

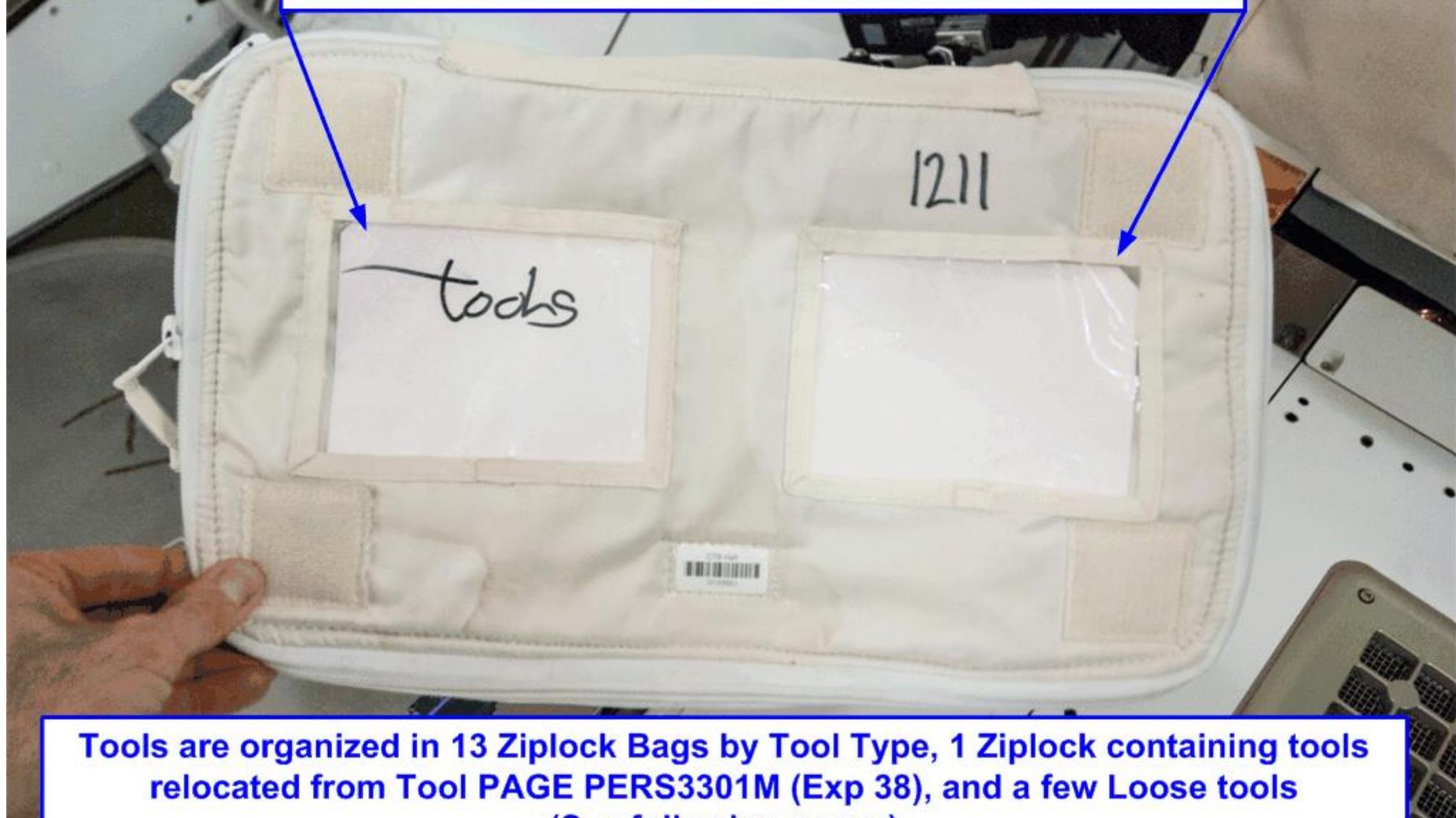
Spare Tools Pouches

Glenn Johnson

The following slides are intended to give you a better understanding of the tools that need to be stowed and the needs of the crew and requirements for the stowage.

- Until recently all the the tools were stuffed into a half CTB (17" x 9" x 10"). Although they fit, it was way over stuffed that's why it is now in the single CTB 18" x 16"x 10".
- Most of the slides are pictures of the ziplock bags that are holding the spare tools on orbit. HUNCH does not expect for you build a prototype bag that holds all of these tools, we are looking for some kind of demonstration of a pouch system with different holders to accommodate the different
- Many of these tools are from Snap-on and you should be able to get most of the dimensions from the internet.
- It may be valuable to leave some items in ziplock bags but still store them with similar tools in a pouch.
- The hammer and the crow bar are probably large enough they don't need a pouch but having them strap to the outside of a pouch might keep them from floating away
- There are also two trays (last page) that hold most of the tools ok but when the foam gets worn out and the tools don't stay in, they take the tool that is floating away and put it in a ziplock bag with other similar tools.

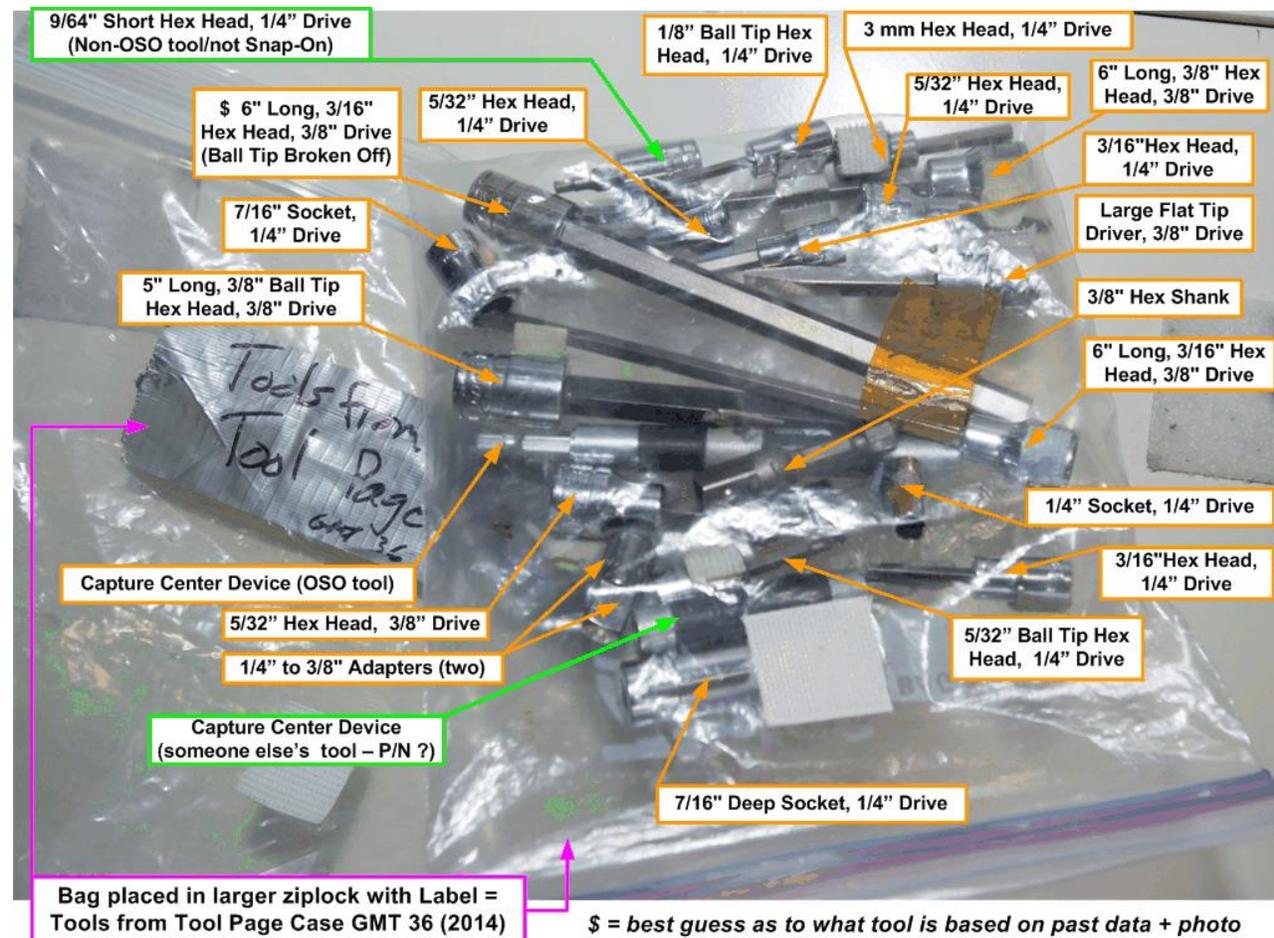
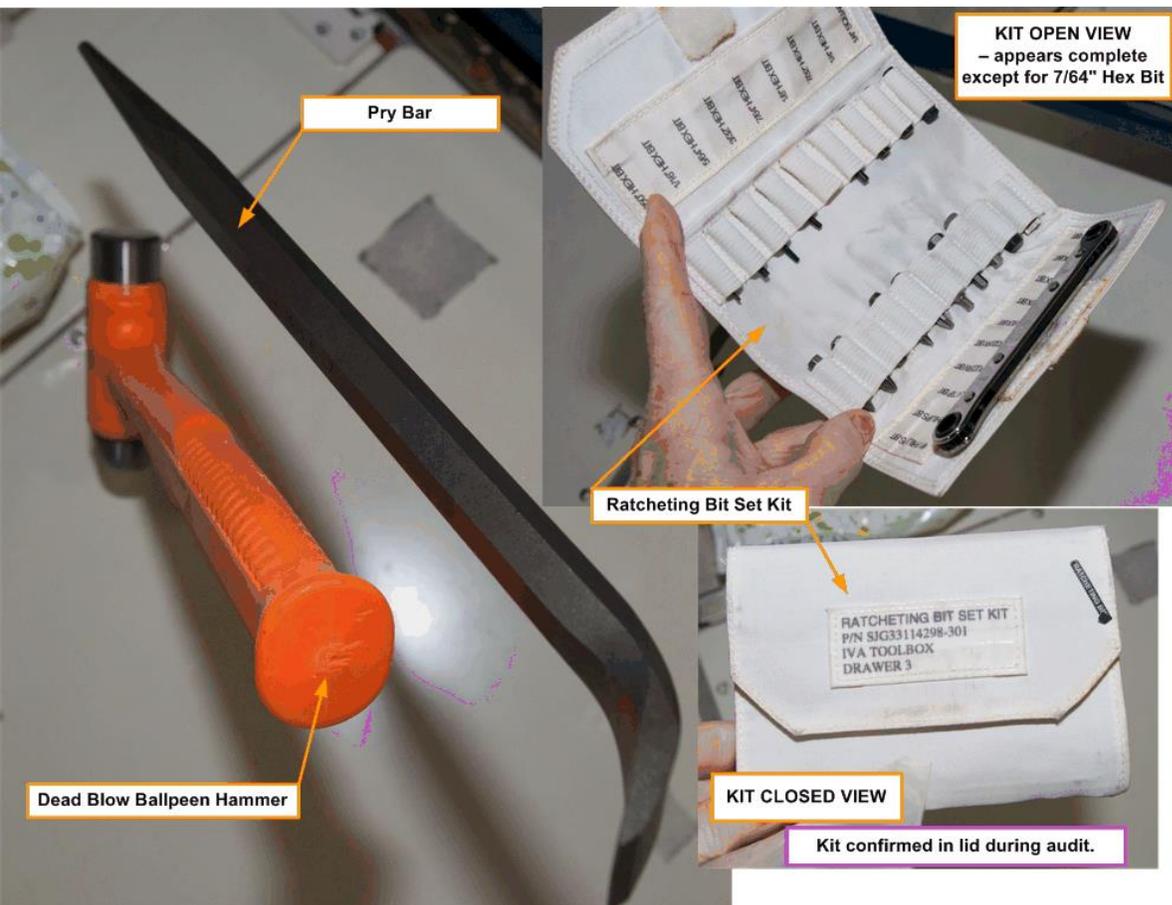
**Node 2 Spare Tools were Relocated to 0.5 CTB 1211,
B/C 010392J in Expedition 36 (Last Audited Exp 50)**



**Tools are organized in 13 Ziplock Bags by Tool Type, 1 Ziplock containing tools
relocated from Tool PAGE PERS3301M (Exp 38), and a few Loose tools
(See following pages)**









Thread Gauge

Center Punch
(flew OA-1)

Small File Set
(complete)

Hacksaw + ~3 to 5
spare blades

Nonmetallic Feeler Gauge

8\"/>

Large File Set (two)
- but neither has black
plastic handle

Black File Handle
- likely missing

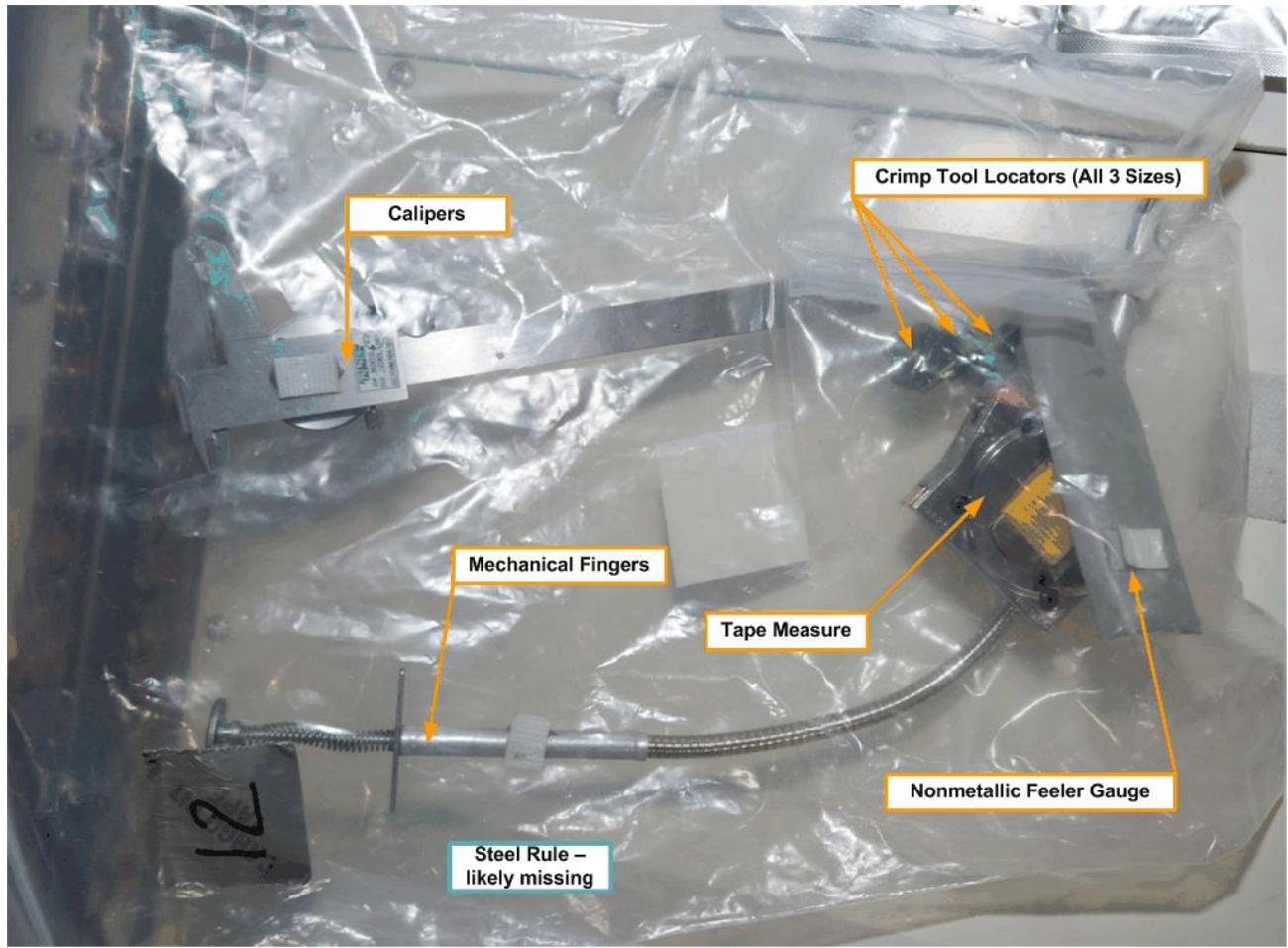
6\"/>

Center Punch



REAR VIEW (of Ziplock Bag)

FRONT VIEW
(of Label)



Calipers

Crimp Tool Locators (All 3 Sizes)

Mechanical Fingers

Tape Measure

Nonmetallic Feeler Gauge

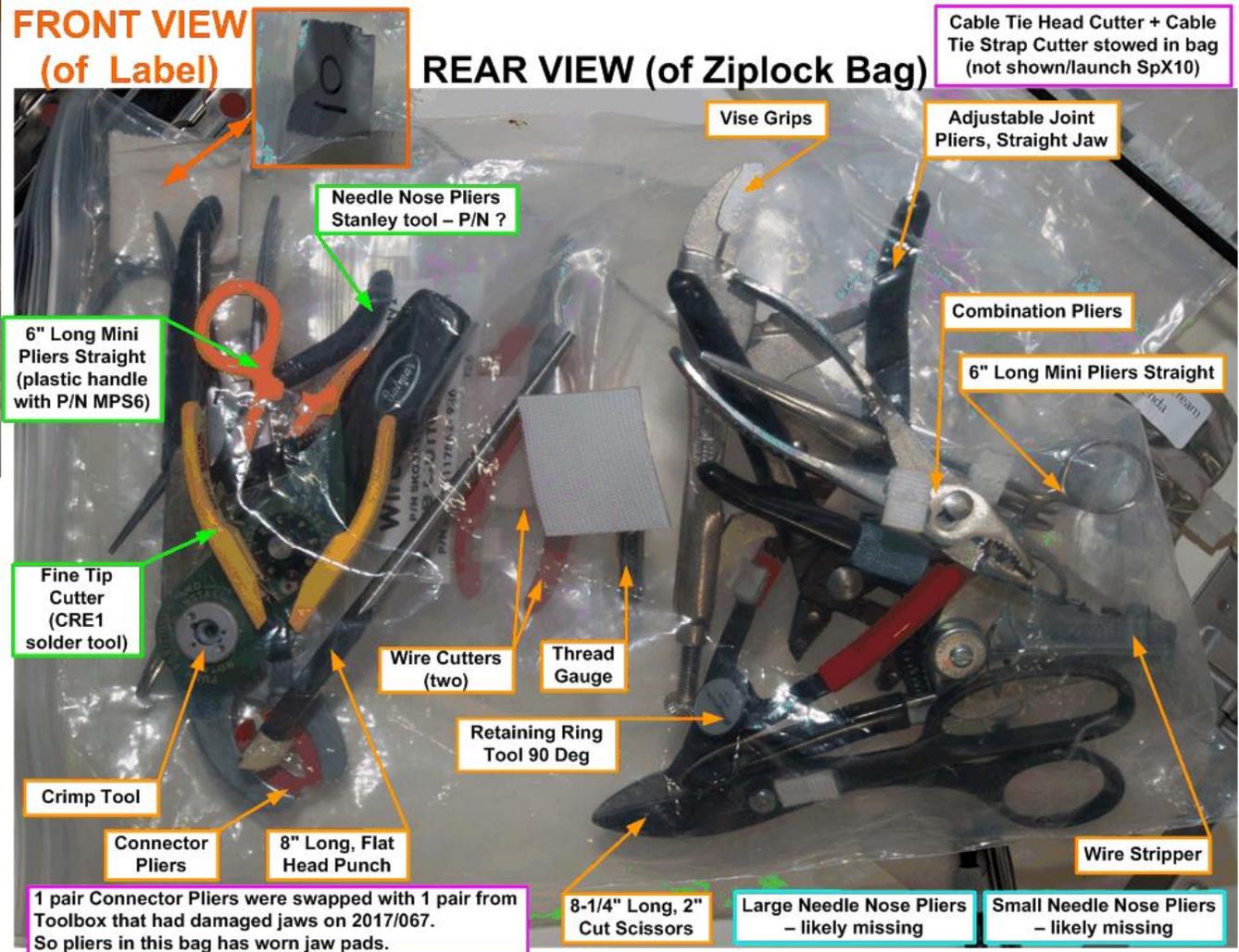
Steel Rule -
likely missing

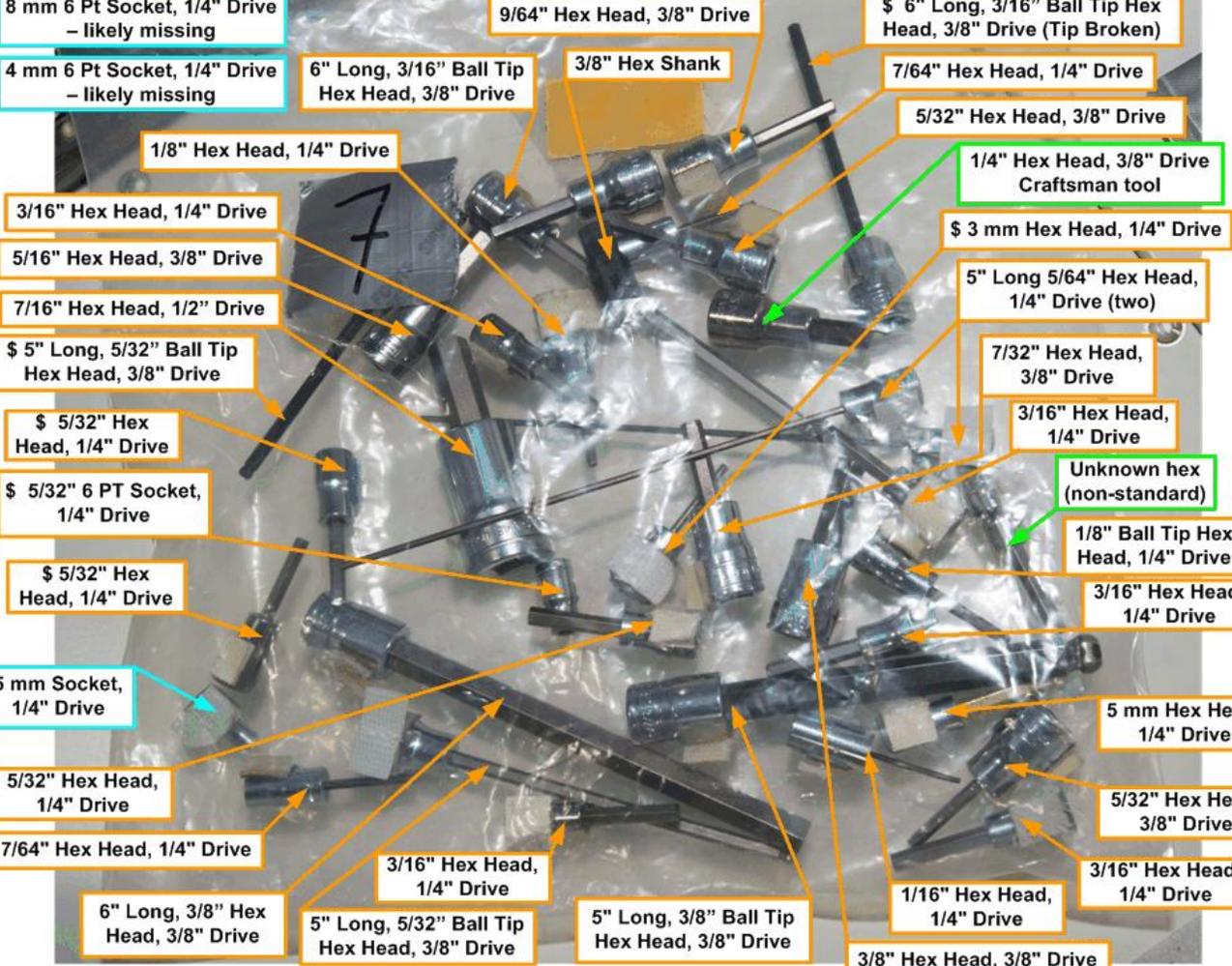
12



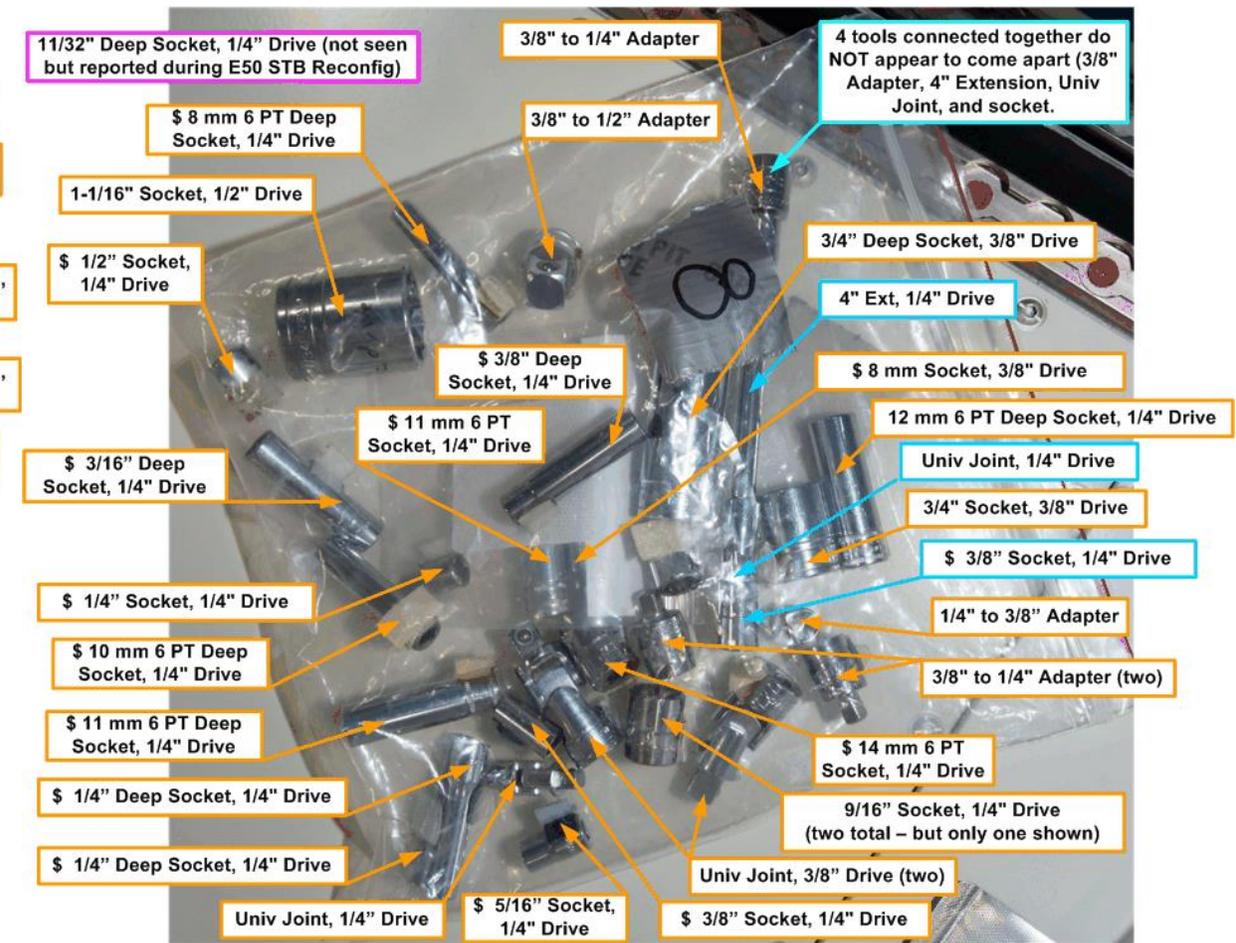
FRONT VIEW (of Label)

REAR VIEW (of Ziplock Bag)



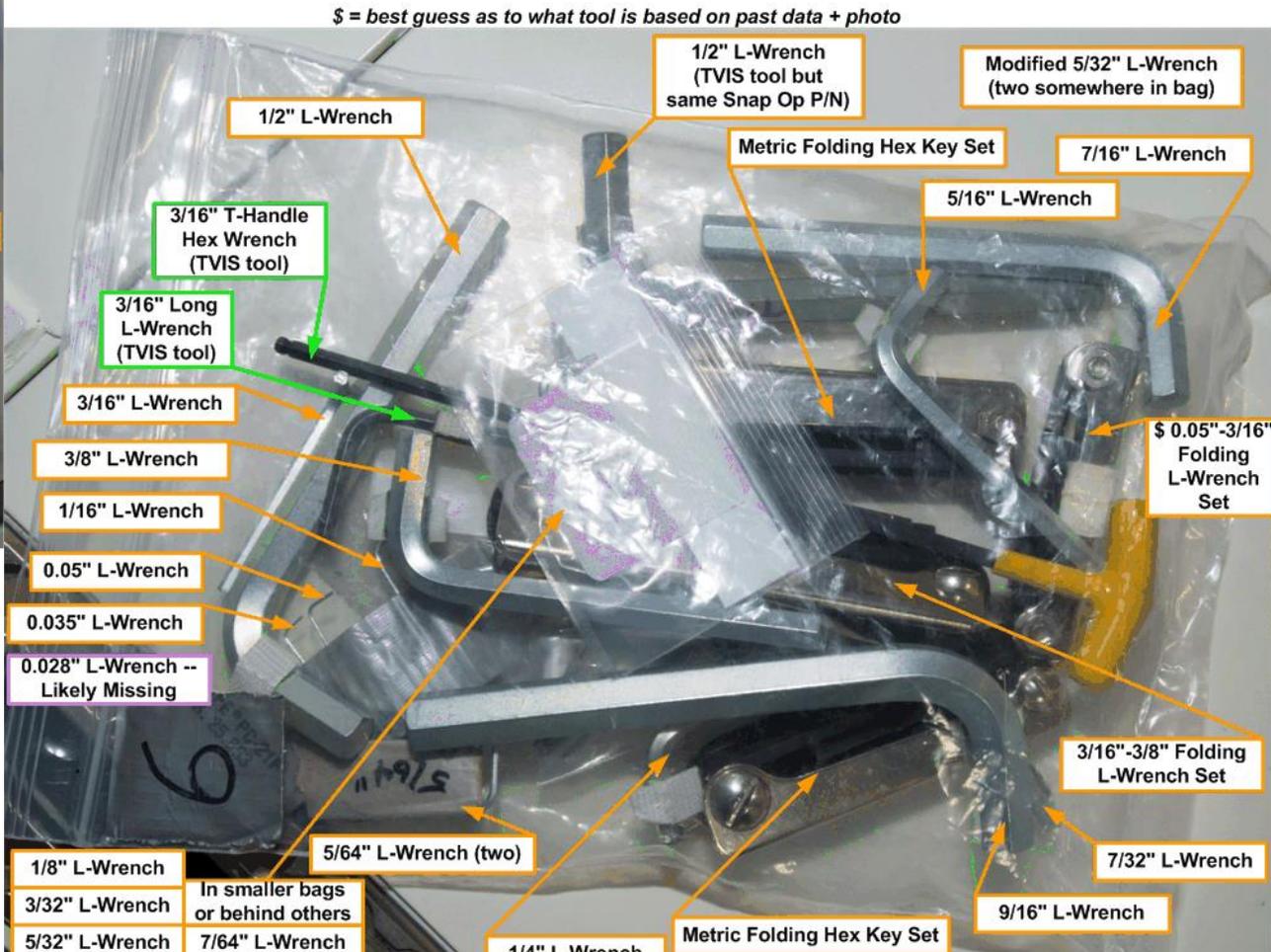
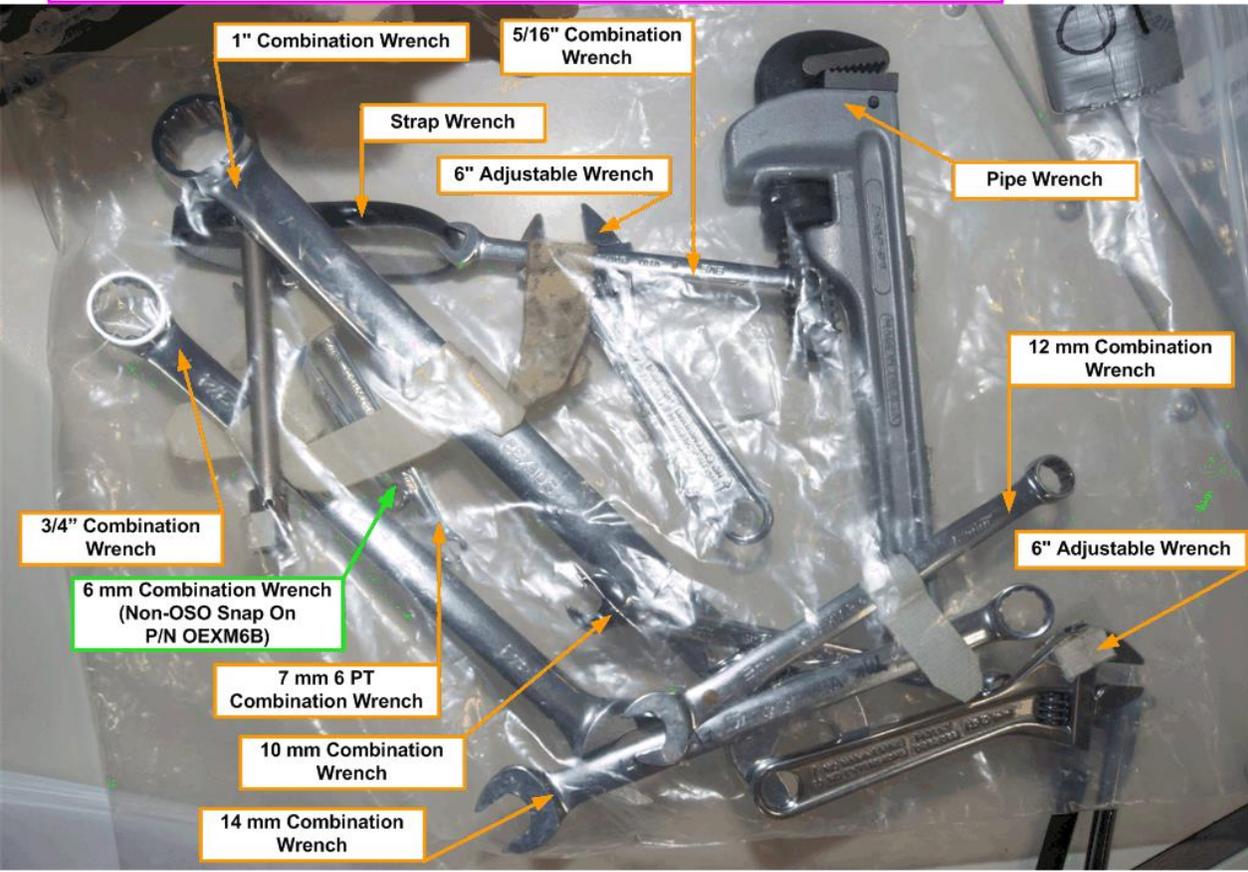


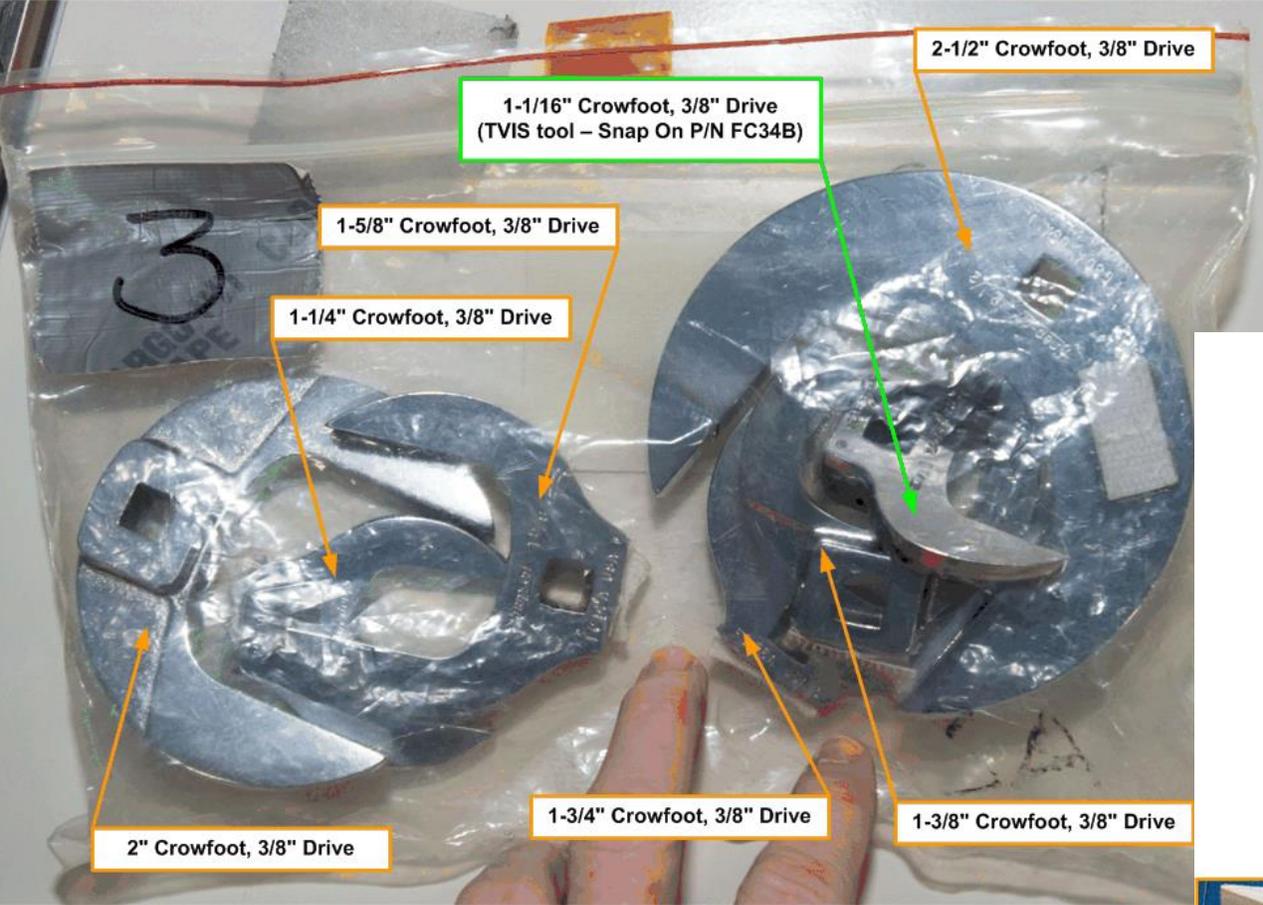
\$ = best guess as to what tool is based on past data + photo

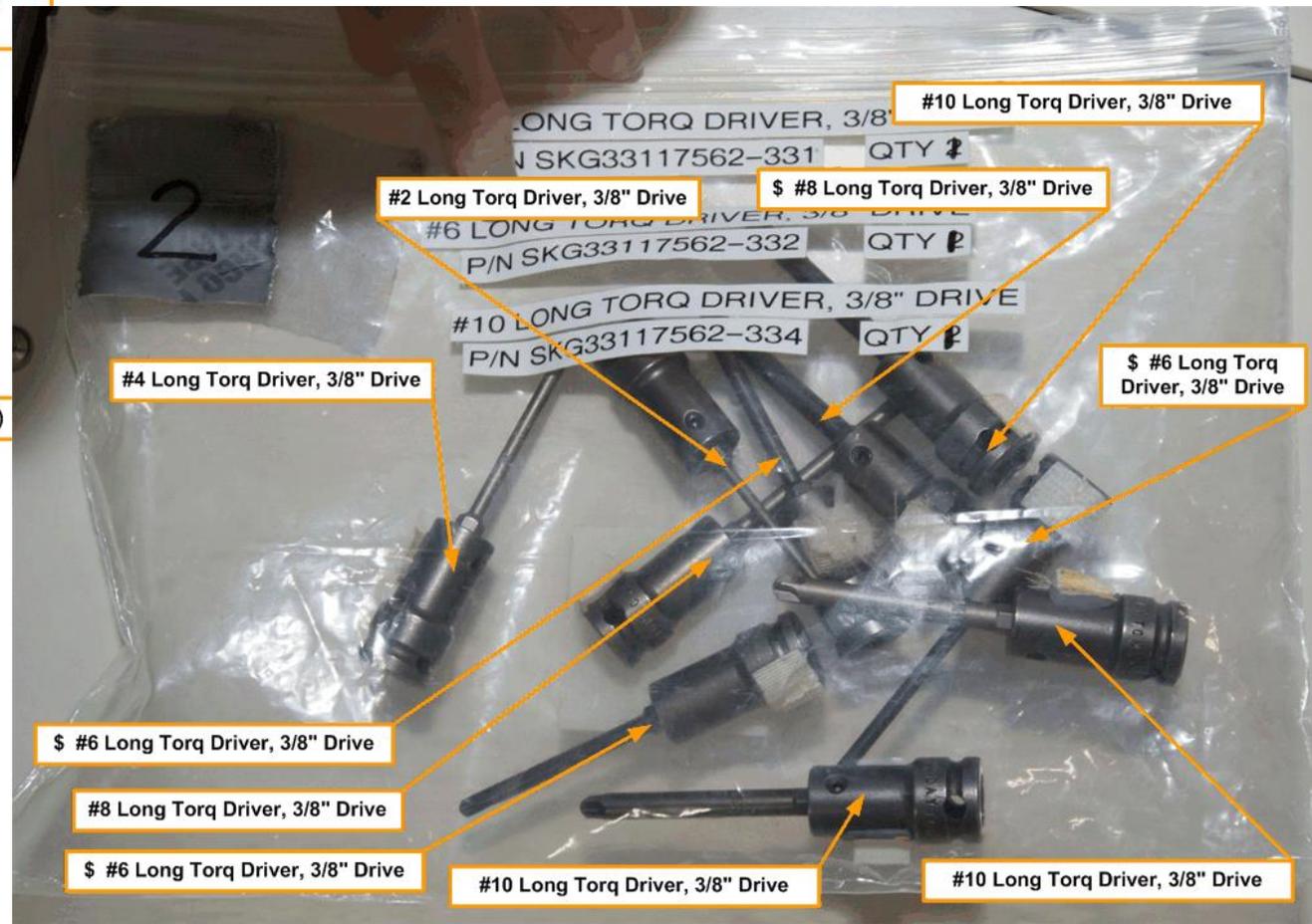


\$ = best guess as to what tool is based on past data + photo

NOTE: 1-5/16" Combination Wrench is supposed to be in bag but NOT seen in latest photo below:







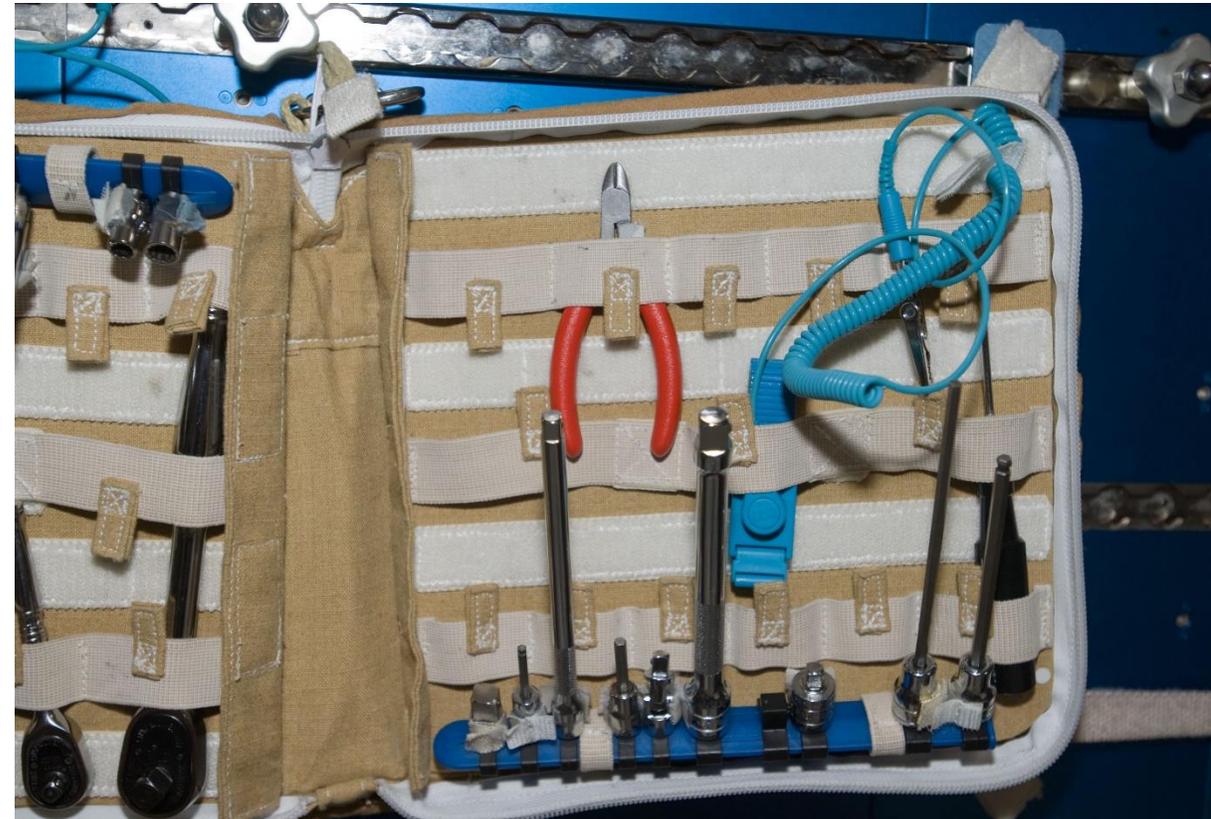
\$ = best guess as to what tool is based on past data + photo

Tool Page Case

This is a Tool Page Case. There are two on orbit and are used to fill up with tools for a specific job and then the tools are put back. These could be good for holding some tools but aren't really set up for holding lots of the same type of tool. Also the elastic is getting old and are not holding the tools as well as desired. Notice how the it zips closed to hold all the tools inside. By having a few of these designed to hold specific groups of tools, it would be easy to organize and find the spare tools desired.



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Tools Drawers

These are the two drawers with spare tools that remained on the ISS. You can see that some of the most used tools have been moved out to the spare tool ziplock bags as the foam stops holding them in place. At some point the use of all these tools will wear on the foam holding them in place and these tools will be moved out as well and the drawers will be thrown away. Planners had considered flying up new foam to replace the old but difficulty of removing and replacing in zero-g was considered a waste of on orbit time and frustration (not quite as easy as you might think).

The current version of the tool drawers that included some 3D printed holders is also available for viewing on the HUNCH web site.

