



PrimeServ OMNICARE

The right-first-time 3D scanning blueprint

A proven approach for the successful and
reliable re-bundling of barrel compressors

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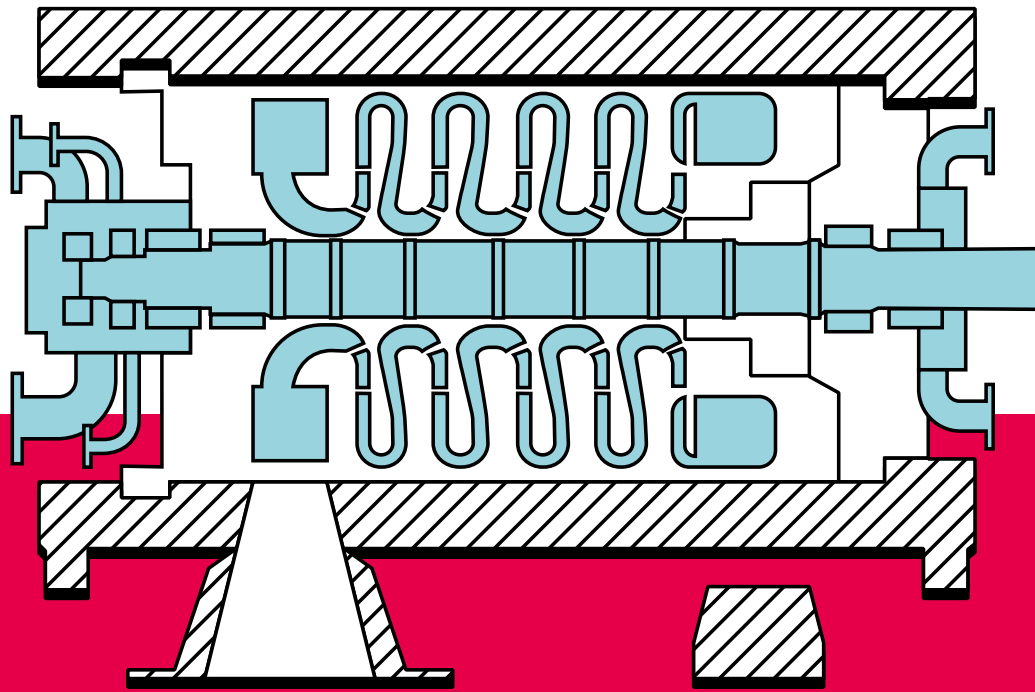
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List of abbreviations	
EPC	Engineering, Procurement and Construction
OEM	Original Equipment Manufacturer

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Executive summary

Revamping centrifugal compressors is essential to keep oil & gas facilities operating reliably under changing process conditions. However, revamp projects can be complex, costly, and their feasibility is often dependent on the availability of critical dimensional data. Our experience shows that the key to a successful outcome is close collaboration between customer, EPC contractor, and our engineering team. This collaboration starts right at the beginning of the project, from the initial drafting of the project concept. With our right-first-time 3D scanning methodology, we capture critical compressor casing-to-bundle interface dimensions during planned overhauls to ensure that reliable critical data is available by the time a compressor revamp is scheduled. The result: you ensure revamp readiness, unlock access to alternative solutions and thus reduce revamp project risks and costs.

The challenge

A compressor revamp project typically spans 3 to 5 years from initial concept studies to installation and commissioning. The complexity of the project depends on the feasibility of the available technical solutions: either a footprint or a re-bundling solution. A “plug-and-play” re-bundling solution, where the existing casing is re-used and no major process piping modifications are required, is typically preferred by the operators because it minimizes invasive modifications.

The feasibility of a re-bundling solution relies on the availability of critical casing-to-bundle interface dimensions. These dimensions are often proprietary to the manufacturer and can only be accessed and collected during an equipment overhaul event (a window of less than 10 days, happening every 3–6 years).

If these opportunities are missed, operators are forced to rely on the OEM offering – limiting sourcing options, increasing costs, and delaying projects. The stakes are high: a single missed measurement can set a project back years and lead to millions in production losses.

Anticipated timeline

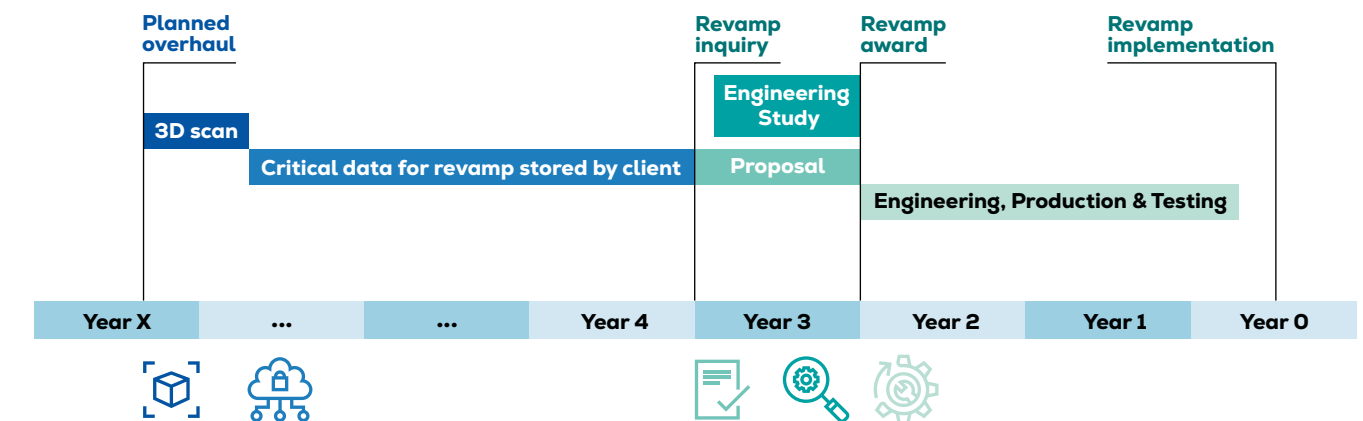


Fig. 1: Anticipated timeline (note: reported durations are for reference only)

Our strategic approach: right-first-time 3D scanning

Our right-first-time 3D scanning methodology puts our engineering know-how on compressor design and construction at the service of our customers to ensure the timely collection of critical data on third-party compressors, enabling future re-bundling solutions with our OEM technology.



What we do:

- Specify the critical data required for a specific compressor revamp project.
- Define the data collecting method, including scanning device selection, scan quality and data accuracy requirements.
- Capture, in collaboration with the customer, the specified data during a scheduled overhaul
- Validate and interpret the collected data ensuring its suitability for revamp purposes.

How we do it:

- 1. Strategic planning** – We engage with customers to identify compressors within the installed fleet that could be subject to future revamp projects based on forecasts of the evolution of process parameters. We understand the overhaul schedules for those compressors and, together with the customer, define a data collection plan for those assets in alignment with their overhaul schedule.
- 2. Detailed preparation** – We take an active role during the preparation of the compressor overhaul to integrate the 3D scanning activities within the overhaul scope. Our participation during the preparation phase includes defining the technical facts inherent to the data to be collected (which data? what accuracy? what quality?); the technical facts related to the 3D scanning activities (equipment selection, access requirements, lighting, surface preparation, etc.); and the integration of the scanning works within the overall overhaul schedule.
- 3. Lead the 3D scanning & validation** – Thanks to our expertise and know-how on compressor design and construction, we collaborate with the specialist 3D scanning contractor and customer to drive the scanning activities on site, process and validate the collected data, and ensure that the deliverables fulfill the requirements of a future revamp project.

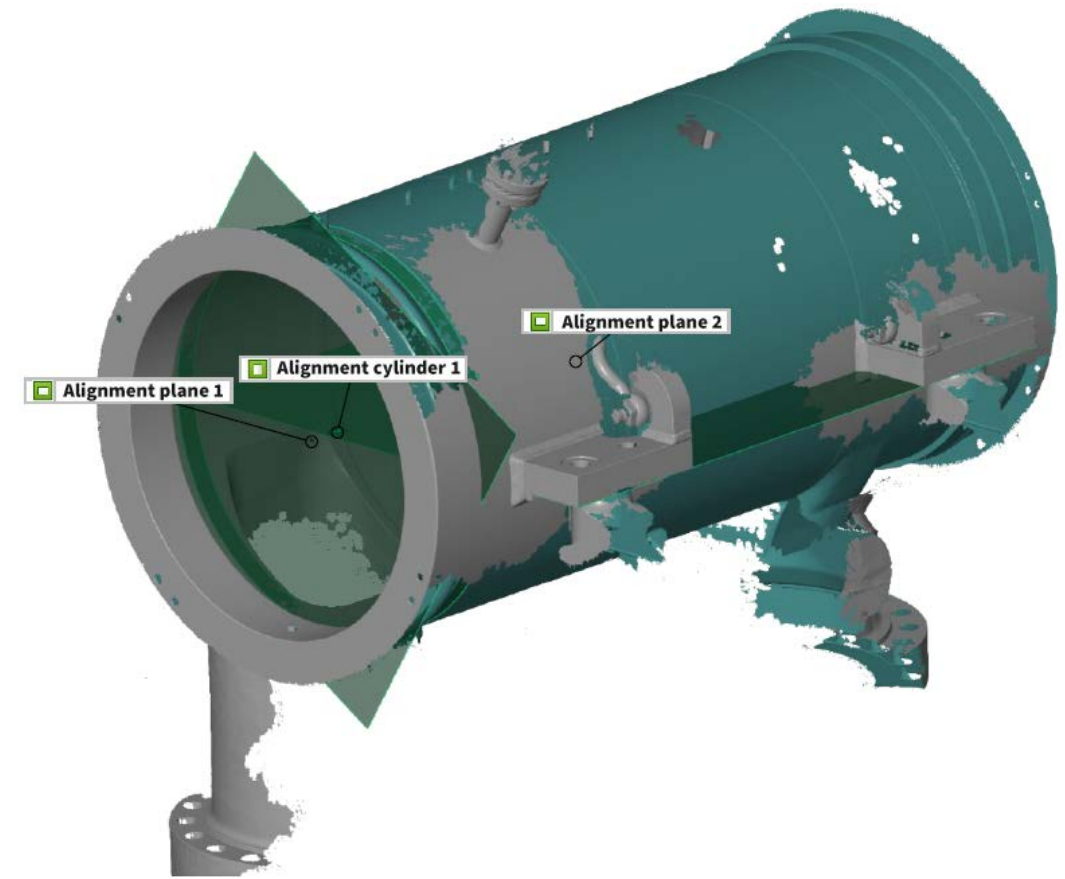


Fig. 2: 3D scan of a barrel compressor outer casing

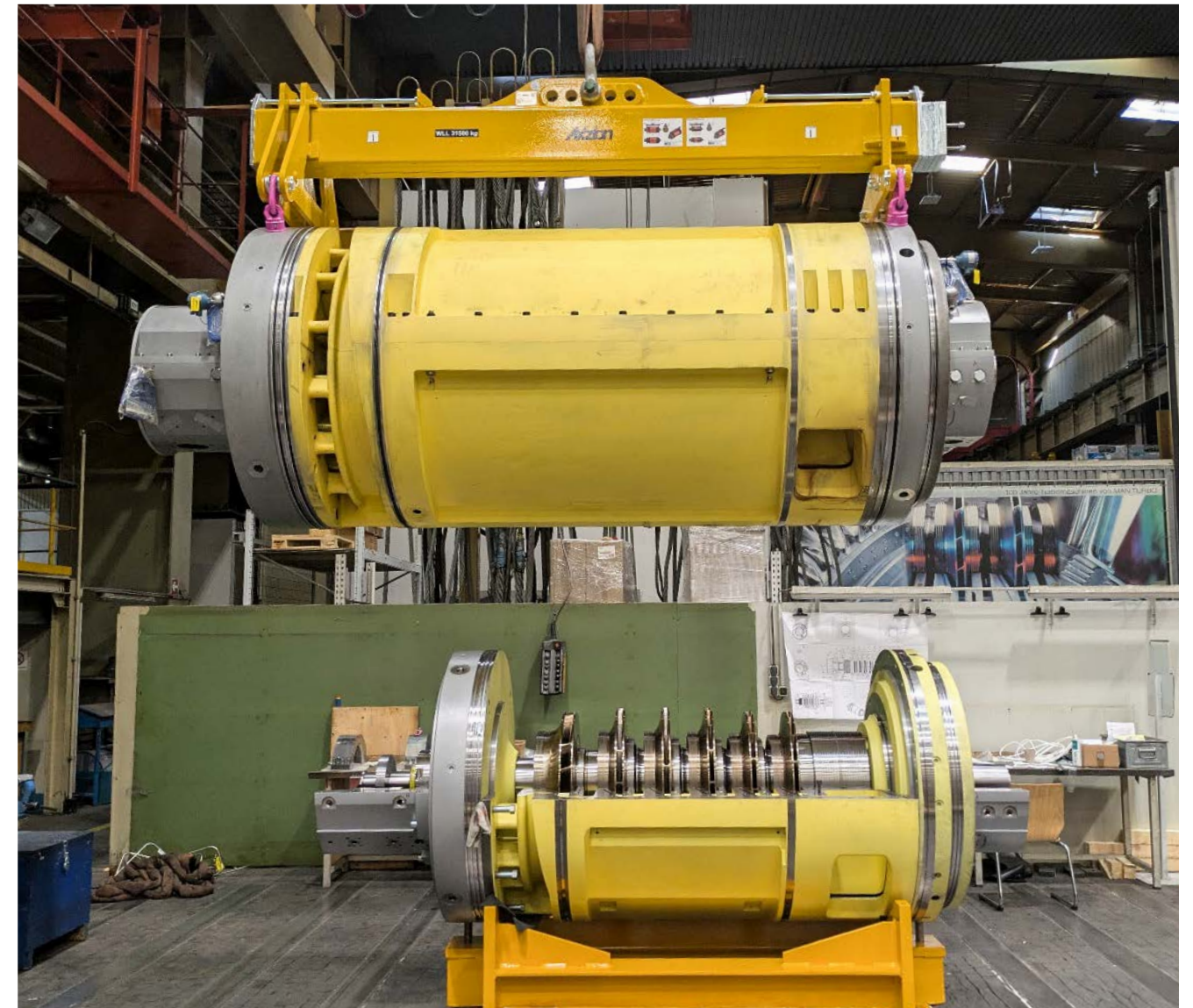
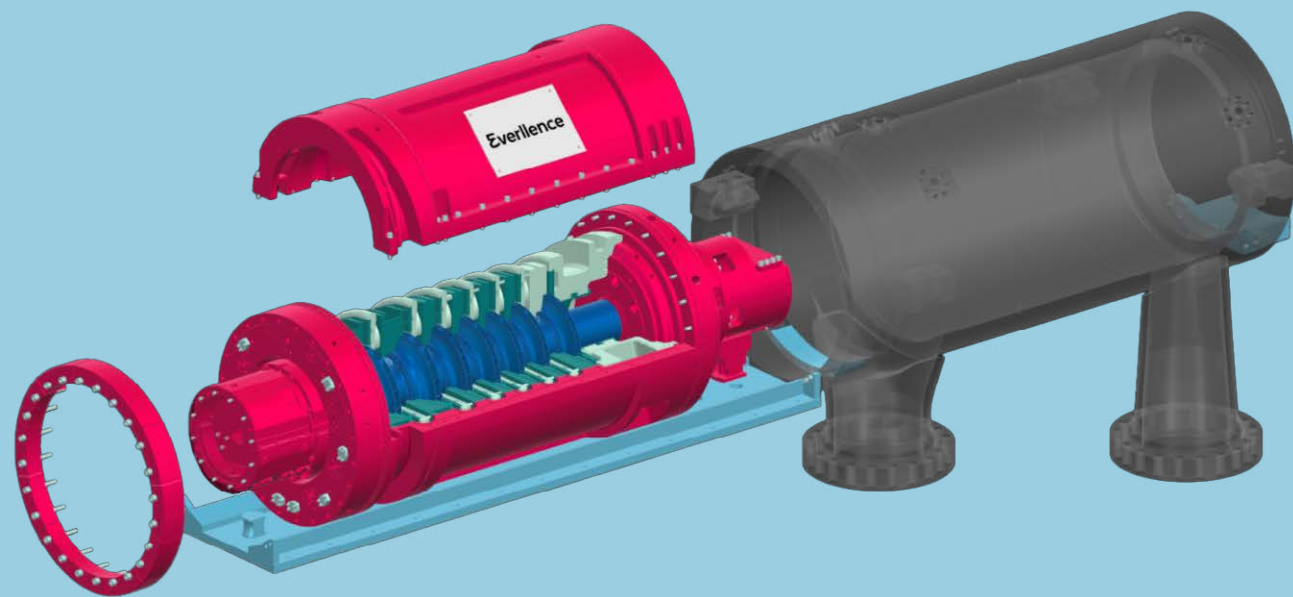


Effective collaboration: the key to success

The key to success lies in the effective collaboration between the customer and our team:

- **Customer:** Provides insights on long-term asset overhaul planning, supports the integration of 3D scanning works during overhaul schedules, participates in preparation activities.
- **Our team:** Lead the technical specification of data and collecting methodology, lead the scanning execution, engineering validation, and interpretation of results, ensuring reliable inputs for design.

When both parties coordinate early, we prevent missed opportunities, reduce risk-of failure, and ensure the availability of accurate data to enable the right-first-time delivery of compressor revamp projects.



Results & benefits

By applying this methodology, operators gain:

- Reduced OEM dependency – opening the market to competitive revamp solutions.
- Reduced costs – by increasing the feasibility of “plug-and-play” re-bundling solutions.
- Mitigated risk-of-failure – benefiting from our engineering back-up during the data collection exercise.
- Shorter project timelines – avoiding years of revamp project delays due to missed data.
- No extra downtime – taking advantage of scheduled shutdowns for data collection.

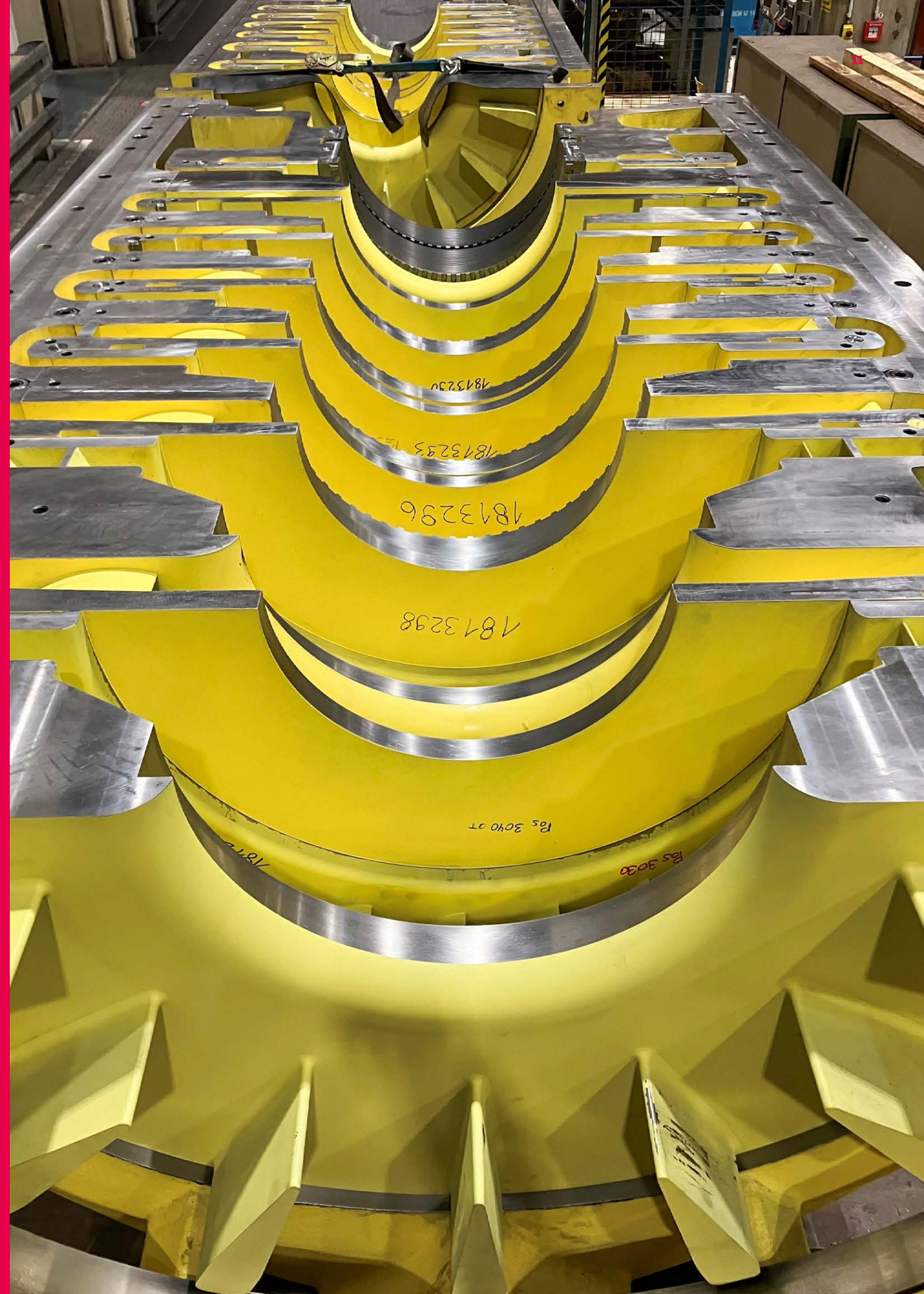
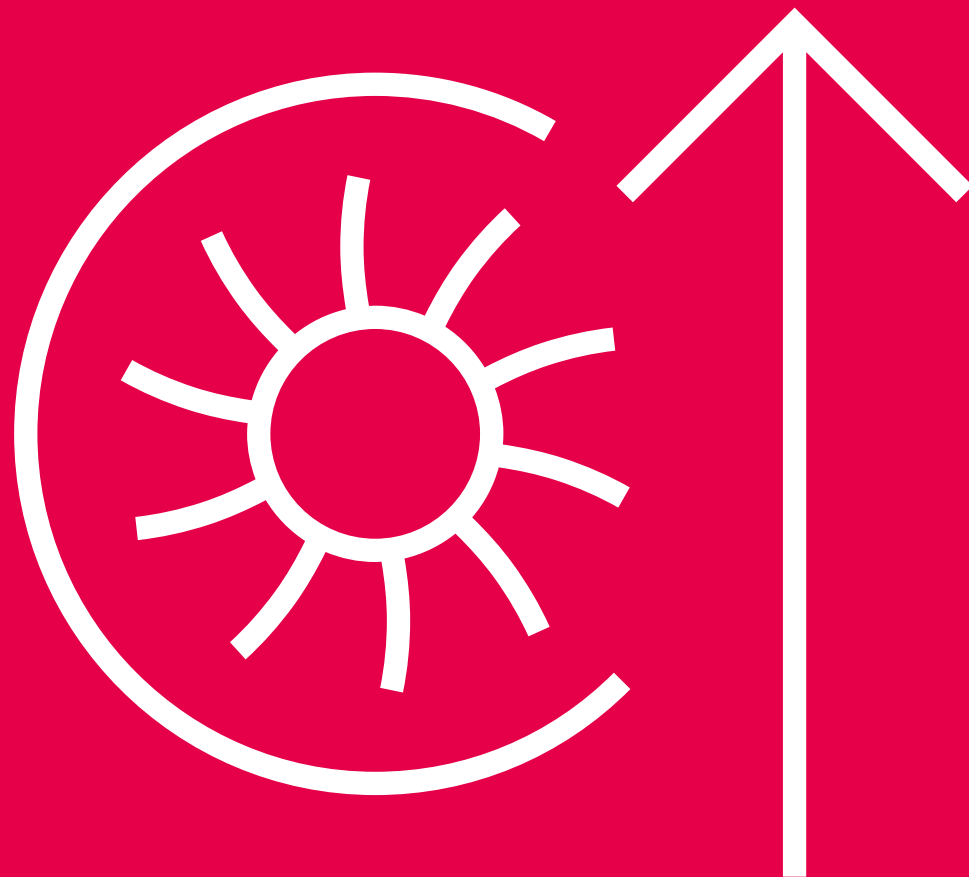
Conclusion

Revamp projects succeed when critical data is made available in a timely manner. An early collaboration between the customer and our team ensures that the right data is captured at the right time.

With our right-first-time 3D scanning methodology, we take advantage of scheduled overhaul events to capture and validate relevant and accurate dimensional data enabling the efficient and cost-effective execution of future compressor revamp projects.

Talk to us about how we can prepare your compressors for a successful revamp.

Get in touch



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