

# Klarer Stein Acht

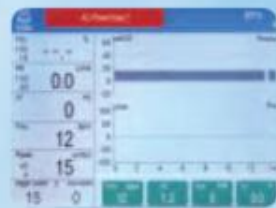
## Anesthesia Machine

ADULT • PEDIATRIC



## Application

The Anesthesia machine makes a good performance in Intensive Care Units (ICU), Operation room, Anesthesiology Department and other departments. Klarer Stein Acht is designed for ease of use, incorporating basic function and the maximum patient safety in daily anesthesia practice. Professional design for adult, child and infant inhalation anesthesia and respiratory management, with advanced ventilation mode. Combine proven ventilation technology with the latest refinements in ergonomics and systems integration with an advanced, easy to use anesthesia table designed together with experienced experts to streamline your anesthesia workflow.



7" TFT screen



Flowmeter



Pressure gauge



Bellow



Breathing circuit



APL valve

## Feature

- 7" TFT LCD screen displays the Ventilation parameters, Alarm information and Oscillogram.
- High precision flowmeter, instantly know the fresh gas flow to your patient.
- Integrated breathing circuit design, ensure easy operating and keep tidy.
- Multiple working modes such as volume control and pressure limit, adapt to wide range patient.
- Vaporizer with temperature, pressure, flow compensation and self-lock function, keep safety anytime.
- Multiple parameters monitoring interface, make every parameter clear, let users know the patient conditions in all aspects.
- Pressure-time, flow-time oscillogram show in real time.
- Vital sign monitor and Anesthetic gas monitor are optional.
- ACGO and fast oxygen supply - Emergency use and revival after operation.

## Safety

- Three level alarm system, visual and sound alarm information.
- With multiple type of alarm, reminder and protection functions.
- Advanced power management control technology.
- Low O<sub>2</sub> pressure alarm and N<sub>2</sub>O cut-off protection.



1 set vaporizer in standard, max 2 sets.

## Trust point

- Providing customers with high quality and cost-effective anesthesia machine.
- We listen to our customers and integrate their insights in our machine development. Flexible configurations to suit customers' needs.
- Countless feedback from customers give good reviews.
- Real time pressure-time, flow-time loop Oscillogram and high precision O<sub>2</sub> concentration detection function included.

## TECHNICAL SPECIFICATION

### Ventilation mode

IPPV, A/C, SIMV, SIGH, MANUAL

### Ventilator parameter range

Flowmeter	O <sub>2</sub> (0.1 ~ 10 L/min) N <sub>2</sub> O (0.1 ~ 10 L/min)
Rapid oxygen supply	25 L/min ~ 75 L/min
Tidal volume (VT)	0, 20 mL ~ 1500 mL
Frequency	1/min ~ 100/min
I:E	2:1 ~ 1:6
PEEP	0 cmH <sub>2</sub> O ~ 30 cmH <sub>2</sub> O
Pressure triggering sensitivity (Ptr)	-20 cmH <sub>2</sub> O ~ 0 cmH <sub>2</sub> O (Based on PEEP)
Flow trigger sensitivity (Ftr)	0.5 L/min ~ 30 L/min
SIGH	0 (off) 1/100 ~ 5/100
Apnea ventilation	OFF, 5s ~ 60s
Pressure limit	20 cmH <sub>2</sub> O ~ 100 cmH <sub>2</sub> O

### Monitoring parameter

Frequency	0/min ~ 100/min
Tidal volume (VT)	0 mL ~ 2000 mL
MV	0 L/min ~ 100 L/min
Oxygen concentration	15% ~ 100%

### Packing size

Wooden case packing size	L 740* W 800* H 1460mm
G.W.	98KG
N.W.	66KG

### Alarm and protection

The AC power failure alarm	Power failure or no connection
Low voltage alarm for back up battery	< 11.3±0.3V
No tidal volume	≤5mL within 6s
High oxygen concentration alarm	19% ~ 100%
Low oxygen concentration alarm	18% ~ 99%
High airway pressure alarm	20 cmH <sub>2</sub> O ~ 100 cmH <sub>2</sub> O
Low airway pressure alarm	0 cmH <sub>2</sub> O ~ 20 cmH <sub>2</sub> O
High minute volume alarm	Adult (5 L/min ~ 20 L/min) Paed (1 L/min ~ 15 L/min)
Low minute volume alarm	0 ~ 10 L/min
Continuous pressure alarm	(PEEP+1.5 kPa) over 16s
Suffocation warning	5s ~ 60s no spontaneous ventilation
The maximum limited pressure	< 12.5 kPa
Fan error	Show on screen
Oxygen deficit	Show on screen

### Working condition

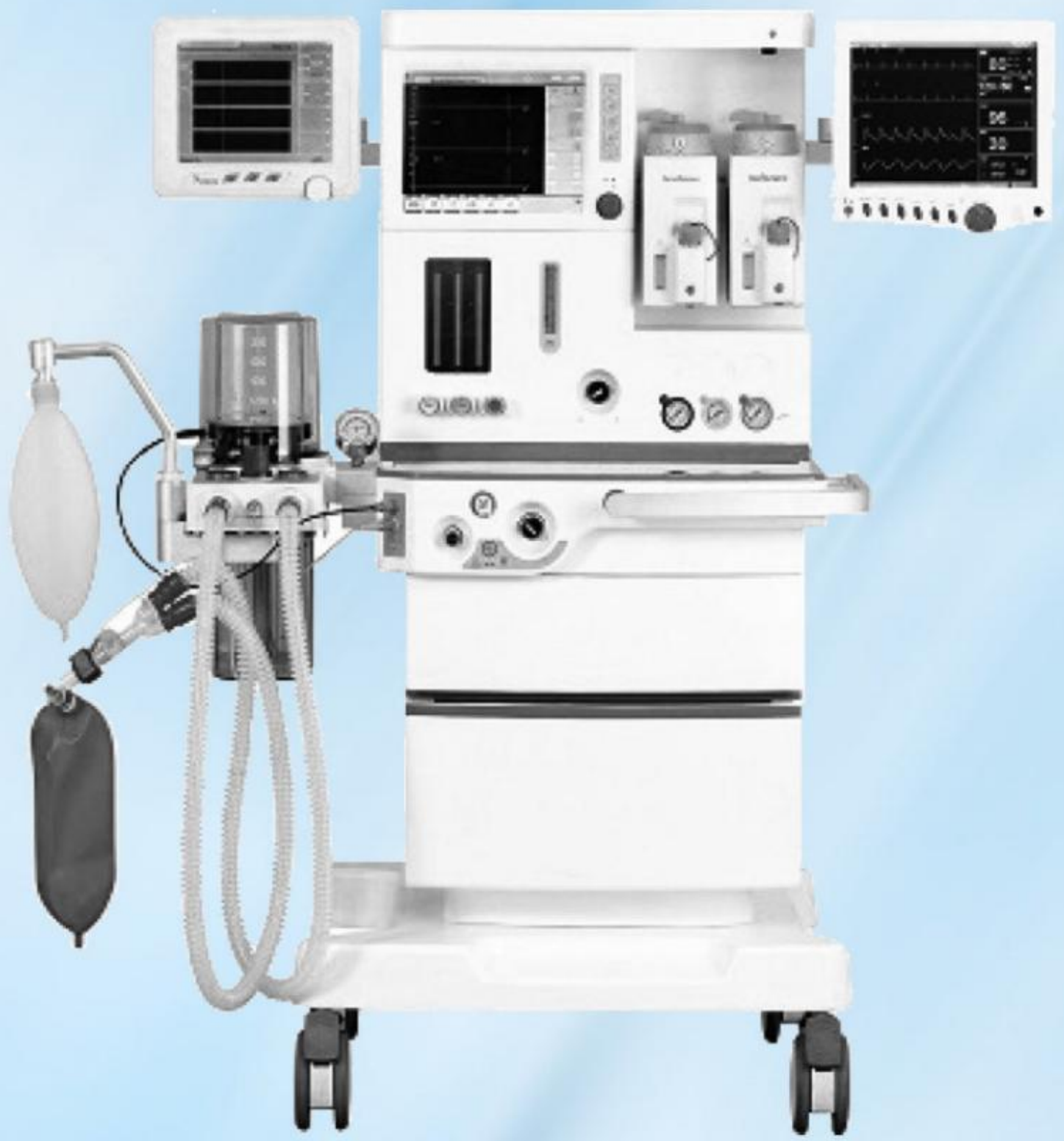
Gas source	O <sub>2</sub> , N <sub>2</sub> O
Pressure	280 kPa ~ 600 kPa
Voltage	100 ~ 240V
Power frequency	60 Hz

### Oscillogram

P-T (pressure - time)
F-T (flow - time)

# Klarer Stein Drei Anesthesia Machine

ADULT • PEDIATRIC



## Application

The Anesthesia machine makes a good performance in Intensive Care Units (ICU), Anesthesiology Department and other departments. Professional design for adult, children and neonatal inhalation anesthesia and respiratory management, with advanced ventilation modes. Outstanding ergonomic design, it ranks high level in safety, stability and convenience as well as user experiences.

Klarer Stein Drei high-end model combine proven ventilation technology with the latest refinements in ergonomics and systems integration with an advanced, easy to use anesthesia table designed together with experienced experts to streamline your anesthesia workflow.

### 12.1" LCD touch screen

Displays the Ventilation parameters, Alarm information and Oscillogram.  
High sensitivity touch screen ensures accurate and easy operation.  
Alternate button for dual control.

### Electronic flowmeter

High precision flowmeter, instantly know the fresh gas flow to patient.  
O<sub>2</sub> and N<sub>2</sub>O linkage device ensure O<sub>2</sub> concentration no less than 25%.

### Bellow

Integrated bellow 0mL - 1500mL.  
Suitable for all range patients.

### APL valve

Automatic decompression to ensure safety.

### ETCO<sub>2</sub>

End-tidal carbon dioxide concentration monitoring, real-time understanding of the patient state.

### Breathing circuit

Integrated breathing circuit design.  
Breathing tube resists high temperature sterilization.  
Ensure easy operating and keep tidy.

### Pedal

User-friendly design convenient for doctors to relax foot.  
Central brake is optional.

### LED top light

Convenient for endoscopy operation.

### Vaporizer

Accurately delivers a calibrated flow,  
Halothane, Enflurane, Isoflurane, Sevoflurane for choice.  
2 vaporizers for standard.  
Suitable for low flow anesthesia, save cost.

### Pressure gauge

Real time pressure for Air, O<sub>2</sub>, N<sub>2</sub>O from central gas supply and gas cylinders.

### Handle

Easy and safety transport.

### ACGO and fast oxygen supply

Emergency situation and revival after operation.

### Drawer

2 drawers with large capacity for storing accessories.

### Caster

Diameter : 125mm,  
2 individual brakes of 4 casters.



### Optional part 1

Anesthetic gas monitor, Vital Signs Monitor:  
Real-time monitoring of anesthetic gas and patient's physiological condition.



### Optional part 2

AGSS: To enhance the safety of the environment in which members of staff in close proximity with waste anesthetic gases and vapors (agents) work.

## Trust point

- Patient Centered Ventilation: Precision in an anesthesia ventilator, from conventional ventilation to advanced modes and adapt to wide range patient.
- Safty design: Vaporizer with temperature, pressure, flow compensation and self-lock function. Real time pressure-time, flow-time loop oscillogram and high precision ET<sub>CO</sub><sub>2</sub>, O<sub>2</sub> concentration detection function included.
- Alarm: Three level alarm system, visual and sound alarm information.
- Power: Built-in battery ensure 2-3 hours using when power failure.
- Separate design of electric circuit and gas circuit ensure long using life.
- Flexible configurations able to customize your requirements.
- Designed and manufactured by Superstar Medical with over 25 years experience in this area.

## TECHNICAL SPECIFICATION

### Ventilation mode

IPPV, A/C, PCV, PSV, SIMV, SIGH, MANUAL

### Ventilator parameter range

Flowmeter	O <sub>2</sub> (0.1 ~ 10 L/min)
	N <sub>2</sub> O (0.1 ~ 10 L/min)
	AIR (0.1 ~ 10 L/min)
Rapid oxygen supply	25 L/min ~ 75 L/min
Tidal volume(Vt)	0, 20 mL ~ 1500 mL
Frequence (Freq)	1 /min ~ 100 /min
I:E	4:1 ~ 1:8
PEEP	0 cmH <sub>2</sub> O ~ 30 cmH <sub>2</sub> O
Pressure triggering sensitivity (PTr)	-20 cmH <sub>2</sub> O ~ 0 cmH <sub>2</sub> O (Based on PEEP)
Flow trigger sensitivity (FTr)	0.5 L/min ~ 30 L/min
Pressure control (PC)	5 cmH <sub>2</sub> O ~ 80 cmH <sub>2</sub> O
SIGH	0 (off) 1/100 ~ 5/100
Apnea ventilation	OFF, 5 s ~ 60 s
Pressure limit	20 cmH <sub>2</sub> O ~ 100 cmH <sub>2</sub> O

### Monitoring parameter

Frequence (Freq)	0 /min ~ 100 /min
Tidal volume (Vt)	0 mL ~ 2000 mL
MV	0 L/min ~ 100 L/min
Oxygen concentration	15 % ~ 100 %

### Oscillogram

P-T (pressure - time)
F-T (flow - time)
V-T (volume - time)
ETCO <sub>2</sub> -T (ETCO <sub>2</sub> - time)
P-V loop (pressure - volume loop)

### Alarm and protection

The AC power failure alarm	Power failure or no connection
Internal battery backup low voltage alarm	< 11.3 ± 0.3 V
No tidal volume	≤ 5 mL within 6 s
High oxygen concentration alarm	19% ~ 100%
Low oxygen concentration alarm	18% ~ 99%
High airway pressure alarm	20cmH <sub>2</sub> O ~ 100cmH <sub>2</sub> O
Low airway pressure alarm	0cmH <sub>2</sub> O ~ 20cmH <sub>2</sub> O
High minute volume alarm	Adult (5 L/min ~ 20 L/min)
Low minute volume alarm	Paed (1 L/min ~ 15 L/min, 0 ~ 10 L/min)
Continuous pressure alarm	(PEEP+1.5kPa) over 16s
Suffocation warning	5s-60s no spontaneous ventilation
The maximum limited pressure	< 12.5 kPa
Fan error	Show on screen
Oxygen deficit	Show on screen

### Working condition

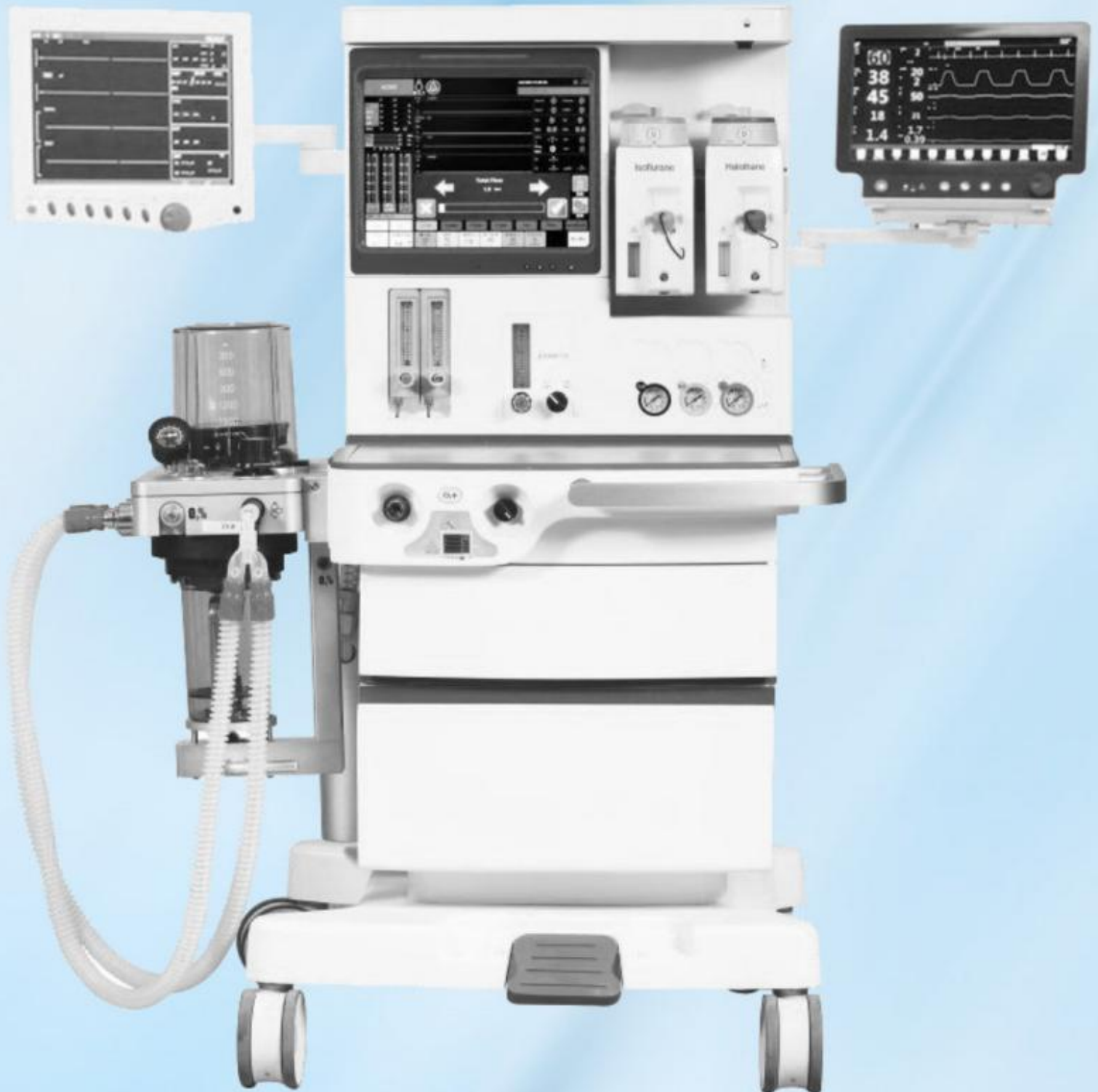
Gas source	O <sub>2</sub> , N <sub>2</sub> O, AIR
Pressure	280 kPa ~ 600 kPa
Voltage	100 ~ 240 V
Power frequency	60 Hz

### Packing size

Wooden case packing size	L 870 * W 890 * H 1510 mm
G.W.	195 KG
CBM	1.17 m <sup>3</sup>
Anesthesia machine size	L 930 * W 750 * H 1405 mm
N.W.	124 KG

# Klarer Stein Eins Anesthesia Machine

ADULT • PEDIATRIC



## Application

The Anesthesia machine makes a good performance in Intensive Care Units (ICU), Anesthesiology Department and other departments. Professional design for adult, children and neonatal inhalation anesthesia and respiratory management, with advanced ventilation modes. Outstanding ergonomic design, it ranks high level in safety, stability and convenience as well as user experiences. Klarer Stein Eins model with the highest technology, more comfortable for doctors and more safety for patients.

### 15" TFT LCD touch screen

Extra-large screen, high sensitivity touch give you better operating experience. Displays the Ventilation parameters, Alarm information and Oscillograms.

### Built-in electronic flowmeter

High precision flowmeter, instantly know the fresh gas flow to your patient. O<sub>2</sub> and N<sub>2</sub>O linkage device ensure O<sub>2</sub> concentration no less than 25%.

### O<sub>2</sub> and air supply

Provide fresh oxygen or air to the patient for independent use.

### Breathing circuit and bellow

Integration breathing circuit and bellow design, ensure easy operating and keep tidy. With bypass and heating function.

### Oxygen concentration detector

Real-time monitoring of oxygen concentration for safety.

### APL valve

Decompression automatic to ensure safety.

### CO<sub>2</sub> absorber 1.5L

With bypass function and heating function, can be directly disassembled and replaced the Soda Lime during operation. Make sure the comfort level of patients and also avoid backflow of condensate water.

### LED top light

Convenient for endoscopy operation.

### Vaporizer

Accurately delivers a calibrated flow, Halothane, Enflurane, Isoflurane, Sevoflurane for choice. Suitable for low flow anesthesia, save cost.

### Mechanical flowmeter

Emergency situation and spare-use for doctor.

### Pressure gauge

Real time pressure.

### Handle

Easy and safety transport.

### ACGO and fast oxygen supply

Emergency situation and revival after operation.

### Drawer

2 drawers with large capacity.

### Pedal and central brake system

User friendly design convenient for keep the machine stable.

### 6 auxiliary plugs

Plugs of monitors can be inserted.

### VGA RS232 USB connector and ETCO<sub>2</sub>

Connect with hospital's system and output patient information. End-tidal carbon dioxide concentration monitoring, real-time understanding of the state of the patient.

### AGSS (optional part)

To enhance the safety of the environment in which members of staff in close proximity with waste anesthetic gases and vapors (agents) work.

### Other optional parts

Anesthetic gas monitor, Vital signs monitor. Real-time monitoring of anesthetic gas and patient's physiological condition.



## Trust point

- Patient Centered Ventilation: Precision in an anesthesia ventilator, from conventional ventilation to advanced modes and adapt to wide range patient.
- Safety design: Vaporizer with temperature, pressure, flow compensation and self-lock function. Real time pressure-time, flow-time loop oscillogram and high precision ET<sub>CO</sub><sub>2</sub>, O<sub>2</sub> concentration detection function included.
- Alarm: 13 alarms to make sure the safety. Three level alarm system, visual and sound alarm information.
- Built-in battery ensure 2-3 hours using when power failure.
- Visible self-checking system: Make sure the safety of all parts.
- Before setting parameters, choose freely type of patients: adult, children and neonatal. Also preset the age of patient.
- Separate design of electric circuit and gas circuit ensure long using life.
- Language: 8 languages for exchange including Chinese, English, Spanish, French, Russian, Turkish, German, Portuguese.

## TECHNICAL SPECIFICATION

### Ventilation mode

IPPV, A/C, PCV, PSV, SIMV, SIGH, MANUAL

### Ventilator parameter range

Flowmeter	O <sub>2</sub> (0.1 ~ 10 L/min)
	N <sub>2</sub> O (0.1 ~ 10 L/min)
	AIR (0.1 ~ 10 L/min)
Rapid oxygen supply	25 L/min ~ 75 L/min
Tidal volume(Vt)	0, 20 mL ~ 1500 mL
Frequency (Freq)	1 /min ~ 100 /min
IE	4:1 ~ 1:8
PEEP	0 cmH <sub>2</sub> O ~ 30 cmH <sub>2</sub> O
Pressure triggering sensitivity (PTr)	-20 cmH <sub>2</sub> O ~ 0 cmH <sub>2</sub> O (Based on PEEP)
Flow trigger sensitivity (FTr)	0.5 L/min ~ 30 L/min
Pressure control (PC)	5 cmH <sub>2</sub> O ~ 60 cmH <sub>2</sub> O
SIGH	0 (off) 1/100 ~ 5/100
Apnea ventilation	OFF, 5 s ~ 60 s
Pressure limit	20 cmH <sub>2</sub> O ~ 100 cmH <sub>2</sub> O

### Monitoring parameter

Frequency (Freq)	0 /min ~ 100 /min
Tidal volume (Vt)	0 mL ~ 2000 mL
MV	0 L/min ~ 100 L/min
Oxygen concentration	15 % ~ 100 %

### Oscillogram

P-T (pressure – time)
F-T (flow – time)
V-T (volume – time)
ETCO <sub>2</sub> -T (ETCO <sub>2</sub> – time)
P-V loop (pressure – volume loop)

### Alarm and protection

The AC power failure alarm	Power failure or no connection
Internal battery backup low voltage alarm	< 11.3 ± 0.3 V
No tidal volume	≤ 5 mL within 6 s
High oxygen concentration alarm	19% ~ 100%
Low oxygen concentration alarm	18% ~ 99%
High airway pressure alarm	20cmH <sub>2</sub> O ~ 100cmH <sub>2</sub> O
Low airway pressure alarm	0cmH <sub>2</sub> O ~ 20cmH <sub>2</sub> O
High minute volume alarm	Adult (5 L/min ~ 20 L/min)
Low minute volume alarm	Paed (1 L/min ~ 15 L/min, 0 ~ 10 L/min)
Continuous pressure alarm	(PEEP+1.5kPa) over 16s
Suffocation warning	5s-60s no spontaneous ventilation
The maximum limited pressure	< 12.5 kPa
Fan error	Show on screen
Oxygen deficit	Show on screen

### Working condition

Gas source	O <sub>2</sub> , N <sub>2</sub> O, AIR
Pressure	280 kPa ~ 600 kPa
Voltage	100 ~ 240 V
Power frequency	50/60 Hz

### Packing size

Wooden case packing size	L 870 * W 890 * H 1510 mm
G.W.	195 KG
CBM	1.17 m <sup>3</sup>
Anesthesia machine size	L 930 * W 750 * H 1405 mm
N.W.	124 KG

# Klarer Stein Funf Anesthesia Machine

ADULT • PEDIATRIC



## Application

The Anesthesia machine makes a good performance in Intensive Care Units (ICU), Operation room, Anesthesiology Department and other departments. Klarer Stein **Funf** is designed for ease of use, incorporating basic function and the maximum patient safety in daily anesthesia practice. Professional design for adult, child and infant inhalation anesthesia and respiratory management, with advanced ventilation mode. Combine proven ventilation technology with the latest refinements in ergonomics and systems integration with an advanced, easy to use anesthesia table designed together with experienced experts to streamline your anesthesia workflow.



10.4" TFT screen



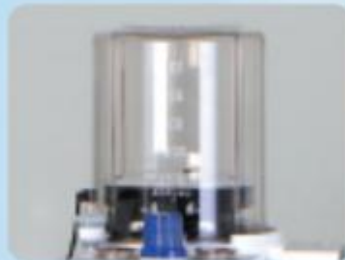
Flowmeter



Breathing circuit



Pressure gauge



Bellow



APL valve



Halothane: 0~5%

Enflurane: 0~5%

Isoflurane: 0~5%

Sevoflurane: 0~8%

1 set vaporizer for standard, can be installed 2 vaporizers in all.

## Features

- 10.4" TFT LCD screen displays the Ventilation parameters, Alarm information and Oscillographs.
- High precision flow meter, instantly know the fresh gas flow to your patient.
- Integration breathing circuit design, ensure easy operating and keep tidy.
- Multiple working modes such as volume control and pressure limit, adapt to wide range patient.
- Vaporizer with temperature, flow compensation and self-lock function .
- Multiple parameters monitoring interface, make every parameter clear, let users know the patient conditions in all aspects.
- Pressure-time, flow-time oscillographs show in real time.
- Vital sign monitor, Anesthetic monitor and ETCO2 module are optional.

## Safety

- Three levels alarm system, visual and sound alarm information.
- With multiple type of alarm, reminder and protection functions.
- Advanced power management control technology.
- Low O<sub>2</sub> pressure alarm and N<sub>2</sub>O cut-off protection.

## Trust Points

- Simplicity: four static casters with self-locking function.
  - Flexible configurations able to customize your requirements.
  - International standard and advanced technology suitable for wide range use.
  - Compact interface and big screen give you better operating experience.
- Over 5,000 units are installed in more than 200 countries.

## Specifications

### Ventilation Modes

IPPV; A/C; SIMV; SIGH, MANUAL, PEEP, Standby, PCV,PSV

### Ventilator Parameter Ranges

Flow meter	O <sub>2</sub> (0.1~10 L/min)
	Air (0.1~10 L/min)
Rapid oxygen supply	25 L/min~75 L/min
Tidal volume (VT)	0, 20 ML~1500 ML
Frequency	1 bpm~100 bpm
I/E	4:1~1:8
PEEP	0 cmH <sub>2</sub> O~30 cmH <sub>2</sub> O
Pressure triggering sensitivity (PTr)	-20 cmH <sub>2</sub> O~0 cmH <sub>2</sub> O (Based on PEEP)
Flow trigger sensitivity (FTr)	0.5 L/min~30 L/min
SIGH	0 (off) 1/100~5/100
Apnea ventilation	OFF, 5s~60s
Pressure limit	20 cmH <sub>2</sub> O~100 cmH <sub>2</sub> O

### Monitored Parameters

Frequency	0 /min~100 /min
Tidal volume (VT)	0 ML~2000 ML
MV	0 L/min~100 L/min
Oxygen concentration	15 %~100 %

### Packing Size

Wooden case packing size	L 740* W 800* H 1460mm
G.W.	93KG
N.W.	66KG

### Alarms and Protection

The AC power failure alarm	Power failure or no connection
Low voltage alarm for back up battery	< 11.3±0.3V
No tidal volume	≤5ML within 6s
High oxygen concentration alarm	19%~100%
Low oxygen concentration alarm	18%~99%
High airway pressure alarm	20 cmH <sub>2</sub> O~100 cmH <sub>2</sub> O
Low airway pressure alarm	0 cmH <sub>2</sub> O~20 cmH <sub>2</sub> O
High minute volume alarm	Adult (5 L/min~20 L/min) Paed (1 L/min~15 L/min)
Low minute volume alarm	0~10 L/min
Continuous pressure alarm	(PEEP+1.5 kPa) over 16s
Suffocation warning	5s~60s no spontaneous ventilation
The maximum limited pressure	< 12.5 kPa
Fan error	Show on screen
Oxygen deficit	Show on screen

### Working Conditions

Gas source	O <sub>2</sub> , Air/ O <sub>2</sub> , N <sub>2</sub> O
Pressure	280 kPa~600 kPa
Voltage	100~240V
Power frequency	50/60 Hz
Input power	40 VA

### Oscillographs Display

P-T (pressure – time), V-T (volume - time)  
F-T (flow – time), P-V Loop

# Grob Klarer Stein Veterinar Series

## Veterinary Anesthesia Machine



# Grob Klarer Stein Veterinar Series Veterinary Anesthesia System

## Application

Veterinary Anesthesia System is widely applied to veterinary clinics, hospitals and laboratories, as always received good reputation from clients around the world.

Grob model designed for safe, simple and controllable inhalation anesthesia for animals. The Veterinary Anesthesia System provides rapid control of anesthetic depth with little resistance to respiration from high to low acuity, simple to complex cases, small to big animals, like Dogs, Cats, Rabbits, Mice, Birds, etc.



Bellow



APL valve

## Trust point

- 4 casters with 2 individual brakes.
- Precision in an anesthesia ventilator with multiple ventilation modes: IPPV, A/C, PCV, SIMV, SIGH and MANUAL.
- Compact interface and 10.4" TFT LCD touch screen give you better operating experience.
- Flexible configurations able to customize your requirements.
- International standard and advanced technology suitable for wide range use.
- Over 5,000 units are installed in more than 200 countries.
- Designed and manufactured by Superstar Medical with over 25 years of experience in veterinary field.

## Safety

- Three level alarm system, visual and sound alarm information.
- Intelligent dual system controls ensure safe use in clinics.
- With lots of alarm, reminder and protection functions.
- Advanced power management control technology.
- Built-in backup battery provide the emergency power supply up to 2-3 hours for the unit.



Breathing circuit



Halothane: 0-5%

Enflurane: 0-5%

Isoflurane: 0-5%

Sevoflurane: 0-8%

1 set vaporizer for standard, max 2 sets.



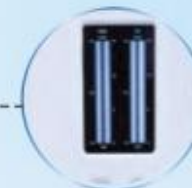
10.4" Touch Screen



Pressure gauge

## Advantage

- 10.4" touch screen displays information area, alarm area, monitoring area, and setting area.
- Electronic flowmeter, instantly know the fresh gas flow to animals.
- Vaporizer with temperature, pressure, flow compensation and self-lock function, keep safety anytime.
- Real time pressure-time, flow-time loop oscillogram and high precision ET/CO<sub>2</sub>, O<sub>2</sub> concentration detection function included.
- Electronic PEEP makes parameter adjustment more precise.
- Screen displays manual or mechanical ventilation, keeps safety.
- Built-in sensor design with longer use life.
- Wide use range for animals within 200KG.
- ET/CO<sub>2</sub> module and Anesthesia Gas Scavenging System (AGSS) are optional.



Electronic flowmeter



## Technical Specification

### Ventilation mode

IPPV,A/C,PCV,SIMV,SIGH,MANUAL

### Ventilator parameter range

Flowmeter	O <sub>2</sub> (0.1 ~ 10L/min) N <sub>2</sub> O (0.1 ~ 10L/min)
Rapid oxygen supply	25L/min ~ 75L/min
Tidal volume (V <sub>t</sub> )	0, 20 mL ~ 1500 mL
Frequency (Freq)	1/min ~ 100/min
I:E	4:1 ~ 1:8
PEEP	0cmH <sub>2</sub> O~20cmH <sub>2</sub> O
Pressure triggering sensitivity(Ptr)	-20 cmH <sub>2</sub> O ~ 20 cmH <sub>2</sub> O(Based on PEEP)
Flow trigger sensitivity (Ftr)	0.5 L/min ~ 30 L/min
Pressure control (PC)	5 cmH <sub>2</sub> O ~ 60 cmH <sub>2</sub> O
SIGH	0(off) 1/100 ~ 5/100
Apnea ventilation	OFF, 5 s ~ 60 s
Pressure limit	20 cmH <sub>2</sub> O ~ 100 cmH <sub>2</sub> O

### Monitoring parameter

Frequency (Freq)	0/min ~ 100/min
Tidal volume (V <sub>t</sub> )	0 mL ~ 2000 mL
MV	0 L/min ~ 100 L/min
Oxygen concentration	15 % ~ 100 %

### Oscillogram

P-T (pressure – time)
F-T (flow – time)
P-V loop (pressure – volume loop)
V-T (volume – time)
ETCO <sub>2</sub> -T (ETCO <sub>2</sub> – time)

Other models for your reference :



### Alarm and protection

The AC power failure alarm	Power failure or no connection
Low voltage alarm for back up battery	< 11.3±0.3V
No tidal volume	≤5mL within 6s
High oxygen concentration alarm	19%-100%
Low oxygen concentration alarm	18%-99%
High airway pressure alarm	20cmH <sub>2</sub> O-100cmH <sub>2</sub> O
Low airway pressure alarm	0cmH <sub>2</sub> O-20cmH <sub>2</sub> O
High minute volume alarm	Adult (5L/min-20L/min)
Low minute volume alarm	Paediatric (1L/min-15L/min) (0-10L/min)
Continuous pressure alarm	(PEEP+1.5kPa) over 16s
Suffocation warning	5s-60s no spontaneous ventilation
The maximum limited pressure	< 12.5 kPa
Fan error	Show on screen
Oxygen deficit	Show on screen

### Working condition

Gas source	O <sub>2</sub> , N <sub>2</sub> O
Pressure	280kPa-600kPa
Voltage	100-240V
Power frequency	60Hz

### Size

Wooden case packing size	L 740*W 795*H 1540mm
G.W.	98KG
N.W.	66KG
CBM	0.99m <sup>3</sup>

# Klarer Stein Sechs Anesthesia Machine

ADULT • PEDIATRIC



## Application

The Anesthesia machine makes a good performance in Intensive Care Units (ICU), Operation room, Anesthesiology Department and other departments. Klarer Stein Sechs is designed for ease of use, incorporating basic function and the maximum patient safety in daily anesthesia practice. Professional design for adult, child and infant inhalation anesthesia and respiratory management, with advanced ventilation mode. Combine proven ventilation technology with the latest refinements in ergonomics and systems integration with an advanced, easy to use anesthesia table designed together with experienced experts to streamline your anesthesia workflow.

## Feature

- Simplicity: 4 static casters with self-locking function.
- Precision in an anesthesia ventilator with multiple ventilation modes: IPPV, A/C, SIMV, SIGH and MANUAL.
- 10.4" TFT LCD screen displays the Ventilation parameters, Alarm information and Oscillogram.
- Vaporizer with temperature, pressure, flow compensation and self-lock function, keep safety anytime.
- Pressure-time, low-time and high precision ETCO<sub>2</sub>, O<sub>2</sub> concentration show in real time.
- ETCO<sub>2</sub> and Anesthesia Gas Scavenging System (AGSS) are optional.
- Built-in backup battery provide the emergency power supply to the unit.
- Low O<sub>2</sub> pressure alarm and N<sub>2</sub>O cut-off protection.
- Over 5,000 units are installed in more than 200 countries.
- Designed and manufactured by Superstar Medical with over 25 years of experience in ICU field.



10.4" screen



Flowmeter



Breathing circuit



Pressure gauge



Bellow



APL Valve

## TECHNICAL SPECIFICATION

### Ventilation mode

IPPV, A/C, SIMV, SIGH, MANUAL

### Ventilator parameter range

Flowmeter	O <sub>2</sub> (0.1~10 L/min)
	N <sub>2</sub> O (0.1~10 L/min)
	AIR (0.1~10 L/min)
Rapid oxygen supply	25 L/min~75 L/min
Tidal volume (Vt)	0, 20 mL~1500 mL
Frequency (Freq)	1/min~100 /min
I:E	2:1~1:6
PEEP	0 cmH <sub>2</sub> O~30 cmH <sub>2</sub> O
Pressure triggering sensitivity (Ptr)	-20 cmH <sub>2</sub> O~0 cmH <sub>2</sub> O (Based on PEEP)
Flow trigger sensitivity (Ftr)	0.5 L/min~30 L/min
SIGH	0 (off) 1/100~5/100
Apnea ventilation	OFF, 5s~60s
Pressure limit	20 cmH <sub>2</sub> O~100 cmH <sub>2</sub> O

### Monitoring parameter

Frequency (Freq)	0 /min~100 /min
Tidal volume (Vt)	0 mL~2000 mL
MV	0 L/min~100 L/min
Oxygen concentration	15 %~100 %

### Oscillogram

P-T (pressure – time)	P-V loop (pressure – volume loop)
F-T (flow – time)	

### Packing Size

Wooden case packing size	L 920*W 970*H 1380mm
G.W.	156KG
N.W.	102KG
CBM	1.24m <sup>3</sup>

### Alarm and protection

The AC power failure alarm	Power failure or no connection
Low voltage alarm for back up battery	<11.3±0.3V
No tidal volume	≤5mL within 6s
High oxygen concentration alarm	19%~100%
Low oxygen concentration alarm	18%~99%
High airway pressure alarm	20 cmH <sub>2</sub> O~100 cmH <sub>2</sub> O
Low airway pressure alarm	0 cmH <sub>2</sub> O~20 cmH <sub>2</sub> O
High minute volume alarm	Adult (5 L/min~20 L/min)
	Paed (1 L/min~15 L/min)
Low minute volume alarm	0~10 L/min
Continuous pressure alarm	(PEEP+1.5 kPa) over 16s
Suffocation warning	5s~60s no spontaneous ventilation
The maximum limited pressure	<12.5 kPa
Fan error	Show on screen
Oxygen deficit	Show on screen

### Working condition

Gas source	O <sub>2</sub> , N <sub>2</sub> O, AIR
Pressure	280 kPa~600 kPa
Voltage	100~240V
Power frequency	60 Hz

# Klarer Stein Sieben

## Anesthesia Machine

ADULT • PEDIATRIC



## Application

The Anesthesia machine makes a good performance in Intensive Care Units (ICU), Operation room, Anesthesiology Department and other departments. Klarer Stein Sieben is designed for ease of use, incorporating basic function and the maximum patient safety in daily anesthesia practice. Professional design for adult, child and infant inhalation anesthesia and respiratory management, with advanced ventilation modes. Combine proven ventilation technology with the latest refinements in ergonomics and systems integration with an advanced, easy to use anesthesia table designed together with experienced experts to streamline your anesthesia workflow.

### Screen

7" screen displays information area, alarm area, monitoring area and setting area.  
2-3 hours built-in backup battery.  
Intelligent three level alarming system with 14 alarm, visual and sound alarm information.  
2 oscillograms: P-T, V-T

### Pressure gauge

Pressure gauge shows pressure of centre gas system or gas cylinder.

### Bellow

1500mL can applied to different patients.  
Volume of absorber: 1.5 L  
Integrated design makes installation easily.

### Oxygen sensor

Oxygen sensor makes sure accurate parameters.

### Brake

4 casters with 2 individual brakes.

### Vaporizer

One or dual-position  
Choice: Halothane, Enflurane, Isoflurane, Sevoflurane  
1 set vaporizer for standard, max 2 sets.

### Mechanical flowmeter

5 Mechanical flowmeters: O<sub>2</sub>, Air, N<sub>2</sub>O.  
Fine control: 0.1-1 L/min  
Coarse control: 1-10 L/min

### ACGO and fast oxygen supply

Emergency situation and revival after operation.

### Optional

AGSS  
Gas gauge for gas cylinders  
Vital sign monitor, anaesthetic gas monitor  
Hand held ETCO<sub>2</sub> monitor or Vital sign monitor with ETCO<sub>2</sub>  
3 Yokes



## Trust point

- Providing customers with high quality and cost-effective anesthesia machine.
- The Superstar Medical team is a group of experienced and dedicated professionals with a passion for more than 20 years.
- We listen to our customers and integrate their insights in our machine development. Flexible configurations to suit customers' needs.
- Countless feedback from customers give good reviews.
- Advanced one button switch of manual provides convenient electronic controlling interchanges.
- High precision flowmeter, instantly know the fresh gas flow to your patient.
- Integrated breathing circuit design, ensure easy operating and keep tidy.
- Multiple working modes such as volume control and pressure limit, adapt to wide range patient.
- Vaporizer with temperature, pressure, flow compensation and self-lock function, keep safety anytime.
- Real time pressure-time, flow-time loop oscillogram and high precision O<sub>2</sub> concentration detection function included.

## TECHNICAL SPECIFICATION

### Ventilation mode

IPPV, A/C, SIMV, SIGH, MANUAL

### Ventilator parameter range

Flowmeter	O <sub>2</sub> (0.1 ~ 10 L/min)
	N <sub>2</sub> O (0.1 ~ 10 L/min)
	AIR (0.1 ~ 10 L/min)
Rapid oxygen supply	25 L/min ~ 75 L/min
Tidal volume (Vt)	0, 20 mL ~ 1500 mL
Frequency (Freq)	1 /min ~ 100 /min
I:E	2:1 ~ 1:6
PEEP	0 cmH <sub>2</sub> O ~ 30 cmH <sub>2</sub> O
Pressure triggering sensitivity (Ptr)	-20 cmH <sub>2</sub> O ~ 0 cmH <sub>2</sub> O (Based on PEEP)
Flow trigger sensitivity (FTr)	0.5 L/min ~ 30 L/min
Pressure control (PC)	5 cmH <sub>2</sub> O ~ 60 cmH <sub>2</sub> O
SIGH	0 (off) 1/100 ~ 5/100
Apnea Ventilation	OFF, 5 s ~ 60 s
Pressure Limit	20 cmH <sub>2</sub> O ~ 100 cmH <sub>2</sub> O

### Monitoring parameter

Frequency (Freq)	0/min ~ 100 /min
Tidal volume (Vt)	0 mL ~ 2000 mL
MV	0 L/min ~ 100 L/min
Oxygen concentration	15 % ~ 100 %

### Oscillogram

P-T (pressure – time)	
V-T (volume – time )	

### Alarm and protection

The AC power failure alarm	Power failure or no connection
Internal battery backup low voltage alarm	< 11.3 ± 0.3 V
No tidal volume	≤ 5 mL within 6 s
High oxygen concentration alarm	19% ~ 100%
Low oxygen concentration alarm	18% ~ 99%
High Airway pressure alarm	20 cmH <sub>2</sub> O ~ 100 cmH <sub>2</sub> O
Low Airway pressure alarm	0 cmH <sub>2</sub> O ~ 20 cmH <sub>2</sub> O
High Minute Volume alarm	Adult (5 L/min ~ 20 L/min)
Low Minute Volume alarm	Paed (1 L/min ~ 15 L/min, 0 ~ 10 L/min)
Continuous Pressure alarm	(PEEP+1.5 kPa) over 16s
Suffocation warning	5 s ~ 60 s no spontaneous ventilation
The maximum limited pressure	<12.5 kPa
Fan error	Show on screen
Oxygen deficit	Show on screen

### Working condition

Gas source	O <sub>2</sub> , N <sub>2</sub> O, Air
Pressure	280 kPa ~ 600 kPa
Voltage	100 ~ 240 V
Power frequency	60 Hz

### Packing size

Wooden case packing size	L 810 * W 1060 * H 1540 mm
G.W	150 KGS
N.W	96 KGS
CBM	1.33 m <sup>3</sup>

# Klarer Stein Vier

## Anesthesia Machine

ADULT • PEDIATRIC



## Application

The Anesthesia machine makes a good performance in Intensive Care Units (ICU), Anesthesiology Department and other departments. Professional design for adult, child and infant inhalation anesthesia and respiratory management, with advanced ventilation modes. Outstanding ergonomic design, it ranks high level in safety, stability and convenience as well as user experiences. Klarer Stein Vier comfortable classic model, easy to use and be designed together with experienced experts to streamline your anesthesia workflow.



10.4" screen



Flowmeter



Pressure gauge



Bellow



Breathing circuit



APL valve



Halothane: 0~5%



Enflurane: 0~5%



Isoflurane: 0~5%



Sevoflurane: 0~8%

1 pc vaporizer for standard, max 2 pcs.

## Feature

- 10.4" TFT LCD screen displays the Ventilation parameters, Alarm information and Oscillogram.
- High precision flowmeter, instantly know the fresh gas flow to your patient.
- Integrated breathing circuit design, ensure easy operating and keep tidy.
- Multiple working modes such as volume control and pressure limit, adapt to wide range patient.
- Vaporizer with temperature, pressure, flow compensation and self-lock function, keep safety anytime.
- Multiple parameters monitoring interface, make every parameter clear, let users know the patient conditions in all aspects.
- Pressure-time, low-time loop oscillogram and high precision  $ETCO_2$ ,  $O_2$  concentration show in real time.
- Vital sign monitor and anesthetic gas monitor are optional.
- $ETCO_2$  module and Anesthesia Gas Scavenging System (AGSS) are optional.

## Trust point

- Simplicity: 4 static casters with self-locking function.
- Precision in an anesthesia ventilator with multiple ventilation modes: IPPV, A/C, PCV, SIMV, SIGH and MANUAL.
- Flexible configurations able to customize your requirements.
- International standard and advanced technology suitable for wide range use.
- Compact interface and big screen give you better operating experience.
- Over 5,000 units are installed in more than 200 countries.
- Designed and manufactured by Superstar Medical with over 25 years of experience in ICU field.

## Safety

- 3 level alarm system, visual and sound alarm information.
- With multiple type of alarm, reminder and protection functions.
- Advanced power management control technology.
- Built-in backup battery provide the emergency power supply to the unit.
- Low O<sub>2</sub> pressure alarm and N<sub>2</sub>O cut-off protection.

## TECHNICAL SPECIFICATION

### Ventilation mode

IPPV, A/C, PCV, SIMV, SIGH, MANUAL

### Ventilator parameter range

Flowmeter	O <sub>2</sub> (0.1 ~ 10 L/min)
	N <sub>2</sub> O (0.1 ~ 10 L/min)
	AIR (0.1 ~ 10 L/min)
Rapid oxygen supply	25 L/min ~ 75 L/min
Tidal volume(Vt)	0, 20 mL ~ 1500 mL
Frequency	1 /min ~ 100 /min
I:E	4:1 ~ 1:8
PEEP	0 cmH <sub>2</sub> O ~ 30 cmH <sub>2</sub> O
Pressure triggering sensitivity (Ptr)	-20 cmH <sub>2</sub> O ~ 0 cmH <sub>2</sub> O (Based on PEEP)
Flow trigger sensitivity (Ftr)	0.5 L/min ~ 30 L/min
Pressure control (PC)	5 cmH <sub>2</sub> O ~ 80 cmH <sub>2</sub> O
SIGH	0 (off) 1/100 ~ 5/100
Apnea ventilation	OFF, 5s ~ 80s
Pressure limit	20 cmH <sub>2</sub> O ~ 100 cmH <sub>2</sub> O

### Monitoring parameter

Frequency (Freq)	0 /min ~ 100 /min
Tidal volume(Vt)	0 mL ~ 2000 mL
MV	0 L/min ~ 100 L/min
Oxygen concentration	15 % ~ 100 %

### Oscillogram

P-T (pressure - time)	
F-T (flow - time)	
P-V loop (pressure - volume loop)	

### Alarm and protection

The AC power failure alarm	Power failure or no connection
Low voltage alarm for back up battery	< 11.3±0.3V
No tidal volume	≤5mL within 6s
High oxygen concentration alarm	19% ~ 100%
Low oxygen concentration alarm	18% ~ 99%
High airway pressure alarm	20 cmH <sub>2</sub> O ~ 100 cmH <sub>2</sub> O
Low airway pressure alarm	0 cmH <sub>2</sub> O ~ 20 cmH <sub>2</sub> O
High minute volume alarm	Adult (5 L/min ~ 20 L/min)
	Paed (1 L/min ~ 15 L/min)
Low minute volume alarm	0 ~ 10 L/min
Continuous pressure alarm	(PEEP+1.5 kPa) over 16s
Suffocation warning	5s ~ 60s no spontaneous ventilation
The maximum limited pressure	< 12.5 kPa
Fan error	Show on screen
Oxygen deficit	Show on screen

### Working condition

Gas source	O <sub>2</sub> , N <sub>2</sub> O, AIR
Pressure	280 kPa ~ 600 kPa
Voltage	100 ~ 240V
Power frequency	60 Hz

### Packing size

Wooden case packing size	L 920* W 970* H 1380mm
G.W.	156KG
N.W.	102KG
CBM	1.23m <sup>3</sup>