

Concise installation and operating instructions for pneumatic linear vibrators series NTS 120 HF to NTS 350 NF

Safety



Make sure that the compressed air is shut off during installation or during other work on the vibrator and on the supply lines. Before starting operation all hoses must be tightly connected.

A hose coming loose under pressure may cause injury.

Observe the enclosed drawings.



Alterations to the unit may change the characteristics of the vibrator or even damage the unit and will cause the rejection of any warranty claims.

Screw connections must be checked after 1 hour and then controlled at regular intervals (normally each month).

Vibrations can cause loosening of bolted connections and equipment. This may cause damage to persons and material.

General Notes

The linear vibrators comply with the EC machine regulation 2006/42/EC.

The standard DIN EN ISO 12100 has been observed.

The vibrators produce linear vibrations or shaking movements.

They are used for emptying bunkers, to drive feeders, screens and vibrating tables. Generally for loosening, conveying and separating of bulk materials and for the reduction of friction.

When observing the operating instructions of the customer they may also be used in food processing or wet environments.

They can be operated outside, in dusty or wet environments and, under certain circumstances, under water or other fluids.

The frequency and the dependent centrifugal force are determined by the operating pressure.

Drive medium: Clean, filtered (filter $\leq 5\mu\text{m}$), compressed air or nitrogen of 2 to 6 bar (30 to 90 PSI) is required.

Devices suitable for lubrication-free operation (NTS L) filter $\leq 0,01\mu\text{m}$.

Non-filtered air will damage the vibrators.



All vibrators must be mist-lubricated during operation. Use acid-free and resin-free pneumatic oil, ISO viscosity class according to DIN 51519, VG 5 to VG 15.

Vibrators suitable for operation with oil-free and dry compressed air (NTS L) and/or in areas with explosion risk according to ATEX (NTS E, NTS E L) are available on request.

Maximum operating pressure: 6 bar (90 PSI).

Noise level: Depending on the type of vibrator and air pressure the noise level is 60 to 75 dB(A) (with silencer). If the air pressure is lower, the noise level is also lower. In order to avoid unnecessary noise, the vibrators should not be operated without a silencer.

Installation



The unit must be fastened to a clean and level surface with a fastening screw (for screw size and tightening torque see table).

Use self-locking washers (no spring washers). Use self-locking nuts or e.g. Loctite 270 against loosening.

It is strongly recommended to use a stiffening (U-profile) for the substructure. This stiffening section should be welded to the object. This allows optimal transfer of the vibration energy (avoids lateral vibrations).

Air Supply line: The air resistance increases with the hose length. The nominal widths in the table apply for hose lengths of up to 3 m. Longer supply lines need bigger cross-sections.

A 3/2-way valve (size 1/8" or 1/4") should be installed close to the vibrator. For longer distances, use an additional simple pneumatic control (see detailed operating instructions).

Air discharge line: The exhaust air can be discharged through a hose connected directly to the cover.

In order for the linear vibrator to achieve full efficiency, the discharge hose must have a greater nominal cross-section than the supply hose. The nominal cross-sections given in the table apply for hose lengths up to 3 m. Longer supply lines require larger cross-sections. A silencer should always be fitted at the end of the discharge hose.

Type	Mounting Thread	Tightening Torque	Thread Supply Line max. Length	Supply Hose Size	Thread Discharge Line	Discharge Hose Size	Water proof *	Temperature Range
NTS 120 HF, NF	M 8	20 Nm	G 1/8x6	NW 6	G 1/8	NW 8	yes	5°C to 60°C
NTS 180 HF, NF	M 10	18 Nm	G 1/8x6	NW 6	G 1/4	NW 8	yes	5°C to 60°C
NTS 250 HF, NF	M 12	20 Nm	G 1/8x7	NW 6	G 3/8	NW 8	yes	5°C to 60°C
NTS 350 HF, NF	M 12	30 Nm	G 1/4x7	NW 6-10	G 3/8	NW 8-12	yes	5°C to 60°C

*) Underwater operation requires air discharge to the atmosphere.



The air supply is located on the side of the housing (imperial thread). Do not use fittings with threads longer than specified (see table) e.g. no tubes with male thread. The housing may thereby be deformed – the piston will seize.



The compressed air supply must be securely fastened. The air is discharged via the silencer. The housings have a metric mounting thread in the base.

Start-up and Operation

The start-up of the vibrator is possible immediately after the correct installation. Make sure that the pneumatic system is able to supply the air quantity specified in the operating instructions. Otherwise the vibrator will not be able to reach the technical specifications.

Ensure that the compressed air supply system is able to meet the air consumption value specified in the detailed operating instructions. Otherwise the vibrator will not be able to achieve the technical specifications.



Permissible operating conditions: Ambient temperatures

The permissible temperature range of 5°C to 60°C must not be exceeded or fallen short of during operation.

At ambient temperatures $\leq 10^\circ\text{C}$ higher start-up pressures may be required (≥ 2 bar).

Amplitude adjustment:

The amplitude of vibration can be adjusted by regulating the exhaust air using an optional throttle. The exhaust throttle can be mounted directly to the vibrator or integrated in the air discharge line.

Checklist for Assembly and start-up:

1. Install the unit carefully.
2. Secure the fastening screws.
3. Install maintenance unit (filter, regulator), valve and supply line.
4. Install lubricator and adjust oil flow (2 to 6 drops/h).
5. Check: Are fastening screws secured?
6. Have notes on hose length and nominal width been observed?

Maintenance

NTS vibrators can be cleaned with a water jet from outside. Then operate the vibrator for a short while after.

The use of a mist lubricator requires that it works correctly (are the contents decreasing? drops/h?). Top up oil regularly.



Dirty compressed air causes clogging of filter and silencer. If necessary empty the filter, clean filter element and silencer (wash out).



Screw connections must be checked and retightened after 1 hour of operation and then at regular intervals (normally every month).

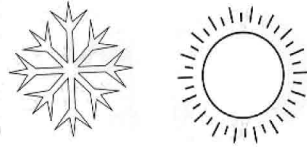
For maintenance instructions and trouble shooting refer to the operating instructions.

Waste disposal: The parts must be disposed off according to valid regulations, depending on the material.

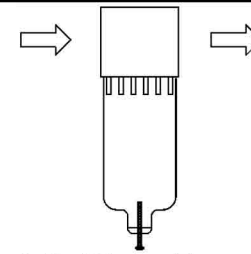
All units can be disposed of through your supplier. The valid waste disposal prices are available on request.



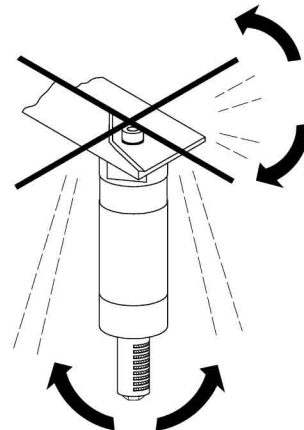
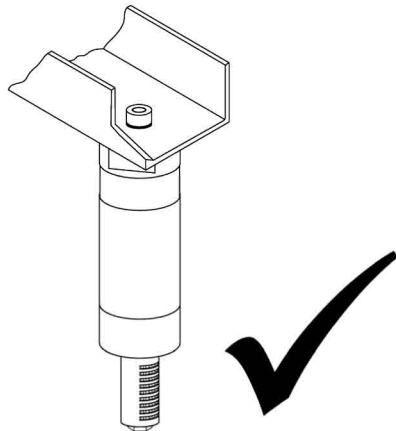
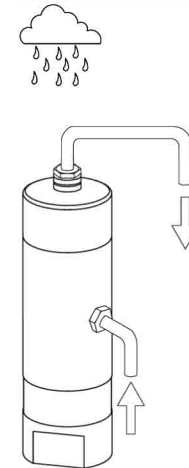
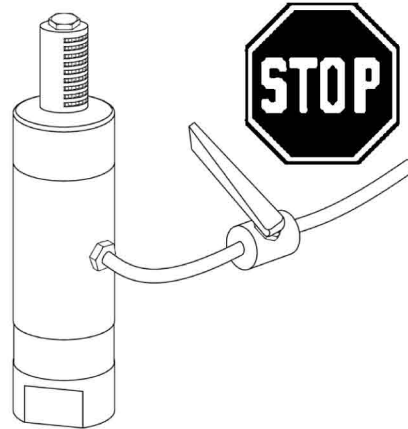
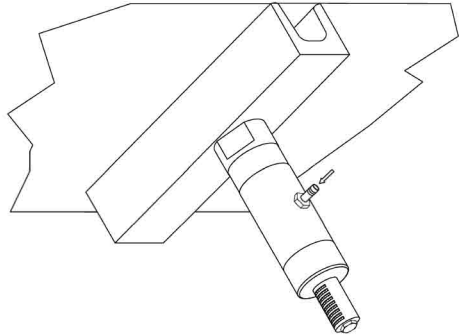
Betriebsdruck
Pressure
Pression
6 bar / 90 PSI max.



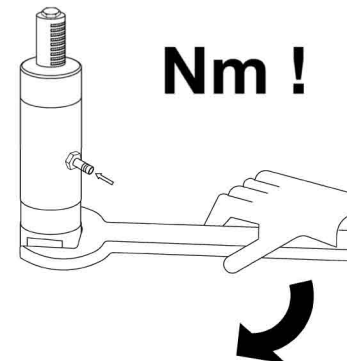
5°C - 60°C
41°F - 140°F



NTS $\leq 5\mu\text{m}$
NTS L $\leq 0,01\mu\text{m}$
Filter erforderlich
Filter recommended
Filtre recommandé



Jan. / Feb. / ...



Nm !