

## Technical data

### Dimensions

length of a lock chamber **between 265 and 314 m**

usable length of a lock chamber **between 230 and 275 m**

width of a lock chamber **24 m**

average drop height **between 9 and 15 m**

### Filling

volume of a lock chamber **between 60.000 and 95.000 m<sup>3</sup>**

Time to fill a chamber **between 12 and 18 minutes**

Filling & draining channels **about 5x6 m**

### Lock gates

Upstream lock gate **upper part 100 to 120 t**

**lower part 120 to 175 t**

Mitre gate **about 120 tons per leaf**

**Locking upstream** from tail water to headwater

**Locking downstream** from headwater to tail water

**Outside wall** wall on the outer side of the lock chamber

**Intermediate wall** wall separating the two lock chambers

**Filling system** Means for filling the lock chamber; the water is emptied from the headwater



**Control tower** Workplace of the lockmaster



**Stop log** Apparatus for tamping the lock chamber

**Mooring post** Post used to secure vessels to a mooring place



## Glossary

**Headwater** Area upstream from the lock

**Tail water** Area downstream from the lock

**Upstream lock gate** Gate construction at the upstream end of the lock; opening by lowering the upper part or rotating segment



**Downstream lock head** Gate construction at the downstream end of the lock

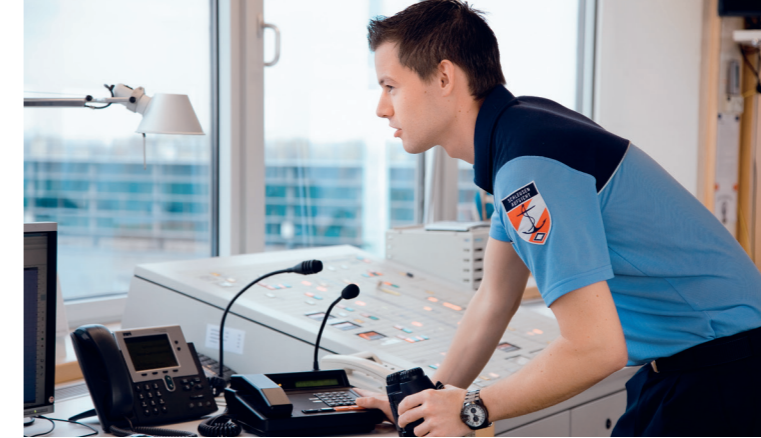


**Mitre gate** double-leaf gate at the downstream end of the lock

**Vessel impact guard** A tight rope across the lock chambers to protect the gates from damage by vessels



**Stop log** Apparatus for tamping the lock chamber



## viadonau



viadonau is operated by the Federal Ministry of Transport, Innovation and Technology. At six locations and ten locks along the 378 river kilometres in Austria (Danube, Danube Canal and mouth of Traun, Enns and March), over 250 employees take care of the natural landscape and the Danube waterway. Our common goal is the careful and sustainable development of the Danube as a living and economic space. For each measure and for each service, we have all the essential environmental, safety and economic aspects in mind. Our engagement is always balanced, and it pays off in the long run – for the environment, for the people on the river and for Austria. Our staff at the locks works around the clock for our customers and lock over 100,000 vessels each year.

### Imprint

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Locks along the  
Austrian Danube

viadonau

## DUTIES OF THE LOCK MASTERS



The smooth and service-oriented operation of the locks is an essential part of a well-functioning waterway infrastructure. The lock masters of viadonau are responsible for traffic control at the Danube locks. Over 50 employees at our locks - working around the clock in 12-hour-shifts - perform the following tasks:

### Control and monitoring of vessel traffic at locks

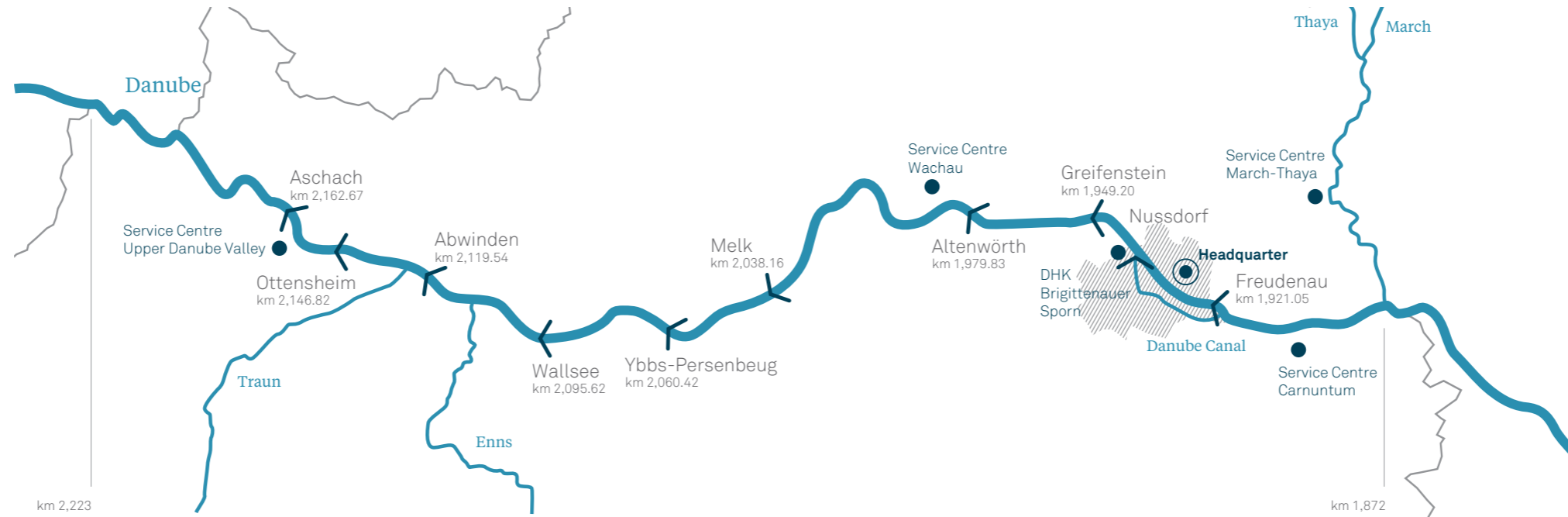
- Allocation of locking order
- Monitoring of lock traffic using radio telephone, radio data transmission for vessel positions and radar
- Technical operation of lock systems (gates, filling / emptying, traffic-light signals)
- Control of vessels' equipment for safety concerns, in particular for the transport of dangerous goods
- Measures in case of accidents in or at locks

### "Around the clock" monitoring of the locks

- Fairway and water status in the lock area
- Taking measures in case of trouble
- Specific tasks in case of high water or ice formation

### Contact point for skippers and administrative tasks

- Information & advice (e.g. current traffic situation on the waterway, water levels, critical fairway conditions)
- Maintenance of a lock management system



18 hydraulic power stations have been built over the entire length of the Danube. Nine of those are situated along the Austrian 350 km long stretch and operated by the power company Verbund AG. Verbund AG is also responsible for maintaining and repairing all of the locks located along the river.

The purpose of locks is primarily the handling of river traffic; however, they also help discharge high water and ice. They were built in the course of the construction of the power stations.

Locks consist of two chambers each 24 metres wide and with a usable length between 230 and 275 metres. Each lock chamber has the capacity to

accommodate an entire pushed convoy consisting of a pusher vessel and four barges. Every year, approximately 10,000 to 14,000 vessels pass through each of these locks, with up to 45 vessels daily during peak season. Lockage takes about 30 minutes, requiring roughly between 60,000 and 95,000 m<sup>3</sup> of water.

On their upstream end, the chambers are shut using lock gates or swivelling segments and on the downstream end by means of mitre gates (double-leaf gates). The chambers are filled via the filling station and filling channels from the upstream area. When the chambers are emptied, water is channelled downstream via draining

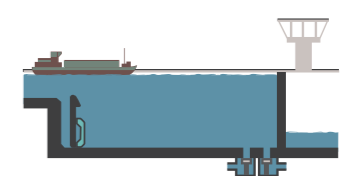
channels. The chambers are both filled and emptied without pumps.

A vessel impact guard protects the gates from damage caused by vessels.

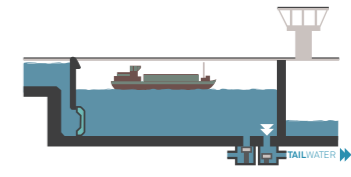
The lockmaster's station is usually situated at the downstream end of the locks, allowing both chambers to be monitored and controlled independently from each other.

If required, the lock chambers can be dammed up and drained for maintenance purposes by means of stop logs.

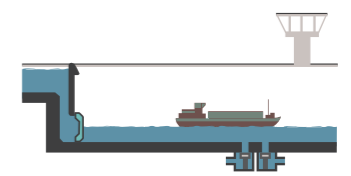
## The locking principle



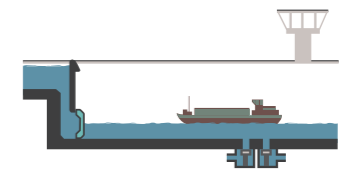
**Locking downstream**  
1. Entering the chamber



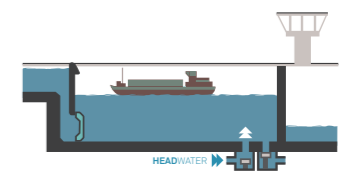
2. Upstream lock gate closes, draining to tail water



3. Leaving to tail water



**Locking upstream**  
1. Entering the chamber



2. Mitre gate closes, filling from head water



3. Leaving to head water