

## Stationary Powder-Filling Machines

This versatile workshop unit convinces with its fully developed construction and its wide-spread application.

### Model UP 15

Workshop machine for filling and checking powder extinguishers with 1-50 kg content.

Two large gum wheels which make possible an easy transport of the machine.

Because of the very strong laid out extract fan and the high-grade technical conception it is **the ideal machine for all larger checking services and works fire brigades.**

#### Technical Data:

##### Suction:

approx. 12 - 17 kg/min.

##### Power consumption:

400 V, three-phase, 50 Hz  
also available for other voltages.

##### Weight:

approx. 70 kg

##### Dimensions:

500 x 800 x 1570 mm



VULKAN was founded 1921 as fire extinguisher production  
VULKAN has been making filling and testing equipment since 1965 for all types of fire extinguishers.  
VULKAN supplies not only a perfect technology but also the necessary know-how to cope with all works can arise when providing service.



**Filling and testing machines**

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**Our experience -your advantage**



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**consult us.!**

## Stationary Powder-Filling Machines

**This versatile workshop unit convinces with its fully developed construction and its wide-spread application. for manually operated fire extinguishers with strainer unit in the flow - model UP 15-5**

### Brief technical description

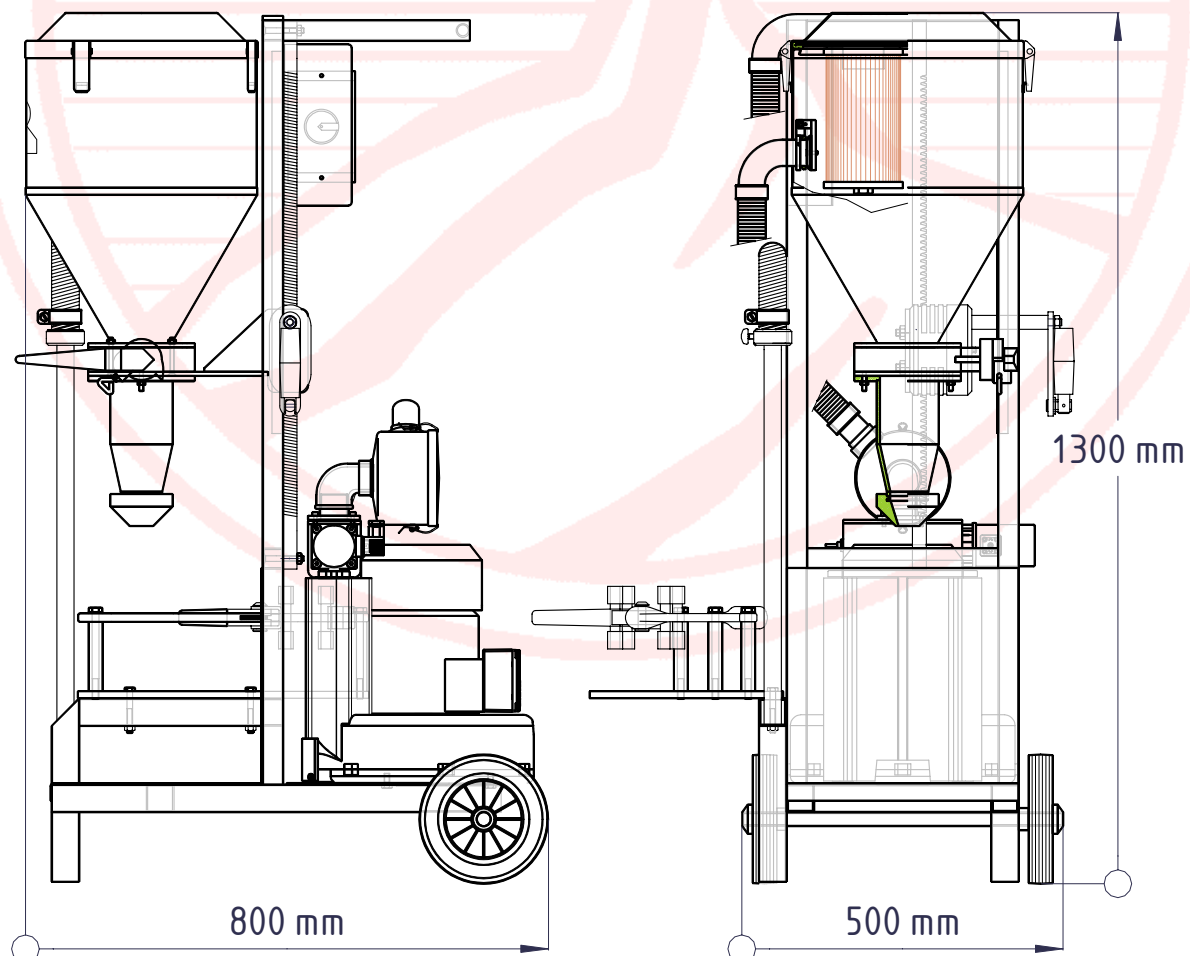
The purpose of our powder refilling units is the dust free refilling of fine and finest grained powder above all for replenishing and periodic checking of powder extinguishers as well as initial filling of small series.

All our powder refilling units are working on the same principle. By means of a suction device the powder is led through a strainer (mesh width 1,0 mm or 1,6 mm) in the so called preliminary separator. There, the filter unit is separating the intake air from the powder. Because of the low porosity at high suction performance the suction air is escaping while the powder is falling in the provided container (fire extinguisher). Through steady development of our machines and accessories we are in a position both to fill mobile fire extinguishers and smaller fire extinguishing vehicles by using the preliminary separator VA 230 and also plastic containers. The complete cleaning of the whole station after the filling procedure guarantees a very long useful life of the filter unit. Beside that an immediate change of powder is possible.

The types UP 07-6 and UP 05-5 are especially suitable for mobile use in vehicles because of their small dimensions and weights and their voltage while the stationary operated stations UP 15-5 and UP 02-5 guarantee a very high suction performance thanks to their three phase current.

The accessories available are completing our powder refilling machines.

### Technical Data



Electrical execution according to VDE 0113.  
We reserve the right to make technical improvements

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### Filling output:

6-kg-container	40 pcs./h
12-kg-container	25 pcs./h
50-kg-container	6 pcs./h
250-kg-container	1 pcs./h
Conveying capacity	300 kg/h
Storage capacity	12 kg
Filter range	1,10 m <sup>2</sup>
Reversing	counter air
Blower type	gas ring compressor
Suction performance	max. 220
Motor performance	1,5 kW
Operating time	100 % ED
Electric supply	400 V, 3 Ph, 50 Hz
Dimension: W x D	500 x 800 mm
H min./max	1250/1570 mm
Weight	70 kg
Paint	white (RAL 9010) <u>powder-coated</u>

### 1. General - brief technical description

The most important requirement for such a machine is the **dust-free filling** and the dust-free emptying of cylinders. For this purpose, an efficient suction unit as well as a sufficiently dimensioned filter equipment is required to guarantee the function for a prolonged period without having an important decrease in performance. Furthermore it is important that the filters are **cleaned after each operation** by means of the reversing unit. The most efficient way to clean a filter is by counter current blowing (reversing).

Furthermore this machine is equipped with a subsequent fine filter for the very finest dust particles which cannot be retained by the filter. Thus no dust particles will penetrate into the suction unit, which means a considerable increase of working life.

In order to guarantee the required dust-free filling without additional exhauster, we have created a **close system** in connecting the fire extinguisher container to be filled in a dustproof way to the filling funnel. Here it is important to have a universal design for the clamping device and the holding fixture for the individual containers to allow the filling of a variety of different types and sizes of fire extinguishers without major alterations.

In the **closed filling system**, the extinguisher to be filled is pressed against a sealing, so that it is not possible to control at the same time the powder weight to be filled by means of a balance. Therefore the powder storage container (a sack or a drum) is placed beside the machine on a floor balance, preferably a digital balance with tare, which continuously displays the weight of the powder being sucked out of the container.

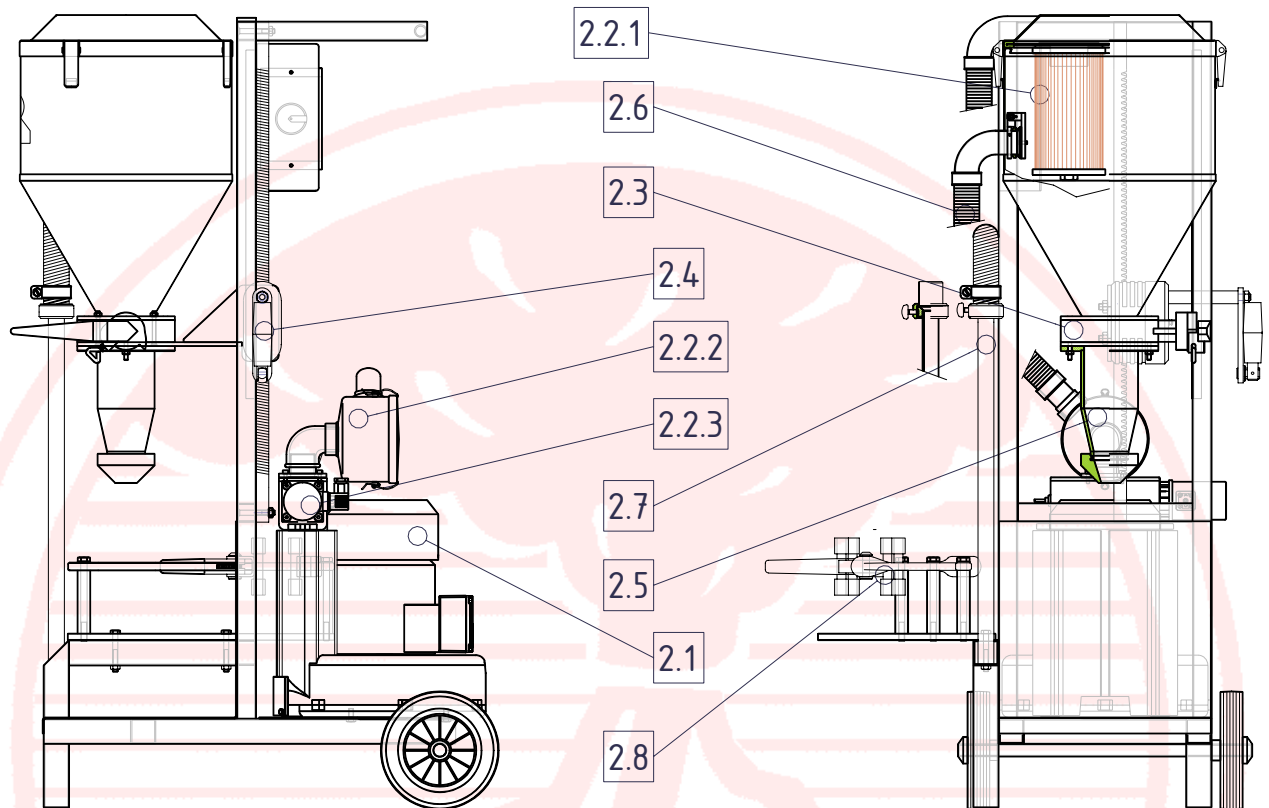
Another very practical feature is the **sieve in the suction pipe**, preventing the transport of clotted powder into the filling funnel and from there to the fire extinguisher. This is very important because such powder lumps cannot only block the nozzle or the deliver pipe but the humidity contained in it may even cause an expansion of the lumping and a total failure of the fire extinguisher.

The machine is designed in such a way that all powder fire extinguishers from 1 to 12 kg can be clamped in and filled without auxiliary equipment.

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### 2. Description of the individual components and elements



#### 2.1 Suction fan

The suction fan is a high-quality single-stage gas ring compressor, directly flanged at an electric motor. Because of the high flow rate and a sufficiently dimensioned low pressure it is most suitable for powder conveying.

#### 2.2 Filter system

The filter system consists of a large filter basket equipped with several filter cartridges and built into the separator tank. A fine filter is connected in series which holds back even the finest floating particles up to a grain size of 0,003 mm, thus ensuring a dust-free filling.

##### 2.2.1 Main filter

The powder is lead through the suction hose into the powder separator. The powder particles, carried partially upside together with the conveying air are collected at the filter cartridges. Therefore it is necessary to clean the filter cartridges after each filling procedure or periodically by counter-current blowing (reversing).

##### 2.2.2 Fine filter

We use a micro-filter with a removable filter cartridge. The filter material consists of a fine filter paper which is folded many times over to have a big filter surface. This filter cartridge is taken out from time to time and shaken or blown out with low compressed-air jet.

##### 2.2.3 Filter cleaning by reversing

The reversing unit consists of a electric-operated slider in an aluminium casing. The slider is standing in normal position at "suction". When you operate the slider manually, the suction blower is supplied with suction air from outside and the exhaust air is pressed inwards through the filter cartridges, that means in opposite direction as in position "suction". The air flowing in this way backwards through the filter cartridges is cleaning them. The adhering dust particles are falling into the separator tank. During this reversing operation the suction line is simultaneously closed by a non-return valve, so that the powder cannot flow out of the suction pipe. This cleaning should be repeated several times according to the requirements in 2-second- tact.



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### **2. Description of the individual components and elements**

#### **2.3 *Hand-operated valve***

The hand-operated valve is a maintenance free, wear-resistant component closing the separator tank. Because of the rubber inside gasket an easy-running system for absolutely tight closing is not possible. The hand lever corresponds to the position of the valve: in a horizontal position the hand-operated valve is closed, in a vertical position it is open.

#### **2.4 *Lifting device with cylinder holder***

In order to equalize the different cylinder heights, the powder refilling machine UP 15-5 is equipped with a lifting device. This height adjustment lifts or lowers the whole separator tank along with control funnel and sealing cone. The lifting device consists of a toothed rack with wheel box and hand-operated crank.

#### **2.5 *Control funnel***

The transparent plexiglas funnel allows to watch the powder flowing out of the separator. Consequently the operator is able to regulate the suction operation to ensure a regular inflow of the powder into the cylinder. A too rapid suction may cause an obstruction in the funnel which can be easily removed by closing manually the suction opening at the suction pipe for a moment.

The sealing cone attached on the bottom of the control funnel is made of soft plastic to protect the control funnel and to equalize irregularities of the cylinder opening.

#### **2.6 *Suction hose***

The suction hoses at the UP 15-5 are electrically conductive due to an integrated metal wire. Thereby the static charging is carried away during suction because of the power friction. When changing the suction hose, please take care that the metal wire at the junction points between machine and suction pipe is made bright in order to guarantee the electrical conductivity.

#### **2.7 *Suction pipe with strainer***

The suction pipe in the standard execution has an external diameter of 25 mm. We can supply suction pipes with other diameters or lengths at request. In order to obtain a high efficiency when emptying powder out of cylinders.

At the junction points between the end of the suction pipe and the suction line connection a sieve is layed in loosely which can be changed by opening the locking device by means of the wing screw.

#### **2.8 *Universal cylinder clamping device***

This clamping device is fastened on the machine frame and serves for the holding of the fire extinguisher cylinder to be emptied. It offers an advantage for the demounting of the fire extinguishers, and it is also practical for the subsequent draining of the cylinder.

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### **3. Recommended additional equipments**

#### **3.1 *Sealing cone***

for small filling holes, to be mounted on flow control, filling diameter 14 - 89 mm.

#### **3.2 *Special suction pipe***

optionally with diameters 38, 18, 12, or 8 mm 760 mm long.

#### **3.3 *Blow - off fixture***

for the emptying of pressurized extinguishers, suitable to take up various hose nozzles of pressurized extinguishers.

#### **3.4 *Balance CW150***

As accessory an electric dormant scale appropriate for verification and with digital indication can be supplied. The weighing range is 150 kg (recommended) with an exactness of 100 gr .The storing container placed on the dormant scale is counter balanced by means of a push of the button before starting operation. During emptying the fire extinguisher the suctioned powder quantity is indicated.

#### **3.5 *Universal preliminary separator VA230***

for refilling of larger tanks

The pre-separator cone with suction lines is mounted between the suction pipe and the existing suction hose. The connections at the suction hoses of the pre-separator cone are designed in a way that any confusion is excluded.

#### **3.6 *Storage drum filling***

for intermediate storage of powder or collection of old powder. Lid removable, with two strong handles. The UP 15 is designed constructional in a way that a storage drum with 60 l can be put directly under the separator by means of the lifting device and be filled provided that the storage drum is equipped with a suitable flange.

#### **3.7 *Special suction pipe***

with diameter 38, 1300 mm long.

#### **3.8 *Suction hose extension length 2 m***

with two connection pieces.

#### **3.9 *Special execution with stronger suction fan***

for filling and emptying of bigger extinguisher vessel

Rating:	4,0 kw
Voltage necessary:	220 - 440 V, 3 Ph, 50 / 60 Cy
Endurance noise level :	higher 87 dBA

#### **4.0 *Bag filling device BF41***

The bag is placed between cover and gasket of the filling device BF 41 and then can be filled with the standard sealing cone.

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### 4. Working position of our powder refilling machine UP15-5



Transport of the machine



Refilling from one extinguisher to another



**New filling of extinguishers**  
place the powder storing container or storing sack **on to the balance**, and suction the required quantity of powder by means of the suction pipe into the extinguisher to be filled.



**Discharge of old powder**  
and filling in to plastic bags



**Emptying of wheeled extinguishers**  
with storage drum and preliminary separator VA230



**New filling of wheeled extinguishers**  
with preliminary separator VA230