

# SEPARATOR

**Acceptance at the workshop:**  
according to the European Pressure Equipment Directive PED (2014/68/EU)

**CE-Marking on the Pressure Vessel:**  
according to the European Pressure Equipment Directive PED (2014/68/EU)

**Design code: EN 12953**

## Separator designation

Separators are designed to separate the steam-water mixture into steam and water. Resulting steam and water can be used as heating media in heat exchanger units. Basically, separators are installed on continuous and periodic blowdown lines of steam boilers. They can be also connected to condensate drainage lines from steam receivers, steam lines drainage, etc.

Separator body is a welded metal cylindrical vessel. It consists of two torispherical bottoms and a shell. Flange connection is provided in the upper part which connection can be disassembled for maintenance purposes. The separator is equipped with lifting eyes and metal supports for mounting on the foundation. The following components are installed inside the separator:

- steam-water mixture supply device;
- two-stage dehumidifier;
- steam outlet nozzle;
- water outlet nozzle;
- drainage nozzle;
- branch pipes for level indicator mounting;
- nipples for instruments connection.



General view of the separator

## Separator operation

Steam-water mixture entering the separator is swirled along walls of the tank, while the steam component tends to move to the center, and water condensate — to the periphery of the separator working space. Steam rising upwards passes through the dehumidifier leaving liquid droplets on it, which amalgamate with each other, increase in mass, and upon reaching a critical mass flow down by gravity. Condensate collected in the lower part of the separator is discharged from it through the water outlet pipe. Rising steam is discharged through the steam outlet.

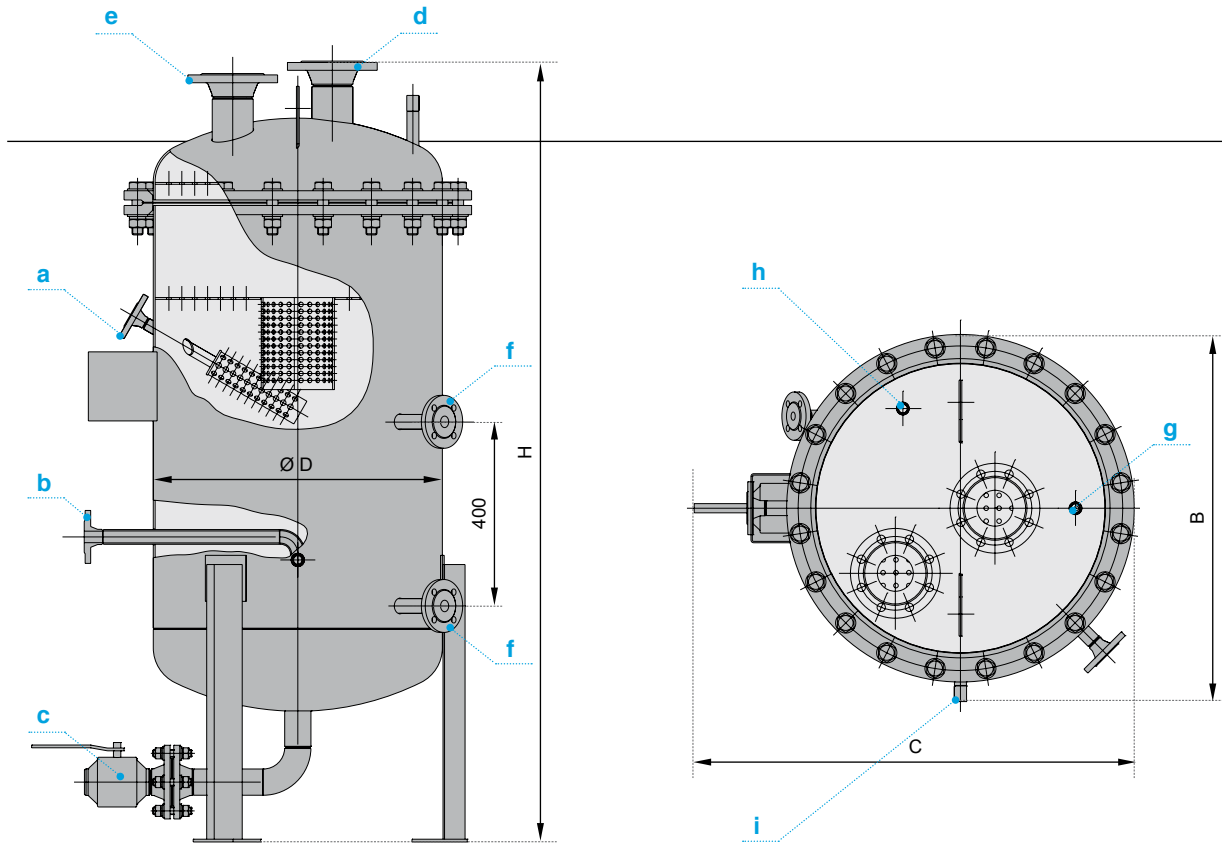
Parameter name	Value
Maximum overpressure, MPa	0.07
Hydraulic test overpressure, MPa	0.1

## Technical specifications

Description	Maximum capacity, kg/h		
	at 8 bar	at 12 bar	at 16 bar
ECP1	1900	1550	1340
ECP2	3000	2420	2100
ECP3	4500	3630	3150
ECP4	6700	5400	4690
ECP5	8800	6500	5800

## Overall and mounting dimensions

Type	Description				
	ECP1	ECP2	ECP3	ECP4	ECP5
Diameter, D, mm	628	820	916	1016	1216
Height, H, mm	1696	1646	1875	2203	2031
Distance, B, mm	798	1004	1100	1200	1400
Distance, C, mm	956	1066	1146	1246	1446
Working medium inlet, DN, a	20	25	25	32	40
Condensate outlet, DN, b	25	25	32	40	50
Drainage, DN, c	50				
Steam outlet, DN, d	80	100	125	150	200
Safety relief valve, DN, e	80	100	125	150	150
Level transmitter, DN, f	G ½ — B				
Instrumentation, g/h	G ½ — B				
Temperature transmitter, i	207	291	433	553	667
Weight, kg					



## Delivery package

The scope of the separator supply package may vary depending upon the Customer requirements.

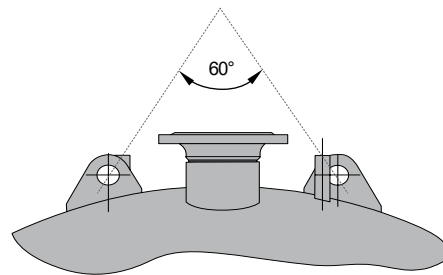
The scope of supply (complete package) includes:

- separator assembly (with drainage device installed);
- component equipment and instruments;
- data sheet;
- operation and installation manual.

## Transportation

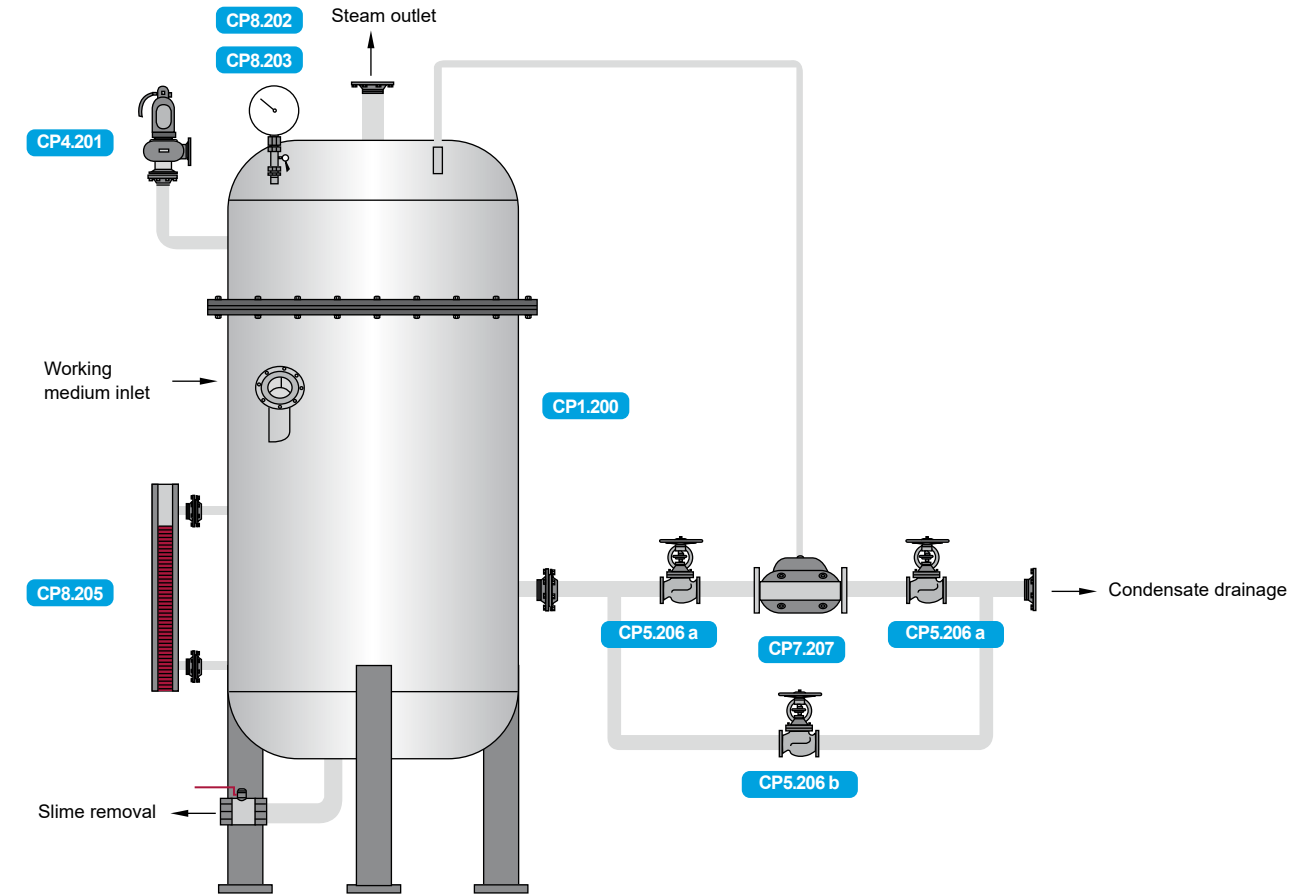
The separator is delivered on a pallet packed in a protective film ensuring safekeeping and protection of the device at proper transportation and storage.

All openings shall be protected from moisture and dirt ingress by plugs.



Sliding diagram

## Valves and Fittings, Instruments and Safety Devices



**CP1.200** Separator

**CP4.201** Safety valve

**CP8.202** Pressure gauge

**CP8.203** Pressure gauge tap

**CP8.205** Magnetic level indicator (water level control)

**CP5.206 a** Check valve

**CP5.206 b** Check valve

**CP7.207** Condensate trap