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Instructions for  
 Preventive Maintenance Kit 370-0001  
 Overhead Shuttle Models  
 216-0001, 216-0002, 216-0003  
 and 216-0005

**370-0001 SHUTTLE MAINTENANCE KIT PARTS LIST**

The following is a list of parts included in the 370-0001 shuttle maintenance kit. To order additional kits or shuttle parts not included in this kit, contact your local Xandex distributor or contact Xandex Customer Service at (707) 763-7799, toll free in the US at (800) 767-9543, FAX (707) 763-2631 or visit us on the internet at [www.Xandex.com](http://www.Xandex.com)

<b>NUMBER</b>	<b>DESCRIPTION</b>	<b>QTY</b>
110-0601	SPRING CLIP	1
160-0017	STRAIGHT FITTING	1
510-2202	SCREW	1
510-3402	SET SCREW, NYLON TIP	2
511-1003	WASHER	1
517-0002	SPRING, COMPRESSION	1
518-0003	60" TWIN AIR HOSE	1
518-0010	AIR HOSE	1
520-0208	MAGNALUBE-G, 2CC TUBE	1
820-0097	SHUTTLE PREVENTIVE MAINTENANCE INSTRUCTION	1

Items necessary for maintenance not included in the Shuttle Maintenance Kit are:

- Isopropyl Alcohol\*
- Teflon Thread Sealant Tape\*
- Threadlocker Loctite 222

\*Not available from Xandex

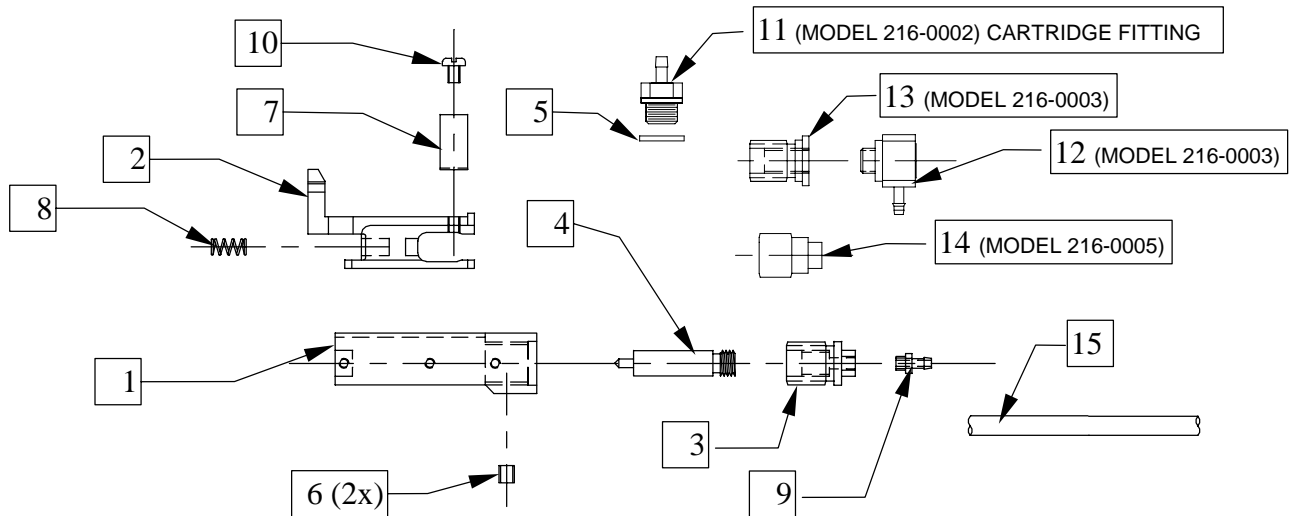
**PNEUMATIC SHUTTLE MAINTENANCE SCHEDULE**

The recommended periodic preventive maintenance schedule for the Xandex pneumatic shuttle is as follows;

- Off-line use = 6 month intervals
- In-Line / Post Probe use = Once per year



## PART IDENTIFICATION REFERENCE



ITEM	NUMBER	ITEM DESCRIPTION
1	110-0973	BRKT PNEU HOLDER OH CK
2	110-0970	SHUTTLE PNEUMATIC HOLDER
3	110-0974	ADAPTER AIR CYL IN LINE
4	160-0034	CYLINDER SM-2 SUBMINIATURE MNT RGLTR/FLTR /WS
+5	511-1003	WASHER .125X. 25X. 02 BUNA
+6	510-3402	SCRSET 4-40X1/8 BLK NYLTTP
+7	110-0601	SPRING CLIP
+8	517-0002	SPRING COMPRESSION .120X.014X1/4 MUSIC WIRE 2M
9	160-0021	FITTING HOSE 1/16X3-56 R K I
+10	510-2202	SCR PHS 2-56 X 1/8 SS
+11	160-0017	FITTING, STRAIGHT*
12	120-0627	FITTING PNEU SHTL SWIVEL**
13	160-0073	FTNG ELBW SWVL 1/16X10-32 SS**
14	110-0976	ADAPTER AIR CYL SHORT STROKE***
+15	518-0010	TUBING 1/8 OD X 1/16 ID RED

+ Included in PM Kit \*Part of 216-0002 shuttle \*\*Part of 216-0003 shuttle \*\*\*Part of 216-0005 shuttle

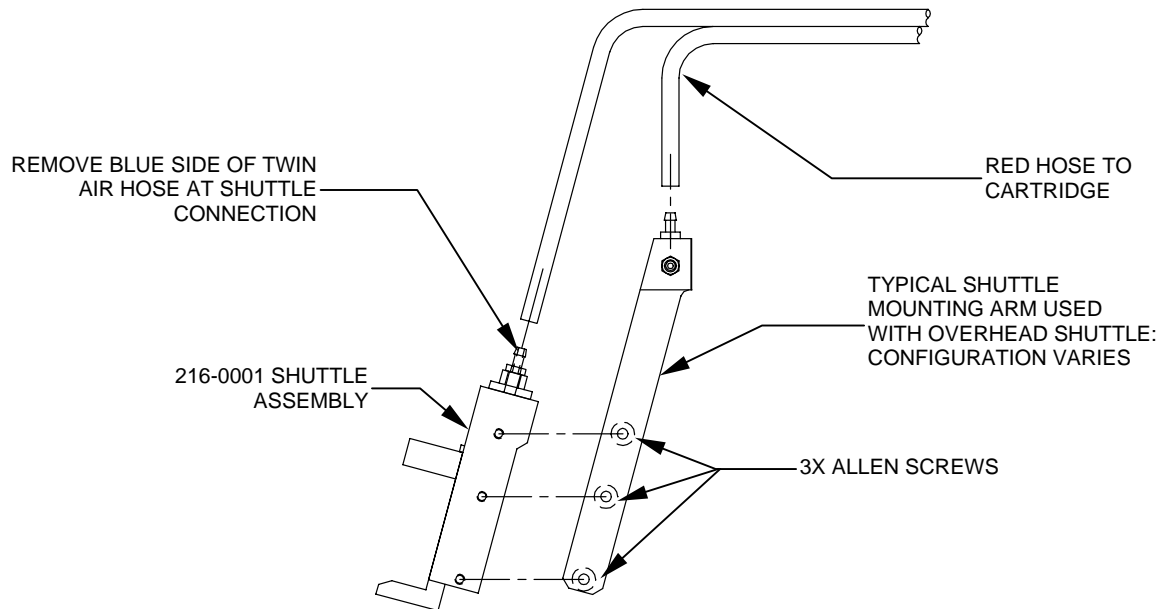
## SHUTTLE MODEL DESCRIPTION

The main components of the four shuttle models described in this maintenance instruction are identical. The significant difference between these four shuttles is the “adapter” component. The adapter function is the same in all models. It provides adjustment and lockdown of cylinder positioning within the shuttle bracket and a connection point for the air signal to the cylinder. The different adapters used in these models provide for varying configurations of air hose connection (straight or elbow) to the shuttle, as detailed below. This instruction references the adapter (Item 3, #110-0974) for the 216-0001 model shuttle, since this is the most common model in use. Adapters and air fittings for the other models are listed in the part number reference on page 1.

The 216-0001 model shuttle uses adapter #110-0974 (Item 3) and straight air fitting #160-0021 ((Item 9). The 216-0002 shuttle is identical to the 216-0001 shuttle, but also includes a straight brass cartridge connection fitting (Item 11) and washer. The 216-0003 shuttle *replaces* the adapter and straight air fitting used in model 216-0001 with adapter #120-0627 (Item 12) and an elbow swivel fitting #160-0073 (Item 13). The 216-0005 shuttle *replaces* the adapter used in model 216-0001 with adapter #110-0976 (Item 14) and uses the same straight air fitting #160-0021 (Item 9). The #110-0976 adapter allows shuttle stroke (travel) to be shortened to less than the nominal 0.050-0.060 inches.

## SHUTTLE MAINTENANCE PROCEDURE

1. Remove the ink cartridge (if installed). Remove the inker from the prober. Retain all inker mounting screws.
2. Disconnect the *twin pneumatic hose* at the shuttle connection (grasp, do not crush, the hose with needle nose pliers over the fitting point and pull gently to disconnect, being careful not to damage hose). 60" of extra hose is included in the kit. If the hose has been damaged, measure the old hose and replace with the same length of 518-0003 at re-assembly.
3. Remove the three Allen screws securing the *shuttle assembly* to the *shuttle mounting arm* and remove the shuttle assembly for maintenance.



## SHUTTLE DISASSEMBLY

1. Loosen the two *Allen set screws* (Item 6) at the top corners of the *bracket* (Item 1), then unscrew the *cylinder/adaptor assembly* (Items, 3, 4 & 9) from the *bracket* and remove.
2. Carefully lift and remove the *pneumatic holder* (Item 2) from the *bracket* (Item 1), paying close attention to the *spring* (Item 8) located in the bottom of the *holder*.

## SHUTTLE ASSEMBLY MAINTENANCE

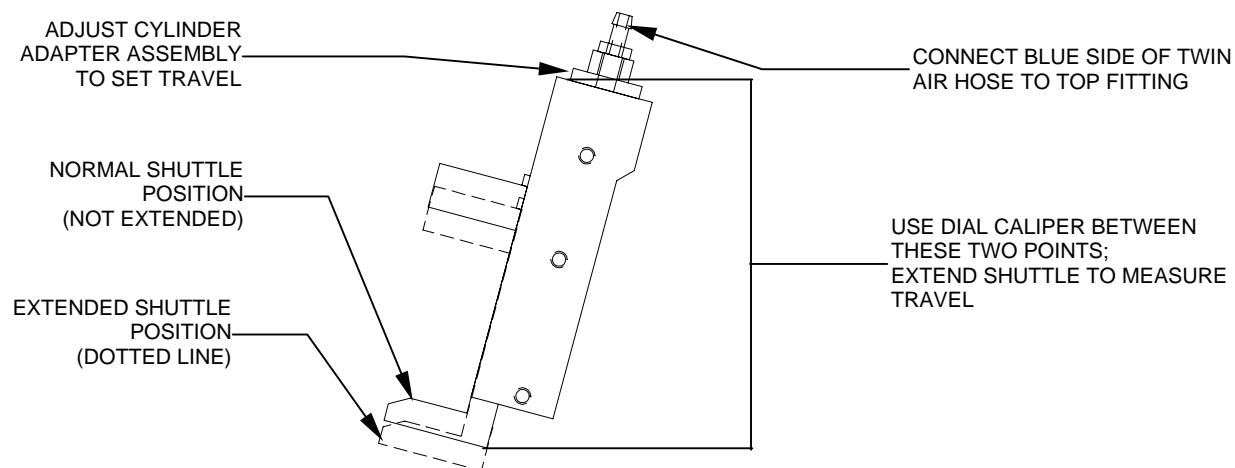
**With the Shuttle removed and disassembled, perform the following checks to verify condition/operation.**

1. Clean both the *pneumatic holder* (Item 2) and *bracket* (Item 1) with Isopropyl Alcohol and a clean lint free cloth. Inspect the *pneumatic holder* (Item 2) and *bracket* (Item 1) for wear or physical deformation. Replace as necessary.
2. Inspect the *cylinder/adaptor assembly* (Items 3, 4 & 9). Apply/remove 40-80 PSI to the *cylinder/adaptor assembly* and verify operation. The cylinder should extend and retract, as the air signal is applied/removed. If problems are noted in operation (air leak, cylinder sticking, etc.) replace the *cylinder assembly* (Item 4).

3. Inspect the *spring* (Item 8) for fatigue or physical deformation. Free length of the *spring* is 0.250" ( $\pm 0.005$ ") nominal. Replace as needed.
4. Remove the two *Allen set screws* (Item 6) that lock the *cylinder/adaptor assembly* (Items 3, 4 & 9) in place, from the *bracket* (Item 1). Replace the *Allen set screws* (Item 6).
5. Inspect the cartridge fitting and red air hose for ink contamination. Clean fitting as necessary and replace the *washer* (Item 5), on the cartridge fitting. Replace the hose if necessary with Item 15.
6. Inspect the spring clip (Item 7). Remove and replace the clip if it is bent or deformed (compare to new clip supplied in kit for reference).

## RE-ASSEMBLY

1. Apply a thin film of lubrication (Magnalube-G P/N 520-0208, supplied) to the *pneumatic holder* (Item 2) and *bracket* (Item 1).
2. Install the *spring* (Item 8) in the bottom of the *pneumatic holder* (Item 2), then carefully install the *pneumatic holder* (Item 2) in the *bracket* (Item 1). Verify that the *spring* (Item 8) is in the proper position and the *pneumatic holder* (Item 2) moves freely in the *bracket* (Item 1).
3. Install the *cylinder/adaptor assembly* (Items 3, 4 & 9) into the *bracket* (Item 1). Using a Dial Caliper, measure the stroke of the *holder* (Item 2) from normal to extended position. Adjust the *cylinder/adaptor assembly* (Items 3, 4 & 9) until the stroke is between 0.050" and 0.060".



4. Tighten the *Allen screws* (Item 6) in the *bracket* (Item 1) to lock down the *cylinder/adaptor assembly* (Items 3, 4 & 9). Apply 40-80 PSI air signal to the pneumatic connection on *shuttle assembly* and verify operation of the *shuttle*.
5. Re-install the *shuttle assembly* on the *shuttle mounting arm* using the three *Allen screws* previously removed. Reconnect the *twin pneumatic hose* (#518-0003), install a cartridge, and test to verify operation. The red side of the twin air hose connects to the cartridge fitting. The blue side connects to the top fitting on the shuttle.