

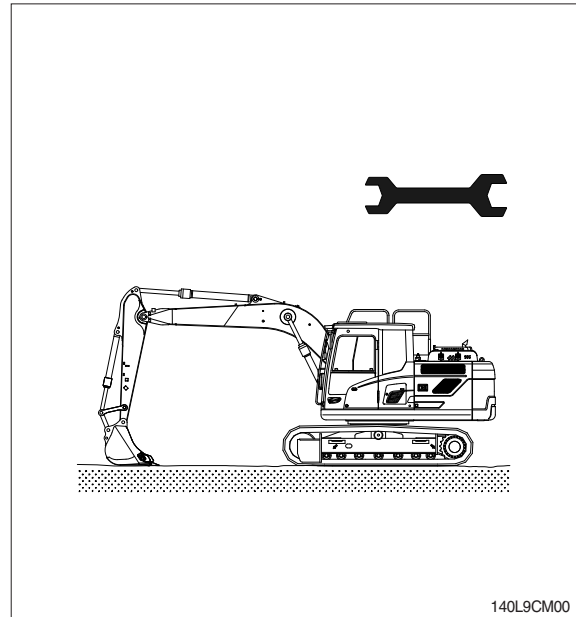
SECTION 9 COMPONENT MOUNTING TORQUE

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SECTION 9 COMPONENT MOUNTING TORQUE

GROUP 1 INTRODUCTION GUIDE

1. This section shows bolt specifications and standard torque values needed when mounting components to the machine.
 2. Use genuine HD Hyundai Construction Equipment spare parts.
We expressly point out that HD Hyundai Construction Equipment will not accept any responsibility for defects resulted from non-genuine parts.
In such cases HD Hyundai Construction Equipment cannot assume liability for any damage.
- ※ Only metric fasteners can be used and incorrect fasteners may result in machine damage or malfunction.
Be careful not to use metric fastener in case inch fastener was used.
 - ※ Before installation, clean all the components with a non-corrosive cleaner.
Bolts and threads must not be worn or damaged.



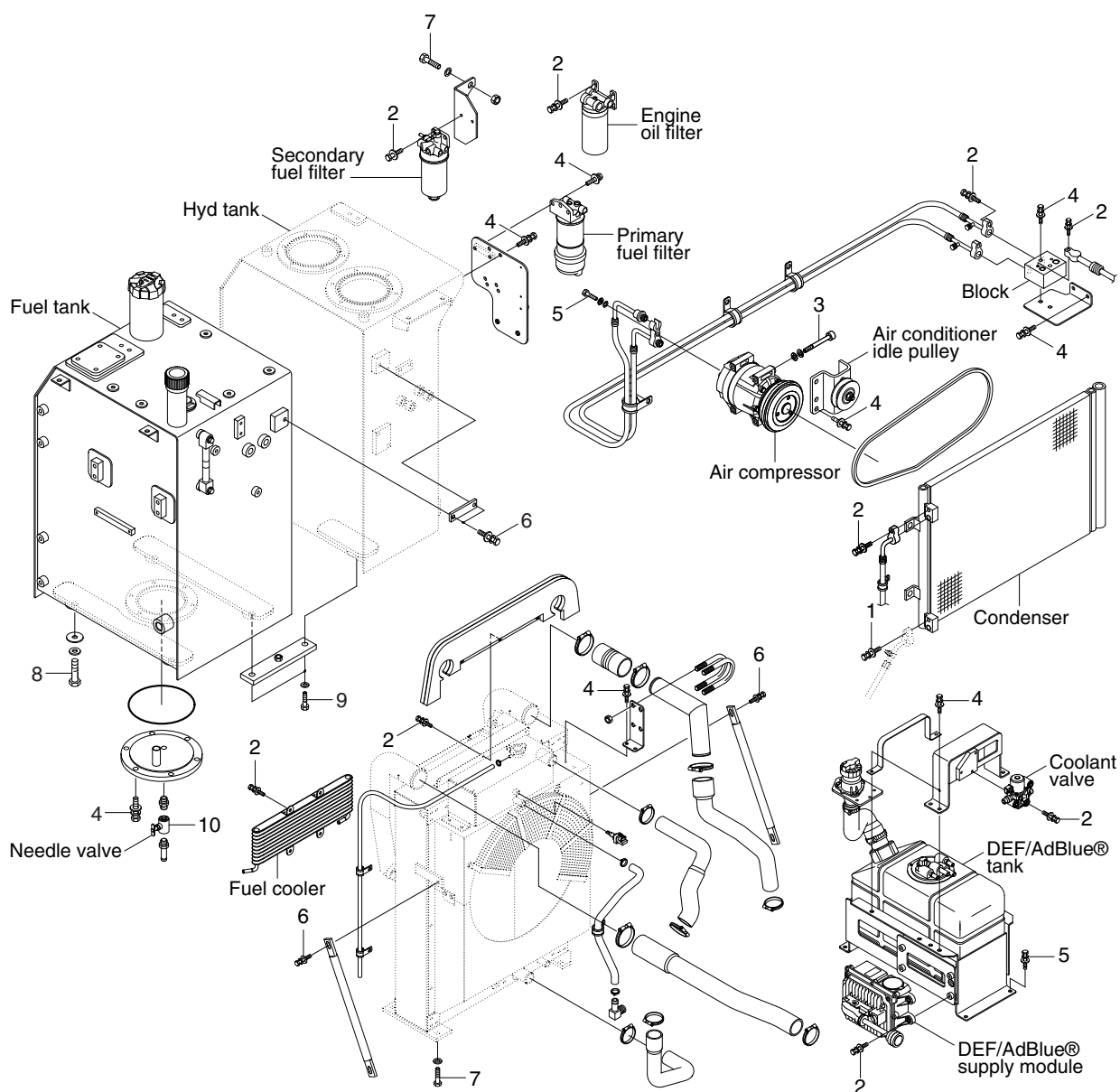
1. ENGINE AND ACCESSORIES MOUNTING



Item	Size	kgf · m	lbf · ft
1	M 8 × 1.25	2.5 ± 0.5	18.1 ± 3.6
2	M10 × 1.5	6.9 ± 1.4	49.9 ± 10.1
3	M10 × 1.5	8.27 ± 1.7	59.8 ± 12.3

Item	Size	kgf · m	lbf · ft
4	M12×1.75	7.9±2.0	57.1±14.5
5	M12×1.75	11.2±1.1	81±8.0
6	M16×2.0	34.0±4.0	246±28.9

2. COOLING SYSTEM AND FUEL TANK MOUNTING



140L9CM02

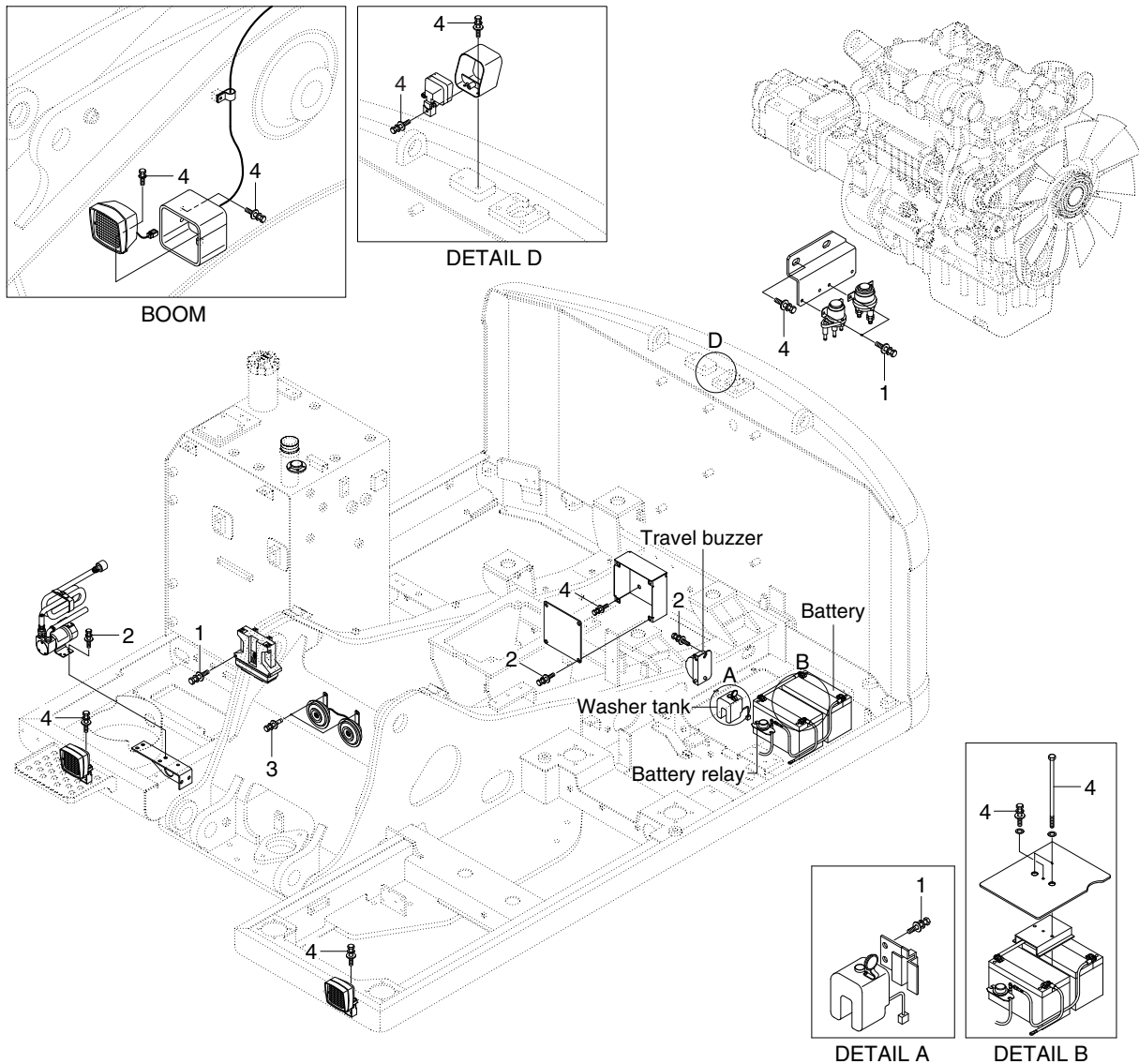
· Tightening torque

Item	Size	kgf · m	lbf · ft
1	M 6×1.0	1.05±0.2	7.6±1.45
2	M 8×1.25	2.5±0.5	18.1±3.6
3	M 8×1.25	4.05±0.8	29.3±5.8
4	M10×1.5	6.9±1.4	49.9±10.1
5	M10×1.25	7.4±1.5	53.5±10.8

Item	Size	kgf · m	lbf · ft
6	M12×1.75	12.8±3.0	92.6±21.7
7	M16×2.0	29.7±4.5	215±32.5
8	M20×2.5	46±5.1	333±36.9
9	M20×2.5	57.9±8.7	419±62.9
10	-	2.3±0.6	16.6±4.3

GROUP 3 ELECTRIC SYSTEM

1. ELECTRIC COMPONENTS MOUNTING 1



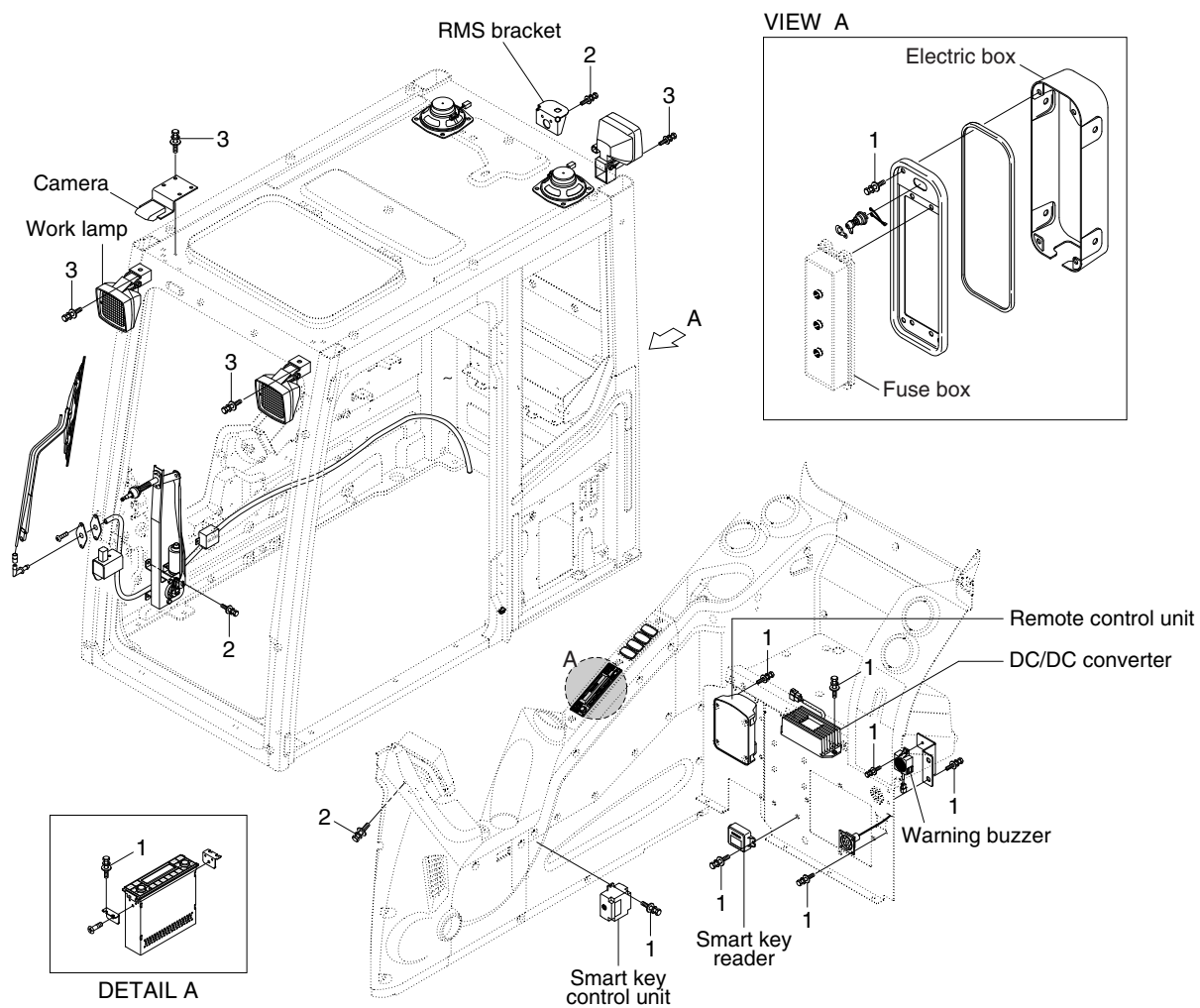
140L9CM03

· Tightening torque

Item	Size	kgf · m	lbf · ft
1	M 6×1.0	1.05±0.2	7.6±1.45
2	M 8×1.25	2.5±0.5	18.1±3.6

Item	Size	kgf · m	lbf · ft
3	M 8×1.25	3.43±0.7	24.8±5.1
4	M10×1.5	6.9±1.4	49.9±10.1

2. ELECTRIC COMPONENTS MOUNTING 2



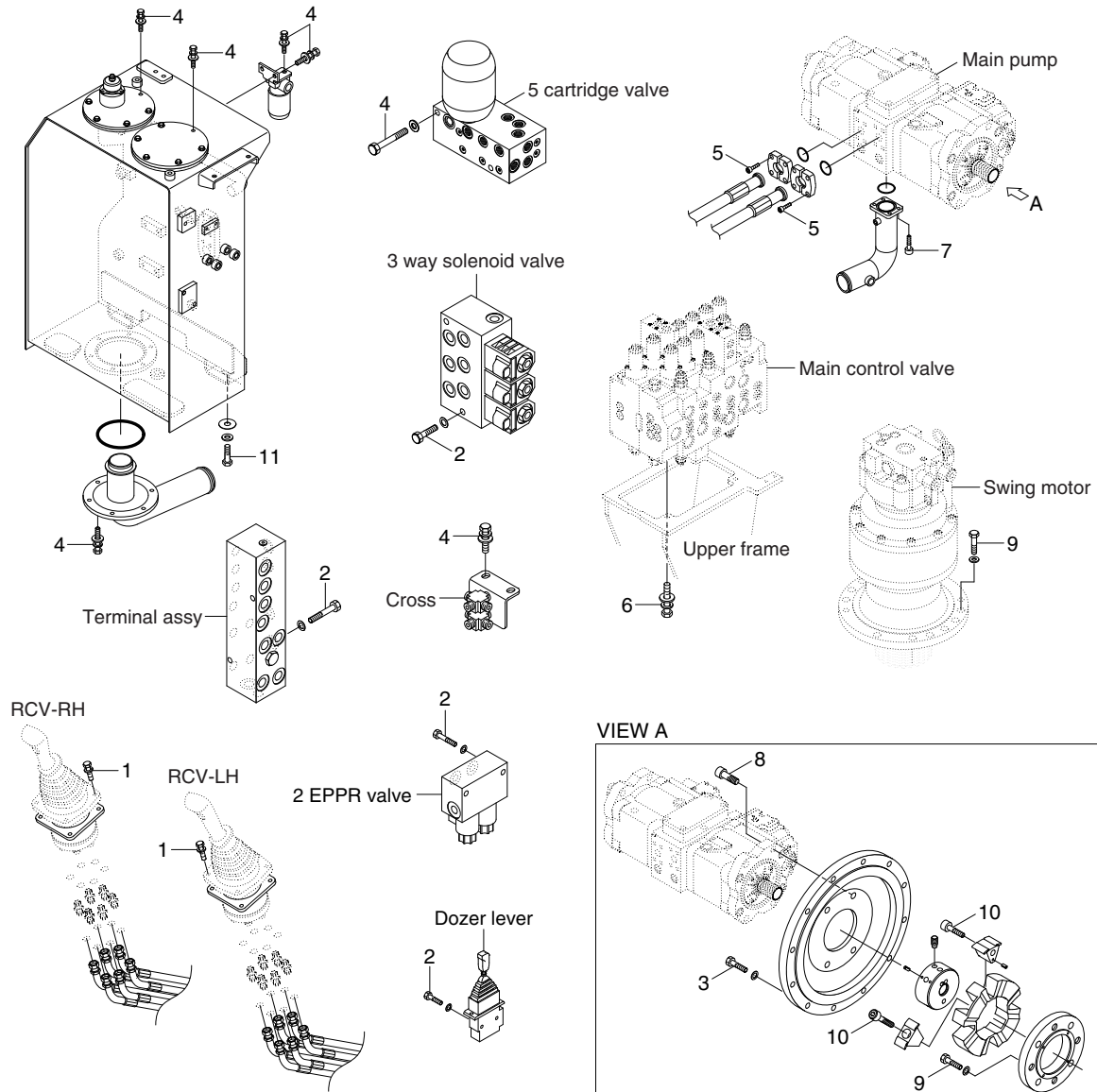
140L9CM04

• Tightening torque

Item	Size	kgf · m	lbf · ft
1	M 6×1.0	1.05±0.2	7.6±1.45
2	M 8×1.25	2.5±0.5	18.1±3.6
3	M10×1.5	6.9±1.4	49.9±10.1

GROUP 4 HYDRAULIC SYSTEM

1. HYDRAULIC COMPONENTS MOUNTING 1



140L9CM05

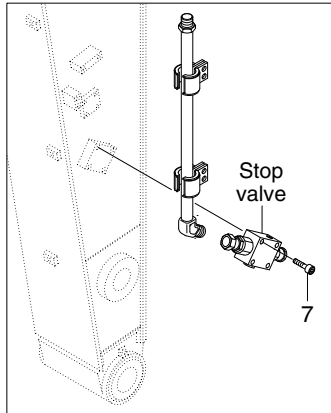
• Tightening torque

Item	Size	kgf · m	lbf · ft
1	M 6×1.0	1.05±0.2	7.6±1.45
2	M 6×1.0	1.44±0.3	10.4±2.2
3	M10×1.5	6.0±1.5	43.4±10.9
4	M10×1.5	6.9±1.4	49.9±10.1
5	M10×1.5	8.27±1.7	59.8±12.3
6	M12×1.75	12.2±1.3	88.2±9.4

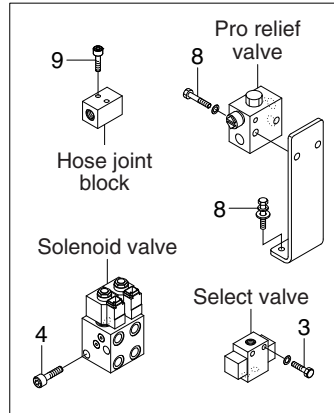
Item	Size	kgf · m	lbf · ft
7	M12×1.75	14.7±2.2	106±15.9
8	M16×2.0	22.0±1.5	159±10.9
9	M16×2.0	29.6±3.2	214±23.1
10	M16×2.0	32.0±1.6	231±11.6
11	M20×2.5	46±5.1	333±36.9

2. HYDRAULIC COMPONENTS MOUNTING 2

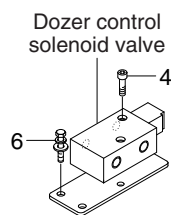
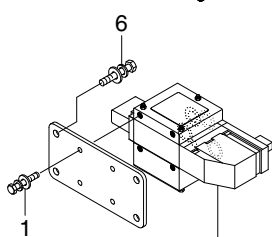
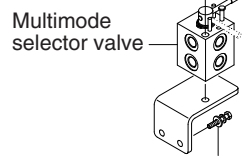
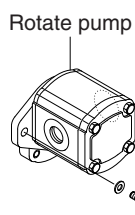
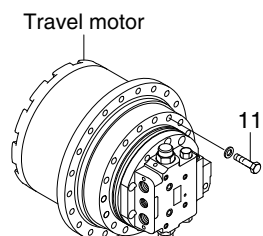
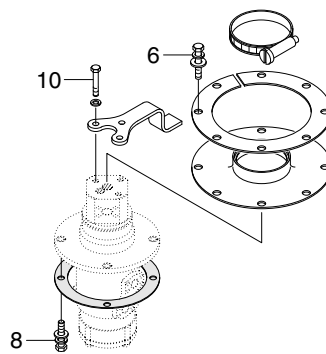
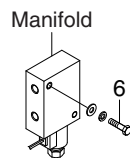
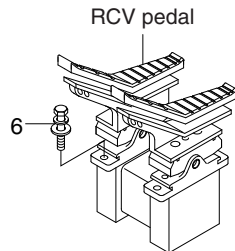
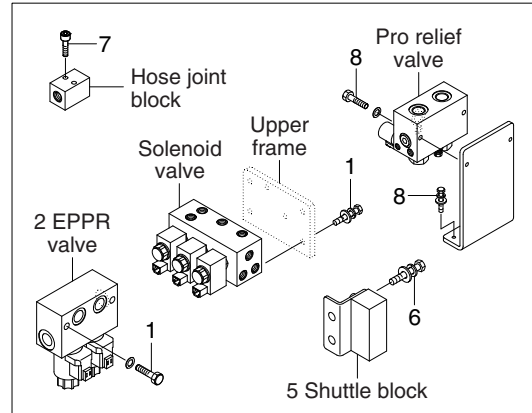
S & D/acting attachment piping



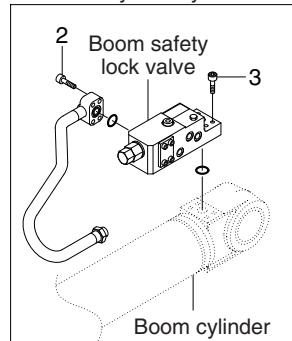
Single acting main piping



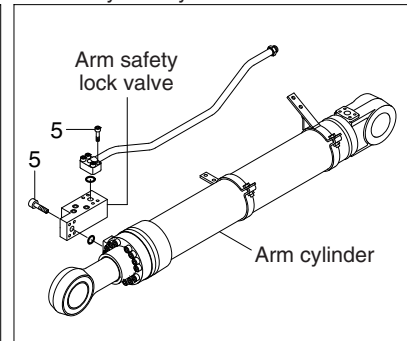
Double acting main piping



Boom safety lock system



Arm safety lock system



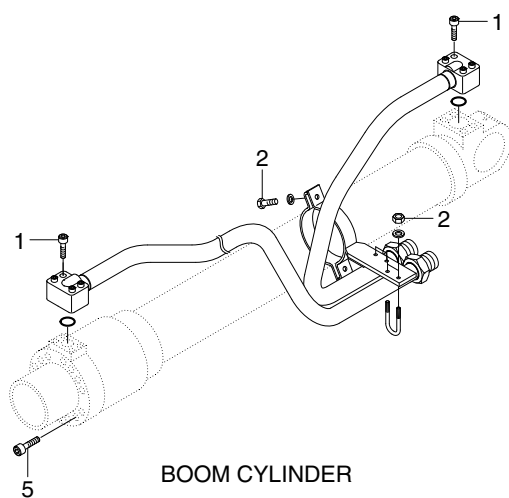
140L9CM06

· Tightening torque

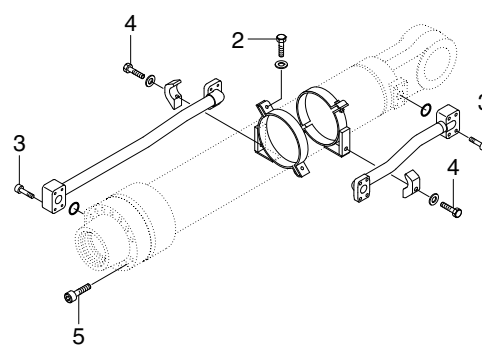
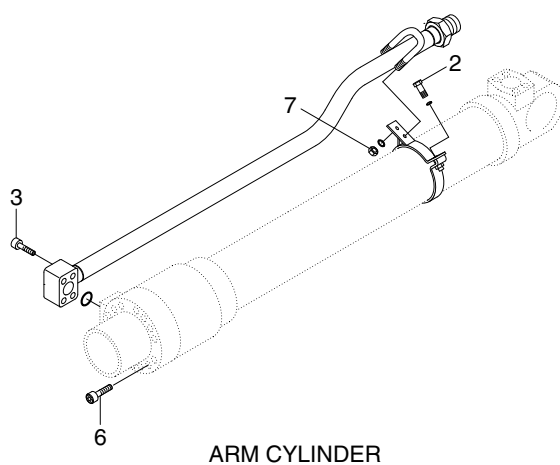
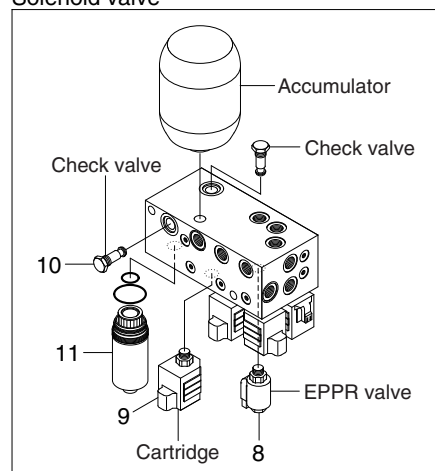
Item	Size	kgf · m	lbf · ft
1	M 8×1.25	2.5±0.5	18.1±3.6
2	M 8×1.25	2.7±0.3	19.5±2.2
3	M 8×1.25	3.43±0.7	24.8±5.1
4	M 8×1.25	4.05±0.8	29.3±5.8
5	M10×1.5	5.4±0.5	39.1±3.6
6	M10×1.5	6.9±1.4	49.9±10.1

Item	Size	kgf · m	lbf · ft
7	M10×1.5	8.27±1.7	59.8±12.3
8	M12×1.75	12.8±3.0	92.6±21.7
9	M12×1.75	14.7±2.2	106±15.9
10	M14×2.0	19.6±2.9	142±21.0
11	M16×2.0	25.7±4.0	186±28.9

3. HYDRAULIC COMPONENTS MOUNTING 3



Solenoid valve



140L9CM07

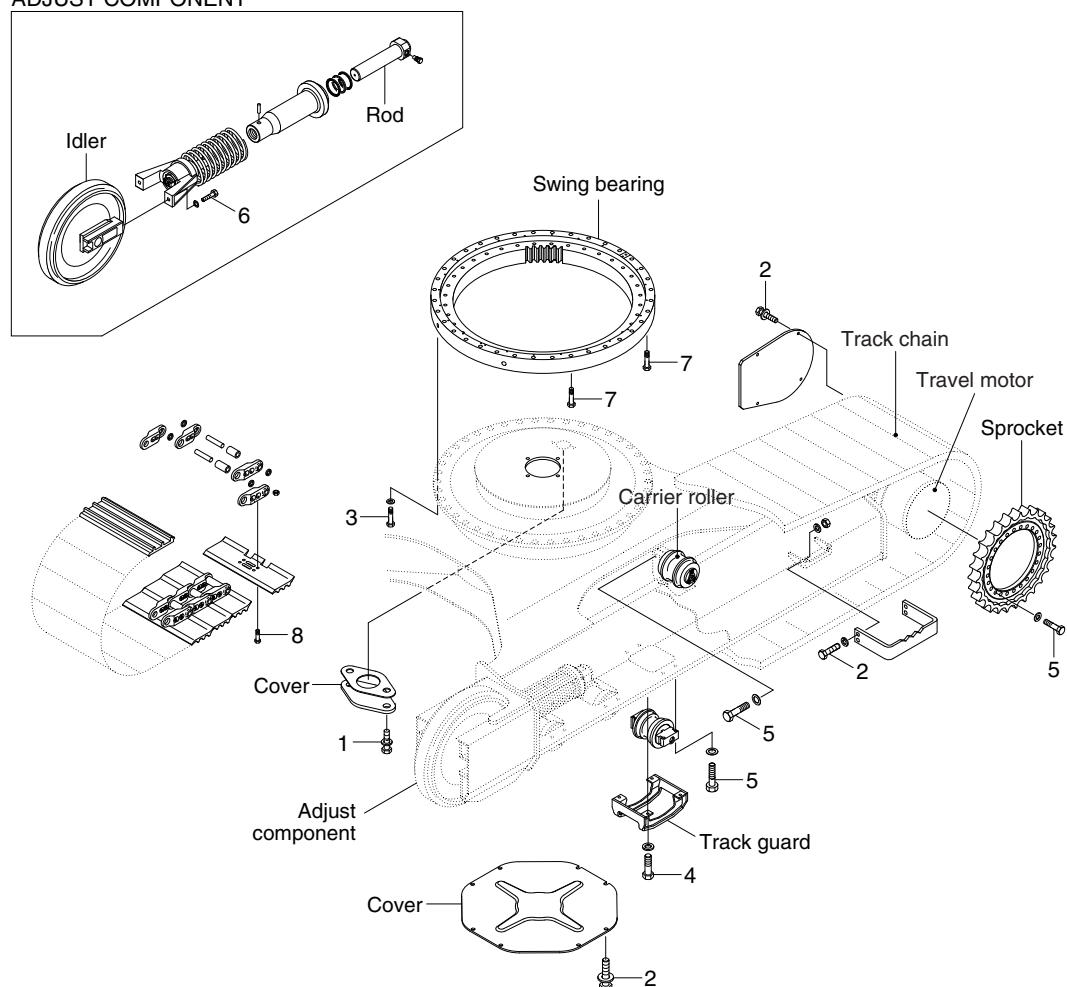
• Tightening torque

Item	Size	kgf · m	lbf · ft
1	M 8×1.25	2.7±0.3	19.5±2.2
2	M10×1.5	3.2±0.3	23.1±2.2
3	M10×1.5	5.4±0.5	39.1±3.6
4	M12×1.75	5.5±0.6	39.8±4.3
5	M14×2.0	15±2.0	108±14.5
6	M16×2.0	23±2.0	166±14.5

Item	Size	kgf · m	lbf · ft
7	M10×1.5	5.0±1.0	36.2±7.2
8	EPPR valve	2.5	18.1
9	Cartridge	3.5	25.3
10	Check valve	4.0	28.9
11	Line filter	2.5	18.1

GROUP 5 UNDERCARRIAGE

ADJUST COMPONENT



140L9CM08

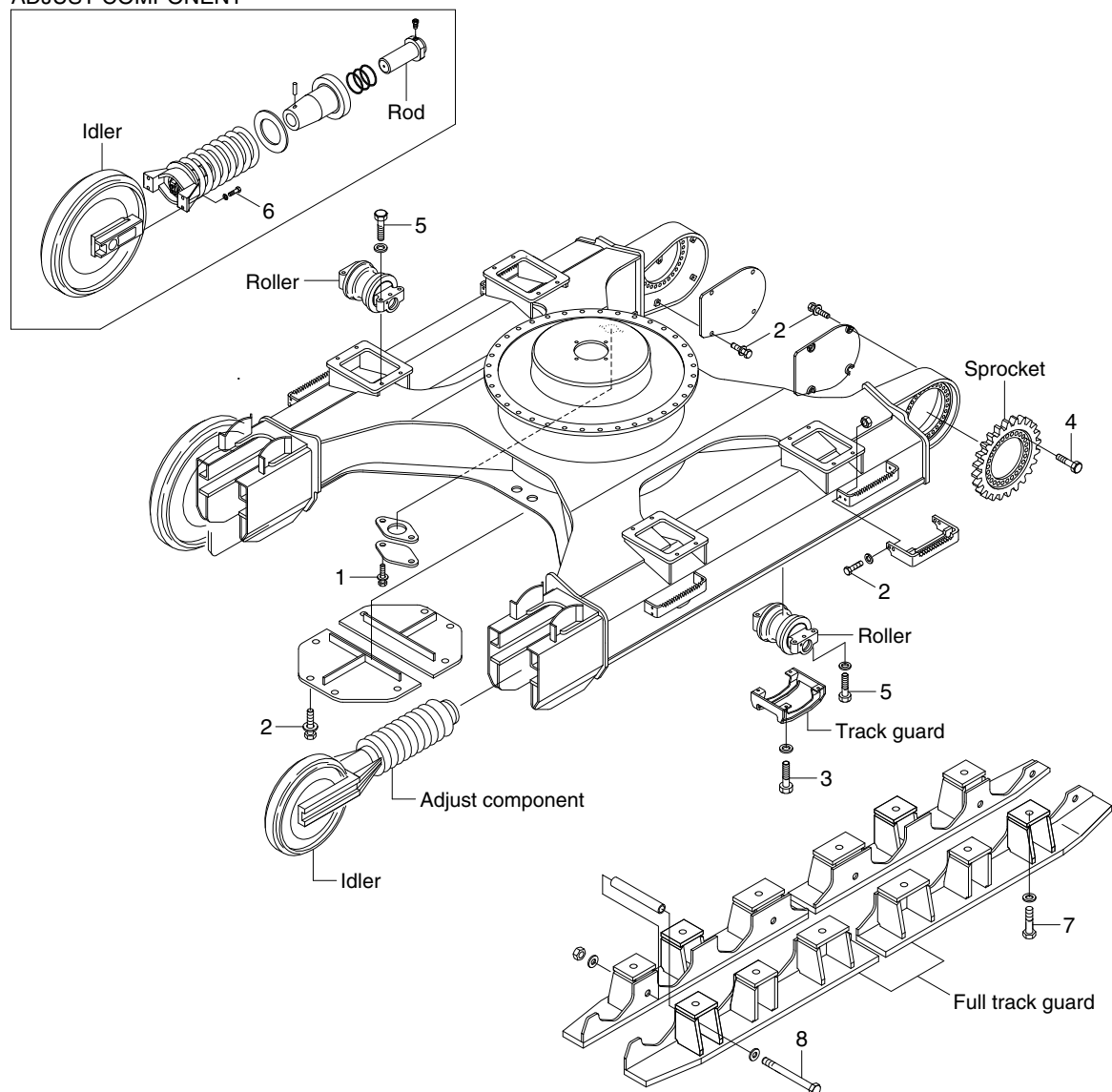
• Tightening torque

Item	Size	kgf · m	lbf · ft
1	M10×1.5	6.9±1.4	49.9±10.1
2	M12×1.75	12.8±3.0	92.6±21.7
3	M16×1.5	31.3±3.2	226±23.1
4	M16×2.0	29.6±3.2	214±23.1

Item	Size	kgf · m	lbf · ft
5	M16×2.0	29.7±3.0	215±23.1
6	M16×2.0	29.7±4.5	215±32.5
7	M18×2.5	41.3±4.5	299±32.5
8	5/8"-18 UNF	42±4.0	304±28.9

UNDERCARRIAGE MOUNTING (HIGH WALKER)

ADJUST COMPONENT



140L9CM09

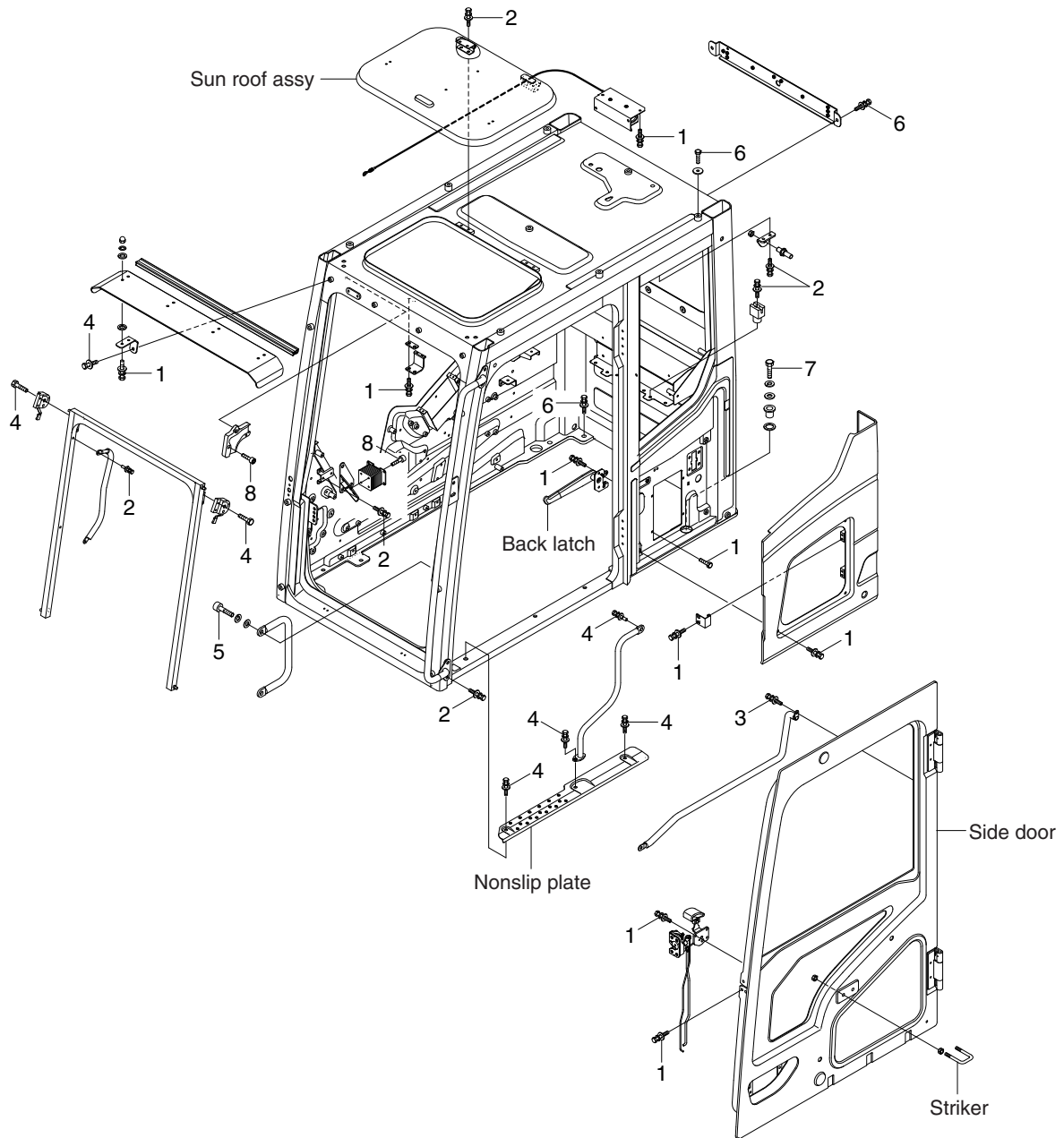
• Tightening torque

Item	Size	kgf · m	lbf · ft
1	M10×1.5	6.9±1.4	49.9±10.1
2	M12×1.75	12.8±3.0	92.6±21.7
3	M16×2.0	29.6±3.2	214±23.1
4	M16×2.0	29.7±3.0	215±21.7

Item	Size	kgf · m	lbf · ft
5	M20×2.5	57.9±6.0	419±43.4
6	M16×2.0	29.7±4.5	215±32.5
7	M20×2.5	57.9±8.7	419±62.9
8	M24×3.0	100±15	723±108

GROUP 6 STRUCTURE

1. CAB AND ACCESSORIES MOUNTING



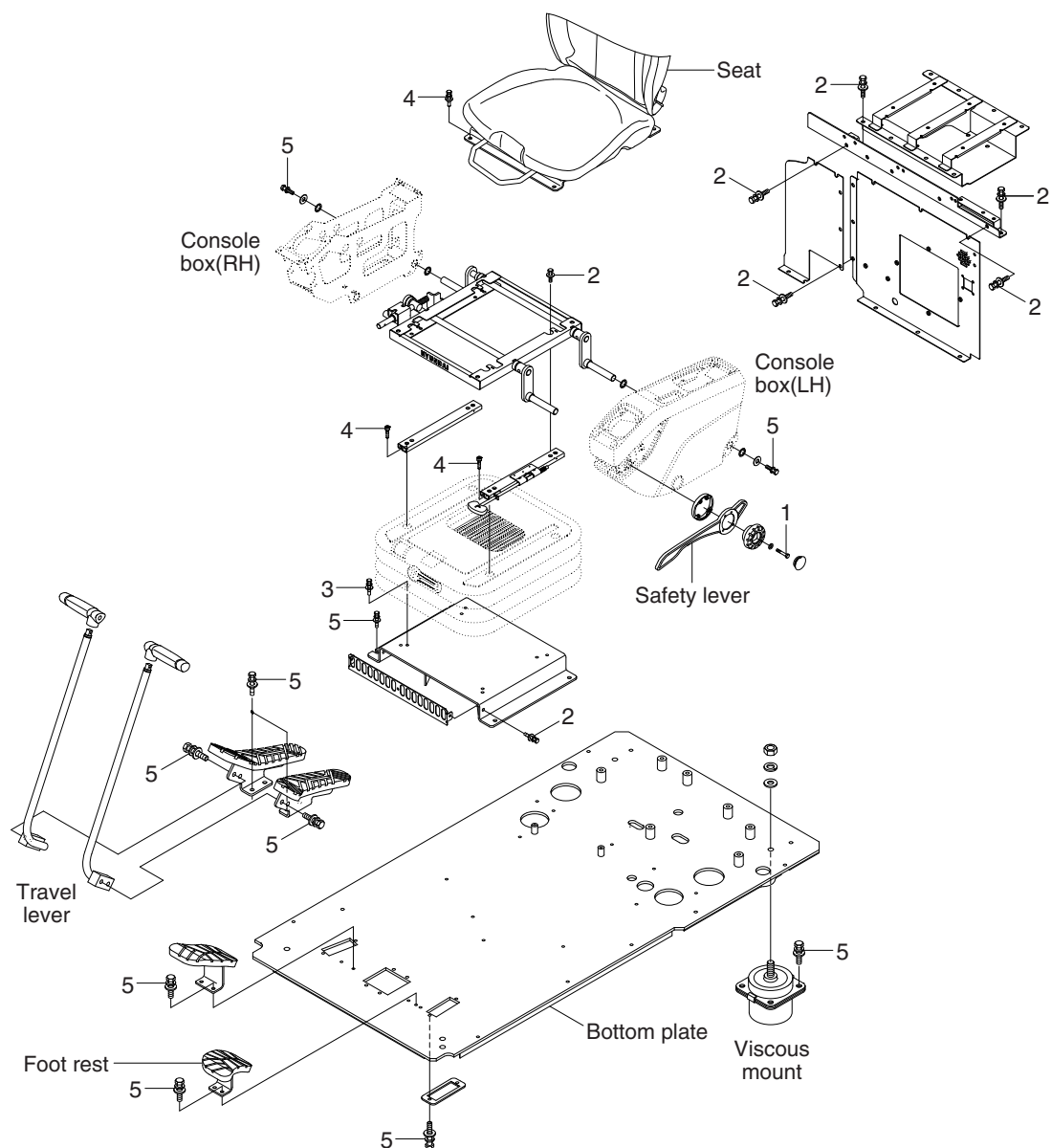
140L9CM10

• Tightening torque

Item	Size	kgf · m	lbf · ft
1	M 6×1.0	1.05±0.2	7.6±1.45
2	M 8×1.25	2.5±0.5	18.1±3.6
3	M 8×1.25	3.43±0.7	24.8±5.1
4	M10×1.5	6.9±1.4	49.9±10.1

Item	Size	kgf · m	lbf · ft
5	M10×1.5	8.27±1.7	59.8±12.3
6	M12×1.75	12.8±3.0	92.6±21.7
7	M24×3.0	100±15	723±108
8	M 6×1.0	1.72±0.35	12.4±2.2

2. CAB INTERIOR MOUNTING



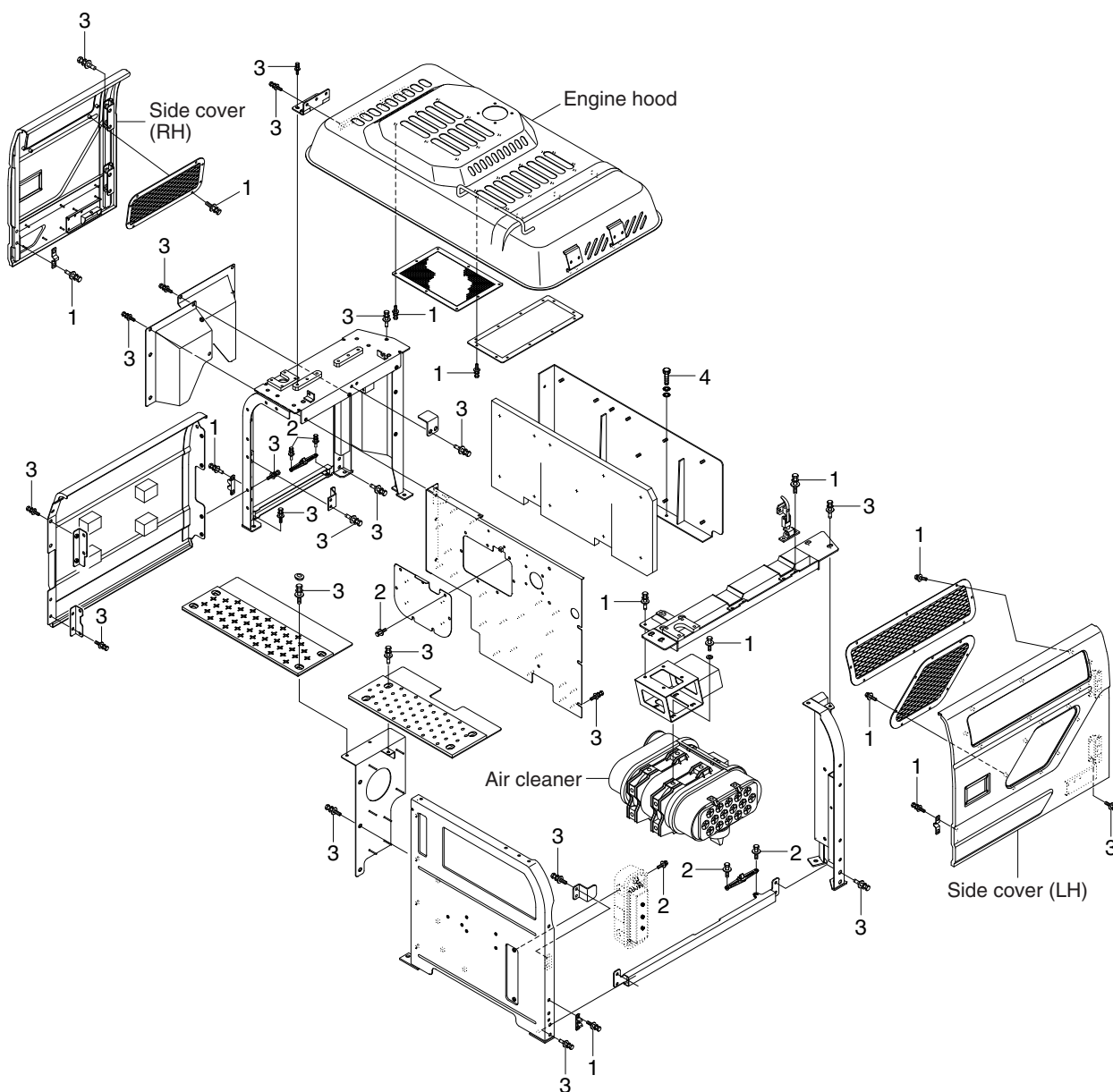
140L9CM11

• Tightening torque

Item	Size	kgf · m	lbf · ft
1	M 6×1.0	1.05±0.2	7.6±1.45
2	M 8×1.25	2.5±0.5	18.1±3.6
3	M 8×1.25	3.43±0.7	24.8±5.1

Item	Size	kgf · m	lbf · ft
4	M 8×1.25	4.05±0.8	29.3±5.8
5	M10×1.5	6.9±1.4	49.9±10.1

3. COWLING MOUNTING



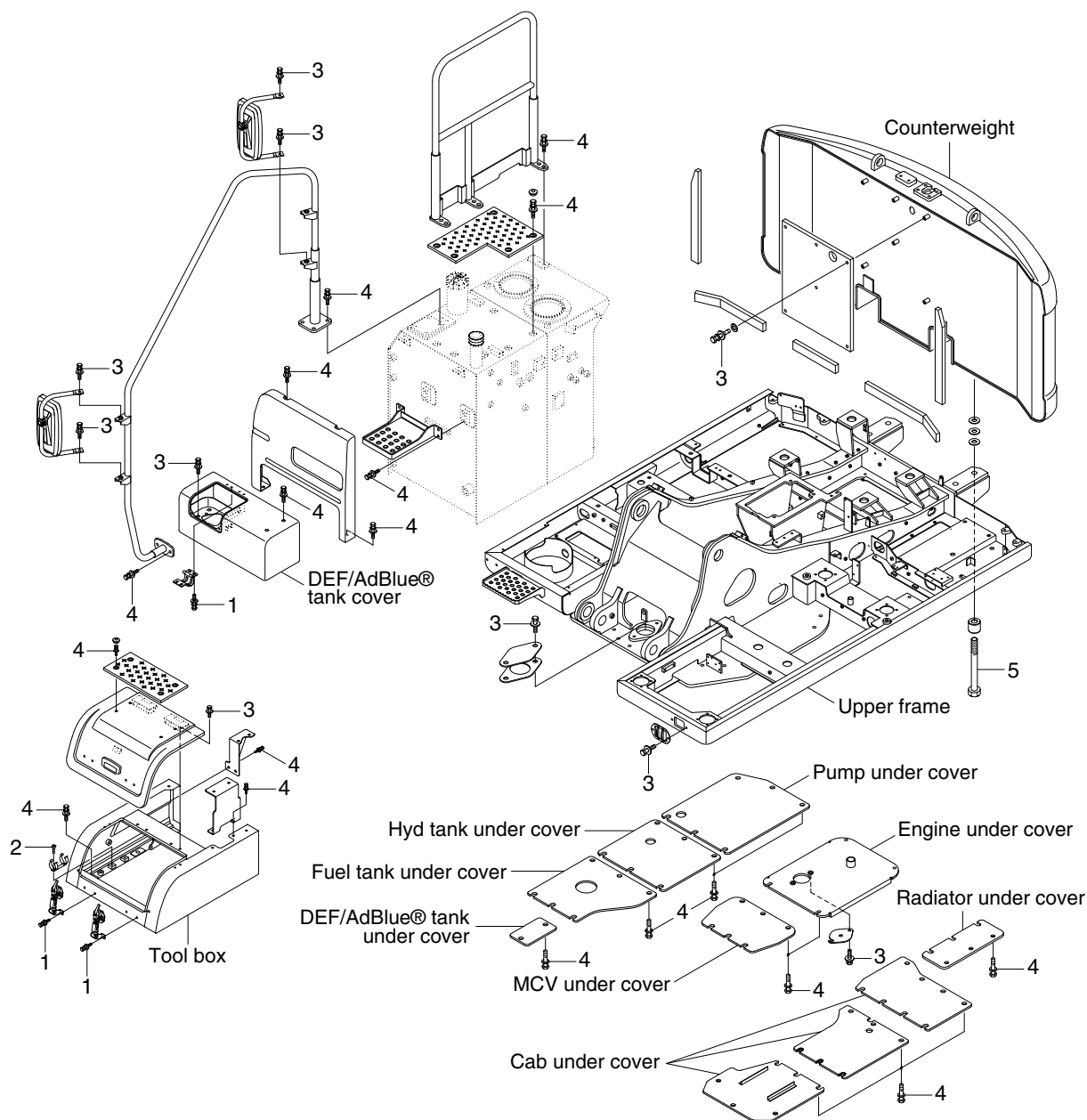
140L9CM12

· Tightening torque

Item	Size	kgf · m	lbf · ft
1	M8×1.25	2.5±0.5	18.1±3.6
2	M10×1.5	6.9±1.4	49.9±10.1

Item	Size	kgf · m	lbf · ft
3	M12×1.75	12.8±3.0	92.6±21.7
4	M16×2.0	29.7±4.5	215±32.5

4. COUNTERWEIGHT AND COVERS MOUNTING



140L9CM13

· Tightening torque

Item	Size	kgf · m	lbf · ft
1	M 8 × 1.25	2.5 ± 0.5	18.1 ± 3.6
2	M 8 × 1.25	4.05 ± 0.8	29.3 ± 5.8
3	M10 × 1.5	6.9 ± 1.4	49.9 ± 10.1

Item	Size	kgf · m	lbf · ft
4	M12 × 1.75	12.8 ± 3.0	92.6 ± 21.7
5	M27 × 3.0	135 ± 15	976 ± 108

This diagram illustrates the assembly of the excavator's boom and arm. The main components shown are the Boom, Arm cylinder, Arm pin, Arm cylinder rod pin, Arm cylinder head pin, Boom cylinder, Boom cylinder head pin, Bucket cylinder, Bucket cylinder head pin, Side cutter(LH), Bucket, and Bucket control link. The diagram uses numbered callouts (1, 2, 3) to indicate the specific pins and bolts required for assembly. The Boom is the uppermost section, followed by the Arm cylinder, which connects to the Arm pin. The Arm pin is then connected to the Arm cylinder rod pin, which is secured by the Arm cylinder head pin. The Boom cylinder is attached to the Boom, and its head pin is secured by the Boom cylinder head pin. The Bucket cylinder is connected to the Arm pin, and its head pin is secured by the Bucket cylinder head pin. The Side cutter(LH) is attached to the Bucket, and the Bucket control link is connected to the Bucket. The diagram shows the relative positions of these components and the specific pins and bolts used to assemble them.

- Tightening torque

9-15