

# ROBINSON HELICOPTER COMPANY

## R44 MAINTENANCE MANUAL AND INSTRUCTIONS FOR CONTINUED AIRWORTHINESS RTR 460 VOLUME I

Production Certificate Number 424WE

Type Certificate Number H11NM



Robinson Helicopter Company  
2901 Airport Drive  
Torrance, California 90505-6115  
United States of America

Phone: (310) 539-0508  
Fax: (310) 539-5198  
Web: <https://robinsonheli.com>

### OFFICE HOURS

Monday through Friday, 7:30 a.m. to 4:30 p.m., Pacific Time.  
Lunch hour is 11:30 a.m. to 12:30 p.m.

### HOLIDAYS

Please visit <https://robinsonheli.com> for a list of holidays and company shutdowns.

### CUSTOMER SUPPORT AND SPARES ORDERS

Please visit <https://robinsonheli.com> for Customer Support contact information. Procure parts from any R44 Dealer or Service Center, or order directly from RHC Customer Service via email, fax, or phone.

### PUBLICATIONS

Viewing RHC Maintenance Manuals (MMs) and Illustrated Parts Catalogs (IPCs) online at <https://robinsonheli.com> is recommended to ensure use of current data. Viewing MMs and IPCs offline via paper or digital download requires verification that the data is current. Refer to the online MM or IPC Revision Log for the list of current pages.

**SUBSCRIPTION ORDER AND RENEWAL FORMS**

Subscription order and renewal forms are located at <https://robinsonheli.com>.

**WARRANTY INFORMATION**

Helicopter and parts warranty information is located at <https://robinsonheli.com>.

3.300 Airworthiness Limitations

The Airworthiness Limitations Section is FAA approved and specifies inspections and other maintenance required under 14 CFR §§ 43.16 and 91.403, unless an alternative program has been FAA approved.

There are two lists for fatigue life-limited parts. List A is applicable to all R44 and R44 II helicopters. List B provides increased service lives which may be used for the two-seat R44 Cadet configuration (R44 serial numbers 30001 through 39999).

**A. R44 and R44 II Fatigue Life-Limited Parts**

<u>Part Number</u>	<u>Description</u>	<u>Maximum Service Life</u>
C023-1 . . . . .	Tailcone Assembly, Rev M & Prior . . . . .	2000 Hours
C016-2 <sup>4</sup> & -5 <sup>4</sup> . . . . .	Main Rotor Blade . . . . .	2200 Hours or 12 years <sup>1</sup>
C016-7 . . . . .	Main Rotor Blade, Rev AJ & Prior . . . . .	2200 Hours or 12 years <sup>1</sup>
C016-7 . . . . .	Main Rotor Blade, Rev AK & Subsequent . . . . .	2200 Hours or 15 years <sup>1</sup>
C020-1 & -2 . . . . .	Upper Frame . . . . .	2200 Hours
C029-1, -2, & -3 . . . . .	Tail Rotor Blade, Rev Q & Prior . . . . .	2200 Hours or 12 years <sup>1</sup>
C029-3 . . . . .	Tail Rotor Blade, Rev R & Subsequent . . . . .	2200 Hours or 15 years <sup>1</sup>
C030-1 . . . . .	Tail Rotor Hub . . . . .	2200 Hours
C044-1 . . . . .	Horizontal Stabilizer, Rev L & Prior . . . . .	2200 Hours <sup>2</sup>
C146-1 & -5 . . . . .	Gear Set, Main Gearbox . . . . .	2200 Hours
C146-2 . . . . .	Pinion, Main Gearbox . . . . .	2200 Hours
C154-1 . . . . .	Main Rotor Hub . . . . .	2200 Hours <sup>2</sup>
C158-1 . . . . .	Main Rotor Spindle . . . . .	2200 Hours <sup>2</sup>
C196-1 . . . . .	Tail Rotor Drive Shaft . . . . .	2200 Hours
C263-1 & -2 . . . . .	Sump, Main Gearbox . . . . .	2200 Hours
C264-1 & -2 . . . . .	Housing, Main Gearbox . . . . .	2200 Hours
C545-1 . . . . .	Gear Set, Tail Gearbox . . . . .	2200 Hours <sup>2</sup>
C545-2 . . . . .	Pinion, Tail Gearbox . . . . .	2200 Hours <sup>2</sup>
C647-12 . . . . .	Bearing Set, C017-6 Swashplate . . . . .	2200 Hours <sup>2</sup>
D062-2 . . . . .	Tail Rotor Hub . . . . .	2200 Hours
D079-1 . . . . .	Tail Rotor Guard . . . . .	2200 Hours <sup>2</sup>
G062-2 . . . . .	Tail Rotor Hub . . . . .	2200 Hours <sup>2</sup>
A756-6 <sup>4</sup> . . . . .	Cyclic Grip . . . . .	4400 Hours
C023-1 . . . . .	Tailcone Assembly, Rev N & Subsequent . . . . .	4400 Hours
C023-2, -3, -4, -14, & -15 . . . . .	Tailcone Assembly . . . . .	4400 Hours
C044-1 . . . . .	Horizontal Stabilizer, Rev M & Subsequent . . . . .	4400 Hours <sup>2</sup>
C198-1 & -2 . . . . .	Lower Swashplate . . . . .	4400 Hours
C251-1 . . . . .	Main Rotor Shaft . . . . .	4400 Hours

<sup>1</sup> Whichever limit occurs first. Calendar time starts on date of original RHC-issued Airworthiness Approval.

<sup>2</sup> Maximum service life is 2000 hours if part is, or ever has been, installed on an R66 helicopter.

<sup>3</sup> Maximum service life is 4000 hours if part is, or ever has been, installed on an R66 helicopter.

<sup>4</sup> Obsolete due to FAA AD 2014-23-16.

3.300 Airworthiness Limitations (continued)

**A. R44 and R44 II Fatigue Life-Limited Parts (continued)**

<u>Part Number</u>	<u>Description</u>	<u>Maximum Service Life</u>
C319-3 <sup>4</sup>	Cyclic Torque Tube	4400 Hours
C320-1 <sup>4</sup>	Cyclic Stick	4400 Hours
C337-1 <sup>4</sup>	Jackshaft	4400 Hours
D196-1	Tail Rotor Drive Shaft	4400 Hours <sup>2</sup>
F050-2	Horizontal Stabilizer	4400 Hours <sup>3</sup>

<sup>1</sup> Whichever limit occurs first. Calendar time starts on date of original RHC-issued Airworthiness Approval.

<sup>2</sup> Maximum service life is 2000 hours if part is, or ever has been, installed on an R66 helicopter.

<sup>3</sup> Maximum service life is 4000 hours if part is, or ever has been, installed on an R66 helicopter.

<sup>4</sup> Obsolete due to FAA AD 2014-23-16.

**B. R44 Cadet Fatigue Life-Limited Parts**

The following service lives may be used for parts installed on R44 helicopter serial numbers 30001 through 39999. The service lives from List A must be used if the part is, or ever has been, installed on any R44 helicopter other than serial numbers 30001 through 39999.

<u>Part Number</u>	<u>Description</u>	<u>Maximum Service Life</u>
C016-7	Main Rotor Blade, Rev AF thru Rev AJ	2400 Hours or 12 years <sup>1</sup>
C016-7	Main Rotor Blade, Rev AK & Subsequent	2400 Hours or 15 years <sup>1</sup>
C020-1 & -2	Upper Frame	2400 Hours
C029-3	Tail Rotor Blade, Rev Q & Prior	2400 Hours or 12 years <sup>1</sup>
C029-3	Tail Rotor Blade, Rev R & Subsequent	2400 Hours or 15 years <sup>1</sup>
C146-2	Pinion, Main Gearbox	2400 Hours
C146-5	Gear Set, Main Gearbox	2400 Hours
C154-1	Main Rotor Hub	2400 Hours
C158-1	Main Rotor Spindle	2400 Hours
C263-2	Sump, Main Gearbox	2400 Hours
C264-2	Housing, Main Gearbox	2400 Hours
C545-1	Gear Set, Tail Gearbox	2400 Hours
C545-2	Pinion, Tail Gearbox	2400 Hours
C647-12	Bearing Set, C017-6 Swashplate	2400 Hours
D079-1	Tail Rotor Guard	2400 Hours
G062-2	Tail Rotor Hub	2400 Hours
C023-1, -14, & -15	Tailcone Assembly, Rev AQ & Subsequent	4800 Hours
C044-1	Horizontal Stabilizer, Rev P & Subsequent	4800 Hours
D196-1	Tail Rotor Drive Shaft	4800 Hours
F050-2	Horizontal Stabilizer	4800 Hours

<sup>1</sup> Whichever limit occurs first. Calendar time starts on date of original RHC-issued Airworthiness Approval.

3.300 Airworthiness Limitations (continued)

Approved By: MAUREEN A MORELAND Digitally signed by MAUREEN A MORELAND Date: 2024.04.09 12:47:32 -07'00' Date: 4/9/24  
Manager, Federal Aviation Administration  
West Certification Branch, AIR-770

**FAA Approved:** Pages 3.3, 3.4, and 3.5 constitute the Airworthiness Limitations Section in its entirety, are considered segregated from the rest of the document, and set forth the FAA-approved mandatory replacement times for fatigue life-limited parts.

Intentionally Blank

**REVISION LOG**

**DEC 2024**

The R44 Maintenance Manual (MM) list of effective pages and effective dates are given below. If a previously issued page is not listed below, it is no longer an effective page and must be discarded. The issue or revision date is in bold at the top of each revision log page.

Please visit <https://robinsonheli.com> to verify the issue or revision date is current.

<u>Page</u>	<u>Date</u>	<u>Page</u>	<u>Date</u>	<u>Page</u>	<u>Date</u>
i .....	DEC 2024	1.7 .....	OCT 2006	2.9 .....	DEC 2021
ii .....	DEC 2024	1.8 .....	JUL 2008	2.10 .....	DEC 2021
iii .....	AUG 2019	1.8A .....	OCT 2006	2.11 .....	JAN 2021
iv .....	AUG 2019	1.8B .....	OCT 2006	2.12 .....	JAN 2021
v .....	AUG 2019	1.8C .....	JUL 2004	2.13 .....	DEC 2021
vi .....	AUG 2019	1.8D .....	06 Dec 99	2.14 .....	DEC 2021
		1.8E .....	DEC 2021	2.15 .....	DEC 2021
1.i .....	FEB 2024	1.8F .....	DEC 2021	2.16 .....	DEC 2021
1.ii .....	FEB 2024	1.8G .....	DEC 2021	2.17 .....	FEB 2024
1.1 .....	AUG 2022	1.8H .....	DEC 2021	2.18 .....	FEB 2024
1.2 .....	AUG 2022	1.9 .....	11 Jun 93	2.18A .....	DEC 2021
1.2A .....	FEB 2024	1.10 .....	11 Jun 93	2.18B .....	DEC 2021
1.2B .....	FEB 2024	1.10A .....	1 Jun 97	2.19 .....	AUG 2022
1.3 .....	FEB 2024	1.10B .....	1 Jun 97	2.20 .....	AUG 2022
1.3A .....	FEB 2024	1.11 .....	OCT 2006	2.20A .....	SEP 2023
1.3B .....	FEB 2024	1.12 .....	OCT 2006	2.20B .....	SEP 2023
1.3C .....	FEB 2024	1.13 .....	FEB 2024	2.21 .....	JUL 2008
1.3D .....	AUG 2022	1.14 .....	FEB 2024	2.22 .....	JUL 2008
1.3E .....	AUG 2022	1.15 .....	FEB 2024	2.23 .....	FEB 2024
1.3F .....	SEP 2023	1.16 .....	FEB 2024	2.24 .....	FEB 2024
1.3G .....	SEP 2023	1.17 .....	FEB 2024	2.25 .....	SEP 2023
1.3H .....	SEP 2023	1.18 .....	FEB 2024	2.26 .....	SEP 2023
1.3I .....	SEP 2023			2.26A .....	SEP 2023
1.3J .....	SEP 2023	2.i .....	AUG 2022	2.26B .....	SEP 2023
1.3K .....	SEP 2023	2.ii .....	AUG 2022	2.27 .....	FEB 2024
1.3L .....	SEP 2023	2.1 .....	FEB 2024	2.28 .....	FEB 2024
1.3M .....	SEP 2023	2.2 .....	FEB 2024	2.29 .....	JUL 2021
1.3N .....	SEP 2023	2.3 .....	FEB 2024	2.30 .....	JUL 2021
1.3O .....	SEP 2023	2.4 .....	FEB 2024	2.30A .....	JUL 2021
1.3P .....	AUG 2022	2.5 .....	JAN 2021	2.30B .....	JUL 2021
1.4 .....	AUG 2022	2.6 .....	JAN 2021	2.31 .....	DEC 2021
1.5 .....	OCT 2006	2.7 .....	JUL 2008	2.32 .....	DEC 2021
1.6 .....	OCT 2006	2.8 .....	OCT 2006	2.33 .....	DEC 2021

**REVISION LOG**

**DEC 2024**

<u>Page</u>	<u>Date</u>	<u>Page</u>	<u>Date</u>	<u>Page</u>	<u>Date</u>
2.34	DEC 2021	3.ii	FEB 2024	4.30	FEB 2024
2.35	DEC 2021	3.1	FEB 2024	4.31	FEB 2024
2.36	DEC 2021	3.2	FEB 2024	4.32	FEB 2024
2.36A	DEC 2021	3.3	DEC 2024		
2.36B	DEC 2021	3.4	DEC 2024	5.i	DEC 2011
2.37	JUL 2021	3.5	DEC 2024	5.ii	DEC 2011
2.38	JUL 2021	3.6	DEC 2024	5.1	DEC 2011
2.39	JUL 2008			5.2	DEC 2011
2.40	JUL 2008	4.i	FEB 2024	5.3	12 Dec 94
2.41	OCT 2006	4.ii	FEB 2024	5.4	11 Jun 93
2.42	OCT 2006	4.1	SEP 2023	5.5	11 Jun 93
2.43	OCT 2006	4.2	SEP 2023	5.6	12 Dec 94
2.44	OCT 2006	4.3	SEP 2023	5.7	11 Jun 93
2.45	FEB 2024	4.4	SEP 2023	5.8	12 Dec 94
2.46	FEB 2024	4.5	SEP 2023	5.9	06 Dec 99
2.47	FEB 2024	4.6	SEP 2023	5.10	06 Dec 99
2.48	FEB 2024	4.7	1 Jun 97	5.11	JUL 2008
2.49	OCT 2006	4.8	1 Jun 97	5.12	JUL 2008
2.50	OCT 2006	4.9	15 Jun 98	5.13	06 Dec 99
2.51	AUG 2022	4.10	11 Jun 93	5.14	06 Dec 99
2.52	AUG 2022	4.11	12 Dec 94	5.15	06 Dec 99
2.53	AUG 2022	4.12	12 Dec 94	5.16	06 Dec 99
2.54	AUG 2022	4.13	DEC 2011	5.17	DEC 2021
2.55	DEC 2021	4.14	DEC 2011	5.18	DEC 2021
2.56	DEC 2021	4.15	DEC 2011	5.19	06 Dec 99
2.57	SEP 2023	4.16	DEC 2011	5.20	06 Dec 99
2.58	SEP 2023	4.17	FEB 2024	5.21	OCT 2006
2.59	FEB 2024	4.18	FEB 2024	5.22	OCT 2006
2.60	FEB 2024	4.19	FEB 2024	5.23	JUL 2005
2.61	AUG 2022	4.20	FEB 2024	5.24	JUL 2005
2.62	AUG 2022	4.21	FEB 2024	5.25	JUL 2005
2.63	AUG 2022	4.22	FEB 2024	5.26	JUL 2005
2.64	AUG 2022	4.23	FEB 2024	5.27	JUL 2005
2.65	AUG 2022	4.24	FEB 2024	5.28	JUL 2005
2.66	AUG 2022	4.25	FEB 2024	5.29	JUL 2005
2.67	DEC 2021	4.26	FEB 2024	5.30	JUL 2005
2.68	DEC 2021	4.27	FEB 2024		
		4.28	FEB 2024	6.i	JUN 2014
3.i	FEB 2024	4.29	FEB 2024	6.ii	JUN 2014



**REVISION LOG**

**DEC 2024**

<u>Page</u>	<u>Date</u>	<u>Page</u>	<u>Date</u>	<u>Page</u>	<u>Date</u>
6.1 .....	JUN 2014	7.9B .....	DEC 2011	7.42 .....	12 Dec 94
6.2 .....	JUN 2014	7.9C .....	DEC 2011	7.43 .....	11 Jun 93
6.3 .....	JUN 2014	7.9D .....	DEC 2011	7.44 .....	12 Dec 94
6.4 .....	JUN 2014	7.10 .....	DEC 2011	7.45 .....	12 Dec 94
6.5 .....	JUN 2014	7.11 .....	18 MAR 99	7.46 .....	1 Jun 97
6.6 .....	JUN 2014	7.12 .....	12 Dec 94	7.47 .....	JUL 2008
6.7 .....	AUG 2022	7.13 .....	DEC 2011	7.48 .....	1 Jun 97
6.8 .....	AUG 2022	7.14 .....	DEC 2011	7.49 .....	JUL 2008
6.9 .....	JUN 2014	7.14A .....	18 MAR 99	7.50 .....	JUL 2008
6.10 .....	JUN 2014	7.14B .....	1 Jun 97	7.51 .....	5 May 95
6.11 .....	JUN 2014	7.15 .....	DEC 2011	7.52 .....	12 Dec 94
6.12 .....	JUN 2014	7.16 .....	DEC 2011	7.53 .....	12 Dec 94
6.13 .....	JUN 2014	7.17 .....	DEC 2011	7.54 .....	12 Dec 94
6.14 .....	JUN 2014	7.18 .....	DEC 2011		
6.15 .....	JUN 2014	7.19 .....	AUG 2022	8.i .....	DEC 2011
6.16 .....	JUN 2014	7.20 .....	AUG 2022	8.ii .....	DEC 2011
6.17 .....	JUN 2014	7.21 .....	AUG 2022	8.iii .....	DEC 2011
6.18 .....	JUN 2014	7.22 .....	AUG 2022	8.iv .....	DEC 2011
6.19 .....	DEC 2021	7.23 .....	SEP 2023	8.1 .....	DEC 2021
6.20 .....	DEC 2021	7.24 .....	SEP 2023	8.1A .....	DEC 2021
6.21 .....	JUN 2014	7.25 .....	SEP 2023	8.1B .....	06 Dec 99
6.22 .....	JUN 2014	7.26 .....	SEP 2023	8.2 .....	FEB 2003
6.23 .....	JUN 2014	7.27 .....	12 Dec 94	8.3 .....	FEB 2003
6.24 .....	JUN 2014	7.28 .....	12 Dec 94	8.3A .....	06 Dec 99
		7.29 .....	06 Dec 99	8.3B .....	JUL 2004
7.i .....	SEP 2023	7.30 .....	1 Jun 97	8.4 .....	15 Jun 98
7.ii .....	SEP 2023	7.31 .....	12 Dec 94	8.5 .....	15 Jun 98
7.1 .....	DEC 2011	7.32 .....	11 Jun 93	8.6 .....	15 Jun 98
7.2 .....	DEC 2011	7.33 .....	15 Jun 98	8.7 .....	11 Jun 93
7.3 .....	5 May 95	7.34 .....	1 Jun 97	8.8 .....	06 Dec 99
7.4 .....	12 Dec 94	7.35 .....	15 Jun 98	8.9 .....	1 Jun 97
7.5 .....	JUL 2008	7.36 .....	15 Jun 98	8.10 .....	15 Jun 98
7.6 .....	JUL 2008	7.37 .....	1 Jun 97	8.11 .....	15 Jun 98
7.7 .....	15 Jun 98	7.38 .....	12 Dec 94	8.12 .....	15 Jun 98
7.8 .....	18 MAR 99	7.39 .....	AUG 2022	8.13 .....	15 Jun 98
7.8A .....	DEC 2011	7.40 .....	AUG 2022	8.14 .....	15 Jun 98
7.8B .....	DEC 2011	7.40A .....	AUG 2022	8.15 .....	15 Jun 98
7.9 .....	DEC 2011	7.40B .....	AUG 2022	8.16 .....	15 Jun 98
7.9A .....	DEC 2011	7.41 .....	06 Dec 99	8.17 .....	15 Jun 98

**REVISION LOG**

**DEC 2024**

<u>Page</u>	<u>Date</u>	<u>Page</u>	<u>Date</u>	<u>Page</u>	<u>Date</u>
8.18	12 Dec 94	8.53	OCT 2006	10.16	JUL 2008
8.19	15 Jun 98	8.54	OCT 2006	10.17	JUL 2008
8.20	15 Jun 98	8.55	OCT 2006	10.18	JUL 2008
8.21	15 Jun 98	8.56	JUL 2008	10.18A	JUL 2008
8.22	06 Dec 99	8.57	SEP 2023	10.18B	JUL 2008
8.23	12 Dec 94	8.58	SEP 2023	10.19	JUL 2008
8.24	11 Jun 93	8.59	SEP 2023	10.20	FEB 2003
8.25	JUL 2004	8.60	SEP 2023	10.21	12 Dec 94
8.26	JUL 2004	8.61	APR 2012	10.22	18 MAR 99
8.27	JUL 2004	8.62	APR 2012	10.23	2 Jul 93
8.28	JUL 2004	8.63	APR 2012	10.24	FEB 2003
8.29	JUL 2004	8.64	APR 2012	10.25	FEB 2003
8.30	JUL 2004	8.65	APR 2012	10.26	FEB 2003
8.31	FEB 2024	8.66	APR 2012	10.27	DEC 2021
8.32	FEB 2024	8.67	APR 2012	10.28	DEC 2021
8.32A	FEB 2024	8.68	APR 2012	10.29	DEC 2021
8.32B	FEB 2024			10.30	DEC 2021
8.33	SEP 2023	9.i	DEC 2021	10.31	DEC 2021
8.33A	SEP 2023	9.ii	DEC 2021	10.32	DEC 2021
8.33B	AUG 2022	9.1	DEC 2021	10.33	DEC 2021
8.34	AUG 2022	9.2	DEC 2021	10.34	DEC 2021
8.35	12 Dec 94			10.35	DEC 2021
8.36	JUL 2004	10.i	DEC 2021	10.36	DEC 2021
8.37	JUL 2008	10.ii	DEC 2021	10.37	DEC 2021
8.38	JUL 2008	10.1	DEC 2021	10.38	DEC 2021
8.39	JUL 2008	10.2	DEC 2021	10.39	DEC 2021
8.40	JUL 2008	10.3	AUG 2022	10.40	DEC 2021
8.41	JUL 2004	10.4	AUG 2022	10.41	DEC 2021
8.42	JUL 2004	10.5	AUG 2022	10.42	DEC 2021
8.43	11 Jun 93	10.6	AUG 2022	10.43	DEC 2021
8.44	JUL 2004	10.7	JUL 2008	10.44	DEC 2021
8.45	JUL 2004	10.8	FEB 2003	10.45	DEC 2021
8.46	11 Jun 93	10.9	OCT 2006	10.46	DEC 2021
8.47	11 Jun 93	10.10	FEB 2003	10.47	AUG 2022
8.48	11 Jun 93	10.11	JUL 2008	10.48	AUG 2022
8.49	JUL 2008	10.12	JUL 2008	10.49	DEC 2021
8.50	JUL 2008	10.13	11 Jun 93	10.50	DEC 2021
8.51	2 Jul 93	10.14	11 Jun 93		
8.52	5 May 95	10.15	OCT 2006	11.i	SEP 2023

**REVISION LOG**

**DEC 2024**

<u>Page</u>	<u>Date</u>	<u>Page</u>	<u>Date</u>	<u>Page</u>	<u>Date</u>
11.ii	SEP 2023	12.12	FEB 2024	13.12	AUG 2019
11.1	DEC 2011	12.12A	FEB 2024	13.13	AUG 2019
11.2	DEC 2011	12.12B	FEB 2024	13.14	AUG 2019
11.3	1 Jun 97	12.13	FEB 2024	13.15	AUG 2019
11.4	1 Jun 97	12.14	FEB 2024	13.16	AUG 2019
11.5	1 Jun 97	12.15	DEC 2021	13.17	AUG 2019
11.6	1 Jun 97	12.16	DEC 2021	13.18	AUG 2019
11.7	SEP 2023	12.17	FEB 2024	13.19	AUG 2019
11.8	SEP 2023	12.18	FEB 2024	13.20	AUG 2019
11.8A	SEP 2023	12.19	DEC 2021	13.21	AUG 2019
11.8B	SEP 2023	12.20	DEC 2021	13.22	AUG 2019
11.9	OCT 2006	12.21	DEC 2021	13.23	AUG 2019
11.10	OCT 2006	12.22	DEC 2021	13.24	AUG 2019
11.11	OCT 2006	12.23	DEC 2021	13.25	AUG 2019
11.12	OCT 2006	12.24	DEC 2021	13.26	AUG 2019
11.13	OCT 2006	12.25	DEC 2021	13.27	AUG 2019
11.14	JUL 2008	12.26	DEC 2021	13.28	AUG 2019
11.15	OCT 2006	12.27	DEC 2021	13.29	AUG 2019
11.16	OCT 2006	12.28	DEC 2021	13.30	AUG 2019
11.17	OCT 2006	12.29	DEC 2021	13.31	AUG 2019
11.18	JUL 2008	12.30	DEC 2021	13.32	AUG 2019
11.19	OCT 2006	12.31	DEC 2021	13.33	AUG 2019
11.20	JUL 2008	12.32	DEC 2021	13.34	AUG 2019
11.21	JUL 2008	12.33	DEC 2021	13.35	AUG 2019
11.22	JUL 2008	12.34	DEC 2021	13.36	AUG 2019
				13.37	DEC 2021
				13.38	DEC 2021
12.i	FEB 2024	13.i	DEC 2021		
12.ii	FEB 2024	13.ii	DEC 2021		
12.1	DEC 2021	13.1	AUG 2019	14.i	JUL 2021
12.2	DEC 2021	13.2	AUG 2019	14.ii	JUL 2021
12.3	DEC 2021	13.3	AUG 2019	14.1	AUG 2019
12.4	DEC 2021	13.4	AUG 2019	14.2	AUG 2019
12.5	DEC 2021	13.5	AUG 2019	14.3	AUG 2019
12.6	DEC 2021	13.6	AUG 2019	14.3A	AUG 2019
12.7	FEB 2024	13.7	AUG 2019	14.3B	JUN 2014
12.8	FEB 2024	13.8	AUG 2019	14.3C	JUN 2014
12.9	DEC 2021	13.9	AUG 2019	14.3D	JUN 2014
12.10	DEC 2021	13.10	AUG 2019	14.3E	JUN 2014
12.11	FEB 2024	13.11	AUG 2019	14.3F	JUN 2014

**REVISION LOG****DEC 2024**

<u>Page</u>	<u>Date</u>	<u>Page</u>	<u>Date</u>	<u>Page</u>	<u>Date</u>
14.3G .....	JUN 2014	14.27 .....	11 Jun 93	14.62B .....	AUG 2022
14.3H .....	JUN 2014	14.28 .....	11 Jun 93	14.63 .....	AUG 2022
14.3I .....	JUN 2014	14.29 .....	15 Jun 98	14.64 .....	AUG 2022
14.17 .....	OCT 2006	14.30 .....	11 Jun 93	14.65 .....	AUG 2019
14.17A .....	OCT 2006	14.31 .....	11 Jun 93	14.66 .....	AUG 2019
14.17B .....	OCT 2006	14.32 .....	11 Jun 93	14.67 .....	AUG 2019
14.18 .....	OCT 2006	14.33 .....	11 Jun 93	14.68 .....	AUG 2019
14.18A .....	OCT 2006	14.34 .....	11 Jun 93	14.69 .....	AUG 2019
14.18B .....	OCT 2006	14.35 .....	11 Jun 93	14.70 .....	AUG 2019
14.18C .....	JUL 2008	14.36 .....	12 Dec 94	14.71 .....	AUG 2019
14.18D .....	OCT 2006	14.37 .....	11 Jun 93	14.72 .....	AUG 2019
14.19 .....	JUL 2004	14.38 .....	11 Jun 93	14.73 .....	AUG 2019
14.19A .....	JUL 2004	14.39 .....	1 Jun 97	14.74 .....	AUG 2019
14.19B .....	JUL 2004	14.40 .....	1 Jun 97	14.75 .....	AUG 2019
14.20 .....	11 Jun 93	14.40A .....	OCT 2006	14.76 .....	AUG 2019
14.20A .....	18 MAR 99	14.40B .....	OCT 2006	14.77 .....	JAN 2021
14.20B .....	15 Jun 98	14.41 .....	FEB 2024	14.78 .....	JAN 2021
14.20C .....	18 MAR 99	14.42 .....	FEB 2024		
14.20D .....	15 Jun 98	14.43 .....	AUG 2019	15.i .....	DEC 2021
14.20E .....	JUL 2004	14.44 .....	AUG 2019	15.ii .....	DEC 2021
14.20F .....	18 MAR 99	14.45 .....	AUG 2019	15.1 .....	DEC 2021
14.20G .....	JUL 2004	14.46 .....	AUG 2019	15.2 .....	DEC 2021
14.20H .....	JUL 2004	14.47 .....	AUG 2019	15.3 .....	JAN 2021
14.20I .....	DEC 2011	14.48 .....	AUG 2019	15.4 .....	JAN 2021
14.20J .....	DEC 2011	14.49 .....	AUG 2019	15.5 .....	JAN 2021
14.20K .....	JUN 2014	14.50 .....	AUG 2019	15.6 .....	JAN 2021
14.20L .....	JUN 2014	14.51 .....	AUG 2019	15.7 .....	JAN 2021
14.20M .....	JUN 2014	14.52 .....	AUG 2019	15.8 .....	JAN 2021
14.20N .....	JUN 2014	14.53 .....	AUG 2019	15.9 .....	JAN 2021
14.20O .....	JUN 2014	14.54 .....	AUG 2019	15.10 .....	JAN 2021
14.20P .....	JUN 2014	14.55 .....	AUG 2019	15.11 .....	JAN 2021
14.20Q .....	JUN 2014	14.56 .....	AUG 2019	15.12 .....	JAN 2021
14.20R .....	JUN 2014	14.57 .....	AUG 2019	15.13 .....	JAN 2021
14.21 .....	JUL 2021	14.58 .....	AUG 2019	15.14 .....	JAN 2021
14.22 .....	JUL 2021	14.59 .....	AUG 2019	15.15 .....	DEC 2021
14.23 .....	JUL 2021	14.60 .....	AUG 2019	15.16 .....	DEC 2021
14.24 .....	JUL 2021	14.61 .....	AUG 2019		
14.25 .....	AUG 2019	14.62 .....	AUG 2019	16.i .....	FEB 2024
14.26 .....	AUG 2019	14.62A .....	AUG 2022	16.ii .....	FEB 2024

**REVISION LOG**

**DEC 2024**

<u>Page</u>	<u>Date</u>	<u>Page</u>	<u>Date</u>	<u>Page</u>	<u>Date</u>
16.1	FEB 2024	20.ii	AUG 2019	23.24	DEC 2021
16.2	FEB 2024	20.1	AUG 2019	23.25	DEC 2021
16.3	FEB 2024	20.2	AUG 2019	23.26	DEC 2021
16.4	FEB 2024			23.27	DEC 2021
16.5	FEB 2024	21.i	AUG 2019	23.28	DEC 2021
16.6	FEB 2024	21.ii	AUG 2019	23.29	SEP 2023
16.7	FEB 2024	21.1	AUG 2019	23.30	SEP 2023
16.8	FEB 2024	21.2	AUG 2019	23.31	SEP 2023
				23.32	SEP 2023
17.i	FEB 2024	22.i	AUG 2019	23.33	SEP 2023
17.ii	FEB 2024	22.ii	AUG 2019	23.34	SEP 2023
17.1	FEB 2024	22.1	AUG 2019	23.35	DEC 2021
17.2	FEB 2024	22.2	AUG 2019	23.36	DEC 2021
17.3	FEB 2024			23.37	FEB 2024
17.4	FEB 2024	23.i	SEP 2023	23.38	FEB 2024
17.5	FEB 2024	23.ii	SEP 2023	23.39	FEB 2024
17.6	FEB 2024	23.1	DEC 2021	23.40	FEB 2024
		23.2	DEC 2021	23.41	DEC 2021
18.i	FEB 2024	23.3	DEC 2021	23.42	DEC 2021
18.ii	FEB 2024	23.4	DEC 2021	23.43	DEC 2021
18.1	FEB 2024	23.5	AUG 2022	23.44	DEC 2021
18.2	FEB 2024	23.6	AUG 2022	23.45	FEB 2024
18.3	FEB 2024	23.7	SEP 2023	23.46	FEB 2024
18.4	FEB 2024	23.8	SEP 2023		
18.5	MAR 2024	23.9	SEP 2023	24.i	SEP 2023
18.6	MAR 2024	23.10	SEP 2023	24.ii	SEP 2023
18.7	MAR 2024	23.11	FEB 2024	24.1	AUG 2022
18.8	MAR 2024	23.12	FEB 2024	24.2	AUG 2022
18.9	FEB 2024	23.13	SEP 2023	24.3	AUG 2022
18.10	FEB 2024	23.14	SEP 2023	24.4	AUG 2022
18.11	FEB 2024	23.15	DEC 2021	24.5	AUG 2022
18.12	FEB 2024	23.16	DEC 2021	24.6	AUG 2022
		23.17	DEC 2021	24.7	AUG 2022
19.i	AUG 2019	23.18	DEC 2021	24.8	AUG 2022
19.ii	AUG 2019	23.19	DEC 2021	24.9	AUG 2022
19.1	AUG 2019	23.20	DEC 2021	24.10	AUG 2022
19.2	AUG 2019	23.21	DEC 2021	24.11	SEP 2023
		23.22	DEC 2021	24.12	SEP 2023
20.i	AUG 2019	23.23	DEC 2021	24.13	SEP 2023

**REVISION LOG**

**DEC 2024**

<u>Page</u>	<u>Date</u>	<u>Page</u>	<u>Date</u>	<u>Page</u>	<u>Date</u>
24.14	SEP 2023	27.20	SEP 2023	28.34	DEC 2021
24.15	SEP 2023	27.21	SEP 2023	28.35	DEC 2021
24.16	SEP 2023	27.22	SEP 2023	28.36	DEC 2021
				28.37	DEC 2021
25.i	AUG 2019	28.i	DEC 2021	28.38	DEC 2021
25.ii	AUG 2019	28.ii	DEC 2021	28.39	DEC 2021
25.1	AUG 2019	28.1	DEC 2021	28.40	DEC 2021
25.2	AUG 2019	28.2	DEC 2021	28.41	DEC 2021
		28.3	DEC 2021	28.42	DEC 2021
26.i	FEB 2024	28.4	DEC 2021	28.43	DEC 2021
26.ii	FEB 2024	28.5	DEC 2021	28.44	DEC 2021
26.1	FEB 2024	28.6	DEC 2021		
26.2	FEB 2024	28.7	DEC 2021	29.i	AUG 2019
26.3	FEB 2024	28.8	DEC 2021	29.ii	AUG 2019
26.4	FEB 2024	28.9	DEC 2021	29.1	AUG 2019
26.5	FEB 2024	28.10	DEC 2021	29.2	AUG 2019
26.6	FEB 2024	28.11	DEC 2021		
		28.12	DEC 2021	30.i	DEC 2021
27.i	SEP 2023	28.13	DEC 2021	30.ii	DEC 2021
27.ii	SEP 2023	28.14	DEC 2021	30.1	DEC 2021
27.1	SEP 2023	28.15	DEC 2021	30.2	DEC 2021
27.2	SEP 2023	28.16	DEC 2021	30.3	DEC 2021
27.3	SEP 2023	28.17	DEC 2021	30.4	DEC 2021
27.4	SEP 2023	28.18	DEC 2021	30.5	DEC 2021
27.5	SEP 2023	28.19	DEC 2021	30.6	DEC 2021
27.6	SEP 2023	28.20	DEC 2021	30.7	DEC 2021
27.7	SEP 2023	28.21	DEC 2021	30.8	DEC 2021
27.8	SEP 2023	28.22	DEC 2021	30.9	DEC 2021
27.9	SEP 2023	28.23	DEC 2021	30.10	DEC 2021
27.10	SEP 2023	28.24	DEC 2021	30.11	DEC 2021
27.11	SEP 2023	28.25	DEC 2021	30.12	DEC 2021
27.12	SEP 2023	28.26	DEC 2021	30.13	DEC 2021
27.13	SEP 2023	28.27	DEC 2021	30.14	DEC 2021
27.14	SEP 2023	28.28	DEC 2021	30.15	DEC 2021
27.15	SEP 2023	28.29	DEC 2021	30.16	DEC 2021
27.16	SEP 2023	28.30	DEC 2021	30.17	DEC 2021
27.17	SEP 2023	28.31	DEC 2021	30.18	DEC 2021
27.18	SEP 2023	28.32	DEC 2021	30.19	DEC 2021
27.19	SEP 2023	28.33	DEC 2021	30.20	DEC 2021

**REVISION LOG**

**DEC 2024**

<u>Page</u>	<u>Date</u>	<u>Page</u>	<u>Date</u>	<u>Page</u>	<u>Date</u>
30.21 .....	DEC 2021	36.8 .....	JAN 2021	37.28 .....	AUG 2019
30.22 .....	DEC 2021	36.9 .....	AUG 2019	37.29 .....	AUG 2019
30.23 .....	DEC 2021	36.10 .....	AUG 2019	37.30 .....	AUG 2019
30.24 .....	DEC 2021			37.31 .....	AUG 2019
		37.i .....	FEB 2024	37.32 .....	AUG 2019
31.i .....	AUG 2019	37.ii .....	FEB 2024	37.33 .....	FEB 2024
31.ii .....	AUG 2019	37.1 .....	JAN 2021	37.34 .....	FEB 2024
31.1 .....	AUG 2019	37.1A .....	JAN 2021		
31.2 .....	AUG 2019	37.1B .....	SEP 2023	38.i .....	AUG 2019
		37.2 .....	SEP 2023	38.ii .....	AUG 2019
32.i .....	AUG 2019	37.2A .....	SEP 2023	38.1 .....	AUG 2019
32.ii .....	AUG 2019	37.2B .....	SEP 2023	38.2 .....	AUG 2019
32.1 .....	AUG 2019	37.2C .....	AUG 2022	38.3 .....	AUG 2019
32.2 .....	AUG 2019	37.2D .....	AUG 2022	38.4 .....	AUG 2019
		37.3 .....	AUG 2019	38.5 .....	AUG 2019
33.i .....	AUG 2019	37.4 .....	AUG 2019	38.6 .....	AUG 2019
33.ii .....	AUG 2019	37.5 .....	AUG 2019	38.7 .....	AUG 2019
33.1 .....	AUG 2019	37.6 .....	AUG 2019	38.8 .....	AUG 2019
33.2 .....	AUG 2019	37.7 .....	DEC 2021	38.9 .....	AUG 2019
		37.8 .....	DEC 2021	38.10 .....	AUG 2019
34.i .....	AUG 2019	37.9 .....	JAN 2021	38.11 .....	AUG 2019
34.ii .....	AUG 2019	37.10 .....	JAN 2021	38.12 .....	AUG 2019
34.1 .....	AUG 2019	37.11 .....	AUG 2019	38.13 .....	AUG 2019
34.2 .....	AUG 2019	37.12 .....	AUG 2019	38.14 .....	AUG 2019
		37.13 .....	AUG 2019	38.15 .....	AUG 2019
35.i .....	AUG 2019	37.14 .....	AUG 2019	38.16 .....	AUG 2019
35.ii .....	AUG 2019	37.15 .....	AUG 2019	38.17 .....	AUG 2019
35.1 .....	AUG 2019	37.16 .....	AUG 2019	38.18 .....	AUG 2019
35.2 .....	AUG 2019	37.17 .....	DEC 2021	38.19 .....	AUG 2019
		37.18 .....	DEC 2021	38.20 .....	AUG 2019
36.i .....	AUG 2019	37.19 .....	AUG 2019	38.21 .....	AUG 2019
36.ii .....	AUG 2019	37.20 .....	AUG 2019	38.22 .....	AUG 2019
36.1 .....	AUG 2019	37.21 .....	AUG 2019	38.23 .....	AUG 2019
36.2 .....	AUG 2019	37.22 .....	AUG 2019	38.24 .....	AUG 2019
36.3 .....	SEP 2023	37.23 .....	AUG 2019	38.25 .....	AUG 2019
36.4 .....	SEP 2023	37.24 .....	AUG 2019	38.26 .....	AUG 2019
36.5 .....	SEP 2023	37.25 .....	AUG 2019	38.27 .....	AUG 2019
36.6 .....	SEP 2023	37.26 .....	AUG 2019	38.28 .....	AUG 2019
36.7 .....	JAN 2021	37.27 .....	AUG 2019	38.29 .....	AUG 2019

**REVISION LOG**

**DEC 2024**

<u>Page</u>	<u>Date</u>	<u>Page</u>	<u>Date</u>	<u>Page</u>	<u>Date</u>
38.30 .....	AUG 2019				
39.i .....	AUG 2019				
39.ii .....	AUG 2019				
39.1 .....	AUG 2019				
39.2 .....	AUG 2019				
40.i .....	AUG 2019				
40.ii .....	AUG 2019				
40.1 .....	AUG 2019				
40.2 .....	AUG 2019				
41.i .....	DEC 2021				
41.ii .....	DEC 2021				
41.1 .....	DEC 2024				
41.2 .....	DEC 2024				
41.3 .....	DEC 2024				
41.4 .....	DEC 2024				
41.5 .....	DEC 2024				
41.6 .....	DEC 2024				
41.7 .....	DEC 2024				
41.8 .....	DEC 2024				
41.9 .....	DEC 2024				
41.10 .....	DEC 2024				