



Model 18220-Series

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BALLAST PUPPY Wakeboard Towboat Ballast Pump FEATURES

- Pump:** Bronze
- Impeller:** Jabsco Nitrile or Polyurethane Impeller
- Seal:** Lip Type
- Ports:** 1/2" Internal Pipe Threads
1" External Hose Barb
- Motor:** Equipped with Run-Dry Protection Device (Patent Pending)
12 Volt DC
Permanent Magnet Type
Fully Enclosed
Stainless Steel Shaft
Ball Type Shaft Bearing
Reversible
- Dimensions:** 3-5/8" (93mm) high,
7-1/8" (182mm) long
4-3/4" (120mm) wide
- Weight:** 6 lb (2.7 kg)

Rating: CE

Motors meet USCG Electrical Regulation 183.410 and ISO 8846 MARINE for IGNITION PROTECTION on gasoline powered vessels.

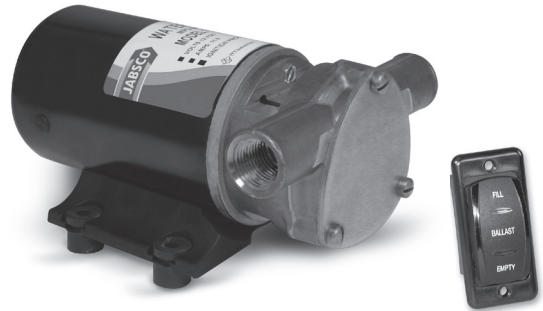
WARNING Explosion Hazard. Do not pump gasoline, solvents, thinners or other flammable liquids. To do so can cause an explosion resulting in injury or death.

WARNING Explosion Hazard. Do not operate with rivets removed from motor case. Explosion resulting in personal injury, death or property damage can occur. Case openings must be sealed to avoid explosion and maintain ignition protected rating.

WARNING Sinking hazard. Do not exceed manufacturer's combined maximum weight capacity and persons capacity as specified in vessel's "Maximum Capacities" warning placard. To do so can cause sinking that can result in loss of property and life.

APPLICATION

The Ballast Puppy is designed to pump water into Wakeboard Liquid Ballast Tanks and when reversed will also pump water out of them. It has a flow rate of 11 gallons per minute, so it can fill most ballast tanks in about five minutes. It is equipped with a Run-Dry Protection Device (patent pending) to automatically shut-off the pump and protect the impeller from run-dry damage should the pump be mistakenly left on after the Ballast Tank is empty.



VARIANTS

- 18220-1123 - Nitrile Impeller
- 18220-1127 - Polyurethane Compound Impeller
- 18220-X123 - OEM Variant
- 18220-X127 - OEM Variant

INSTALLATION

The pump must be mounted in a dry location – the motor is not waterproof and must not be submerged. SELECTION OF A COOL VENTILATED location will generally extend pump motor life. The unit can be mounted in any desired position. It is best to mount so that water dripping from loose port connection will not wet the motor. The pump head may be rotated 180° on the motor to change the direction of flow.

PLUMBING CONNECTIONS

Pump ports have external 1" hose barb and internal 1/2" pipe threads. Use hose that does not kink when bent and with sufficient wall thickness to prevent collapse when used on suction side of pump. Hoses should be routed so that some water will be retained in pump body to wet the impeller. Wetting the impeller aids in priming and extends impeller life. Use a strainer on the intake hose to stop trash and solids from going through the pump. All hoses must have airtight connections to enable fast priming.

PSI	Total Head		Capacity	
	Feet	Metres	GPM	LPM
2.1	5	1.5	9.0	34
4.3	10	3.0	8.5	32
6.5	15	4.6	8.0	30
8.7	20	6.1	7.5	28

Table shows approximate Head-Flow for new pump.

⚠ WARNING

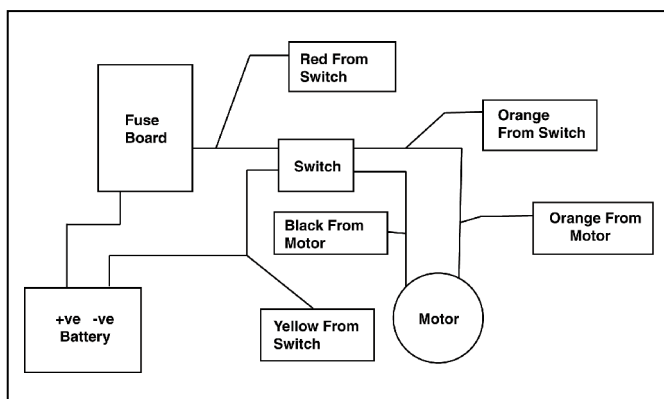
Explosion hazard. If pump is operated in an area containing flammable vapors, motor wire leads must be joined by insulated mechanical locking connectors. Loose or inadequate wire connections can spark resulting in an explosion. Property damage, injury or death can occur.

ELECTRICAL CONNECTIONS

NOTICE: To prevent motor damage, use only multi-strand copper wire in size recommended. **DO NOT** use ordinary lamp cord or other substitutes

The Ballast Puppy should be wired to the Polarity Reversing Switch (provided) through an over-current protected distribution panel fitted with a 20 amp breaker or fuse. This circuit should be dedicated to the Ballast Puppy and free of any other accessories. The Polarity Reversing Switch requires that both positive and negative conductors be run from the power source to the switch as well as both positive and negative conductors run from the pump to the switch. These conductors must be sized to match the recommended wire size in the Electrical Specification Chart for the total length of the circuit (the sum of the length of all positive and negative conductors). Use positive locking type wire connectors (crimp type butt connectors) to complete all connections at the pump and reversing switch. Use only quality marine grade multi-strand copper wire of the proper size as determined from the Electrical Specification Chart below.

Wiring Instructions Pump Model 18220-1123



- 1.) Please note wiring recommendations in the data sheet.
- 2.) Please note the fuse requirements in the datasheet
- 3.) To reverse pump/switch for filling and emptying, swap the orange and black from motor to orange and black from switch.

ELECTRICAL SPECIFICATIONS AND MINIMUM WIRE SIZE

VOLTAGE	AMP DRAW	FUSE SIZE	WIRE SIZE PER FEET OF RUN*				
			0'-10' (0 M-3 M)	10'-15' (3 M-4.6 M)	15'-25' (4.6 M-7.6 M)	25'-40' (7.6 M-12.2 M)	40'-60' (12.2 M-18.3 M)
12V DC	12	20	#16 (1.5 mm ²)	#14 (2.5 mm ²)	#12 (4 mm ²)	#10 (6 mm ²)	#8 (10 mm ²)

* Length of run is total distance from power source to pump and back to ground. Wire sizes listed are SAE gauge and metric millimetres².

OPERATION

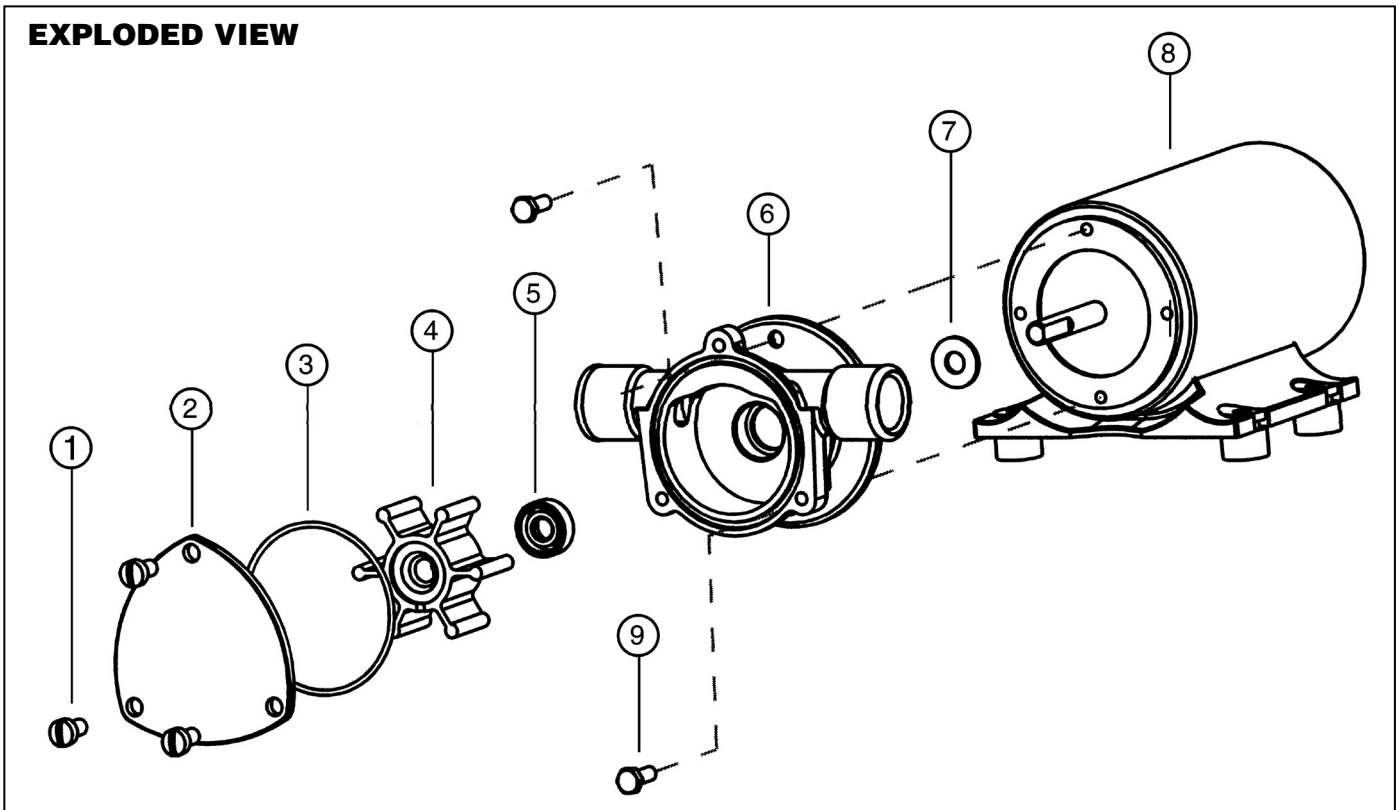
The Ballast Puppy is reversible so it can both add liquid ballast and then pump it back overboard when ready to lighten the load. The stylish double throw reversing switch (provided) is intended to be mounted in a convenient, easily accessible location for quick and easy ballast control. The pump can fill a typical forty gallon tank in about 5 – 6 minutes.

When ready to add ballast, simply flip the switch to the fill position and watch for indicators that the tank is full, then switch the pump off. To reduce the ballast load, flip the switch to the drain position and the pump will reverse itself to pump liquid ballast back overboard. To fully empty tank, just leave the pump in the drain position and monitor the tank level so that the pump can be turned off when the tank is empty. Alternatively, simply pay attention to the sound made by the pump and when the frequency changes (higher pitch) and it gets louder, that is an indication the tank is empty and the pump should be turned off. However, if for some reason attendants become distracted and do not notice the change in pump sound or that the tank is empty, the Jabsco Ballast Puppy is equipped with an exclusive Run-Dry Protection Device (patent pending) to prevent serious impeller damage. This Run-Dry Protection Device senses the absence of water and after a short period of sustained run-dry operation will shut-off the pump before the impeller is badly damaged. The delay in run-dry operation before pump shutdown provides adequate time for initial pump priming when filling the ballast tank.

The Ballast Puppy is designed for intermittent duty cycles only. It is capable of filling most ballast tanks in about 5 – 6 minutes and can be immediately reversed to empty the tank if urgent de-ballasting is required. However, after about twenty minutes of continuous running the Run-Dry Protection Device will interrupt power to the pump and cause the pump to shutdown. The pump would then need to cool off for about twenty minutes before normal operation will resume.

The pump cannot run against a closed outlet as may be encountered when installed in systems with valves to regulate flow. Pressure for normal operation should not exceed 20 feet of head (8.7 psi).

EXPLODED VIEW



MAINTENANCE

Check wires and connections to be sure corrosion is not adding additional resistance to the motor circuit and causing a low voltage condition at the motor. Low voltage can inhibit motor from starting and/or reversing and cause fuse to blow. Full voltage should be available to prevent motor damage.

NOTICE: If pump is idle for extended periods, the impeller may stick to the pump body, preventing motor rotation and causing blown fuses. To correct, remove end cover and impeller, clean body and impeller, then lubricate with water or small amounts of non-petroleum-based grease before assembly.

If pump is to be in freezing temperatures, drain by loosening end cover screws.

A Service Kit, or at least spare impellers, should be carried aboard to be assured of pumping capability.

DISASSEMBLY

1. Remove end cover screws, end cover and O-ring.
2. Withdraw impeller.
3. Loosen and remove two slotted hex screws, which attach body to motor.
4. Tap body lightly between ports and remove body from motor.
5. With a 1/2" diameter dowel, push against the shaft seal from back (motor) side of the body to dislodge it from the seal bore.

NOTE: Do not tamper with or disassemble motor.

PARTS LIST

Key	Description	Qty.	Part Number
1	Screw Kit (End Cover) (3 screws per kit)	1	91004-0090
2	End Cover	1	18647-0000
3	O-Ring*	1	18753-0660
4	Impeller* - Black (Nitrile)	1	6303-0023
	Impeller* - Yellow (Polyurethane)	1	6303-0007
5	Seal*	1	18753-0384
6	Body	1	18645-0000
7	Slinger	1	6342-0000
8	Motor	1	18753-0696
9	Screw, Pump to Motor (3/kit)	2	98019-0020
	Rocker Switch†	1	18753-0095
	Service Kit* - Black (Nitrile)	1	90061-0006
	Service Kit* - Yellow (Polyurethane)	1	90061-0007

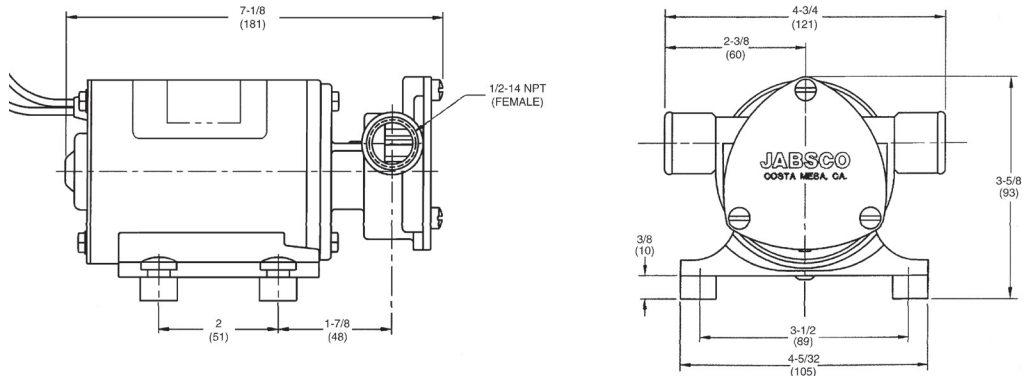
* Parts Contained in Service Kit.

† Rocker Switch (18753-0095) not shown

ASSEMBLY

1. Lubricate seal with water and position it in seal bore with lip, or hollowed-out side of seal, pointing towards the impeller bore. With a 1/2" diameter dowel, push the shaft seal into its bore until it contacts the bottom.
2. Lubricate motor shaft and install body on motor.
3. Lubricate impeller bore and, aligning flat in impeller with flat on motor shaft, install impeller with a rotary motion.
4. Install O-ring, end cover and screws.

DIMENSIONAL DRAWING
Inches (Millimetres)



COMMERCIAL WARRANTY

Warranty. For goods sold to commercial buyers, Seller warrants the goods sold to Buyer hereunder (with the exception of membranes, seals, gaskets, elastomer materials, coatings and other "wear parts" or consumables all of which are not warranted except as otherwise provided in the quotation or sales form) will be (i) be built in accordance with the specifications referred to in the quotation or sales form, if such specifications are expressly made a part of this Agreement, and (ii) free from defects in material and workmanship for a period of one (1) year from the date of installation or eighteen (18) months from the date of shipment (which date of shipment shall not be greater than thirty (30) days after receipt of notice that the goods are ready to ship), whichever shall occur first, unless a longer period is specified in the product documentation (the iWarranty).

Except as otherwise required by law, Seller shall, at its option and at no cost to Buyer, either repair or replace any product which fails to conform with the Warranty provided Buyer gives written notice to Seller of any defects in material or workmanship within ten (10) days of the date when any defects or non-conformance are first manifest. Under either repair or replacement option, Seller shall not be obligated to remove or pay for the removal of the defective product or install or pay for the installation of the replaced or repaired product and Buyer shall be responsible for all other costs, including, but not limited to, service costs, shipping fees and expenses. Seller shall have sole discretion as to the method or means of repair or replacement. Buyer's failure to comply with Seller's repair or replacement directions shall terminate Seller's obligations under this Warranty and render the Warranty void. Any parts repaired or replaced under the Warranty are warranted only for the balance of the warranty period on the parts that were repaired or replaced. Seller shall have no warranty obligations to Buyer with respect to any product or parts of a product that have been: (a) repaired by third parties other than Seller or without Seller's written approval; (b) subject to misuse, misapplication, neglect, alteration, accident, or physical damage; (c) used in a manner contrary to Seller's instructions for installation, operation and maintenance; (d) damaged from ordinary wear and tear, corrosion, or chemical attack; (e) damaged due to abnormal conditions, vibration, failure to properly prime, or operation without flow; (f) damaged due to a defective power supply or improper electrical protection; or (g) damaged resulting from the use of accessory equipment not sold or approved by Seller. In any case of products not manufactured by Seller, there is no warranty from Seller; however, Seller will extend to Buyer any warranty received from Seller's supplier of such products.

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