

SD Block-type Grease Distributor

I. SD block-type progressive distributor

SD block-type progressive distributor is an advanced design with reasonable structure. It can be used in the operating conditions of high pressure and wide range of temperature. It can be used together with motor-driven pump, pneumatic pump, etc., to form single-line lubrication system. It is ideal for various large machinery and equipment, large single-line master distributors of lubrication systems, and similar applications.

A. Composition and classification of SD block-type progressive distributor

①. Classification: SD1 series, SD2 series, SD3 series

②. Composition:

Typically, progressive block assemblies consist of a start and end block plus a minimum of 3 middle wafers up to a maximum of 10, held together with tie rods. Usually a block distributor can provide from 3 to 20 lubrication points. There are all kinds of discharge volume for the Blocks of SD type progressive distributor. (See outlets with standard discharge volume from SD1, SD2, SD3 series block piece), and there is a built-in check valve. However, each block piece in middle with double outlets (“ T “ means the block with double outlets when named the model number), separate the two outlets on both ends of the working block piece. Block piece with single outlet (“ S “ means the block with single outlet when named the model number), and the outlet can work at either end of the block, and the other end will be installed a blank plug. Note: You cannot block any outlet of blocks with double outlets, or you will affect normal operation of the distributor and damage it.

□ Features

- a. Distributor with lubricant measuring/metering function.
- b. Easy calculation and delivery of lubricant to pre-determined lubrication points.
- c. Compact and economic design.
- d. Available with built-in grease check valve.
- e. Piston pair made by precision grinding

B. Working principle

The working cycle of SD block-type progressive distributor activate in order according to the progressive movement. With respect to progressive movement indicates that the piston pair of each working block is working separately following to the cycle movement of the adjacent block and complete its stroke to delivery the measured grease to lubrication points. As long as the lubricant with pressure is delivered to the primary block, the work of distributors will be continuous in progressive mode, and dispensing the same metered grease constantly. However, once the supply of pressured lubricant stops, the piston of blocks stops moving at the same time. When the lubricant with pressure restarts flowing, the stroke movement of the block distributors will start at the same point.

C. Functions

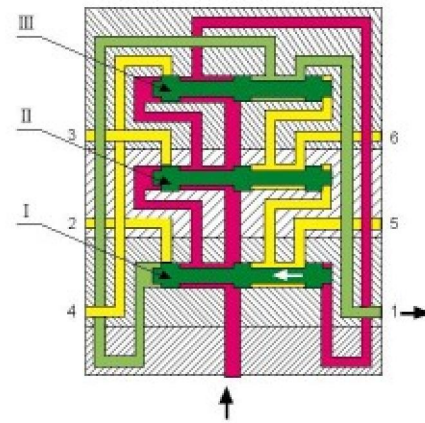
Red: the district for grease with pump output pressure

Yellow: the district for grease closure.

Grass green: the district for grease flowing pushed by piston to lube points

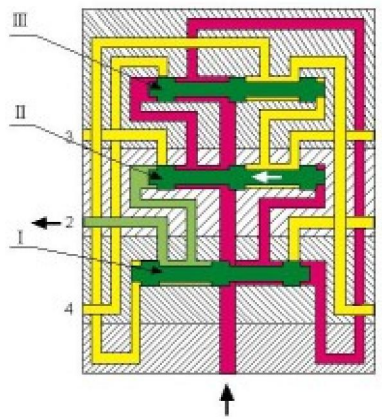
Dark Green: indicate the pistons of distributor.

The pressured grease delivered from the pump flows through the inlet of distributors, and through the primary block, working block and the end block, reaches to the right side of Piston I. Piston I shifts from right to left, and grease lubricant will be stroked out through outlets I from the pressure district on the left side of piston. (See Pic. A)



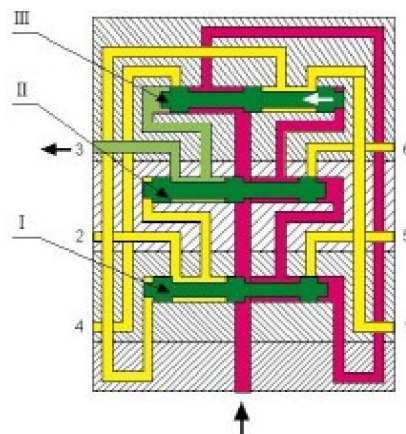
Pic. A

Then, the pressured grease delivered from the pump reaches the right side of Piston II, and the Piston II was pushed to the left side, and the grease gets the pressure to form a pressuring district by the pushing of piston II, dispensing grease through outlet 2. (See Pic. B)



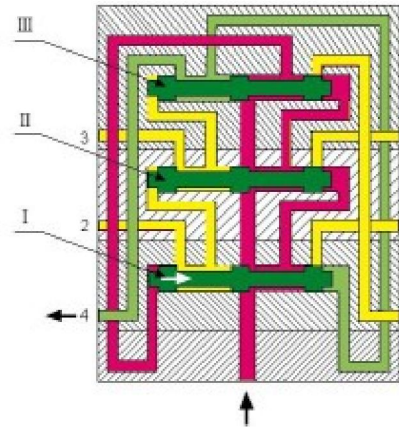
Pic. B

Following, the pressured grease delivered from the pump reaches the right side of Piston III, The Piston III shifts from right to left, the grease gets the pressure to form a pressuring district from the pushing of piston III, dispensing through outlet 3. (See Pic. C)



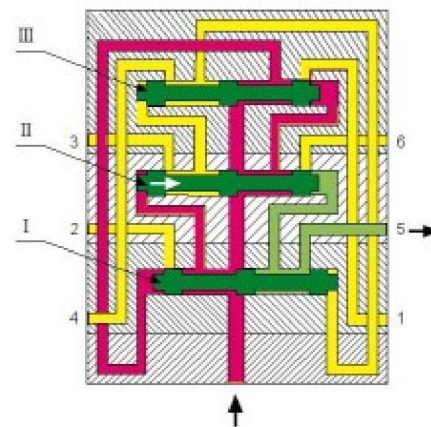
Pic. C

Subsequently, the pressured grease delivered from the pump reaches the left of Piston I, And piston I was pushed from left to the right, the grease get the pressure to form a pressuring district by the pushing piston I, dispensing grease through outlet 4. (see Pic. D)



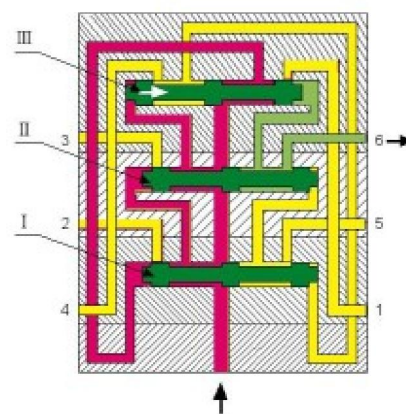
Pic. D

Next Subsequently, the pressured grease delivered from the pump flows to the left of piston II, and piston II was pushed to right, the grease get the pressure to form a pressuring district by the pushing piston II, grease dispensing through outlet 5. (See Pic. E)



Pic. E

Finally, the pressured grease delivered from the pump flows to the left of piston III, and piston III was pushed to right, the grease get the pressure to form a pressuring district by the pushing piston III, grease dispensing through outlet 6. (See Pic. F)



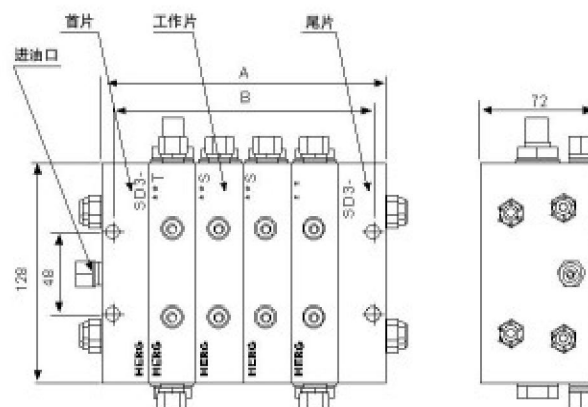
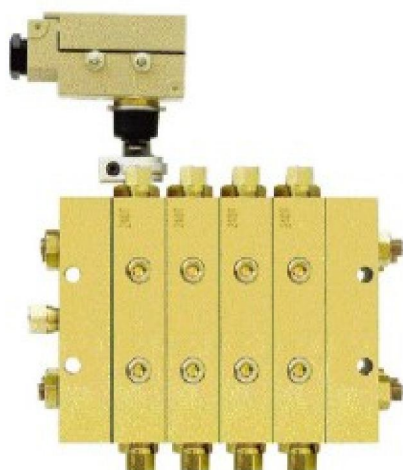
Pic. F

After exchange of the position of Piston III, lubricant flows to the right side of piston I again to begin the second progressive cycle (See Pic.A). The cycle will continue repeatedly as long as the grease is supplied to the progressive distributor.

II.SD3 Series block progressive distributor

Configuration& Installation and main components

(1). Configuration & Installation



Numbers of working blocks	Theoretical Size A (mm)	Theoretical Size B (mm)
3	142.5	129.1
4	169.9	157.9
5	198.5	186.7
6	226.7	215.5
7	255.0	244.3
8	283.5	273.1
9	311.9	301.9
10	340.4	330.7

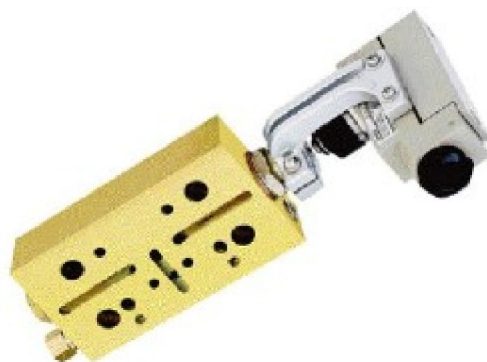
Note: Size A and Size B are the theoretical values and are only for reference, since deviation may occur due to the effects of cumulative assembly of distributor.

(2) The working block with mechanical circulating indicator pin.

Observe the cycling action of indicator pin's stretching – retracting, analyze the working situation of grease pump and distributors.

(3).The working block with electric micro-switch circulating indicator pin.

The micro-switch depends on the pushing from the circulating action of distributor pistons to give out the turn-on signal and turn-off signal. (normally open or normally closed status can be optional.), it can be combined with the control system of the lubricating pump or external PLC to be feedback control systems.

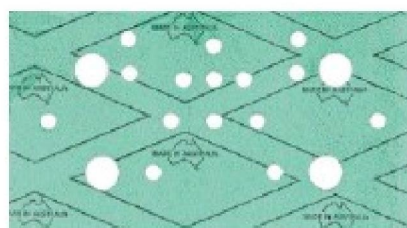
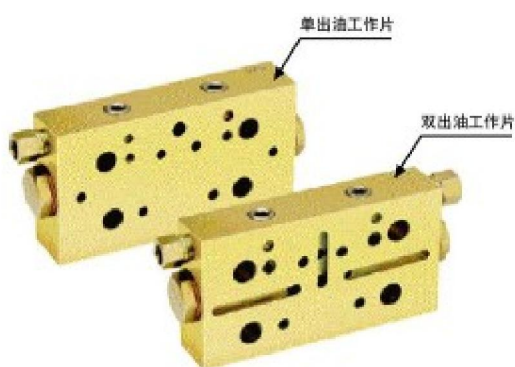


(4) Block with single/double outlet

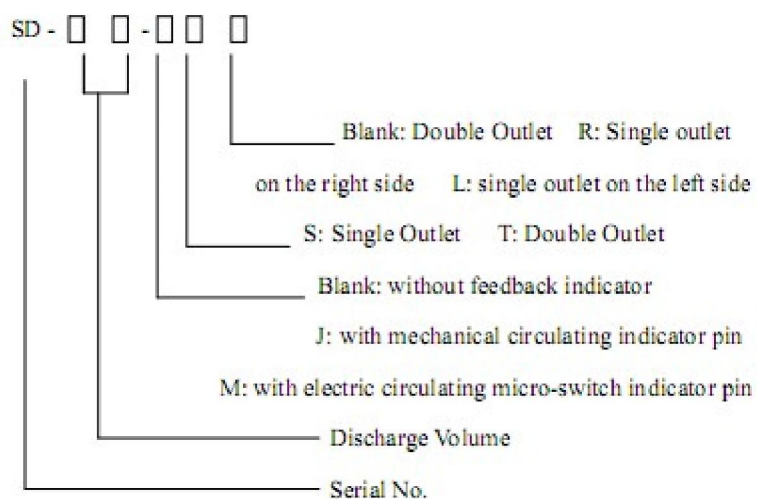
(5) Middle sealing block

Order No.: SD3-003

Usage Quantity: Numbers of working blocks +1



(6) Order Methods



7. Technical Parameters:

- ☐ Max. working pressure: 25MPa
- ☐ Min. starting Pressure: 1.4Mpa

- Lube Points: 1-20 lube points (each combined distributor)
 - Suitable Lubricant: Oil viscosity no less than ($\geq$)68mm²/s (When temperature is at 40℃)
Grease penetration no lower than 265 (When temperature is at 25℃, 150g)
 - Working temperature: -20℃ - +80℃
- ⑥. The maximum circulating rate from the piston on the block with indicator pin : 60cyc/min
- ⑦ The maximum circulating rate: 200 cyc/min
- ⑧ Block assembly: 3-10 block
- ⑨ Optimum tube: DIA 6MM, length 1.5-4.5m

8. Standard discharge volume on each volume

Blocks	Standard discharge volume mL/cyc		Code of whole block assembly			
	Double Outlets	Single Outlet	Double Outlets	Double Outlets with indicator pin on right	Single Outlet with indicator pin (Outlet on the right)	Single Outlet with indicator pin on the right
40	0.40	0.80	SD3-40T	-----	SD3-40SR	-----
80	0.80	1.60	SD3-80T	SD3-80JT	SD3-80SR	SD3-80JSR
120	1.20	2.40	SD3-120T	SD3-120JT	SD3-120SR	SD3-120JSR
160	1.60	3.20	SD3-160T	SD3-160JT	SD3-160SR	SD3-160JSR
200	2.00	4.00	SD3-200T	SD3-200JT	SD3-200SR	SD3-200JSR
240	2.40	4.80	SD3-240T	SD3-240JT	SD3-240SR	SD3-240JSR

Notes:

- The discharge volume means the discharge volume from each outlet on the block working on complete cycle.
- The block outlet thread specification Rc1 / 4.

III. SD2 Series block progressive distributor

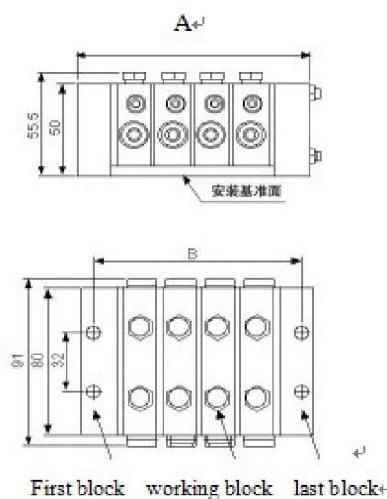
1.Configuration& Installation and main components

(1). Configuration & Installation

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Numbers of working blocks	theoretical Size A(mm)	theoretical Size B (mm)
3	103.4	89.4
4	124	110
5	144.6	130.6
6	165.2	151.2
7	185.8	171.8
8	206.4	192.4
9	227	213
10	247.6	233.6

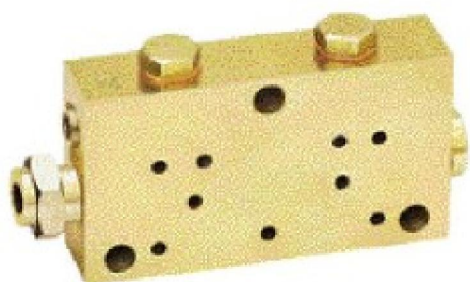
Note: Size A and Size B are the theoretical values and are only for reference, since deviation may occur due to the effects of cumulative assembly of distributor.

(2) The working block with mechanical circulating indicator pin.

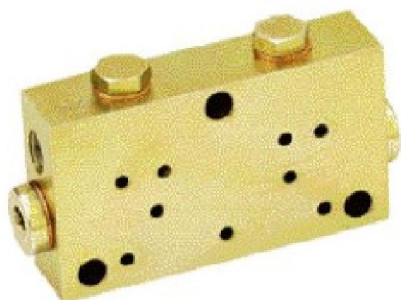
Observe the cycling action of indicator pin's stretching – retracting, analyze the working situation of grease pump and distributors.

(3).The working block with electric micro-switch circulating indicator pin.

The micro-switch depends on the pushing from the circulating action of distributor pistons to give out the turn-on signal and turn-off signal. (normally open or normally closed status can be optional.), it can be combined with the control system of the lubricating pump or external PLC to be feedback control systems.



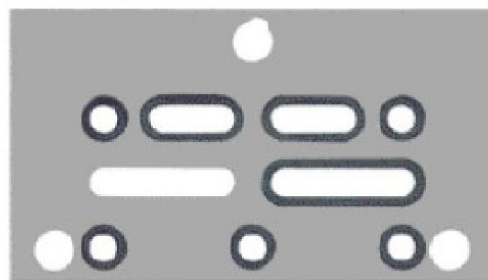
(4) Block with single/Double outlet



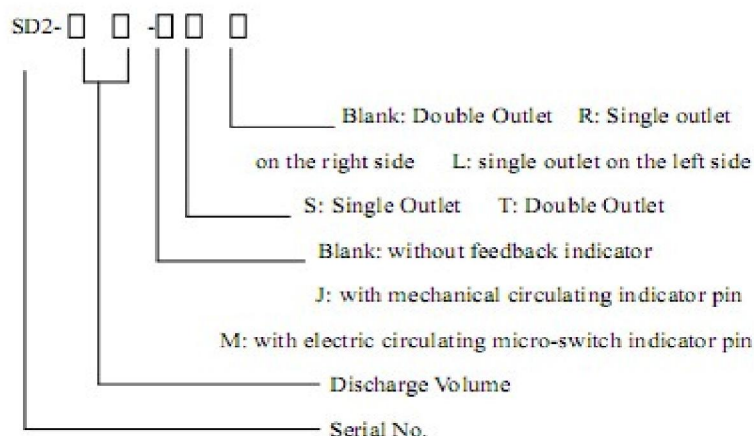
(5) Middle sealing block

Order No.: SD2-003

Usage Quantity: numbers of working blocks +1



6. Order Methods



7. Technical Parameters:

- ①. Max. working pressure: 25MPa
- ②. Min. Starting Pressure: 1.4Mpa
- ③. Lube Points: 1-20 lube points (each combined distributor)
- ④. Suitable Lubricant: Oil viscosity no less than ($\geq$)68mm²/s (When temperature is at 40℃)
Grease penetration no lower than 265 (When temperature is at 25℃, 150g)
- ⑤. Working temperature: -20℃ - +80℃
- ⑥. The maximum circulating rate from the piston on the block with indicator pin : 60cyc/min
- ⑦. The maximum circulating rate: 200 cyc/min
- ⑧. Block assembly: 3-10 blocks
- ⑨. Optimum tube: DIA 6MM, length 1.5-4.5m

8. Standard discharge volume on each volume

Blocks	Standard discharge volume Ml/cyc		Code of whole block assembly			
	Double Outlets	Single Outlet	Double Outlets	Double Outlets with indicator pin on right	Single Outlet with indicator pin (Outlet on the right)	Single Outlet with indicator pin on the right
16	0.16	0.32	SD2-16T	-----	SD2-16SR	-----
24	0.24	0.48	SD2-24T	-----	SD2-24SR	-----
32	0.32	0.64	SD2-32T	SD2-32JT	SD2-32SR	SD2-32JSR
40	0.40	0.80	SD2-40T	SD2-40JT	SD2-40SR	SD2-40JSR
48	0.48	0.96	SD2-48T	SD2-48JT	SD2-48SR	SD2-48JSR
56	0.56	1.12	SD2-56T	SD2-56JT	SD2-56SR	SD2-56JSR

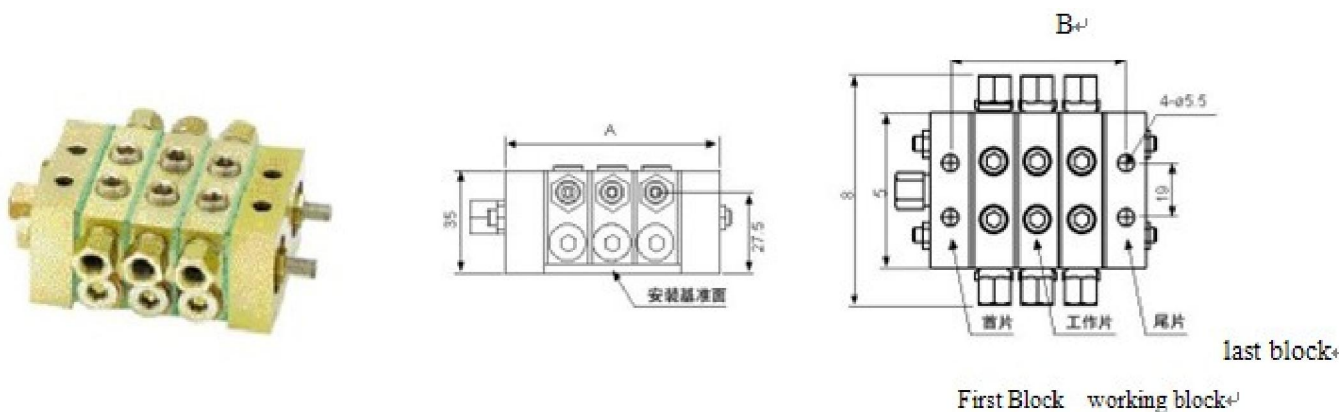
Note:

- The discharge volume means the discharge volume from each outlet on the block working on complete cycle.
- The block outlet thread specification Rc1 / 8.

IV. SD1 Series block progressive distributor

1. Configuration& Installation and main components

(1). Configuration & Installation



Numbers of working blocks	Theoretical Size A(mm)	Theoretical Size B (mm)
3	73.3	59.3
4	88.7	74.7
5	103.5	89.5
6	118.6	104.6
7	133.6	119.6
8	148.7	134.7

Note: Size A and Size B are the theoretical values and are only for reference, since deviation may occur due to the effects of cumulative assembly of distributor.

(2) Block with single/Double outlet



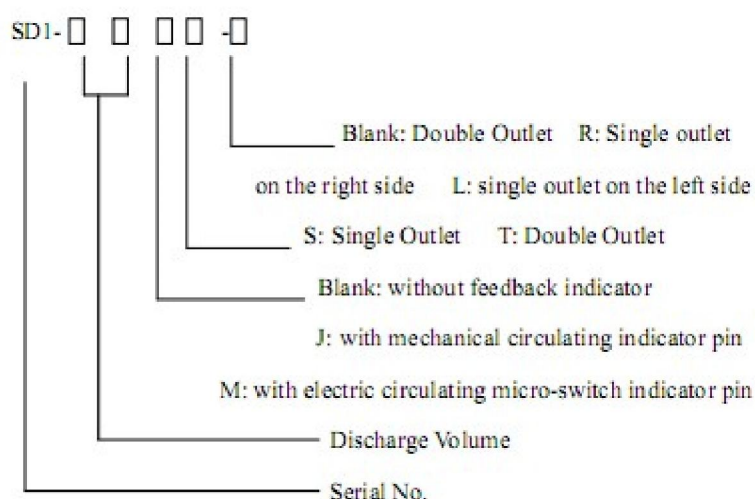
(3) Middle sealing block

Order No.: SD1-003

Usage Quantity: numbers of working blocks +1



4. Working Method



5. Technical Parameters:

- ①. Max. working pressure: 25MPa
- ②. Min. Starting Pressure: 1.4Mpa
- ③. Lube Points: 1-20 lube points (each combined distributor)
- ④. Suitable Lubricant: Oil viscosity no less than ($\geq$)68mm²/s (When temperature is at 40℃)
Grease penetration no lower than 265 (When temperature is at 25℃, 150g)
- ⑤. Working temperature: -20℃ - +80℃
- ⑥. The maximum circulating rate from the piston on the block with indicator pin : 60cyc/min
- ⑦. The maximum circulating rate: 200 cyc/min
- ⑧. Block assembly: 3-10 blocks
- ⑨. Optimum tube: Dia 4MM, length 0.5-2.5m, Dia 6mm, length 1.2-3.5m

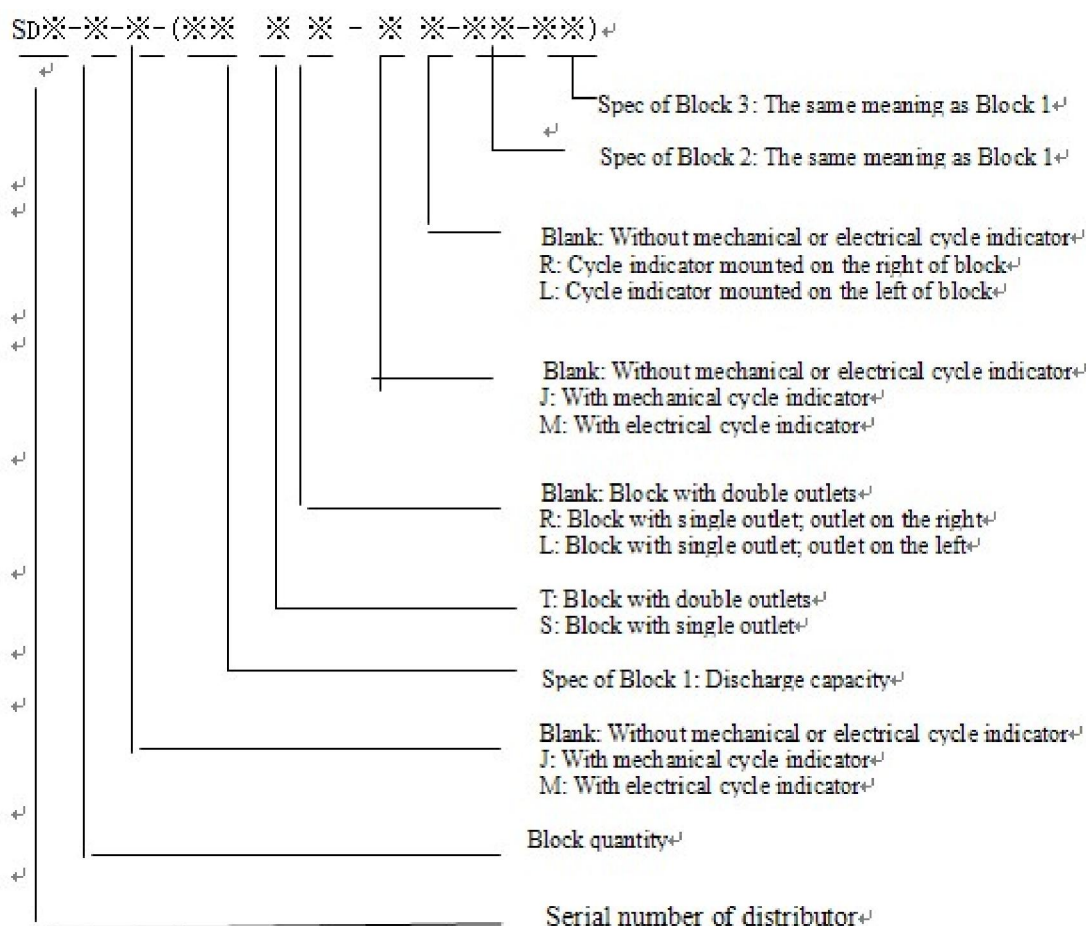
6. Standard discharge volume on each volume

Blocks	Standard discharge volume Ml/cyc		Code of whole block assembly			
	Double Outlets	Single Outlet	Double Outlets	Double Outlets with indicator pin on right	Single Outlet with indicator pin (Outlet on the right)	Single Outlet with indicator pin on the right
08	0.08	0.16	SD1-08T	-----	SD1-08SR	-----
16	0.16	0.32	SD1-16T	-----	SD1-16SR	-----
24	0.24	0.48	SD1-24T	SD1-24JTR	SD1-24SR	SD1-24JSR

Note:

- The discharge volume means the discharge volume from each outlet on the block working on complete cycle.
- The block outlet thread specification Rc1 / 8.

V. Model number and rules of SD Series block progressive distributor

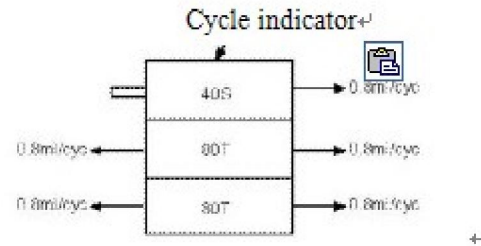


When ordering a distributor, it would be best to provide diagram of distributor combination, to make it clearer.

For example: the diagram for ordering SD3 distributor

Model number and expression:

SD3-3-J- (40SR-JL, 80T, 80T)
A B C D E E F



- A. Indicates SD3 (or SD2, or SD1) distributor series;
- B. Indicates the block quantity, which is 3 in here;
- C. Means cycle indicator. J means mechanical bar type cycle indicator; M means cycle indicator with electrical microswitch.
- D. Inside the bracket are the specs of blocks in sequence after the Block 1.
- E. Means the first block in order is 40; S means the block is with single outlet; R means the single outlet is on the right of the block; JL means mechanical bar type cycle indicator is on the left of the block;
- F: Means the second block in order is 80; T means the block is with double outlets.
- G. Means the third block in order is 80; T means the block is with double outlets.

VI. SD Series block progressive distributor maintenance and precautions

1. Maintenance and precautions

- (1) Distributor and system should use clean lubricant.
- (2) Ambient temperature of distributor should not exceed 80°C.
- (3) Distributor piston and valve sheet are used in matched pair, so piston pairs cannot be interchanged.
- (4) When valve sheet needs repair, you can first dismount the block from the distributor, and then remove the hexagonal plugs at both ends of the block, and carefully take out the piston, and wash the piston and block. After washing, use clean high pressure gas to blow all holes in the block, and apply a little clean lubricant to the piston, so that the piston smoothly slides into the cylindrical hole of block. Reassemble the screw plugs of the block according to requirements in "Moment required for lock distributor set after maintenance". After completing reassembly of distributor, you can use manual pump or high-pressure grease gun to test the working conditions of repair and assembly. If all pistons in the blocks operate properly, and grease suction and discharge are normal, you can install this distributor to the lubrication system for normal operation again.

2. Moment required for lock distributor set after maintenance

SD3 Series: Locking moment parameters:

Moment for locking nut on screw is 26-31N.m

Moment of hexagonal plugs at both ends of the block is 55-60N.m

Moment of outlet connector or screw plug is 12.5-13.8N.m

Moment of screws of connected components is 12.5-13.8N.m

SD2 Series: Locking moment parameters:

Moment for locking nut on screw is 10-11.5N.m

Moment of hexagonal plugs at both ends of the block is 11-12.5N.m

Moment of outlet connector or screw plug is 8-10.5N.m

Moment of screws of connected components is 9-10.5N.m

SD1 Series: Locking moment parameters:

Moment for locking nut on screw is 10-11.5N.m

Moment of hexagonal plugs at both ends of the block is 11-12.5N.m

Moment of outlet connector or screw plug is 8-10.5N.m

Moment of screws of connected components is 9-10.5N.m