In another embodiment, the plate has two parts, an inner asymmetric portion and symmetric outer portion selectively attachable to the inner asymmetric plate portion and is of a configuration to fit into a standard opening in a holder.

Brief Description of the Drawings

Figure 1 shows a first embodiment of the present invention in cross-sectional view.

Figure 2 shows a second embodiment of the present invention in planar, bottom view.

Figure 3 shows a third embodiment of the present invention in cross-sectional view.

Figure 4 shows a fourth embodiment of the present invention in cross-sectional view.

Figures 5 A ~~and B~~ shows fifth embodiment of the present invention in planar view.

Figure 5 B shows fifth embodiment of the present invention in planar view.

Figures 6 A~~-H~~ shows different shapes useful in the embodiments of the present invention in planar view.

Figure 6 B shows different shapes useful in the embodiments of the present invention in planar view.

Figure 6 C shows different shapes useful in the embodiments of the present invention in planar view.

Figure 6 D shows different shapes useful in the embodiments of the present invention in planar view.

Figure 6 E shows different shapes useful in the embodiments of the present invention in planar view.

Figure 6 F shows different shapes useful in the embodiments of the present invention in planar view.

Figure 6 G shows different shapes useful in the embodiments of the present invention in planar view.

Figure 6 H shows different shapes useful in the embodiments of the present invention in planar view.

Figures 7A ~~and B~~ shows another embodiment in planar bottom up view.

Figure 7B shows another embodiment in planar bottom up view.

Figure 8 shows a further embodiment in planar bottom up view.

Figure 9 shows a knockout plug according to an embodiment of the present invention in cross-sectional view.

Detailed Description of the Invention

In Figure 1 is shown a first embodiment of the present invention in cross-sectional view. A bag 2 is held within a holder 4 such as a carboy or a tote and has one or more ports 6 extending out at least of its lowermost portion 8. An alignment plate 10 is attached to either the bag 2 or its one or more ports 6 as will be discussed below. The plate 10 also provides support for the bottom of the bag while in use in the holder 4 by fitting into and aligning with a hole or opening 12 in the lowermost portion 8 of the holder 4. As can be seen, the port(s) 6 extend through the plate 10 so they may be connected to inlets, outlets, pumps, storage bags, tubing, etc (not shown) as is needed in the process. In this embodiment the plate 10 is attached to the ports 6 of the bag 2 by an attachment device 14 such as a cable tie or a wire wrap or similar device.

To the extent the same elements are used in later Figures, their reference numbers remain the same.

As shown in Figure 2, one surface 16 of the plate 10 may be adhered or welded or molded to the bag 2 during assembly so that its orientation remains the same.

As shown in Figure 3 is an embodiment of the plate containing a graphic design 18 as to the orientation or alignment of the bag 2 when it is inserted into the holder 4 such that the operator will know which way to orient the bag 2 as it is being inserted into the holder 4 and attached to the various other elements such as pumps, filters, inlet hoses, outlet hoses, etc, (not shown). The graphical design 18 may be anything such as an arrow as shown pointing in a given direction to indicate the bag's alignment to the holder 4. It may also include words 19 providing an indication of the direction of the bag or which port is which such as inlet, outlet, etc so an operator may properly align the bag in the holder. Alternatively, the graphic design 18 could be a hash mark, the arrow mentioned above or other symbol that is designed to align with a similar feature on the holder 4 itself (not shown).

As shown in Figure 4 is an embodiment in which the bag 2 has one port 6. In this embodiment the bag 2 also has an alignment device 20 in this case in the form of a nub that extends outwardly from the bag 2 and the alignment plate 10 contains both an opening for the port 6 but also for the alignment device 20 such that the plate 10 is always properly aligned to the bag and not allowed to rotate relative to it The plate 10 may be attached to the port 6 in this instance by an attachment device 14 again in this instance a ratcheted cable tie. Other alignment devices include but are not limited to twist ties such as plastic coated wire ties, steel or plastic clamps and the like.

Bags 2 containing two or more ports 6 that extend through the plate 10 do not necessarily need a separate alignment device 20 but may have one if desired.

While the plate 10 in the above embodiments is shown as being a rectangle, the shape of the plate 10 and its corresponding hole 12 is not limited to such. It may be any symmetric or

asymmetric shape or design that is desired, such as any polygon including but not limited to triangles, squares, pentagons, hexagons, heptagons, octagons and the like. They may also be circular or ~~ova s~~ ovals. They may also be combinations of the different shapes such as two circles of different sizes or two polygons of different sizes or different shapes.

Multiple plates 10 may also be used, with each one associated either with at least one port 6 or an alignment device 20.

Any of the embodiments discussed above may if desired contain the graphical design 18 discussed above.

What is claimed:

1) A disposable processing bag comprising:
a bag formed of one or more pieces of plastic sealed to form a closed container;
one or more ports formed in the bag to provide access to an interior of the bag for the introduction and/or removal of materials to the bag; and
an alignment plate attached to the bag adjacent the one or more ports, which plate is symmetrical and contains a graphic alignment feature.

~~2) The bag of claim 1 wherein the plate is symmetrical and contains a graphic alignment feature.~~

~~3) The bag of claim 1 wherein the plate is asymmetrical in shape.~~

~~4) The bag of claim 1 wherein the plate is asymmetrical in shape and in the form selected from the group consisting of uneven polygons, partial polygon/partial circular designs and two or more rectangular or circular designs of different sizes.~~

~~5) The bag of claim 1 wherein the plate is asymmetrical in shape and In the form of polygons selected from the group consisting of rhomboids and paralellograms.~~

~~6~~2) The bag of claim 1, wherein the plate has one or more openings and is attached to the one or more ports.

~~7~~3) The bag of claim 1, wherein the plate has one or more openings aligned to match the ports of the bag and the plate is attached to the one or more ports by one or more cable ties.

~~8~~4) The bag of claim 1, wherein the bag has one port and the plate has one opening aligned with the port and the bag has a separate attachment feature spaced apart from the one port and the plate has a separate opening aligned with the attachment feature to retain the plate in relative position with the bag and the port.

~~9~~5) The bag of claim 1, wherein the bag has one port and the plate has one opening aligned with the port and the bag has a separate attachment feature spaced apart from the one port and the plate has a separate opening aligned with the attachment feature and wherein the plate is attached to both the port and the alignment feature.

~~10~~6) The bag of claim 1, wherein the bag has one port and the plate has one opening aligned with the port and the bag has a separate attachment feature spaced apart from the one port and the plate has a separate opening aligned with the attachment feature and wherein the plate is attached to both the port and the alignment feature by cable ties.

~~11~~7) The bag of claim 1, wherein the bag has one port and the plate has one opening aligned with the port and the bag has a separate attachment feature spaced apart from the one port and the plate has a separate opening aligned with the attachment feature and wherein the plate is attached to both the port and the alignment feature by welding the plate to the bag adjacent to the port and alignment feature.

~~12~~8) The bag of claim 1, wherein the plate has one or more openings aligned to match the ports of the bag and the plate is welded an adjacent surface of the bag.

~~13~~9) The bag of claim 1, wherein the plate has one or more openings aligned to match the one or more ports of the bag and the plate is molded to an adjacent surface of the bag.

~~14~~10) The bag of claim 1, wherein the plate has one or more openings aligned to match the one or more ports of the bag and the plate is overmolded to an adjacent surface of the bag.

~~15~~11) The bag of claim 1 further comprising a wireless device attached to the plate.

~~16~~12) The bag of claim 1 further comprising a wireless device attached to the plate wherein the wireless device is a RFID tag.