



Recommended WPCE Service and certification schedule

All Elmar Wireline Pressure Control Equipment is certified to be manufactured following API6A specifications, to be fit for purpose and to conform to its published specifications when it is initially manufactured. The “Certification” is documented in the **IRC (Independent Review Certificate)** which confirms that the design of a given Assembly, identified by its Assembly Number, is following the industry standards and the **COC (Certificate of Conformity)** which vouches that the specific equipment, identified by its Serial Number, conforms to the Assembly design and specifications.

To remain fit for purpose and conforming to specifications during its life cycle, the equipment must be checked, serviced, and maintained regularly.

There are no Industry world-wide Regulatory Standards that specify procedures and frequencies of Service interventions for Wireline PCE, and the regulators rely on OEM’s guidelines.

In a number of instances Local Authorities (e.g. the Petroleum Services Association of Canada IRPs), or Oil Companies (e.g. Shell, Saudi Aramco amongst others) have issued binding specific regulations. Some of the major wireline Service Companies also have binding “Policies” related to Wireline Pressure Control Equipment.

Elmar OEM’s recommended Service Schedule and Certification update schedules are laid out in the D-SASWI-007 “Service & Maintenance Level Requirements for WPCE & Control Modules” Document.

An overview of that document follows:

Service Levels

Service Level 1: is to be carried out after every job to get the equipment ready for the next job. It is to be repeated before dispatching the equipment after a long period of storage.

If the equipment has been subjected to severe well environment, corrosive well fluids (e.g. CO₂ or H₂S, or acids) or there is evidence of severe mishandling (e.g. dropping of skid), Service Level 2 should be performed. Blistering of exposed elastomers, or severe corrosion are certain signs of exposure to corrosive fluids.

The equipment is pressure tested at Working Pressure (WP) and function tested at atmospheric pressure. It is important to properly protect internal surfaces and sealing bores with adequate anticorrosion products if the equipment is stored. This is best done by using a mixture of water with inhibitors for the pressure test.

The pressure test procedure for each assembly is stated on each Assembly Drawing.

Notice this test is not, nor replaces the pressure test to be carried out on location after rigging up the equipment. This pressure test on location can be carried out at 1.2 Times the Maximum Anticipated Wellhead Pressure, but not to exceed Equipment Working Pressure.



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Service Level 2: is to be carried out at a **maximum** interval of **ONE YEAR**, but also whenever the equipment has been subjected to hostile well conditions or rough handling.

The following are notes on detailed procedures:

Equipment is stripped down, rebuilt with new elastomers, including BOP Ram outer seals and quick connects. BOP Ram Inner seals are to be inspected and changed out if any abnormality is observed (e.g. slight bubbling from long exposure to well fluids).

It is simpler, and faster, to use Assembly kits rather than order individual seals. Most recent Elmar PCE assembly kits use the Assembly No with a “K” added on the end. Kit Part No’s are listed in the “Technical Summary” on each Assembly Drawing.

Legacy Bowen and Hydrolex Seal Kits are on a case by case basis. Contact Elmar Aftersales Support if unsure.

Line Size Kits for Grease Heads, Stuffing Boxes, Line Wipers, Enviro and Slickline Pack-offs should also be changed out at this time.

Tool Catcher Garter Springs should be changed out at this time. Grapples should be inspected, and changed out if any wear / corrosion is suspected on the grab section.

Tool Trap Flappers should be inspected at this time and changed out if any cable wear or deformation is seen at all.

Extreme care should be taken when servicing multiple assemblies of the same kind (e.g. lubricator strings or multiple GIE Grease Heads) not to mix parts between individual assemblies. Any mix-up would render invalid the Assembly Data Sheet and the Certification of the equipment as recorded in the QA file.

Ensure Collar / Collar insert combinations are separated to ensure corrosion build up. If this service is not performed at this time there is a risk that the parts will bind together over time through corrosion.

Lifting gear (Lifting Bails, Test Plug Lifting Bail Assy and Spreader / Lubricator clamps) should be MPI’ed and Load Tested to Test Load as per the drawings Safe Working Load (SWL) specifications once-a-year.

Service Level 3: This is a **Major Refurbishment and Re-Certification**. It entails complete dismantling of all equipment Assemblies to component parts, NDT tests and dimensional checks and rebuilding with parts that have passed the checks, or with new parts. It includes an update to the latest modifications.

It results in an updated COC being issued by a Certifying authority.

A major **Refurbishment and Re-Certification** can be carried-out only by the OEM who retains the manufacturing files, including the dimensional drawings. It is Elmar policy not to release manufacturing drawings. Re-Certification can be carried out only by Elmar Personnel. This is normally performed at an Elmar Aftersales Support location.



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When logistical issues make this difficult, Elmar can provide options to perform the Re-Certification at the Clients' Location. This will require availability of third party services for NDT and specialised Coating, and dispatch to the location of all necessary replacement parts. Elmar Aftersales Support should be contacted to make arrangements well before the required date.

Elmar recommends that equipment operated in **standard, average job frequency** conditions be Re-Certified through a Level 3 Service at a **maximum interval of 5 years**, or shorter if dictated by local regulations.

Exposure to HP/HT conditions with frequent loading to 80% of WP, corrosive well fluids, high job frequency, or continuous storage in corrosive atmosphere, may require a shorter than five years interval between re-certifications. This is a decision to be taken by the Operator, after performing an analysis of failure risks and associated costs vs. preventive maintenance cost.

Wireline Companies' own policies, local Oil Industry regulators or Oil Companies may also dictate shorter intervals. As an example Canada's PSAC, and Saudi Aramco currently dictate a Major Refurbishment and Re-Certification every 3 years.

