



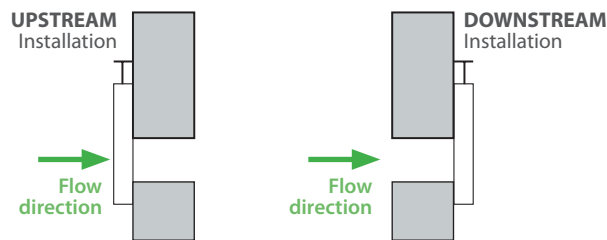
Selection guide penstocks

Introduction

Our penstocks are especially designed for waste water and rain water retention. They are generally integrated in constructions such as:

- Sewage treatment plants,
- Storm basins,
- Inspection manholes,
- Settle solids interceptors and/or oil interceptors,
- Pumping stations.

The first selection criterion concerns the installation site and the watertightness of the penstock. We will thus retain 2 types of installation:



The ranges

Once this selection is made, **we distinguish 3 ranges:**

- Upstream watertightness, Dn 200 to 1200, manual control.
- Upstream and downstream watertightness, Dn 800 to 1200, manual control or with motorisation.
- Upstream watertightness, Dn 150 to 600, manual control.



Determination of the model according to the water height*

	Upstream			Downstream	
	HydroVM	HydroVML	HydroVE	HydroVM	HydroVE
Dn 150	-	1 meter	-	-	-
Dn 200	6 meters		-	6 meters	-
Dn 300			-		-
Dn 400			-		-
Dn 500			-		-
Dn 600			-		-
Dn 800			-		6 meters
Dn 1000		-			
Dn 1200		-			

*Data conform to DIN19569-4 standard, the leakage flow must be inferior to 20 mL/s per meter of seal.





HydroVM penstock

VM model

➤ Description

Our HydroVM penstocks are manufactured in galvanized steel (**VM_A** models) or in stainless steel (A2) (**VM_I** models). The closing is made clockwise with a non rising threaded rod.

They are systematically supplied with a mounting kit containing steel dowels and a modular watertight band.

They have a full-flow round orifice and the following equipments:

- A 30 x 30 galvanized steel control square,
- A bronze threaded rod nut with a stainless steel (A2) stud bolt stop,
- A zinc-plated steel threaded rod (in stainless steel (A2) for VM_I models),
- A galvanized steel frame and disk (in stainless steel (A2) for VM_I models).



➤ Advantages

The penstock is machine-welded, this enables to change easily all its components.

The frame has two lifting rings to facilitate the handling and the installation.

Supplied with a drilling template, very useful when the penstock weighs more than 40 kg.

The final adjustment of the disk, in the closed position, can be made slimmer thanks to four locking nuts.

The EPDM seal is removable.

➤ Options / The operating accessories, OV models:

- ➊ **Cast iron hand wheel for Dn 200 to Dn 500 penstocks:**
Dn 200 and 300: **OV010**, diameter 200mm, weight 3 kg
Dn 400 and 500: **OV015**, diameter 300mm, weight 5 kg
- ➋ Galvanized steel **crank**, with rotating handle:
Dn 200 to 1200: **OV020**, length 380mm, weight 2 kg
- ➌ Galvanized steel **operating tee**, equipped with a 30 x 30 cast iron female square:
Height 1000mm: **OV026**, weight 3.5 kg
Height 1500mm: **OV025**, weight 4 kg
- ➍ Galvanized steel column, provided with four fitting holes:
Height: 900mm: **OV002**, weight 29 kg.
Caution, make sure to use an extension of at least RV12I-type for integration in the post.
- ➎ **Rod extension**, adjustable on site, **RV model**
The extension is equipped with a galvanized steel male square at the upper part and a cast iron female square at the lower part. It is supplied with mounting dowels and one or two rod guide(s).

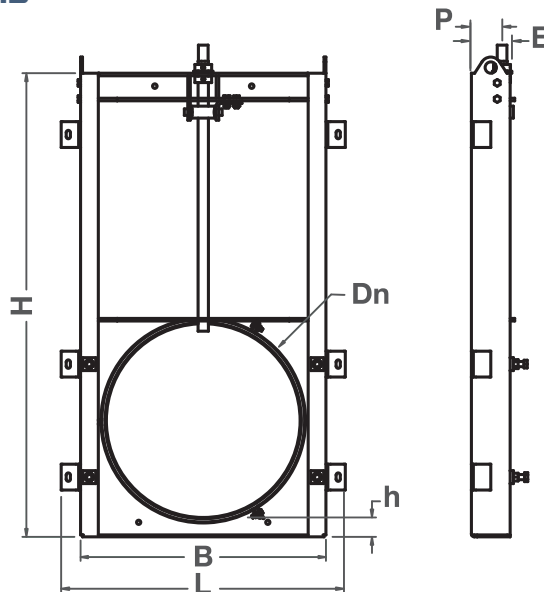


Manufacturing in stainless steel (A4) on request

Water height: 3 to 6m
Installation: upstream & downstream

ø200 → 1200
Galvanised steel or stainless steel

The dimensions



VM Steel or stainless steel	Leakage rate	Water height upstream	Water height downstream	Dn	H	L	B	E	P	h	Weight					
VM0200A	< 20 ml/s per meter of seal	6 m	6 m	200	636	480	360	120	90	60	33					
VM0200I				300	836	580	460				42					
VM0300A				400	1036	680	560				64					
VM0300I				500	1236	780	660				89					
VM0400A				600	1436	880	760				108					
VM0400I				800	1836	1160	960				216					
VM0500A			3 m	3 m	1000	2238	1340	1160	155	101	67.5	281				
VM0500I					1200	2638	1560	1360				357				
VM0600A																
VM0600I																
VM0800A																
VM0800I																
VM1000A																
VM1000I																
VM1200A																
VM1200I																

Extensions selection table (RV models, option)

1 rod guide			2 rod guides		
Height of the extension	Reference	Weight	Height of the extension	Reference	Weight
300 to 500 mm	RV05I	6	1100 to 1500 mm	RV15I	14
400 to 800 mm	RV08I	8	1400 to 2000 mm	RV20I	17
700 to 1200 mm	RV12I	13	1900 to 2500 mm	RV25I	18

Dimensions in mm, weights in kg

Motorisation

Please see page 40

Non-contractual texts, dimensions, photos and schemes

Penstocks



Selection guide penstocks

Possible configurations

OPEN AIR

Equipment required:
 Valve DN =¹
 Rod extension (guide included) H =¹
 Post
 + or Hand wheel
 + or Crank
 + or Servomotor and Control Unit

OPEN AIR

Equipment required:
 Valve DN =¹
 Rod extension (guide included) H =¹
 Operating tee

INSTALLED UNDER SECLUDED AREA

Equipment required:
 Valve DN =¹
 Rod extension (guide included) H =¹
 Post
 + or Hand wheel
 + or Crank
 + or Servomotor and Control Unit

INSTALLED UNDER ROAD or IN SECLUDED AREA

Equipment required:
 Valve DN =¹
 Rod extension (guide included) H =¹
 Operating tee

INSTALLED UNDER ROAD

Equipment required:
 Valve DN =¹
 Servomotor
 Universal support
 Control unit

INSTALLED UNDER ROAD

Equipment required:
 Valve DN =¹
 Rod extension (guide included) H =¹
 Servomotor
 Universal support
 Control unit

Non-contractual texts, dimensions, photos and schemes

Penstocks



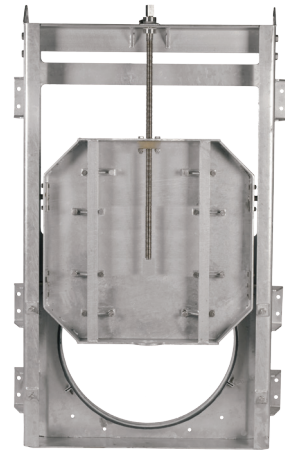
④ Description

Our HydroVE penstocks are manufactured in galvanized steel (**VE_A** models) or in stainless steel (A2) (**VE_I** models). The closing is made clockwise with a non rising threaded rod.

They are systematically supplied with a mounting kit containing steel dowels and a modular watertight band.

They have a full-flow round orifice and the following equipments:

- A 30 x 30 galvanised steel control square,
- A bronze threaded rod nut with a 304L stainless steel stud bolt stop,
- A stainless steel (A2) threaded rod,
- A galvanised steel frame and disk (in stainless steel A2 for VE_I models).



④ Advantages

The penstock is machine-welded, this enables to change easily all its components.

The frame has two lifting rings to facilitate the handling and the installation.

Supplied with a drilling template, very useful when the penstock weighs more than 40 kg.

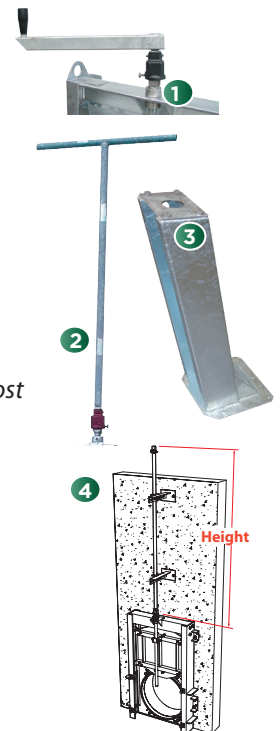
The final adjustment of the disk, in the closed position, can be made slimmer thanks to four locking nuts.

The EPDM seal is removable.

Stainless steel (A2) roller-mounted disk. The penstock has teflon anti-friction washers.

④ Options / The operating accessories, OV models:

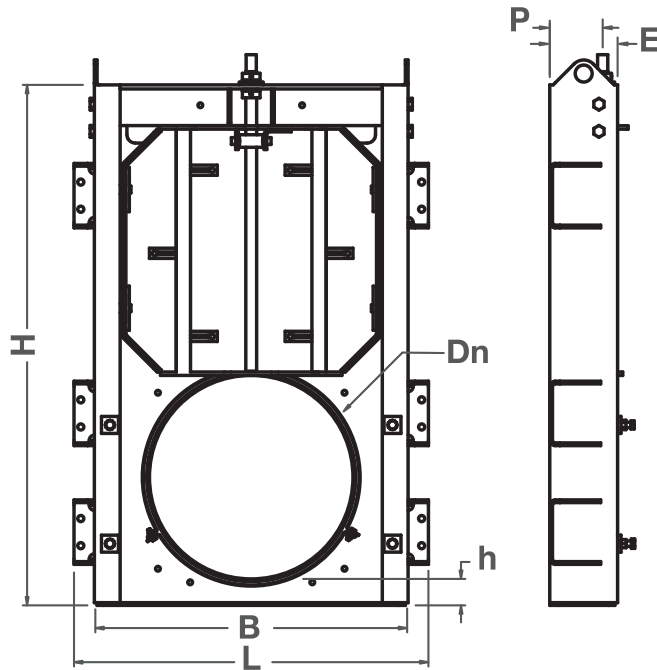
- ① Galvanised steel **crank**, with rotating handle:
Dn 200 to 1200: **OV020**, length 380mm, weight 2 kg
 - ② Galvanised steel **operating tee**, equipped with a 30 x 30 cast iron female square:
Height 1000mm: **OV026**, weight 3.5 kg
Height 1500mm: **OV025**, weight 4 kg
 - ③ Galvanised steel **column**, provided with four fitting holes:
Height: 900mm: **OV002**, weight 29 kg.
Caution, make sure to use an extension of at least RV12I-type for integration in the post
- **Rod extension**, adjustable on site **RV**
 - ④ The extension is equipped with a galvanised steel male square at the upper part and a cast iron female square at the lower part. It is supplied with mounting dowels and one or two rod guide(s).



Maximum water height: 6m
 Installation:
 upstream & downstream
 ø800 → 1200
 Galvanised steel or
 stainless steel

➤ The dimensions

Manufacturing in
 stainless steel (A4)
 on request



VE Steel or stainless steel	Leakage rate	Water height upstream and downstream	Dn	H	L	B	E	P	h	Weight
VE0800A	< 20 ml/s per meter of seal	6 m	800	1927	1245	1125	200	156	78	315
VE0800I			1000	2274	1445	1325				403
VE1000A			1200	2674	1645	1525				497
VE1000I										
VE1200A										
VE1200I										

➤ Extensions selection table (RV models, option RV)

1 rod guide			2 rod guides		
Height of the extension	Reference	Weight	Height of the extension	Reference	Weight
300 to 500 mm	RV05I	6	1100 to 1500 mm	RV15I	14
400 to 800 mm	RV08I	8	1400 to 2000 mm	RV20I	17
700 to 1200 mm	RV12I	13	1900 to 2500 mm	RV25I	18

Dimensions in mm, weights in kg

➤ Motorisation

Please see page 40.



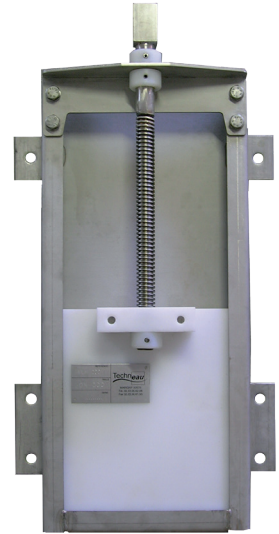
➤ Description

Our HydroVML_V penstocks are manufactured in stainless steel (A2). The closing is made with an operating screw.

They are systematically supplied with a mounting kit containing stainless steel dowels and a silicone seal.

They have a full-flow round orifice and the following equipments:

- A stainless steel operating rod (A2),
- A PEHD disk with anti-UV treatment,
- A stainless steel frame (A2).



➤ Advantages

The penstock is machine-welded, this enables to change easily all its components.

➤ Options / The operating accessories, OV models:

- ➊ **Cast iron hand wheel for Dn 200 to Dn 500 penstocks:**
 Dn 200 and 300: **OV010**, diameter 200mm, weight 3 kg
 Dn 400 and 500: **OV015**, diameter 300mm, weight 5 kg

- ➋ Galvanised steel **crank**, with rotating handle:
 Dn 200 to 1200: **OV020**, length 380mm, weight 2 kg

- ➌ Galvanised steel **operating tee**, equipped with a 30 x 30 cast iron female square:
 Height 1000mm: **OV026**, weight 3.5 kg
 Height 1500mm: **OV025**, weight 4 kg

- ➍ Galvanised steel **column**, provided with four fitting hole:
 Height: 900mm: **OV016**, weight 29 kg.
Caution, make sure to use an extension of at least RVML12I-type for integration in the post.

- ➎ **Rod extension**, adjustable on site, **RVML model**

The extension is equipped with a galvanised steel male square at the upper part and a cast iron female square at the lower part. It is supplied with mounting dowels and one or two rod guide(s).

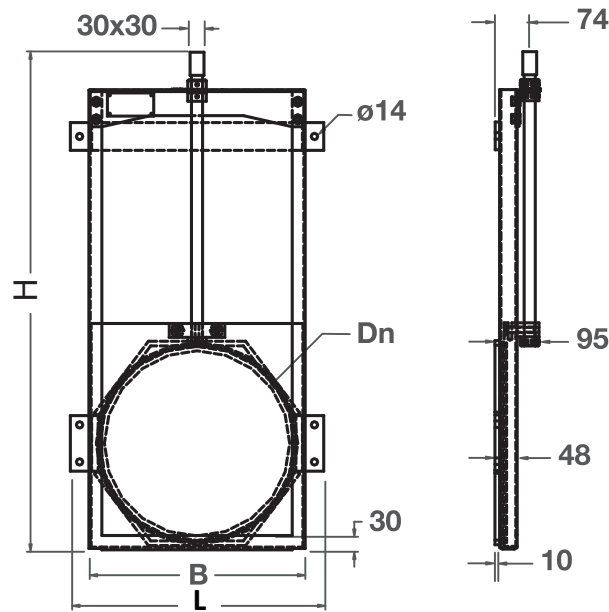


Maximum water height: 1m
Installation: upstream

ø150 → 600
Galvanised steel or
stainless steel

Manufacturing in
stainless steel (A4)
on request

➤ The dimensions



VMLV Steel or stainless steel	Leakage rate	Water height Upstream	Dn	H	L	B	Weight
VML0150VA	< 20 ml/s per meter of seal	1 m	150	575	297	217	10.4
VML0150VI							9.5
VML0200VA			200	675	347	267	12.9
VML0200VI							11.8
VML0300VA			300	875	447	367	19
VML0300VI							17.3
VML0400VA			400	1075	547	467	24
VML0400VI							21.9
VML0500VA			500	1275	649	569	33.3
VML0500VI							30.4
VML0600VA			600	1475	749	669	48.9
VML0600VI							45.4

➤ Extensions selection table (RVML models, option)

1 rod guide			2 rod guides		
Height of the extension	Reference	Weight	Height of the extension	Reference	Weight
300 to 500 mm	RVML05I	2.3	1100 to 1500 mm	RVML15I	5.4
400 to 800 mm	RVML08I	3	1400 to 2000 mm	RVML20I	5.8
700 to 1200 mm	RVML12I	4.9	1900 to 2500 mm	RVML25I	6.7

Dimensions in mm, weights in kg



HydroVML penstock

T model

Maximum water height: 1m
Installation: upstream

ø150 → 600
inox

Description

Our HydroVML_T penstocks are manufactured in stainless steel (A2). The closing is made with an operating rod.

They are systematically supplied with a mounting kit containing stainless steel dowels and a silicone seal.

They have a full-flow round orifice and the following equipments:

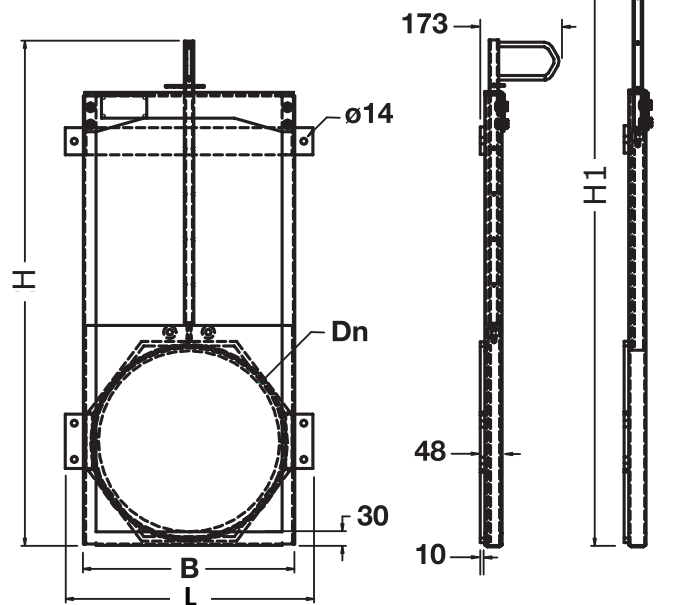
- A stainless steel operating rod (A2),
- A PEHD disk with anti-UV treatment,
- A stainless steel frame (A2).

Manufacturing in stainless steel (A4) on request

Advantages

The penstock is machine-welded, this enables to change easily all its components.

The dimensions



VMLT Steel or stainless steel	Leakage rate	Water height Upstream	Dn	H	H1	L	B	Weight
VML0150TA	< 20 ml/s per meter of seal	1 m	150	617	797	297	217	9.1
VML0150TI								8.3
VML0200TA			200	714	944	347	267	11.6
VML0200TI								10.4
VML0300TA			300	914	1244	447	367	17.5
VML0300TI								15.7
VML0400TA			400	1114	1544	547	467	24.4
VML0400TI								22.1
VML0500TA			500	1313	1843	649	569	38.9
VML0500TI								36
VML0600TA			600	1513	2143	749	669	48.4
VML0600TI								44.8

Dimensions in mm, weights in kg



ServoMotors

Motorisation for penstocks **VM** and **VE** models



➤ Description

The standard servomotors include a motor with thermal protection, kinematic chain, manual control, connection unit, load limiters and limit switches.

➤ Technical characteristics

The servomotors are designed to work in both extreme positions, and possibly in intermediate positions.

VM & VE	
Control	Load limiters and limit switches
Power supply	3-phase AC - 400 V / 50 Hz - S2 - 15mn
Motor	1 thermal protection Class F tropicalized insulation
Heating resistor	Heating, self-regulating to avoid internal condensation
Gland inlet	2 x M25 x 1.5 - 1 x M20 x 1.5
Auto. service	On - Off
Manual service	Intermediary positions
Hand wheel	Manual, automatic mechanism (the motor has the priority). Visual revolution indicator
Protection	IP68 (72h under 5m of water)
Temperature	-25°C to +25°C
Closing	Clockwise
Coating	Polyurethane

➤ Option

• Universal support



Manufactured in galvanised steel, it can be installed either on the penstock or on the structure. Supplied with fasteners

Penstock	Support
VM or VE 0200	OV004
VM or VE 0300A to 0500	OV005
VM or VE 0600 to 1000	OV006
VE 1200	OV008

Penstock ref.	Motor ref.	Speed (tr/mn)	Minimum closing time* (min)	Flange ref.	Torque maxi (nM)	Current		Power (KW)	Weight (kg)
						Nominal (A)	maxi (A)		
VM & VE	SA05	46	1'05"	F10	60	1.5	5	0.37	25
			1'31"						
			1'57"						
			2'23"						
	SA07	46	2'23"	F10	140	3.4	24	1.5	31
	SA10	61	2'21"	F14	300	5.1	27	2.2	49
			2'52"						
	SA12	92	2'16"	F16	700	9.2	69	4.5	76

* For faster closing times or for an ADF protection, ATEX standard for servomotors, please consult our design office.





ComMotors

Control unit for penstocks, CV500P model

(for VM and VE penstocks)



Technical characteristics

- Equipment:** Polyester cabinet, IP 669
 Protected by a circuit breaker
 Padlockable main switch
 Key switch, local or remote position (remote control)
- Dimensions:** H 645 x W 435 x D 250mm - Weight: 20 kg (**CV500P**)
- Power supply:** 3-phase 400 V / 50 Hz with general circuit breaking
- Signalling:** *Penstock condition display:*
 Powered / Opening / Closing
 Penstock closed / Penstock opened
 Disk blocked (*failure signal*)
 Thermal protection activated (*failure signal*)
- Control:** Pushbuttons
 Opening/Closing/Stop, self-holding
 Remote control by dry contacts (*opening/closing*), usually in opened position
 Remote control voltage: 230 V - Maximum distance: 500m.

Options

- Electrical cable:**
 The cables are equipped with packing glands fitted to their section. Each cable wire is marked: **please see the table below** for the ref.

	Motor ref.	Current (A)	From 0 to 50 meters		From 51 to 100 meters		From 101 to 500 meters	
			400V supply cable 4g	230V control cable 12g	400V supply cable 4g	230V control cable 12g	400V supply cable 4g	230V control cable 12g
VM & VE	SA05	1.1	4 g1.5 ² & 12g1.5 ² OV065		4 g1.5 ² & 12g1.5 ² OV065	4 g2.5 ² & 12g1.5 ² OV067		
	SA07	3.4				4 g10 ² & 12g1.5 ² OV073		
	SA10	5.1			4 g2.5 ² & 12g1.5 ² OV067		4 g16 ² & 12g1.5 ² OV075	
	SA12	9.2			4 g4 ² & 12g1.5 ² OV069			

- Casing and base for outdoor installation:**
 Polyester casing and base with double door, and a panel with glass front door.
 Dimensions: H 1095 x W 450 x D 270mm. Weight: 10 kg. Ref.: **OV055**

