

Subject

Requirements to increase the integrity of fore deck fittings for dry cargo ships

ClassNK

Technical Information

No. TEC-0556

Date 12 December 2003

To whom it may concern

Unified requirements for strength and securing of small hatches on the exposed fore deck (UR S26) and strength requirements for fore deck fittings and equipment (UR S27) have been established based on the investigation for the resistance to green sea forces for fore deck fittings and equipment by IACS AHG/FDF (Ad Hoc Group/Fore Deck Fittings). The unified requirements are now in the process of being incorporated into ClassNK rules.

The amendments of rules are applicable to bulk carriers, general dry cargo ships (excluding container vessels, vehicle carriers, Ro-Ro ships and wood chip carriers) and combination carriers (e.g. OBO ships, Ore/Oil Carriers, etc.) of length 100m or more, which are contracted for construction prior to 1 January 2004, except for the requirements for windlass and winches, as well as new ships. These ships, which have been identified as NOTE on survey status, need to complete the confirmatory survey in accordance with the implementation scheme specified in the attached guidance.

Preliminary examinations for the related drawings are not required but the completion of the required reinforcement for small hatches, air pipes and ventilator pipes aboard need to be confirmed by surveyors in accordance with the attached guidance.

For any questions about the above, please contact:

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Attachment: Guidance of retroactive requirements for Fore Deck Fittings

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Attachment to
ClassNK Technical Information No. TEC-0556

Guidance of retroactive requirements for Fore Deck Fittings

1. Application

Bulk carriers, general dry cargo ships (excluding container vessels, vehicle carriers, Ro-Ro ships and wood chip carriers) and combination carriers (e. g. OBO ships, Ore/Oil Carriers, etc.) of length L1 defined in Part C 15.2.1-1 of NK Rules 100m or more, which are contracted for construction prior to 1 January 2004, need to complete the confirmatory survey for small hatches, air pipes and ventilator pipes on the exposed deck giving access to spaces forward of the collision bulkhead and to spaces which extend over this line aft-wards shown in Figure 1, in accordance with the followings.

Ship's Age on 1 January 2004	Implementation Scheme
15 years \leq A	By the due date of the first Intermediate Survey or Special Survey after 1 January 2004.
10 years \leq A < 15years	By the due date of the first Special Survey after 1 January 2004, but not later than first Intermediate Survey after the ship's age reaches 15 years.
A < 10 years	By the date on which the ship reaches 10 years of age. Where the due date of the first Intermediate or Special Survey does not fall between 1 January 2004 and the date when the ship reached 10 years of age, the implementation may be by the due date of the first Intermediate or Special Survey after the ship reaches 10 years of age.

2. Small Hatches

(1) Strength

- (i) Small hatch covers are to be renewed and / or stiffened to meet the requirements shown in Table 1 and Figure 2. Stiffeners, where fitted are to be aligned with the metal-to-metal contact points. All stiffeners are to be welded to inner edge stiffener. See Figure 2 and Figure 3.
- (ii) The upper edge of the hatchway coamings is to be suitably reinforced by a horizontal stiffener, normally not more than 170 to 190mm from the upper edge of the coamings. See Figure 4.

(To be continued)

- (iii) For small hatch covers of circular, the diameter of which is 630mm or less, or similar shape, the top plates are exempted from these requirements when the thickness is 8mm or more. Where the diameter of which is more than 630mm, or similar shape, the top plates are to be suitably reinforced by the measures considered equivalent to those for square hatch covers specified in above (i).
- (iv) For small hatch covers constructed of materials other than steel, the required scantlings are to provide equivalent strength.

(2) Primary Securing Devices

- (i) Dogs (twist tightening handles) with wedges type securing devices shown in Figure 5 are not acceptable. They have to be replaced by Butterfly nuts tightening onto forks (clamps), Quick acting cleats or Central locking device.
- (ii) A gasket of small hatch cover is to allow a metal to metal contact to prevent over compression of the gasket by green sea forces that may cause the securing devices to be loosened or dislodged. The metal-to-metal contacts are to be arranged closed to each securing device in accordance with Figure 2.
- (iii) The securing devices are to be of the type such that sufficient compression pressure is achieved by one person without the need of any tools.
- (iv) A primary securing method using butterfly nuts, the forks (clamps) are to be of robust design, which minimize the risk of butterfly nuts being dislodged while in use, by means of curving the forks upward, a raised surface on the free end, or a similar method. The plate thickness of unstiffened steel forks is not to be less than 16mm. An example arrangement is shown in Figure 3.
- (v) The hinges are to be fitted such that the predominant direction of green sea will cause the cover to close, which means that the hinges are normally to be located on the fore edge. See Figure 6.

(3) Secondary Securing Device

Small hatches on the exposed fore deck are to be fitted with an independent secondary securing device e.g. by means of a sliding bolt, a hasp or a backing bar of slack fit, which is capable of keeping the hatch cover in place, even in the event that primary securing device became loosened or dislodged. It is to be fitted on the side opposite to the hatch cover hinges.

3. Air Pipes

Air Pipes on the exposed fore deck are to be reinforced in accordance with Table 2 and Figure 7.

(To be continued)

4. Ventilator

Gooseneck Type ventilators on the exposed fore deck are to be reinforced in accordance with Table 3 and Figure 7. Rotation type mushroom type heads (an example is shown in Figure 8) are to be replaced by another type (an example is shown in Figure 9).

Table 1 Scantling for Small Steel Hatch Covers on the Fore Deck

Nominal size (mm x mm)	Cover plate thickness (mm)	Primary stiffeners	Secondary stiffeners
		Flat Bar (mm x mm); Number	
630 x 630	8	-	-
630 x 830	8	100 x 8 ; 1	-
830 x 630	8	100 x 8 ; 1	-
830 x 830	8	100 x 10 ; 1	-
1030 x 1030	8	120 x 12 ; 1	80 x 8 ; 2
1330 x 1330	8	150 x 12 ; 2	100 x 10 ; 2

Table 2 Bracket Standards for Air

Air Pipe on Freeboard deck with height of 760mm

Nominal pipe diameter (mm)	80	100	125	150	200	250 over
Height of Brackets (mm)	460	380	300	300	No reinforce	No reinforce

Air Pipe on Superstructure deck with height of 450mm

Nominal pipe diameter (mm)	80	100	125	150	200	250 over
Height of Brackets (mm)	300	300	300	No reinforce	No reinforce	No reinforce

Table 3 Gooseneck type Ventilator Bracket Standards

Circle type

Nominal pipe diameter (mm)	80	100	150 over
Height of Bracket (mm)	460	380	No reinforce

Oval type

Section Scantling (mm)	120 x 80	200 x 100
Height of Bracket (mm)	300	300

(To be continued)

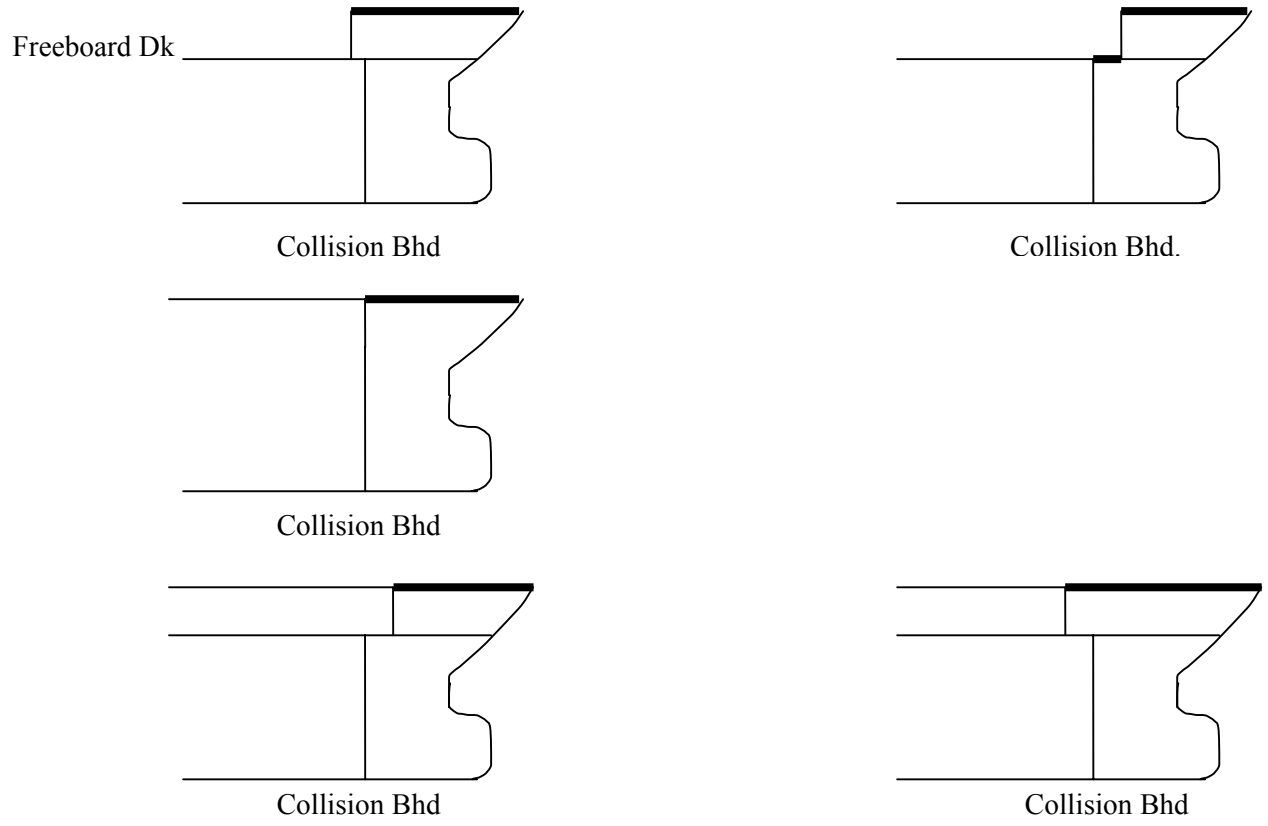


Figure 1 Exposed Fore Deck

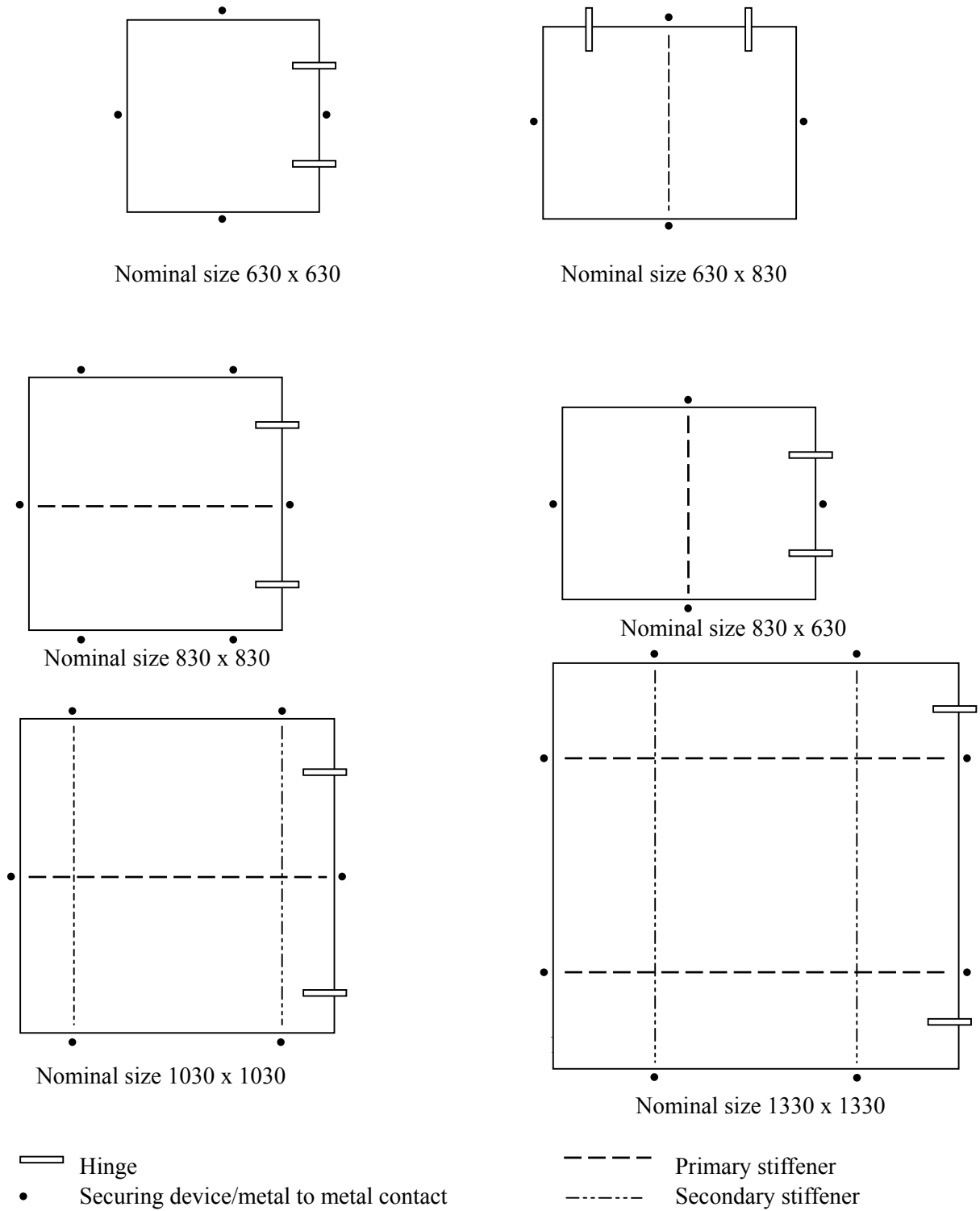
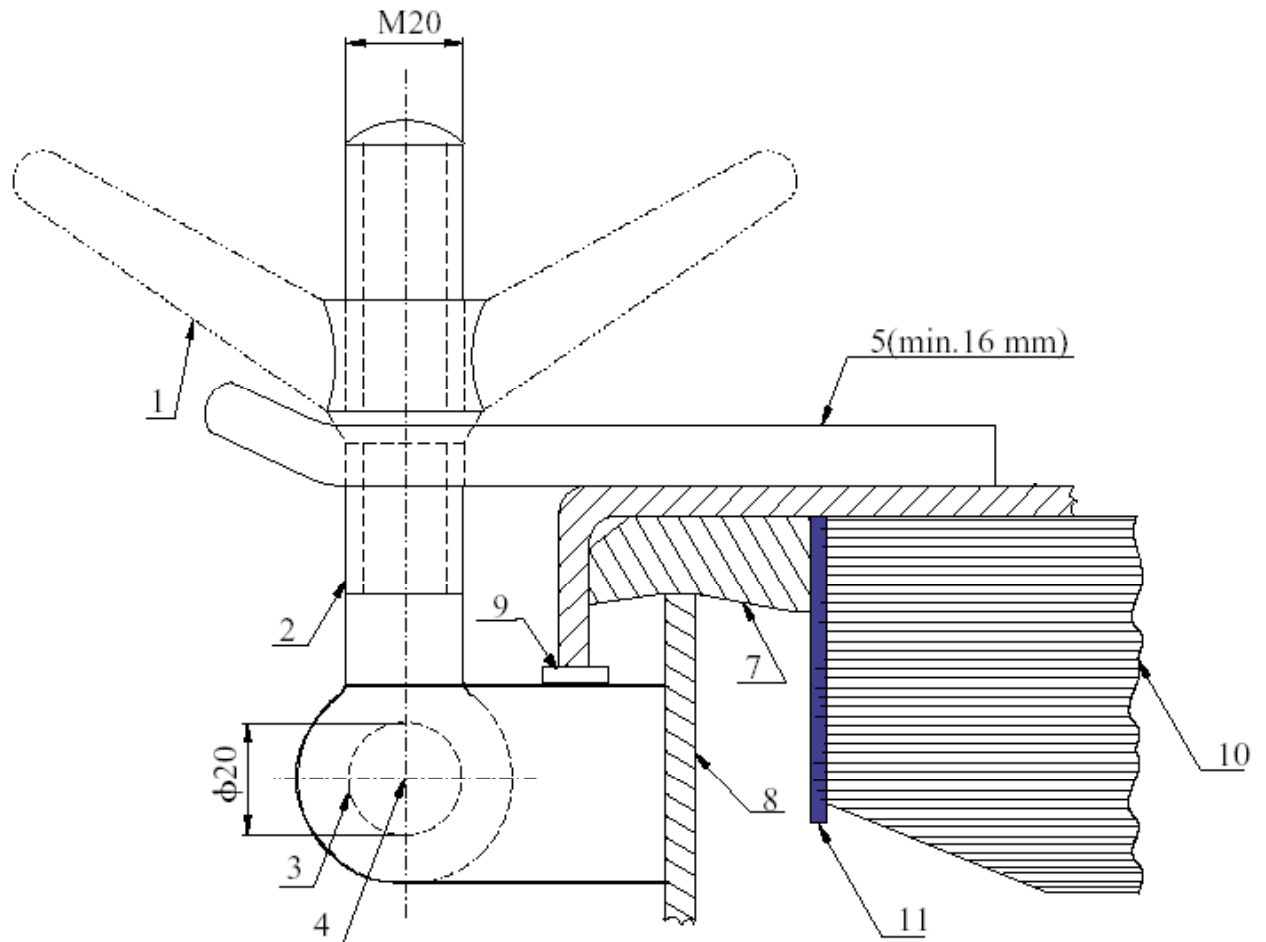


Figure 2 Arrangement of stiffeners

(To be continued)



(Note: Dimensions in millimeters)

1. butterfly nut
2. bolt
3. pin
4. center of pin
5. fork (clamp) plate
6. hatch cover
7. gasket
8. hatch coaming
9. bearing pad welded on the bracket of a toggle bolt for metal to metal contact
10. stiffener
11. inner edge stiffener

Figure 3 Example of a Primary Securing Method

(To be continued)

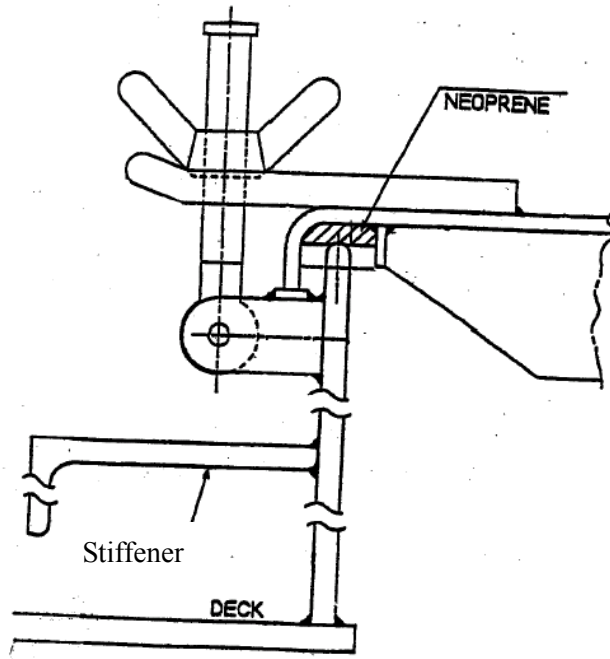
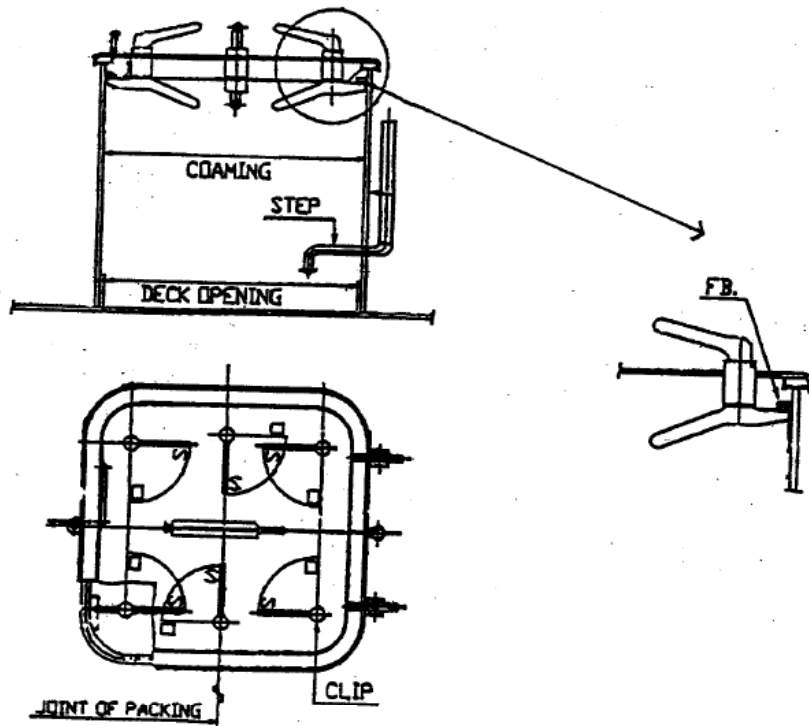


Figure 4 Example of Reinforcement of the hatchway coaming



NOT ACCEPTABLE

Figure 5 Example of Dogs with wedges

(To be continued)

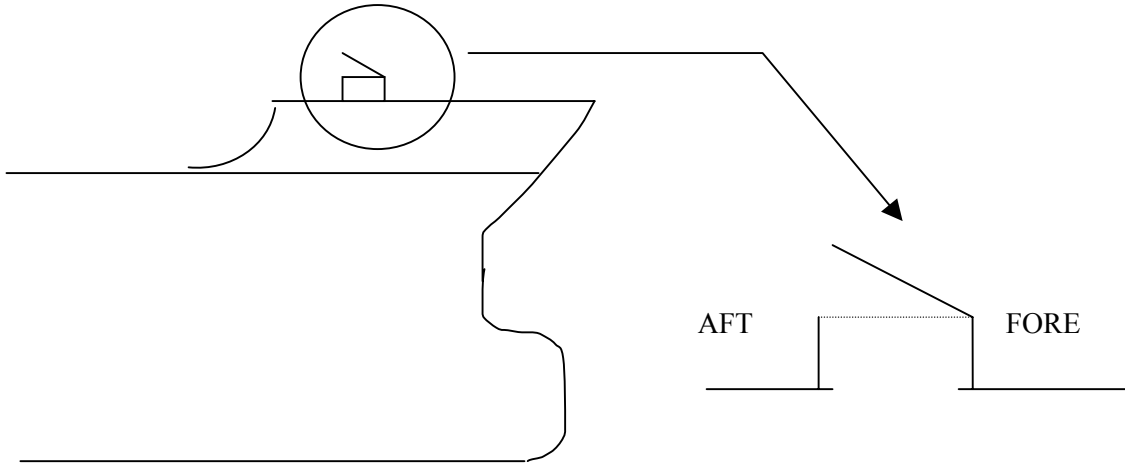


Figure 6 Hinge to be located on the fore edge

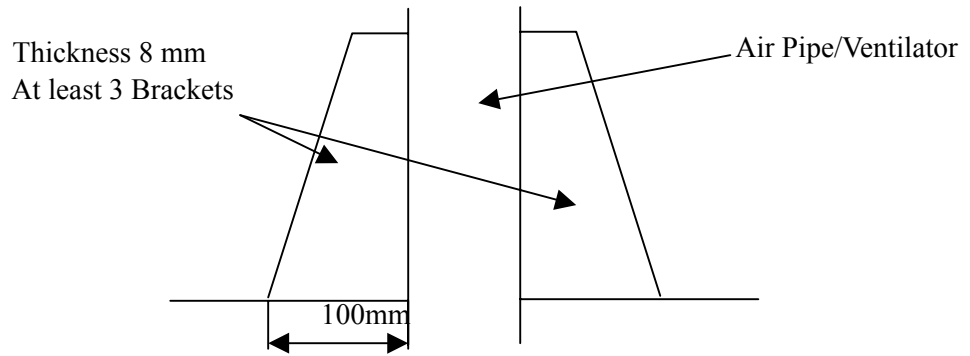
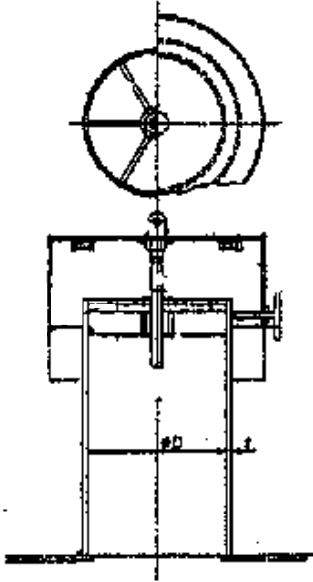


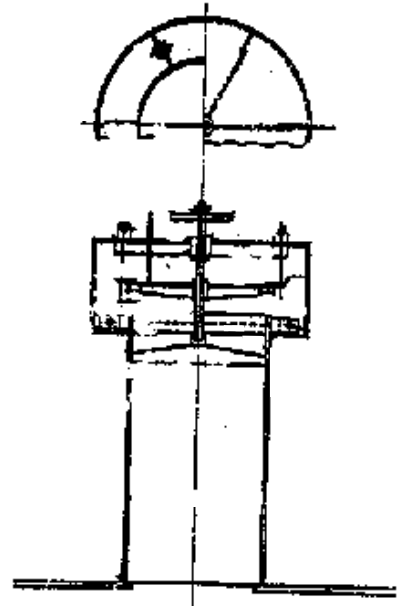
Figure 7 Reinforcement by bracket of Air pipe and Ventilator

(To be continued)



NOT ACCEPTABLE

Figure 8 Rotation type Mushroom head



ACCEPTABLE

Figure 9 Another type