PEERLESS
ROTARY SCREW COMPRESSORS

P185D Diesel Screw Compressor
User Operating & Maintenance Manual

P185D & P185D-T

READ THIS MANUAL CAREFULLY BEFORE CARRYING OUT ANY OPERATIONS ON THE COMPRESSOR UNIT. FAILURE TO DO SO CAN RESULT IN SERIOUS INJURY OR DEATH. KEEP THIS MANUAL IN A SAFE LOCATION FOR FUTURE REFERENCE.

PREFACE

Please read the following manual carefully before operating the air compressor. Made with the most advanced technology, this air compressor is not only durable but also safe and reliable. If the instructions below are followed, successful running of the machine for a long time can be guaranteed. Please keep the manual near the machine for convenient reference at any time. In all communication documents related to the compressor, please remember to indicate the model and serial number marked on the nameplate of the compressor. The company reserves the right to modify the compressor without notice.

INTRODUCTION

Thank you for purchasing this quality Rotary Screw Compressor that Peerless Products has supplied you. All Peerless Products are constructed using the highest quality materials and components. They are designed to the highest possible standards, therefore offering our customers endless hours of optimum performance.

THE COMPANY

Peerless Products are a family owned business which has been in operation for over 60+ Years, an Australian leader in the supply industrial air compressors and air related equipment based in Bendigo, Victoria.

We have a dealer network throughout Australia who are highly trained in our products along with our own teams located in each State that have high technical training on our complete range of industrial air compressors.

Peerless Products head office and manufacturing base is located in Bendigo (VIC).

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The manufacturer shall not be held responsible for any damage to the equipment caused by the use of non-original parts or the modification of the equipment without the written permission of the manufacturer.

If any part of this manual conflicts with your local legislation, it should apply to the more stringent one.

The statements of safety precautions in this manual should not be interpreted as suggestions, recommendations or leading instructions, and should be implemented in conjunction with any existing laws or regulations.

General safety precautions

1. The user is responsible for ensuring that the machine is used under safe operating conditions. If parts are lost or safe operation cannot be guaranteed, please take relevant measures in time.

2. The supervisor or person in charge shall always ensure that all relevant personnel can strictly implement all instructions on the operation and maintenance of the machine, and at the same time ensure that the machine and its accessories, safety facilities, and consumable parts are always in a good condition without abnormal wear or misuse, and there is no dereliction of duty.

3. The machine should be shut down immediately once the internal parts are found to be overheated. Please do not open any access cover for maintenance before the machine cools down enough to prevent the air from entering and causing the oil and gas to ignite.

4. The conventional ratings (pressure, temperature, speed, etc.) shall be clearly and durably marked.

5. Please use the equipment only for the intended purpose and ensure the rated limit values (pressure, temperature, speed, etc.) are not exceeded during operation.

6. Please ensure as far as possible that the machine is clean (free of oil, dust or other deposits).

7. The surface of the heat exchanger (cooler fins, heat and cold automatic regulator, water jacket, etc.) should be inspected and cleaned regularly in case of high working temperature. Please refer to the compressor preventive maintenance schedule.

8. Please always maintain with care all adjustment and safety facilities to ensure they work normally. Dismantling of any part is not allowed.

9. Please do not damage the safety valve or other pressure release devices. Special attention shall be paid to prevent the devices from being blocked by paint, tar or dust, otherwise it will interfere with the normal operation of such devices.

10. The accuracy of pressure gauges and thermometers should be checked regularly. If any ultra-limit found, please replace them in time.

11. Safety devices should be tested regularly in accordance with the maintenance schedule described in this instruction manual to ensure that they are always in good working condition. Please refer to the compressor preventive maintenance schedule.

12. Please always pay attention to the signs and information labels on the equipment.

13. Once the safety label is damaged or torn, it should be replaced in time to ensure the safety of the operator.

14. Please always keep the work area clean. Disordered work may increase the incidence of accidents.

15. Protective clothing should be worn during operation of the equipment. Depending on the nature of the work, these safety items shall be prepared: goggles, earplugs, helmets, gloves, clothing and shoes. Please keep your hair short and tidy (or cover long hair with the helmet), and do not wear loose clothes or ornaments.

16. Please always pay attention to fire prevention. When contacting or using fuel, engine oil or antifreeze which are all flammable substances, please be extra careful and do not smoke or bring them close to flames. Always keep a fire extinguisher at a handy place just in case.

Safety during transportation and installation

Transportation of the compressor must be carried out by authorized/experienced personnel.

The battery switch should always be off when towing, lifting or transporting the compressor in any way.

If the compressor needs to be lifted, please first firmly bind all loose and pivoting parts, such as the door and tow bar.

Do not fix cables, chains or ropes directly to the lifting eyes; when using crane hooks or lifting hooks, please follow local safety regulations. Never allow steep bends in lifting cables,

chains or ropes.

Transportation by helicopter is prohibited.

It is strictly forbidden to stay in the dangerous area under the lifting load. Do not lift the equipment above people or living quarters. Lifting acceleration and retardation should be controlled within a safe range.

1. Before towing the equipment:
   - Check whether the pressure vessel has been decompressed.
   - Check the tow bar, brake system and hook. Also check the coupling of the tractor.
   - Check the traction and braking performance of the tractor.
   - Check that if the tow bar, tension wheel or machine leg is securely locked in the raised position.
   - Keep hands/fingers away from coupling devices and all other potential twisting points. Keep feet away from the tow bar to avoid injury while sliding.
   - Make sure that the hook can rotate freely.
   - Check if the wheels are safe and if the tires are in good condition and properly inflated.
   - Connect the signal cable and check all the lights. Make sure that the signal cable will not be pulled along the ground when towing the equipment.
   - Fix the safety cable or chain to the tractor.
   - Remove the wheel chock (if applicable) and release the parking brake.
   - Check if the spring on the brake is missing or broken.

2. Please use a tractor with sufficient power to tow the equipment (refer to relevant documents about the tractor).

3. If the equipment will be supported by the tractor, please cut off the ultra-limit brake mechanism (if it is not an automatic adjustment mechanism).

4. It is forbidden to exceed the maximum towing speed of the equipment (pay attention to the requirements of local regulations).

5. Before disconnecting the equipment from the tractor, please place it on a level ground and apply the parking brake. Then release the safety cable or chain. If the equipment does not have a parking brake or tension wheels, place a chock in front of and/or behind the wheels to fix the equipment. If the tow bar is placed vertically, a locking device in good

condition has to be used. The equipment needs always to be used/parked/stored in areas that are not accessible to the public. Please lock it and prevent unauthorized persons from accessing it.

6. In order to lift heavy parts, a lift with sufficient power should be used, tested and approved in accordance with local safety regulations.

7. It is forbidden to bend lifting hooks, rings, buckles, etc., and their stress should only be consistent with the design load axis. When a lifting force is applied at the angle of the load axis, the performance of the lifting device is weakened.

8. In order to maximize the safety and effectiveness of the lifting device, please place the lifting parts as close as possible to the vertical line. If necessary, a lifting beam should be used between the lift and the load.

9. It is forbidden to hang the load on the lift.

10. When using a crane, the object has to be lifted vertically. If lifting is not possible, care must be taken to prevent the load from swinging. For example, by using two lifts, each at an angle of no more than 30° from the vertical.

11. Place the equipment away from the wall. Take all precautions to ensure that the hot air discharged from the engine and cooling system does not recirculate. Otherwise, it may cause overheat of the equipment or reduce the engine power.

12. Please shut down the compressor before moving it.

Safety during operation

1. If the equipment has to be operated in an environment with flame hazard, a spark arrestor must be provided for each exhaust system of the engine to catch sparks.

2. The exhaust gas contains carbon monoxide which is lethal. When using this equipment in a narrow space, the exhaust gas from the engine should be led out to the outdoors through a pipe with a large enough diameter. When doing that, be careful not to create additional back pressure on the engine. If necessary, please consider installing an air extractor. Please abide by the relevant local regulations in force. Besides, please ensure the machine has sufficient air intake for normal

working. If necessary, please consider installing an additional air suction pipe.

3. When operating in a dusty environment, please install the machine in a relatively clean place. Clean environment can greatly extend the time interval for cleaning the air filter and cooler core.

4. Before connecting or disconnecting the hose, close the air outlet valve of the compressor. Before disconnecting, make sure the hose has been sufficiently depressurized

Before blowing in compressed air through a hose or air pipe, make sure the open end is fixed firmly to prevent whipping or damage.

5. The end of the air pipe connected to the outlet valve must be protected with a safety cable connected to the valve.

6. Do not apply external force on the air outlet valve, for example, pulling the hose forcefully or installing auxiliary equipment directly on the valve, such as water separator, oiler, etc. It is forbidden to trample on the outlet valve.

7. When connecting an external line or hose to the outlet valve, do not move the equipment to avoid damage to the valve, manifold and hose.

8. Without taking special measures, it is forbidden to use compressed air in any type of compressor for breathing as that may cause casualties. Regarding the breathing air quality, compressed air must be fully purified in accordance with local regulations and standards. It is always required to provide appropriate breathing air with stable pressure.

9. The distribution pipes and air hoses shall have correct diameter and proper working pressure. Do not use hoses that are worn, damaged or deteriorated. Remember to replace the hose before the end of its service life, and only use hose fittings of the correct type and size.

10. If the compressor is used for sandblasting, or will be connected to a shared compressed air system, please install the corresponding one-way valve (check valve) between the compressed air outlet and the connected sandblasting or compressed air system. Please install it in the correct position/direction.

11. Before removing the oil filler plug, please make sure to open the vent valve to release the pressure.

12. It is forbidden to remove the oil filler cap of the cooling water system of the overheated engine. Wait until the engine has cooled down sufficiently.

13. It is forbidden to refill fuel while the equipment is in operation, unless otherwise specified in this manual. Keep the fuel away from hot parts, such as exhaust pipes or air outlets of

the engine. Smoking is prohibited during refueling. Before refueling with an automatic pump, the grounding cable shall be connected to the equipment to discharge static electricity. Do not spill or leave oil, fuel, coolant, or detergent in or around the equipment.

14. All doors shall be closed during operation so as not to disturb the cooling air flow inside the machine and/or weaken the effect of noise suppression. For inspection or adjustment, please just keep the door open for a short time.

15. Please perform regular maintenance according to the maintenance schedule.

16. Please install fixed cylinder jackets on all rotating or reciprocating parts that have no extra protection and may cause personal injury. When the cylinder jackets are removed, it is forbidden to operate the equipment unless they are firmly reinstalled.

17. Noise may cause irritation and disturbance. Long-term noise may cause serious damage to the human nervous system. If people are required to be present under normal circumstances, and the sound pressure level at this time is:

- Below 70 dB (A): No action is required.
- Above 70 dB (A): Noise protection equipment should be provided for those who are continuously in the room.
- Below 85 dB (A): No measures are required for occasional visitors staying for a limited time.
- Above 85 dB(A): This kind of workshop will be classified as a noise hazard area, and clear warning signs should be permanently set up at each entrance.
- Above 95 dB (A): The warning at the entrance shall have warning signs, and occasional visitors shall also be advised to wear ear protectors.
- Above 105 dB (A): Special ear protectors suitable for this noise level and spectral synthesis should be equipped, and special warnings shall be set up at each entrance.

18. The temperature of some parts of the equipment may exceed 80 degrees Celsius. The insulation or safety plates around those parts should not be removed until those parts have cooled

to room temperature. Technically it is impossible to install safety devices around all hot parts (such as exhaust pipes, exhaust turbines). When opening the equipment door, the operator/maintenance engineer shall not touch the hot parts.

19. Never operate the equipment if any flammable or toxic gases that may be sucked in around the machine.

20. If smoke, dust or vibration hazards are generated during the working process, take necessary measures to eliminate the risk of personal injury.

21. When using compressed air or inert gas to clean the equipment, handle it carefully and use appropriate protective devices, at least safety goggles for the operator and any onlookers. Do not apply the air or gas to the skin or the worker. It is forbidden to use it to remove dust or dirt from clothes.

22. If the parts are cleaned with a cleaning agent or immersed in a cleaning solvent, necessary ventilation equipment should be applied, and appropriate protection should be used, such as breathing filters, protective glasses, rubber aprons and gloves etc.

23. Safety boots have to be worn in any workshop, and if there is a risk of falling objects (regardless of the size of the object), safety helmets should be provided.

24. If any risk of inhaling harmful gas, smoke, or dust, respiratory organs must be protected. According to the nature of the risk, eyes and skin shall also be protected.

25. If there is visible dust, there are almost certainly finer, invisible debris; but the fact that the dust cannot be seen is not a strong evidence that there is no dangerous, invisible dust in the air.

26. It is forbidden to operate the machine at a pressure beyond the limit stated in the technical specifications.

27. It is forbidden to use aerosol type starting aids, such as ether. If used, it may cause explosion or personal injury.

Safety during maintenance and repair

Maintenance, overhaul and repair work should be carried out by well-trained personnel. If necessary, it should be completed under

1. Only use the right tools in good condition for maintenance and repair work.

2. Only authentic Peerless replacement parts can be used.

3. All maintenance work, except for common check, shall be carried out when the equipment is stopped. Measures should be taken to prevent inadvertent startup. In addition, a warning sign saying “Work in progress. Start prohibited” should be fixed to the start device. For engine-driven equipment, the battery should be disconnected and removed, or the terminal equipment shall be covered with an insulating cover. For electrically driven equipment, the power switch should be locked to the open position, and then the fuse should be pulled out. A warning mark such as “Work in progress. No power supply” should be fixed to the fuse box or the power switch.

4. Before removing any pressurized components, the compressor or equipment should be effectively disconnected from various pressure sources, and the entire system should be decompressed. Do not rely on one-way valves (check valves) to isolate the pressure system. In addition, a warning sign such as “Work in progress. Do not open” should be fixed to each vent valve.

5. Before disassembling the engine or other machinery or overhauling the engine or equipment, all movable items shall be prevented from rolling or moving.

6. Make sure that no tools, detachable parts, or rags are left in or on the equipment. It is forbidden to put rags or loose clothing near the air inlet of the engine.

7. Do not use flammable solvents for cleaning (fire risk).

8. Take safety precautions to prevent harm from toxic vapors of the cleaning solution.

9. Do not use machine parts as climbing aids.

10. Follow cleaning steps during maintenance and repairs. Keep away from dirt, and cover parts and exposed openings with clean cloth, paper or tape.

11. Do not perform welding or other work related to heating near fuel or hydraulic systems. The fuel and oil tank must be cleaned thoroughly, for example, through the steam cleaning method, before doing the work. Welding and modification in any way on the pressure vessel is forbidden. During arc welding on the equipment, please disconnect the generator cable.

12. When working under the equipment or when removing the wheels, firmly support the tow bar and axle. Do not rely on a jack.

13. Do not remove or damage any acoustic

material. Keep the material free of dust and liquids such as fuel, oil and cleaning agent. If any acoustic material is damaged, replace it immediately to prevent the sound pressure level from rising.

14. Only use lubricants and oils approved or recommended by Peerless or the equipment manufacturer. Please check if the selected lubricant meets all applicable safety regulations, especially those regarding the risk of explosion or fire, and the possibility of decomposition or generation of hazardous gases. Do not mix it with mineral oil.

15. Protect the engine, air intake filter, electronics and regulating components, etc., from moisture, for example, when doing steam cleaning.

16. When performing any operation involving heat, flame or sparks, the surrounding components should be protected with non-flammable materials first.

17. It is forbidden to use a light source with an open flame to inspect the inside of the equipment.

18. Disconnect the battery clamp (or turn the battery switch to the "off" position) before electrical maintenance or welding.

19. When using cartridge-type breathing air filter device, make sure to use a correct filter element that has not expired.

21. Ensure that petroleum, solvents and other items that can pollute the environment are properly handled.

22. Before cleaning the equipment for use after maintenance or overhaul, please check if the working pressure, temperature, and speed are correct, and whether the control and shutdown devices can function normally.

Always use appropriate tools to complete each task. Knowledge about using and limitations of tools and some common sense can prevent many accidents.

Special maintenance tools, which can save time and avoid damage to components, are provided for special work. Please use them as suggested.

19. Maintenance and repair work should be recorded in the log of the operator. The maintenance frequency can reveal unsafe status.

20. If the hot parts have to be handled, special heat-resistant gloves shall be used. If necessary, other body protection devices should be applied.

Battery

Specific safety measures repairing the battery.

1. The electrolyte of the battery is sulfuric acid solution which can be fatal when contacts human eyes and cause burns when contacts skin. Therefore, please be very careful when handling the battery, for example, when checking the charging status.

2. Set up a sign where battery is charging, prohibiting ignition, open flames and smoking.

3. When charging, an explosive gas mixture forms in the battery and may overflow through the vent of the plug. So if the ventilation is not good, explosive air may form around the battery, and it lasts for several hours in and around the battery after charging. Therefore:

- Smoking is prohibited in nearby locations where the battery is being charged or was recently charged.
- It is forbidden to stop the live circuit at the battery terminal, because sparks usually occur.

Pressure vessel

Maintenance or installation requirements:

1. The vessel can be used as a pressure vessel or a separator, the purpose of which is to contain compressed air for the following:

i. Compressor pressure vessel

ii. Medium air or oil

iii. And follow the description on the nameplate of the vessel:

iv. Maximum working pressure (bar/psi)

v. Maximum working temperature Tmax (Oc)

vi. Minimum working temperature Tmin(Oc)

2. The pressure vessel is only used for the application specified above conforming to technical specifications. Any other applications are forbidden for safety reasons.

3. The national legislative requirements regarding re-inspection shall be complied with.

4. No welding or heat treatment of any kind is allowed on those vessel walls exposed to pressure.

5. The provided vessel is only allowed to be used in conjunction with the required safety devices, such as pressure gauges, overpressure control device, safety valves, etc.

6. When the vessel is in use, the condensate shall be drained daily.

7. The installation, design and connection shall not be changed.

8. Cover bolts and flanges shall not be used for additional fixing.

Safety valve

1. All adjustments or repairs shall be carried out by an authorized representative of the valve supplier.

2. Only trained technicians can be responsible for the maintenance, resetting or performance testing of the safety valve.

3. Safety valves shall be equipped with lead seals or tight lug caps to prevent unauthorized access to the pressure regulating device.

4. The set pressure (except for the stamping pressure) of the safety valve shall not be changed at any time without the installation design engineer's permission.

5. If the set pressure has to be modified, please only use the correct parts provided by Peerless and comply with the instructions available in the valve category.

6. The safety valve shall be tested often and maintained regularly.

7. The accuracy of the set pressure shall be checked regularly.

8. During installation, the compressor should be operated when the pressure is not lower than 75% of the set value to ensure free running of the internal parts.

9. The test frequency is affected by the strictness of the operating environment and the corrosiveness of the pressurized medium.

10. The soft seal and spring should be replaced as part of the maintenance procedure.

11. Do not paint the installed safety valve.

Important notes

Engine

The compressor is driven by a water-cooled diesel engine, and the power of the engine is transmitted to the compressor through a gearbox. There are two spiral rotors mounted on the ball and roller bearing in the compressor. The male rotor driven by the engine pushes the female rotor to produce pulsation-free compressed air. The injected oil plays a role of sealing, cooling and lubricating.

Compressor oil system

The oil is injected by the vessel pressure, and there is no oil pump in the system.

The compressed oil and air mixture is first separated by centrifugation in the container, and the remaining

high-pressure gas with low oil content is filtered again by the oil separator.

The screw-in type oil separator can be replaced more quickly.

Regulating system

The compressor is equipped with a continuous regulating system and an emergency relief valve integrated in the unloader assembly. During operation, the valve is closed by the pressure of the air receiver, and when the compressor is shut down, it is opened by the pressure of the air tank through the compressor core. When air consumption increases, the pressure in the air tank will decrease, and vice versa.

After the regulating valve identifies the pressure change of the air tank, it uses the control air flowing to the unloader to change the opening of the engine's speed regulator to match the air output with the air consumption. The pressure of the air tank is maintained between the preselected working pressure and the corresponding unloading pressure.

Cooling system

The engine is equipped with a liquid cooler and the compressor has an oil cooler.

The upper water storage chamber is integrated with the cooler, thereby reducing the number of interfaces. The cooling air is produced by a fan driven by the engine.

Fuel System

The fuel supply pipeline has an electronic oil pump and a diesel filter, and the oil return line is equipped with a one-way valve.

Before the diesel runs out, they can ensure normal oil suction and prevent air from entering the fuel pipeline to guarantee smooth start-up.

Safety equipment

The temperature switch protects the compressor from overheating. The air receiver is equipped with a safety valve. The engine has a low oil pressure and high coolant temperature switch.

Chassis and axle

The bottom of the compressor/engine is supported by rubber shock pads.

The equipment may or may not have wheels when it is delivered. If wheels are provided, there shall be an adjustable or fixed towbar with or without brakes. The tow bar has a tow ring.

The tow bar is equipped with a jockey wheel or support leg.

Operating Procedures

Parking, towing and lifting instructions Safety Precautions

Operators are required to strictly implement all safety matters.

Notes:

After the first 100km travel, please check and re-tighten the wheel nuts and draw bolts to make them meet the specified torque.

When using a drawing vehicle to operate the equipment, please raise the jockey wheel to the maximum height.

Tow bar with a jockey wheel

When the compressor parks, please fix the jockey wheel (1) and keep the machine in a horizontal position.

(1)

If there is a brake, pull the joystick up to park. Place the compressor as horizontally as possible, but it can be operated temporarily at a non-horizontal position not exceeding 15

degrees. If the compressor stays on a sloping ground, place a tool (wheel chock) or stones in front of or behind the wheel to fix the machine.

Compressor placement

Make the rear of the compressor face the wind, away from contaminated oncoming airflow and walls. Prevent the engine exhaust gas and hot air from entering the machine again, which may cause overheat and power reduction to the engine. Do not block the air duct of the cooling system. If the intake air of the compressor is contaminated, the service life of the compressor oil will be shortened.

Towing instructions

Before towing the compressor, please make sure that the traction equipment on the vehicle is matched with the traction ring or connector, and that the canopy and other openable devices are locked.

Release the parking brake (if applicable); fix the jockey wheel1) in the highest position.

Lifting instructions

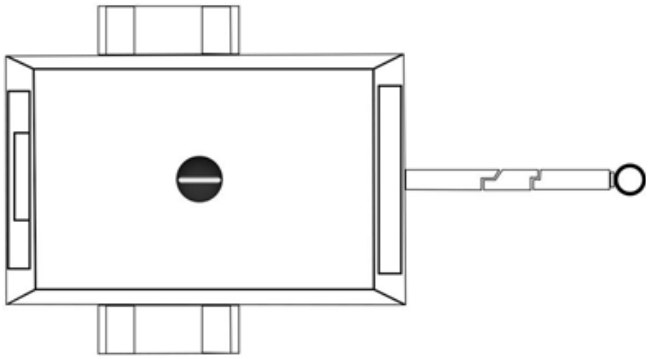
When lifting the compressor, please place it in a horizontal position, and the crane shall be directly above it so that it can be lifted in the vertical direction.

Note:

It must be ensured that the lifting speed is within the safety limit. Transportation by helicopter is prohibited.

When the equipment is running, the lifting operation cannot be carried out. It is best to use a lifting rope to avoid damage to the lifting beam structure.

Use a rope that is strong enough.



Compressor operation

Low load prevention

Low load may cause:

- High fuel consumption: Long-time no-load/low-load running of the engine may cause blue/gray smoke at low speed, and fuel consumption will increase accordingly.
- Low combustion temperature: This will lead to insufficient fuel combustion and dilution of lubricant. In addition, unburned fuel and lubricant can enter the exhaust pipe and eventually seep out through it.
- Hidden fire hazards.

Therefore, the low load time should be minimized.

Code	Description	Code	Description
(A)	Alarm	(U)	Up
(SU)	Status	(M)	Menu
(ST)	Start	(D)	Down
(L)	Loading / Unloading	(SP)	Stop
(P)	Power Switch	(MA)	Maintenance
(F)	Fuse	(R)	Checking
		(E)	Emergency Stop

It is recommended to always use the air compressor under a load greater than 30% of the rated value.

For more information, please contact Peerless Service Center.

Please note that any failure caused by low-load operation is not covered by the warranty.

Before starting

1. Before initial startup, check whether the battery is normal. See the section on battery.

2. Place the compressor horizontally and check the engine oil level. If necessary, add oil to the upper marking line of the oil indicator. See the section on engine oil level check.

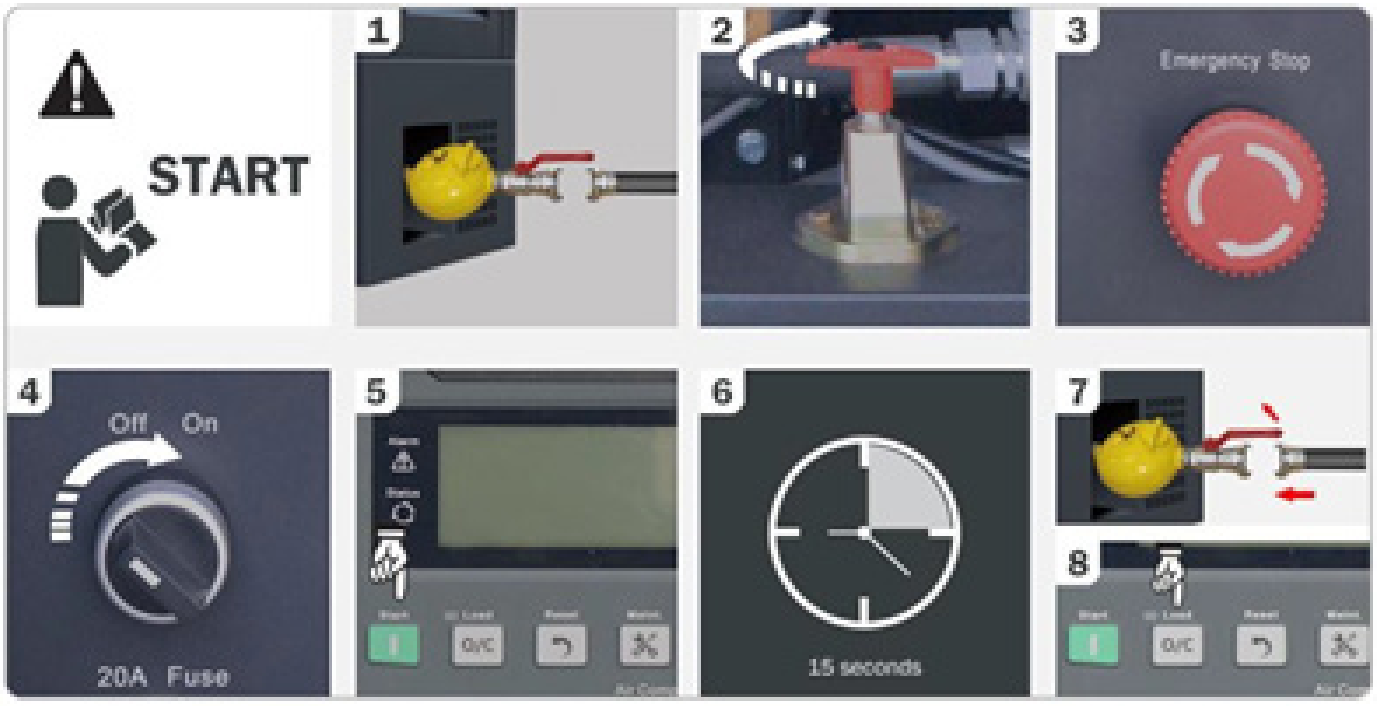
3. Check the compressor oil level. If necessary, add oil so that it is between the upper (H) and lower (L) positions. See the section on compressor oil level check.

4. Check the coolant level of the radiator. If necessary, add a proper amount of coolant. See the section on coolant adding.

5. Check whether the fuel tank has enough diesel. If necessary, add some fuel.

6. Check the air filter vacuum indicator (if any). If the yellow piston reaches the inspection range marked in red, the filter element needs to be replaced. After replacement, press the reset button to reset the indicator.

7. Open the vent valve to make the compressed air flow into the air.



Start Compressor

Please read the manual carefully before starting the compressor.

1. Open the valve on outlet, but don't connect the air hose.

2. Open the canopy of compressor, turn on the main power switch (it is always on top of near to the battery).

3. Ensure emergency stop (E) is up status.

4. Turn power switch (P) to "ON" position.

5. Press (ST) to start the compressor.

6. Engine needs about 15 seconds for pre-heating under idling speed. When ambient temperature is lower than 10 °C, the engine pre-heating time should be more than 30 seconds.

7. Close the valve on outlet and connect the air hose.

8. Press (L) to load. Engine will run at high speed. The compressor will run in automatic control mode. Engine will be in automatic control mode according to air consumption (pressure change).

Caution:

- When compressor is running, ensure that the valve on outlet is always open.
- In running period, please close the canopy. The canopy can be open temporarily, but don't touch any hot or rotating part.
- Check if there is abnormal noise.
- Check if there is warning. If so, Alarm light (A) will be on.

Outlet Pressure

The pressure has been set at factory.

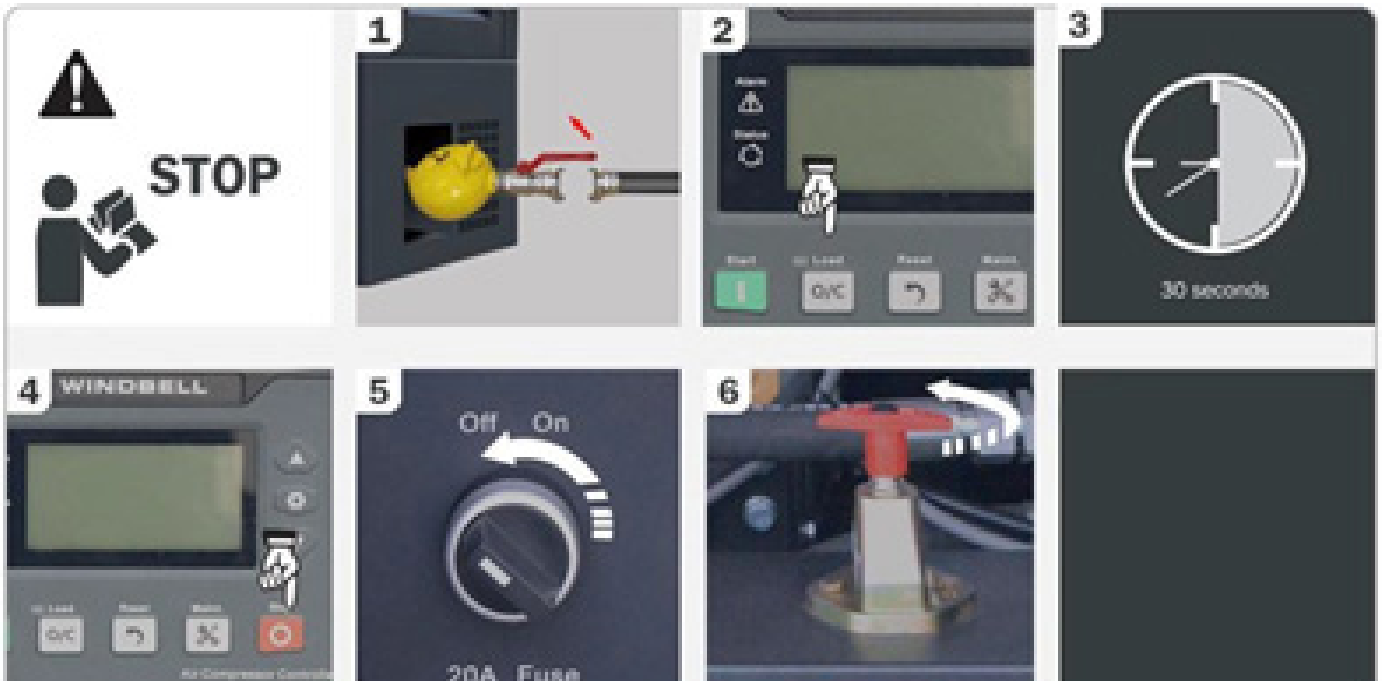
Caution:

- Pressure value set above the rated one will affect normal running of the compressor.

Without Peerless or authorised distributor permission, it is forbidden to adjust the regulating valve to reset the pressure.

- Incorrect using or operation is not covered by warranty.
- Small pressure fluctuation may exist in running. Try to ensure system pressure is at the Max. Value indicated on name plate of the compressor.

If system pressure always cannot reach the Max value, that is to say air consumption is larger than that the compressor can supply, please choose bigger compressor.



Compressor Shutdown

1. Close the valve on the outlet.

2. Press (L) to unload. Load and unload button is the same; press once to load and twice to unload; load/unload is by turns.

3. 30 seconds later, press (SP) to stop the engine. When ambient temperature is too high, make sure the engine runs at idle speed more than 30 seconds before stopping the engine to protect it.

4. Turn power switch (P) to off position.

5. Open canopy to turn off the main power.

6. If any help needed, scan the QR code.

Caution:

Please don't open the valve on the outlet when stop the machine. The residual compressed air in the system will be released through relief valve.

If compressed air released too fast, compressor oil will produce foams. These foams will come into oil air separator, which will cause high oil content in the compressed air.

Maintenance

Unauthorised modifications may cause human injury or machine damage.

Always keep the machine clean and prevent fire hazards.

Machine defects due to incorrect maintenance or damage resulting from modifications to the machine without the written permission of the manufacturer is not under guarantee.

Daily Inspection and Record

Daily inspection and recording should be done every morning. If something abnormal, please stop the machine to do repairing or maintenance immediately. If the problem can't be solved, please contact local agent or manufacturer directly.

1. Checking coolant level and its cleanliness.
2. Draining out the condensate water for oil air separator.
3. Checking if any oil leakage.
4. Checking pressure scale and other instrument.
5. Checking pipelines and air hose.
6. Checking control panel and other instrument.

Making daily records for each inspected item, if anything abnormal, solve it timely.

Please make records for pressure, oil level, oil filling, service time, which will be helpful for daily work.

Oil

Peerless original oil is always highly recommended. If you want to use other brand oil, please check with us first.

Do not mix mineral oil with synthetic oil.

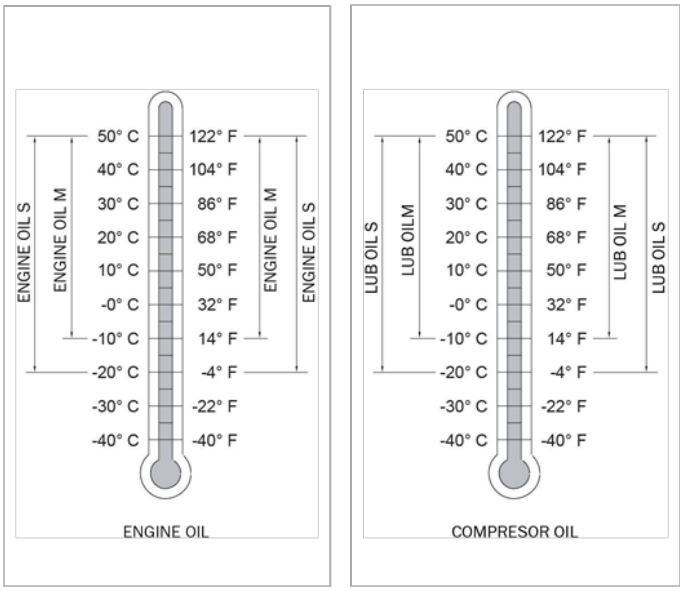
Checking oil level

The mixing of different brands or types of oil is prohibited.

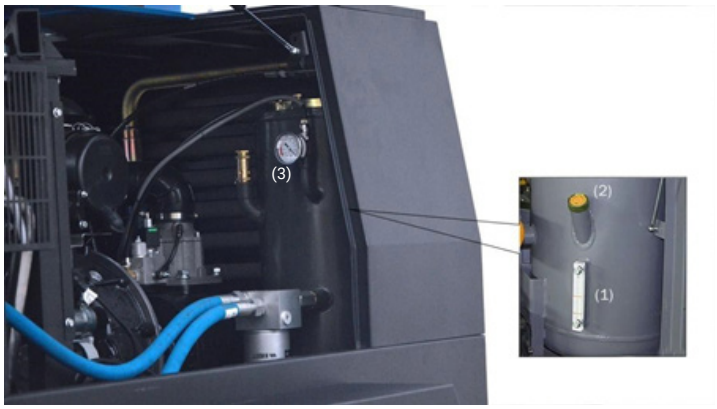
Let the engine cool about 10 minutes, place the compressor at a horizontal place, then check the oil level. If necessary, please add some.

Please choose suitable engine oil and compressor oil according to local ambient temperature.

Oil type will be attached at the end of this manual or check with manufacturer or distributor.



Checking compressor oil level



Daily checking:

After running, checking the compressor oil level every day is very necessary.

Compressor should be on level ground.

No residual pressure inside of the compressor.

1. Close the outlet valve and stop the compressor. Five minutes later, make sure the pressure inside of the compressor is released completely.

2. Check compressor oil level on the indicator (1), and make sure the level is above the middle line but lower than upper line; if the oil level is too low, add some oil from the filler hole.

Before removing the cap on the oil filler hole, please make sure there is no residual pressure inside of oil air separator. The pressure can be seen from the pressure gauge (3) or PLC.

Coolant liquid

The mixing of different brands or types of oil is prohibited.

1. Check the coolant level from the indicator of radiator. If necessary, fill some.

2. Too low coolant level will make the engine run at a very high temperature, and the engine will be damaged.

Coolant filling

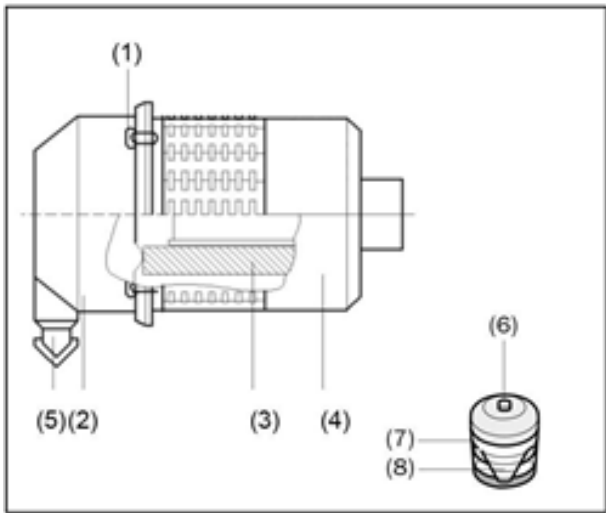
It is forbidden to fill coolant when the coolant is still hot. Because residual pressure may exist inside the radiator. When temperature of coolant is lower than ambient, it is allowed to fill.

Battery

Check the battery regularly.

Keep it clean and dry.

Engine /Compressor air filter



(1)	Fixed buckle
(2)	Dust catcher cap
(3)	Air filter element
(4)	Air filter outer shell
(5)	Pump out valve
(6)	Reset button
(7)	Vacuum indicator
(8)	Yellow indicator

Remove the dust inside the dust catcher, and push the pumpout valve several times.

Cleaning the cooler

Keep the cooler clean to ensure cooling efficiency. Open the door to clean it by Fibre brush or compressed air.

Forbidden to use steel brush.

The angle between the cooler and spray nozzle should be bigger than 90 oC.

Protect well the electrical control device and air filter from water.

It is forbidden to leave overflowing liquid, like fuel, oil, water or cleanser in or nearby the compressor.

Common Faults and Solutions

If any faults appeared, please check the table below for a solution; if it cannot be solved, please contact the manufacturer or distributor.

If any faults appeared, please check in below table and try to solve it; if it cannot be solved, please contact the manufacture or distributor.

Regular Faults and Solutions

No.	Description	Reason	Solution
1	Lower temperature for free air delivery	Too low environment temperature	Reduce the area of heat dissipation
		No-loading running too long time	Increase the air supplying
		Temperature sensor fault	Replace temperature sensor
		Temperature control valve fault	Replace temperature control valve
2	Compressor shutdown by too high temperature of air delivery.	Coolant oil not enough	Check oil level
		Too high ambient temperature	Improve ventilation
		Cooler blocked	Clean cooler
		Coolant oil not suitable	Check oil specification
		Temperature control valve fault	Replace new temperature control valve core
		Oil filter blocked	Replace new filter
		Temperature sensor fault	Replace new one
3	High content of oil in air, Smoke comes out from air filter.	Too much oil	Check oil level
		Oil return pipeline blocked	Clean it
		Too low pressure of air delivery	Adjust the pressure
		Oil air separator broken	Replace new one
		Spring of pressure regulator too loose	Replace new one

No.	Description	Reason	Solution
4	Can’t run by full-loading	Tolerance valve fault	Reset
		Intake valve not work	Clean and add grease
		Oil throttle cylinder not work well	Check , clean, repair or replace
		Pressure regulator not work well	Check valve seat , valve plate wore or not
		Pipeline leakage	Check
		Air intake valve not work	Clean it and add grease
5	Low air delivery	Air filter blocked	Clean
		Intake valve not work	Clean it and add grease
		Pressure regulator not work	Clean it and add grease
		Oil air separator blocked	Clean or replace
6	Smoke comes from air filter	Intake valve leakage	Replace
		Oil return pipeline blocked	Clean
		Pressure regulator valve leakage	Replace
		Discharge valve not work	Replace
		Oil air separator broken	Replace

Controller Protection

Warnings

When controller detects warning signal, it only issues warning, not shutdown. When alarm is removed, warning alarm is cleared automatically.

No.	Type	Description
1	Over Speed Warn	When controller detects speed is above the pre-set over speed warning threshold, it issues warning signal.
2	Under Speed Warn	When controller detects speed is below the pre-set under speed warning threshold, it issues warning signal.
3	Loss of Speed Signal	When controller detects speed is 0, and speed signal loss action is selected "Warning", it issues warning signal.
4	Failed to Stop	When engine stop delay is over and engine doesn't stop completely, controller issues warning signal.
5	Charge Alt Fail	When controller detects engine charger voltage is less than pre-set threshold, it issues warning alarm signal.
6	Battery Overvoltage	When controller detects engine battery voltage is larger than pre-set threshold, it issues warning alarm signal.
7	Battery Undervoltage	When controller detects engine battery voltage is less than pre-set threshold, it issues warning alarm signal.
8	ECU Warn	When controller receives warning signal of engine by 1939, it issues warning signal.
9	Temp Sensor Open Warn	When controller detects sensor is open and action type is selected "Warning", it issues warning signal.
10	High Temp Warn	When controller detects temperature is higher than pre-set high temp warning value, it issues warning signal.
11	Low Temp Warn	When controller detects temperature is lower than pre-set low temp warning value, it issues warning signal.
12	OP Sensor Open Warn	When controller detects oil pressure sensor is open, and action type is selected "Warning", it issues warning signal.
13	Low OP Warn	When controller detects oil pressure value is below pre-set oil pressure warning value, it issues warning signal.
14	Fuel Level Open Warn	When controller detects fuel level sensor is open and action type is selected "Warning", it issues warning signal.
15	Low Fuel Level Warn	When controller detects level value is below pre-set fuel level warning value, it issues warning signal.
16	Discharge Pressure Open	When controller detects discharge sensor is open and action type is selected "Warning", it issues warning signal.
17	High Discharge Press Warn	When controller detects discharge pressure value is above pre-set pressure warning value, it issues warning signal.

18	Low Discharge Press Warn	When controller detects discharge pressure value is below pre-set pressure warning value, it issues warning signal.
19	Flexible Sensor 1-4 Open	When controller detects sensor is open, and action type is elected "Warning", it issues warning signal.
20	Flexible Sensor 1-4 High	When controller detects sensor value is above pre-set upper limit of warning values, it issues warning signal.
21	Flexible Sensor 1-4 Low	When controller detects sensor value is below pre-set lower limit of warning values, it issues warning signal.
22	Input 1-5 Warn	When digital input port is configured to "Warning", and when it is active, it issues corresponding input warning signal.
23	End Of Mandate Time	When controller time reaches mandate time, and mandate time due action is selected "Warning", it issues warning signal.
24	Oil Filter Time Over	When timing method is set to genset "Running Time", maintenance timing is due, and action type is selected "Warning", it issues warning signal. When timing method is set to “Real Time Clock”, maintenance countdown goes to 0, and action type is selected “Warning”, it issues warning signal.
25	Oil Separator TimeOver	
26	Air Filter Time Over	
27	Lubrication Time Over	
28	Engine Oil Filter Over	
29	Fuel Filter Time Over	
30	Engine Lubrication Over	
31	Maintenance 8 Over	
32	Maintenance 9 Over	
33	Maintenance 10 Over	

Shutdowns

When controller detects shutdown alarm signal, it immediately stops. When engine stops completely, it needs to press manually Alarm Reset button to remove alarms.

No.	Type	Description
1	Emergency Stop	When controller detects emergency stop alarm signal, it issues emergency stop alarm signal.
2	Engine Overspeed Shut	When controller detects engine speed is over preset over speed stop threshold, it issues shutdown alarm signal.
3	Engine Underspeed Shut	When controller detects engine speed is below preset over speed stop threshold, it issues shutdown alarm signal.
4	Loss of Speed Signal	When controller detects speed is 0, and speed signal loss action is selected "Shutdown", it issues shutdown alarm signal.
5	Failed to Start	When engine fails to start during pre-set start attempts, controller issues failed to start alarm signal.
6	ECU Shutdown	When controller receives shutdown alarm signal via J1939, it issues shutdown alarm signal.
7	High Temp. Shutdown	When controller input port is set to High Temp Shutdown Input and if it is active, it issues alarm signal.
8	Low Oil Press Shutdown	When controller input port is set to Low Oil Pressure Shutdown Input and if it is active, it issues alarm signal.
9	ECU COM Fail Shutdown	When engine start is completed, but controller doesn't receive data via J1939, controller issues communication failure signal.
10	Temp Sensor Open Shut	When controller detects sensor open, and action type is selected "Shutdown", it issues shutdown alarm signal.
11	High Temp Shutdown	When controller detects temperature value is above pre-set shutdown value, it issues shutdown alarm signal.
12	OP Sensor Open Shut	When controller detects sensor is open and action type is selected "Shutdown", it issues shutdown alarm signal.
13	Low OP Shutdown	When controller detects oil pressure is below pre-set shutdown value, it issues shutdown alarm signal.
14	Fuel Level Open Shut	When controller detects sensor is open, and action type is "Shutdown", it issues shutdown alarm signal.
15	Low Fuel Level Shutdown	When controller detects level is below pre-set fuel level shutdown value, it issues shutdown alarm signal.
16	Discharge Pressure Open	When controller detects pressure sensor is open, and action type is selected “Shutdown", it issues shutdown alarm signal.
17	High Discharge Press	When controller detects sensor is above pre-set pressure shutdown value, it issues shutdown alarm signal.
18	Low Discharge Press Shut	When controller detects sensor is below pre-set pressure shutdown value, it issues shutdown alarm signal.

19	Flexible Sensor 1-4 Open	When controller detects sensor is open, and action type is selected "Shutdown", it issues shutdown alarm signal.
20	Flexible Sensor 1-4 High	When controller detects sensor value is above pre-set upper shutdown limit value, it issues shutdown alarm signal.
21	Flexible Sensor 1-4 Low	When controller detects sensor value is below pre-set upper shutdown limit value, it issues shutdown alarm signal.
22	Input 1-5 Shutdown	When digital input is configured to shutdown alarm, and if it is active, it issues corresponding input shutdown alarm signal.
23	End of Mandate Time	When controller time reaches mandate time, and mandate time due action is selected "Warning", it issues warning signal.
24	Oil Filter Time Over	When timing method is set to genset "Running Time", maintenance timing is due, and action type is selected Shutdown", it issues shutdown signal. When timing method is set to "Real Time Clock", maintenance countdown goes to 0, and action type is selected “Shutdown", it issues shutdown signal.
25	Oil Separator Time Over	
26	Air Filter Time Over	
27	Lubrication Time Over	
28	Engine Oil Filter Over	
29	Fuel Filter Time Over	
30	Engine Lubrication Over	
31	Maintenance 8 Over	
32	Maintenance 9 Over	
33	Maintenance 10 Over	

Servicing

Please see below breakdown of servicing schedules. For a complete servicing guide please scan the below QR code which will lead to a video.

You can also find this video by going to our YouTube channel, search Peerless Products.

Item	Name	Qty	Unit	Service Time	
				250 Hours	500 Hours
Compressor	Oil	20	L	☑	☑
	Oil Filter	1	Pce	☑	☑
	Air Filter	1	Pce	☑	☑
	Oil Separator Filter	1	Pce		☑
Engine	Oil	5	L	☑	☑
	Oil Filter	1	Pce	☑	☑
	Air Filter	1	Pce	☑	☑
	Fuel Filter	1	Pce	☑	☑

Design Data

Compressor

Compression stage		1
Working pressure	Bar(psi)	7 (100)
Air delivery	M3/min	5.2 (185)

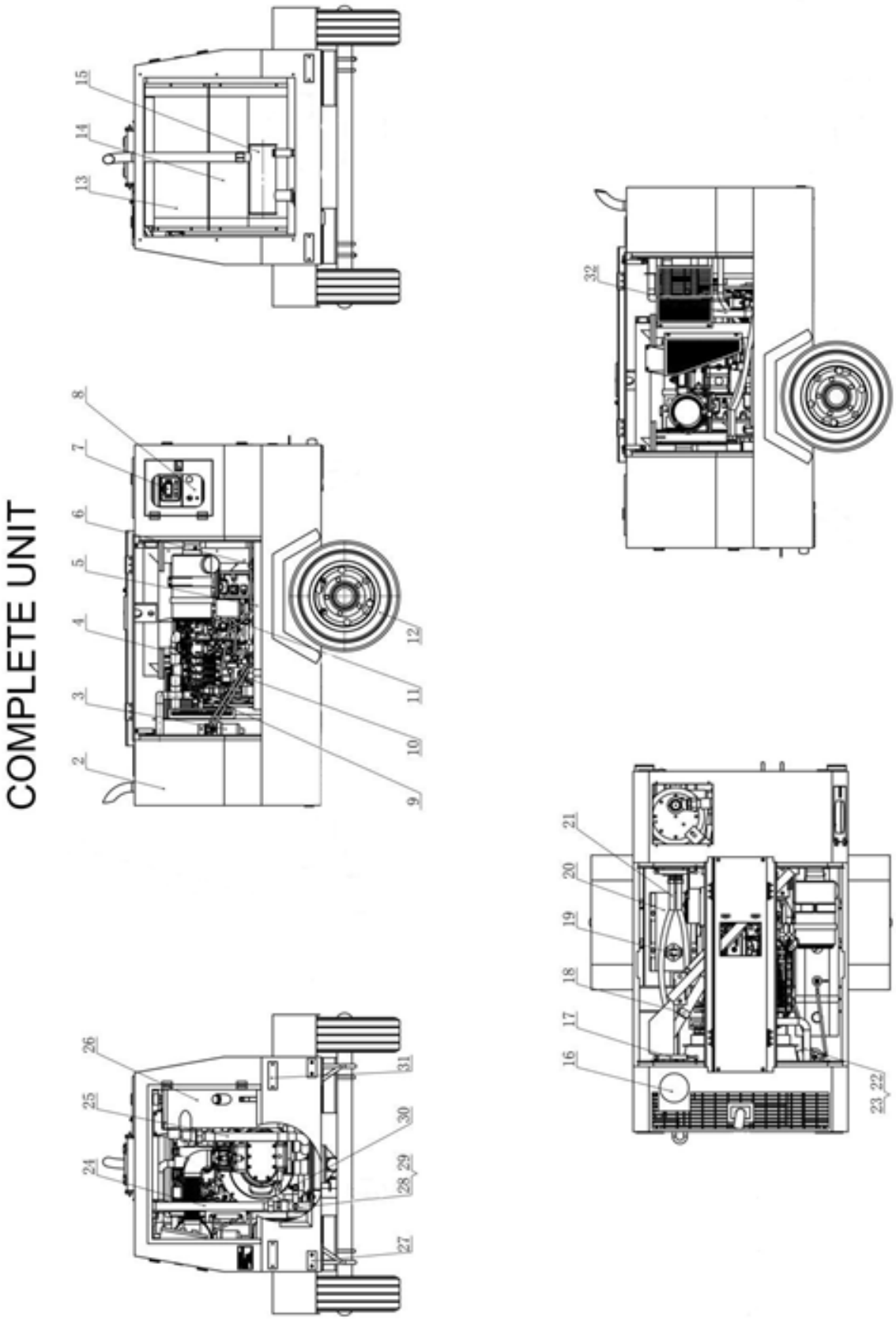
Engine

Make		PEERLESS
Power	kW / HP	36.8 / 50
Cooling system		Water
Cylinders		4
Cylinder bore	mm	90
Cylinder stroke	mm	100
Rated power speed	RPM	2650
Max torque speed	RPM	1500-1800
Displacement		2.54
Engine oil capacity	L	5
Engine oil grade		CF-4/15W-40
Coolant capacity	L	12
Coolant No.		-25
Compressor oil capacity	L	20
Air receiver capacity	L	38
Fuel tank capacity	L	80

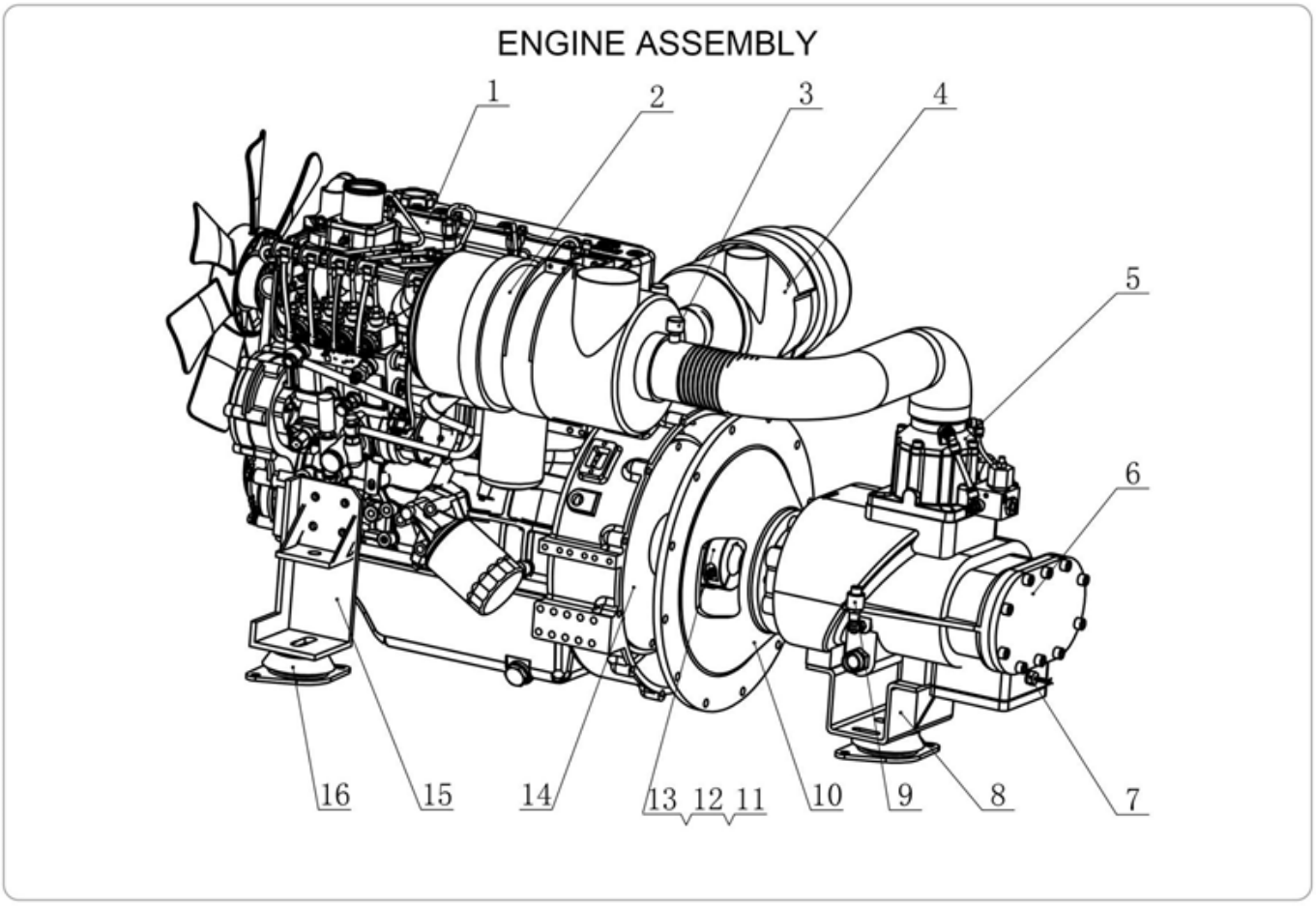
Outlets

Outlets	2×3/4”

COMPLETE UNIT

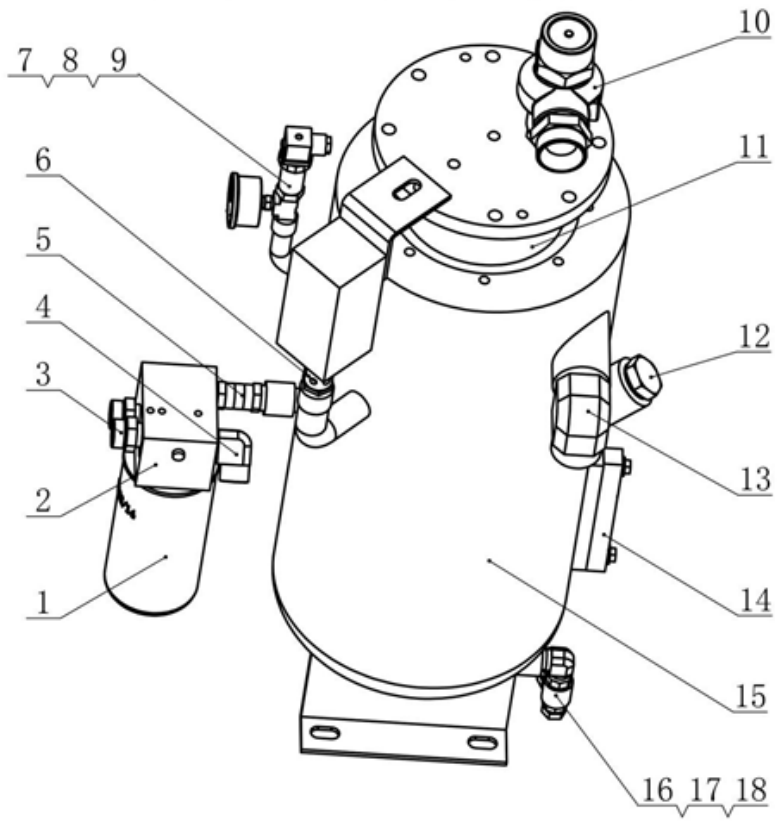


NO.		DESCRIPTION	Q'TY (PCE)
2		SHELL	1
3		OIL WATER SEPARATOR	1
4		COMPRESSOR UNIT ASSEMBLY	1
5		FUEL TANK	1
6		FUEL LOCATION SENSOR	1
7		CONTROLLER	1
8		CONTROLLER GLASS	1
9		FUEL LINE	1
10		FUEL LINE	1
11		FUEL LINE	1
12		WHEEL	1
13		WGD WATER RADIATOR	1
14		OIL RADIATOR	1
15		MUFFLER	1
16		WATER PROOF RUBBER CAP	1
17		PNEUMATIC SPRING	4
18		EXHAUSTING CORRUGATED PIPE	1
19		MECHANICAL POWER SWITCH	1
20		LEAD-ACID BATTERY	1
21		HIGH PRESSURE SOFT PIPE	2
22		WATER PIPE (Ø38)	1
23		SILICONE PIPE(RED)	4
24		AIR OUTLET PIPE	1
25		AIR DISCHARGE SOFE PIPE	1
26		OIL AIR SEPARATOR ASSEMBLY	1
27		ANTI-COLLISION SOFT PAD	2
28		AIR OUTLET (G3/4)	2
29		SAFETY VALVE	1
30		HIGH PRESSURE SOFT PIPE	1
31		RED REFLECTOR	4
32		WATER INLET PIPE (Ø38)	1



NO.	MATERIAL CODE	DESCRIPTION	Q'TY (PCE)
1	01.02.02.02.4105	DIESEL ENGINE	1
2	01.02.02.04.1024	AIR FILTER ASSY	1
3	01.02.02.08.1009	INDICATOR	2
4		AIR FILTER ASSY	1
5	01.02.02.05.0079	AIR INTAKE VALVE	1
6	01.02.02.02.0657	AIR END	1
7	01.02.02.08.0016	TEMPERATURE SENSOR	1
8		AIR END BASE	1
9	01.02.02.05.6007	CHECK VALVE	1
10	01.02.02.18.0174	CENTRAL SUPPORT	1
11	01.02.02.07.3503	COUPLING SPIDER	1
12	01.02.02.07.4603	COUPLING	1
13	01.02.02.07.4612	COUPLING	1
14	01.02.02.18.0832	COUPLING FLANGE	1
15		DIESEL ENGINE SUPPORT	2
16	01.02.02.15.0002	SHOCK PAD	3

OIL AIR SEPARATOR ASSEMBLY



NO.	MATERIAL CODE	DESCRIPTION	Q'TY (PCE)
1	01.02.02.12.0003	OIL FILTER	1
2	01.02.02.05.5019	OIL FILER BASE	1
3	01.02.02.23.3012	1 WAY CONNECTOR	2
4	01.02.02.23.3112	RIGHT ANGLE CONNECTOR	1
5		TWO END SCREW	
6	01.02.02.05.2302	SAFETY VALVE	1
7	01.02.02.23.0607	THREE WAY VALVE	1
8	01.02.02.16.0018	PRESSURE SCALE	1
9	01.02.02.08.1093	PRESSURE SENSOR	1
10	01.01.02.05.1003	PRESSURE MAINTENANCE VALVE	1
11	01.02.02.13.0404	OIL AIR SEPARATOR ELEMENT	1
12	01.02.02.18.2206	OIL FILLING CAP	1
13	01.02.02.23.3118	RIGHT ANGLE CONNECTOR	1
14	01.02.02.03.9002	OIL INDICATOR	1
15	01.02.02.03.0706	OIL AIR VESSEL	1
16	01.02.02.23.1104	RIGHT ANGLE SCREW	1
17	01.02.02.05.4002	COPPER BALL VALVE	1
18	01.02.02.23.0553	END CAP	1

Certificate of Warranty

It is the policy of Peerless Products to provide to its current customers, warranty for all equipment supplied and installation work performed within a specified period.

Parts and Equipment

Peerless Products provides a warranty period of twelve (12) months from the date of original invoice for all manufactured parts and the associated labour. Repair or replace of defective parts will be at the sole discretion of Peerless Products.

Changeover parts will be invoiced to the customer at the customers normal purchase cost and upon return of the warranty item and validation of the claim, the invoice will be credited.

Installations

Peerless Products provides a warranty period of twelve (12) months from the date of final invoice for workmanship after the completion of any installation work.

Labour

Peerless Products will not normally cover any labour costs associated with a warranty claim. Subject to the approval of the Divisional Sales Manager, Peerless Products may choose to reimburse the customer for some or all labour costs associated with a warranty claim. Any claim for labour costs must be authorised by Peerless Products prior to the work being undertaken.

Exclusions

Peerless Products will not accept any liability or cost associated with any consequential losses, or loss of profit or damage to property as a result of faulty product.

Warranty shall not apply:

a) If in the opinion of Peerless Products, the equipment has been used in a

situation the equipment has not been designed for;

b) If in the opinion of Peerless Products, the equipment has been subject to abuse, negligence or accident;

c) If connected to improper, inadequate or faulty power, water or drainage service or operated using incorrect, insufficient or contaminated lubricants, coolants, refrigerants or additives;

d) Where the product is installed, maintained or operated otherwise than in accordance with the instructions supplied by Peerless Products;

e) Where the product has been damaged by foreign objects;

f) Where the product has been serviced, repaired, altered or moved otherwise than by Peerless Products or its nominees or using other than Peerless approved replacement parts.

To obtain full details of your warranty and approved service agency, please contact your dealer/supplier, or the nearest Peerless Products Agent.

Peerless Products

TEL: 03 5434 4200 FAX: 03 5442 2129

Notes

250 Hour Service

Service Agent Service Agent Number

Date of Service / / Signature

Notes at time of service

500 Hour Service

Service Agent Service Agent Number

Date of Service / / Signature

Notes at time of service

750 Hour Service

Service Agent Service Agent Number

Date of Service / / Signature

Notes at time of service

1000 Hour Service

Service Agent Service Agent Number

Date of Service / / Signature

Notes at time of service

1250 Hour Service

Service Agent | Service Agent Number

Date of Service / / | Signature

Notes at time of service

1500 Hour Service

Service Agent | Service Agent Number

Date of Service / / | Signature

Notes at time of service

1750 Hour Service

Service Agent | Service Agent Number

Date of Service / / | Signature

Notes at time of service

2000 Hour Service

Service Agent | Service Agent Number

Date of Service / / | Signature

Notes at time of service

PEERLESS
ROTARY SCREW COMPRESSORS

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EMAIL **SALES@PEERLESSPRODUCTS.COM.AU**

We Are Air