Mr Terry Potter
Lift and Escalator
Industry Association
33 / 34 Devonshire Street
London W1G 6PY
United Kingdom

KONE plc
Global House
Station Place
Chertsey
Surrey KT16 9HW
Tel 0845 199 9999
Fax 0870 770 1144
www.kone.com

17 November 2011

Dear Sir,

RE : Preventive Maintenance of Counterweight Pulleys

KONE is strongly committed to quality and safety throughout all its processes and we manage the quality of our products continuously in our factories, within our suppliers and field operations and monitor equipment performance after installation.

KONE has learned of certain individual incidents within the industry globally where elevator counterweight pulley bearings have reached the end of their useful lives and where signs of functional failure were not detected during regular routine maintenance.

All bearings are wearing parts and should be replaced, at the latest, when the first signs of bearing deterioration are detected. Bearings will in most cases start to make noise and create vibration when worn. Another clear sign of deterioration is grease leaking out from the bearing. If ignored, bearing deterioration will lead to an eventual failure of the bearing.

Professional elevator maintenance requires that elevator bearings must be monitored regularly. Bearings must be replaced at the very latest when the first signs of bearing deterioration are observed. Noise, leaking grease and / or vibration are all indications to a professional maintenance provider that the bearing must be changed. KONE strongly recommends that all elevator maintenance companies take the above into consideration in their maintenance processes.

An undetected counterweight pulley bearing failure may lead to a misalignment of the pulley wheel, which may in turn cause significant mechanical stress to the counterweight structure.

In its continuing monitoring and development of its products, KONE has established that in **KONE CWF10PWS type of counterweights equipped with retainer rings in the ends of the pulley axle,** an unnoticed complete failure of the pulley bearing may cause unnecessary loading to the counterweight guiderails and in very rare and extreme cases lead to the counterweight becoming derailed from the counterweight guiderails.

As stated above, professional maintenance personnel can be expected to detect the above-mentioned early signs of bearing wear before complete failure of the bearing occurs. However, KONE will now offer to equip all the above mentioned CWF10PWS counterweights with retainer rings in the ends of the axle, with a new type of axle holder and new cover plate assembly eliminating the risk of derailing. KONE will be approaching customers having purchased the said products to conduct the upgrades.

Should any maintenance provider wish to perform the upgrade without KONE's intervention, the improved axle holder and cover plate designed for counterweights equipped with retainer rings is available free of charge through KONE's Global Spares Supply (http://www.kone.com/spares/Download/KONEExternalOrderForm.xls) under identification number: KM50025975R01 or KM50025977R01 (depending on the diameter of the pulley). In the **Appendix** to this letter you will find more information on how to identify the relevant products. In addition it contains the instructions on how to replace the axle holder and cover plate. Please note that the materials will be available free of charge until 31 December 2012.

With proper maintenance processes the wear of pulley bearings should be detected before deterioration leads to a bearing failure but with the above upgrade, KONE wishes to provide maintenance companies the opportunity to improve the failure modes in KONE products in their maintenance, should signs of bearing wear somehow go unnoticed.

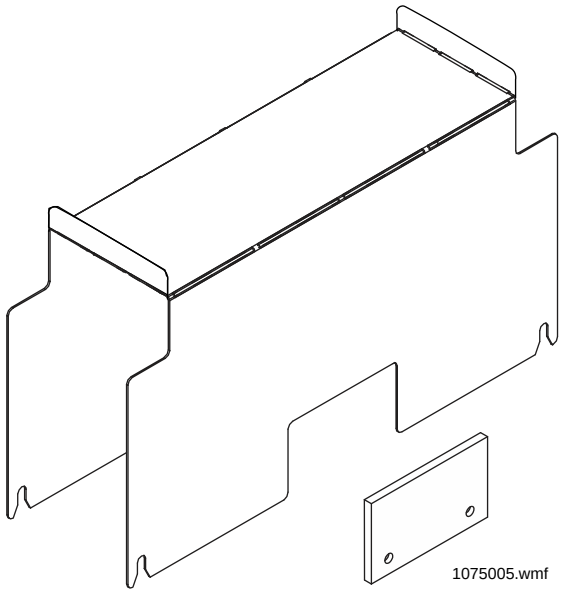
Questions relating to the above may be directed to the undersigned.

Yours faithfully,

Susan Timms Blanch
Quality Team

APPENDIX: CWF10PWS COUNTERWEIGHT UPGRADE

NOTE: This document is intended to be used by competent maintenance people who are suitably trained, qualified by knowledge and practical experience, provided by their maintenance organizations with necessary instructions and supported within their own maintenance organizations to enable the required maintenance operations to be safely carried out. The work described in this instruction should never be undertaken by any other person than a competent maintenance person described above. KONE shall not assume any liability for any damage, loss, injury and/or death due to performance of work in accordance with and/or related to this instruction.



CONTENTS

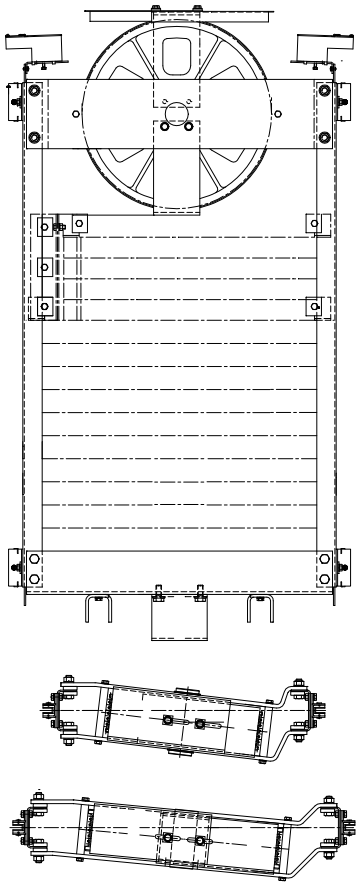
1 INTRODUCTION

This instruction describes the procedure for installing a counterweight upgrade package which consists of a counterweight pulley cover plate and an axle holder.

1.1 Selecting the correct upgrade package

This upgrade package is suitable for counterweight CWF10PWS versions which have a longer pulley axle and axle retainer rings fitted. Typically, this counterweight version has been installed in KONE elevators with MX10 or MX06 machine delivered since late 2004. Select the upgrade package based on the counterweight pulley diameter.

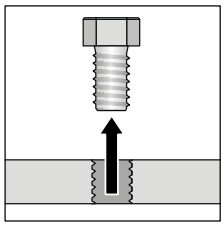
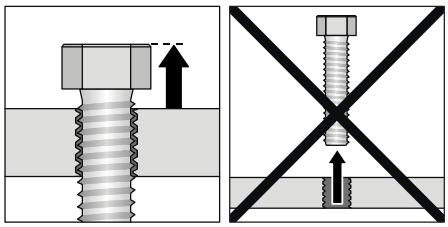
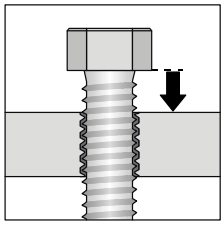
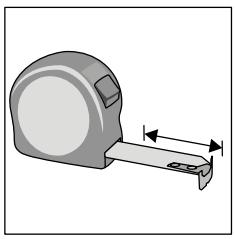
NOTE! Each upgrade package contains materials for five counterweights.

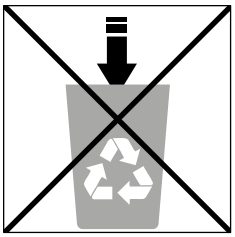
Counterweight type	Counterweight pulley diameter (mm)	Upgrade package part number
Counterweight with the skewed pulley CWF10 2:1PWS (601769G01/601769G02) 	330	KM50025977R01
	410	KM50025975R01

1.2 Related documents

Refer to your local, national or other applicable safety instructions and requirements related to elevator maintenance.

1.3 Symbols used in this document

Symbol	Description
	Remove the screw.
	Loosen the screw. Do not remove it.
	Tighten the screw to full tightness.
	Measure the distance indicated in the picture.

Symbol	Description
	Do not throw away anything indicated in the picture.
	Wear safety gloves.

2 ENVIRONMENTAL ISSUES

Hazardous waste material must be taken care of according to the local regulations.

3 MAINTENANCE METHOD SAFETY

It is required that the person working in accordance with these instructions is familiar with the normal safety measures related to elevator maintenance. All applicable local, national, international and/or other safety legislation, regulations and codes and standards must also be followed. Issues to be especially taken into consideration include but are not limited to:

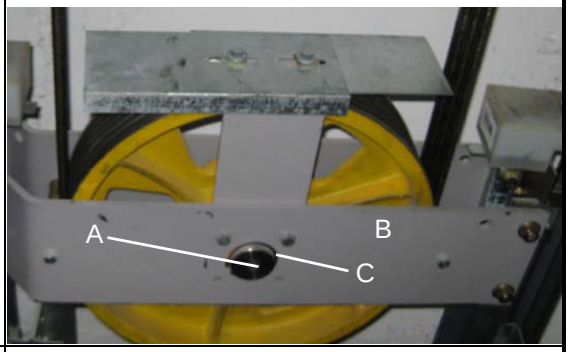
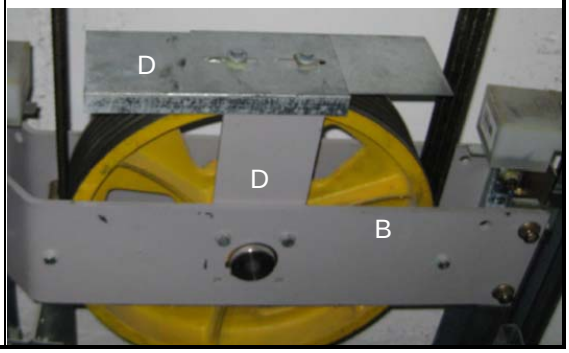
- Safety precautions when working on the elevator car roof
- Safety precautions when driving the elevator on inspection drive
- Safety precautions related to work at height
- Safety precautions related to end-user safety and taking the elevator out of use maintenance
- Electrical safety
- The use of protective gloves when handling metal plates and/or elevator ropes

4 CHECKING THE NEED FOR UPGRADE PACKAGE

The following conditions help to identify the affected units equipped with CWF10PWS counterweight. The units relevant for the upgrade fulfill all of the characteristics below:

WARNING

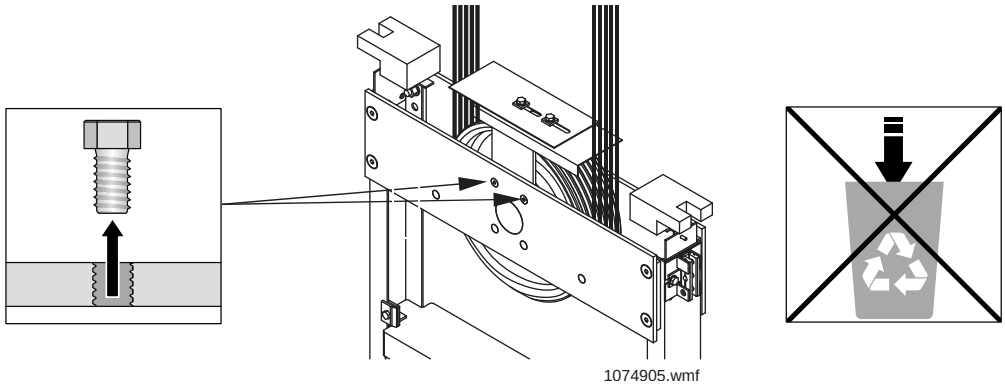
Refer to Appendix 2 for safety measures for counterweight upgrade.

	Condition	Illustration/Note
1	Unit has been delivered in the year 2004 or later (until August 2011).	The year of delivery is indicated in the car operating panel.
2	Elevator and machinery type combination is one of the following: • KONE MonoSpace machineroomless elevator with MX10 machinery. • KONE SMonoSpace and KONE SMiniSpace elevators with MX10 machinery • KONE XMiniSpace with MX06 or MX10 machinery.	The motor type is marked to the motor data plate which is fixed into the motor.
3	On both sides, the pulley axle (A) extends outside of the pulley assembly side plate (B) with retainer ring (C) fitted.	
4	Counterweight has an integrated upper axle holder and rope cover plate (D) fitted inside the pulley assembly side plate (B). NOTE! Axle holder (D) can be on car roof side or shaft wall side.	

	Condition	Illustration/Note
5	Counterweight pulley diameter and distance between guiderails is one of the following combinations: • the pulley diameter is 330mm and the distance between the guiderails is 570mm; or • the pulley diameter is 410mm and the distance between the guiderails is 700mm.	
6	Distance between the pulley assembly side plates is 124 mm.	

5 INSTALLING UPGRADE PACKAGE

1



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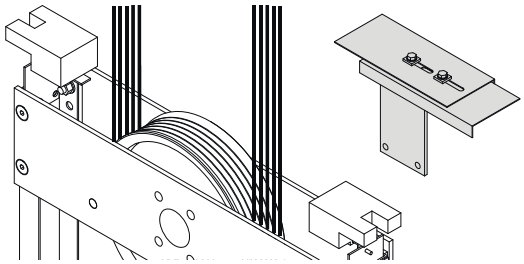

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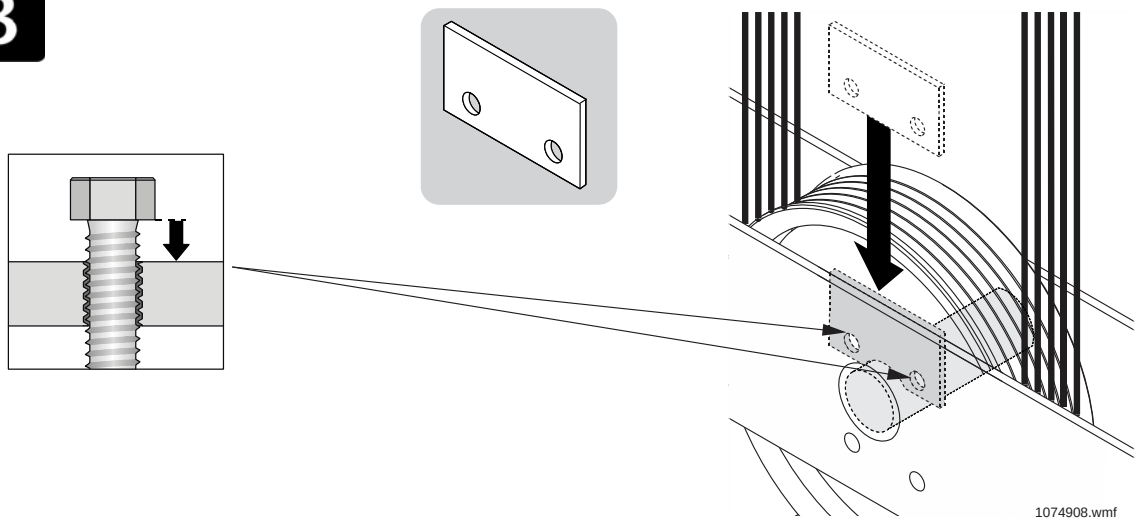

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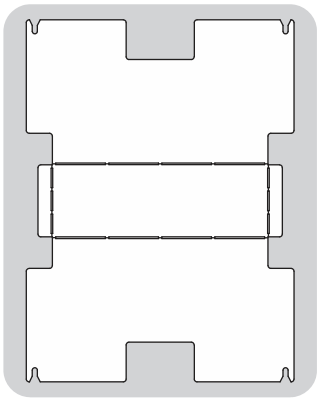

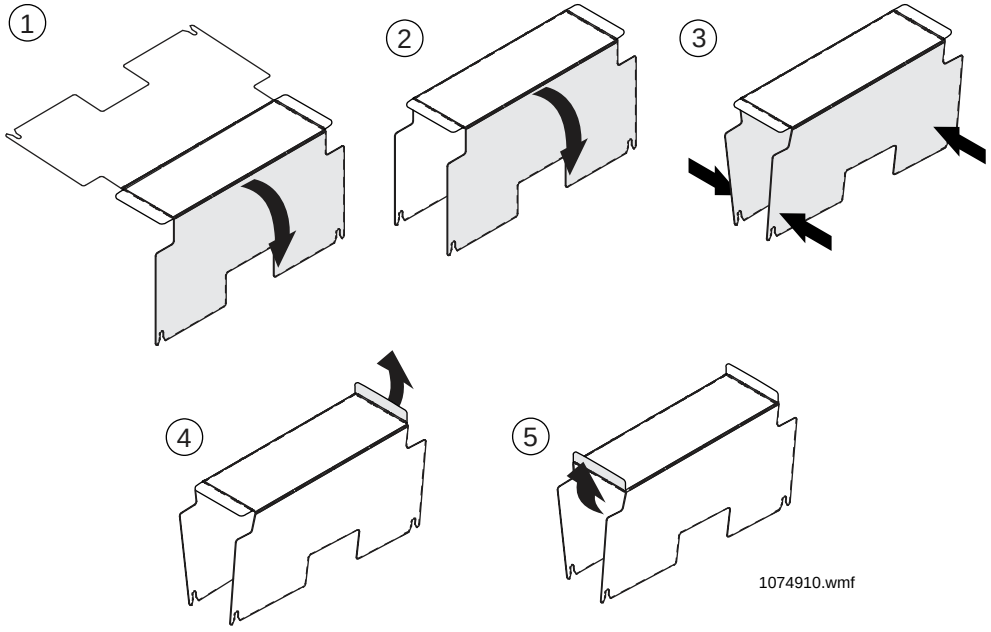

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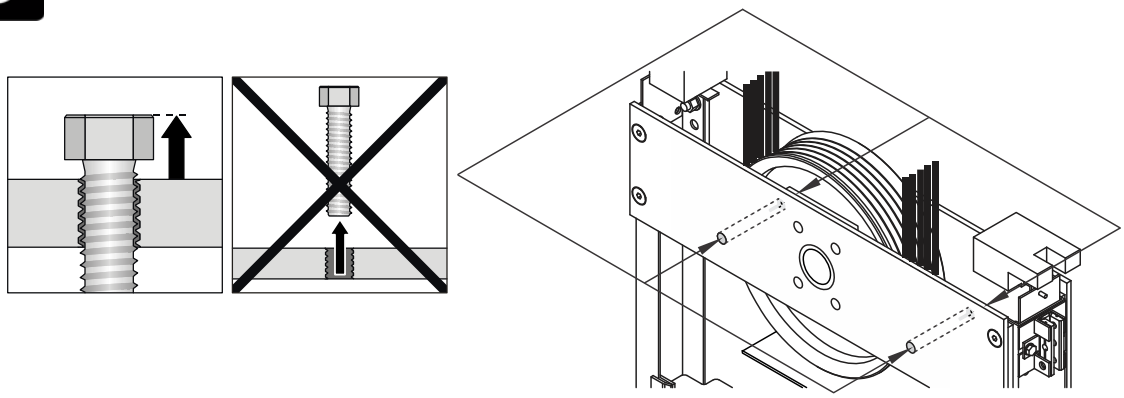

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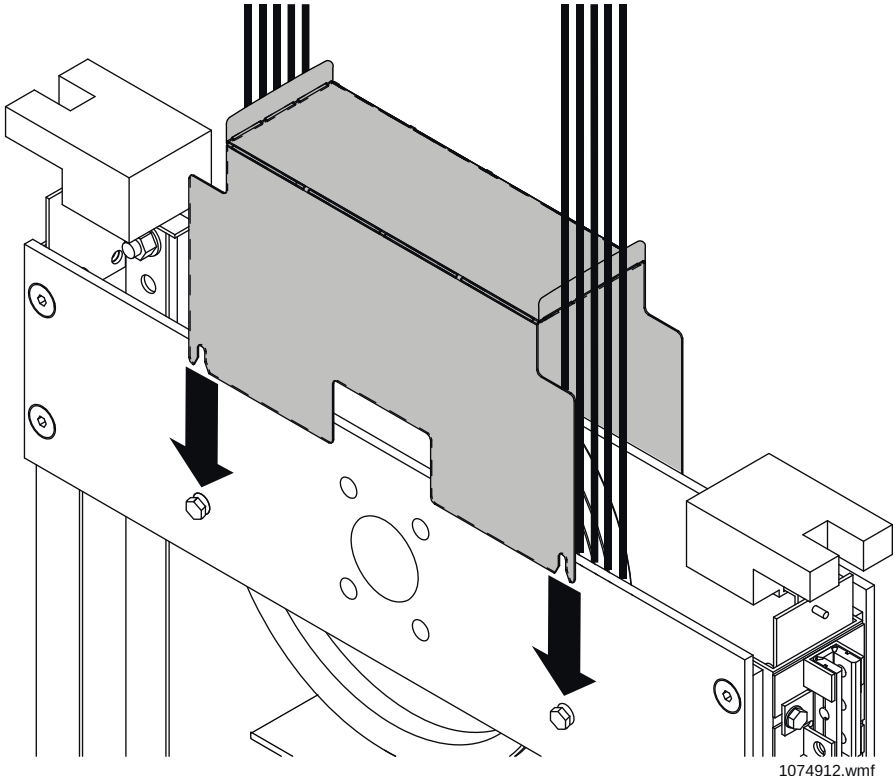

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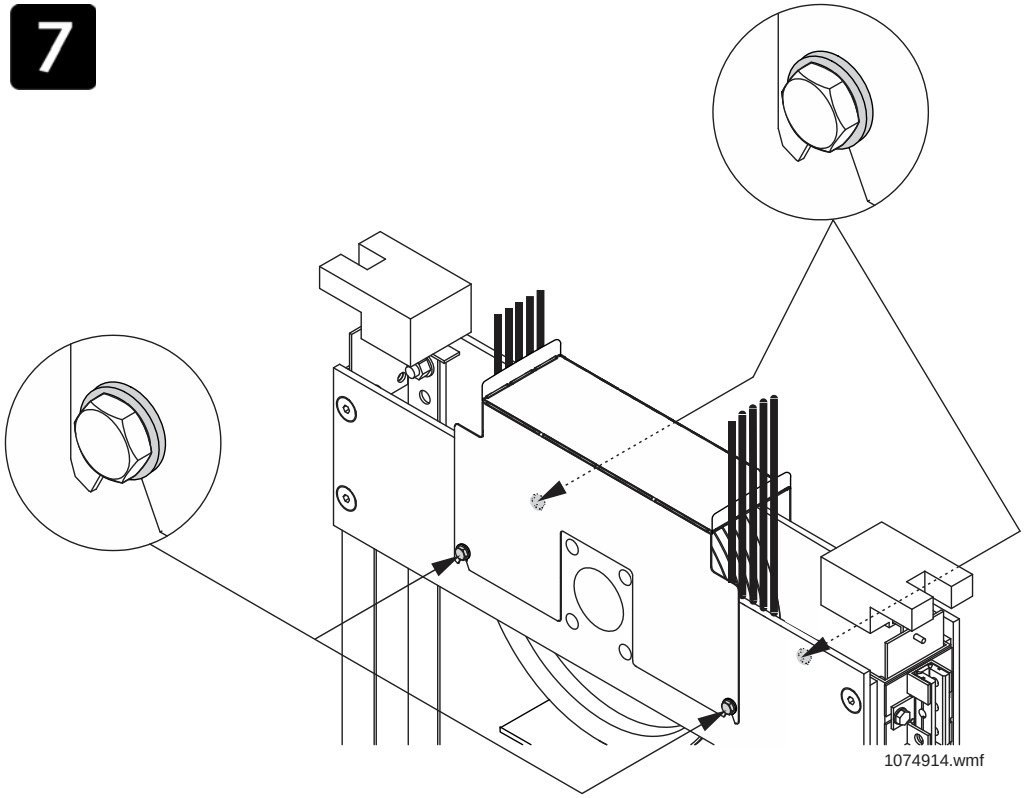

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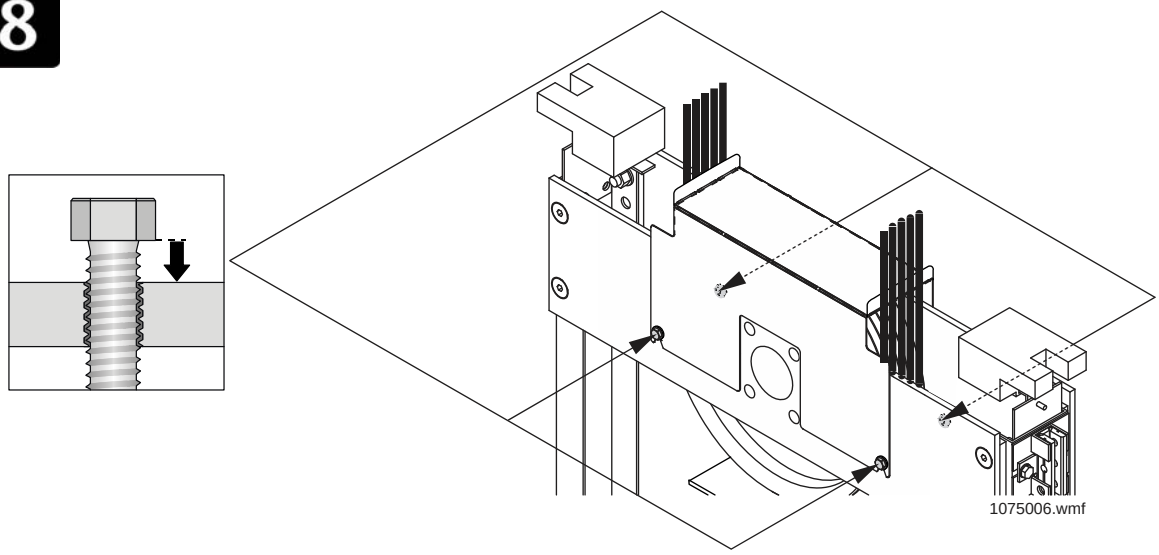

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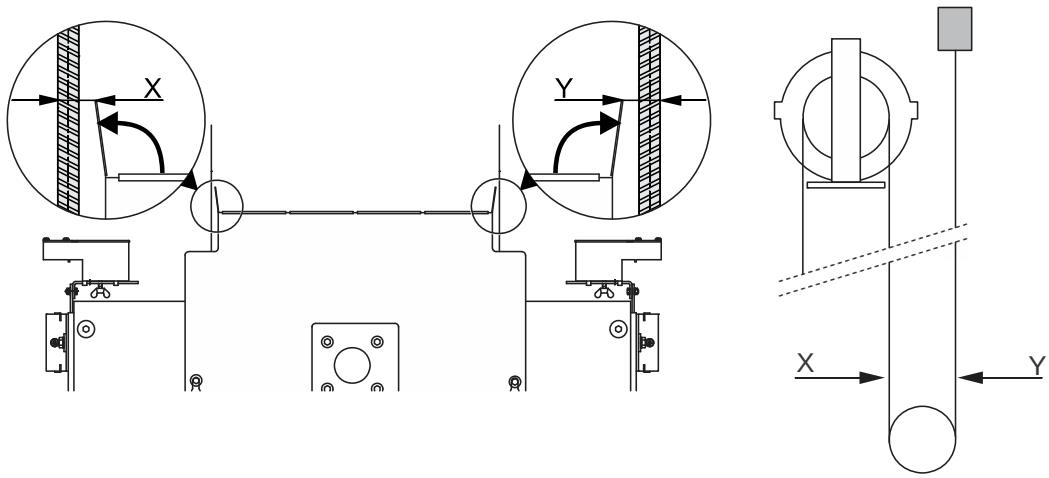

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X (on machinery side) = 3 – 5 mm.
Y (on counterweight rope fixing side) = 8 – 10 mm.

NOTE! The gap from the cover plate to the rope is different in different parts of the shaft. Typically, the shortest distance is when the counterweight is in its higher position and on the rope fixing side.

5.1 Finalizing the maintenance work

Step	Action	Illustration/Note
1	Check that the suspension ropes do not touch the pulley cover anywhere.	Drive on inspection to bottom floor. Inspect by listening that the ropes on the rope anchorage side of the counterweight pulley are not rubbing on the cover plate.