Before installing or operating this lubricator, please read this manual carefully. Failure to follow instruction can result in damage to the product and/or serious bodily injury.

The Versa Ⅲ lubricator meets all operating parameters for Bijur Single Line Resistance (SLR) and Positive Displacement Injector (PDI) centralized lubricating systems.

GENERAL

As a self-contained motorized gear pump, VERSAMATIC Ⅲ is compact, efficient. It's suitable for most industrial lubricant from 20 cst to 2000 cst and meets a variety of lubricating requirements. VERSA Ⅲ is programmed to discharge accurate amounts of oil at predetermined intervals from several minutes to several hours. It's units are available complete with built-in level switch, pressure switch, built-in controller (SM-AC / SM-B1) or external controller. There are 2 different capacity for reservoir, 2 liters，3liters and 4 liters, which material is ABS or metal.

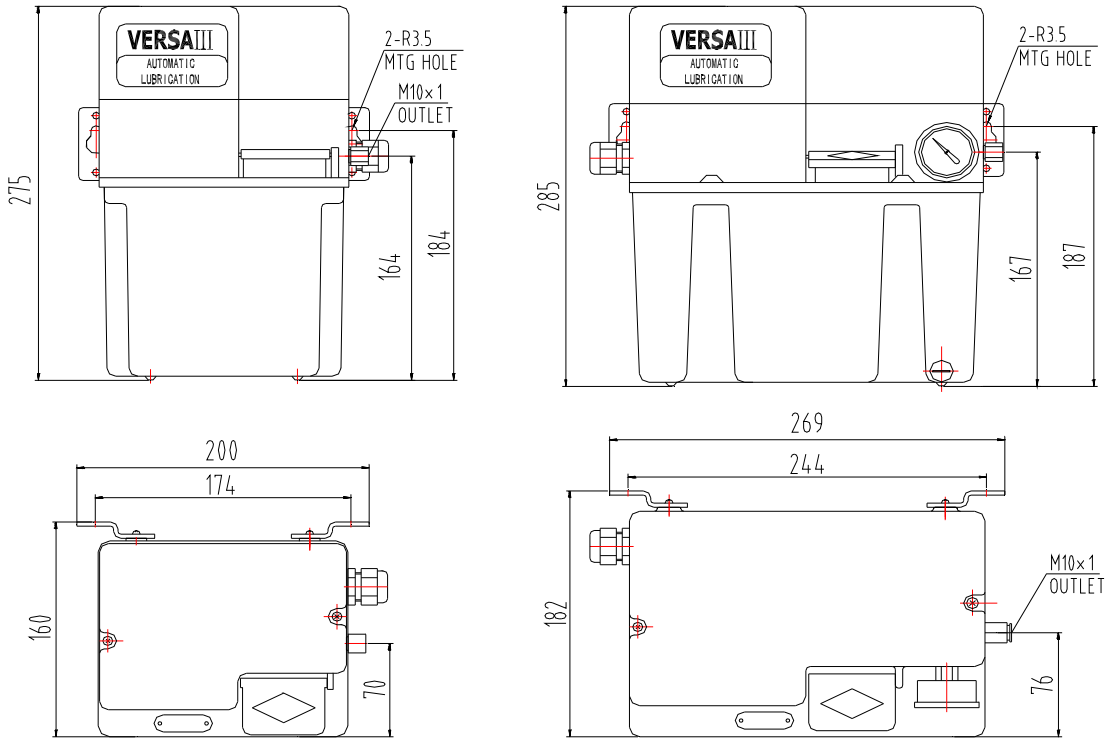
VERSA Ⅲ can be used respectively in PDI system, SLR system or PRG system if it is offered with PDI, MU OR PRG .

Applications for VERSA Ⅲ include: Machine tools, Plastic machinery, Textile machinery, Printing machinery, Elevator and conveyer equipment.

SPECIFICATIONS

Delivery Volume	108 ml/min
Rated Pressure	1.4 MPa
MAX. Delivery Pressure	2.5 MPa
Oil Viscosity Range	20~2000 cst
Filter Precision	90 μ m
Volumetric Factor	⩾75%
Power Supply for Motor	220V,110V/1 Phase,380/3 Phase 50/60 Hz
Velocity of Motor Shaft	1350 rpm
Power Rating	35 Watts
Controller	SM-AC/SM-B1

LAYOUT AND INSTALLATION DIMENTIONS



VⅢ 2 LITER VⅢ 4 LITER

FEATURES

- Lubricator is equipped with a single phase or three-phase motor, which is thermally protected.
- With the motor, liquid level switch or pressure switch contacting with SM-AC, SM-B1, or user's controller, lubricator can be controlled automatically.
- In PDI system, "ON" period (running time) is controlled by pressure switch while "OFF" period (interval period) is preset by controller.
- In SLR system, controller presets both "ON" and "OFF" period.

PRINCIPLE OF OPERATION

Lubricator includes a motor-driven gear pump with a built-in flow control valve, which relieves distribution line pressure during "OFF" period, as required for PDI system. A pressure switch and low-level switch are provided to monitor occurrence of pump cycle and low level of oil in reservoir.

A built-in timer controls the operating cycles of the lubricator. Three modes are required to operate the lubricator: "**Pause**" period (pump motor off), "**Pressure build**" period and "**Pressure hold**" period. At the end of Pause period, power is supplied to the lubricator's electric motor, commencing Pressure Build operation and increasing oil pressure.

Once pressure to operate the system is attained, the lubricator's built-in pressure switch closes, advancing the controller to Pressure hold mode. The pump motor continues to run until the Pressure hold time is completed. Then the controller advances to the Pause mode and remains in this mode for the preset interval. The controller shuts off the pump allowing the lubricator's pressure dump valve assembly to relieve pressure from the system network, and allows all injectors to reset for the next cycle.

OPERATE LUBRICATOR

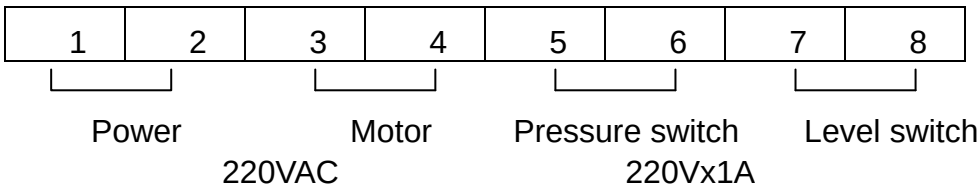
● 2 LITER LUBRICATOR WITH CONTROLLER SM-B1

ATTENTION

1. Attach tube fittings and PDI / Meter Unit to the lubricating system as requirement.

   Attention: *Be sure there are not any leakage at each connection in the whole system.*

2. Fill reservoir with clean Bijur approved oil.
3. If oil distribution system has not been previously primed with oil, it is necessary to purge air from the system before operating machinery. This may be accomplished by removing MU at the farthest points from the lubricator and initiating manual lubricator cycles.
4. Remove lubricator's up-cover and a controller SM-B1 display, which wiring diagram as below:



5. Set lubricator's pause-time mode by operating DIP switch in the controller, which can be adjusted from 1minute to 255 minutes. The relationship between octet address number and time value detailed as below:

Add NO..	1	2	3	4	5	6	7	8
Minutes	1	2	4	8	16	32	64	128

For example: If we want to get 130 minutes interval time, we should turn 2# and 8# address switch to "ON" position and remain others in "OFF" position.

6. Reassemble the housing cover after setting.
7. Connect lubricator's two bullet-shape blue male terminal with power supply and grounded by a green-yellow wire.
8. Plug in, a red LED flashes 10 times as motor runs 10 seconds, then a green LED on and motor stops simultaneously.
9. If lubricator is in interval period, press the button switch can start it. (Red LED doesn't flash)

10. In a system with pressure switch, controller can send a stop signal in 4 seconds after the pressure switch is activated by system pressure. At the same time, red LED off while green one on, and motor stops to interval phase.
11. When oil level drops below the limited line, level switch is activated and gives off alarm. In this case, green LED flashes and motor stops.

ATTENTION

- 2、3、4 LITER LUBRICATOR WITH CONTROLLER SM-AC

1. Attach tube fittings and PDI / Meter Unit to the lubricating system as requirement.

   Attention: *Be sure there are not any leakage at each connection in the whole system.*

2. Fill reservoir with clean Bijur approved oil.
3. If oil distribution system has not been previously primed with oil, it is necessary to purge air from the system before operating machinery. This may be accomplished by removing MU at the farthest points from the lubricator and initiating manual lubricator cycles.
4. How to set the program

GENERAL

SM-AC is a multi-purpose controller for different lubricating systems, such as **SLR** system, **PDI** system, **PRG** system and **PULES** system.

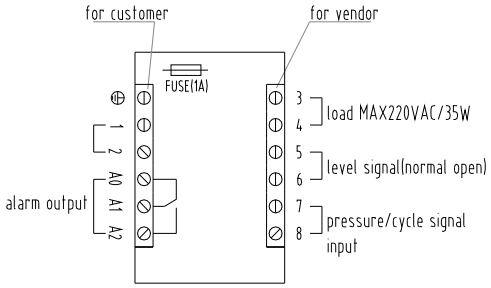
This programmed controller is compact and reliable. It can meet almost all kinds of rough industrial condition due to its high protective grade and anti-vibration.

Real time fault alarm is an outstanding feature of this excellent controller as well as its data memory function at power off occasion.

SPECIFICATION

- Power Supply : 220VAC,50/60HZ
- Loading Power: 60 W
- Fault Relay Contacts: 220V, 30W
- Ambient Temp. : -20 ℃～ 55 ℃
- FUSE: ¢5x20, 1A

LAYOUT



PANEL

There are one 4-digit display and 3 LED lights on the panel. The digital screen can display operation mode and program. 3 LED lights indicate respectively: power supply (Green), pump running (Red) and low level alarm (Yellow).

KEY BOARD

S: Function setting and program review
R: Data store, reset and run
: Remove cursor
: Data setting

WIRING DIAGRAM

- **Terminal 1 and 2:** Power input, for customer'connecting
- **Terminal A0 , A1, A2 :** alarm output (A0 and A1 normal close; A0 and A2 normal open)
- **BELOW IS JUST FOR VENDOR**
- **Terminal 3 and 4:** Motor's load (the voltage should be compatible with power supply).
- **Terminal 5, 6:** Low level signal input. Closed at low level.
- **Terminal 7, 8:** pressure and cycle signal input .

OPERATION

◆ Power on

The controller run the previous programe setted before power off. Please follow the below steps if need to reset.

◆ Data Setting

1. Press “S” and “R” simultaneously to enter setting mode, one cursor flashes.
2. On the setting mode, press “⇦” and “ ↑ “ to modify the data.
3. Press “S” to set next parameter.

◆ Run & Stop

1. After all data are preset, press “R” to save the data and start the system.
2. Whenever the system is running, pressing “R” will reset the system.
3. Pressing “S” and “R” simultaneously can stop a running system.

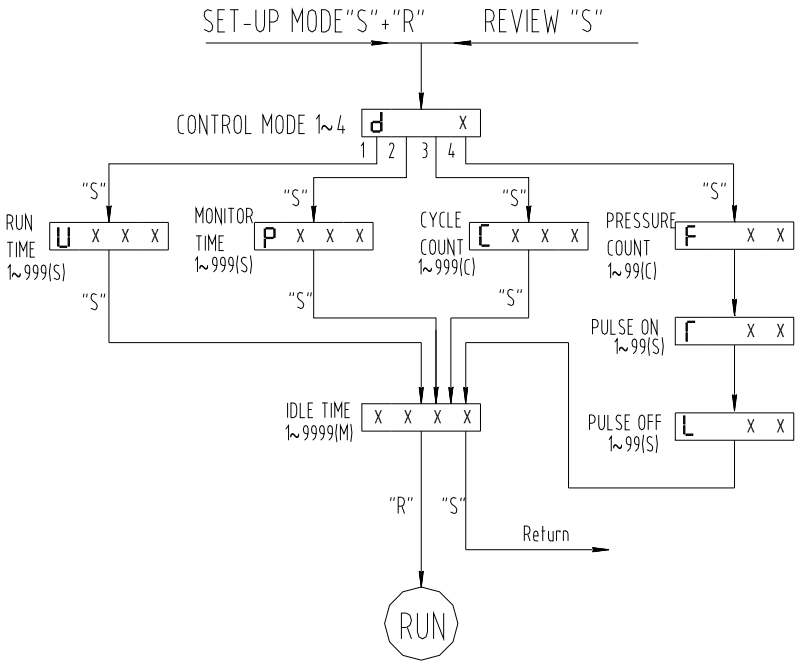
◆ Program Review

In order to review the preset data, please press the key “S” whenever the system is running. After releasing the key for a while, the display will be restored.

◆ Fault Alarm

When any malfunction being checked, the controller will cut off output by activating an inner relay.

◆ Flow Chart



CAUTION:

Recommend using default mode. If you want to change operation mode, please contact the supplier.

- **Time Control Mode (d=1). Recommend for SLR system.**

  On this mode, lubricating system runs according to the preset running time and idle time.

- **Pressure Control Mode (d=2). Recommend for PDI system.**

  A pressure switch mounted on pump or online is a key monitoring unit for the whole system. Normally, system should build up rating pressure to activating pressure switch closed in a proper period (called alarm time) after pump starts. In order to build up enough pressure at the end of lines, pump will keep running for 4 additional seconds (called 4-seconds delay) after pressure switch closed. Then pump stops and completes one discharge cycle. The system starts to count down idle time and prepare for next period. If there are any faults in the system, such as leakage, clog or malfunction on any units, the pressure switch can't be triggered in preset alarm time, then controller will give off alarm signal and LED shows "EEPP". (if you want to modify data, please press the key "R" first to enter data setting mode).

  User can adjust alarm time according to the line length and discharge volume they need.

- **Cycle Control Mode (d=3). Recommend for PRG system.**

  A micron switch mounted on PRG divider is a key monitoring unit for the whole system. Normally, Pump starts to discharge lube from each outlet of PRG divider, an indicator pin stretches out or draws back synchronously per each discharge cycle. This movement activates the micron switch that connected with indicator pin to give a feedback signal to controller, which can accumulate cycles automatically. When system finishes preset cycles, the controller will stop the pump and start to count down idle time and prepare for next period. If there are any faults in the system, such as leakage, clog or malfunction on any units, the micron switch can't be triggered in default time (5 minutes, un-adjustable), then controller will give off alarm signal and LED on the panel flashes.

- **Pulse Control Mode (d=4). Recommend for PULSE system.**

  This mode is designed for pulse system that pump runs un-continuously (pulse), such as pneumatic piston pump or magnetic piston pump. By switching on/off the solenoid valve (to pneumatic pump) or electric power (to magnetic pump), the controller can monitor the whole system to run properly.

MAINTENANCE

ATTENTION

1. Check oil level daily and refill as needed with clean Bijur approved oil to maintain proper level in reservoir at all times.

   Failure to maintain proper oil level may result in serious damage to lubricator and machine being lubricated.

2. Clean reservoir every two months and clean or replace suction filter annually or as frequently as necessary.
3. Safe valve is adjusted to the pressure 2.5 ± 0.1MPa before delivery from factory.
4. If an application has some special requirements, please annotate it on purchase order.
5. Lubricator is supplied with many kinds of discharge ports for different adapters, such as M8x1, M10x1, M12x1 or Z1/8.
6. When starts a lubricator for the first time or after parts' replacement, purge air from the lube system at first to ensure oil flows at all lube points before main machine is started. Otherwise, some move parts will be damaged for lack of lubrication.
7. Forbid removing lubricator's cover without turning off and disconnecting power supply.

TROUBLESHOOTING CHART

ITEM	SYMPTOM	POSSIBLE CAUSE	REMEDY
1	Motor can't run	Poor electrical connection	Connect with proper power supply
		Incorrect wire connection	Make sure all wire connections are tight and correct as wiring diagram.
2	Motor runs but lubricator doesn't pump oil	Pump isn't running enough for the first performance	Running 30 seconds at lease for an new lubricator
		There is air in lube system	Purge air from lube system
		380V motor runs in a wrong direction	Convert phase connect

3	Lubricator doesn't pump oil after motor runs for 30 seconds	Oil is not enough	Refill reservoir with clean Bijur approved oil
		Clogged suction filter screen	Clean or replace suction screen.
4	Lubricator doesn't build pressure	Damaged pressure gauge	Replace proper gauge
		Junction loosened or leakage	Fasten or seal tubing fittings
5	Pressure switch work wrong (SM-AC type)	Damaged pressure switch	Replace proper switch
		Wrong setting controller	Reset the controller
6	Indicator lights but digits displayed wrong (SM-AC type)	Loosened conjunction	Connect indicator with main-board tightly
		Incorrect power supply	See "OPERATE LUBRICATOR"
		Poor environment	See "OPERATE LUBRICATOR"

PRODUCTS TRACE SHEET

User							
P.O. NO.							
Responder			Phone NO.				
Mail-ADD							
Product's Name							
Type / Code			Quantity				
Delivery Date			Installation Date				
Content Degree	□ Appreciate		□ Acceptable		□ Unsatisfactory		
Quality Trouble							
Effect	□ Installation □ Application □ Environment		□ Test □ Reliability □ Others		□ Precision □ Duration		□ Function □ Maintenance
Requirements	□ Explanation □ Repair □ Return purchase		□ Check on site □ Exchange □ Others		□ Help to test on site □ Claim for compensation		
Suggestions							

Signature: Date:

Note:

1. User should fill the form as they purchase Bijur products.
2. Please choose relative item in the blank.
3. Send this form to: Quality Control Department,
   Nanjing Bijur Machinery Products, LTD.
   ADD: 9#, Heng Tong Road, Najing Economic & Technical Development Zone, Nanjing, China
   Post Code: 210038
   Tel: 8008286000
   Fax: 025-85802299