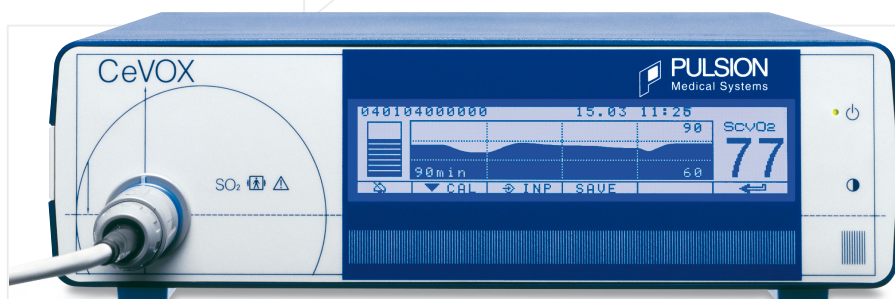


CeVOX

Continuous monitoring of central venous oxygen saturation



✓ Continuous ScvO₂

Advantages:

No Latex

No DEHP

- **Uses existing venous access** CeVOX Probe is inserted into a pre-placed 20 cm CeVOX Central Venous Catheter or any 15, 20 or 30 cm CVC with distal lumen $\text{Ø} \geq 0.032''$
- **Cost and time saving** Applied only when indicated by central venous blood gas analysis – no need to use expensive fibre optic Central Venous Catheters when placing initial central venous line
- **Effective and safe** Simplified handling by waiving the in-vitro calibration
- **Easy, fast, continuous** Insert, calibrate, monitor ScvO₂!
- **Useful information** Indicates balance/imbalance between oxygen supply and oxygen demand
- **Improvement of outcome** Decrease in mortality, shorter ICU and hospital stay in patients with septic shock**
- **Optimized, complete system** CeVOX 8.5F 20 cm CVC with 100 % compatible CeVOX Probe

Application:



- Start** Insert CeVOX Probe
- 2 min** Perform in-vivo calibration
- 3 min** Monitor continuous ScvO₂

→ **O₂ balance or imbalance!**

**Rivers E, Nguyen B, Havstad S, Ressler J, Muzzin A, Knoblich B, Peterson E, Tomlanovich M: Early goal-directed therapy in the treatment of severe sepsis and septic shock. N Engl J Med 345 (19): 1368-1377, 2001

Fields of application:

Continuous monitoring of ScvO₂ with the CeVOX has a wide range of applications:

- Targeting treatment in septic shock patients**
- Rapid assessment of the overall patient condition in emergency medicine
- Additional information for hemodynamic/Lung Water optimization with the PiCCO-Technology
- Peri-operative monitoring for high risk patients or high risk surgery
- Less invasive monitoring of patients in step-down units

Precautions and compatibility:

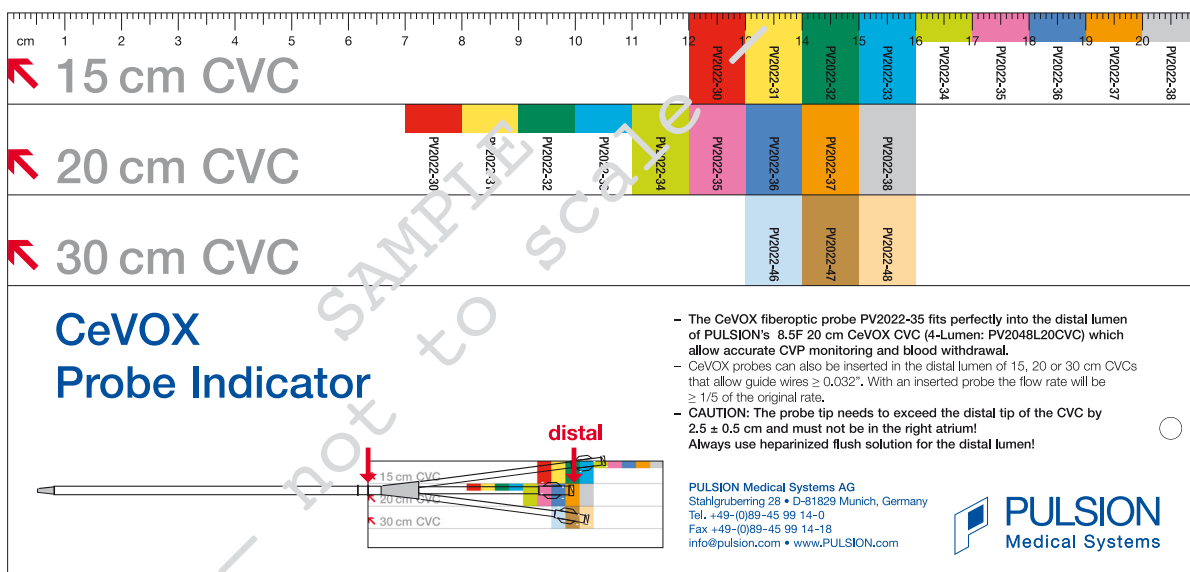
To avoid stiffening of the soft tip of the central venous catheter, the inserted CeVOX probe has to exceed the tip of the catheter by 2.5 ± 0.5 cm. Make sure that the tip is not placed in the right atrium to avoid interference with the conductive system. Always use heparinized flush solution for the distal lumen with CeVOX probe inserted.

CeVOX CVC:

PULSION offers special CeVOX probe adapted 4 lumen 8.5F CeVOX Central Venous Catheters with a usable length of 20 cm and a distal lumen $\text{Ø} \geq 0.038$ ", perfectly compatible with the 35 cm CeVOX probe PV2022-35. After probe insertion the remaining flow rate will be at least 1/5 of the original rate which allows monitoring of central venous pressure and blood withdrawal.

Other central venous catheters:

CeVOX probes are also available in other lengths (30-48 cm) for use with 15, 20 and 30 cm multi-lumen central venous catheters from various manufacturers* with a distal lumen for ≥ 0.032 " guide wires. To choose the appropriate CeVOX probe for other manufacturers* central venous catheters, a CeVOX probe length indicator is available which allows easy probe length determination by colour coding.



*please refer to CeVOX central venous catheter compatibility list: www.PULSION.com

**Rivers E, Nguyen B, Havstad S, Ressler J, Muzzin A, Knoblich B, Peterson E, Tomlanovich M:
Early goal-directed therapy in the treatment of severe sepsis and septic shock. N Engl J Med 345 (19): 1368-1377, 2001

Alternatively the appropriate CeVOX Probe length can be determined as follows:

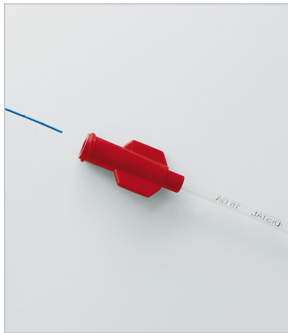
Procedure:

1. Measure distance of last length mark to Luer-Lock hub of distal lumen
2. Add value of length mark
3. Add 2.0 cm
4. Result:
5. Round up to next available probe length
6. Appropriate CeVOX Probe

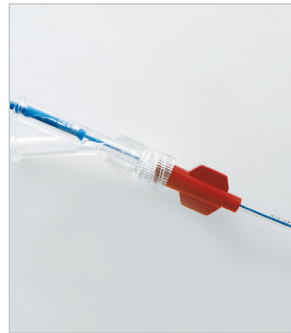
Example
12.5 cm
20.0 cm
2.0 cm
<hr/>
34.5 cm
35.0 cm
<hr/>
PV2022-35



Startup procedure:



Insert probe into distal lumen of the CVC



Lock the probe securely to the distal hub of the CVC



The tip of the probe exceeds the catheter tip by 2.5 ± 0.5 cm

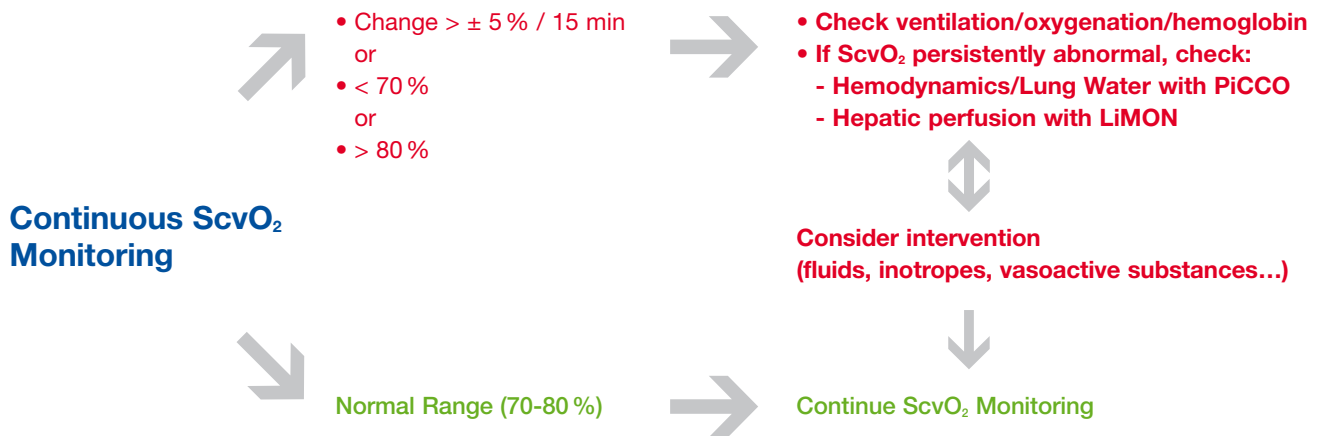


Connect probe to the optical module of the CeVOX, perform in-vivo calibration

Clinical use:

Indications:

- Blood sample ScvO₂ outside of normal range (70-80 %) or risk of hemodynamic instability or
- Signs of reduced tissue perfusion: Clinical inspection, Lactate ↑ or diuresis ↓ or GEDI⁺ ↓ or ICG-PDR^{**} ↓



* Global Enddiastolic Volume Index, volumetric preload indicator by PiCCO

**Plasma disappearance rate of indocyanine green dye, parameter of splanchnic perfusion/hepatic function by LiMON

Ordering information:

Article Number	Product description
PC3000	CeVOX Monitor for continuous monitoring of central venous oxygen saturation: HxWxD: 89x260x250 mm; weight: 1.6 kg (incl. CeVOX Optical Module); mains connection 230/115 V, 50/60 Hz; LCD screen; RS-232 serial interface; CeVOX Optical Module (cable length: 300 cm); CeVOX Probe Length Indicator; CeVOX User's Manual
PVCK2022-35CVC4	CeVOX Kit consists of: 2F CeVOX Probe PV2022-35 (Ø 0,67 mm, fiberoptics, radiopaque, usable length: 35 cm, total length: 95 cm and CeVOX 8.5F PULSIOCATH Central Venous Catheter PV2048L20CVC (4 Lumen)
PV2048L20CVC	8.5 F CeVOX PULSIOCATH central venous catheter; 4 lumen (proximal 18 Ga, flow rate 1440 ml/h; middle prox 18 Ga, flow rate 1300 ml/h; middle dist 18 Ga, flow rate 1160 ml/h; distal 16 Ga, flow rate 3590 ml/h; tip 0.038") Indwelling PU catheter with blue flex tip, radiopaque, latex free, Ø 2.83 mm, usable length: 20 cm, Extension Line Clamps, Injection Site Caps Components: Dilator; suture wing; 5 ml syringe, J-guide wire: 0.035" (0.89 mm), 70 cm; needle 18 Ga (1.27 mm), 70 mm; mini scalpel; GW advancer; Y valve connector specially suited for use with CeVOX Probe PV2022-35
PV2022-30...38	2 F CeVOX Probe for use with central venous catheters of various manufacturers Ø 0.67 mm, PU, fiberoptics, radiopaque, usable length: 30 - 38 cm, 1 cm increment, total length: 95 cm
PC30607	CeVOX Probe Length Indicator (available free of charge)

Technical specifications are subject to change without further notice

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For further information please visit www.PULSION.com
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