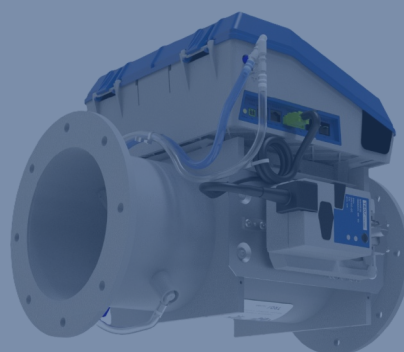


TROX LAB CONTROL
MONASH UNIVERSITY

TROX

LAB CONTROL

Monash Health,
246 Clayton Road, Clayton, VIC



Project Background

As Specified

The tender specification nominated Venturi valves for both room supply and extract air applications, with a room pressure transducer directly connected to the extract air Venturi valve to maintain negative pressure within the laboratories.

NEW VENTURI VALVE SCHEDULE							
ROOM	ACH	ISO RATING	SUPPLY AIR		EXHAUST AIR		NOTES
			NOMINATED	AIR QUANTITY (L/S)	NOMINATED	AIR QUANTITY (L/S)	
1 PH 12 ENTRY AIRLOCK	15	ISO 8	ANTEC VFX 108 OR APPROVED EQUIVALENT	155	ANTEC VFX 108 OR APPROVED EQUIVALENT	105	MECHANICAL CONTRACTOR TO ALLOW FOR ALL ASSOCIATED ROOM PRESSURE SENSORS AND COMPONENTS TO MEET THE DESIGN INTENT
1 PH 15 BIOHAZARD	40	ISO 5	ANTEC VFX 112 OR APPROVED EQUIVALENT	320	ANTEC VFX 112 OR APPROVED EQUIVALENT	390	MECHANICAL CONTRACTOR TO ALLOW FOR ALL ASSOCIATED ROOM PRESSURE SENSORS AND COMPONENTS TO MEET THE DESIGN INTENT
1 PH 17 BIOHAZARD AIRLOCK	30	ISO 5 / 7	ANTEC VFX 108 OR APPROVED EQUIVALENT	100	ANTEC VFX 108 OR APPROVED EQUIVALENT	20	MECHANICAL CONTRACTOR TO ALLOW FOR ALL ASSOCIATED ROOM PRESSURE SENSORS AND COMPONENTS TO MEET THE DESIGN INTENT
1 PH 17 MEDICAL CONSUMABLES	15	ISO 8	ANTEC VFX 108 OR APPROVED EQUIVALENT	120	ANTEC VFX 108 OR APPROVED EQUIVALENT	160	MECHANICAL CONTRACTOR TO ALLOW FOR ALL ASSOCIATED ROOM PRESSURE SENSORS AND COMPONENTS TO MEET THE DESIGN INTENT
1 PH 18 CYTOTOXIC	40	ISO 5	ANTEC VFX 112 OR APPROVED EQUIVALENT	465	ANTEC VFX 108 OR APPROVED EQUIVALENT	70	MECHANICAL CONTRACTOR TO ALLOW FOR ALL ASSOCIATED CYTOTOXIC CABINET INTERLOCK / CONTROLS AND ROOM PRESSURE SENSORS AND COMPONENTS TO MEET THE DESIGN INTENT
1 PH 19 CYTOTOXIC AIRLOCK	30	ISO 5 / 7	ANTEC VFX 108 OR APPROVED EQUIVALENT	100	ANTEC VFX 108 OR APPROVED EQUIVALENT	20	MECHANICAL CONTRACTOR TO ALLOW FOR ALL ASSOCIATED ROOM PRESSURE SENSORS AND COMPONENTS TO MEET THE DESIGN INTENT
1 PH 20 ASEPTIC AIRLOCK	30	ISO 5 / 7	ANTEC VFX 108 OR APPROVED EQUIVALENT	100	ANTEC VFX 108 OR APPROVED EQUIVALENT	100	MECHANICAL CONTRACTOR TO ALLOW FOR ALL ASSOCIATED ROOM PRESSURE SENSORS AND COMPONENTS TO MEET THE DESIGN INTENT
1 PH 21 ASEPTIC	30	ISO 5	ANTEC VFX 112 OR APPROVED EQUIVALENT	455	ANTEC VFX 112 OR APPROVED EQUIVALENT	385	MECHANICAL CONTRACTOR TO ALLOW FOR ALL ASSOCIATED ROOM PRESSURE SENSORS AND COMPONENTS TO MEET THE DESIGN INTENT
1 PH 22 LABELLING & PRODUCT RELEASE	15	ISO 8	ANTEC VFX 212 OR APPROVED EQUIVALENT	1200	ANTEC VFX 212 OR APPROVED EQUIVALENT	1260	MECHANICAL CONTRACTOR TO ALLOW FOR ALL ASSOCIATED ROOM PRESSURE SENSORS AND COMPONENTS TO MEET THE DESIGN INTENT

Approved Alternative

As a technically superior alternative, ACS has successfully delivered the TROX Laboratory Pressure Control Solution:

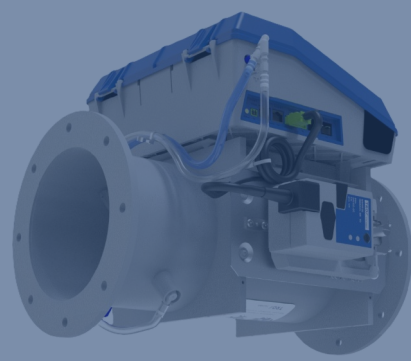
- TVRK fast-acting control valves for supply and extract air
- ELAB Controller
- TROX differential pressure transducers

TROX TVRK valves are purpose-engineered for laboratory and cleanroom supply and extract air applications where elevated risks of contamination, corrosion, and fire exposure exist. The valves incorporate high-precision, fast-response actuators enabling rapid, stable, and repeatable pressure control across varying operating conditions. Following system evaluation, the client, consultant, and builder collectively recognised both the functional advantages of the TROX solution and the proven expertise of the ACS and TROX teams in delivering reliable laboratory control systems.

Parameters	Key Data
Material	PPs casing/blade; stainless shaft; chloroprene/TPE seals; removable static dP sensor
Pressure Independent	Up to 1000 Pa
Leakage	EN 1751 casing Class C; Closed Blade Class 3
Hygiene	VDI 6022; Components suitable under DIN 19464
Response Time	Fast-running actuator ≤ 3 s, Flow Rate Setting Time ≤ 2 s
BMS/UX	BACnet MS/TP, Modbus RTU, BACnet/IP, Modbus/IP, Web Server

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TROX TVRK valves vs Venturi valves

Fan Energy Consumption

Compared to Venturi valves, TROX TVRK fast-acting flow controllers deliver equivalent airflow accuracy of $\pm 5\%$ while operating with a significantly lower nominal pressure drop across the valve. The reduced pressure loss directly translates to lower fan energy demand, improving overall system efficiency and reducing operating energy costs.

Costs

In laboratory and cleanroom applications, **Venturi** valves are typically required to be manufactured from stainless steel or other specialised alloys to satisfy contamination control, corrosion resistance, and hygiene standards. This material requirement significantly increases both initial capital expenditure and ongoing replacement costs.

By contrast, **TROX TVRK** valves are manufactured from flame-resistant polypropylene, delivering a cost-effective yet robust solution for demanding laboratory environments. The material's inherent corrosion resistance and low weight contribute to extended service life, reduced maintenance intervention, and a lower total cost of ownership.

BMS Integration Flexibility

The TROX solution provides seamless, native integration with Building Management Systems (BMS) via BACnet IP and Modbus IP protocols. This direct connectivity removes the need for third-party gateways or interface controllers, enabling:

- Real-time feedback of airflow, damper position, pressure, and alarm status to the BMS
- Centralised monitoring and control of laboratory supply and exhaust systems
- Streamlined commissioning, troubleshooting, and fault diagnostics
- Reduced system complexity and lower long-term maintenance costs

Support for both BACnet IP and Modbus IP ensures broad compatibility with contemporary BMS architectures, while delivering a scalable, future-ready control platform for laboratory and cleanroom applications.

Maintenance & Serviceability

TROX TVRK valves are designed for low maintenance and ease of service, incorporating simplified airflow geometry, corrosion-resistant construction, self-correcting control logic, and externally accessible pressure sensing tubes.

These features minimise service intervention and reduce lifecycle maintenance requirements.

Product and Project Support

For more than 30 years, TROX has been a premium supplier of engineered systems for laboratory control environments. Since collaborating with ACS in 2010, TROX's product range and technical support services have been specifically adapted to meet the regulatory, operational, and performance requirements of the Australian and New Zealand markets.

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TROX TVRK



Lower pressure drop

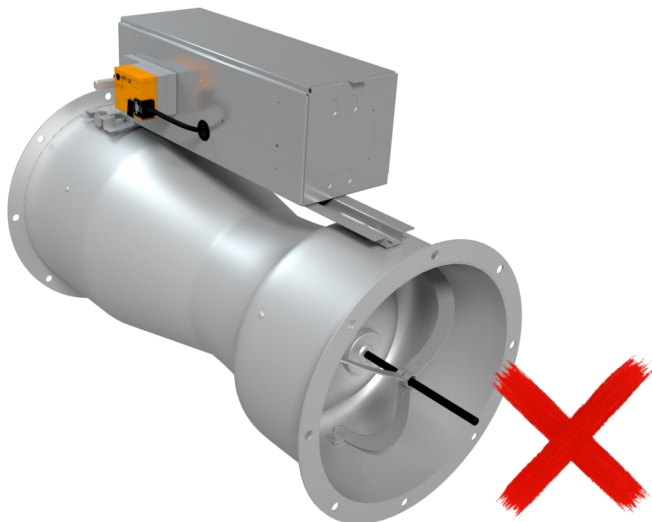


Reduced operating energy



Seamless BMS integration

Venturi Valve





TROX