

Reavell®

An Ingersoll Rand Business

STRONG UNDER PRESSURE

HIGH PRESSURE SOLUTIONS
FOR NAVAL DEFENCE
APPLICATIONS



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Strong Under Pressure

OFFERING LIFETIME VALUE, MAINTAINABLE, DESIGNED
TO YOUR SPECIFICATION

STAYING AHEAD WITH REAVELL

Be strong under pressure with Reavell

Building on a 120 year heritage, Reavell continues to maintain its position at the leading edge of compressed air technology. The engineers behind the first Scott-Reavell steam engine, patented in 1894, probably wouldn't recognise our current high pressure compressor range, but they would certainly identify with our relentless drive for technical excellence and quality customer service.

As part of the global Ingersoll Rand High Pressure Division, Reavell continually invests in research and development, with the goal of continuously improving the reliability and efficiency of our machines.

Our compact compressor solutions are designed to offer market leading, maximum output with minimum size and weight. They deliver unrivalled performance and peace of mind for customers operating in some of the world's most demanding environments- at sea, on land and underground.

NAVAL DEFENCE IS VITAL FOR A NATION'S SECURITY. OUR LIFETIME APPROACH, FOCUS ON MAINTAINABILITY AND BESPOKE DESIGNS MEAN WE ARE THE PARTNER OF CHOICE FOR MANY OF THE WORLD'S LEADING NAVIES.

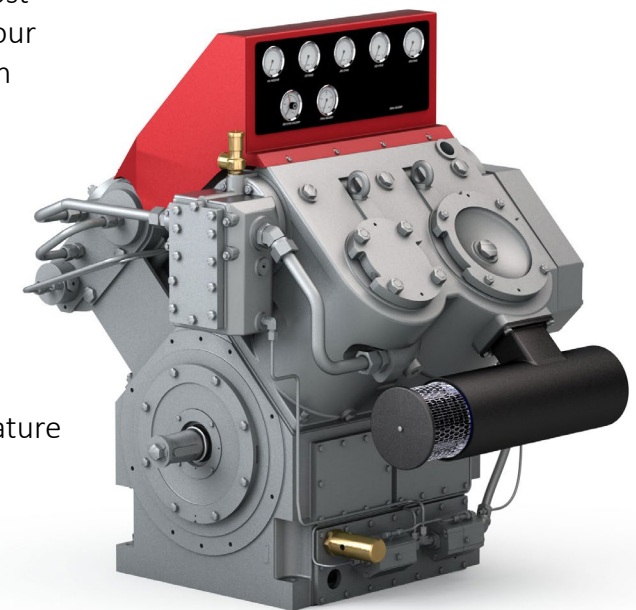
YOUR LIFETIME PARTNER

Reavell has built its reputation on ensuring that we actively support our solutions throughout their lifetimes. Whether it's through routine maintenance kits, life extending scheduled factory refurbishment or immediate support whenever required, we pride ourselves on being your reliable lifetime partner.

Our machines are manufactured to ensure reliability in the most demanding of conditions, guaranteeing that you can rely on your compressor, whatever environment it's operating in. And when the time for routine maintenance comes, the Reavell design allows easy access for maintenance, ensuring downtime is kept to an absolute minimum.

Reavell's compressor solutions are designed to each client's specification at our UK Centre of Excellence. Whatever your requirement – rest assured, Reavell can handle the pressure.

- Weapon Guidance Systems
- Ballast and Stabilisation Tanks
- Centralised Air Systems
- Breathing Air
- Low-Magnetic Signature for minesweepers
- Engine Start





Value Under Pressure

IT IS USUALLY THE CASE THAT THE COST OF OWNERSHIP OF HIGH PRESSURE MACHINES OUTWEIGHS THE INITIAL COST OF PURCHASE. HOWEVER, IN COMPARISON TO COMPETITOR MACHINES, REAVELL COMPRESSORS ARE PROVEN TO DELIVER SIGNIFICANT SAVINGS OVER THEIR TOTAL LIFETIME.

LIFETIME COSTS

When it comes to a nation’s defence, quality and reliability are paramount. However, for publicly funded naval operations, where the focus must be on sourcing reliable and cost-effective solutions, this can be a difficult balance to achieve.

SERVICING VALUE

When calculating the lifetime costs of a compressor, one of the biggest considerations is the cost of servicing. Reavell’s transparent service strategy not only offers peace of mind in an area which can otherwise lead to significant unexpected costs, but more importantly, delivers proven cost savings.

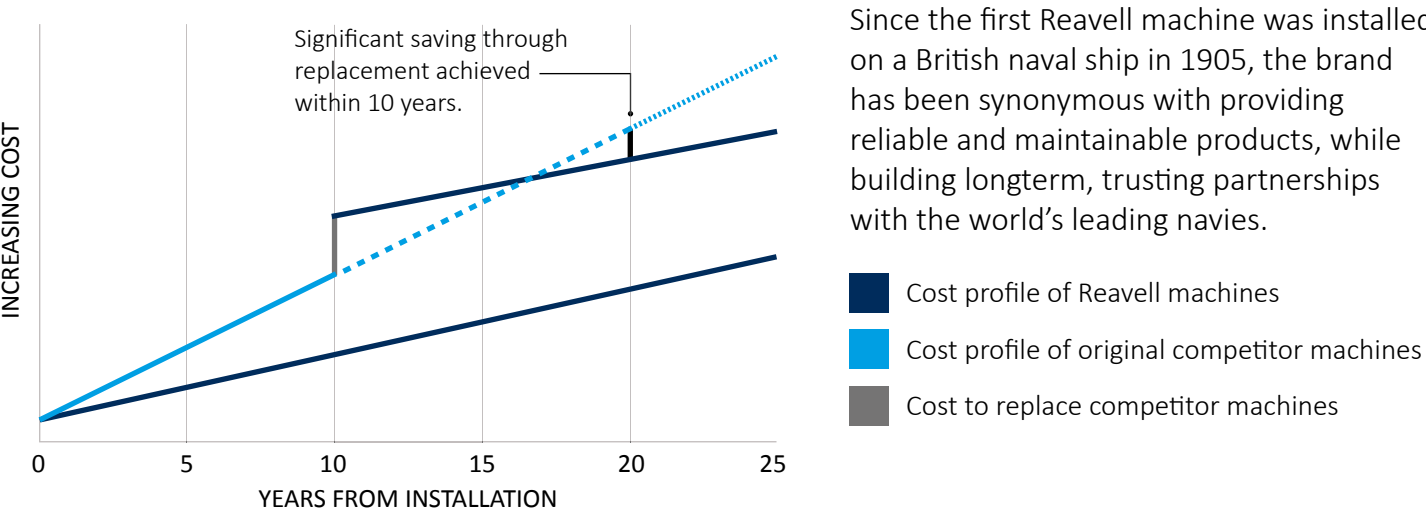
PROVEN VALUE

A recent decade long study conducted by a major NATO partner resulted in its decision to replace all competitor High Pressure Air Compressors (HPACs) with the Reavell 5417N.

The purpose of the study, which commenced in 2007, was to calculate the overall running costs of Reavell HPACs versus a competitor’s machines.

The independent study indisputably concluded that the competitor’s machines were outperformed by Reavell’s in terms of reliability and cost of maintenance.

Because the through-life costs of a Reavell machine are significantly lower, even after the complex decommissioning process of the rival’s compressors, cost savings to the navy and to taxpayers will be considerable





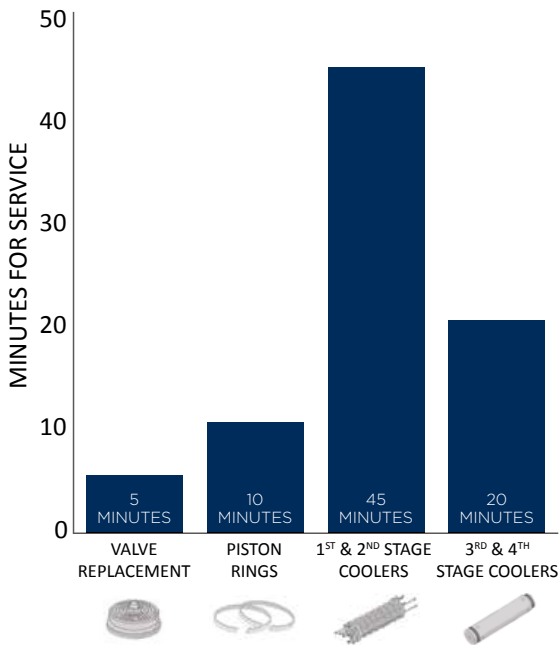
Reliability Under Pressure

RELIABLE BEYOND LIMITS

Testament to the reliability of our machines is the fact that we have maintained relationships with some of our naval partners for more than 100 years. Our focus on continuous development means the reliability of those first machines is built in to today’s leading-edge models. Our 5437N, for example, has its roots in the original VHP36, and although there have been several upgrades to meet the demands of today’s leading navies, the underpinning reliability remains.

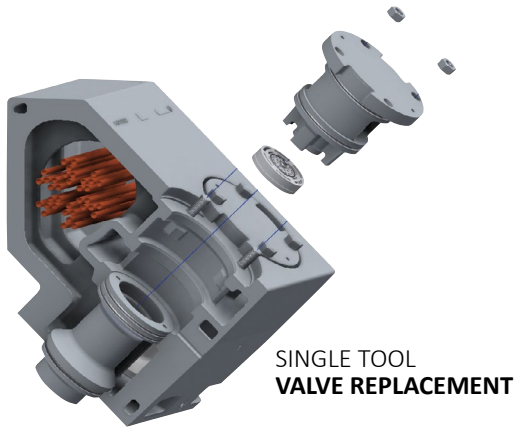
MINIMUM DOWNTIME

Reavell’s dedicated engineering team ensure that our compressor designs have the ideal balance of a compact footprint, whilst ensuring that critical components are easily accessible. This guarantees that downtime during servicing and maintenance is kept to a minimum, as illustrated in the graph on the right.



1,500 HOUR SERVICE INTERVALS

Reavell compressors come with market leading service intervals of up to 1,500 hours. We provide preventative maintenance kits that are specifically designed to minimise costs, that cover everything from minor air end servicing down to running gear overhauls. Not only will your machine run longer between services, but it will also be running long after competitor machines have had to be replaced.



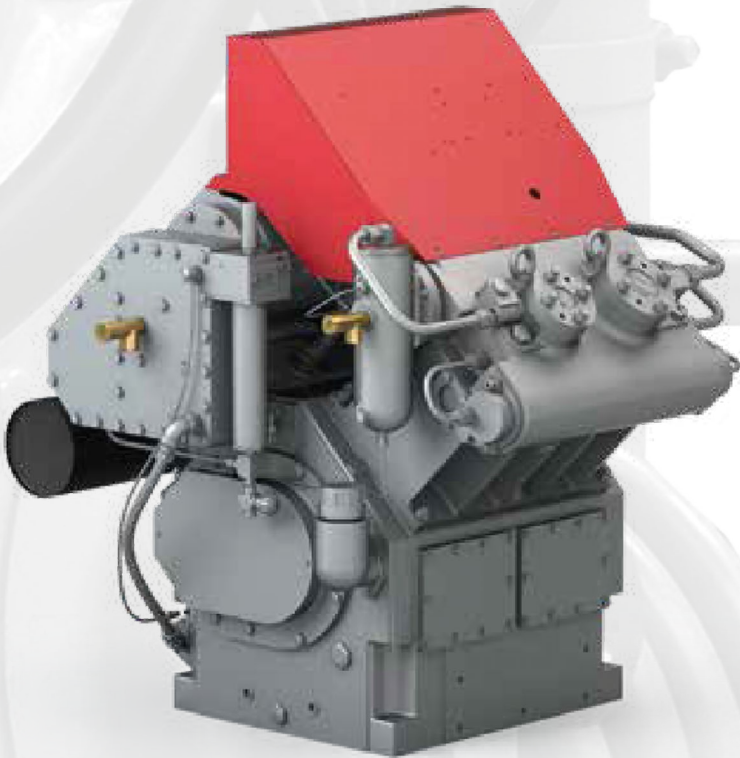
| COMPONENT | EXPECTED LIFE HOURS |
|------------------------------------|---------------------|
| 1 ST STAGE PISTON RINGS | 12.000 |
| 2 ND STAGE PISTON RINGS | 9.000 |
| 3 RD STAGE PISTON RINGS | 5.000 |
| 4 TH STAGE PISTON RINGS | 4.000 |
| 1 ST STAGE VALVES | 12.000 |
| 2 ND STAGE VALVES | 12.000 |
| 3 RD STAGE VALVES | 9.000 |
| 4 TH STAGE VALVES | 4.000 |

Solutions Under Pressure

FIND YOUR REAVELL DEFENCE SOLUTION

| | | | DELIVERY PRESSURE | | FLOW RATE | | MAXIMUM MOTOR POWER | ELEVATED COMPRESSOR INLET | | MAXIMUM BOOSTER INLET PRESSURE* |
|------|--------------|--------|-------------------|---------|---------------------------|---------------------------|---------------------|---------------------------|--|---------------------------------|
| | | | Minimum | Maximum | Minimum delivery pressure | Maximum delivery pressure | | Maximum Inlet Pressure | Flow rate at maximum delivery pressure | |
| | | | BARG | BARG | M ^w /HR | M ³ /HR | | BARG | M3/HR | |
| LPAC | AIR COOLED | 5207 | 16 | 40 | 12.5 > 26.0 | 11.5 > 24.4 | 7.5 | 0.03 | 11.8 > 25.1 | n/a |
| | | 5209 | 16 | 40 | 26.0 > 43.5 | 24. > 40.7 | 11 | 0.03 | 24.8 > 41.9 | 6 |
| | | 5211 | 20 | 45 | 26.0 > 62.0 | 24.0 > 57.1 | 15 | 0.03 | 24.7 > 58.8 | n/a |
| | | 5213 | 16 | 31 | 27.9 > 66.5 | 26.5 64.0 | 15 | 0.03 | 27.3 > 65.9 | n/a |
| | WATER COOLED | 5212 | 10 | 35 | 25.1 > 63.7 | 22.3 > 57.9 | 15 | 0.14 | 25.4 > 65.9 | n/a |
| | | 5217 | 10 | 40 | 57.5 > 136.0 | 50.5 > 125.6 | 30 | 0.14 | 57.5 > 143.0 | 7 |
| | | 5236 | 10 | 40 | 135.0 > 313.0 | 125.0 > 291.0 | 75 | 0.14 | 142.3 > 331.2 | 7 |
| MPAC | AIR COOLED | 5307 | 40 | 80 | 15.6 > 28.0 | 14.7 > 26.5 | 11 | 0.03 | 15.1 > 27.3 | 6 |
| | | 5309 | 40 | 80 | 24.2 > 43.5 | 23.3 > 42.0 | 18.5 | 0.03 | 24.0 > 43.2 | 4 |
| | WATER COOLED | 5317 | 40 | 85 | 27.8 > 67.1 | 26.7 > 64.6 | 18.5 | 1 | 53.1 > 128.4 | 6 |
| HPAC | AIR COOLED | 5404 | 85 | 350 | 6.4 > 8.3 | 5.4 > 7.3 | 4 | 0.07 | 5.8 > 7.8 | n/a |
| | | 5405 | 85 | 350 | 9.3 > 12.2 | 8.1 > 11.0 | 5 | 0.03 | 8.3 11.3 | n/a |
| | | 5405E | 85 | 350 | 9.2 > 16.4 | 8.3 > 15.0 | 7.5 | 0.03 | 8.5 15.4 | n/a |
| | | 5407 | 160 | 350 | 12.4 > 26.8 | 11.8 > 25.5 | 15 | 0.4 | 16.5 > 35.6 | 5 |
| | | 5407H | 160 | 414 | 12.4 > 26.8 | 11.8 > 20.8 | 15 | 0.03 | 12.1 > 21.4 | 5 |
| | | 5409** | 150 | 350 | 19.9 > 44.0 | 19.2 > 42.5 | 22 | 0.4 | 26.8 > 59.3 | 4 |
| | | 5409H | 160 | 414 | 19.9 > 43.3 | 19.2 > 41.8 | 22 | 0.03 | 19.8 > 43.0 | 4 |
| | WATER COOLED | 5417 | 140 | 350 | 27.0 > 67.6 | 25.0 > 65.5 | 30 | 1 | 49.7 > 130.2 | 6 |
| | | 5437 | 140 | 350 | 65.0 > 159.2 | 64.1 > 156.9 | 90 | 1 | 127.4 > 311.8 | 6.5 |
| | | 5437H | 160 | 414 | 75.8 > 157.3 | 64.1 > 133.0 | 75 | 1 | 127.4 > 264.3 | 6.5 |

*Booster supplied without first stage cylinder, not suitable for running at atmospheric inlet pressure.
**400mbar inlet pressure up to 1500 rpm only, limited to 200 mbar if above.



UNRIVALLED HERITAGE

The class- leading Reavell 5437N offers unparalleled reliability, maintainability and performance density. So whether your requirement is for low vibration submarine operation, high quality breathing air supply, weapons systems, or radar masking, the 5437 offers the ideal solution.

Range & Performance Capability



REAVELL 5417N

The H 5417 is a 4 stage, water cooled, lubricated compressor offering reduced wear, excellent reliability, longer life, simple maintenance and extended service intervals. This Compressor is quick to install and simple to configure to your site and user requirements. This compressor type can manage a wide variety of gases, depending on the application. Typical gases include industrial air, breathing air, nitrogen, heliox, natural gas, helium. Other gases available. Limitations apply and subject to selection.

Performance statistics:

140 to 350 barg (2031 to 5076 psig) | 25 to 68 m³/hr (15 to 40 cfm)



REAVELL 5437N

The H 5437 is a heavy duty 4 stage, water cooled, lubricated compressor set designed to operate in the harshest of environments but easy to maintain. This compressor type can manage a wide variety of gases, depending on the application. Typical gases include industrial air, breathing air, nitrogen, heliox, natural gas, helium. Other gases available. Limitations apply and subject to selection.

Performance statistics:

160 to 414 barg (2321 to 6005 psig) | 62 to 159 m³/hr (37 to 93 cfm)



REAVELL HAB10

The HAB10 is a 3 stage, air cooled, lubricated compressor offering reduced wear, excellent reliability, longer life, simple maintenance and extended service intervals. This compressor is quick to install and simple to configure to your site and user requirements. This compressor can manage a range of gases, depending on the application. Typical gases are industrial air, breathing air and nitrogen.

Performance statistics:

85 to 350 barg (1233 to 5076 psig) | 6 to 8 m³/hr (4 to 5 cfm)



REAVELL R25H-AL-N

The R25H-AL-N is a radial 4 cylinder, 4 stage, air cooled, low magnetic compressor. Designed for continuous operation. Belt Drive or Direct Drive Options available.

Performance statistics:

138 to 276 barg (2000 to 4000 psig) | 10 to 25 m³/hr (6 to 15 cfm)



Specialists Under Pressure

CUSTOM ENGINEERED PROJECTS

At Reavell, we work to your specifications. We understand that our naval clients require complex solutions that guarantee continuous operation in harsh environments. Our compressors are designed to meet defence shock requirements as standard, so whatever your application demands, Reavell can deliver.

MOBILE, FLEXIBLE, RELIABLE

This robust solution is used by militaries across the globe. The heavy duty axles and dependable diesel engine, combined with a weatherproof enclosure ensure that this compressor can function at optimum levels in any environment. The breathing air quality filtration and extra length delivery hose deliver air that can be used across a wide range of applications.

LOWEST FOOTPRINT, NOISE AND VIBRATION MAXIMUM PERFORMANCE

Built from our ultra-reliable and maintainable H5437 compressor block, this solution was configured for a customer with demands for the smallest possible footprint and the lowest noise and vibration signature available. This specialist solution delivers a maximum of 142 Nm³/hr at 275 barg from a footprint of only 4.32m². With noise and vibration levels below 85 dBA and 90 dBref 1e-5 m/s², and shock tested to ISO EN 60068-2-27 at 15g in all directions – this HPAC unit is truly a market leading solution. What's more, breathing air delivery of -20°C dew point, less than 0.5 mg/m³ lubricant and absolutely no water particles mean this air can be used for a wide range of applications.





Advancement Under Pressure REFURBISHMENT

REAVELL TRAINING DAYS

At Reavell we're proud of our products- and proud to share our expertise! We offer a comprehensive range of factory training days. Our courses cover everything from important health and safety consideration and defence basics, to in-depth machine maintenance training, and market and application focussed sales training.

We can also design a bespoke training course to meet your specific requirements. So whether it's sales training centred on technical features and USPs or hands-on maintenance training for your engineers, we can deliver the course you need.

Our training courses can be delivered at our new Factory Training Centre that was opened in 2017. Alternatively we can deliver bespoke training at a location and venue to suit you. To find out more about our training courses, or to book a course, speak to your local Reavell sales representative.

CENTRE OF EXCELLENCE

We're extremely proud of our UK manufacturing heritage. In 2012 our Centre of Excellence was opened in Redditch, UK, which features world-class manufacturing facilities and employs 300+ staff. Our Reavell machines are constructed entirely on site at the Centre, where they undergo rigorous quality testing to ensure that each machine meets the exemplary quality standards that modern navies require.

Depending on the planned lifetime of your naval systems, replacing compressor units is not always a viable option. That's where our high pressure factory refurbishment centre comes into its own. It is the only major high pressure refurbishment centre in the United Kingdom and it has supported customers across industry and military applications for many decades.

The Centre enables us to offer full diagnostic evaluations and can also recommend maintenance programs, designed to bring your existing high pressure system back to its optimum operating performance level. With a dedicated team to deal with your refurbishment requirements, Reavell are uniquely positioned to add extended lifetime onto your compressor machines – delivering considerable savings.





Versatile Under Pressure

ANCILLARY OPTIONS



CONDITIONAL MONITORING

Where reliability is absolutely critical we can complement our comprehensive preventative maintenance kits with condition monitoring systems designed to your requirements. We have extensive experience in active temperature, vibration and noise level monitoring.



INTEGRATION

Not only do we manufacture market leading compressors, our systems engineering team are experts in integrating specialist machinery into a compact space, whilst ensuring minimum impact on surrounding equipment and allowing room for effective maintenance.



FILTRATION/DRYERS

Most applications come with air treatment requirements. At Reavell our extensive experience ranges from basic particulate filtration to carbon filtration and dew point control – so whatever your application needs, you can be sure we have the expertise to help.

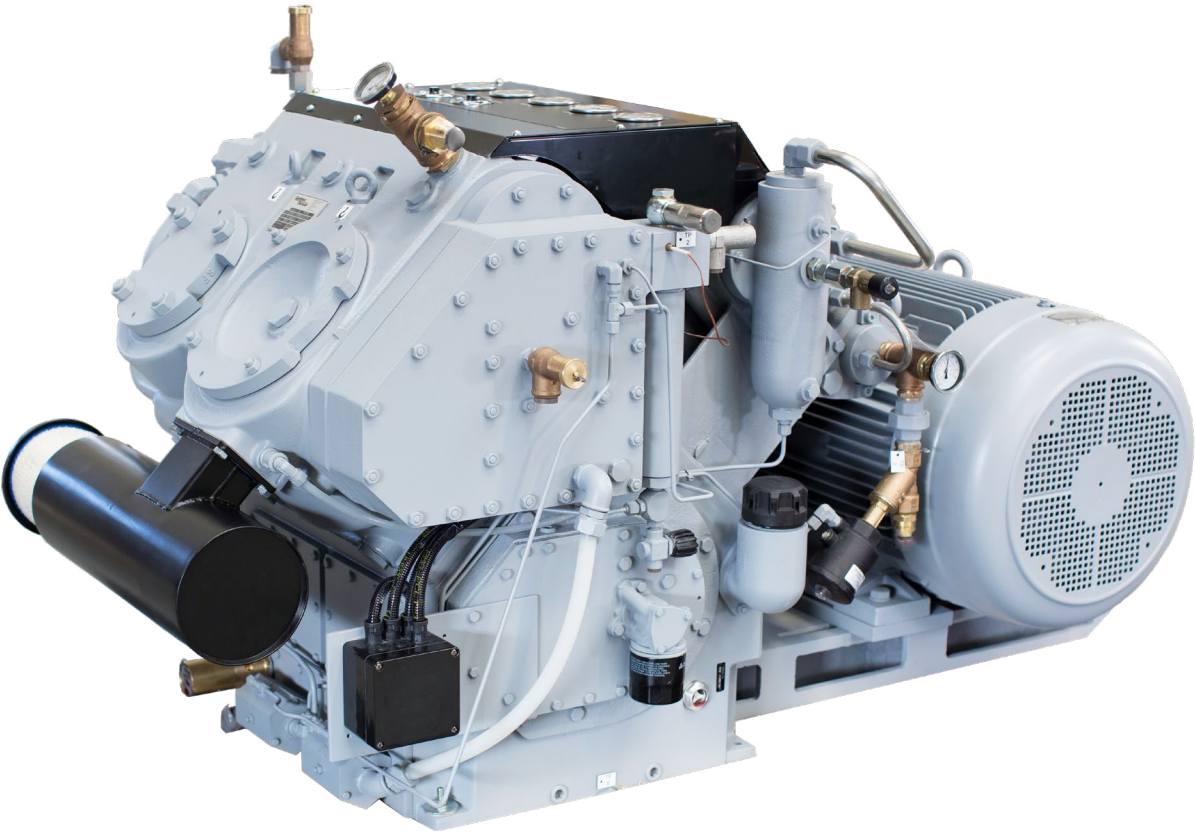


ACOUSTIC ENCLOSURES

Whether it's noise dampening or weatherproofing, our bespoke acoustic enclosures are designed to meet your demands.

COMPLETE AIR SOLUTIONS

For the last 100+ years, Reavell has maintained close relationships with defence organisations worldwide. As part of the Ingersoll Rand Group, we now share this expertise with other brands that have similar experience in the defence industry. Reavell is in a unique position to offer total package solutions, incorporating high pressure, low pressure & vacuum pumps into one complete air solution.



Strong Under Pressure

High Pressure Solutions for Naval Defence Applications

Perfect With Pressure

Offering lifetime value, maintainable, designed to your specification. Be strong under pressure with Reavell.

A Lifetime Approach

- Reavell compressors are proven to deliver significant savings over their total lifetime.

Minimum Downtime

- Trusted naval partner for over 100 years, continuous development means the reliability of those first machines is built in to today's models.
- Our designs have the ideal balance of a compact footprint, while ensuring that critical components are easily accessible.

Leading Refurbishment Capabilities

- Only major Refurbishment Centre in the UK.
- Offering a full diagnostic evaluation and recommend maintenance programs which will bring your existing High Pressure system back to optimum operating specification.

Complete Air Solutions

- Reavell is in a unique position to offer total package solutions, incorporating high pressure, low pressure & vacuum pumps into one complete air solution.

Contact us today:

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E: highpressure@gardnerdenver.com
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Proudly Made in the United Kingdom

For more than 120 years, Reavell has been a leading global supplier of high pressure air & gas compressors. Founded in Ipswich in 1898, we're now proud to serve every corner of the globe from our new High Pressure Centre of Excellence in Redditch, UK. Serving industrial, marine and offshore markets, we take great pride in our British manufacturing heritage and the unrivalled reputation for quality and reliability that Reavell products retain throughout the world.



REAVELL OFFER SOLUTIONS FOR:

| | | | |
|---------------|----------------------|-------------------|--------------|
| BREATHING AIR | BREATHING GAS | NITROGEN BOOSTING | CNG & BIOGAS |
| ENGINE START | INDUSTRIAL AIR & GAS | MARINE & OFFSHORE | DEFENCE |



For additional information please contact.
Gardner Denver or your local representative.
Specifications subject to change without notice.