VEVOR

Affordable. Reliable. Home Improvement.

HYDRAULIC POWER UNIT

SERIES: TDDC12V-1.6KW-S- X L

(TIPS: X IS 3/4/4.5/6/7/8/10/12/13/14/15/20)

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SERIES: TDDC12V-1.6KW-S-X L

This is the original instruction, please read all manual instructions carefully before operating. VEVOR reserves a clear interpretation of our user manual. The appearance of the product shall be subject to the product you received. Please forgive us that we won't inform you again if there are any technology or software updates on our product.

	**Warning-** To reduce the risk of injury, users must read the instructions manual carefully.

	**CORRECT DISPOSAL** This product is subject to the provision of European Directive 2012/19/EC. The symbol showing a wheelie bin crossed through indicates that the product requires separate refuse collection in the European Union. This applies to the product and all accessories marked with this symbol. Products marked as such may not be discarded with normal domestic waste but must be taken to a collection point for recycling electrical and electronic devices.
	This product is of protection class III.
DC	Direct current

INSTRUCTIONS

The hydraulic power unit integrates a high-pressure gear pump, DC motor, multi-purpose integrated block, various hydraulic valves, oil tank, and other components organically. It is a typical hydraulic circuit of power up and power down. The second relief valve of the system performs control of the downward pressure, and the pressure-compensated flow valve automatically adjusts the falling speed. This product is widely used in small dump trucks, hydraulic winches, etc.

CARE INSTRUCTIONS

- The battery power must be sufficient, with a current of 200A and voltage to match the machine.
- This vehicle hydraulic pump is an S3 working system, not continuous operation, 30 seconds to start, 270 seconds to stop, the maximum working time of 180 seconds, intermittent 360 seconds continuous working time is too long, will cause motor short circuit or damage.
- When the hydraulic power unit produced by our Company leaves the factory,

the system pressure has been set. If changes are needed, users can adjust the system pressure by themselves through a pressure regulator knob according to the actual situation, but it cannot exceed the nominal pressure (16 MPa) of the system.

- Check the connection of the motor and electromagnetic valve carefully, and it is strictly forbidden to make a virtual connection.
- During the first installation and debugging, pay attention to keeping the oil level inside the oil tank, and after a working cycle, the oil tank should be filled, but it cannot be overfilled.
- The motor terminal box should be waterproof and moisture-proof. When connecting for the first time, inch the motor to carefully check the direction of the motor. From the rear end of the motor, the rotation direction is counterclockwise. It is absolutely forbidden to reverse the rotation of the motor and idle without oil.
- The hydraulic oil must be filtered when the oil tank is filled, with a filtering accuracy of no less than 25μm.
- The power unit cannot filter out impurities inside the hydraulic cylinder. Therefore, the inside of the hydraulic cylinder must be clean to avoid the failure of the valve. The tubing must also be clean.

SAVE THESE INSTRUCTIONS

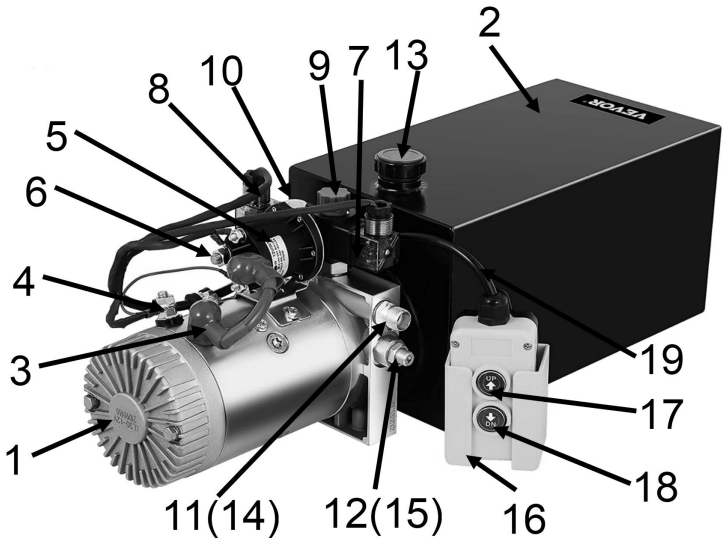
TECHNICAL PARAMETERS

Action	Double
Voltage	12 V
Reservoir Capacity	3/4/4.5/6/7/8/10/12/13/14/15/20 Quart
Power	1600 W
Rotating Speed	2600 RPM
Pressure	16~20 MPa
Traffic	2.1 mL/r
Tank Material	Steel or Plastic
Tank Color	White or Black

PARTS ILLUSTRATION

The Hydraulic Power Unit has been fully assembled. It comes with a hand-held remote control and 2 additional **SAE#6** connectors for replacement. The whole power unit is easy to wire and easy to operate.

Part List	
1 Electronic motor	11 Reservoir return port
2 Reservoir	12 Overflow valve
3 The positive pole of the electronic motor	13 Reservoir filler
4 The negative pole of the electronic motor	14 Reservoir outlet port
5 Relay	15 Overflow valve
6 The positive pole of the relay	16 Control box
7 Electromagnetic coil A	17 Up button
8 Electromagnetic coil B	18 Down button
9 two-position four-way valve	19 Control wire
10 normally closed solenoid valve	



WORKING PRINCIPLE AND WIRING METHOD

1. Please fill in hydraulic oil from 13 reservoir fillers till it is 3cm to 5cm below the upper surface of the reservoir.

2. The positive pole of the power supply should be connected to the positive pole of the relay, while the negative pole of the power supply should be connected to the negative pole of the electronic motor. The power supply wire must be copper wire 20 to 25 mm^2 in cross-sectional area.

3. Please connect the power supply correctly and then install the oil pipelines. Then press the 17 Up button to turn on the motor. The indicator light of 17 electromagnetic coil A should be lit. And the two-position four-way valve opens to allow oil to be discharged via the reservoir outlet port. This generates pressure and causes the reservoir to rise. Release the Up button, and the motor shall stop working, and the oil pump and the reservoir should stay still.

4. By the end of the hydraulic cylinder's travel, please press 18 on the Down button for oil return. This shall turn on the motor and cause the indicator light of 8, the electromagnetic coil B, to light up as well as generate magnetic force to push on the normally closed electromagnetic valve. This allows oil to return and go down.

COMMON FAILURES AND TROUBLESHOOTING

1. Do not rise (advance) or rise (advance) unstably.

a. If the oil level is too low in the oil tank, add oil to the specified level.

b. The hydraulic power unit should use anti-wear hydraulic oil with a kinematic viscosity of 22-46mm^2/s (50°C). ISO VG46 is recommended when the oil temperature is below 50°C, while ISO VG68 is recommended when the oil temperature is above 50°C. The added oil should be filtered by a filter with a filtration accuracy of 30um. The oil volume should be 80% of the effective capacity of the oil tank. The oil temperature is usually between -10~80°C, and low-temperature hydraulic oil should be used for extremely cold areas, such as ISO VG32. These measures can effectively prolong the service life of the hydraulic

system and hydraulic components, and improve the stability and reliability of the hydraulic power unit.

c. Blocked oil filter screen: Wash or replace the filter screen.

d. Unsealed or leaking oil suction pipe: Check the leakage or unsealed place, and repair or replace the pipe.

e. Unclosed electromagnetic valve or hand valve: Wash the electromagnetic valve and hand valve or replace the oil.

2. Do not drop or drop unstably.

a. Blocked electromagnetic valve or hand valve filter screen, clean the filter screen and electromagnetic valve.

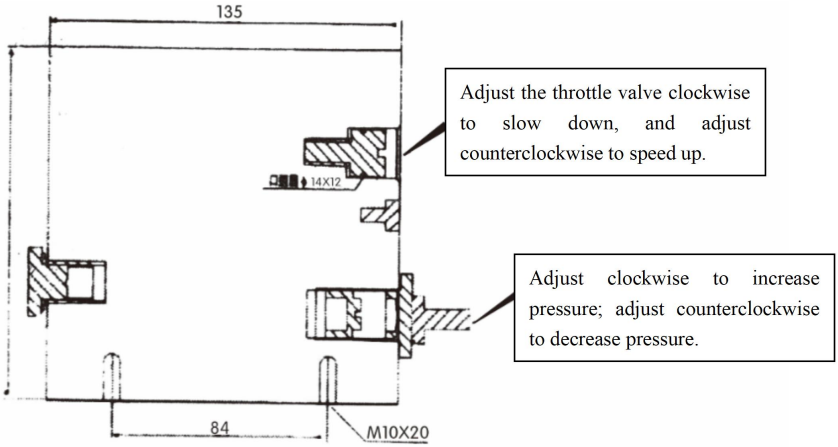
b. Blocked throttle valve, adjust the throttle valve.

3. Do not pressurize

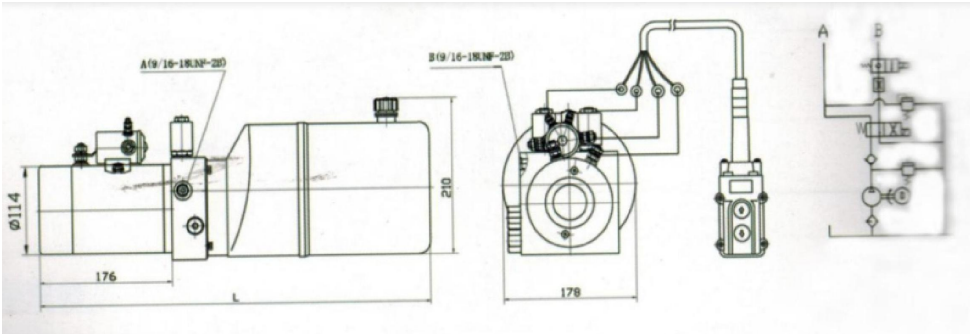
a. Unsealed check valve, wash the check valve or replace the oil seal and oil.

b. Unsealed electromagnetic valve or hand valve, clean electromagnetic valve, hand valve, or replace the oil seal and oil.

SIMPLE COMMISSIONING DIAGRAM

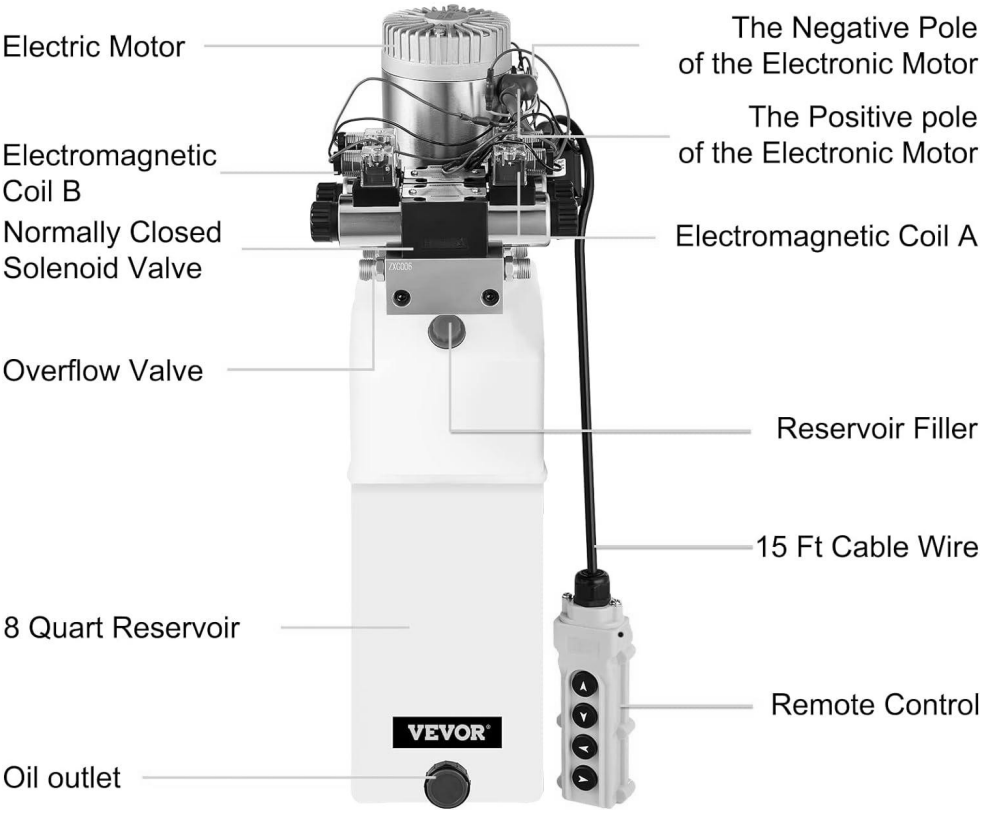


SCHEMATIC DIAGRAM

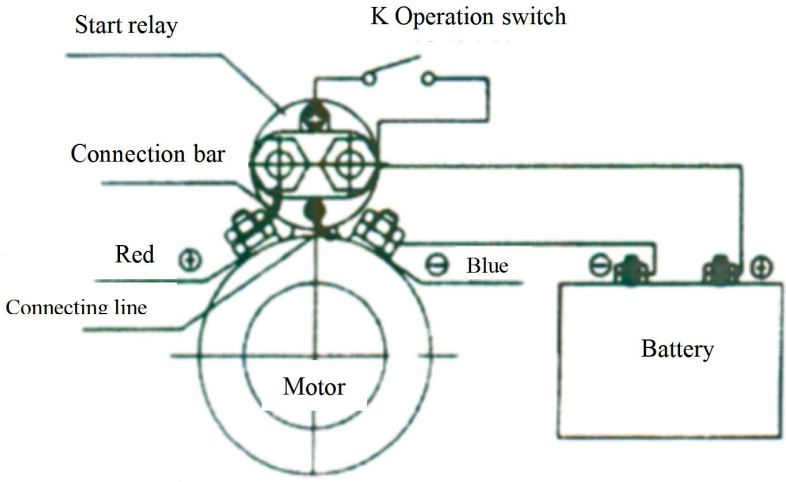


DURABLE COMPACT STRUCTURE

Will not leak or be easily damaged



DC MOTOR ELECTRIC WIRING DIAGRAM

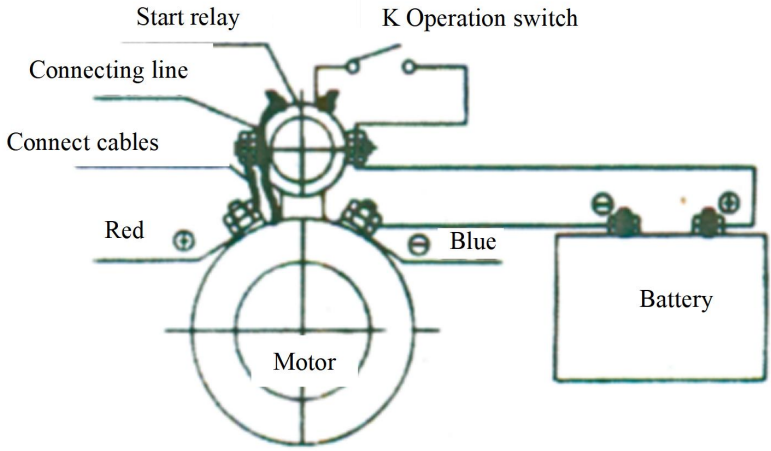


Legend:

Wires required to be connected by users

Wires already connected when leaving the factory

Type A



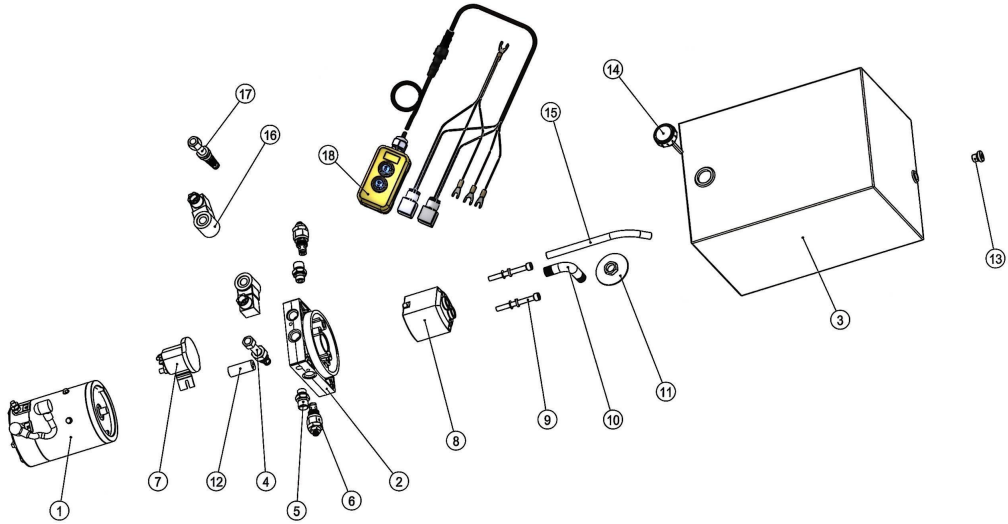
Legend:

Wires required to be connected by users

Wires already connected when leaving the factory

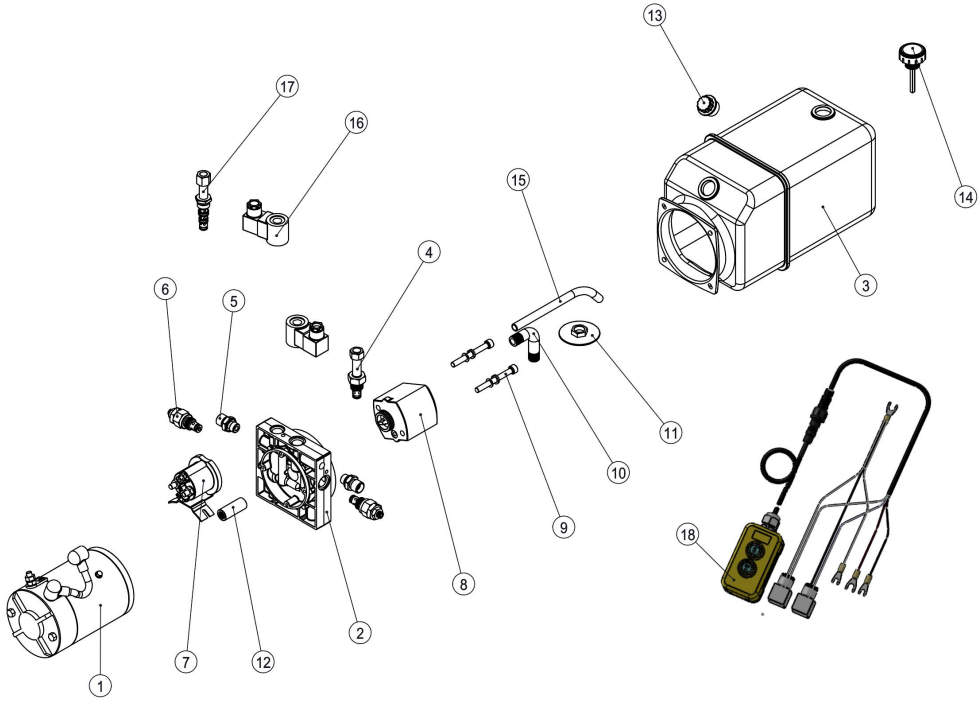
Type B

TYPE 1



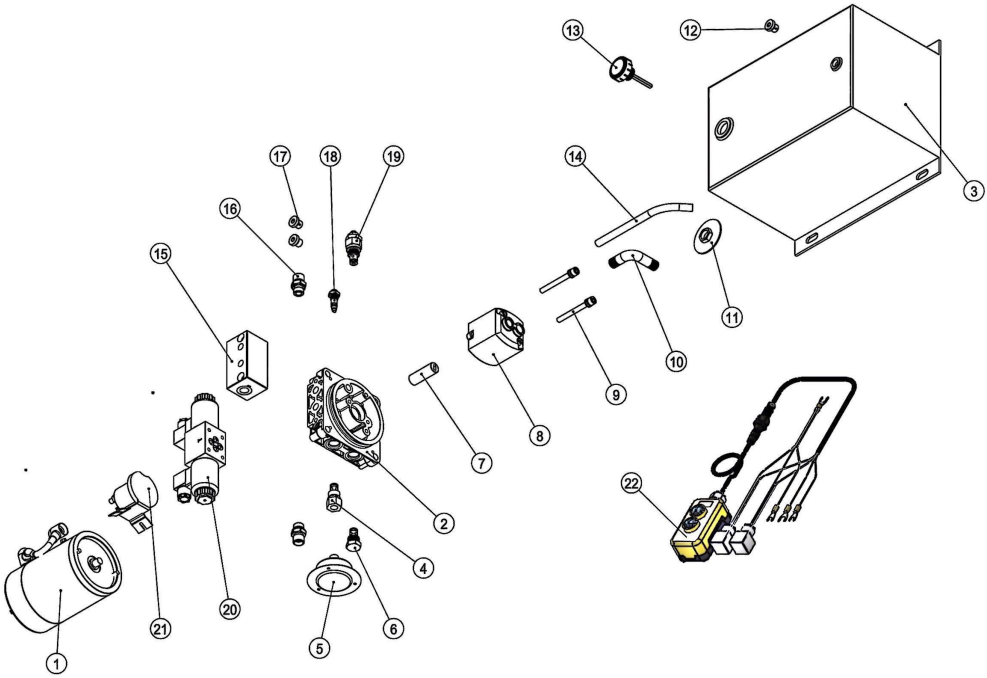
NO.	NAME	NO.	NAME
1	12V DC motor	10	Oil suction pipe
2	Die - casting block	11	Oil suction filter
3	Horizontal oil tank	12	Spline coupling
4	Two position two normally closed solenoid valve	13	G1/4 plug
5	Double acting connector	14	Breathing cap
6	Relief valve	15	Oil return pipe
7	Relay	16	Solenoid
8	Gear pump	17	Two position four - way solenoid valve
9	Fixed screw	18	Lift switch

TYPE 2



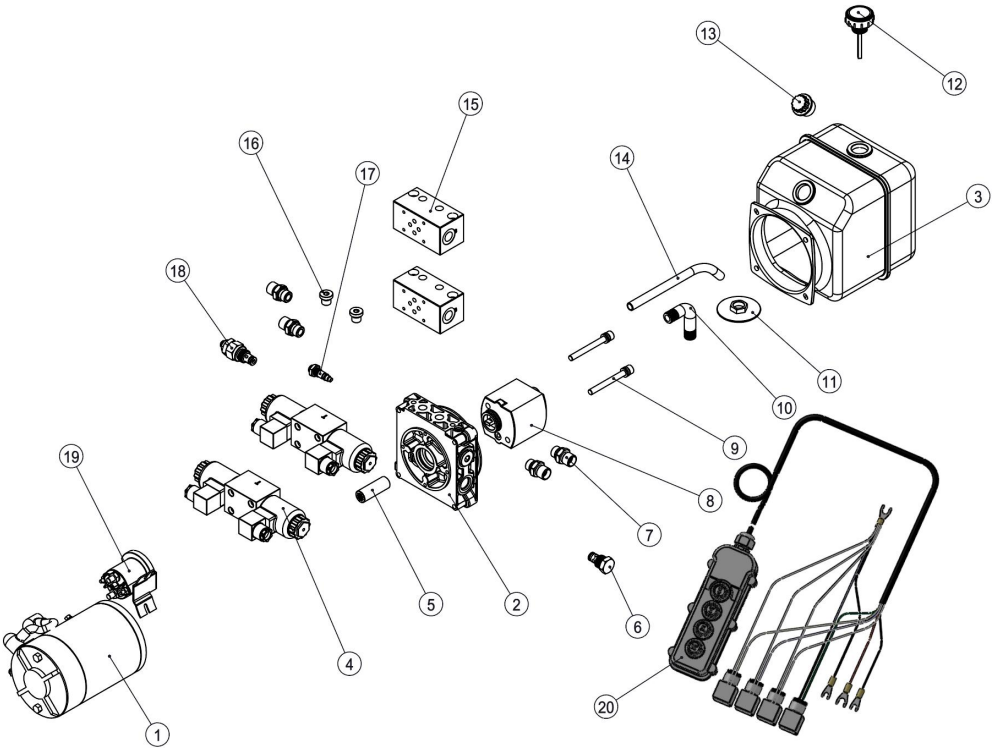
NO.	NAME	NO.	NAME
1	12V DC motor	10	Oil suction pipe
2	Die - casting block	11	Oil suction filter
3	Horizontal oil tank	12	Spline coupling
4	Two position two normally closed solenoid valve	13	G1/4 plug
5	Double acting connector	14	Breathing cap
6	Relief valve	15	Oil return pipe
7	Relay	16	Solenoid
8	Gear pump	17	Two position four - way solenoid valve
9	Fixed screw	18	Lift switch

TYPE 3



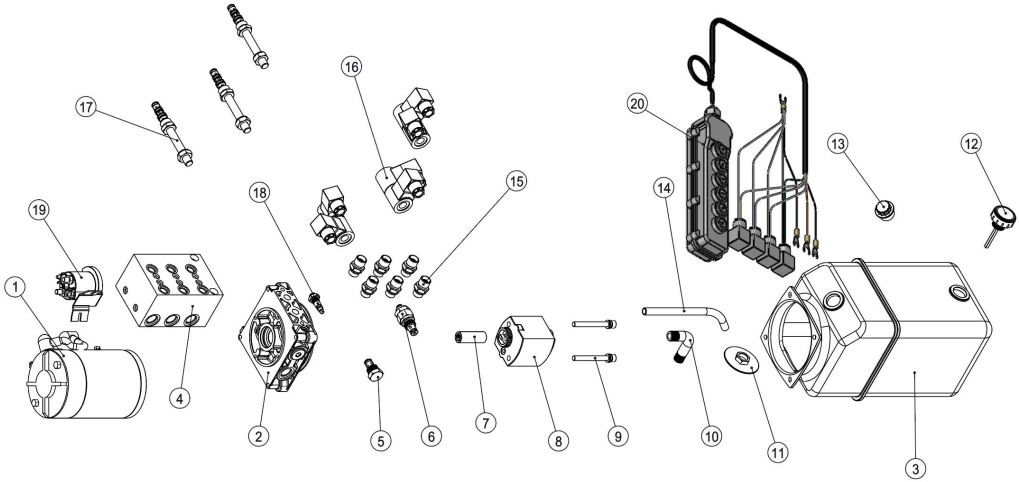
NO.	NAME	NO.	NAME
1	12V DC motor	12	G1/4 plug
2	Die - casting block	13	Breathing cap
3	Horizontal oil tank	14	Oil return pipe
4	Pressure tapping	15	Transition block
5	Pressure gauge	16	Double acting connector
6	Check valve	17	G1/4 plug
7	Spline coupling	18	Throttle valve
8	Gear pump	19	Relief valve
9	Fixed screw	20	Directional control valve
10	Oil suction pipe	21	Relay
11	Oil suction filter	22	Lift switch

TYPE 4



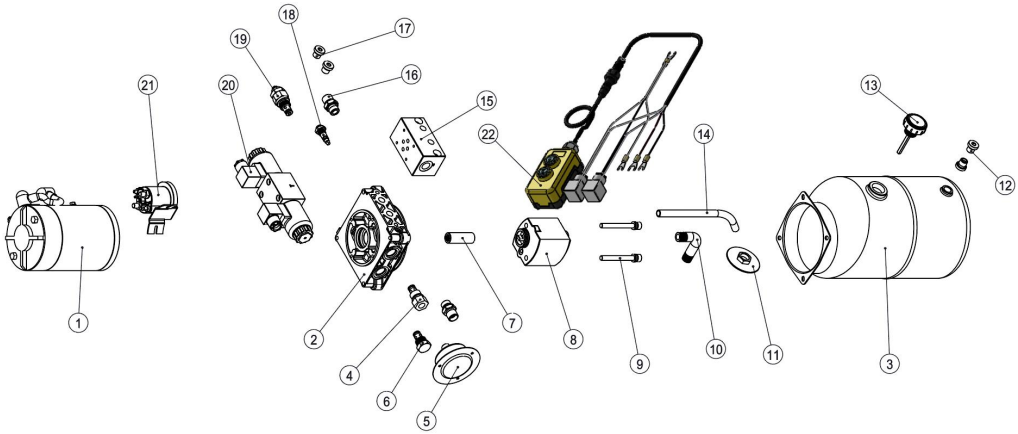
NO.	NAME	NO.	NAME
1	12V DC motor	11	Oil suction filter
2	Die - casting block	12	Breathing cap
3	Horizontal oil tank	13	G3/4 Plastic plug with sealing gasket
4	Directional control valve	14	Oil return pipe
5	Spline coupling	15	Transition block
6	Check valve	16	G1/4 plug
7	Double acting connector	17	Throttle valve
8	Gear pump	18	Relief valve
9	Fixed screw	19	Relay
10	Oil suction pipe	20	Lift switch

TYPE 5



NO.	NAME	NO.	NAME
1	12V DC motor	11	Oil suction filter
2	Die - casting block	12	Breathing cap
3	Horizontal oil tank	13	G3/4 Plastic plug with sealing gasket
4	Customized transition block	14	Oil return pipe
5	Check valve	15	Double acting connector
6	Relief valve	16	Solenoid
7	Spline coupling	17	Three position four - way solenoid valve
8	Gear pump	18	Throttle valve
9	Fixed screw	19	Relay
10	Oil suction pipe	20	Lift switch

TYPE 6



NO.	NAME	NO.	NAME
1	12V DC motor	11	Oil suction filter
2	Die - casting block	12	Breathing cap
3	Horizontal oil tank	13	G3/4 Plastic plug with sealing gasket
4	Customized transition block	14	Oil return pipe
5	Check valve	15	Double acting connector
6	Relief valve	16	Solenoid
7	Spline coupling	17	Three position four - way solenoid valve
8	Gear pump	18	Throttle valve
9	Fixed screw	19	Relay
10	Oil suction pipe	20	Lift switch

MAINTENANCE

1. Actuators and pipelines should be kept clean to prevent the introduction of foreign material into the system.
2. The reservoir should be adequately filled with oil. Proper refilling is needed after certain working circles. It may damage the oil pump and the enclosure if the oil pump sucks air.
3. The hydraulic oil should be replaced upon working for 100 hours since the initial filling. Subsequently, the hydraulic oil should be replaced once per year or at about 1500 working hours.
4. The viscosity of the hydraulic oil should be 22-46mm^2/s.
5. High-viscosity hydraulic oil should be used in high-temperature working environments, while low-viscosity hydraulic oil should be used in low-temperature environments.