286 Series Medical Regulator

Instruction Manual

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Read this manual thoroughly and carefully before using this product.

Retain this manual for future reference.

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1. Safety Warnings

1.1 This manual provides an overall guide for the medical oxygen regulator, such as how to assemble, calibrate, use, maintain, and troubleshoot. Before attempting any of these actions, please read this manual thoroughly and carefully, and follow the guidelines as closely as possible. If you have any questions please, contact your local distributor, or TeSuCo Pty Ltd.

⚠ **Note:** Do not use this system for any purpose other than its original intent without the consent of TeSuCo Pty Ltd or its distributors.

1.2 There are a few symbols in this manual that may be helpful, such as:

⚠ **Warning:** May damage system and/or cause injury to personnel!

⚠ Oxygen is a non-flammable gas. However, oxygen substantially increases the rate at which flammable materials burn. Do not smoke in the area where oxygen is in use and don't

2. Intended Use

2.1 286M Series medical regulator is an active medical device and pressure -reducing devices that lower the high-pressure oxygen within a cylinder to a safe usable level. It can be used in hospital treatments, other device gas supply, life support, home care, and any circumstances where patients require the assistant of regulator for breathing. This device can be used repeatedly.

⚠ **Note:** All PRODUCTS ARE LISTED WITH THE THERAPEUTIC GOODS ADMINISTRATION – AUSTRALIA.

2.2 Regulators, gas, high-pressure

ARTG Identifier	176047 Class IIb
GMDN	35300

2.3 Flowmeter, oxygen therapy

ARTG Identifier	178265 Class IIb
GMDN	37132

2.3 Flowmeter, gas, calibration

ARTG Identifier	178344 Class IIb
GMDN	31283

2.4 Other listings:Medical gas supply system

ARTG Identifier	176048 Class IIb
GMDN	36271

⚠ **Note:** Regulators and fittings shall be used with the gas for which they are intended. Improper mix and match may cause severe harm or death to the patient.

3. Specifications

Accuracy	±10% of indicated setting @ 15°C
Transport / Storage Temperature Range	-20°C ~ 60°C
Maximum Inlet Pressure (P1)	20,000 kPa
Delivery Pressure (P2)	400 kPa (Fixed)

Q_1 Value: For models without power take offs Q1 Value is maximum value of fixed orifice:

286MB-4LYA Q1	4 L/min
286MB-8LYA Q1	8 L/min
286MB-15LYA Q1	15 L/min
286MB-25LYA Q1	25 L/min

For models power take offs Q1 Value is maximum value of fixed orifice:

286MB-15LY2A Q1	50 L/min
286MB-25LY2A Q1	50 L/min

Model Number	Flow Settings (LPM)	Delivery Pressure (kPa)	Inlet Connection
286MB-4LYA	0, 1/32, 1/16, 1/8, 1/4, 0.5, 0.75, 1, 1.5, 2, 3, 4	400	AS2473.3 Figure 9
286MB-8LYA	0, 0.5, 1, 1.5, 2,2.5, 3, 4, 5, 6, 7, 8	400	AS2473.3 Figure 9
286MB-15LYA	0, 0.5, 1, 2, 3, 4, 5, 6, 7, 8, 10, 15	400	AS2473.3 Figure 9
286MB-15LY2A	0, 0.5, 1, 2, 3, 4, 5, 6, 7, 8, 10, 15	400	AS2473.3 Figure 9
286MB-25LYA	0, 0.5, 1, 2, 3, 4, 5, 6, 8, 10, 15, 25	400	AS2473.3 Figure 9
286MB-25LY2A	0, 0.5, 1, 2, 3, 4, 5, 6, 8, 10, 15, 25	400	AS2473.3 Figure 9

3.1 Australian Standard Details: Regulator

3.1.1 AS 3840.1 - Pressure regulators for use with medical gases.

3.1.2 Part 1. Pressure regulators and pressure regulators with flow – metering devices.

3.1.3 Ignition and Fault Tolerance: Independently tested by a 3rd Party.

3.1.4 AS 3840.1 Appendix E. Ignition Test (Oxygen Pressure Shock-Type Test).

3.2 Regulator Outlet Connection**:** Hose Barb.

3.3 Regulator Inlet Connection: Pin-indexed Yoke AS 2473.3.

3.4 Pressure Gauges: AS 4706, Color coded and 0 to 30,000 kPa.

⚠ **Safety:** Internal Relief Valve. Specifications are subject to change without prior notice.

4. Installation and Operation

4.1 Before usage, check to see if the device is in working order and none of the parts is damaged. Any damaged parts might result in personal injury and should not be used.

4.2 Before using this product, make sure that the device, its environment, and its gas source, including the cylinder, are not contaminated with oil or grease. The presence of oil or grease might cause explosion and serious personal injury.

4.3 Do not cover or block vent hole in regulator body with labels, decals, or other adhesive

material. Blocking the vent may inadvertently affect the regulator's functionality.

4.4 Do not tamper with the preset pressure.

4.5 Only medical oxygen can be used with this product.

4.6 It is recommended to use parts made by GENTEC, generic parts may cause damage or harm to the regulator or patient.

4.7 Attaching Regulator to the Cylinder.

Step 1: Remove protective caps on the cylinder post if there are any and inspect the cylinder and threads for any damages or contaminations. Make sure any contamination is properly cleaned before mounting the regulator.

Step 2: Loosen the T-handle on the regulator yoke.

Step 3: Lower the oxygen over the cylinder post valve.

Step 4: Align the pins in the regulator yolk connection to the holes in the cylinder post.

Step 5: Turn the T-handle clockwise until the regulator is secure. Ensure the T-handle screw point is fixed onto the cylinder post properly.

⚠ **Note:** Do not open the cylinder valve rapidly as this may cause a fire or injury arising from oxygen pressure shocks.

⚠ **Note:** Backpressure in excess of 14 kPa will cause inaccuracy of the delivery flow that is indicated on the adjusting knob.

⚠ **Note:** Do not cover or block vent hole in regulator body with labels, decals, or other adhesive material. Blocking vent may inadvertently affect the regulator work.

4.8 Using Your Oxygen Regulator

Step 1: Open the cylinder valve slowly with the cylinder key provided.

Step 2: Check cylinder pressure on the regulator pressure gauge.

⚠ **Note:** Pressure reading from 14,000 to 20,000kPa = Full (Indicated by a green line).The filling pressure will depend on the size of the cylinder and your gas supplier. 12,000kPa=3/4 Full, 8,000kPa = ½ Full, 4,000kPa = ¼ Full, a cylinder pressure under 2,000 kPa should be replaced with a full cylinder.

Step 3: Confirm that there are no leaks in the cylinder, regulator. If you hear a hissing sound, there is a leak in the system. Turn the cylinder off and relieve the pressure by opening the flow control knob. Go through instructions again to ensure a leak-tight seal. If leaking persists, contact a service representative. Do not attempt to repair the regulator or cylinder yourself.

4.9 Adjusting Flow

Step 1: Adjust the flow control knob clockwise to increase the flow.

Step 2: Adjust the flow control knob counter-clockwise to reduce flow.

4.10 Shutdown procedure: When you are finished using the oxygen regulator, turn the cylinder off by using the cylinder key provided and turn the flow selector to the off position.

4.11 Detaching Regulator to the Cylinder

Step 1: Ensure the cylinder valve is at the off position.

Step 2: Open the flow control knob to bleed the remaining pressure from the connected circuit. Ensure the regulator pressure reads Zero (0).

Step 3: Turn the flow control knob to the closed position by turning counter-clockwise.

Step 4: Loosen the T-handle by turning counter-clockwise to disengage

from the cylinder post. Remove the regulator from the cylinder.

⚠ Do not attempt to detach the regulator while pressure is displaying on the regulator pressure gauge.

4.12 Cleaning: Use a pH neutral disinfectant to clean the regulator. Do not wipe inlet or

⚠ Do not use oil or hydrocarbons based products to clean the regulator.

5. Maintenance / Troubleshooting

5.1 Inspect the regulator for dirt, dust, oil or grease, especially in the area of the inlet connection every use. Do not use if any contamination is found and contact your service representative immediately to properly clean.

5.2 Inspect the Yoke index pins and seal washer for deformation or damage every use.

5.3 Inspect regulator and cylinder valve match well, and the Yoke pins and the holes in valve match well before opening the cylinder valve every use. Do not open the cylinder valve until any fault is corrected.

5.4 Inspect the leakage of regulator every use. Do not use if any leakage is found and contact your service representative immediately to fix the troubles.

5.5 Quarterly replace Yoke seal washer on the regulator.

5.6 The pressure gauge is a measuring device and should be calibrated every year or subject to the relevant regional or national

standards.

5.7 Repairs are to be carried out by an authorized accredited repaired only.

⚠ The maintenance of regulators should be undertaken by authorized repairers accredited by the manufacturer.

6. Troubleshooting

Problem	Probable Cause	Corrective Measure
No flow or very little flow goes through outlet	Cylinder valve is closed or not open entirely	Open the cylinder valve
	Flow control knob is not in the position appropriately.	Readjust the flow control knob to desired flow
	The cylinder is depleted of gas	Change cylinder
	The filter inside inlet connector is clogged up.	Clean the filter

Problem	Probable Cause	Corrective Measure
Leaks in the cylinder connection.	Connection is not tightened	Tighten connection, ensure pins on the Yoke connection is properly aligned to the post valve
	The sealing washer is deformed or missing	Replace the sealing washer.

Problem	Probable Cause	Corrective Measure
eaks in the cylinder connection.	The thread on the cylinder valve is damaged and the knob cannot be screwed on securely.	Change cylinder
Leaks in vent hole in regulator body	Seat seal is deformed or missing.	Qualified personnel for repair

Problem	Probable Cause	Corrective Measure
Leaks in the cylinder connection.	Contaminants between the connections	Clean or replace
	The sealing surface of the oxygen regulator is damaged	Send back to factory or qualified personnel for repair
	The sealing surface of the cylinder valve is damaged	Change cylinder

Problem	Probable Cause	Corrective Measure
Leaks in the cylinder connection.	The thread on the cylinder valve is damaged and the knob cannot be screwed on securely.	Change cylinder
Leaks in vent hole in regulator body	Seat seal is deformed or missing.	Qualified personnel for repair

Problem	Probable Cause	Corrective Measure
Leaks in internal relief valve	Valve seat seal is deformed or relief valve doesn't work	Qualified personnel for repair
Inaccuracy of the delivery flow indicated on the adjusting knob	Back pressure is excess of 14 kPa	Determine cause of backpressure and rectify.

7. Repair Parts

⚠ Use genuine GENTEC parts and components to avoid potential failure to the regulator.

C65400320	User manual for 286M Medical Oxygen Regulator
141012001	Inlet Gauge (0 ~ 30,000 kPa)
C62400220	Repair Kit, Bodok Seal , Blue Color
123029007	Repair Kit, Cylinder Wrench Key

⚠ Filter cannot be replaced by the end user, it can be replaced only by an authorized repairers accredited by the manufacturer.

⚠ The maintenance of regulators should be undertaken by authorized repairers accredited by the manufacturer.

8. Warranty

8.1 A Five (5) years limited warranty against manufacturer's defect will apply from the date of the end users purchase.

8.2 The product must be returned to the place of purchase together with your original purchase invoice.

8.3 Warranty is only valid to the original purchaser.

8.4 Any product found to be tampered with will void this warranty.

9. Australian/New Zealand Agent

TESUCO PTY LTD

ABN: 21 003 578 434

Full details are on our website:

www.tesuco.com.au

Please contact us for your closest supplier

10. Manufacturer

GENTEC (SHANGHAI) CORPORTAION

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Shanghai 201699, P.R.C.

Website: www.gentechealthcare.com

Other Models

197M Series High Flow Regulator

Model No.: 197M-870-YSC

197M-950-YSC

FM197/FM187 Series Flowmeter

Model No.: FM197BS-15L-SIS

FM187BS-15L-SIS(R)

CFM Click Style Flowmeter

Model No.: CFM-15L-SIS