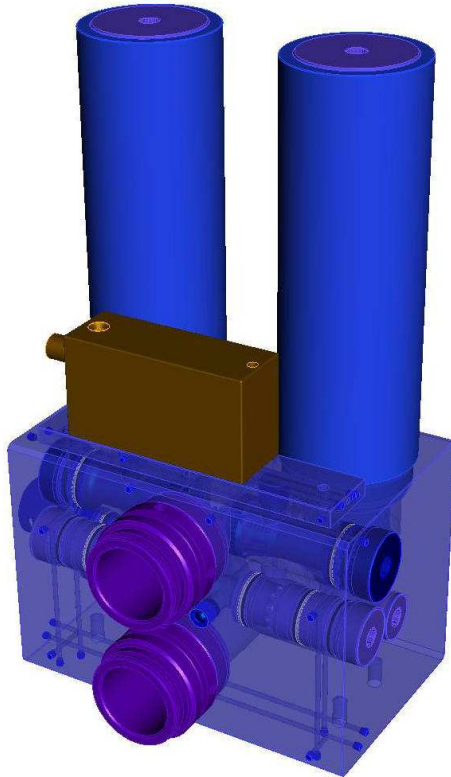


Backflush filter for the face end



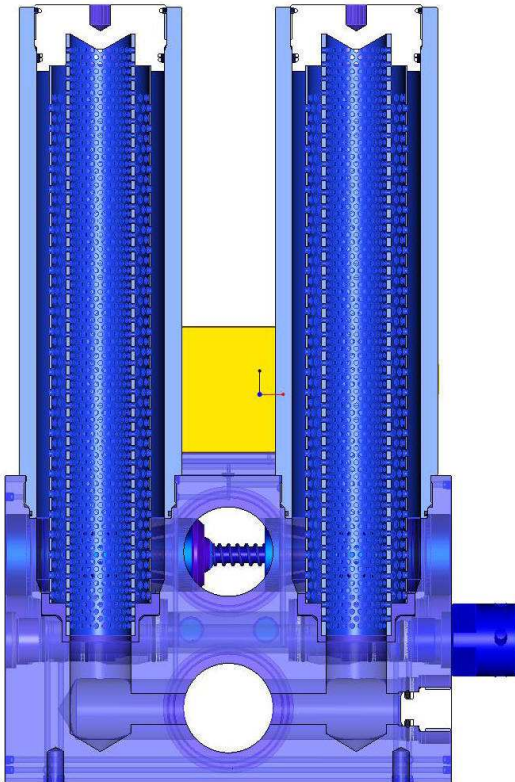
This backflush filter has a capacity of 700 l/min. With the relevant auxiliary equipment, the filter can be run automatically (see parts listed in the table at the end of this document).

It can also be configured to form a filter station with several modules and a capacity of up to 5000 l/min (see filter station configuration drawings attached). The outlet is in DN50. Inlet and outlet are both routed through the block. The connections are threaded and any standard connections can be fitted to them. Marco recommends using the marco DN50 pipe connection here.

Two to three filter elements can be linked in sequence in order to adjust the filter surface area to the rate of flow and thereby keeping the drop in pressure for the required flow to a minimum. (A 1% drop in pressure also puts paid to 1% of the investment in the pumps and also increases the energy required for the longwall by 1% - which is why we recommend using 2 elements even for 700 l/min!).

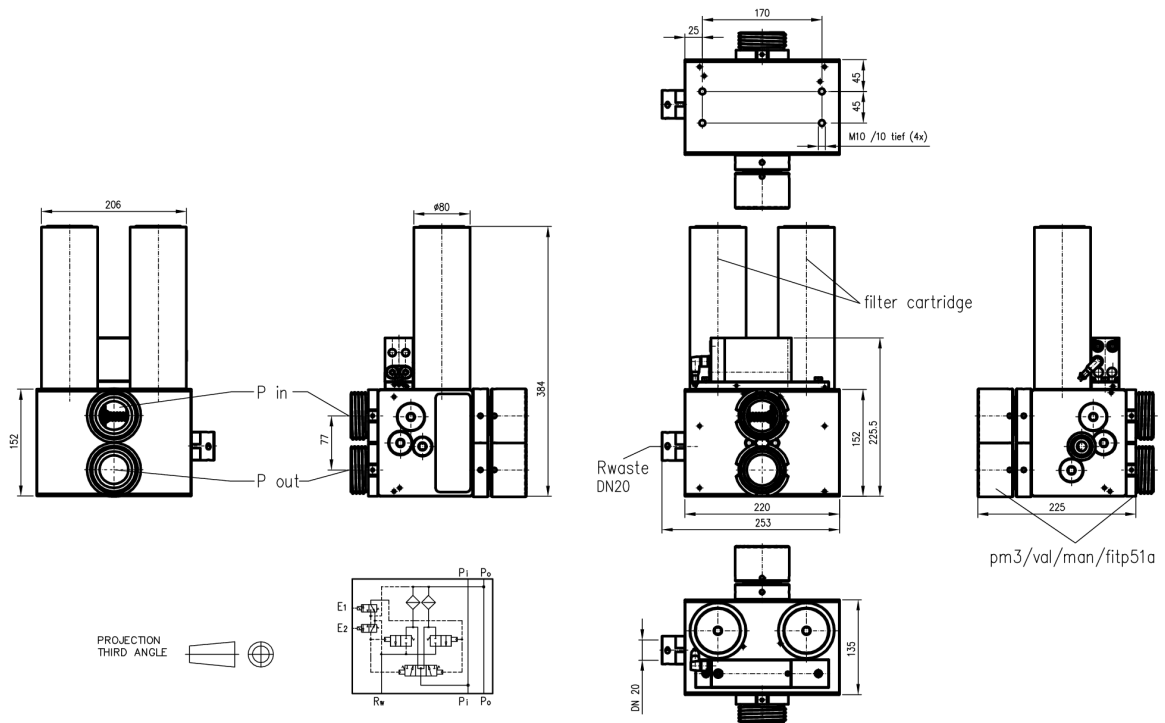
Larger filter installations are configured using parallel arrangements of several rows. The filter unit is controlled by the PM32 controller as also used in the face for shield control. One controller is sufficient for a filter installation with several modules. marco configures these installations to an operational unit. Control of the filters is dependent upon very precise measuring of

pressure differentials. The following figure shows the basic unit which consists of two filter elements on top of the valve unit.

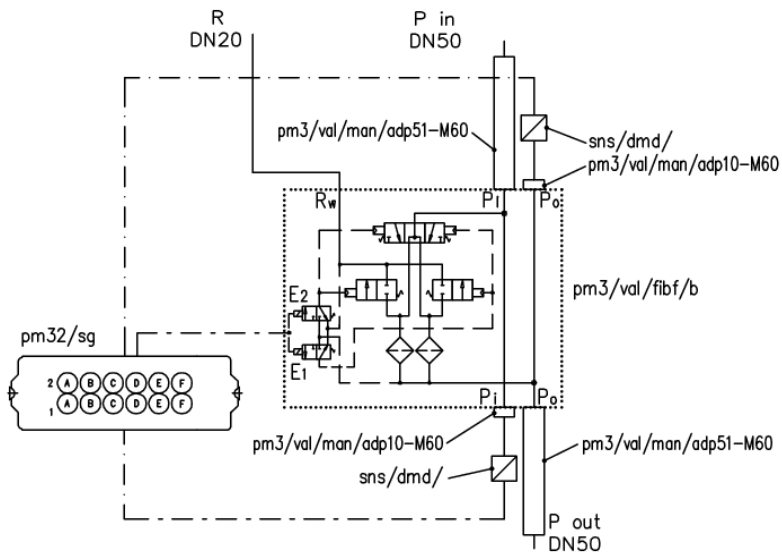


This arrangement is particularly favourable as most dirt particles are heavier than the pressure medium, and are therefore easily removed during the flushing procedure.

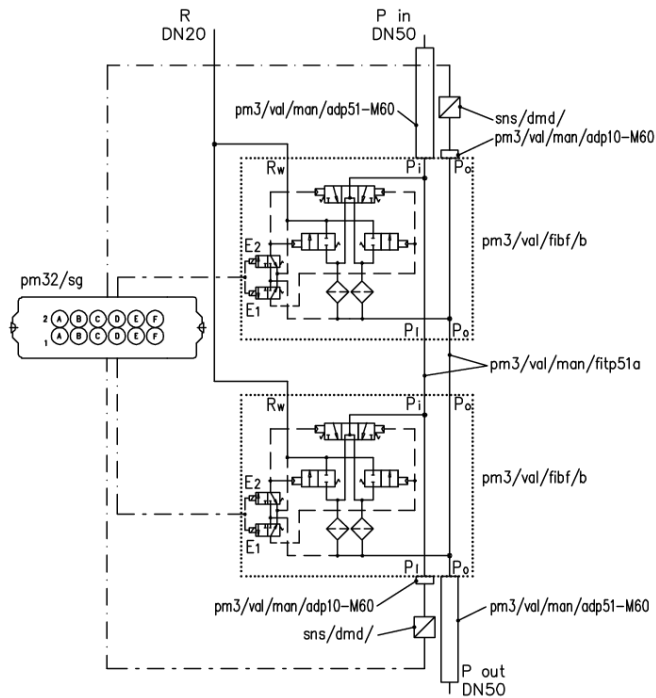
The filter elements are considerably larger than the pipes seen from the outside. These filter elements consist of high quality, extra strong wire cloth made of stainless steel and only need to be replaced after approximately 1000 flushing cycles. There is a solenoid valve on the valve block, arranged identically to those used in shield control. This valve allows the flushing cycle of both filter halves to be independently controlled - electrically and manually. The valve unit contains a large poppet valve which first of all separates the filter from the pressure supply, activates an additional valve cartridge and then opens the flushing outlet. Dividing the flushing function into two valves has the advantage that each cartridge can be adapted to the flow rate. For the main flow there is a large poppet valve in DN32 and for the flushing procedure a valve in DN20. This valve design conforms to a marco patent.



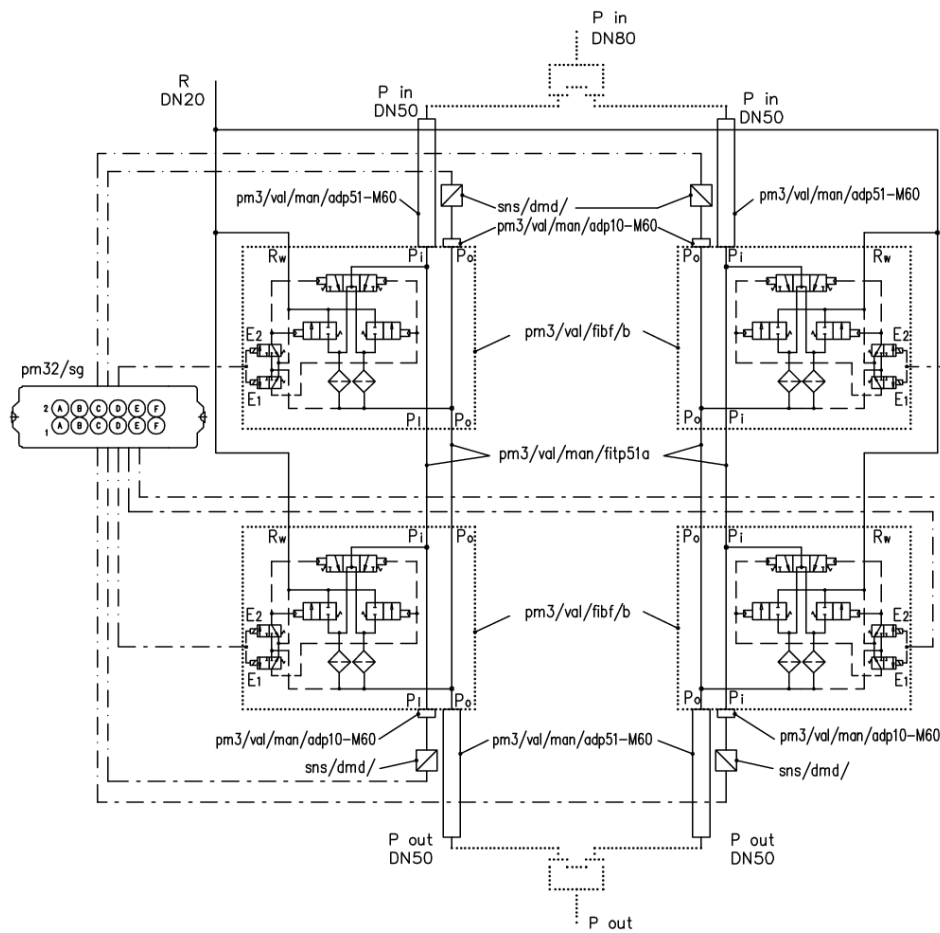
The figure shows one filter block. Marco configures these blocks specifically for the installation in question. The following drawings show examples of such configurations.



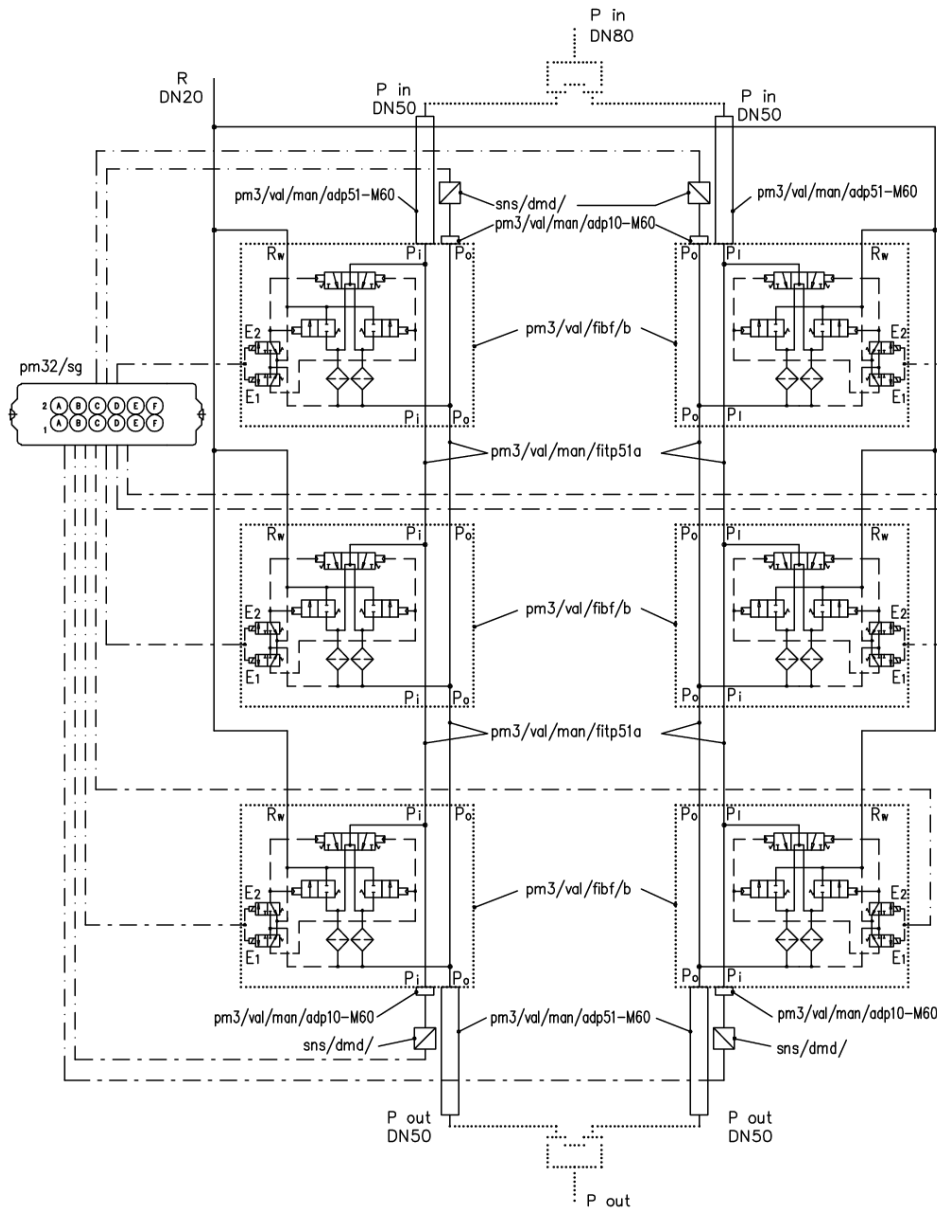
Filter station with one module



Filter station with two modules.



This drawing shows a filter station configured with four modules in parallel.



This filter station has six modules running in parallel.

Order number	Rev.	Description
pm3/val/fibf/b	1.0	Backflush filter for the face end
pm32/sg/...		Controller
sns/dmd/...		Pressure sensor
pmsys/bf/6/001/pm32		Software
Filter station		Customer-specific configuration