

# Movotec<sup>®</sup> Refill Instructions

## (For Crank and Motorized Lift Systems)

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### 1.0 Safety Instructions

This document contains safety and user service instructions for refilling a Movotec<sup>®</sup> Crank and/or Motorized Lift System. Suspa<sup>®</sup> Incorporated is not responsible for any alteration or deviation from these instructions resulting in property damage, personal injury or death.



**FAILURE TO FOLLOW THE INSTRUCTIONS IN THIS DOCUMENT  
COULD RESULT IN FIRE, PROPERTY DAMAGE, ELECTRIC SHOCK,  
PERSONAL INJURY OR DEATH.**

The instructions in this document are intended to be used in conjunction with the Movotec<sup>®</sup> Refill Kit. The Movotec<sup>®</sup> NT15 hydraulic fluid contained in this kit is specially formulated for the optimal performance. **DO NOT, FOR ANY REASON, USE ANY FLUID OTHER THAN MOVOTEC<sup>®</sup> NT15 HYDRAULIC FLUID WHEN REFILLING A MOVOTEC<sup>®</sup> LIFT SYSTEM.**

**READ ALL INSTRUCTIONS BEFORE ATTEMPTING TO REFILL A MOVOTEC<sup>®</sup> LIFT SYSTEM.**

### 2.0 Movotec<sup>®</sup> Refill Kit Contents



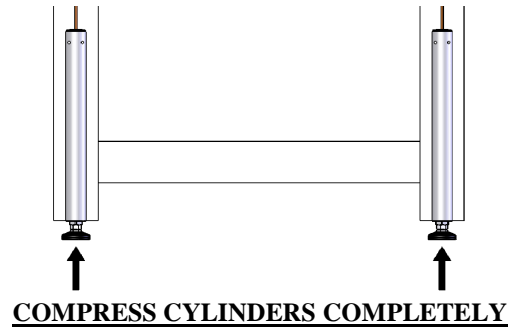
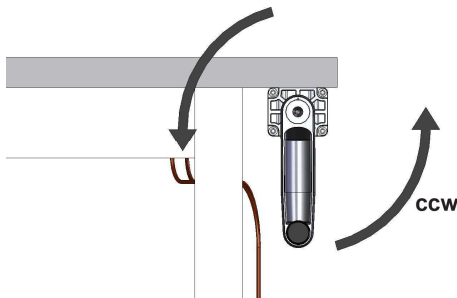
- Movotec<sup>®</sup> Refill Instructions
- Movotec<sup>®</sup> NT15 Hydraulic Fluid MSDS
- (0.5) Liters (16.9 oz.) of Movotec<sup>®</sup> NT15 Hydraulic Fluid
- Filler Bottle
- Filler Bottle Cap
- Filler Bottle Needle
- (10) Meters (32.8 ft.) of Movotec<sup>®</sup> Flexible Hydraulic Tubing
- (12) Ferrules
- (12) Compression Nuts

### 3.0 System Preparation

Depending upon whether the Movotec® Lift System is crank driven or motorized, the system preparation instructions will vary. For refilling a crank driven system, refer to section 3.1 **Crank Driven System Preparation**. For refilling a motorized system, refer to the section 3.2 **Motorized System Preparation**.

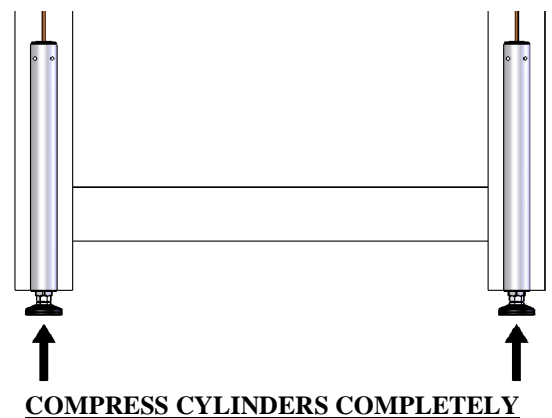
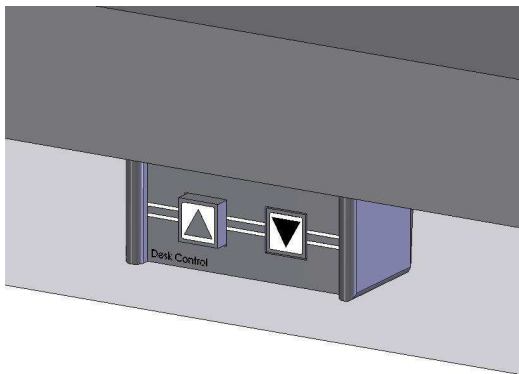
#### 3.1 Crank Driven System Preparation

Lower the system by rotating crank handle counter-clockwise. Continue rotating crank until all lift cylinders have reached their fully retracted position.

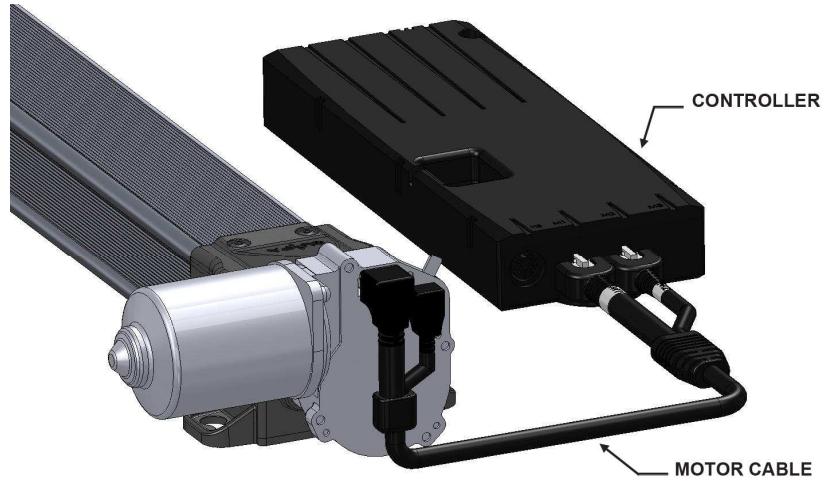


#### 3.2 Motorized System Preparation

Lower the system by holding the “down” arrow button on the switch. Continue holding the “down” button until all lift cylinders have reached their fully retracted position. Remove finger from the switch. Then, press and hold “down” arrow button again. After approximately 5 seconds the system will begin to retract until the “zero” position is reached. The system is now fully retracted.

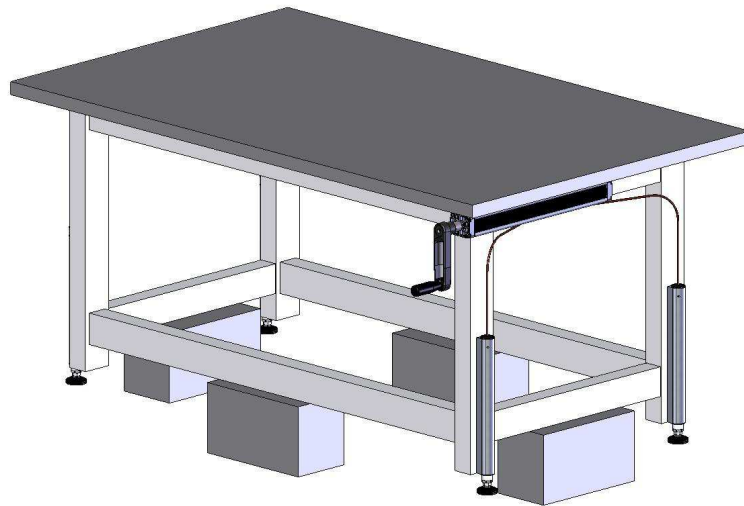


Once the system has reached the “zero” position, unplug power cord from the power outlet. Then, disconnect motor cable from controller (keep cables plugged in to back of motor drive).

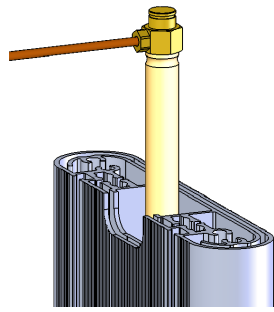


### 3.3 Cylinder Preparation

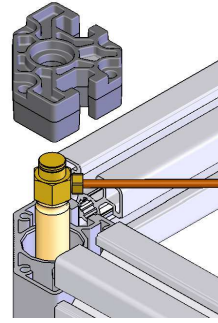
To properly refill a cylinder, the load must be removed from all cylinders and/or the workstation. For Movotec® “Bolt-On” lift systems, this can be achieved by lifting the entire workstation off of the floor with a lift truck or pallet jack. Blocks can be used to stabilize the workstation during the refill procedure.



For Movotec® ATU and Corner Leg systems, lift cylinder(s) that are to be refilled must be removed from their corresponding support leg. Movotec® ATU lift systems will require external retaining ring pliers to remove the 13mm retaining ring from the top of the lift cylinder. For Movotec® Corner Leg lift systems, a T25 torx driver will be required to remove (4) torx screws at the top of the corner leg support housing. Additionally, external retaining ring pliers will be required to remove a 13mm retaining ring and upper cap from the top of the lift cylinder.



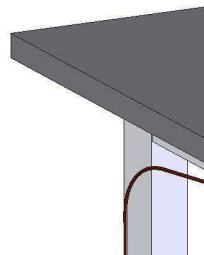
**ATU Cylinder Removal**



**Corner Leg Cylinder Removal**

**3.4 Pump Preparation**

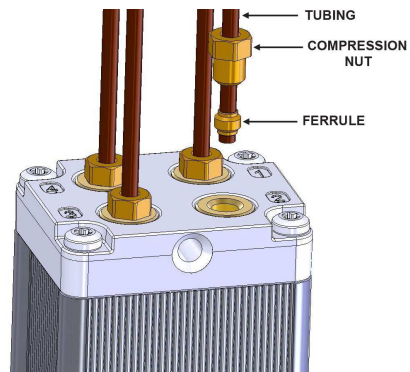
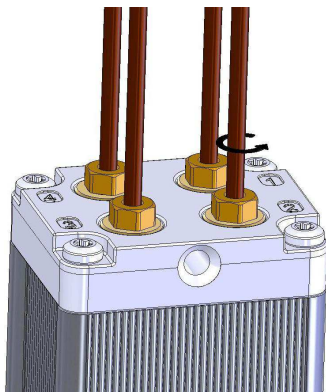
Detach pump from work surface. Orient and secure the pump in an upright position to prevent fluid loss during the refill procedure. **Be careful not to stretch, kink, or damage the hydraulic tubing and connections.**



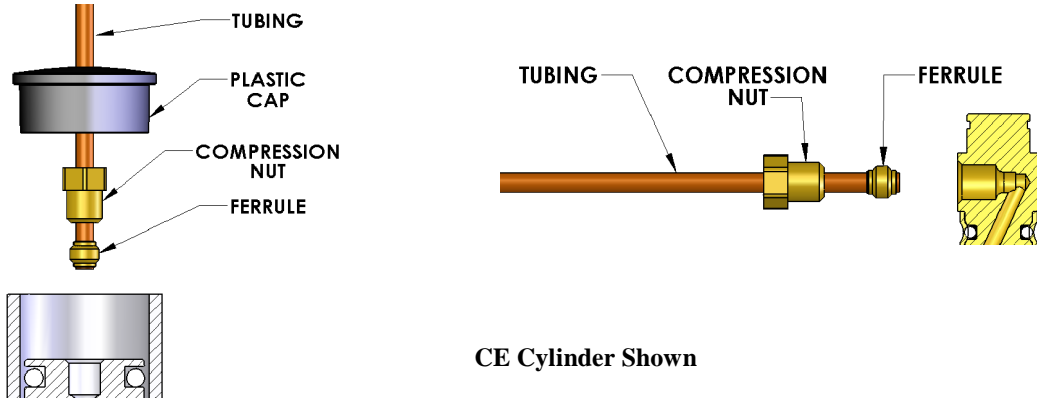
**Crank Driven Pump  
(Shown in Upright Position)**

**4.0 Tubing Disconnection**

To disconnect tubing from pump, unscrew and remove the compression nut, ferrule, and tubing assembly which corresponds with the lift cylinder to be refilled.



To disconnect tubing from cylinder, unscrew and remove compression nut, ferrule, and tubing assembly from cylinder port.  
**NOTE:** CB cylinders will require the removal of plastic cap to expose the compression nut.

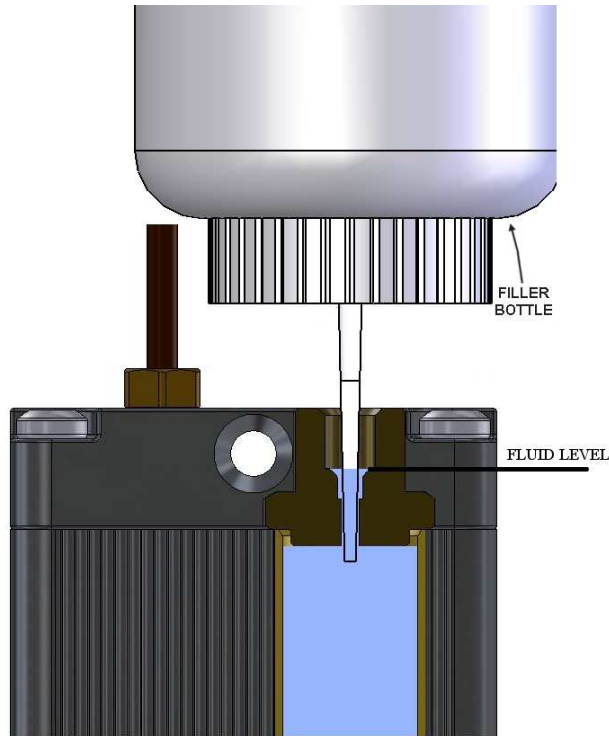


CB Cylinder Shown

CE Cylinder Shown

**5.0 Refill Procedure**

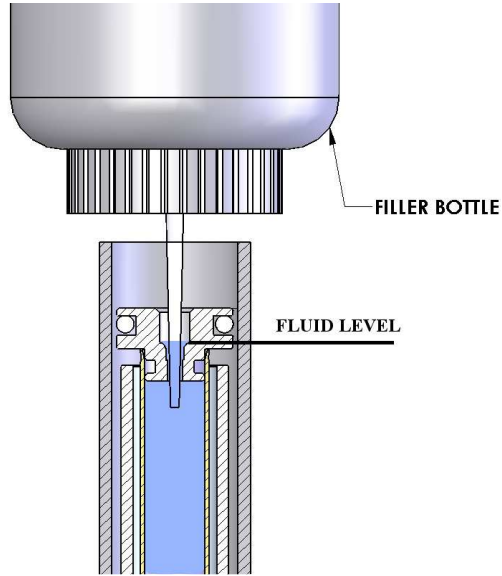
To refill the pump, fill open port with Movotec® NT15 Hydraulic Fluid to level indicated below using the filler bottle with needle.  
**NOTE:** The pump element will not fill properly if the filler bottle needle is not inserted past the smallest opening in the port as shown.



The cylinder refill procedure will vary depending upon whether your system uses a top or side-ported cylinder. For top-ported cylinders (CB, CS), refer to section 5.1 **Top-Ported Cylinder Refill**. For side-ported cylinders (CE, CH), refer to section 5.2 **Side-Ported Cylinder Refill**.

### 5.1 Top-Ported Cylinder Refill

To refill a top-ported cylinder, slowly pull cylinder rod to an extended length of approximately 4 inches (102mm) from end of cylinder body. Fill open cylinder port with Movotec® NT15 Hydraulic Fluid to level indicated below using the filler bottle with needle. **NOTE:** The cylinder will not fill properly if the filler bottle needle is not inserted past the smallest opening in the port as shown.

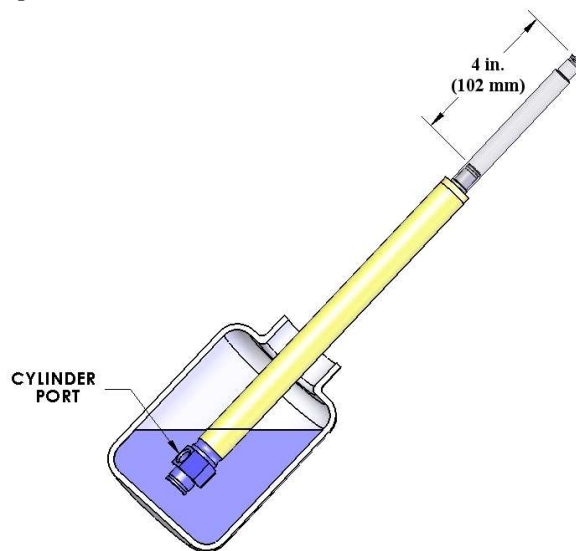


CB Cylinder Shown

### 5.2 Side-Ported Cylinder Refill

To refill a side-ported cylinder, slowly insert cylinder (open port first) into open bottle of Movotec® NT15 Hydraulic Fluid. **Be sure that cylinder port is completely immersed in fluid.** Slowly pull cylinder rod to an extended length of approximately 4 inches (102mm) from end of cylinder body. This action will draw fluid into the cylinder.

Remove cylinder from bottle and wipe clean.

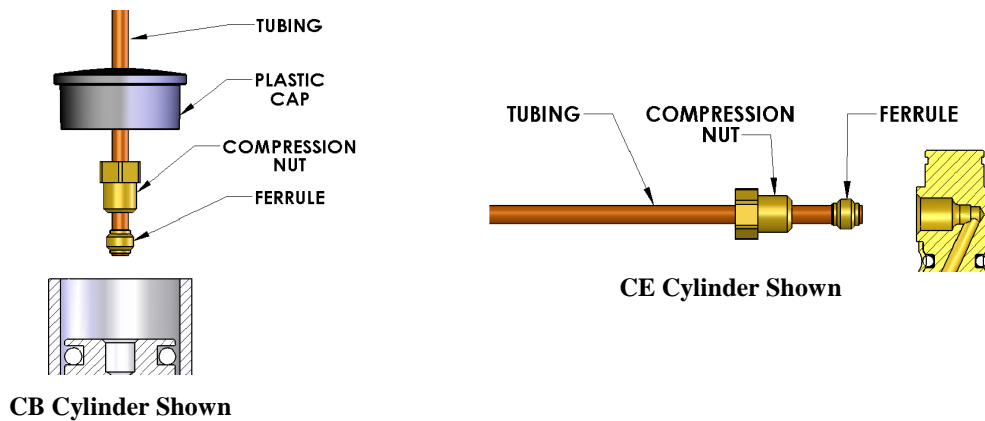


CE Cylinder Shown

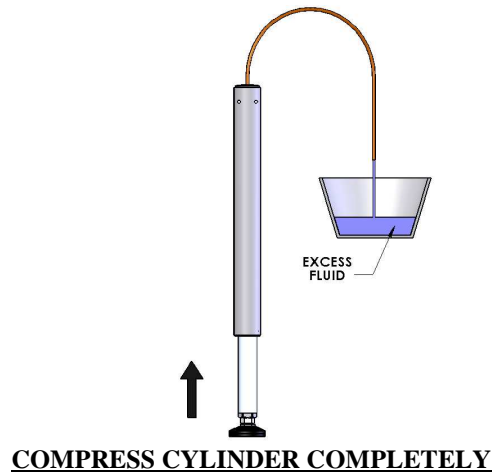
## 6.0 Tubing Attachment

Original tubing assembly can be reused if undamaged. When cutting a new section of Movotec® Flexible Hydraulic Tubing to required length, **make sure any cuts made are square and clean. Tubing length must not exceed 196 inches (5m).** Slide compression nut and ferrule onto tubing. **NOTE:** If a CB cylinder is used, slide plastic cap over tubing end first as shown below.

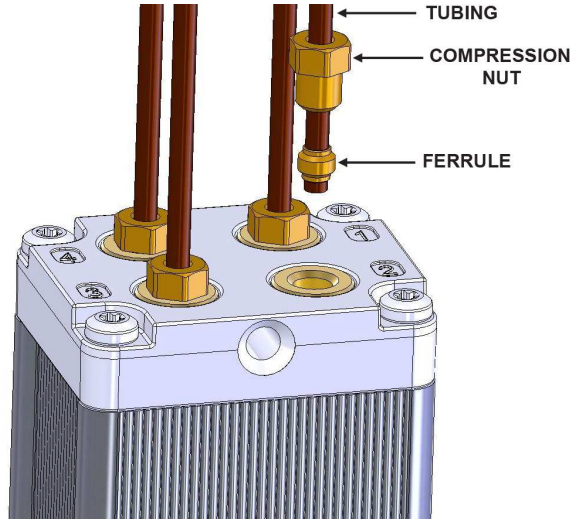
To attach tubing to cylinder, insert tubing end into cylinder port. While maintaining a slight downward pressure on tubing, slide compression nut and ferrule down into port. Re-tighten compression nut to 84-88 lb<sub>f</sub>-in (9.5-10 N-m) torque. **NOTE:** For a CB cylinder, slide plastic cap down tubing and insert into CB cylinder housing.



For this step, a container will be required to collect fluid. Hold the open end of flexible tubing over the container. With cylinder in upright position, completely compress cylinder rod. This action will expel fluid from the cylinder and fill the flexible tubing with fluid.



**Before reconnecting tubing to pump, make sure that the cylinder is completely compressed.** Slide compression nut and ferrule onto free end of tubing. Insert free tubing end into pump port. While maintaining a slight downward pressure on tubing, slide compression nut and ferrule down into port. Re-tighten compression nut to 84-88 lb<sub>f</sub>-in (9.5-10 N-m) torque.



## **7.0 Operation**

Once all cylinders have been refilled and tubing connections are made as needed, re-attach the pump to workstation. Crank driven systems should now be fully operational and ready for normal use.

For motorized systems, re-attach motorized pump to the workstation. Re-connect the motor cable to the controller. Finally, connect power cord to a power receptacle. The controller should make an audible “clicking noise” to signal that it has recognized the motor. Hold the “down” button to reset the system. After the system has finished moving down to its lowest position (if it wasn’t already), the system will be ready for normal operation.

## **8.0 Contact Information**

If you have any questions, please feel free to contact technical support at:

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