

Notice No.37 29th May 2008

AMENDMENT TO THE GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

“Guidance for the survey and construction of steel ships” has been partly amended as follows:

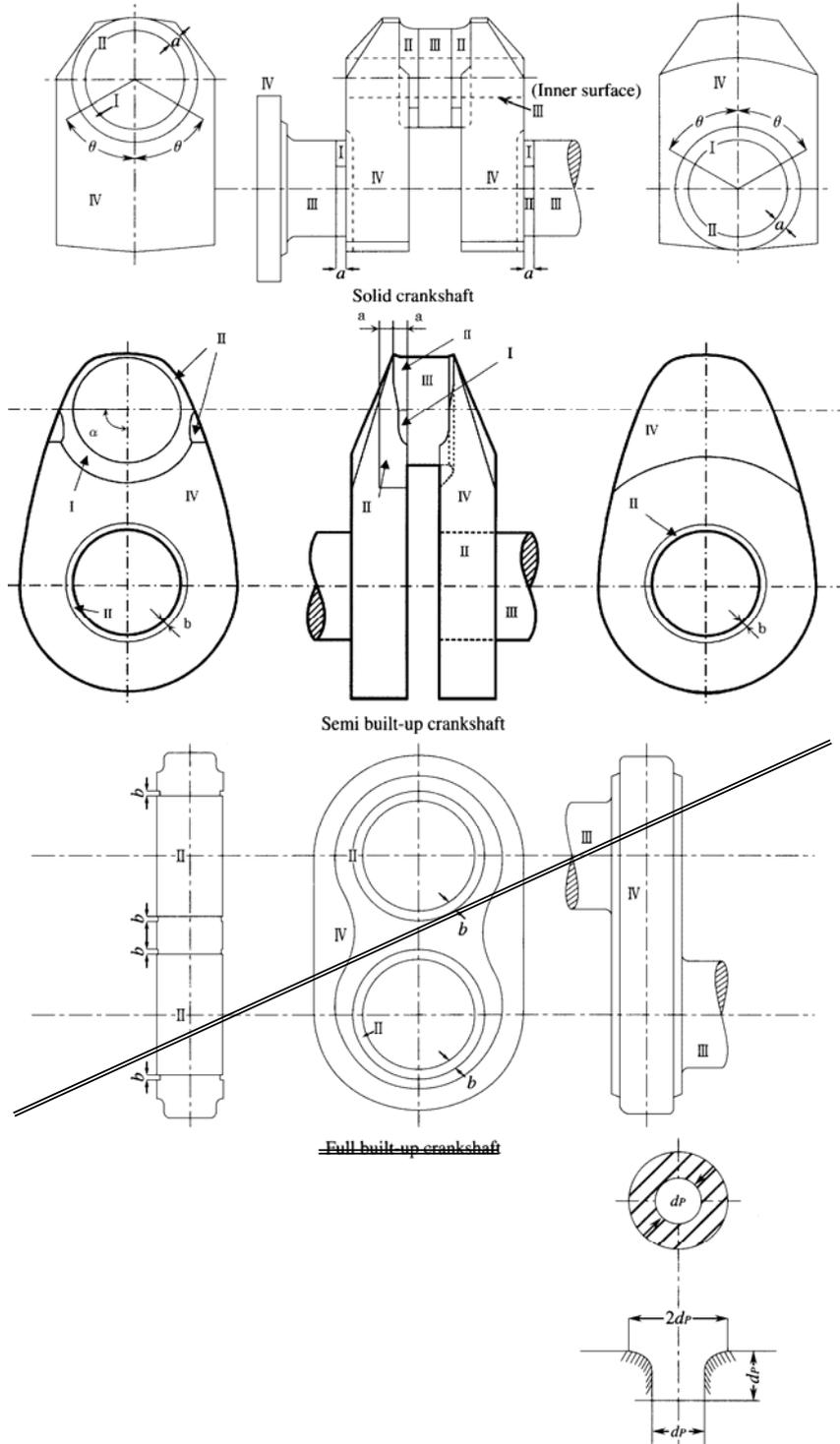
Annex K5.1.9(2) GUIDANCE FOR SURFACE INSPECTION OF DIESEL ENGINE CRANKSHAFTS

1.2 Divisions for Inspection Surface

The inspection surface of the crankshaft is divided into the following I to IV zones as shown in **Fig. 1**. The inspection methods and standards are specified depending on the zones respectively.

Fig. 1 has been amended as follows.

Fig. 1 Divisions for Inspection Surface



Notes:

- (1) Where the crankpin or journal has oil holes, the circumferential surface of the oil holes should be classified into division II (See the right figure).
- (2) In the above figures, θ , α , a , and b are as follows:
 $\theta = 60^\circ$
 $\alpha = 90^\circ$

$a = 0.1d$
 $b = 0.05d$ but not less than 25 mm
 d : Diameter of crankshaft

1.6 Standards for Allowable Limit of Defects for Surface Inspection

1.6.1 Steel Forged Crankshaft

Sub-paragraphs -4(2) and (3) have been amended as follows.

4 Standards

(2) [Class A crankshaft]

(a) For carbon steel

Zone I : All defects detected are to be removed, and the depth of grooves caused by such removing is to be less than $0.01d$. In this case, the grooves for the fillet part are to be smoothly rounded off so that the original shape is not impaired. Grooves for the parallel and surface parts are to be so rounded off that the bottom radius of the grooves is not less than three times the depth of the grooves.

Zone II : All defects are to be removed except the following :

- (i) Dotted indications that have been detected by dye penetrant inspection, which are however several Grade *B* defects that could be discernible with naked eye only with difficulty.
- (ii) Grade *B* defects of length not exceeding 2mm with sufficient spacing between each two.

The depth of grooves caused by such removing is to be less than $0.01d$ and the grooves are to be so rounded off that the bottom radius of the grooves is generally not less than three times the depth of the groove, and in no case it shall be less than twice the depth.

Zone III : All defects detected are to be removed except the following :

- (i) Grade *B* defects of length not exceeding ~~10mm~~6mm.
- (ii) Grade *C* defects of length not exceeding ~~5mm~~3mm.

The depth of grooves caused by such removing is to be less than $0.01d$ and the grooves are to be so rounded off that the bottom radius of the grooves is not less than twice the depth of the groove.

Zone IV : All defects detected are to be removed except the following :

- (i) Grade *B* defects of length not exceeding ~~20mm~~10mm.
- (ii) Grade *C* defects of length not exceeding ~~10mm~~5mm.

The depth of grooves caused by such removing is to be such that it does not affect the strength of the zone, and for the depth, it is necessary to receive the Surveyor's approval.

(b) For low alloy steel

- (i) In case when Grade *C* defects were detected, whatever zones are, the crankshaft is to be rejected.
- (ii) Regarding the standards in case when Grade *B* defects were detected, those for the carbon steel are to be applied correspondingly.

(3) [Class B Crankshaft]

(a) For carbon steel

Zone I : All defects detected are to be removed except the following :

- (i) Dotted indications that have been detected by dye penetrant inspection, which are however several Grade *B* defects that could be discernible with the naked eye only with difficulty.
- (ii) Grade *B* defects of length not exceeding *2mm* with sufficient spacing between each two.

The depth of grooves caused by such removing is to be less than $0.01d$ and the grooves are to be so rounded off that the bottom radius of the grooves is generally not less than three times the depth of the groove, and in no case it shall be less than twice the depth.

Zone II : All defects detected are to be removed except the following :

- (i) Fillet part: Grade *B* defects of length not exceeding *2mm* with sufficient spacing between each two.
- (ii) Other part: Grade *B* defects of length not exceeding *5mm* with sufficient spacing between each two.

The depth of grooves caused by such removing is to be less than $0.01d$ and the grooves are to be so rounded off that the bottom radius of the grooves is not less than twice the depth of the groove.

Zone III : All defects detected are to be removed except the following :

- (i) Grade *B* defects of length not exceeding ~~*10mm*~~*6mm*.
- (ii) Grade *C* defects of length not exceeding ~~*5mm*~~*3mm*.

The depth of grooves caused by such removing is to be less than $0.01d$ and the grooves are to be so rounded off that the bottom radius of the grooves is not less than twice the depth of the groove.

Zone IV : All defects detected are to be removed except the following :

- (i) Grade *B* defects of length not exceeding ~~*20mm*~~*10mm*.
- (ii) Grade *C* defects of length not exceeding ~~*10mm*~~*5mm*.

The depth of grooves caused by such removing is to be such that it does not affect the strength of the zone, and for the depth, it is necessary to receive the Surveyor's approval.

(b) For low alloy steel

- (i) In case when Grade *C* defects were detected, whatever zones are, the crankshaft is to be rejected.
- (ii) Regarding the standards in case when Grade *B* defects were detected, those for the carbon steel are to be applied correspondingly.

EFFECTIVE DATE AND APPLICATION

1. The effective date of the amendments is 1 December 2008.
2. Notwithstanding the amendments to the Guidance, the current requirements may apply to the surveys for which the application is submitted to the Society before the effective date.