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## Kit InstructionKUPDDR0100 KUPDDR0200

MSSM0957AE/9830AV
INSTRUCTIONS FOR KITS
KUPDDR0100 (50 KG)
AND
KUPDDR0200 ( 60 KG )
2-STAGE PRESS
DISCHARGE SAFETY DOOR RETROFIT
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## PREPARATIONS

## Understand and Avoid Safety Hazards

## DANGER:

## ELECTROCUTION AND ELECTRICAL BURN HAZARDS

Contact with high voltage will electrocute or burn you. Power switches on the machine and the control box do not eliminate these hazards. High voltage is present on the machine unless the main machine power disconnect is OFF.

- Do not service the machine unless qualified and authorized.
- Keep bystanders well clear of the machine.
- Lock off and tag out power at the main machine disconnect before servicing.


## DANGER:

ENTANGLE, CRUSH, AND SEVER HAZARDS
These operations require personnel to work in and around areas of the machine where there is a possibility of becoming entangled with electrical wiring, air tubing, or machine parts. Certain machine parts can move in such a way as to crush or sever limbs or cause other serious injuries. In particular, the main press bell is capable of descending even with all machine power off.

- NEVER climb on, touch, or reach into assemblies in or above the press frame unless main power has been locked OFF and tagged out at the external disconnect box, and then only for maintenance.
- ALWAYS ensure all personnel are clear of the press, all press side doors are closed, and all guards are in place prior to returning power to the machine.

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## NOTE

## READ THESE INSTRUCTIONS AND VERIFY ALL PARTS BEFORE STARTING!

## Overview

These retrofit instructions provide information for field-installing discharge safety doors on Milnor 50 KG and 60 KG 2-stage laundry presses which use MK2 or newer controls. These instructions are applicable to either type of press.

This retrofit consists of the following operations:

1) Attach the door tracks, air cylinder, and pulley mechanism to the machine frame;
2) Remove, modify, and reinstall the existing front cover plate;
3) Mount the door assembly to the door tracks;
4) Connect the $3 / 16$ " wire rope cables to the door lift brackets;
5) Mount the two (2) proximity switch brackets and switches;
6) Connect the air cylinder to the press pneumatic system;
7) Connect the proximity switches to the appropriate electrical circuits;
8) Change the system operating software by replacing one EPROM and reprogram the controller;
9) Test the system.

To accomplish this retrofit the following skills are required:

1) Welding (electric arc);
2) Basic mechanical assembly;
3) Pneumatic tubing and piping assembly;
4) Electrical/electronic wiring.

The following tools and equipment will be required:

1) Basic hand tools for mechanical assembly and electrical wiring;
2) Electric drill and bits (up to and including $1 / 2$ " diameter);
3) Electric arc welding equipment;
4) Portable grinder or disc sander;
5) $1 / 8$ " diameter plastic pneumatic tubing and fittings.

The Milnor service department estimates that this retrofit can be done by skilled personnel in eight (8) manhours (that is, two men/four hours, or four men/two hours, etc.). This estimate is based on Milnor's experience with previous retrofits of this type.

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Check the Kit Contents - First, verify that you have the correct kit for your type of press. If your press is a 50 KG (Model MP2501), the correct kit is KUPDDR0100. If your press is a 60 KG (Model MP2601 or MP2606), the correct kit is KUPDDR0200. Then, verify that your kit contains the components listed below. Contact the Milnor Parts Department in the event that any components are missing or damaged.

The following component list is for kit KUPDDR0100, for 50 KG presses. The kit for 60 KG presses, KUPDDR0200, is identical except as shown. Where a part is unique to the 50 KG or the 60 KG press, respectively, it is noted.

To simplify installation the discharge door and its associated components are supplied as follows:

1) Air cylinder/pulleys/cable/mounting plate (preassembled);
2) Door/fittings/brackets/glide strips (preassembled);
3) Door tracks and front cover plate (individual components);
4) Proximity switches, brackets, and targets (individual components);
5) Electrical (EPROM, circuit board, power supply)

For a detailed breakdown of the component parts which make up the individual kit assemblies refer to BMP970065, Press Unload Door (Option), in the Press Service Manual. A copy is included with the retrofit kit(s).

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## KIT KUPDDR0100 (50 KG)

| QTY | PART NUMBER | PART NAME/DESCRIPTION |
| :---: | :---: | :---: |
| 1 | A72CG006 | Unload Door Assembly 50 KG Press |
| 1 | 01-10429X | Nameplate - Move Press Up/Down - ISO |
| 1 | BMP970065 | Press Unload Door (Option) |
| 2 | 09RPS30ADS | Proximity Switch 30 MM No DC Shield |
| 2 | 09RPSDC005 | Connector Straight Female DC 3A/300V 5 MM |
| 1 | 96N0010H | Shuttle Valve, 1/2" 4-Way |
| 2 | KZAVNC0137 | 1/8" Air Pilot Valve Kit, 3-way NC, 120v/50/60Hz |
| 1 | KTWPSSDC24 | 24 VDC Power Supply with Leads |
| 1 | 07-30145 | Unload Door Mounting Leg 50 KG - Right |
| 1 | 07-30145A | Unload Door Mounting Leg 50 KG - Left |
| 4 | 07-20862A | Cover and Guard Bracket |
| 10 | 15N204A | 5/16" flat head screws |
| 8 | 15K039 | Hex Head Cap Screw 1/4-20UNC2AX3/4 GR5 ZN/CD |
| 8 | 15G165 | Hexnut 1/4-20UNC2B GR2 ZN |
| 8 | 15U183 | Lockwasher External Tooth $1 / 4$ " US Std ZN |
| 4 | 15P105 | Threadcutting Panhead Screw 8-32X5/8 Nickel Steel |
| 1 | 97A027T | \#27 Jobber Length Drill Bit HSS |
| 1 | 97A989L | Countersinking Drill Bit, 3/4" |
| 1 | 08BS816BT | Circuit Board Serial 8 Out - 16 In |

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## KIT KUPDDR0200 ( 60 KG )

| QTY | PART NUMBER | PART NAME/DESCRIPTION |
| :---: | :---: | :---: |
| 1 | A73CG005 | Unload Door Assembly 60 KG Press |
| 1 | 01-10429X | Nameplate - Move Press Up/Down - ISO |
| 1 | BMP970065 | Press Unload Door (Option) |
| 2 | 09RPS30ADS | Proximity Switch 30 MM No DC Shield |
| 2 | 09RPSDC005 | Connector Straight Female DC 3A/300V 5 MM |
| 1 | 96N0010H | Shuttle Valve, 1/2" 4-Way |
| 2 | KZAVNC0137 | 1/8" Air Pilot Valve Kit, 3-way NC, 120v/50/60Hz |
| 1 | KTWPSSDC24 | 24 VDC Power Supply with Leads |
| 1 | 07-20124 | Unload Door Mounting Leg 60 KG - Right |
| 1 | 07-20124A | Unload Door Mounting Leg 60 KG - Left |
| 4 | 07-20862A | Cover and Guard Bracket |
| 10 | 15N204A | 5/16" flat head screws |
| 8 | 15K039 | Hex Head Cap Screw 1/4-20UNC2AX3/4 GR5 ZN/CD |
| 8 | 15G165 | Hexnut $1 / 4-20$ NNC2B GR2 ZN |
| 8 | 15U183 | Lockwasher External Tooth $1 / 4$ " US Std ZN |
| 4 | 15P105 | Threadcutting Panhead Screw 8-32X5/8 Nickel Steel |
| 1 | 97A027T | \#27 Jobber Length Drill Bit HSS |
| 1 | 97A989L | Countersinking Drill Bit, 3/4" |
| 1 | 08BS816BT | Circuit Board Serial 8 Out - 16 In |

## NOTE

These instructions are written primarily for presses which use MK2 controllers or newer (MK3, MK4, MK5). When checking the kit contents prior to beginning the retrofit be especially careful to verify that your kit has the special software EPROM for your type of press controls. If not, or you are not sure of the software type provided in your kit(s), contact the Milnor Service Department before proceeding further.

## CAUTION

If your press uses a 24VAC control circuit, contact the Milnor Service Department for required changes.

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Inspect and Verify the Machine's Circuit Board Cage - the electrical modifications to be performed include the addition of one (1) circuit board to the machine's circuit board cage. Before beginning any electrical modifications, check your machine's circuit board cage and verify that there is at least one (1) open slot which can accommodate the added circuit board. On some machines it is possible that all slots in the circuit board cage are in use. If this is the situation for your machine, you will need to order a new circuit board cage and replace the existing cage prior to performing the electrical modifications. Contact the Milnor Service Department for the replacement part.

The replacement part number will be P/N ESCA_CC, where the blank space is the number of slots in the cage. To determine the proper part number to order, follow these simple steps:

1) Count the number of slots in your machine's existing circuit board cage;
2) Add 1 to that number;
3) Fill in the blank with the resulting number.

EXAMPLE: Your existing circuit board cage has six (6) slots and they are all in use. Following the steps given previously, the proper replacement part number to order is P/N ESCA7CC which has seven (7) slots. This new part will accommodate all six (6) existing boards plus the board added by this retrofit.

Preparations - Prior to beginning this retrofit it is necessary to perform the following operations in the sequence listed:

1) Verify that there is an open slot available in the card cage for the I/O circuit board to be added (not required for machines with MK1 controls);
2) Using manual functions, retract the sled to the rearward (home) position;
3) Using manual functions, lower the prepress tamper assembly to the full-down position;
4) Using manual functions, raise the main press bell. Position the two (2) safety stands under the lip of the main bell. See the Press Safety Manual;
5) Before removing the old version of the operating software, it is STRONGLY

RECOMMENDED that you copy ALL of the configuration data so that you will have a starting point when reprogramming the processor (see instructions below);
6) Turn off power to the machine at the press electrical panel;
7) Turn off power to the machine at the main facility disconnect and lock off and tag out;
8) Turn off the press air supply and disconnect the main air supply hose from the press, then bleed air from the press pneumatic system.

Access the Program Mode - To access the program mode, turn the program/run keyswitch to program. Press the stop/start button - this will enter configuration mode. For more information see "Programming and Configuring..." in the press controller reference manual.

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Install the Door Tracks - Locate the door tracks to the sides of the machine by aligning the top of each inside track with the top of the press frame as shown in Figures 2 and 3. Mark the sides of the press frame to provide guidelines for removing paint from the press frame in preparation for welding. Grind and/or sand the press frame in the marked areas where the tracks are to be welded. Tack weld, then final weld the tracks to the press frame. Grind and/or sand welds and touch up paint as required. Install the inner and outer door tracks per Figures 2 and 3 using the fasteners supplied with the kit.

Install the Lift Cylinder and Pulley Mechanism - Locate the lift cylinder and pulley mechanism (preassembled) as shown in Figure 1. The mounting plate's center hole lines up with the centerline of the press front cover plate's middle hole. Mark the position for the three (3) mounting plate attach holes and drill through. Drill holes through for mounting the upper support brackets, (2) places per bracket, and attach the brackets using the bolts, nuts, and washers supplied with the kit.

Remove, Modify, and Reinstall the Cover Plate - Remove the machine's existing cover plate and remove the MILNOR logo from the cover plate - the logo will not be reinstalled. Using the countersink bit provided with the retrofit kit, countersink the cover plate (8) places to accommodate the new $5 / 16$ " flathead screws supplied with the kit. Reinstall the cover plate to the machine using eight (8) flathead screws. If the heads of the screws are not flush with or slightly below the surface of the cover plate, it will be necessary to countersink the screw holes in the machine frame. Remove the cover plate and countersink the mounting holes in the machine frame (8) places as required. Reinstall the cover plate. Repeat this step as required until the cover plate fasteners are flush with or slightly below the surface of the cover plate.

Mount the Door to the Tracks - Loosen nine (9) bolts on one track assembly and remove the outer door track (it doesn't matter which one). Insert the door assembly into the track on the opposite side. Replace the outer door track previously removed and tighten all nine (9) bolts snug. Manually slide the door up and down a few times to check for binding and misalignment. Adjust as necessary.

Attach the Lift Cable to the Door - Attach the two (2) lifting cable clevises to the door lift brackets per Figure 6. Raise the door manually and insert the two (2) safety pins through the door tracks to hold the door in the open position.

Mount the Proximity Switches and Brackets - Locate the two (2) proximity switch brackets 2" (51 MM) back from the inside edge of the door track. The brackets mount on the side of the press on which the electrical panels are mounted. See Figures 4 and 5. Each bracket's center hole (for mounting the proximity switch body) should be centered to and parallel to the targets mounted on the door when the door is in the full up and full down positions. Install the proximity switches in the brackets. Install the proximity switch targets on the same side of the door as the proximity switches are mounted. Adjust the locking nuts on the threaded body of each switch so that the front face of the switch is $1 / 4 "$ ( 6.35 MM ) from its target. See Figure 5.

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Install the Air Pilot Valves - Attach the two (2) electrically-operated pilot air valves to the press main air manifold. Install the shuttle valve and attach to the pilot air valves, door cylinder, and oil collector assembly per the schematic, Figure 7.

## NOTE

The following instructions for performing the required electrical modifications are written primarily for machines which use the older MK3 and MK4 controls. Where applicable, instructions are included for modifying the newer MK5 controls. If your machine was manufactured prior to date code 97106, it will have either MK3 or MK4 controls. If your machine was manufactured after this date, it will have MK5 controls. If you are unsure about which type of controls your machine has, contact the Milnor Service Department prior to performing any electrical modifications.

Replace the Circuit Board Cage (if required)- If a new circuit board cage is required to provide an open slot for the new circuit board to be added, replace the existing cage with the replacement part obtained from Milnor (see previous instructions). Reinstall all existing circuit boards. Before proceeding further with this retrofit, inspect and verify that all circuit boards are installed correctly in the new cage. Test the machine to verify that it functions normally after the removal and replacement of the circuit board cage.

Mount the Control Board and Power Supply - Install the 08BS816BT control circuit board into an open slot in the circuit board cage in the electrical panel. Locate the KTWPSSDC24 power supply in a convenient location in the circuit board cage and mount the supply by drilling four (4) \#27 diameter holes to match the mounting holes in the power supply's case (use the P/N 97A027T drill bit supplied with the retrofit kit). Mount the power supply using four (4) 15P105 self-tapping screws.

Set the DIP Switches on the Control Board - Set DIP switches 1 and 3 to OFF. All other switches are to be set to ON .

Wire the Control Board and Power Supply - Connect the power supply and the serial data link per schematic W6PR2SBW. If your machine has MK5 controls, the serial link and power connections will be made via the motherboard.

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Connect Signal Outputs - Connect signal output wires per the referenced schematics (if applicable) and the following directions:

MK3 controls - connect signal output wires per schematic W6PR2STC;
MK4 controls - connect signal output wires per schematic W6PR3STC and as follows:

- Unload Door UP pilot valve to terminal 5MTA5-9;
- Unload Door DOWN pilot valve to terminal 5MTA5-6;
- Common to 2 F , AC Common.

MK5 controls - connect signal output wires per schematic W6PR5STC and as follows:

- Unload Door UP pilot valve to terminal 1MTA14-6;
- Unload Door DOWN pilot valve to terminal 1MTA14-16;
- Common to AC Common at Wire 6;
- AC power input (120VAC) to 1MTA14-10, Wire 7.

Connect Signal Inputs - connect signal input wires per the referenced schematics and per the following directions:

MK3 controls - connect signal input wires per schematic W6PR2SIA;
MK4 controls - connect signal input wires per schematic W6PR3SIA and as follows:

- Unload Door UP proximity switch (BLACK) to 5MTA3-10;
- Unload Door DOWN proximity switch (BLACK) to 5MTA3-9;
- Common + 12VDC/+24VDC (BROWN) to power supply positive;
- Common negative (BLUE) to 2G, DC Common.

MK5 controls - connect signal input wires per schematic W6PR5SIA and as follows:

- Unload Door UP proximity switch (BLACK) to 1MTA4-7;
- Unload Door DOWN proximity switch (BLACK) to 1MTA38-8;
- Common + 24VDC (BROWN) to terminal TBA102;
- Common negative (BLUE) to TBA7.

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Make a Backup Copy of All Configuration Data - Prior to removing and replacing the software EPROM make a backup copy of all system configuration data is you have not already done so. To do this it is necessary to turn on electric power to the machine at the main facility disconnect. Prior to operating the machine ensure that all doors are closed, all machine guards are in place, and that all personnel are well clear of the machine. When complete, turn off press power at the main facility disconnect.

Install New Software - New software is required to automatically operate the discharge door. Before installation, verify that all electrical power to the press has been locked OFF and tagged out at the main facility disconnect and that the press power has been turned off at the press main control panel. Using proper handling procedures for ESD (Electrostatic Discharge) sensitive electronic components, remove the existing EPROM from the motherboard and install the new EPROM provided with the retrofit kit. Make sure that the new EPROM is positioned correctly (observe the position of the index notch in the body of the EPROM chip) before removing the existing chip, and that all pins seat fully in their correct socket positions. BE CAREFUL NOT TO BEND THE PINS ON THE EPROM!

Test the Machine - Test the function of the discharge door by performing the following operations in the sequence listed:

1) Turn on press power at the main facility disconnect.
2) Reconnect the facility air supply hose to the machine and turn on the air supply at the facility supply valve.
3) Reprogram the press controller using the configuration data saved previously.
4) Using manual functions, raise the main press bell and remove the two (2) safety stands.
5) Remove the two (2) safety pins from the unload door tracks.
6) Using manual functions, verify that the door functions properly.
7) Return the press to normal (automatic) operation.

If any problems are encountered, contact the Milnor Service Department at (504)467-9591, Extension 75.
Press Unload Door

[^0]
Press Unload Door
MP2501, MP2601, MP2606
[1IIIIDIVi Pellerin Milnor Corporation

PULLEY AND GUIDE
RIGHT SHOWN - LEFT OPPOS
detall g
AIRCYLINDER FRONT MOUNT AND PULLEY BRACKET

DOOR OPERATING MECHANISM
Press Unload Door

DETAIL C
DOOR TRACKS - LEFT AND RIGHT

DETAIL H
DOOR PROXIMITY SWITCH AND TARGET

VIEW B
DOOR INSTALLA

UPPER DOOR PROXIMITY SWITCH

DOOR INSTALLATION

DETAIL H
DOOR LIFT BRACKET - LEFT SIDE (RIGHT SIDE OPPOSITE)

*ISZyd9M










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