

Howden WRViN range Screw compressor

The Howden WRViN range of compressors is an extremely robust screw compressor designed for a long operating life with extended service intervals.



Routine inspection of the compressor is visual inspections and an annual check on thrust bearing wear, however if the unit is fitted with axial displacement probes the need for this annual check is removed, replaced with a review of probe logs.

Replacement would require evacuation of the refrigerant, drain the compressor of oil, remove switches/LPI, cylinder end cover, piston, cylinder, outlet end cover. Then jack out the bearings. Heat new ones to fit, allow to cool. Check clearances and assembly and refit dismantled components.

If the compressor is operated within guidelines then it is not expected to have any major internal service within the first ten years of operation, however dependant of the shaft seal selection there may need to be some intervention to have seals replaced or inspected every two to three years.

Maintenance is limited to visual inspections, with only the shaft seal and control system feedback devices suitable for on-site removal or replacement.

The compressor is supplied with Babbitt lined sleeve radial bearings, Angular Contact thrust bearings and 28SC (Dry Outboard) 8B1 (Wet Inboard) mechanical seal design.

Owners and operators of plant with WRViN range compressors have three options when considering service, influenced by location, cost or by locally available services, or by a combination of all three, as follows:

Replacement compressor(s) – no field or local service, swap out compressors and return to Howden for re-build

This option minimises down time in the event of a compressor needing to be replaced, and also reduces the customer investment in workshop facilities including lifting equipment, special tooling, spare parts etc. required for the maintenance of these compressors.

Facilitate a suitable workshop to allow compressor strip and rebuilds

This option requires investment in workshop facilities including lifting equipment, special tooling, spare parts etc. required for the maintenance of these compressors. Compressor outage time is measured in the time taken to re-build the compressor suitable for re-installation.

This option is most suited to installations where there is sufficient capacity and planned outage times to carry out service on the installed equipment.

A combination of both of above, stock compressors being issued and replaced by locally re-worked units

This option minimises down time in the event of a compressor needing to be replaced but also requires investment in workshop facilities including lifting equipment, special tooling, spare parts etc. required for the maintenance of these compressors.

This option is most suited to installations where compressor availability must be maximised, and the location does not allow easy access to Howden facilities.



Where it is planned to have workshop facilities the following equipment is recommended, essential equipment is marked with a *.

Personnel:

- Experienced Compressor Service Engineer(s)*

Spares:

- Fasteners and soft parts*
- Replacement Shaft Seal*
- Replacement Thrust Bearings*
- Replacement Journal Bearings*

Facilities:

- Suitable Premises
- Min 5 Ton Lifting Equipment*
- Steel benches
- Std and Special Tooling*
- Compressed air for power tools
- Accessibility for 321 compressors, and associated transport*
- Racking/storage of tooling and spares*

Others:

- Field Service Transport
- Local machine shop facilities
- Balancing Equipment*
- Electroplating
- Sand Blasting

Service Calendar

Action	Year																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Visual inspection, review of axial probe logs	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Labour costs	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Parts costs (£k)																				
Shaft seal inspect/replace*		Y		Y		Y		Y		Y		Y		Y		Y		Y		Y
Labour costs		6		20		6		20		6		20		6		20		6		6
Parts costs (£k)		£xx		£xx		£xx		£xx		£xx		£xx		£xx		£xx		£xx		£xx
Workshop overhaul																				
Labour costs										55										55
Parts costs (£k)										£xxx										£xxx

* Shaft seal replacement intervals may be extended through service experience

Total annual costs and hours

Action	Year																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Labour costs	2	8	2	22	2	8	2	22	2	63	2	22	2	8	2	22	2	8	2	53
Parts costs (£k)		£xx		£xx		£xx		£xx		£xxx		£xx		£xx		£xx		£xx		£xxx

For further information contact:
 Howden, a Chart Industries Company
 Old Govan Road, Renfrew, PA4 8XJ, UK
www.howden.com

