

# Case Study

## Formex Manufacturing | Automotive



### Client Background

Formex in Port Elizabeth is a leading supplier of pressed sheet metal components to OEM's and 1<sup>st</sup> Tier component suppliers alike. As part of Pragma's strategy to integrate condition monitoring into the Asset Care Service, Pragma presented the client with a strategic Ultrasonic Air Leak detection service. The service was only conducted in the main press plant on all the air lines and relevant equipment.

It is a known fact that compressed air is an expensive commodity in industry, yet it receives minimal attention on wastage monitoring for two reasons:

- One, lack of employee awareness and knowledge
- Two, knowing where the leaks are and their equivalent losses monetary value.

### Key Challenges

- Identifying air lines and their routing within the plant as many old piping are not colour coded.
- Identifying exact locations of individual leaks where multiple leaks are present in a web of flexible pipes.
- Identifying and quantifying leaks inside operational equipment as well as leak locations in the basement.

Annual estimated compressed air generation savings in excess of:

## R874 461

#### Flexible sensor leaks

Leak #	Pressure	Distance	dBµV	Litre/hour	Leak #	Pressure	Distance	dBµV	Litre/hour	Leak #	Pressure	Distance	dBµV	Litre/hour
1	6	20	27.1	549	16	6	20	16.8	309	31	6	20	38	1028
2	6	40		0	17	6	20	64.1	4622	32	6	20	66.2	2768
3	6	40		0	18	6	20	64	4995	33	6	20	67.3	3124
4	6	40		0	19	6	20	63.1	3671	34	6	20	68.9	3426
5	6	20	30.3	679	20	6	20	48	1828	35	6	20	60.2	2075
6	6	30	34.3	5387	21	6	20	46	1629	36	6	20	71	6878

*The results of the air leak survey has triggered an energy management drive within the company. Employees are made aware of the costs of air leaks and urged to inform maintenance of identified leaks. This drive initiative has improved maintenance planning and prove to have direct impact on reduce wasted expenditure.*

### Pragma Intervention

- The Pragma technician was able to accurately detect, tag and quantify a total of 63 leaks. Once all these leaks have been properly sealed and repaired it will have the potential direct saving of R453 446.00 annually.
- There are two open hose leaks found from filter dryers that have a combined annual loss of R331 172.00. This equipment should not have air loss during the air drying process and must be investigated.
- 6 hand valves in the welding area was found to have small leaks and were closed by the technician.
- Multiple leaks in or under equipment were detected but could not be pointed or quantified due to restricted access.



### Value Add

- Recommendations to the client to make staff aware of visible and audible leaks and the costs these can have.
- Recommending to the client to conduct regular leak surveys as part of a monthly service level agreement.
- Measurement and verification can confirm actual savings based on compressor utilisation.
- Integrate the leak report into CMMS to improve planning.



### Tools and Technology

Trained personnel using the following leak detection equipment and software:

- SDT200 Ultrasonic leak detector
- Flexible air borne ultrasonic sensor
- Parabolic dish sensor
- SDT field leak estimator and calculator.