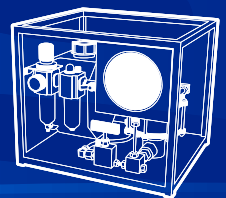
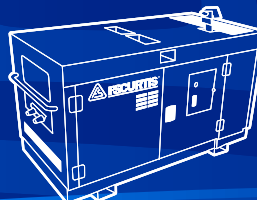
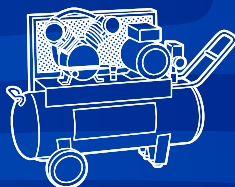
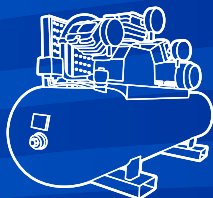
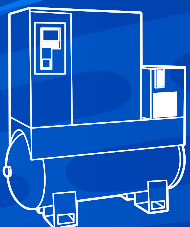


# COMPRESSED AIR AUDITING



# ABOUT US



## About Us

Nessco Pressure Systems (NPS) supply and service screw compressors, air preparation equipment, high pressure products and complete airline systems. With over 12 years experience in delivering compressed air systems of the highest quality and standard, NPS provide their customers with expert advice and service. The team is fully equipped for all makes and models of air compressor systems of various sizes and configurations providing servicing, repairs and replacement options.

When you choose Nessco Pressure Systems, you can be confident you are choosing a company who take the time to offer the full service. Our staff will start with an initial consult with the client resulting in a system design based on maximized energy saving and optimal flow pressure performance. This is followed by the supply and full installation of the product as well as after sales support including post installation audits and efficiency testing.

NPS supplies and services diesel compressors, electric screw compressors, piston and oil free compressors, receivers, dryers and filtration. We provide a turn key solution to each customer's requirements through consultancy, system design, sales and installation.

Our reputation as a trusted manufacturer and installer of pressure systems within the local community has seen NPS work not only with reputable local Perth companies but also with multinational corporations.

NPS has a strong presence in a number of industries within WA.

These industries include:

- ✓ Fabrication
- ✓ Manufacturing
- ✓ Mining
- ✓ Kitchen and cabinet making
- ✓ Automotive
- ✓ Medical
- ✓ Food and beverage
- ✓ Construction
- ✓ Fishing
- ✓ Agriculture and viticulture
- ✓ Chemical processing

## Contact us

For more information on Nessco Pressure Systems, contact us today and talk to one of our representatives

By Phone: **(08) 9333 4999**

Monday - Friday: 7AM - 5PM

Saturday: 8AM - 12:30PM

By Fax: **(08) 9333 4900**

By email: [info@nesscopressure.com.au](mailto:info@nesscopressure.com.au)

Or visit our website at [www.nesscopressure.com.au](http://www.nesscopressure.com.au)



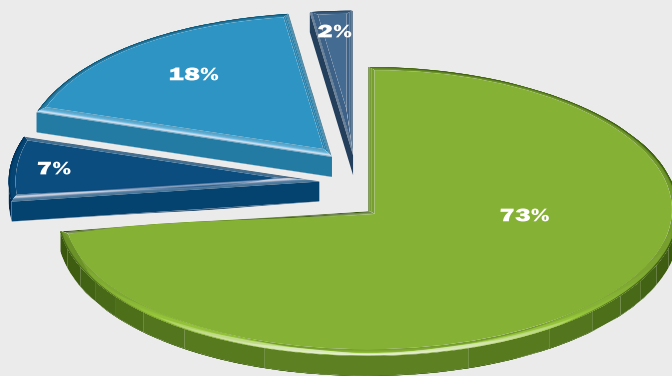
## Benefits of a Compressed Air Audit

With the rapidly escalating cost of electricity, there is an increasing focus within industry on the energy consumption of air compressor systems. As an un-maintained system can be wasting as much as 30% of a compressor's output, it is important to ensure that your system is operating at its full potential.

A compressed air system audit can provide an important means of establishing the efficiency of systems and identifying precisely where energy losses are occurring. An audit will highlight the true costs of compressed air and identify simple opportunities to improve plant and process productivity, on-site safety, product quality, equipment reliability and plant downtime.

Nessco Pressure Systems offer a complete visual compressed air system audit, which may detect and identify problem areas. Our tailored audits have been proven to be extremely effective in increasing system production and providing significant cost savings. The cost of an Infinity audit may well be the best investment you have made, potentially saving you thousands of dollars a year in energy and production costs.

### Compressed air system costs over 10 years



With 73% of the cost of a compressor attributable to energy use, significant cost savings can be achieved by improving the system's efficiency.

Source:

Energy efficient compressed air systems, p. 1, Carbon Trust, UK, February 2005

## Air Audits by NPS

A Nessco Pressure Systems basic visual audit includes a range of activities that are performed over one or two days, to ensure your system is performing properly.

The objectives of our tailored compressed air audit is to monitor, measure and correctly diagnose problems within the system to ultimately reduce energy cost, and increase production quality and compressor system reliability.

### The scope of work includes:

- ✓ Consulting period with client, in order to highlight existing problems and future expansion
- ✓ A full system inspection is carried out, with leaks documented, graded, photographed and tagged. This process is carried out using our scissor lift and ultrasonic leak detector.
- ✓ Identified grade one leaks are repaired immediately
- ✓ A fully integrated report is generated from results, including any photographs and videos taken. Included in this report will be the current cost factor of any identified leaks and the savings that can be made once such problems have been rectified.
- ✓ A plan to implement report findings is created by our experienced team (including leak repairs and new compressor installations)





# TARGETS OF AIR AUDIT

## 1

### PLUG THOSE LEAKS AND SAVE



**Studies indicate that as much as 35% of the compressed air produced in today's industry is wasted to leaks. Identifying and correcting these leaks may save not only the purchase price of a compressor, but also reduce the amount of energy needed to run it.**

It has been our experience that plants which have no disciplined compressed air leak-management program will have a cumulative leak level equal to 30-50% of the total air demand. This means that every 8-12 cfm leak can cost you \$800-\$1,200 per year.

NPS audits offer a leak inspection program so that every sector of the plant is inspected once a quarter to identify and repair leaks.

## 2

### DOUBLE- CHECK AIR REQUIREMENTS



**Often, production overestimates the amount of air it needs, resulting in an inefficient system.**

More often than not, it is one process that needs a certain minimum pressure, affecting the pressure requirements of the entire system. For example, while the majority of a plant may only require 80 psi, the compressed air system may demand 98 psi.

In cases where only a small area of the system needs a higher pressure, an effective solution is to set up a secondary, smaller, high-pressure unit or an appropriate booster, rather than driving the entire plant system at the higher pressure. Expecting the supply system to support a black hole is not a realistic design criterion.

## 3

### CONNECTIONS ALL TEED OFF



**One of the simplest fixes in a compressed air system is to replace tee connections with directional angle entry connections.**

In a piping system where a feed line of compressed air is trying to feed into another air line, the turbulence caused by a 90° entry often causes a 3-5 psi pressure loss. Such a loss can cost you at every one of those tees.

More importantly, in a compressor house, the back pressure sends a false unload signal to the controls, causing premature unloading or extra compressors to be on-line. Using a 30-45° directional angle entry instead of a tee will eliminate this pressure loss, with the extra cost of the directional entry negligible.

## 4

### BAD PIPING



**Convoluting piping, piping restrictions, old pipes and incorrect pipe sizes often lead to pressure loss.**

In a well-laid-out system, the interconnecting piping from the compressed air supply to the process and header distribution piping should create no pressure loss.

Piping is a major consideration, especially in older facilities or shops that have grown and expanded. Cast-iron piping will rust dramatically over time, releasing rust and scale into the compressed air and creating buildups at various points in the system. In many cases, it is easy to simply replace a section of pipe to gain efficiency. When upgrading, ensure that the physical piping diameter is sized to deliver the required air flow with minimum pressure drop.

## 5

### DOWN WITH OVER PRESSURISATION



**Excessive pressure increases leaks and wastes money.**

Some end users will try to increase pressure in an attempt to compensate for capacity issues, however this in fact has the opposite effect on air flow, often exacerbating the problem. Additionally, there is a proportional relationship between pressure and power consumption, for which every 10 psi in excess pressure results in a 5% increase in power cost.

Too-high a pressure will amplify system problems, not solve them. Lower system pressures means less required mass, therefore fewer running compressors and lower overall running costs.

## 6

### INSUFFICIENT STORAGE



#### Insufficient storage is a common problem.

Across the board in manufacturing and processing, the value of an appropriately sized air receiver and appropriate compressed air piping is underestimated.

These tanks provide a first stage of moisture separation to help maintain compressed air quality. However, their primary function is storing and delivering compressed air to help meet periods of peak demand and to prevent excessive compressor cycling.

## 7

### INAPPROPRIATE USE



#### Unregulated and inappropriate use of compressed air wastes a lot of energy.

Considering that it costs eight times as much to use air as it does to use electricity, it is prudent to re-evaluate unregulated air-powered cabinet coolers, blow-offs, vacuum generators, mechanical pumps, air motors and hoists, vibrators, aeration, spraying and a host of other equipment.

Open blow, refrigeration and vortex cooling may all be replaceable with heat tube cabinet coolers with a potential savings of 3.5-4 kW each on a 30- by 24- by 12-inch average cabinet. In addition to this, venturi air amplifier nozzles or air inducers are recommended whenever possible, reducing blow-off compressed air by 50% or more.

## 8

### PUMPS AND PULSE CLEANERS



#### Air-operated diaphragm pumps tolerate aggressive conditions relatively well and can run dry, which makes them a favorite with plant personnel.

But is an air-operated pump the best solution? Electric motor-driven diaphragm pumps are readily available, and may work just as well.

If air-operated pumps are needed, consider adding controls to shut the pumps off when they are not needed. Pumps waste the most air when they are pumping nothing. Additionally, check to see if the pump is running at the lowest possible pressure. Simple controls can increase pressure when needed.

## 9

### GET RID OF OBSOLETE RESTRICTIONS



#### Clogged filter elements, forgotten manual drain traps and neglected separator cartridges can cause significant drops in pressure and negatively impact capacity and reliability, not to mention creating air-quality issues.

One often overlooked item in the air piping system that causes pressure loss is equipment that is left installed but is no longer in use. Such things as old, unused orifice plate flowmeters, filters and separators are often left in the air system even though they are no longer required. Since they are not used or maintained, they fill with sludge, rust, and scale, causing ever-increasing blockage and pressure drop as the air flows past. This requires a corresponding increase in header pressure to maintain the required process pressure.

## 10

### MAINTAIN THE SYSTEM



#### Poor air quality adversely affects overall plant operations.

Air should be clean, oil free and dry, however to achieve this requires regular maintenance of the filters, separators and driers. Neglecting recommended maintenance can let oil get into the plant air and cause production problems such as dripping tools and fisheyes in paint systems.

Change air/oil separators, filters and other components at the optimum time and on a regular basis, not when they clog up and cause a pressure loss problem.

# OUR GUARANTEE



## Peace of mind service

At NPS, we offer a complete service - from initial consultation, through to post installation audits, efficiency testing and support. We take the time to learn about your business in order to provide you with the best advice possible.

Our factory trained service technicians have over 30 years experience in the WA compressor industry, and have experience with all makes and models of compressors including oil flooded screw and piston compressors, oil free piston compressors, scroll and water cooled screw compressors as well as diesel and petrol models.



## Energy efficiency

NPS can tailor a complete system design based on maximised energy savings, with optimal flow/pressure performance.

The high degree of sealing and the fine tolerances used in our compression elements guarantee even in small power ranges:

- ✓ Greater yield
- ✓ High efficiency
- ✓ Long life and reliability
- ✓ Lasting performance



## Same day response

NPS service personnel are strategically placed to offer a speed of response unrivaled within our industry. Our approach to service is simple; we strive for ultimate customer satisfaction, achieved through superior workmanship, dedication, honest communication and guaranteed same day response.



## 24/7 call out

NPS has a team of dedicated on-road fully certified factory trained service technicians, servicing right across Perth and WA, 24 hours a day, seven days a week. The NPS service team strive to deliver a personalised service to you and your business that is always on-hand, complete with fully stocked, mobile service vans, service dryers, filter and ancillary equipment and standby machines at the ready.





# OUR CLIENTS



"The commencement of business at our new purpose built facility in Welshpool marked a significant milestone in the history of our company. A relocation of this size is a major undertaking, and is not a project we could take on without significant support from external contractors and suppliers. We thank Nessco Pressure Systems for the role they have played in helping us achieve what has been an extremely successful move."

**Welshpool window manufacturer**  
- **Managing Director**



"After using LH Airtools now Nessco for over ten years it was time to upgrade our compressed air system. Nessco Pressure Systems carried out a full factory audit before recommending the size and type of compressor we should use. The new system incorporated variable speed drive compressors, combined with standard compressors offer excellent energy savings, plus dryer, filters and receiver. NPS carried out a complete turnkey installation."

**Kewdale beverage manufacturer**  
- **Facilities Manager**



"The world's leading manufacturer of mine refuge systems, moved to Welshpool, Perth. The company required not only a new compressor system but also a compressed air ring main design and installation. NPS carried out the complete project and supplied all parts and labour. They also offer compressed air purification testing, providing certification. Safe to breath compressed air is extremely important in our industry."

**Welshpool mining equipment supplier**  
- **Workshop Manager**

# OUR PEOPLE

A COUPLE OF OUR SPECIALISED SERVICE TEAM



## TONY BARBOUR

Tony is a fully qualified fitter, turner and machinist by trade, having served his apprenticeship in a marine engineering pressure workshop. He has worked in the industry for 20 years, nine of which he spent operating his own compressor business. Tony comes with a vast amount of experience and expertise.



## OTTO SCHATZ

Otto is a fully trained motor mechanic, having received his qualifications with VW Porsche in Germany. With over 15 years experience in the mechanical industry as an owner operator, Otto has been with NPS for seven years and comes with highly recommended service knowledge on all types of compressors.



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