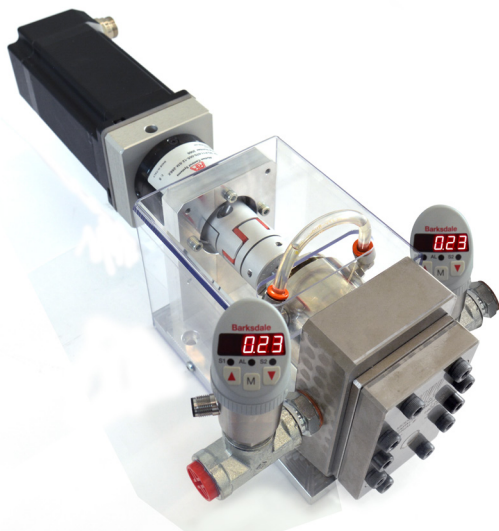


Installation and maintenance guide

DAVtech

GP GEAR VOLUMETRIC PUMPS

06 / 2 / 4 / 10



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1 INTRODUZIONE

1.1 The manual

The user guide is the document that accompanies the pumps from the time of its construction and throughout the period of use, it is therefore an integral part of the pump. It requires reading the manual before taking any action involving the pump. The manual must be readily available for use by staff and maintenance of the pump. The user and the attendant use are required to know the contents of this manual.

Reproduction of any part of this manual, in any form, without the express written permission of DAV Tech. The text and illustrations in this manual are not binding, the DAV Tech reserves the right, at any time and without notice, the right to make any changes to improve the product or for reasons of character manufacturing or commercial.

1.2 Warranty

The warranty is valid for a period of 12 months from the date of commissioning and no later than 15 months from the date delivery. The interventions carried out during the warranty period does not extend in any way the validity period of the guarantee. The seller is not liable for defects caused by normal wear of parts which by their nature are subject to wear.

1.3 Goods receiving

The original configuration of the pump must never be changed. Upon receipt of the goods, check that:

- The packaging is intact
- The exact correspondence of the material ordered.

2 TECHNICAL DESCRIPTION

2.1 DAV Tech gear pumps are high precision metering pumps. Therefore, the user is required to take the utmost care to protect them from impacts, intrusion of dust and foreign bodies, during storage, transport, installation, cleaning, disassembly and assembly. In order to keep the pump in the best conditions, the following instructions must be followed.

2.2 The pumps with martensitic stainless steel body model GP, are pumps designed to withstand medium-high pressures at temperatures not higher than 120 ° C. The fluid transported must have a good lubricating capacity and the pump is able to withstand medium viscosity fluids. The body in martensitic stainless steel together with other constructive devices guarantees a greater solidity of the pump.

2.3 Different maintenance is required depending on the shaft sealing system. Here are some indications in the case of losses.

2.4 Baderna and barrier fluid. It must be checked if the oil inside the chamber is present through the transparent tube. If you notice a decreasing level, top up with vaseline oil. Then adjust the pressure on the shaft by acting on the ring nut.

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2.2 Technical specification

Models	GP 06 - 2 - 4 - 10
Capacità nominali	0,6 - 2 - 4 - 10 cc/rev
Viscosity	1 cP – 1.000.000 cP
Max Pressure outlet	≤ 150 bar
Max Pressure inlet	≤ 150 bar
Temperature	0 / 130°C
Motor speed	≤ 150 rpm
Pump shaft diameter	16 mm
Measure and type inputs	G ½"
Body	Martensitic stainless steel
Reel	Martensitic stainless steel
Fluids to be dispensed	Silicones, glues, greases, resins, oils

3 PRELIMINARY CLEANING

3.1 The pump is supplied lubricated and protected with Svitol Lubricant and therefore sealed, cleaning of the parts is not necessary.

3.2 The Viton O-rings, if any, are greased with STABURAGS NBU 12 grease resistant to temperatures between -15 ° and 135 ° C.

4 PUMP DISASSEMBLY



WARNING: Perform the following operations referring to the attached drawings. Do not put your hands between the gear teeth during rotation.

4.1 The following operations must be carried out preferentially in a clean environment free of abrasive particulates, with great care, avoiding damaging or denting the parts, in order to avoid malfunctions at the time of reassembly.

4.2 Release the motor and the pump reducer.

4.3 Firmly anchor the pump in a vice with the drive shaft facing up.

4.4 Remove the sealing system, see section 5 - Removing the sealing systems

4.5 Lock the internal plate in a vice with the control shaft facing the bottom and unscrew the M8 screws. Remove the outer plate paying attention to the fixed fixed pin on it.

4.6 Remove the driven spool and the drive spool, paying attention to the shaft key, taking care to keep the drive shaft, which at this point is free to withdraw from the internal plate.

4.7 The fixed pin is forced on the external plate and its removal is recommended only in case of absolute necessity.

4.8 Proceed to this point to clean the details or replace them.

5 DISASSEMBLING THE SEALING SYSTEMS

5.1 Shaft seal and fluid barrier

If the pump is equipped with this sealing system, remove the dragging tab. Empty it from the oil that acts as a barrier liquid that is inside the estate. Unscrew the flange screws and remove the gland flange, taking care not to damage the o-ring and the forced seal on it. Remove the teflon packing and unscrew the hub levers, then remove the hub itself.

6 CLEANING THE PARTICULARS

6.1 The cleaning of the parts must be done with a mixture of oil and abrasive grit powder 1200. Do not use abrasive paper or other types of abrasive with rapid removal that could alter the dimensions of the parts, compromising the accuracy of the pump.

6.2 For a good functioning of the pump, any replacement of parts must be carried out avoiding the coupling of new parts with others in conditions of considerable wear.

6.3 Clean all the details in an ultrasonic washer with suitable detergent or other means that ensures perfect cleaning. Carry out this operation with particular care, in order to completely remove all traces of residue.

6.4 After cleaning, protect the parts from oxidation with a protective oil film type B.1.

7 ASSEMBLY

7.1 The following operations must be carried out in a clean environment free of abrasive particulates, with great care, avoiding damaging or denting the parts. Any external matter (even very small matter) that enters the parts during assembly can cause damage to the operation of the pump.

7.2 If the fixed pin had been removed, heat the outside plate at a temperature of 90-100 ° C and place the fixed pin in its housing, allowing the plate to cool. The pin will be blocked when the temperature stabilizes.

7.3 Lock the internal plate in a vice with the holes for fixing the plates facing upwards and insert the drive shaft from underneath. The part of the drive shaft to be inserted is the one with the seat for the round key. Insert the shaft key into its housing and mount the drive spool.

7.4 Fit the gear plate and the driven spool.

7.5 Rotate the two gears by hand, the rotation must be free from any hitch. Lubricate thoroughly with product in point B.1.

7.6 Fit the external plate making sure that the rotation is free.

7.7 Use a torque wrench and derive the tightening torque from the attachment. Insert the connecting screws and during closing, crossing the sequence, check that the rotation of the drive shaft occurs freely.

7.8 Position the pump in a vice by closing it on the inner plate with the control shaft facing upwards and follow the assembly operations of the specific sealing system indicated in the paragraph.

8 ASSEMBLY OF THE TIGHTNESS SYSTEM

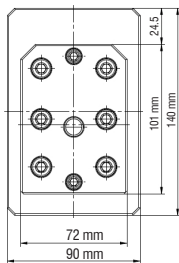
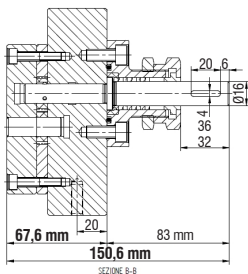
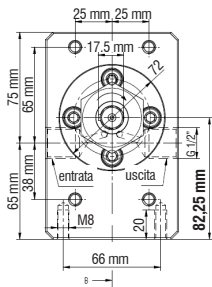
8.1 Shaft seal

Mount the hub with the o-ring inserted in its seat. Fit and tighten the screws for the hub without closing them. Insert the packing around the drive shaft following the direction of rotation of the pump indicated on the relative drawing, after having completely filled the stuffing box, cut the packing and insert the packing gland. Close the hub screws with a torque wrench, prepared according to the enclosed table, and tighten the lock nut until it stops. Tighten the nut, taking care to rotate the drive shaft and when you feel an increase in the friction of the packing, close the locknut. If the pump should start to leak from the drive shaft during the initial working hours, then the lock nut should be loosened and the nut closed slightly until the leakage stops.

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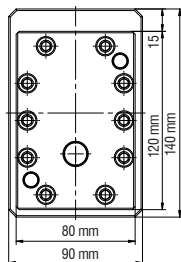
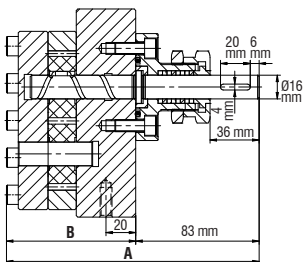
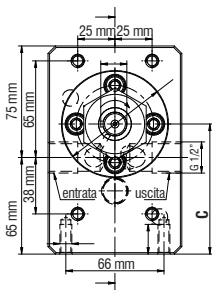
9 DIMENSIONS

0.6 cc/Rev



Weight: 6,3 Kg

2 - 4 - 10 cc/Rev



Dimensions	Model 2 cc/Rev	Model 4 cc/Rev	Model 10 cc/Rev
A	157 mm	173 mm	170 mm
B	74 mm	80,3 mm	87 mm
C	82,25 mm	82,25 mm	87,5 mm
Weight	7,3 Kg	7,7 Kg	8,6 Kg

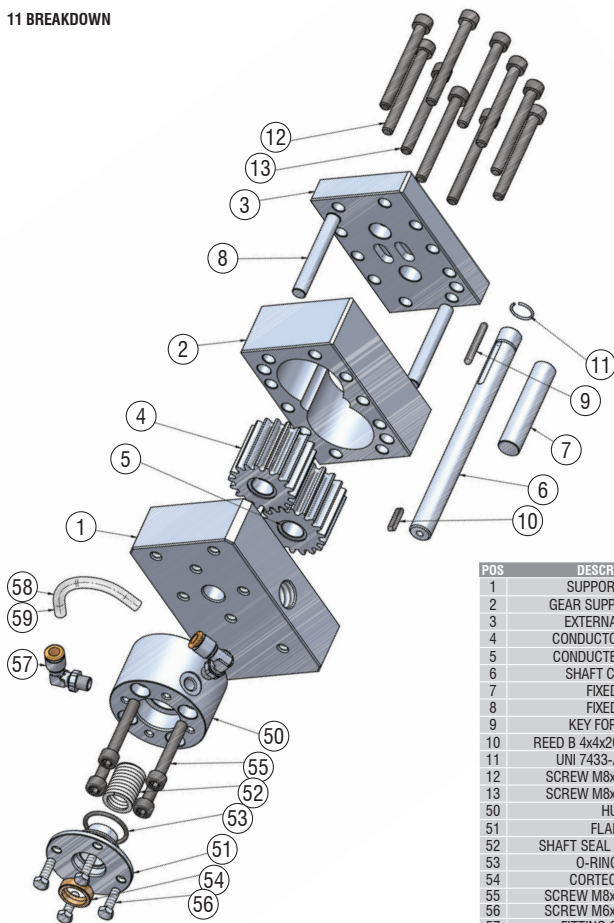
10 TROUBLESHOOTING

The search for any malfunctions must be carried out by qualified personnel only, subject to the relevant safety regulations.

#	PROBLEM	POSSIBLE CAUSE	SOLUTION
1	Low flow or low pressure, although the speed is correct	<ul style="list-style-type: none"> The pump is not sufficiently powered Air enters inside the pipe connections Bearings or mechanisms can be worn The filter is clogged 	<ul style="list-style-type: none"> Make sure the pump is well fed Check the connections Inspect bearings and mechanisms (replace them if necessary) Inspect the filter, clean it or change it
2	Irregular dispensing, outgoing air bubbles	<ul style="list-style-type: none"> Air enters inside the pipe connections The pump is not powered sufficiently Bearings or mechanisms could be damaged Irregular temperature of the dispensed fluid 	<ul style="list-style-type: none"> Make sure the pump is well fed Check the connections. Inspect bearings and mechanisms (replace them if necessary) Make sure the fluid temperature is correct
3	Drive shaft blocked	<ul style="list-style-type: none"> The fluid temperature is lower than the operating temperature The pump bushings are seized Too cold fluid or clogged downstream circuit 	<ul style="list-style-type: none"> Increase the fluid temperature until the operating temperature is reached Check the shaft and bushings housing (rework them or change them if necessary) Check the circuit downstream of the pump
4	Abnormal noises during the operation.	<ul style="list-style-type: none"> Cavitations in the pump Speeds that are too high for the viscosity of the fluid Obtured filter Air bubbles inside the fluid 	<ul style="list-style-type: none"> Increase the pressure in the pump supply. Reduce speed. Inspect the filter, clean it or change it. Check the pressure and temperature of the fluid being fed.
5	Increase of electricity consumption.	<ul style="list-style-type: none"> Start blocking the pump. Thermal shock of the fluid Pressure increases rapidly 	<ul style="list-style-type: none"> Check the drive shaft and bushings housing (change them if necessary) Increase the fluid temperature until the operating temperature is reached Check and adjust the operating pressure

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11 BREAKDOWN



POS	DESCRIPTION
1	SUPPORT PLATE
2	GEAR SUPPORT PLATE
3	EXTERNAL PLATE
4	CONDUCTOR ROLLER
5	CONDUCTED ROLLER
6	SHAFT CONTROL
7	FIXED PIN
8	FIXED PIN
9	KEY FOR SHAFT
10	REED B 4x4x20 UNI 6604-69
11	UNI 7433-A-16 RING
12	SCREW M8x40 UNI5931
13	SCREW M8x35 UNI5931
50	HUB
51	FLANGE
52	SHAFT SEAL 3x3mm PTFE
53	O-RING 3112
54	CORTECO RING
55	SCREW M8x50 UNI5931
56	SCREW M6x20 UNI5739
57	FITTING G1 / 8 "ø8
58	TUBE
59	VASELINE OIL

GP 0,6 COMPONENTS

CODE	DESCRIPTION
CP11X00000002	Internal plate
CPN1V60000003	Gear plate
CPE100000000Y	External plate
CRE1V60000003	Conductor spool
CRO1V60000003	Conductor spool
CAM7V60200002	Command shaft
CNP100000000I	Fixed pin
CMOZ00000000D	Hub
CSTZ00000000A	Stuffing box
05021V3112	GASKET OR3112 VITON 2,62x28,25
05051N16	RING HOLD AT NBR 16X24X7
05051V1602	Ring SM 16247 Viton ø16x24x7
05031T3	SHAFT SEAL EPT 5504 L IN PTFE 3X3 MM
ZX69A042	TRAVELING SPHERE 3/32 "HRC = 63
2E98C202	REED 4X4X20 UNI6604-69
2E29E306	SCREW M 6X30 UNI5931 12.9 TCCE
2E29F256	SCREW M 8X25 UNI5931 12.9 TCCE
2E29F306	SCREW M 8X30 UNI5931 12.9 TCCE
2E29F506	SCREW M 8X50 UNI5931 12.9 TCCE
2E33E207	SCREW M 6X20 UNI5739 8.8 ZINC. YOU
ZY64B070	1/8 "ADJUSTABLE ELBOW FITTING
ZY50B001	TUBE FOR LEGRIS FITTINGS D.8X6
ZX71H134	RING RING H ø13 Nickel-plated

GP 2 COMPONENTS

CODE	DESCRIPTION
CPS1V800000001	Support plate VL805 1-8cc
CNP100000000V	Fixed pin
CPN1002000002	Gear plate
CPE1V800000001	External plate VL805
CRE1002000004	Conductor spool VL8
CRO1002000001	Conductor spool
CAM7003200004	Command shaft
CNP1000000003	Fixed pin
CMOZ00000000D	Hub
CSTZ00000000A	Stuffing box
05021V3112	GASKET OR3112 VITON 2, 62x28, 25
05051V1602	Ring SM 16247 Viton ø16x24x7
CHV4000000009	Key
2E98C202	REED 4X4X20 UNI6604-69
05031T3	SHAFT SEAL EPT 5504 L IN PTFE 3X3 MM
2E29F406	SCREW M 8X40 UNI5931 12.9 TCCE
2E29F506	SCREW M 8X50 UNI5931 12.9 TCCE
2E29F356	SCREW M 8X35 UNI5931 12.9 TCCE
2E33E207	SCREW M 6X20 UNI5739 8.8 ZINC. YOU
ZY64B070	1/8 "ADJUSTABLE ELBOW FITTING
ZY50B001	TUBE FOR LEGRIS FITTINGS D.8X6
ZX71A162	RING A16 UNI 7433-75

GP 4 COMPONENTS

CODE	DESCRIPTION
CPS1V800000001	Support plate VL805 1-8cc
CPN1004000003	Gear plate
CPE1V800000001	External plate VL805
CRE1004000001	Conductor spool
CRO1004000001	Conductor spool
CAM7004200002	Command shaft
CNP1000000004	Fixed pin
CNP100000000A	Fixed pin
CMOZ00000000D	Hub
CSTZ00000000A	Stuffing box
05021V3112	GASKET OR3112 VITON 2,62x28,25
05051N16	RING HOLD AT NBR 16X24X7
05051V1602	Ring SM 16247 Viton ø16x24x7
CHV4000000006	Key
2E98C202	REED 4X4X20 UNI6604-69
05031T3	SHAFT SEAL EPT 5504 L IN PTFE 3X3 MM
2E29F456	SCREW M 8X45 UNI5931 12.9 TCCE
2E29F406	SCREW M 8X40 UNI5931 12.9 TCCE
2E29F505	SCREW M 8X50 UNI5931 8.8 TCCE
2E29F506	SCREW M 8X50 UNI5931 12.9 TCCE
2E33E207	SCREW M 6X20 UNI5739 8.8 ZINC. YOU
ZY64B070	1/8 "ADJUSTABLE ELBOW FITTING
ZY50B001	TUBE FOR LEGRIS FITTINGS D.8X6

GP 10 COMPONENTS

CODE	DESCRIPTION
CPS1X000000001	Support plate 10-30
CPS1X000F0001	Support plate
CPS1X000000001	Support plate 10-30
CPN10100000002	Gear plate
CPN10100F0001	Gear plate
CPN10100000002	Gear plate
CPE1X000000002	External plate
CRE10100I0001	Conductor spool
CRO10100000001	Conductor spool
CAM70102000003	Command shaft
CNP10200000001	Fixed pin
CMOZ00000000D	Hub
CSTZ00000000A	Stuffing box
05021V3112	GASKET OR3112 VITON 2,62x28,25
05051N16	RING HOLD AT NBR 16X24X7
05051V1602	Ring SM 16247 Viton ø16x24x7
CHV400000000H	Key
2E98C202	REED 4X4X20 UNI6604-69
05031T3	SHAFT SEAL EPT 5504 L IN PTFE 3X3 MM
2E29F556	SCREW M 8X55 UNI5931 12.9 TCCE
2E29F506	SCREW M 8X50 UNI5931 12.9 TCCE
2E29F456	SCREW M 8X45 UNI5931 12.9 TCCE
2E29F505	SCREW M 8X50 UNI5931 8.8 TCCE

11 SAFETY RULES

Regarding security, as a user of the pump, you are responsible for the following items:



In any case, you are responsible for compliance with the laws and regulations in force relating to safety, insurance and environmental protection of the country where the pump will be used.

The pump can only be used under perfect technical conditions. Security systems will be installed and will have to operate perfectly. No type of personal modification can be applied to the pump.

At the start-up, then at regular intervals and after every revision or maintenance service, check the correct functioning of all the safety systems. A replacement or removal of security systems is not allowed.

Responsibility for the start-up, use, repair and service of the pump will be clearly specified to avoid any misunderstanding about the skills of the people involved.

Make sure the pump is ready for start-up, use, repair and maintenance, exclusively for personnel authorized to use it.

In any case, authorized personnel must make sure that all unauthorized personnel do not work on the pump or are not near areas that can be considered dangerous for the safety of the individual.

The personnel trained and employed must be constantly supervised by a qualified expert operator, already instructed by the construction company.

Make sure that authorized personnel have read and understood the instructions in the manual correctly and that the manual is always available in its place, near the pump.

Inform the staff about possible problems and be aware of the safety measures to be taken, such as, for example, the use of protective equipment.

11.1 Security rules



Any working method that may compromise the safe use and operation of the pump or that can be dangerous for personnel or third parties, must be avoided! The personnel must report to the supervisor any minor irregularities discovered on the pump, in particular those relating to security. If necessary, stop the pump.



ELECTRICAL INSTALLATION

All operations must be carried out by properly trained and authorized personnel. All electrical boxes, control panels, electrical booths and electrical equipment must be opened, checked and repaired only and exclusively by expert and authorized electricians. In case of overhaul or maintenance, the pump must be without power supply and every any electrical accessory directly mounted on the pump must be removed.



PREPARATION

In any case, regarding handling, follow the laws and safety rules in force in the country in which the transport of the machinery is carried out. Before using auxiliary items, such as eyebolts, ropes, chains, etc ... check both their conditions and adequacy. During the preparation, before moving dynamic parts and accessories, keep away from the dangerous area of the body, arms and hands as well as tools, clothes, hair, etc.



PERATION

To make the pump work properly, continuous feeding must always be guaranteed. Failure to arrive at the product can cause serious damage to the pump and due to blockage the lack of lubrication of moving parts, or damage to the system in terms of productivity with abnormal manufacturing interruptions.