

REACH REGULATION

R 0008 EN

Instructions on the Safe Handling of SAMSON Diaphragms Made of PVMQ/VMQ (Silicone Rubber) for Type 3755 to Meet the Requirements of REACH Regulation 1907/2006 ¹⁾

1 Product overview

Type 3755 Pneumatic Volume Booster

The Type 3755 Pneumatic (non-electrical) Volume Booster is used together with positioners to increase the positioning speed of pneumatic actuators with an effective area $\geq 1000 \text{ cm}^2$ or a travel volume $\geq 6 \text{ l}$.

The device is designed to operate under exactly defined conditions (e.g. operating pressure, temperature). Therefore, operators must ensure that the volume booster is only used in operating conditions that meet the specifications used for sizing the controller at the ordering stage.

In case operators intend to use the volume boosters in applications or conditions other than those specified, contact SAMSON.

SAMSON does not assume any liability for damage resulting from the failure to use the device for its intended purpose or for damage caused by external forces or any other external factors.

→ Refer to the Mounting and Operating Instructions
 ► EB 8393 for the intended use (e.g. limits of application).

The following individual articles contain declarable substances:

– Fig. 4: diaphragm (1) made of VMQ or PVMQ

Materials and articles for the standard temperature and low temperature range are also affected:

– For standard temperature range:

| Material number | Material short text |
|-----------------|-------------------------------|
| 1000111404 | Diaphragm |
| 100082330 | Natural rubber VMQ 58 Shore A |

– For low temperature range:

| Material number | Material short text |
|-----------------|--------------------------------|
| 0520-1590 | Diaphragm |
| 8088-3051 | Natural rubber PVMQ 55 Shore A |



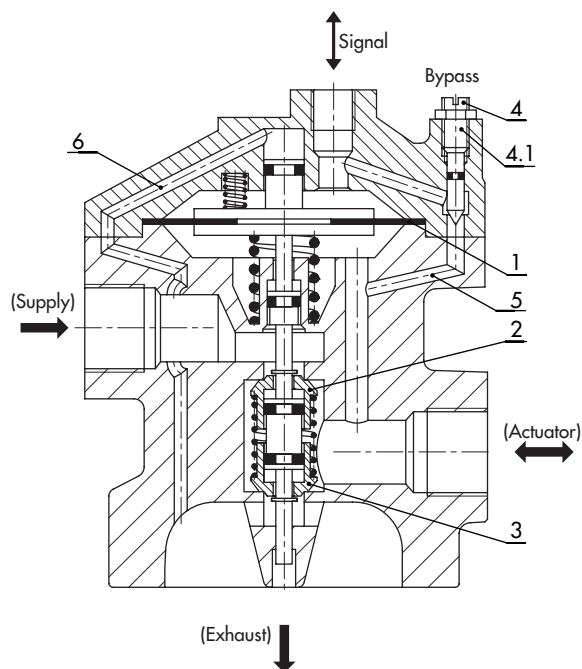
Fig. 1: Type 3755-1 (cast aluminum body)



Fig. 2: Type 3755-2 (cast aluminum body)



Fig. 3: Type 3755-2 (stainless steel body)



- 1 Diaphragm
- 2 Supply plug
- 3 Exhaust plug
- 4 Bypass restriction screw
- 4.1 Lock nut
- 5 Bypass duct (through hook-up in version with stainless steel body)
- 6 Duct for pressure balancing (through hook-up in version with stainless steel body)

Fig. 4: Sectional drawing of version with aluminum body (the same principle applies to the version with stainless steel body)

Materials

| Type | 3755-1 (aluminum) | 3755-2 (aluminum) | 3755-2 (stainless steel) |
|----------------------|---|---|---------------------------------------|
| Body | Cast aluminum, powder coating (RAL 1019) | | 1.4404 and 1.4571 |
| | EN AC-43000KF according to DIN EN 1706 | EN AC-43000KF according to DIN 1706 and EN AW-5083-H112 according to DIN EN 755-3 | |
| Exhaust side | Silencer with sintered polyethylene filter disk and stainless steel retaining plate | Flanged-on threaded port made of aluminum, powder coated (RAL 1019) | Threaded port made of stainless steel |
| Diaphragm | Standard temperature range: VMQ · Low-temperature range: PVMQ | | |
| Seat-plug seal | VMQ | | |
| Other seals | NBR | | |
| Other external parts | Stainless steel | | |

Source: Mounting and Operating Instructions ► EB 8393

1.1 Chemical composition

The VMQ diaphragms, as articles according to Article 33 of the REACH Regulation, contain natural rubber, an article with the following (pure) chemical substances:

- Diaphragm (finished article): vulcanized rubber with PES fabric
 - PES fabric
 - VMQ natural rubber (silicone polymer) or
 - PVMQ natural rubber (silicone polymer)

| CAS no. | Name, EC number and GHS classification | % (w/w) | Index no. | REACH no. |
|----------|---|-----------|--------------|------------------|
| 556-67-2 | Octamethylcyclotetrasiloxane (D4) 209-136-7 Flam. Liq. 3 Repr. 2 Aquatic Chronic 4 H226, H361f, H413 | 0.1 < 0.3 | 014-018-00-1 | 01-2119529238-36 |
| 541-02-6 | Decamethylcyclopentasiloxane (D5) 208-764-9 | 0.1 < 0.3 | | 01-2119511367-43 |
| 540-97-6 | Dodecamethylcyclohexasiloxane (D6) 208-762-8 | 0.3 < 1.0 | | 01-2119517435-42 |

Any residues of chemical substances that may adhere to rubber parts are removed. SAMSON subjects the diaphragms to a tempering process. However, it must be assumed that very small amounts of the listed substances still remain on the diaphragms.

According to the manufacturer, the listed substances are accompanying substances present in silicone polymers. The substances can be reduced by tempering the parts (i.e. the parts are heat-treated by carefully heating them over a long period of time).

This treatment changes the internal structure of solid materials.

1.2 Note on CLP Regulation (EC) No. 1272/2008

The entire mixture is not classified as hazardous as defined in the regulation (see section 1.1 on different classification of CAS no. 556-67-2).

As the potential hazardous ingredients, if any, are bound in the polymer matrix, it is unlikely that the product poses a risk to health and environment.

➔ Product overview ► <https://www.samsongroup.com/en/about-samson/material-compliance/reach-regulation/>

1.3 Note concerning Annex XVII of REACH: Restrictions

SAMSON is working intensively on reducing the concentrations of D4 and D5 in the affected articles and looking for materials to replace them. The current version of the REACH Annex XVII (entry 70) determines that so far there is only one restriction for use of these substances in wash-off cosmetic products.

- Octamethylcyclotetrasiloxane (D4) CAS no. 556-67-2 EC no. 209-136-7
- Decamethylcyclopentasiloxane (D5) CAS no. 541-02-6 EC no. 208-764-9

1. Shall not be placed on the market in wash-off cosmetic products in a concentration equal to or greater than 0.1 % by weight of either substance, after 31 January 2020.
2. For the purposes of this entry, "wash-off cosmetic products" means cosmetic products as defined in Article 2(1)(a) of Regulation (EC) no. 1223/2009 that, under normal conditions of use, are washed off with water after application

This restriction concerning cosmetic product does not affect SAMSON.

Source: ► <https://echa.europa.eu/documents/10162/50e79685-efaf-ac9a-4acb-d8be3f0e9ddc>

1.4 Foundation for calculation: list of individual articles according to Article 33 of the REACH Regulation

Following the judgment by the Court of Justice of the European Union concerning case C-106/14 of 16 October 2015, "Once an article, always an article" (O5A), we calculate the substance on the VMQ or PVMQ as follows:

Natural rubber VMQ 58 Shore A and PVMQ 55 Shore A

These silicones as the originally isolated articles contain chemical substances in concentrations listed in section 1.1.

2 Legal requirements of the European Union (EU) and the European Free Trade Association (EFTA) in the common European Economic Area (EEA)

The combination of the Type 3755 Volume Booster with positioners, sensors or other electrical components may create an electrical assembly. Such assemblies as new or waste electrical and electronic equipment are subject to the rules restricting the use of hazardous substances in electrical and electronic equipment (RoHS).

The Regulation (EC) No. 1272/2008 (CLP) for the classification, labeling and packaging of substances and mixtures together with the REACH Regulation 1907/2006 are complementary regulations: the restricted substances are usually classified as chemical substances and mixtures in the United Nations Global Harmonized System (UN GHS).

These legal requirements affect the Safety Data Sheets (SDS) for chemicals and chemical mixtures as well as the Material Data Sheets (MDS) for declaring the material and substance content as do other legal obligations to report certain substances:

UK Waste Electrical and Electronic Equipment Regulations 2013

UK Statutory Instruments 2013 No. 3113 PART 3 Regulation 24 on waste electrical and electronic equipment – this document serves to report Substances of Very High Concern (SVHC) to recycling companies.

WEEE 2012/19/EU

In compliance with Article 15, SAMSON AG reports the content of D4, D5 and D6 to European Chemicals Agency (ECHA) over the EU SCIP database. In this way, it provides information to interested recycling companies within the European Economic Area (EEA; both EU and EFTA) in accordance to Article 33 of the REACH Regulation.

Waste Framework Directive (WFD) 2008/98/EC

Article 9(i), Directive (EU) 2018/851 of 30 May 2018 amending EU Waste Framework Directive:

SAMSON AG reports the content of SVHC to European Chemicals Agency (ECHA) over the EU SCIP database in accordance to Article 33 of the REACH Regulation (see WEEE above).

3 Legal requirements outside the EU

These substances are often determined based on the classification of chemical substances and mixtures in the United Nations Global Harmonized System (UN GHS).

3.1 China RoHS ²⁾, also in conjunction with WEEE ³⁾ and waste disposal regulations

The RoHS and WEEE regulations only apply to non-electrical equipment when it is delivered to the customer combined with electrical equipment. In this case, an entire electrical assembly is created.

| | |
|---|---|
| China RoHS | It does not apply since the pure substances D4, D5 and D6 are not listed. |
| Rules on WEEE (Waste Electrical and Electronic Equipment) | Waste electrical and electronic equipment according to national waste disposal legislation: this document serves to report Substances of Very High Concern (SVHC) to recycling companies outside the EU and EFTA. |

3.2 California Proposition 65 ⁴⁾

The substances D4, D5 und D6 are not included in the following list:

- March 19, 2021 Proposition 65 List (Excel)

So far, no duty exists for SAMSON to communicate information on substances for the target market of California.

SAMSON mentions that there is no significant exposure through dust for cases involving servicing, repair or recycling.

→ See section 4, 5, 6 and 7

4 Information on safe handling

The diaphragms are already installed in the Type 3755 Pneumatic Volume Boosters delivered by SAMSON or are supplied as spare parts to replace defective diaphragms. The substance is contained in the diaphragm's rubber. As a result, hardly any direct contact with the substance will occur under normal, foreseeable conditions and when used as intended. Nevertheless, contact could occur when handling the diaphragm directly.

→ To prevent contact with the fabric and ensure the safe handling of the article, observe the following instructions on safe use (see section 5, 6 and 7).

5 Personal safety measures

Eye and face protection

- Wear safety goggles or face shield.
Suitable eye protection: goggles with side shields

Hand protection

- Wear suitable gloves.
Mandatory properties: resistant to heat.
- Make sure the area is sufficiently ventilated and use local exhaust ventilation at critical areas.

6 Environmental protection measures

- Use an extraction system if fiber dust is created during processing.
Make sure the fiber dust is not released into the sewage system.
- Diaphragms must be replaced by properly trained and instructed staff only.
- Make sure that these instructions are available to the staff before replacing any diaphragms.
- Do not machine or heat up diaphragms before use. Mount the diaphragm as specified in the applicable instructions.
Close the housing afterwards.

7 Further instructions on handling the whole article (diaphragm)

- Do not use the diaphragm for medical or clinical purposes.
- Immediately replace damaged diaphragms.
- Waste disposal according to public authority regulations.

Waste code – unused product:

070299 Wastes from organic chemical processes; wastes from the manufacture, formulation, supply and use (MFSU) of plastics, synthetic rubber and man-made fibres; wastes not otherwise specified

Waste code – used product:

070299 Wastes from organic chemical processes; wastes from the manufacture, formulation, supply and use (MFSU) of plastics, synthetic rubber and man-made fibres; wastes not otherwise specified

Waste code – packaging (not cleaned):

150106 Waste packaging; absorbents, wiping cloths, filter materials and protective clothing not otherwise specified; packaging (including separately collected municipal packaging waste); mixed packaging

Completely empty packaging can be recycled.

8 Manufacturer address

SAMSON will keep you updated on all modifications concerning restrictions, requirements or other rules and regulations in connection with the substance.

- Go to the REACH page on our website:
 - ▶ <https://www.samsongroup.com/en/about-samson/material-compliance/reach-regulation/>
- In cases of doubt, contact our material compliance experts: ▶ request-compliance-de@samsongroup.com.

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- ¹⁾ REACH regulation: Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the registration, evaluation, authorization and restriction of chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No. 793/93 and Commission Regulation (EC) No. 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC
 - ²⁾ China RoHS: SJ/T 11363, SJ/T 11364, SJ/T 11365, additionally: 28 February 2006: Management Measures for the Prevention and Control of Pollution from Electronic Information Product
China RoHS: GB/T 26572, for EFUP, environment-friendly use period of electronic information products
 - ³⁾ DIRECTIVE 2012/19/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 on waste electrical and electronic equipment (WEEE) (recast), Article 15: Information for treatment facilities
(1) In order to facilitate the preparation for re-use and the correct and environmentally sound treatment of WEEE, including maintenance, upgrade, refurbishment and recycling, Member States shall take the necessary measures to ensure that producers provide information free of charge about preparation for re-use and treatment in respect of each type of new EEE placed for the first time on the Union market within one year after the equipment is placed on the market. This information shall identify, as far as it is needed by centers which prepare for re-use and treatment and recycling facilities in order to comply with the provisions of this Directive, the different EEE components and materials, as well as the location of dangerous substances and mixtures in EEE. It shall be made available to centers which prepare for re-use and treatment and recycling facilities by producers of EEE in the form of manuals or by means of electronic media (e.g. CD-ROM, online services).
 - ⁴⁾ CHAPTER 6.6. Safe Drinking Water and Toxic Enforcement Act of 1986 [25249.5 - 25249.14].

