



# The HYDROMAT®

Since 1953



# The sealing principle

Concentricity makes all the difference.

The decisive advantage of a HYDROMAT® is the friction-locked sealing principle, made possible by the concentric bearing-mounted valve disk.

A wide, massive seal virtually insensitive to normal stresses is vulcanised without stress in a circular groove within the valve disk. During closing of the valve, this seal comes to rest against the inside of the housing. At a valve position of around 82° the valve disk is friction-locked and seals securely. Even under the most extreme operating conditions, this sealing principle ensures very high operational reliability and, due to the dimensioning of the seal, guarantees decades of service for the HYDROMAT®.

Another advantage ensuing from the concentric bearing-mounted valve disk is the favourable position of the valve disk in relation to flow, in which no turbulences arise and therefore minimises incrustation. The concentric bearing mounting enables smooth passage through the housing, without the pinching of the nominal width due to the sticking of seals as for eccentric valves (see photograph and illustration below).

A special feature of the HYDROMAT®, resulting from the concentric bearing-mounted valve disk, is the continuous shaft, which greatly enhances the rigidity and strength of the HYDROMAT®. These are outstanding advantages with the HYDROMAT®.



## HYDROMAT® DN800, PN10

30 years in the pipeline network, seal in perfect condition. The valve is completely functional.



## ECCENTRIC VALVE DN800, PN10

12 years in the pipeline network. The narrow sealing ring typical of eccentric valves is defective.

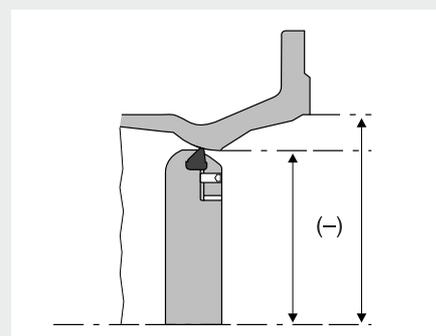


## HYDROMAT®



Smooth passage through the housing at nominal width

## ECCENTRIC VALVE



Pinching of nominal width due to sticking of seal



## The seal

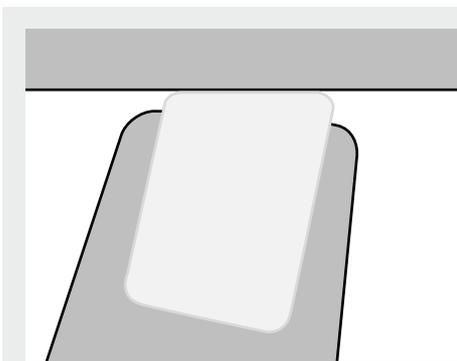
The heart of the valve.

The concentric arrangement of the valve disk of a HYDROMAT® enables the use of an extremely wide and massive sealing element.

Under all operating conditions, with a large or a small number of operating cycles, impurities in the medium, detached incrustations or other foreign particles, the sealing element of a HYDROMAT® has sufficient reserves to guarantee sealing and thus operational reliability over decades.

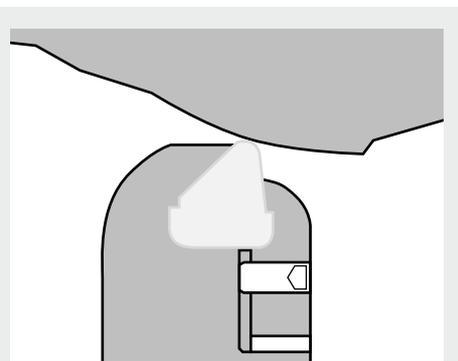
In their advertising, manufacturers of eccentric valves emphasise the possibility of fast and cost-effective re-tightening or replacement of the sealing element. In practice, however, the question arises whether the valve can in fact be taken out of the system or out of the ground fast and cost-effectively. This is why we emphasise what is really expected of a sealing element in our advertising: namely sealing reliably, over the longest possible time.

### HYDROMAT®



Original cross-section of a seal  
HYDROMAT® DN200

### ECCENTRIC VALVE



Original cross-section of a seal  
ECCENTRIC VALVE DN200

# Corrosion protection

The surface of a valve is what decides between functioning and corrosion.

Different surface coatings are used in the valve construction in order to protect the valve against environmental influences and corrosion. We have decided upon enamel, and there's good reason for this:

Whatever theory and practice may claim, it is ultimately cost-effective use which is decisive. The particularly long life of enamels is altogether convincing here. An objective cost-benefit comparison, confirmed by a well-known utility, favours enamel.

During the enamelling process, a perfect bonding develops between the casting and the enamel, in which the materials fuse together at a temperature of around 850 °C. We speak accordingly of a composite material. This is a physical reality and in no way merely an advertising argument. On the other hand, a coating is simply applied to the surface, as can be seen from the common abbreviations for coatings, such as EKB (electrostatic plastic coating).

One often hears that enamel is too brittle and chips away easily: this may be true if we turn the clock back 20 years, but today this view must be seen as prejudice. Modern enamelled materials are dimensionally extremely stable. A glass rod breaks, but not a fibreglass. The enamel used for the HYDROMAT® is flexible and therefore resistant to impacts.

But what does "resistant to impacts" mean in the hard everyday world of building sites? Nothing whatever! If the enamel is damaged in spite of this, e.g. because someone had a bad day, the remaining composite layer prevents corrosion and infiltration. The HYDROMAT® remains protected and functional. Enamel has an extremely smooth

surface, so that nothing can cling to the surface - from the well-known evil of incrustations to so-called "invisible" dirt, bacteria and other micro-organisms.

Enamel does not provide a breeding ground for bacteria, and entails no hygienic or physiological risks: the HYDROMAT®, in the truest sense of the word, completely clean.

The HYDROMAT® is a standard, completely enamelled valve. The outer side of the housing is of impact-resistant ground coat enamel with rugged two-component application. The inner side of the housing and the valve disk are of impact-resistant enamel.

Original enamelled surface of a HYDROMAT®

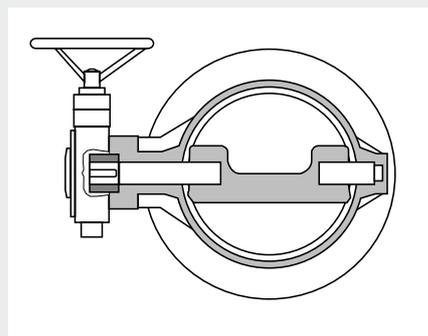


HYDROMAT®



Favourable position in relation to flow due to continuous valve shaft

ECCENTRIC VALVE



Turbulences due to sticking of seals and bearings

# Gearing

Quality has partners, and thus HYDROMATEN KG as well.

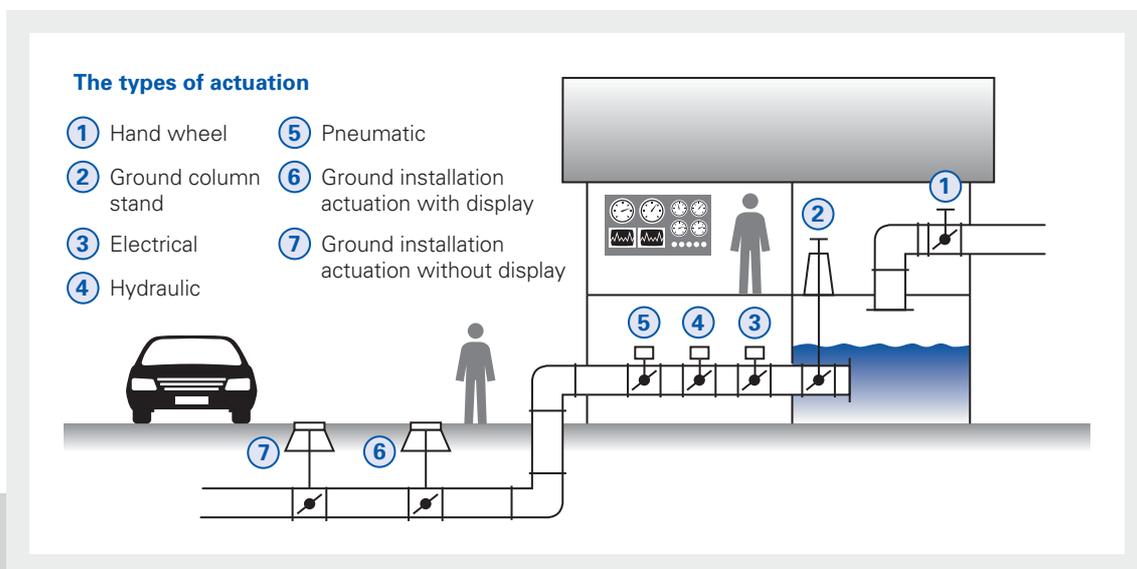
The AUMA Group is one of the world's leading manufacturers of valve gearing and since 1972 a supplier to Hydromaten KG.

The maintenance-free worm gear pair of the GS series which we use at HYDROMATEN® is an extremely robust gearing for manual and motorised operation. Reliability and long life are its most prominent features.

The greatest possible demands on a gear are fulfilled: Degree of protection IP 68-3 after EN 60529. Dust-tight and dirt-tight, waterproof up to 6m water head in conjunction with a high-quality corrosion protection which is setting altogether new standards.

The gears are individually adjusted by us from the adjustable end stops for each HYDROMAT®. These settings and the interplay of the valve and gearing are controlled during the pressure testing which each HYDROMAT® undergoes.

For the case that, in spite of all these measures, a replacement part is required for the gearing or the gearing must be entirely replaced, e.g. a line construction worker of truly exceptional strength has newly discovered the limits of leverage on the valve spanner, it doesn't matter: even after a long time, we're still able to supply a replacement part for the gearing or replace the entire gearing. Upon request, our certified valve and pipeline service will perform the repairs.



## The materials

The better overall package is decisive.

### The housing and the valve

The main components of a HYDROMAT® are in proven and dimensionally accurate quality, not in the least as the result of certified quality standards. The material used is EN-GJS-500-7, conforming with DIN EN 1563; that is, in plain GGG 40, the proven casting material for the construction of valves.

### The valve seal and the shaft seal

These components are in proven EPDM rubber quality, in accordance with the guidelines of the German Association of Gas and Water Industries (DVGW) and the requirements of the KTW (German guideline for toleration of drinking water) – recommendation of the Federal Office of Health (leaflet 86 6. communication ff. – so much for bureaucracy and theory). In practice, we take pleasure in submitting to any comparison. The design features of a HYDROMAT® and the dimensioning of the sealing ele-

ment provide substantial safety reserves, ensuring several decades of trouble-free service.

### The shaft and the screws

The shaft and the screws are made of stainless steel. Furthermore, the shaft, thanks to its four-fold sealing, has no contact whatever with the media, either externally or internally. It has maintenance-free bushes and a standard interface for all conceivable actuating variants.

These are the parts which make up a HYDROMAT®. By contrast with eccentric valves, there are no clamping rings, retaining rings, set screws, spacer sleeves, adjusting screws, grooved dowel pins, etc.

And we all know from our own experience: in technical devices, the fewer the components, the less the risk of a malfunction.

# Short and concise

We do not wish to take away the light of the competition and cast no shadow of our own, but a comparison is certainly permissible.

## Our history

Hydromaten KG is a company of the Tröger + Entenmann Group, Heidelberg, and has manufactured HYDROMATEN® butterfly valves, in concentric design, since 1953.

The basis of our business is our experience. Nevertheless, the fact that we own the patent for and built the first butterfly valve are not enough. Decisive is the continuous further development of a good idea.

## The valve

The HYDROMAT® is an extremely robust butterfly valve with a concentric bearing-mounted valve disk, which due to its construction features guarantees decades of trouble-free service. Viewed in terms of the potential costs of replacement or repair, it is well worth its price.

## Service

The price and design of valves are determined today largely by the market. Thus, there are only limited possibilities to rise above the competition. Within these possibilities, however, there is a decisive difference: the service.

Our customers experience the reliability of our HYDROMATS® in terms of our service as well. Our valve and piping network service supports you with help and advice, from project planning to pressure testing. Today, tomorrow, and in future and, above all, for projects long since in operation.

## The warranty

For the case that your company requires butterfly valves, our HYDROMATS® can offer you a technically faultless alternative to eccentric valves at a comparable price – guaranteed and with warranty.

## The result

Your customers will be well served. Your sales force will be well pleased. Your technicians will be reassured.

## And we nearly forgot...

Hydromaten KG utilises a QA System after the standard DIN EN ISO 9001:2000.

HYDROMATS® are tested and certified in accordance with DVGW.



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