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 (707) 763-7799

Instructions for  
 Preventive Maintenance Kit 370-0002  
 Standard Shuttle Models  
 316-0001 and 316-0002

**370-0002 SHUTTLE MAINTENANCE KIT PARTS LIST**

The following is a list of parts included in the 370-0002 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          |
| 160-0022      | ELBOW FITTING                                 | 1          |
| 510-2202      | SCREW   | 1          |
| 510-3402      | SET SCREW, NYLON TIP                          | 1          |
| 511-1003      | WASHER  | 1          |
| 515-0003      | O RING, VITON                                 | 2          |
| 517-0002      | SPRING, COMPRESSION                           | 1          |
| 518-0010      | AIR HOSE                                      | 1          |
| 518-0003      | 60" TWIN AIR HOSE                             | 1          |
| 520-0208      | MAGNALUBE-G, 2CC TUBE                         | 1          |
| 820-0098      | SHUTTLE PREVENTIVE<br>MAINTENANCE INSTRUCTION | 1          |

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

- Isopropyl Alcohol\*
- Teflon Thread Sealant Tape\*
- O-Ring Lubricant\*
- Threadlocker Locktite 22

\*Not available from Xandex

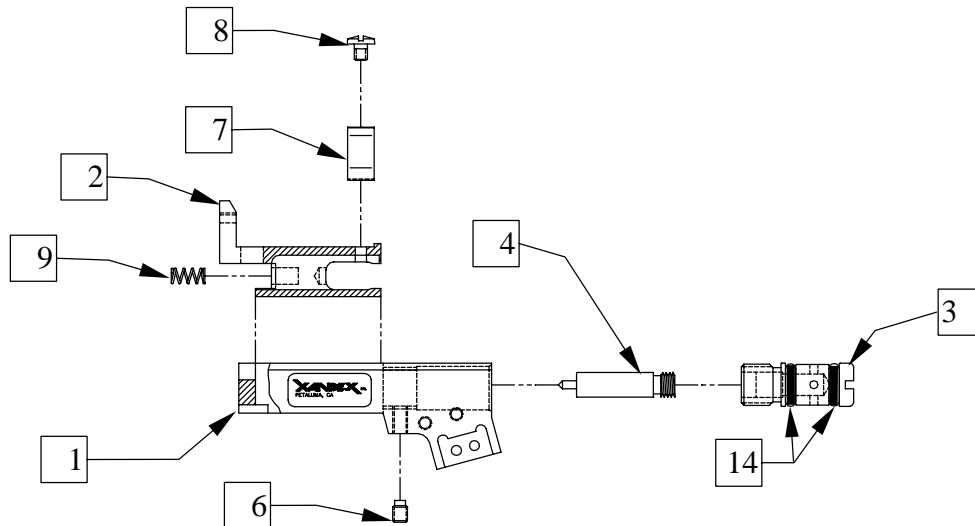
**PNEUMATIC SHUTTLE MAINTENANCE SCHEDULE**

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

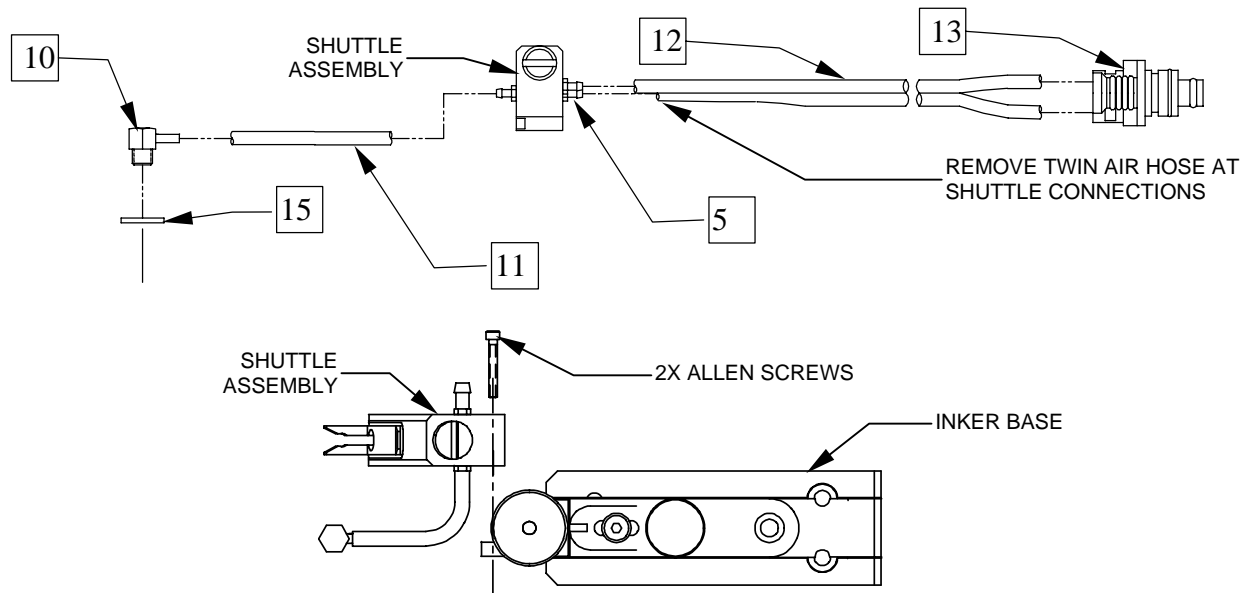


| ITEM | NUMBER   | ITEM DESCRIPTION                               |
|------|----------|--|
| 1    | 110-0971 | BRKT PNEUMATIC HOLDER                          |
| 2    | 110-0970 | SHUTTLE PNEUMATIC HOLDER                       |
| 3    | 110-0972 | ADAPTER AIR CYL PNU SHTL                       |
| 4    | 160-0034 | CYLINDER SM-2 SUBMINIATURE MNT RGLTR/FLTR /WS  |
| 5    | 160-0021 | FITTING HOSE 1/16X3-56 R K I                   |
| +6   | 510-3402 | SCRSET 4-40X1/8 BLK NYLTP                      |
| +7   | 110-0601 | SPRING CLIP                                    |
| +8   | 510-2202 | SCR PHS 2-56 X 1/8 SS                          |
| +9   | 517-0002 | SPRING COMPRESSION .120X.014X1/4 MUSIC WIRE 2M |
| +10  | 160-0022 | FITTING ELBOW 1/16 ID X 10-32                  |
| +11  | 518-0010 | TUBING 1/8OD X 1/16ID RED                      |
| +12  | 518-0003 | TUBING TWIN COLOR 1/8X1/16ID                   |
| 13   | 160-0018 | COUPLING MALE TWIN 1/16 ID                     |
| +14  | 515-0003 | O-RING 1/4 IDX.048 VITON                       |
| +15  | 511-1003 | WASHER .125X.25X.02 BUNA 65                    |

+ Included in PM Kit

## 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* from the shuttle at the barbed connections (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 equal length of #518-0003 (Item 12).
3. Remove the two Allen screws securing the *shuttle assembly* to the *inker base* and remove the shuttle assembly for maintenance.



## SHUTTLE DISASSEMBLY

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

## SHUTTLE ASSEMBLY MAINTENANCE

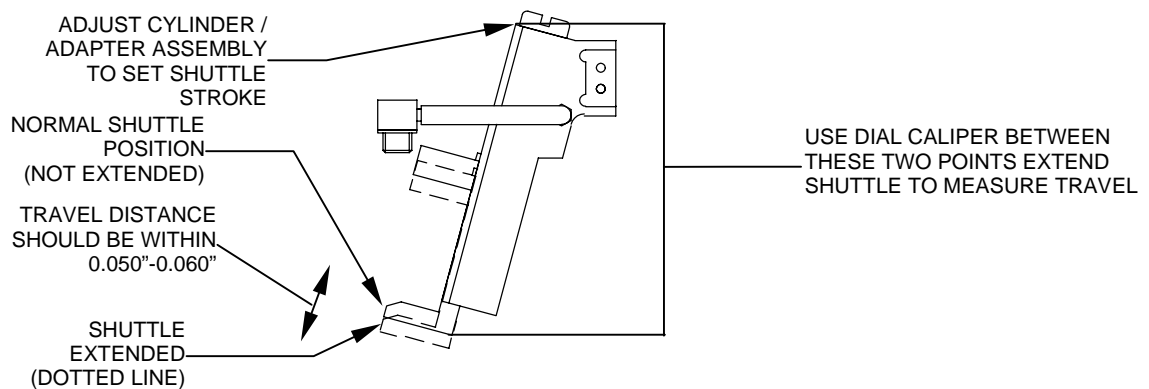
**With the Shuttle removed and disassembled, perform the following checks to verify condition/operation.**

1. Connect a 1/8" pneumatic hose to each of the barbed *air hose fittings* (Item 5) on the *shuttle bracket* (Item 1) and apply 40-80 PSI. Verify that there are no obstructions in the *shuttle bracket* (Item 1) affecting the air signal.
2. Clean the *pneumatic holder* (Item 2) and *shuttle bracket* (Item 1) with Isopropyl Alcohol and a clean, lint free cloth. Inspect the *pneumatic holder* (Item 2) and *shuttle bracket* (Item 1) for wear or physical deformation. Replace as necessary.
3. Inspect the *cylinder/adapter assembly* (Items 3 & 4). Remove and replace the two *O-rings* (Item 14). A lubricant (Parker O-lube or equivalent) applied to each *O-ring* prior to re-assembly will ease installation.
4. Install the *cylinder/adapter assembly* (Items 3 & 4) in the *pneumatic holder bracket* (Item 1) and apply/remove 40-80 PSI air signal a few times. Verify that the shaft of the cylinder extends and retracts properly without hesitation or binding.
5. Remove the *cylinder/adapter assembly* (Items 3 & 4) from the *pneumatic holder bracket* (Item 1). If problems were noted in operation (air leak, cylinder sticking, etc.), separate the *cylinder* (Item 4) from the *adapter* (Item 3) and replace as necessary. Use Teflon<sup>®</sup> tape on *cylinder* (Item 4) threads to insure proper seal between the *cylinder* (Item 4) and *adapter* (Item 3) at reassembly.

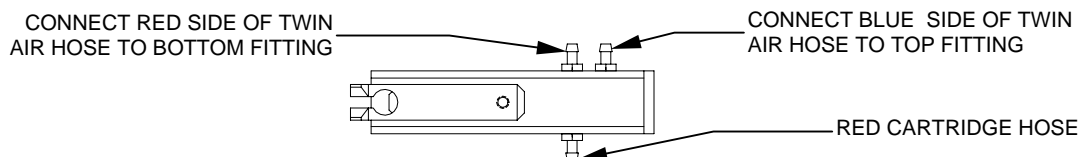
6. Inspect the *spring* (Item 9) for fatigue or physical deformation. Free length of the *spring* is 0.250" ( $\pm 0.005$ ") nominal. Replace as needed.
7. Remove the *Allen screw* (Item 6) that locks the *cylinder/adaptor assembly* (Items 3 and 4) in place from the *bracket* (Item 1). Replace the *Allen screw* (Item 6) with a new screw from the kit.
8. Inspect the *elbow fitting* (Item 10) and the *cartridge-to-shuttle air hose* (Item 11). If the hose or fitting are contaminated with ink replace as necessary. Replace the *washer* (Item 15) on the *elbow fitting* (Item 10).
9. 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 thin film of lubrication (Megalube-G P/N 520-0208, supplied) to the *pneumatic holder* (Item 2) and *bracket* (Item 1).
2. Install the *spring* (Item 9) 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 9) is in the proper position and the *holder* (Item 2) moves freely in the *bracket* (Item 1).
3. Install the *cylinder/adaptor assembly* (Items 3 & 4) into the *bracket* (Item 1), turning the *adapter* (Item 3) screw a maximum of 6 turns. 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) until the stroke is between 0.050" and 0.060".



4. Tighten the *Allen screw* (Item 6) in the *bracket* (Item 2) to lock down the *cylinder/adaptor assembly* (Items 3 & 4). Apply 40-80 PSI air signal to the lower pneumatic connection on *shuttle assembly* and verify operation of *shuttle*.



5. Re-install the *shuttle assembly* on the *inker base* using the two *Allen screws* previously removed. Reconnect the *twin pneumatic hose assembly* (Items 12 & 13) to the controller, install a cartridge, and test to verify operation. The red side of the twin air hose connects to the bottom barbed air fitting on the shuttle. The blue side connects to the top fitting.