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2 MACHINE AND MANUFACTURER IDENTIFICATION

CODE PRODUCT: P0030403D
MODEL: VISCOMAT 230/2
TECHNICAL DATA: 230V, 50/60 Hz, 1100/1700 rpm, 1.2/1.5 kW, 16/18 A

AVAILABLE MODELS:
VISCOMAT 200/2
230 V/50-60 Hz, 400-460 V/50-60 Hz, 120 V/60 Hz, 100 V/50-60 Hz, 200 V/50-60 Hz
VISCOMAT 230/2
230 V/50 Hz, 400 V/50 Hz
VISCOMAT 350/2
230 V/50-60 Hz, 400-460 V/50-60 Hz, 200 V/50-60 Hz
MANUFACTURER: Piusi S.p.A. Via Pacinotti 16/A - Z.I. Rangavino - 46029 Suzzara (MN) - Italy

3 DECLARATION OF CONFORMITY

The undersigned: Piusi S.p.A. Via Pacinotti 16/A - Z.I. Rangavino 46029 Suzzara - (MN) - Italy
Hereby states under its own responsibility that the equipment described below:
Description: Pump for lubricant oil transfer
Model: VISCOMAT GEAR
Serial number: refer to Lot Number shown on CE plate affixed to product
Year of manufacture: refer to the year of production shown on the CE plate affixed to the product in conformity with the legal provisions indicated in the directives:
- Machine Directive 2006/42/EC
- Electromagnetic Compatibility Directive 2014/53/EU
The documentation is at the disposal of the competent authority following motivated request at Piusi S.p.A. or following request sent to the email address: doc.leg@piusi.com
The person authorised to compile the technical file and draw up the declaration is Otto Varini as legal representative

Suzzara, 20/04/2016

Otto Varini
legal representative

4 MACHINE DESCRIPTION

PUMP Self-Priming, volumetric, rotating electric vane pump equipped with by-pass valve.
MOTOR Asynchronous motor, single-phase or three-phase, 2 or 4 pole, closed type (Protection class IP55 according to regulation EN 60034-5-86), self-ventilating, flange-mounted directly to the pump body.

4.1 HANDLING AND TRANSPORT

Foreword Due to the limited weight and dimensions of the pumps, special lifting equipment is not required to handle them. The pumps are carefully packed before dispatch. Check the packing when receiving the material and store in a dry place.

PACKAGING The pump is equipped comes packed suitably for shipment. On the packaging a label shows the following product information:

- name
- code
- weight



MODEL	WEIGHT (Kg)	PACKAGING DIMENSION (mm)
VISCOMAT 200/2	9	350 x 200 x 280
VISCOMAT 230/2	12,5	350 x 200 x 280
VISCOMAT 350/2	12,5	350 x 200 x 280

5 GENERAL WARNINGS

Warnings To ensure operator safety and to protect the dispensing system from potential damage, workers must be fully acquainted with this instruction manual before attempting to operate the dispensing system. The following symbols will be used throughout the manual to highlight safety information and precautions of particular importance:

ATTENTION This symbol indicates safe working practices for operators and/or potentially exposed persons.
WARNING This symbol indicates that there is risk of damage to the equipment and/or its components.
NOTE This symbol indicates useful information.

Manual preservation This manual should be complete and legible throughout. It should remain available to end users and specialist installation and maintenance technicians for consultation at any time. All reproduction rights are reserved by Piusi S.p.A. The text cannot be reproduced without the written permission of Piusi S.p.A.

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9 TECHNICAL DATA

The data in the table relate to functioning with oil of a viscosity equal to approximately 100 cSt (comparable, for example, to oil SAE V80 at a temperature of 22°C). As the viscosity of the oil varies, the variation in the pump's performance will be more noticeable: the greater the back pressure against which the pump is working, VISCOMAT pumps can pump oils of very different viscosities, within the limits indicated in the TECHNICAL INFORMATION, without requiring any adjustment of the by-pass.

6 SAFETY INSTRUCTIONS

Mains - preliminary checks before installation
Maintenance control
FIRE AND EXPLOSION
ATTENTION You must avoid any contact between the electrical power supply and the fluid that needs to be FILTERED.
Before any checks or maintenance work are carried out, disconnect the power source.
To help prevent fire and explosion:
Use equipment only in well ventilated area.
Keep work area free of debris, including rags and spilled or open containers of solvent and gasoline.
Do not plug or unplug power cords or turn lights on or off when flammable fumes are present.
Ground all equipment in the work area.
Stop operation immediately if static sparking occurs or if you feel a shock. Do not use equipment until you identify and correct the problem.
Keep a working fire extinguisher in the work area.

ELECTRIC SHOCK
This equipment must be grounded. Improper grounding, setup or use of the system can cause electric shock.
Turn off and disconnect power cord before servicing equipment. Connect only to a grounded electrical outlets.
Use only 3 wire extension cords in accordance with local electrical codes. Extension cords should have a ground lead.
Ensure ground prongs are intact on power and extension cords. Do not expose to rain. Store indoors.
Never touch the electric plug of socket with wet hands.
Do not turn the dispensing system on if the power connection cord or other important parts of the apparatus are damaged, such as the inlet outlet plumbing, dispensing nozzle or safety devices. Replace damaged components before operation.

Electrocution or death
Before each use check that the power connection cord and power plug are not damaged. If damaged, have power connection cord replaced before use by a qualified electrician.
The electrical connection between the plug and socket must be kept well away from the dispensing system on if the power connection cord or other important parts of the apparatus are damaged, such as the inlet outlet plumbing, dispensing nozzle or safety devices. Replace damaged components before operation.
For safety reasons, we recommend that, in principle, the equipment be used only with a earth-leakage circuit breaker (max 30 mA).
Electrical connections must use ground fault circuit interrupter (GFCI). Installation operations are carried out with the box open and accessible electrical contacts. All these operations have to be done with the unit isolated from the power supply (presence of electrical shock). Do not operate the unit when fatigued or under the influence of drugs or alcohol.
Do not leave the work area while equipment is energized or under pressure.
Turn off all equipment when equipment is not in use.
Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.
Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.
Do not kink or over bend hoses or use hoses to pull equipment.
Keep children and animals away from work area.
Comply with all applicable safety regulations.

EQUIPMENT MISUSE
Misuse can cause death or serious injury
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Comply with all applicable safety regulations.
Do not exceed the maximum operating pressure or the temperature of the part with lower nominal value of the system. See Technical Data in all equipment manuals.
Use fluids and solvents that are compatible with the wetted part of the system. See Technical Data in all equipment manuals. Read the manufacturer's instructions of the fluids and solvents. For more information on the material, request the safety data sheet (MSDS) from the distributor or dealer.
Check the equipment every day. Immediately repair or replace worn or damaged parts only with original spare parts of the manufacturer.
Make sure the equipment is classified and approved compliant with the standards of the environment in which it is used.
Use the equipment only for the intended use. Contact your distributor for more information.
Keep hoses and cables far from traffic areas, sharp edges, moving parts and hot surfaces.
Do not bend or overbend the hoses or use the hose to pull the equipment.
Read MSDS to know the specific hazards of the fluids you are using.
Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.
Prolonged contact with the treated product may cause skin irritation, always wear protective gloves during dispensing.

TOXIC FLUID OR FUMES HAZARD
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Voltage (V)	VISCOMAT 200/2			VISCOMAT 230/3			VISCOMAT 350/2		
	230	400/460	120	100	200	230	400/460	120	100
Frequency (Hz)	50/60	50/60	60	50/60	50	50	50/60	50/60	50/60
Absorption (A)	3,8/4,4	1,4/2	1,5	1,5/1,7	2,9	6	2,7	4,6	2,1/2,8
Power (W)	800/1000	600/1000	1500	920/1200	1250	1200	1000/950	1100	1100
RPm	1450/1750	1450/1750	1750	1450/1750	1450	1450	1450/1450	1750	1750
Max Pressure (bar)	12	10	16	12	16	12	10	25	25
Max Pressure (psi)	170	147	232	170	232	170	147	355	355
Max Flow Rate (l/min)	9	9	14	3,7	9	9	9	9	9
Flow Rate (bar)	2,4	2,4	4,4	1,4	3,7	2,4	2,4	2,4	2,4

ATTENTION The power absorbed by the pump depends on the functioning and the viscosity of the oil being pumped. The data provided in the Table refer to pumps functioning at the point of maximum compression, with oils of a viscosity equal to approximately 500 cSt.

10 OPERATING CONDITIONS

10.1 ENVIRONMENTAL CONDITIONS
TEMPERATURE min. -10°C / max. +60°C
RELATIVE HUMIDITY max. 90%
ATTENTION The temperature limits shown apply to the pump components and must be respected to avoid possible damage or malfunction. It is understood, nevertheless, that for a given oil, the real functioning temperature range also depends on the variability of the viscosity of the oil itself with the temperature. Specifically:
- The minimum temperature allowed (-10°C) could cause the viscosity of some oils to greatly exceed the maximum allowed, with the consequence that the static torque required during the starting of the pump would be excessive, risking overload and damage to the pump.
- The maximum temperature allowed (+60°C) could, on the other hand, cause the viscosity of some oils to drop well below the minimum allowed, causing a degradation in performance with obvious reductions in flow rate as the back pressure increases.

10.2 ELECTRICAL POWER SUPPLY
NOTE Depending on the model, the pump must be fed by three-phase or single-phase alternating current whose nominal values are those indicated in the Table of paragraph TECHNICAL DATA. The maximum acceptable variations from the electrical parameters are:
Voltage: +/- 5% of the nominal value
Frequency: +/- 2% of the nominal value
Power from lines with values outside the indicated limits can damage the electrical components.

10.3 WORKING CYCLE
NOTE The motors are intended for continuous use. Under normal operating conditions they can function continuously with no limitations

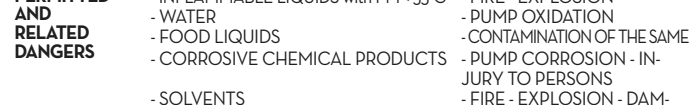
ATTENTION Functioning under by-pass conditions is only allowed for brief periods of time (2-3 minutes maximum). Whenever particular installation carries the risk of functioning in by-pass mode for longer periods of time, it is necessary that the by-passed flow not be recirculated inside the pump, but be returned to the suction tank.

10.4 PERMITTED AND NON-PERMITTED FLUIDS
FLUIDS PERMITTED
OIL with a VISCOSITY from 50 to 2000 cSt (at working temperature)
- GASOLINE
- INFAMMABLE LIQUIDS with PM < 55°C
- WATER
- FOOD LIQUIDS
- CORROSIVE CHEMICAL PRODUCTS
- SOLVENTS
FLUIDS NON PERMITTED AND RELATED DANGERS
- FIRE - EXPLOSION
- FIRE - EXPLOSION
- PUMP OXIDATION
- CONTAMINATION OF THE SAME
- PUMP CORROSION - INJURY TO PERSONS
- FIRE - EXPLOSION - DAMAGE TO GASKET SEALS

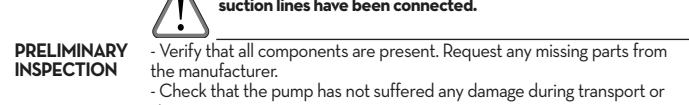
11 INSTALLATION
ATTENTION The pump must never be operated before the delivery and suction lines have been connected.

PRELIMINARY INSPECTION
- Verify that all components are present. Request any missing parts from the manufacturer.
- Check that the pump has not suffered any damage during transport or storage.
- Carefully clean the suction and delivery inlets and outlets, removing any dust or other packaging material that may be present.
- Check that the electrical data corresponds to those indicated on the data plate.
- Always install in an illuminated area.
- Install the pump at a height of min. 80 cm.
- Make sure that the motor shaft turns freely.

11.1 POSITIONING, CONFIGURATIONS AND ACCESSORIES
NOTE In the case of installation in the open air, proceed to protect the pump by providing a protection roof.
The pump can be installed in any position (horizontal or vertical axis pump).
The pump must be secured in a stable way using the holes on the bed of the motor and vibration damping devices.
THE MOTOR IS NOT OF THE ANTI-EXPLOSIVE TYPE. DO NOT install them where inflammable vapours could be present. It is the responsibility of the installer to provide the necessary line accessories to ensure the correct and safe operation of the pump. The accessories that are not suitable to be used with the previously indicated material could damage the pump and/or cause injury to persons, as well as causing pollution.
To maximize performance and prevent damage that could affect pump operation, always demand original accessories.
The Viscomat series pumps can be installed in the following two ways:



11.2 CONNECTIONS
12.1 ELECTRICAL CONNECTIONS
All motors come with a short cable used for production testing. To connect the motor to the line, open the terminal strip cover, remove the above mentioned cable and connect the line according to the following chart:



1 INHALTSVERZEICHNIS
2 ANGABEN ZU MASCHINE UND HERSTELLER
3 KONFORMITÄTSERKÄRUNG
4 BESCHREIBUNG DER MASCHINE
4.1 BEFÖRDERUNG UND TRANSPORT
5 ALLGEMEINE WARNHINWEISE
6 SICHERHEITSANLEITUNGEN
7 ERSTE-HILFE-MASSNAHME
8 ALLGEMEINE SICHERHEITSVORSCHRIFTEN
9 TECHNISCHE DATEN
10 ANMERKUNGEN ZU FÖRDER- UND ANSAUGLEITUNGEN
11 INSTALLATION
12 POSITIONIERUNG, KONFIGURATION UND ZUBEHÖR
13 ANSCHLÜSSE
14 ELEKTRISCHE ANSCHLÜSSE
15 ANSCHLUSS DER LEITUNGEN
16 TÄGLICHER EINSATZ
17 WARTUNG
18 GERÄUSCHPEGEL
19 ANMERKUNGEN ZU FÖRDER- UND ANSAUGLEITUNGEN
20 DEMONTAGE UND ENTSORGUNG
21 ÜBERSICHTSBILDTAFELN
22 KONFIGURATION FÖRDERLEISTUNG UND SAUGLEISTUNG

Table with 4 columns: CODE PRODUKT, MODELLE, TECHNISCHE MERKMALE, JAHR DER HERSTELLUNG. Includes technical specifications for VISCOMAT 200/2, 230, 350/2.

3 KONFORMITÄTSERKÄRUNG
Die unterzeichnete Firma: PIUSI S.p.A.
Erklärt auf ihre eigene Verantwortung, dass das folgende beschriebene Gerät:
Pumpe mit Ventilen von Schmierölen VISCOMAT GEAR

Suzarra, 20/04/2016
Ottaviano
gesetzlicher Vertreter.

4 BESCHREIBUNG DER MASCHINE
PUMPE
Selbstaussaugende Elektrozahnradpumpen mit Innenprofil und By-pass-Ventil.
MOTOR
Antriebsmotor mit 2, 4 oder 6 Polen.

Table with 3 columns: MODELLE, GEWICHT (kg), VERPACKUNG ABMESSUNGEN (mm). Lists models VISCOMAT 200/2, 230/3, 350/2.

5 ALLGEMEINE WARNHINWEISE
Wichtige Hinweise
Vor der Ausführung irgendwelcher Vorgänge am Zapfsystem sowie zur Wartung der Universalität der Bediener und Vermeidung eventueller Beschädigungen des Zapfsystems ist es unerlässlich, dass die ganze Betriebsanleitung zur Kenntnis genommen wurde.

6 SICHERHEITSANLEITUNGEN
ACHTUNG
Strikt den Kontakt zwischen der Stromversorgung und der zu pumpenden Flüssigkeit vermeiden.
Kontrolle!
Wartungsvorgänge
BRAND-EXPLOSION
Vor irgendwelchen Überprüfungs- oder Wartungsvorgängen die STROMVERSORGUNG unterbrechen.

7 ERSTE-HILFE-MASSNAHME
Von Strom-erschütterte Person
Die Versorgung unterbrechen oder einen trockenen Isolator verwenden, um sich beim Verarbeiten des Verletzten von den Stromleitern zu schützen.

9 TECHNISCHE DATEN
Die in der Tabelle angegebenen Daten beziehen sich auf den Betrieb mit Öl, das eine Viskosität von etwa 100 cSt bei 50°C hat.
Tabelle mit 3 Spalten: VISCOFLOWMAT 200/2, VISO FLOWMAT 230/3, VISCOFLOWMAT 350/2. Spalten mit Spannung, Frequenz, Aufnahme, Macht, RPM, Max Druck, Durchfluss.

10 BETRIEBSDINGUNGEN
10.1 UMGEBUNGSBEDINGUNGEN
TEMPERATUR min. -10 °C / max. +60 °C
RELATIVE LUFTFEUCHTIGKEIT max. 90%
Die angegebenen Grenztemperaturen beziehen sich auf die Bauteile der Pumpe und müssen eingehalten werden.

10.2 STROMVERSORGUNG
Hinweis
Je nach Pumpenmodell hat die Stromversorgung über einen Drehstrom oder eine Einphasenleitung mit Wechselstrom zu erfolgen.

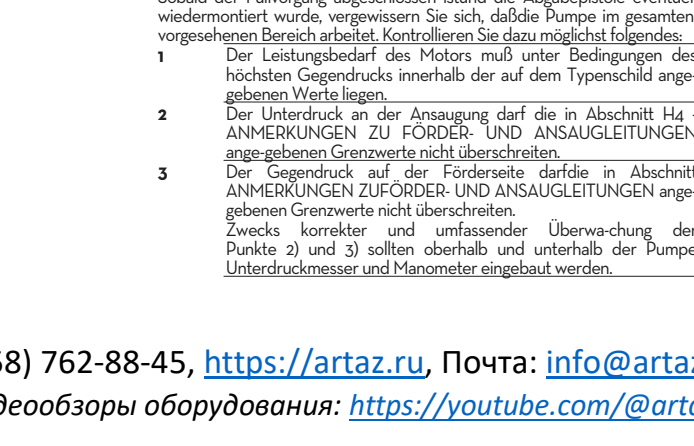
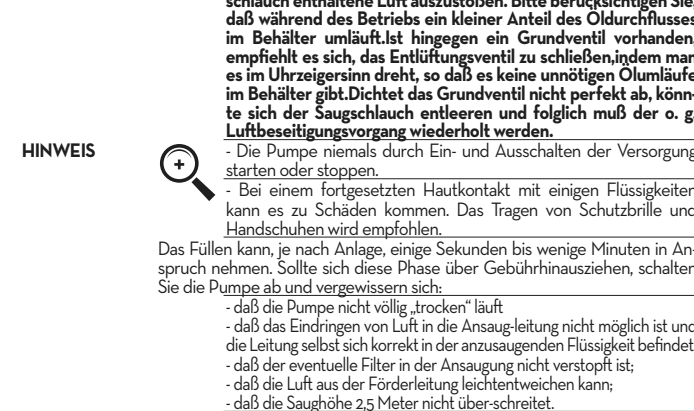
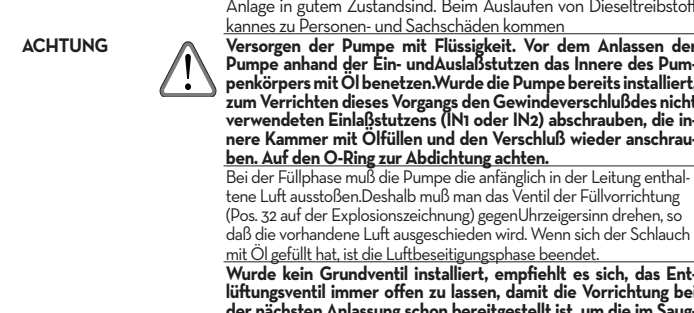
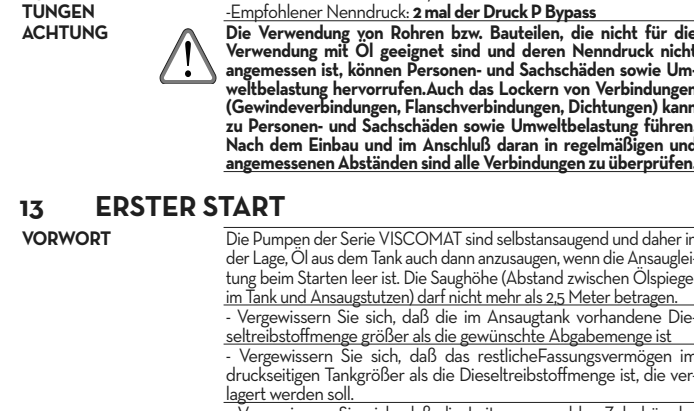
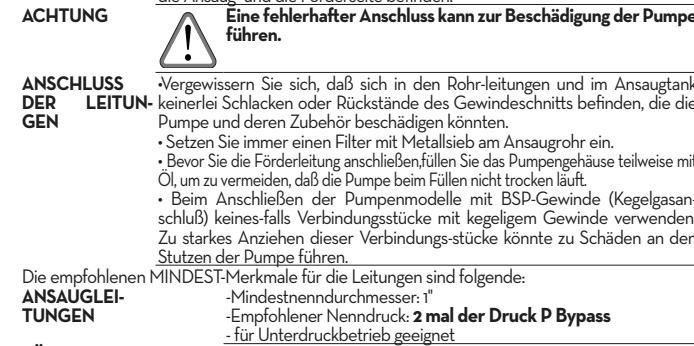
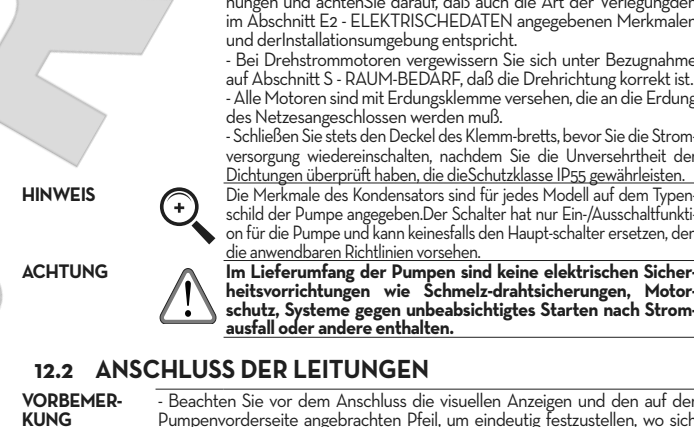
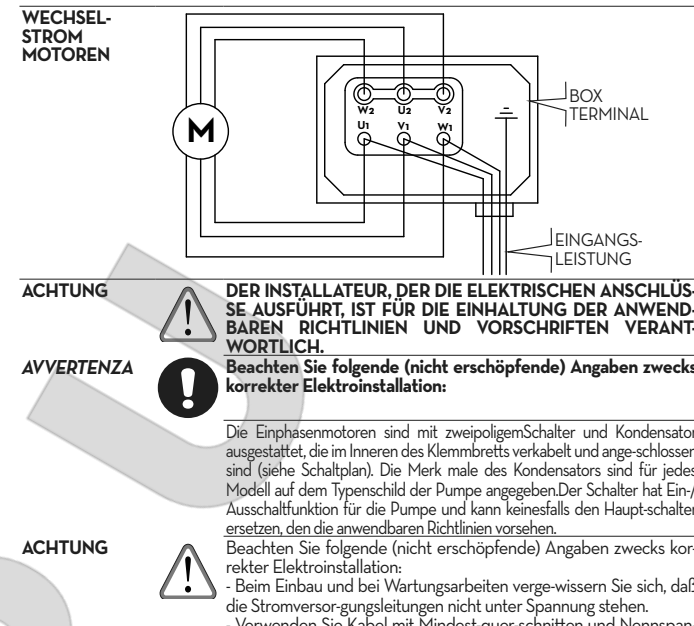
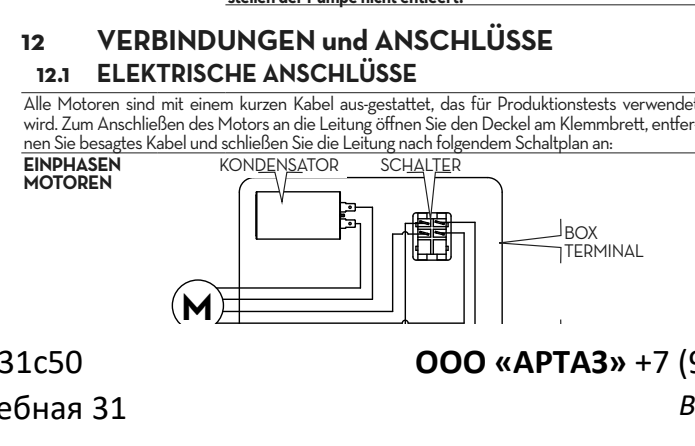
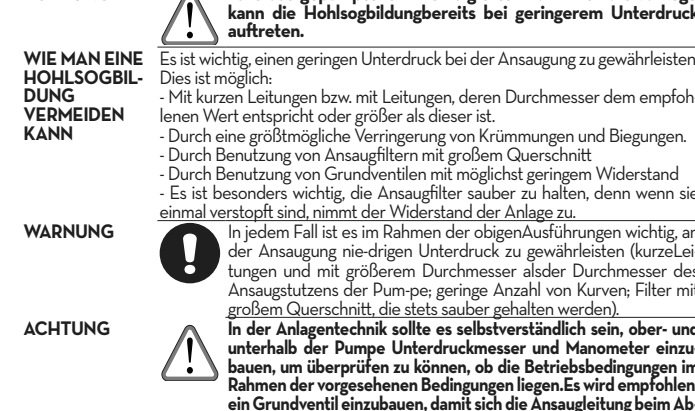
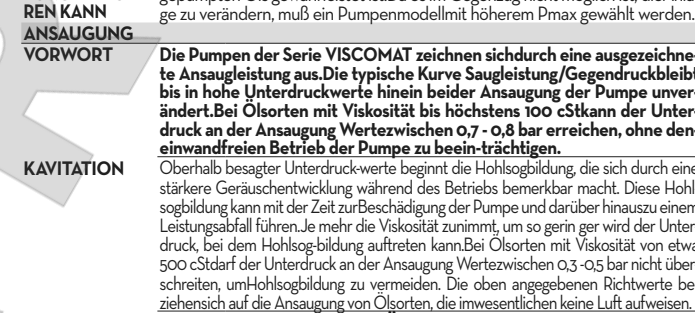
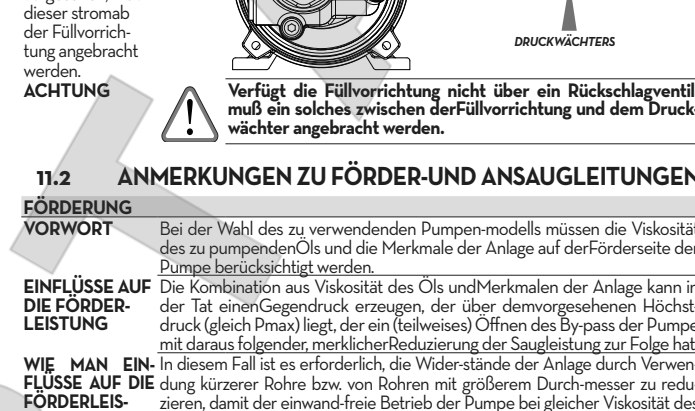
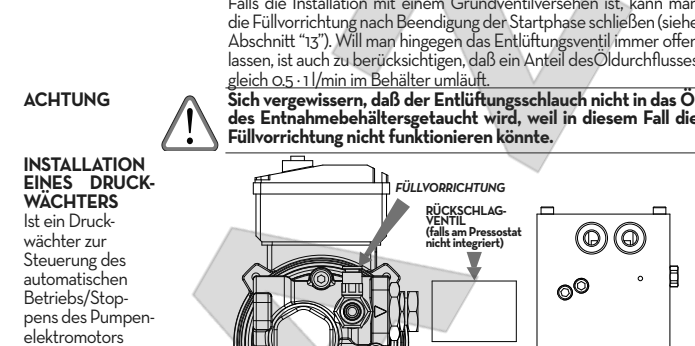
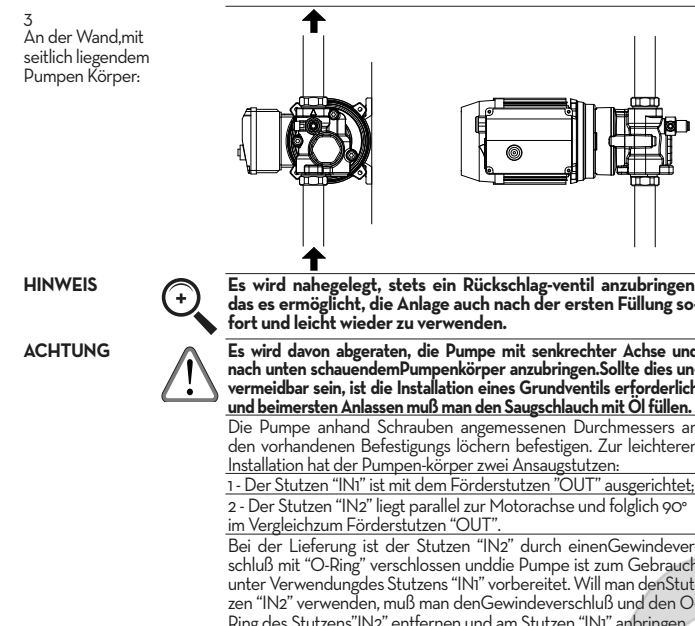
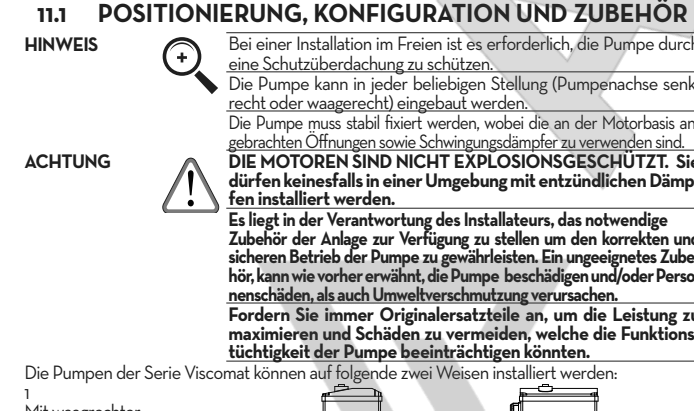
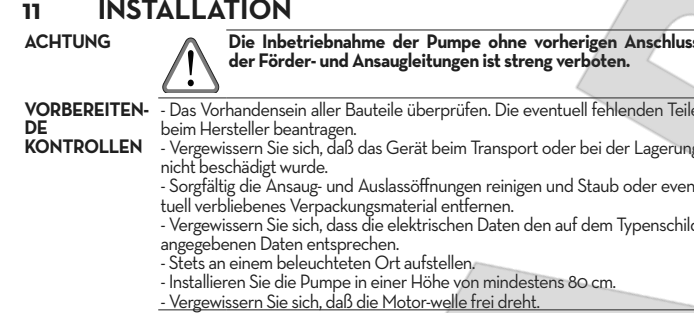
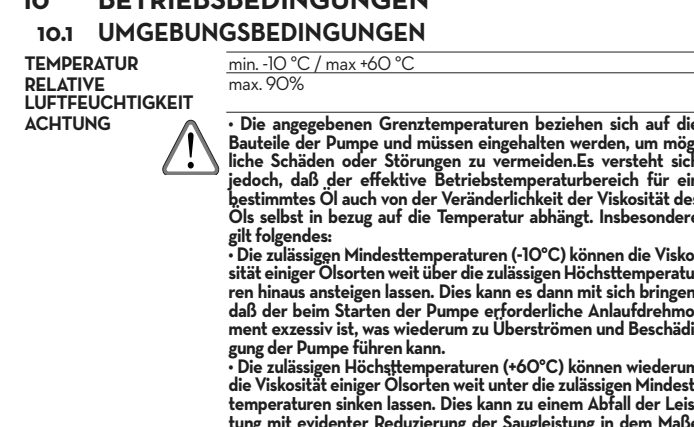
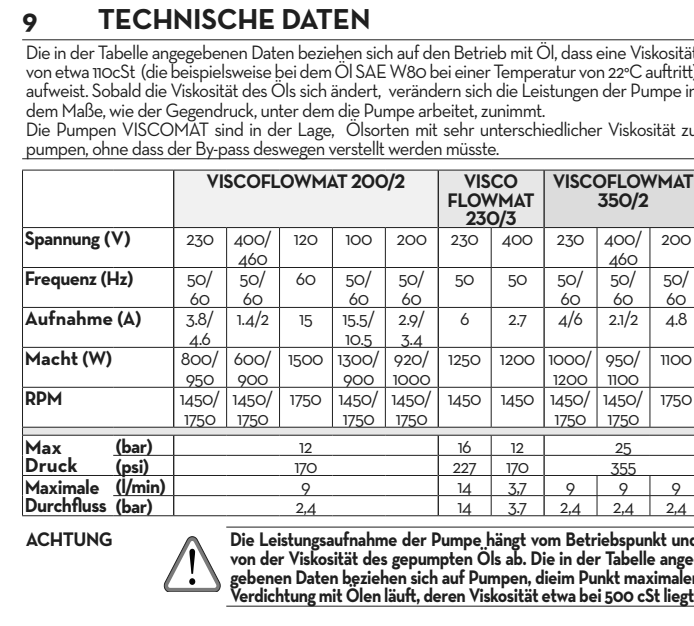
10.3 ARBEITSZYKLUS
Hinweis
Die Motoren sind für Dauerbetrieb ausgelegt. Unter normalen Betriebsbedingungen kann die Pumpe bis zu 24 Stunden am Tag in Betrieb sein.

10.4 ERLAUBTE UND VERBOTENE FLUIDS
ZULÄSSIGE FLUIDS
ÖL mit einer VISKOSITÄT von 50 bis 2000 cSt (bei Betriebstemperatur).
BRAND-EXPLOSION
BRAND-EXPLOSION
BRAND-EXPLOSION

11 INSTALLATION
ACHTUNG
Die Betriebsanleitung der Pumpe ohne vorherigen Anschluss der Förder- und Ansaugleitungen ist streng verboten.
VORBEREITEN-DE KONTROLLEN
Das Vorhandensein aller Bauteile überprüfen. Die eventuell fehlenden Teile beim Hersteller beantragen.

11.1 POSITIONIERUNG, KONFIGURATION UND ZUBEHÖR
Hinweis
Bei einer Installation im Freien ist es erforderlich, die Pumpe durch eine Schutzüberdachung zu schützen.
Die Pumpe kann in jeder beliebigen Stellung (Pumpenachse senkrecht oder waagrecht) eingebaut werden.

12 VERBINDUNGEN UND ANSCHLÜSSE
12.1 ELEKTRISCHE ANSCHLÜSSE
Alle Motoren sind mit einem Kabel ausgestattet, das für Produktionszwecke verwendet wird. Zum Anschließen des Motors an den Deckel am Klemmbrett, entfernen Sie besagtes Kabel und schließen Sie die Leitung nach folgendem Schaltplan an.



13 ERSTER START
VORWORT
Die Pumpen der Serie VISCOMAT sind selbstansaugend und daher in der Lage, Öl aus dem Tank auch dann anzusaugen, wenn die Ansaugleitung beim Starten leer ist.

13 ANSCHLUSS DER LEITUNGEN
Hinweis
Die empfohlenen MINDEST-Merkmale für die Leitungen sind folgende:
- Mindestquerschnitt: 2 mm²
- Für Unterdruckbetrieb geeignet

14 TÄGLICHER EINSATZ
VORWORT
Vor dem täglichen Einsatz der Pumpen VISCOMAT ist keine besondere Vorbereitung zu treffen.

15 WARTUNG
Sicherheitshinweise
Die Pumpe der Serie Viscomat sind für eine minimale Wartung konzipiert und gebaut.

16 GERÄUSCHPEGEL
Unter normalen Betriebsbedingungen überschreitet die Lärmemission aller Modelle in 1 m Entfernung von der Elektropumpe den Wert von 70 dB nicht.

17 STÖRUNGEN UND DEREN BEHEBUNG
Im Falle irgendeines Problems wenden Sie sich bitte an den in Ihrer Nähe liegenden Kundendienst.

18 DEMONTAGE UND ENTSORGUNG
VORWORT
Im Falle der Entsorgung des Geräts müssen seine Bauteile einer auf Entsorgung und Recycling von Industriemüll spezialisierten Firma zugeführt werden.

