

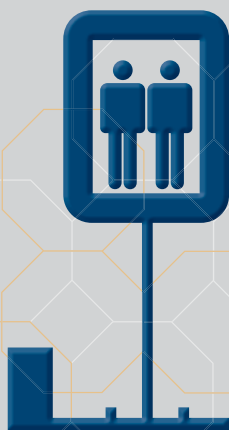
Maintenance Control Program Records Retention Binder

Building Name _____

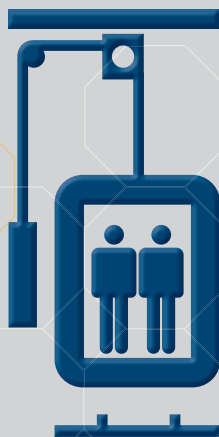
Building Address _____ City/State/Zip _____

Route/Contract Number _____ Elevator/Escalator # _____ of _____

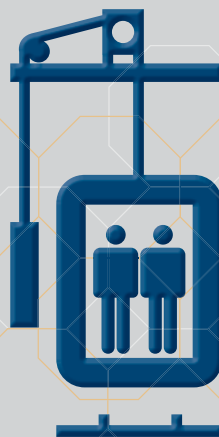
Contract Type: ☐ Platinum Premier ☐ Platinum ☐ Gold ☐ Silver ☐ Bronze



☐ Hydraulic



☐ Machine
Room-Less



☐ Traction



☐ Escalator/
Moving Walk

Other:

- ☐ Home Elevator
- ☐ LU/LA Elevator
- ☐ Wheelchair/Platform Lift
- ☐ Dumbwaiter

ThyssenKrupp Elevator Americas





Maintenance Control Program Records Retention Binder

Maintenance Control Program Records Retention Binder

Maintenance Control Program Records Retention Binder

Maintenance Control Program Records Retention Binder

Maintenance Control Program Records Retention Binder

Maintenance Control Program Records Retention Binder

Maintenance Control Program Records Retention Binder

Maintenance Control Program Records Retention Binder

Maintenance Control Program Records Retention Binder

Maintenance Control Program Records Retention Binder

Maintenance Control Program Records Retention Binder

Maintenance Control Program Records Retention Binder

Maintenance Control Program Records Retention Binder

Maintenance Control Program Records Retention Binder

Maintenance Control Program Records Retention Binder



Instructions to Complete the Traction Maintenance Tasks, Examinations, & Records (MTER)

NOTE: Do not use the MTER logs for service requests, unless regular maintenance or examinations are also performed.

1. Verify the accuracy of the MTER cover page.

This information must be entered at the time of MCP Implementation. This standalone document is placed in front of the MTER logs.

Complete this form with the available information.

2. Enter the information in the Year and Month fields at top of the Maintenance Task page.

Based on the Start Month of the contract, enter the abbreviated months in the column header fields sequentially starting with the appropriate month.

Product Specific –
Maintenance Tasks,
Examinations, & Records (MTER)

TAC32T Traction Elevator

Job Site Information

Building Name Building One Route Number 014
 Building Address 101 Main St City/State/Zip Seattle WA 98113
 Contract/EOS Number 4500449347 Elevator # 2 of 6
 Building Manager/Sup. John Doe Location Room 201
 Phone Number 123-456-7890 Ext. 123
 Building Engineer NA Location NA
 Phone Number NA Ext. NA

Equipment Data

Elevator # 2 Conveyance ID 60002 Unit Serial # CA4327
 Landings/Openings 12 Speed 560
 Controller Supply Voltage 460
 Drive Manufacturer ThyssenKrupp Model 1CR HP 20 Voltage 460
 Hoist Motor Manufacturer _____ HP _____ Voltage _____

Evaluate/Examine the system or component before performing the maintenance tasks or test.

ThyssenKrupp Elevator Americas

Task Instructions:
Before performing a maintenance task, first evaluate the system or examine the component to ensure that it is the required month to perform the tasks. If not, indicate the Not Due status by writing ND in the current month's column on the MTER. If it is determined that the maintenance task will be required before the end of the MTER annual cycle, place a small "x" in one corner of the box to the right of the applicable task and below the month that the task is to be performed as a reminder. Reevaluate or reexamine when the task is due as indicated by the reminder. Complete the task or mark as ND again if applicable.

For the Year
20 13

Date →
(i.e., 1/19)

Enter abbreviated months in the box below.

	NA	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB
4.1 Suspension Means													
4.2 Governor Wire Ropes													
4.6 Brakes													

1. 2. 3.

3. At each maintenance visit, the technician enters the date that they were on site to perform the scheduled maintenance in the Date column header. Enter mm/dd in the box to indicate the month and day. (e.g., 1/19 is January 19.)

NOTE: By initialing the boxes below the date column, the technician is attesting that the task was completed as defined in either the Basic Elevator and Escalator Procedures (B.E.E.P.) Maintenance Manual 2.0 or Product Specific Documents, procedures were performed properly and items were operating correctly.

4. If after an evaluation/examination, the technician determines the specific maintenance task is not due at the scheduled month's visit, then an indicator of ND must be entered at the associated column. If it is determined that task will be required before the end of the annual cycle, place a small "X" in one corner of the box to the right of the applicable task and below the month that the task is to be performed as a reminder. Reevaluate or reexamine when the task is due as indicated by the reminder. Complete the task or mark as ND again if applicable.
5. Upon completing a task, the technician initials in pen in the associated box with the task corresponding to the date column. If a scheduled task is not completed during a regular visit, do not initial it as completed.

Special Circumstances:

(Pictured as completed for a portion of the year)

Task Instructions: Before performing a maintenance task, first evaluate the system or examine the component to ensure that it is the required month to perform the tasks. If not, indicate the Not Due status by writing ND in the current month's column on the MTER. If it is determined that the maintenance task will be required before the end of the MTER annual cycle, place a small "x" in one corner of the box to the right of the applicable task and below the month that the task is to be performed as a reminder. Reevaluate or reexamine when the task is due as indicated by the reminder. Complete the task or mark as ND again if applicable.		Enter abbreviated months in the box below.													
		For the Year 20 <u>13</u>	NA	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB
ne Room / Spaces, Control Room / Spaces	4.1 Suspension Means														
	4.2 Governor Wire Ropes														
	4.6 Brakes														
	4.8 Machinery Spaces, Machine Rooms, Control Spaces, & Control Rooms														
	4.12 Governors														
	4.17 Ascending Car Overspeed & Unintended Car Movement Protection														
	11.1 Firefighters' Emergency Operation Log														
	11.2 Two-Way Communication Means														
	11.3 Access Keys														
	Special Provisions														

5. →

6. If the technician performs a task listed with an NA, then they must override the NA by lining through the NA and then place his/her initials below the date that the maintenance task was performed.

Task Description/Definition

The following pages provide information for the Building Owner, Building Management Group, and others that lists the Code Required Maintenance Tasks and Examinations and explains how the tasks and examinations are performed throughout the year by TKE's highly qualified maintenance and repair technicians. The Task Descriptions/Definition section provides greater detail than what is listed on the Maintenance Tasks, Examinations, and Records (MTERs).



ASME A17.1 – 2010 Code Compliant Maintenance & Examination Records (8.6.1.4)

Endura MRLH - General Descriptions (Task and Examinations)

NOTE: For terms marked with one or more asterisks (*), refer to the key below.

* = Definition of Terms document behind this document

Machine Room / Spaces, Control Rooms / Spaces	8.6 Maintenance Tasks	Routine Maintenance & Examination Requirements		General Descriptions of Maintenance & Examination Requirements	
		8.6.11 Special Provisions	Firefighters' Emergency Operation Log	8.6.11.1 Check for record of monthly findings of Firefighters' Test (monthly log shall be available to elevator personnel and AHJ*).	
			Two-Way Communications Means	8.6.11.2 Check to ensure that two-way communication is established to each car and that visual indicators are functional inside the car(s), if applicable. Ensure that the elevator location and number is received by answering authorized personnel.	
			Access Keys	8.6.11.3 Check that the keys required for access operation, inspection operation, maintenance, repair, and emergency access are onsite and available only to authorized personnel as per 8.1.	
			Emergency Evacuation Procedures for Elevators	8.6.11.5 (5.1) Evacuation of passengers shall be performed only by authorized elevator or emergency personnel. (5.2) Written emergency evacuation procedure shall be on premises. (5.3) Written procedure shall identify the hazards, detail the safety precautions utilized in evacuation of passengers. (5.4) All authorized personnel used in the evacuation shall be given a copy of the procedures, and necessary training to ensure they understand and can comply to the procedures. (5.5) Procedures shall be available to authorized elevator personnel. (5.6) A record of authorized personnel trained as specified in 5.4, shall be on premises and available to authority having jurisdiction.	
			Egress and Reentry Procedure from Working Areas	8.6.11.8 Check that a written procedure for egress and reentry is posted in a permanent manner in plain view at an appropriate location.	
Pit	8.6 Maintenance Tasks	Routine Maintenance & Examination Requirements		General Descriptions of Maintenance & Examination Requirements	
		Lubrication of Guide Rails		8.6.4.3 (.1, .2, .3, .4, & .5) If Applicable. (.1) Lubricate in accordance to crosshead data plate. (.2) Shall be kept lubricated. (.3) If lubricant other than those recommended by manufacturer, a safety test shall be made to demonstrate the safeties will function. (.4) Rails kept clean. (.5) Guiding surfaces shall be free of paint, graphite etc.	
		Cleaning of Pits		8.6.4.7 Maintain pit condition (cleanliness), access doors (closed and locked), and proper storage (pipe stands only).	
		Tank Levels		8.6.5.4 Maintain proper minimum and maximum oil levels.	
		Gland Packings and Seals		8.6.5.5 (.1, and .2) (.1) Where Pressure piping, valves, and cylinders use packing glands or seals, they shall be examined and maintained. When cylinder packing or seal or a pressure piping seal is replaced, the system shall be retested by operating it at relief-valve pressure for not less than 15 seconds. (.2) Packing gland or cylinder head collection container not to exceed 5 gallons, and is not to be allowed to overflow.	
		Relief-Valve Setting. <i>NOTE: Provide AHJ with Relief Valve Pressure Documentation, if required.</i>		8.6.5.9 Maintain integrity of relief-valve seal as per Code. Maintain requirements if relief-valve seal was broken; record information and place completed form behind CCVP* tab.	
		Anti-creep		8.6.5.12 Maintain proper operation of anti-creep as per Code.	
		Low Oil Protection		8.6.5.12 Maintain proper operation of low oil protection as per Code.	
Hoistway (Inside/Outside)	8.6 Maintenance Tasks	Routine Maintenance & Examination Requirements		General Descriptions of Maintenance & Examination Requirements	
		Cleaning of Hoistways		8.6.4.7 Maintain cleanliness of hoistway.	
		Hoistway Access Switches		8.6.4.14 Maintain proper operation of top and bottom access key switches.	

Inside the Car	8.6 Maintenance Tasks	Routine Maintenance & Examination Requirements	General Descriptions of Maintenance & Examination Requirements
		Kinetic Energy and Force Limitation for Automatic Closing, Horizontal Sliding Car and Hoistway Doors or Gates	8.6.4.13.2 Maintain to ensure: <ul style="list-style-type: none"> • Closing force <30 lbf. [record value]] • Kinetic energy <7 ft lb_f [record value] • Reduced Torque Kinetic Energy <2.5 ft lb_f [record value]
		Car Emergency System	8.6.4.15 Maintain & Test to ensure the following meets applicable code. [2.27] <ul style="list-style-type: none"> • [2.27.1.1.2 & 1.1.3] 2-Way communications • [2.27.1.2] Emergency Stop Switch Audible Alarm • [2.14.7] Emergency Lighting • [2.14.2.3] Ventilation, clean and lube if applicable
		Stopping Accuracy	8.6.4.16 [8.11.2.1.1(u)] Maintain stopping accuracy $\pm \frac{1}{2}$ ".
Top of Car	8.6 Maintenance Tasks	Routine Maintenance & Examination Requirements	General Descriptions of Maintenance & Examination Requirements
		Cleaning of Top of Cars	8.6.4.9 Maintain cleanliness and remove items.
Doors and Gates	8.6 Maintenance Tasks	Routine Maintenance & Examination Requirements	General Descriptions of Maintenance & Examination Requirements
		Car Door Systems 8.6.4.13.1 (b), (c), (d), (f), (g), (h), (i), (j), and (l)	Maintain the following: 8.6.4.13.1 `b` Electric contacts, (c` Reopening device, (d) Vision panels and grills, (f) Hangers, tracks, rollers, up-thrusts*, and safety retainers*, `g` Astragals* and resilient members*, (h) Sills and bottom guides, fastening, condition and engagement, (i) Clutches, vanes, , and engaging rollers, `j` Interconnecting means, and (l) Door restrictors*.
Doors and Gates	8.6 Maintenance Tasks	Routine Maintenance & Examination Requirements	General Descriptions of Maintenance & Examination Requirements
		Hoistway Door Systems 8.6.4.13.1 (a), (d), (e), (f), (g), (h), (i), (j), (k), and (l)	Maintain the following: 8.6.4.13.1 `a` Interlocks, locks, and contacts (d) Vision panels and grills, (e) Unlocking devices and escutcheons*, (f) Hangers, tracks, rollers, up-thrusts*, and safety retainers*, (g) Astragals* and resilient members*, space guards, and sight guards, (h) Sills and bottom guides, fastenings, condition, and engagement, (i) Engaging rollers, (j) Interconnecting means, (k) Closers, and (l) Door restrictors*.

Definition of Terms

Refer to Traction General Descriptions (Task and Examinations)

- AHJ** – Authority Having Jurisdiction. The organization, office, or individual responsible for enforcing the adopted code.
- Astragals** – A rubber molding mounted and extending the full length of the leading edge of center-opening doors.
- B.E.E.P.** – Basic Elevator and Escalator Procedures. Refers to ThyssenKrupp’s Code compliant BEEP Maintenance manual. NOTE: The BEEP Maintenance manual was introduced in 2008 and is ASME A17.1 - 8.6 Code compliant. The BEEP series also includes the BEEP Repair and BEEP Emergency manuals.
- CCVP** – Code Compliance Verification Processes. These are unit specific maintenance/testing procedures.
- Door Restrictor** – A safety device that restricts the car doors from opening more than 4" when the car is away from the landing floor.
- Egress** – The act of going out of an enclosed space. Often used in reference to an exit.
- Escutcheons** – Small access holes in a hallway door for authorized elevator or emergency personnel to access the hoistway.
- E.Q. Zone** – One of four acknowledged earthquake zones. Often used in reference to the escalating building requirements associated with each zone.
- Item** – The term “Item” i.e., (Item 4.2) informs the reader where to find additional Inspection Procedures within the ASME A17.2, Guide for Inspectors.
- MTER** – Refers to ThyssenKrupp’s Code compliant “Maintenance Tasks, Examinations, & Records” logs. NOTE: This series of Maintenance Tasks, Examinations, & Records (MTER) is being introduced late 2012 and is ASME A17.1-2010 Code compliant.
- Openwork-Type** – A protective partition with openings (usually wire mesh/grille or perforated metal).
- OEM** – Original Equipment Manufacturer and/or Current Maintenance Provider
- Resilient Members** – See Astragals.
- Runby** – A distance between two objects (top or bottom landing sill to car sill). (Usually used in reference to minimum or maximum distance Code allows.)
- Safety Retainers** – Prefabricated steel angles that prevent the doors from being dislodged (especially during a fire).
- Seismic Risk Zones** – See E.Q. Zone.
- Unintended Motion** – Any movement of an elevator car that is not intended. Car movement resulting from a component or system failure is “Unintended Motion.”
- Up-thrust** – A device used to prevent the dislodging of equipment due to upward force (in this instance the equipment is a door).
- Zone 2** – See E.Q. Zone.

This page intentionally left blank.

Maintenance Tasks, Examinations, and Records (MTER)

The purpose for creating a multi-page MTER is to ensure that all code required Maintenance and Examinations are met or exceeded throughout a year.



Product Specific – Maintenance Tasks, Examinations, & Records (MTER)

MRLH Endura Elevator

Job Site Information

Building Name _____ Route Number _____
Building Address _____ City/State/Zip _____
Contract/EBS Number _____ Elevator # _____ of _____
Building Manager/Supt. _____ Location _____
Phone Number _____ Ext. _____
Building Engineer _____ Location _____
Phone Number _____ Ext. _____

Equipment Data

Elevator # _____ Conveyance ID _____ Unit Serial # _____
Landings/Openings: _____ Valve Manufacturer Model _____
Controller Supply Voltage _____ Speed _____
Motor Manufacturer _____ Model _____ HP _____ Voltage _____
Pump Manufacturer _____ Model _____ Packing Type/Sizes _____

**Evaluate/Examine the system or component before
performing the maintenance tasks or test.**

ThyssenKrupp Elevator Americas



ThyssenKrupp

MRLH Endura Category 1 and 5 Test Records Log

Category One (1) Tests Complete the following information after performing Category One (1) Tests				Category 1 Test is next due on: ____/____/____ mm dd yyyy			
NOTE: 8.6 and 8.11 Section Numbers are ASME A17.1-2010.	Test N/A or ND	Date	Technician Initials	Verified By	Inspection Authority	Inspection Company	ASME - QEI Certified
8.6.5.14.1 Relief Valve Setting and System Pressure Test							Yes / No
8.6.5.14.2 Hydraulic Cylinders and Pressure Piping							Yes / No
8.6.5.14.3 Additional Tests							
(a) Normal Terminal Stopping Devices (8.6.4.19.5) (Item 3.5.2)							Yes / No
(e) Firefighter's Emergency Operation (8.6.4.19.6) (Items 6.3 and 6.4)							Yes / No
(f) Standby or Emergency Power Operation (8.6.4.19.7) (Item 1.17.2.2)							Yes / No
(g) Power Operations of Door System (Item 4.7)							Yes / No
(h) Emergency Terminal and Speed Limiting Device and Emergency Terminal Stopping Device (3.25.2) (Item 3.6.2.2)							Yes / No
(i) Low Oil Protection Operation (3.26.9) (Item 2.39.2)							Yes / No
8.6.5.14.5 Pressure Switch							Yes / No
8.6.5.14.6 Power Operation of Door System (Item 1.8)							Yes / No
Record: Closing Force _____ lbf Kinetic Energy _____ ft lb Reduced Torque Kinetic Energy _____ ft lb							
Additional Tasks							
							Yes / No
							Yes / No
							Yes / No
							Yes / No
							Yes / No
Complete form required by jurisdiction (if applicable) and TKE Annual Hydraulic Safety Test form. Include a copy of the form in the MCP Records Retention Binder.							

Category Five (5) Tests Complete the following information after performing Category Five (5) Tests				Category 5 Test is next due on: ____/____/____ mm dd yyyy			
NOTE: 8.6 Section Numbers are ASME A17.1-2010.	Test N/A or ND	Date	Technician Initials	Verified By	Inspection Authority	Inspection Company	ASME - QEI Certified
8.6.5.16.5 Overspeed Valves							Yes / No
Complete form required by jurisdiction (if applicable) and TKE Annual Hydraulic Safety Test form. Include a copy of the form in the MCP Records Retention Binder.							

Other/Additional Testing							
Test	Test N/A or ND	Date	Technician Initials	Verified By	Inspection Authority	Inspection Company	ASME - QEI Certified
							Yes / No
							Yes / No
							Yes / No
							Yes / No
							Yes / No
							Yes / No
							Yes / No
							Yes / No
							Yes / No
							Yes / No
							Yes / No
							Yes / No

MRLH Endura Maintenance Tasks (A17.1-2010 8.6.5)

Enter abbreviated months in the box below.

Task Instructions: Before performing a maintenance task, first evaluate the system or examine the component to ensure that it is the required month to perform the tasks. If not, indicate the Not Due status by writing ND in the current month's column on the MTER. If it is determined that the maintenance task will be required before the end of the MTER annual cycle, place a small "x" in one corner of the box to the right of the applicable task and below the month that the task is to be performed as a reminder. Reevaluate or reexamine when the task is due as indicated by the reminder. Complete the task or mark as ND again if applicable.		For the Year 20_____		<div> <div>NA</div> <div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div> </div>																
		Date → (i.e., 1/19)			<div> <div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div> </div>															
8.6	4.3 Lubrication of Guide Rails																			
	4.7 Cleaning of Pits																			
	4.7 Cleaning of Hoistways																			
	4.9 Cleaning of Top of Cars																			
	4.13.1 Car Door Systems																			
	4.13.1 Hoistway Door Systems																			
	Maintenance complete on floors _____ through _____ Date: _____																			
	Maintenance complete on floors _____ through _____ Date: _____																			
	4.13.2 Kinetic Energy and Force Limitation for Automatic Closing, Horizontal Sliding Car and Hoistway Doors or Gates	Door Force _____ [Torque] < 30 lbf Kinetic Energy _____ < 7 ft lb _f Reduced Torque Kinetic Energy _____ < 2.5 ft lb _f																		
	4.14 Hoistway Access Switches																			
	4.15 Car Emergency System																			
	4.16 Stopping Accuracy(±0.5 inch)																			
	5.4 Tank Levels																			
	5.5 Gland Packings and Seals																			
	5.5.1 Examination and Maintenance																			
	5.5.2 Collection of Oil Leakage																			
	5.9 Relief-Valve Setting (Verify seal is intact.)																			
	5.12 Anticreep																			
	5.12 Low Oil Protection																			
	5.13 Overspeed Valve Setting																			
8.6 Special Provisions	11.1 Firefighters' Emergency Operation Log																			
	11.2 Two-Way Communication Means																			
	11.3 Access Keys																			
	11.5 Emergency Evacuation Procedures for Elevators																			
	11.8 Egress and Reentry Procedure From Working Areas																			
Additional Tasks	Valve LRV-1																			
	Pit Props																			

Repair and Parts Replacement Log for MRLH Endura

INSTRUCTIONS: (1) All Billable and Non-Billable repairs shall be recorded.
 (2) Replacement parts used during repairs shall be recorded.

DATE	Description of Work	Parts Used	Technician
	<input type="checkbox"/> Repaired <input type="checkbox"/> Replaced		
	<input type="checkbox"/> Repaired <input type="checkbox"/> Replaced		
	<input type="checkbox"/> Repaired <input type="checkbox"/> Replaced		
	<input type="checkbox"/> Repaired <input type="checkbox"/> Replaced		
	<input type="checkbox"/> Repaired <input type="checkbox"/> Replaced		
	<input type="checkbox"/> Repaired <input type="checkbox"/> Replaced		
	<input type="checkbox"/> Repaired <input type="checkbox"/> Replaced		
	<input type="checkbox"/> Repaired <input type="checkbox"/> Replaced		
	<input type="checkbox"/> Repaired <input type="checkbox"/> Replaced		

Service Request Log for MRLH Endura

INSTRUCTIONS: (1) This Service Request Report (Callback) Log shall be used to record all Callbacks or Complaints reported to Elevator Personnel by any means, including corrective actions taken.
 (2) The Technician is responsible to report all trouble calls to ThyssenKrupp Dispatch that he or she receives by means other than Authorized Dispatch.

Date	Time	Description	Resolution	Technician

Code Compliance Issue Log

Contract/EBS (Oracle) # _____

INSTRUCTIONS: (1) This Code Compliance Issue Log shall be used to record all non-compliance issues pertaining to the ASME A17 Code that is reported to Elevator Personnel.
(2) Technicians apply Initials in pen.

Date	Description of Non-compliance	Person Reported To	Technician Initials

This page intentionally left blank.

CCVPs and Additional Maintenance Instructions

This section is for maintaining the relevant product-specific Code Compliance Verification Process (CCVPs) to aid the technician in inspecting, testing, or verifying the equipment for code compliance, and maintaining the equipment. Also if other instructions are available to aid the technician in troubleshooting or repairing the specific type of equipment, store them in this section.

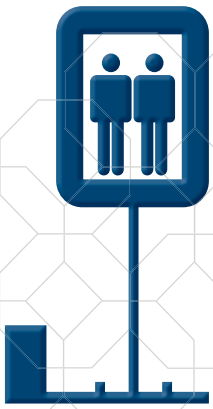


Basic Elevator and Escalator Procedures

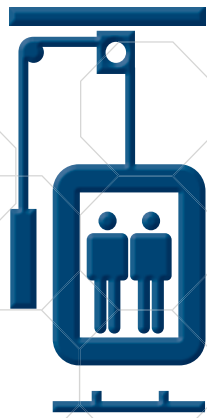
B.E.E.P. Maintenance Manual 2.0

Product Specific: ThyssenKrupp MRLH Endura Application

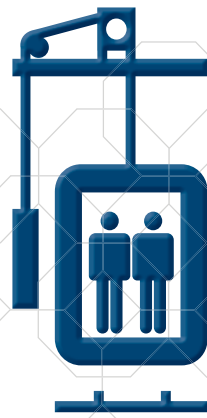
ASME A17.1 - 2010 8.6
Compliant Maintenance Control Program



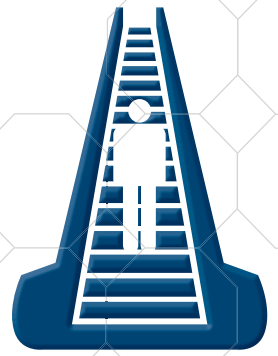
☐ Hydraulic



☒ Machine
Room-Less



☐ Traction



☐ Escalator/
Moving Walk

Other:

- ☐ Home Elevator
- ☐ LU/LA Elevator
- ☐ Wheelchair/Platform Lift
- ☐ Dumbwaiter



Every attempt has been made to ensure that this documentation is as accurate and up-to-date as possible. However, International Technical Services assumes no liability for consequences, directly or indirectly, resulting from any error or omission. The material contained herein is subject to revision, and International Technical Services makes every effort to inform its product users of these revisions as they occur. Please report any problems with this manual to the Technical Publications Department at Publications.Feedback@thyssenkrupp.com.

ITS Contact Information:

ThyssenKrupp Elevator
International Technical Services
Technical Publications
621 South Royal Lane, Suite 500
Coppell, TX 75019

Phone: 800-655-9601

FAX: 866-558-9404

E-mail: ITS.Pub@thyssenkrupp.com

Acknowledgments

ThyssenKrupp Elevator wishes to thank the following for permission to use excerpts of copyright materials in the creation of this publication:

- ASME A17.1-2010, by permission of the American Society of Mechanical Engineers. All rights reserved.
- Reprinted from ASME A17.2-2010, by permission of the American Society of Mechanical Engineers. All rights reserved.

Every effort has been made to trace rights holders but if any have been inadvertently overlooked, we would be pleased to make the acknowledgment at the next revision.

Copyright 2013 by ThyssenKrupp Elevator

All rights reserved.

The text of this publication, or any part thereof, may not be reproduced or transmitted in any form or by any means without the prior written permission of ThyssenKrupp Elevator.

Printed in the United States of America

{November, 2013}

TKE - Maintenance Control Program

☒ TASKS ☐ EXAMINATIONS per ASME A17.1 Code

TKE - Product Specific

Code Reference

8.6.4.3

Equipment Category

Endura MRLH

Periodic Task/Test Procedure – Lubrication of Guide Rails - Pit and Top of Car

Product: ThyssenKrupp MRLH Endura

Procedure No.

PR-560-86-201-SPEC TKE MRLH

Relevant Elevator Equipment:

All elevators requiring lubrication of rails

Distribution Statement:

For trained ThyssenKrupp Elevator technicians who are qualified to perform the task or examination.

Technicians shall strictly adhere to all safety rules in the *Elevator Industry Field Employees Safety Handbook* and the *Employee Safety Standards for the Field Organization* manual (safety manual).

ASME A17.1 Section 8.6/8.11 Applicable Code/Summary for this Procedure:

- 8.6.4.3.4 Rails shall be kept clean and free of lint and dirt accumulation and excessive lubricant. Means shall be provided at the base of the rails to collect excess lubricant.
- 8.6.4.3.5 Paint, mixtures of graphite and oil, and similar coatings shall not be applied to the guiding surfaces, unless recommended by the manufacturer of the safety

Unique Tools, Parts, Materials, Test Equipment:

None

Task/Examination Procedures:

Before taking car out of service, notify the proper building personnel and put “Out of Service” tags at each landing (as required).

Due to the many hazards associated with working around various conveyances, the technician must comply with the safety procedures as outlined in the *Employee Safety Standards for the Field Organization* manual and TKE Safety Policy.

Refer to product specific or component manual/procedures as required.

Lubrication of Guide Rails from Car Top

1. Starting from the top of the hoistway, remove any lint and dirt accumulation and excessive lubricant from guiding surface of rails.
2. Lubricate rails per manufacturer’s recommendations. For Dover/Thyssen formed rail guide shoes, use 30w motor oil (TKE #70307).
3. If equipped with safeties and a lubricant other than manufacturer’s recommendation is used, a safety test conforming to 8.6.4.19.1 shall be required.

Lubrication of Guide Rails from the Pit

1. From the pit, remove any lint and dirt accumulation and excessive lubricant from guiding surface of rails.
2. If applicable, clean out or replace bottom of rail(s) excessive lubricant collection device.
3. Lubricate rails per crosshead data tag or manufacturer’s recommendations. For Dover/Thyssen formed rail guide shoes, use 30w motor oil (TKE #70307).
4. Verify that the guiding surfaces of the rails have no coatings (paint etc.) on the face of the rail other than manufacturer’s recommendations.



This page intentionally left blank.

TKE - Maintenance Control Program

☒ TASKS ☐ EXAMINATIONS per ASME A17.1 Code

TKE - Product Specific

Code Reference

8.6.4.7

Equipment Category

Endura MRLH

Periodic Task/Test Procedure – Cleaning of Pits

Procedure No.

PR-560-86-204-SPEC-TKE MRLH

Relevant Elevator Equipment:

All elevators

Distribution Statement:

For trained ThyssenKrupp Elevator technicians who are qualified to perform the task or examination.

Technicians shall strictly adhere to all safety rules in the *Elevator Industry Field Employees Safety Handbook* and the *Employee Safety Standards for the Field Organization* manual (safety manual).

ASME A17.1 Section 8.6/8.11 Applicable Code/Summary for this Procedure:

- 8.6.4.7.1 Clean the pit of any dirt and rubbish. Pit is not to be used for storage.
- 8.6.4.7.2 Pipe stands are permitted to be stored in the pit, provided they do not interfere with the operation of the elevator and do not present a hazard for persons working in the pit.
- 8.6.4.7.3 If applicable, pit access door shall be kept closed and locked.
- 8.6.4.7.4 Water and oil shall not be allowed to collect on pit floor.

Unique Tools, Parts, Materials, Test Equipment:

None

Task/Examination Procedures:

Before taking car out of service, notify the proper building personnel and put “Out of Service” tags at each landing (as required).

Due to the many hazards associated with working around various conveyances, the technician must comply with the safety procedures as outlined in the *Employee Safety Standards for the Field Organization* manual and TKE Safety Policy.

Pit Examination

1. Verify that the pit is not being used for storage.
Pipe stands are permitted to be stored in the pit, provided that they do not interfere with the operation of the elevator and do not present a hazard for persons working in the pit.
2. Where applicable, verify pit access doors, self-closers, and locks are functional.
3. Verify that oil and/or water is not accumulating on pit floor.

NOTE: If item(s) above (1, 2, or 3) fail and cannot be corrected during visit, note this on the Code Compliance Issue Log and notify your route supervisor or service manager to inform them of the condition that needs corrective action.

Clean Pit

Clean the pit with a broom or vacuum to remove any dirt or rubbish. If applicable, be mindful of smoke detectors in the hoistway.



This page intentionally left blank.

TKE - Maintenance Control Program

Code Reference

8.6.4.7

Equipment Category

Endura MRLH

☒ **TASKS** ☐ **EXAMINATIONS** per ASME A17.1 Code

TKE - Product Specific

Periodic Task/Test Procedure – Cleaning of Hoistways Product: ThyssenKrupp Endura MRLH		Procedure No. PR-560-86-301-SPED-TKE MRLH
Relevant Elevator Equipment: All elevators	Distribution Statement: For trained ThyssenKrupp Elevator technicians who are qualified to perform the task or examination. Technicians shall strictly adhere to all safety rules in the <i>Elevator Industry Field Employees Safety Handbook</i> and the <i>Employee Safety Standards for the Field Organization</i> manual (safety manual).	
ASME A17.1 Section 8.6/8.11 Applicable Code/Summary for this Procedure: — 8.6.4.7.1 Hoistway shall be kept free of dirt and rubbish and shall not be used for storage purposes.		Unique Tools, Parts, Materials, Test Equipment: None
<hr/> Task/Examination Procedures: <p>Before taking car out of service, notify the proper building personnel and put “Out of Service” tags at each landing (as required).</p> <p>Due to the many hazards associated with working around various conveyances, the technician must comply with the safety procedures as outlined in the <i>Employee Safety Standards for the Field Organization</i> manual and TKE Safety Policy.</p> <p>Hoistway Examination</p> <ul style="list-style-type: none">• Verify that the hoistway is not being used for storage purposes. <p>NOTE: If item above cannot be corrected during visit, note this on the Code Compliance log and notify your route supervisor or service manager. Inform them of the condition that needs corrective action.</p> <p>Clean Hoistway</p> <ul style="list-style-type: none">• Clean the hoistway using a vacuum. If applicable, be mindful of smoke detectors in hoistway.		



This page intentionally left blank.

TKE - Maintenance Control Program

☒ TASKS ☐ EXAMINATIONS per ASME A17.1 Code

TKE - Product Specific

Code Reference

8.6.4.9

Equipment Category

Endura MRLH

Periodic Task/Test Procedure – Cleaning of Top of Cars Product: ThyssenKrupp Endura MRLH

Procedure No.

PR-560-86-504-SPEC-TKE MRLH

Relevant Elevator Equipment:

All elevators

Distribution Statement:

For trained ThyssenKrupp Elevator technicians who are qualified to perform the task or examination.

Technicians shall strictly adhere to all safety rules in the *Elevator Industry Field Employees Safety Handbook* and the *Employee Safety Standards for the Field Organization* manual (safety manual).

ASME A17.1 Section 8.6/8.11 Applicable Code/Summary for this Procedure:

- 8.6.4.3.9 Cleaning of Top of Cars. The tops of cars shall be kept free of oil, water, dirt, and rubbish, and shall not be used for storing lubricants, spare parts, tools, or other items

Unique Tools, Parts, Materials, Test Equipment:

None

Task/Examination Procedures:

Before taking car out of service, notify the proper building personnel and put “Out of Service” tags at each landing (as required).

Due to the many hazards associated with working around various conveyances, the technician must comply with the safety procedures as outlined in the *Employee Safety Standards for the Field Organization* manual and TKE Safety Policy.

Inspect Car Top

1. Verify that the car top is not being used for storage (lubricants, spare parts, tools, or other items). If present, these items must be removed.
2. Verify that car top is free of oil and/or water.



WARNING!

If water is present on the car top, DO NOT clean with power applied to the car. Immediately contact your route supervisor or service manager and inform them of the condition(s) and for further instructions. If appropriate and possible, notify the appropriate building personnel of the environmental issue allowing water to be in the hoistway.

NOTE: If item(s) above (1) or (2) fail and cannot be corrected during visit, note this on the Code Compliance log and notify your route supervisor or service manager and inform them of the condition that needs corrective action.

Clean Car Top

Clean the car top ensuring it is free of dirt and rubbish. If applicable, be mindful of smoke detectors in hoistway.



This page intentionally left blank.

TKE - Maintenance Control Program

☒ TASKS ☐ EXAMINATIONS per ASME A17.1 Code

TKE - Product Specific

Code Reference

8.6.4.13.1 (Car Doors)

Equipment Category

Endura MRLH

Periodic Task/Test Procedure – Door Systems (Car Doors) Product: ThyssenKrupp Endura MRLH		Procedure No. PR-560-86-601-SPEC-TKE MRLH
Relevant Elevator Equipment: Endura MRLH	Distribution Statement: For trained ThyssenKrupp Elevator technicians who are qualified to perform the task or examination. Technicians shall strictly adhere to all safety rules in the <i>Elevator Industry Field Employees Safety Handbook</i> and the <i>Employee Safety Standards for the Field Organization</i> manual (safety manual).	
ASME A17.1 Section 8.6/8.11 Applicable Code/Summary for this Procedure: — 8.6.4.13.1 (b)(c)(d)(f)(g)(h)(i)(j)(l) Car door system shall be maintained to ensure safe and proper operation		Unique Tools, Parts, Materials, Test Equipment: None
<hr/>		
Task/Examination Procedures: <p>Before taking car out of service, notify the proper building personnel and put “Out of Service” tags at each landing (as required).</p> <p>Due to the many hazards associated with working around various conveyances, the technician must comply with the safety procedures as outlined in the <i>Employee Safety Standards for the Field Organization</i> manual and TKE Safety Policy.</p> <p>Refer to the product specific or component manual/procedure as required.</p> <p>NOTE: Replacement parts may or may not be covered by the service agreement. If not, the replacement parts are to be handled as billable materials. It is the responsibility of the technician to know what parts are or are not covered by the service agreement.</p> <p>Maintain car door components to provide proper operation. Take the car out of service. With the car doors in a position that will allow access:</p> <p>8.6.4.13.1(b)</p> <p>Examine car door contact(s) and door interlocks (if provided).</p> <ol style="list-style-type: none">1. Maintain to provide proper wipe of contacts to assist in reducing buildup on contacts. The amount of wipe will vary depending upon the style of contact. From an open position, move the doors closed until contacts are just touching. Move the car door to the fully closed position and observe the motion between the contacting surfaces. The surface of the contacts should have a motion across each other that will help prevent build up, pitting, and burning. If proper wipe is not observed, adjust.2. Verify contacts are clean and without buildup. If buildup is present, try to remove with a dry cloth. If a dry cloth will not remove buildup, use a fine scouring pad or other fine abrasive to remove buildup. <p>NOTE: Some contacts have a coating on them, typically silver, that assists in conductivity. When cleaning be aware of this and do not become more aggressive in cleaning than is necessary. If contacts are pitted or burned that cleaning cannot resolve, they are to be replaced.</p> <ol style="list-style-type: none">3. Verify mechanical adjustment/clearances of car door interlock to provide reliable operation and ensure that the electrical contact opens prior to the door opening 2 inches or less. Clean linkages and/or operating rods and lubricate pivot/hinge points with bearing oil (TKE 70305 or equivalent).4. Verify that wiring connections are secure.		



Periodic Task/Test Procedure – Door Systems (Car Doors)
Product: ThyssenKrupp Endura MRLH

Procedure No.
PR-560-86-601-SPEC-TKE MRLH

8.6.4.13.1(c)

Electronic door reopening devices:

1. Using a clean dry cloth, wipe down both the lenses (transmit/receive) to clean the lens.
2. Examine SE cord(s) for signs of wear or breaks. Wipe the SE cords down with a dry cloth and visually examine for signs of cracks or wear. Replace any cords that have the insulation worn or cracked. Verify cords are routed to prevent wear, avoid pinch points, and maximize life of the cable.
3. Wire connections. Verify that the SE wiring connectors and/or plug(s) is securely connected and tight.

8.6.4.13.1(f)

Examine hangers, up thrusts, and door safety retainers for proper adjustment and secure fastening. Clean door tracks of any buildup.

1. Hangers – Using a 4" paint brush or similar, clean the car door rollers and hangers of dirt. Examine car door rollers and hangers for damage or wear. Verify secure fastening. Damaged rollers or hangers shall be replaced. Many roller bearings today are of a sealed type that do not require lubrication, however if the bearings allow for lubrication, lubricate with a light bearing oil (TKE #70305 or similar).
2. Up thrusts – Verify that the up thrust clearance is adjusted to about .015" (.38 mm). Verify that the fastenings that secure and would prevent a change of the adjustment are tight.
3. Safety retainers are required on hall doors only.
4. Clean door tracks of any buildup using a fine scouring pad or equivalent. After cleaning, wipe down with a rag that has been lightly oiled with light bearing oil (TKE #70305 or similar).

8.6.4.13.1(g)

Examine astragals, resilient members, door space guards and sight guards for damage and secure fastening.

1. Examine the car door astragal for damage and secure mounting. If damaged it shall be replaced.
2. Verify that the leading edges of the doors are free of sharp projections or burrs correct if found.
3. On center opening doors, there shall be at least one resilient member on the leading edge of the door(s). It shall be examined to verify that they extend the full height of the panel and when fully closed they do not interlock more than 1/2". When fully closed, verify the metal parts of the door panels are no more 1/2" from each other.
4. Space Guard – Where installed, verify it is not damaged and is securely mounted. If damaged, it shall be repaired or replaced. Space guard is required on automatic or continuous pressure operation elevators, when the distance from the face of the car door to the face of the hall door exceeds;
 - a. For swinging-type hoistway door or gate and a car gate or folding car door are used – 4 inches.
 - b. For a swinging-type hoistway and car door are used – 5 1/2 inches.
 - c. Where a sliding-type hoistway and car door or gate is used – 5 1/2 inches.
 - d. On freight elevators with horizontal swinging doors not accessible to the general public – 6 1/2 inches.



Periodic Task/Test Procedure – Door Systems (Car Doors)
Product: ThyssenKrupp Endura MRLH

Procedure No.
PR-560-86-601-SPEC-TKE MRLH

5. Sight Guards – Hoistway doors only.

8.6.4.13.1(h)

Sills and bottom guides, fastenings, condition, and engagement.

1. Examine car door sill for secure fastening to the platform. Clean debris from car sill. Verify that the distance between car and hoistway sill is at least 0.5" for passenger cars and 0.8" for freight elevators. If the car corner guides are used it shall be at least 0.8". All should not exceed 1.25".
2. Examine bottom guides to ensure that they are still in good condition. Verify they are securely fastened to the car door. Move the car door its limits of travel and verify that at any point that the guides are engaged in the sill by at least 1/4". Replacements and/or adjustments will be done that allow the guides to meet this requirement.
3. Verify that each panel has at least one fire safety tab installed and is securely fastened to the door.

8.6.4.13.1(i)

Examine door clutch and engage roller for correct adjustment.

1. Using a dry paint brush, clean the door clutch to remove any dirt or debris and examine for excessive wear or damage. Parts with excessive wear or damage shall be replaced.
2. Lubricate bearings and pivot points with bearing oil (TKE #70305 or equivalent).
3. From the car top, verify that the clutch engaging rollers, retiring cams, and engaging vanes are properly engaged.
4. From the car top, verify that there is no excessive movement of the car guide shoes or rollers that would allow vanes or engaging rollers to become misaligned or disengaged. Verify that cab steadiers, if provided, are securely fastened and adjusted to inhibit motion of cab that may cause vane or roller misalignment.

8.6.4.13.1(j)

Examine interconnecting means for proper adjustment and operation. Clean, ensure proper adjustment, and lubricate. Refer to product specific manual if required.

1. Wipe the interconnecting means (belt) down and examine for damage or wear.
2. Verify the interconnecting means is secure and properly adjusted.

8.6.4.13.1(l)

Door Restrictors. Refer to product specific manual as required.

1. Clean using a dry paint brush and/or a rag.
2. Verify the restrictor is securely fastened to both the car and the engaging means on the hoistway.
3. Using light bearing oil, lubricate pivot points.
4. Verify that the rail guide shoes/rollers and cab steadier brackets (if provided) do not allow enough motion of the car to allow an engaging means to become separated.



Periodic Task/Test Procedure – Door Systems (Car Doors)
Product: ThyssenKrupp Endura MRLH

Procedure No.
PR-560-86-601-SPEC-TKE MRLH

5. When the car door is restricted from opening, verify that there is sufficient engagement to prevent car doors from opening. Worn, bent, or damaged parts shall be repaired or replaced.
6. When outside of the code required zone, verify the door restrictor inhibits the opening of the car doors.
7. Restrictors shall be adjusted so that they do not allow the car door to open more than 4" when outside the zone.
Zone dimensions are:
 - 0-3 inches - car doors must open.
 - 3-18 inches - car doors may open.
 - More than 18 inches - car doors may not open more than 4".



TKE - Maintenance Control Program

☒ TASKS ☐ EXAMINATIONS per ASME A17.1 Code

TKE - Product Specific

Code Reference

8.6.4.13.1 (Hoistway Doors)

Equipment Category

Endura MRLH

Periodic Task/Test Procedure – Door Systems (Hoistway Doors)		Procedure No. PR-560-86-602-SPEC-TKE MRLH
Relevant Elevator Equipment: All elevators	Distribution Statement: For trained ThyssenKrupp Elevator technicians who are qualified to perform the task or examination. Technicians shall strictly adhere to all safety rules in the <i>Elevator Industry Field Employees Safety Handbook</i> and the <i>Employee Safety Standards for the Field Organization</i> manual (safety manual).	
ASME A17.1 Section 8.6/8.11 Applicable Code/Summary for this Procedure: — 8.6.4.13.1 Door Systems - Hoistway (a), (d), (e), (f), (g), (h), (i), (j), and (k)		Unique Tools, Parts, Materials, Test Equipment: None
<p>Task/Examination Procedures:</p> <p>Before taking car out of service, notify the proper building personnel and put “Out of Service” tags at each landing (as required).</p> <p>Due to the many hazards associated with working around various conveyances, the technician must comply with the safety procedures as outlined in the <i>Employee Safety Standards for the Field Organization</i> manual and TKE Safety Policy.</p> <p>Refer to product specific or component manuals/procedures as required.</p> <p>NOTE: Replacement parts may or may not be covered by the service agreement. If not, the replacement parts are to be handled as billable materials. It is the responsibility of the technician to know what parts are or are not covered by the service agreement.</p> <p>Maintain hoistway door components to provide proper operation. Items below are to be used but be aware that some car door/gate applications may have more items.</p> <p>8.6.4.13.1(a)</p> <p>Hoistway door interlocks, mechanical locks, and contacts shall be examined to;</p> <ol style="list-style-type: none">1. Verify proper adjustment of mechanical lock used to prevent door from being opened other than as designed. (Refer to product specific manuals if required.)2. Verify that they are securely fastened.3. Maintain to provide proper wipe of contacts to assist in reducing buildup on contacts. The amount of wipe will vary depending upon the style of contact. From an open position, move the doors closed until contacts are just touching. Move the car door to the fully closed position and observe the motion between the contacting surfaces. The surface of the contacts should have a motion across each other that will help prevent build up, pitting, and burning. If proper wipe is not observed, adjust.4. Verify contacts are clean and without buildup. If buildup is present try to remove with a dry cloth. If a dry cloth will not remove buildup, use a fine scouring pad or other fine abrasive to remove buildup. <p>NOTE: Some contacts have a coating on them, typically silver, that assists in conductivity. When cleaning be aware of this and do not become more aggressive in cleaning than is necessary. If contacts are pitted or burned that cleaning cannot resolve, they are to be replaced.</p>		



5. Verify that wiring connections are secure.
6. Using a dry paint brush, clean the mechanics to be free of dirt and lubricate pivot points with a light bearing oil (TKE#70305 or equivalent).

8.6.4.13.1(f)

Examine hangers, up thrusts, and door safety retainers for proper adjustment and secure fastening. Clean door tracks of any buildup.

1. Hangers. Using a 4" paint brush or similar, clean the car door rollers and hangers of dirt. Examine car door rollers and hangers for damage or wear. Verify secure fastening. Damaged rollers or hangers shall be replaced. Many roller bearings today are of a sealed type that do not require lubrication; however, if the bearings allow for lubrication, lubricate with a light bearing oil (TKE#70305 or equivalent).
2. Up thrusts. Verify that the up thrust clearance is adjusted to about .015" (.38 mm). Verify that the fastenings that secure and would prevent a change of the adjustment are tight.
3. Safety retainers. Safety retainers are required on hall doors only.
4. Clean door tracks of any buildup using a fine scouring pad or equivalent. After cleaning wipe down with a rag that has been lightly oiled with light bearing oil (TKE#70305 or equivalent).

8.6.4.13.1(g)

Examine astragals, resilient members, door space guards and sight guards for damage and secure fastening.

1. Examine the car door astragal for damage and secure mounting. If damaged it must be replaced.
2. Verify that the leading edges of the doors are free of sharp projections or burrs. Correct if found.
3. On center opening doors, there shall be at least one resilient member on the leading edge of the door(s). It shall be examined to verify that they extend the full height of the panel and when fully closed they do not interlock more than 1/2". When fully closed verify the metal parts of the door panels are no more 1/2" from each other.
4. Space Guard. Where installed, verify it is not damaged and is securely mounted. If damaged it must be repaired or replaced. Space guard is required on automatic or continuous pressure operation elevators, when the distance from the face of the car door to the face of the hall door exceeds;
 - a. For swinging-type hoistway door or gate and a car gate or folding car door are used – 4 inches.
 - b. For a swinging-type hoistway and car door are used – 5 1/2 inches.
 - c. Where a sliding-type hoistway and car door or gate is used – 5 1/2 inches.
 - d. On freight elevators with horizontal swinging doors not accessible to the general public – 6 1/2 inches.
5. Sight Guards. If present, examine sight guards for damage and verify secure fastening. If damaged they shall be repaired or replaced. Verify that the sight guard extends the height of the doors to, at a minimum, within 1/2" of the doors sill.



8.6.4.13.1(h)

Sills and bottom guides, fastenings, condition, and engagement

1. Examine hoistway door sill for secure fastening. Clean debris from car sill. Verify that the distance between car and hoistway sill is at least 0.5" for passenger cars and 0.8" for freight elevators. If the car corner guides are used it shall be at least 0.8". All should not exceed 1.25".
2. Examine bottom guides to ensure that they are still in good condition. Verify they are securely fastened to the car door. Move the car door to its limits of travel and verify that at any point that the guides are engaged in the sill by at least 1/4". Replacements and/or adjustments will be done that allow the guides to meet this requirement.
3. Verify that each panel has at least one fire safety tab installed and is securely fastened to the door.

8.6.4.13.1(i)

Examine the door engaging rollers for correct adjustment. Refer to product specific manual if required.

1. Using a dry paint brush, clean the door clutch to remove any dirt or debris. Examine for excessive wear or damage. Parts with excessive wear or damage shall be replaced.
2. Lubricate bearings and pivot points with bearing oil (TKE #70305 or equivalent).
3. From the car top, verify that the clutch engaging rollers, retiring cams, and engaging vanes are properly engaged. Components that are damaged shall be repaired or replaced.
4. From the car top, verify that there is no excessive movement of the car guide shoes or rollers that would allow vanes or engaging rollers to become misaligned or disengaged. Verify that cab steadier's, if provided, are securely fastened and adjusted to inhibit motion of cab that may cause vane or roller misalignment.

8.6.4.13.1(j)

Examine interconnecting means for proper adjustment and operation. Clean, ensure proper adjustment, and lubricate. Refer to product specific manual if required.

1. Wipe interconnecting means (relating cable/chain) with a rag lightly oiled with light bearing oil ((TKE#70305 or equivalent). Examine for any broken wires or damage. If broken wires are found the cable shall be replaced.
2. Verify the interconnecting means is securely fastened at each end.
3. If interconnecting means is equipped with sheaves/pulley, examine for excessive wear or damage. Excessively worn or damaged sheave/pulley shall be replaced. Rollers that have bearings requiring lubrication, lube with light bearing oil (TKE#70305 or equivalent).

8.6.4.13.1(k)

If provided, examine the door closer(s) for securing fastening, condition, and adjust for proper operation. Per A17.2- 2012, Item 3.17.1(b)(3), closer should be adjusted to provide the operation described below:

1. Manually open the doors to their full open position.
2. Release the doors and stop them at approximately the halfway point.



Periodic Task/Test Procedure – Door Systems (Hoistway Doors)

Procedure No.

PR-560-86-602-SPEC-TKE MRLH

3. With the doors at the halfway point, release the doors again and stop approximately 2" from the strike jamb.
4. Release the doors from the 2" position and verify they return to the fully closed and locked position.
5. Tension on door closing devices should not be increased to provide the operation described above until other possible causes have been eliminated (i.e., gibs/door track buildup). Clean and maintain to provide the operation as described above.

Refer to product specific manuals as required for any items that may be present and are not covered in this procedure.



TKE - Maintenance Control Program

☒ TASKS ☐ EXAMINATIONS per ASME A17.1 Code

TKE - Product Specific

Code Reference

8.6.4.13.2

Equipment Category

Endura MRLH

Periodic Task/Test Procedure – Kinetic Energy and Force Limitation for Automatic Closing, Horizontal Sliding Car and Hoistway Doors or Gates Product: ThyssenKrupp Endura MRLH

Procedure No.

PR-560-86-401-SPEC-TKE MRLH

Relevant Elevator Equipment:

Automatic horizontal doors and gates

Distribution Statement:

For trained ThyssenKrupp Elevator technicians who are qualified to perform the task or examination.

Technicians shall strictly adhere to all safety rules in the *Elevator Industry Field Employees Safety Handbook* and the *Employee Safety Standards for the Field Organization* manual (safety manual).

ASME A17.1 Section 8.6/8.11 Applicable Code/Summary for this Procedure:

- 8.6.4.13.2 Kinetic Energy and Force Limitation for Automatic Closing, Horizontal Sliding Car and Hoistway Doors or Gates – Closing kinetic energy and closing force must conform to 2.13.4 and 2.13.5.
- 8.11.3.1.1 (h) Door Closing Force (Item 1.8)

Unique Tools, Parts, Materials, Test Equipment:

Door Kinetic Force Gauge
(TKE Part #9869657)

–OR–

HMC Door Pressure Gauge (Model DPG)

Task/Examination Procedures:

Due to the many hazards associated with working around various conveyances, the technician must comply with the safety procedures as outlined in the *Employee Safety Standards for the Field Organization* manual and TKE Safety Policy.

Contained within this procedure are two methods of determining the torque and kinetic energy requirement.

Method #1: Using the TKE door gauge is the primary method and will be documented on the log. Method #2: Not required unless local AHJ does not accept door gauge method. This method uses the door timing method based on the code required data tag on the door operator.

1. Check/Test Door Closing Force (Door Torque)



WARNING!

When making torque or kinetic energy readings with a ThyssenKrupp gauge, position the gauge so that the chain holding the two tubes of the gauge together is between your hands and the larger edge of the gauge.

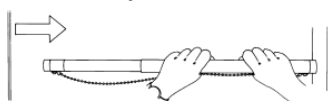


Figure 1: Safe Use of Door Gauge



Figure 2: HMC Door Pressure Gauge (Model DPG).

Photo Courtesy of HMC INT'L. DIV., Inc. (Used with permission)

NOTE: Follow steps a through d when using either of the two door gauges shown in Figure 1 or 2.

- Place the gauge against the leading edge of the car door.
- Operate the doors electrically. As the doors close, hold the door back to reduce the door speed until the doors stall out on the gauge within the center third of door travel.
- Manually apply pressure to the door in the opening direction to reduce the torque reading.
- Gradually release the pressure applied to the door allowing the torque reading to increase to a maximum value.
- Note the horizontal line for a typical reading using the TKE Door Gauge. Record this torque value on the Maintenance Task Log. (See Figure 4)

NOTE: Per ASME code, this force must not exceed 30 lbf (pounds-force).



**Periodic Task/Test Procedure – Kinetic Energy and Force
Limitation for Automatic Closing, Horizontal Sliding Car
and Hoistway Doors or Gates
Product: ThyssenKrupp Endura MRLH**

Procedure No.
PR-560-86-401-SPEC-TKE MRLH

2. Check/Test Door Close Kinetic Energy (Full Speed)

NOTE: Kinetic energy can be tested using the ThyssenKrupp gauge or the timing method based on local code requirements.



When making torque or kinetic energy readings with a ThyssenKrupp gauge, position the gauge so that the chain holding the two tubes of the gauge together is between your hands and the larger edge of the gauge.

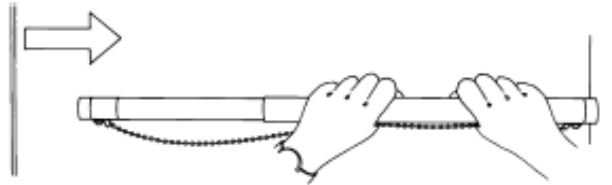


Figure 3: Safe Use of Door Gauge

Door Gauge Method

NOTE: This procedure is based on the use of the TKE Door Kinetic Force Gauge, Part #9869657.

- a. Place an obstruction in the doorway so that the door(s) will stop and reopen at least 12" from fully closed, but will have room to strike the gauge prior to the obstruction of the gauge against the leading edge of the car door.
- b. Push the O-ring on the gauge against the large end of the tube.
- c. Open the doors electrically and place one end of the gauge against the jamb (or leading edge of one of the doors on center-opening), aligned so that the landing edge of the moving door will strike the gauge.
- d. Allow the doors to strike the kinetic energy gauge at high speed.
- e. Remove the gauge and determine the kinetic energy based on the position of the O-ring as follows:
 - (1) Using the value in Step 1.e. (the value noted on the top scale – horizontal line in Figure 4) transfer this value to the bottom scale.
 - (2) Follow this vertical line up (dotted line) until it intersects with the O-ring position from Step 2.e. to determine the kinetic energy. (See Figure 4)

- f. Verify that the door kinetic force does not exceed the local code requirements (typically 7 ft lbf).

NOTE: Using a door close torque reading of 27 lbf. as an example only, follow the intersecting sloped line and read the kinetic energy scale. (4.6 ft lbf in the figure).

NOTE: If required, repeat kinetic energy test with the doors operating in nudging operation. Record this value as reduced torque kinetic energy in the MTER log.

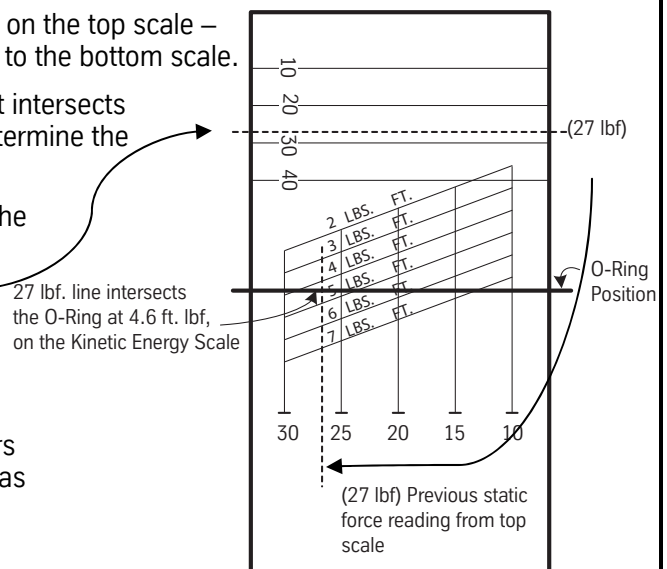


Figure 4: Force and Kinetic Energy Scale on TKE Door Gauge



**Periodic Task/Test Procedure – Kinetic Energy and Force
Limitation for Automatic Closing, Horizontal Sliding Car
and Hoistway Doors or Gates
Product: ThyssenKrupp Endura MRLH**

Procedure No.
PR-560-86-401-SPEC-TKE MRLH

Door Timing Method

- a. For single-speed or two-speed doors, mark the sill 2" from each jamb.
- b. For center-opening doors, mark sill 1" from jamb and 1" from center point.
- c. Time the doors on closing from one mark to another.
- d. Verify the times are greater than or equal to the minimum door closing time on the code data plate.

3. Check/Test Kinetic Energy (Nudging Duty)

Door Gauge Method

- a. Push the O-ring on the door gauge against the large end of the tube.
- b. Enable Nudging Operation (if available).
- c. After recording the original adjustment, reduce the Nudging Timer value to 15 seconds.
- d. After recording the original adjustment, increase the Watchdog Fail Timer value (if available) to 100 seconds (maximum).
- e. Open the door(s) and prevent them from closing with the safety edge until Nudging activates.
- f. When Nudging operation starts, place one end of the gauge against the jamb (or leading edge of one of the doors on center-opening) and align it so that the leading edge of the moving door will strike the gauge.
- g. Allow the door(s) to strike the kinetic energy gauge at Nudging speed.
- h. Remove the gauge and determine the kinetic energy based on the position of the O-ring as follows:
 - (1) Locate the kinetic energy line that corresponds to the previously noted/recorded torque reading.
 - (2) Follow the torque line until it intersects with the O-ring.
 - (3) Follow the intersecting sloped line and read the kinetic energy scale.
- i. Verify that the door kinetic force does not exceed the local code requirements (typically 2.5 ft lbf).
- j. Return Nudging, nudging timer and watchdog fail timer back to recorded adjustment.

Door Timing Method

- a. For single-speed or two-speed doors, mark the sill 2" from each jamb.
- b. For center opening doors, mark sill 1" from jamb and 1" from center point.
- c. Enable Nudging Operation (if available).
- d. Reduce the Nudging Timer value to 15 seconds.
- e. Increase the Watchdog Fail Timer value (if available) to 100 seconds (maximum).
- f. Open the door(s), and prevent them from closing with the safety edge until Nudging activates.
- g. When nudging operation starts, time the doors on closing from one mark to another.
- h. Verify the times are greater than or equal to the minimum door closing time from door data tag.



This page intentionally left blank.

TKE - Maintenance Control Program

☒ **TASKS** ☐ **EXAMINATIONS** per ASME A17.1 Code

TKE - Product Specific

Code Reference

8.6.4.14

Equipment Category

Endura MRLH

Periodic Task/Test Procedure – Hoistway Access Switches Product: ThyssenKrupp Endura MRLH		Procedure No. PR-560-86-303-SPEC-TKE MRLH
Relevant Elevator Equipment: All elevators	Distribution Statement: For trained ThyssenKrupp Elevator technicians who are qualified to perform the task or examination. Technicians shall strictly adhere to all safety rules in the <i>Elevator Industry Field Employees Safety Handbook</i> and the <i>Employee Safety Standards for the Field Organization</i> manual (safety manual).	
ASME A17.1 Section 8.6/8.11 Applicable Code/Summary for this Procedure: — 8.6.4.14 Hoistway access switches, where provided, shall be maintained.		Unique Tools, Parts, Materials, Test Equipment: None
<hr/> Task/Examination Procedures: <p>Before taking car out of service, notify the proper building personnel and put “Out of Service” tags at each landing (as required).</p> <p>Due to the many hazards associated with working around various conveyances, the technician must comply with the safety procedures as outlined in the <i>Employee Safety Standards for the Field Organization</i> manual and TKE Safety Policy.</p> <p>Refer to the product specific or component manual/procedure as required.</p> <p>Procedures below shall be completed if hoistway access operation is present on the job. Not all jobs will have hoistway access operation.</p> <ol style="list-style-type: none"> Verify that the hoistway access switches function properly, both mechanically and electrically. <ol style="list-style-type: none"> Using the hoistway access switch, move the car in a direction away from the floor. Without returning the key to center position, release the key. Motion of the car should stop and the key should return approximately to the center position. Repeat for opposite direction. Repeat 1-a above for all hoistway access switches. Verify wiring connections are tight. Verify the speed of the car is less than 150 fpm when moving on hoistway access operation. If the application uses mechanical switches in the hoistway to limit the travel of the car: <ol style="list-style-type: none"> Verify the physical operation of the switch, adjustment, and condition of contacts. Replace if required. Verify that there is not enough movement of the car within the rails to interfere with the operation of the switch (cam/switch alignment). Verify wiring connections are tight. Using the hoistway access switch, verify the limit of travel of the car. <ol style="list-style-type: none"> Down Direction – not greater than the height of the car crosshead level with landing. Up Direction – not greater than the bottom of the platform guard (toe guard) and the top of the landing door frame. <p>NOTE: Travel may be less than this, but should not exceed.</p>		



This page intentionally left blank.

TKE - Maintenance Control Program

☒ **TASKS** ☐ **EXAMINATIONS** per ASME A17.1 Code

TKE - Product Specific

Code Reference

8.6.4.15

Equipment Category

Endura MRLH

Periodic Task/Test Procedure – Car Emergency Systems Product: ThyssenKrupp Endura MRLH		Procedure No. PR-560-86-402-SPEC-TKE MRLH
Relevant Elevator Equipment: All	Distribution Statement: For trained ThyssenKrupp Elevator technicians who are qualified to perform the task or examination. Technicians shall strictly adhere to all safety rules in the <i>Elevator Industry Field Employees Safety Handbook</i> and the <i>Employee Safety Standards for the Field Organization</i> manual (safety manual).	
ASME A17.1 Section 8.6/8.11 Applicable Code/Summary for this Procedure: <ul style="list-style-type: none"> – 8.6.4.15 Emergency operation of signaling devices (2.27), lighting, communication, and ventilation shall be maintained. – 2.27.1.1.1 & 6 Verify that the phone is being monitored, and the daily phone line operability test is functioning as intended. Means used other than a phone line must be checked for proper function. 		Unique Tools, Parts, Materials, Test Equipment: None
<hr/> <p>Task/Examination Procedures:</p> <p>Before taking car out of service, notify the proper building personnel, and put “Out of Service” tags at each landing (as required).</p> <p>Due to the many hazards associated with working around various conveyances, the technician must comply with the safety procedures as outlined in the <i>Employee Safety Standards for the Field Organization</i> manual and TKE Safety Policy.</p> <p>If equipped with one or more of the following emergency systems, they shall be maintained.</p> <ul style="list-style-type: none"> • Emergency Signaling Devices – Stop switch alarm bell • Auxiliary Lighting – Battery operated backup light • Emergency Communications – Two-way communications system • Normal Ventilation – Cabs equipped with a forced ventilation system • Emergency Ventilation – Cabs equipped with a forced ventilation system with an auxiliary power source <p>Verify Test and Maintain Car Emergency Systems</p> <ol style="list-style-type: none"> 1. Two-Way Communication / Phone (A17.1-2010 2.27.1.1.1 and 2.27.1.1.6) <ol style="list-style-type: none"> a. Activate phone to get response to verify that the phone is being monitored. (2.27.1.1.1) b. A17.1-2010 and later: Verify that daily phone line operability test is functioning as intended. (2.27.1.1.6 (a)) c. If means other than a phone line is being used (e.g., VOIP, network, intercom, etc.) for the two-way communications, similar verification or this equivalent means shall be performed. (2.27.1.1.6 (a)) d. Activate the intercom system and verify correct operation. <p>NOTE: Refer to product specific information on how to initiate monitoring test and place a printed copy of the product specific information on how to initiate the monitoring test in the MCP Records Retention Binder.</p>		



Periodic Task/Test Procedure – Car Emergency Systems

Product: ThyssenKrupp Endura MRLH

Procedure No.

PR-560-86-402-SPEC-TKE MRLH

NOTE: If communication is non-functional because of a disconnected phone line, follow instructions and document in the “Code Compliance” log within the MTER. Inform the building owner, owner representative, and/or TKE personnel of the issue as appropriate for job conditions.

2. Verify emergency light and alarm bell for proper operation under normal power conditions.
3. Clean batteries and their connections used within the car emergency systems.

NOTE: Depending upon the manufacturer/application, there may be multiple systems equipped with batteries.

4. Note the amp/hr rating on all batteries. If amp hour rating is not on the battery, contact your supervisor.
5. By measuring battery voltage with and without normal power, verify battery charging systems are functioning. (Battery voltage should be slightly higher when charging).
6. With controller and cab lighting power removed;
 - verify battery charging (voltage is slightly lower that when measured while charging) on all batteries used for emergency system, and
 - verify emergency light is providing 0.2 foot candles measured anywhere between 35 and 48 inches above the floor and centered in front of the COP alarm bell, and in car communications for proper operation.
7. Verify battery amp/hr rating is correct for the application. The lighting load on the battery during a loss of power must be within the amp/hr rating on the battery. The amp/hr rating should have been noted in step 4. The second step is to determine the current load on the battery. Three methods are provided.

Method #1. If the information on the current requirements is located on the devices used, these can be used to determine the amperage requirements using the Power formula $I=P/E$, where

I = Current

P=Power (wattage of the bulbs or other devices) measured in watts.

E = Voltage applied.

Example: If there were two 15-watt bulbs wired in parallel and the voltage applied was 12 volts, the current required would be $I= P/E$, $I=30/12$, $I=2.5$ amps. Since the battery would need to run for 4 hours, multiply 4 times 2.5 and we have a 10 amp/hr battery requirement. This is a minimum requirement; the battery may have larger amp/hr rating.

Method #2. Using your multimeter in AMP mode, connected in series with either the positive or negative battery lead, measure the current draw.

NOTE: There is typically a 10 amp max rating for amps on most meters. This is fine for most systems, **but some rare systems may have a draw higher than this (typically batteries required for fans for glass backed cabs in sunlight) would not allow this method to be used.**

Method #3. Using a clamp-on ammeter clamped onto either the positive or negative battery lead, measure the current draw. After the amp/hr requirement has been determined using any of these methods, record this requirement in an appropriate location, preferably by the battery.

If multiple battery backed emergency systems are provided, battery size shall be verified for all systems.



Periodic Task/Test Procedure – Car Emergency Systems
Product: ThyssenKrupp Endura MRLH

Procedure No.
PR-560-86-402-SPEC-TKE MRLH

8. Maintain normal forced ventilation system for proper operation. Clean fan and grill. If fan motor has lubrication points, they are to be lubricated.
9. Verify operation of emergency ventilation and maintain as required to provide proper operation (if provided).
10. Verify operation of the two-way intercom system (if provided).
11. Verify the natural ventilation of the cab is not blocked.



This page intentionally left blank.

TKE - Maintenance Control Program

☒ TASKS ☐ EXAMINATIONS per ASME A17.1 Code

TKE - Product Specific

Code Reference

8.6.4.16

Equipment Category

Endura MRLH

Periodic Task/Test Procedure – Stopping Accuracy Product: ThyssenKrupp Endura MRLH		Procedure No. PR-560-86-403-SPEC-TKE MRLH
Relevant Elevator Equipment: All	Distribution Statement: For trained ThyssenKrupp Elevator technicians who are qualified to perform the task or examination. Technicians shall strictly adhere to all safety rules in the <i>Elevator Industry Field Employees Safety Handbook</i> and the <i>Employee Safety Standards for the Field Organization</i> manual (safety manual).	
ASME A17.1 Section 8.6/8.11 Applicable Code/Summary for this Procedure: — 8.6.4.16 The elevator shall be maintained to provide a stopping accuracy at the landing during norm operation as appropriate for the type of control, in accordance with applicable Code requirements.		Unique Tools, Parts, Materials, Test Equipment: None
<hr/>		
Task/Examination Procedures: Before taking car out of service, notify the proper building personnel, and put “Out of Service” tags at each landing (as required). Due to the many hazards associated with working around various conveyances, the technician must comply with the safety procedures as outlined in the <i>Employee Safety Standards for the Field Organization</i> manual and TKE Safety Policy. Maintain to ensure Stopping Accuracy. Components related to stopping accuracy of the elevator shall be maintained to provide stopping accuracy as appropriate for the type of control used. These items may include but are not limited to: 1. Viscosity operation, if provided. 2. Lubrication and maintenance of selector tape guides. 3. Valve adjustments. 4. On jobs equipped with cylinder packings, do not over tighten. 5. Maintain rail guides for proper clearances at floors. A17.1 2000 and later: Maintain the elevator stopping accuracy to be no greater than 0.5 inches. The technician must be aware that because of variations within control systems, code required stopping accuracy varies depending upon the code the equipment is permitted under. Also stopping accuracy requirements may vary due to other codes adopted in area of conveyance (A117, IBC, ADA, etc.), code requirements for floor accuracy and re-level distance may vary. If the technician is not certain of other code requirements that may apply to the conveyance, different than for maintaining the floor accuracy at no greater than .5 inches, contact the route supervisor or service manager for direction.		



This page intentionally left blank.

TKE - Maintenance Control Program

☒ TASKS ☐ EXAMINATIONS per ASME A17.1 Code

TKE - Product Specific

Code Reference

8.6.5.4

Equipment Category

Endura MRLH

Periodic Task/Test Procedure – Tank Levels Product: ThyssenKrupp Endura MRLH

Procedure No.

PR-560-86-108-SPEC-TKE MRLH

Relevant Elevator Equipment:

ThyssenKrupp Endura MRLH

Distribution Statement:

For trained ThyssenKrupp Elevator technicians who are qualified to perform the task or examination.

Technicians shall strictly adhere to all safety rules in the *Elevator Industry Field Employees Safety Handbook* and the *Employee Safety Standards for the Field Organization* manual (safety manual).

ASME A17.1 Section 8.6/8.11 Applicable Code/Summary for this Procedure:

- 8.6.5.4 Tank Levels – Oil levels shall be checked and maintained to comply with prescribed minimum and maximum level

Unique Tools, Parts, Materials, Test Equipment:

None

Task/Examination Procedures:

Before taking car out of service, notify the proper building personnel and put “Out of Service” tags at each landing (as required).

Due to the many hazards associated with working around various conveyances, the technician must comply with the safety procedures as outlined in the *Employee Safety Standards for the Field Organization* manual and TKE Safety Policy.

Refer to the product specific or component manual/procedure as required.

Check and Maintain Oil Level.

1. Verify that the oil level in the tank is between the tank’s minimum and maximum level.

NOTE: Before adding new oil, check the oil collection devices/containers and return any uncontaminated oil to the tank and re-check the oil level. When contaminated oil is removed from the job site, it should be noted in the Hydraulic Oil Usage Log as reasoning for the added oil.

The typical methods for verifying oil levels are as follows:

- Dip Stick:

NOTE: Current ThyssenKrupp model dipstick shown below; other manufacturer’s style/design may vary.



With the car at the bottom landing, the oil level should be between the “Full” and “Add” levels shown above. Oil level should be above the bottom of the bottom nut and not higher than the top of the top nut as indicated by the arrows above.

- Sight Glass:

With the car at the bottom landing, the oil level should be between the marked minimum and maximum levels.



Periodic Task/Test Procedure – Tank Levels
Product: ThyssenKrupp Endura MRLH

Procedure No.
PR-560-86-108-SPEC-TKE MRLH

- Permanent Min/Max levels marked on inside or outside of the tank:

With the car at the bottom landing, the oil level should be between the minimum and maximum levels. If marks are on the outside of the tank, the distance from the top of the tank to the oil level must be measured and this measurement compared to the minimum and maximum marks on the outside of the tank.

NOTE: If other methods for verifying oil levels besides the ones listed above are used, detailed procedures must be provided and located behind the CCVP tab in the MCP Records Retention Binder.

2. Adjust the tank's oil level so the minimum and maximum levels may be maintained.

NOTE: If any oil is returned to the tank from the oil collection devices or if any new oil is added to the tank reservoir, it must be noted in the Hydraulic Oil Usage Log per 8.6.5.7 – Record of Oil Usage (PR-540-86-110).



TKE - Maintenance Control Program

☒ TASKS ☐ EXAMINATIONS per ASME A17.1 Code

TKE - Product Specific

Code Reference

8.6.5.5.1

Equipment Category

Endura MRLH

Periodic Task/Test Procedure – Gland Packing and Seals Examination and Maintenance Product: ThyssenKrupp Endura MRLH		Procedure No. PR-560-86-207-SPEC-TKE MRLH
Relevant Elevator Equipment: All hydraulic elevators	Distribution Statement: For trained ThyssenKrupp Elevator technicians who are qualified to perform the task or examination. Technicians shall strictly adhere to all safety rules in the <i>Elevator Industry Field Employees Safety Handbook</i> and the <i>Employee Safety Standards for the Field Organization</i> manual (safety manual).	
ASME A17.1 Section 8.6/8.11 Applicable Code/Summary for this Procedure: — 8.6.5.5.1 Piping, valves, and seals shall be maintained to prevent excessive loss of fluid.		Unique Tools, Parts, Materials, Test Equipment: None
<hr/> Task/Examination Procedures: Before taking car out of service, notify the proper building personnel and put “Out of Service” tags at each landing (as required). Due to the many hazards associated with working around various conveyances, the technician must comply with the safety procedures as outlined in the <i>Employee Safety Standards for the Field Organization</i> manual and TKE Safety Policy. Pressure Piping, Valves, and Seals Pressure piping, valves, and cylinders that use packing glands or seals shall be maintained to prevent excessive loss of fluid. NOTE: If a cylinder packing, seal, or a pressure piping seal is replaced, the entire system is required to be operated at relief-valve pressure for not less than 15 seconds. 1. With a clean cloth, wipe clean the area between seal(s) and plunger(s).		



This page intentionally left blank.

TKE - Maintenance Control Program

☒ TASKS ☐ EXAMINATIONS per ASME A17.1 Code

TKE - Product Specific

Code Reference

8.6.5.5.2

Equipment Category

Endura MRLH

Periodic Task/Test Procedure – Gland Packing and Seals Collection of Oil Leakage Product: ThyssenKrupp Endura MRLH

Procedure No.

PR-560-86-208-SPEC-TKE MRLH

Relevant Elevator Equipment:

Endura MRLH

Distribution Statement:

For trained ThyssenKrupp Elevator technicians who are qualified to perform the task or examination.

Technicians shall strictly adhere to all safety rules in the *Elevator Industry Field Employees Safety Handbook* and the *Employee Safety Standards for the Field Organization* manual (safety manual).

ASME A17.1 Section 8.6/8.11 Applicable Code/Summary for this Procedure:

- 8.6.5.5.2 Oil leakage collected from each cylinder head seals or packing gland shall not exceed 5 gal before removal. The container shall be covered and not allowed to overflow.

Unique Tools, Parts, Materials, Test Equipment:

None

Task/Examination Procedures:

Before taking car out of service, notify the proper building personnel and put “Out of Service” tags at each landing (as required).

Due to the many hazards associated with working around various conveyances, the technician must comply with the safety procedures as outlined in the *Employee Safety Standards for the Field Organization* manual and TKE Safety Policy.

Oil Collection Container

Pressure piping, valves, and cylinders that use packing glands or seals shall be maintained to prevent excessive loss of fluid.

NOTE: If a cylinder packing, seal, or a pressure piping seal is replaced, the entire system is required to be operated at relief-valve pressure for not less than 15 seconds.

1. Inspect for blockage of discharge line to oil recovery device.
2. If applicable and as necessary, remove and dump oil recovery bucket, reinstall bucket and cover (follow EPA rules for disposal of hazardous waste, or consult your supervisor). Record emptying of oil collection bucket in MTER Oil Usage Log.
3. Oil collection container cannot exceed 5 gallons per jack.

Oil Recovery Device

1. If applicable, check automatic oil recovery device to make sure that it is operating properly and that the container is not leaking.
2. Oil recovery devices may only return to a 5 gallon container.



This page intentionally left blank.

TKE - Maintenance Control Program

☒ TASKS ☐ EXAMINATIONS per ASME A17.1 Code

TKE - Product Specific

Code Reference

8.6.5.9

Equipment Category

Endura MRLH

Periodic Task/Test Procedure – Relief-Valve Setting Product: ThyssenKrupp Endura MRLH		Procedure No. PR-560-86-111-SPEC-TKE MRLH
Relevant Elevator Equipment: All hydraulic elevators	Distribution Statement: For trained ThyssenKrupp Elevator technicians who are qualified to perform the task or examination. Technicians shall strictly adhere to all safety rules in the <i>Elevator Industry Field Employees Safety Handbook</i> and the <i>Employee Safety Standards for the Field Organization</i> manual (safety manual).	
ASME A17.1 Section 8.6/8.11 Applicable Code/Summary for this Procedure: <ul style="list-style-type: none">– 8.6.5.9 Relief-Valve Setting – Verify that the seal is intact.– 8.6.5.14.1 Periodic Test Requirements – Category 1 – Relief Valve Setting and System Pressure Test.		Unique Tools, Parts, Materials, Test Equipment: None
<hr/> Task/Examination Procedures: <p>Before taking car out of service, notify the proper building personnel and put “Out of Service” tags at each landing (as required).</p> <p>Due to the many hazards associated with working around various conveyances, the technician must comply with the safety procedures as outlined in the <i>Employee Safety Standards for the Field Organization</i> manual and TKE Safety Policy.</p> <p>Examine Relief Valve Adjustment</p> <p>Visually examine the relief valve seal used to prevent tampering and verify that it is intact.</p> <p>NOTES:</p> <ul style="list-style-type: none">– If the relief-valve seal is not intact, the Category 1 test procedure as defined in 8.6.5.14.1 – Relief Valve Setting and System Pressure Test (PR-548-86-902) must be performed.– Many AHJ’s require a test form to be filled out and turned in after the relief valve has been re-adjusted and sealed.		



This page intentionally left blank.

TKE - Maintenance Control Program

☒ TASKS ☐ EXAMINATIONS per ASME A17.1 Code

TKE - Product Specific

Code Reference

8.6.5.12 (Anti-creep)

Equipment Category

Endura MRLH

Periodic Task/Test Procedure – Anti-creep Product: ThyssenKrupp Endura MRLH		Procedure No. PR-560-86-112-SPEC-TKE MRLH
Relevant Elevator Equipment: All elevators	Distribution Statement: For trained ThyssenKrupp Elevator technicians who are qualified to perform the task or examination. Technicians shall strictly adhere to all safety rules in the <i>Elevator Industry Field Employees Safety Handbook</i> and the <i>Employee Safety Standards for the Field Organization</i> manual (safety manual).	
ASME A17.1 Section 8.6/8.11 Applicable Code/Summary for this Procedure: — 8.6.5.12 Anti-creep operation shall be maintained to operate per code.		Unique Tools, Parts, Materials, Test Equipment: None
<hr/>		
Task/Examination Procedures: Before taking car out of service, notify the proper building personnel and put “Out of Service” tags at each landing (as required). Due to the many hazards associated with working around various conveyances, the technician must comply with the safety procedures as outlined in the <i>Employee Safety Standards for the Field Organization</i> manual and TKE Safety Policy.		
NOTES: <ul style="list-style-type: none">— Anti-creep devices are required to maintain the car within 1 inch of the landing.— The anti-creep device in most TKE systems for electro-hydraulic elevators operates in both directions; however, code only requires it to operate the car in the up direction. Equipment shall be maintained to operate as designed.— Some jurisdictions may be enforcing ADA requirements for leveling, which is 1/2 inch.		
Maintain Anti-creep Devices Depending upon the manufacturer, the items to maintain may vary. Examples of items to maintain <u>may</u> include, but are not limited to: <ul style="list-style-type: none">1. Selector Tape Guides – Check for wear and lubricate with light oil.2. Selector Tape Magnet – Check placement and verify it is secured to prevent movement.3. Guide Shoes – Check for wear and correct adjustment. If lubrication is required, see 8.6.4.3 – Lubrication of Guide Rails (PR-540-86-201).4. Relays within controller associated with anti-creep shall be maintained. (See 8.6.1.6.3 – Controllers, Wiring, and Wiring Diagrams (PR-540-86-102))5. Maintain proper valve adjustment (anti-creep (leveling) speed not to exceed 25 fpm).6. Verify operation of viscosity operation, if provided.7. Proper engagement of operating vanes and/or switches used for anti-creep operation.		



This page intentionally left blank.

TKE - Maintenance Control Program

☒ TASKS ☐ EXAMINATIONS per ASME A17.1 Code

TKE - Product Specific

Code Reference

8.6.5.12 (Low Oil Protection)

Equipment Category

Endura MRLH

Periodic Task/Test Procedure – Low Oil Protection Product: ThyssenKrupp Endura MRLH		Procedure No. PR-560-86-113-SPEC-TKE MRLH
Relevant Elevator Equipment: All elevators	Distribution Statement: For trained ThyssenKrupp Elevator technicians who are qualified to perform the task or examination. Technicians shall strictly adhere to all safety rules in the <i>Elevator Industry Field Employees Safety Handbook</i> and the <i>Employee Safety Standards for the Field Organization</i> manual (safety manual).	
ASME A17.1 Section 8.6/8.11 Applicable Code/Summary for this Procedure: — 8.6.5.12 Low Oil Protection shall be maintained to operate per code.		Unique Tools, Parts, Materials, Test Equipment: None
<hr/> Task/Examination Procedures: <p>Before taking car out of service, notify the proper building personnel and put “Out of Service” tags at each landing (as required).</p> <p>Due to the many hazards associated with working around various conveyances, the technician must comply with the safety procedures as outlined in the <i>Employee Safety Standards for the Field Organization</i> manual and TKE Safety Policy.</p> <p>Refer to the product specific or component manual/procedure as required.</p> Maintain Low Oil Devices <ol style="list-style-type: none">1. When the elevator control system is provided with a device that directly monitors the level of oil in the tank (commonly a float switch), examine and maintain the level sensing device for proper operation.2. When the elevator control system is provided with an external pump run timer, the timer and any associated relays or contacts shall be maintained to ensure proper operation.		



This page intentionally left blank.

TKE - Maintenance Control Program

☒ **TASKS** ☐ **EXAMINATIONS** per ASME A17.1 Code

TKE - Product Specific

Code Reference

8.6.5.13

Equipment Category

Endura MRLH

Periodic Task/Test Procedure – Overspeed Valve Setting Product: ThyssenKrupp Endura MRLH

Procedure No.

PR-560-86-212-SPEC-TKE MRLH

Relevant Elevator Equipment:

Equipment where overspeed valves are installed

Distribution Statement:

For trained ThyssenKrupp Elevator technicians who are qualified to perform the task or examination.
Technicians shall strictly adhere to all safety rules in the *Elevator Industry Field Employees Safety Handbook* and the *Employee Safety Standards for the Field Organization* manual (safety manual).

ASME A17.1 Section 8.6/8.11 Applicable Code/Summary for this Procedure:

- 8.6.5.13 Overspeed Valve Setting – All elevators provided with field adjustable overspeed valves shall have the adjustment means examined to ensure the seal is intact. If the overspeed adjustment seal is not intact, compliance with 8.6.5.16.5 shall be verified and a new seal shall be installed.
- 8.6.5.16.5 Overspeed valves, where provided, shall be inspected and tested to verify that they will stop the car, traveling down with rated load, within the specified limits of 3.19.4.7.5(a) using a written procedure supplied by the valve manufacturer or the person or firm maintaining the equipment. If the seal has been altered or broken, the overspeed valve shall be resealed after successful test.

Unique Tools, Parts, Materials, Test Equipment:

None

Task/Examination Procedures:

Before taking car out of service, notify the proper building personnel and put “Out of Service” tags at each landing (as required).

Due to the many hazards associated with working around various conveyances, the technician must comply with the safety procedures as outlined in the *Employee Safety Standards for the Field Organization* manual and TKE Safety Policy.

Verify that overspeed valve seal is intact.

- If the seal is not intact, the test required in 8.6.5.16.5 – Overspeed Valves (PR 548-86-928 - Periodic Test Requirement - Category 5) shall be performed.
- If Category 5 testing is required, contact your immediate supervisor/manager to inform them and record the information in the Code Compliance log.
- Do **not** initial the task complete unless you perform the required Category 5 testing, when there is a broken seal.



This page intentionally left blank.

TKE - Maintenance Control Program

☒ TASKS ☐ EXAMINATIONS per ASME A17.1 Code

TKE - Product Specific

Code Reference

8.6.11.1

Equipment Category

Endura MRLH

Periodic Task/Test Procedure – Special Provisions–Firefighters’ Emergency Operation Log Product: ThyssenKrupp Endura MRLH

Procedure No.

PR-560-86-114-SPEC-TKE MRLH

Relevant Elevator Equipment:

All elevators

Distribution Statement:

For trained ThyssenKrupp Elevator technicians who are qualified to perform the task or examination.

Technicians shall strictly adhere to all safety rules in the *Elevator Industry Field Employees Safety Handbook* and the *Employee Safety Standards for the Field Organization* manual (safety manual).

ASME A17.1 Section 8.6/8.11 Applicable Code/Summary for this Procedure:

- 8.6. 11.1 Firefighters’ Emergency Operation – Elevators with firefighters’ emergency operation shall be subjected monthly, by authorized personnel, to Phase 1 recall by use of the key switch, and a minimum of one-floor operation on Phase II, except in jurisdictions enforcing the NBCC. A recording of findings shall be available to elevator personnel and the authority having jurisdiction.

Unique Tools, Parts, Materials, Test Equipment:

None

Task/Examination Procedures:

Before taking car out of service, notify the proper building personnel and put “Out of Service” tags at each landing (as required).

Due to the many hazards associated with working around various conveyances, the technician must comply with the safety procedures as outlined in the *Employee Safety Standards for the Field Organization* manual and TKE Safety Policy.

If provided with Firefighters’ Emergency Operation, verify compliance of the record of findings.

1. Verify that the MTER Firefighters’ Emergency Operation log used to record the findings of the Phase I and II testing are current.
2. Verify that the logs are available to elevator personnel and the Authority Having Jurisdiction (AHJ).

NOTE: It is not a code requirement that elevator personnel perform this testing. It may be done by “authorized personnel” which is anyone trained and “authorized” by the owner. However, there may be jobs where this is part of the service performed for the customer. If it is unclear, contact supervisor for clarification.



This page intentionally left blank.

TKE - Maintenance Control Program

☒ TASKS ☐ EXAMINATIONS per ASME A17.1 Code

TKE - Product Specific

Code Reference

8.6.11.2

Equipment Category

Endura MRLH

Periodic Task/Test Procedure – Special Provisions–Two-Way Communications Means Product: ThyssenKrupp Endura MRLH		Procedure No. PR-560-86-115-SPEC-TKE MRLH
Relevant Elevator Equipment: All elevators	Distribution Statement: For trained ThyssenKrupp Elevator technicians who are qualified to perform the task or examination. Technicians shall strictly adhere to all safety rules in the <i>Elevator Industry Field Employees Safety Handbook</i> and the <i>Employee Safety Standards for the Field Organization</i> manual (safety manual).	
ASME A17.1 Section 8.6/8.11 Applicable Code/Summary for this Procedure: — 8.6. 11.2 The two-way communications means shall be checked annually by authorized personnel.		Unique Tools, Parts, Materials, Test Equipment: None
<hr/> <p>Task/Examination Procedures:</p> <p>Due to the many hazards associated with working around various conveyances, the technician must comply with the safety procedures as outlined in the <i>Employee Safety Standards for the Field Organization</i> manual and TKE Safety Policy.</p> <p>Refer to the product specific or component manual/procedure as required.</p> <p>At a minimum, annually verify the two-way communication means.</p> <ol style="list-style-type: none"> 1. Test to verify the proper operation of the two-way communications means and that two-way communication is established. 2. When testing, verify visual indicator is functional and the person answering can provide the building location and elevator number if there is more than one elevator in the building. 3. For equipment permitted under A17.1 2010 and later, verify that the phone line monitoring device required by 2.27.1.1.6 is functioning. This test is typically performed as follows: <ol style="list-style-type: none"> a. Disconnect the phone line wires from the two-way communication means. (The phone lines may be found in the machine/control room or COP.) b. In the car, push the button used to initiate the two-way communication means. c. Verify the visual signal located at the designated landing in the vicinity of the fire recall switch illuminates intermittently. d. Verify the audible signal sounds once at least every 30 seconds until the phone line is reconnected. e. The audible signal is allowed to be silenced by authorized personnel. This is typically a keyswitch located in the vicinity of the visual/audible indicator. The visual indicator should continue to flash until the phone line is reconnected. 4. If there is a communication system from the building to the elevator, verify communication system operates correctly. 5. If an intercom system is provided, it shall also be tested to verify two-way communication is functional. 		



This page intentionally left blank.

TKE - Maintenance Control Program

☒ TASKS ☐ EXAMINATIONS per ASME A17.1 Code

TKE - Product Specific

Code Reference

8.6.11.3

Equipment Category

Endura MRLH

Periodic Task/Test Procedure – Special Provisions–Access Keys Product: ThyssenKrupp Endura MRLH		Procedure No. PR-560-86-116-SPEC-TKE MRLH
Relevant Elevator Equipment: All elevators	Distribution Statement: For trained ThyssenKrupp Elevator technicians who are qualified to perform the task or examination. Technicians shall strictly adhere to all safety rules in the <i>Elevator Industry Field Employees Safety Handbook</i> and the <i>Employee Safety Standards for the Field Organization</i> manual (safety manual).	
ASME A17.1 Section 8.6/8.11 Applicable Code/Summary for this Procedure: — 8.6. 11.3 Keys required for access, operation, inspection, maintenance, repair, and emergency access shall be made available only to personnel in the assigned security level, in accordance with 8.1.		Unique Tools, Parts, Materials, Test Equipment: None
<hr/> Task/Examination Procedures: <p>Before taking car out of service, notify the proper building personnel and put “Out of Service” tags at each landing (as required).</p> <p>Due to the many hazards associated with working around various conveyances, the technician must comply with the safety procedures as outlined in the <i>Employee Safety Standards for the Field Organization</i> manual and TKE Safety Policy.</p> <ol style="list-style-type: none">1. Verify that there are no Group 1 keys that would be available to unauthorized personnel in the machine room/control space or other areas maintained by TKE. A list of the ASME A17.1 group 1 restricted keys is shown below. <p>Group 1: Restricted access covers the following (refer to ASME A17.1 8.1 for more details):</p> <ul style="list-style-type: none">• pit access doors• access openings in machinery space floor, etc.• hoistway access doors• equipment access panels in the car for access to equipment outside the car• motor controller cabinet door(s) or panel(s) when not located in the machine room/space• access to the means to move the car from outside the hoistway• access to removable means to move the car from outside the hoistway• inspection and test panel enclosure (where required, see ASME 2.7.6.5 2010 for specific applications)• access to a manual lowering valve when hydraulic machine is located in the hoistway• access to pressure gauge fittings when the hydraulic machine is located in the hoistway• emergency access doors• hoistway door unlocking device, hoistway access switch		





Periodic Task/Test Procedure – Special Provisions–Access Keys Product: ThyssenKrupp Endura MRLH	Procedure No. PR-560-86-116-SPEC-TKE MRLH
<ul style="list-style-type: none">• hoistway access enabling switch or its locked cover• in-car inspection operation transfer switch• in-car stop switch or its locked cover• screw machine controllers located away from hoistway, machine room, or machinery space• screw machine access panels• inclined elevator hoistway access switch• inclined elevator uphill end emergency exit• hoistway door unlocking device• power and hand dumbwaiters without automatic transfer devices hoistway access switch• electric material lifts with automatic transfer devices car-mounted operating devices	



TKE - Maintenance Control Program

☒ TASKS ☐ EXAMINATIONS per ASME A17.1 Code

TKE - Product Specific

Code Reference

8.6.11.5

Equipment Category

Endura MRLH

Periodic Task/Test Procedure – Special Provisions– Emergency Evacuation Procedures for Elevators Product: ThyssenKrupp Endura MRLH

Procedure No.

PR-560-86-118-SPEC-TKE MRLH

Relevant Elevator Equipment:

All elevators

Distribution Statement:

For trained ThyssenKrupp Elevator technicians who are qualified to perform the task or examination.

Technicians shall strictly adhere to all safety rules in the *Elevator Industry Field Employees Safety Handbook* and the *Employee Safety Standards for the Field Organization* manual (safety manual).

ASME A17.1 Section 8.6/8.11 Applicable Code/Summary for this Procedure:

- 8.6.11.5.1 The evacuation of passengers shall be performed by authorized elevator and emergency personnel.
- 8.6.11.5.2 A written emergency evacuation procedure shall be made and kept on the premises where elevator is located.
- 8.6.11.5.3 The procedure shall identify the hazards, while detailing the safety precautions utilized in evacuating passengers.
- 8.6.11.5.4 All authorized personnel assigned to evacuate passengers must be given a copy of the evacuation procedure and trained on same.
- 8.6.11.5.5 The written procedure must be available to all authorized elevator and emergency personnel.
- 8.6.11.5.6 A record of all authorized personnel trained on the procedure must be kept on the premises and made available to authority having jurisdiction.

Unique Tools, Parts, Materials, Test Equipment:

None

Task/Examination Procedures:

Before taking car out of service, notify the proper building personnel and put “Out of Service” tags at each landing (as required).

Due to the many hazards associated with working around various conveyances, the technician must comply with the safety procedures as outlined in the *Employee Safety Standards for the Field Organization* manual and TKE Safety Policy.

NOTE: The elevator owner is responsible to comply with 8.6.11.5. The elevator owner must provide and keep on premise where the elevator is located a written elevator emergency evacuation procedure, and a record of authorized personnel trained to comply with the procedure, and that it is available to all authorized elevator personnel, emergency personnel, and authority having jurisdiction.

In buildings where it cannot easily be verified that a written emergency evacuation procedure and a record of authorized personnel trained in the procedure is on site and available, the technician must contact his route supervisor or service manager to notify them of this fact. It shall then be recorded in the MTER Code Compliance Log that the technician could not verify the above, while not initialing the procedure as complete in the MTER log.

1. Verify that a written elevator emergency evacuation procedure is on premise where the elevator is located, and is available to authorized elevator personnel, emergency personnel, and authority having jurisdiction. This will typically be a copy of the ASME A17.4 publication.



This page intentionally left blank.

TKE - Maintenance Control Program

☒ TASKS ☐ EXAMINATIONS per ASME A17.1 Code

TKE - Product Specific

Code Reference

8.6.11.8

Equipment Category

Endura MRLH

Periodic Task/Test Procedure – Special Provisions–Egress and Reentry from Working Area in 2.7.5.1.3 or 2.7.5.2.3 Product: ThyssenKrupp Endura MRLH

Procedure No.

PR-560-86-120-SPEC-TKE MRLH

Relevant Elevator Equipment:

Hydraulic MRL

Distribution Statement:

For trained ThyssenKrupp Elevator technicians who are qualified to perform the task or examination.

Technicians shall strictly adhere to all safety rules in the *Elevator Industry Field Employees Safety Handbook* and the *Employee Safety Standards for the Field Organization* manual (safety manual).

ASME A17.1 Section 8.6/8.11 Applicable Code/Summary for this Procedure:

- 8.6.11.8 Egress and Reentry Procedure From Working Areas in 2.7.5.1.3 or 2.7.5.2.3. A written procedure to outline the method for egress and reentry shall be posted in a permanent manner in plain view at an appropriate location at the egress/reentry point (see 2.7.5.1.3 or 2.7.5.2.3). The posting shall conform to ANSI Z535.4 or CAN/CSA Z321, whichever is applicable (see Part 9).
- 2.7.5.1 Working Areas in the Car or on the Car Top. The requirements of 2.7.5.1.1 through 2.7.5.1.4 shall be complied with if maintenance or inspections of the, hydraulic machine, elevator motion controller, or motor controller are to be carried out from inside the car or from the car top.
- 2.7.5.2 Working Areas in the Pit. The requirements of 2.7.5.2.1 through 2.7.5.2.4 shall be complied with if maintenance or inspections of the hydraulic machine or of elevator motion controllers or motor controllers is to be carried out from the pit.

Unique Tools, Parts, Materials, Test Equipment:

None

Task/Examination Procedures:

Before taking car out of service, notify the proper building personnel, and put “Out of Service” tags at each landing (as required).

Due to the many hazards associated with working around various conveyances, the technician must comply with the safety procedures as outlined in the *Employee Safety Standards for the Field Organization* manual and TKE Safety Policy.

Refer to the product specific or component manual/procedure as required.

1. On applications installed under A17.1 2010 and later that are required to comply with 2.7.5.1.1 or 2.7.5.2.3 shall have a written procedure on its use posted.

This typically applies to MRL applications, if the pit or car top is to become a working platform/area, written instructions on how to properly access or egress from these areas are required to be posted.

- a. Verify that the required procedure outlining the method for egress and reentry into the working area is posted in a permanent manner in plain view at an appropriate location.
- b. The labeling is required to conform to ANSI Z535.4 or CAN/CSA Z321. The standard for Product Safety Signs and Labels.

NOTE: Labeling from standard hand label makers is not sufficient to meet the requirement.

If the car top exit is to be used as the method of egress, examine the edges of the car top opening. Using a file or sander, remove any burrs and verify the edges of the opening are smooth to prevent cuts.

If a written procedure is not posted as required, contact the route supervisor or service manager to notify them of this fact. Record the specific information on the Code Compliance document, which is part of the MTER logs.



Periodic Task/Test Procedure – Special Provisions–Egress and Reentry from Working Area in 2.7.5.1.3 or 2.7.5.2.3
Product: ThyssenKrupp Endura MRLH

Procedure No.
PR-560-86-120-SPEC-TKE MRLH

Below are procedures specifically for the Endura MRLH Egress and Reentry to hoistway and pit.

The Access and Egress Procedures that are used entering the hoistway determine whether or not power is needed to perform the required task(s). If not, position the car to allow for safe access to either the top of the car or pit area depending on the task(s) to be performed. Close the Electronic Shutoff Valve to prevent Unintended Car Movement. Leave the service panel ajar so interlock remains open. Turn OFF, Lock-Out/Tag-Out the mainline disconnect.

⚠ WARNING! DO NOT Stand on the car top emergency access cover; it may not be able to hold total body weight.

Car Top Safety

Safety precautions when accessing/egressing car tops:

- Prior to opening the hoistway door, ensure that the correct hoistway has been selected and that the car is at the proper floor (to avoid a fall hazard).

NOTE: Access car tops from the top terminal landing whenever possible.

- Never access a hoistway, unless a reliable method of controlling the car has been determined.
- Locate the emergency stop switch.
- Before accessing the car top, place the stop switch in the STOP position and confirm the proper operation.
- Locate a safe refuge area.
- Always maintain control of the hoistway doors during access/egress.
- Fall protection is to be used when a fall hazard exists. The only exception to this is when routine maintenance is being performed on top of complete, operational elevator cars. DO NOT use fall protection where there is a greater risk of entanglement.
- When opening hoistway doors from the car top, do so slowly, so that no one steps in from the landing thinking a car has arrived.
- Observe overhead clearances.
- Use extra care when working on car tops that are curved, domed, or located in unenclosed hoistways.
- When egressing the hoistway/car top, ensure that the stop switch is in the STOP position, and that the inspection switch is on Inspection Operation.

⚠ WARNING! DO NOT turn these switches to automatic operation until the hoistway door interlock is open-and remains open-and the hoistway is empty.



**Periodic Task/Test Procedure – Special Provisions–Egress and
Reentry from Working Area in 2.7.5.1.3 or 2.7.5.2.3
Product: ThyssenKrupp Endura MRLH**

Procedure No.
PR-560-86-120-SPEC-TKE MRLH

Pit Safety

Before entering a pit, ensure that every employee is aware of the hazards. Some common hazards are:

- Recognized refuge space
- Inadequate lighting
- Improper access
- Tripping hazards
- Improper use of pit ladders
- Moisture/water/fluid
- Moving equipment

Before entering a pit, take appropriate steps to minimize the following hazards and any others that are identified:

- Locate the position of the car being accessed, as well as any other cars in the vicinity.
- Obtain control of the car.
- Position the car to allow for safe access to the pit area.
- Close the Electric Shutoff Valve, leave the Service panel door ajar so interlock remains open.
- Perform Lock-Out/Tag-Out procedure.
- Identify a refuge space before entering the pit.
- If notified by the building owner or representative that the pit and/or hoistway has been classified as a Permit Required Confined Space (this notification could be verbal or the pit/hoistway may be labeled), contact the appropriate person for authorization. In either case, DO NOT enter the pit/hoistway until you receive authorization.

Safety Precautions when working in pits:

- Before entering the pit, test and verify the door lock circuit and stop switch circuit.
- Ensure that all portable lights and tools are connected through a ground fault (GFCI).
- Take care to protect all lighting from damage.
- DO NOT work in a pit with standing water.
- Before climbing, always examine shoes for fluid/grease.



Periodic Task/Test Procedure – Special Provisions–Egress and Reentry from Working Area in 2.7.5.1.3 or 2.7.5.2.3
Product: ThyssenKrupp Endura MRLH

Procedure No.
PR-560-86-120-SPEC-TKE MRLH

- Use both hands when working with ladders and when accessing/egressing the pit.
- Be aware of moving equipment (e.g., pump, motors, belts, and sheaves). Ensure that clothing and hands cannot get caught in them.
- Avoid smoking or the use of open flames in the pit.



TKE - Maintenance Control Program

☒ **TASKS** ☐ **EXAMINATIONS** per ASME A17.1 Code

TKE - Product Specific

Code Reference

Additional Task

Equipment Category

Endura MRLH

Periodic Task/Test Procedure – Valve LRV-1 Product: ThyssenKrupp Endura MRLH		Procedure No. PR-560-AT-999-SPEC-TKE MRLH
Relevant Elevator Equipment: Endura MRLH	Distribution Statement: For trained ThyssenKrupp Elevator technicians who are qualified to perform the task or examination. Technicians shall strictly adhere to all safety rules in the <i>Elevator Industry Field Employees Safety Handbook</i> and the <i>Employee Safety Standards for the Field Organization</i> manual (safety manual).	
ASME A17.1 Section 8.6/8.11 Applicable Code/Summary for this Procedure: — n/a		Unique Tools, Parts, Materials, Test Equipment: None
<hr/> Task/Examination Procedures: <p>Before taking car out of service, notify the proper building personnel and put “Out of Service” tags at each landing (as required).</p> <p>Due to the many hazards associated with working around various conveyances, the technician must comply with the safety procedures as outlined in the <i>Employee Safety Standards for the Field Organization</i> manual and TKE Safety Policy.</p> <p>Follow the Egress and Reentry Procedures as outlined in this manual.</p> <p>NOTE: Service on the unit hydraulic valve is drastically reduced due to its closed loop design.</p> <p>Hoistway Examination</p> <p>MAINTENANCE REQUIREMENTS (As noted in BUCHER Valve Manual): The following is to be performed at least two times (2x's) per year except where noted. Each of the following must be performed in order to complete the entire Valve LRV-1 Maintenance task on the MTER.</p> <ol style="list-style-type: none">1. Check for internal leakage on first visit but not longer than 3 months after turn over.2. Check for external leakage around valve on first visit but not longer than 3 months after turn over.3. Check mechanical zero point (Hall sensor) – Follow the procedure as outline in the Service Section of the Endura Product Manual for Checking and Setting the Zero Point of the LRV-1 Bucher Valve (pg. 57 of Bucher Valve manual).4. Clean or replace the pilot filters– Follow the procedure as outline in the Service Section of the Endura Product Manual for Pilot Filters of the LRV-1 Bucher Valve (pg. 58 of Bucher Valve manual).5. Clean Main Filter at least annually.		



This page intentionally left blank.

TKE - Maintenance Control Program

☒ TASKS ☐ EXAMINATIONS per ASME A17.1 Code

TKE - Product Specific

Code Reference

Additional Task

Equipment Category

Endura MRLH

Periodic Task/Test Procedure – Pit Props Product: ThyssenKrupp Endura MRLH		Procedure No. PR-560-AT-998-SPEC-TKE MRLH
Relevant Elevator Equipment: Endura MRLH	Distribution Statement: For trained ThyssenKrupp Elevator technicians who are qualified to perform the task or examination. Technicians shall strictly adhere to all safety rules in the <i>Elevator Industry Field Employees' Safety Handbook</i> and the <i>Employee Safety Standards for the Field Organization</i> manual (safety manual).	
ASME A17.1 Section 8.6/8.11 Applicable Code/Summary for this Procedure: — n/a		Unique Tools, Parts, Materials, Test Equipment: None
<hr/> Task/Examination Procedures: <p>Before taking car out of service, notify the proper building personnel and put “Out of Service” tags at each landing (as required).</p> <p>Due to the many hazards associated with working around various conveyances, the technician must comply with the safety procedures as outlined in the <i>Employee Safety Standards for the Field Organization</i> manual and TKE Safety Policy.</p> Installing the Pit Prop <ol style="list-style-type: none">1. Place the car on Inspection from within the car while car is at the bottom landing.2. Using the hall access key switch, raise the car high enough to safely access the pit.3. Turn the pit light on and push the pit stop switch to turn off.4. Turn the hall key access switch in both directions to ensure the car will not move. Remove the key.5. Enter the pit and install the pit prop.6. Exit the pit and pull the pit stop switch to return it to normal.7. Use the hall access key switch to slowly bump the car down until the car is landed on the pit prop.8. Push the pit stop switch to turn off.9. From the Service Panel, close the Electronic Shut Off valve to prevent unintended car movement. Removing the Pit Prop <ol style="list-style-type: none">1. From the Service Panel, open the Electronic Shut Off valve.2. Pull the pit stop switch to set it to normal.3. Using the hall access key switch, raise the car high enough to safely access the pit.4. Turn the pit light on and push the pit stop switch to turn off.5. Turn the hall key access switch in both directions to ensure the car will not move. Remove the key.6. Enter the pit and remove the pit prop.		



Periodic Task/Test Procedure – Pit Props
Product: ThyssenKrupp Endura MRLH

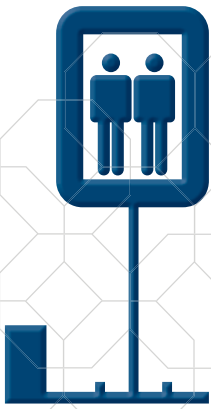
Procedure No.
PR-560-AT-998-SPEC-TKE MRLH

7. Place the pit prop in its proper storage location in the pit.
8. Exit the pit and pull the pit stop switch to return it to normal.
9. Turn the pit light off.
10. Use the hall access key switch to lower the car and reengage the doors at the bottom landing. Remove the key.
11. Return the car to normal by taking the car off of Inspection mode.

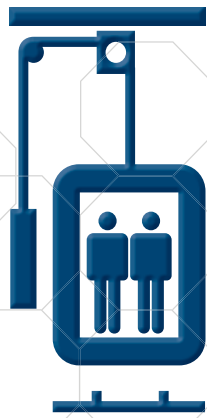


Product Specific: ThyssenKrupp MRLH Endura Application

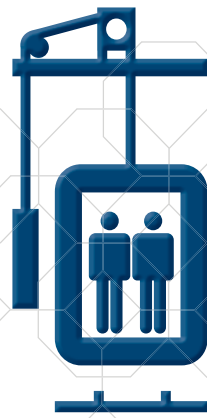
Procedures for the Category 1 and 5 Test Records Log



☐ Hydraulic



☒ Machine
Room-Less



☐ Traction



☐ Escalator/
Moving Walk

Other:

- ☐ Home Elevator
- ☐ LU/LA Elevator
- ☐ Wheelchair/Platform Lift
- ☐ Dumbwaiter

For Procedures associated with the
Category 1 and 5 Test Records Log

**Refer to the Product Manual and Inspector's
Guide for ThyssenKrupp MRLH Endura**

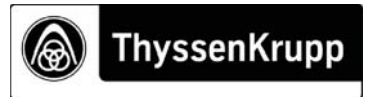
This page intentionally left blank.

Forms

This section is for collecting various forms relevant to the maintenance and repair of this specific conveyance.



Maintenance Quality Audit Survey Form - Traction



Audit Date:	<input type="text"/>	Route Technician:	<input type="text"/>
Quality Audit By:	<input type="text"/>	Equipment Manf:	<input type="text"/>
Building Name:	<input type="text"/>	Model:	<input type="text"/>
Building Address:	<input type="text"/>		
City, State, Zip:	<input type="text"/>	Customer Copy:	<input type="radio"/> Yes <input type="radio"/> No
Unit Number:	<input type="text"/>		

The following represents a summary of the conditions noted during our survey. A check in the Yellow or Red column indicates a deficiency has been noted and a specific description will be noted in the comments below. See Immediate Action Item(s).

ACCEPTABLE		
IMPROVEMENT POSSIBLE		
DEFICIENCIES NOTED		
		Machine Room
<input type="radio"/>	<input type="radio"/>	Hoist Machine, Motor Drive
<input type="radio"/>	<input type="radio"/>	Controller (Incl. Working VISTA Unit)
<input type="radio"/>	<input type="radio"/>	Governor(s)
<input type="radio"/>	<input type="radio"/>	Housekeeping
<input type="radio"/>	<input type="radio"/>	Code Related Items (Including MCP)
		Hoistway/Car-Top
<input type="radio"/>	<input type="radio"/>	Dr. Oper(s)&H/WDr. Equip. (Smth. & Quiet)
<input type="radio"/>	<input type="radio"/>	Hoist & Travel Cables
<input type="radio"/>	<input type="radio"/>	Roller Guides / Guide Shoes & Rails
<input type="radio"/>	<input type="radio"/>	Housekeeping
<input type="radio"/>	<input type="radio"/>	Code Related Items
		Pit
<input type="radio"/>	<input type="radio"/>	Equipment
<input type="radio"/>	<input type="radio"/>	Housekeeping
<input type="radio"/>	<input type="radio"/>	Code Related Items
		Car Enclosure/Hall
<input type="radio"/>	<input type="radio"/>	Car Operating Fixtures/Hall Fixtures
<input type="radio"/>	<input type="radio"/>	Door Protection Devices
<input type="radio"/>	<input type="radio"/>	Code Related Items
		Performance
<input type="radio"/>	<input type="radio"/>	General Overall Performance
<input type="radio"/>	<input type="radio"/>	Stopping Accuracy
<input type="radio"/>	<input type="radio"/>	Ride Quality
<input type="radio"/>	<input type="radio"/>	ADA/Code Related Items

Creating Tenant Satisfaction

1. How do the tenants perceive the service we are providing to the building?

2. What can we do to help better position your building in the marketplace?

3. Do you have any needs you would like me to address?

Based upon the results of this Audit, the overall level of preventive maintenance is rated:

Rating/Points Follow Up Visit Required ☐ Yes ☐ No

Immediate Action Item(s)

The following area(s) of concern require immediate action by the unit technician.

ThyssenKrupp Elevator

RECOMMENDATION AND SURVEY REPORT

Building Name: _____

Location: _____

ThyssenKrupp Ser# _____

NOTE: Actual Recommendation and Survey Report forms are located in the rear pocket of the MTR binder.

Elevator Data: (One Elevator Per Report)

Ser. #	Manufacturer	Type	Other Positive I.D. Data

- | | |
|--------------------------------------------------------|----------------------------------------------|
| <input type="checkbox"/> Battery Lowering | <input type="checkbox"/> Oil Cooler |
| <input type="checkbox"/> Door Operator | <input type="checkbox"/> Power Unit |
| <input type="checkbox"/> Door Restrictor | <input type="checkbox"/> Solid State Starter |
| <input type="checkbox"/> Down Light Ceiling (Existing) | <input type="checkbox"/> Tank Heater |
| <input type="checkbox"/> Electronic Door Edge | <input type="checkbox"/> Valve |
| <input type="checkbox"/> Hoistway Door Equipment | <input type="checkbox"/> Other _____ |

State Condition, Situation, Need or Other Concern. Be Explicit.
(Use Separate Sheet If Necessary)

Is The **Customer** Aware of The Above Item? ☐ Yes ☐ No

Comments: _____

Customer to Contact Regarding Above Item: (Print)

Name _____

Telephone Number _____

Mechanic's Signature _____

Clock # _____

Supervisor's Signature _____

Supervisor's Action: _____

The following text will be added to the next version of this document: "It is preferred that TKE sales representative has an opportunity to explain the recommendations in a formal manner first."

DO NOT Give Customer Copy of **THIS** Report.
Turn in Reports Each Payroll Period.

Communicate All Emergencies to Supervisor by Telephone.



ThyssenKrupp Elevator Americas

621 S. Royal Ln., Ste. 500 · Coppell, TX 75019

(800) 655-9601 or (972) 471-8400

thyssenkruppelevator.com | version 2.1 [12/13]

All illustrations and specifications are based on information in effect at time of publication approval. ThyssenKrupp Elevator reserves the right to change specifications or design and to discontinue items without prior notice or obligation. Copyright © 2013

ThyssenKrupp Elevator Corporation. CA License #651371





Maintenance Control Program Records Retention Binder