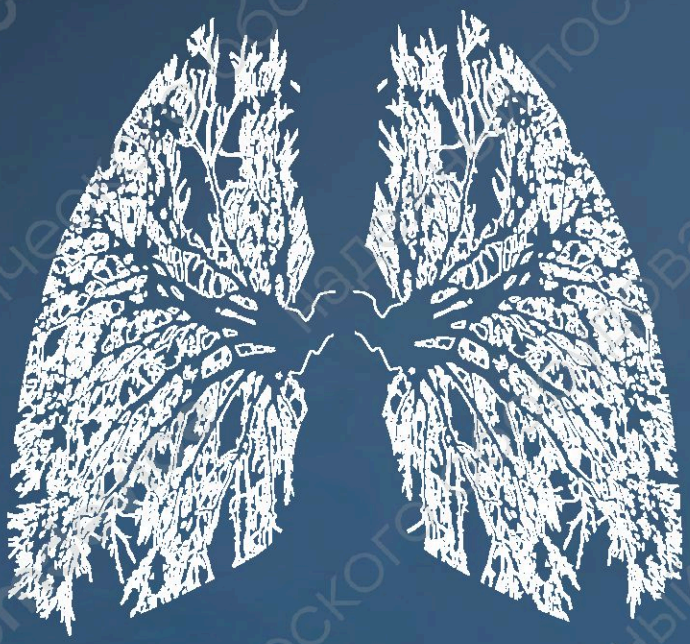
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Chirana

Medical & Dental Company





INTENSIVE CARE UNITS
ANAESTHESIA WORKSTATIONS

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about us

The foundations of the machinery production in Stará Turá were laid by the industrialist František Michera in 1935. Our company CHIRANA continues this tradition of precision engineering until today.

The product portfolio of CHIRANA a.s. consists of all our traditional production segments and is predominantly oriented to development, production and sale of anaesthesia units, breathing units, patient monitoring systems for intensive care and relevant spare parts, disposable materials, gas modules, flow-meters and other accessories as well.

CHIRANA a.s., strives on being an environmentally friendly company. The main fundamentals of CHIRANA a.s. is to maintain a high quality and long operating life of our products, with minimum maintenance costs. The basic prerequisite for maintaining the quality of CHIRANA a.s., is production based on our own technical R&D, modern CNC machines, robotic machinery technologies, quality system, proven materials from Europe, top technical equipment and also highly qualified staff with experiences and know-how in production of medical devices for intensive care since 1968.

THE QUALITY GUARANTEED BY TRADITION.

Since 1935

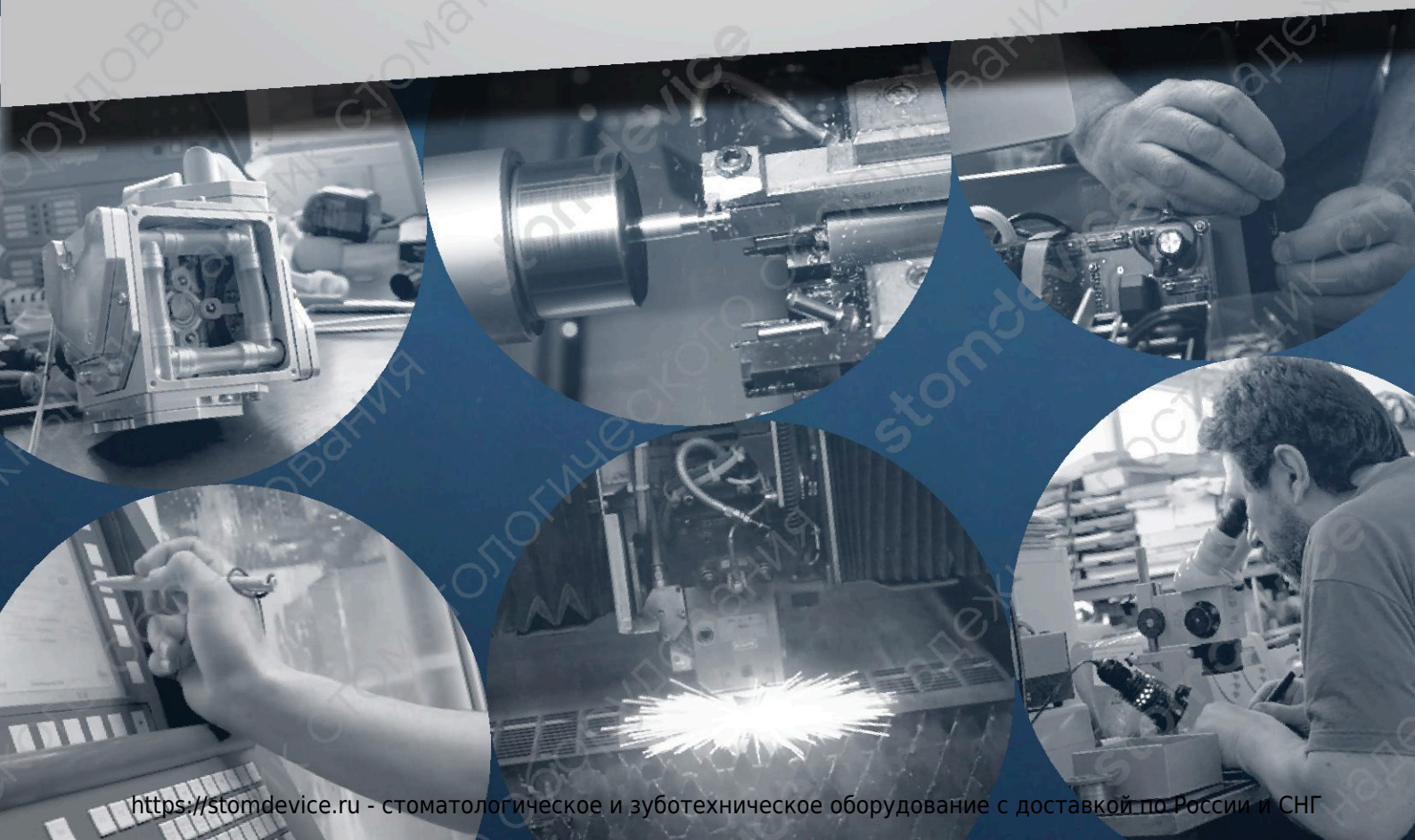
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Chirana
Medical & Dental Company

INTENSIVE CARE UNITS
and
ANAESTHESIA WORKSTATIONS

PROUDLY MADE IN SLOVAKIA.



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chronology of the production

1935 Czech industrialist František Michera laid the foundations of machinery production in Stara Tura. New factory focusing on production of components for water meters and gas meters was established.

1947 Manufacture of injection technique from a disposed factory Injecta Kraslice in the Czech border region was delimited to the factory in Stara Tura. Its product range has gradually expanded to include sterilization, inhalation and investigative techniques, surgical instruments and other medical equipment products.

1958 Under the former name of Precise Mechanics - PREMA Stara Tura the factory reached one of the first international successes at the World Expo in Brussels (Grand Prix was awarded to its world novelty - Big bronchoscopic set).

1965 All the factories of medical devices production located in former Czechoslovakia were integrated into one holding company under the brand CHIRANA with its headquarter in Stara Tura.

1968 After launching of the first anaesthesia unit produced in Stara Tura in 1968 there was followed very dynamic growth in area of breathing and anaesthesia devices production. The CHIRANA Stara Tura company introduced progressively to the market devices for inhalation anaesthesia (N5, N6 also known as Vatra, Anestar N7, Anemat N8, MTL2...), devices for artificial ventilation of lungs (series Chirolog, ODA-E, or civil version of EDAM...) and devices for functional diagnostics of lungs (Chiraspir and electronic version Chiradat). At the same time also electronics department achieved considerable progress and successfully launched products as of defibrillators (BPD line), electrocardiographs (Chirastar) and other electronic products.Transformation from state company to public limited company.

1991 Privatization and division of the company into several separate business units.

2001 Establishment of employee-management company M.O.C. and formation of the group M.O.C. Stara Tura.

2002 The parent company M.O.C. bought from the previous owners the whole operation of production the medical equipment of the brand Chirana as a whole, including all tangible, intangible assets and international and national CHIRANA™.

2003-2005 The new line of anaesthesia workstation VENAR and breathing unit Chirolog SVα+c" was introduced and launched to the market.

2006-2008 The company increases the amount of investments to level 2,0 mil.€ annually with a priority to investments into new technologies. The sales of anaesthesia and breathing units has doubled.

2009-2010 Despite of crisis in external environment, Group launches to the market new products in every segment of its product portfolio – breathing devices line Chirana AURA with inbuilt multi-membrane air generator and unique anaesthetic device VENAR Xenon.

2011-2012 First time in whole history the share of anaesthesia and breathing devices sales exceeded the share of dental units and instruments sale. The company won the legal case regarding using of „CHIRANA" brand with its un-fair competitor what confirms that our company is only one legal owner of the family of „CHIRANA" trade-marks with priority since 1951. There were produced more than 75.000 pcs of anaesthesia and breathing units in total under the CHIRANA trademark in Stara Tura till end of 2012.

2013-2014 The launching of new product concepts in all of our product ranges: new breathing unit Chirana AURA "V" with unique multi-level ventilation mode and new anaesthesia unit VENAR "TS" with new touch-screen interface.

2015-2018 The generation of AURA and VENAR units was upgraded with a lot of technical solutions to meet almost all of customer demands and to offer a lot of new unique methods already in basic equipment. The new breathing unit Chirana Aura Basic with touch-screen interface was presented to the market with big success. Thanks independency from central pressured gas supply AURA Basic is the most ideal solution for difficult conditions.

2019- present New breathing unit Chirana Aura V_NEO was launched, which extends application of our breathing units for neonatal patients as well. We also launched uniq feature and there was inplemented JET module with active expirium solution into AURA V breathing unit as well. Chirana is proud to present significatnt innovations as modular patient monitoring system ANEMON with touch-screen control, integrated circuit with flexible and removable CO2 absorber during operation, system of highly effective collection of humidity from the circuit, touch-screen for control of units or monitoring with optional size up to 21" as well.

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Chirana AURA V



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ADAPTABLE

Chirana AURA V represents the highest level of ventilation system with above-standard ventilation modes for a variety of situations and for all ranges of patients. This is only one universal breathing unit which provides complete solution in basic equipment and it gives the priority to the efforts of patient to eliminate stress breathing. The advanced respiratory system is able to automatically compensate the dead space, compliance and resistance of breathing circuit. In-built artificial intelligence provides many automatic options including optimization of ventilation parameters based on on-line monitoring of breathing system mechanics what is resulted in better synchronization with patient and significant reducing of recovery time, elimination of potential complications and shorter weaning periods. The programmed multi-level ventilation mode using variable volume, variable pressure and variable time is unique method for ventilation of hardly damaged lungs from the pathology leading to inhomogeneous gas distribution (viral pneumonia, ALI, ARDS, contusion, etc.). The numerous features and functions are predetermined to deliver personalized, non-traumatic artificial ventilation adapted to the patient needs.

Main advantages:

- tidal volume from 4 ml (up to 2000 ml) and respiratory frequency: 1-180 / min.
- 15" or optional 21" touchscreen intuitive user interface with different skins from Basic to Expert
- self-adaptive system of expiration AAE
- proportional control of minute ventilation APMV in all modes, controlled by pressure
- compensation of endotracheal tube
- non-invasive ventilation (NIV) is available for all ventilation modes and oxygen therapy
- multi-level ventilation of patients with difficult ARDS, viral pneumonia or another non-homogenous lungs complications
- the automatic proportional minute ventilation – a self-adaptive system based on compliance with the selected MV (minute ventilation) for all of ventilation modes ensures the protective ventilation and the selected minute ventilation
- function AutoStart for very quick and automatic setting of ventilation parameters
- the high frequency modulated CPAP intended for patients under 5 kg
- intelligent expiration assistance
- UVM represents computer-aided system with semi-automatic adjustment of parameters for passing of patient into spontaneous breathing with minimum staff intervention to minimize time of disconnection from ventilator
- mechanical parameters of patient's breathing system ON-LINE (PAi, PAe, PEEPi, PEEP, PAmin, Cst, Cdyn, Paw, Risys, Resys, Taui, Taue, f, Ti%, VT, MV and more)
- graphic display of curves, loops, and trends
- high-flow nasal ventilation for better comfort and variability of patient
- adjustable Bias Flow to improve the reaction-ability of trigger and reduction of spontaneous breathing effort
- optional gas analyser CO2 mainstream or CO2 + O2 sidestream
- complex metabolic analysis of a patient (O2 consumption and CO2 elimination) including monitoring of energy consumption by organism
- on-line monitoring alveolar ventilation and VD/VT using volumetric capnography
- monitoring of P0,1, F0,1, ME – mechanic energy and Pdrive
- optional ultrasonic or pneumatic nebulizer selection
- connection to central information system by LAN interface

Ventilation modes:

CMV, SCMV, PCV, SPCV, SIMV, SIMV+PS, SIMVp, SIMVp+PS, PS, PS-CMV, CPAP, nCPAP, HFM-CPAP, HFloNV, 2-level, 2-level+PS, APRV, APMV, PMLV, CFvS, SIGH, NIV, PS-VG, PC-VG, SIMV-VG, 2-level-VG, PMLV-VG, UVM



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Chirana AURA Basic



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INDEPENDENT

Chirana AURA Basic is intended for long-time intensive therapy. There is option of controlled, supporting or spontaneous lung's ventilation for both children and adult patients including automatic compensation of death space of breathing circuit. The colour 15" touch display and intuitive user interface allows really easy adjustment of basic ventilation modes and their modifications. This breathing unit is independent from central supply of compressed air or from external compressor. The inbuilt multi-membrane air generator delivers constant flow of pressured air in all of requested levels of working pressure and is designed for very long lifetime (above 50000 hours of operation). Optional possibility of low-pressure O2 connection from oxygen concentrator makes Chirana AURA Basic very variable and widely applicable solution even in very hard conditions.

Main advantages:

- self-adaptive system of expiration AAE
- proportional control of minute ventilation APMV in all modes, controlled by pressure
- compensation of endotracheal tube
- non-invasive ventilation (NIV) is available for all ventilation modes and oxygen therapy
- intelligent expiration assistance
- multi-level ventilation of apnea patients with difficult ARDS, viral pneumonia or another non-homogenous lungs complications
- the automatic proportional minute ventilation – a self-adaptive system based on compliance with the selected MV (minute ventilation) for all of ventilation modes ensures the protective ventilation and the selected minute ventilation
- function AutoStart for very quick and automatic setting of ventilation
- mechanical parameters of patient's lungs ON-LINE (PAi, PAe, PEEPi, PAmin, Cst, Cdyn, Taui, Taue)
- graphic display of curves, loops, and trends
- adjustable Bias Flow to improve the reaction-ability of trigger and reduction of spontaneous breathing effort
- inbuilt pressured air generator with immediate response to a patient request
- low-pressure O2 connection from oxygen concentrator
- optional CO2 analysis and metabolic analysis of a patient
- connection to central information system by LAN interface

Ventilation modes:

CMV, SCMV, PCV, SPCV, SIMV, SIMV+PS, SIMVp, SIMVp+PS, PS, PMLV , CPAP, CFvS , SIGH, 2-level, APMV , NIV, PS-VG, PC-VG, SIMV-VG, 2-level-VG



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Chirana AURA V



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NEONATAL

Chirana AURA V in neonatal option equipment represents the highest level of ventilation system with above-standard ventilation modes for a variety of situations and for all ranges of patients. This is only one universal breathing unit which provides complete solution in basic equipment and it gives the priority to the efforts of patient to eliminate stress breathing. The advanced respiratory system is able to automatically compensate the dead space of breathing circuit. In-built artificial intelligence provides many automatic options including optimization of ventilation parameters based on on-line monitoring of lungs conditions what is resulted in better synchronization with patient and significant reducing of recovery time, elimination of potential complications and shorter weaning periods. The programmed multi-level ventilation mode using variable volume, variable pressure and variable time is unique method for ventilation of hardly damaged lungs from the pathology leading to inhomogeneous gas distribution (viral pneumonia, ALI, ARDS, contusion, etc.). The numerous features are predetermined to deliver personalized, non-traumatic ventilation adapted for treating all of adult, pediatric and neonatal patients.

Main advantages:

- tidal volume from 2 ml (up to 2000 ml) and respiratory frequency: 1-180 / min.
- 15" or optional 21" touchscreen intuitive user interface with different skins from Basic to Expert
- self-adaptive system of expiration AAE
- proportional control of minute ventilation APMV in all modes, controlled by pressure
- non-invasive ventilation (NIV) is available for all ventilation modes and oxygen therapy
- multi-level ventilation of apnea patients with difficult ARDS, viral pneumonia or another non-homogenous lungs complications
- the automatic proportional minute ventilation – a self-adaptive system ensures the protective ventilation and the selected minute ventilation
- function AutoStart for very quick and automatic setting of ventilation parameters
- the high frequency modulated CPAP intended for patients under 5 kg
- UVM represents computer-aided system with semi-automatic adjustment of parameters for passing of patient into spontaneous breathing with minimum staff intervention
- mechanical parameters of patient's breathing system ON-LINE (PAi, PAe, PEEPi, PEEP, PAmin, Cst, Cdyn, Paw, Risys, Resys, Taui, Taue, f, Ti%, VT, MV and more)
- graphic display of curves, loops, and trends
- high-flow nasal ventilation for better comfort of patient
- adjustable Bias Flow to improve the reaction-ability of trigger and reduction of spontaneous breathing effort
- optional gas analyser mainstream or sidestream
- complex metabolic analysis of a patient
- on-line monitoring alveolar ventilation and VD/VT using volumetric capnography
- monitoring of P0,1, F0,1, ME – mechanic energy and Pdrive
- complex metabolic analysis of a patient including monitoring of energy consumption by organism
- ultrasonic nebulizer selection
- connection to central information system by LAN interface

Ventilation modes:

CMV, SCMV, PCV, SPCV, SIMV, SIMV+PS, SIMVp, SIMVp+PS, PS, PS-CMV, CPAP, nCPAP, HFM-CPAP, HFloNV, 2-level, 2-level+PS, APRV, APMV, PMLV, CFvS, SIGH, NIV, PS-VG, PC-VG, SIMV-VG, 2-level-VG, PMLV-VG, UVM



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VENAR TS

integrated electronic flow-meter

Optional Xe



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COMFORTABLE

The anaesthesia system VENAR TS with intuitive user interface and integrated electronic mixer is designed to provide efficient, reliable and precise anaesthesia care. The color 15" touch screen control panel allows easy adjustment of ventilation modes and support functions, adjustment and monitoring of low-flow and minimal-flow anaesthesia. The VENAR TS anaesthesia device is a modern, compact device with the possibility of function variability at administration of the inhalation anaesthesia based on standard liquid anaesthetics or optional over standard anaesthesia using XENON. The Xenon is the ideal anaesthetic gas with no negative secondary influences to the human health because it is inert gas which isn't metabolized. Another significant advantage of Xenon except its positive influence to the brain cells it is very fast anaesthesia onset time same like very fast awake from anaesthesia. VENAR TS meets all the highest standards for anaesthesia workstation with all available options as of integrated gas module analysis based on sidestream method (AA, O2) and monitor of vital functions with display 8,4" up to 17" size and optionally touchscreen as well as measurement of ECG, SpO2, NIBP, IBP, Temp, Cardiac output, CO2, AA, O2, Depth of anaesthesia, Index of nociception/pain and other unique features.

Main advantages:

- electronic driven ventilator with unique Chirana inbuilt air generator
- tidal volume (VT) from 5 ml in PC mode up to 1600 ml
- respiratory rate (frequency): 4 - 100 c/ min
- 15" touchscreen intuitive user interface with different skins from Basic to Expert
- graphic display of curves, loops, and trends
- optional Xenon version with integrated module for providing and monitoring of xenon anaesthesia
- option of integrated full gas analysis "sidestream" method including paramagnetic O2
- aspirator of waste gas AGSS and ejector suction of biological secretions
- independent flow meter for O2 inhalation
- universal system "Selectatec Interlock" of vaporizers
- integrated electronic flow mixer with automatic management of pre-set gas mixture with automatic protection against hypoxic mixture /O2, AIR, N2O, Xe/
- sophisticated Quick Start system for extreme situations, allowing quick-start of ventilation in CMV mode via entering of the patient's weight
- multi-level ventilation of apnea patients with difficult ARDS, viral pneumonia and another non-homogenous lungs complications
- complete metabolic analysis of a patient, including energy consumption by organism
- proportional control of minute ventilation APMV in all pressure control modes
- - cardiac bypass is intended for cardio-surgical workstations and in the case when anaesthesia is provided during operation on extracorporeal circulatory system
- calculation of gas consumption during surgery
- monitoring of lungs mechanics parameters (Ti, Te, PAi, PAE, PEEP, Cst, Cdyn, Vt, Mv, f)
- heating of breathing circuit for minimization of condensation
- connection to central information system by LAN interface

Ventilation modes:

CMV, PCV, SIMV, SIMV+PS, PS, CPAP, MLV, MVs, MANUAL



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VENAR TS

individual electronic flow-meter



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INDIVIDUAL

The anaesthesia system VENAR TS with intuitive user interface and individual electronic flow-meter is designed to provide efficient, reliable and precise anaesthesia care. The color 15" touch screen control panel allows easy adjustment of ventilation modes and support functions, adjustment and monitoring of low-flow and minimal-flow anaesthesia. Individual electronic flow-meter allows independent manual control of gas mixture and it is ideal solution for difficult conditions with non-stable central gas supply. The VENAR TS anaesthesia device is a modern, compact device with the possibility of function variability at administration of the inhalation anaesthesia based on standard liquid anaesthetics agents. VENAR TS meets all the highest standards for anaesthesia workstation with all available options as of integrated gas module analysis based on sidestream method (AA, O2) and monitor of vital functions with display 8,4" up to 17" size and optionally touchscreen as well as measurement of ECG, SpO2, NIBP, IBP, Temp, Cardiac output, CO2, AA, O2, Depth of anaesthesia (qCON/BIS), Index of nociception/pain (qNOX) and other unique features.

Main advantages:

- electronic driven ventilator with unique Chirana in-built air generator
- tidal volume (VT) from 5 ml in PC mode up to 1600 ml
- respiratory rate (frequency): 4 - 100 c/ min
- 15" touchscreen intuitive user interface with different skins from Basic to Expert
- graphic display of curves, loops, and trends
- option of mainstream CO2 gas analysis or full integrated gas analysis sidestream method including paramagnetic O2
- aspirator of waste gas AGSS and ejector suction of biological secretions
- independent flow meter for O2 inhalation
- universal system "Selectatec Interlock" of vaporizers
- individual electronic flow mixer EFA with manual setting of gas mixture with automatic protection against hypoxic mixture /O2, AIR, N2O/
- sophisticated Quick Start system for extreme situations, allowing quick-start of ventilation in CMV mode via entering of the patient's weight
- multi-level ventilation of apnea patients with difficult ARDS, viral pneumonia and another non-homogenous lungs complications
- complete metabolic analysis of a patient, including energy consumption by organism
- proportional control of minute ventilation APMV in all pressure control modes
- cardiac bypass is intended for cardio-surgical workstations and in the case when anaesthesia is provided during operation on extracorporeal circulatory system
- calculation of gas consumption during surgery
- monitoring of lungs mechanics parameters (Ti, Te, PAi, PAE, PEEP, Cst, Cdyn, Vt, Mv, f)
- heating of breathing circuit for minimization of condensation
- connection to central information system by LAN interface

Ventilation modes:

CMV, PCV, SIMV, SIMV+PS, PS, CPAP, MLV, MVs, MANUAL



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VENAR OMEGA



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ALL IN ONE

The modern anaesthesia workstation VENAR OMEGA meets the highest standards. The device is equipped with modern electronic ventilator that works with all modes of ventilation to cover all range of patients from pediatric to adult. The device has an integrated monitoring system ANEMON, complete monitoring and brings a detailed analysis of the patient´s hemodynamic parameters as well. VENAR OMEGA is controlled using colour 15" touch screen intuitive user interface with different skins from Basic to Expert allows easy control and displays basic ventilation parameters. Integrated patient monitoring is equipped by touchscreen display with size up to 21".

Main advantages:

- integrated semimodular patient monitoring module with touch-screen control up to 21"
- electronic driven ventilator with unique Chirana in-built air generator
- tidal volume (VT) from 5 ml in PC mode up to 1600 ml
- respiratory rate (frequency): 4 - 100 c/ min
- graphic display of curves, loops, and trends
- full integrated gas analysis sidestream method including paramagnetic O2
- aspirator of waste gas AGSS and ejector suction of biological secretions
- independent flow meter for O2 inhalation
- universal system "Selectatec Interlock" of vaporizers
- integrated electronic flow meter with automatic protection against hypoxic mixture /O2, AIR, N2O/
- sophisticated Quick Start system for extreme situations, allowing quick-start of ventilation in CMV mode via entering of the patient's weight
- multi-level ventilation of apnea patients with difficult ARDS, viral pneumonia and another non-homogenous lungs complications
- complete metabolic analysis of a patient, including energy consumption by organism
- proportional control of minute ventilation APMV in all pressure control modes
- cardiac bypass is intended for cardio-surgical workstations and in the case when anaesthesia is provided during operation on extracorporeal circulatory system
- calculation of gas consumption during surgery
- monitoring of lungs mechanics parameters (Ti, Te, PAi, PAE, PEEP, Cst, Cdyn, Vt, Mv, f)
- heating of breathing circuit for minimization of condensation
- connection to central information system by LAN interface

Monitored functions:

ECG, SpO2, NIBP, IBP, Temp, RESP, ARR/PVC, ECG/ST, O2, CO2, N2O, AA, MAC, BAL, optional qCON/BIS and qNOX

Ventilation modes:

CMV, PCV, SIMV, SIMV+PS, PS, CPAP, PMLV, MVs, MANUAL



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EXTRA ACCESSORIES

Humidifiers

CHIRANA strictly recommends to use active humidification during artificial ventilation as basic measure for protective and non-traumatic ventilation of patient. Many good quality humidifiers are offered in our portfolio.



WILAMED AIRniva



VADI 1500



VADI 3000



WILAMED AIRcon

Vaporizers

All offered high quality vaporizers are made in UK and provide very long life-time.



Isoflurane by PENLON or JUPITER

Sevoflurane by PENLON or JUPITER

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Individual electronic mixer

CHIRANA produces its own electronical microprocessor controlled flow-meters with very accurate control and preparation of gas mixture for patient. This is the most critical part of anaesthesia unit especially for proper minimal flow anaesthesia or Xenon anaesthesia. Electronic mixers are equipped with "oxygen ratio control" system.



Patient monitors

Our anaesthesia units VENAR TS could be equipped by additional patient monitoring systems. We offer monitors of vital functions with display 8,4" up to modern modular 17" touch-screen monitor with all of necessary optional modules including Depth of anaesthesia and Index of nociception/pain monitoring.



Modular design
(17" touch screen)



Solid design
(8,4" / 12,1" / 15" display)

Other Accessories

CHIRANA offers full range of high quality consumables for delivered anaesthesia and breathing units as complete breathing circuits, hoses, tubes, masks, filters, test lungs, sensors, CO2 absorbers standard or Jumbo with double capacity, high quality soda lime etc. We always recommend sterilisable and reusable consumables to help our environment as much as possible.





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