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patients for life.®

SERVICE MANUAL

RT-5100

AirDrive Trolley™






EC	REP	Advena Limited Tower Business Centre, 2nd Flr Tower Street, Swatar, BKR 4013 Malta	 Made in the USA by Qfix 440 Church Rd, Avondale, Pennsylvania, USA +1 484-720-6053 www.Qfix.com
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Vibra-Tite is a trademark of ND Industries, Inc.

GENERAL PRECAUTIONS

WARNING STATEMENTS

 **! WARNING ! RECOMMENDED MAINTENANCE AND SERVICE, AS WELL AS USE OF ONLY QFIX-PROVIDED ACCESSORIES, COMPONENTS, AND REPLACEMENT PARTS, ARE NECESSARY TO ENSURE THE SAFETY, PERFORMANCE, AND MRI COMPATIBILITY OF THE PRODUCT(S), AS WELL AS TO MAINTAIN APPLICABLE WARRANTIES.**

 **! WARNING ! ALL MAINTENANCE AND SERVICE PERFORMED ON THE AIRDRIVE™ SYSTEM, AIRSHUTTLE™ DEVICES, AND ALL ACCESSORIES SHOULD BE CONDUCTED OUTSIDE MRI ENVIRONMENTS.**

! NOTE ! Refer to the Product Guide and User Manual for the AirDrive Trolley (P/N 2005112) for operating instructions, product features, specifications, warnings, cautions, and other general precautions related to the use of the AirDrive System.

WARNING LABELS & DESCRIPTIONS

Refer to Qfix.com for a listing of symbols and their definitions.

PURPOSE

This manual is intended for trained service personnel to service the AirDrive Trolley (RT-5100).

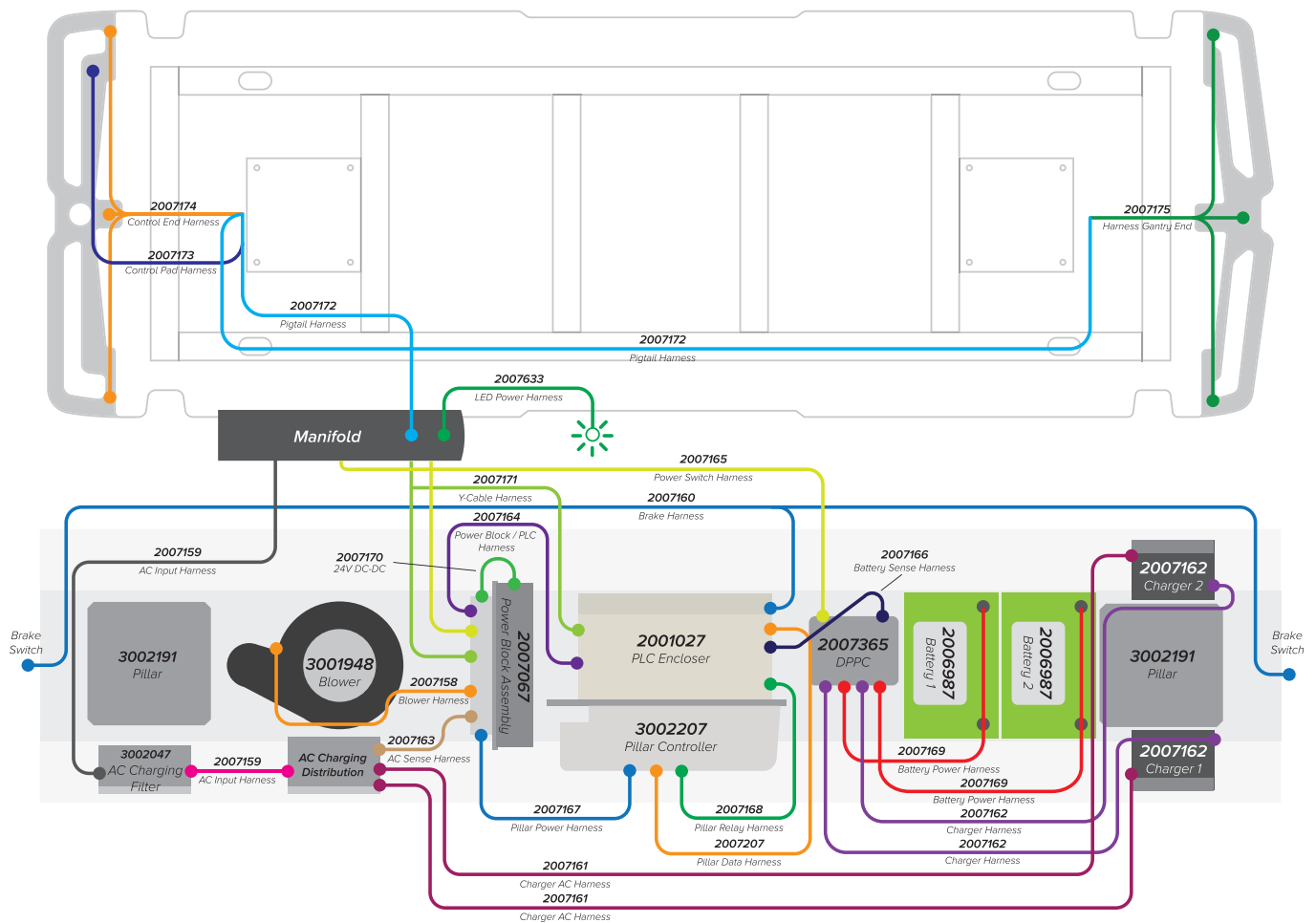
SERVICE TOOLS

- ¼" [6.5 mm] x 10" [254 mm] Blade Screwdriver
- ⅜" [5 mm] x 7" [180 mm] Blade Screwdriver
- ⅛" [3 mm] x 4"–5" [100–125 mm] Blade Screwdriver
- No. 2 [PH2] x 6" [150 mm] Phillips Screw Driver
- Metric Hex Keys 2 mm–8 mm
- SAE Key Keys ⅛"–⅜"
- ⅜" Combination Wrench
- ⅝" Combination Wrench
- ½" Combination Wrench
- 8 mm Combination Wrench
- 10 mm Combination Wrench
- 17 mm Combination Wrench
- ¼" [6.3 mm] Drive Ratchet
- ⅜" [9.52 mm] Drive Ratchet
- ⅝" x ¼" Drive Deep Socket
- 10 mm x ¼" Drive Deep Socket
- T27 x ¼" Drive Tamper Proof Socket
- ⅝" x ⅜" Drive Standard Socket
- ⅜" x ⅜" Drive Standard Socket
- ⅝" x ⅜" Drive Standard Socket
- 13 mm x ⅜" Drive Standard Socket
- 17 mm x ⅜" Drive Standard Socket
- ⅜" Drive x ¼" Hex Shank Drive Bit
- ⅜" Drive x 6" [150 mm] Long Extension
- 18" [450 mm] Trigger-Active Bar Clamp
- 1 ½" [38 mm] Ratcheting Hand Clamp
- 2 x .125" Diameter (3.175 mm–3.2 mm) Gauge Pins
- Scissors

SERVICE TOOLS

- Flashlight
- Vibra-Tite™ VC-3 Threadmate
- Cordless/Corded Drill $\frac{3}{8}$ " [10 mm] Chuck Capacity Minimum
- Cordless Impact Wrench $\frac{1}{4}$ " [6.4 mm] Hex Bit Drive
- No. 2 [PH2] x $\frac{1}{4}$ " Hex Drive Bit
- Utility Knife
- Bent Nose Pliers 4"–6" [100–150 mm] Overall Length
- Long Nose Pliers 4"–6" [100–150 mm] Overall Length
- Wire Cutters 4"–6" [100–150 mm] Overall Length
- Wire Strippers #10–22 AWG Wire
- Wire Crimping Tool #10–22 AWG Wire Connectors
- Electrical Tape
- Multi-Meter Capable of AC Voltage ≥ 250 Volts, DC Voltage ≥ 24 Volts, Resistance

WIRING DIAGRAM



TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	TEST	POSSIBLE SOLUTION
No power to trolley.	E-stop pressed.	With power switch on, green power light is lit on trolley base.	Check and reset both control end and gantry end E-stop buttons.
	Spiral cable from trolley top to trolley base loose or disconnected.	Inspect connection to trolley manifold.	Align connector and secure by rotating locking ring on connector end.
	Blown Fuse.	With power switch on, no green power light on trolley base and no lights on control panel.	Check fuses in charging outlet on trolley base. Replace if needed.
	Batteries Dead.	With power switch on, no green power light on trolley base and no lights on control panel.	Plug trolley in to charge and check control panel for charging indication.
			If no control panel charging indication, check to ensure that the wall outlet supplying power is functioning properly.
		Remove screws and raise trolley cover, plug trolley in to charge, and check for voltage at AC Charging distribution.	If AC voltage is present, check for power light on charger to verify power is flowing to charger. If no light, check that AC Charger Harness 2007161 is fully plugged into the charger.
			If AC voltage is present, check for power light on charger to verify power is flowing to charger. If light is on, check fuse in Battery Charger Harness 2007162.
			If AC voltage is present, check for power light on charger to verify power is flowing to charger. If light is on, check for increasing voltage across battery terminals and look for blinking green light on battery.
	Bad Battery.		
	Faulty DPPC.		If AC voltage is present, and voltage is not increasing across battery terminals, possible DPPC malfunction. Unplug trolley from charging. Remove battery charger and battery connectors from DPPC Housing and reconnect.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	TEST	POSSIBLE SOLUTION
Batteries not charging.	Damaged or faulty charging cable.	Inspect cable for damage and continuity.	Using a meter, check continuity of the connection through the power cord.
	No power at outlet supplying the power for charging.	Check outlet for operation.	Move to another outlet for charging or have outlet repaired.
	Loose Charging Cable to charger.	Remove screws and raise trolley cover, plug trolley in to charge, & check for voltage at AC Charging distribution.	If power exists, check for power light on charger to verify power is flowing to charger. If no light check AC Charger Harness 2007161 is fully plug into the charger.
	Blown Fuse.		If power exists, check for power light on charger to verify power is flowing to charger. Light exists, check fuse in Battery charger harness 2007162.
	Faulty Battery.		If power exists, check for power light on charger to verify power is flowing to charger. Light exists, check for voltage increase across battery terminals and look for blinking green light on battery.
	Faulty DPPC.		If power exists, and no voltage increase across battery terminals. Possible DPPC not functioning. Unplug trolley from charging. Remove battery charger and battery connectors from DPPC Housing and reconnect. If still not charging, contact Qfix service for assistance.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	TEST	POSSIBLE SOLUTION
Blower will not turn on.	Brakes not engaged.	Cycle Brake pedal in and out of brake lock.	Fully engage pedal in brake position.
	Blown fuse.	Remove screws and raise trolley cover, turn trolley off, remove fuse on power block, and check for failure.	Replace fuse if blown.
	Brake switch malfunction.	Remove screws and raise trolley cover, turn trolley on, actuate brake pedal while inspecting brake switch engagement with brake mechanism. Perform at both control end and gantry end.	Brake switch arm is bent or not making contact with brake mechanism. Gently bend switch arm to make contact.
Blower will not turn off.	Damaged blower button.	Check all buttons for tactile feel.	Replace blower button if damaged.
		Actuate E-Stop and reset. Once power is restored, test blower buttons.	If blower will not turn on after reset, blower button may be damaged.
	Damaged or malfunctioning spiral cable connection.	Inspect spiral cable for damage or poor connection to manifold.	Turn off power, remove and reattach spiral cable to manifold. Ensure that locking ring is engaged. Turn power back on.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	TEST	POSSIBLE SOLUTION
Brakes not holding.	Broken or loose brake linkage.	Inspect linkage connection at each caster.	Tighten bolts and/or replace broken linkage.
	Brake tension at wheels needs adjustment or is not working.	With brake pedal engaged, raise end of trolley to allow wheels to freely spin. Determine if wheels have resistance to rotation.	If wheels spin with brake engaged, brake tension needs adjusting.
		After adjustment, wheels still spin with brake engaged.	Replace caster.
Steer lock not engaging.	Broken or loose brake linkage.	Inspect linkage connection at each caster	Tighten bolts or replace broken linkage.
		After tightening bolts or linkage replacement, steer lock still not functioning.	Replace caster.
Trolley not rolling smoothly.	Damaged caster tread.	Inspect rubber tread on caster for damage (tears, flat sections, etc.)	Replace caster if damaged. Inspect floor in where trolley is used for damage and sharp edges.
Siderail not closing or latching.	Debris or loose components at pivot and latch mechanisms.	Inspect siderail pivot and mechanisms for operation.	Clear debris, check for damage. Contact Qfix service if parts need to be replaced.
	Nonfunctioning or disconnected gas strut.	Raise and lower side rail and inspect gas strut operation. Inspect for leaks.	Replace gas strut if leaking or poor function.
	Sticking, loose or damaged siderail latch.	Inspect remote release and determine whether it is getting stuck, holding latch open.	Reset remote release and clear latch sticking.
		Remove latch cover, inspect remote release, and inspect whether latch is loose.	Reset remote release, and tighten latch if loose.
Siderail not unlatching.	Resistance to moving siderail.	Push in on side rail and actuate release handle to lower.	Clear debris and check for damage at hinges. Contact Qfix service if parts need to be replaced.
	Broken or disconnected release handle.	Depress and release siderail handle to actuate release mechanism. Inspect whether handle properly depresses and returns when released.	Broken release handle or internal connection. Contact Qfix service for further instructions.
	Sticking, loose or damaged siderail latch.	Inspect remote release, and pull to release latch	Reset remote release and clear latch sticking.
		Remove latch cover, inspect remote release, and inspect whether latch is loose.	Reset remote release and tighten latch if loose.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	TEST	POSSIBLE SOLUTION
Siderail falling when released.	Nonfunctioning or disconnected gas strut.	Raise and lower side rail, and inspect gas strut operation. Inspect for leaks.	Replace gas strut if leaking or poor function.
Trolley top will not raise or lower.	Loose or disconnected spiral cable.	Inspect spiral cable for damage or connection to manifold.	Remove and reattach spiral cable to manifold. Ensure that locking ring is engaged.
	Damaged control panel.	Inspect to see if blue led is illuminated without button press, or doesn't illuminate when a button is pressed.	Possible damage to control panel. Inspect for tactile feel of buttons. Replace control panel if damaged.
	Battery level too low.	inspect control panel for blinking charging indicator and low battery level alarm.	Plug trolley in to charge, and check control panel for charging indication.
	Pillars out of sync and require calibration.	Perfrom pillar calibration .	Perform calibration by pressing the Up, Down, and 1 buttons at the same time. Wait for beeping tone from base of trolley, then lower completely to the bottom.

For technical support, contact Qfix at 484-720-6053 or techsupport@qfix.com.



440 Church Road
Avondale, PA 19311 USA
www.Qfix.com

☎ +1 484.720.6053 / 800.526.5247

🖨 +1 610.268.0588 / 800.831.8174

✉ sales@Qfix.com

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