

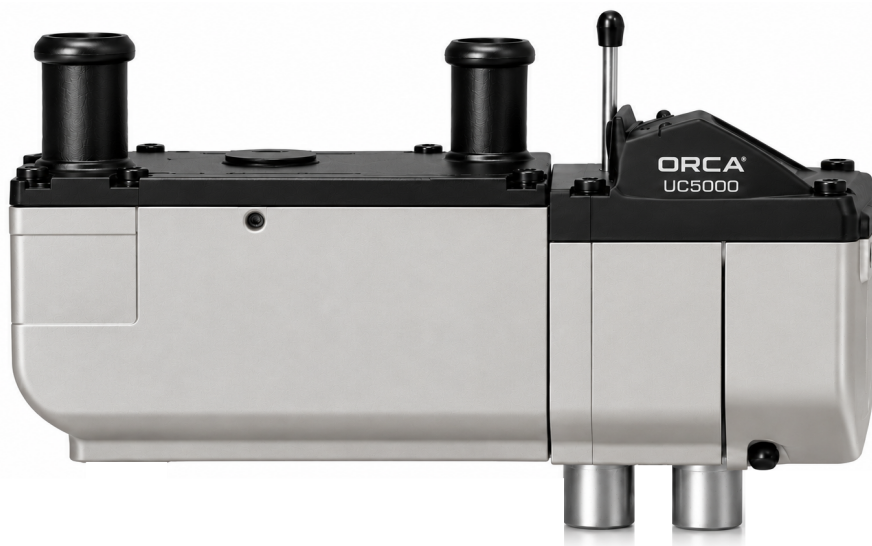
ATLOSON

THERMAL SYSTEMS

ORCA UC5000

INSTALLATION AND OPERATION MANUAL

OPERATION | MAINTENANCE | PARTS



HEAT DRIVES
POSSIBILITIES

01 Identification, safety and use

This manual accompanies model ORCA UC5000. Record SKU, serial number, voltage, fuel and revision before installation. Accessories, functions and protective devices depend on the supplied variant.

Engine preheating and heating of a closed antifreeze circuit; cabin heating via a separate heat exchanger. No direct connection to drinking water.

SKU	Fuel	Voltage
ATL-ORC-UC50-D12	Diesel	12V
ATL-ORC-UC50-D24	Diesel	24V

Carbon monoxide: combustion gases must remain outside occupied spaces. Do not operate in a garage or other enclosed location. Keep intakes and flue outlets clear, especially after snow, mud or travel.

Fuel smell, abnormal smoke, leakage or a CO alarm: stop use, move occupants away and have the installation inspected. Do not restart to conceal a fault. Contact emergency services if there is immediate danger.

Fire and burns: keep combustible materials away from the appliance, hot ducts and exhaust. Do not use the service compartment for storage. Allow cooling before inspection and keep children away from hot surfaces.

Power: use the nameplate voltage. Never increase a fuse rating or bypass protection. For a normal stop, allow the controlled cooling cycle to finish before disconnecting power.

Stop before refuelling. Fuel, combustion, gas and mains work require a qualified professional. Install and maintain a CO detector suitable for the application according to its own instructions.

Coolant heating: the appliance belongs in an approved cooling loop and needs adequate circulation. Confirm flow direction, pump, bleeding, fluid compatibility, valves, flow rate and pressure. Never work on a hot or pressurised loop. Engine coolant is not drinking water.

02 Variant specifications

Common specification	Value
Fuel	Diesel
Heat output class	5 kW

Differences between variants

Specification	SKU	Value
Operating voltage	ATL-ORC-UC50-D12	12 V DC (10.5-16 V range)
Operating voltage	ATL-ORC-UC50-D24	24 V DC
Heat output	ATL-ORC-UC50-D12	2.4-5.0 kW
Heat output	ATL-ORC-UC50-D24	5 kW class
Approximate output	ATL-ORC-UC50-D12	Up to 17,061 BTU/h
Approximate output	ATL-ORC-UC50-D24	Depending on variant
Fuel consumption	ATL-ORC-UC50-D12	0.27-0.62 L/h
Electrical power during operation	ATL-ORC-UC50-D12	Catalogue value: 14-29 W (catalogue range)
Dimensions	ATL-ORC-UC50-D12	Catalogue value: 223 × 86 × 152 mm
Weight	ATL-ORC-UC50-D12	Catalogue value: 2.6 kg
Temperature setting	ATL-ORC-UC50-D12	Catalogue value: 5-35 °C
Temperature setting	ATL-ORC-UC50-D24	Depending on variant
Altitude function	ATL-ORC-UC50-D12	Up to 5,000 m (catalogue value)
Altitude function	ATL-ORC-UC50-D24	Depending on variant

Specification	SKU	Value
Controller	ATL-ORC-UC50-D12	Depending on variant
Controller	ATL-ORC-UC50-D24	Programmable digital controller
Application	ATL-ORC-UC50-D12	Depending on variant
Application	ATL-ORC-UC50-D24	Cooling circuit / antifreeze

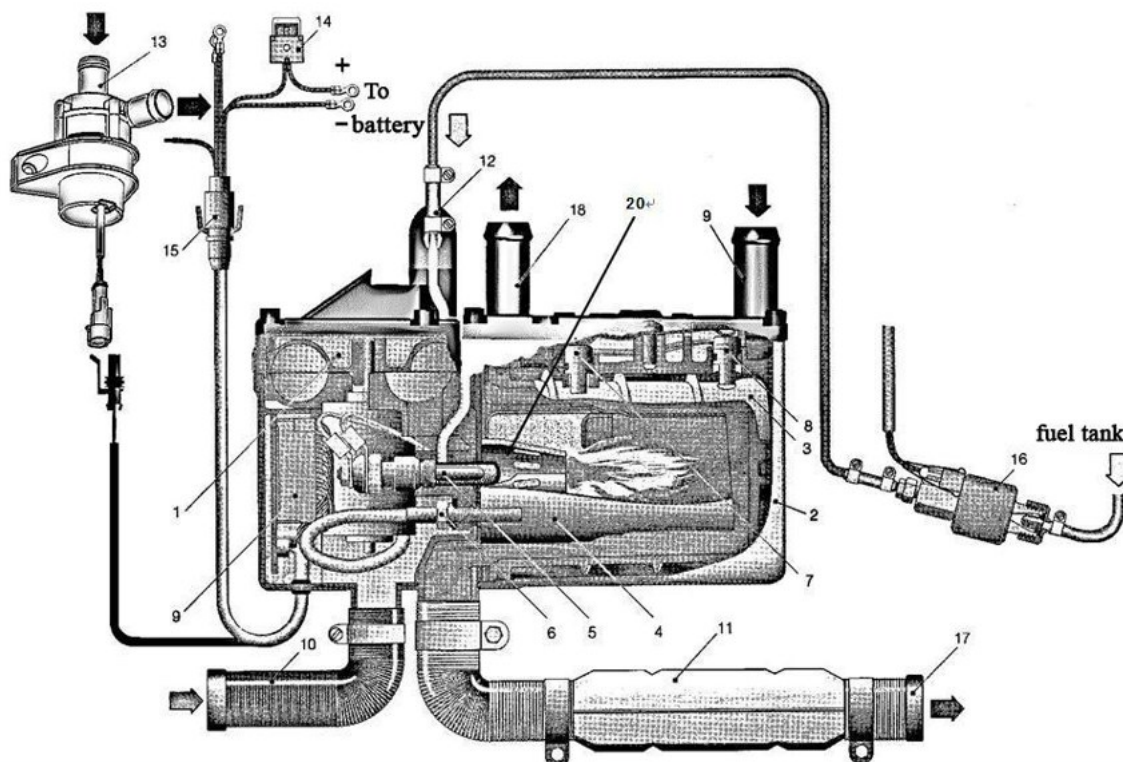
For unpublished values, use the supplied variant's nameplate and data sheet: starting current, fastening torque, pressure, pump flow and protection devices cannot be inferred from power.

03 Recommended applications and output selection

Indicative engine displacement	1,5 à 3 L
Coolant circuit	Record the vehicle's actual capacity and size for target temperature, available time, circulation and heat losses.

Engine-displacement ranges are selection guides. They do not establish a circuit-volume limit. Use the vehicle-specified antifreeze mixture and a suitable pump.

04 Functional section and UC5000 circuit



Drawing callouts: identify components before service. A sectional view shows operation; it does not define a disassembly sequence. Check the unit revision before ordering any part.

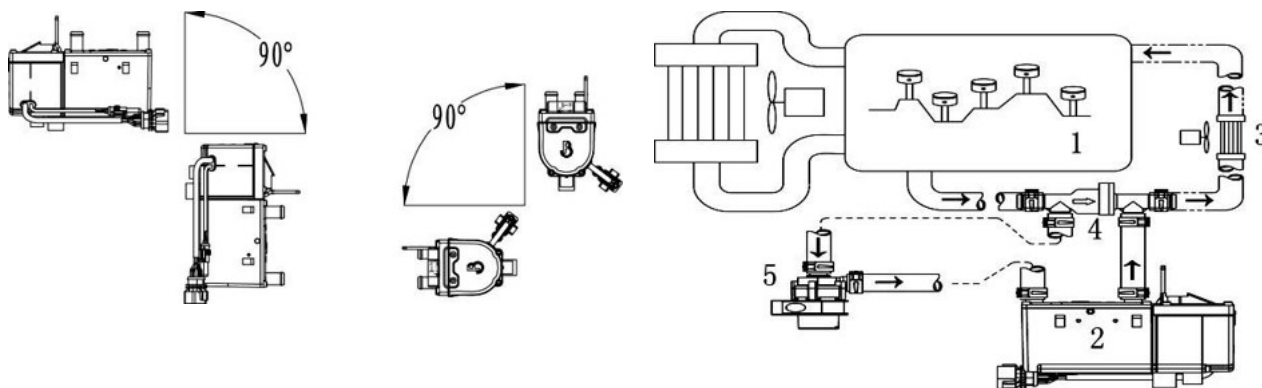
05 Step-by-step installation

STEP 1 - Mount the heater

Provide an accessible rigid support. Identify coolant inlet and outlet on the unit and leave clearance for the burner, pump and connections.

STEP 2 - Create the hydraulic circuit

Connect to the closed antifreeze circuit. Follow circulation direction and avoid restrictions and high points trapping air. Install the pump suitable for the circuit; separate engine coolant from drinking water.



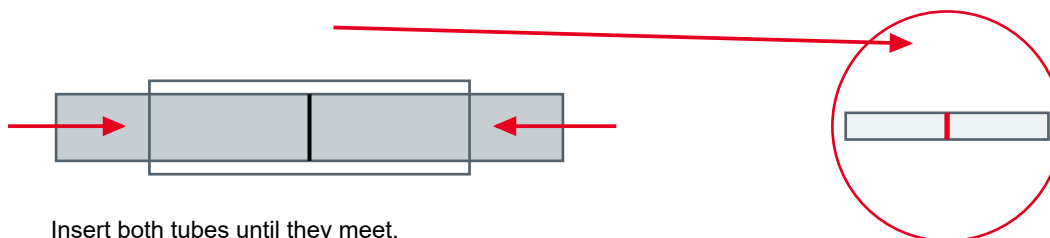
Unit orientation

Closed coolant circuit

STEP 3 - Fill and bleed

With the engine cold, fill with the vehicle-specified coolant. Open the necessary valves, bleed the heater and pump, then check level and leak tightness. Never start dry.

ACTION DETAIL - schematic

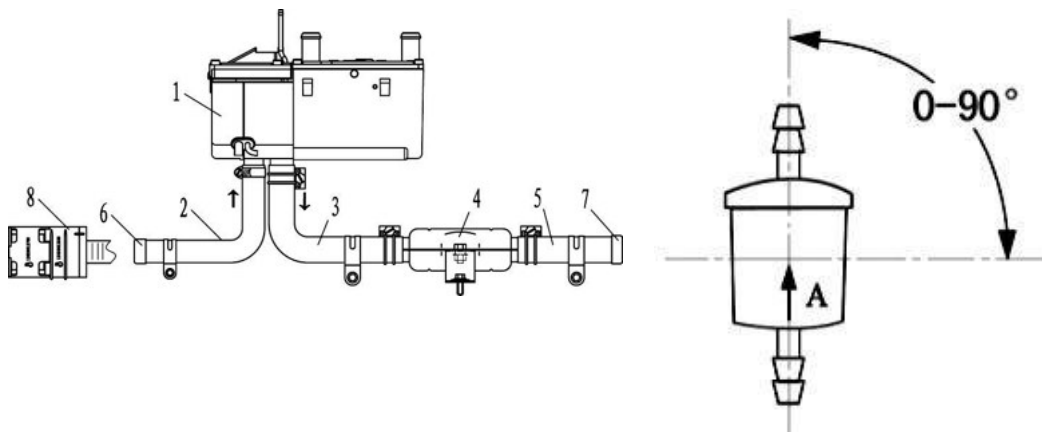


Insert both tubes until they meet.

Detail: no air pocket between tubes.

STEP 4 - Connect combustion circuits

Install combustion intake and exhaust outside the cabin. For UC5000/UC9000 use the matched metering pump. For larger units follow the supplied burner's architecture: do not replace the circuit with a small metering pump.



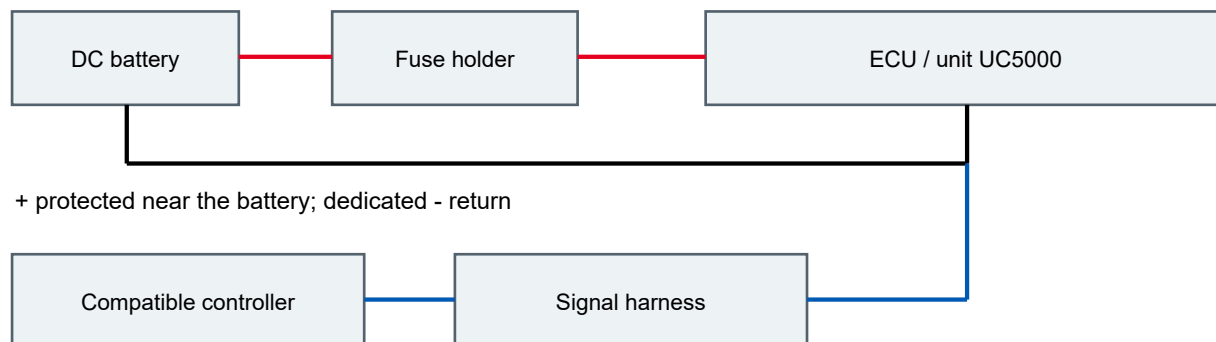
Heater and pump position

Metering pump

STEP 5 - Check electrical supply and heating

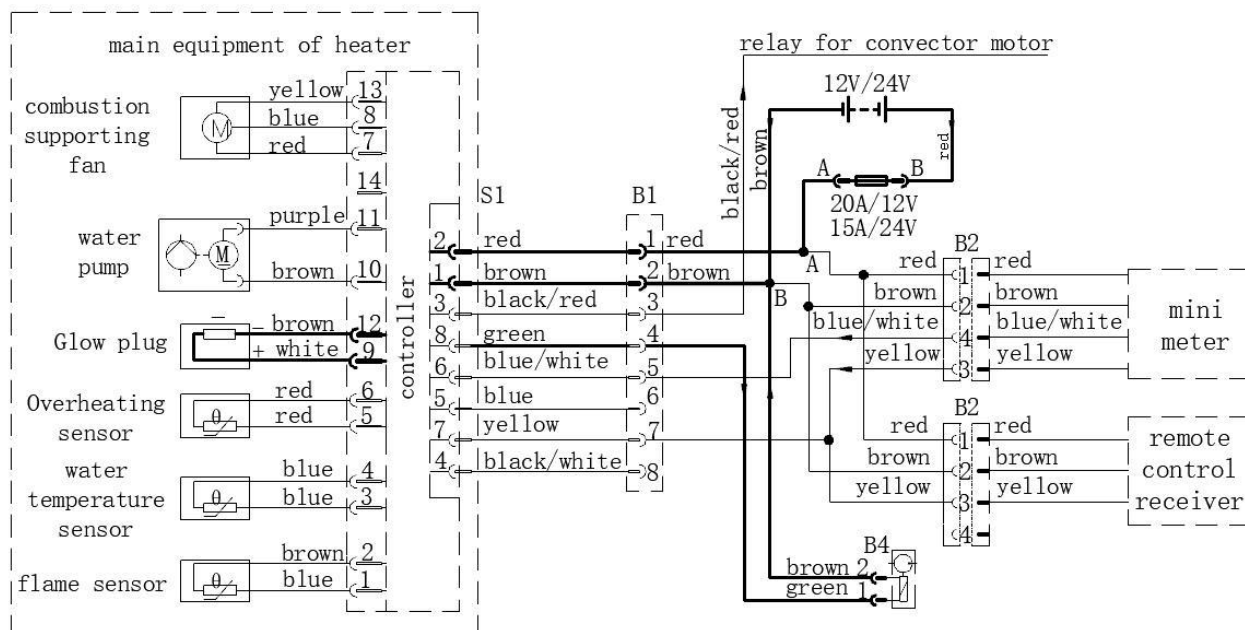
Test power under load and circulation. Measure supply/return temperatures. Check the cabin-fan control if fitted. Complete a full shutdown and recheck the level when cold.

06 Electrical connections



Schematic. Pins, rating and voltage: use the supplied harness.

Maintain power during cooling. Normal shutdown uses the controller; do not install a switch that interrupts the cycle. Protect cables and connections against water, abrasion and heat.



Circuit detail for the illustrated family. Drawing labels identify components; check connectors, voltage and options on the supplied harness. A mains connection cannot be inferred from nominal power alone.

07 Initial commissioning

Check	Result to verify
Rating plate and controller	SKU, voltage, fuel and connectors match
Mounting	Mountings, clearances, ducts and outlets checked
Fluid circuit	Filled and bled; no leaks
Supply under load	Voltage measured during starting
Complete cycle	Ignition, operation, setpoint and shutdown/cooling tested
Delivery	Rating-plate photo, measurements, date and installer recorded

08 Operation and controls

The coolant heating setpoint differs from ambient temperature. Set the duration and program on the compatible circuit controller; check circulation and battery charge before automatic start.

Situation	Action
Before starting	When cold, check level and antifreeze protection. Ensure required valves are open and the circuit is filled and bled. Do not start with an empty or frozen circuit. Never open a hot pressurized circuit cap.
Engine preheating	Program time only after an initial supervised test. Start with the correct coolant-heater controller. Displayed room temperature does not necessarily represent the coolant setpoint. Check circulation, leaks and gradual temperature rise.
Cabin heating	If a heat exchanger and vehicle fan controller are installed, check their operation separately. Cabin heating consumes some heat output and battery power; allow a longer preheating time than with coolant alone.
Shutdown / circulation fault	Stop normally with the controller; maintain power during purging and cooling. If overheating occurs or hoses remain abnormally cold, allow cooling and have the level, air bleeding, valves, restrictions and pump checked before restarting.

09 Maintenance and winterization

When	Work
Before use	Check fuel, battery, ducts, outlets, connections and absence of leaks.
After transport	Inspect mountings, cables, ducts and exposed components.
Before the season	Supervised test; full inspection of combustion and protective devices.
Engine circuit	Check cold level, antifreeze protection, bleeding and circulation.
After repair	Suitable seals, leak test, complete cycle and measurements recorded.

Before use and after travel, inspect ducts, supports, openings, fuel lines and accessible connections. Once cool, remove external debris without directing water into the intake or flue.

Before the season and after storage, have the installation, battery, protection, tightness and combustion checked. Hour-based intervals, exercise-run duration and component life remain to be confirmed for the exact model and revision.

The user may keep access clear and clean cold surfaces using material-appropriate methods. Burner, exchanger, pump, sensor and ECU removal is qualified service work. Do not adjust fuel delivery or thermal protection.

After repair, require leak checks and a full cycle. Record date, hours, symptom, code, part SKUs and technician. Confirm applicable warranty terms with ATLOSON; no other warranty is implied.

10 Troubleshooting and fault codes

Symptom	Action
Display off	Check the permitted power supply, visible connection and identified protection device; a fuse that blows again requires professional diagnosis.
No ignition / flameout	Record the code and check fuel level and visible obstructions. Do not repeat starting or priming attempts; have fuel dosing and combustion checked.
Overheating / low heat output	Keep air passages clear. On a coolant circuit, allow cooling before checking the level; have air bleeding, circulation and pump checked. Do not bypass the sensor.
Smoke / odor / leak	Stop using the system and have it inspected before returning it to service. Do not tighten or repair a hot pipe.
Communication / remote control	Record the message and version. Have harness and protocol confirmed. For GSM, check the module and network availability with the installer.

Record the exact code before clearing it. Stop and allow cooling, check the power supply under load, then ducts and the fluid circuit. Correct the cause before a supervised test. A repeated fault requires workshop service.

11 Fault-code table - COOLANT

Table for the controller/ECU of this family. The same number may have a different meaning on another revision.

Code	Meaning
00 / B0	Missing or lost communication
10	Voltage too high
11	Voltage too low
12 / 14 / 15 / 17	Overheat or abnormal temperature by code
13 / 50	Ignition failure / lockout by code
20 / 21 / 22	Glow plug / circuit / version
30 / 31 / 32 / 33 / 84 / 85 / 86	Blower: circuit, speed or start
38 / 39	Auxiliary output/equipment circuit
41 / 42	Circulation pump circuit
45 / 46	Auxiliary output/equipment circuit
47 / 48	Metering pump circuit
51 / 52 / 55 / 64 / 65	Flame detection / sensor circuit
60 / 61 / 62 / 71 / 72	Temperature sensor / circuit / limit
91 / 99	ECU / memory
A9	Abnormal power interruption
AA / AB / AC / AD / AE / AF	Self-test failure by circuit
D3	Maintenance requested
E0 / E1 / E2 / E3	Ignition / glow / flame monitoring
EE	Unidentified fault

12 Parts, kits and purchasing

Order by part number and variant. Drawing callouts are not SKUs. Check voltage, fuel and connector before replacement. A complete-system reference is not a maintenance kit.

Reference / purchase	Catalogue description
AT10355	Heater non-plateau to plateau adapter cable
AT10566	Stainless Steel Fuel Tank 10L Gasoline Storage for Parking Heater
AT10567	Stainless Steel Thru Hull Fitting, 22 mm, 90° Base, Angled Connector, Boltless
AT1121	UC5000 - MAINTENANCE KIT 12V DIESEL
AT11212	UC5000 - MAINTENANCE KIT 12V DIESEL
AT11212	UC5000 - Heater Only 12v Diesel
AT1122	UC5000 - Heater Only 24v Diesel
AT1123	UC5000 - Heater Only 12v Gasoline
AT1125	Coolant pump with support 12V
AT1126	Coolant pump with support 24V
AT1127	UC5000 - Flame tube GASOLINE
AT1128	UC5000 - Flame tube DIESEL
AT1129	Heat exchanger jacket (outer casing)

Reference / purchase	Catalogue description
AT1131	Heat exchanger O-ring 74*3mm
AT1132	UC5000 - ECU assembly 12V GASOLINE
AT1133	UC5000 - ECU assembly 12V DIESEL
AT1134	UC5000 - ECU assembly 24V DIESEL
AT1135	Combustion blower motor assembly 12V
AT1136	Combustion blower motor assembly 24V
AT1137	Air blower assy cover with air intake port
AT1138	Seal, flame tube and blower assembly
AT1139	Seal, flame tube to heat exchanger 81.5*69*1mm
AT1140	Coolant barb O-ring SAE#114 (13*2mm)
AT1141	Heat exchanger top cover
AT1142	Top cover for air blower assembly
AT1143	Flame sensor
AT1144	Glow plug lining
AT1145	Glow plug lining O-ring 9*2mm
AT1146	FUEL TANK 10, PLASTIK
AT1147	Glow plug 12V
AT1148	Glow plug 24V
AT1149	Glow plug O-ring 8*1mm FPM
AT1150	Glow plug connection with fuel intake tube
AT1151	Glow plug connection O-ring 11*1mm FPM
AT1152	Temperature and overheat sensor assy
AT1153	O-ring for temperature and overheat sensors 7.5*2mm
AT1154	Spring leaf for temperature and overheat sensors
AT1155	Muffler
AT1156	UC5000 - Wiring harness 12V
AT1157	UC5000 - Wiring harness 24V
AT1158	Fuel pump 12V
AT1159	Fuel pump 24V
AT1160	Fuel pump damper
AT1161	Fuel pump support
AT1165	Bolt M6×10mm
AT1166	Nut M6
AT1167	Flat washer 6mm*12mm
AT1168	Split lock washer, M6
AT1169	Fuel filter
AT1170	Fuel line $\phi 5 \times 2.0$ mm L1m
AT1171	Fuel line $\phi 4$ mm× $\phi 1.5$ mm L6m, clear

Reference / purchase	Catalogue description
AT1172	Fuel line coupling 3.5*9.5*40mm
AT1173	Fuel line coupling 4.1*10.5*40mm
AT1174	Fuel line clamp ϕ 8-10mm
AT1175	Fuel line clamp ϕ 9-11mm
AT1176	Coolant hose ϕ 17*26mm CR01-5A(EPDM)
AT1177	Coolant hose clamp ϕ 20-32mm
AT1178	Coolant hose coupling ϕ 20mm, L55mm
AT1179	Coolant hose reducing coupling ϕ 18*20mm, L60mm
AT1180	Air inlet pipe 20.5 x 24mm x L900mm
AT1181	Air inlet pipe strap
AT1182	Air inlet pipe clamp ϕ 16-25mm
AT1183	Exhaust pipe
AT1184	Exhaust pipe strap
AT1185	Exhaust pipe clamp 24-28mm
AT1186	Heater mounting bracket
AT1187	Rubber shock absorbers 5*20*4mm
AT1188	Self-drilling and self-tapping screw ST5.5×30
AT1189	Fuel pickup tube
AT1191	4-port bypass valve
AT119101	Air Intake Silencer
AT119102	Elbow Connector, 90
AT119103	Relay 12V
AT119104	Relay 24V
AT119105	Fuel Pump Connector
AT119106	Fuse, 24V (15A)
AT119107	Fuse, 12V (20A)
AT119108	Fuse Base
AT119109	Fuse Base 2
AT119110	Encloruse Box kit
AT1192	Digital control switch, GSM compatible
AT1193	Check valve
AT15001	Diagnostics USB Cable
ATL1005	UC5000 Heater Kit, Coolant Heater, 5kw, 12v, Diesel, Controller LCD - BT
ATL1006	UC5000 Heater Kit, Coolant Heater, 5kw, 24v, Diesel, Controller LCD - BT
ATL1007	UC5000 Heater Kit, Coolant Heater, 5kw, 12v, Gasoline, Controller LCD - BT
ATM001006	ORCA UC5000 Instruction Manual

Records and support

Date / hours: _____ Work / parts: _____

Keep the invoice, SKU, serial number and history. For assistance, provide a nameplate photo, code and symptom.

[ATLOSON support](#)