

ASTRA 3i Anaesthesia Machine

Technical Specification

- Anaesthesia machine with integrated 10.4" ventilator TFT full colour touch screen – optional 15" screen
- 3 lockable drawers
- Adult, pediatric and neonate modes
- Three gases (O2/N2O/Air)
- European label colour coding – optional USA available
- One or two station Selectatec® vaporizer backbar
- Upto four cylinder yokes – Pin Index
- Non Interchangeable pipeline inlets (NIST connections) – DISS available on request
- Pipeline & cylinder gauges for O2, N2O & Air
- Oxygen flush located next to the common gas outlet (CGO)
- Lockable front castors
- Absorber mounting arm – when absorber fitted
- Hoses for O2, N2O and Air outlets with NIST fittings – DISS available on request
- 4 power socket outlets – twin fused 3 pin UK specification with mains isolator – optional US, IEC and European sockets available
- Top shelf. Maximum loading: 35 kg with even distribution
- Work surface with 3 drawer unit and retractable writing table
- Maximum drawer loading: 35 Kg / drawer
- Vertical GCX compatible mounting system
- Oxygen monitor – optional (when supplied without integrated Cygnus ventilator)
- Oxygen sensor type – MOX 3 – paramagnetic available with Draeger patient airway gas analyzer
- Flowmeter backlight – electro luminescent - optional
- MRI compatible version available
- Draeger side stream patient gas analyzer with or without paramagnetic oxygen analyser, automatic anaesthetic gas identification, CO2 and N2O - optional

Machine Construction Specification

- Aluminium extruded anodized uprights with GCX compatible mounting system
- Flame retardant polyurethane molded components
- Anaesthetic resistant epoxy powder coated aluminum panels
- Height – 130 cm
- Width – 72 cm / 100 cm with screen / 102 cm with absorber
- Depth – 66 cm
- Monitor shelf – 66 cm x 35 cm. Maximum load 35 kg evenly distributed
- Work surface – 60 cm x 30 cm
- Writing table 35 cm x 30 cm. Maximum load 10 kg evenly distributed
- Drawers – 48 cm x 32 cm. Maximum load 35 kg evenly distributed
- Weight – approximately 110 kg – dependent on specification
- 12.5 cm castors - lockable front castors

Pneumatic Specification

- Common gas outlet ISO 22mm male taper and 15mm female
- Pipeline input pressure :
 - o O2 : 300 – 450 kPa NIST
 - o N2O : 300 – 450 kPa NIST
 - o Air : 300 – 450 kPa NIST
- Pin Index cylinder yokes : up to four for E size Pin Index cylinders
- Oxygen failure device: Nitrous Oxide cuts out with low oxygen pressure
- Oxygen failure alarm with reservoir - whistle sounds prior to Nitrous Oxide cut off

- Pipeline gauges
 - o O2 : 0 – 1000 kPa
 - o N2O : 0 – 1000 kPa
 - o Air : 0 – 1000 kPa
- Cylinder contents gauges
 - o O2 : 0 – 20000 kPa
 - o N2O : 0 – 20000 kPa
 - o Air : 0 – 20000 kPa
- Oxygen high pressure Mini Schrader outlet
- Air high pressure Mini Schrader outlet – optional

Flowmeter Specification

- Optional electronic TFT colour touch screen digital flowmeter readout (EFM – Electronic Flow Monitor)
- On / off switch mounted below flowmeter bank - shrouded knob
- Diameter and shape indexed flowmeter control knobs
- Secondary regulators for flow meter bank
- Six tubes cascade flowmeter with three gas machine (O2 x2, N2O x2, Air x2) – 4 tubes cascade flowmeter with two gas machine (O2/N2O or O2/Air)
- Mechanical anti hypoxic device
- Gear driver with minimum 25% Oxygen concentration
- Oxygen flow range (dual tube)
 - o 0 – 1000 ml
 - o 1 - 10 Litre
- Nitrous Oxide flow range (dual tube)
 - o 0 -1000 ml
 - o 1-10 Litre
- Air flow range (dual tube)
 - o 0 – 1000 ml
 - o 1 - 10 Litre

Vertical Tee Slot Mounting System GCX compatible Specification

- Vertical mounting system
- Height adjustment 22 cm to 127 cm
- Maximum loading 30 Kg

HYDRA CO2 (Carbon Dioxide) Absorber Specification

- Absorber on / off switch
- Ventilator / bag switch
- Ventilator connector with 22mm male taper and 15 mm female taper
- Swivel bag arm with 22mm male taper and 15 mm female taper
- Adjustable pressure limit valve – APL – 60 cm H2O max
- Fresh gas inlet 0.8 M hose with 22 mm female taper
- 30 mm exhaust connector
- Fresh gas inlet hose – with 22 mm female taper connector and o seal for easy sealing
- Patient circuit pressure gauge with sampling on inspiratory limb - range (-) 20 to (+) 100 cm H2O
- Inspiratory and expiratory connectors 22mm male taper and 15 mm female taper
- Non return valves with stainless steel one way valves with clear screw top covers
- Quick release absorber latches
- Absorbent container – autoclavable
- Canister / absorbent capacity - 1.4 kg / 1600 cc
- Mounting system – 25.4 mm mounting block with clamp screw
- Quick release manometer - range - 20 - 100 cm H2O



CYGNUS Integrated Electronic Multi Mode Ventilator

Cygnus Electronic Ventilator Specification

- Touch screen control with large easy to read 10.4" or optional 15" TFT full colour screen
- Software /electronically controlled using Oxygen as drive gas
- Integrated oxygen monitor with pop up key pad adjustment
- Variable orifice patient proximal spirometry
- Modes - Volume, Pressure, Spontaneous, PSV-Plus, Pressure with Volume Guarantee, SIMV, SMMV and Cardiac Bypass modes
- Electronic PEEP
- Five hours battery backup
- Patient select initial screen
- User selectable patient weight default settings for 3, 10, 25, 50, 70 and 100 Kg
- User savable patient configured setting with custom naming facility – six off settings
- Patient setting confirm button
- User patient settings keys – Oxygen Alarm, Minute Volume, Tidal Volume, Pressure Limit / Target Pressure, PEEP, BPM, I : E Ratio
- Mode settings keys – Volume, Pressure, Spontaneous, PSV – Plus, SIMV, Cardiac Bypass, SMMV, Trigger, Inspiratory Pause, Sigh, Alarm Settings, Calibrate / Screen Setting Adjustment / Clock, Engineer Settings
- Measured Parameters – Oxygen concentration, Expired Tidal Volume, Expired Minute Volume, Peak Pressure, Mean Pressure, PEEP Pressure
- Colour coded waveform
- Digital case timer
- Digital clock
- Start / stop case button
- Gas mixture set button – Oxygen and Air or Oxygen and Nitrous Oxide
- Pop out key pads for all adjustable settings
- Leak and compliance check
- Oxygen fuel cell calibration
- Patient flow sensor calibration
- Internal calibration routine for Service Engineer in the field
- Engineer settings – service pin, language, diagnosis (error log and voltages), service record, calibration, upgrade, features
- Waveforms – pressure / time plus one of the following second waveforms - flow versus time, volume versus time, volume / pressure loop, flow / pressure loop
- Additional CO2 waveform available when Anaesthetic Gas Module fitted
- Autoclavable bellows assembly

Function

Tidal volume (Vt)	: 10 to 1500 ml
Rate (BPM)	: 4 to 100 bpm
I:E Ratio	: 1:05 to 1:60
Pressure limit	: 10 to 70 cm H2O
Fresh gas compensation	: Active automatic tidal volume adjustment
Pressure control	: 10 to 50 cmH2O
Electronic PEEP	: 5 to 20 cmH2O

Advance Modes

Trigger	: 0.7 to 6.0 L/min (PEEP Referenced)
Trigger window	: 60 % of expiratory time
Tidal volume (Vt)	: 10 to 1500 ml
Inspiratory pause	: 0 to 50% of inspired time
Sigh	: 1.5 x tidal volume every 50 / 100 /150 breaths
Minute volume (Vm)	: 0.4 to 25 Litre – dependent on user settings
Inspiratory time (Ti)	: 0.2 to 6.0 seconds – dependent on user settings
Support pressure	: 3 to 20 cmH2O (PEEP referenced)

Alarms – Automatic

Low drive gas pressure	: Less than 275 kPa
Low tidal volume	: 50% of volume set (Spirometry)
Mains failure	: 5 hours battery backup
Ventilator inoperable	
High airway pressure	
Patient disconnect	
Low oxygen – 18 % to 50 %	
High oxygen – 55 % to 104 %	
High airway flow	
Low tidal volume	
Low minute volume	
Power about to fail	
Low airway pressure	
Battery missing	
Oxygen sensor exhausted	
Low supply gas pressure	
Negative airway pressure	
High continuous positive airway pressure	
High tidal volume	
High minute volume	
Apnea	
Oxygen sensor disconnected	
High drive pressure	
Very low battery	
Drive valve leaking	

Alarms – User Set

High airway pressure
Low oxygen concentration
High Oxygen concentration
Alarm mute - 120 seconds
Apnea Alarm time

OES MEDICAL 

OES Medical Limited
ABC House, Cotswold Dene, Standlake
Witney, Oxfordshire, OX29 7QG

Tel: +44 (0)1865 301711 Fax: +44 (0)1865 301573
e-mail: sales@oes-medical.co.uk
www.oes-medical.co.uk

Doc. No. 1974-502 Issue A
March 2017

