

## CHARACTERISTICS

- **VOLTAGES**  
12V AC/DC  
24V AC/DC  
110V/230V 50/60 Hz
- **NOMINAL FLOW RATE PER OUTLET**  
0,14 cm<sup>3</sup>/rev  
0,19 cm<sup>3</sup>/rev  
0,02 ÷ 0,13 cm<sup>3</sup>/rev  
0,04 ÷ 0,2 cm<sup>3</sup>/rev
- **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**

## 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.



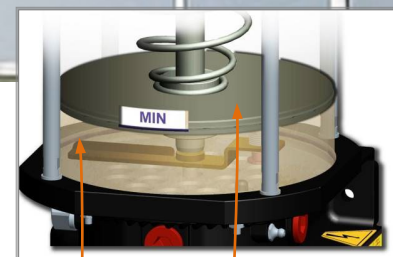
## APPLICATIONS



### 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.



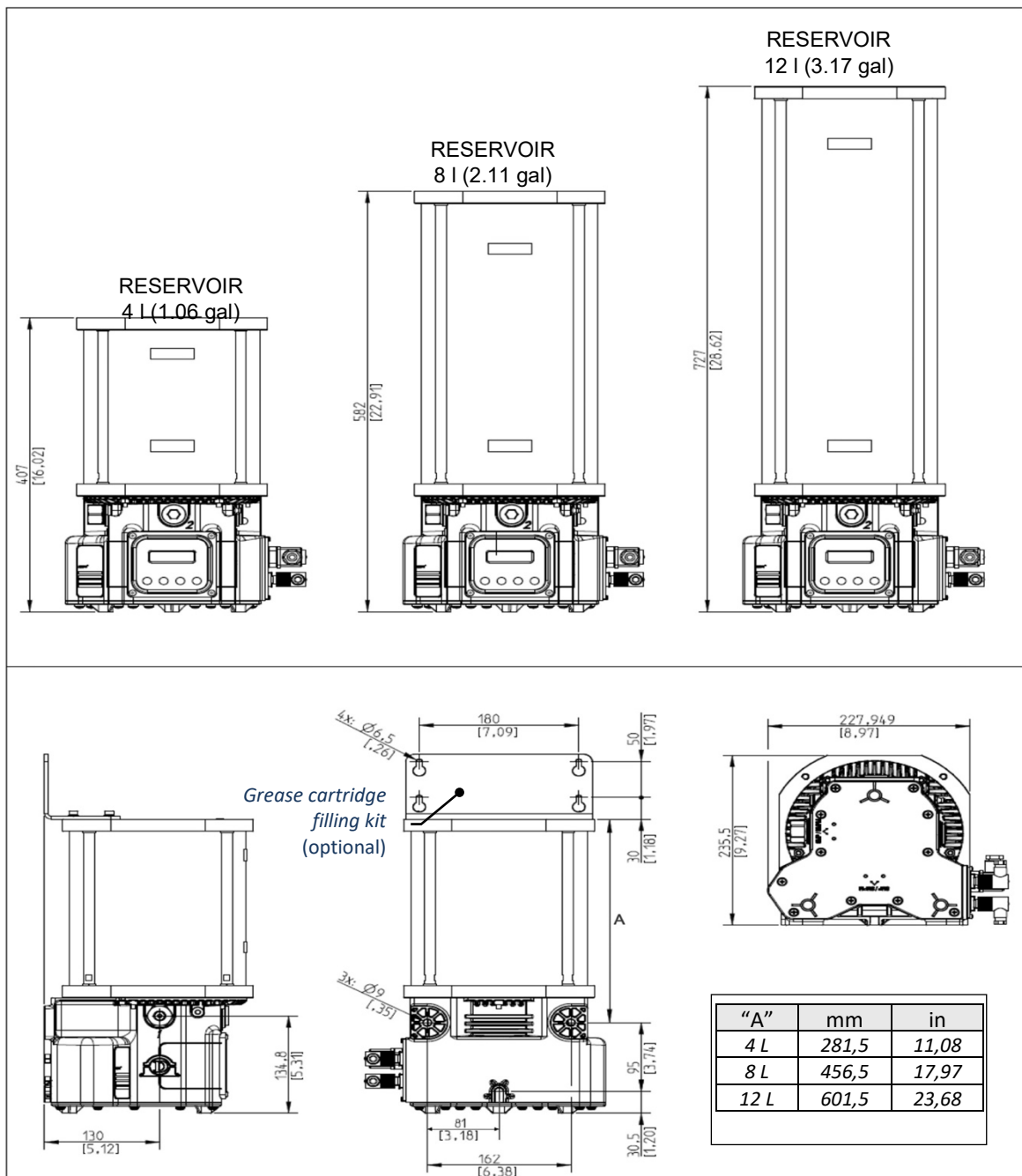
**The complete lubrication system typically comprises:**

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 flow rate per outlet	0,14 cm <sup>3</sup> /rev (0.0085 in <sup>3</sup> /rev) 0,19 cm <sup>3</sup> /rev (0.012 in <sup>3</sup> /rev) 0,02 ÷ 0,13 cm <sup>3</sup> /rev (0.0012 ÷ 0.008 in <sup>3</sup> /rev) - Adjustable 0,04 ÷ 0,2 cm <sup>3</sup> /rev (0.0024 ÷ 0.012 in <sup>3</sup> /rev) - 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)

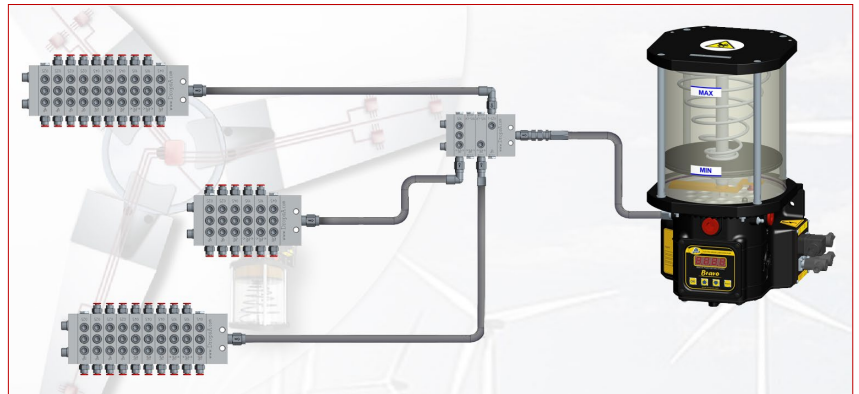




**BRAVO FP - THE EXTENTION OF LUBRICATION SYSTEM THANKS TO DROPSA PROGRESSIVE SYSTEM**

**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**

PUMPS						
Power supply VOLTAGE	AUTOMATIC VERSION			MANUAL VERSION		
	RESERVOIR 4 l (1.06 gal)	RESERVOIR 8 l (2.11 gal)	RESERVOIR 12 l (3.17 gal)	RESERVOIR 4 l (1.06 gal)	RESERVOIR 8 l (2.11 gal)	RESERVOIR 12 l (3.17 gal)
110 V/230 V	0888480	0888481	0888482	0888486	0888487	0888488
12 V	0888483-12V	0888484-12V	0888485-12V	0888489	0888490	0888491
24 V	0888483-24V	0888484-24V	0888485-24V	0888492	0888493	0888494

**CONNECTOR BASES AND CONNECTORS**

AUTOMATIC VERSION 12V/24V							
CONNECTION		FEMALE CONNECTOR		CONNECTIONS AVAILABLE			
CODE	DESCRIPTION	CODE	DESCRIPTION	Power Supply	Alarm contact	Cycle sensor	External switch
0888102	AMPH connector	0039828	AMPH connector	•	•	•	•
0888059	4 MPM connector	0039976	MPM connector	•	•	•	•
0888141	2 MPM connector	0039976	MPM connector	•	•		
0888139	1 MPM connector 3 M12 connector	0039976 0039999	MPM connector M12 connector	•	•	•	•
0888142	1 MPM connector 1 M12 connector	0039976 0039999	MPM connector M12 connector	•	•		
0888437	IP69K – 12V/24V	0038963 0039835	3 pin IP69K connector 4 pin IP69K connector	•	•	•	•

AUTOMATIC VERSION 110V/230V							
CONNECTION		FEMALE CONNECTOR		CONNECTIONS AVAILABLE			
CODE	DESCRIPTION	CODE	DESCRIPTION	Power Supply	Alarm contact	Cycle sensor	External switch
0888134	4 MPM connector	0039976	MPM connector	•	•	•	•
0888138	2 MPM connector	0039976	MPM connector	•	•		
0888136	1 MPM connector 3 M12 connector	0039976 0039999	MPM connector M12 connector	•	•	•	•
0888137	1 MPM connector 1 M12 connector	0039976 0039999	MPM connector M12 connector	•	•		
0888472	IP69K – 110V	0038963 0039835	3 pin IP69K connector 4 pin IP69K connector	•	•	•	•
0888474	IP69K – 230V	0038963 0039835	3 pin IP69K connector 4 pin IP69K connector	•	•	•	•



MANUAL VERSION 12V/24V							
CONNECTION		FEMALE CONNECTOR		CONNECTIONS AVAILABLE			
CODE	DESCRIPTION	CODE	DESCRIPTION	Power Supply	Alarm contact	Cycle sensor	External switch
0888141	2 MPM connector	0039976	MPM connector	•	•		
0888142	1 MPM connector	0039976	MPM connector	•	•		
	1 M12 connector	0039999	M12 connector				
MANUAL VERSION 110V/230V							
CONNECTION		FEMALE CONNECTOR		CONNECTIONS AVAILABLE			
CODE	DESCRIPTION	CODE	DESCRIPTION	Power Supply	Alarm contact	Cycle sensor	External switch
0888138	2 MPM connector	0039976	MPM connector	•	•		
0888137	1 MPM connector	0039976	MPM connector	•	•		
	1 M12 connector	0039999	M12 connector				

OPTIONALS & ACCESSORIES				
CODE	DESCRIPTION	CODE	DESCRIPTION	NOTES
0039433	Remote control switch and lamp 12V	0888156	0.14 cm <sup>3</sup> /rev pump unit	
0039434	Remote control switch and lamp 24V	0880104	0.19 cm <sup>3</sup> /rev pump unit	
0888386	Pump bracket kit	0888555	0.02 ÷ 0.13 cm <sup>3</sup> /rev adjustable pump unit	
0038966	IP69K protection plug connector	0880060	0.04 ÷ 0.2 cm <sup>3</sup> /rev adjustable pump unit	
0888470	IP69K protection kit	0888572*	External by-pass with pressure gauge *The purchase of code 3079007 is mandatory	
0010509	Screw for assembling SMP-SMPM	0888163*	External by-pass without pressure gauge *The purchase of code 3079007 is mandatory	
		3079007*	By-pass extension	

C2192PE WK 40/25

Dropsa products can be purchased from Dropsa subsidiary and Dropsa sales representatives, visit [www.dropsa.com/contact](http://www.dropsa.com/contact) or contact us [sales@dropsa.com](mailto:sales@dropsa.com)

Distributor Info: