knuckle by the screed, and clean the oil gallery. the run-out of main journal should be match in 120° scope.
- Undefined tolerance acc. to GB/T1804-m
- Mark of blank acc. to Q/WCG005.4
- Dynamic balance test is done, max unbalanced error for all surfaces is 60g·cm.
- Raw part:after forging, hardened and tempered to (800-950) N/mm², if the run out is above 3mm, straightened in low temperature and then annealed for 5h at 5h at 620°C, after tant , cooled in the air aliminate the stress.according to requirement ,the above step can be repeated.
- After rough machining , the products must be straightened and stress relief annealed at 620°C for 3h, after that controlled cooling and achieve 350°C in 3h, then cooling in air for 5min. and the oxide is forbidden
- When the crankshaft is unstandard, should mark SI、SIH or SIL
- the run-out of main journal should be less than 0.05 before nitrification.
- If considered the run-out tolerance $\sqrt{0.3 A-B}$ the run-out of flange and front face allowed to increase. the max run-out valve coule add up to 0.075 according the distance to catch po A or B .
- The drawing is referred by 612600020857, 612600020866, 612600020867.

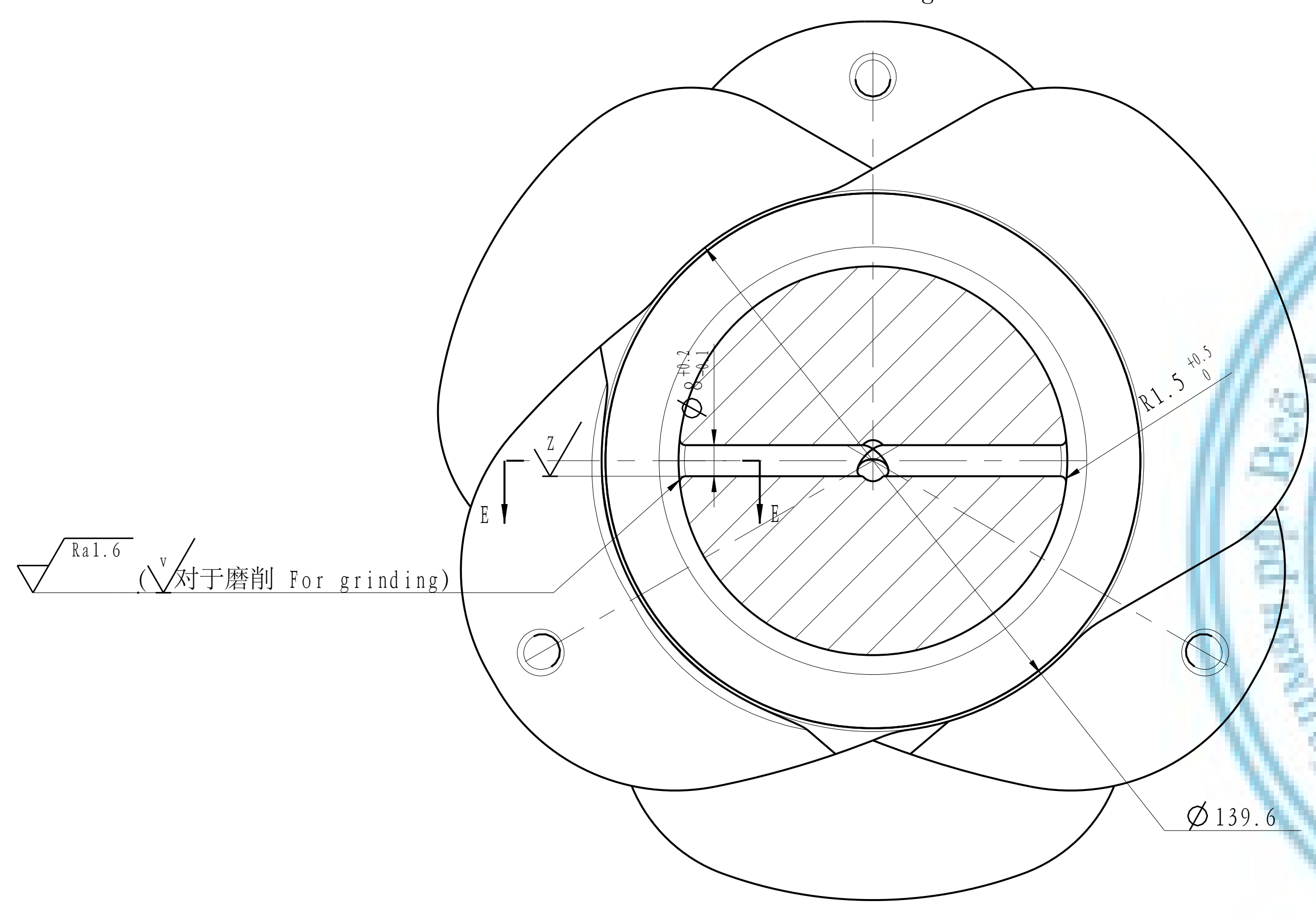
V向
V View *相对于基准C
* is relative to C



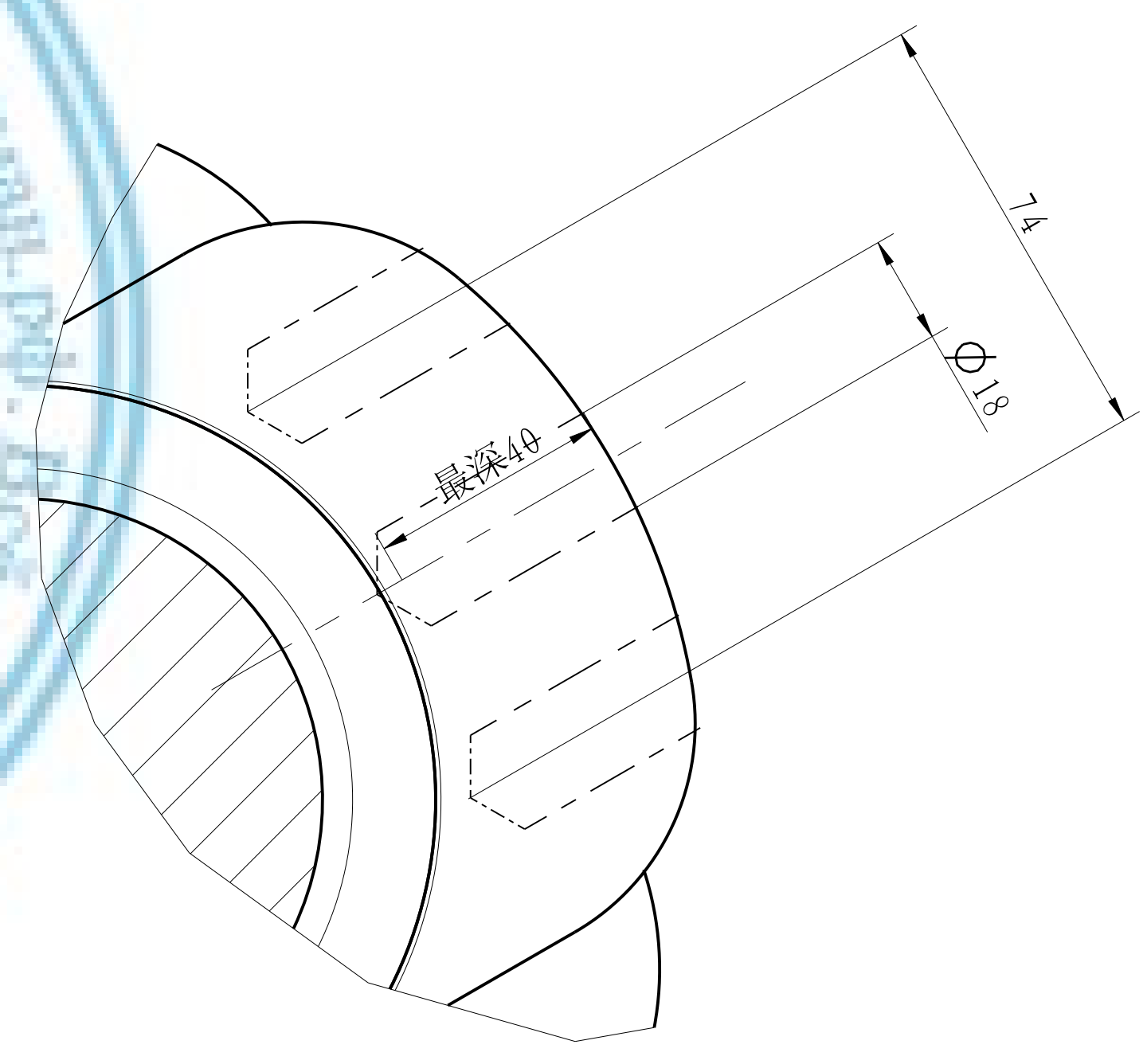
连杆轴颈油孔剖面
Connecting rod bearing oil section



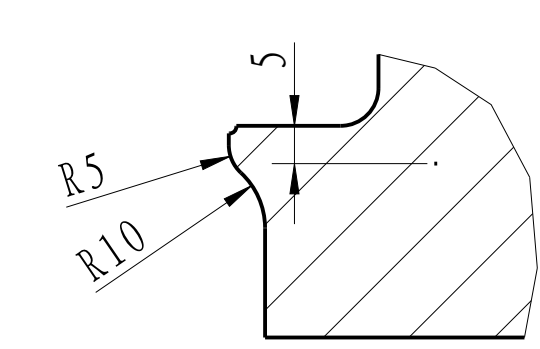
D-D
主轴颈油孔剖面
Main bearing oil section



平衡钻孔供选择的形式
Balancing holes shape for choice



E-E



级别	顺序号	内容	备注
Z	101	曲轴材料 Material of crankshaft	
Z	102	主轴颈圆柱度 Cylindricity of main journal	
Z	103	主轴颈的跳动 Runout of main journal	
Z	103	动平衡的最大不平衡量 Dynamic balancing	

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重量Weight	101.2kg
比例Scale	1:1

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