



a xylem brand

## SELF-PRIMING PUMPS

### FEATURES

|                    |                                  |
|--------------------|----------------------------------|
| <b>Body:</b>       | Bronze                           |
| <b>Impeller:</b>   | Neoprene or Nitrile              |
| <b>Shaft:</b>      | Stainless Steel                  |
| <b>Shaft Seal:</b> | Mechanical Face Seal or Lip Type |
| <b>Wearplate:</b>  | Replaceable                      |
| <b>Bearings:</b>   | Shielded Ball Bearings           |
| <b>Ports:</b>      | 1" NPT Internal                  |
| <b>Weight:</b>     | 5-3/4 lb (2.61 kg)               |

### VARIATIONS AVAILABLE

| Model No. | Description                    |
|-----------|--------------------------------|
| 777-0001  | Neoprene Impeller (Lip Seal)   |
| 777-0003  | Nitrile Impeller (Lip Seal)    |
| 777-9001  | Neoprene Impeller (Face Seal)  |
| 777-9003  | Nitrile Impeller (Face Seal)   |
| 777-9051  | Half Thickness Cam (Face Seal) |

### APPLICATIONS

**MARINE** – Pump bilge, Washdowns, Circulating water in bait tanks, Utility dock-side pump, Engine cooling.

**INDUSTRIAL** – Circulating and transferring, Velocity-mixing, Pumping machine tool coolants, Return spill, Sump drainage, Chemicals, Pharmaceuticals, Soap, Liquors, Ink, Dyes, Alcohol, Dilute acids, Tanning Liquors, Glycerine, Brine, etc.

**FARMING** – Pumping water for stock, Pumping water from shallow wells and cisterns, Pumping liquid ballast into tractor tires.

**PLUMBING AND HOME EMERGENCY USE** – Pumping out flooded basements, Cesspools, Sumps, Water heaters and water closets, Drains and sinks, Draining fishponds and pools.

### OPERATING INSTRUCTIONS

1. Installation – Pump may be mounted in any position. The rotation of the pump shaft determines the location of the pump's intake and discharge ports. (Refer to dimensional drawing.) Pump is normally assembled at factory for clockwise rotation (looking



**Model 777-Series**

at end cover). If counter clockwise rotation is desired, follow steps 1 and 2 of disassembly and step 11 of assembly instructions to change direction of impeller blade deflection under cam.

2. Drive – Belt or Direct with flexible coupling.

Belt – Overtightened belt load will reduce pump bearing life.

Direct – Clearance should be left between drive shaft and pump shaft when installing coupling. Always mount and align pump and drive shaft before tightening the coupling set screw.

- NOTICE: If pulley or coupling must be pressed on shaft, remove end cover and impeller to support shaft from impeller end during press operation. Do not hammer pulley or coupling on shaft; this may damage bearings or seal.

3. Speeds – 100 RPM to the maximum shown in the performance table. Consult the factory for operation at speeds above those shown. For longer pump life, operate at lowest possible speeds.
4. Self-Priming – Primes at low or high speeds. For vertical dry suction lift of 10 feet, a minimum of 800 RPM is required. Pump will produce suction lift up to 22 feet when wetted. BE SURE SUCTION LINES ARE AIRTIGHT OR PUMP WILL NOT SELF-PRIME.
5. Running Dry – Unit depends on liquid pumped for lubrication. DO NOT RUN DRY for more than 30 seconds. Lack of liquid will damage the impeller.
6. Notice – Do not pump light fraction petroleum derivatives, solvents, thinners, highly concentrated or organic acids. Damage to pump may result.

Consult Jabco Chemical Resistance Table (available upon request from the factory) for proper body materials and impeller compounds. If corrosive fluids are handled, pump life will be prolonged if pump is flushed with water after each use or after each work day.

7. Pressures – Consult Head Capacity Table for recommended maximum for continuous operation. If pressures exceed those shown, consult the factory.
8. Temperatures – Neoprene 45°-180°F (7-82°C). Nitrile 50°-180°F (10°-82°C).
9. Freezing Weather – Drain unit by loosening end cover. The following anti-freeze compounds can be used without any adverse effects to the neoprene impeller: Atlas “Permaguard”, DuPont “Zerex” and “Telar”, Dow Chemical “Dowguard” and Olin Mathison “Pyro” Permanent. Most Methyl alcohol (methanol) based anti-freeze can be used.

**DO NOT USE PETROLEUM BASED ANTI-FREEZE COMPOUNDS OR RUST INHIBITORS.**

10. Gasket – Use a standard pump part. Thicker gasket will reduce priming ability. A thinner gasket will cause the impeller to bind. Standard gasket is 0.010” thick.
11. Spare Parts – To avoid costly shutdowns, keep a



**WARNING** Chemical hazard. Pumps which have handled corrosive, caustic or toxic fluids should be drained and completely flushed prior to servicing. Failure to do so can cause injury.

JABSCO Service Kit on hand.

## SERVICE INSTRUCTIONS

### DISASSEMBLY

1. Remove end cover screws, end cover and gasket.
2. Grasp hub of impeller with water pump pliers and withdraw from body.
3. Remove cam screw and cam; clean sealant from cam and body bore.
4. Remove wearplate.
5. Insert screwdriver between OD of outer bearing seal and bearing bore and pry seal out.
6. Remove bearing to body retaining ring.
7. Press on impeller drive end of shaft to remove shaft and bearing assembly.
8. Using extreme care not to mar body bore, insert screwdriver between OD of inner bearing seal and bearing seal bore and pry out seal.
9. **Lip seal versions:** Press seal out of body towards impeller bore.

**Face seal versions:** Remove ceramic seal seat

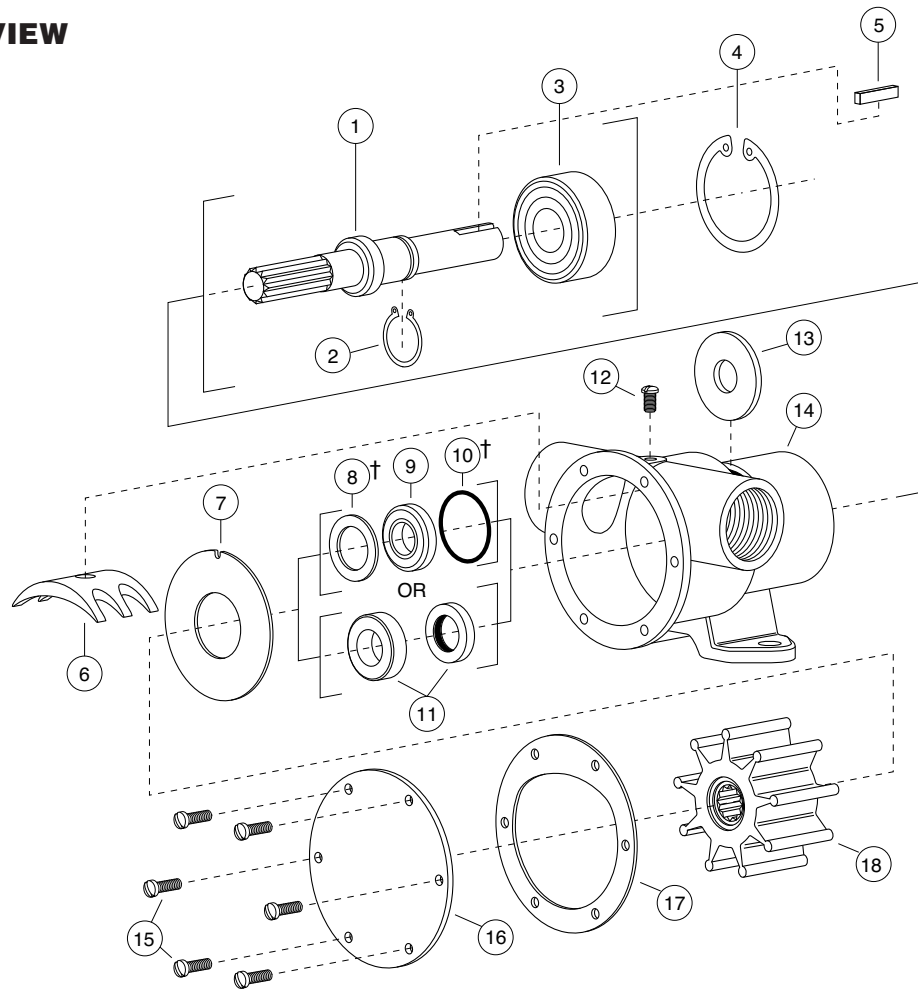
and seat gasket from shaft. Press carbon seal seat out of body towards impeller bore.

10. Remove bearing shaft retaining ring.
11. Support bearing inner race, press on drive end of shaft to remove shaft from bearing. Do not attempt to remove bronze bushing which is pinned to shaft.
12. Inspect all parts for wear or damage and replace where necessary.

### ASSEMBLY

1. Lubricate inner bearing seal lip with grease and press into body bearing seal bore with lip facing away from bearing bore.
2. Press shaft into bearing, using care to support inner race of bearing.
3. Install bearing to shaft retaining ring with flat side toward bearing.
4. Position slinger in body drain area. Insert splined end of shaft through bearing bore and guide slinger over shaft until bearing contacts body. Align slinger with raised shoulder on shaft as the shaft/bearing assembly is pressed the last 1/4” into the bearing bore.
5. Pressing on bearing outer race, install bearing into bore.
6. Install bearing to body retaining ring in body groove with flat side toward bearing.
7. Lubricate outer bearing seal lip with grease and press into bearing bore until it is flush with the body.
8. **Lip seal versions:** Lubricate OD and lip of seal, then push into place, using care not to damage or cut seal lip. (Lip faces impeller bore.)
- Face seal versions:** Lubricate rubber grommet in ceramic seal seat with water and install on shaft, grommet toward bearing. Install seal (carbon toward ceramic seat) in seal bore and press flush with bottom of impeller bore.
9. Install wearplate in body bore, aligning slot in wearplate with dowel pin in body.
10. Apply a thin coat of sealant to cam screw threads and top side of cam and install in body with cam screw.
11. Lubricate impeller bore and end surfaces of impeller with light coat of water pump grease and start impeller into bore with a rotary motion until splines engage, then push into bore.
12. Install gasket and end cover and secure with end cover screws.

# EXPLODED VIEW



## PARTS LIST

| Key | Description                        | Model<br>777-0001 | Model<br>777-0003 | Model<br>777-9001 | Model<br>7777-9003 | Model<br>7777-9051 |
|-----|------------------------------------|-------------------|-------------------|-------------------|--------------------|--------------------|
| 1   | Shaft                              | 6718-0000         | 6718-0000         | 6718-0000         | 6718-0000          | 6718-0000          |
| 2   | Retaining Ring (Brg. to Shaft)     | 18713-0000        | 18713-0000        | 18713-0000        | 18713-0000         | 18713-0000         |
| 3   | Ball Bearing                       | 92600-0060        | 92600-0060        | 92600-0060        | 92600-0060         | 92600-0060         |
| 4   | Retaining Ring (Brg. to Body)      | 18724-0000        | 18724-0000        | 18724-0000        | 18724-0000         | 18724-0000         |
| 5   | Key                                | 9215-0000         | 9215-0000         | 9215-0000         | 9215-0000          | 9215-0000          |
| 6   | Cam (Brass)                        | 934-0000          | 934-0000          | 934-0000          | 934-0000           | 2431-0000          |
| 7   | Wearplate                          | 4156-0000         | 4156-0000         | 4156-0000         | 4156-0000          | 4156-0000          |
| 8   | Seal Spacer†                       | 3166-0000         | 3166-0000         | —                 | —                  | —                  |
| 9   | Seal (Lip)* **                     | 92700-0060        | 92700-0060        | —                 | —                  | —                  |
| 10  | O-Ring*†                           | 92000-0210        | 92000-0210        | —                 | —                  | —                  |
| 11  | Seal (Face)* **                    | —                 | —                 | 96080-0080        | 96080-0080         | 96080-0080         |
| 12  | Screw (Cam)                        | 91004-0090        | 91004-0090        | 91004-0090        | 91004-0090         | 91004-0090         |
| 13  | Slinger, used with Lip Seal only   | 3181-0000         | 3181-0000         | 3181-0000         | 3181-0000          | 3181-0000          |
| 14  | Body                               | 798-0020          | 798-0020          | 798-0020          | 798-0020           | 798-0020           |
| 15  | Screw (End Cover)                  | 91003-0010        | 91003-0010        | 91003-0010        | 91003-0010         | 91003-0010         |
| 16  | End Cover                          | 11831-0000        | 11831-0000        | 11831-0000        | 11831-0000         | 11831-0000         |
| 17  | Gasket*                            | 890-0000          | 890-0000          | 890-0000          | 890-0000           | 2432-0000          |
| 18  | Impeller* - Neoprene, Brass Insert | 17937-0001        | —                 | 17937-0001        | —                  | 17937-0001         |
|     | Nitrile, Brass Insert              | —                 | 920-0003          | —                 | 920-0003           | —                  |
|     | Service Kit (Not Shown)            | 90010-0001        | 90010-0003        | 90118-0001        | 90118-0003         | 90118-0001         |

\* Parts supplied in Service Kit.

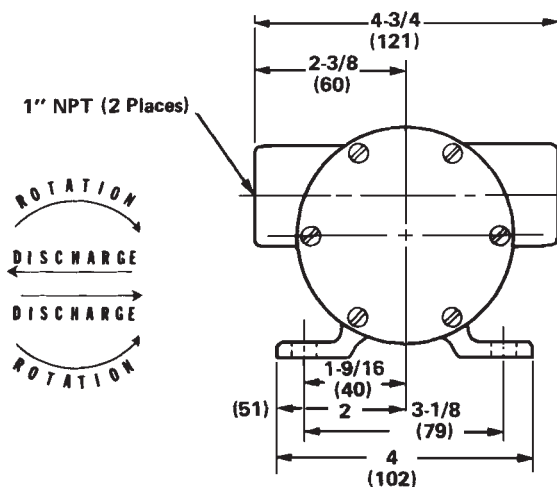
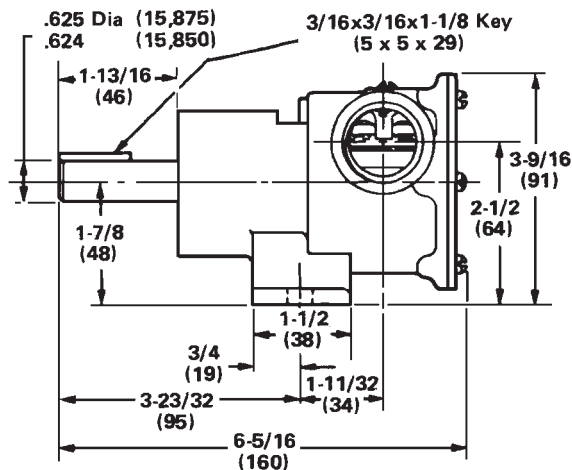
† Used for models prior to August 1, 1964.

NOTE: 5915-0001, High Pressure Neoprene Impeller available; contact factory for application recommendations.

\*\* When replacing shaft seal, the outer bearing seal is often distorted beyond serviceability and should be replaced.

# DIMENSIONAL DRAWING

Inches (Millimeters)



## PERFORMANCE TABLES

### Model 777-9001

| Total Head        |                           | 500 RPM        |     | 1160 RPM       |     | 1750 RPM       |     | 2100 RPM        |       | 2750 RPM        |       | 3000 RPM        |       |
|-------------------|---------------------------|----------------|-----|----------------|-----|----------------|-----|-----------------|-------|-----------------|-------|-----------------|-------|
| psi<br>(kg/sq cm) | Feet of Water<br>(Meters) | GPM<br>(L/Min) | HP  | GPM<br>(L/Min) | HP  | GPM<br>(L/Min) | HP  | GPM<br>(L/Min)  | HP    | GPM<br>(L/Min)  | HP    | GPM<br>(L/Min)  | HP    |
| 4.3<br>(0.3)      | 10<br>(3.0)               | 6.0<br>(22.7)  | 1/4 | 14.7<br>(55.6) | 1/3 | 23.3<br>(88.2) | 3/4 | 27.9<br>(105.6) | 3/4   | 33.8<br>(127.8) | 1-1/2 | 35<br>(132.5)   | 1-1/2 |
| 8.7<br>(0.6)      | 20<br>(6.1)               | 5.6<br>(21.2)  | 1/4 | 13.8<br>(51.9) | 1/2 | 22.0<br>(8.3)  | 3/4 | 26.8<br>(101.3) | 1-1/2 | 32.9<br>(124.5) | 1-1/2 | 34.3<br>(129.8) | 1-1/2 |
| 17.3<br>(1.2)     | 40<br>(12.2)              | 4.6<br>(17.4)  | 1/4 | 11.5<br>(43.5) | 1/2 | 19.3<br>(73.1) | 3/4 | 23.9<br>(90.5)  | 1-1/2 | 30.5<br>(115.5) | 1-1/2 | 32.5<br>(123.0) | 1-1/2 |
| 26.0<br>(1.8)     | 60<br>(18.3)              | —              | —   | 7.8<br>(29.5)  | 3/4 | 15.5<br>(58.7) | 1   | 19.2<br>(72.5)  | 1-1/2 | 26.1<br>(98.6)  | 2     | 29.3<br>(110.9) | 2     |
| 34.6<br>(2.4)     | 80<br>(24.4)              | —              | —   | —              | —   | 10.0<br>(37.9) | 1   | 13.2<br>(49.8)  | 1-1/2 | 19.9<br>(75.3)  | 2     | 23.5<br>(89.1)  | 2     |

### Model 777-9051

| Total Head        |                           | 500 RPM        |     | 1160 RPM       |     | 1750 RPM       |     | 2100 RPM       |     | 2750           |       | 3000 RPM       |       |
|-------------------|---------------------------|----------------|-----|----------------|-----|----------------|-----|----------------|-----|----------------|-------|----------------|-------|
| psi<br>(kg/sq cm) | Feet of Water<br>(Meters) | GPM<br>(L/Min) | HP  | GPM<br>(L/Min) | HP  | GPM<br>(L/Min) | HP  | GPM<br>(L/Min) | HP  | GPM<br>(L/Min) | HP    | GPM<br>(L/Min) | HP    |
| 4.3<br>(0.3)      | 10<br>(3.0)               | 4.0<br>(15.1)  | 1/4 | 8.7<br>(32.9)  | 1/4 | 13.6<br>(51.5) | 1/2 | 16.7<br>(63.2) | 3/4 | 22.3<br>(84.4) | 1     | 34.0<br>(90.8) | 1     |
| 8.7<br>(0.6)      | 20<br>(6.1)               | 3.4<br>(12.9)  | 1/4 | 8.0<br>(30.3)  | 1/3 | 12.8<br>(48.4) | 1/2 | 15.8<br>(59.8) | 3/4 | 21.2<br>(79.9) | 1     | 23.2<br>(87.8) | 1-1/2 |
| 17.3<br>(1.2)     | 40<br>(12.2)              | 2.0<br>(7.6)   | 1/4 | 5.8<br>(22.0)  | 1/3 | 10.4<br>(39.4) | 3/4 | 13.5<br>(51.1) | 3/4 | 18.5<br>(70.0) | 1     | 22.0<br>(83.3) | 1-1/2 |
| 26.0<br>(1.8)     | 60<br>(18.3)              | —              | —   | —              | —   | 7.0<br>(26.5)  | 3/4 | 10.0<br>(37.9) | 1   | 14.5<br>(54.9) | 1-1/2 | 16.0<br>(60.6) | 1-1/2 |

NOTE: Table shows approximate head-flow for new pump, with a neoprene impeller, in U.S. gallons per minute and liters per minute. For a nitrile impeller, reduce values by 10%. Progressively longer life may be expected as operating pressures and speeds are reduced. Factory application engineering assistance is recommended for shaded area. High starting torque motors are required. Pump starting torque in dry condition (no fluid in pump body) is 45.7 inch-pounds and in wet condition (fluid in pump body) is 39.0 inch-pounds.

THE PRODUCTS DESCRIBED HEREIN ARE SUBJECT TO THE JABSCO ONE YEAR LIMITED WARRANTY, WHICH IS AVAILABLE FOR YOUR INSPECTION UPON REQUEST.

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