ESKA

ERG-H5 and ERG-HZ5 MODEL

GAS PRESS REGULATORS

INSTALLATION, USE AND CARE MANUAL

"Read Carefully and Sleep Before All Transactions. Do not perform unspecified transactions"

"Save for Future Requirements."

"Products must only be authorized by authorized persons."

"This product must be installed in accordance with applicable rules and guidelines."

Rev.0 – 01.10.2023

ESKA VALVE A.Ş.
Sakarya 1. Organize Sanayi Bölgesi Mahallesi, 11. Cadde, No: 6-8, Arifiye/Sakarya/TURKEY
Telefon: +90 (264) 502 54 34-35-83 Faks: +90 (264) 502 54 84 E-mail: info@eskavalve.com
Web: www.eskavalve.com

All rights to make amendments in this manual, depending on technological developments are reserved. The Pressure Equipment Directive 2014/68/EU has been applied in this document and has been issued accordingly.

1. GENERAL WARNINGS AND REQUIRED CONTROLS

Please read the label on the product carefully before each operation and use the product according to the information written on the label. If the manual and/or label is lost please ask the manufacturer to provide you with a new one before starting any operations. The performance of any application which is not mentioned in or is in contradiction with this manual or the label, the product may not operate correctly, may fail and/or may cause losses, injuries or loss of life. If there are any suspicious cases before, during and/or after the operations please contact the manufacturer. Keep this manual, the label on the product and the product box continuously at and near the plant where the product is located. After all operations; keep this manual, label and box in a secure area. Do not start any operation until you have reached and read this instruction. If you cannot reach this instruction or there are issues that are not understood, are unknown or which you are not sure before starting any operations, or if you cannot perform the operations and encounter problems even though the information written in the manual is followed during operations, please contact the manufacturer or our representative. The manufacturer shall not be held responsible for any defects, damages, accidents etc. due to non-compliance with the rules and information taking place in this instruction. Do not exceed the technical limits written in this instruction.

All operations written in this manual should only be carried out by expert personnel who have obtained approval from competent authorities. Unauthorized persons should never interfere in the device. Our company is not responsible for any applications carried out without complying with this manual.

Before-during-after any process and throughout the entire use of the product: Please ensure that all necessary legal permissions shall be obtained, all parties that may be involved in the operations shall be informed and warned, all necessary safety measures including personal protection equipment (goggles, helmets etc.) shall be taken, all operations shall be carried out in compliance with the applicable legislations, regulations, technical standards and rules accepted by the gas organizations, the safety of the working conditions are reviewed, all necessary measures against risk of fire shall be taken, the gases shall not be inhaled, all measures against combinations of danger shall be taken, adequate measure against the spurting out of potential liquids in the lines shall be taken, the ingress of foreign matters into the bleed ports, if any, shall be prevented, approaching the device with electrical materials shall be prevented, the operation area shall be in compliance with the general protection plan and necessary safety marks and that any materials which have potential to create explosions and fire such as fire, sparks and cigarettes shall be kept away from the product and shall not be used in the area due to the combustible gas content in the product.

The end user and/or authorized expert staff is obliged to implement the right systems to protect the product. – Taking into considerations the factors such as tampering the product, unauthorized opening of the product covers, inserting wires, water, dirt etc. and other matters into the holes of the device, hazards such as earthquake, fire and flood, impacts of corrosion and chemical impacts ,environmental impacts and weather conditions (rain-snow-frost-humidity(upon condensation)), mold, UV rays, harmful pests, poisonous and irritant solvents/liquids (such as cutting and cooling fluids), keeping the product away from direct sunlight and corrosive atmospheric impacts, preventing access by unauthorized persons, identification of gas leakage; protect the device from any of the aforementioned impacts, take any necessary measures and establish the necessary systems.

End users and unauthorized persons shall read this instruction, follow all safety rules that may be related to them, shall in no case interfere in the product or the line, shall not tamper with it, shall not attempt to change the settings and make physical inputs, shall close the input valve in front of the regulator in cases of failure or gas leakage detection during use etc. and inform the relevant gas distribution company and experts.

If there are electrical stresses or gas pressures available around the product do not carry out any work under any circumstances. Necessary interventions should be made taking into account the official regulations. Smoking or commencing fire within the distance limits of 2 meters from the product is forbidden. The product should be kept away from chemicals, rain and water as far as possible. All necessary actions and precautions should be taken considering that the product may be exposed to natural events (earthquakes, floods, landslides, fires, etc.).

Non-original and non-company parts should not be used except for the original parts provided with the product and in the box. If necessary, please contact us only to provide spare parts. Tampering with the product, the use of non-genuine parts and/or different parts renders the product warranty void. It can also endanger the correct operation of the device.

The products should be replaced with new ones at the end of their physical lives. Always comply with the laws and regulations in processes such as sorting and recycling-destruction-disposal of products and spare parts which have been disassembled at the end of their physical lives, other parts that will not be used again and of packaging (box-parcel-stretch) and similar.

While sending defective products, replacement products and the wrong products to the manufacturer: Please ensure that the related box, apparatus, accessories, connections and similar parts and labels belonging to the product shall be available. Otherwise, the manufacturer reserves the right to reject the product.

The product is designed for conditions and loads that are in accordance with the intended use and with other reasonably predictable working conditions. The product should only be used under the conditions for which it is designed and in accordance with the intended use. The operating limits specified in the technical characteristics section should not be exceeded and the pressure applied on the product shall not exceed the maximum pressure. No fluids should be used except for those fluids that are specified as appropriate. Make the product selection by determining all conditions. Verify the accuracy by comparing with the information in the manual and on the product label. If everything is convenient, proceed

to the assembly stage of the product. If the manual and label information vary from each other, please contact the manufacturer without using the product. Do not use if the product is not suitable for field conditions.

All our products are placed into special cardboard boxes and parcels to prevent damages that may occur during handling and transportation. During handling and transportation, in the course of all processes and during the usage period; ensure that the products or the product boxes shall not fall, thrown, waggled, shall not be exposed to overload, forces and impacts, shall not be crushed, no weights shall be put on the products and external parts and outer protrusions of the product shall not be damaged, wetted and overturned. The products, supplementary parts and spare parts shall be stored in their own packages until installation. After opening the package, the product shall be checked for any damages; if any damage is identified, the supplier should be informed and the product should be kept in its original package for inspection purposes. For all operations mentioned in this instruction and throughout the entire use; apply the appropriate tools and methods.

At any stage of this manual, and throughout use; do not attempt to displace the "57 – H5 OPSO COCKING HANDLE" of the product with model number ERG-H5, do not allow any mechanical damages, do not move it unnecessarily and do not overstrain it. After the product's cut-off of the gas supply and upon the identification that there is no gas leakage to be carried out by an authorize person only, the product shall be adjusted and commissioned.

Where appropriate, it is recommended to use our product in gas lines for safety purposes. The product can only be used in perfect and flawless condition. Incorrect operation forms and any defects shall be corrected immediately.

As the products with model number ERG-HZ5 are not equipped with safety shut-off devices that close at extremely high and low output pressures, additional measures shall be taken for undesired excessive pressure increases and decreases that may occur at the line exit, in case these products are applied.

2. DEFINITIONS AND ABBREVIATIONS

Device or Product : ESKA Brand Gas Pressure Regulator
SSD : Automatic Safety Shut-Off Device
Authorized Body : Gas distribution company existing in the province or region where you are located in which is responsible for gas distribution.
Authorized Fitter : The person who is responsible for the installation, assembly, operating, periodic maintenance and inspections of the device in accordance with the laws, regulations and standards, who is experienced and trained in this field, who has full knowledge in this filed and is qualified, vested with a high level of knowledge, who is aware of the laws, legislations, standards etc. related to such persons works and safety, experienced in all necessary measures and who is authorized by the official authorities.
Breathing Line : This is the connecting line which connects between the control and/or pilot and atmosphere in order to equalize the pressure on the sensory component when, under normal operating conditions, the position of the sensory component changes and which connects the atmosphere side of the pressure sensory component to the atmosphere. Note - When a fault occurs in the sensory component, this line may be the exhaust line.
- Exhaust Line : The connecting line between the regulator or auxiliary equipment and the atmosphere used for safe relief of the gas, in case of any fault in any section.

PS: Permissible Maximum Input Pressure
PSD: Maximum Strength Pressure for Sections with Different Strengths
TS: Operating Temperature Range
S.N: Serial Number
Wds: Outlet Pressure Setting Range
Pds: Outlet Setting Pressure
Pumax: Maximum Inlet Pressure
Bpu: Inlet Pressure Range
Wdo: High Pressure Safety Shut-Off Set Range
Wdu: Low Pressure Safety Shut-Off Set Range
Wdso: High Pressure Safety Shut-Off Adjustment Range
Wdsu: Low Pressure Safety Shut-Off Adjustment Range
Pdso: High Pressure Safety Shut-Off Regulating Pressure
Pdsu: Low Pressure Safety Shut-Off Regulating Pressure
AC: Accuracy Class (± change in outlet adjustment pressure)
SG: Shut-Off Pressure Class (the pressure which is read on the output side when the flowrate is zero)
AG: Safety Shut-Off Accuracy Group
DN: Nominal Diameter
Pdo: Discharge Opening Pressure
IS: Regulators with combined strengths
DS: Regulators with different strengths
SZ: Locking Pressure Zone Class
Qen çok; Qmax ; Maximum Flowrate
Qen az; Qmin; Minimum Flowrate

3. OPERATING PRINCIPLE, INTRODUCTORY AND INFORMATION

The technical characteristics ranges of the products are as follows. These values may vary from product to product depending on factors such as the outlet flowrate, outlet pressure range, input pressure range etc. The final technical information of the product is indicated on the label on the product. In no case should the product be used except under the following limitations.

Type-Model-Series: ERG-H5 and ERG-HZ5
Product Name:
ERG-H5: Gas Pressure Regulator with Safety Shut-Off
ERG HZ5: Gas Pressure Regulator without Safety Non-Shut-Off
Brand: ESKA VALVE / ESKA
Operating Temperature Range "TS": -10°C ; 60°C (Class 1) or -20°C ; 60°C (Class 2) or upon request -40°C; 60°C

Usage Area: The products can be utilized in transmission, distribution or service lines, commercial and industrial facilities, transmission in pressure control stations (up to the PS class specified on the label), distribution (up to the PS class specified on the label) or service lines for gas supply with combined use of gas supply for buildings such as residences, high built buildings, public buildings, commercial and industrial facilities (from 5 to 16 bar provided that the PS class on the label shall not be exceeded and with maximum flowrate of over 200m/h) and in commercial and industrial gas lines and pressure regulation stations. They should not be used in the areas specified in the EN 88-1 and EN 88-2 standards in service lines with a volume flow rate of ≤ 200 m3/h and input pressure below ≤ 5 bar in connections with input from above/through/inside gas consumption devices which are placed after gas meters used in homes and similar places.

Permissible Maximum Pressure-Design Pressure: PS4, PS6, PS10/PSD8, PS16/PSD8, PS20/PSD8 bar
Regulator Strength Type:
Regulators with combined strength "IS": PS4 and PS6
Regulators with different strengths "DS": PS10, PS16 and PS20 (PSD8 bar in DS types)
Test Pressure: PT=PSx1.5 bar and PT=PSDx1.5 bar is applied.
Regulator Type: Single stage direct acting gas pressure regulator (spring driven)
Regulator Failure Type: Regulator which opens in case of failure
Filter: No filter available.
Sound Pressure Level "Lpa": ≤ 70 dB
Inlet pressure range "bpu": 0.5;4 bar, 0.5;6 bar, 0.5;10 bar, 0.5;16 bar, 0.5;20 bar
(up to 10 bar for LP, up to 20 bar for MP and HP)
Output Pressure General Setting Range "Wd": 15;2500 mbar (LP=15;100 , MP=100;300 , HP=300;32500)
Output Pressure Accuracy Class "AC": ±5% AC5, ±10% AC10, ±20% AC20
Hysteresis Band: ,+5%, +10%, +20%
Locking Pressure Class "SG": +10% SG10, +20% SG20, +30% SG30
Locking Pressure Zone Class "SZ": +10%SZ10, +20% SZ20
Maximum Flow "Qmax": Up to 500 m^3/hour (natural gas)
Discharge Opening Pressure Adjustment Range "Pdo": 30;3000 mbar
Relief Pressure Tolerance: ±5%, ±10%, ±%, ±30%
Nominal Diameter-End Connection: DN25xDN25 and DN25xDN40 threaded connection (modular connection on request)
Line Connection Directions: Tandem (180 degrees)
Product Weight: Approximately 5 kg
Suitable for following Fluids: Gas, Natural Gas, LPG and non-corrosive gases
Welding Process: Not available.
Material Standards:
For aluminum cast alloys: EN 1706
For brass materials: EN 12164 and EN 12165
For nodular cast iron with graphite: EN 1563
For elastomers: EN 549

Additional Features of the Model ERG-H5 Model;

High Pressure Safety Shut-Off Set Range "Wdo": 30;5500 mbar
Up to 10 bar (LP=32;160, MP=155;500, HP=450;3000)
Up to 20 bar (LP=30;180, MP=40;450, HP=250;5500)
Low Pressure Safety Shut-Off Set Range "Wdu": 6;3500 mbar
Up to 10 bar (LP=6;80 , MP=80;250 , HP=100;1500)
Up to 20 bar (LP=6;60 , MP=10;240 , HP=100;3500)
Safety Device Accuracy Class "AG": ±%5 AG5, ±%10 AG10, ±%20 AG20, ±%30 AG30
Safety Device Action Type: quick action
Response Time: ≤ 2 seconds
Safety Device Functional Type: Class A
Safety Device Type: Combined safety device
Can the safety device be utilized as stand alone in the line?: No. It has to be integrated in the regulator at all times.
Gas Pressure Regulator Summary: The regulator, as its function, maintains the value of the controlled variable (outlet pressure-Pds) within the tolerance range by reducing it to the desired/adjusted value, without being affected by disruptor variables (such as flowrate and inlet pressure). The gas pressure regulator supports the devices installed after it to enable them working safely in the gas line. The gas pressure regulator may have an air-released type evacuation system if requested during the order placement. There may be a temporary gas release into the atmosphere from the regulator's auxiliary equipment. In this case, the necessary measures regarding the gas to be discharged should be taken before installation.

Regulators have internal sensing. However, for higher capacity and better precision, it is also possible to connect an external line for the regulator and safety shut-off.

The gas pressure regulator is not pilot controlled, does not have a controller feature, does not need a bypass unit to operate, is not used as a backup inspection device and is spring driven.

The ERG-H5 Model gas pressure regulator has a high- and/or low-pressure gas safety shut-off device that is built in the same body, i.e. placed in an additional combined way, and automatically cuts off the gas in the line and which activates when if the outlet pressure raises and/or falls to undesired levels. This equipment is independent from the regulator in terms of function. Safety shut-offs alone may be a stand-alone high-pressure safety shut-off kit, a stand-alone low-pressure safety shut-off, or both.

Combined Gas Safety Shut-Off Device (SSD) Summary: It is the device which automatically shuts down the gas flow completely if the pressure that remains open and is in control under normal operating conditions exceeds the preset values (overpressure and/or low pressure) (overpressure monitoring and/or low-pressure monitoring). If the outlet pressure increases or decreases to undesired levels and exceeds the safety adjustment pressure, it automatically detects this situation and automatically cuts off the gas on the line and remains closed until it is installed manually again. The gas is integrated into the pressure regulator.
Discharge System Summary: The regulator and/or SSD can be produced with a relief valve. The safety valve continuously monitors the outlet pressure and if it detects that the pressure level is higher than the nominal outlet pressure of the regulator and/or SSD, it activates the gas and discharges it into the atmosphere. The safety valve has a limited discharge capacity. Usually the calibration point is lower than the OPSO system. Under certain conditions such as gas expansion during hot weather seasons, the safety valve is activated before OPSO shuts down the gas lines. It prevents random shutdown related to pressure increase on the outlet side. The safety valve can be re-calibrated using appropriate tools.

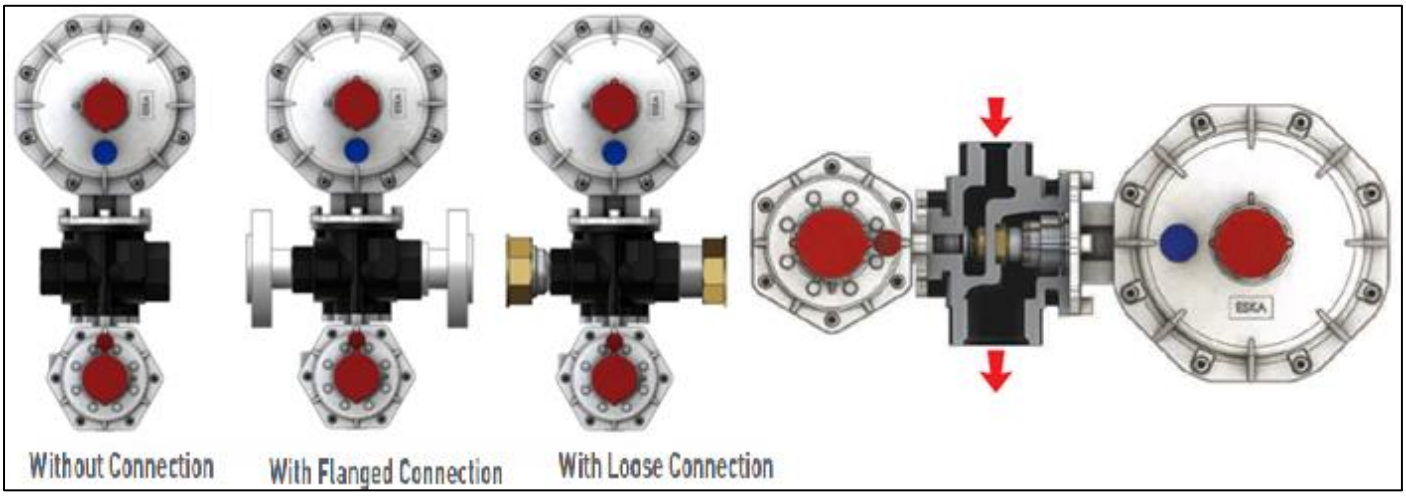


Figure 1

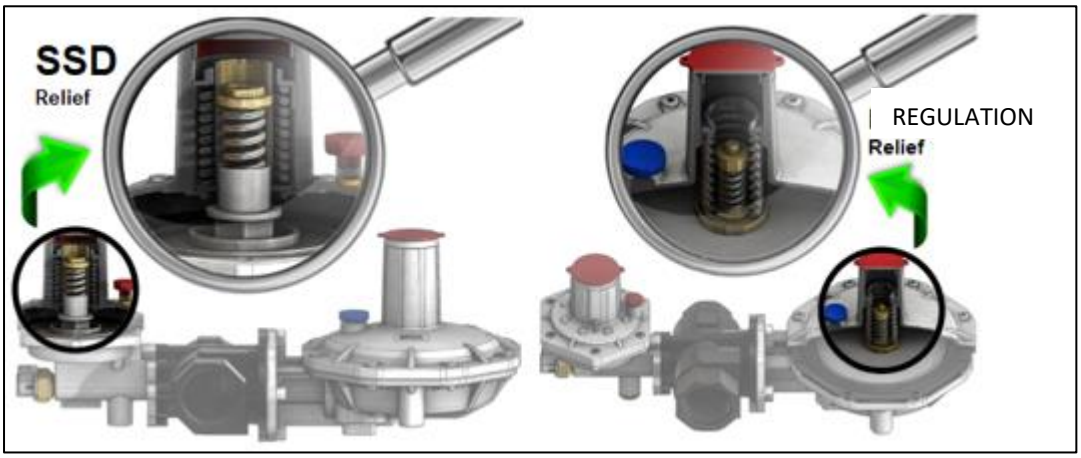


Figure 2

4. MOUNTING

The process described in this information shall be carried out by technicians which are attested by gas approval bodies, duly certified, authorized and experts in the field as well as by authorized companies-services-installers. The end user shall strictly not carry out these operations. If the product will not be installed properly; incorrect or non-operation of the product or failures can lead to loss of property, injury and loss of life. Our company will not be held responsible for applications carried out without observing the manual.

Correctly determine and be sure of the characteristics of the product to be used before installation. Check the technical and general information on the product and in this manual, compare it and make sure that the correct selection is made, especially review the information on the label because it symbolizes the product itself. In case of any discrepancies between the information, please contact the manufacturer without carrying out any operation.

A. BEFORE MOUNTING

Check auxiliary parts (gasket, seal, protection plug etc.) which may be on or in the product and the box, as well as the documentation (manual, warning, label, certificate etc.) which have to be available with the product. In case of deficiencies or failures please contact the manufacturer without carrying out any operation.

Make the necessary verifications and ensure that the comparisons to verify that the product to be mounted is in compliance with the line specifications to be installed have been made (operating pressure range, fluid, flowrate, environmental conditions, cleanness of the line and fluid, selection of the interconnectivity types and diameters, axis eccentricity in the line, appropriate line and product dimensions etc.). In particular, the label on the product should be checked carefully and its suitability for operation shall be confirmed.

Check and make sure that the inlet and outlet pipelines are aligned. In case of wet gases, necessary actions should be taken to prevent water ingress and potential subsequent freezing. Confirm that the installation has been started in accordance with applicable technical rules and laws. An inlet and outlet shut-off valve has to be mounted in the line which the product will be installed, being one each before

and after the product. To ensure protection against any pipe leakage, install manual gas shut-off devices (e.g. sphering valves etc.) in front of and behind the product. While assembling to adjacent elements, pay attention that no oppression force shall be applied on the housing and the mounting components (bolts, o-rings, sliders) must be suitable for the geometry and working conditions of the equipment. No changes should be made on the product (drilling, grinding, soldering etc.). To avoid exceeding usage limits (PS, TS), make sure that the inlet side is protected with a suitable device. Sufficient buffer volumes should be left at the line outlet after the device, before installation. Confirm the accuracy of the bumper volume on the outlet side. The buffer volume should be 1/500 of the flowrate at pressures up to 300 mbar and 1/1000 at higher pressures.

Check the accuracy of the flow direction. See the arrow mark on the body. Vent and relief lines, which may be required, must be made in accordance with applicable rules and laws. In mountings made with non-condensing gases, the product can be assembled in any position. In mountings with condensed gases such as LPG, the product should be placed at horizontal or vertical flow direction and the outlet side should be downwards. Installation should be carried out with appropriate and approved seals. The sealed surface should be clean and soft and new seals should be used at all times. Clean the inner side of the entire pipeline where the product will be installed with compressed air before mounting the product and take precautions to ensure that these lines will not be contaminated again. Make sure there are no particles left at any point on the line (dust, dirt, sawdust, foreign particles etc.). The fluid that will flow to the product must be filtered before the product. A filter with ≤ 50 µm pore width should be placed at the inlet side. The regulator and SSD should be kept away from direct sunlight and corrosive atmospheric effects.

The said pressure equipment must be installed in a non-seismic area and should not be exposed to fire and lightning strikes. For outdoor installations, the regulator must be located away from vehicle traffic and positioned so that water, ice and other foreign substances do not enter the spring case through the ventilation hole. Avoid placing the regulator under fringes or down pipes. Make sure that it is above the potential snow level. Check the risk of explosive mixture in the pipeline. Make sure that all valves used before and after the product which provide gas flow to the product are closed. Before starting the mounting, ensure that there is no pressure gas trapped in the line where the product will be installed and between the line and the product, that the gas supply is turned off and that the possibility of opening is completely prevented. Prevent explosive gas-air mixture. Avoid contact voltage and ignition of sparks in the product. Necessary measures shall be taken to ensure that there is no sound and vibration caused by the line. Before installation, take appropriate measures (clamping at the line side etc.) at the line inlet and outlet to reduce bending and torsion loads caused by pipes and shocks. Attention should be paid to the relevant limitations in counter forces and moments caused by pipes and connections.

Make sure that the necessary dimensions and areas are provided considering further operations (testing, maintenance, disassembly etc.). In any case, check that the inlet pressure of the product shall be higher than the outlet pressure. Ensure that there are no diameter narrowing and expansion over short distances at the inlet and outlet of the line on which the product will be mounted. Before installation, it should be checked and ensured that the line pressure is within the inlet pressure range specified on the label on the product and that the product capacity will not be exceeded during operation. It should be checked and ensured that there is no damage on the product (visual and functional), that the product to be installed is suitable for the system to be used, that the pressure does not exceed the maximum pressure level specified on the product label, that the product's dimensions fit with the line, that the installation place is at adequate distance and under protection so that it will not be affected by sparks and electrical currents that may be caused by flammable substances and devices.

Proceed with the installation process by taking necessary measures (such as protection box etc.) so that the product will not be exposed to direct external environmental, corrosion and wearing conditions (sun, atmosphere, rain, snow, humidity, water, external chemicals etc.) and to potential external damages and impacts. If the products are to be used in floor-mount applications, this should be indicated while placing the order. In this case, products with properly coated surfaces should be used and appropriate measures should be taken to prevent dirt, dust, dirt, liquid, etc. at the discharge part, if any, of the product. In addition, it should be ensured that the products shall not be in form of embedded in full or in part into water, soil or liquids. If requested during order placing, the regulator may be equipped with a breath line for leaking into the atmosphere as a result of a failure (such as diaphragm failure). If necessary (e.g., the use of the product indoors etc.), the exhaust line must be connected to the breath line console of the product. This connection must be threaded with minimum DN10 screws. The threaded screw adapter required for this connection shall be requested and used from the manufacturer and shall be used accordingly. Gas pressure regulators and SSDs with discharge system; shall not be installed and operated in closed areas and floor-mount applications without taking necessary measures for transmitting the gas to be discharged to the safe zone (e.g. transmitting and mixing the gas to be discharged with a pipe of minimum DN 10 to external atmospheric conditions, etc.). Before installing the product on the line; perform a general check for the pressure and sealing of the line and system.

B. DURING MOUNTING

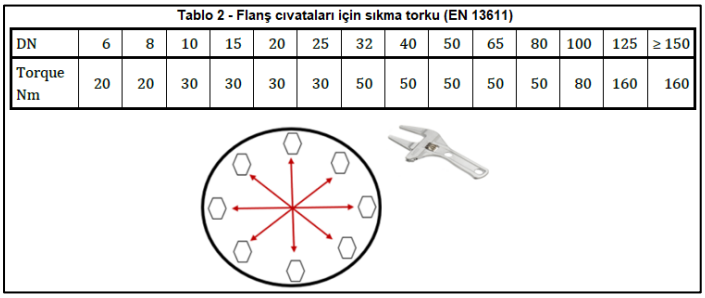
Manually remove the inlet-outlet connection protection plugs, if any. If the product is equipped with modular connection additionally, manually and carefully place the inlet and outlet seals which are shipped in the product box to the inlet and outlet connection nozzles (always use certified and new seals). Set the flow direction of the product by showing the arrow outlet side and gas flow direction in the product body and ensure that the joint components to be used during installation shall comply with the regulations. Install the product only in accordance with applicable legislations and local regulations, obtaining the necessary approvals, if necessary. Do not install the product outdoors without mounting the product into a housing and taking required protective measures. The lifting equipment being used must be suitable for loads to be lifted. While connecting the product to the line no overload, force and impact shall be applied.

While connecting the product to the line; place it in such way that the product shall not block the front of the sensing line. Pay attention to the specified distance of the measuring point for the sensing line. While connecting the product to the line; use appropriate wrenches for tightening inlet and outlet connections and make sure that no excessive load, force and impact is applied and that external leakage is prevented. Pipe connections should always be welded to the upper part of the pipe, and the hole in the pipe should not show any burrs or protrusions inwards. Ensure that there is no pressure gas trapped in the line where the product will be installed and between the line and the product, that the gas supply is turned off and that the possibility of opening is completely prevented. After tightening, make the controls that the connections are fully seated in the sockets and there are no cracks, breakages, etc., mechanical problems and deformations in the connections and in the product and that no mechanical stress caused by the line, pipe and connection has occurred. If connection components which are larger than the connection diameter on the body of the product are installed in the inlet and outlet of the product for assembly, forces and moments exceeding the values required by the main connection diameter on the body should not be applied and limitations should not be exceeded.

While screwing the product on the line, make sure that the pipe thread is not too long in order to prevent damage on the body. If the product is modularly flanged; make sure that the inlet and outlet counter flanges are perfectly coaxial and parallel in order to avoid unnecessary mechanical pressure on the product body. Also calculate the space required to place the seal. As the product may be disassembled from the installation for testing, repair, maintenance, replacement and similar purposes, use a gland or ball valves at the product inlet and outlet. Connect the product to the line without causing mechanical stress. It should be remembered that excessive loads to be applied to the body may lead to cracks. For these reasons, assemble with wrenches. For products with flanges, follow the mounting torques shown in chart 2. For tightening operations, make available single or double calibrated torque wrenches or other controlled locking tools. After tightening, make the controls that the connections are fully seated in the sockets and there are no cracks, breakages, etc., mechanical problems and deformations in the connections and in the product and that no mechanical stress caused by the line, pipe and connection has occurred.

Tablo 2 - Flanş cıvataları için sıkma torku (EN 13611)

DN	6	8	10	15	20	25	32	40	50	65	80	100	125	≥ 150
Torque Nm	20	20	30	30	30	30	50	50	50	50	50	80	160	160



The necessary gaps and spaces should be left around the product and between the wall and the product by taking the outer dimensions of the product as reference, in order to enable access to the product's components, perform the necessary operations and carry out testing. If the product is accessible to unauthorized persons, provide protection against impact or accidental contact. During installation, make sure that the gas in front of the product is turned off. Close the gas cutting valves at the line inlet and outlet. Make sure there are no gas flows. While mounting the product on the line; connection shall be in the direction of the arrow indicated on the product. The arrow on the product shall be mounted in such way that the outlet side shall indicate the user, that means it shall show the gas flow direction. By this, the flow will be from the network to the user.

- Install the product in horizontal or vertical position with a tolerance of ±5°C at the appropriate mounting position as shown in figure 3. However, it should be preferred to install in such way that the cover shall be vertical with an upwards direction. The mounting position for dry gases may be vertical or horizontal provided that the outlet pressure regulation part shall not be downwards and mounting position for LPG shall in such way that the regulator's outlet side shall be downwards.

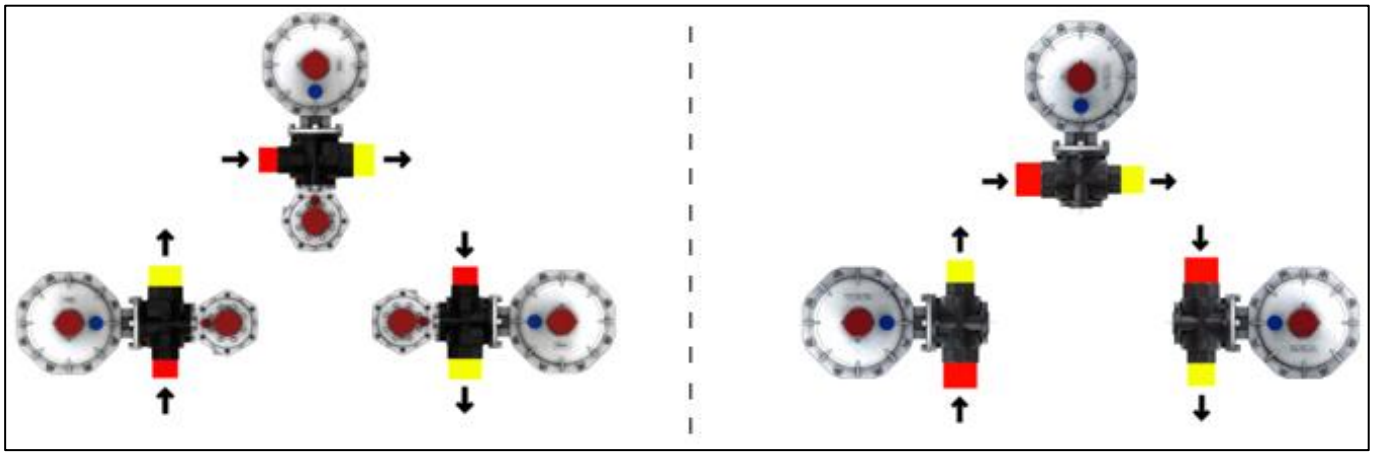


Figure 3

The sensing line for regulation mounted on the outlet of the product and sensory line in models with SSD should be completely exempted from any obstacles or deformations. Necessary measures should be taken for this. Manually place the inlet and outlet seals for product assembly which are shipped in the box on inlet and outlet connection nozzles properly (always use certified and new seals). It also shall be ensured that the seals shall show no defects that will impair the sealing properties. When connecting the product to the line; product inlet and outlet must be connected to the relevant pipeline with nipples or moving glands, if any.

If the product has threaded connection; assemble together with appropriate seals by screwing to the line by pipes and/or fitting components with appropriate threads being attached to the connection. During screwing, do not use any part of the product as an apparatus to support the screwing operation. Use appropriate equipment for assembly. Use chip-free, newly reamed and threaded pipes.

If the product is provided with flanged connection or modularly; it shall have the same dimensions at the inlet and outlet and face-to-face dimensions must comply with national laws, regulations or relevant standards. Install the product by flanging together with the necessary and appropriate seals, screws and nuts to the installation with pipes which is compatible with the line which has the same flange connection. The seals should be centered between the flanges and it should be ensured that there are no defects in the seals which will disrupt the sealing properties. If there is too much space between the seals after placing, do not try to reduce this space by tightening the bolts too much. Make sure that the arrow direction in the body of the product is compatible with the line. Take the necessary measures to avoid any damages on the flanges during the tightening process. Be careful not to damage the seal when tightening. Gradually tighten nuts or bolts in a "diagonal" pattern (chart 2). Gradually tighten them with increased torque (chart 2). Tighten each nut one by one and tighten again clockwise at least once until maximum torque is achieved.

C. AFTER MOUNTING

Confirm that the installation has been carried out in accordance with applicable technical rules and laws. After completion of the mounting process, check and be sure that that the product is not reverse-mounted. After the product is assembled, carry out the necessary checks. Ensure that the product impermeability is provided (example; external impermeability, visual control).

Gas Inlet, Impermeability Control and Adjustment:

- The product pressurizing should be carried out quite slowly.

In order to protect equipment from damage, the following procedures should never be carried out:

- Pressurize the system with the valve at the outlet side
- Lowering/discharging the pressure of the system with the valve at the inlet side
- To ensure that there is no leak by a foam test applied at low pressure
- The regulator and all other apparatus are delivered being adjusted to the desired set value. The adjusted value of the spring may vary due to various reasons (shock during transportation etc.). It is recommended to adjust the set values according to the label values.
- Before commissioning the regulator, it should be ensured that all on/off valves (in, out, all kinds of by-pass) are closed and that the gas is at a temperature that does not cause any deterioration.

5. INSTALLATION, COMMISSIONING, OPERATION

A. BEFORE

Before installation, carefully review, keep with you and fully follow the instructions in this manual and the information on the label on the product. If you think there is incomplete and incorrect information, contact the manufacturer and do not carry out any operation.

Before installation, check and provide that all users and persons at the outlet side have not made any use. Make the necessary warnings so that users do not make any use. The main gas supply must be turned off before starting the installation. Before installing the product; ensure that the product is mounted in the line correctly. During installation; prevent ingress of particles such as dirt, rust, dust etc. to the product and take permanent measures. The non removal of residues will cause damage or incorrect performance.

During commissioning; unauthorized personnel should be strictly kept away and the area with restricted access should be properly marked (signs, barriers, etc.). During commissioning; in the event that flammable or harmful gases are released into the atmosphere, the risks identified by any discharge should be assessed. During installation; consider the risk of an explosive mixture (gas/air) which may form in the pipes. Take the necessary measures. Make sure that all breath and/or exhaust lines in the product are not clogged. Then take the further necessary measures to prevent these lines from being blocked. Do not install any caps such as blind plug to these lines which may prevent the gas outlet.

Do not change the factory settings of the product. The factory settings are adjusted according to the desired values in the order specification and are indicated on the product label. Adjustment devices are sealed if requested in the order specification. Such sealing is recommended by the manufacturer. Start operating the product only if all protective equipment is fully operative. If there is an angled line and/or pipeline supports are insufficient, do not apply the weight of the line on the product only due to such reasons at any time or for any reason. Take the necessary measures for this status. Before starting the gas flow, check the pipeline for impermeability and make sure it is sealed.

B. DURING

- INSTALLATION PROCESS FOR MODELS WITH SSD:

1- Partially open the outlet valve in the line, partially open the outlet vent valve,
2- Slightly, slowly and gradually open the inlet valve, means the gas supply valve in the line, check that the input pressure is correct.
3- Manually remove "SR SHUT OFF SAFETY PLUG NO. 60" by turning counter clockwise,
4- Pull the "H5 OPSO INSTALLING LEVER No. 57" slowly and gradually towards yourself without applying excessive load, force and impact (Figure 4) (thus allowing the outlet side to be filled with gas.),
5- When the output pressure reaches the setting value, pull the "H5 OPSO INSTALL LEVER No. 57" to yourself a little more and hold it until it remains in the pulled position (until the slam shut is installed), verify that the output pressure is balanced.
6- Check and verify that the "H5 OPSO INSTALL LEVER No. 57" remains pulled, that there is gas flow at the outlet side, that the released gas is mixed in the atmosphere if the product is equipped with a discharge system, and check that outlet and gas impermeability is achieved by appropriate methods (foam, detector etc.).
7- Wait until the output pressure reaches the desired value. If necessary, set the output pressure value with the "SR REGULATION ADJUSTMENT SCREW No. 2".
8- Close the output vent valve.
9- Gently open the cut-off valve at the entrance.
10- Thus, the product will be installed.
11- Repeat the steps if the installation is not realized.
12- After completion of the installation, attach the "SR SHUT OFF SAFETY COVER No.60" again (installation process schematic display figure 4).
13- If you have difficulty in pulling the "H5 OPSO INSTALLATION ARM No. 57" during installation or if you encounter the closure of the "H5 OPSO INSTALLATION ARM No. 57" because the output pressure comes ahs reached the safety adjustment pressure, then take all necessary safety measures and you can carry out operations such as removing the "SR BREATH LINE NO. 6", if any, opening the input valve not completely but gradually in parts, allowing a small amount of gas release from the test nipple at the outlet line, if available.
14- After the operations, manually replace the parts you have used ("SR BREATH LINE No.6 ", "SR SHUT OFF SAFETY COVER No. 60", test nipple etc.).
15- Inform all gas users about the use of gas.

- INSTALLATION PROCESS FOR MODELS WITHOUT SSD:

1- Partially open the output valve in the line,
2- Gently open the inlet valve in the line, i.e. gas supply, check that the input pressure is correct.
3- When the input valve that will feeds the product is opened, the gas flow will automatically start to the outlet, wait a few seconds,
4- Verify that there is gas flow at the output side, so the product will be installed.
5- If the installation is not realized contact the manufacturer.

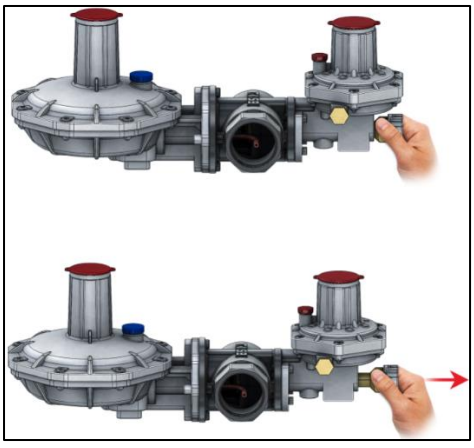


Figure 4

C. AFTER

If the setup process does not occur or f you encounter different problems afterwards; contact the manufacturer without carrying out any operation.

The setup shall not affect the function of other components.

Under closed conditions or inside, the leaked gas can accumulate and create danger of explosion. In such cases, the ventilation hole should be connected by piping from the product to outdoors (atmosphere).

If the product is exposed to excessive pressure, it should be checked for any damage that may have occurred. If the overpressure is high enough to damage the product, some kind of external overpressure protection must be provided.

The product's operation under the limits specified in this manual and the product label: This does not prevent damage caused by external sources or residues in the pipeline. The inlet must be protected with appropriate equipment to avoid exceeding the permitted limits (PS, TS).

When designing a decompressing station, carry out an analysis that takes into account the impact of wind, snow and temperature to prevent unnecessary load and equipment from moving towards the flanges and take the necessary measures according to this analysis.

If necessary, a support can be used under the pipe and regulator/SSD body to prevent excessive pressure on the regulator/SSD.

The installed product shall be adequately protected from vehicle traffic and damage from other external sources.

Do not install the product where excessive water accumulation or ice formation can occur. In some installations, such as in areas with heavy snowfall, a cap or enclosure may be required to protect the product from the snow load and to prevent freezing caused by air discharge. The necessary measures should be taken considering the aforementioned situations.

Depending on the temperature during and after the installation process or during mid seasons, instant gas output from the product's relief section may occur which is normal. It is important that such gas output in question shall not continue; if it continues it can be considered that there is a failure in the product. In such a case, the products use shall be discontinued and the authorized persons/organizations should be contacted immediately.

If the product is closed for various reasons during operation, the inlet and outlet valve should be closed, the problem should be detected and the product shall be re-installed according to the aforementioned rules.

If the product is equipped with a discharge system; gas discharge to the atmosphere shall not be performed under any circumstances; however, there may be temporary discharges from auxiliary equipment. If there is a continuous discharge contact the authorized person/institutions immediately.

<u>If the product is shut down for various reasons during operation:</u>

1- The inlet and outlet valve should be closed, the problem should be detected and re-installed according to the aforementioned rules.
2- The output pressure may increase and the product's high pressure safety shut-off device may close which will lead to gas cut-off, depending on contaminated gas and foreign matters in the line, which will cause pressure-capacity changes due internal leakage, abrupt stop of the combi boiler, boiler etc., breathing line clogging, product failures etc. In this case, the reinstallation process has to be repeated.
3- If the output pressure of the product drops excessively for various reasons during operation and reaches the adjusted safety pressure, the low-pressure safety shut-off system activates and the gas flow may close. In this case, the reinstallation process has to be repeated.

<u>- TESTS</u>
After installation, output pressure, high- and/or low-pressure closing pressures and internal impermeability, external impermeability and the capacity should be checked. While performing these procedures, take all necessary measures to ensure that the discharged gas generated from the product or the external leakage shall not a hazardous atmosphere and do not operate indoors.

Note: In no case should operations be performed which lead to pressure income or pressure flow of more then 20 bars to the inlet connection nozzle and body of the product or to pressure income or pressure flow of more then 6 bars to the housings where the product's outlet pressure adjustments are made and such situations shall be strictly prevented.

To examine the pressure values; carry out this procedure with a calibrated manometer mounted on minimum 5xDN in the pipeline at the outlet side of the product. DN is the value that depends on the diameter at the output of the product.

- OUTLET PRESSURE, LOCKING PRESS, INTERNAL IMPERMEABILITY AND RELIEF PRESSURE TESTS

1- Connect the related pressure gauge and pressure source to the appropriate test valve located on the output line of the product in a firm and sealed manner.
2- Measure the output pressure when there is gas consumption in the line and check its conformity within the tolerances.
3- Close the output valve (Q=0 m3/h) at the outlet of the product and wait for a while, then check that the output pressure is in balance and its value is within the tolerances.
4- Slowly increase the pressure on the pressure source, observe the value in the manometer and verify that the product is discharging at the declared discharge value of the product. Gas output to the outside is an indication that the valve has been activated.

- SAFETY SHUT-OFF PRESSURES TEST

1- Temporarily close the relief part of the product (do not forget to open it after testing.),
2- For the product which has reached the relief pressure; slowly increase the pressure on the pressure source up to the high-pressure safety shut-off adjustment value and check that the "H5 OPSO SET-UP LEVER No. 57" is closed. If it is closed this means that the values are conforming,
3- Open the discharge valve and allow it to continue its functioning,
4- Then re-dry the product and close the inlet valve, reduce the pressure on the product and also reduce the pressure at the pressure source below the output pressure. Continue to reduce the pressure until the slam shut reaches the minimum closing value and is activated. Verify that the product automatically shuts itself off,
5- Remove the pressure source, close the test valves,
6- Check the line and the product for external leaks,
7- Re-dry the product in accordance with the rules mentioned in this instruction,
8- Monitor the output pressure from the manometer and bring it to the set value and make sure that the slam shut remains installed at the desired value.

- OUTER LEAKAGE TEST

1- Set the inlet pressure to 1,1xPS bar.
2- Apply an appropriate leakage detection spray.
3- If any foam formation occurs this means an outer leakage.

- LOCKING PRESSURE AND INTERNAL IMPERMEABILITY

1- Turn on the inlet valve and set it up to Pumax pressure and observe its accuracy in the manometer,
2- Close the output valve (Q=0 m3/h) at the outlet of the product to ensure that there is no consumption on the output side. Wait a while and check that the output pressure value read on the manometer is balanced and its value is within tolerances. Observe that fluctuations are minimal. If there is any nonconformity, the product has failed the test.
Note: In no case should operations be performed to cause pressure at the product's inlet connection nozzle which exceeds the PS value on the product label and any operations in the upper cover section where the products' outlet pressures are regulated which cause pressure or gas flow over 8 bars; this situation should strictly not be allowed to occur.

6. SETTINGS

A. BEFORE

Before adjusting, make sure that gas in front of and behind the product is turned off.
Please keep the manual and the label on the product with you before adjusting. Perform the procedures according to the information in this manual.
Before setting; make sure that the existing springs are those springs that can provide the desired values. Check this from the springs chart. Please contact the manufacturer if you are not sure.
Models with SSD: regulation spring, regulation discharge spring, high pressure shut-off spring, low pressure shut-off spring,
Models without SSD: regulation spring, regulation discharge spring.
If you observe any nonconformity in the springs (incorrect spring, corrosion, etc.) before adjusting, please request those from the manufacturer without performing any operation.

B. DURING

The spring used in products is designed to provide desired output pressure intervals. For output pressures outside the specified range, a spring change will be required. These springs must be supplied from the manufacturer.

- If required for various reasons, the output pressure of the product and safety closure pressure settings, if any, should be made as follows:

1- The settings shall not be changed at a rate more than ± 10% and/or outside the limits specified on the label.
2- Seals on the related sections of the product, if any, shall be removed.
3- While adjusting the pressure, the adjustment mechanisms and springs should not be compressed, bent and forced excessively.
4- To see the values of the settings, connect the pressure gauge or manometer to a suitable test valve located between the product and the output pipe and monitor the pressure by consuming gas within the appropriate capacity range.
5- For all adjustments to be made, pressure increase is achieved in clockwise rotations and pressure decrease in reverse rotations.
6- If there is an SSD, an increase in safety pressures should be ensured when adjusted output pressures are increased and a decrease in safety pressures should be ensured when reduced.

- OUTLET PRESSURE SETTING:

1- Remove the relevant seal, if any,
2- Remove the "SR TOP COVER PLUG No. 1" by manually rotating it counterclockwise,
3- Turn the "SR REGULATION ADJUSTMENT SCREW No. 2" in the appropriate direction with the appropriate hexagonal wrench, (turning counter clockwise reduces the outlet pressure; turning clockwise increases the output pressure.),
4- Mark the adjustment pressure being set,
5- After the procedures; Manually replace "SR TOP COVER PLUG No. 1" to its initial position.

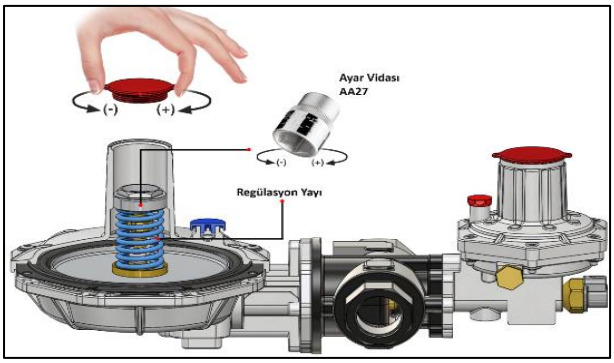


Figure 5

- RELIEF (Regulation) PRESSURE SETTING

1- Remove the relevant seal, if any,
2- Remove the "SR TOP COVER PLUG No. 1" by manually rotating it counterclockwise,
3- Turn it in the appropriate direction with the hexagonal wrench suitable for "H1 TEMPER NUT No. 9",
4- Mark the adjustment pressure being set,
5- After the procedures; manually replace the "SR TOP COVER PLUG No. 1" to its initial position.

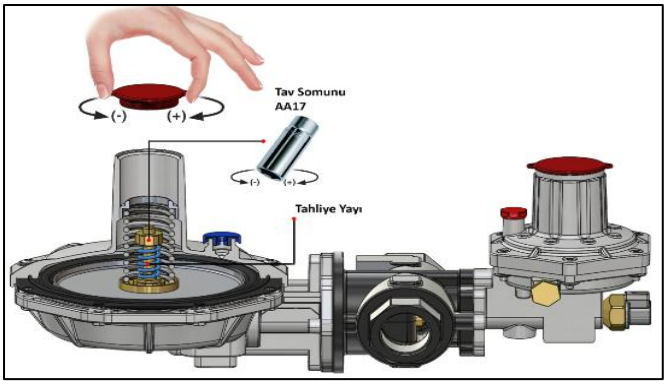


Figure 6

- HIGH SAFETY PRESSURE SETTING:

1- Remove the relevant seal, if any,
2- Remove the "SR TOP COVER PLUG No. 81" by manually rotating it counterclockwise,
3- Turn the "80 SR REGULATION ADJUSTMENT SCREW" in the appropriate direction with the appropriate hexagonal wrench,
4- Mark the adjustment pressure being set,
5- After the procedures; manually replace "SR TOP COVER PLUG 81" to its initial position.

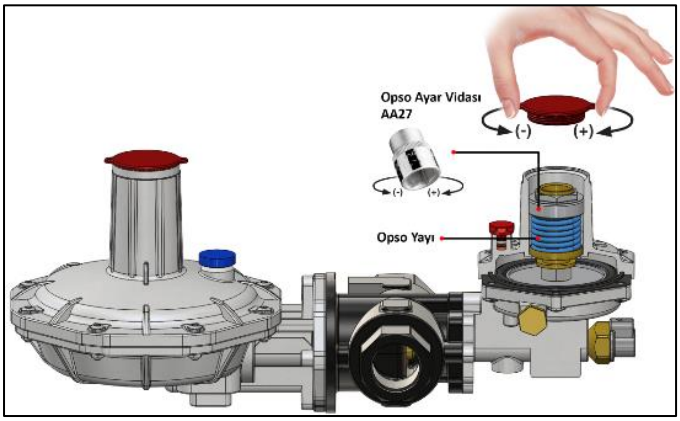


Figure 7

- LOW SAFETY PRESSURE SETTING:

1- Remove the relevant seal, if any,
2- Remove the "SR TOP COVER PLUGI No. 81" by manually rotating it counterclockwise,
3- Turn the "H1 Min ADJUSTMENT SCREW No. 76" in the appropriate direction with the appropriate hexagonal wrench,
4- Mark the adjustment pressure being set,
5- After the procedures; Manually replace "SSD TOP COVER TAPASI 81" to its initial position.

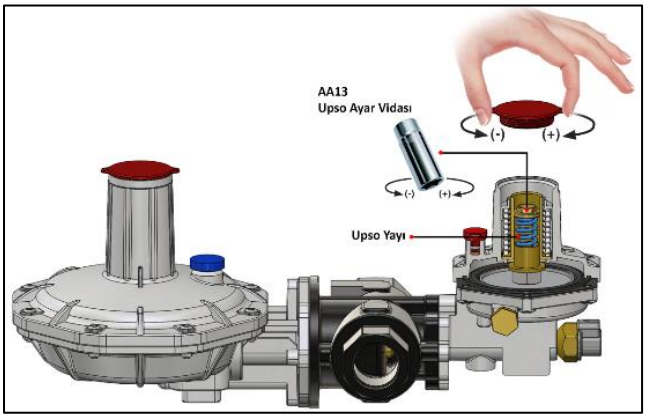


Figure 8

C. AFTER

After the adjustment changes check, by appropriate methods, that technical characteristics and limits specified in this manual and on the product have not been exceeded. All aforementioned tests should be repeated and it shall be ensured that the results are in conformity.

It is recommended to seal the adjustment devices so that the settings are not changed after the relevant pressure settings have been made or if the products will be used in the field. The seal contained in the box, if any, can be used for this process.

Test the set values 3 times to make sure they are set correctly. The testing methods should not disrupt the functionality of the product. To examine the pressure values; perform this process with a calibrated manometer mounted on at least 5xDN in the pipeline at the outlet side of the product. DN is the value that depends on the diameter at the outlet of the product.

If the product is assembled in different positions, check the output, discharge, OPSO, UPSO, SSD discharge pressures and perform the test 3 times to ensure that they are at the correct setting. To examine the pressure values; perform this process with a calibrated

manometer mounted on at least 5xDN in the pipeline at the outlet side of the product. DN is the value that depends on the diameter at the outlet of the product.

7. PERIODICAL MAINTENANCE AND INSPECTION

A. BEFORE

Periodic maintenance-inspection is recommended for the intact and safe operation of the product.

For all operations, full compliance with the rules in this manual must be ensured. This manual should always be with you before, during and after periodic maintenance-inspection and all rules in this manual should be followed. If you think there is any incomplete and incorrect information, contact the manufacturer and do not carry out any further operation.

No repairs on the product should be carried out by the user. All repair operations should be carried out by authorized services and personnel. Users or non-authorized persons should not intervene in the product or in the line in case of any malfunction. The parts that may needed to be disassembled for repair in the product can be removed and installed with normal hand tools and are formed sin such way that they are not installed incorrectly. To prevent personal injuries or damage to equipment, do not perform any maintenance or disassembly without separating the product from the system pressure and draining all internal pressure, as described in the "Shut-Off" section. It is important to ensure that the product is isolated from the inlet and outlet pressure and that the pressure between the product and outlet valve section of the line has been discharged. Prevent explosive gas-air mixture: constantly control the air of the room for gas leakage with a suitable gas concentration measurement device.

The plant shall be equipped with discharge devices and systems to discharge the pressure and fluid from the plant before any inspection and maintenance operations.

The maintenance process is closely associated with the quality of transporting of gas (particles, humidity, gasoline, corrosive substances) and the efficiency of filtering.

In any case, make sure that there is no pressurized gas in the product before performing any maintenance operation.

The periodic maintenance-inspection intervals should not exceed the intervals specified by the gas organization or the related legislation. The maintenance time shall be adjusted according to the working conditions.
If not determined by rules, the time period of preventive maintenance depends on the following conditions:
1- The quality of gas transportation
2- Cleaning and protection of the pipeline before the product: in general, after commissioning, maintenance may be required very often, since the pipeline is not clean enough.
3- The level of reliability required by the regulatory system

Perform maintenance of the product's parts with an "EITHER CLEAN OR REPLACE" approach.

B. DURING

In any case, do not apply abrupt discharge to clean the line after the product or to carry out maintenance-repair operations on the product.

Disassemble the product from the line in accordance with the disassembly rules specified in this manual. Before starting the process, ensure that the gas in front of and behind the product is turned off. Make sure that the fasteners (screws and/or bolts-nuts) in the product are screwed and unscrewed with the specified torques. For this purpose, use a calibrated device and keep it with you. Install the covers exactly in the same place again using the same screws, without applying any contraction and straining on the screws and by reciprocal tightening without applying excessive force so that the holes overlap completely and make sure that they do not remain loose and are not exposed to any mechanical damage. If there is any paint-lacquer etc. on the fasteners, do not perform any process and contact the manufacturer first.

If necessary, do not disassemble the parts inside the enclosures which you have removed separately, hold the enclosures as a group with the parts inside clean them slowly with a clean cloth.

If a problem will be identified during the periodic maintenance and inspection, necessary actions shall be taken according to the rules described in the failures chapter.

Maintenance intervals depend on system-specific operating and ambient conditions, gas quality, the condition of pipelines, etc. The maintenance intervals should be determined by the operator of the system in a system-specific manner. The inspection/control and replacement frequencies depend on the severity of the terms of service and applicable national laws, regulations, standards and directive/recommendations. We recommend function control on a monthly basis and maintenance on an annual basis to ensure that the system shall remain operative. At worst, function control on an annual basis and maintenance on a biennially basis may be preferred.

The pressure equipment directive (PED) and the energy performance of buildings directive (EPBD) stipulate a regular control of heat generators to ensure high efficiency and therefore low emissions to the environment in long terms.

Regarding spare parts; any parts which are not original and are not coming from our company except those parts provided with the product and the box shall not be used. If necessary, contact only the manufacturer for the supply of spare parts. The necessary spare parts kits must be available. For mounting and dismounting, the appropriate tool kits must be available.

Manually remove the seal on the input connection side and the output seal on the output connection side and clean them properly, replace them, if necessary.

Review the measures having been taken for hazards related to the release of flammable or harmful gases to the atmosphere.

Always use new seals after part replacement or conversion.

Do not clean with cleaners containing alcohol or solvents.

Reversely apply the maintenance procedures stated below and reassemble this section.

- SPRING MAINTENANCE:

Output Pressure Adjustment Spring:

1- Remove the "SR UPPER COVER PLUG No. 1" by manually rotating it counterclockwise,
2- Flip "SR REGULATION ADJUSTMENT SCREW No. 2" with the appropriate hexagonal wrench,
3- Remove "H5 REGULATION SPRING No. 3" with your hand, be careful if there is an "OVER-SPRING WASHER",
4- Place the spring supplied from the manufacturer properly and without forcing,
4- Place the "SR REGULATION ADJUSTMENT SCREW No. 2" with the appropriate hexagonal wrench to its initial position,
5- Manually assemble the "SR UPPER COVER PLUG No. 1" by rotating clockwise,
6- Cary out the required processes for the recycling or disposal of the old spring.

Evacuation (regulation) Adjustment Spring:

1- Remove "SR TOP COVER PLUG No. 1" by manually rotating it counterclockwise,
2- Turn the "H1 TEMPER NUT No. 9" with the appropriate hexagonal wrench,
3- Remove the "H1 TEMPER SPRING No. 10" with your hand, be careful if there is an "OVER-SPRING WASHER",
4- Place the spring supplied from the manufacturer properly and without forcing,
4- Place the "H1 TEMPER NUT No. 9" with the appropriate hexagonal wrench to its initial position,
5- Manually assemble the "SR UPPER COVER PLUG No. 1" by rotating clockwise,
6- Cary out the required processes for the recycling or disposal of the old spring.

High Pressure Shut-Off Safety Spring

1- Remove “SR TOP COVER PLUG No. 81” by manually rotating it counterclockwise,
2- Remove “SR REGULATION ADJUSTMENT SCREW No. 80” by turning it with the appropriate hexagonal wrench,
3- Remove “H5 OPSO SPRING No. 77” with your hand, be careful if there is an "OVER-SPRING WASHER",
4- Place the spring supplied from the manufacturer properly and without forcing,
4- Rotate the “SR REGULATION ADJUSTMENT VIDEO no.80” with the appropriate hexagonal wrench to its initial position,
5- Manually assemble the "81 SR TOP COVER PLUG" by rotating clockwise,
6- Cary out the required processes for the recycling or disposal of the old spring.

Low Pressure Shut-Off Safety Spring

1- Remove the “SR TOP COVER PLUG no. 81” by manually rotating it counterclockwise,
2- Remove the "H1 MN ADJUSTMENT SCREW No. 76" with the appropriate hexagonal wrench,
3- Remove the “H5 OPSO MIN SPRING No. 75” with your hand, be careful if there is an "OVER-SPRING WASHER",
4- Place the spring supplied from the manufacturer properly and without forcing,
4- Rotate the “H1 MIN ADJUSTMEN SCREW No. 76” with the appropriate hexagonal wrench to its initial position,
5- Manually assemble the "81 SR TOP COVER PLUG" by rotating clockwise,
6- Cary out the required processes for the recycling or disposal of the old spring.

- REGULATION SECTION MEMBRANE MAINTENANCE-REPLACEMENT

1- Duly unscrew the screws "M5x20 THB SCREW" of the "H5 REGULATION COVER No. 8". By this, remove the cover together with its inner parts from the "H5 REGULATORY BODY No. 22",
2- Remove the "H1 TEMPER NUT No. 9" with the appropriate hexagonal wrench,

3- Remover the "H1 TEMPER SPRING NO. 10", "H1 REGULATION BUMPER NUT No. 11", "H1 SPRING BOTTOM WASHER No. 12", "H5 LP REGULATORY BUMPER No. 13".

4- Change "H5 LP REGULATION DIAPHRAGM No. 14".
5- Check the o-rings and/or gaskets which are seen during the assembly/disassembly works on the product. If damage in the -orings and/or gaskets are observed such as tearing, wear, deformation etc., request the same original o-rings/gaskets from the manufacturer. Upon receipt, replace the deformed o-rings/gaskets with new ones and assemble the product. In this way, you will have made the replacement of "O-RING-GASKET". Carry out the appropriate recycling or disposal process for the old o-rings/gaskets.
6- Assemble the product by performing all operations in reverse order.
7- Check the accuracy of the product with tests.

- SSD SECTION MEMBRANE MAINTENANCE-REPLACEMENT

1- Duly unscrew the screws "M5x20 THB SCREW" of the “H5 OPSO COVER No. 72”. By this, remove the cover together with its inner parts from the "H5 OPSO BODY No. 55".
2- Remove the "H5 UPSO BUMPER No. 71".
3- Remove the "M12 NUT No. 70" with the appropriate wrench.
4 - Remove “H5 LP REGULATORY BUFFER No. 69”.
5- Replace the "H5 LP REGULATION DIAPHRAGM NO. 68".
6- Check the o-rings and/or gaskets which are seen during the assembly/disassembly works on the product. If damage in the -orings and/or gaskets are observed such as tearing, wear, deformation etc., request the same original o-rings/gaskets from the manufacturer. Upon receipt, replace the deformed o-rings/gaskets with new ones and assemble the product. In this way, you will have made the replacement of "O-RING-GASKET". Carry out the appropriate recycling or disposal process for the old o-rings/gaskets.
6- Assemble the product by performing all operations in reverse order.
7- Check the accuracy of the product with tests.

C. AFTER

Assemble and install the product which its maintenance process has been completed in accordance with this manual. Make sure that the threaded or flanged connection between the product and the line is made correctly and is tight. Check and ensure that all accessories and apparatus (seal, plug, cover, filter, etc.) are attached to the product. In all cases, make sure that nobody is present indoors in any situation which leads to gas release from the product or the line to the atmosphere, that no hazardous atmosphere is and/or will be formed and that all necessary lines are opened to the atmosphere. After maintenance, sort any idle and waste parts according to the disposal or recycling methods in accordance with the laws and regulations.

Check and ensure that there are no external leaks in any area of the product with appropriate methods (detector, foam etc.). During and after the periodical maintenance and inspection procedures, attention shall be paid that particles such as dirt, rust, dust, sawdust, etc. do not enter the section where there is clean gas. Check that there is no sound or vibration in the product. After the procedures, check that the technical characteristics and limits mentioned in this manual and on the product are not exceeded using appropriate methods. Perform the test operations described in the installation section in this manual by taking all relevant security measures. If any problem is identified during the periodical maintenance and inspection, necessary actions can be taken according to the rules described in the failures chapter.

8. DECOMMISSION, DISASSEMBLY AND REPLACEMENT

Follow all the rules set forth in this manual before, during and after all disassembly and replacement works and take the necessary actions.

A. BEFORE

Before and during disassembly and replacement processes, ensure that there is no pressurized gas trapped between the line and the product, that the gas supply is turned off and that it is completely prevented from any potential opening.

B. DURING

Close the inlet and outlet valves on the line at the front and back of the product.

Safely and gradually discharge the trapped gas between the line and the product from the section between the product and the outlet valve in accordance with the legislation.

Remove the inlet and outlet connections of the product from the line by rotating them with an appropriate wrench and without applying any overload and force.

C. AFTER

If the product will be replaced with a new one, assemble and install the new product according to this manual.

9. DIMENSIONS, CONNECTIONS AND PARTS

The dimensions are in mm.

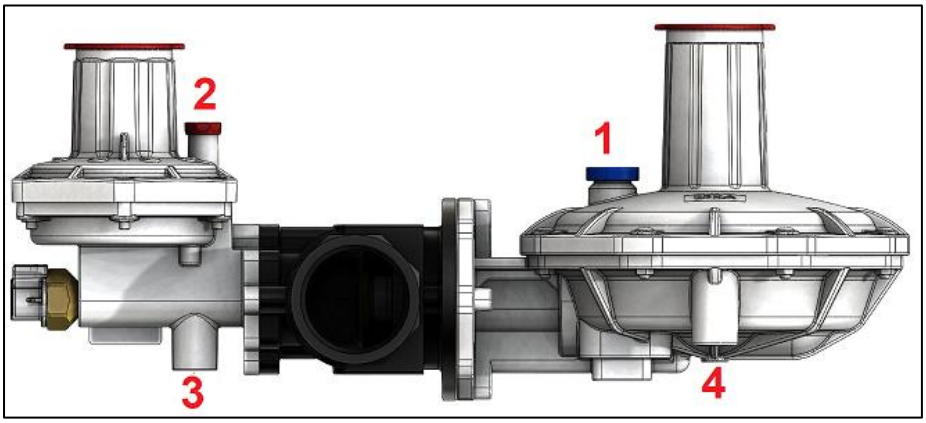
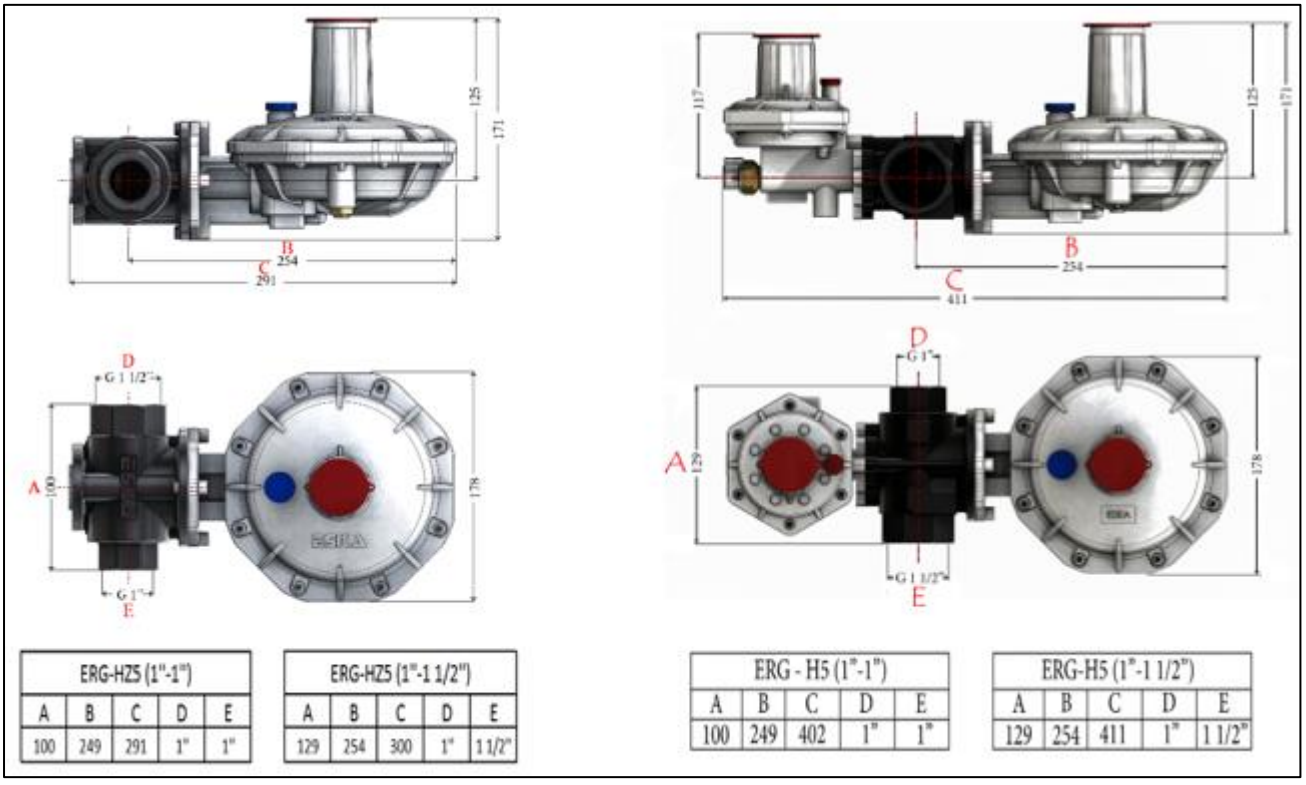


Figure 9

Regulation Discharge No. 1: G1/4 ISO 228
SSD Discharge No.2: G1/8 ISO 228
SSD Sensing Line No.3: GE12-1/4, For Pipes: 12 X 1.5
Regulation Sensing Line No.4: GE12-1/4, For Pipes: 12 X 1.5



ERG-H25 (1"-1")				
A	B	C	D	E
100	249	291	1"	1"

ERG-H25 (1"-1 1/2")				
A	B	C	D	E
129	254	300	1"	1 1/2"

ERG - H5 (1"-1")				
A	B	C	D	E
100	249	402	1"	1"

ERG-H5 (1"-1 1/2")				
A	B	C	D	E
129	254	411	1"	1 1/2"

Figure 10

Display of the External Sensing Connection

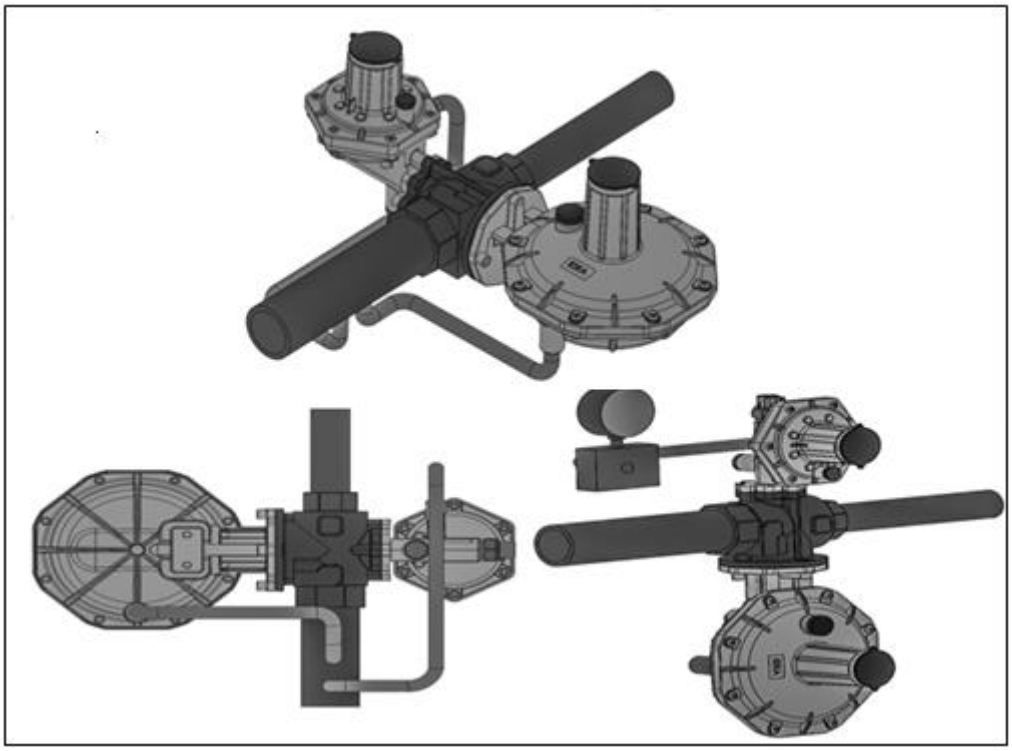
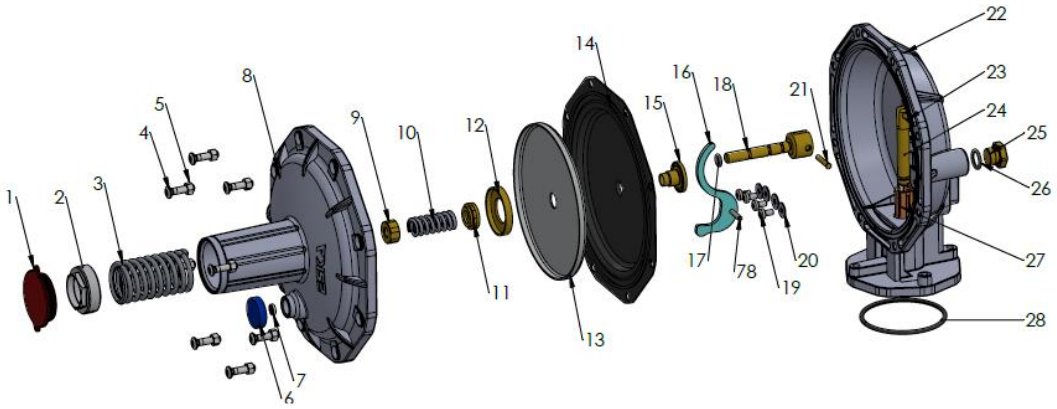
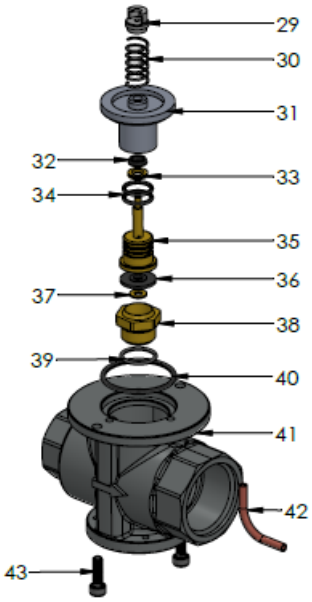
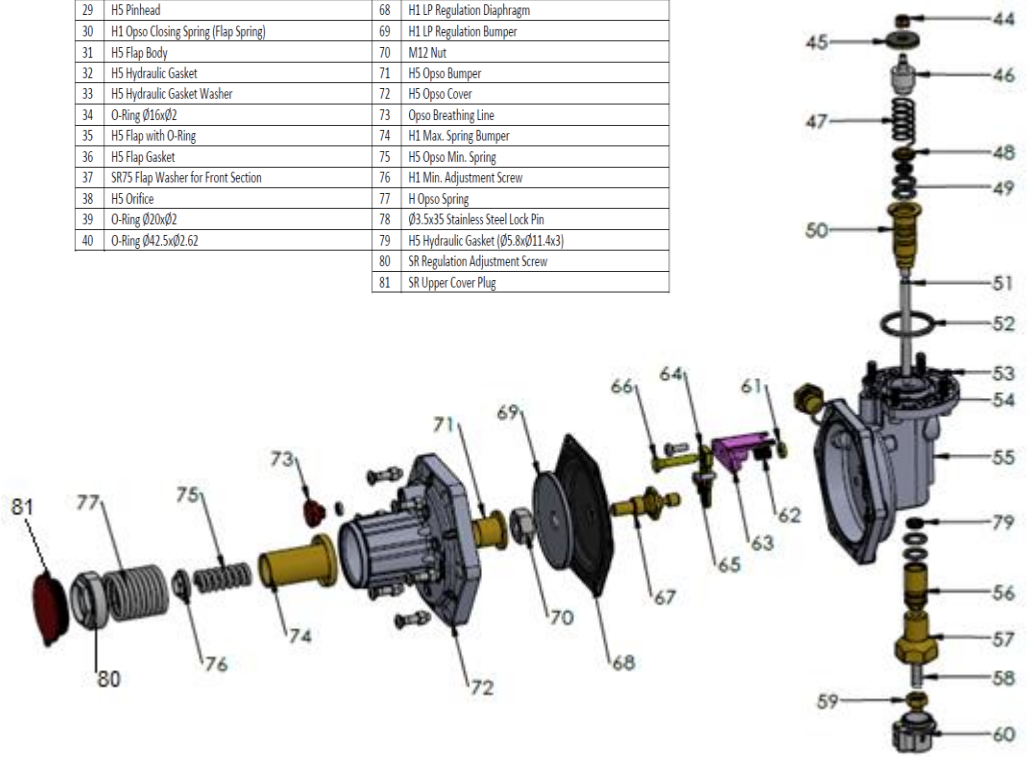


Figure 11





No.	Part Name	No.	Part Name
1	SR Upper Cover Plug, sealed	41	H5 Body 1 1-2"
2	SR Regulation Adjustment Screw	42	H5 Regulation Pipe
3	H5 Regulation Spring 170-300 mbar	43	M6x25 Inox Hex Socket Screw
4	M5x20 Countersunk Inox Hex Socket	44	H1 Opso Flap Screw
5	M5 Inox Nut	45	H1 Opso Flap
6	SR Breathing Line	46	H5 Opso Flap Bumper 1 1-2"
7	SR Breathing Line Filter	47	H1 Opso Closing Spring
8	H5 Regulation Cover	48	H5 Opso Over-Spring Washer
9	H1 Temper Nut	48	H5 Oppo Body
10	H Temper Spring	49	O-Ring Ø 10, 3x Ø2,62
11	H1 Regulation Bumper Nut	50	H5 Opso Ball Cage
12	H1 Spring-Bottom Washer	51	H5 Oppo Pike
13	H5 LP Regulation Bumper	52	O-Ring Ø 30xØ2
14	H5 LP Reg. Diaphragm	53	Side Cover Square O-Ring
15	H5 Discharge Valve	54	M5x20 Hex Socket Screw
16	H5 Lever	55	H5 Opso Body
17	O-Ring Ø6xØ2	56	H5 Opso Cage Nut
18	H5 Discharge Shaft	57	H5 Opso Cocking Lever
19	MMx8 TS8 Self Tapping Screw	58	Opso Cocking Lever
20	Washer, size 4	59	H5 Opso Indicator
21	H5 Discharge Pin	60	SR Shut-Off Safety Plug
22	H5 Reg. Body	61	H5 Opso Lock Washer
23	Drive Pin	62	H5 Opso Cocking Spring
24	H5 Drive Shaft	63	H5 Opso Centering
25	H1 1-4 Plug	64	H5 Opso Lever
26	O-Ring Ø32xØ2	65	Max 12 YBS Screw
27	H5 Plastic Bushing	66	H5 Opso Lock Shaft
28	O-Ring Ø62xØ3	67	H5 Opso Membrane Pin
29	H5 Pinhead	68	H1 LP Regulation Diaphragm
30	H1 Opso Closing Spring (Flap Spring)	69	H1 LP Regulation Bumper
31	H5 Flap Body	70	M12 Nut
32	H5 Hydraulic Gasket	71	H5 Opso Bumper
33	H5 Hydraulic Gasket Washer	72	H5 Opso Cover
34	O-Ring Ø16xØ2	73	Opso Breathing Line
35	H5 Flap with O-Ring	74	H1 Max. Spring Bumper
36	H5 Flap Gasket	75	H5 Opso Min. Spring
37	SR75 Flap Washer for Front Section	76	H1 Min. Adjustment Screw
38	H5 Orifice	77	H Opso Spring
39	O-Ring Ø20xØ2	78	Ø3.5x35 Stainless Steel Lock Pin
40	O-Ring Ø42.5xØ2.62	79	H5 Hydraulic Gasket (Ø5.8xØ11.4x3)
		80	SR Regulation Adjustment Screw
		81	SR Upper Cover Plug



10. CAPACITY CHART

The capacity of use of the desired product should not exceed the following values.

The following formula should be used to find the flows in other gas types:

Conditions: +15°C, 1013 mbar,

Q (n)m³/h (natural gas) x K = Q (n)m³/h (x gas)

Example: Q (n)m³/h (natural gas) x 0.78 = Q (n)m³/h (air)

Correction factor K at 15ºC	
Butane	0,55
Propane	0,64
Oxygen	0,76
Air	0,78
Nitrogen	0,81
Biogas	0,85
City gas	1,23
Hydrogen	3,04
LPG	1,3

ERG-H5 and ERG-HZ5 MODEL GAS PRESSURE REGULATORS CAPACITY CHART

1"-1"

Internal Sensing Active

Pd:15-100 mbar **LP** Head				Pd:100-300 mbar **MP** Head				Pd:300-1000 mbar **HP** Head				Pd:1000-3000 mbar **HP** Head			
Giriş Basıncı	AC5	AC10	AC20	Giriş Basıncı	AC5	AC10	AC20	Giriş Basıncı	AC5	AC10	AC20	Giriş Basıncı	AC5	AC10	AC20
Pd+0,5bar	70	80	90	Pd+0,5bar	90	110	130	Pd+0,5bar	60	85	105	Pd+0,5bar	100	150	190
Pd+1bar	70	110	125	Pd+1bar	130	150	185	Pd+1bar	75	130	155	Pd+1bar	180	340	400
Pd+2,5bar	85	110	125	Pd+2,5bar	220	270	280	Pd+2,5bar	150	240	270	Pd+2,5bar	330	500	500
Pd+5bar	80	135	140	Pd+5bar	280	280	280	Pd+5bar	350	450	500	Pd+5bar	340	500	500

1"-1"

Internal and External Sensing Active

Pd:15-100 mbar **LP** Head				Pd:100-300 mbar **MP** Head				Pd:300-1000 mbar **HP** Head				Pd:1000-3000 mbar **HP** Head			
Giriş Basıncı	AC5	AC10	AC20	Giriş Basıncı	AC5	AC10	AC20	Giriş Basıncı	AC5	AC10	AC20	Giriş Basıncı	AC5	AC10	AC20
Pd+0,5bar	50	70	90	Pd+0,5bar	90	135	145	Pd+0,5bar	50	70	90	Pd+0,5bar	90	150	180
Pd+1bar	70	125	140	Pd+1bar	120	190	220	Pd+1bar	70	110	130	Pd+1bar	140	250	290
Pd+2,5bar	110	180	220	Pd+2,5bar	180	280	300	Pd+2,5bar	110	180	240	Pd+2,5bar	280	470	500
Pd+5bar	140	250	300	Pd+5bar	350	350	350	Pd+5bar	120	350	350	Pd+5bar	330	340	350

,

1"-1 1/2"

Internal Sensing Active

Pd:15-100 mbar **LP** Head				Pd:100-300 mbar **MP** Head				Pd:300-1000 mbar **HP** Head				Pd:1000-3000 mbar **HP** Head			
Giriş Basıncı	AC5	AC10	AC20	Giriş Basıncı	AC5	AC10	AC20	Giriş Basıncı	AC5	AC10	AC20	Giriş Basıncı	AC5	AC10	AC20
Pd+0,5bar	70	95	110	Pd+0,5bar	110	140	150	Pd+0,5bar	60	85	110	Pd+0,5bar	100	150	180
Pd+1bar	150	170	190	Pd+1bar	180	210	250	Pd+1bar	70	130	150	Pd+1bar	165	330	380
Pd+2,5bar	130	190	190	Pd+2,5bar	350	370	400	Pd+2,5bar	150	235	270	Pd+2,5bar	300	450	500
Pd+5bar	130	160	180	Pd+5bar	350	370	400	Pd+5bar	340	450	500	Pd+5bar	330	450	500

1"-1 1/2"

Internal and External Sensing Active

Pd:15-100 mbar **LP** I Head				Pd:100-300 mbar **MP** Head				Pd:300-1000 mbar **TR** Head				Pd:1000-3000 mbar **TR** Head			
Giriş Basıncı	AC5	AC10	AC20	Giriş Basıncı	AC5	AC10	AC20	Giriş Basıncı	AC5	AC10	AC20	Giriş Basıncı	AC5	AC10	AC20
Pd+0,5bar	70	100	110	Pd+0,5bar	90	150	170	Pd+0,5bar	60	80	100	Pd+0,5bar	100	150	180
Pd+1bar	150	160	175	Pd+1bar	150	235	280	Pd+1bar	70	130	150	Pd+1bar	160	330	370
Pd+2,5bar	280	330	330	Pd+2,5bar	500	500	500	Pd+2,5bar	150	230	260	Pd+2,5bar	300	480	500
Pd+5bar	180	230	280	Pd+5bar	500	500	500	Pd+5bar	340	420	500	Pd+5bar	320	500	500

Pd: Outlet Pressure (bar), Maximum Capacities m3/h Natural Gas

11. SPRING CHART

* The manufacturer reserves the right to make changes in the spring settings. Please contact the spring manufacturer.

		Regulation Spring
	1	13-18
	2	18-25
	3	25-35
	4	35-65
LP	5	65-100
	1	100-180
MP	2	180-300
	1	300-600
	2	600-1000
	3	1000-1800
HP	4	1800-2500

		OPSO
	1	30-49
LP	2	50-180
	1	140-180
	2	180-280
MP	3	270-450
	1	250-550
	2	550-850
	3	850-1400
	4	1400-2500
	5	2500-4000
HP	6	4000-5500

		UPSO
LP	1	6-60
	1	10-60
MP	2	60-240
	1	100-500
	2	500-1000
	3	1000-2000
HP	4	2000-3500

12. PACKAGING, HANDLING, TRANSPORT AND STORAGE

- In order to prevent any damages on the product during handling and transportation; our company places the products into single and multiple special cartoon boxes and delivers to the customer.
- Carry out the loading-unloading-lifting-storage operations properly. The product may not function properly if the product will be exposed to throwing, excessive shaking, tipping, falling, impact, overload, force, applying weight onto the product, damage of external parts and outer protrusions, wetting and tipping, etc. In such cases, our company shall not be held responsible.
- Do not expose the product to direct sunlight.
- Store in closed, ventilated, shaded, dry and clean environment conditions.
- Ensure that products are protected from rain, water, snow, extreme heat and cold and similar conditions during handling, transportation and storage.
- No direct heat sources shall be present in the warehouse area.
- Ensure that the floors where the operations are carried out are and clean and are not wet and slippery.
- Do not apply overload and do not lift during transportation.
- In case of repacking no humidity or wetness shall remain in the product.
- The product shall be stored in environments which are isolated from forces such as falling-tipping-shock-impact-vibration etc., shall not be affected by disasters such as earthquakes, flood, fire etc., shall be stored in environments which are protected from corrosive and wearing conditions (sun, atmosphere, rain, snow, humidity, water, external chemicals, etc.) in such a way as not to be affected by weather conditions and being protected from dirt-sludge-contamination.
- Protection measures should be taken for the products by effective packaging against oxidation and ingress of foreign substances into the inner surface of the products.
- Equipment and spare parts shall be kept in their original packaging until their installation at the final destination. When packages are opened, it is necessary to verify the integrity of the materials contained.
- In case of any damages, report the detected damages to the suppliers who safeguard the original packaging to enable the performance of necessary inspections.
- Do not take out the products from the original box and parcels unless they will be used and do not replace the box and parcel with others.

13. LABEL INFORMATION

ERG-H5 Series

ESKA	ESKA VALVE A.Ş. Place : Sakarya / Turkey www.eskavalve.com	CE 2354 according to the 2014/68/EU PED	
GAS PRESSURE REGULATOR			
Model-Type-Series:	ERG-H5	PS / PSD:	.....
Serial Number:	.....	bpu:	.....
Production date (W/Y):	.....	Wds:	.....
Strength Type IS or DS:	.....	Pds:	.....
TS:	.....	AC ±%/ SG +%/ SZ +%	.....
Fluid:	Naturalgas	Qmin-Qmax:	.....
DN	.....	Wdso:	.....
Failure mode type:	.....	Pdso:	.....
Test Pressure:	Pumax x1,5 bar	Wdsu:	.....
K1 / KG / Cg	.....	Pdsu:	.....
		AG ±%	.....
		DvRf	.....

ERG-HZ5 Series DN32-DN40-DN50

ESKA	ESKA VALVE A.Ş. Place : Sakarya / Turkey www.eskavalve.com	CE 2354 according to the 2014/68/EU PED	
GAS PRESSURE REGULATOR			
Model-Type-Series:	ERG-H5	PS / PSD:	.....
Serial Number:	.....	bpu:	.....
Production date (W/Y):	.....	Wds:	.....
Strength Type IS or DS:	.....	Pds:	.....
TS:	.....	AC ±%/ SG +%/ SZ +%	.....
Fluid:	Naturalgas	Qmin-Qmax:	.....
DN	.....	DvRf	.....
Failure mode type:	.....		
Test Pressure:	Pumax x1,5 bar		
K1 / KG / Cg	.....		

ERG-HZ5 Series DN15-DN20-DN25

ESKA	ESKA VALVE A.Ş. Place : Sakarya / Turkey www.eskavalve.com		
GAS PRESSURE REGULATOR			
Model-Type-Series:	ERG-H5	PS / PSD:	.....
Serial Number:	.....	bpu:	.....
Production date (W/Y):	.....	Wds:	.....
Strength Type IS or DS:	.....	Pds:	.....
TS:	.....	AC ±%/ SG +%/ SZ +%	.....
Fluid:	Naturalgas	Qmin-Qmax:	.....
DN	.....	DvRf	.....
Failure mode type:	.....		
Test Pressure:	Pumax x1,5 bar		
K1 / KG / Cg	.....		

14. POSSIBLE FAILURES, CAUSES AND SOLUTIONS

Repair works on the product shall be carried out by authorized and technically expert personnel only.

Follow all rules specified in this manual before, during and after all failure procedures as required and take the necessary actions, especially those actions to inform end users and those measures against pressurized gas hazards.

In case of any suspicion of failure, it is recommended to carry out the procedures specified in the chart below according to the type of problem, if you do not prefer to carry out these procedures or if you have, despite the performance of such procedures, not solved the problem or have not remedied the suspicion of a problem; disassemble the product from the line without performing any further action (without any additional intervention in the product, without attempting to open and to repair the product) by following the disassembly rules, send the product to the manufacturer and install a new product in the line. In no case should any repair and replacement process be carried out in such way to interfere in the internal parts of the product.

Repair works shall be carried out in empty systems and on products which have been disassembled from the line.

Use original spare parts only.

FAILURE TYPE	PROBABLE CAUSE	SOLUTION
Regulator does not work as required	The pressure intended to be adjusted may be outside the installed broadcast range.	Change springs.
	The flow capacity of the line may exceed the product capacity:	Change product.
	Signal lines may be clogged or in the turbulence area.	Change the signal line.
	The ventilation hole may be clogged or constrained.	Clean the ventilation hole and take measures.
Regulator does not close completely	The diaphragms may be defected.	Change the diaphragms.
	A worn out, damaged, contaminated or carved flap.	Clean the flap.
	The O-ring may be worn out.	Change the o-ring.
	The o-ring nozzle may be worn out.	Change the o-ring nozzle.
No gas in regulator	Gas may not flow to the product.	Check the gas installation before the regulator.
	The SSD may be off.	Unlock SSD.
	Inlet pressure may not be available.	Check the inlet pressure.
Regulator provides wrong output pressure.	Regulatory spring may be wrong.	Replace with appropriate spring.
	The required output pressure may be outside the output pressure range of the product.	Change the regulator model.
	Inlet pressure may be low.	Check the gas installation
The output pressure is equal to the input pressure without any flow rate in the regulator. And The output pressure in the regulator is equal to the input pressure in the operation (while flowrate is present). And There's gas release from the air-inlet connection in the regulator.	The signal line may be shut down.	Check the signal line.
	The signal line could be leaking.	Seal the signal line.
	The control plate may be damaged.	Change the control plate.
	The control plate slot may be damaged.	Replace the control plate slot.
	The operation diaphragm may be damaged.	Change the operation diaphragm.
	The balancing diaphragm may be damaged.	Change the balancing diaphragm.
	The lever is damaged.	Change the regulator.
	The o-rings of the regulator may have been damaged.	Replace the regulator's o-rings.
	The o-rings of the SSD may have been damaged.	Change the o-rings of the SSD.
	The balancing unit may be damaged	Replace the regulator plate.
	The o-rings of the balancing axis may be leaking.	Change the regulator.
When the flowrate is increased in the regulator, the output pressure decreases. And Low output pressure outside of tolerances is observed in the regulator	The intended volume flow may exceed the regulator's performance.	Check that the wrong product is not selected in terms of flow rate and output pressure, change the regulator model.
	The dimensions of the gas line may be incorrect.	Increase the nominal width of the pipeline.
	The gas filter before the regulator may be contaminated.	Carry out maintenance on the gas filter, replace the filter.
	The lever may be damaged.	Change the regulator.
	The signal line may be shut down.	Check the signal line.
	The SSD may be damaged.	Check the SSD.
	The input pressure may be incorrect.	Check input pressure
	The output adjustment pressure may be set incorrectly.	Measure the output adjustment pressure, correct if incorrect
	Filter may be contaminated	Change the filter.
	The problem may not have been detected.	Replace with a new product.
Gas discharge from the air inlet connection of the regulator.	The operation diaphragm may be damaged.	Change the operation diaphragm.
	The balancing unit may be damaged.	Replace the regulator plate.
	The o-rings of the balancing axis may be leaking.	Change the regulator.
The SSD cannot be opened/activated.	The signal line may not have been installed or operated correctly.	Assemble the signal line.
	The signal line may be clogged.	Clear the signal line.
	The signal line could be leaking.	Seal the signal line.
	The signal line may have been bent.	Change the signal line.
	The signal pressure may be out of the adjustment range.	Adjust the shut-off pressure or output pressure of the SSD.
	Adjustment springs may not be appropriate.	Replace the adjustment spring.
	The adjustment range of the SSD is outside the output pressure.	Change the SSD.
The SSD does not activate or does not operate.	The signal line may not have been installed or operated correctly.	Connect/mount the signal line.
	The signal line may be clogged.	Clear the signal line.
	The signal line could be leaking.	Seal the signal line.
	The signal line may have been bent.	Change the signal line.
	The signal pressure may be out of the adjustment range.	Set the shut-off pressure of the SSD.
	Adjustment springs may not be appropriate.	Change the adjustment springs.
	Failure can be caused by jams in the mechanism.	Change the SSD.
The SSD shuts down but doesn't seal.	The valve disc may have been damaged or worn out.	Replace the valve disc and the flap or contact the manufacturer for repairing.
	The valve slot may be damaged.	Replace the valve slot.
	Moving parts may be contaminated by foreign substances.	Clean moving parts or replace the valve disc and flap.
	The trigger mechanism may be damaged.	Change the SSD.
	That o-ring may be damaged.	Change the o-rings.
SSD is leaking.	The operation diaphragm may be damaged.	Change the operation diaphragm.
	The SSD enclosure may be damaged.	Replace the SSD enclosure.
	Orifis-flap may have been worn out.	Replace orifis-flap.

	The flap o-ring may have been damaged.	Change the o-ring.
When there's no flow in the regulator, the output pressure rises. And Output pressure in the regulator is constantly increasing	Orifice may be damaged.	Change the orifice
	Flap may be damaged	Change the flap.
	Main diaphragm may be damaged	Change the main diaphragm.
	The sealing area in the body is contaminated	Clear the relevant fields.
	The regulator valve plug may not be installed. An internal leak may be possible.	Check the regulator valve plug, change it.
Fluctuation in output pressure of the regulator.	Possible friction in the balancing mechanism.	Clean the components of the balancing mechanism.
	Traction below minimum capacity.	Increase the flowrate or change the regulator model.
	The plug cap of the regulation top cover may not be attached.	Put the cap on.
Output pressure in the regulator increases during flow.	The main diaphragm may be damaged.	Change the main diaphragm.
Constant output pressure increase in the regulator. And Leaking in regulator when Q=0	Regulator valve plug may not be installed. Potential internal leak.	Check the regulator valve plug. If necessary, replace.
	Orifice and/or class may be defective.	Check the regulator orifice and the flap. Replace or contact the manufacturer.
	O-rings may be damaged	Change the o-rings.
	Operation or Balancing Diaphragm may be defective.	Change the Operation or Balancing Diaphragm.
	There may be contanination or foreign objects in the sealed area.	Clean the sealed area.
	The obturator may be damaged.	Replace.
The output pressure drops constantly.	Possible external leak.	Find the leak and seal it. Replace the relevant part or contact the manufacturer.
No gas flow in regulator	Possible icing due to humidity.	Check for freezing of the water which may ingress into the line or the product.
	Connections may not be fully tightened.	Check for loose connections or screws, if yes, tighten according to the rules. (if the screws are sealed do not perform this process)
	Filter may be clogged.	Remove the product from the line, manually remove and clean the line filter before the product, install the new filter properly manually if necessary and make sure it is fully seated, mount the product back to the line
	The product's SSD may have turned off.	Try re-installing the product.
	The problem may not have been detected.	Replace the product with a new one.
External leak in the product	Connections may not be fully tightened.	Check for loosened connection or screw and tighten according to the rules. (if the screws are sealed, do not perform this process)
	The product-line connection may not be fully connected.	If there is a leak in the outlet connection nozzle, remove the product from the line, remove the outlet seal manually, if there is no visual problem, install it back in, reassemble the product to the line
	The operation diaphragm may be damaged.	Change the operation diaphragm.
	The drain valve may be contaminated.	Clean the drain valve.
High output pressure in the regulator which is outside the tolerances	Possible error in the line pressure.	Stop the gas traction at the outlet, close the inlet valve, then turn it on and re-activate the product and check the result.
	The output adjustment pressure may be set incorrectly.	Measure output adjustment pressure and correct if incorrect.
	The problem may not have been detected.	Replace the product with a new one.
Discharge system errors in regulator	The discharge adjustment spring may be loose.	Tighten or replace the spring.
	The discharge gasket may be contaminated.	Replace the discharge gasket.
	Possible mechanical jam	Replace with a new product.
Insufficient flowrate in regulator	Product selection may be incorrect.	Check that the wrong product is not selected in terms of flow rate and output pressure.
	The line and filter may be contaminated.	Take measures for line cleaning. Replace the filter.
	Input pressure may be too low.	Measure input pressure and check that it is not below the minimum input pressure.
	The output adjustment pressure may be set incorrectly.	Measure output adjustment pressure and correct if incorrect
	The problem may not have been detected.	Replace with a new product
Missing accessories in the product	There may be missing accessories in the product.	Identify missing parts such as the cocking lever plastic, pressure adjustment seals, if any, discharge protection plug if any, discharge filter if any, etc., request these parts from the manufacturer and install new parts manually.
Sound and vibration in the product	The mounting position may be incorrect.	Check if the mounting position is correct.
	Possible fluctuation in input pressure.	Check for fluctuations in input pressure.
	There may be diameter defects in the output pipeline.	Check for undesirable diameters and similar narrowing at the outlet side
SSD general errors	The SSD lever may be damaged or defective.	Check the SSD lever for impact marks and bending. Try to re-install the product. Replace with a new product.
	Sudden interruption of use	Check if there is any pressure increase due to abrupt stop of outlet flow, combi boiler, boiler etc.

	There may be a narrowing of the diameter in the outlet line.	Check the outlet line for excessive diameter contraction.
	The output adjustment pressure may be set incorrectly.	Measure output adjustment pressure and correct if incorrect
	There may be a narrowing of the diameter in the output sensing line.	Check that there's no contraction in the output sensing line.
	The SSD setting pressure may be set incorrectly.	Measure the SSD adjustment pressure and correct it if it is incorrect.
	The product may not be installed correctly.	Try to re-install the product.
	The problem may not have been detected.	Replace with a new product
PD increase by Q> 0	Broken membrane	Replace

What to do in case of gas smell:

If you smell gas in the line where the product is installed or if the gas alarm devices in the environment where the product is located give signals and alarms, remain calm and carry out following procedures.

- Turn off the gas source from the main gas control-valve and / or storage tank (if LPG),
- Starting from the nearest; close the gas valves and gas appliances,
- Open the doors and windows to increase ventilation,
- Do not use any substances which may cause combustion (cigarettes, lighters, matches, etc.), extinguish all open fires and smoky substances, sources that may create sparks and fires, do not re-start,
- Do not touch, turn on or off any electrical equipment, do not play with plugs (fuses, doorbells, power buttons, etc.) (leave open ones on, and closed ones off.)
- Do not use mobile phones and radios against the risk of sparks,
- Extinguish fire, if any.

If the cause of the gas leak has been determined and eliminated after the aforementioned procedures are carried out, you can instruct authorized fitters to open the valves and devices you had closed by consulting the relevant places (gas distribution company-fitter, etc.). Before the gas is re-released, you STRICTLY must inform all inhabitants of the building that the gas will be/ has been re-opened.

If there is an inflammation in the gas environment, it is useless and very dangerous to try to extinguish the flames without cutting off the incoming gas from the valves.

15. PHYSICAL LIFE

The product’s physical life is 5 years.

The physical life is valid if any operation and status having been made on the product has been carried out in accordance with this with this manual.

Replace the product when the physical life expires.

ESKA

CE

EU DECLARATION OF CONFORMITY

AB UYGUNLUK BEYANI

According to Pressure Equipment Directive (2014/68/EU)

Basınçlı Ekipmanlar Yönetmeliği'ne Göre (2014/68/AB)

Declaration Number ***(Deklarasyon No)***	DEC_001_R00
Manufacturer and Owner Of Certificate ***(Üretici ve Sertifika Sahibi Adı)***	ESKA VALVE A.Ş.
Trade Mark ***(Ticari Marka)***	ESKA VALVE / ESKA
Manufacturer Adress and Place ***(Üretici Adresi ve Üretici Yeri)***	Sakarya 1. Organize Sanayi Bölgesi Mahallesi, 11. Cadde, No:6-8, Arifiye/Sakarya/Türkiye
Product Description ***(Ürün Tanımı)***	Gas Pressure Regulator With Safety Shutoff Valve *Emniyet Kapatmalı Gaz Basınç Regülatörü*
Product Model / Type / Serie ***(Ürün Modeli / Tipi / Seri)***	ERG-H5 Series and Versions (LP,MP,HP) *ERG-H5 Serisi ve Versiyonları (LP,MP,HP)*
Product Information ***(Ürün Bilgileri)***	PS4, PS6, PS10, PS16, PS20, TS: Class 1 (-10;60°C) or Class2 (-20;60°C) on request with (-40;60°C), DN25xDN25, DN25xDN40 Threaded Connection (on request with modular connection), AC 5/10/20, SG 10/20/30, AG 5/10/20/30, PS4 and PS6 IS Type , PS10,PS16 and PS20 DS Type (PSD:8) *PS4, PS6, PS10, PS16, PS20, TS: Sınıf 1 (-10;60°C) yada Sınıf 2 (-20;60°C) (istek üzerine -40;60°C), DN25xDN25, DN25xDN40 Dişli Bağlantı (istek üzerine modüler bağlantı), AC 5/10/20, SG 10/20/30, AG 5/10/20/30, PS4 ve PS6 IS Tip, PS10,PS16 ve PS20 DS Tip (PSD8)*
Declaration Issue Date ***(Deklarasyon Yayın Tarihi)***	01.11.2020
The name of the Notified Body and No ***(Onaylanmış Kuruluşun Adı ve Numarası)***	TÜV NORD Turkey Teknik Kontrol ve Belgelendirme Incorporated Company – NB 2354
EU Conformity Assessment Method ***(AB Uygunluk Değerlendirme Yöntemi)***	2014/68/EU PED Category IV, Modul B+D
Modul B Certificate No / Valid Until **Modul D Certificate No / Valid Until**	…….. / …….. …….. / ……..
Declaration ***(Deklarasyon)***	Up defined in our products, we declare that meets the essential safety requirements of the directives to in this document. This declaration of conformity has been published under the responsibility of Eska Valve A.Ş. *Yukarı da tanımlanan üzerinde seri no olan ürünlerimizin, bu belgede belirtilen yönetmeliklerin temel güvenlik gerekliliklerini karşıladığını beyan ederiz. Bu uygunluk beyanı Eska Valve A.Ş. nin sorumluluğu altında yayınlanmıştır.*
Note ***(Not)***	The compliance with Directives applies only to the product if the product is integrated in a system or combined with other units .The system manufacturer is responsible fort he compliance of the complete system with Directives. By altering the device without approval the declaration would invalidate. *Ürünün bir sistemle entegre olarak ya da diğer bir birimle birleştirilerek kullanıldığı durumlarda direktiflerle uyumluluk yalnızca ürünü kapsar. Sistem üreticisi sistemin tamamının direktiflere uyumluluğundan sorumludur. Onayımız alınmadan cihaz üzerinde değişiklik yapıldığında bu beyan geçerli değildir.*

Manufacturers Authorized Signature
(Üretici İmza Yetkilisi)
Erhan SARDAL
General Manager *(Genel Müdür)*
Sakarya/Türkiye, 10.08.2023

ESKA
VALVE ANONİM ŞİRKETİ
Sakarya 1. Organize San. Bölg. Mah.
11. Cad. No: 6/8 Arifiye-SAKARYA
Alifuat Cebesoy V.D. 380 110 2771
Mersis No: 0380-1102-7710-0001

ESKA

CE

EU DECLARATION OF CONFORMITY

AB UYGUNLUK BEYANI

According to Pressure Equipment Directive (2014/68/EU)

Basınçlı Ekipmanlar Yönetmeliği'ne Göre (2014/68/AB)

Declaration Number *(Deklarasyon No)*	DEC_002_R00
Manufacturer and Owner Of Certificate *(Üretici ve Sertifika Sahibi Adı)*	ESKA VALVE A.Ş.
Trade Mark *(Ticari Marka)*	ESKA VALVE / ESKA
Manufacturer Adress and Place *(Üretici Adresi ve Üretici Yeri)*	Sakarya 1. Organize Sanayi Bölgesi Mahallesi, 11. Cadde, No:6-8, Arifiye/Sakarya/Türkiye
Product Description *(Ürün Tanımı)*	Gas Pressure Regulator Without Safety Shutoff Valve *Emniyet Kapatmasız Gaz Basınç Regülatörü*
Product Model / Type / Serie *(Ürün Modeli / Tipi / Seri)*	ERG-HZ5 Series and Versions (LP,MP,HP) *ERG-HZ5 Serisi ve Versiyonları (LP,MP,HP)*
Product Information *(Ürün Bilgileri)*	PS4, PS6, PS10, PS16, PS20, TS: Class 1 (-10;60°C) or Class2 (-20;60°C) on request with (-40;60°C), DN25xDN40 Threaded Connection (on request with modular connection), AC 5/10/20, SG 10/20/30, PS4 and PS6 IS Type , PS10,PS16 and PS20 DS Type (PSD:8) *PS4, PS6, PS10, PS16, PS20, TS: Sınıf 1 (-10;60°C) yada Sınıf 2 (-20;60°C) (istek üzerine -40;60°C), DN25xDN40 Dişli Bağlantı (istek üzerine modüler bağlantı), AC 5/10/20, SG 10/20/30, PS4 ve PS6 IS Tip, PS10,PS16 ve PS20 DS Tip (PSD8)*
Declaration Issue Date *(Deklarasyon Yayın Tarihi)*	01.11.2020
The name of the Notified Body and No *(Onaylanmış Kuruluşun Adı ve Numarası)*	TÜV NORD Turkey Teknik Kontrol ve Belgelendirme Incorporated Company – NB 2354
EU Conformity Assessment Method *(AB Uygunluk Değerlendirme Yöntemi)*	2014/68/EU PED Category I, Modul A2
Modul A2 Certificate No / Valid Until **Modul A2 Certificate No / Valid Until**	…….. / …….. …….. / ……..
Declaration *(Deklarasyon)*	Up defined in our products, we declare that meets the essential safety requirements of the directives to in this document. This declaration of conformity has been published under the responsibility of Eska Valve A.Ş. *Yukarı da tanımlanan üzerinde seri no olan ürünlerimizin, bu belgede belirtilen yönetmeliklerin temel güvenlik gerekliliklerini karşıladığını beyan ederiz. Bu uygunluk beyanı Eska Valve A.Ş. nin sorumluluğu altında yayınlanmıştır.*
Note *(Not)*	The compliance with Directives applies only to the product if the product is integrated in a system or combined with other units .The system manufacturer is responsible fort he compliance of the complete system with Directives. By altering the device without approval the declaration would invalidate. *Ürünün bir sistemle entegre olarak ya da diğer bir birimle birleştirilerek kullanıldığı durumlarda direktiflerle uyumluluk yalnızca ürünü kapsar. Sistem üreticisi sistemin tamamının direktiflere uyumluluğundan sorumludur. Onayımız alınmadan cihaz üzerinde değişiklik yapıldığında bu beyan geçerli değildir.*

Manufacturers Authorized Signature
(Üretici İmza Yetkilisi)
Erhan SARDAL
General Manager *(Genel Müdür)*
Sakarya/Türkiye, 01.11.2020

ESKA
VALVE ANONİM ŞİRKETİ
Sakarya 1. Organize San. Bölg. Mah.
11. Cad. No: 6/8 Arifiye-SAKARYA
Alifuat Cebesoy V.D. 380 110 2771
Mersis No: 0380-1102-7710-0001

EU DECLARATION OF CONFORMITY

AB UYGUNLUK BEYANI

According to Pressure Equipment Directive (2014/68/EU)

Basınçlı Ekipmanlar Yönetmeliği'ne Göre (2014/68/AB)

Declaration Number *(Deklarasyon No)*	DEC_003_R00
Manufacturer and Owner Of Certificate *(Üretici ve Sertifika Sahibi Adı)*	ESKA VALVE A.Ş.
Trade Mark *(Ticari Marka)*	ESKA VALVE / ESKA
Manufacturer Adress and Place *(Üretici Adresi ve Üretici Yeri)*	Sakarya 1. Organize Sanayi Bölgesi Mahallesi, 11. Cadde, No:6-8, Arifiye/Sakarya/Türkiye
Product Description *(Ürün Tanımı)*	Gas Pressure Regulator Without Safety Shutoff Valve *Emniyet Kapatmasız Gaz Basınç Regülatörü*
Product Model / Type / Serie *(Ürün Modeli / Tipi / Seri)*	ERG-HZ5 Series and Versions (LP,MP,HP) *ERG-HZ5 Serisi ve Versiyonları (LP,MP,HP)*
Product Information *(Ürün Bilgileri)*	PS4, PS6, PS10, PS16, PS20, TS: Class 1 (-10;60°C) or Class2 (-20;60°C) on request with (-40;60°C), DN25xDN25 Threaded Connection (on request with modular connection), AC 5/10/20, SG 10/20/30, PS4 and PS6 IS Type , PS10,PS16 and PS20 DS Type (PSD:8) *PS4, PS6, PS10, PS16, PS20, TS: Sınıf 1 (-10;60°C) yada Sınıf 2 (-20;60°C) (istek üzerine -40;60°C), DN25xDN25 Dişli Bağlantı (istek üzerine modüler bağlantı), AC 5/10/20, SG 10/20/30, PS4 ve PS6 IS Tip, PS10,PS16 ve PS20 DS Tip (PSD8)*
Declaration Issue Date *(Deklarasyon Yayın Tarihi)*	01.11.2020
EU Conformity Assessment Method *(AB Uygunluk Değerlendirme Yöntemi)*	2014/68/EU PED, Sound Engineering Practice (SEP)
Declaration *(Deklarasyon)*	We declare that our products with a serial number as defined above meet the requirements 2014/68/EU PED- Pressure Equipment Directive Article 4 item 3 . These equipments designed and manufactured in accordance with the sound engineering practice (SEP) of a Member State in order to ensure safe use. However, These equipments should not bear the CE mark in accordance with Article 4 item 3. *Yukarı da tanımlanan üzerinde seri no olan ürünlerimizin, 2014/68/AB-Basinçli Ekipmanlar Direktifi Madde 7 (3) uyarınca güvenli kullanımı sağlamak için geçerli genel kabul görmüş mühendislik uygulamasına (SEP) uygun olarak tasarımlanmış ve imal edilmiştir. Bununla birlikte 2014/68/AB-Basinçli Ekipmanlar Direktifi Madde 7 (3) gereği bu ekipmanlara CE işareti taşımaması gerektiğini beyan ederiz.*
Note *(Not)*	The compliance with Directives applies only to the product if the product is integrated in a system or combined with other units .The system manufacturer is responsible fort he compliance of the complete system with Directives. By altering the device without approval the declaration would invalidate. *Ürünün bir sistemle entegre olarak ya da diğer bir birimle birleştirilerek kullanıldığı durumlarda direktiflerle uyumluluk yalnızca ürünü kapsar. Sistem üreticisi sistemin tamamının direktiflere uyumluluğundan sorumludur. Onayımız alınmadan cihaz üzerinde değişiklik yapıldığında bu beyan geçerli değildir.*

Manufacturers Authorized Signature
(Üretici İmza Yetkilisi)
Erhan SARDAL
General Manager *(Genel Müdür)*
Sakarya/Türkiye, 01.11.2020

ESKA
VALVE ANONİM ŞİRKETİ
Sakarya 1. Organize San. Bölg. Mah.
11. Cad. No: 6/8 Arifiye-SAKARYA
Alifuat Cebesoy V.D. 380 110 2771
Mersis No: 0380-1102-7710-0001

WARRANTY CERTIFICATE

MANUFACTURER'S OR IMPORTER'S;

Title: ESKA VALVE A. Ş.
Address: Sakarya 1. Organize Sanayi Bölgesi Mahallesi, 11. Cadde, No:6-8 Arifiye/Sakarya/TURKEY
Telephone: +90 (264) 502 54 34 (35) (83)
Fax: +90 (264) 502 54 84
E-mail: info@eskavalve.com
Authorized Signature:
Authorized Stamp:

THE SELLER'S;

Title:
Address:
Phone:
Fax:
E-mail:
Authorized Signature:
Authorized Stamp:

COMMODITYS'S;

Type: Gas Pressure Regulator
Brand: ESKA / ESKA VALVE
Model: ERG-H5 or ERG-HZ5 Series
Banderole Number:
Serial Number:
Warranty Time: 2 years
Maximum Repair Period: 20 working days
Date of Delivery to Customer:
Place of Delivery to Consumer:
Invoice Date:
Invoices Number:

WARRANTY TERMS

1) The warranty period begins from the date of delivery of the goods and is 2 years.

2) All entire goods including all parts are covered by the warranty.

3) If replacing the goods with non-defective goods will bring disproportionate difficulties for the seller, the consumer may select one of the rights being revoking from the contract or exercising the right of claiming a price discount at the rate of the defecet. In determining the disproportion, issues such as the non-defective value of the goods, the significance of the defect and whether applying for other selectable rights would be a problem for the consumer are taken into account. In cases where the consumer chooses the right to revoke from the contract or claiming a price discount at the rate of the defect, the seller is obligated to immediately return the entire price of the goods or the amount of the discount made from the price to the consumer. In the event that the consumer selects the right to replace the goods with non-defecive goods the seller, manufacturer or importer is obligated to fulfill this request within maximum thirty working days as of the date they have been notified on the request to replace the goods with non-defective goods.

4) If the consumer chooses, among other rights, the right of claiming free repair, the seller is obligated to repair or hav repaired the goods without charging any fees such as labor cost, replaced part price or whatsoever. The consumer can also exercise the right of claiming free repairs against the manufacturer or importer. The seller, manufacturer and importer are jointly responsible for the consumer's exercise of this right.

5) If the consumer exercises the right of claiming free repairs and in cases where: – the goods have failed again within the warranty period, - the maximum period for repair has been exceeded, - it has been identified by the authorized service station, seller, manufacturer or importer with a report that the repair of the goods is not possible, the consumer may request from the seller the return of the price of the goods, a price discount at the rate of the defect or, if possible, the replacement of the goods with non-defective goods. The seller cannot refuse the consumer's request. In the event that this request is not fulfilled, the seller, manufacturer and importer are jointly responsible.

6) The repair period of the goods is maximum of 20 working days. This period begins on the date of notification of the failure of the goods to the service station or seller within the warranty period, or, if the warranty period has been exceeded, from the date of delivery of the goods to the service station. If the goods have failed within the warranty period, the time in repair is added to the warranty period. It is imperative to identify whether the defect is caused by user error by the service stations or, if a service station is not available, respectively; any of the seller of the goods, importer or manufacturer with a report to be issued within the maximum repair period and to submit one cope of this report to the cunsomer. The warranty period of the goods replaced during the warranty application is limited to the remaining warranty period of the purchased goods.

7) Any defects caused by the use in contradict with rules mentioned in the user manual or caused by user errors are not covered by the warranty.

8) For any disputes which may arise from the exercise of rights under the warranty, the consumer may apply to the Consumer Arbitral Tribunal or the Consumer Court located in the place where the consumer resides or where the consumer transaction has been performed.