

BrakeMate Jr. +TM

BRAKE FLUSH MACHINE



OPERATIONS MANUAL

TABLE OF CONTENTS

| | |
|---|-----------|
| INTRODUCTION to the BrakeMate Jr.+ | 3 |
| SAFETY INFORMATION | 4 |
| SYSTEM FEATURES & SPECIFICATIONS | 10 |
| MACHINE OVERVIEW | 11 |
| OPERATING INSTRUCTIONS | 12 |
| REPLACEMENT PARTS | 15 |
| MAINTENANCE | 17 |
| CUSTOMER SERVICE CONTACT INFO | 17 |
| WARRANTY INFORMATION | 18 |

INTRODUCTION *to the*

Flo-Dynamics BrakeMate Jr.+ Brake Flush Machine

Congratulations on the purchase of your BrakeMate Jr.+ brake flush machine!

Brake service is now more profitable, since we have eliminated the need for a second technician when performing a brake bleeding service.

The BrakeMate Jr.+ provides the shop with the ability to flush and pressure test a brake system faster and easier than ever before with a combination of speed and effectiveness.

Please take time to read through this manual to familiarize yourself with the BrakeMate Jr.+ before performing your first brake flush.

IMPORTANT SAFETY NOTICE

For your safety, read this manual thoroughly before operating this machine. Your machine is intended for use by properly trained, skilled professional automotive technicians. The safety messages presented below and throughout this user's manual are reminders to the operator to exercise care when using this unit. Before using your machine, always refer to and follow the safety messages and applicable service procedures provided by the manufacturer of the vehicle being serviced.

• Read All Safety Instructions

Read, understand and follow all safety messages and instructions in this manual. Safety messages in this section of the manual contain a signal word with a three-part message and, in some instances, an icon.

• Signal Words

The signal word indicates the level of the hazard in a situation:

DANGER

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury to the operator or to bystanders.

WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury to the operator or to bystanders.

CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in moderate or minor injury to the operator or to bystanders.

IMPORTANT

Indicates a situation which, if not avoided, may result in damage to the machine, or the vehicle being serviced.

• Safety Messages

Safety messages in this section contain three different type styles:

- Normal type states the hazard.
- **Bold type** states how to avoid the hazard.
- *Italic type* states the possible consequences of not avoiding the hazard.

• Safety Symbols

A safety symbol, when present, gives a graphical description of the potential hazard, and how to avoid the hazard:



Risk of Fire



Read Instructions Before Use



Risk of Explosion



Mandatory Eye Protection



Risk of Entanglement



Mandatory Protective Gloves



Dangerous Fumes



Mandatory Protective Clothing



Do Not Pull or Move



Risk of Burns

IMPORTANT SAFETY INSTRUCTIONS

DANGER



Engine exhaust contains toxic gases.

- Vent vehicle's exhaust away from work area.
- Do not breathe exhaust.

Exhaust gases will cause injury or death.

WARNING



Improper use and operation.

- Read, understand and follow all safety messages and operational procedures in this manual before operating this machine.
- This equipment should be operated only by qualified personnel.
- Use this equipment only as described in this manual.

Improper use and operation of this product can result in injury.

WARNING

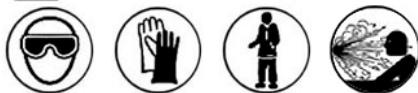


Engine systems can malfunction expelling fuel, oil vapors, hot steam, hot toxic exhaust gases and other flying particles.

- Wear safety goggles and protective clothing, user and bystander. Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses.
- Do not position head directly over or in front of carburetor or throttle body. Engine backfire can occur when air cleaner is out of normal position.
- Make sure gauge reads zero before connecting or disconnecting hose connections to adapters.
- Make sure cooling system pressure has been relieved before connecting or disconnecting hose connections and adapters.
- Keep a dry chemical (Class B) fire extinguisher rated for gasoline, chemical & electric fires in the work area.

Fire, explosion, or flying particles may cause serious injury.

WARNING



Risk of expelling pressurized fluids.

- Wear safety goggles and protective clothing, user and bystander.

- Engine systems can malfunction, expelling fuel, oil vapors, hot steam, hot toxic exhaust gases and other debris.
- Always unplug the machine from its power source when not in use.
- Keep the service hoses away from hot or moving engine parts. Hoses can split or burst causing fluid to be expelled.
- Avoid contact with brake fluid.
- Treatment methods are as follows:
 - Eyes: Flush eyes with plenty of water.
 - Skin: Wash with soap and water.
 - Inhalation: Move to uncontaminated area.
 - Ingestion: If large amount, get medical attention.
 - If any irritation persists, get medical attention.
- Dispose of used fluid according to environmental laws and regulations.

Fuel, oil vapors, hot steam, hot toxic exhaust gases, pressurized fluid, and other debris can cause serious injury.

⚠ WARNING

Risk of unexpected vehicle movement.

- Block drive wheels before starting vehicle's engine to begin an exchange.
- Unless instructed otherwise, set parking brake and put gear selector in park.
- Do not leave a running vehicle unattended.
- If vehicle has an automatic parking brake release, disconnect release mechanism for testing and reconnect when testing is completed.

A moving vehicle can cause injury.

⚠ WARNING



Risk of entanglement. Engine has moving parts.

- Do not place tools on fenders or other places in engine compartment.
- Keep yourself, clothing, battery cables and service hoses clear of moving parts such as fan blades, belts, pulleys, hood and doors.
- Barriers are recommended to help identify danger zones in test area.
- Prevent personnel from walking through immediate test area.

Contact with moving parts can cause injury.

⚠ WARNING



Risk of fire or explosion.

- Do not operate in the vicinity of open containers of flammable liquids such as gasoline.
- Keep hoses and jumper cables away from heat sources and sharp edges.
- Do not operate equipment with damaged cords or hoses until they have been examined by a qualified serviceman.

Fire or explosion can cause injury.

⚠️ WARNING



Risk of fire or explosion. Gases produced by a battery are highly explosive.

- **Wear safety goggles and protective clothing, user and bystander.**
- **This machine is equipped to operate on 12-volt DC power only. A power source greater than this can result in serious injury to the user as well as damage to the machine.**
- **Do not smoke, place metal tools on battery or allow a spark or flame in vicinity of battery.**
- **Clean battery terminals before hooking the machine's battery clips to them. During cleaning, keep airborne corrosion from eyes, nose and mouth.**
- **Be sure both battery cables are tightly connected to the battery terminals as instructed before proceeding with a fluid exchange.**
- **Never remove battery cables from the battery terminals while the machine is operating.**

Battery explosion can cause injury.

⚠️ WARNING



Risk of burns.

- **Wear gloves when handling hot engine components.**
- **Do not touch hot exhaust systems, manifolds, engines, radiators, etc.**

Hot engine parts may cause injury.

⚠️ WARNING



Battery acid is a highly corrosive sulfuric acid.

- **Wear safety goggles and protective gloves, user and bystander.**
- **Have plenty of fresh water and soap nearby. If battery acid contacts skin, clothing, or eyes, flush exposed area with soap and water for 10 minutes.**
- **While cleaning battery's terminals, keep airborne corrosion from eyes, nose and mouth.**
- **Do not touch eyes while working near battery.**

Battery acid can burn eyes and skin.

⚠️ WARNING



Risk of burns.

- **Wear gloves when working near hot engine components.**
- **Do not touch hot exhaust systems, manifolds, engines, radiators, etc.**
- **The fluid coming from the vehicle along with some of the machine's components that the fluid comes into direct contact with (i.e. hoses and fittings) may reach temperatures uncomfortable to the touch. Exercise caution in avoiding contact with these items.**

Hot components can cause injury or discomfort.

⚠ CAUTION



Risk of injury.

- This equipment should be operated by qualified personnel only.
- Use this equipment only as described in this manual.
- Always unplug the machine from its power source when not in use.
- Loop the power cord loosely in its proper location when machine is not in use.
- Do not operate equipment with a damaged battery cables or hoses, or if the equipment has been dropped or damaged, until it has been examined by a qualified service representative.
- Care should be taken to arrange the battery cables and service hoses so that they will not be tripped over or pulled.
- Never pull on the power cables or service hoses to transport the machine. Damage may occur to these components, or machine may tip over.
- Keep area of operation clear of unnecessary tools and equipment. Utilize recessed tool storage areas on the top of the machine.
- Never leave the machine running unattended.
- The machine is not designed for any other purpose than the servicing of automotive brake systems.

Operation of this machine by anyone other than qualified personnel may result in injury.

⚠ CAUTION

Misdiagnosis may lead to incorrect or improper repair and/or adjustment.

- Do not rely on erratic, questionable, or obviously erroneous test information or results. If test information or results are erratic, questionable, or obviously erroneous, make sure that all connections and data entry information are correct and that the test procedure was performed correctly. If test information or results are still suspicious, do not use them for diagnosis.

Improper repair and/or adjustment may cause vehicle or equipment damage or unsafe operation.

IMPORTANT

Risk of equipment damage.

- Connect battery cables to a 12-volt power source only (i.e. vehicle's battery).
- Servicing, transporting, or storing this machine in an attitude other than the normal operating position can result in fluid spillage and/or component damage.
- Never pull on the power cables or service hoses to transport the unit. Damage may occur to these components, or machine may tip over. Always use the handle to move.
- Periodically clean the machine by wiping down with a clean, soft, dry cloth.

Improper operation of equipment may result in damage to machine or components.

SAVE AND FOLLOW THESE INSTRUCTIONS!

DIMENSIONS & TECHNICAL SPECIFICATIONS

DIMENSIONS:

38" Tall
18" Wide
28" Deep

Service Hose:
15' outside of machine

Wheels:
5" locking casters (front)
5" casters (back)

Fluid Tanks:
5-Quart New Fluid Tank
4-Quart Waste Fluid Bottle

Weight:
60 lbs

TECHNICAL SPECIFICATIONS:

Power:
12-Volt DC from vehicle battery

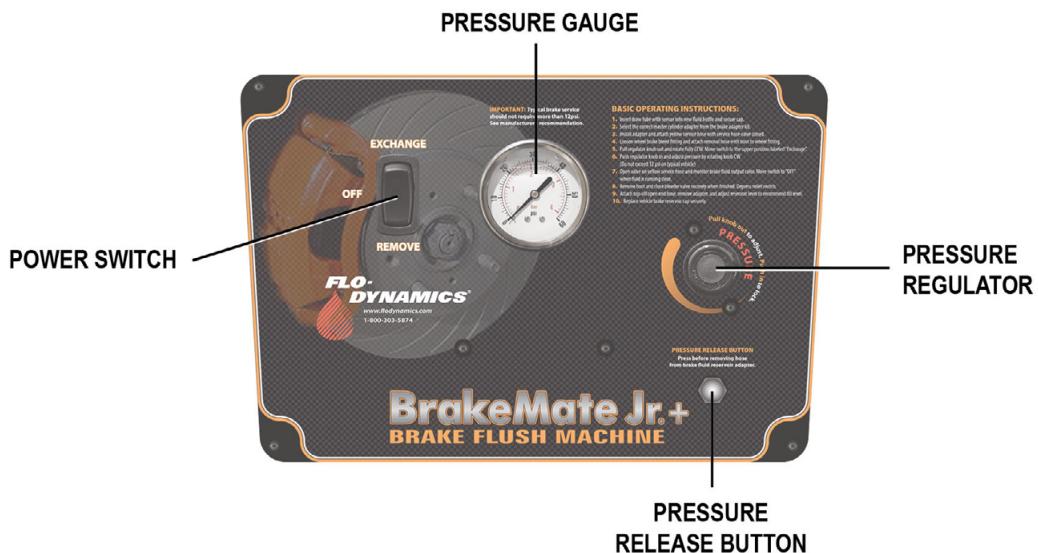
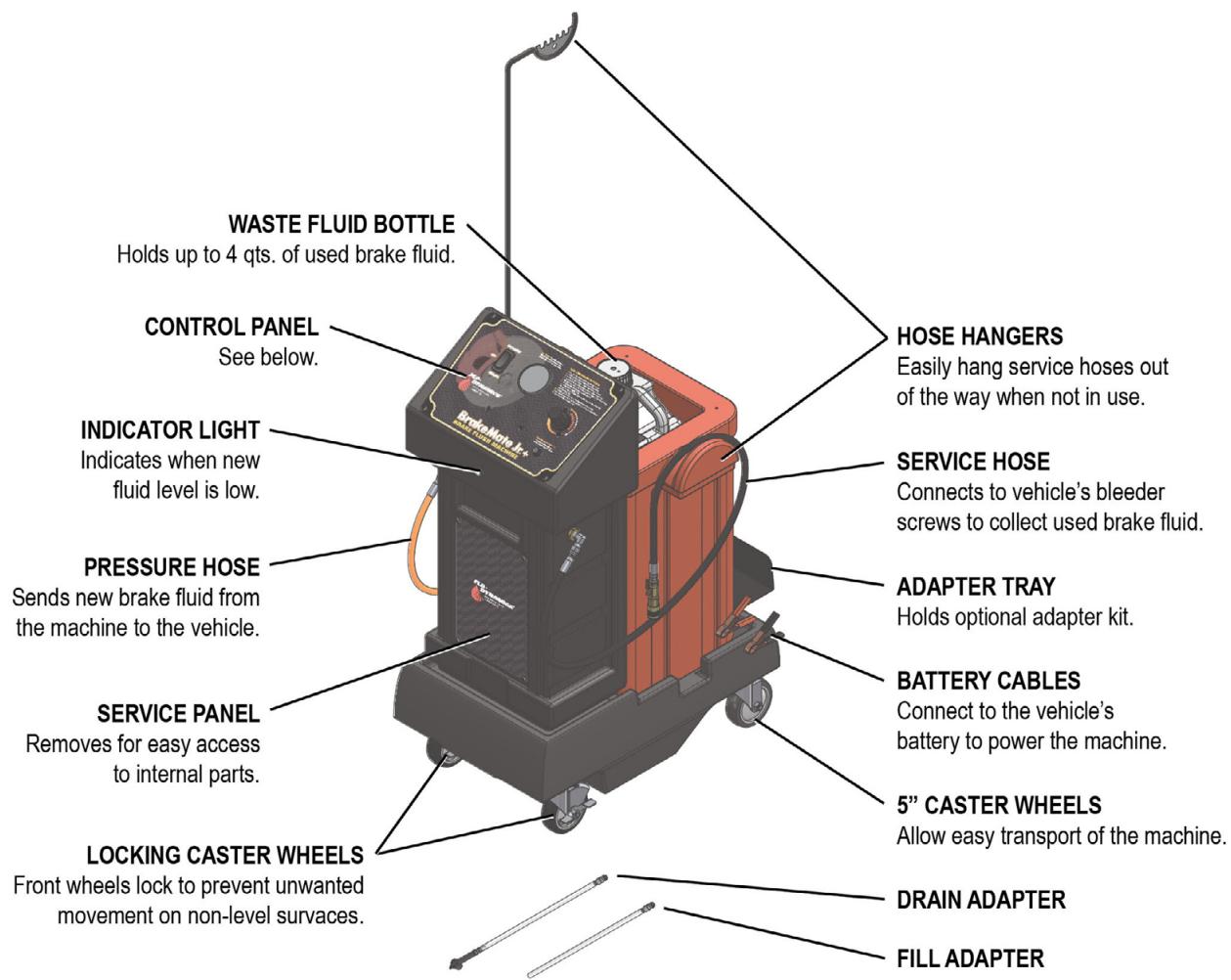
Fuse:
15 Amp

Operating Temperature:
60° to 110°F (15° to 43°C)

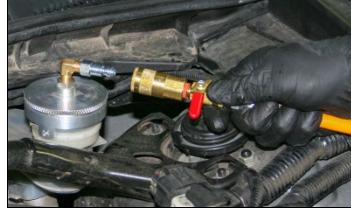
FEATURES

- Complete brake system fluid exchange
- Combo of pressure at master cylinder & vacuum at wheels
- Handles high-pressure hybrid vehicle brake systems
- Pressure regulator & gauge for proper fluid pressure setting (1-49 psi)
- Ease of "Remove" and "Top Off" of the master cylinder reservoir
- Pressure-free service hose removal
- 18' removal hose
- Removable waste fluid container
- Convenient, portable roll-around unit

MACHINE OVERVIEW

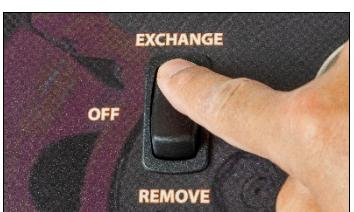


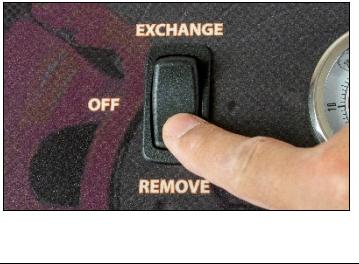
OPERATING INSTRUCTIONS

| CONNECTION | | |
|--|--|---|
| Remove master cylinder cap. Find correct master cylinder adapter from adapter kit and attach to master cylinder reservoir. Connect yellow pressure hose to master cylinder adapter. |  |  |
| Confirm bleeder screws on vehicle can be opened and are not seized up. Penetrating fluid may need to be applied. Attach brake bleed boot at the end of the fluid removal line to the bleeder screw on wheel being serviced. Support the hose using the attached hook to a convenient point on underside of vehicle to remove strain on the boot. Bleeder valves should be closed, but ready to be opened. Connect battery cables. |  |  |
| PERFORMING AN EXCHANGE | | |
| Move control panel switch to "EXCHANGE". Use the pressure regulator to increase the pressure to the desired amount. A typical brake service should not require more than 12psi (see manufacturer's recommendation). |  |  |
| Slowly open the ball valve on the yellow pressure hose while checking for leaks around the master cylinder adapter. Slightly open the bleeder screw on wheel being serviced until fluid begins to flow into removal hose. Continue until old dark brake fluid is removed. Close bleed valve. Repeat for remaining wheels, starting at the wheel farthest from the master cylinder reservoir and working progressively closer. |  |  |

| | | |
|---|--|--|
| <p>If the fluid level in the new fluid tank runs low, the machine will indicate this with a tone and a warning indicator light.</p> <p>Turn switch to "OFF" position and fill the new fluid tank.</p> <p>Continue exchange by switching machine to "EXCHANGE".</p> |   |  |
| <p>When finished, close the bleeder screw and remove the tube from the fitting. Repeat process on remaining wheels, starting at the wheel farthest from the master cylinder reservoir and working progressively closer.</p> <p>After brake flush is complete, turn the switch to "OFF".</p> |  |  |
| <p>Press and hold the PRESSURE RELEASE BUTTON to relieve pressure.</p> <p>Close the ball valve on the yellow pressure hose.</p> <p>Disconnect the yellow hose from the master cylinder adapter.</p> |   |  |

TOP OFF / REMOVE FLUID

| | | |
|--|--|---|
| <p>If required, the fluid level can be raised by inserting the open-ended adapter into the end of the yellow service fill hose in order to fill the reservoir.</p> <p>Make sure the ball valve is closed on the yellow service hose.</p> |  |  |
| <p>Turn the switch to the "EXCHANGE" position.</p> <p>Adjust the regulator pressure to 5-10 psi.</p> |  |  |

| | | |
|---|--|--|
| <p>Slowly open the valve on the yellow service hose. Fill to desired level and close valve.</p> <p>Remove pressure, then remove adapter.</p> |  |  <p>PRESSURE RELEASE BUTTON Press before removing hose from brake fluid reservoir adapter.</p> |
| <p>To remove fluid, use the same procedure as above, except use the removal hose to remove the fluid. Switch machine to "REMOVE", place open ended hose into reservoir and slowly open valve to remove fluid to desired level. Close valve and switch machine to "OFF". Remove adapter.</p> |  | |

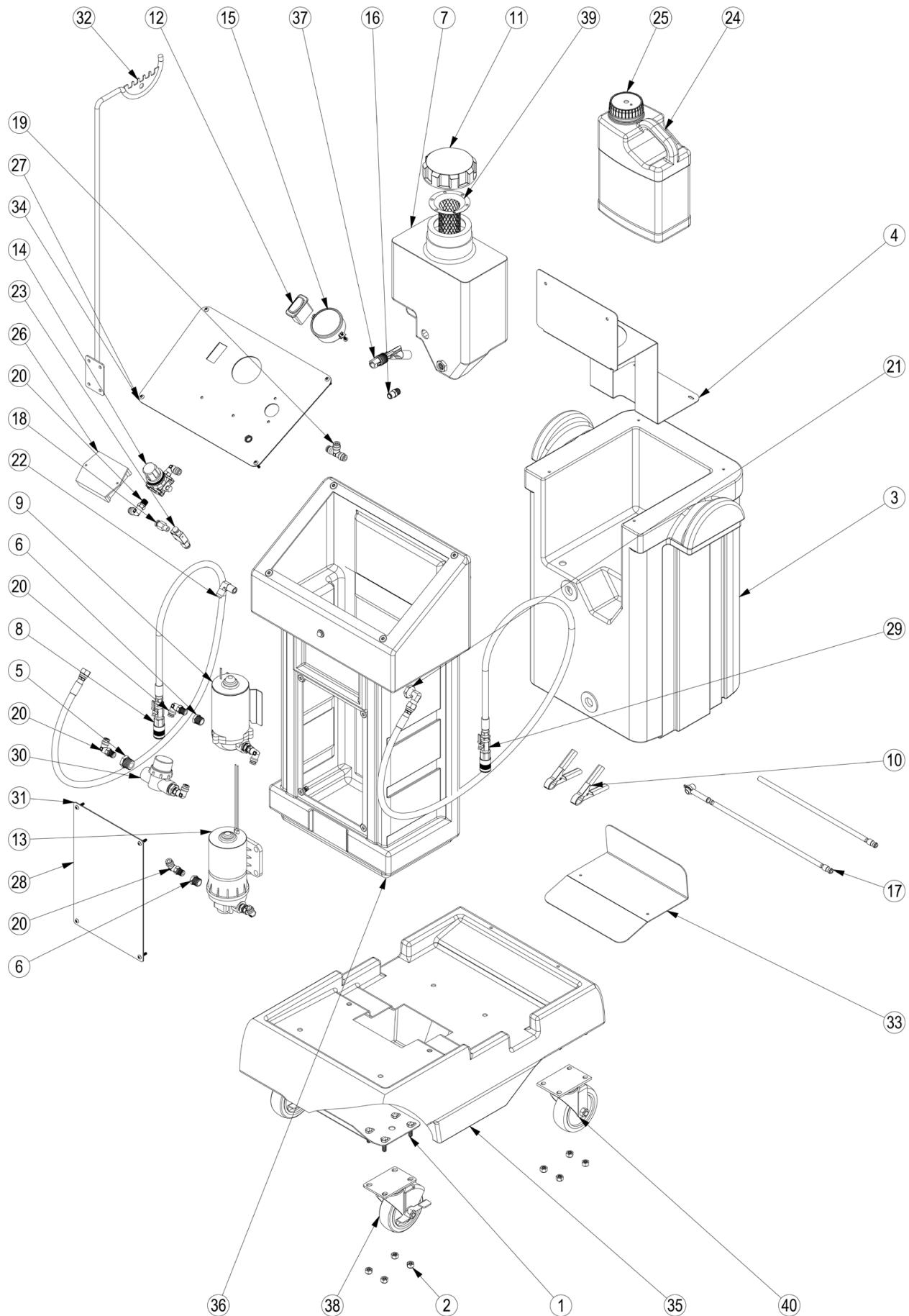
| DISCONNECT | | |
|--|--|--|
| <p>Ensure machine is switched off and pressure is removed by pressing the PRESSURE RELEASE BUTTON.</p> |  |  <p>PRESSURE RELEASE BUTTON Press before removing hose from brake fluid reservoir adapter.</p> |
| <p>Disconnect cables and hoses. Replace master cylinder cap.</p> |  |  |

REPLACEMENT PARTS

| ITEM NO. | PART NO. | DESCRIPTION | QTY. |
|----------|----------|---|------|
| 1 | 503027 | BOLT HEX HD 5, 16, 18X1 GR5 ZINC | 16 |
| 2 | 940503 | High-Strength Steel Nylon-Insert Locknut | 16 |
| 3 | 941252 | USED FLUID TANK-RED | 1 |
| 4 | 941256 | TANK BRACKET | 1 |
| 5 | 941446 | REDUCER-1,2MPT X 1,4FPT | 3 |
| 6 | 941447 | REDUCER-3,8MPT X 1,4FPT | 4 |
| 7 | 941520 | NEW FLUID TANK | 1 |
| 8 | 941540 | SERVICE HOSE - YELLOW | 1 |
| 9 | 941545 | VACUUM PUMP | 1 |
| 10 | 941546W | BATTERY CABLES | 1 |
| 11 | 942113 | TANK CAP | 1 |
| 12 | 944037W | SWITCH ONLY - CONTROL PANEL | 1 |
| 13 | 945000 | NEW FLUID PUMP | 1 |
| 14 | 945002 | PRESSURE REGULATOR | 1 |
| 15 | 945003 | GAUGE - PANEL MOUNT 2.5 0-60PSI | 1 |
| 16 | 945004 | FITTING - 5/16 PUSH EP SEALS | 3 |
| 17 | 40100143 | KIT - BRAKEMATE JR. PLUS HOSE ADAPTERS | 1 |
| 18 | 40200334 | 5/16 TUBE X 1/8 NPT | 2 |
| 19 | 40200336 | 5/16 TUBE UNION TEE | 2 |
| 20 | 40200338 | 5/16 TUBE X 1/4 NPT ELBOW | 10 |
| 21 | 40200339 | 1/4 BRASS BULKHEAD FTG | 3 |
| 22 | 40200340 | 3/8 JIC MALE X 1/4 NPT ELBOW | 2 |
| 23 | 40200343 | VALVE W/ SWITCH | 1 |
| 24 | 40200438 | 1 GAL WASTE FLUID BOTTLE | 1 |
| 25 | 40200439 | CAP FOR 40200438 WASTE BOTTLE | 1 |
| 26 | 40200445 | ELECTRONICS PACKAGE | 1 |
| 27 | 40200861 | OVERLAY CONTROL PANEL - BRAKEMATE JR PLUS | 1 |
| 28 | 40200913 | OVERLAY SERVICE PANEL - GENERIC | 1 |
| 29 | 40201396 | SERVICE HOSE - BLACK (BRAKEMATE JR+ ONLY) | 1 |
| 30 | 40201408 | T STRAINER 1/2" NPT PORTS | 1 |
| 31 | G940758 | SERVICE PANEL - METAL ONLY, BLACK | 1 |
| 32 | P941530 | SHEPHERD HOOK BLACK | 1 |
| 33 | P941538 | ADAPTER BRACKET BLACK | 1 |
| 34 | P945009 | CONTROL PANEL - METAL ONLY, BLACK | 1 |
| 35 | R940750 | CHASSIS - BLACK | 1 |
| 36 | R940751 | CONSOLE - BLACK | 1 |
| 37 | R941251 | LS-7 POLY LEVEL SWITCH | 1 |
| 38 | R942118 | CASTER 4 W/BRAKE | 2 |
| 39 | R942129 | SCREEN BASKET | 1 |
| 40 | R942137 | CASTER 4 SWIVEL | 2 |

To order replacement parts for the BrakeMate Jr+., call:

1-800-303-5874



MAINTENANCE

To keep your machine working properly:

- Keep debris out of new fluid.
- Avoid spilling fluid on the control panel.
- Periodically wipe down exterior using a soft, damp cloth.

CUSTOMER SERVICE CONTACT INFORMATION

If you are experiencing problems with this machine,
call technical support at:

1-800-303-5874

LIMITED ONE (1) YEAR WARRANTY

Flo-Dynamics warrants only to the original Purchaser that under normal use, care and service, the Equipment (except as otherwise provided herein) shall be free from defects in material and workmanship for one year from the date of original invoice. External hoses, remote control modules, adapters and all other attachments, supplies and consumables (except as otherwise provided herein) are warranted for 90 calendar days from the date of original invoice. Filter elements are not warranted. Printed circuit boards purchased from, but not installed by Seller are not warranted.

SELLER'S OBLIGATIONS UNDER THIS WARRANTY ARE LIMITED SOLELY TO THE REPAIR OR, AT SELLER'S OPTION, REPLACEMENT OF EQUIPMENT OR PARTS WHICH TO SELLER'S SATISFACTION ARE DETERMINED TO BE DEFECTIVE AND WHICH ARE NECESSARY, IN SELLER'S JUDGEMENT, TO RETURN THE EQUIPMENT TO GOOD OPERATING CONDITION. NO OTHER WARRANTIES EXPRESS OR IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, SHALL APPLY AND ALL SUCH WARRANTIES ARE HEREBY EXPRESSLY DISCLAIMED.

This warranty does not cover (and separate charges for parts, labor and related expenses shall apply to) any damage to, malfunctioning, inoperability or improper operation of the Equipment caused by, resulting from or attributable to (A) abuse, misuse or tampering; (B) alteration, modification or adjustment of the Equipment by anyone other than Seller's authorized representatives; (D) improper or negligent use, application, operation, care, cleaning, storage or handling; (E) fire, water, wind, lightning or other natural causes; (F) adverse environmental conditions, including, without limitation, excessive heat, moisture, corrosive elements, or dust or other air contaminants, radio frequency interference, electric power failure, power line voltages beyond those specified for the equipment, unusual physical, electrical or electromagnetic stress, and/or any other condition outside of Seller's environmental specifications; (G) use of the Equipment in combination or connection with other equipment, attachments, supplies or consumables not manufactured or supplied by Seller; or (H) failure to comply with any applicable federal, state or local regulation.

Repairs or replacements qualifying under this Warranty will be performed on regular business days during Seller's normal working hours within a reasonable time following Purchaser's request. **All requests for Warranty service must be made during the stated Warranty period.** This warranty is non-transferable.



BrakeMate Jr.+

Copyright 2021 Flo-Dynamics, Inc.

All rights reserved. Flo-Dynamics is a registered
brand of Norco Industries, Inc.

Printed in U.S.A.
August 2021



www.norcoind.com