GAV™

A gravitational valve for the treatment of adult hydrocephalus

Aesculap Neurosurgery

AESCULAP®

Aesculap and MIETHKE

Alliance for Innovation

Aesculap AG, Tuttlingen, Germany

When two strong partners combine their know-how, it often leads to innovative and groundbreaking solutions which could not be achieved independently by either of the partners.

Following this philosophy, Aesculap and MIETHKE have been working together since 1993. Our aim was and still is to develop better solutions for the complex treatment of hydrocephalus.

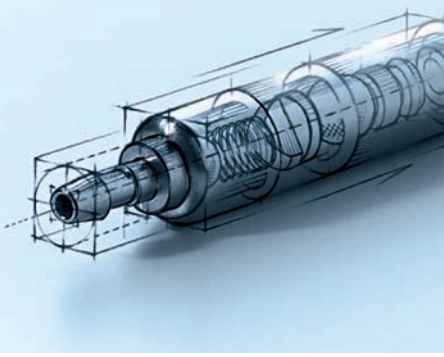
The *GAV*™ valve is a unique gravitational valve developed for the treatment of adult hydrocephalus, and is especially effective in treating active patients. The *GAV* valve combines the advantages of the tried and tested ball-in-cone valve with the advantages of a gravitational unit in a single, streamlined design.

"Meeting with our customers is our opportunity to face the potential of ideas we do not yet have."

Christoph Miethke (pictured left)

GAV Features and Benefits

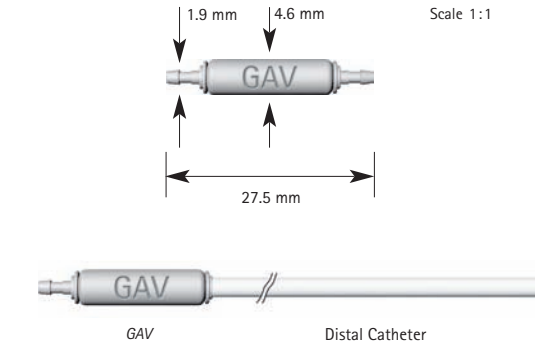
- Unique gravitational technology provides increased resistance as patient moves upright, greatly reducing or eliminating overdrainage.
- Enables the surgeon to use different opening pressures for the supine and standing positions, managing overdrainage complications and patient discomfort.
- Titanium housing allows the *GAV* valve to be made extremely small, but still have large flow paths to help reduce the risk of obstruction.
- Low profile and streamlined shape for fast and easy implantation and improved aesthetics.
- Available in different pressure combinations to help manage the complex needs of different patients.



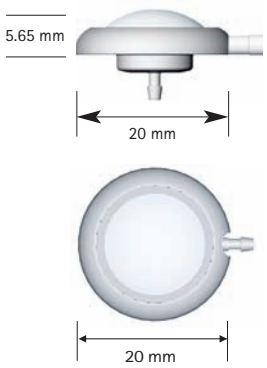
GAV™ Pressure Selection

GAV is available separately or with integrated catheters and reservoirs.

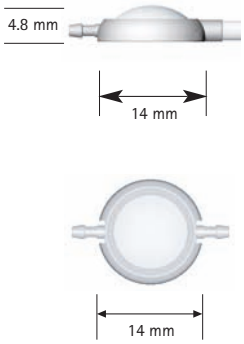
See Hydrocephalus Management Systems Brochure (DOC447) for details and ordering information.



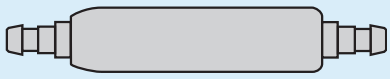
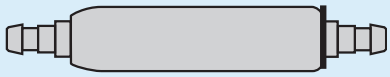
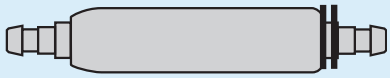
Burrhole or Sprung Reservoir



Flushing Reservoir



The *GAV* valve is available in different pressure level settings. Each pressure level is specially coded, enabling the valve to be identified on post-operative x-rays. Refer to product IFU for more information.

Opening Pressure horizontal/vertical (cm H_2O)	X-ray marker code *GAV*
5/30	
5/35	
5/40	
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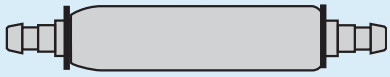
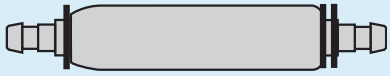
10/40	
10/50	

GAV Pressure Selection

Recommended settings only; may vary according to patient and medical history.

Height of Patient	Recommended Valve
Up to 5' 3"	5/30 cm H_2O
5' 3" – 5' 9"	5/35 cm H_2O
Over 5' 9"	5/40 cm H_2O

- The taller the patient, the higher the pressure level of the gravitational unit to be selected.
- The shorter, more immobile or more overweight the patient, the lower the pressure level of the gravitational unit.
- If a pressure setting lower than those available with the *GAV* valve is needed, *paediGAV*™ or *proGAV*™ valves may be considered.

GAV™

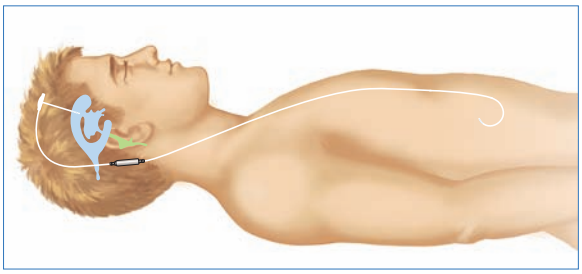
Function

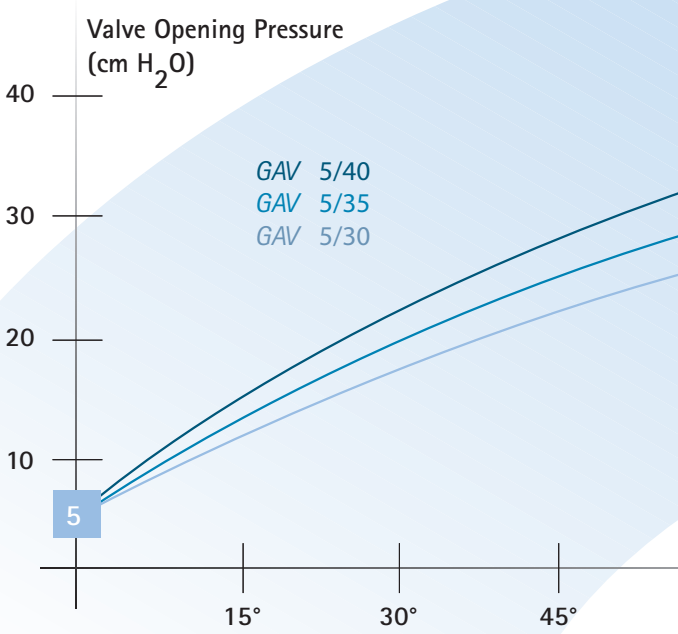
For proper function of the gravitational unit, the GAV valve must be implanted in line with the patient's body axis.

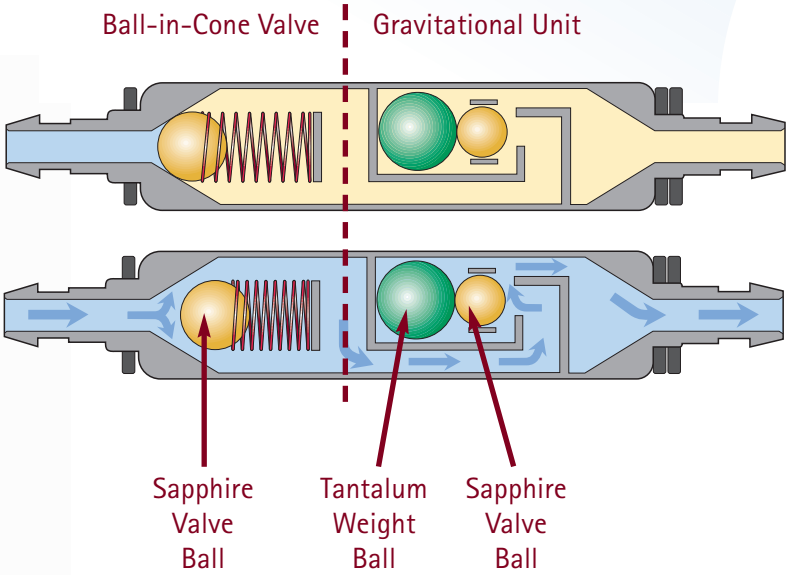
Supine Function

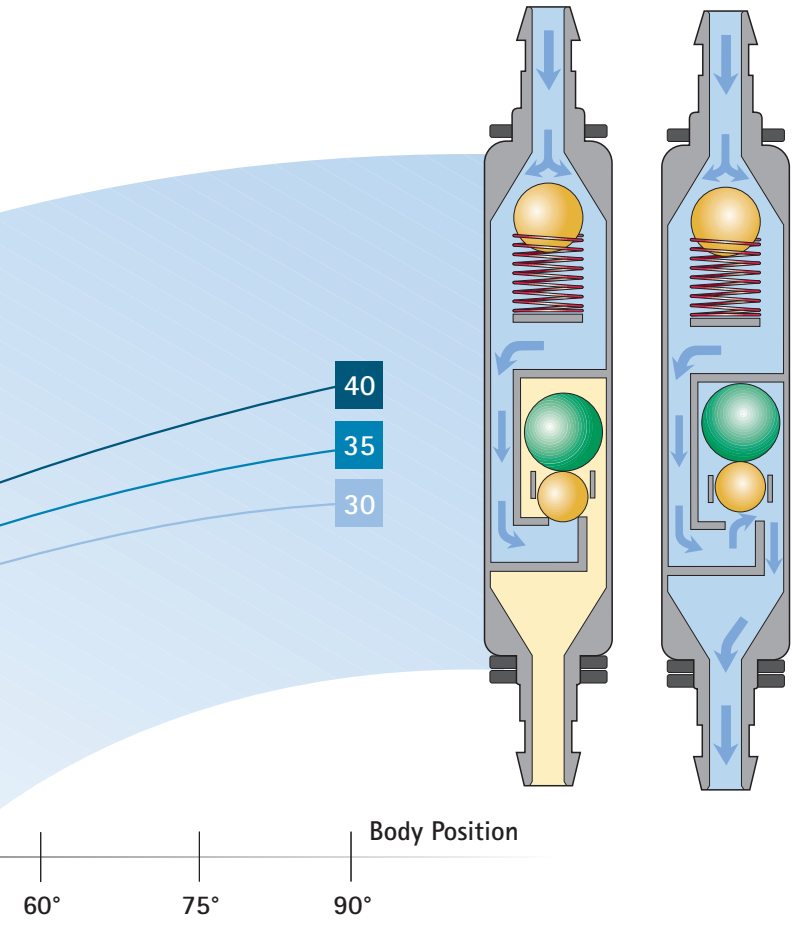
When the patient is in the lying position, intraventricular pressure is maintained solely by the ball-in-cone portion of the *GAV* valve.

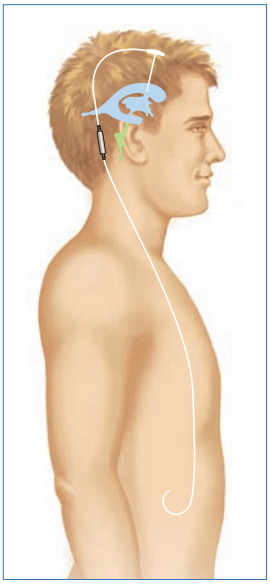
- The low pressure setting of the ball-in-cone valve keeps the intracranial pressure within physiological limits.
- The valve balls in the gravitational unit move freely, keeping the flow path open and adding no resistance to the shunt system.











Upright Function

When the patient moves to an upright position, the gravitational unit of the *GAV*™ valve is automatically activated and resistance is added.

- The Tantalum Weight Ball and Sapphire Valve Ball of the gravitational unit are pulled down by gravity, adding increased resistance.
- CSF flow must now overcome the opening pressure of both the ball-in-cone valve and the gravitational unit, thus the overall pressure of the shunt system is increased, keeping the intraventricular pressure within physiological limits.
- The increased opening pressure in the upright position effectively prevents overdrainage, which can occur as a result of siphoning.

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