

Small-Size Portable Electric Pumps (SMP Series)

- With a magnet motor, noise is reduced greatly as compared with that of conventional models. (70 dB max.)
The performance is unchanged, but the durability has been improved.
- A wide variety of models (13 models) is available to meet various applications.
- The outlet port size is Rc3/8 for all models.
- The AS75 pressure gauge can be mounted on all models. Pressure gauge packing (S-111) is in pressure gauge port.
(The pressure gauge is optional. For the pressure gauge specifications, see page 161.)
- As an optional extra, a speed controller is available. Please contact us for details.
(The controller is compatible with only 100 V pumps whose maximum operating pressure is 35 MPa. It cannot be sold separately.)

■ Common specifications

| Model | Type E closed-type magnet motor (50/60 Hz) | | | | Pump | | | | Oil tank | | | |
|----------|---|-----------------------|-----------------------------------|--------------|--------------------------------------|-----------------|---------------------------|--------------------|------------------|-----------------------|---------------------------------|-----|
| | Voltage V (single phase) | Rated output kW | Rated operating time min | Current A | Maximum operating pressure MPa | | Discharge volume L/min | | Hydraulic oil | Tank capacity L | Effective oil volume L | |
| | | | | | High pressure | Low pressure | At high pressure | At low pressure | | | | |
| SMP-3012 | 100 | 0.25 | 5 | 8.0 | 70 | 1.5 | 0.2 | 2.0 | ISO VG32 | 2.0 | 1.8 | |
| SMP-3014 | | | | | | | | | | 4.5 | 4.0 | |
| SMP-3016 | | | | | | | | | | 6.5 | 6.0 | |
| SMP-3022 | 200 | 0.45 | 5 | 4.0 | 70 | 1.5 | 0.4 | 3.0 | | 2.0 | 1.8 | |
| SMP-3024 | | | | | | | | | | 4.5 | 4.0 | |
| SMP-3026 | | | | | | | | | | 6.5 | 6.0 | |
| SMP-3032 | 230 | 0.45 | 5 | 4.0 | 70 | 1.5 | 0.4 | 3.0 | | 2.0 | 1.8 | |
| SMP-3034 | | | | | | | | | | 4.5 | 4.0 | |
| SMP-3036 | | | | | | | | | | 6.5 | 6.0 | |
| SMP-4012 | 100 | 0.45 | 5 | 12.0 | 70 | 1.5 | 0.4 | 3.0 | | ISO VG32 | 2.0 | 1.8 |
| SMP-4014 | | | | | | | | | | | 4.5 | 4.0 |
| SMP-4016 | | | | | | | | | | | 6.5 | 6.0 |
| SMP-4022 | 200 | 0.45 | 5 | 6.0 | 70 | 1.5 | 0.4 | 3.0 | 2.0 | | 1.8 | |
| SMP-4024 | | | | | | | | | 4.5 | | 4.0 | |
| SMP-4026 | | | | | | | | | 6.5 | | 6.0 | |
| SMP-4032 | 230 | 0.45 | 5 | 5.2 | 70 | 1.5 | 0.4 | 3.0 | 2.0 | | 1.8 | |
| SMP-4034 | | | | | | | | | 4.5 | | 4.0 | |
| SMP-4036 | | | | | | | | | 6.5 | | 6.0 | |

*Each current shown above is the average of the load currents at 70 MPa.

*The oil tank is filled up with hydraulic oil before shipment.

*The power cable and operating switch cable are 3 m long.

■ Convertible models

- Pumps can be changed to another model of the same type (1 or 2) by changing the operating valve, parts, etc.

*Pumps cannot be changed to a model of the other type (type 1 ⇔ type 2).

| SMP-30 series | | SMP-40 series | |
|--|---|--|---|
| Type 1 | Type 2 | Type 1 | Type 2 |
| SMP-30**AR SMP-30**SK SMP-30**NV | SMP-30**B SMP-30**BR SMP-30**C SMP-30**CR SMP-30**DCB SMP-30**SL SMP-30**SW SMP-30**SP SMP-30**NE SMP-30**RK | SMP-40**AR SMP-40**SK SMP-40**NV | SMP-40**B SMP-40**BR SMP-40**C SMP-40**CR SMP-40**DCB SMP-40**SL SMP-40**SW SMP-40**SP SMP-40**NE SMP-40**RK |



- If the pump is used continuously, observe the rated operating time (5 minutes) and pay attention to the rise in motor and oil temperatures. Otherwise, the equipment may also be damaged resulting in poor performance.

Small-Size Portable Electric Pumps for Single-Acting Cylinders (SMP Series)

Model code structure

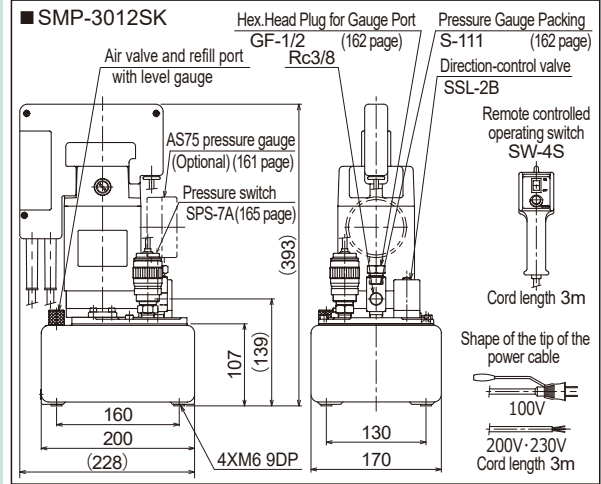
SMP - 30 1 2 B

Series No. (30/40)
 Small-size portable electric pump

Motor voltage
 1 : 100 V
 2 : 200 V
 3 : 230 V

Tank capacity
 2 : 2 L
 4 : 4.5 L
 6 : 6.5 L

Type (for single-acting cylinders)
 B : Manual type
 BR : Manual type with relief valve
 SK : Stop-at-extension type
 AR : Auto-return type
 RK : Intermediate stop type
 NE : Non-inertia type
 NV : W/O attached operating valve



Characteristics and functions

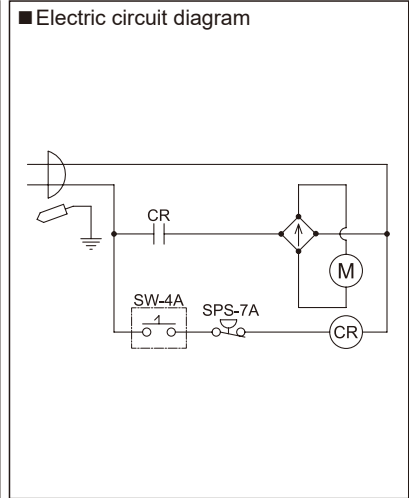
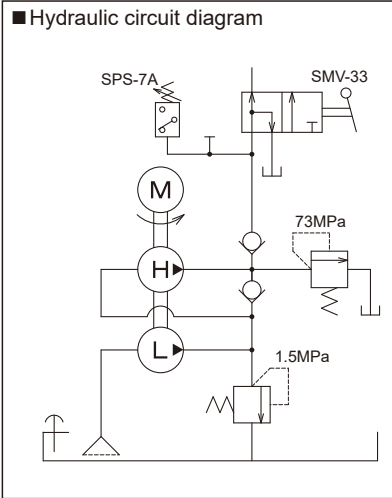
| Model | Functions | Remote controlled operating switch | Components | Approx. weight kg |
|--------------------------------------|--|------------------------------------|------------------------------------|-------------------|
| Manual type | | | | |
| SMP-30 (40)* 2B | When the remote controlled operating switch is turned ON, if the lever of the direction-control manual valve is turned clockwise, the single-acting cylinder is extended. Pressure can be maintained at the preset pressure for the pressure switch. | SW-4A | Pressure switch SPS-7A x 1 | 14.5 |
| SMP-30 (40)* 4B | | | Direction-control valve SMV-33 x 1 | 17.5 |
| SMP-30 (40)* 6B | | | Direction-control valve SMV-33 x 1 | 20.5 |
| Manual type with relief valve | | | | |
| SMP-30 (40)* 2BR | When the remote controlled operating switch is turned ON, if the lever of the direction-control manual valve is turned clockwise, the single-acting cylinder is extended. Pressure can be adjusted and maintained using the relief valve attached to the pump. (Pressure adjustable range: 10 to 70 MPa) | SW-4A | Direction-control valve SMV-33 x 1 | 16.0 |
| SMP-30 (40)* 4BR | | | External relief valve KRV-34 x 1 | 19.0 |
| SMP-30 (40)* 6BR | | | External relief valve KRV-34 x 1 | 22.0 |
| Stop-at-extension type | | | | |
| SMP-30 (40)* 2SK | When the remote controlled operating switch is turned ON, the single-acting cylinder is extended. The maintenance of pressure and the extension of the cylinder (the stopping accuracy is poor) are possible during pressurization. If the remote controlled operating switch is turned OFF and then the RETURN button is pressed, the cylinder is retracted. The cylinder cannot be stopped once it starts being retracted. | SW-4S | Pressure switch SPS-7A x 1 | 14.5 |
| SMP-30 (40)* 4SK | | | Direction-control valve SSL-2B x 1 | 17.5 |
| SMP-30 (40)* 6SK | | | Direction-control valve SSL-2B x 1 | 20.5 |
| Auto-return type | | | | |
| SMP-30 (40)* 2AR | When the remote controlled operating switch is turned ON, the single-acting cylinder is extended. The single-acting cylinder is automatically retracted at the preset pressure for the pressure switch. The pressure cannot be maintained and the cylinder cannot be stopped halfway. | SW-4A | Pressure switch SPS-7A x 1 | 14.5 |
| SMP-30 (40)* 4AR | | | Pressure switch SPS-7A x 1 | 17.5 |
| SMP-30 (40)* 6AR | | | Pressure switch SPS-7A x 1 | 20.5 |
| Intermediate stop type | | | | |
| SMP-30 (40)* 2RK | The single-acting cylinder is extended or retracted only while the PUSH or PULL button of the remote controlled operating switch is pressed and held. The cylinder can be stopped while pressure is applied. The pressure can be maintained while the PUSH button is pressed and held. The cylinder can be stopped at any position while it is being retracted (under no load condition). | SW-4WP | Pressure switch SPS-7A x 1 | 16.5 |
| SMP-30 (40)* 4RK | | | Direction-control valve KD-2C x 1 | 19.5 |
| SMP-30 (40)* 6RK | | | Direction-control valve KD-2C x 1 | 22.5 |
| Non-inertia type | | | | |
| SMP-30 (40)* 2NE | The single-acting cylinder can be extended or retracted only while the PUSH or PULL button of the remote controlled operating switch is pressed and held. The cylinder can be stopped at any position immediately while it is being extended or retracted under no load condition, and also the pressure can be maintained. | SW-4WP | Pressure switch SPS-7A x 1 | 19.0 |
| SMP-30 (40)* 4NE | | | Direction-control valve KD-2C x 2 | 22.0 |
| SMP-30 (40)* 6NE | | | Direction-control valve KD-2C x 2 | 25.0 |
| W/O attached operating valve | | | | |
| SMP-30 (40)* 2NV | If the remote controlled operating switch is turned ON, the single-acting cylinder is extended. If the switch is turned OFF, the cylinder is retracted. The pressure cannot be maintained and the cylinder cannot be stopped halfway. | SW-4A | — | 14.5 |
| SMP-30 (40)* 4NV | | | — | 17.5 |
| SMP-30 (40)* 6NV | | | — | 20.5 |

Note: "*" represents the motor voltage.

Small-Size Portable Electric Pumps for Single-Acting Cylinders (SMP Series)

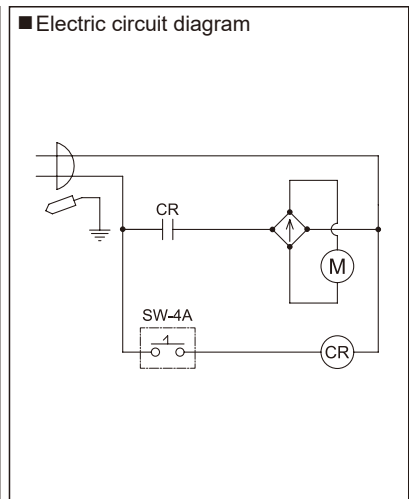
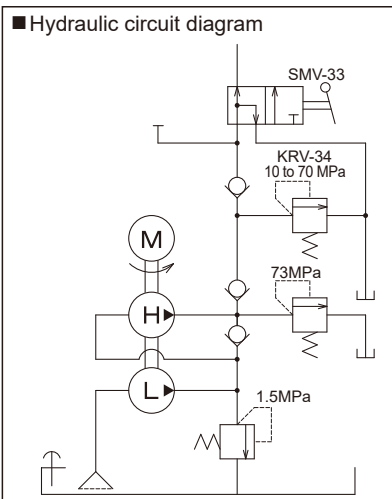
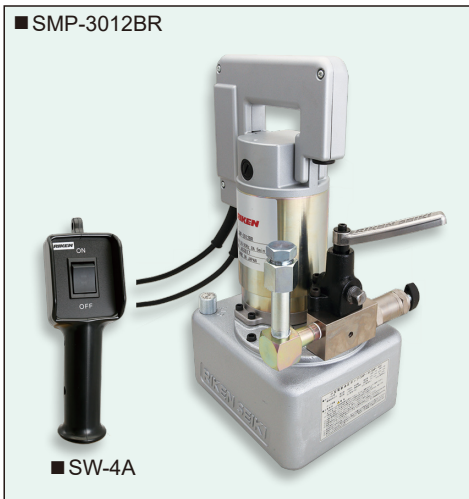
■ SMP-30B/SMP-40B

- A single-acting cylinder is operated by the direction-control valve (SMV-33) and the remote controlled operating switch (SW-4A), which are attached to the pump.
- At the preset pressure for the pressure switch, the pump can stop automatically and maintain the pressure. If the pressure drops a few MPa below the preset pressure, it will restart operation automatically.
- The pumps can be changed to another type 2 model by changing parts, etc. (For type 2, see page 68.)



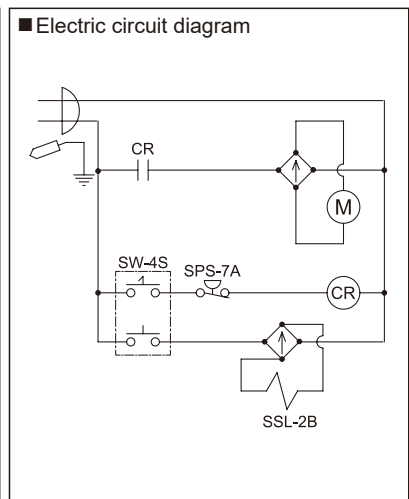
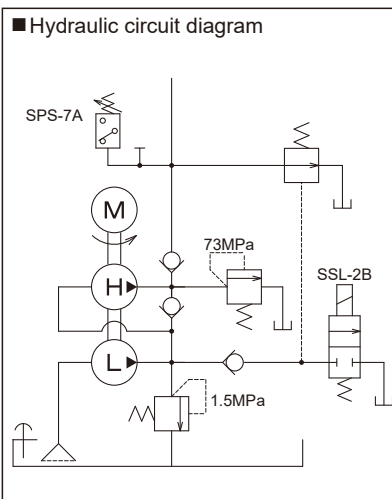
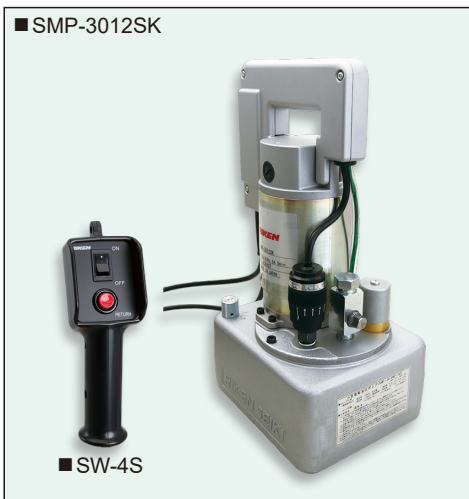
■ SMP-30BR/SMP-40BR

- A single-acting cylinder is operated by the direction-control valve (SMV-33) and the remote controlled operating switch (SW-4A), which are attached to the pump.
- Pressure can be adjusted by using the relief valve attached to the pump, and pressure maintenance is also possible (Pressure adjustable range: 10 to 70 MPa). The hydraulic oil temperature range is 5 to 60 °C. **If the relief valve is operated for a long time, pay attention to the rise in oil temperature.**
- The pumps can be changed to another type 2 model by changing parts, etc. (For type 2, see page 68.)



■ SMP-30SK/SMP-40SK


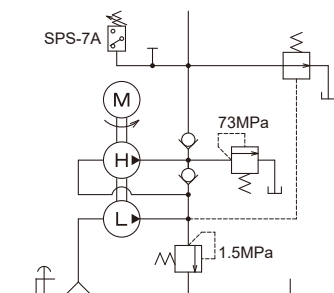
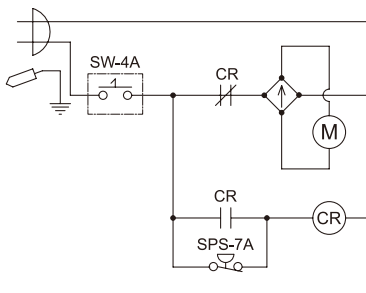
- The single-acting cylinder is operated by the remote controlled operating switch (SW-4S).
- At the preset pressure for the pressure switch, the pumps can stop automatically and maintain the pressure. If the pressure drops a few MPa below the preset one, they will restart operation automatically. The cylinder cannot be stopped halfway once it starts being retracted.
- The pumps can be changed to another type 1 model by changing parts, etc. (For type 1, see page 68.)



Small-Size Portable Electric Pumps for Single-Acting Cylinders (SMP Series)


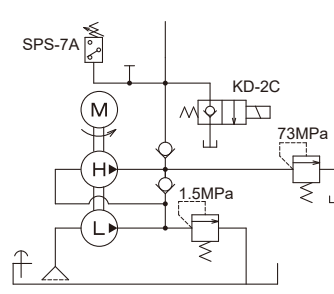
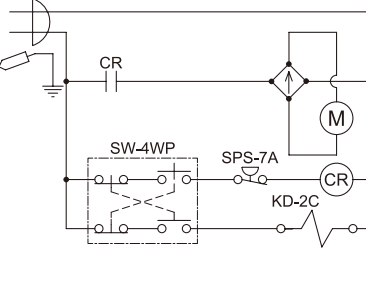
■ SMP-30AR/SMP-40AR

- The single-acting cylinder is operated by the remote controlled operating switch (SW-4A).
- The pumps stop automatically and the cylinder is retracted at the preset pressure for the pressure switch. (Auto-return type)
- The pumps can be changed to another type 1 model by changing parts, etc. (For type 1, see page 68.)

| | | |
|--|--|---|
| <p>■ SMP-3012AR</p>  <p>■ SW-4A</p> | <p>■ Hydraulic circuit diagram</p>  | <p>■ Electric circuit diagram</p>  |
|--|--|---|


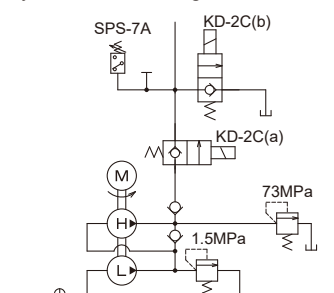
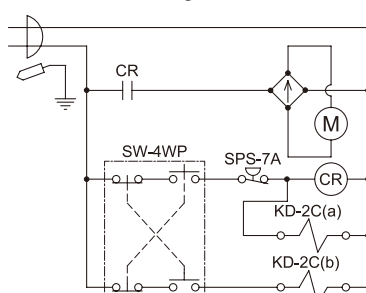
■ SMP-30RK/SMP-40RK

- The single-acting cylinder is operated by the remote controlled operating switch (SW-4WP).
- Only while the PUSH button of the SW-4WP is pressed and held, the pumps stop automatically at the preset pressure for the pressure switch, maintain the pressure, and restart operation automatically. Only while the RETURN button is pressed and held, the solenoid valve operates to retract the cylinder.
- The pumps can be changed to another type 2 model by changing parts, etc. (For type 2, see page 68.)

| | | |
|--|---|--|
| <p>■ SMP-3012RK</p>  <p>■ SW-4WP</p> | <p>■ Hydraulic circuit diagram</p>  | <p>■ Electric circuit diagram</p>  |
|--|---|--|


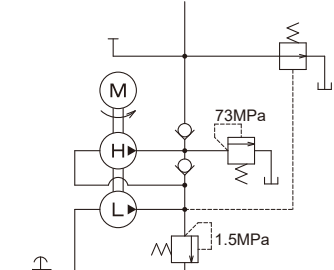
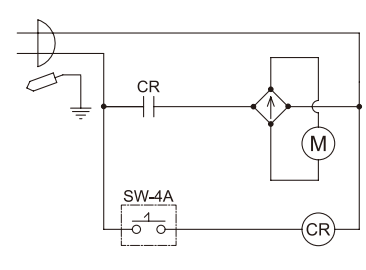
■ SMP-30NE/SMP-40NE

- The single-acting cylinder is operated by the remote controlled operating switch (SW-4WP).
- Non-inertial type pumps stop the cylinder when the push button is released while the cylinder is moving up or down under no load condition.
- The pumps can stop at the preset pressure for the pressure switch, maintain the pressure, and restart operation automatically (as long as the push button is pressed and held).
- The pumps can be changed to another type 2 model by changing parts, etc. (For type 2, see page 68.)

| | | |
|---|--|---|
| <p>■ SMP-3012NE</p>  <p>■ SW-4WP</p> | <p>■ Hydraulic circuit diagram</p>  | <p>■ Electric circuit diagram</p>  |
|---|--|---|

■ SMP-30NV/SMP-40NV

- The single-acting cylinder is operated by the remote controlled operating switch (SW-4A).
- The pressure cannot be maintained and the cylinder cannot be stopped halfway.
- The pumps can be changed to another type 1 model by changing parts, etc. (For type 1, see page 68.)

| | | |
|--|--|---|
| <p>■ SMP-3012NV</p>  <p>■ SW-4A</p> | <p>■ Hydraulic circuit diagram</p>  | <p>■ Electric circuit diagram</p>  |
|--|--|---|

Small-Size Portable Electric Pumps for Double-Acting Cylinders (SMP Series)

Model code structure

| | | | | | |
|------------|---|-----------|----------|----------|----------|
| SMP | - | 30 | 1 | 2 | C |
|------------|---|-----------|----------|----------|----------|

Small-size portable electric pump

Motor voltage
 1 : 100 V
 2 : 200 V
 3 : 230 V

Tank capacity
 2 : 2 L
 4 : 4.5 L
 6 : 6.5 L

Series No. (30/40)

Type (For double-acting cylinders)
 C : Manual type
 CR : Manual type with relief valve
 DCB : Falling-by-self-weight prevention type
 SL : Shuttle valve mounting type
 SW : 4-way 3-position center bypass type
 SP : 4-way 3-position P port blocked type

■ SMP-3012C

■ Characteristics and functions

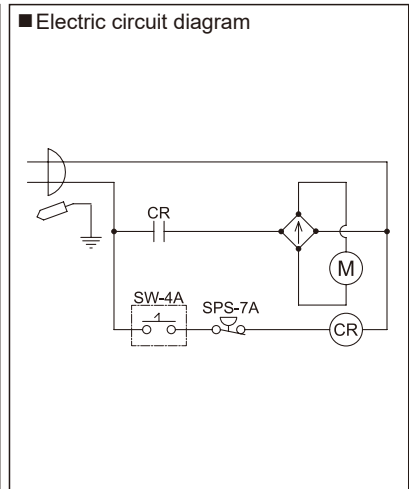
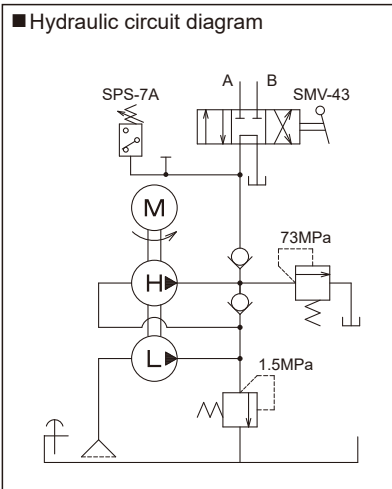
| Model | Functions | Remote controlled operating switch | Components | Approx. weight kg |
|--|---|------------------------------------|-------------------------------------|-------------------|
| Manual type (4-way 3-position) | | | | |
| SMP-30 (40) * 2C | When the remote controlled operating switch is turned ON, if the changeover lever of the direction-control manual valve is switched to the left or right side, the double-acting cylinder is extended or retracted. The pressure can be maintained at the preset pressure for the pressure switch. | SW-4A | Pressure switch SPS-7A x 1 | 15.5 |
| SMP-30 (40) * 4C | | | Direction-control valve SMV-43 x 1 | 18.5 |
| SMP-30 (40) * 6C | | | | 21.5 |
| Manual type with relief valve (4-way 3-position) | | | | |
| SMP-30 (40) * 2CR | When the remote controlled operating switch is turned ON, if the changeover lever of the direction-control manual valve is switched to the left or right side, the double-acting cylinder is extended or retracted. The pressure can be adjusted and maintained by the relief valve attached to the pump. | SW-4A | Direction-control valve SMV-43 x 1 | 17.0 |
| SMP-30 (40) * 4CR | | | External relief valve KRV-34 x 1 | 20.0 |
| SMP-30 (40) * 6CR | | | | 23.0 |
| Manual type with falling-by-self-weight prevention valve | | | | |
| SMP-30 (40) * 2DCB | When the remote controlled operating switch is turned ON, if the changeover lever of the 4-way direction-control manual valve with a built-in pilot controlled check valve and counterbalance valve is switched to the left or right side, the double-acting cylinder is extended or retracted. Pressure can be maintained at the preset pressure for the pressure switch. A heavy load can be prevented from falling by its own weight for smooth operation of the cylinder. | SW-4A | Pressure switch SPS-7A x 1 | 18.5 |
| SMP-30 (40) * 4DCB | | | Direction-control valve SCB-43B x 1 | 21.5 |
| SMP-30 (40) * 6DCB | | | | 24.5 |
| Shuttle valve mounting type | | | | |
| SMP-30 (40) * 2SL | Only while the PUSH button of the remote controlled operating switch is pressed and held, oil is discharged from port B and the pump stops automatically at the preset pressure for the pressure switch, maintaining the pressure. Only while the PULL button is pressed and held, oil is discharged from port A. As soon as the button is released, the outlet port is switched to B, and the amount of oil for the inertia of the motor is discharged from port B. | SW-4WP | Pressure switch SPS-7A x 1 | 18.5 |
| SMP-30 (40) * 4SL | | | Direction-control valve KD-3C x 1 | 21.5 |
| SMP-30 (40) * 6SL | | | | 24.5 |
| 4-way 3-position center bypass type | | | | |
| SMP-30 (40) * 2SW | The double-acting cylinder can be extended or retracted only while the PUSH or PULL button of the remote controlled operating switch is pressed and held. Because of its good responsiveness, the pump can stop the cylinder immediately. The pressure can be maintained at the preset pressure for the pressure switch. | SW-4WP | Pressure switch SPS-7A x 1 | 20.5 |
| SMP-30 (40) * 4SW | | | Direction-control valve KD-3S x 2 | 23.5 |
| SMP-30 (40) * 6SW | | | KD-2S x 1 | 26.5 |
| 4-way 3-position P port blocked type | | | | |
| SMP-30 (40) * 2SP | The double-acting cylinder can be extended or retracted only while the PUSH or PULL button of the remote controlled operating switch is pressed and held, maintaining pressure at the preset pressure for the pressure switch. If the button of the remote controlled operating switch is released, port P is blocked for ABT connection and pressure is no longer maintained. | SW-4WP | Pressure switch SPS-7A x 1 | 19.0 |
| SMP-30 (40) * 4SP | | | Direction-control valve KD-3C x 2 | 22.0 |
| SMP-30 (40) * 6SP | | | | 25.0 |

Note: "*" represents the motor voltage.

Small-Size Portable Electric Pumps for Double-Acting Cylinders (SMP Series)

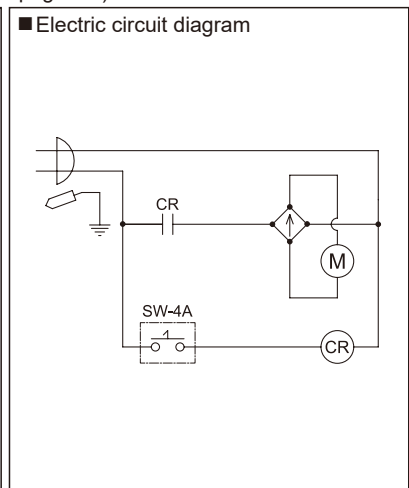
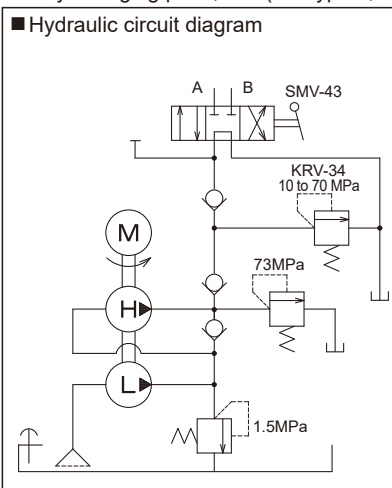
■ SMP-30C/SMP-40C

- A double-acting cylinder is operated by the direction-control valve (SMV-43) and the remote controlled operating switch (SW-4A), which are attached to the pump.
- At the preset pressure for the pressure switch, the pump can stop automatically and maintain the pressure.
If the pressure drops a few MPa below the preset pressure, it will restart operation automatically.
- During the transition period of switching the switching handle, all ports are open and pressure drops.
- The pumps can be changed to another type 2 model by changing parts, etc. (For type 2, see page 68.)



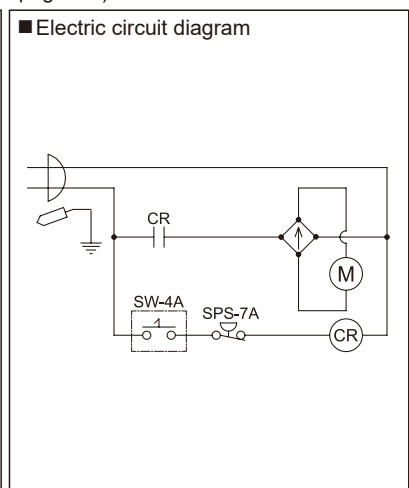
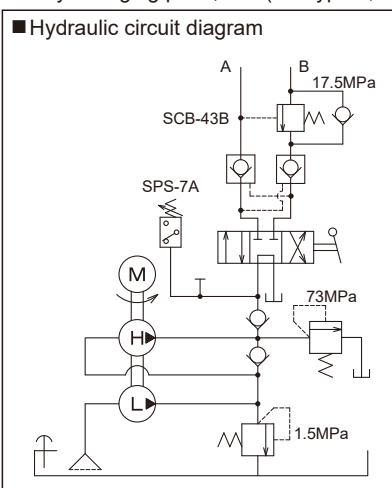
■ SMP-30CR/SMP-40CR

- A double-acting cylinder is operated by the direction-control valve (SMV-43) and the remote controlled operating switch (SW-4A), which are attached to the pump.
- Pressure can be adjusted by the relief valve attached to the pump and maintained. (Pressure adjustable range: 10 to 70 MPa)
The hydraulic oil temperature range is 5 to 60 °C. **If the relief valve is operated for a long time, pay attention to the rise in oil temperature.**
- The pumps can be changed to another type 2 model by changing parts, etc. (For type 2, see page 68.)



■ SMP-30DCB/SMP-40DCB


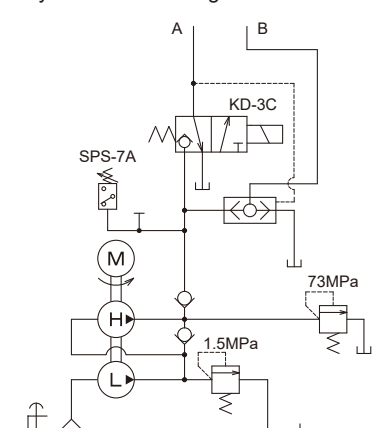
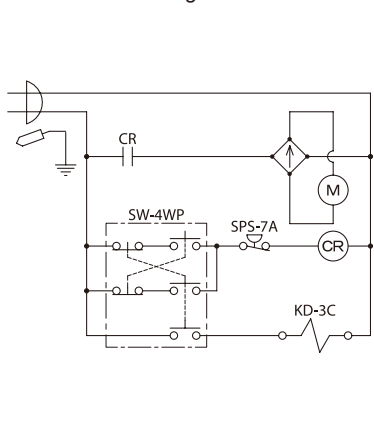
- A double-acting cylinder is operated by the direction-control valve (SCB-43B) and the remote controlled operating switch (SW-4A), which are attached to the pump.
- The SCB-43B incorporates a pilot check valve and an external pilot-operated counterbalance valve to prevent heavy load from falling by its own weight while the pump is jacking up the load. (The falling-by-self-weight prevention circuit is provided to port B only.)
- The pumps can be changed to another type 2 model by changing parts, etc. (For type 2, see page 68.)



Small-Size Portable Electric Pumps for Double-Acting Cylinders (SMP Series)


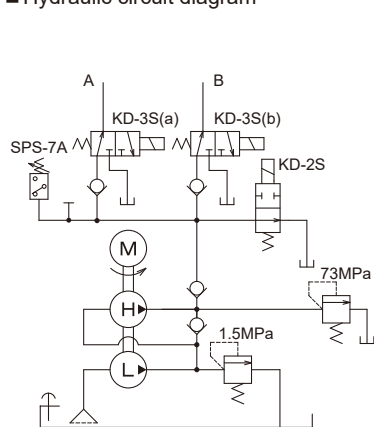
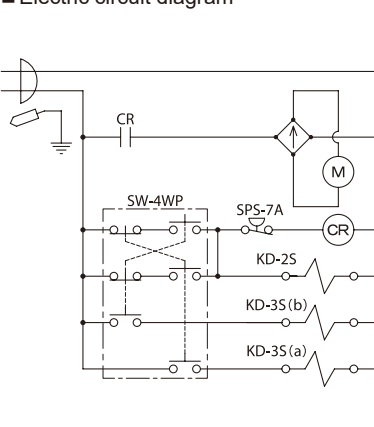
■ SMP-30SL · SMP-40SL

- A double-acting cylinder, torque wrench, etc. are operated by the remote controlled operating switch (SW-4WP).
- Only while the PUSH button of the SW-4WP is pressed and held, oil is discharged from port B, and the pump automatically stops at the preset pressure for the pressure switch, maintaining the pressure. Only while the PULL button is pressed and held, oil is discharged from port A. As soon as the button is released, the outlet port is switched to B, and the amount of oil for the inertia of the motor is discharged from port B.
- The pumps can be changed to another type 2 model by changing parts, etc. (For type 2, see page 68.)

| | | |
|---|---|---|
| <p>■ SMP-3012SL</p>  <p>■ SW-4WP</p> | <p>■ Hydraulic circuit diagram</p>  | <p>■ Electric circuit diagram</p>  |
|---|---|---|


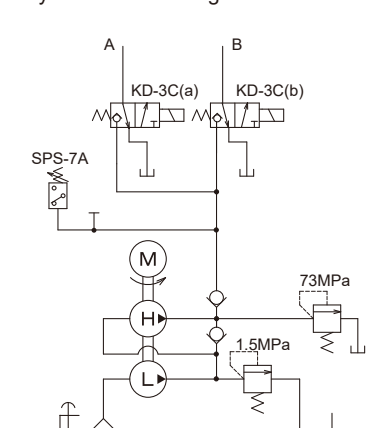
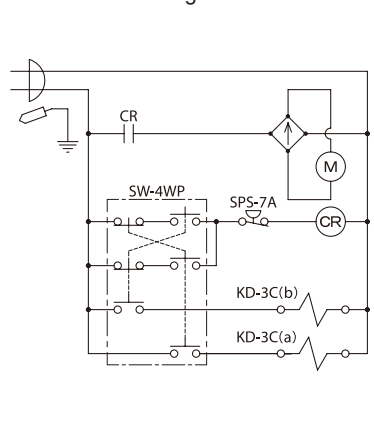
■ SMP-30SW · SMP-40SW

- The remote controlled operating switch (SW-4WP) operates a double-acting cylinder.
- Because of its good responsiveness, the pump can stop the cylinder immediately. Even if the button of the SW-4WP is released, pressure can be maintained for a long time due to the check valve.
- The pumps can be changed to another type 2 model by changing parts, etc. (For type 2, see page 68.)

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|---|---|---|
| <p>■ SMP-3012SW</p>  <p>■ SW-4WP</p> | <p>■ Hydraulic circuit diagram</p>  | <p>■ Electric circuit diagram</p>  |
|---|---|---|

■ SMP-30SP · SMP-40SP

- The remote controlled operating switch (SW-4WP) operates a double-acting cylinder.
- Only while the PUSH or PULL button of the SW-4WP is pressed and held, oil is discharged from port A or B, and the pump can stop automatically at the preset pressure for the pressure switch, maintaining the pressure. If the pressure drops a few MPa below the preset one, the pump will restart operation automatically.
- The pumps can be changed to another type 2 model by changing parts, etc. (For type 2, see page 68.)

| | | |
|---|---|---|
| <p>■ SMP-3012SP</p>  <p>■ SW-4WP</p> | <p>■ Hydraulic circuit diagram</p>  | <p>■ Electric circuit diagram</p>  |
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