DoseTech DMS Spray System

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Introduction

The DoseTech Spray System™ is a dispensing system used to apply precise amounts of pre-soak cleaners. This chemical dosing system uses an electronically controlled peristaltic pump to dispense cleaners onto surgical instruments prior to manual cleaning. The system is comprised of a main control/pump unit, peristaltic pump, spray wand applicator, detergent supply line with weight and filter, detergent discharge line, and mounting hardware.

Indication for Use

The DoseTech Spray System is designed to replace manual trigger sprayer application. An easy to use spray applicator provides fast and efficient coverage of instruments in a tub or tray. Consult your chemical supplier for guidance on the quantity of cleaning solution needed for proper instrument coverage.

Product Specifications

Dimensions	6" H x 7" W x 6-1/4" D 15.2 cm x 17.8 cm x 15.9 cm
Case Rating	IP-51 Compliant
Dosing Pump Flow Rate	250 ml/min
Power Supply / Voltage	Wall Mount Type, In: 110-240 VAC 1A 50-60 Hz Out: 24 VDC 1.67A
Chemical Compatibility—Dose Pump	Industry standard enzymatic and other detergents
Unit Weight	4.3 lbs, 1.95 kg
Spray Wand	Polypropylene/Stainless steel

Safety Symbols

Listed below are explanations of the safety symbols that appear either on the unit, in the instruction manual, or both. Please familiarize yourself with the meaning of each symbol.

GENERAL CAUTION: This symbol indicates a general safety caution.

SHOCK HAZARD: This symbol indicates that hazardous voltages are inside the enclosure.

READ MANUAL: This symbol indicates to read the manual for important instructions and procedures related to safety.

Safety Precautions

CAUTION: Wear protective clothing and eye wear whenever operating this system.

CAUTION: Wear protective clothing and eye wear when dispensing chemicals. Observe safe handling instructions (MSDS) provided on chemical container or as supplied by chemical manufacturer.

CAUTION: To avoid severe or fatal shock, physical injury, always disconnect main power when servicing the unit.

- System is for indoor use only
- Do not submerge or place in direct path of spray/moisture
- System operates on safe 24 VDC power
- Only approved, factory authorized technicians to service unit
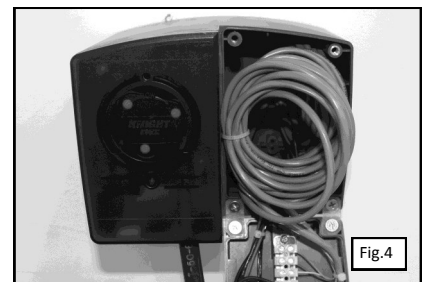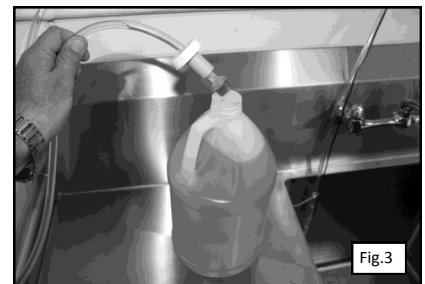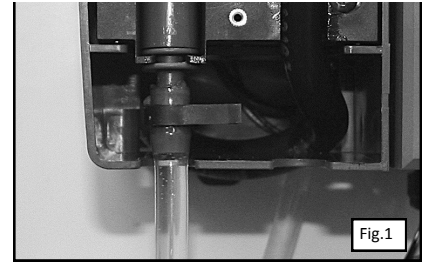
Accessory Kit Check List

Item No.	Part Number	Qty.	Description	Check Box*
1	0300121	10	Cable Ties	☐
2	0200009	4	Cable Tie Mounts	☐
3	7020157	4	Clamp, Nylon, Snap—.46 Snap	☐
4	0300519	1	Ceramic tube Weight, 3/8 Supply Tube	☐
5	2201225-EP	1	Umbrella Foot Valve	☐
6	7025841	180 inches (15 feet)	Tube, T-38 Vinyl, ¼ ID x 3/8 OD (bulk)	☐
7	7600121	3	Mounting Screws and Anchors (sets of two)	☐
8	1600266	1	Control Box Cover (Remote Wall Bracket)	☐

*If items are missing from your kit, please contact Knight customer service immediately: 1-800-854-3764. The serial number on your dispenser will be required at the time of the call.
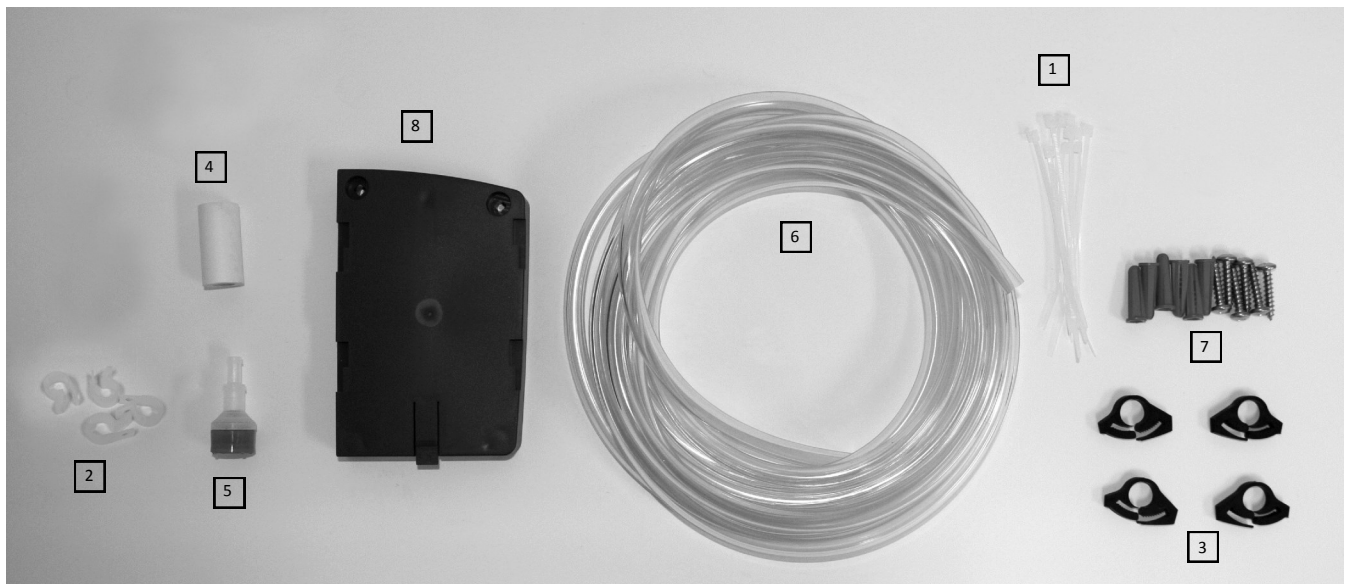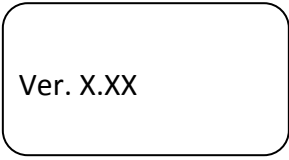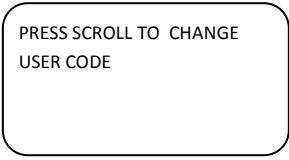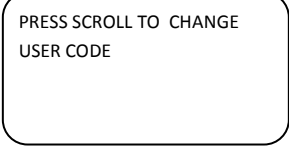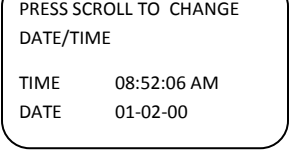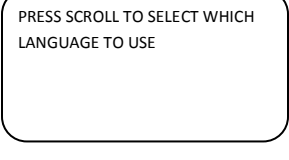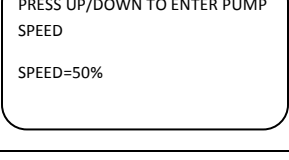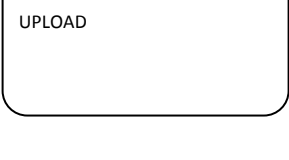
Installation Procedures

1. Tools you will need: drill and drill bit, Phillips screw driver, needle nose pliers, wire cutters, or something similar to cut tubing and cable ties.

2. To begin the installation, remove all of the accessories from the included accessory kit.

3. Remove the faceplate by removing the screw and pushing up. Attach the detergent suction tube to the pump as shown in Fig. 1. Use a black nylon clamp to secure the tube. Replace the faceplate.

4. Select a place to mount the dispenser. Ensure that it will be mounted within 6' (1.8m) of a 115 VAC outlet. It is important to keep the cord above any standing water. It is not recommended to use an extension cord. Verify the dispenser will be mounted within 4' (1.2m) above the floor, and no more than 10' (3m) total distance from the detergent. Note: It is important to mount the dispenser on a hard, flat surface, that is level. See Fig. 2

5. Cut out the template on page 14 for mounting the dispenser. Place the template against the surface that the dispenser will be mounted to. Use the horizontal lines on the template to make sure the template is level. Tape the template to the wall to secure it in place. Pierce the template with a sharp pencil to mark where the anchors and screws will go. Remove the template and pre-drill the holes for the anchors. Insert the anchors and the top two screws. Make sure to leave enough space between the anchors and the head of the tightened screws for the key holes on the dispenser to fit. Mount the dispenser by aligning the key holes with the screws and dropping the dispenser in place. Make sure not to put too much pressure on the dispenser. Secure the dispenser with the bottom two screws.

6. Route the detergent suction tube to the detergent container. Trim the detergent suction tube to the proper length after verifying that there is enough tube to reach to the bottom of the detergent container.

7. Drill or cut a 3/8" hole into the bottle cap of the detergent container and insert the detergent suction tube through the hole. Slide the ceramic tube weight and umbrella foot valve onto the detergent suction tube. See Fig 3. Place the cap on the detergent. Push the suction tube to the bottom of the container. Be sure there are no kinks in the tube or obstructions that would impede the flow of detergent to the pump.

8. Route the power supply cable to the outlet and secure with the cable ties. If the detergent suction tube and power supply are located on the same side, secure them together for a cleaner installation.

9. If mounting the remote control away from the dispenser, you will need to loosen the strain reliefs on the bottom of the dispenser, open the control cover, cut the zip tie, and pull the cables to the length needed (up to 10 feet). Do not pull on the remote control unit to pull the cables out. Roll up the left over cables and place them back into the dispenser. Close the control cover and tighten the strain reliefs. See Fig. 4

10. Measure the distance between the key holes on the remote wall bracket and pre-drill the holes for the anchors in the wall. Insert the anchors. Attach the remote wall bracket with the screws to the anchors. Mount the remote to the remote wall bracket by sliding it down onto the bracket until it locks into place. See Fig. 5

11. If you will be using the sink top mounting kit, rather than wall mounting the dispenser, attach the four hex stand off screws to the bottom of the dispenser. Attach the stand base to the hex stand off screws with the four pan head screws. See Fig. 6

Fig.1

Fig.2

Fig.3

Fig.4

Fig.5

Fig.6

Programming DoseTech Spray System

	Description of Screen	Display
1.	Power on the unit. For about 2 seconds you will see the screen to the right.	Ver. X.XX
2.	To access the basic features in the programming mode, you will need a user pass code. To enter a user pass code, use the SCROLL button to scroll between digits and the UP and DOWN buttons to cycle between 0-9. By default, the pass code is set to 0000. Press ENTER to advance to the next screen.	PRESS SCROLL TO CHANGE USER CODE
3.	To change the existing user pass code, use the SCROLL button to scroll between the digits and use the UP and DOWN buttons to cycle between 0-9. Press ENTER to advance to the next screen.	PRESS SCROLL TO CHANGE USER CODE
4.	To set the time and date, press the SCROLL button to scroll between hour/minutes/seconds/meridiem/month/date/year, and the UP and DOWN buttons to cycle through the digits. Note: When entering the time, you must enter it in a 12 hour time format.	PRESS SCROLL TO CHANGE DATE/TIME TIME 08:52:06 AM DATE 01-02-00
5.	To change the language, use the SCROLL button to toggle between languages. Press ENTER to advance to the next screen.	PRESS SCROLL TO SELECT WHICH LANGUAGE TO USE
6.	To increase/decrease spray volumes, press the UP/DOWN arrows to achieve the spray pattern and coverage volume desired. Save this setting by pressing and holding the enter key and exiting the program screen. See page 7 for adjusting spray volumes and patterns.	PRESS UP/DOWN TO ENTER PUMP SPEED SPEED=50%
7.	To upload a customized graphic which will be displayed when the dispenser has been in idle, insert USB stick and press UP to upload. Once upload is complete the screen will display "Done". Note: Graphic needs to be 128 x 64 pixels in size, black and white, in a .bmp format, and saved with the filename: image.bmp.	PRESS UP TO START GRAPHICS UPLOAD

Adjust Spray Volumes and Patterns

	Description of Screen		Display
1.		From the run screen, press start, then open the flow of the detergent by pressing the applicator lever.	17:05:56AM 08/15/13 LAST DOSE VOLUME 000 LEVELS A&B 025/050
2.		Rotate the nozzle tip right or left until the desired spray pattern is achieved.	*DOSETECH SPRAY SYSTEM*

Operating DoseTech Spray System

	Description of Screen	Display
1.	Power on the unit. For about 2 seconds you will see the screen to the right.	Ver. X.XX
2.	Press start to begin spraying cleaning solution over the instruments. Hold the spray nozzle 3"-4" above the instruments and coating evenly over all surfaces. NOTE: Spraying remains active and will revert to the run screen after the dispenser has been idle for 60 seconds, press Start to reactivate.	17:05:56AM 08/15/13 KNIGHT

Troubleshooting

Symptom	Solutions/Cause
Can't access system menus	• Reboot the system • User interface switch inoperable • Incorrect pass code—contact Ruhof for temporary pass code
Pump tube broken or worn	• Replace with factory tube only
Spray wand will not spray	• Out of detergent • Suction tube out of detergent solution • Spray nozzle closed • Blockage in suction hose
Pump will not activate	• Control board failure • Pressure switch failure

Squeeze Tube Replacement
Removal and Installation of Front Faceplate

⚠ Removal or installation of the pump faceplate for maintenance purposes should ONLY be performed by qualified and trained personnel.

⚡ The facility operators of the system should NEVER attempt removal or installation of the pump faceplate and should be made aware of this by the Responsible Body

⚡ Access to internal parts are for Responsible Body (i.e. service personnel).

REMOVAL

IMPORTANT: Unplug the unit before removing the faceplate. To remove the faceplate, remove the screw in the center, then slide the faceplate up to pull it away from the pump assembly.

INSTALLATION

To install the faceplate, slide the faceplate on the pump assembly and tighten the screw in the center.
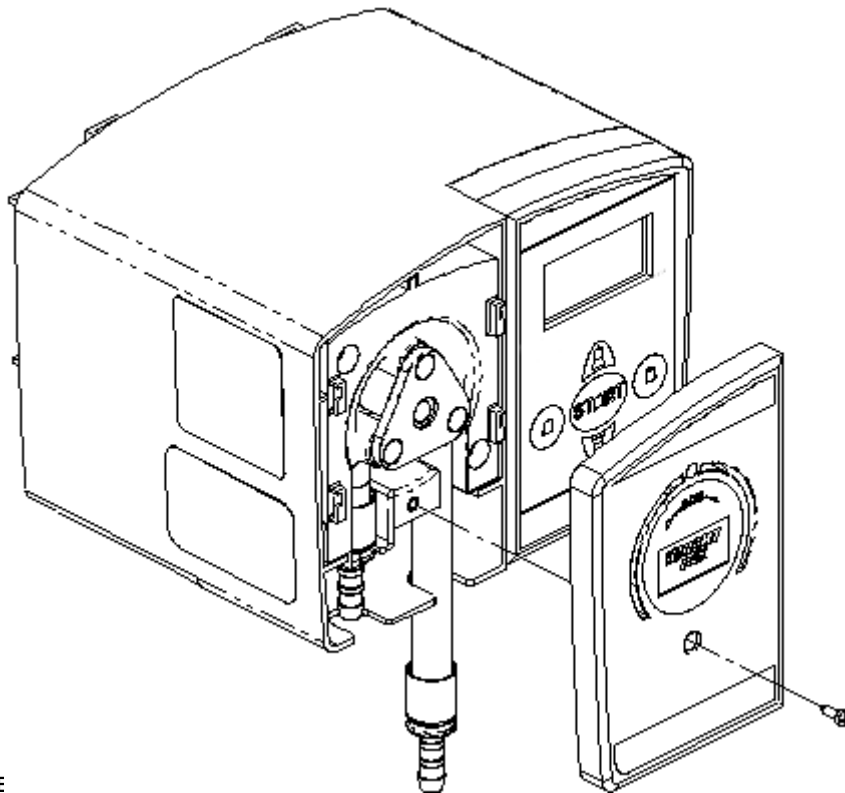
REPLACING THE SQUEE

1. Purge any chemicals from the suction and discharge tubes.
2. Remove the faceplate of the pump per the steps shown above.
3. Disconnect the suction and discharge tubes from pump squeeze tube.
4. Pull the old squeeze tube out of the roller block and remove the barb fittings on each end.
5. Insert the barb fittings into the new squeeze tube and install the new squeeze tube into the roller block.
6. Apply a generous amount of silicone tube lube to the middle third of the tube where the rollers contact it.
7. Re-connect the suction and discharge tubes to the barbs on the new squeeze tube.
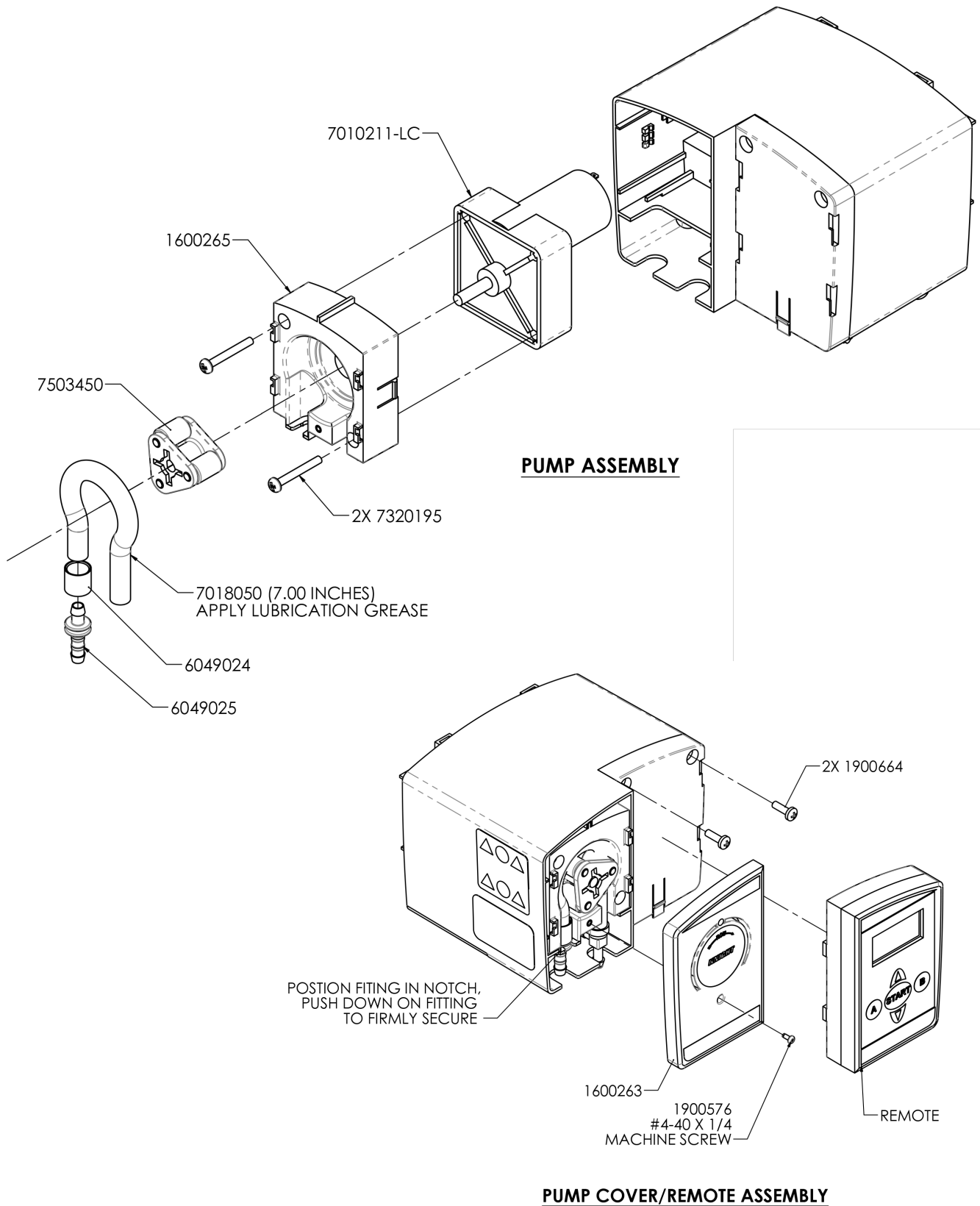
Decontamination Procedure for DoseTech Spray System

Use a clean damp cloth to remove contaminants from user interface panel, flexible hose, and spraying wand. Follow with a wipe down using a hard surface cleaner/disinfectant.
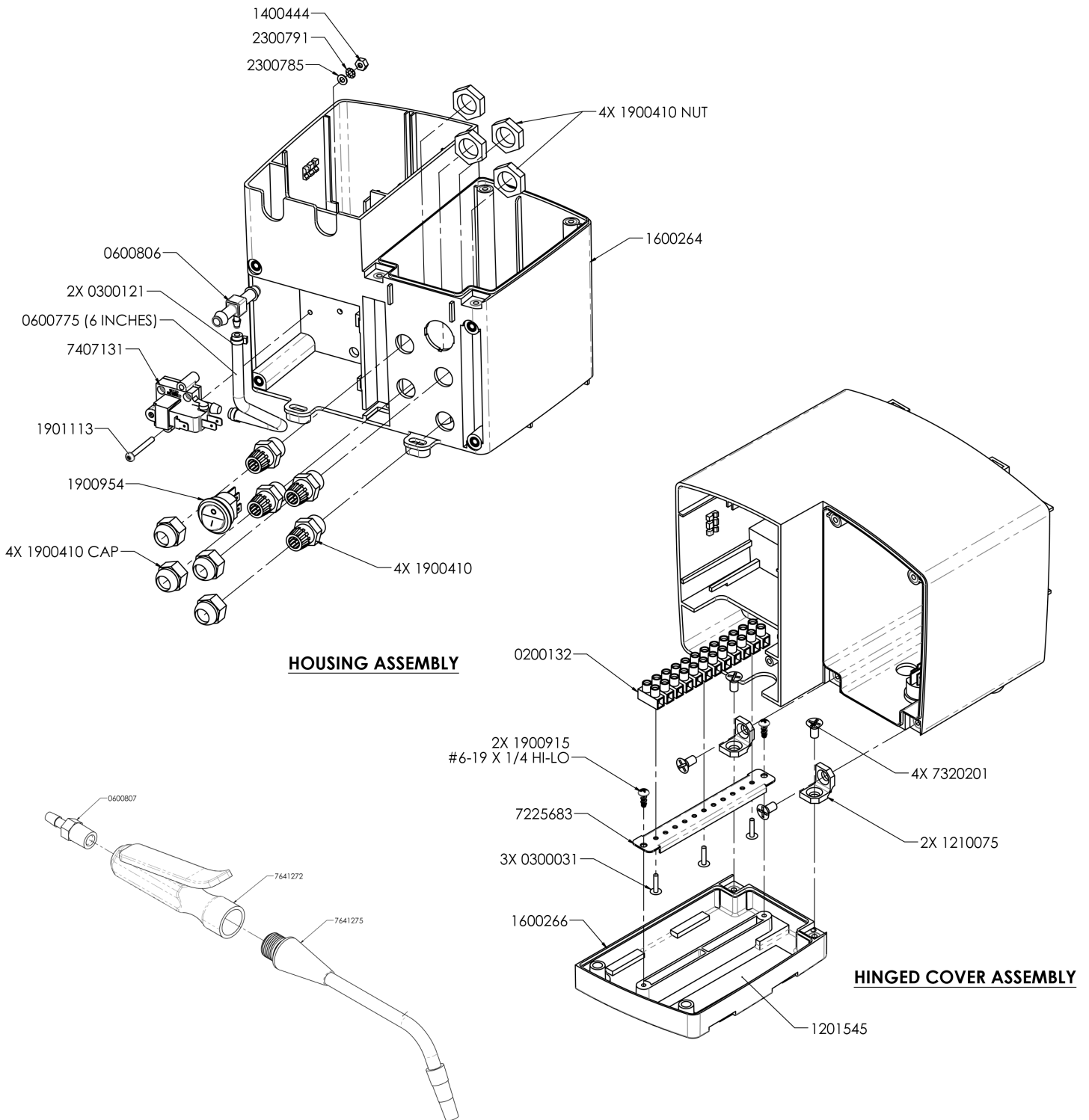
DoseTech Spray System Replacement Parts

Item No.	Part No.	Qty.	Description
1	7010211-LC	1	Gear Motor w Cap, 100 RPM
2	1600265	1	Body, Pump, 500 Series
3	7320195	2	Phillips Pan Head #10 Screw, Stainless Steel
4	7503450	1	3-Lobe Roller Assembly, Yellow Rollers
5	7018050	1	T-50E, Squeeze Tube, Elastic, 1ft.
6	6049024	1	Retaining Ring for Pump Tube Barb
7	6049025	1	Barb Fitting
8	0600743	2	1/8 MNPT X 1/4 Barb Elbow Fitting
9	1900604	2	Phillips Pan Head #6 Screw, Stainless Steel
10	1900460	2	Phillips Pan Head #6 Screw, Hi-Low, Stainless Steel
11	7225689	1	Bracket
12	7020157	1	Clamp, Nylon, Snap, .406
13	1900664	2	Phillips Pan Head #10 Screw, Stainless Steel
14	1600263	1	Pump Shield (Faceplate)
15	1900576	1	Phillips Pan Head #4 Screw, Stainless Steel
16	1600266	1	Control Box Cover (Remote Wall Bracket)
17	7140817-RH	1	Circuit Board Assembly
18	2000519	1	Power Supply, 40W, 24VDC, 1.67A, Local Country Power Supply Adapters
19	6049024	1	Retaining Ring, Barb (Pump Tube Fitting)
20	6049025	1	Barb Fitting (Pump Tube Sleeve)
21	7020152	1	Clamp, Nylon, Snap, .406”
22	7025841	1	Tube, T-38 Vinyl, 1/4” I.D. x 3/8” O.D., 18” (15ft.)
23	2201225-EP	1	Umbrella Foot Valve
24	0300519	1	Ceramic Tube Weight for 3/8” Supply Tube
25	0300121	10	Cable Ties, 3-1/2”
26	0200009	4	Cable Tie Mount
27	1201508-RH	1	Label with Window
28	7641276	1	Spray Wand Assembly
29	7407131	1	Pressure Switch
30	1000954	1	Power Switch

DoseTech Spray System Parts Diagram

7010211-LC

1600265

7503450

2X 7320195

PUMP ASSEMBLY

7018050 (7.00 INCHES)
APPLY LUBRICATION GREASE

6049024

6049025

2X 1900664

POSTION FITING IN NOTCH,
PUSH DOWN ON FITTING
TO FIRMLY SECURE

1600263

1900576
#4-40 X 1/4
MACHINE SCREW

REMOTE

PUMP COVER/REMOTE ASSEMBLY

DoseTech Spray System Parts Diagram

1400444
2300791
2300785

4X 1900410 NUT

1600264

0600806
2X 0300121
0600775 (6 INCHES)
7407131
1901113
1900954
4X 1900410 CAP
4X 1900410

HOUSING ASSEMBLY

0200132

2X 1900915
#6-19 X 1/4 HI-LO

7225683

3X 0300031

1600266

0600807
7641272
7641275

4X 7320201

2X 1210075

HINGED COVER ASSEMBLY

1201545

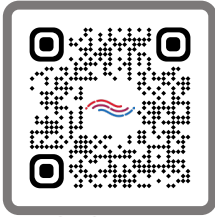## DoseTech Spray System Wiring Diagram
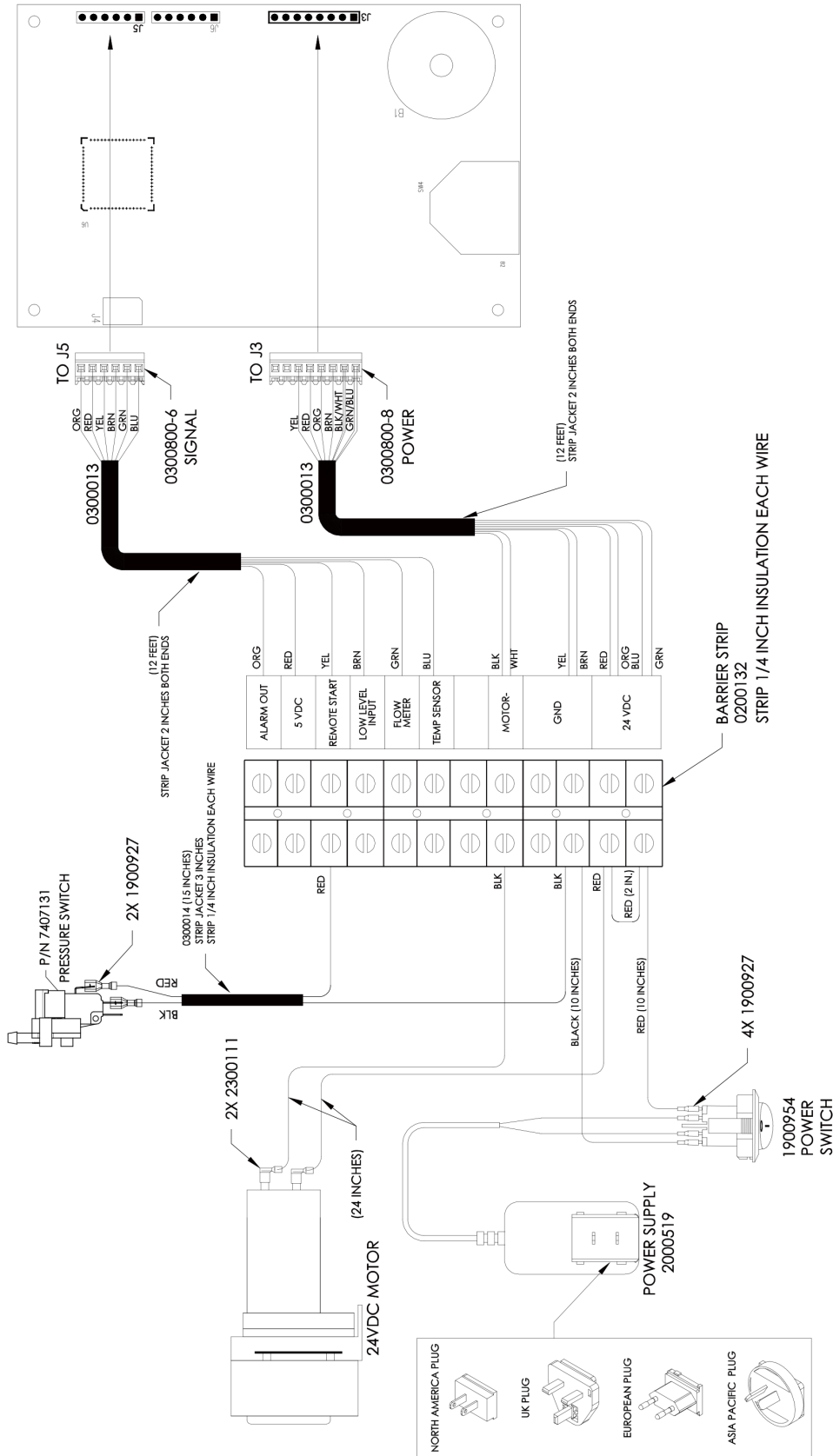
Wall Mounting Template

Notes

Notes

WARRANTY

For complete product terms and conditions scan the QR code below or enter the following URL into your browser: http://cfstech.info/t-and-c

SCAN

DISCLAIMER

Knight LLC does not accept responsibility for the mishandling, misuse, or non-performance of the described items when used for purposes other than those specified in the instructions. For hazardous materials information consult the label, MSDS, or Knight LLC. Knigh products are not for use in potentially explosive environments. Any use of of our equipment in such an environment is at the risk of the user. Knight does not accept any liability in such circumstances.

FOOTNOTE

The information and specifications included in this publication were in effect at the time of approval for publishing. Knight LLC reserves the right to discontinue or change specifications or design at any time without notice and without incurring any obligation whatsoever.

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