Volumetric centralized thin oil lubrication system

Volumetric centralized thin oil lubrication system

Description of the volumetric centralized thin oil lubricating system

The volumetric lubrication system is composed of volumetric lubrication pump, oil filter, straight-through oil distribution block, volumetric distributor, copper joint, oil pipe and other accessories. This lubricating system includes two kinds of oil delivery: decompression quantitative oil delivery and pressurized quantitative oil delivery.

BAOTN 始于2006年

1 Operating principle of decompression quantified oil delivery

When the volumetric lubricating pump is working, the lubricant is conveyed to (models BFA/BFB) volumetric distributor. When the volumetric distributor is full of oil, the lubricant stops working and decompresses. The spring in the distributor advances internal pistons, and conveys quantified lubricant to the lubricating points.

2 Operating principle of pressurized quantified oil delivery

When the volumetric lubricating pump is working, the pressure is used to drive piston inside the (model BFD) volumetric distributor, and quantified lubricant in the volumetric distributor is used to convey the lubricating points.

3 System characteristics

- The lubricant is conveyed to lubricating points accurately.
- Oil delivery quantities of the quantified holes are subject to viscosity, temperature and oil injection time.
- Oil delivery volume of volumetric distribution of the same specifications are subject to installation location and height etc.
- Oil volumes of the lubricating points are measured, and the volumetric system is economical and more energy saving in practice.

4 Attentions for system configuration

- In the volumetric lubricating system, each lubricating system must be provided with a quantified oil outlet hole of the corresponding volumetric distributor for through lubricating; otherwise, the pipeline cannot accumulate pressure, and the distributor cannot store or convey oil.
- The system shall be used with the lubricant pump, and cannot be used with the resistant lubricating pump.

5 Attentions for system installation:

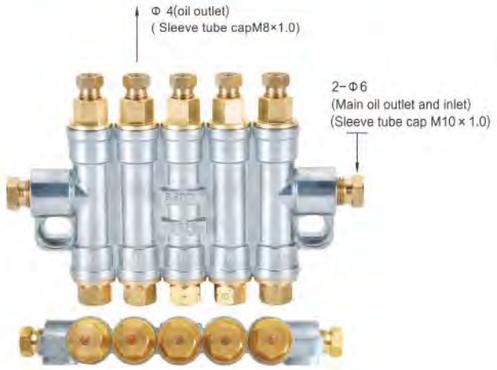
- Oil pipe orifices shall be cut in order to ensure that connection is integral without oil leakage; otherwise, the pipeline may leak oil and pressure cannot be accumulated, and the distributor cannot store oil or convey oil.
- When installed, interior of the pipeline shall be clean, and installing check valves in the lubricating pump and main pipeline are prohibited.
- Please use high-quality and excellent new lubricant, and the optimum viscosity is 32cSt~250cSt. Unique, alkali or acid oil cannot be used.
- Applicable temperature -10~50℃.
- Please notice changes of environmental temperature. Properly adjust oil product variety. R32# oil product is used below the temperature of 15℃, and R68# oil product is used above 30℃.

6 Basic scope of application:

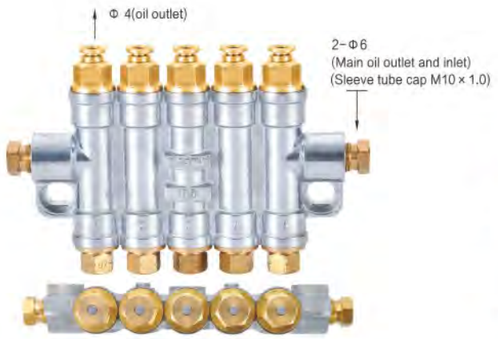
- Gear pump (Shaded Pole Motor): applicable for medium and small-sized machinery and equipment with main oil pipeline length of 10 meters, height of 6 meters and lubricating points of maximum 50 points.
- Gear pump (Induction Motor): applicable for various machinery and quipment with lengthy main oil pipe and requiring large oil quantities.

BFA/BFB Type

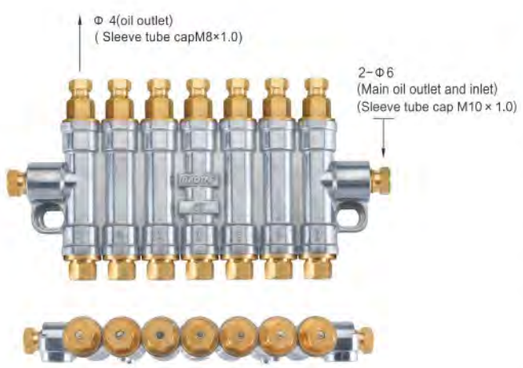
Quantified decompression thin oil distribution



BFA-05



BFB-05



BFA-07

Order description

BFA/BFB - □ - □ - □

Quantity of oil inlets

Blank	Double oil inlet
S	single inlet

Oil quantity code

1	0.1mL
2	0.2mL
3	0.3mL
4	0.4mL
5	0.5mL

Quantity of oil outlets

- Oil volume indication: (notes: when oil volume values of all oil outlets are identical, represented with one oil volume).
- Example 1: BFA/BFB-05-02 means 5-position distributor with model of BFA/BFB, oil delivery volume of oil outlets 1, 2, 3, 4 and 5 is 0.2mL/time.
- Example 2: BFA/BFB-05-53235 means that outlet oil volumes of outlets 1, 2, 3, 4 and 5 of 5-position distributors with model of BFA are 0.5, 0.3, 0.2, 0.3 and 0.5mL/time.

Models, specifications and technical parameters

Models and specifications	Outlet quantity	A	B	Throughput (cc/cy)	Weight (g)
BFA(BFB)-01	1	69	39	0.1/0.2/0.3 /0.4/0.5	168
BFA(BFB)-02	2	69	39		168
BFA(BFB)-03	3	86	54		232
BFA(BFB)-04	4	102	69		299
BFA(BFB)-05	5	116.5	84		359
BFA(BFB)-06	6	160	105		464
BFA(BFB)-07	7	144	107		493

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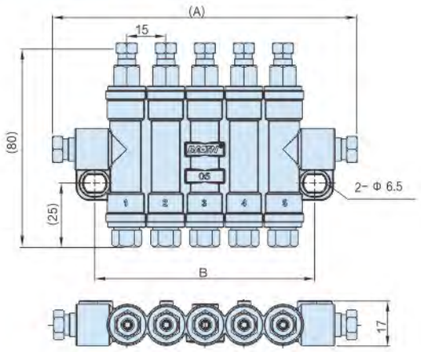
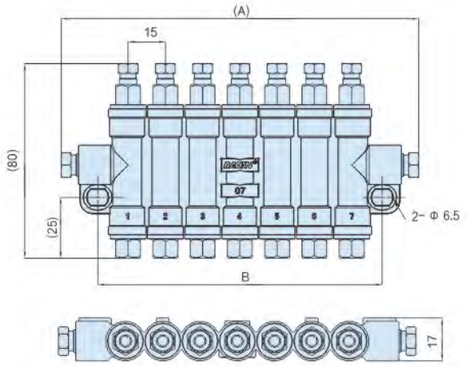
■ Volumetric thin oil distributor

Product dimension figure

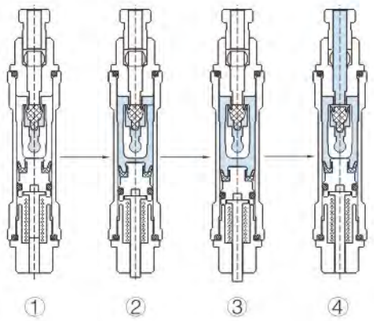


BFA/BFB-05



BFA/BFB-07

Schematic diagram of the BFA/BFB distributor



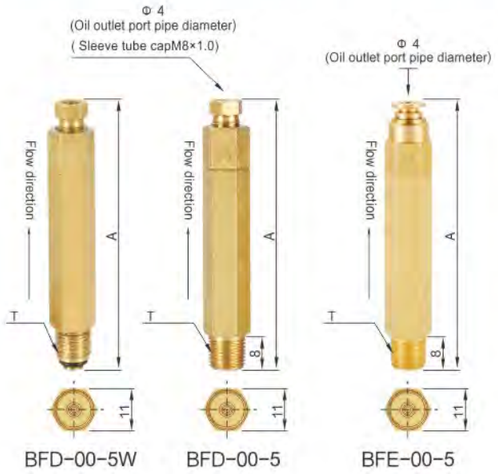
① Before storing oil (Pressurization starts)
② In storing oil (In pressurization)
③ Oil storage completed (Pressurization is completed)
④ In draining oil (The piston is reciprocating)

Rationale of the BFA/BFB distributor

- Lubricant delivered from the oil injector starts to drive through the umbrella valve in the BFA/BFB distributor.
- When the umbrella valve closes the oil outlet hole, oil pressure forces oil storage block to overcome spring force and lower down, and the oil cavity starts to store oil.
- When BFA/BFB oil storage block arrives at the top of the oil cavity, storing oil by BFA/BFB is completed.
- When the oil pump stops supplying oil, the decompression valve is automatically opened to make lubricant in the main oil pipe to return through the decompression valve. The system pressure is lowered, the umbrella valve resets and closes the inlet oil, and the BFA/BFB oil storage block compresses the lubricant in the oil cavity to the the oil outlet port.

BFD/BFE Type

Single pressurization thin oil distributor



BFD-00-5W　BFD-00-5　BFE-00-5

Order description

BFD/BFE-00-□□

Oil volume at oil outlet

05	0.05mL/time
1	0.1 mL/time
2	0.2 mL/time
3	0.3 mL/time
4	0.4 mL/time
5	0.5 mL/time

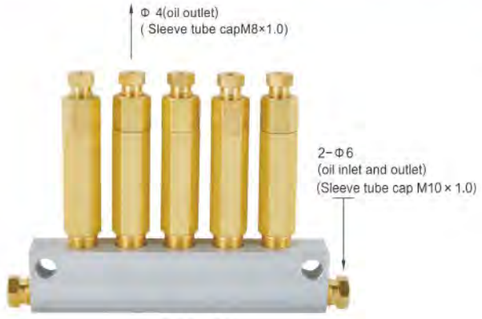
Thread form

Blank	PT1/8
W	M10X1

Models, specifications and technical parameters

Models and specifications	Throughput (cc/cy)	A	Mark	T	Weight (g)
BFD/BFE-00-05	0.05	53	00	PT1/8 M10X1	38
BFD/BFE-00-1	0.1	53	01		38
BFD/BFE-00-2	0.2	60	02		44
BFD/BFE-00-3	0.3	60	03		44
BFD/BFE-00-4	0.4	71	04		54
BFD/BFE-00-5	0.5	71	05		54

Quantified pressurized thin oil distributor



BFD-05

BFE-05

Order description

BFD/BFE-□-□-□

Quantity of oil inlets

Blank	Double oil inlet
S	single inlet

Oil quantity code

05	0.05mL
1	0.1mL
2	0.2mL
3	0.3mL
4	0.4mL
5	0.5mL

Quantity of oil outlets

- Oil volume indication: (notes: when oil volume values of all oil outlets are identical, represented with one oil volume).
- Example 1: BFD/BFE-05-02 means 5-position distributor with model of BFD/BFE, oil delivery volume of oil outlets 1, 2, 3, 4 and 5 is 0.2mL/time.
- Example 2:BFD/BFE-05-53235 means that outlet oil volumes of outlets 1, 2, 3, 4 and 5 of 5-position distributors with model of BFD/BFE are 0.5, 0.3, 0.2, 0.3 and 0.5mL/time.

※ Note: The number of oil outlets 1-12 is the conventional model.

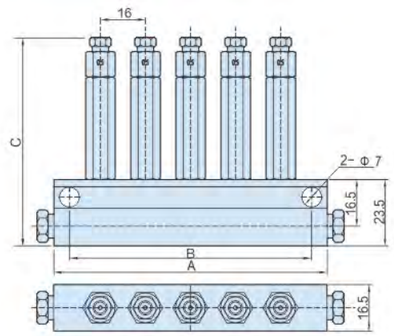
■ Volumetric thin oil distributor

Models, specifications and technical parameters

Models and specifications	Outlet quantity	A	B	C	Throughput (cc/cy)	Weight (g)
BFD/BFE-02	2	49	38	68-86	0.05; 0.1; 0.2; 0.3; 0.4;0.5.	168
BFD/BFE-03	3	65	54	68-86		232
BFD/BFE-04	4	81	70	68-86		299
BFD/BFE-05	5	97	86	68-86		359

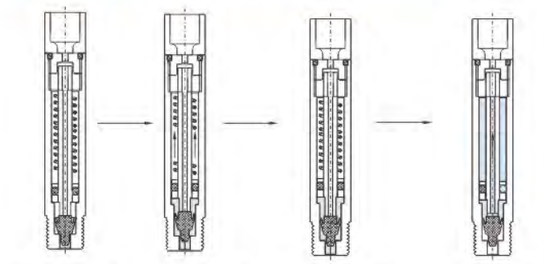
Remarks: The measurement of C is respectively 68mm, 75mm and 86mm when the throughput is 0.1cc, 0.2-0.3cc, 0.4-0.5cc

Product dimension figure

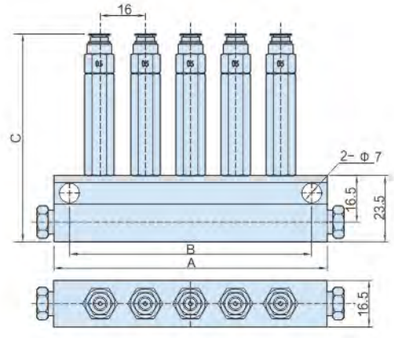


BFD-05

Schematic diagram of the BFD/BFE distributor



1.Before draining oil (Pressurization starts)　2.In draining oil (The piston is reciprocating)　3.Drained (Pressurization is completed)　4.In storing oil (In pressurization)



BFE-05

Rationale of the BFD/BFE distributor

- Lubricant delivered from the oil pump makes umbrella valve in the BFD/BFE distributor drive upwards.
- When the umbrella valve closes central hole of the core bar, the piston overcomes the spring force to rise. Lubricant stored in the oil cavity is drained out.
- When piston moves to the top point of oil cavity, oil draining is completed.
- When oil pump stops oil supplying, the pressure release valve is automatically released to make lubricant in the main oil pipe to reset through the decompression valve. At this moment, the system pressure is reduced, and piston in the distributor starts reciprocating with the function of spring. When the umbrella valve resets and closes oil outlet of the distributor, the piston delivers lubricant in the lower cavity through the core bar, and oil supply for the next time is ready.

BFG Type

Integral pressurized thin oil distributor

BFG-05

Order description

BFG-□-□-□

Quantity of oil inlets

Blank	Double oil inlet
S	single inlet

Oil quantity code

03	0.03mL
05	0.05mL
10	0.1mL
16	0.16mL

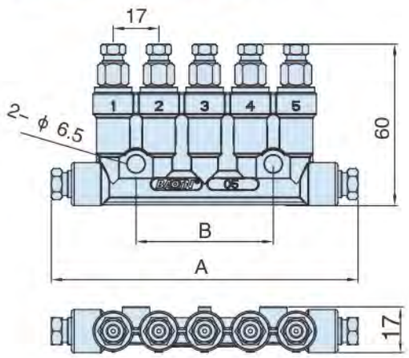
Quantity of oil outlets

- Oil volume indication: (notes: when oil volume values of all oil outlets are identical, represented with one oil volume).
- Example 1: BFG-05-1 means that the oil volume of the 1st, 2nd, 3rd, 4th and 5th oil outlet of the BFG type 5-port distributor is all 0.1mL/time.
- Example 2: BFG-05-1610050303 means that the oil volume of the 1st, 2nd, 3rd, 4th and 5th oil outlet of the BFG type 5-port distributor is 0.16, 0.1, 0.05, 0.03, 0.03 mL/time respectively.
- Example 3: BFG-05-10-S means that the oil volume of the 1st, 2nd, 3rd, 4th, and 5th oil outlet of the BFG type 5-port distributor is all 0.1ML/time, and one end of the oil inlet main pipe is matched with a pipe and an official cap; One end of the oil outlet pipe is equipped with a plug.

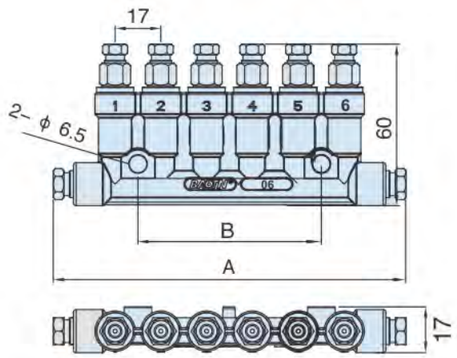
Models, specifications and technical parameters

Models and specifications	Outlet quantity	A	B	Throughput (cc/cy)	Weight (g)
BFG-02	2	63	/	0.03/0.05/0.1/0.16	120
BFG-03	3	80	17		164
BFG-04	4	97	34		207
BFG-05	5	114	51		251
BFG-06	6	146	83		330

Product dimension figure

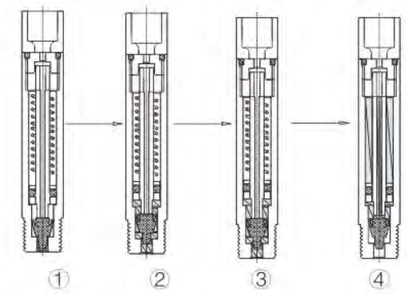


BFG-05



BFG-06

Schematic diagram of the BFG distributor



① Before draining oil(Pressurization starts)
② In draining oil(The piston is reciprocating)
③ Drained(Pressurization is completed)
④ In storing oil(In pressurization)

Rationale of the BFG distributor

- The lubricating oil delivered from the oil pump starts to push upward through the umbrella valve in the BFG distributor.
- When the umbrella valve closes the central hole of the core rod, the piston is forced to rise against the spring force. Drain the lubricating oil previously stored in the upper chamber.
- When the piston moves to the top of the upper chamber, the oil discharge is completed at the same time.
- When the oil pump stops supplying oil, its pressure relief valve opens automatically, so that the pressure oil in the main oil pipe reset to the oil through the pressure relief valve. At this time, the system pressure drops, and the piston in the distributor begins to recover under the action of the spring. When the umbrella valve reposition to close the distributor and enters the oil, the piston presses the lubricating oil stored in the lower chamber to the upper chamber through the small hole of the core rod. , and the next fuel supply is also ready.

BTA-A2 Type

Thin oil lubricating pump with digital display

Order description

BTA-A2 □ □ – □ □ □ □ □

Pressure switch

P	Pressure switch
Blank	None

Oil tank volume

2	2L
3	3L
4	4L
6	6L
8	8L

Motor type

1	Single phase 110V
2	Single phase 220V
9	DC24V

Oil tank

Blank	Resin oil tank
A	Metal oil tank without oil return device
H	Metal oil tank with oil return device

Liquid level switch

W	Liquid level switch unavailable
Blank	Liquid level switch available

Outlet pipe diameter

6	Connected to Φ6pipe

Throughout

2	200cc/min
5	150cc/min

*Throughout : 1. 150cc / min when the tank volume is 2L
2. 200cc / min when the tank volume is 3L and above

Performance and characteristics

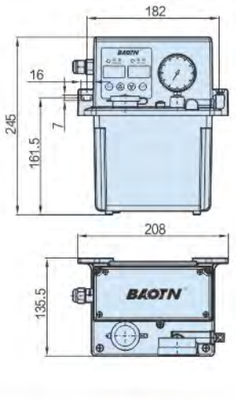
- The system is configured with 3 action modes.
  a.Lubricating: when turning on, execute lubricating timing.
  b.Intermittent: execute intermittent timing after lubricating is completed(Time unit convertible).
  c.Memory: in case of power on after power off, resume incomplete intermittent time.
- Lubricating time and intermittent time can be adjusted. (Built-in locking function, and lubricating and intermittent time after setting is locked).
- Provided with liquid level switch and pressure switch (optional). When oil volume or pressure is insufficient, the beeper makes sound, send alarm and offers abnormal signal output.
  a.When pressure is insufficient, Erp is displayed.
  b.When liquid level is insufficient, Ero is displayed.
- The system time can be configured, LUB lubricating time: 1–999 (seconds) INT intermittent time: 1–999 (minutes) (tailored if specially required)
- The panel indicator displays lubricating and intermittent status.
- The system uses RST key to force lubricating or eliminate abnormal reporting signal.
- Single maximum lubricating time≤2 min, and intermittent time is at least 5 times of the lubricating time.
- The motor is provided with self-protection function to avoid high motor temperature and overload.
- Decompression device is provided with volumetric system, used with BFA/BFB/BFC/BFD/BFE/BFG distributor,Refer to page 03~08.
- Overflow is provided to protect oil injector and pipeline from being damaged by high pressure.

Specifications, models and technical parameters

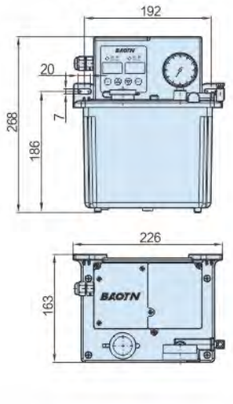
Item / Models and specifications	Motor voltage (V)	Motor Power (W)	Lubricating time (S)	Intermittent time (M)	Rated pressure (MPa)	Maximum output pressure (MPa)	Throughout (cc/min)	Outlet oil pipe diameter (mm)	Pressure Switch	Liquid level switch	Beeper	Oil tank volume (L)	Weight (KG)
BTA-A2	AC110 AC220 DC 24V	20	1-999		1.5~1.7	2.5	150 200	Φ 6	Optional	Yes	Yes	2(Resin)	2.90
												3(Resin)	3.20
												4(Resin)	3.30
												4 (Metal plate)	5.70
												6 (Metal plate)	6.00
												8 (Metal plate)	6.50

■ Intermittent electric thin oil lubricating pump (gear pump)

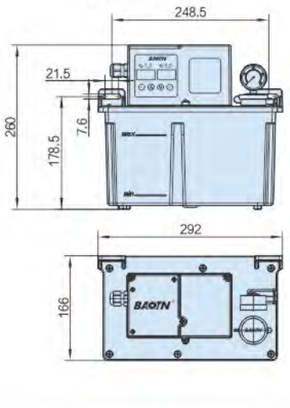
BTA-A2P2
(Resin oil tank)



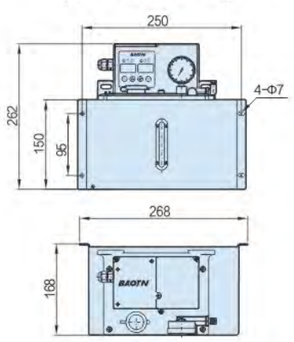
BTA-A2P3
(Resin oil tank)



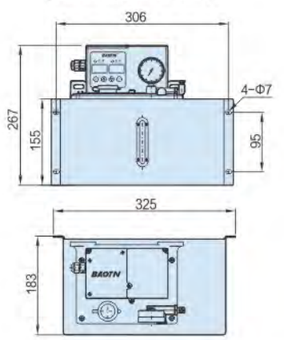
BTA-A2P4
(Resin oil tank)



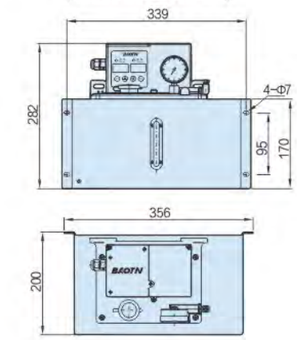
BTA-A2P4
(Sheet metal oil tank)



BTA-A2P6
(Sheet metal oil tank)



BTA-A2P8
(Sheet metal oil tank)



BTA-C2 Type

PLC control thin oil lubricating pump

Order description

BTA-C2□□-□□□□□

Pressure switch

P	Pressure switch
Blank	None

Oil tank volume

2	2L
3	3L
4	4L
6	6L
8	8L

Motor type

1	Single phase 110V
2	Single phase 220V
9	DC24V

Oil tank

Blank	Resin oil tank
A	Metal oil tank without oil return device
H	Metal oil tank with oil return device

Liquid level switch

D	Upper power supply
Blank	Lower power supply

Outlet pipe diameter

6	Connected to Φ6pipe

Throughout

2	200cc/min
5	150cc/min

*Throughout : 1. 150cc / min when the tank volume is 2L
2. 200cc / min when the tank volume is 3L and above

Performance and characteristics

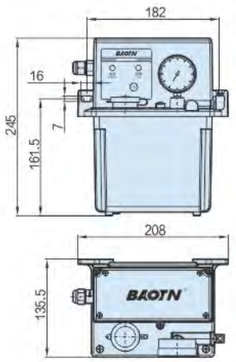
- Liquid level switch and pressure switch (optional) are provided. When oil volume or pressure is insufficient, abnormal signal is output.
- The panel indicator light indicates power and lubrication status of the oil injection mold.
- The system is provided with FEED key, and compulsory lubrication is applied.
- Time setting: single maximum lubrication duration≤2min, and intermittent time shall be 5 times of the lubricating time.
- The motor is provided with self-protection to prevent high temperature and overload of motor.
- The volumetric system is provided with decompression device, used with BFA/BFB/BFC/BFD/BFE/BFG distributor, Refer to page 03~08.
- Overflow valve is provided to prevent damage by oil injector and pipeline.
- Internal fuse is provided to prevent IC board and motor damaged by short circuit.

Specifications, models and technical parameters

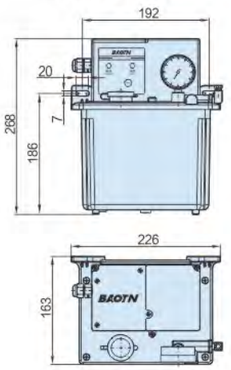
Item / Models and specifications	Motor		Lubricating time (S)	Intermittent time (M)	Rated pressure (MPa)	Maximum output pressure (MPa)	Throughout (cc/min)	Outlet oil pipe diameter (mm)	Pressure Switch	Liquid level switch	Beeper	Oil tank volume (L)	Weight (KG)
	voltage (V)	Power (W)											
BTA-C2	AC110 AC220 DC 24V	20	Controlled by an external PLC		1.5~1.7	2.5	150 200	Φ 6	Optional	Power supply at upper or lower position	No	2(Resin)	2.90
												3(Resin)	3.20
												4(Resin)	3.30
												4 (Metal plate)	5.70
												6 (Metal plate)	6.00
												8 (Metal plate)	6.50

■ Intermittent electric thin oil lubricating pump (gear pump)

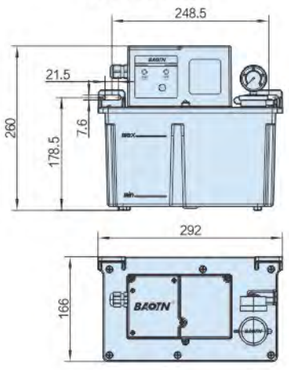
BTA-C2P2
(Resin oil tank)



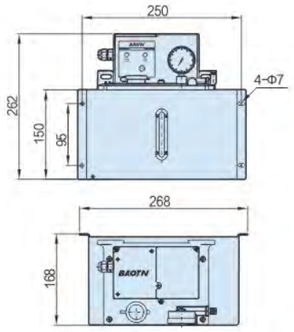
BTA-C2P3
(Resin oil tank)



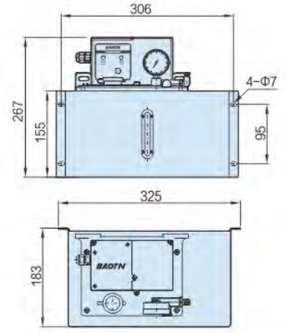
BTA-C2P4
(Resin oil tank)



BTA-C2P4
(Sheet metal oil tank)



BTA-C2P6
(Sheet metal oil tank)



BTA-C2P8
(Sheet metal oil tank)