



BENDIX® ESM™ (ELECTRIC SCREW MODULE) HANDLING AND PACKAGING INSTRUCTIONS

The following instructions apply to core or warranty claim returns to Bendix for a Bendix® ESM™ (Electric Screw Module) (full assembly), ESM compressor, and ESM motor. Care must be taken to adhere to the instructions within this document, which will enable Bendix to quickly and accurately process returns and not deny a warranty claim due to incomplete or damaged parts. For more information on warranty returns, core returns, and the ESM, visit B2Bendix.com.



The ESM is a high-voltage device. Do not attempt to perform any service to the ESM without appropriate Personal Protective Equipment (PPE). Service of a high-voltage system on a vehicle is restricted to qualified personnel certified in High Voltage. Follow all vehicle manufacturer instructions for de-energizing the vehicle before performing any service related to the ESM. Use proper PPE as required by local or national authorities when working in hazardous areas and/or high-voltage devices. Do not attempt to open or disassemble the high-voltage motor or compressor. Failure to follow these instructions may result in serious personal injury and/or death.

PART IDENTIFICATION

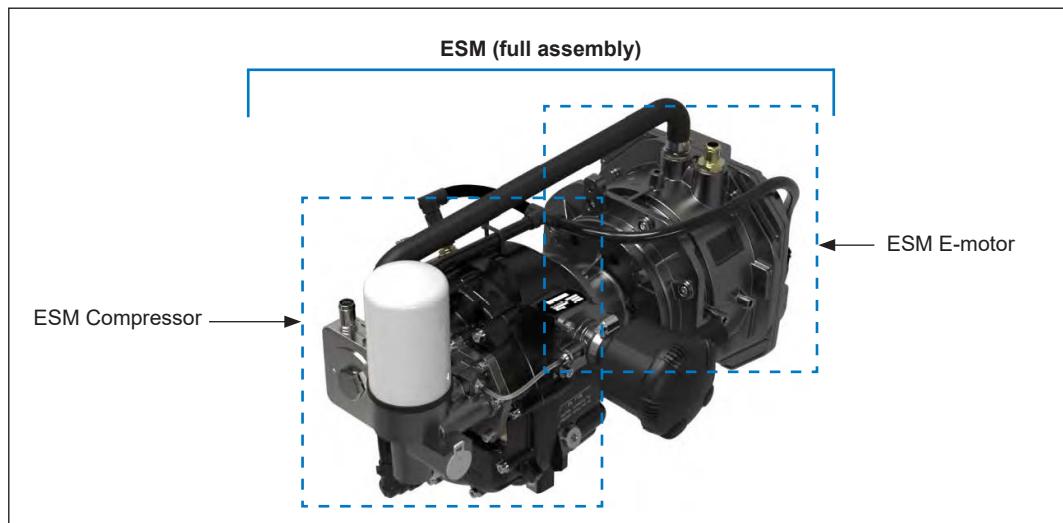


Figure 1 – ESM

Description	Contents	Net Weight	Product Height	Product Length	Product Width
ESM (full assembly)	<ul style="list-style-type: none">• Compressor• High-voltage e-motor• Wiring harness• Coolant hose	103 lbs 47 kg	13.7 in. 347.4 mm	24.3 in. 617.8 mm	14.7 in. 373.7 mm
ESM Compressor	<ul style="list-style-type: none">• Compressor<ul style="list-style-type: none">» Compressor body» Flange» Oil-coalescing filter» Oil» Oil filter» Inlet valve» Oil level sensor» Temperature sensor» Safety valve» Suction pipe	64lbs 29 kg	15.7 in. 400 mm	23.6 in. 600 mm	15.7 in. 400 mm
ESM E-motor	<ul style="list-style-type: none">• High-voltage e-motor	35 lbs 16 kg	15.7 in. 400 mm	23.6 in. 600 mm	15.7 in. 400 mm

Table 1 – ESM Part Identification

GENERAL SAFETY GUIDELINES



WARNING! PLEASE READ AND FOLLOW THESE INSTRUCTIONS

TO AVOID PERSONAL INJURY OR DEATH:

When working on or around a vehicle, the following guidelines should be observed **AT ALL TIMES**:

- ▲ Park the vehicle on a level surface, apply the parking brakes and always block the wheels. Always wear personal protection equipment.
- ▲ Stop the engine and remove the ignition key when working under or around the vehicle. When working in the engine compartment, the engine should be shut off and the ignition key should be removed. Where circumstances require that the engine be in operation, EXTREME CAUTION should be used to prevent personal injury resulting from contact with moving, rotating, leaking, heated or electrically-charged components.
- ▲ Do not attempt to install, remove, disassemble or assemble a component until you have read, and thoroughly understand, the recommended procedures. Use only the proper tools and observe all precautions pertaining to use of those tools.
- ▲ If the work is being performed on the vehicle's air brake system, or any auxiliary pressurized air systems, make certain to drain the air pressure from all reservoirs before beginning ANY work on the vehicle. If the vehicle is equipped with a Bendix® AD-S® air dryer system, a Bendix® DRM™ dryer reservoir module, a Bendix® AD-9si®, AD-HF®, or AD-HFi® air dryer, be sure to drain the purge reservoir.
- ▲ Following the vehicle manufacturer's recommended procedures, deactivate the electrical system in a manner that safely removes all electrical power from the vehicle.
- ▲ Never exceed manufacturer's recommended pressures.
- ▲ Never connect or disconnect a hose or line containing pressure; it may whip and/or cause hazardous airborne dust and dirt particles. Wear eye protection. Slowly open connections with care, and verify that no pressure is present. Never remove a component or plug unless you are certain all system pressure has been depleted.
- ▲ Use only genuine Bendix® brand replacement parts, components and kits. Replacement hardware, tubing, hose, fittings, wiring, etc. must be of equivalent size, type and strength as original equipment and be designed specifically for such applications and systems.
- ▲ Components with stripped threads or damaged parts should be replaced rather than repaired. Do not attempt repairs requiring machining or welding unless specifically stated and approved by the vehicle and component manufacturer.
- ▲ Prior to returning the vehicle to service, make certain all components and systems are restored to their proper operating condition.
- ▲ For vehicles with Automatic Traction Control (ATC), the ATC function must be disabled (ATC indicator lamp should be ON) prior to performing any vehicle maintenance where one or more wheels on a drive axle are lifted off the ground and moving.
- ▲ The power **MUST** be temporarily disconnected from the radar sensor whenever any tests USING A DYNAMOMETER are conducted on a vehicle equipped with a Bendix® Wingman® system.
- ▲ You should consult the vehicle manufacturer's operating and service manuals, and any related literature, in conjunction with the Guidelines above.

WARNING SIGNS USED THROUGHOUT THIS DOCUMENT:

Warning messages in other parts of this document draw the reader's attention to the individual risks concerning use of the product. Warning messages and notes generally precede the descriptions of the relevant applications. Warning messages are subdivided into the following hazard levels in this document:



Warning: identifies hazardous conditions and actions that could cause bodily harm or death.



Caution: identifies conditions and actions that could damage the device, vehicle, other equipment, or cause permanent loss of data.



Electrical Shock Hazard: identifies high-voltage electrical conditions, and the user may need special training and high-voltage personal protective equipment (PPE), as mandated by local or national authorities when working in hazardous conditions.



The ESM should not be opened and the internal parts should not be disassembled beyond spare kit changes. Disassembly may lead to the warranty claim being rejected.

BEFORE RETURNING AN ESM AND/OR ESM COMPONENT

Prior to returning the ESM and/or ESM component(s), perform the following checks:

- Adhere to safety and maintenance guidelines for the applicable product; all related documentation is available on B2Bendix.com, including:
 - » *BW8213, Bendix® ESM™ Preventive Maintenance Kit*
 - » *SD-11-290, Bendix® 400- and 600-volt ESM2™*
- Follow the warranty procedures on B2Bendix.com and determine if the ESM is eligible for warranty return.
- Refer to B2Bendix.com for available spare parts and service kits for the ESM.

Contact the Bendix Tech Team for additional support. For technical support, Bendix Tech Team can be reached by phone at 1-800-AIR-BRAKE (1-800-247-2725), option 2 or by email at techteam@bendix.com or. Bendix Tech Team representatives are available Monday through Thursday, 8:00 a.m. – 6:00 p.m., and Friday, 8:00 a.m. – 5:00 p.m. ET.

HANDLING THE ESM

The ESM must be handled with care and appropriate tools, using the two (2) dedicated lifting eyes in the following locations:

- On the compressor top (not intended to lift the complete assembly with the e-motor).
- On the top side of the e-motor flange.

CAUTION

The ESM has external components (such as harnesses and connections, insulation, inlet air filter, coolant hose, etc.) that may be susceptible to damage while handling, packaging, and shipping. Protect all components as necessary to avoid damage during handling and/or shipping.

CAUTION

During any handling operation, the ESM must not be tilted by more than 45° in any direction. Do not allow the ESM to be exposed to splash water or other contamination.

In the event of tilt, there is a chance of oil leakage through the inlet check valve and inlet air filter.

- Inspect for any oil spills and clean as necessary.
- Inspect all air inlet components. If the air inlet filter shows traces of oil that has been absorbed into it due to leakage from the compressor, replace the air inlet filter with a new one.
- Inspect the oil level inside the compressor and top off as necessary.

Lifting Eyes

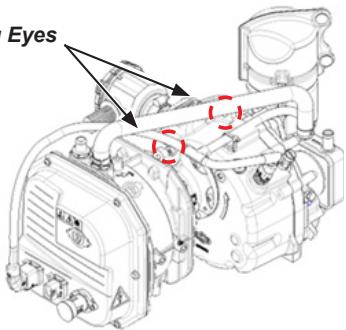


Figure 2 – Lifting Eyes

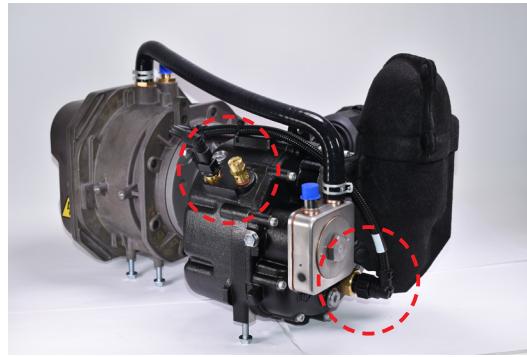
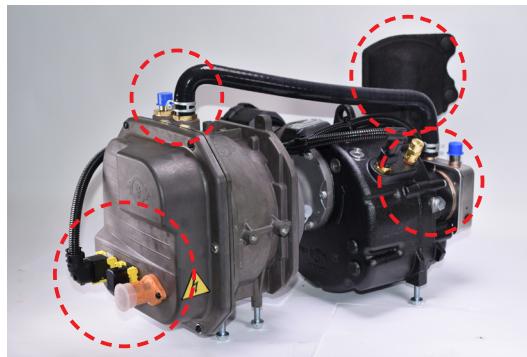


Figure 3 – ESM Parts

PACKAGING THE ESM

- ESM packaging is reusable and can be used for core or warranty claim returns to Bendix.
- Reuse all saved internal and external packaging and cradling to properly package the returned item(s).



Figure 4 – Packaging the ESM

- The box must then be strapped (banded) onto a pallet. All packaging must ensure that the product stays upright. To avoid damage and oil spill, **stacking and tilting beyond 45° in any direction are prohibited**.



- The package label must contain the proper contact and shipping information for easy identification upon receipt at Bendix.

CAUTION

The ESM needs to arrive at Bendix Warranty Center upright and without any physical damage. Proper care must be taken in packaging and shipping to ensure safe delivery. Warranty claim units that are received damaged may be rejected.



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