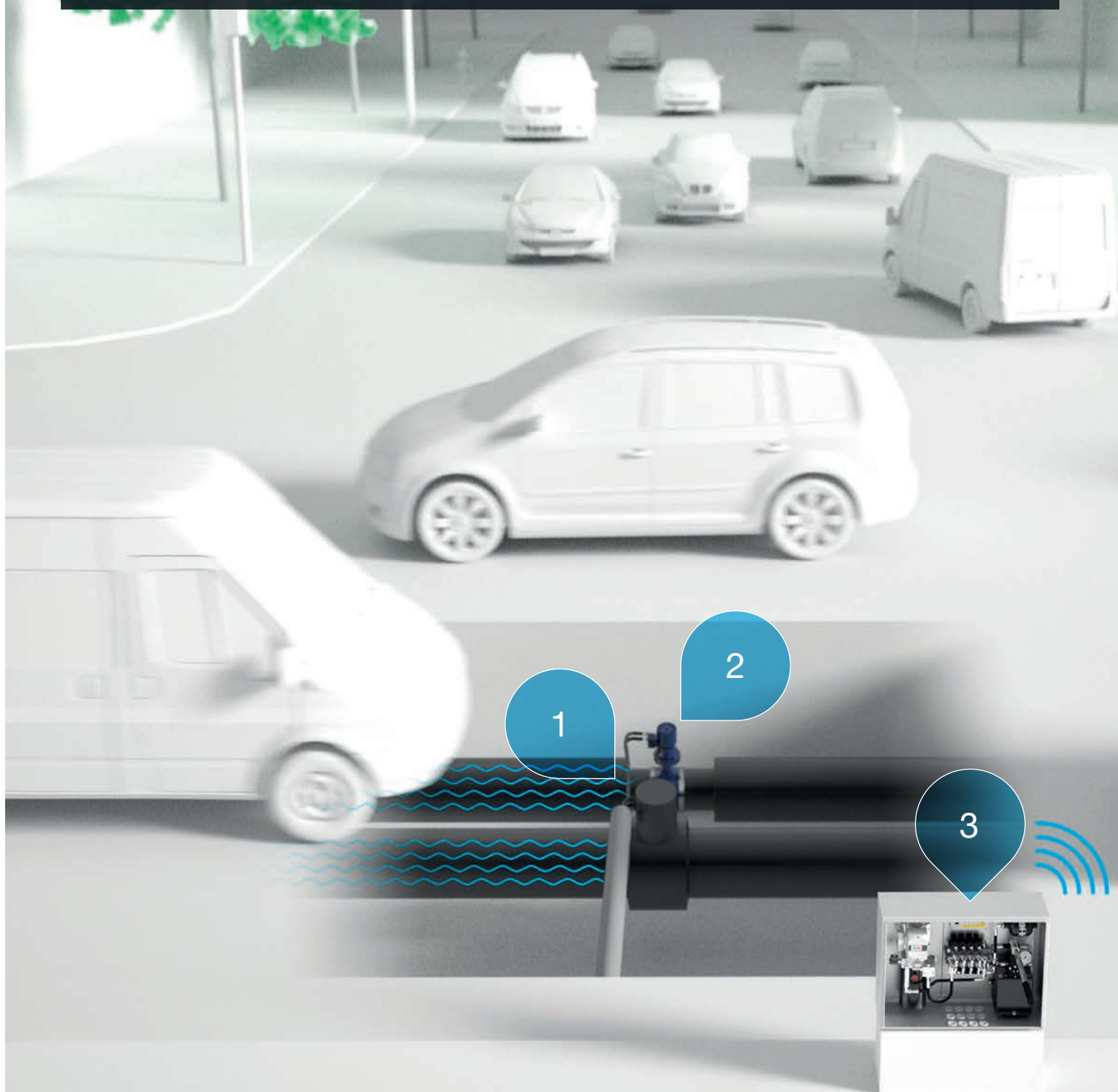


HYDROX

Hydraulic Control Solutions



Vexve's Hydrox™ hydraulic control solutions are suitable for even the most challenging installation sites and conditions. Specifically designed for district heating and district cooling applications.



Reliable - cost-effective - easy to use - safe



1 Valves



2 Hydraulic Actuators



3 Control Cabinets



The best overall solution is covered by our product range.

Seamless/complete operation with Vexve's range of valves

Hydrox™

Vexve's Hydrox™ hydraulic actuator is suitable for even the most challenging installation sites and conditions. Specifically designed for district heating and district cooling applications and to operate seamlessly with Vexve's comprehensive range of ball and butterfly valves, the Hydrox hydraulic actuator is the perfect solution for underground installation providing easy and reliable operation with maximum safety at all times.

Materials

Body:	EN-GJS-400-15
Flange	EN S355
Indicator shaft:	AISI 316L
Output shaft:	42CrMo4
Seals:	NBR
Recommended hydraulic fluid:	<ul style="list-style-type: none"> · Neste Hydraulik 46 SUPER · Neste Biohydraulik SE 46 or equal

Properties

Torques:	From 4000 Nm up to 64 000 Nm
Recommended pressure range:	30-200 bar
Ambient temperature range:	-25 °C to +80 °C
Rotating angle:	90°
IP Protection class:	IP68
Corrosion resistance class:	C3-L

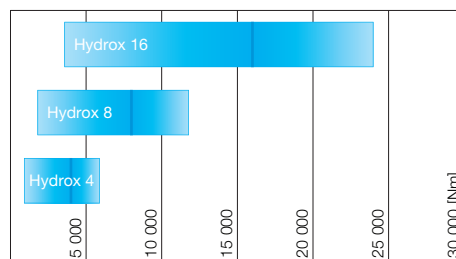
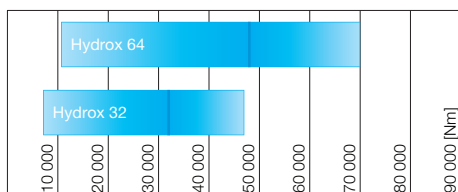
Optional equipment:

- Position transmitter/indicator (low voltage)
- Connection block



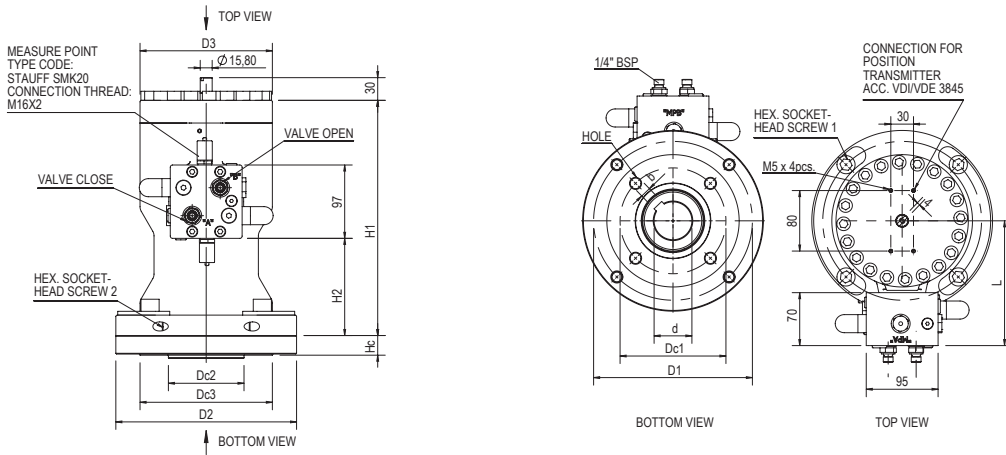
* available with connection block if pressure level adjustment or self-sustainability is not needed

Recommended torque range



Torque [Nm]

Actuator selection criteria:
nominal torque as close as possible to valve torque



Model	D1	D2	D3	H1	H2	L	Oil displacement [l]	Hex socket-head screw 1	Hex socket-head screw 2	Dry weight [kg]
Hydrox 4	210	239	175	311	129	165	0.8	4 x M16	2 x M12	65
Hydrox 8	298	350	220	312	116	184	1.45	6 x M20	2 x M12	115
Hydrox 16	375	415	300	406	179	224	3.1	7 x M20	2 x M12	240
Hydrox 32	450	510	355	473	232	251	4.9	7 x M30	2 x M16	395
Hydrox 64	515	580	420	520	242	284	8.75	6 x M36	2 x M16	590

Model	Product no.	Compatible valves				d	b	ISO 5211	Hole	Dc1	Dc2	Dc3	Hc	Max stem height
		Butterfly valves	Ball valves Reduced Bore	Ball valves Full Bore										
Hydrox 4	80100412035		DN200	DN150	35	10	F12	4 x M12	125	85	150	21	75	
	80100414035	DN300, DN350			35	10	F14	4 x M16	140	100	175	26	83	
	80100414040	DN400	DN250	DN200	40	12	F14	4 x M16	140	100	175	26	83	
	80100416050		DN300, DN350	DN250, DN300	50	14	F16	4 x M20	165	130	210	32	93	
Hydrox 8	80100816050	DN450, DN500			50	14	F16	4 x M20	165	130	210	32	92	
	80100825060	DN600			60	18	F25	8 x M16	254	200	300	32	122	
	80100825070		DN400	DN350	70	20	F25	8 x M16	254	200	300	32	122	
	80100830090		DN500, DN600	DN400, DN500	90	25	F30	8 x M20	298	230	350	32	122	
Hydrox 16	80101625070	DN700			70	20	F25	8 x M16	254	200	415	35	122	
	80101630090	DN750, DN800			90	25	F30	8 x M20	298	230	415	35	122	
	80101635100		DN700	DN600	100	28	F35	8 x M30	356	260	415	47	171	
Hydrox 32	80103235100	DN900			100	28	F35	8 x M30	356	260	415	47	182	
	80103235120	DN1000	DN800	DN700	120	32	F35	8 x M30	356	260	415	47	182	
Hydrox 64	80106435120	DN1200			120	32	F35	8 x M30	356	260	415	55	187	
	80106440140	DN1400		DN800	140	36	F40	8 x M36	406	300	475	55	227	

Hydrox™ by-pass

Hydrox by-pass is the smallest of the Hydrox actuator family. It is intended primarily for use on the bypass valve in demanding sites where mainline valves are equipped with larger Hydrox actuators. Hydrox by-pass provides the same capabilities as the larger Hydrox actuators and is designed to be used in the most challenging applications and environments. Hydrox by-pass is intended specifically for district heating and cooling applications and operates seamlessly with Vexve DN50-DN100 ball valves.

Materials

Body:	EN-GJS-400-15
Flange	EN S355
Indicator shaft:	AISI 316L
Output shaft:	42CrMo4
Seals:	NBR
Recommended hydraulic fluid:	<ul style="list-style-type: none"> · Neste Hydraulii 46 SUPER · Neste Biohydraulii SE 46 or equal

Properties

Torques:	Up to 350 Nm
Recommended pressure range:	30-200 bar
Ambient temperature range:	-25 °C to +80 °C
Rotating angle:	90°
IP Protection class:	IP68
Corrosion resistance class:	C3-L

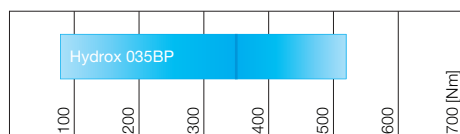
Optional equipment:

- Position transmitter/indicator (low voltage)
- Control block



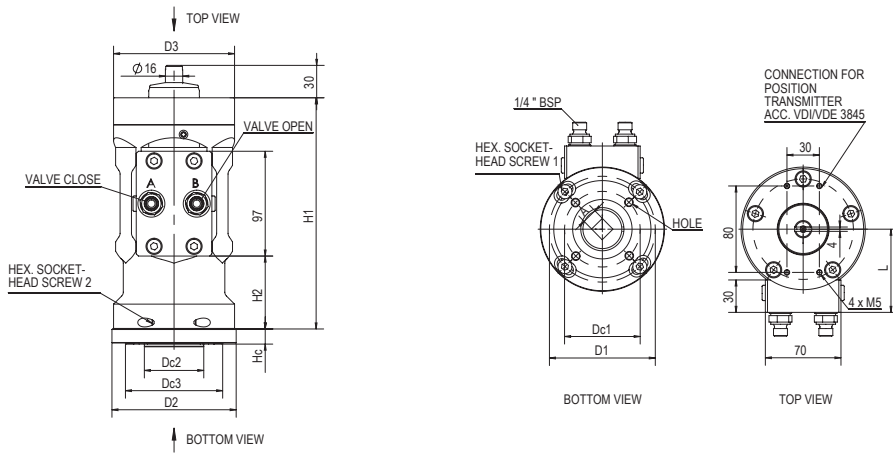
* available with control block if pressure level adjustment and self-sustainability is needed

Recommended pressure range



Torque [Nm]

Actuator selection criteria: nominal torque as close as possible to valve torque



Model	D1	D2	D3	H1	H2	L	Oil displacement [l]	Hex socket-head screw 1	Hex socket-head screw 2	Dry weight [kg]
Hydrox 035BP	98	115	112	214	68	77	0,097	4 x M8	2 x M10	14

Model	Product no.	Compatible valves		A - square	ISO 5211	Hole	Dc1	Dc2	Dc3	Hc
		Ball valves Reduced Bore	Ball valves Full Bore							
Hydrox 035BP	80203507011	DN50	DN40	11	F07	4 x M8	70	55	90	14
	80203507014	DN65, DN80	DN50, DN65	14	F07	4 x M8	70	55	90	14
	80203507016	DN100	DN80	16	F07	4 x M8	70	55	90	14



HCU™ Manual

The HCU Manual is the basic version of a full range of control possibilities for Vexve Oy's hydraulic actuators. It is the right choice where simplicity is key and secure operation is needed at all times.

Technical characteristics

Control cabinet for 4 valves

- Dimensions 800 x 600 x 300 mm (W x H x D)
- Protection class IP65

Hand pump

Double acting hand pump with pilot check valves

- Fluid viscosity: 10-500 mm²/s
- Filtration: ISO code 16/13; SAE class 4 or better
- Fluid temperature: -20°C +80°C
- Ambient temperature: -20°C +50°C
- Max. pressure: 380 bar
- Pressure limiter: 200 bar (adjustable)

Oil tank

- Reservoir capacity: 5 Lt.

Control Valve Block

- Control valves 4 pcs.
- Max. pressure 350 bar
- Positions of lever: 3 (Valve open – Neutral – Valve shut)

One valve is possible to maneuver at a time.

Pressure Gauge

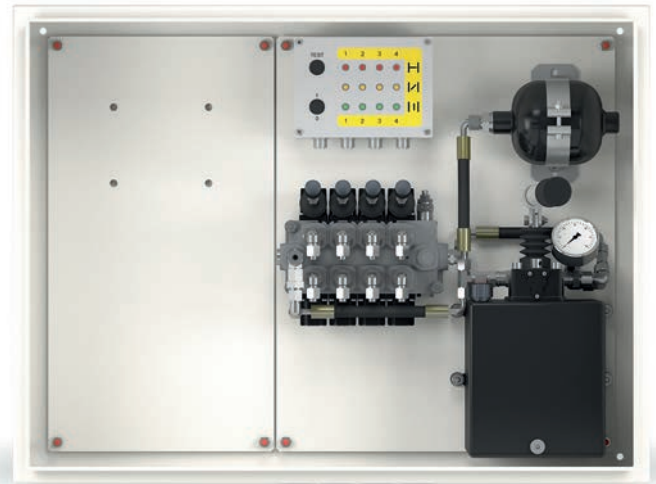
- Range: 0...315 bar

Indicator Lamp Panel

- Indicated open and shut positions of valves
- Low voltage powered
- Connected to position transmitter on actuator

Connection for portable pump unit

- Quick couplings with flat face casing
- Pump unit (sold separately) incl. transportation box, hydraulic hoses and electric cable



Model	Product no.
Manual	810000

HCU™ Manual+

This is an enhanced version of the HCU Manual control unit. The HCU Manual+ control cabinet is equipped with an electric hydraulic pump unit for convenient operation.

Technical characteristics

Includes all technical characteristics as HCU Manual

HCU Manual+ pump

- Motor 0,55kW
- Connection voltage: 230V 50Hz 1-phase
- Pump flow rate 0,57 or 1,35 l/min
- Check valve
- Pressure range 35...200 bar
- Suction filter
- Connection hoses

Oil tank

Reservoir capacity: 2,5 Lt.

Hydrox model	Runtime 0-100% (s)	
	Pump flow rate 0,57 l/min	Pump flow rate 1,35 l/min
Hydrox 035BP	10	4
Hydrox 4	80	36
Hydrox 8	145	64
Hydrox 16	310	138
Hydrox 32	490	218
Hydrox 64	875	389

Recommended



Model	Flow rate	Product no.
Manual+	0,57 l/min	811000
Manual+	1,35 l/min	811001

HCU™ Remote

The hydraulic control cabinet HCU Remote is used for remote and local control of valves fitted with hydraulic actuators. The valves can also be operated directly at the cabinet.

Description

At operational changes, or emergencies, it is necessary to quickly close the valves. Therefore there is a need to be able to remotely control valves from control centers. The HCU Remote is used to control valves with hydraulic actuators, which in turn is controlled by an electric hydraulic pump located in a rugged metal box. The valves' position is indicated by means of sensors and solenoid valves are used to control the oil flow.



Function

The HCU Remote contains an electric hydraulic pump which is connected by hoses to the valve actuator. The valve position is controlled using position indicators and solenoid valves. The closing time is calculated to give the slow closing to minimize the risk of a water hammer in the pipe. For control of the hydraulic pump and the solenoid valves, a programmable control system is used. The control system can be adapted to current circumstances and wishes.

Remote

The HCU Remote is provided with equipment to be controlled remotely. To transmit signals to and from the control center common transmission methods can be used.

Equipment

Hydrox product range provides complete hydraulic control cabinet with the following components:

- Compact power pack with hydraulic pump, oil tank and pressure switch
- Electrically operated directional valves and indicators
- Electrical cabinet with power module and heater to keep the unit free from moisture

Local control

- Control with buttons, open/close and stop for each valve. (Easy to adapt to different languages, robust solution)
- Diode indication for position 0/33/67/100%
- Common alarm light
- Local control overrides remote control for safety

Remote control

- Ingoing signals: open/close and stop for each valve.
- Feedback signals for position indication 0/33/67/100% (Potential free)
- Alarm
- Unit ready

Position indication at the actuator

- Hydrox actuator is equipped with position transmitter with digital signal.
- Position transmitter and HCU remote cabinet are calibrated in factory together with valve and actuator.
- No calibration is needed when installing the cabinet at site.

Model	Flow rate	Product no.
Remote	0,35 l/min	812000
Remote	1,26 l/min	812001

Technical characteristics:

Cabinet

- Dimensions 1310 x 895 x 312 mm (W x H x D)
- Outer cabinet protection class IP34
- Inner electric cabinet protection class IP65
- Fluid viscosity: 10-500 mm²/s
- Filtration: ISO code 16/13; SAE class 4 or better
- Fluid temperature: -20°C +80°C
- Ambient temperature: -25°C +35°C (optional heating/cooling)

Pump

- motor 0,37kW
- connection voltage 380VAC 3-phase
- pump flow rate 0,35 or 1,26 l/min
- recommended max. pressure 210 bar
- pressure limiter at 150 bar (adjustable)

Hydrox model	Runtime 0-100% (s)	
	Pump flow rate 0,35 l/min	Pump flow rate 1,26 l/min
Hydrox 035BP	17	5
Hydrox 4	137	38
Hydrox 8	249	69
Hydrox 16	531	148
Hydrox 32	840	233
Hydrox 64	1500	417

Recommended

Hand pump

- Control valves 4 pcs.
- Max. pressure 210 bar
- Positions of lever 3 (Valve open - Neutral - Valve shut)

Oil tank

Reservoir capacity: 2 lt

Pressure gauge

Range: 0...250 bar

Operating panel

- Indicated valve positions Closed, 33% Open, 67% Open and Open.
- Remote / Local use switch
- Operating switches Open, Close and Stop.
- Common alarm light



HCU™ Remote+

This is an enhanced wireless version of the HCU Remote control unit. HCU Remote+ consists of an HCU Remote control unit and HCU Wireless control cabinet. HCU Remote+ is the most modern and developed control system for hydraulic actuators in the Hydrox product family. HCU Remote+ allows flexible use of the Hydrox actuators via mobile devices and computers. Valves can still be operated locally with the cabinet.



Technical characteristics

Cabinet

- Dimensions 682 x 895 x 312 mm (W x H x D)
- Outer cabinet protection class IP34
- Inner electric cabinet protection class IP65
- Ambient temperature: -25°C +35°C (optional heating/cooling)
- Connection voltage: 230V 50Hz 1-phase

Please contact Vexve for further product information.

HCU Remote+ allows flexible use of the Hydrox actuators via mobile devices and computers.



Hydrox accessories

	Product no.	Part
	830002	Hydrox Portable pump 0,57l/min with case
	830003	Hydrox Portable pump 1,35l/min with case
	830004	Hydrox Electric hydraulic pump for HCU Manual/Manual+ 0,57 l/min
	830005	Hydrox Electric hydraulic pump for HCU Manual/Manual+ 1,35 l/min
	820000	Hydrox Position transmitter HCU Manual
	820001	Hydrox Position transmitter HCU Remote
	821000	Hydrox Sensor Cable HCU Manual
	821100	HydroX Sensor Cable HCU Remote
	840000	Hydrox Hydraulic Hose
	812500	HCU Remote Plinth, above ground
	812501	HCU Remote Plinth, ground recessed mounting

Vexve Oy – we are part of the solution

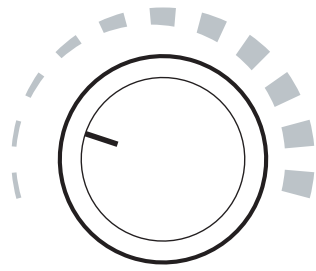
For more than 50 years the Finnish family business of Vexve Oy has been the source of cleantech products and services that aim to save energy and improve the environment. Vexve's products and expertise serve energy industry customers in more than 30 countries around the world.

Vexve valve and control products, as well as hydraulic control solutions, are an integral part of a secure, safe, energy efficient and economically optimized energy distribution network.

We are known as a reliable partner with high quality products, fast delivery and superior customer service.

Our modern highly automated production is PED and ISO 3834-2 certified. In addition, we follow all the necessary international, as well as local, requirements and standards such as EN 488 and GOST.

Our business is ISO 9001 & ISO 14001 certified and as a responsible company, we operate according to the ISO 26000 standard.



Keep **energy** under control

 VEXVE OY

Vexve Oy

Pajakatu 11
FI-38200 Sastamala
Finland

Tel. +358 10 734 0800
Fax +358 10 734 0839

vexve.customer@vexve.com

Riihenkalliontie 10
FI-23800 Laitila
Finland

www.vexve.com

