

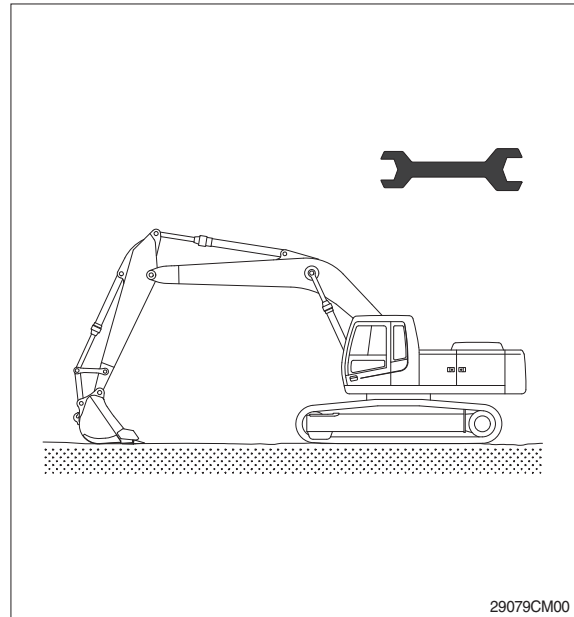
SECTION 9 COMPONENT MOUNTING TORQUE

Group 1	Introduction guide	9-1
Group 2	Engine system	9-2
Group 3	Electric system	9-5
Group 4	Hydraulic system	9-7
Group 5	Undercarriage	9-10
Group 6	Structure	9-12
Group 7	Work equipment	9-18

SECTION 9 COMPONENT MOUNTING TORQUE

GROUP 1 INTRODUCTION GUIDE

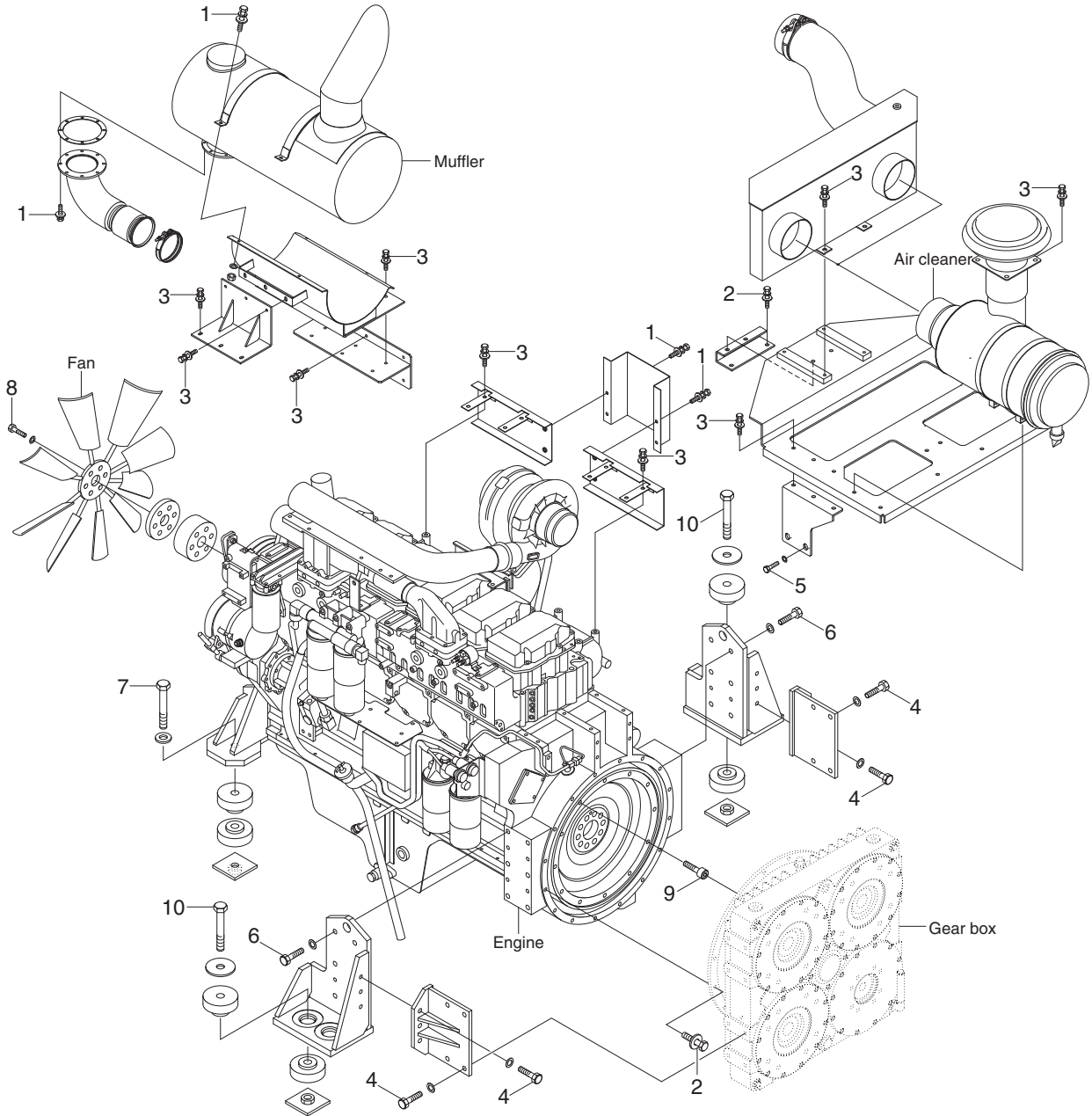
1. This section shows bolt specifications and standard torque values needed when mounting components to the machine.
 2. Use genuine Hyundai spare parts.
We expressly point out that Hyundai will not accept any responsibility for defects resulted from non-genuine parts.
In such cases Hyundai cannot assume 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.**



29079CM00

GROUP 2 ENGINE SYSTEM

ENGINE AND ACCESSORIES MOUNTING



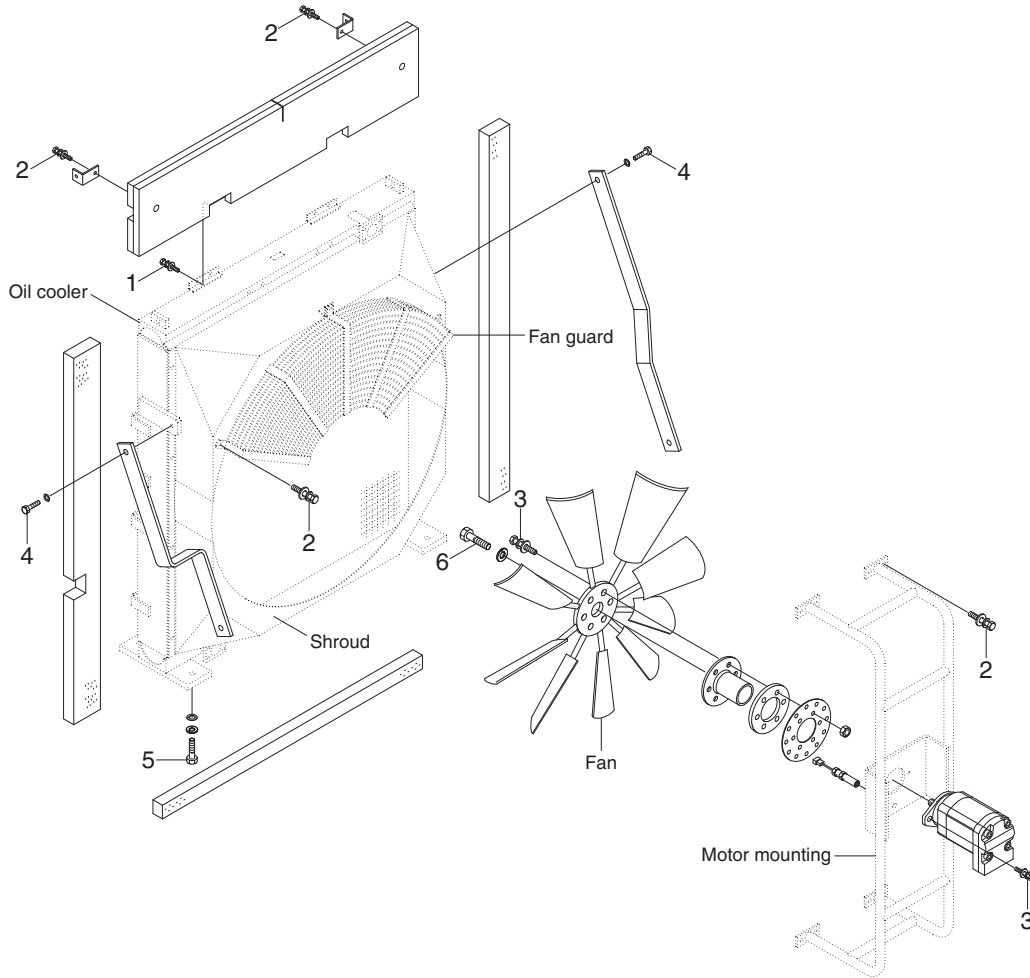
120099CM01

· Tightening torque

Item	Size	kgf · m	lbf · ft
1	M10×1.5	6.9±1.4	49.9±10.1
2	M12×1.75	12.3±1.0	89±7.2
3	M12×1.75	12.3±2.4	88.9±17.3
4	M16×2.0	29.7±3.0	215±21.7
5	M16×2.0	29.7±5.0	215±36.1

Item	Size	kgf · m	lbf · ft
6	M18×2.5	41.3±4.0	299±29
7	M22×2.5	70±7.0	506±50.6
8	1/2-13UNC	13.4±1.0	97±7.2
9	5/8-11UNC	27±3.0	195±21.7
10	M24×3.0	100±10	723±7.2

OIL COOLER AND FAN DRIVE MOUNTING



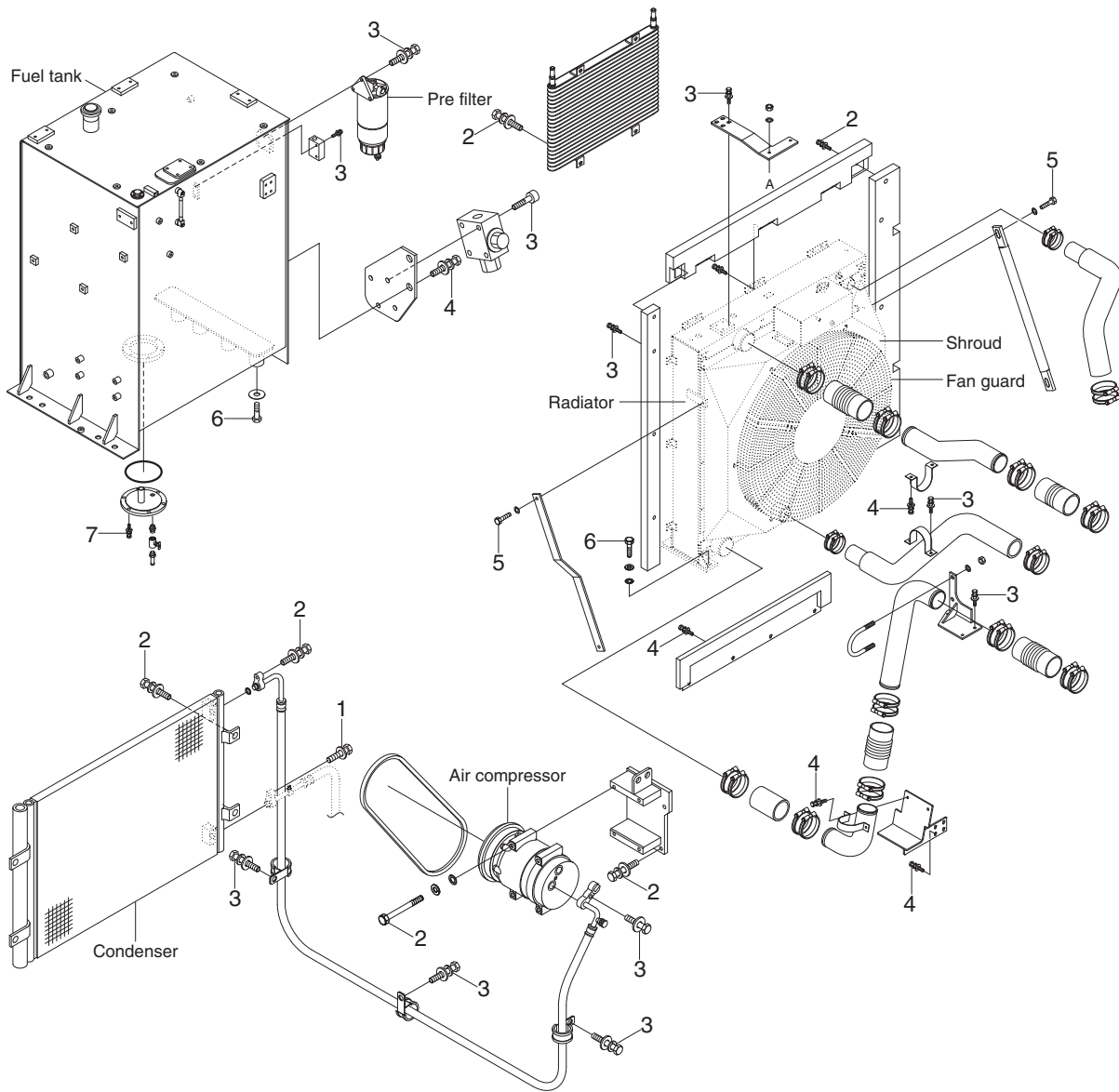
120099CM02

· 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
3	M12×1.75	12.8±3.0	92.6±21.7

Item	Size	kgf · m	lbf · ft
4	M14×2.0	14.4±2.2	104±16
5	M20×2.5	57.9±8.7	419±62.9
6	5/16-18UNC	3.4±0.4	24.6±2.9

COOLING SYSTEM AND FUEL TANK MOUNTING



120099CM03

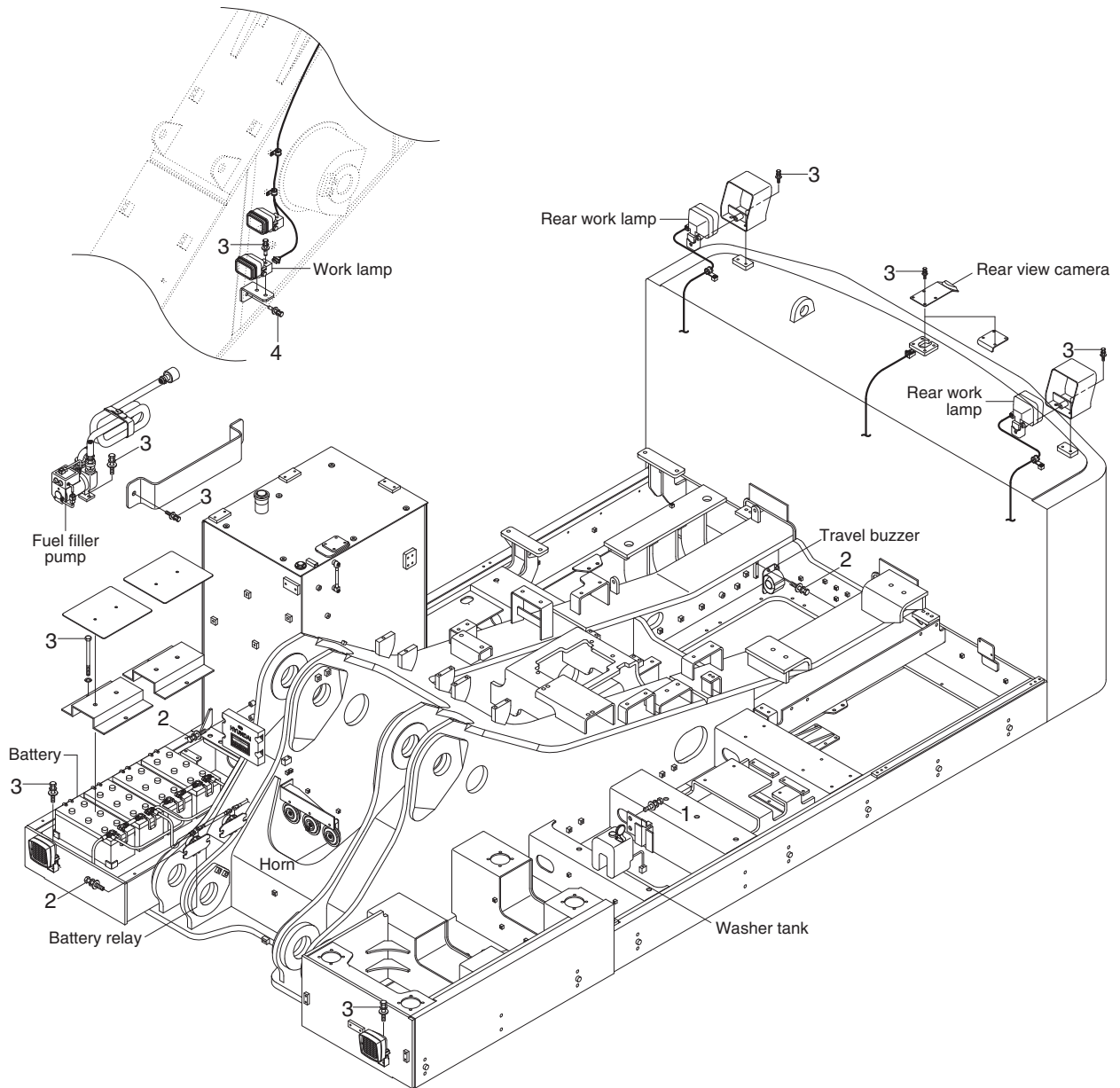
· Tightening torque

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
3	M10 × 1.5	6.9 ± 1.4	49.9 ± 10.1
4	M12 × 1.75	12.8 ± 3.0	92.6 ± 21.7

Item	Size	kgf · m	lbf · ft
5	M14 × 2.0	14.4 ± 2.2	104 ± 16
6	M20 × 2.5	45 ± 5.1	325 ± 37
7	-	2.3 ± 0.6	16.6 ± 4.3

GROUP 3 ELECTRIC SYSTEM

ELECTRIC COMPONENTS MOUNTING 1



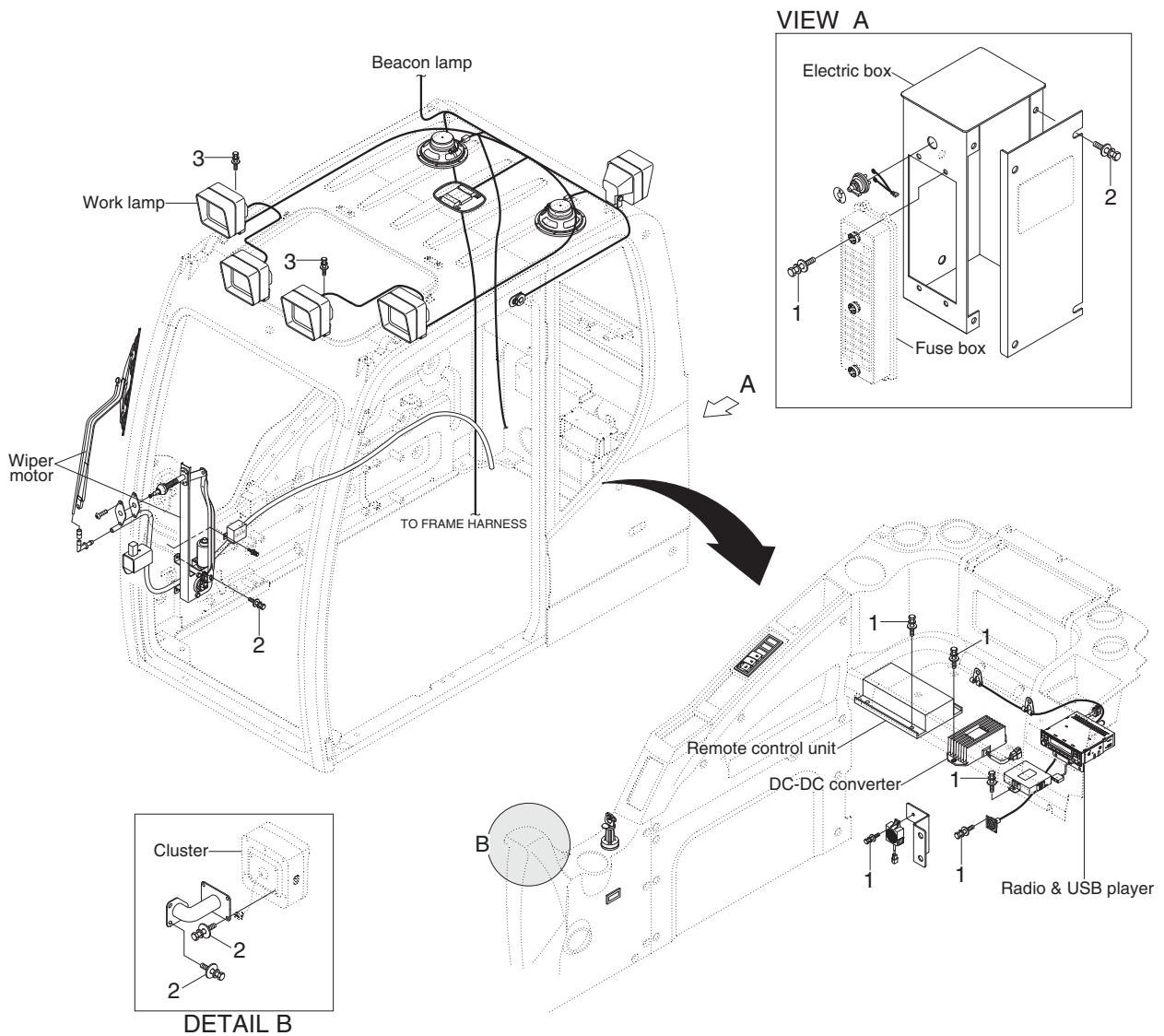
120099CM04

· 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	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



120099CM05

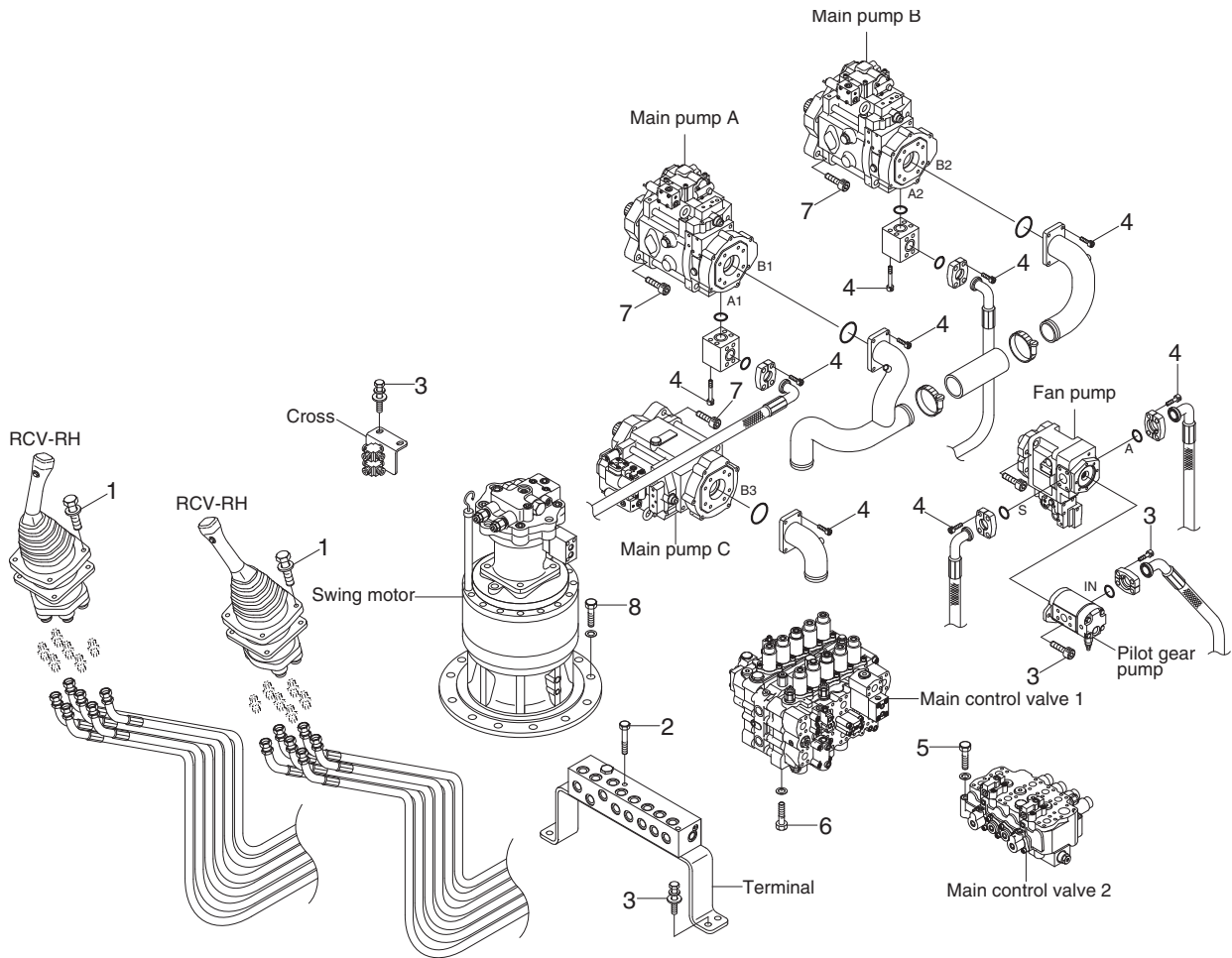
· Tightening torque

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	M10×1.5	6.9±1.4	49.9±10.1

GROUP 4 HYDRAULIC SYSTEM

HYDRAULIC COMPONENTS MOUNTING 1



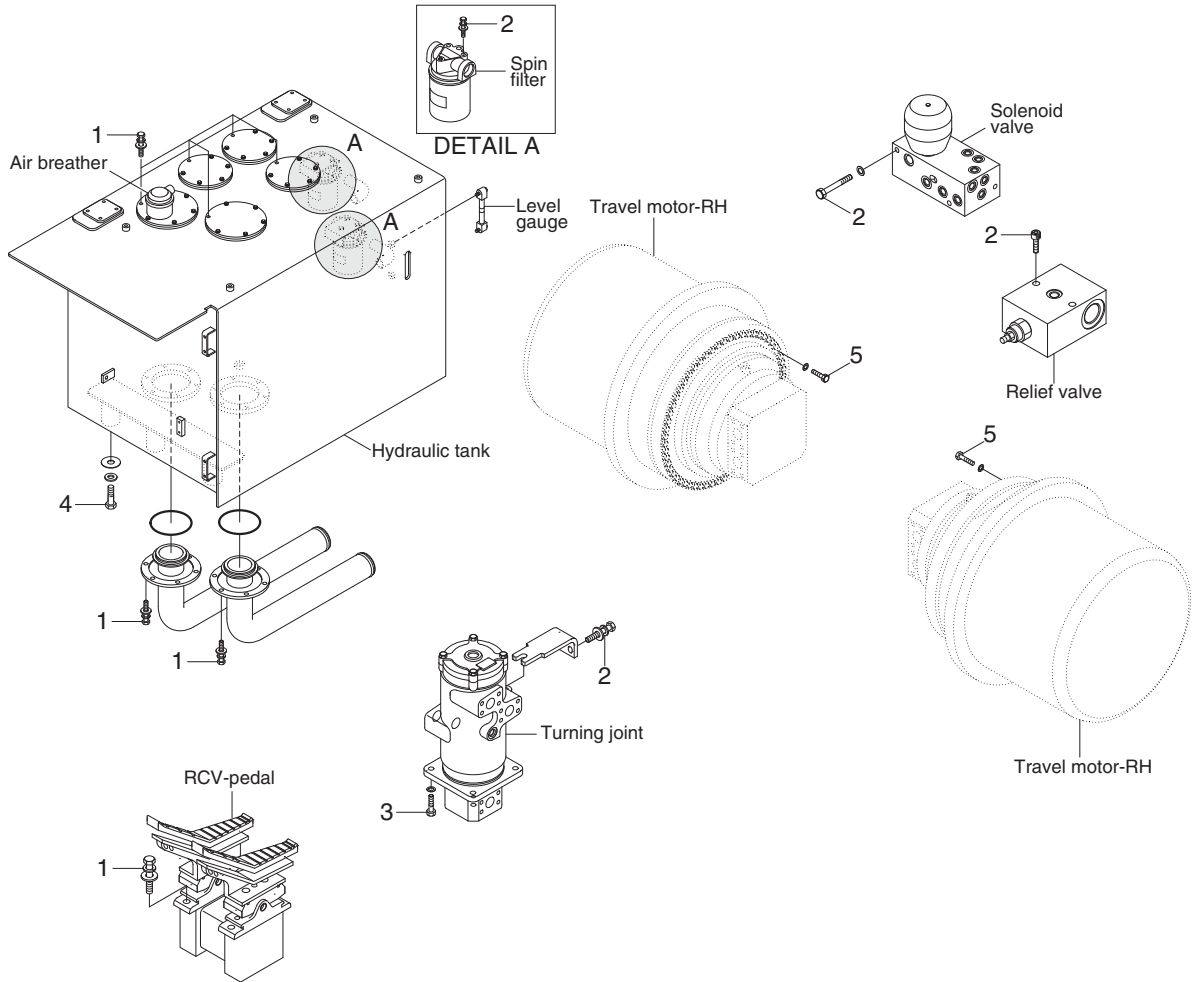
120099CM06

· 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
4	M12×1.75	12.3±1.3	88.2±9.4

Item	Size	kgf · m	lbf · ft
5	M16×2.0	29.7±4.4	215±31.8
6	M20×2.5	42.6±4.2	308±30.3
7	M20×2.5	57.9±8.7	419±62.9
8	M24×3.0	100±15	723±108

HYDRAULIC COMPONENTS MOUNTING 2



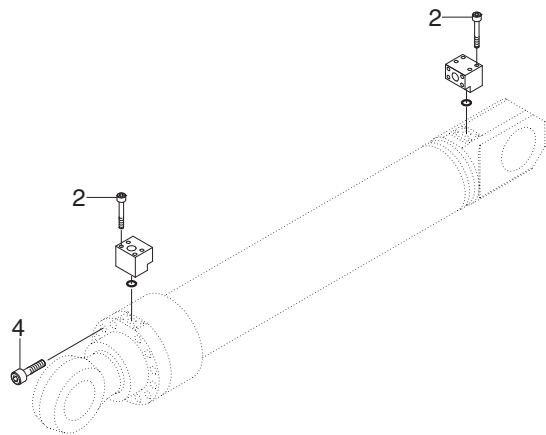
120099CM17

· 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	29.7±4.5	215±32.5

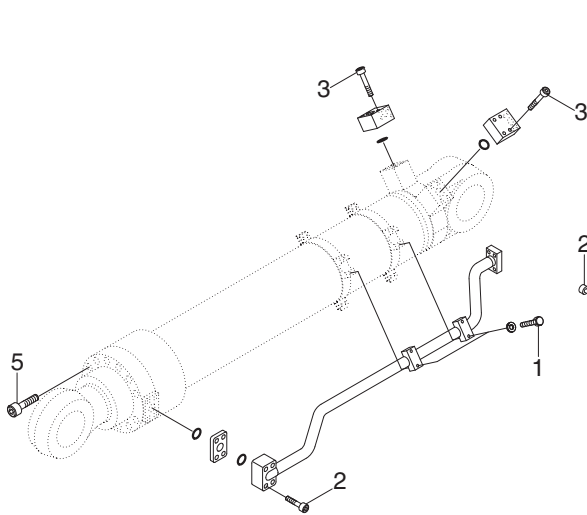
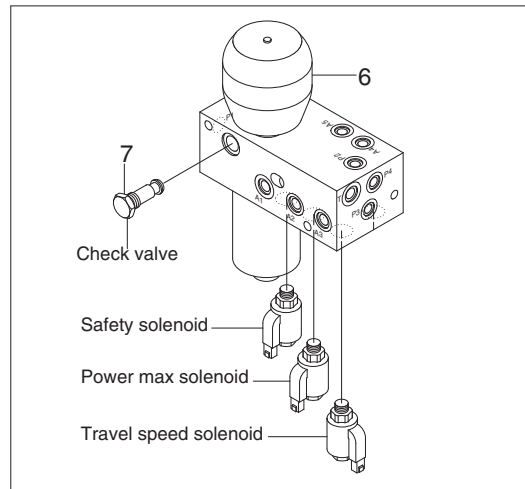
Item	Size	kgf · m	lbf · ft
4	M20×2.5	57.9±8.7	419±62.9
5	M30×3.5	150±10	1085±72.3

HYDRAULIC COMPONENTS MOUNTING 3

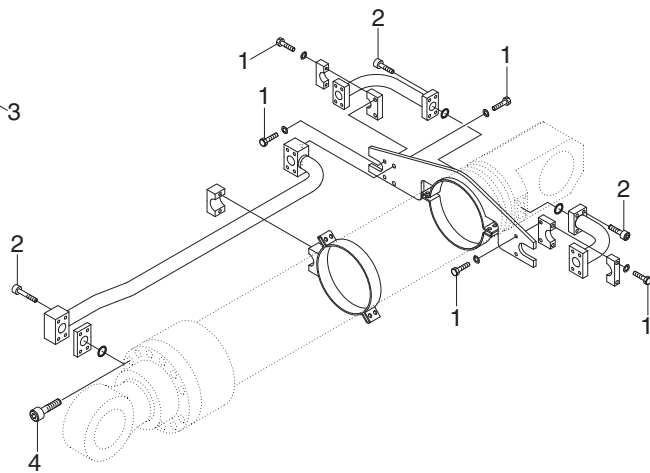


BOOM CYLINDER

Solenoid valve



ARM CYLINDER



BUCKET CYLINDER

120099CM07

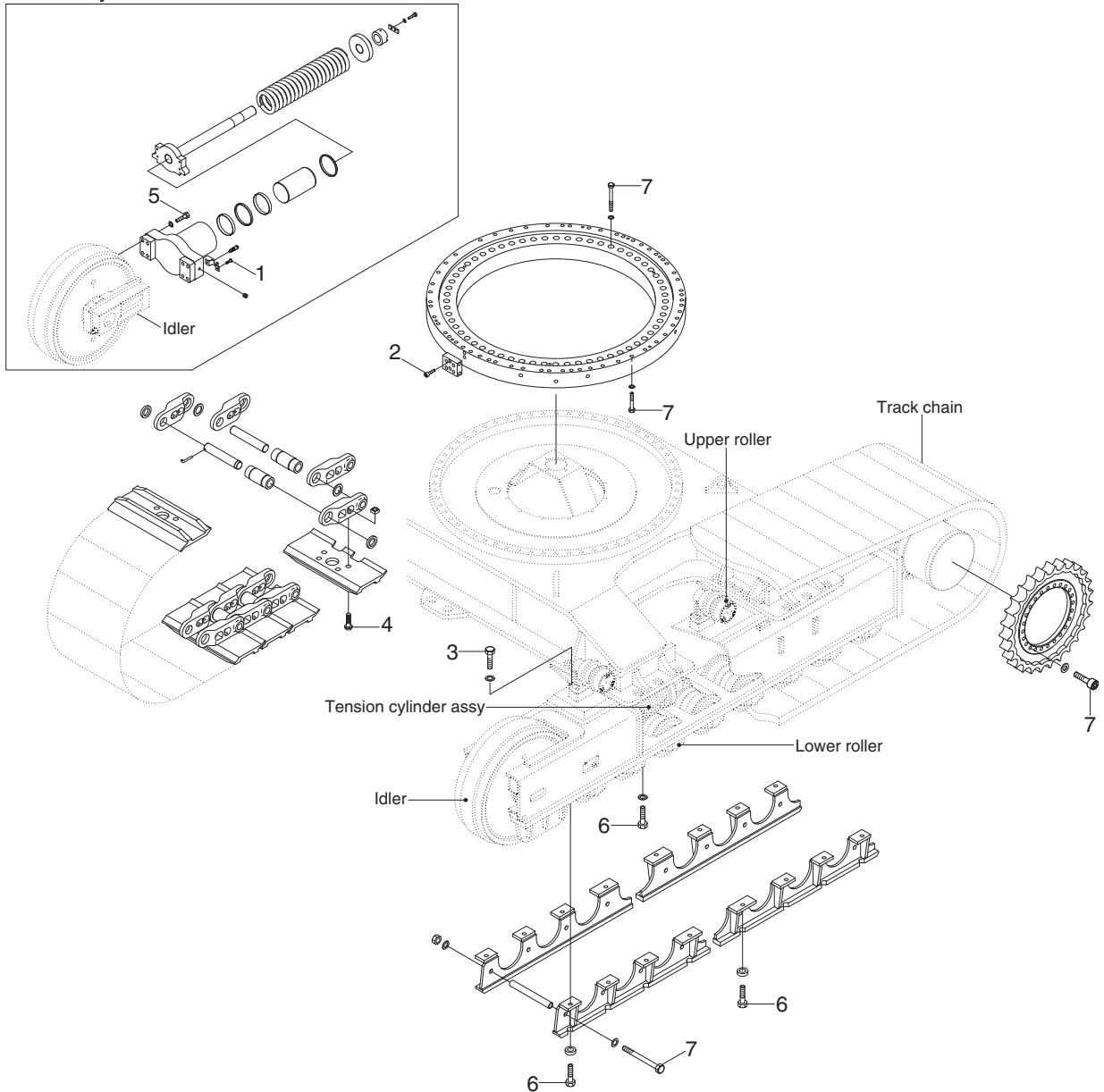
· Tightening torque

Item	Size	kgf · m	lbf · ft
1	M12×1.75	9.4±1.0	68.0±7.2
2	M14×2.0	15±1.5	109±10.8
3	M16×2.0	23±2.3	166±16.6
4	M30×3.5	157±16	1136±116

Item	Size	kgf · m	lbf · ft
5	M33×3.5	215±21.5	1555±156
6	M22×2.5	4.1	29.6
7	M27×3.0	5.1	36.9

GROUP 5 UNDERCARRIAGE

Tension cylinder



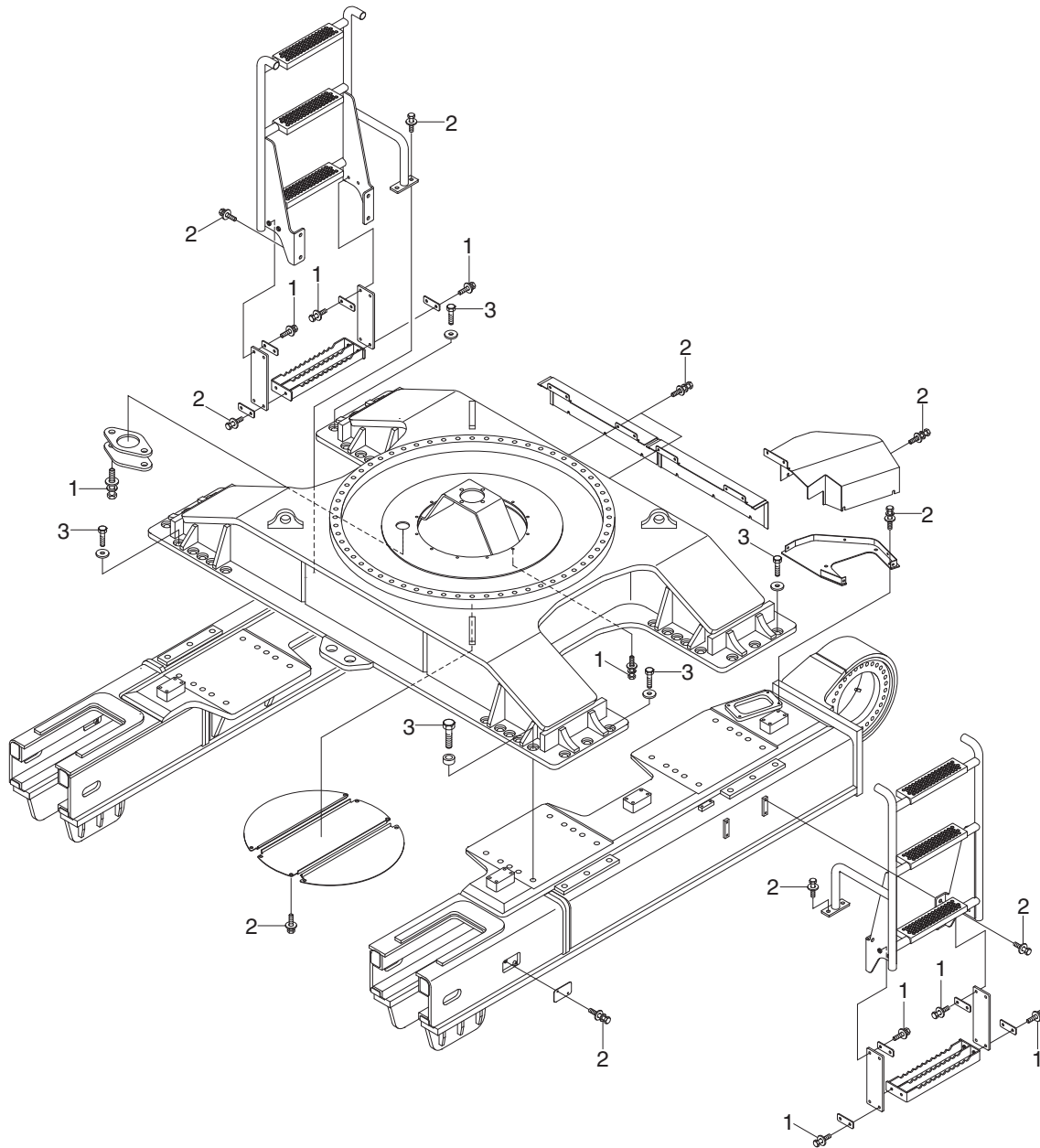
120099CM08

· 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	M20×2.5	57.9±8.7	419±63
4	M24×1.5	240±2.0	1736±50.6

Item	Size	kgf · m	lbf · ft
5	M24×3.0	100±10	723±72.3
6	M27×3.0	140±7.0	1013±50.6
7	M30×3.5	199±10	1439±72.3

COVER AND FOOT BOARD MOUNTING



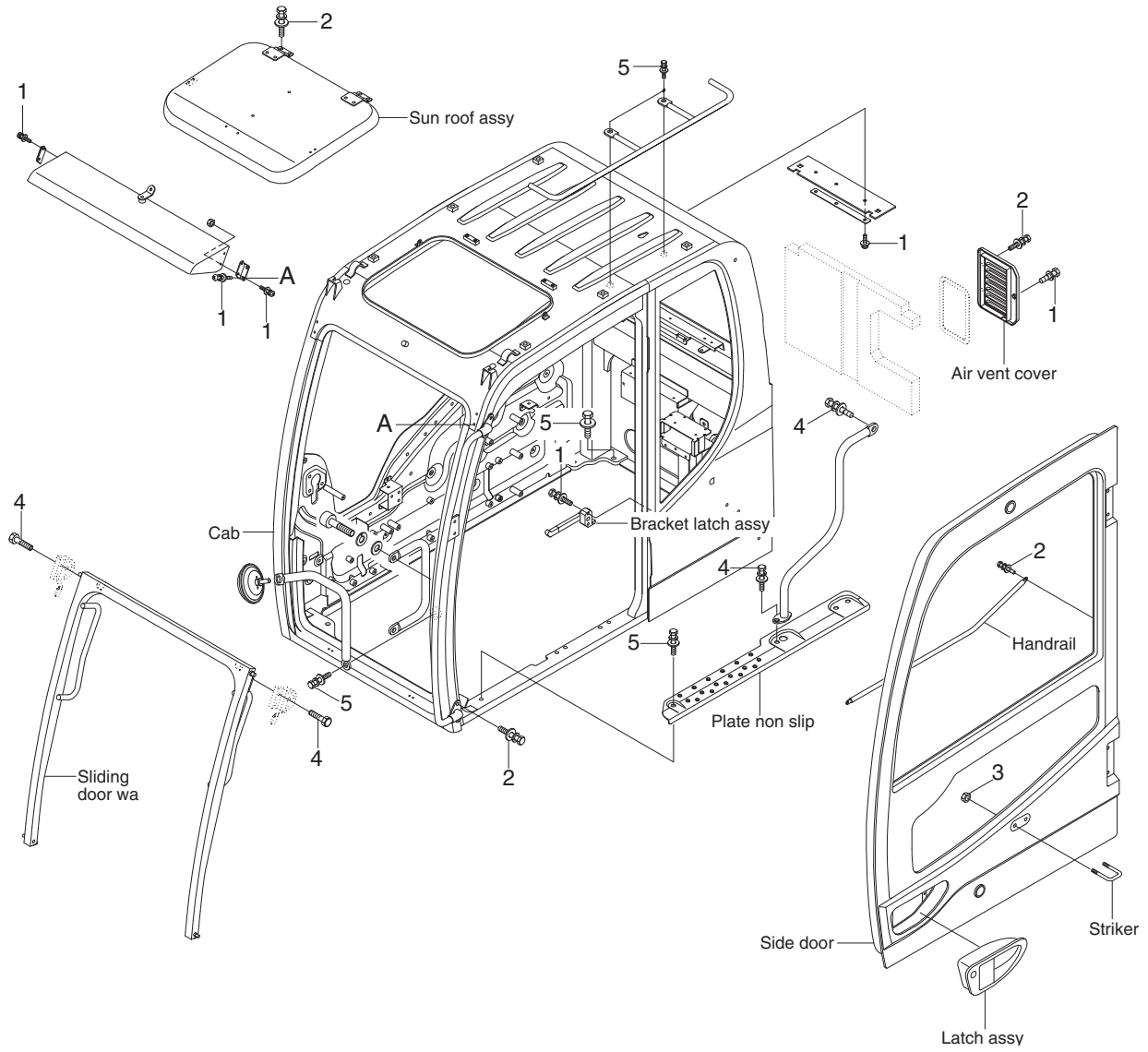
120099CM09

· 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	M42×4.5	483±48	3494±347

GROUP 6 STRUCTURE

CAB AND ACCESSORIES MOUNTING



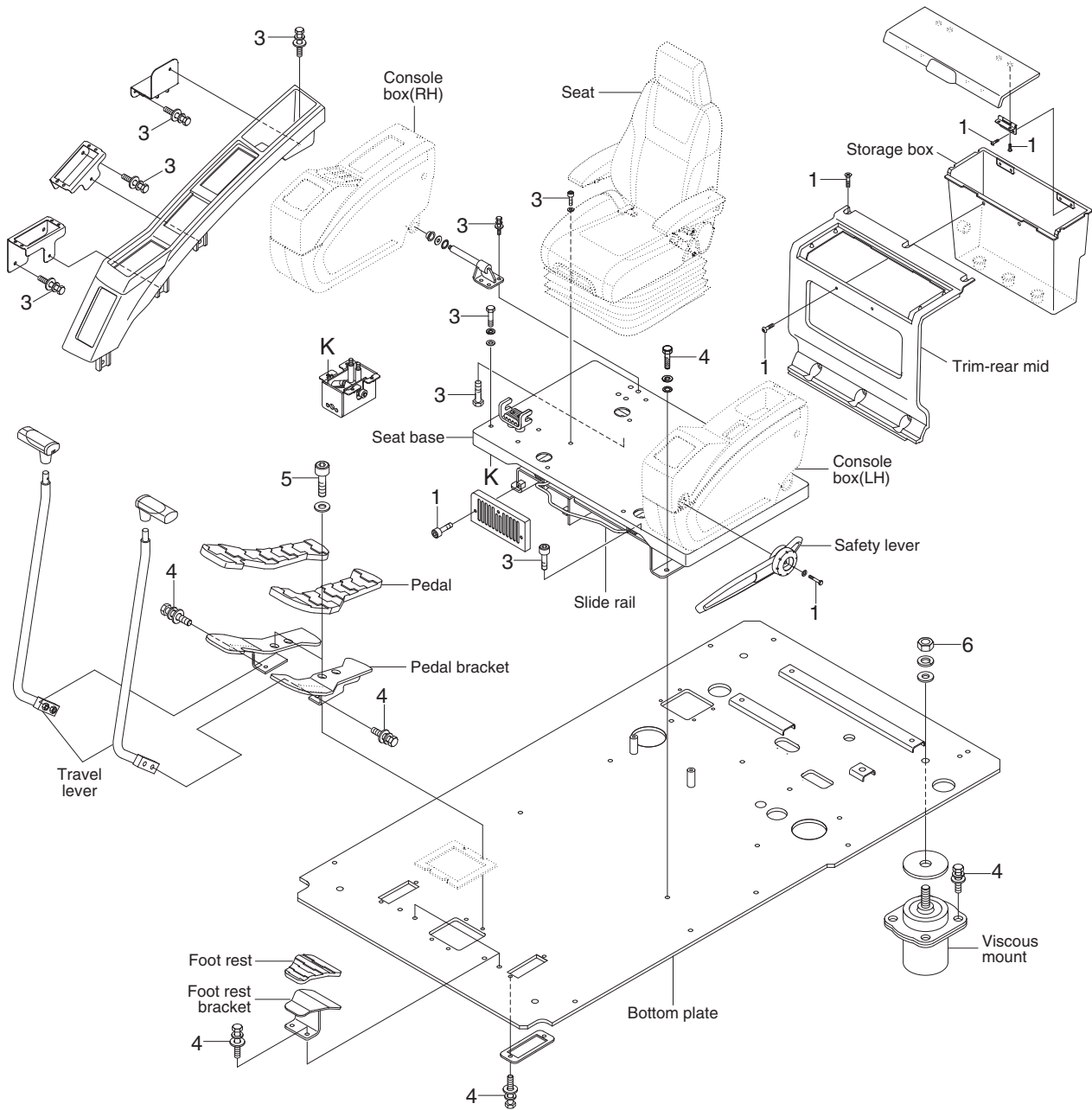
120099CM10

· Tightening torque

Item	Size	kgf · m	lbf · ft
1	M 6×1.0	0.49±0.1	3.5±0.7
2	M 8×1.25	2.5±0.5	18.1±3.6
3	M10×1.5	4.7±0.9	34±6.5

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

CAB INTERIOR MOUNTING



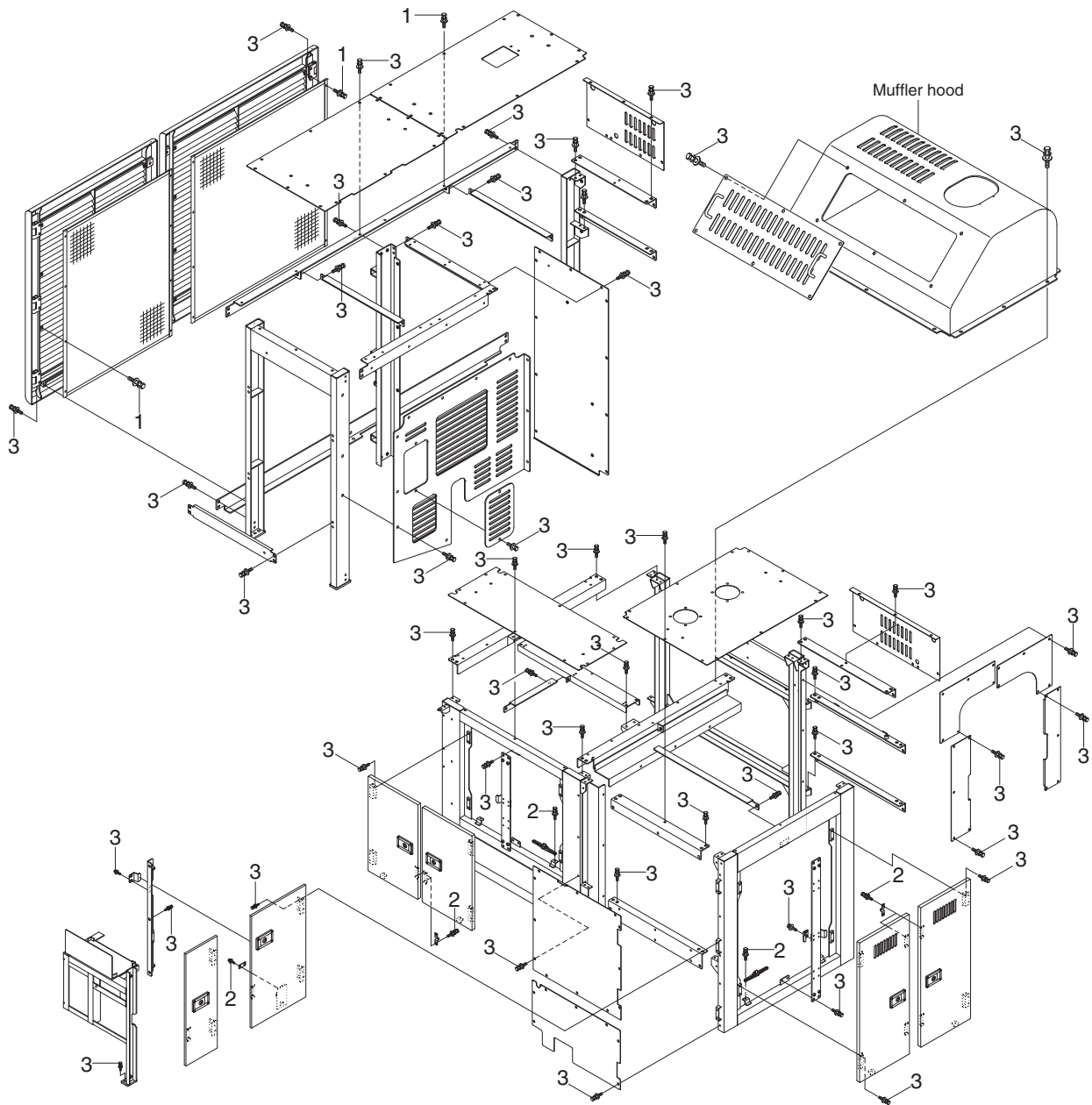
120099CM11

• Tightening torque

Item	Size	kgf · m	lbf · ft
1	M 6×1.0	0.49±0.1	3.5±0.7
2	M 8×1.25	4.05±0.8	29.3±5.8
3	M 8×1.25	2.5±0.5	18.1±3.6

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

COWLING MOUNTING



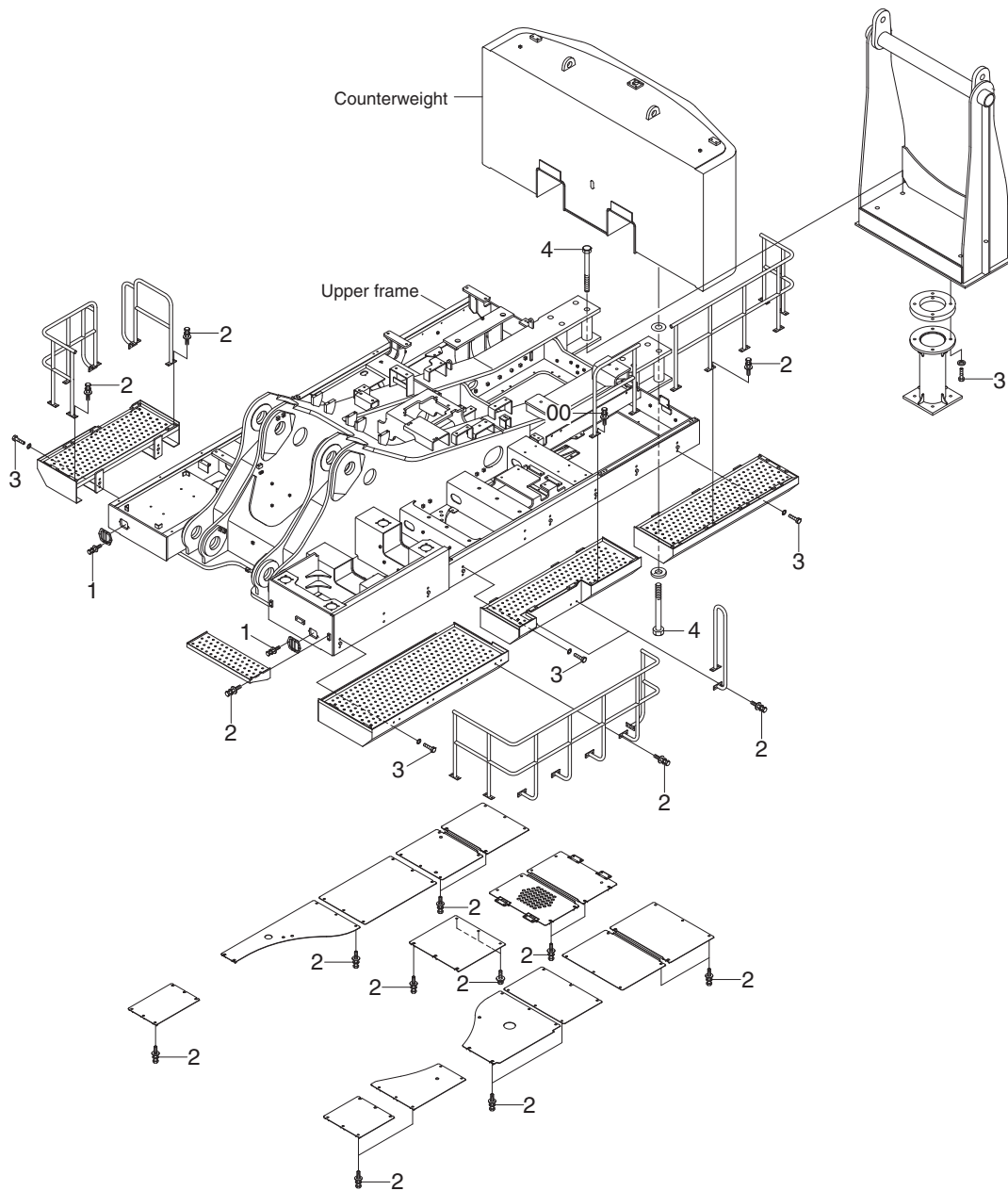
120099CM12

· 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

COUNTERWEIGHT AND COVERS MOUNTING



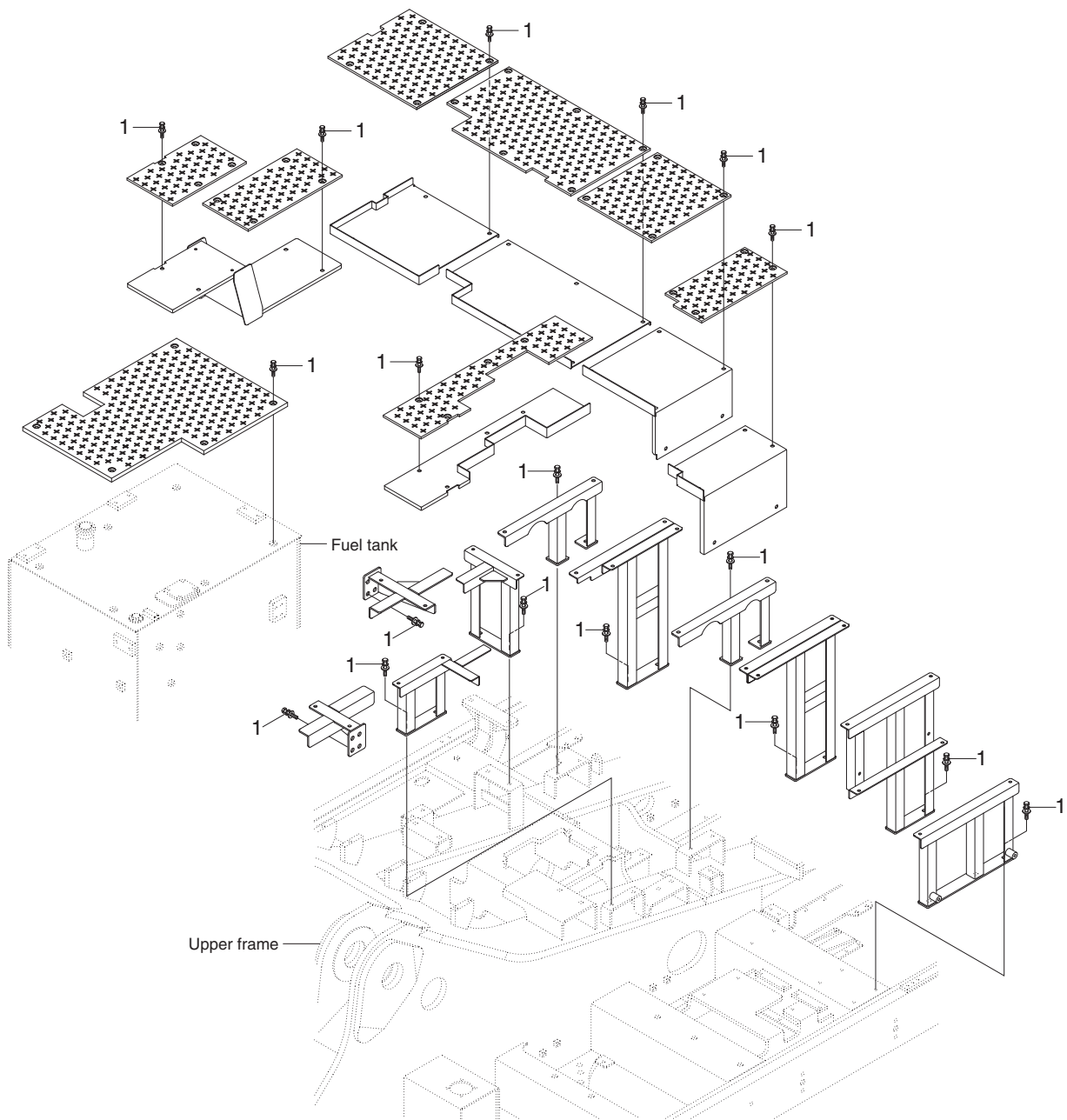
120099CM13

· 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

Item	Size	kgf · m	lbf · ft
3	M16×2.0	29.7±4.5	215±32.5
4	M42×3.0	390±40	2821±289

PLATFORM MOUNTING

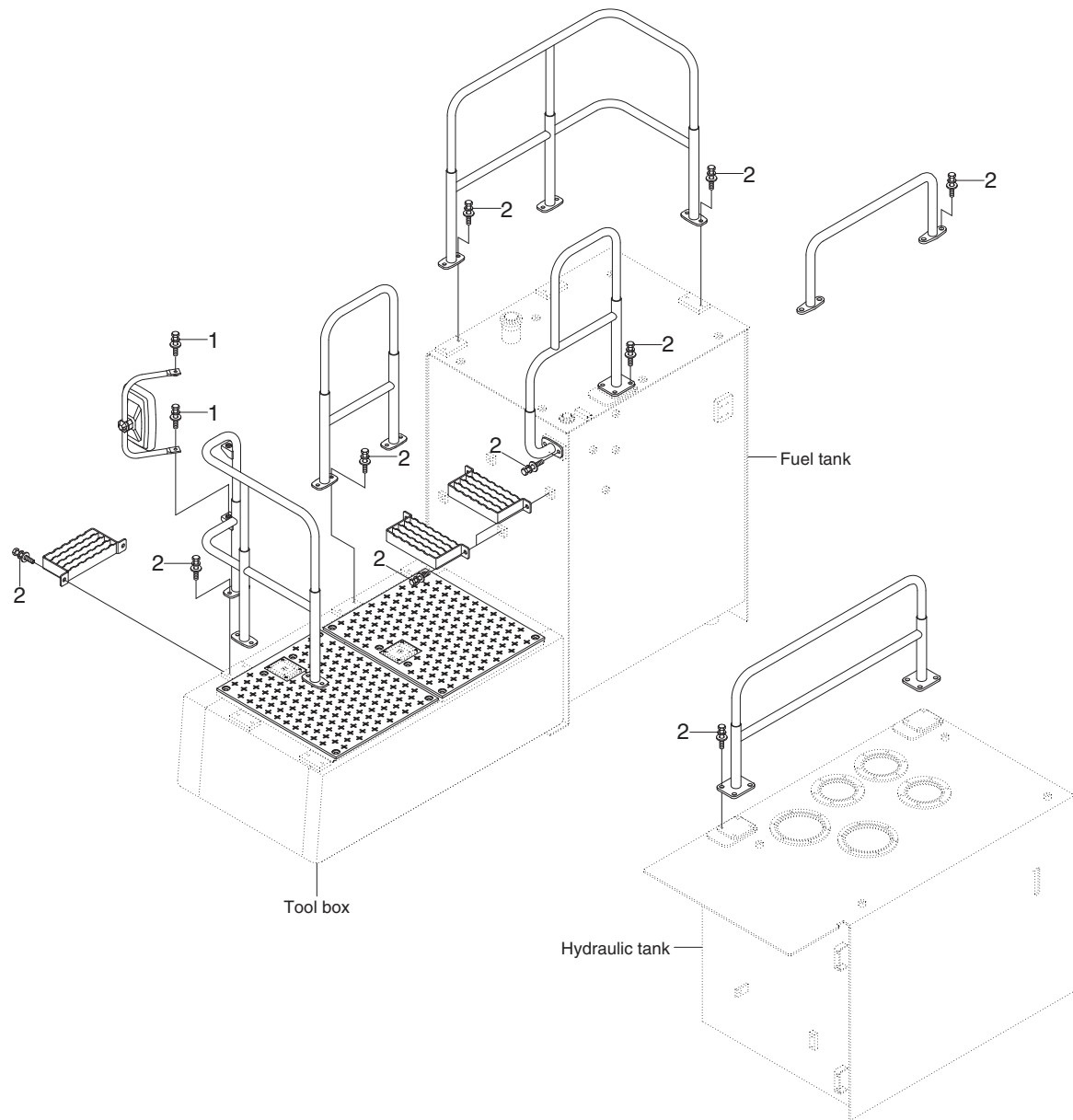


120099CM14

· Tightening torque

Item	Size	kgf · m	lbf · ft
1	M12×1.75	12.8±3.0	92.6±21.7

HANDRAIL AND TOOL BOX MOUNTING

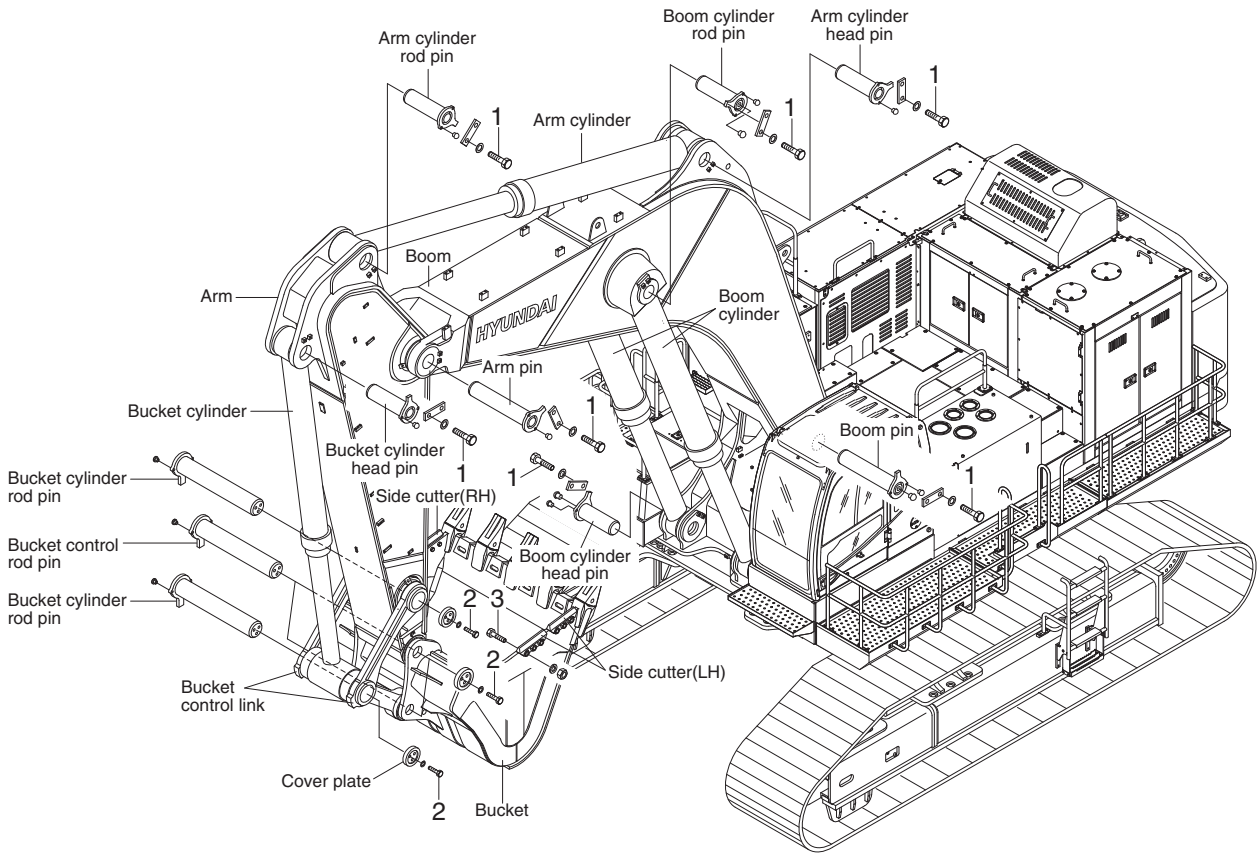


120099CM15

· 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

GROUP 7 WORK EQUIPMENT



120099CM16

· Tightening torque

Item	Size	kgf · m	lbf · ft
1	M16×2.0	29.7±4.5	215±32.5
2	M24×3.0	100±15	723±108

Item	Size	kgf · m	lbf · ft
3	M30×3.5	199±30	1439±217
-	-	-	-