Quality Assurance Programs

ISO 9001 Certification

Since 1995, Ariel Corporation has followed ISO's strategic tools and guidelines to ensure that our products and services are consistent, safe, and reliable.

Please refer to the Ariel website for further specifics on our ISO 9001 certification.

Materials Certifications and Tests

Ariel's compressor components are purchased and machined in large quantities, often in lot quantities. Raw materials suppliers are audited for their quality control and performance. These suppliers provide certain lot sample testing to verify materials chemical compositions and / or physical properties. With the large quantity of components purchased each year Ariel does not require these materials certifications, but rely on the suppliers quality control system and the auditing process. This system maintains supplier quality while limiting component costs and coordination.

An Inspection and Test Plan has been prepared to show what Ariel and Ariel's suppliers provide for materials certifications. This list includes those tests listed as optional in the Ariel Price Book. Additional testing requests must be reviewed and approved by Ariel. Material certification with traceability are an available option for the crankshaft and cylinder body.

EN 10204:2004 specifies the different types of inspection documents supplied to the purchaser... There are several categories or Types referenced within EN 10204:2004. Below are excerpts from EN 10204:2004 and Ariel's position on these categories.

Type 2.1 non-specific inspection: inspection carried out by the manufacturer in accordance with his own procedures to assess whether products defined by the same product specification and made by the same manufacturing process, are in compliance with the requirements of the order or not.

A type 2.1 requirement would consist of a certificate of compliance written by Ariel with no inclusion of material test certificates.

Type 2.2 specific inspection: inspection carried out, before delivery, according to the product specification, on the products to be supplied or on test units of which the products supplied are part, in order to verify that these products are in compliance with the requirements of the order.

Ariel does not provide certification to Type 2.2.

Type 3.1 Document issued by the manufacturer in which he declares that the products supplied are in compliance with the requirements of the order and in which he supplies test results. ... The document is validated by the manufacturer's authorized inspection representative, independent of the manufacturing department.

Ariel provides an option for Type 3.1 material certificates for the crankshaft and cylinder body. These must be requested with the original equipment purchase order.

Type 3.2 Document prepared by both the manufacturer's authorized inspection representative, independent of the manufacturing department and either the purchaser's authorized inspection representative or the inspector designated by the official regulations and in which they declare that the proucts supplied are in compliance with the requirements of the order and in which test results are supplied.

Ariel does not provide certification to Type 3.2.

Inspection and Test Plan

Click here to download the "Ariel Corporation Quality Assurance Plan Description".

Cylinder Leak Test

All Compressor cylinders are hydrostatically tested prior to shipment. The cylinders are tested at a minimum of 1 hour at 1.5 times the rated MAWP of the cylinder (Maximum Allowable Working Pressure). The hydrostatic test pressure is recorded on a pressure test recorder vs time and retained with the permanent unit file.

Cylinder hydrotests may be observed by the client if required. Requests for witness must be included at the time of order for scheduling purposes.

For lighter gasses, mole weights below 12 or hydrogen content above 50%, cylinders will be leak tested with helium. Once the cylinder has been hydrotested , the cylinder is submerged in a water tank and pressurized with Helium to the cylinder MAWP or 2000 psig , whichever is lower. Pressure must be maintained and no leaks observed for a period of thirty (30) minutes. Helium leak tests of compressor cylinders is available as an option.

Helium testing is required for gasses 12 mole weight and below as well as gasses with 50% or more hydrogen by volume.

Assembly Inspections And Tests

During the assembly process, all units are subjected to a series of inspections to ensure mechanical soundness (reference ER-5.3). These include:

- Measurement and recording of critical values such as crankshaft end clearances, connecting rod side clearances, rod runout, and bearing jack clearances.
- Check operation of lubrication system components including shutdowns, pump(s), passages and fittings.
- Verify critical torque values.
- Check freedom of movement of crankshaft and connecting rod pins.

All mechanically complete units (excluding valves) are to be run tested for at least 4 hours, during which time operating parameters will be monitored and recorded on the Production Test Log (ER-5.3.1).

After the run test additional inspections are performed on the unit including:

- Measure and record temperatures of main bearing caps and connecting rods (at split lines), within 5 minutes of completion of run test.
- Visually inspect bores, piston rods, crosshead shoes and slides for any scoring or unusual wear patterns.
- Crankshaft end clearances are measured and recorded.
- Critical torques and set screws are checked and adjusted when required.
- After passing all previous inspections the unit is prepared for shipment. Final visual checks of unit and associated paperwork is performed by Quality Control.