

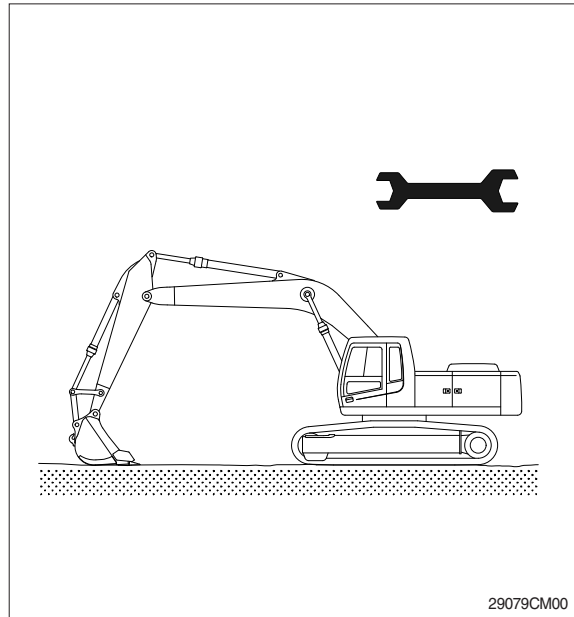
SECTION 9 COMPONENT MOUNTING TORQUE

Group 1	Introduction guide	9-1
Group 2	Engine system	9-2
Group 3	Electric system	9-4
Group 4	Hydraulic system	9-6
Group 5	Undercarriage	9-9
Group 6	Structure	9-11
Group 7	Work equipment	9-15

SECTION 9 COMPONENT MOUNTING TORQUE

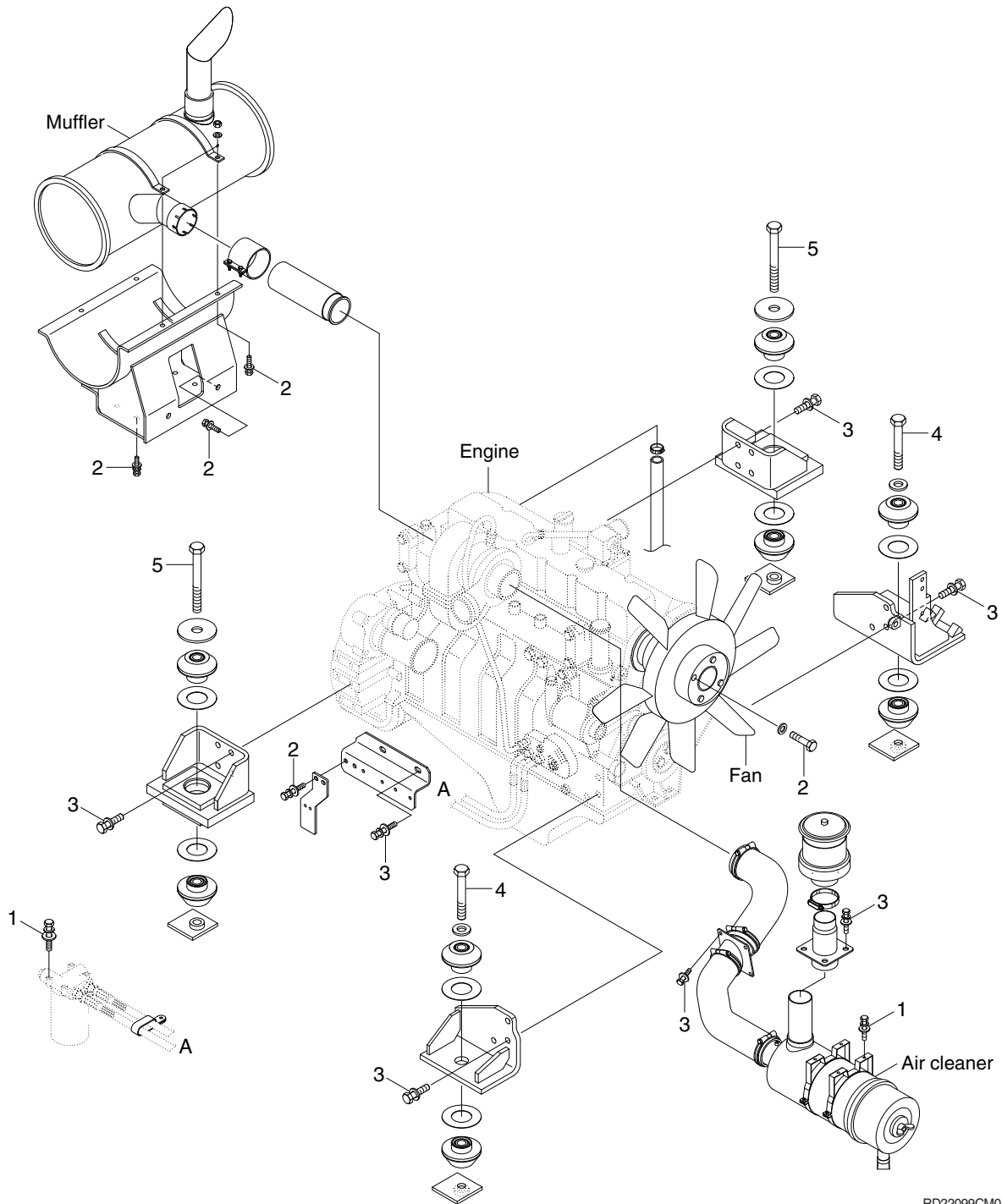
GROUP 1 INTRODUCTION GUIDE

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



GROUP 2 ENGINE SYSTEM

1. ENGINE AND ACCESSORIES MOUNTING



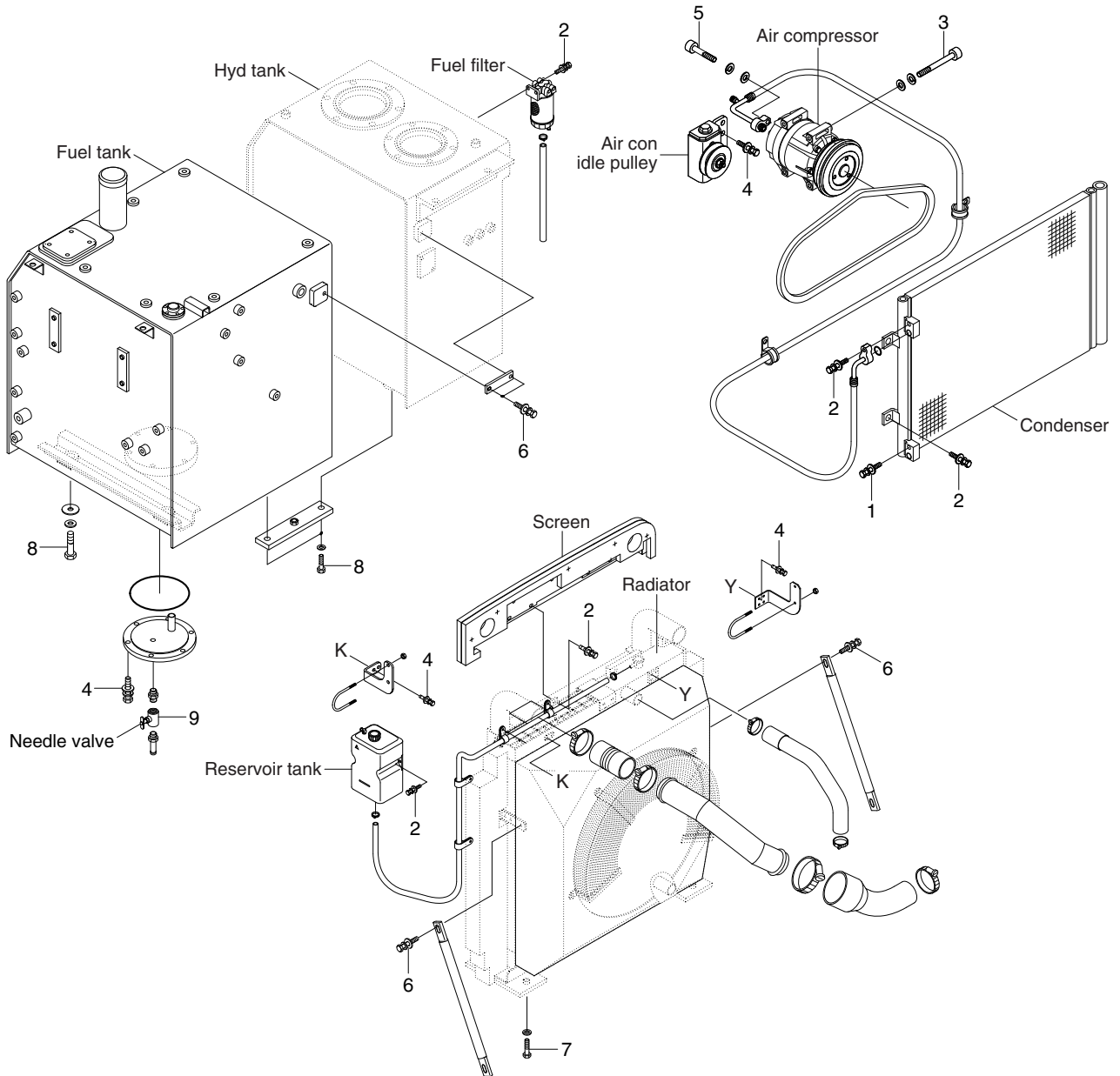
RD22099CM01

· Tightening torque

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	M12×1.75	12.8±3.0	92.6±21.7

Item	Size	kgf · m	lbf · ft
4	M20×2.5	55±3.5	398±25
5	M24×3.0	90±7.0	702±51
-	-	-	-

2. COOLING SYSTEM AND FUEL TANK MOUNTING



RD22099CM02

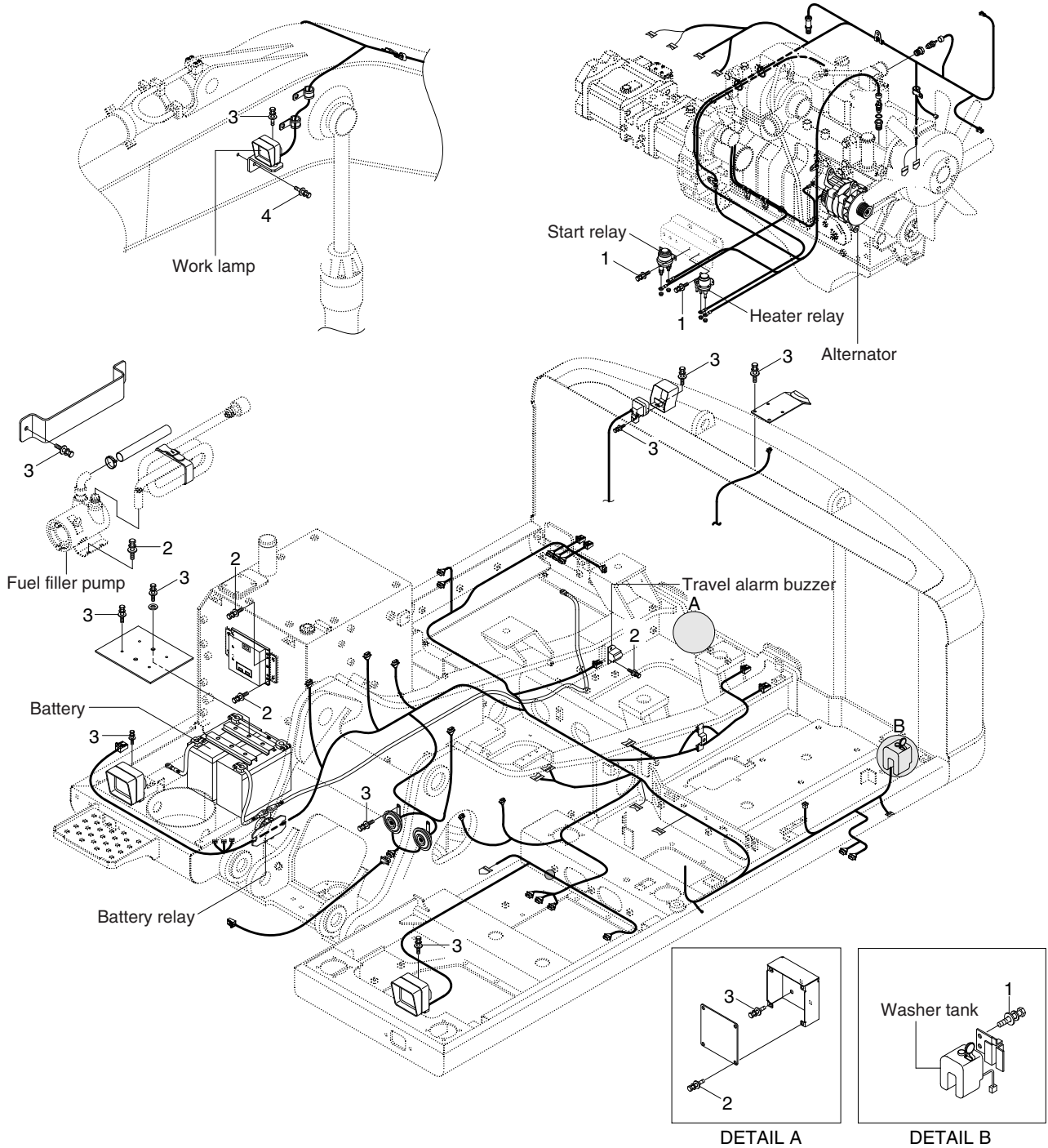
· Tightening torque

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	57.9±8.7	419±62.9
9	-	2.3±0.6	16.6±4.3
-	-	-	-

GROUP 3 ELECTRIC SYSTEM

1. ELECTRIC COMPONENTS MOUNTING 1



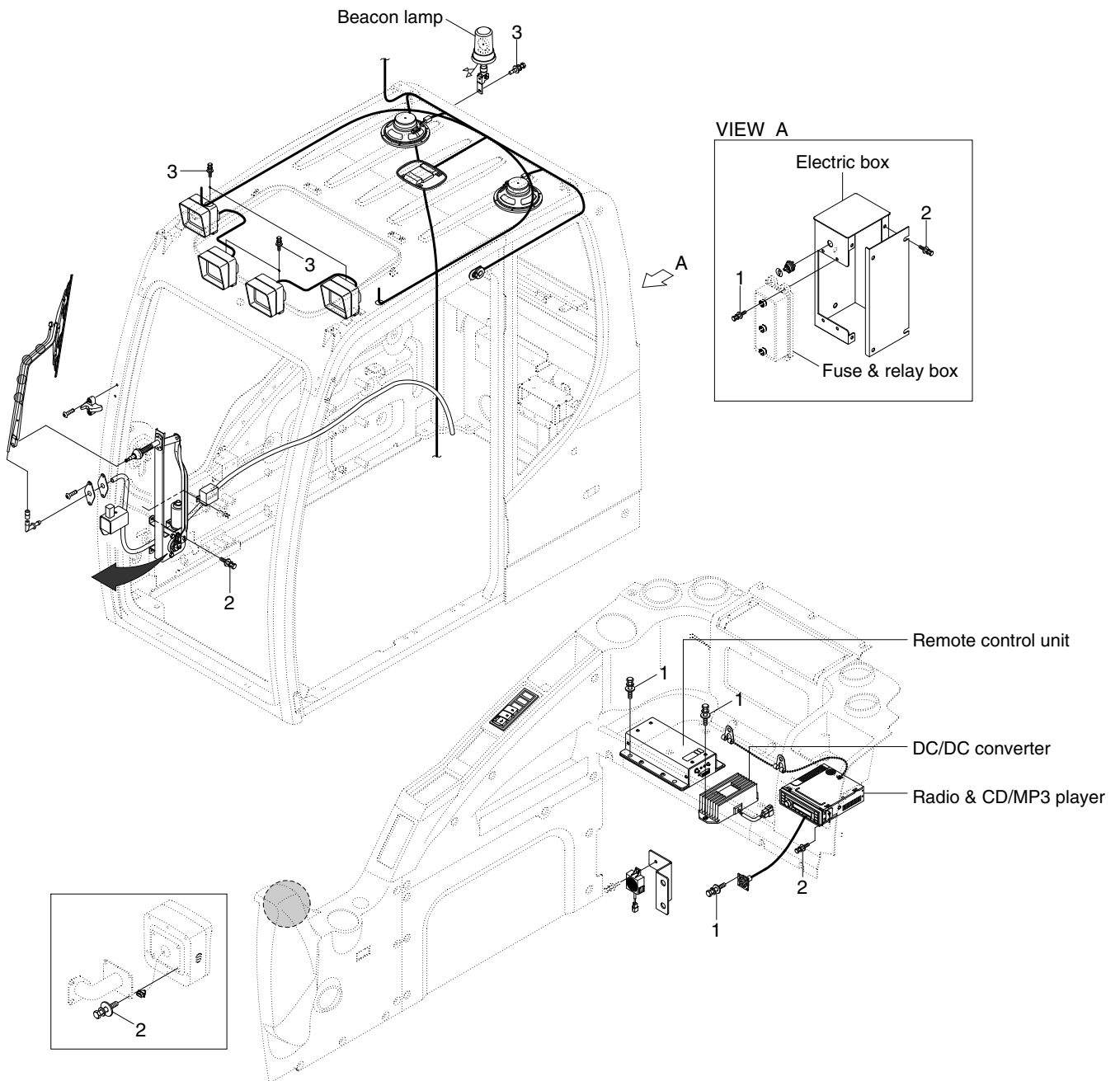
RD22099CM03

· Tightening torque

Item	Size	kgf · m	lbf · ft
1	M6×1.0	1.05±0.2	7.6±1.45
2	M8×1.25	2.5±0.5	18.1±3.6

Item	Size	kgf · m	lbf · ft
3	M10×1.5	6.9±1.4	49.9±10.1
4	M12×1.75	12.8±3.0	92.6±21.7

ELECTRIC COMPONENTS MOUNTING 2



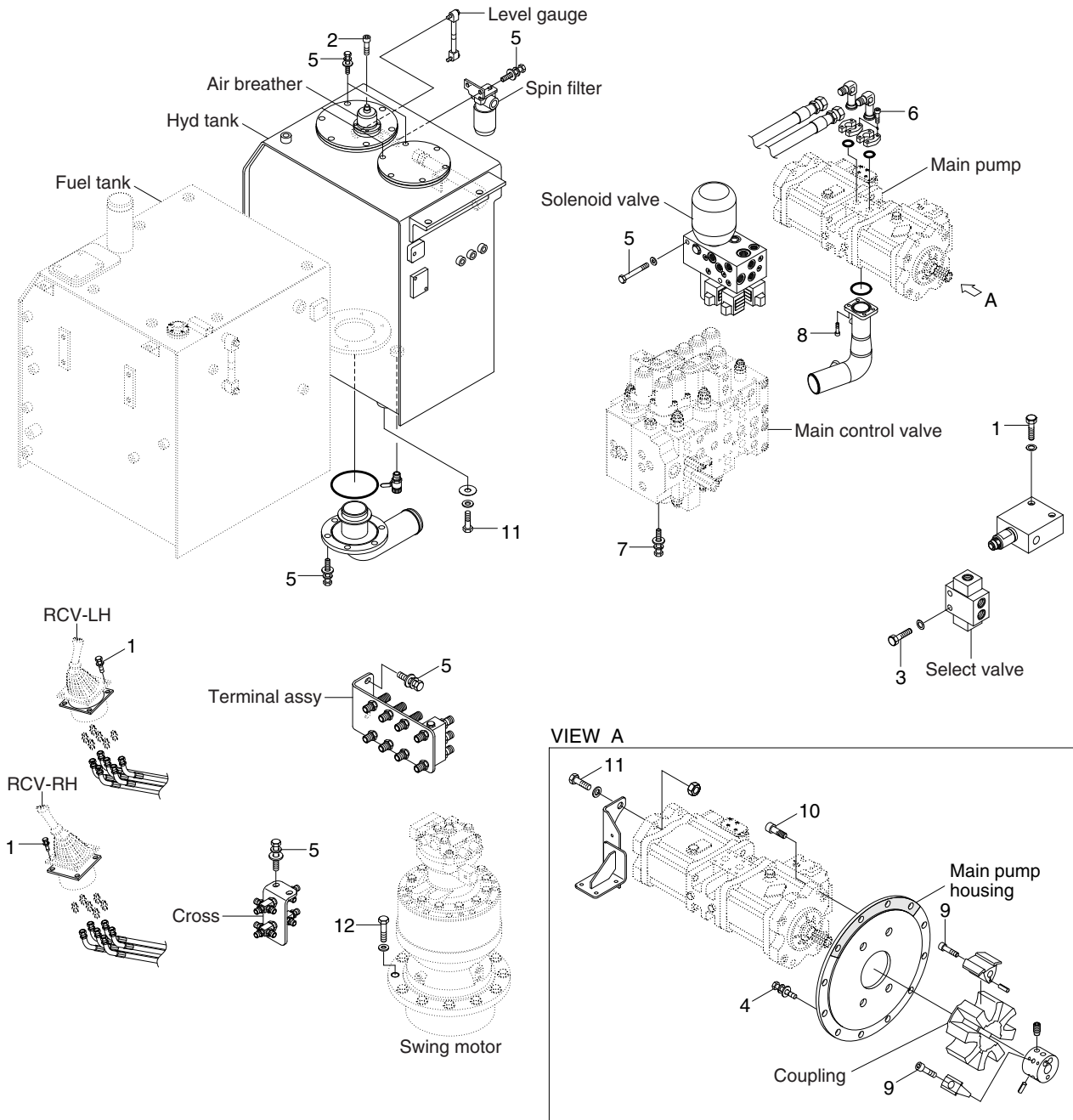
RD22099CM04

· 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



RD22099CM05

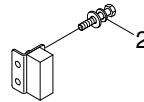
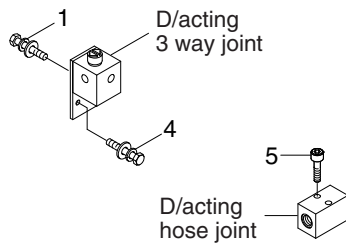
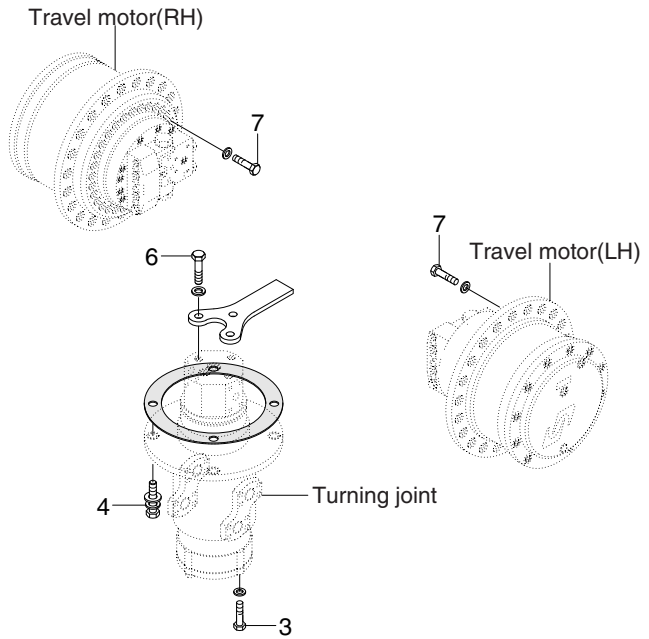
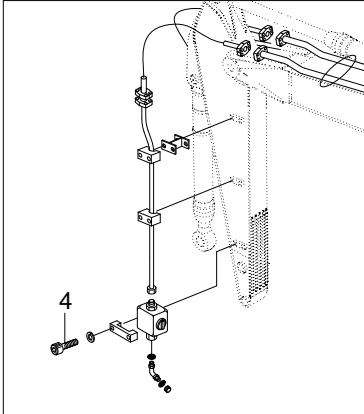
· Tightening torque

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	M 8 × 1.25	2.5 ± 0.5	18.1 ± 3.6
4	M 10 × 1.5	4.8 ± 0.3	34.7 ± 2.2
5	M 10 × 1.5	6.9 ± 1.4	49.9 ± 10.1
6	M 10 × 1.5	8.27 ± 1.7	59.8 ± 12.3

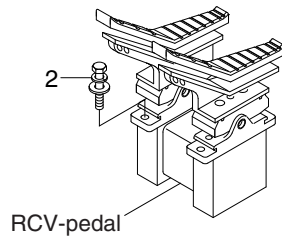
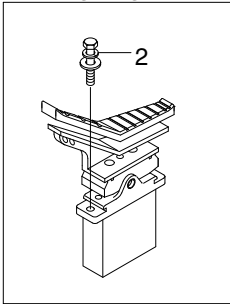
Item	Size	kgf · m	lbf · ft
7	M 12 × 1.75	12.3 ± 1.3	89 ± 9.4
8	M 12 × 1.75	14.7 ± 2.2	106 ± 15.9
9	M 18 × 2.5	32 ± 1.0	231 ± 7.2
10	M 20 × 2.5	42 ± 4.5	304 ± 32.5
11	M 20 × 2.5	57.9 ± 8.7	419 ± 62.9
12	M 20 × 2.5	58.4 ± 5.8	422 ± 42

HYDRAULIC COMPONENTS MOUNTING 2

Double acting attachment piping



D/acting single pedal



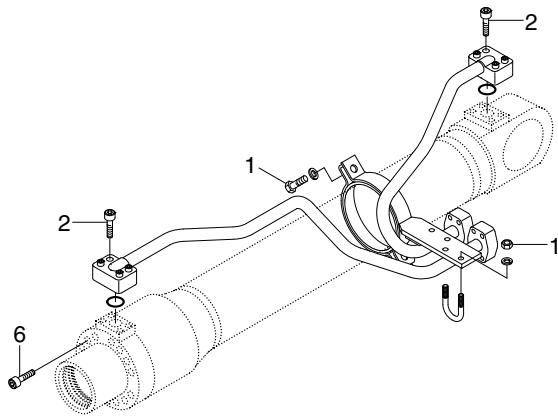
RD22099CM06

• Tightening torque

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	M12×1.75	12.3±1.3	89±9.4
4	M12×1.75	12.8±3.0	92.6±21.7

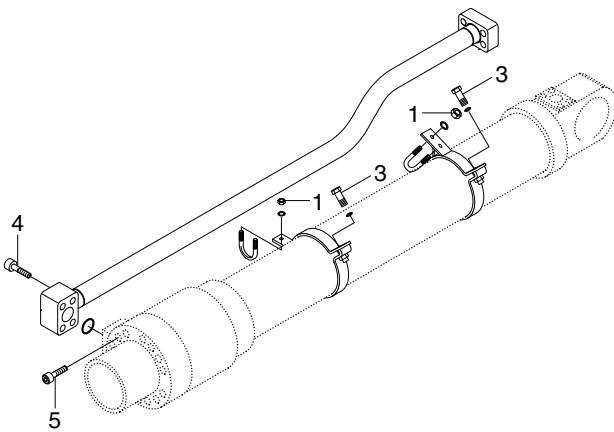
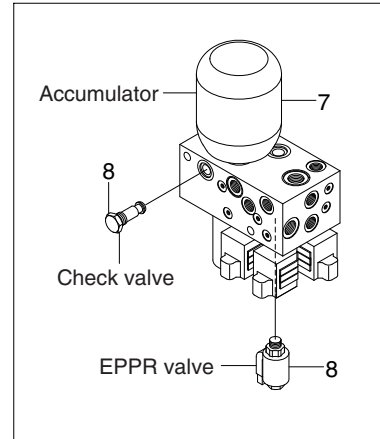
Item	Size	kgf · m	lbf · ft
5	M12×1.75	14.7±2.2	106±15.9
6	M14×2.0	19.6±2.9	142±21.0
7	M16×2.0	23.0±2.5	166±18.1
-	-	-	-

HYDRAULIC COMPONENTS MOUNTING 3

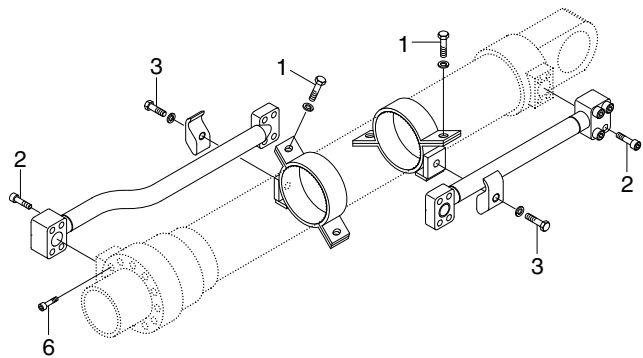


BOOM CYLINDER

Solenoid valve



ARM CYLINDER



BUCKET CYLINDER

RD22099CM07

· Tightening torque

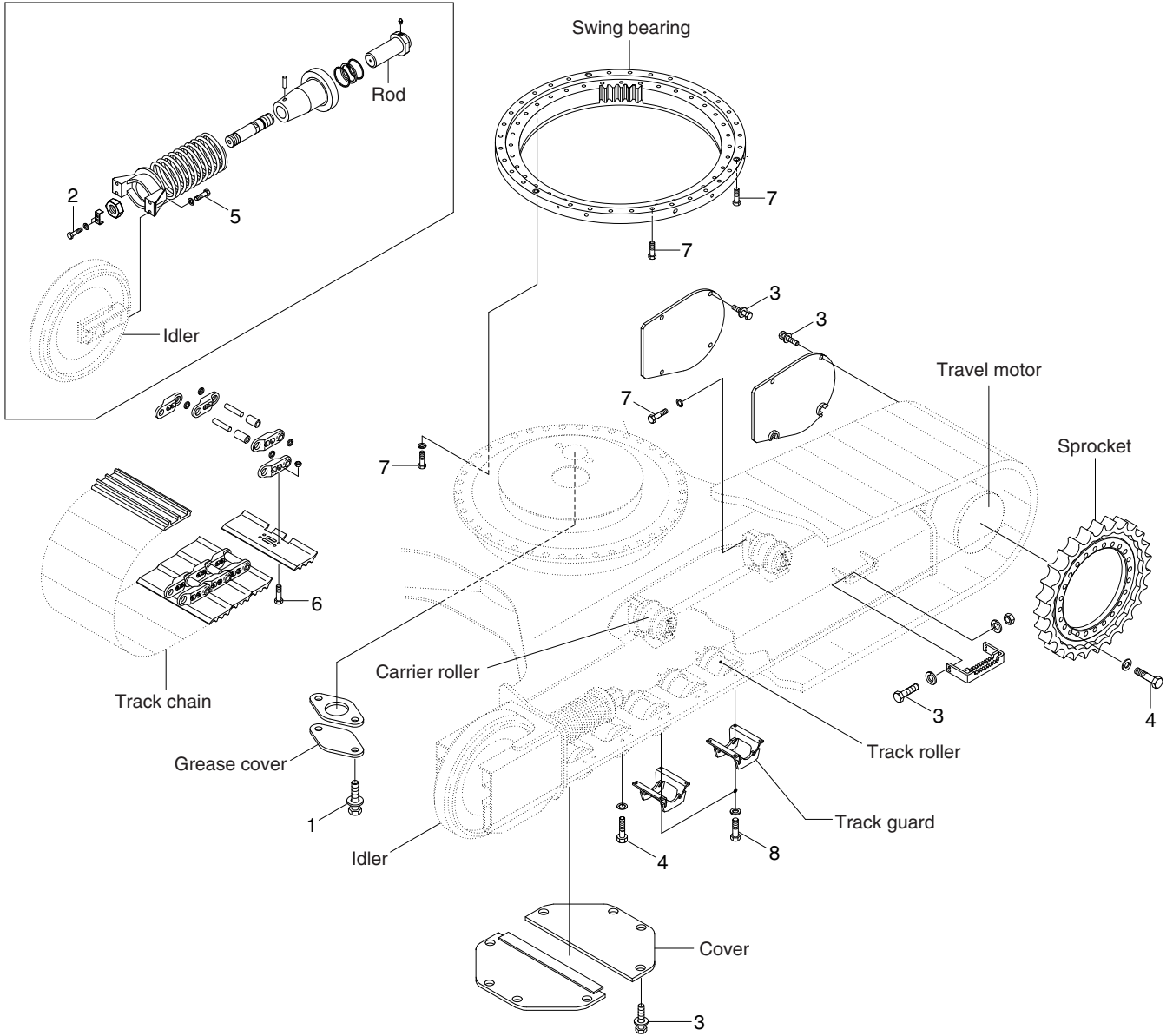
Item	Size	kgf · m	lbf · ft
1	M10×1.5	3.2±0.3	23.1±2.2
2	M10×1.5	6.9±1.4	49.9±10.1
3	M12×1.75	9.3±1.9	67.3±13.7
4	M12×1.75	12.8±3.0	92.6±21.7

Item	Size	kgf · m	lbf · ft
5	M18×2.5	32±3.0	232±21.7
6	M16×2.0	35.6±7.1	257±51
7	Accumulator	5.6±0.5	40.5±3.6
8	Check valve	2.5±0.5	18±3.6

GROUP 5 UNDERCARRIAGE

1. UNDERCARRIAGE MOUNTING

ADJUST COMPONENT



RD22099CM08

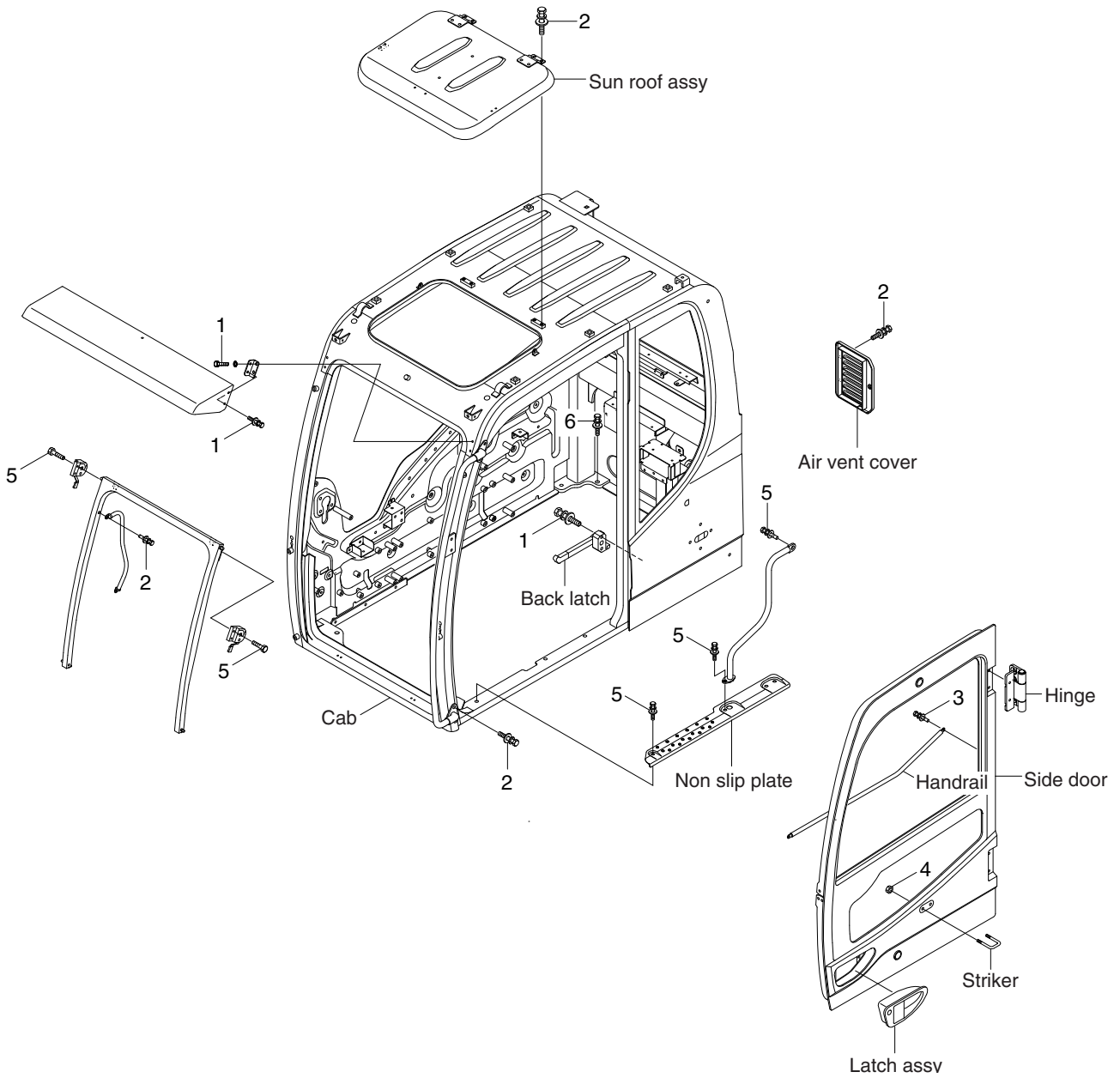
·Tightening torque

Item	Size	kgf·m	lbf·ft
1	M10×1.5	6.9±1.4	49.9±10.1
2	M12×1.25	13.3±2.7	96.2±19.5
3	M12×1.75	12.8±3.0	92.6±21.7
4	M16×2.0	29.7±3.0	215±21.7

Item	Size	kgf·m	lbf·ft
5	M16×2.0	29.7±4.5	215±32.5
6	M20×1.5	78±8.0	564±57.9
7	M20×2.5	57.9±6.0	419±43.4
8	M20×2.5	57.9±8.7	419±62.9

GROUP 6 STRUCTURE

1. CAB AND ACCESSORIES MOUNTING



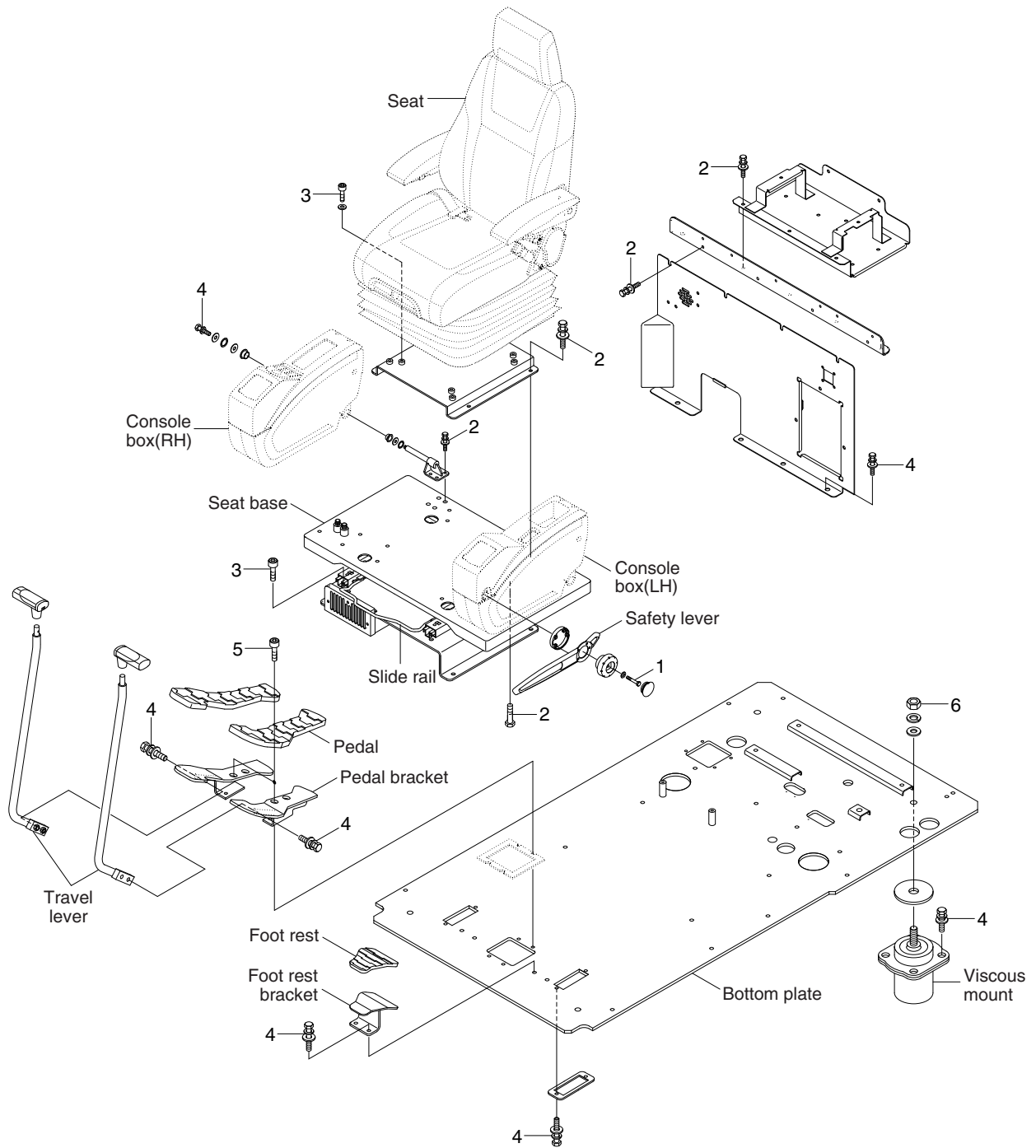
RD22099CM09

· 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	M10 × 1.5	4.7 ± 0.9	34 ± 6.5
5	M10 × 1.5	6.9 ± 1.4	49.9 ± 10.1
6	M12 × 1.75	12.8 ± 3.0	92.6 ± 21.7

2. CAB INTERIOR MOUNTING



RD22099CM10

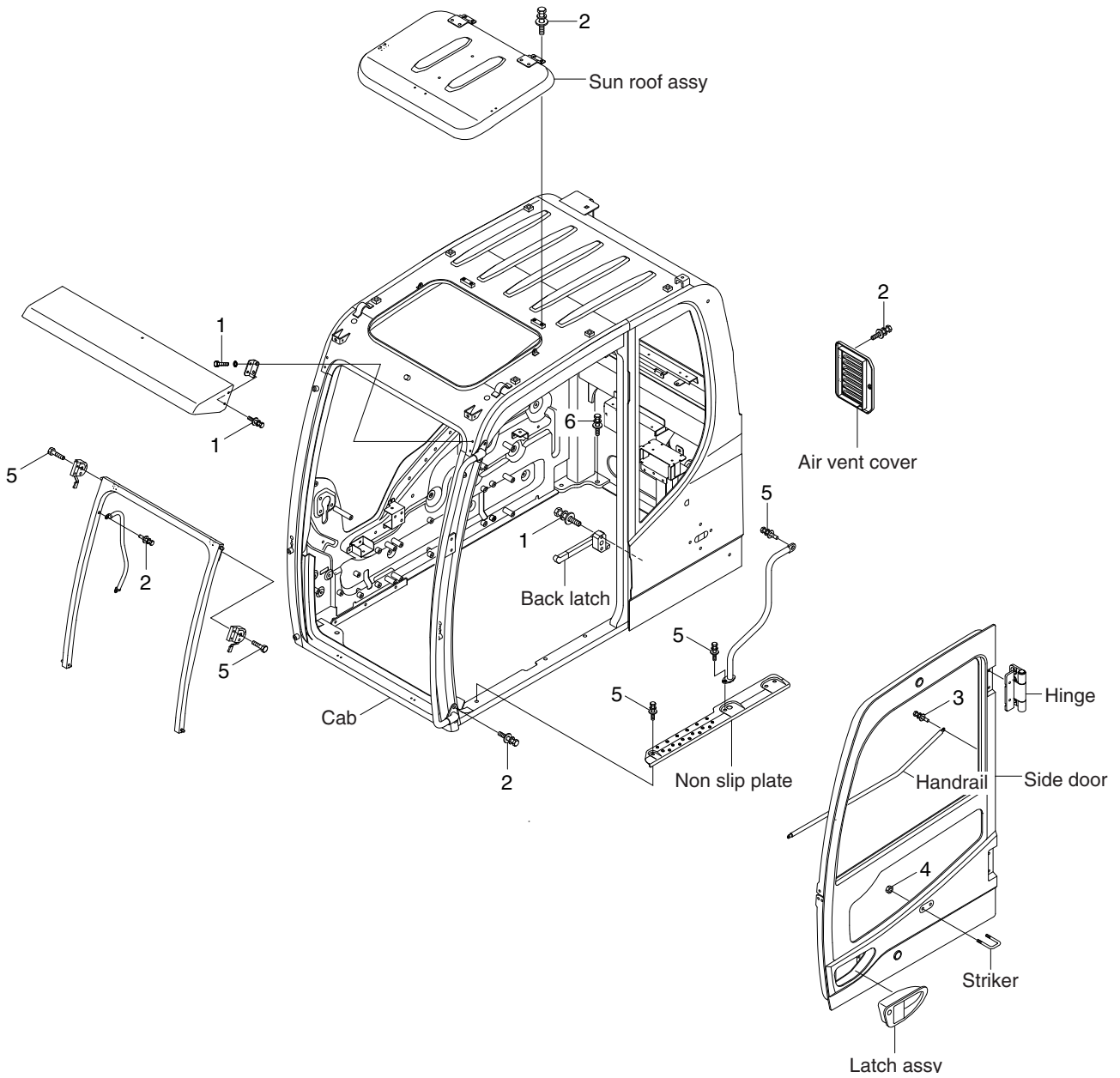
· Tightening torque

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

Item	Size	kgf · m	lbf · ft
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	M16×2.0	29.7±4.5	215±32.5

GROUP 6 STRUCTURE

1. CAB AND ACCESSORIES MOUNTING



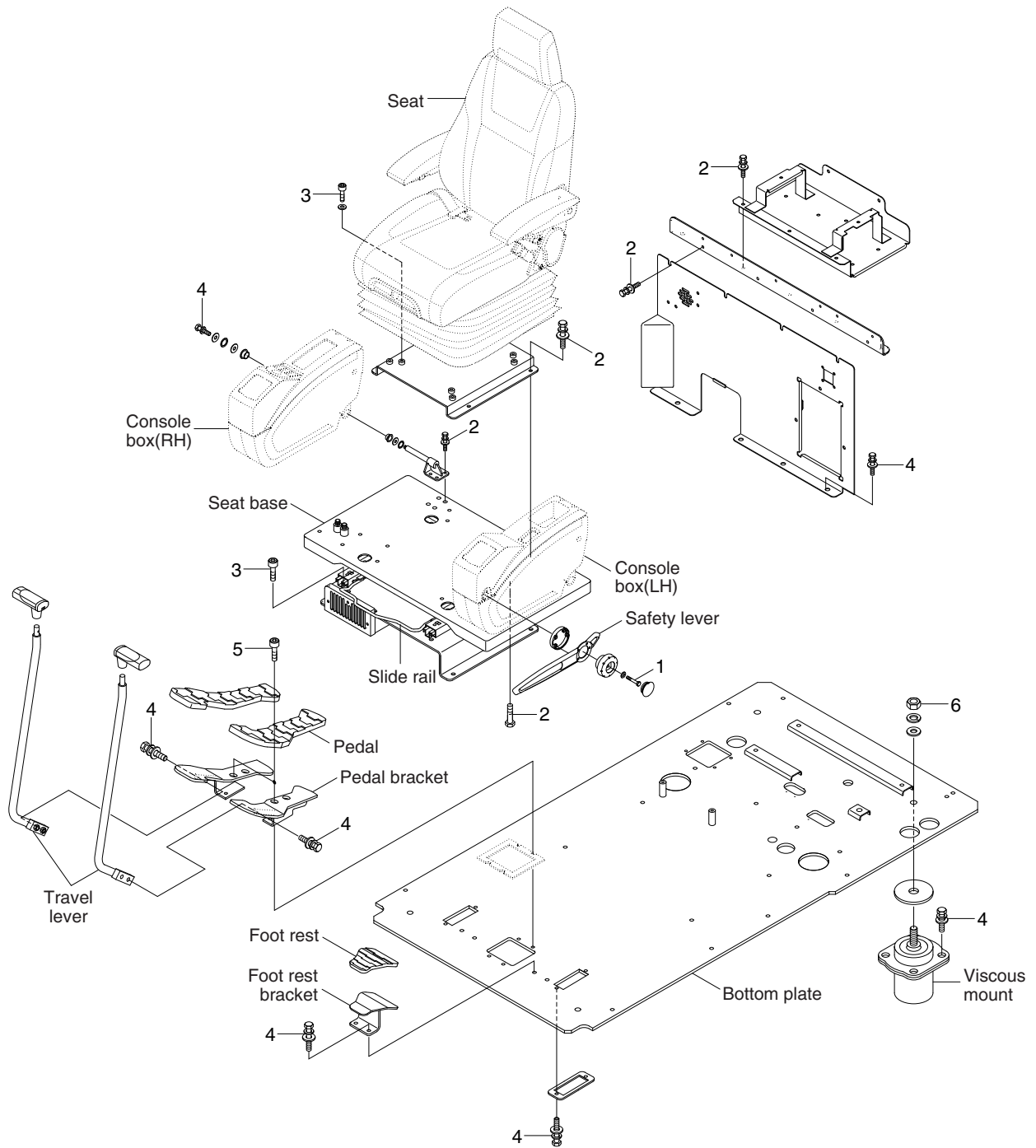
RD22099CM09

· 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	M10 × 1.5	4.7 ± 0.9	34 ± 6.5
5	M10 × 1.5	6.9 ± 1.4	49.9 ± 10.1
6	M12 × 1.75	12.8 ± 3.0	92.6 ± 21.7

2. CAB INTERIOR MOUNTING



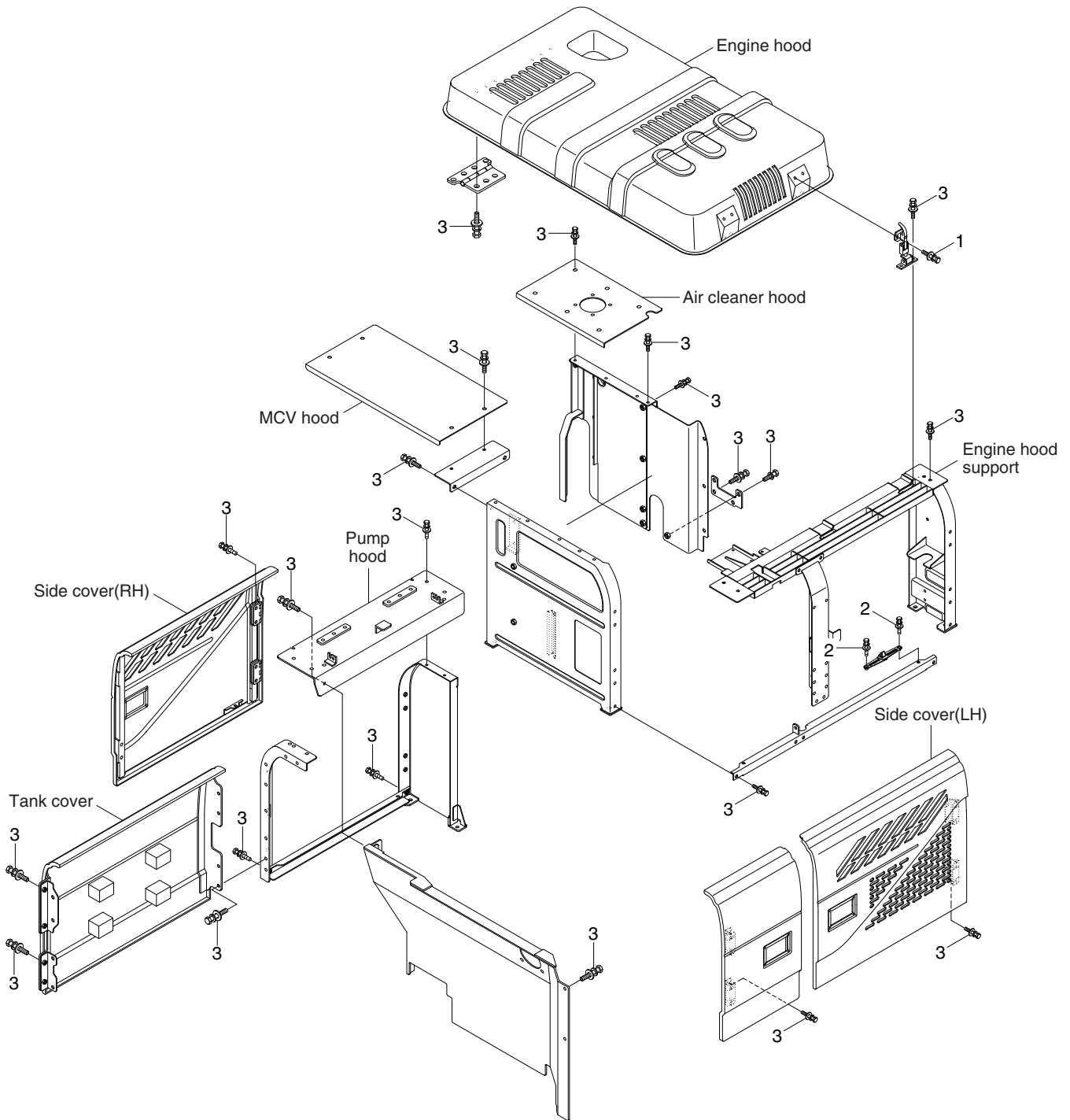
RD22099CM10

· 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

Item	Size	kgf · m	lbf · ft
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	M16×2.0	29.7±4.5	215±32.5

3. COWLING MOUNTING

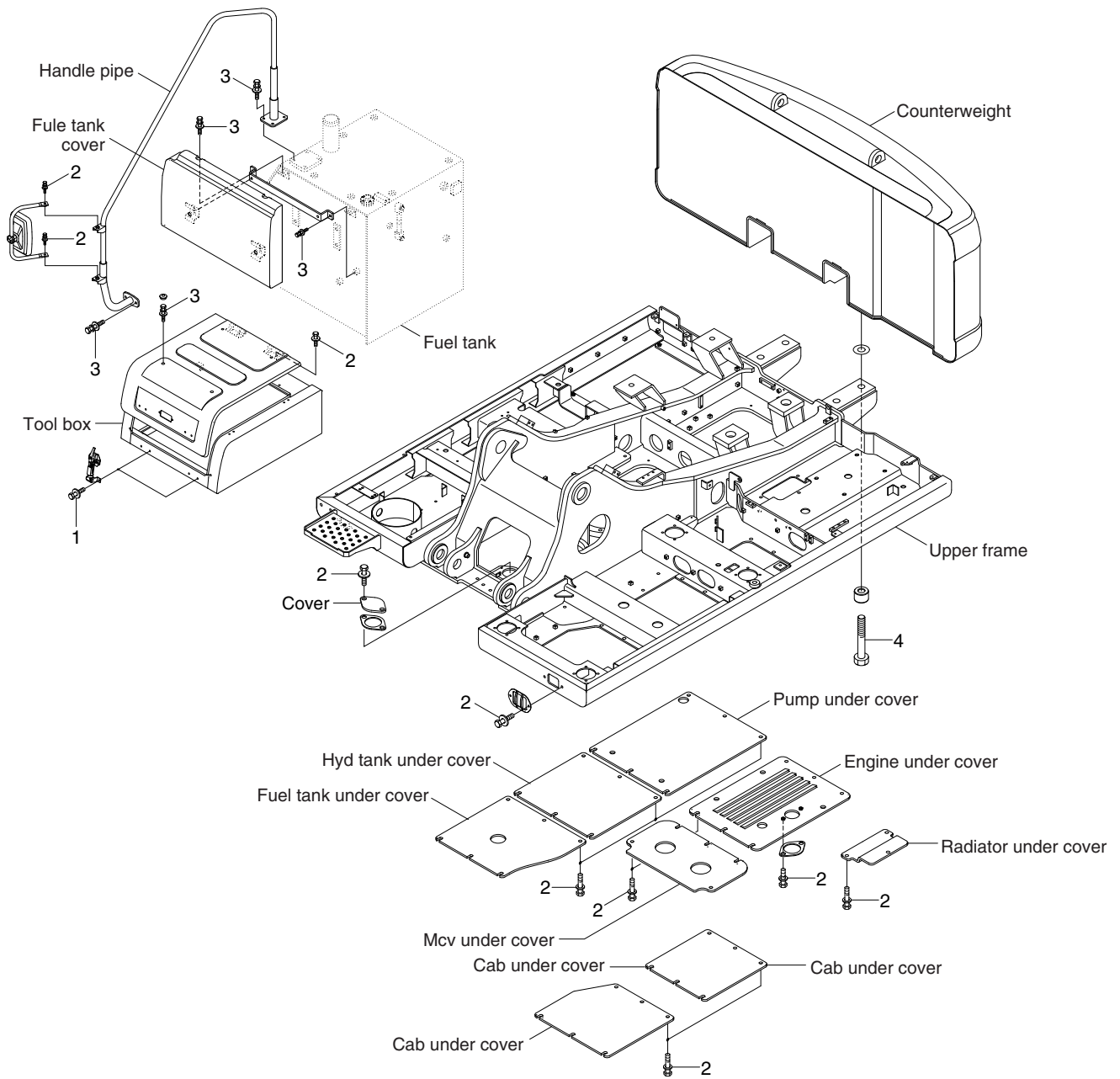


RD22099CM11

· Tightening torque

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	M12×1.75	12.8±3.0	92.6±21.7

4. COUNTERWEIGHT AND COVERS MOUNTING



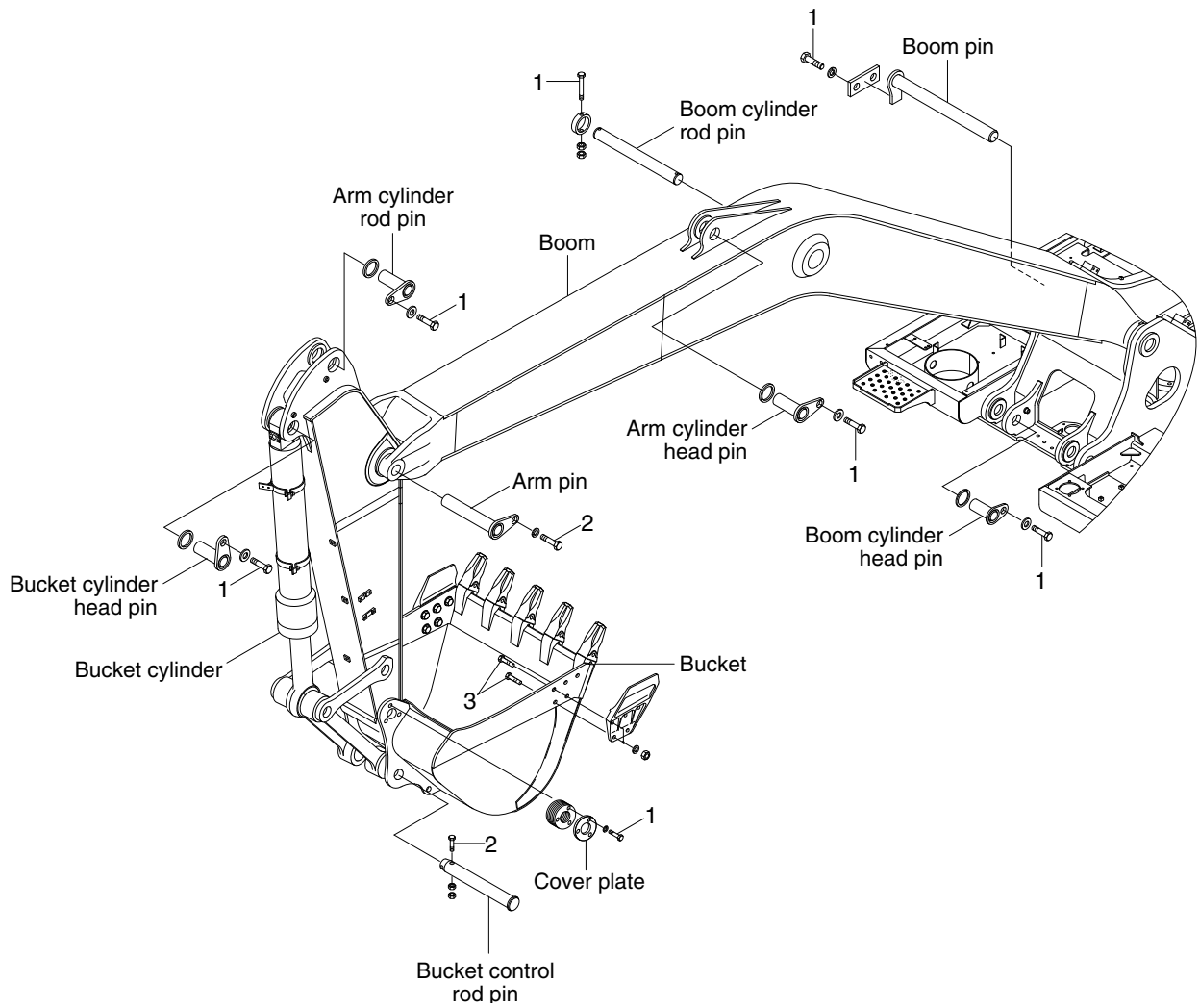
RD22099CM12

· Tightening torque

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

Item	Size	kgf · m	lbf · ft
3	M12 × 1.75	12.8 ± 3.0	92.6 ± 21.7
4	M36 × 3.0	340 ± 10	2460 ± 72.3

GROUP 7 WORK EQUIPMENT



RD22099CM13

· Tightening torque

Item	Size	kgf · m	lbf · ft
1	M16×2.0	29.7±4.5	215±32.5
2	M20×2.5	57.9±8.7	419±62.9
3	M22×2.5	81.9±16.1	592±116