

BRAVO CONTROLLER BOARD UPDATED VERSION



INFO: Please be informed that, due to global electronic component supply issues, the **12V / 24V multi voltage version of the Bravo pump controller board** will not be available until January 2023. To overcome the supply issue a new controller that replaced the Solid state Driver with a relay driver has been developed. Therefore the pump must be selected as 12 or 24 V only.

When ordering, you are pleased to identify the pump operating voltage and choose between the Part Numbers contained in the column "Alternative Part Number".

Part Number	Description	Alternative Part Number	Description
0888403	BRAVO- GREASE-AUT-2KG-12/24VDC	0888403-12V	BRAVO-GREASE-AUT-2KG-12VDC
		0888403-24V	BRAVO-GREASE-AUT-2KG-24VDC
0888404	BRAVO- GREASE-AUT-5KG-12/24VDC	0888404-12V	BRAVO-GREASE-AUT-5KG-12VDC
		0888404-24V	BRAVO-GREASE-AUT-5KG-24VDC
0888405	BRAVO- GREASE-AUT-8KG-12/24VDC	0888405-12V	BRAVO-GREASE-AUT-8KG-12VDC
		0888405-24V	BRAVO-GREASE-AUT-8KG-24VDC
0888418	BRAVO-OIL-AUT-2KG-12/24VDC	0888418-12V	BRAVO-OIL-AUT-2KG-12VDC
		0888418-24V	BRAVO-OIL-AUT-2KG-24VDC
0888419	BRAVO-OIL-AUT-5KG-12/24VDC	0888419-12V	BRAVO-OIL-AUT-5KG-12VDC
		0888419-24V	BRAVO-OIL-AUT-5KG-24VDC
0888420	BRAVO-OIL-AUT-8KG-12/24VDC	0888420-12V	BRAVO-OIL-AUT-8KG-12VDC
		0888420-24V	BRAVO-OIL-AUT-8KG-24VDC
0888703	BRAVO- GREASE-AUT-2KG-12/24VDC - POT.	0888703-12V	BRAVO- GREASE -AUT-2KG-12VDC - POT.
		0888703-24V	BRAVO- GREASE -AUT-2KG-24VDC - POT.
0888483	BRAVO-PRESS-AUTO-4KG-12/24VDC	0888483-12V	BRAVO-PRESS-AUTO-4KG-12VDC
		0888483-24V	BRAVO-PRESS-AUTO-4KG-24VDC
0888484	BRAVO-PRESS-AUTO-8KG-12/24VDC	0888484-12V	BRAVO-PRESS-AUTO-8KG-12VDC
		0888484-24V	BRAVO-PRESS-AUTO-8KG-24VDC
0888485	BRAVO-PRESS-AUTO-12KG-12/24VDC	0888485-12V	BRAVO-PRESS-AUTO-12KG-12VDC
		0888485-24V	BRAVO-PRESS-AUTO-12KG-24VDC
0888430	BRAVO-AUTO 2KG 12/24VDC SENZA BY-PASS	0888430-12V	BRAVO-AUTO 2KG 12VDC WITHOUT BY-PASS
		0888430-24V	BRAVO-AUTO 2KG 24VDC WITHOUT BY-PASS

CHARACTERISTICS

- **VOLTAGES:**
12V AC/DC
24V AC/DC
110V/230V 50/60 Hz
- **NOMINAL OUTPUT PER PUMP ELEMENT:**
2,8cm³/min
0,4 ÷ 2,8
cm³/min 5,2cm³/min
- **INTEGRATED FIXTURE: FOR SMP AND SMPM DISTRIBUTORS**
- **VARIO-DRIVE: ALLOWS ELECTRONIC VARIATION OF PUMP MOTOR 50-100% OF NOMINAL OUTPUT**
- **DIAGNOSTIC AND EVENT LOGGING**
- **MULTI LUBE CYCLE: MULTIPLE SENSOR COUNTS AND SELECTABLE PRE-LUBE FUNCTION**
- **MULTICONNECTOR SYSTEM: ALLOW MANY ELECTRICAL CONNECTOR TYPES TO BE APPLIED TO THE STANDARD PRODUCT TO SUIT VARIED OEM AND END USER REQUIREMENTS**
- **DUAL ACCESS PORTS: FOR CONVENIENT REFILLING AND GREASE RETURN LINE**
- **MINIMO LIVELLO**
- **2.8cm³/min PUMPING UNIT AS STANDARD**

APPLICATIONS

- Mobile systems and vehicle lubrication
- Machine tools: glass working machines or wood-working machines
- Heavy vehicles: earth moving machines, harvesters and other uses for special machines or vehicles
- Heavy industries: mining or construction
- Chain & gear lubrication

THE SMALL PUMP PACKAGE WITH BIG FEATURES

GREASE LUBRICATION FOR INDUSTRY AND UPSIDE DOWN APPLICATIONS

The **BRAVO FP** version is ideal for wind turbine lubrication where the pump unit must be fitted in the nose cone causing the unit to rotate with the blades.

The **follower plate** and **stirring paddle system** keep the grease compacted and allows to pump to continue to feed the lubrication system correctly even when it is in an upside down position.

BRAVO FP. Is a piston pump predisposed to operate with a maximum of three pumping units, with or without internal by-pass. Designed to operate with progressive systems, it can feed several independent lines and, combining the outlets of the two/three pumping units, the flow rate can be doubled or tripled.



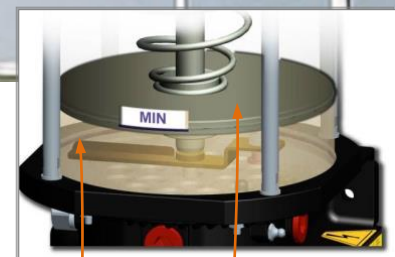
APPLICATIONS



WIND TURBINES

Pumps subjected to turning movement, with the possibility to be an overturned position needs a system that allows the grease to flow always towards the pumping element.

Follower plate pushes the grease and ensures a continuous lubrication.



Stirring paddle Follower plate

VEHICLES AND HEAVY VEHICLES

Bravo is the cost effective solution for many type of vehicles like: trucks, trailers, tractors, earth moving equipment, harvesters and other special vehicles.

With just a status lamp & button placed in the vehicle cabin, the driver always knows the status of the lubrication system

Whenever needed an extra lubrication cycle, is just a push of a button.



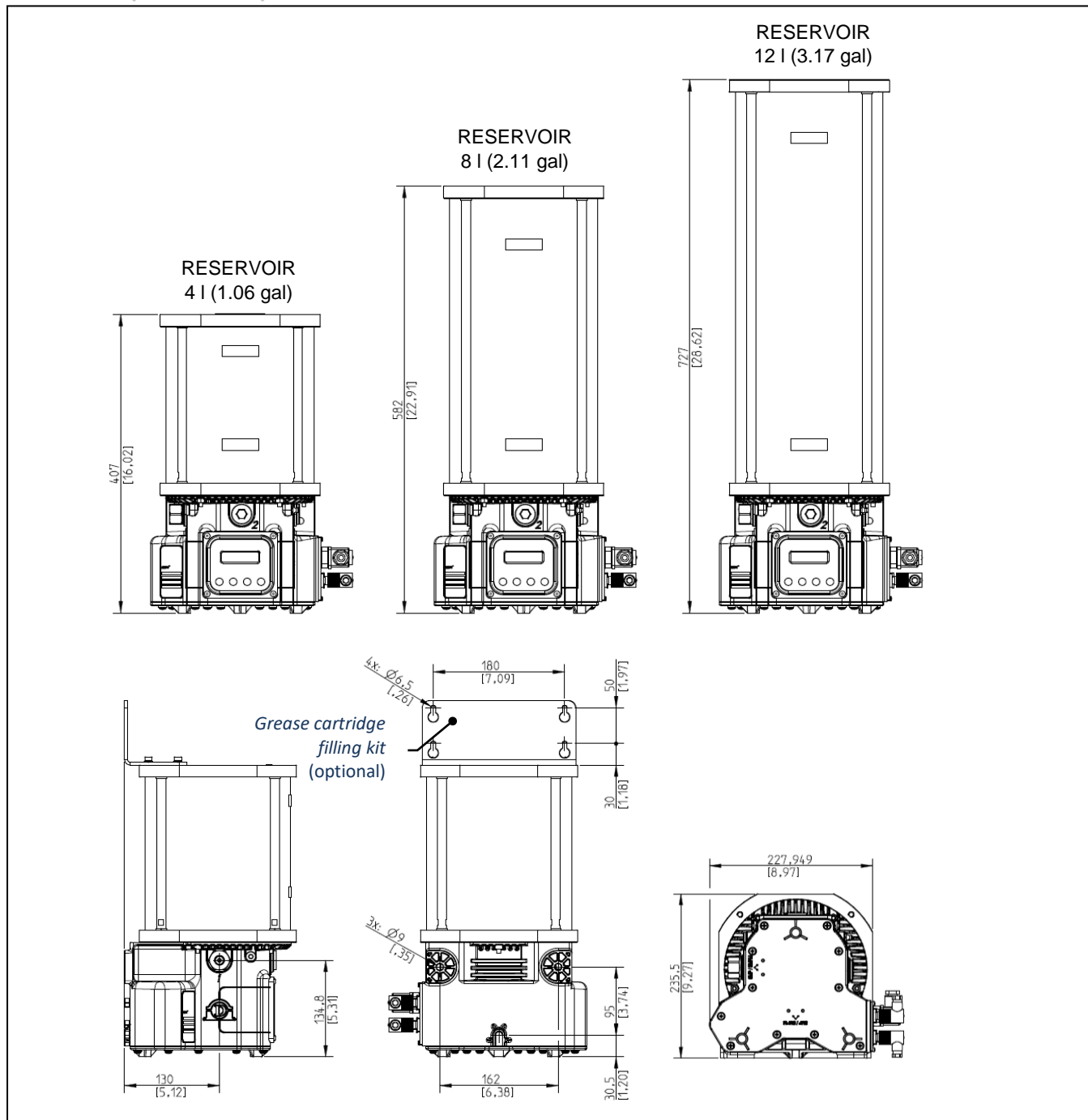
The complete lubrication system typically comprises:

1. Bravo pump
2. SMP – SMPM Distributors
3. Remote status lamp with button

TECHNICAL INFORMATION

GENERAL TECHNICAL CHARACTERISTICS	
Number of outlets / pumping elements	1 (3 max.)
Outlet thread (pumping outlet)	G1/4 BSP
Nominal output per pump element (20 RMP) *	2,8 cm ³ /min (0.17 in ³ /min) 5,2 cm ³ /min (0.31 in ³ /min) 0,4 ÷ 2,8 cm ³ /min (0.02 ÷ 0.17 in ³ /min) - Adjustable
Working pressure	280bar (4061psi)
Integrated By-pass pressure	320bar ±30bar (4641psi ±435psi)
Reservoir Capacity	4 – 8 – 12 liter (1.06 – 2.11 – 3.17 gallons)
Max Grease capability	NLGI 2
Operating temperature	-25°C ÷ +80°C
Storage temperature	-30°C ÷ +90°C
IP Protection grade	IP65 (IP 69K with special equipment)

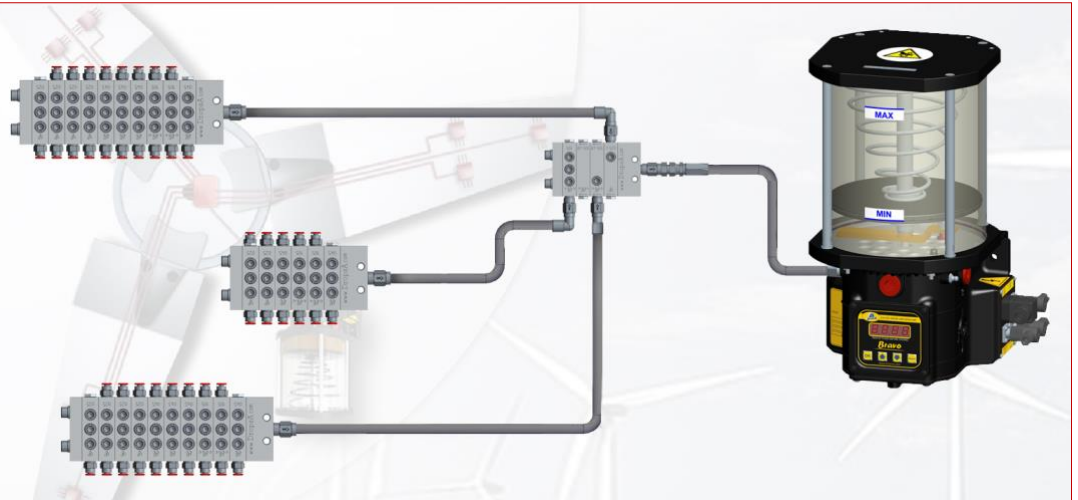
DIMENSIONS (NOT TO SCALE)



BRAVO FP - THE EXTENTION OF LUBRICATION SYSTEM THANKS TO DROPSA PROGRESSIVE SYSTEM

BENEFITS OF PROGRESSIVE SYSTEM DROPSA



- Modular progressive system for excellent lubrication
- Ability to expand the system
- High accuracy
- Stainless steel
- Different progressive distributor for all needs
- SMX - nP - nPr+ - SMP (Ref. DropsA documents progressive system SMX C2104PI - nP C2213PI - nPr+ C2220PI - SMP C2071PI)



ORDERING INFORMATION

VERSIONS	VOLTAGE	RESERVOIR	PART No.
AUTOMATIC VERSIONS	110V/230V	4 l (1.06 gal)	0888480
		8 l (2.11 gal)	0888481
		12 l (3.17 gal)	0888482
	12V/24V	4 l (1.06 gal)	0888483
		8 l (2.11 gal)	0888484
		12 l (3.17 gal)	0888485
MANUAL VERSION	110V/230V	4 l (1.06 gal)	0888486
		8 l (2.11 gal)	0888487
		12 l (3.17 gal)	0888488
	12 V	4 l (1.06 gal)	0888489
		8 l (2.11 gal)	0888490
		12 l (3.17 gal)	0888491
	24 V	4 l (1.06 gal)	0888492
		8 l (2.11 gal)	0888493
		12 l (3.17 gal)	0888494

PIMPING ELEMENTS

	DESCRIPTION	PART No.
	Ø6 mm pumping element with integrated by-pass (included) 1 notch	0888058C
	Pumping element with fixing flow rate (5,2 cm ³ /min - without by-pass) 2 notches	0888391
	Pumping element with fixing flow rate (2,8 cm ³ /min - without by-pass) 1 notch	0888156
	Pumping element with adjustable flow rate (0,4 ÷ 2,8 cm ³ /min - without by-pass)	0888555

ACCESSORIES

DESCRIPTION	PART No.
Remote control switch and lamp 12V	0039433
Remote control switch and lamp 24V	0039434
Grease cartridge filling kit	0888038
400 cc Grease cartridge (NLGI 2)	1524952
P69K protection plug connector	0038966
Screws for SMP-SMPM base installation	0010509
IP69K Protection kit	0888470

Distributor Info: