


APPLICATION		REVISIONS			
NEXT ASSY	USED ON	REV	ACTION	DATE	APPROVED
		A	Release	1/12/89	RDB
		B	Revised & Redrawn per ECO 20496	06/22/09	R REED
		C	Revised with pictures.	8/20/2012	R. MANN

ENGINEERING NOTICE					
PREPARED R. Black	DATE 12/21/88	APPROVED B. Howard	DATE 1/3/89	TITLE: General Guidelines for Surface Flaws	
APPROVED J. Schadlick	DATE 1/9/89	APPROVED T. Trigas	DATE 1/10/89		

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1.0 PURPOSE

To establish criteria to insure a consistent visual finish on the exposed surfaces of the machined metal, plastic or composite parts. These criteria will be an addendum not a replacement for the fabrication drawings for the parts. Consistency will be obtained by quantifying the surface flaws and determining if the parts are usable based on this document.

2.0 GENERAL

The current drawings call out specific surface roughness criteria which will still apply. However, this information is insufficient for controlling the esthetics of the parts. Therefore surfaces finished with a 'grain' that is highly visible and an operation **that obviously** changes the direction or alters the grain **may not be acceptable**, even though the surface roughness is still in tolerance. **In these instances, suppliers may submit waivers in writing to FTI prior to shipping the parts. Waivers shall be submitted on forms that include root cause determination and corrective action.**

3.0 DESCRIPTION OF DEFECTS

INDICATIONS	DEFINITIONS	FIGURE
Burnish Mark	A local smoothing of a surface that may contain scratches of no apparent depth.	Refer to figure 1 in appendix A
Burr	A rough ridge or edge left at the intersection of two surfaces or loose scale like fragments on a surface.	
Tool Marks	Chatter/tool mark(s) on material and/or part.	Refer to figures 2 and 5 appendix A
Dent	A depression on the surface of the material and/or part.	
Foreign Material	Any substance not integral to the part including solid or liquid residue such as material chips, machining oil or coolant residue and sanding grit	
Scratch	A linear depression with a sharp bottom.	Refer to figure 3 in appendix A
Step	An abrupt change in a surface profile or a mismatch between two or more surfaces.	Refer to figure 4 in appendix A
Undercut	A groove or recess cut into a surface near a shoulder or other projection.	Refer to figure 7 in appendix A
Welds	The joining of metals using heat and sometimes filler metal. Welds are to conform to EN-8001.	Refer to figure 9 in appendix A

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3.1 Sand Blasted Finish

3.1.1 Housings with flanges are to be sand blasted. Protect threads and sealing surfaces blasting only external surfaces.
(see fig. 8 Appendix A)

3.2 Sanded Finish

3.2.1 Housings with square or hex bodies are to be sanded using 60-100 grit paper. Only the flat surfaces of the housing body are to be sanded. The direction of the finished grain is to be parallel to the through bore.
(see fig. 6 Appendix A)

4.0 INSPECTION CRITERIA

4.1 Special surface characteristics shall be evaluated by visual inspection under normal shop lighting with the unaided or corrected vision with no magnification.

4.2 Defective characteristics as described in this document shall not be visible at a distance of 12 inches from the viewer.

5.0 DISPOSITION

5.1 Any parts that are found to not comply with these criteria may be re-worked until corrected while still maintaining compliance to the detailed drawing to which the part was originally machined.

Appendix A



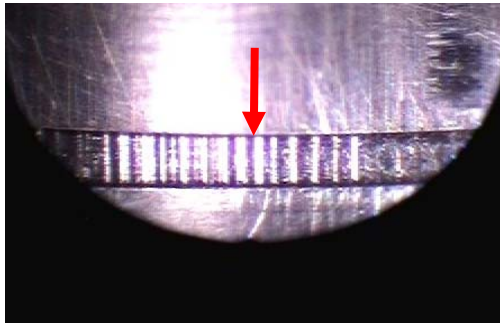
Unacceptable Burnish



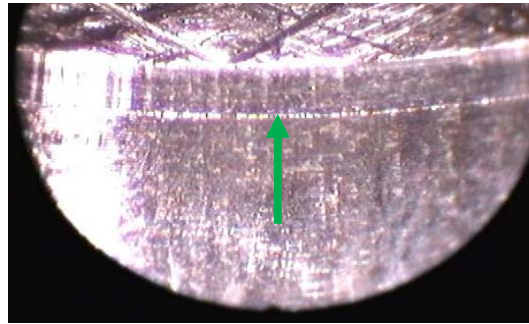
Acceptable Finish

Figure 1

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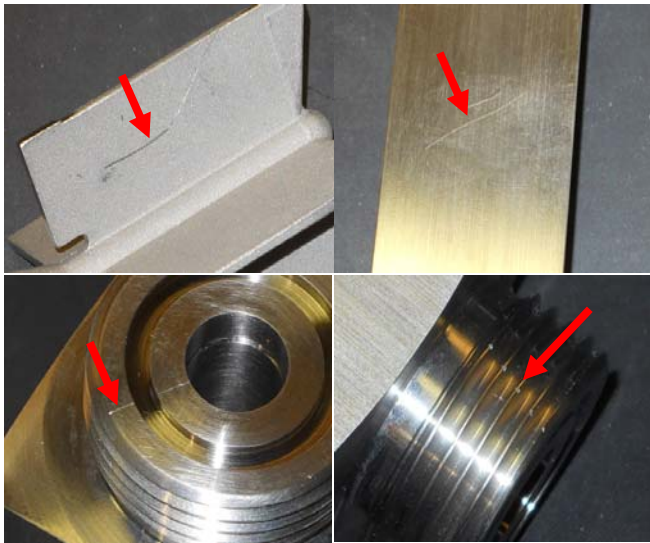


Unacceptable Chatter



Acceptable Chatter

Figure 2



Unacceptable Scratches

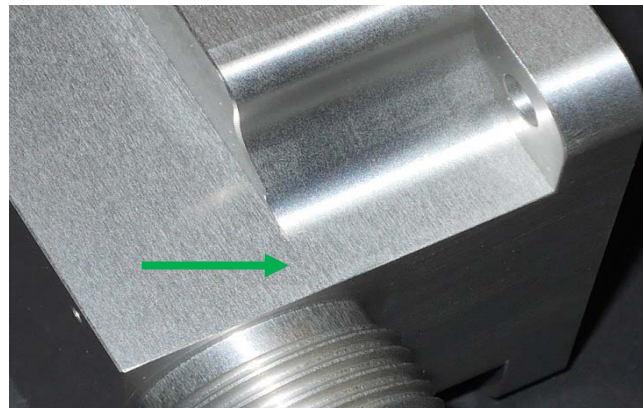


Acceptable

Figure 3

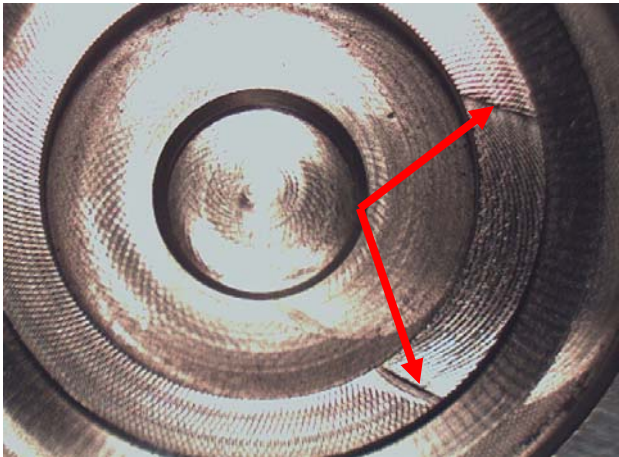


Unacceptable Machined Step



Acceptable

Figure 4



Unacceptable Tool Marks



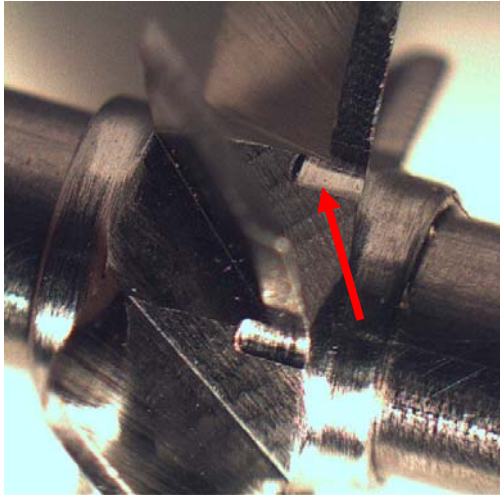
Acceptable Tool Marks

Figure 5

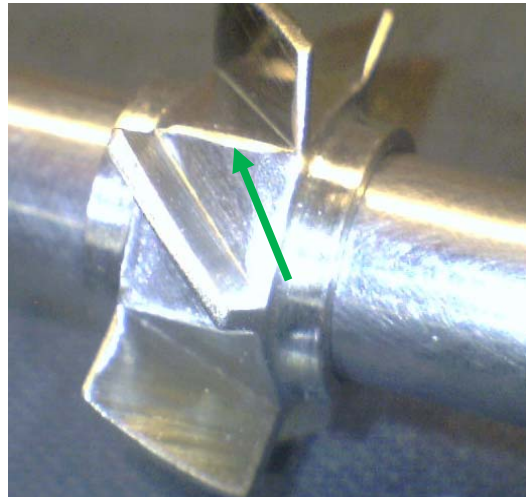


Acceptable Sanding Hex or Square Housing Body

Figure 6



Unacceptable Undercut

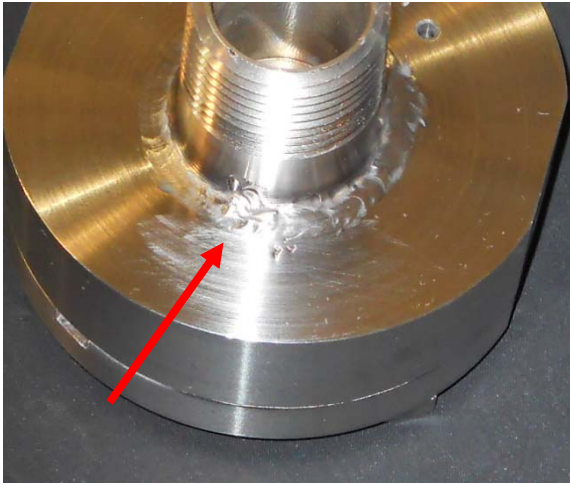


Acceptable Intersection

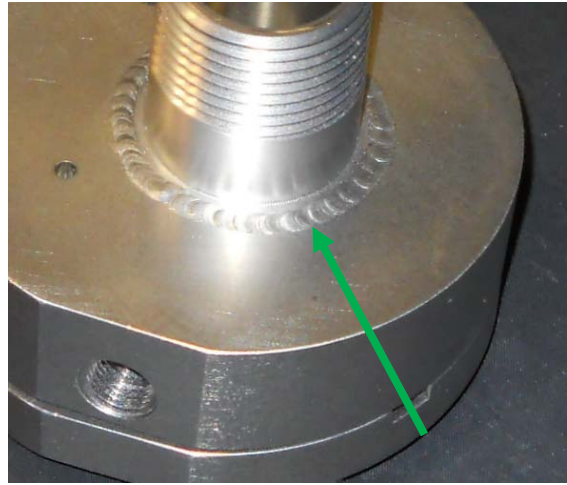
Figure 7



Figure8



Unacceptable Weld



Acceptable Weld

Figure 9