ISSUE 7 2004

S·A·V news

SPECIAL COMMISSIONING FEATURE

THE SHORTER ROUTE TO REAL ENERGY SAVING

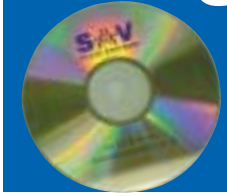
SAV's Commissioning Module concept cuts long distribution lines and gives the designer that essential good valve authority

Fast track cost savings...

Commissioning and balancing of modern air conditioning systems account for a significant proportion of overall installation costs. In this issue of SAV News we focus on the latest developments that can save time and money by ensuring easier, more accurate balancing and protect the system from dirt and debris....

All in the balance page 3

FAQ's



page 4

SAV Commissioning Module - now with integral DPCV

New legislation demands real energy saving. Coming to terms with variable flow water systems is essential.

Varying the speed of the pump to match system demand can significantly reduce energy consumption - energy savings of between 60-70% have been predicted for typical building heating and cooling applications.

SAV's Commissioning Modules have been designed to make that energy saving a practical proposition. It's a complete service that takes care of all the design detail. Solutions are carefully matched to the specific project with the components sized and selected to the system requirements. Each Module is then pre-tested before delivery to site, fully assembled and ready for installation.

Traditional approach

In a traditional approach large, expensive, flanged differential pressure control valves (DPCV's) are used to compensate for changes in the main branch pressure caused by the closure of two-port control valves, or variations in pump speed. Two-port control valves must be selected to control and shut off against the pressure controlled by the nearest upstream DPCV.

Where long distribution lines to fan coils etc are involved achieving good valve authority is almost impossible!

Valve authority should be greater than 0.23* but this is difficult to reach if the pressure drop controlled by the DPCV is large – figures of 0.8 – 1.3 bar are typical. So, designers face the double challenge of saving energy without increasing capital costs and risking embarrassing operating problems.

Ingenious

SAV's ingenious and highly effective solution is to "modularise" the system in such a way that groups of terminal units (with a combined maximum output of 46kW heating or 25kW cooling per group) can share facilities. By utilising distribution manifolds with all necessary controls and using Haka Alupex flexible plastic-coated aluminium pipe for low pressure drop run-outs, all the design issues are resolved with no increase in overall system cost.

● *continued page 2*

* BSRIA Variable Flow Water Systems Application Guide 16/2002

It's all in the balance

Faster commissioning and system balancing can make major savings in overall system costs. Here we show a cost comparison between traditional methods* and an SAV Commissioning Module.
Installation times for fan coil branches are based on figures given in BSRIA Publication ACT 5-2000 DS 5.5 which compare manifold distribution to traditional layouts.

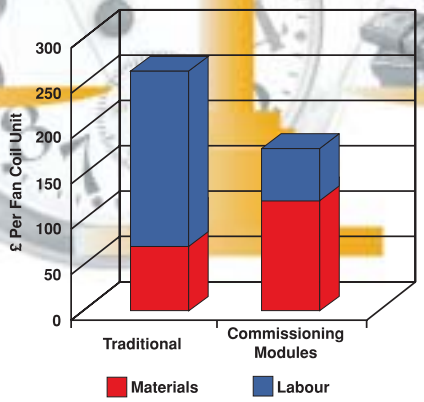
Labour rates are based on typical industry quoted values for the London region.

Potential Savings

The figures take no account of other potential savings made possible by the commissioning module approach – including the need for fewer access points for commissioning valves and flushing drains.

	£/fcu	
	Traditional	CM Module
Materials	68.75	133.00
Labour	193.20	50.00
Total	261.95	183.00
%	100	70

A potential saving of £78.95 per fan coil unit
(excluding savings in commissioning costs)



Chemical cleaning and balancing can begin as soon as the commissioning modules are installed. There's no need to wait until the entire system is installed - no need to cram balancing into the last two weeks of a six months' project!

** "Traditional" in these calculations is the SAV MonoLink system, which is traditional in approach, but modern in design. Only four connections are required - some competitive models require up to 14!*

"controls up to 6 fan c

● *continued from page 1*

SAV Commissioning Modules enable one compact DPCV to be shared by up to six terminal units with a maximum loading of 11.6kW heating and 6.3kW cooling per terminal – a highly cost efficient ratio.

Moreover, because the DPCV's are located close to the terminals, the pressures they control are relatively low – typically 0.2 – 0.5 bar. That crucial good valve authority can be achieved every time.

The key features of the Module include:

- A large bodied strainer to remove circulating system debris before it can cause blockages in terminal units, regulating valves or control valves
- Flexible, plastic-coated aluminium pipe, which can be installed in single lengths between the manifold and terminals with a 60% labour saving compared to rigid pipes.
- A central flushing by-pass and drain so that each terminal can be flushed and cleaned from a single location – no need for looping out.
- A central air vent so that the entire arrangement including terminals can be vented from a single point.
- A return manifold with balancing valves incorporated on each port.
- Optional 2-port control valves on flow manifold.
- A single DPCV to maintain a constant differential pressure between flow and return manifolds.

The latest, SAV 767 version of the Commissioning Module has all its key components including multi-port manifold, air vent and isolation valves already housed in a pre-insulated galvanised steel casing. The casing is also vapour-sealed to guard against mould and condensation so no need to attempt vapour sealing of individual components - seals that are virtually impossible to achieve and must be broken the first time access is required!

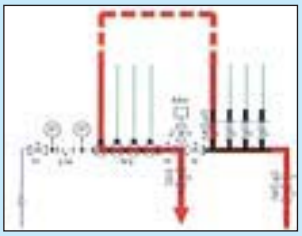
This "box" - no bigger than a standard fan coil unit - can be simply and quickly located in the ceiling or floor void.

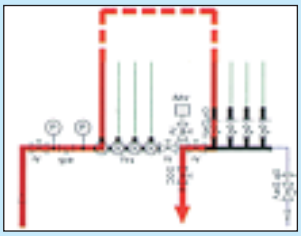
Location is totally flexible so easy access for maintenance is assured. Connecting up the Haka flexible polyethylene-coated aluminium pipe is literally a matter of minutes and the Commissioning Module is ready for action.

Other key system components including large, fine-mesh strainer, test points and specially designed commissioning valves are all accommodated inside the box - together with a Differential Pressure Control Valve (DPCV) for automatic and cost-efficient control of modulated pumping systems.

A wide range of control options including inbuilt pulsed meters for "intelligent" control is available.

FLUSHED WITH SUCCESS!





The system incorporates all the components needed to flush, vent and balance the fan coils. The time consuming business of "looping out" is consigned to history. Forward and back flushing can be easily achieved from the commissioning module for individual heating/cooling lines. Flow of LTHW and chilled water can be easily balanced by a single operative - it's a cost-effective alternative to the hard pressed teams of men with ladders and walkie talkie's that have been a feature of system commissioning until now!

SAV VALVE MODULES

ActionFile

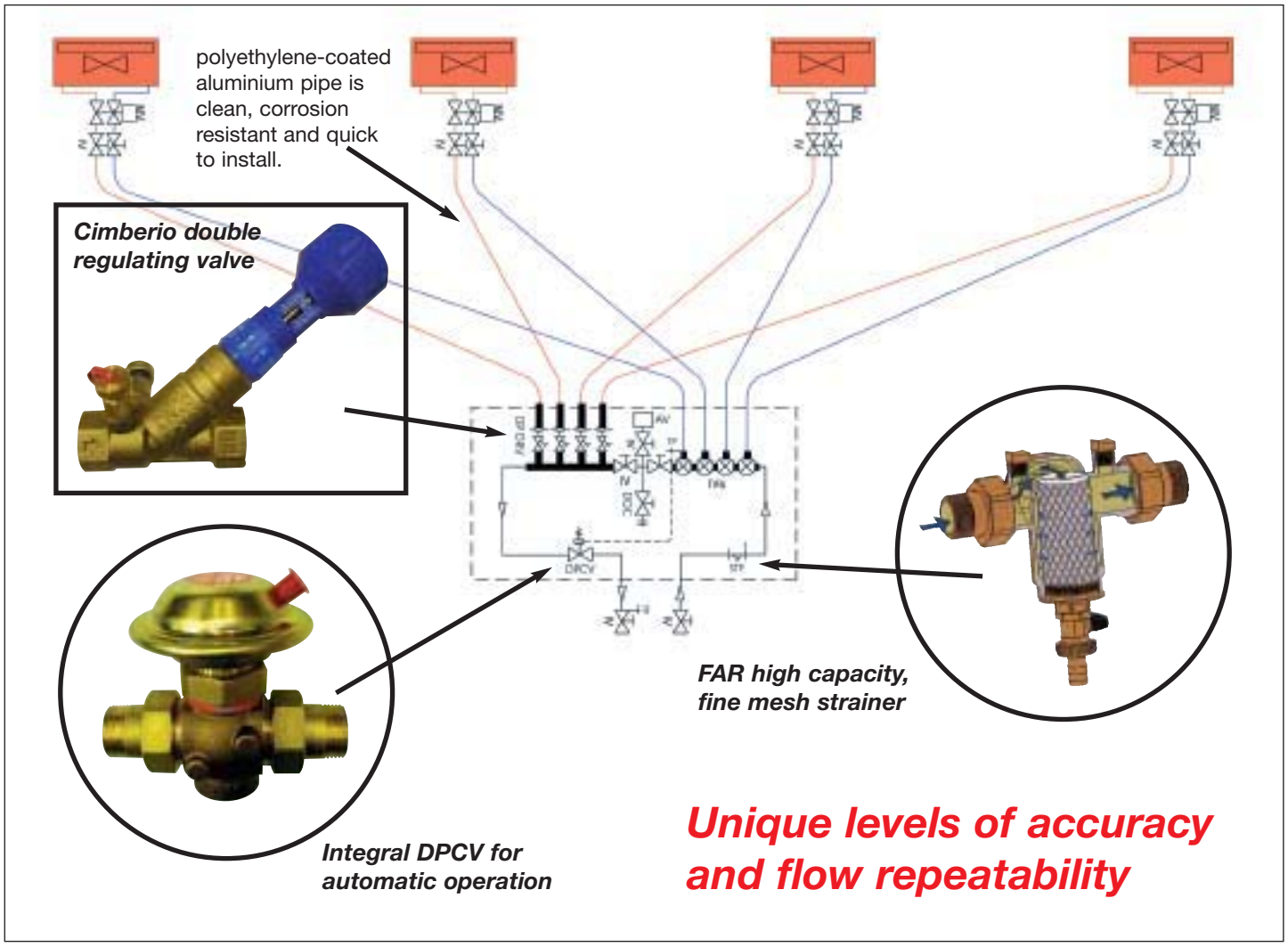
The Modular Approach In Action

SAV Commissioning Modules are already being specified for application in projects all over the United Kingdom.

Building services designers for major developments including Harvey Nichols Manchester store, the Albion Riverside apartments and the new Stock Exchange building are adopting the modular approach.

Centralised balancing and commissioning valves makes it easier and quicker to commission each fan coil group.

...oils from one location"



SAV VALVE MODULES

FAQ's

The answers to some of the points you raise

Q: How are Commissioning Modules "energy saving"?

A: By varying the speed of the pump to match system demand, energy consumption can be significantly reduced. Estimated pump energy savings of between 60-70% have been predicted for typical building heating and cooling applications.

However, designers have to employ variable speed pumps, without excessive expenditure elsewhere in the system - *and without risking embarrassing operating problems.*

The Differential Pressure Control Valve (DPCV) offers a solution by compensating for variations in the total branch pressure caused by the movement of control valves, or variations in pump speed. The DPCV will maintain a constant differential pressure across the branch, regardless of what's happening elsewhere in the system.

However, DPCVs are expensive compared to regulating valves, and should also ideally be accompanied by separate isolating and flow measurement facilities.

An effective compromise is to "modularise" or sub-divide the system in such a way that groups of terminal units can share facilities. By using SAV Commissioning Modules the design issues can be resolved *with no increase in overall system cost.*

Q: How do we size pipes and manifolds and calculate pressure drops?

A: You don't have to. SAV Valves Systems has developed special software to support the range of Commissioning Modules. Just enter the terminal unit velocity required and the distance to each fan coil and the program will make all the calculations. We'll run out the answers for you at SAV HQ.

Q: Is main branch balancing required?

A: No. ALL balancing can be carried out from the Commissioning Module.

THE PEACE OF MIND PACKAGE

Opting for the SAV Commissioning Module packaged service puts fast track confidence into project management.

All components of the pre-insulated box are connected and pressure tested at the factory before delivery.

Once on site only 4 connections per fan coil need to be made - as opposed to 47 for a traditional system.

That means dramatically less time is necessary to bring the system into commission (module-by-module if required). Managers benefit from dramatically reduced on site labour costs and can rest assured that there will be no delays to other trades.

That's the SAV peace of mind promise!

Here's The Missing Link

Specifiers preferring a traditional approach to fan coil distribution arrangements now have the option of a new ultra compact connection system that can drastically reduce installation and commissioning time.

The new MonoLink system from SAV Valve Systems is designed to provide the essential link between the fan coil and the flow and return lines. The pre-packaged assembly incorporates an isolation valve - a high quality ball valve with integral strainer - a drain point, an inbuilt special Cimberio 348 bypass valve and double regulating valve.

All the components required for flushing and commissioning the system are combined in a single assembly that will fit in the tightest corners.

Ball valves feature special extension spindles with tough nylon handles, so that the system can be easily insulated, with the heavy duty handles protuding to give a reliable open/close action.

Only four connections

Not only is the new SAV MonoLink system compact and versatile, it's also easy to fit. Only four connections are required - some competitive models require up to 14! Moreover, because the connections are simple union joints, the whole assembly can be adjusted in situ for maximum convenience and easy accessibility in the space available. Major savings in both installation time and maintenance can be achieved.

The use of the unique FAR connection system makes it possible to use the SAV MonoLink units with virtually any type (or combination) of pipe - copper, stainless steel, or more flexible plastic and composite pipes such as AluPEX in 16 and 20 mm sizes.

Patent Application No. 01 13234.9

For further information contact:

SAV VALVE MODULES, SCANDIA HOUSE, 131 ARMFIELD CLOSE, WEST MOLESEY, SURREY KT8 2JR

TEL: +44 (0)20 8941 4153 FAX: +44 (0)20 8783 1132

WEB: www.savmodules.com E-MAIL: info@savmodules.com

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