



MEGASAN

Anesthetic Gas Scavenging Systems (AGSS)

Maintenance and Operating Manual



Model

MG-AGSSx Waste Gas Discharge (AGSS) Centers

x: 1, 2, 3, 4 (x: Number of Pumps)



Product Brand and Model

Waste Gas Discharge (AGSS) Centers

Manufacturer / Exporter Company

Megasan Medikal Gaz Sistemleri Tıbbi Alet ve Cihazlar A.Ş

Center : Cumhuriyet Mah. Zafer İş Hanı No:33/411 Merkez 18100 TR Çankırı

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Warranty Period

Years

Service Life

10 Years (This period may be extended depending on the performance values of the product)

Version Table			

FOREWORD

This guide is prepared to provide basic information to users seeking knowledge about Waste Gas Discharge (AGSS) Centers, offering general insights into the use of these products. It is designed to meet the informational needs of users who require fundamental understanding of Waste Gas Discharge (AGSS) Centers.

Dear Customers,

We would like to express our gratitude for the interest and trust you have shown in our company and products. Our Anesthetic Gas Scavenging Systems, chosen by you, are presented to you with an extensive service network and the assurance of Megasan.

Please ensure that you validate the warranty certificate with your seller. Any tampering with the serial numbers on the warranty certificate or the absence of serial numbers on the product renders the warranty void. The seller is obligated to accurately fill out the warranty certificate during the sales process. In cases where the warranty certificate is not fully completed, the starting date of the warranty period is considered as the date of dispatch from Megasan.

During the warranty period, service operations will be carried out by the authorized dealer/technical service specified in the warranty certificate.

The following situations are not covered by the warranty, and the repair of these faults will be done at a cost:

Malfunctions caused by the misuse of the product contrary to the instructions in the user manual.

Damages and faults resulting from natural disasters, fire, accidents, and improper use of the product.

This guide in your hands will assist you in installing and using the system. We hope you enjoy using our products and remain satisfied with them.

With respect,





Waste Gas Discharge (AGSS) Centers comply with the interface criteria published by the Ministry of Health of the Republic of Turkey.

Waste Gas Discharge (AGSS) Centers operate in full compatibility with International Gas Systems.

IMPORTANT

- > The lifespan of the system you have purchased is 10 years.
- > Megasan provides a warranty for the purchased product for a period of years from the delivery date.
- > The WARRANTY CERTIFICATE is provided within the product.
- > The list of AUTHORIZED SELLERS and DEALERS is provided together.
- > Please validate your Warranty Certificate with your seller.
- > In the event of a malfunction, the product should only be repaired by an authorized technician. Any interventions made by unauthorized individuals render the product out of warranty coverage.
- > Please have the installation and routine maintenance of your system performed by the specified authorized seller and authorized technical service.



ATTENTION

Waste Gas Discharge (AGSS) Centers must meet the following conditions to prevent any adverse effects on you and the environment:

- >Do not open the box outside of authorized service. Do not approach with fire.
- >Avoid any contact with oil.
- >Do not immerse Waste Gas Discharge (AGSS) Centers in water. This action renders the product warranty void.

LEGAL DISCLAIMER

Megasan Medical Gas Systems Waste Gas Discharge (AGSS) Centers, when used outside of the provided features and applications or contrary to the usage instructions, will not hold **Megasan Medical Gas Systems Medical Devices and Equipment Inc.** responsible for any material damage, loss of life, or similar situations that may arise. The buyer acknowledges and declares awareness of this warning upon purchase.”

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1. Important Notes

- Before using Anesthetic Gas Scavenging Systems, please read this guide.
- Maintain the temperature of the environment where Anesthetic Gas Scavenging Systems are located within the range of +10 °C minimum and +40 °C maximum. Freezing may occur in Medical Air Stations outside these temperature values, and damages resulting from freezing will be excluded from the warranty coverage.
- Take care to avoid contact with oil and oil vapor for Anesthetic Gas Scavenging Systems.
- Do not disassemble any part of Anesthetic Gas Scavenging Systems. Do not make any changes to Medical Air Stations. You can clean Medical Air Stations with a clean dry cloth or a cleaning solution by rubbing. Do not use any chemical liquids and aerosol cleaners, flammable liquids (such as thinner, gas oil, etc.) for cleaning.
- The use of Anesthetic Gas Scavenging Systems should only be done by trained individuals. Before use, check the connections and ensure there are no leaks.
- If Anesthetic Gas Scavenging Systems, plumbing, or connected equipment are not operating normally, do not use them and contact your seller. Remove all protective covers before installation.

2. Economic Life And Reason

- Due to the fact that medical devices generally undergo technological innovation in the range of 6-10 years, a new medical device may be better in terms of functionality, efficiency, reliability than older devices. Therefore probability of medical devices having new technology to provide better experiences in patient treatment may be higher.
- Medical devices may have to be replaced with updated medical device versions for maintaining compliance with quality and safety standards which are specified by health authorities and regulatory institutions.
- Maintenance activities should be made periodically for medical device to work with same performance continuously. Since 5% of annual cost of product will return within 3-5 years, 10% of annual cost will return in 5-10 years, and 20% of product cost will return as maintenance cost; there may be need for supplying new product at the end of this period.
- The parts used on the device wear out and get old over time, which leads to the supply of spare parts. The supply of spare parts for old devices may become difficult in the future. Our company commits to supply provide spare parts for “ Medical Was Gas Discharge Centers” it produces for 10 years.
- Economic life of product is determined as 10 years due to reasons we explained above.

3. Intended Use

These are THERAPEUTIC AUXILIARY equipment used in hospitals and health centers for the evacuation of narcotic gas used to stun patients from the environment so that it does not affect other people in the environment after the patient's breathing process.

4. Product Control

- Read this manual before using. When you do not understand any explanation in this manual, contact with your dealer before use.
- Once you purchase the product open its package and check whether it is damaged. If there is any failure do not use the product and proceed the process to return it.

5. Accessories

No accessories have been defined for the Medical Anesthetic Gas Evacuation Center.

6. Cleaning And Sterilization Instructions

Considering the area where the AGSS Power Plant operates, they are equipment that is prone to contamination. These are systems that have no contact with the patient. They are not sterile units. Therefore, there is no need for any sterilization process.

7. Maintenance Instructions - Periods

Following Maintenance periods and operations to be done should be followed for using the unit properly.

- MEGASAN is not responsible for any adverse situation that may occur as a result of using any spare parts that Megasan Medical has not approved.
- Using spare parts without approval will violate the warranty conditions of the AGSS Power Center

Description	Period	Application	Responsible
Control of the Electrical Control Panel	Daily	Control of connections and operation of the system.	Authorized Personnel
Cleaning of the Electrical Control Panel	1 Month	Remove dust and dirt with pressurized dry air and a clean dry cloth.	Authorized Personnel
Clean the suction pump fan assembly and pump.	2 Month		Authorized Personnel
Replacement of the filter group bacteria filter	6 Month	Replacement with suitable spare parts	Authorized Personnel
Waste level control of the Filter group waste collection jar	Daily	Check the waste level by eye.	Authorized Personnel
Emptying the filter group waste collection jar	Daily	Dispose in accordance with appropriate disposal regulations.	Authorized Personnel

8. Handling and Transportation

- Packaging is made by wrapping it with balloon and stretch nylon to protect it from external factors during shipment.
- Since the lower part has a standing structure, a forklift or pallet truck should be used during transportation.
- The personnel who will make the transportation should take the necessary transportation precautions against tipping and falling.

9. Technical Characteristics, Safety Tips and Points to Be Considered in its Use

	Be careful. Consider the warning and directives regarding product.
	Do not disassemble any parts of their units, do not try to replace parts.
	Please follow the national regulations for the disposal of components of AGSSCenters.
	There is oil in the suction pumps. Fire can cause explosions and may lead flames become greater. together with oil.
	Do not smoke at the points where AGSS Power Centers operate. Fire can cause explosions and may lead flames become greater. together with oil.
	Read the user manual carefully. (Operating manual should be read completely and clearly for product to be used properly throughout economic life and for preventing accident which are caused directly or indirectly from product)

	Protective earthing connection should be made for the product. WARNING : Due to fact that medical vacuum centers are Class I electrical medical equipments “This equipment should only be connected to mains network together with protective earthing connection for preventing electrical shock risk.”
	The Electrical Safety Class of the Device is TYPE B.
	Anesthesia-resistant gas may be present on the unit.
	The electrical safety class of the device is IP00. The unit housing does not have a water protection feature. The device enclosure prevents the user from reaching dangerous areas and foreign objects from entering the device.
380 V. AC 50-60 Hz	The device's electrical supply is AC 380 Volt and it operates on the 50-60 Hz electrical network.
	Protect medical vacuum plants from temperatures below - 20°C and above +50 ° C.
	Use the AGSS Center between +5° C and +20° C, under 1 atm pressure.
	Prevent water contact the control units and suction pumps. This invalidates the product warranty.
	It is recommended that the alarm panel be fed from uninterruptible power supply “UPS” systems due to the possibility of being affected by energy fluctuations.
	AGSS centers are not STERILE units.

10. Patient Population

Medical AGSS centers are used for the purpose of creating the suction power that will be necessary for patient treatment. They are not designed for specific patient group instead they are designed for all patient groups.

11. Indications

Medical AGSS centers are used for the purpose of creating the suction power that will be necessary for patient treatment. Considering this situation, it is produced for general treatment purposes, not for any type of disease.

12. Contraindications

Since medical AGSS centers are not directly therapeutic equipment, it is not possible to define areas where they cannot be used.

13. Side Effects

Since medical AGSS centers are not directly therapeutic equipment, there is no definition related to their side effects.

14. Differences Between Models and Their Features – Product Pictures – Technical Specifications

PRODUCT PICTURES	DIFFERENCE- FEATURES
	MG-AGSSx - AGSS center x : 1, 2, 3, 4 Pumps The x variable is increased depending on the suction power of the center. There are x equal capacity suction pumps on the center. The automatic control panel on the system ensures that the system works when the pumps are put into the automatic operation position when they are needed. Standby motors are activated automatically when there is a malfunction in the system.

15. Connection and Assembly

Table 1: Technical specifications of suction pumps

ATTENTION: The technical details in the following table are indicated for the DVP brand vacuum pump. These properties may vary for other vacuum pumps.

Capacity (m ³ /h)	Power(Kw) (1 Pump)	Pumps Number	Cable Cross Section	Energy	Pump Introduction	Installation Outlet	Exhaust Outlet
135	0,75	2	4x2,5 mm ²	380 V 50 Hz	1" 1/2	1" 1/4	1" 1/4
		3					
		4					

Making the Electrical Connection



Connect one end of the cable with the appropriate diameter that you will select from the table above to the mains and the other end to the electrical connection terminal you see in the picture on the side.

- (PE) Sarı-Yeşil : TOPRAK
(1, 2, 3) Diğer Renkler : FAZLAR
(4) Mavi : NÖTR

Making the Connection of the AGSS Suction Line



The filter group is integrated into the unit on the central frame

It is connected to the AGSS suction line from the outlet point described as point "A" on the power center with a medical copper pipe of appropriate diameter that you choose from Table-1.

We recommend that the frame be fixed to the ground from the feet at the point where it presses on the ground.

Making th Exhaust connection

There are 2 separate outlet points on the center frame The outlet point to which the filter group is connected, which is defined as the "A" point, is connected to the AGSS suction line. The other line belongs to the discharge system. The AGSS discharge outlet is connected to the medical copper pipe of the appropriate diameter that you select from Table-1, and it is pulled up to the outside of the building and the waste gas that is sucked out is released into the atmosphere.

16. Operating principle

- There is no tank to create the suction power in the AGSS center, the suction motors work according to the principle of removing the gas from the environment by absorbing it outside the building.
- AGSS medical copper pipe system serves as the suction tank. The sensor is connected to the copper pipe and the suction power in the installation is measured.
- The suction level in the system is set to remain in the within range of 110-275 mmHg.
- The Center will be ready for commissioning after the connections required for gas input to the electrical and gas installation are made.
- All settings and final controls of the system have been completed during production.

- The user is expected to remove the F2 fuse on the control panel only after making the necessary electrical and plumbing connections.
- The system is designed to work in two separate ways. The system works automatically or manually.
- Make sure that all fuses and thermal protection relays in the control panel are installed before setting the operating options of the system.
- If there is a “phase sequence error” on the control panel screen, the system will not transmit.
- If there is such a problem, 2 phases are replaced from the terminal block where the mains electricity connection is made,

Front View of the Control Panel



Automatic Operation

- There is a selector switch for each suction pump on the control panel. This switch allows the suction pump to be set to the automatic, manual or passive position.
- The sensor will measure the suction power in the agss line and ensure that the system is automatically activated and deactivated within the determined limits in the system that is placed in automatic mode, .
- During this operation, the system will start each engine sequentially in such a way that it ages equally.

Manual Operation

- A remote control line is drawn to the AGSS control panel from each point where the AGSS System is used.
- A 0/1 switch is installed at these points, which will make the system active or passive.
- The selector switches for each pump are placed in manual position on the control panel.
- If the switch is placed in position 1 at any of the remote control points, the system will be activated.
- The switches on all remote control points must be set to the 0 position in order for the system to stop. Otherwise, the system will run continuously without stopping.
- During this operation, the system will start each engine sequentially in such a way that it ages equally.

ATTENTION: You can refer to the user manual of the manufacturer sent with the center for a more detailed explanation of the control panel.

17. Possible Problems And Solutions

PROBLEM	DETAIL OF PROBLEM	POSSIBLE REASON	WHAT SHOULD BE DONE	THE PERSON IN CHARGE
The center is not working	The phase lamps on the control panel are not lit and the center is not working	Electrical supply problem	The control panel or external supply fuse may be defective or tripped. Check the external supply electrical values.	Hospital technical staff
	The phase lights on the control panel are on and the center is not working	The phase sequence may be incorrect in phase sequence protected systems,	Ensure that the protection relay gives output by checking the phase sequence	Hospital technical staff
		The operating mode of the control panel selection switch can be in the zero position.	Perform the appropriate actions according to the Operating section of the user manual	Hospital technical staff

It does not perform suction.	The pump is rotating but there is no suction	It may be rotating at reverse direction according to arrow direction over pump.	Rotate the pump in the direction of the arrow by changing the phase sequence in the electrical supply.	Hospital technical personnel
The control fault lights are on and give an audible alarm	1. or 2. the pump control panel lamp is on	The pump may have caused thermal discharge from over-current	Switch on the thermal protection relay.	Hospital technical personnel
		Thermal protection relay failure	Make sure that the pump is not jammed, otherwise contact your technical service	Hospital technical personnel
The engine is making excessive noise	The mechanical part of the engine makes a sound	Engine mechanical parts are jamming	Adjust the thermal protection relay setting again according to the power of the pump	Hospital technical personnel
			Switch the system to the semi-automatic position and contact your authorized technical service	Authorized service

SPARE PARTS LIST:

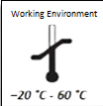
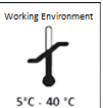
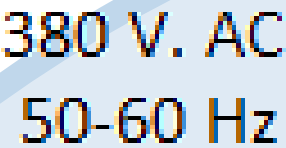
- Filter Jar
- Bacteria Filter cartridge
- Suction pump
- Non return valve
- Relief

18. Product Package Label

		MEGASAN Medikal Gaz Sis. Tıbbi Alet ve Cihazlar İnş.Taşh. Mad. Turizm İth. Ve İhr. San ve Tic.A.Ş. Merkez: Cumhuriyet Mah. Düvenciler Sok. Zafer İş Hanı Apt. No: 33/411 Merkez - ÇANKIRI / TÜRKİYE Fabrika: Dere Mah. Aşağı Ağıl Özü Mevkii Cad. No:18 PK:18700 Eldivan - ÇANKIRI / TÜRKİYE Tel: 0376 218 10 25 - Fax: 0376 218 12 26 info@megasan.com.tr - megasanmedical@yahoo.com www.megasan.com.tr MADE IN TURKEY		2023	  Üretim Tarihi .../.../2023
		Ü.ADI: Ü.KODU:			
 8 698973 920047		Saklama Ortamı  -20 °C - 60 °C	Çalışma Ortamı  5 °C - 40 °C	 220-240 V ~AC / 50-60 Hz	
SERIAL NUMBER  22/xx-00186	 Protect From Oil Yağdan Koruyunuz		 DİKKAT ELEKTRİK TEHLİSESİ	 NON STERILE	
ÜE-01 Revizyon No: 02 Revizyon Tarihi: 30.03.2023					

Explanations of symbols used on the Package Label for Electrical or Non-Electrical Devices

	Manufacturer / Company Information / Year of Manufacturing
	Approved Institution Identification Number
	See User Manual

	Store and transport at temperatures between -20°C and 60°C.
	Use ambient temperature values between 5°C - 40°C
	Since it contains electrical structure, the user must be careful against electrical hazards.
	User should be careful
	Anesthesia-resistant gas may be present on the unit.
	The electrical safety class of the device is IP00. The unit housing does not have a water protection feature. The device enclosure prevents the user from reaching dangerous areas and foreign objects from entering the device.
	The device's electrical supply is AC 380 Volt and it operates on the 50-60 Hz electrical network.
	Protective earthing connection should be made for the product. WARNING : Due to fact that pendant units are Class I electrical medical equipments "This equipment should only be connected to mains network together with protective earthing connection for preventing electrical shock risk."
	The Electrical Safety Class of the Device is TYPE B.
	Medical vacuum centers are not sterile.
	Product Barcode Code
	Production Year, Product Group, serial number

19. Technical Service Stations

LIST SHOWING SERVICE STATIONS	
OF THE IMPORTER/MANUFACTURER/PRODUCER COMPANY	
TITLE	MEGASAN MED. GAS. FOG. TIB. TOOLS AND DEVICES CONS. TAAH. MAD.NAK. TYPE. imp. DHR. SINGING. TRADE. Inc.
HEAD OFFICE ADDRESS	Cumhuriyet Mah. D�venciler sok. Zafer Iř Hanı Apt. No:33/411 Merkez / ankırı
PHONE	376-218 10 25
FAX	376-218 12 26
TRADE REGISTER NO	2 / 2163
Tax Office / No	613 088 4492

Service Name	MEGASAN MED. GAS. FOG. TIB. TOOLS AND DEVICES CONS. TAAH. MAD.NAK. TYPE. imp. DHR. SINGING. TRADE. Inc.
Authorized Name Surname	HAYRETTİN ELİKTEN
Tax Office / No	ANKIRI / 613 088 4492
Phone No	376-218 10 25
HYBN No.	Jun-59
Address	Cumhuriyet Mah. D�venciler sok. Zafer Iř Hanı Apt. No:33/411 Merkez / ankırı
Province	ANKIRI

Service Name	TEKNIKON MEDICAL C�H. AND GAS SYSTEM. SINGING. VE T�C.LTD. ř�.
Authorized Name Surname	OKAN řERİF AKMAN
Tax Office / No	OSTİM / 8360335116
Phone No	312-395 09 29
HYBN No.	Jun-04
Address	İVEDİK SANAYİ B�LGESİ 645. SOK. NO:28 OSTİM
Province	ANKARA

Service Name	BUZSAN MEDICAL COOLING CONSTRUCTION TOURISM NATURAL GAS CONTRACTING IMPORT EXPORT INDUSTRY TRADE LTD. ř�.
Authorized Name Surname	İRFAN KALKAN
Tax Office / No	HARPUT /1910537688
Phone No	424 238 71 27
HYBN No.	14.31.23 / HYB-329
Address	AKPINAR MAH. PINARLI SOK.NO:8/C
Province	ELAZIĞ

Service Name	SERTEK TECHNICAL SYSTEMS - İZZET USLU
Authorized Name Surname	İZZET USLU
Tax Office / No	MİMARŞINAN / 8950271798
Phone No	320 52 52
HYBN No.	38 / 1323
Address	HASTANE CAD. KİRANATLI İř MERKEZİ NO:33/1
Province	KAYSERİ

Service Name	MEDGAZ MEDICAL INDUSTRIAL MECHANICAL INSTALLATION ELECTRICAL CONSTRUCTION TAAH. SINGING. TRADE. LTD. ř�
Authorized Name Surname	�ZCAN DEMİRTAř
Tax Office / No	SETBAřI / 613 075 3619
Phone No	0224 360 04 10
HYBN No.	
Address	Değirmenli Kızık Mahallesi Teyyareci Cad. No:252/1 Yıldırım
Province	BURSA



