

**AQTV, AQSV, AQCV**  
Vertical axial flow pumps

# VERTICAL AXIAL FLOW PUMPS

## AQTV, AQSV, AQCVC

Vertical pumps AQTV, AQSV, AQCVC have axial-flow impeller. Considering rate of flow they may be classified as the most efficient pump-sets. They are intended for delivering a huge amount of water with small delivery heads in pumping stations for irrigation, drainage, watering and sewerage systems, and even in industrial and water supply plants.

### APPLICATION

For pumping rain, river, leaky and pre-treated waste water with a small content of solids up to temperature of 50 °C.

### DESCRIPTION

Model AQTV, having been produced in sizes 300 and bigger, represents series of vertical axial flow pumps of conventional „fast“ non-pull-out workmanship. They are designed for wet sumps in workmanships with an intermediate floor or without it. Pumps of the same conception as the „AQTV“ model but with inclined centreline are manufactured under designation „AQTS“.

Model AQSV is available in the sizes from 800 and represents series of vertical propeller pumps with pull-out rotor. They are intended for wet sumps in workmanship with an intermediate floor.

Models AQCVC are available in sizes from 1000 to 1400 and represents series of vertical axial flow pumps of pull-out versions, with possibilities of capacity and the pump delivery head control through the impeller adjustable vanes. Regulation mechanism is controlled with a servomotor being placed on the upper floor stand. They are intended for wet sump of the version with an intermediate floor.

Pumps with greater diameter of the discharge branch than 1,400 mm are custom - made on the customer special request.

Pump rotor is supported on journal bearings, being lubricated at the pump „wet“ end with a pumped liquid, above the branch elbow there grease or oil should be used. Axial hydraulic thrust and rotor weight are absorbed by a thrust bearing in suspension assembly.

On pumps having low operating speed a drive is resolved commonly with using a gearbox. That arrangement makes using an electric motor of higher speed possible and further, the considerable reduction of an electric motor weight may be obtained.

### MATERIAL OPTIONS

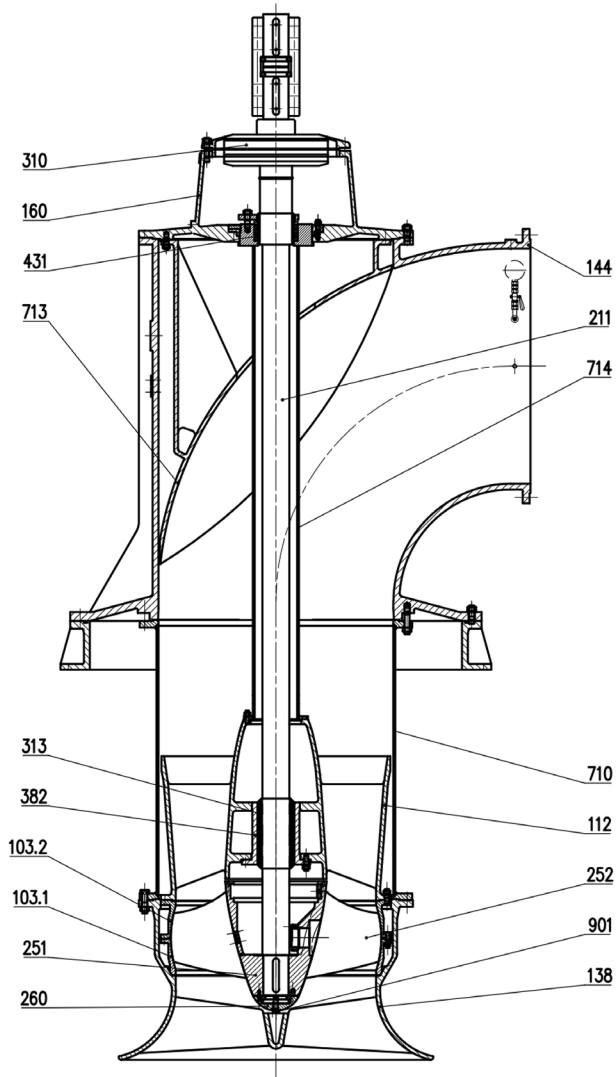
In standard versions the pump main parts are of following materials:

Pump shaft	heat-treated carbon steel
Impeller hub	cast manganese steel
Impeller vanes	cast chrome steel (smaller pump sizes) cast chrome-nickel-molybdenum steel (bigger sizes)
Bearing bushes	special rubber
Discharge elbow	grey cast iron
Elbow rectifier	grey cast iron
Elbow cover	grey cast iron
Suction bell	grey cast iron
Diffuser	grey cast iron
Bearing housings	grey cast iron
Motor stand	grey cast iron

More detailed material version of a pump according to real operating conditions may be specified by the manufacturer in the contract.

# CROSS-SECTIONAL ARRANGEMENT

AQSV



## POSITION NUMBERING ACC. DIN 24 250

103.1	Lower spherical insert
103.2	Upper spherical insert
112	Diffuser
138	Suction bell
144	Discharge elbow
160	Discharge elbow guard
211	Pump shaft
251	Impeller hub
252	Impeller vane
260	Cartridge cap
310	Journal bearing
313	Diffuser journal bearing
382	Diffuser bearing housing
431	Gland packing
710	Column pipe (element)
713	Diffuser bearing rectifier
714	Shaft protective pipe
901	Impeller screw

# DIMENSIONS OF PUMPS

## AQTV

Pump type	A	B	B <sub>1</sub>	C	ø D	ø D <sub>1</sub>	ø E	H	H <sub>1</sub>	To be set individually	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>
											od-do	od-do	od-do	od-do
300-AQTV-250-63	465	400	550	400	420	300	500	250			865-3160	1050-3300	1015-3220	1050-3300
350-AQTV-293-45	520	450	600	450	470	350	600	250			970-3170	1100-3350	1120-3320	1100-3350
400-AQTV-362-50	530	500	650	500	590	400	700	300			1030-3720	1150-4400	1180-3870	1150-4400
400-AQTV-328-89	610				520				1100-3790	1150-3900	1250-3940	1150-3900		
500-AQTV-426-45	725	600	800	600	670	500	900	350	To be set individually		1325-4145	1300-4100	1525-4345	1300-4100
500-AQTV-408-50	745									1345-4165	1545-4365			
500-AQTV-408-68	725									1325-4145	1525-4345			
500-AQTV-408-89	600									1200-4020	1400-4220			
500-AQTV-470-89	600				745			400		1200-4020		1400-4220	1300-4100	
600-AQTV-521-45										1555-5125	1400-3950	1755-5325	1400-3950	
600-AQTV-521-68	855	700	900	700	825	600	1000	450	1555-5125					
600-AQTV-521-89									1555-5125					

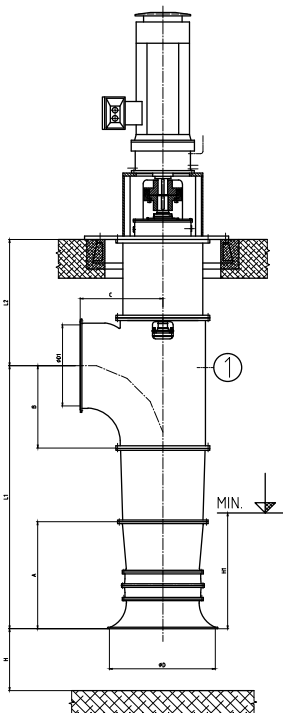
All dimensions are informative. Binding dimensioned scheme of the whole pump-set may be supplied after the order technical clarification. Larger sizes may be produced on the customer request after foregoing negotiation with the manufacturer.

Dimension H1 representing lowest water level shall be specified individually, according to operating conditions.

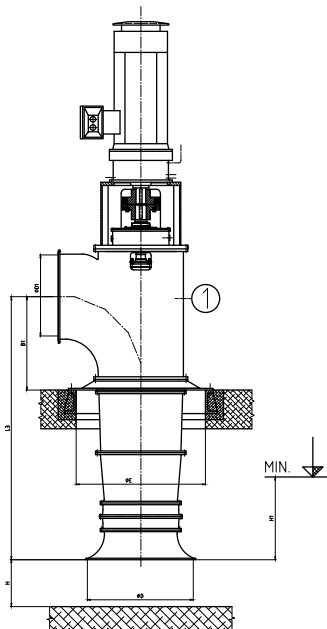
Dimensions L1, L2, L3, L4 may be modified individually according to the pumping station configuration, while both minimum and maximum sizes are given in the Table. Those dimensions are stepped off by approximately 250 mm.

1 ..... drain from stuffing box – connection consists of a pipe DN 1" with version without intermediate floor, with a version with intermediate floor there is screwing DN 1".

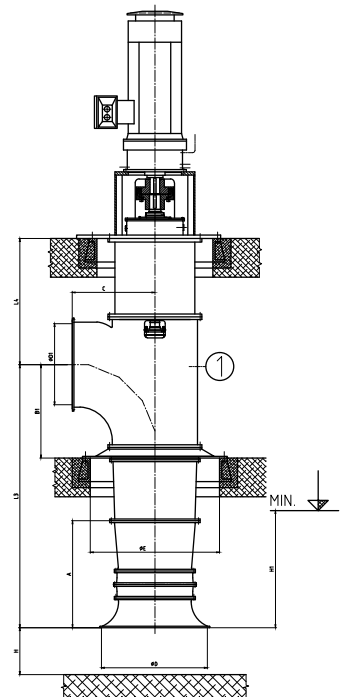
**Pump version without intermediate floor**



**Pump version with electric motor located on discharge elbow**



**Pump version with intermediate floor closure**



# DIMENSIONS OF PUMPS

## AQSV, AQCVC

Pump type	A	B	C	ø D	ø D <sub>1</sub>	ø E	H	H <sub>1</sub>	L <sub>1</sub>	L <sub>2</sub>
									od-do	od-do
800-AQSV-688-45	520	900	900	1050	800	1300	525	To be set individually	750-2000	1250-4500
800-AQSV-675-50										
800-AQSV-688-68										
800-AQSV-688-89										
1000-AQSV-876-45	650	1100	1100	1300	100	1520	650		750-2500	1500-5300
1000-AQCVC-876-45										2200-5300
1000-AQSV-876-68										1500-5600
1000-AQCVC-876-68										2200-5600
1000-AQSV-876-89										1500-5300
1000-AQCVC-876-89										2200-5300
1200-AQSV-1075-45	800	1300	1300	1600	1200	1900	800		750-2500	1450-6400
1200-AQCVC-1075-45										2300-6400
1200-AQSV-1075-68								1500-6600		
1200-AQCVC-1075-68								2300-6600		
1200-AQSV-1075-89								1500-6600		
1200-AQCVC-1075-89								2300-6600		
1400-AQSV-1250-45	950	1500	1500	1840	1400	2300	900	1000-2500	1750-7500	
1400-AQCVC-1250-45				1870					1650-7500	
1400-AQSV-1250-68				1840					1750-7500	
1400-AQCVC-1250-68				1870					1650-7500	

All dimensions are informative. Binding dimensioned scheme of the whole pump-set may be supplied after the order technical clarification.

Smaller sizes may be produced on the customer request after foregoing negotiation with the manufacturer.

Dimension H1 representing lowest water level shall be specified individually, according to operating conditions.

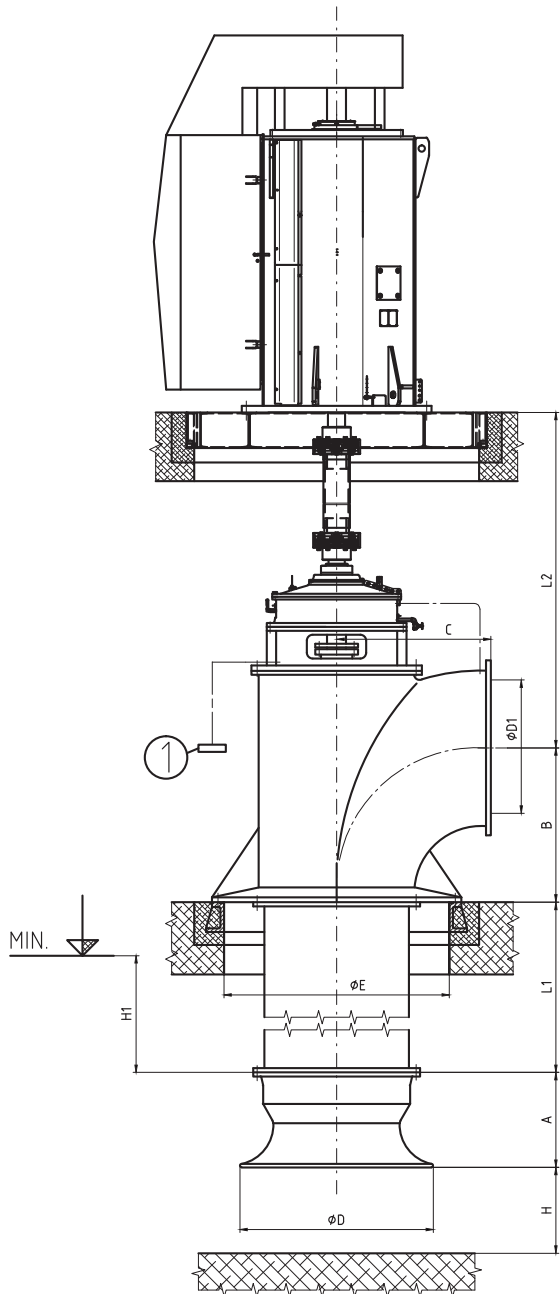
Dimensions L1, L2, may be modified individually according to the pumping station configuration, while both minimum and maximum sizes are given in the Table. Those dimensions are stepped off by approximately 250 mm.

1 ..... drain from stuffing box – connection consists of a screwing DN 1" with pumps AQSV, screwing DN ¾ with pumps AQCVC.

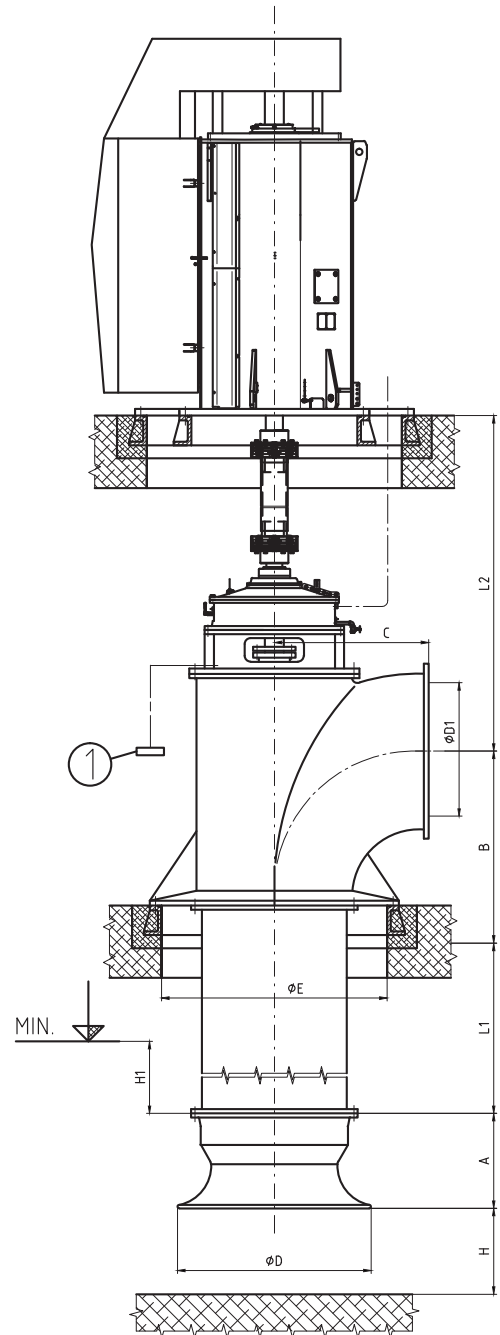
# PUMPS

AQSV, AQCVC

**AQSV**



**AQCVC**



*Version with intermediate floor closure*





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