



# Installation Instructions

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## **Radiator Assembly A029F540 and Air Cleaner Assembly AC6073**

**Used on Generator Sets with KTA50G3 Engines**



## Installation Instructions for Radiator Assembly A029F540 and Air Cleaner Assembly AC6073 (Used on Generator Sets with KTA50G3 Engines)

This instruction sheet describes the installation of the radiator assembly shown in [Figure 16](#) on a KTA50G3 engine. The fan (part number A007Y009) is supplied loose and must be installed before installing this kit. [Figure 17](#) is an outline drawing showing the radiator and air cleaner assemblies installed.

The KTA50G3 engine is sold with the AC6073 air cleaner assembly installed. [Figure 15](#) is included in this instruction sheet to provide air cleaner replacement parts information.

The following items must be supplied by the customer to complete the installation.

Part Description	Qty	Where Used
Radiator Hold-Down Bolts	12	To secure the radiator to the bed frame
Low Coolant Level Sensor	1	On Radiator
Loctite 577 Thread Sealant	1	To install LCL Sensor

### GENERAL PRECAUTIONS

Read these installation instructions completely and become familiar with safety warnings, cautions, and the installation procedure before starting.

#### **WARNING**

**Incorrect service or replacement of parts can result in severe personal injury or death, and/or equipment damage. Service personnel must be trained and experienced to perform electrical and mechanical service.**

#### **WARNING**

**Ignition of explosive battery gases can cause severe personal injury or death. Arcing at battery terminals, light switch or other equipment, flame, pilot lights and sparks can ignite battery gas. Do not smoke, or switch trouble light ON or OFF near battery. Discharge static electricity from body before touching batteries by first touching a grounded metal surface.**

***Ventilate the battery area before working on or near the battery—Wear goggles—Stop the genset and disconnect the battery charger before disconnecting battery cables—Disconnect the negative (-) cable first and reconnect it last.***

#### **CAUTION**

***Disconnect the battery charger from its AC source before disconnecting battery cables. Otherwise, disconnecting the cables can result in voltage spikes damaging to DC control circuits of the genset.***

#### **WARNING**

***Accidental starting of the generator set can cause severe personal injury or death. Prevent accidental starting by disconnecting the negative (-) cable from the battery terminal.***

### REQUIRED TOOLS

This installation requires the following tools:

- Lifting Straps and Shackles
- 17mm Spanner Wrench
- 17mm Socket/Air Ratchet

## INSTALLATION

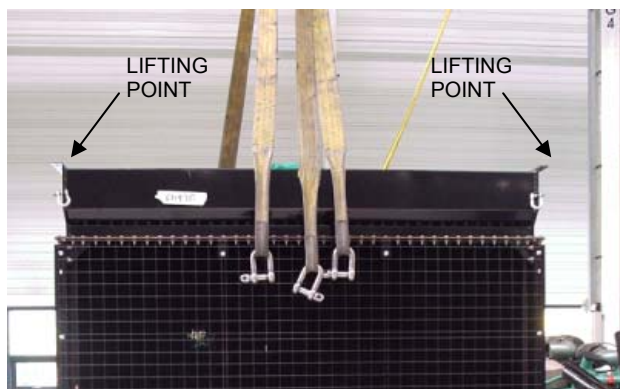
The numbers in parenthesis ( ) correspond to the part callout numbers in [Figure 16](#).

1. Make sure the generator set is disabled.
  - a) The generator set Run/Off/Auto switch is in the Off position.
  - b) The battery charger (if equipped) is turned off and disconnected.
  - c) The negative (-) cable from the battery is disconnected to prevent accidental starting.
2. Remove the shipping container from the radiator assembly and remove all loose items. Check the radiator and components are free from defects.



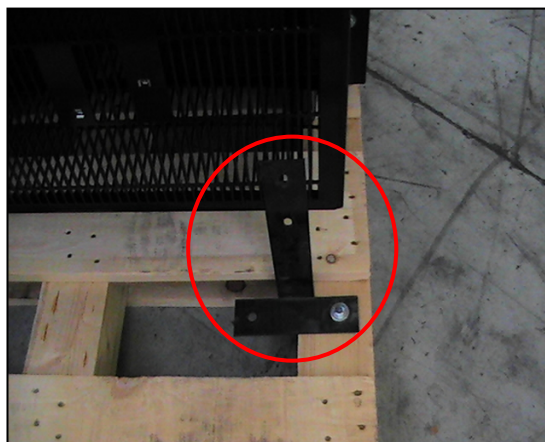
**FIGURE 1: RADIATOR ON SHIPPING PALLET**

3. Attach suitable lifting equipment to the designated lifting points (See [Figure 2](#)) either side of the radiator, ensure the equipment is tensioned prior to releasing the transit screws.



**FIGURE 2: SHACKLES AND LIFTING STRAPS**

4. Remove the guarding transit bracket fixings and discard to the appropriate waste facility. See [Figure 3](#)



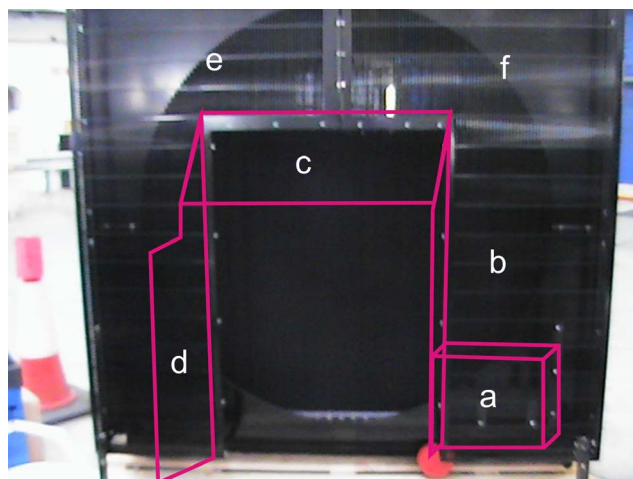
**FIGURE 3: TRANSIT BRACKETS**

### **! WARNING**

*Do not remove the radiator transit bracket fixings at this stage as load stability will be impaired for guard removal.*

**NOTE:** The guards must be stored in a safe area, including the fixings which must be retained for re-fitting.

5. Remove the charge alternator guard ([Figure 4](#)) (a), with vertical guard (b) from cowl guard (f) and horizontal guard (e).



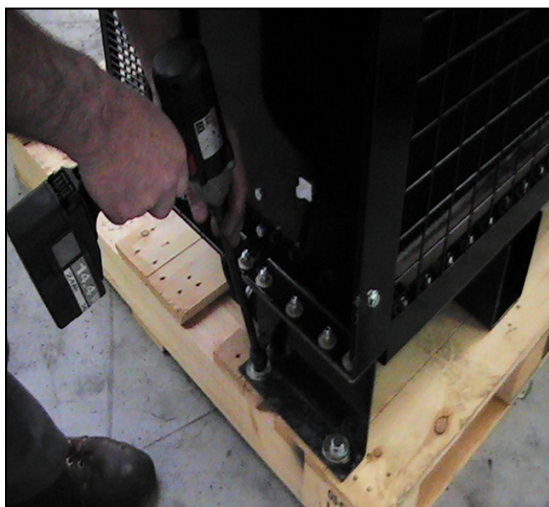
**FIGURE 4: RADIATOR GUARDS**

6. Remove vertical guard (d) with horizontal guard (c) from cowl (e).

**NOTE:** Leave removal of last fixing in the guard (c) to ensure no damage will occur to guard (d). Support guard (c) upon removal of last fixing.

7. Remove cowl guard (e), leaving cowl guard (f) fixed to the radiator.

8. Remove the radiator transit fixings on both sides and discard to appropriate waste facility. See [Figure 5](#)



**FIGURE 5: TRANSIT FIXINGS REMOVAL**

9. Use the provided bolts to install the fan on the engine. Torque the fan bolts to 131 Nm (96 ft-lbs).

**⚠ WARNING**

***The radiator cooling system is heavy; it has an approximate dry weight of 450 kg (992 pounds). Dropping the radiator assembly can cause severe personal injury or death. Use a hoist of sufficient capacity, do not stand under a raised radiator, and keep hands and feet clear of the perimeter of the radiator while maneuvering it.***

10. Using slow progressive movements fit the radiator/guarding around the fan, lowering the radiator until its support feet are in contact with the bedframe support bearer. [Figure 6](#)



**FIGURE 6: LOWERING THE RADIATOR**

11. Check the support feet front edges are level with the support bearer. [Figure 7](#)

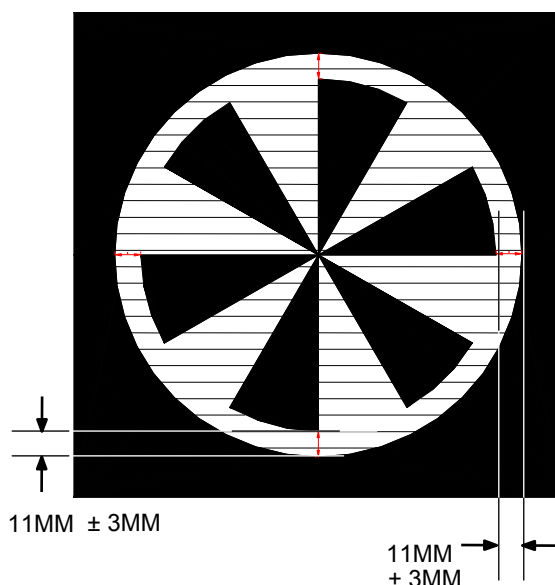


**FIGURE 7: SUPPORT BEARERS**

**⚠ CAUTION**

***Contact between the fan blades and the radiator can result in serious equipment damage. Make sure there is adequate space between the fan blades and the radiator grill.***

12. Check the fan tip clearance within the cowl, equal clearance must be maintained vertically.
13. Shuffle the radiator assembly until it is vertical and there is an 11mm  $\pm$  3mm equal gap between the edge of the fan blades and the radiator fan cowl all the way around (see [Figure 8](#)).



**FIGURE 8: RADIATOR TO FAN CLEARANCE**

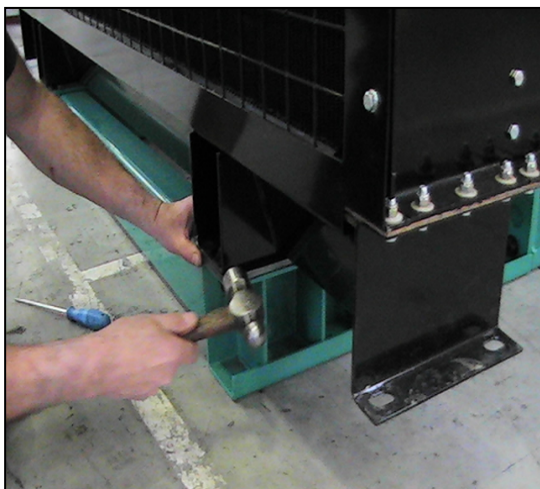


14. Insert the shims (13) between the radiator foot and the support bearer. (See [Figure 9](#)) Re-check the feet alignment and the vertical clearance of the guard is within tolerance.



**FIGURE 9: SHIM PLACEMENT**

15. Ensure shims are level with the front edges of the support bearer and radiator foot and secure the fixings to 63 Nm. [Figure 10](#).

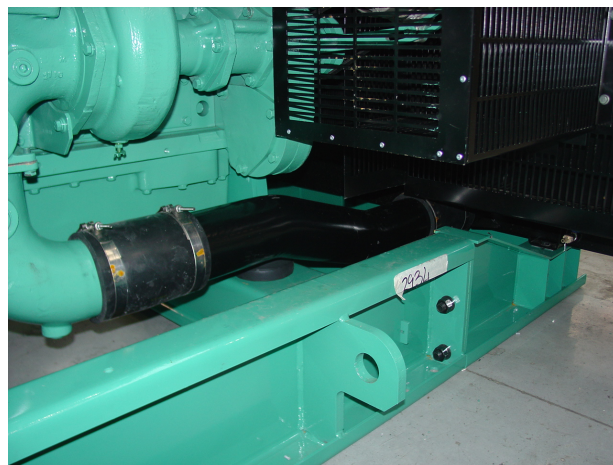


**FIGURE 10: ALIGN SHIMS WITH FRONT EDGES**

16. Remove all hole plugs from the radiator and engine necessary to install the pipe work.
17. Use four hose clamps and two rubberized couplings (supplied with the coolant return tube) to install the coolant return tube (16), as shown in [Figure 11](#).
18. Fit the rubberized couplings over both connections. Tighten the hose clamps to make sure that the fittings are watertight. Ensure there is equal spacing of rubber hose over hose tube swages and

orientation of the clips are accessible and aligned..

**NOTE:** You may find it easier to install couplings by adding Hellerine or similar lubricant.

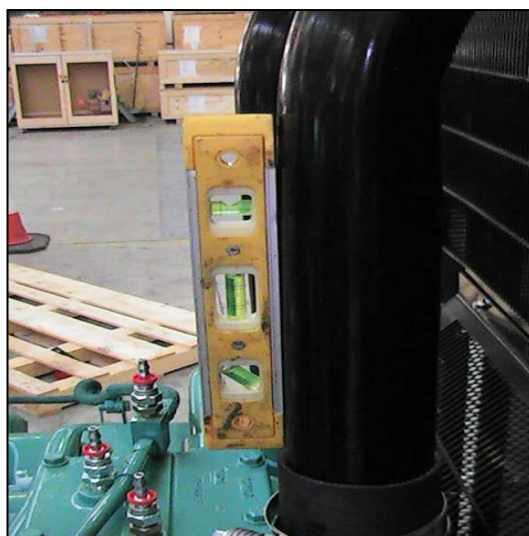


**FIGURE 11: COOLANT RETURN HOSE**

19. Re-fit the guards in reverse order sequence (Points 5-7).

**NOTE:** Guard (c) will need to be positioned between the engine radiator ports and fan. Insert all the fixings loose until the guarding is aligned and then tighten.

20. Use eight hose clamps and four rubberized couplings (supplied with the top radiator tubes) to install the top radiator tubes (15). Fit rubberized couplings over both connections. Use a spirit level to ensure vertical alignment, [Figure 12](#).



**FIGURE 12: ENSURE VERTICAL ALIGNMENT**

21. Apply sealant to hose adaptor fittings then insert to the engine coolant ports and tighten.
22. Install the radiator vent hoses (18) from the radiator to the engine. Push the hoses over the unions until the hoses bottom out against the red capping washer. [Figure 13](#)



**FIGURE 13: VENT TUBE UNIONS**

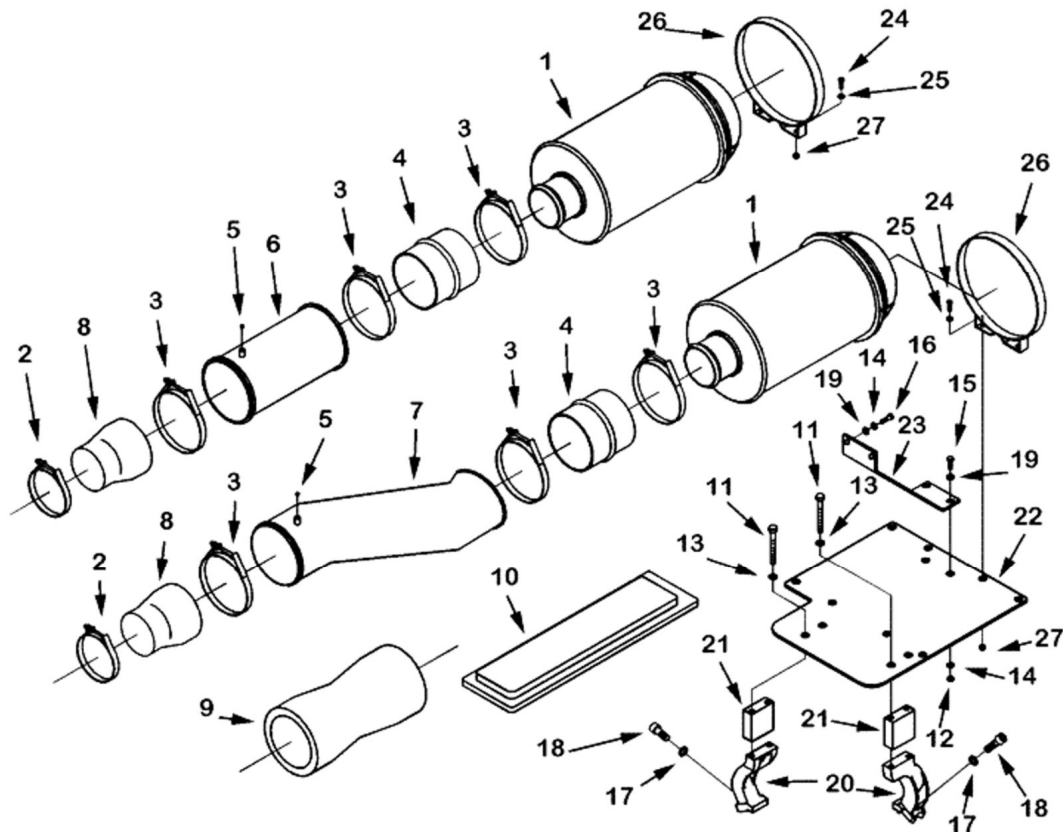
23. All vent hoses must be installed to run continuously upwards to prevent any air locks.
24. Apply Loctite 577 thread sealant and install a customer-supplied low coolant level sensor on the radiator. Connect the engine harness to the sensor.
25. Use cable ties to secure the engine harness and vent hoses to the upper coolant tubes. If necessary, trim the cable ties. [Figure 14](#).



**FIGURE 14: SECURED VENT HOSES**

26. Install the clear plastic overflow tube (37) on the top of the radiator. Feed the tube down the side of the radiator and through the guarding. Use tie wraps to secure the tube to the side of the radiator.
27. Tighten the hose clamps, making sure the connections are watertight.
28. Fill the radiator with coolant. The system coolant capacity is 280 liters (80 US gallons). Refer to the engine manufacturer's Owner's Manual for recommended coolant type.
29. Connect the negative (-) cable to the battery.
30. Connect the battery charger (if applicable) and turn it on.
31. In order to purge air from the system, it is necessary to start the engine and allow it to warm up. Follow the procedures in the generator set Operator Manual for safe operation of the set.
32. Stop the engine and when cooled down, check for coolant leaks and repair as necessary.
33. Recheck the coolant level and, if needed, add coolant.

### Air Cleaner Assembly AC6073



REF	PART	DESCRIPTION	QTY
1	3099012	CLEANER, AIR *	2
2	125741	CLAMP, T-BOLT (6 INCH) *	2
3	140314	CLAMP, T-BOLT (7-5/8 INCH) *	6
4	3030792	HOSE, HUMP *	2
5	3628604	PLUG, PIPE (1/8 INCH)	2
6	3630523	TUBE, AIR INLET	1
7	3630526	TUBE, AIR INLET	1
8	3630688	HOSE, REDUCING *	2
9	3630836	SHIELD, HEAT	2
10	3631822	SHIELD, HEAT	2
11	S 195	SCREW, CAP - HEX HEAD (1/2-13 X 4-3/4 INCHES)	4
12	S 217	NUT, HEX - HEAVY (7/16-14)	2
13	S 608	WASHER, LOCK (1/2 INCH)	4
14	S 610	WASHER, LOCK (7/16 INCH)	4
15	103009	SCREW, CAP - HEX HEAD (7/16-14 X 1-1/4 INCHES)	2
16	185804	SCREW, CAP - HEX HEAD (7/16-14 X 1-3/8 INCHES)	2
17	205059	WASHER, FLAT (3/4 INCH)	2
18	206028	SCREW, CAP - HEX HEAD (3/4-10 X 2-1/4)	2
19	3000082	WASHER, FLAT (15/32 INCH)	4
20	3051793	SUPPORT, TURBOCHARGER	2
21	3179692	SPACER, MOUNTING	2
22	3179693	BRACKET, AIR CLEANER	1
23	3179694	SUPPORT, AIR CLEANER	1
24	S 112	SCREW, CAP - HEX HEAD (3/8-16 X 1 INCH)	8
25	S 604	WASHER, LOCK (3/8 INCH)	8
26	3050499	STRAP, AIR CLEANER	4
27	3201128	NUT, HEX (3/8-16)	8

FIGURE 15 AIR CLEANER ASSEMBLY



RADIATOR ASSEMBLY A029F540

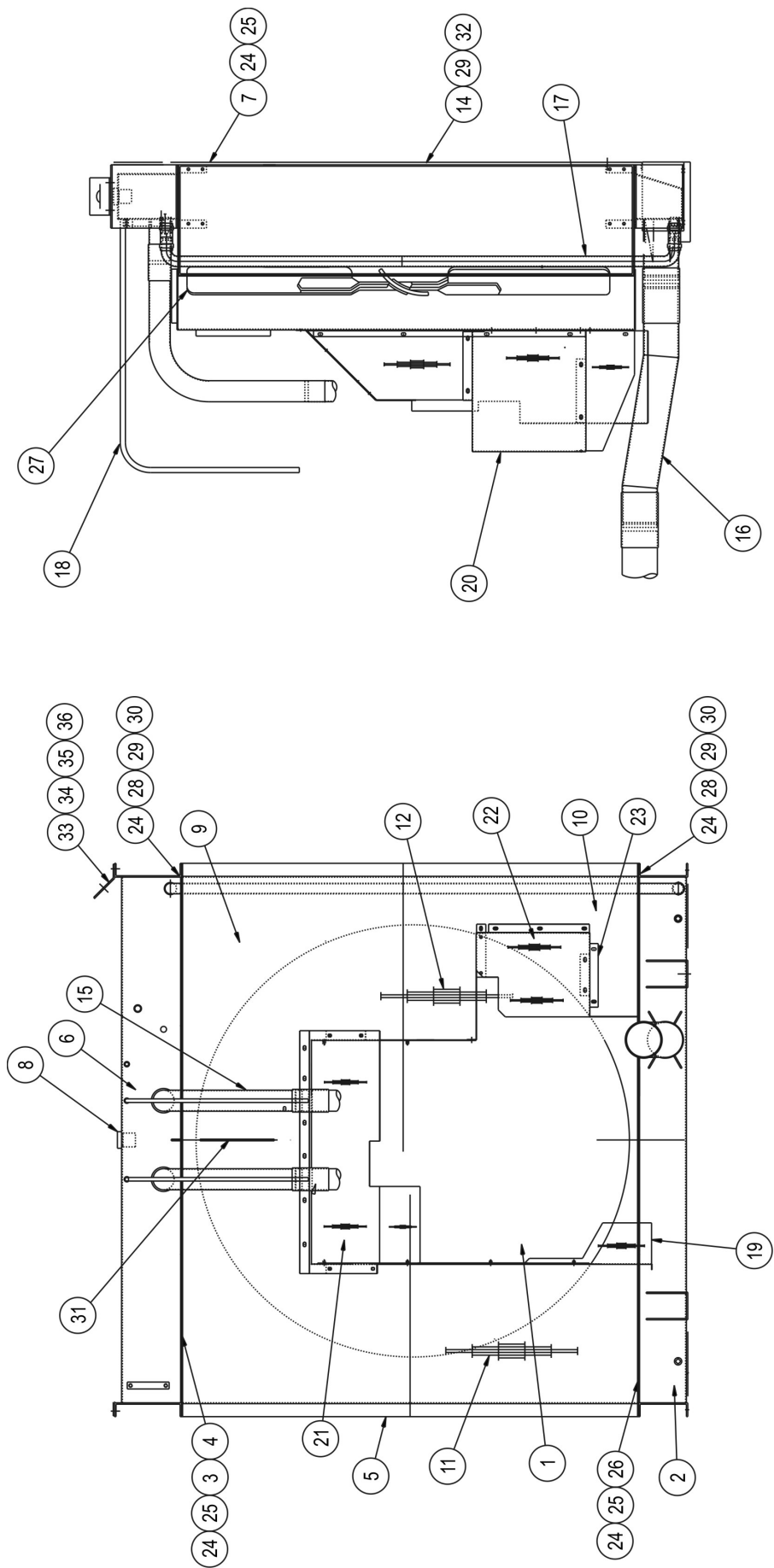


FIGURE 16 RADIATOR ASSEMBLY

### RADIATOR ASSEMBLY A029F540

REF	PART NO.	DESCRIPTION	QTY
1	A029B452	CORE, RADIATOR	1
2	A029B510	TANK, RADIATOR	1
3	A029C776	GASKET, RADIATOR	2
4	A029B712	STRAP, TANK	4
5	A029B530	MEMBER, SIDE	2
6	A029B511	TANK, RADIATOR	1
7	A029B528	PLATE, SUPPORT	8
8	A001A627	CAP, PRESSURE	1
9	A029B515	SHROUD, TOP FAN	1
10	A029B514	SHROUD, BOTTOM FAN	1
11	A029B508	GUARD, RADIATOR	1
12	A029B509	WRAPPER, GUARD	1
13	A029J729	SPACER	2
14	A029B518	PANEL, MESH	2
15	A029B523	TUBE, RADIATOR	2
*	0130-5353	HOSE	4
*	0503-1872-05	CLAMP, HOSE	8
16	A029B524	TUBE, RADIATOR	1
**	0130-5356	HOSE	2
**	0503-1872-10	CLAMP, HOSE	4
17	A029B525	TUBE, FILL	1
18	A029B527	HOSE, VENT	3
***	0130-5355	ADAPTOR	N/A
***	REF	Fitting 1/4 BSP	N/A
19	A029J560	GUARD, RADIATOR	1
20	A029J562	GUARD, RADIATOR	1
21	A029J564	PANEL, GUARD	1
22	A029J566	GUARD, ALTERNATOR	1
23	A029J568	GUARD, ALTERNATOR	1
24	A005Y923	SCREW, HH	192
25	A019P383	NUT, LOCK	188
26	A029M913	STRAP, TANK	2
27	A029M922	DUCT, AIR	1
28	A029M925	PLATE, COVER	2
29	A000J931	BOLT	51
30	A029M927	NUT	4
31	A000J934	BOLT	10
32	A029M981	NUT	15
33	A004H830	BRACKET, LIFTING	2
34	A005Y190	SCREW, HH	6
35	A007L025	WASHER, FLAT	6
36	A029M935	NUT	6
37	A009W564	TUBE, RADIATOR – OVERFLOW	1

\* SUPPLIED AS PART OF ITEM 15

\*\* SUPPLIED AS PART OF ITEM 16

\*\*\* SUPPLIED AS PART OF ITEM 18 RADIATOR ASSEMBLY PARTS

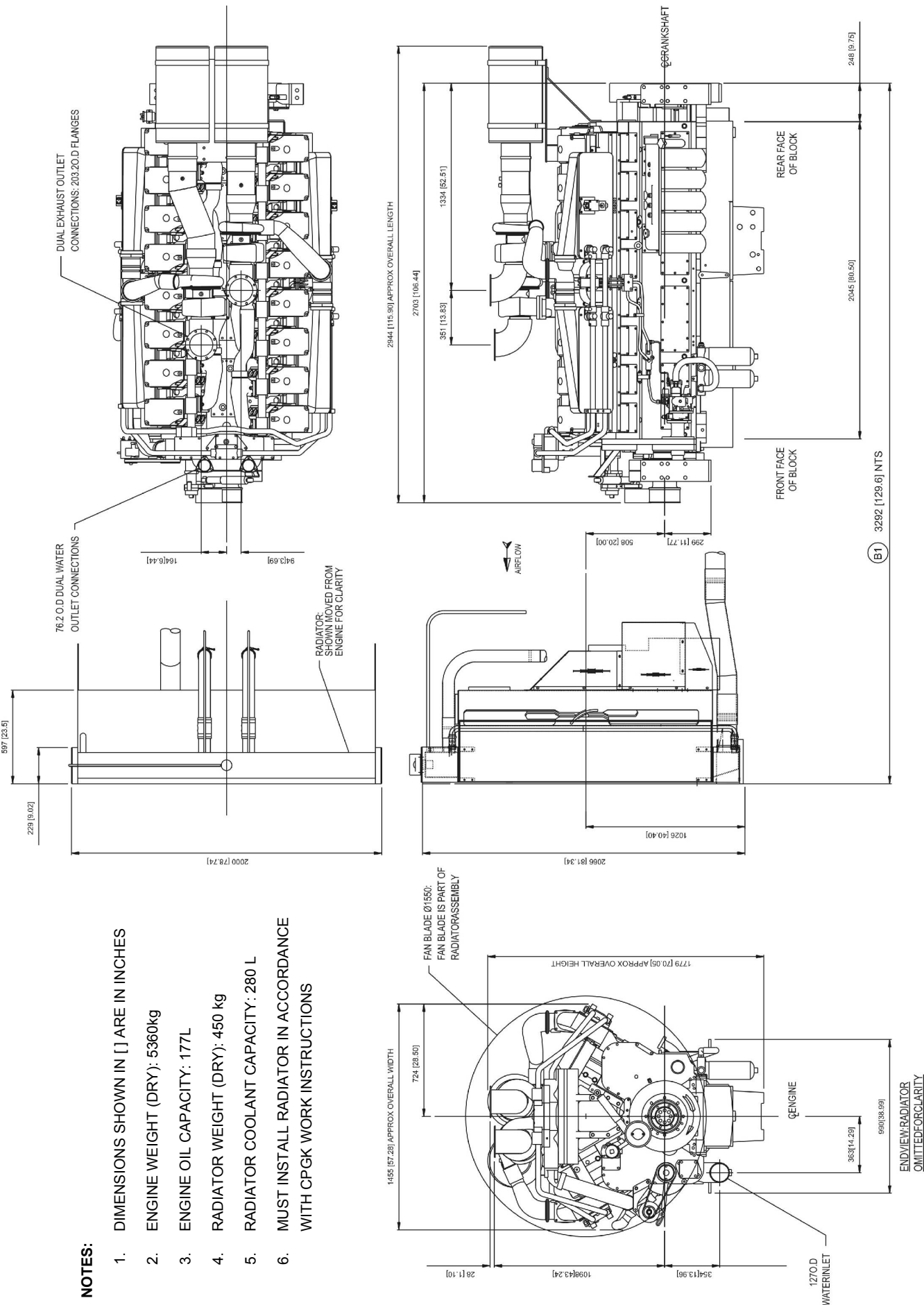


FIGURE 17. KTA50G3 ENGINE OUTLINE DRAWING

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