CLAIMS

1. A protective sleeve (20) for use in a syringe (2) having a cylinder (14) with a first and second (13) ends, a piston assembly (4), an output (8) at the first end and an opening for a shaft (6) at the second end of the cylinder (14), the protective sleeve (20) being ~~comprising:~~

a tube ~~shape defining two ends, an axis made to compress and expand along the~~ made of a resilient material and having a first end and a second end, the second end opposing the first end, the tube configured to extend and collapse along a longitudinal axis of the tube, ~~the sleeve made of a resilient material that is placed within the syringe~~ and located within the cylinder (14) behind the piston assembly (4)~~;~~, with

a first lip (22) formed at one end of the tube ~~shape~~ that is configured to engages the piston assembly (4), ~~wherein the first lip~~ and to moves with the piston assembly (4)~~;~~ and

a second lip (24) formed at the second end of the tube ~~shape~~ that is configured to be retained at the second end of the cylinder (14), wherein the ~~collapsible tubular shape~~ tube is configured to extends and collapses as the piston assembly (4) moves~~.~~, characterized by:

(a) the first lip (22) having a first lip longitudinal portion extending from the sleeve (20) along a direction substantially parallel to the longitudinal axis of the tube, and a first lip radial portion extending from the first lip longitudinal portion along a direction that is substantially perpendicular to the longitudinal axis of the tube, where the first lip radial portion is

secured between a shoulder (7) of the shaft (6) and an extension portion (9) of the piston assembly (4); and

(b) the second lip (24) having a second lip longitudinal portion extending from the sleeve (20) along a direction substantially parallel to the longitudinal axis of the tube, and a second lip radial portion extending from the second lip longitudinal portion along a direction that is substantially perpendicular to the longitudinal axis of the tube, where the second lip radial portion is secured between a retention plate (18) at the end (13) of the cylinder (14) and the second end (13) of the cylinder (14).

2. The protective sleeve of claim 1 ~~further~~ wherein the ~~tubular shape~~ tube comprises a bellows or accordion configuration (26) along at least a portion of the sleeve (20).

3. The protective sleeve of any preceding claim ~~1~~ wherein the sleeve (20) is made from polyethylene, or other resilient material of a thickness of less than 3.81mm (0.15 inches).

4. The protective sleeve of any preceding claim, ~~1 further comprising a retaining plate that secures~~ wherein the second lip ~~at the other~~ radial portion is configured to be disposed external to the second end (13) of the cylinder (14) between the retention plate (18) and a handle of the cylinder (14).

5. The protective sleeve of any preceding claim, wherein the second lip radial portion extends radially outwardly away from a central axis of the tube.

6. The protective sleeve of any preceding claim, wherein the first lip radial portion extends radially inwardly toward a central axis of the tube.

~~5~~7. A syringe comprising:

a cylinder (14) with two ends, a first end defining an output (8) and a second end ~~having~~ defining an opening for a shaft (6);

a piston assembly (4); and

a tubular-shaped protective sleeve (20) made to ~~compress and~~ extend and collapse along ~~the~~ a longitudinal axis of the ~~cylinder~~ tube, the protective sleeve (20) according to claim 1 made of a resilient material that is placed within the ~~syringe~~ cylinder (14) behind the piston, ~~assembly~~;

~~the sleeve having a first lip that is fixed to the piston assembly, wherein the end of the protective sleeve with the first lip moves with the piston assembly;~~

~~the sleeve having a second lip that is retained at the second end of the cylinder, wherein the collapsible tubular shape extends and collapses as the piston assembly moves forward and back within the cylinder.~~

8. The syringe of claim 7 wherein the tube comprises a bellows or accordion configuration (26) along at least a portion of the sleeve (20).

9. The syringe of claim 8 wherein the sleeve (20) is made from polyethylene, or other resilient material of a thickness of less than 3.81 mm (0.15 inches).

10. The syringe of claim 8, wherein the second lip radial portion is configured to be disposed external to the second end (13) of the cylinder (14) between the retention plate (18) and a handle of the cylinder (14).

11. The syringe of claim 8, wherein the second lip radial portion extends radially outwardly away from a central axis of the tube.

12. The syringe of claim 11, wherein the first lip radial portion extends radially inwardly toward a central axis of the tube.