20ml VARIABLE AUTOMATIC DRENCHER / INJECTOR

IMPORTANT

The Phillips 20ml Automatic Drencher/Injector (referred to as applicator) has been designed for the administration of most solution and suspension drenches and injectable solutions to livestock. It should never be used for vaccination of small livestock at dose settings of 2ml or less.
As components in this instrument may be affected by solvents in some 'pour-on' formulations no responsibility will be accepted by the manufacturer should the instrument be used with such products.

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As components in this instrument may be affected by solvents in some 'pour-on' formulations no responsibility will be accepted by the manufacturer should the instrument be used with such products.

BEFORE DRENCHING/INJECTING

Always read the label.
Check the label on the pharmaceutical manufacturer's container for dose rates, precautions, and safety information prior to use.
Use only the recommended dose rate.
Use only the pharmaceutical manufacturer's recommended rates. Refer to the pharmaceutical manufacturer's dose rate chart or specification. NJ Phillips Pty Limited will take no responsibility if the applicator is used for any other purpose than specified or used contrary to the pharmaceutical manufacturer's dose rate specifications.
Check the applicator.
Before each use, the nozzle should be inspected to ensure there are no sharp edges. Should this occur, remove with file or emery paper or replace nozzle.

INSTRUCTIONS FOR USE

Preparing the applicator.
Fit the appropriate nozzle or injection attachment assembly to the handpiece, taking care to ensure the delivery valve and spring (item 7) remain facing in direction shown in the handpiece diagram.

CAUTION

Always exercise care when dosing animals. Do not apply undue pressure and ensure the nozzle is not forced against or through delicate mouth and throat tissues.

When drenching, use large barb inlet fitting (item 20) as supplied fitted to the instrument, taking care to ensure the inlet valve and spring (item 19) remain facing in direction shown in the handpiece diagram.
When injecting, fit dual barb inlet fitting (item 21) to handpiece, taking care to ensure the inlet valve and spring are positioned as above.
When injecting, it is essential that this instrument and a supply of needles be thoroughly sterilized before each use. A common method of sterilization is as follows:

1. Fit injection attachment assembly (items 1, 2, 3, and 5) to handpiece.
2. Connect feed tube and spring to handpiece.
3. Wrap cloth around handpiece and place end of feed tube into container of clean hot water and draw hot water into cylinder by depressing lever.
4. Remove cloth and suspend instrument by fully immersing in a container of water and boil together with the needles for 10 to 20 minutes.

NOTE

Suspending the instrument not only makes it easier to remove, but also prevents damage should the container boil dry. Chemical sterilization with antiseptic solutions is sometimes practised and in such instances the recommendations of the chemical manufacturer should be followed. DO NOT attempt to sterilize by autoclaving.

5. Remove instrument and needles from container, wrap cloth around handle and pump dry, remove cloth and dry handpiece.

Attach connecting tube to both the hand piece and draw off system. Make sure the springs provided are screwed over the feed tube in an anti-clockwise direction. This will prevent the tube from kinking at these points.
Priming the applicator.
To prime, set to maximum dose and actuate the instrument by depressing the lever quickly until material is drawn into the cylinder. Expel all air by holding the instrument in a **vertical position**, with the nozzle pointed upwards until both cylinder and nozzle are full.

WARNING

Care must be taken to ensure the liquid does NOT come into contact with any part of the operator's body. Chemicals may cause injury to the operator.

To adjust the dose.
Loosen item 30 *(dose adjustor lock nut)*. Depress the lever to take pressure off item 29, *(dose adjustor screw)*. Adjust the dose adjustor screw in or out depending on the dose setting required. To set the correct dose, align item 13 *(black piston)* with the cylinder marking. Once the piston is in the correct position, release pressure on the lever and re-tighten item 30 *(dose adjustor lock nut)*. (See calibration instructions)
Calibration of the applicator.
As the graduation markings on the cylinder are for reference only, check the accuracy of the instrument with a calibrated measuring glass. To ensure repeatability, squirt 5 x 5ml doses into a calibrated glass. The level of fluid should be at the 25ml mark. If it is not, readjust the applicator following the steps above then perform the dose test again. If you have problems with dose accuracy contact the manufacturer or place of purchase.
Cylinder fill rate and delivery pressure.
This can be varied by adjusting item 26 *(return spring)* tension. Turning item 23 *(adjustor nut)* on the trunnion assembly clockwise, will increase fill rate and delivery pressure, turning anticlockwise will reduce fill rate and delivery pressure. Minimum return spring tension should be used to achieve acceptable filling rate and delivery speed. If spitting occurs reduce tension on return spring.

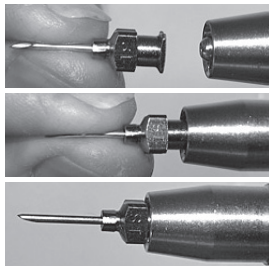
CARE AND MAINTENANCE

To ensure continued high performance from this instrument, attention to cleanliness is essential. After each use, flush the instrument and feed tube thoroughly by pumping through a warm water detergent mix, followed by clean water. Remove the feed tube from the instrument and suck a small quantity of NJ Phillips Lubricant into the cylinder by immersing the inlet fitting in the lubricant and gently pumping the lever. If at any time the instrument becomes sluggish in operation, maintenance by cleaning and lubrication should overcome the problem.

IMPORTANT

DO NOT store your applicator or feed tube full of product. Clean as per the "Care and Maintenance" instructions.

LUER LOCK NEEDLE FITTING



1. Position the needle in front of the needle nut.
2. Locate the needle onto the needle mount and turn clockwise to tighten.
3. The needle is now secured in place.

NJ PHILLIPS PTY LTD ABN 36 000 082 002
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EMAIL: njp1@njphillips.com.au **MADE IN AUSTRALIA**

ISO 9001:2008 CERTIFIED COMPANY

njphillips.com
Our expertise is in your hands.

PAD1232C, PAD1232, PASD1232, EAS1315, EASD1265C, EASD1127, EASD1235C, EAD1433, EAD1434 | QL707-R7

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Check the applicator.
Before each use, the nozzle should be inspected to ensure there are no sharp edges. Should this occur, remove with file or emery paper or replace nozzle.

INSTRUCTIONS FOR USE

Preparing the applicator.
Fit the appropriate nozzle or injection attachment assembly to the handpiece, taking care to ensure the delivery valve and spring (item 7) remain facing in direction shown in the handpiece diagram.

CAUTION

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5. Remove instrument and needles from container, wrap cloth around handle and pump dry, remove cloth and dry handpiece.

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IMPORTANT

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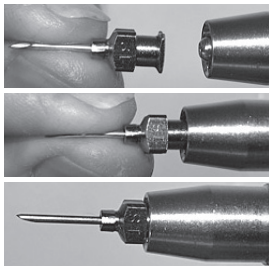
LUER LOCK NEEDLE FITTING



1. Position the needle in front of the needle nut.
2. Locate the needle onto the needle mount and turn clockwise to tighten.
3. The needle is now secured in place.

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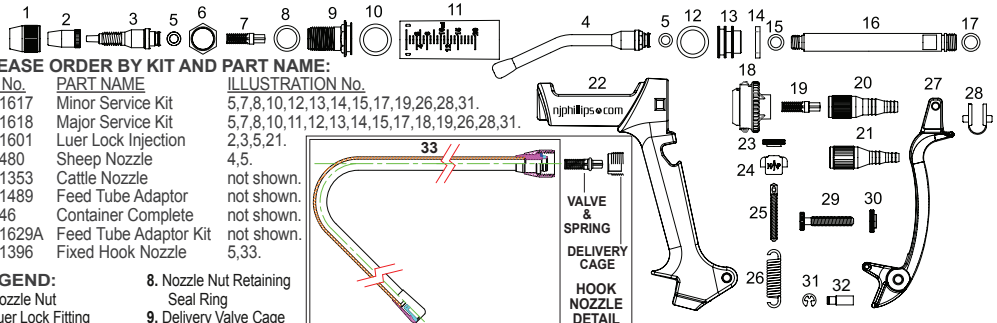
AS OUR POLICY IS ONE OF CONTINUOUS IMPROVEMENT THE MANUFACTURER RESERVES THE RIGHT TO ALTER THESE SPECIFICATIONS AT ANY TIME. ALL PRODUCTS PRODUCED BY NJ PHILLIPS PTY LIMITED, ARE IDENTIFIED BY A UNIQUE BATCH NUMBER. THIS IDENTIFICATION NUMBER IS AFFIXED TO THE PRODUCT TO ALLOW TRACEABILITY BY THE MANUFACTURER AND MUST NOT BE REMOVED IF PRODUCT INTEGRITY IS TO BE MAINTAINED.
PAD1232C, PAD1232, PASD1232, EAS1315, EASD1265C, EASD1127, EASD1235C, EAD1433, EAD1434 | QL707-R7



PLEASE ORDER BY KIT AND PART NAME:

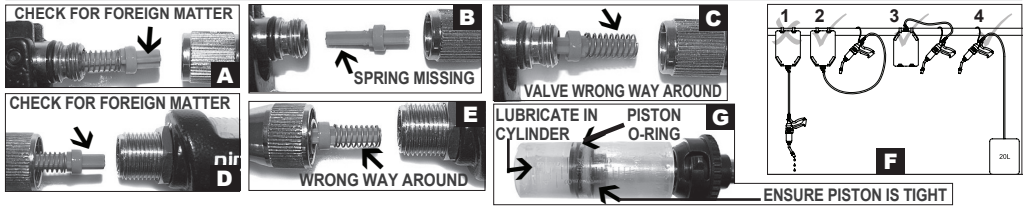
KIT No.	PART NAME	ILLUSTRATION No.
WX1617	Minor Service Kit	5,7,8,10,12,13,14,15,17,19,26,28,31.
WX1618	Major Service Kit	5,7,8,10,11,12,13,14,15,17,18,19,26,28,31.
WX1601	Luer Lock Injection	2,3,5,21.
WX480	Sheep Nozzle	4,5.
WX1353	Cattle Nozzle	not shown.
WX1489	Feed Tube Adaptor	not shown.
WX46	Container Complete	not shown.
WX1629A	Feed Tube Adaptor Kit	not shown.
WX1396	Fixed Hook Nozzle	5,33.

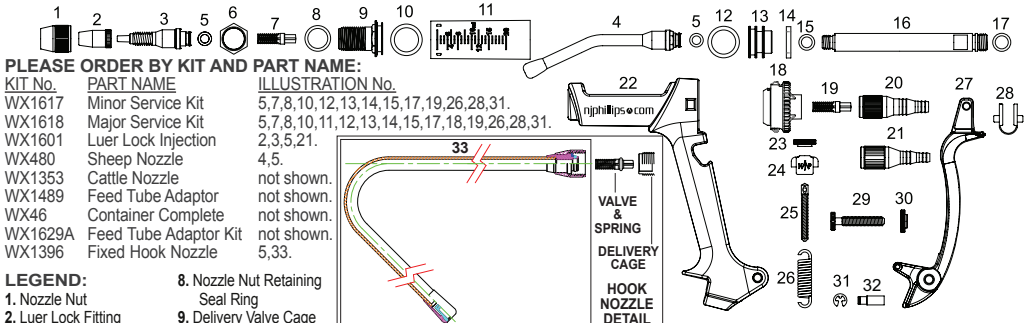
LEGEND:

1. Nozzle Nut
2. Luer Lock Fitting
3. Injection Attachment
4. Sheep Nozzle
5. Nozzle Seal Ring
6. Delivery Cage Lock Nut
7. Delivery Valve Complete
8. Nozzle Nut Retaining Seal Ring
9. Delivery Valve Cage
10. Cylinder Seal Ring
11. Cylinder
12. Piston Seal Ring
13. Piston
14. Lubricating Washer
15. Push Rod Seal Ring (Delivery End)
16. Push Rod
17. Push Rod Seal Ring (Inlet End)
18. Push Rod Guide
19. Inlet Valve Complete
20. Large Barb Inlet Fitting (Fitted to Instrument)
21. Dual Barb Inlet Fitting
22. Handle
23. Adjustor Nut
24. Trunnion
25. Spring Adjustor Spindle
26. Return Spring
27. Lever
28. Lever Pads
29. Dose Adjustor Screw
30. Dose Adjustor Lock Nut
31. Circlip
32. Lever Pin
33. Hook Nozzle

IMPORTANT: QUICK REFERENCE TROUBLESHOOTING GUIDE

	SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
1a. 1b.	**Product being returned to the container from the applicator. Unable to draw product from the container.**	Foreign matter lodged under the inlet valve.	**SEE A.** Remove inlet adaptor (20) and clean the internal seat by removing valve and spring (19), rinse with clean water then wipe with a soft cloth. Reassemble ensuring correct orientation of the valve and spring (19).
		Inlet valve spring is missing.	**SEE B.** Replace inlet valve spring (19).
		Inlet valve and spring incorrectly assembled.	**SEE C.** Reassemble valve and spring (19) correctly (as shown in the top photo).
		Foreign matter lodged under delivery valve.	**SEE D.** Remove nozzle (4), valve and spring (7). Clean valve seat located in front of cylinder by rinsing and wiping with a soft cloth. Clean valve and spring (7) and reassemble ensuring valve and spring are oriented correctly.
2.	**Product leaking out of the nozzle or air being drawn into the cylinder from the nozzle end.**	Nozzle seal ring damaged.	**SEE E.** Replace nozzle seal ring (5).
		Delivery valve and spring incorrectly assembled.	**SEE E.** Reassemble valve and spring (7) correctly (see parts illustration).
		Delivery valve sealing edge damaged.	**SEE D.** Replace the delivery valve and spring (7).
		Delivery cage seal ring damaged.	Replace the delivery cage seal ring (10).
3.	**Fluid dripping out of nozzle when not in use.**	Applicator is hanging at end of feed tube when not in use.	**SEE F.** Hang applicator at same height or higher than off take point of feed tube on container of product. This ensures the delivery valve is free of load which can cause the product to leak past the valve assembly.
4.	**Air is being drawn into the cylinder from in and around the piston.**	Foreign matter lodged on or around piston o-ring.	**SEE G.** Replace piston o-ring (12) and lubricate liberally.
		Piston not sealing against push rod.	**SEE G.** Remove cylinder (11). Hold rear push rod (16), tighten piston (13) firmly using wide blade screwdriver or replace push rod / piston seal ring (if applicable).
		Delivery valve and spring incorrectly assembled.	**SEE E.** Reassemble valve and spring (7) correctly (see parts illustration).
		Feed tube damaged.	Replace the feed tube.
		Feed tube connection at container or applicator is split or damaged.	Replace container fitting or inlet adaptor to ensure an air tight seal. Cut feed tube for clean ends.
5.	**Piston not returning fully on filling stroke.**	Piston o-ring and lubricating washer dry.	**SEE G.** Remove cylinder (11), soak piston o-ring (12) and lubricating washer (14) in NJ Phillips Lubricant.
		Blockage in inlet line.	Check inlet valve and spring (19), inlet adaptor (20), feed tube and container draw off fitting for foreign matter.
		Kinking or restriction of feed tube.	Remove restriction or reposition feed tube.
		Binding of push rod within dose adjustor assembly caused by foreign matter between sliding surfaces.	Dismantle push rod (16) from instrument and rinse it and dose adjustor assembly with clean water. Inspect for damage. If damaged, replace affected part.
		Product too viscous for draw-off and feed tube.	Increase feed tube and draw off bore size.
		Chemical container not collapsing as instrument draws fluid.	Vent pack or use a Phillips Vented Draw-Off system.
6.	**Hard delivery stroke pressure**	Foreign matter in delivery valve spring or blockage in nozzle.	**SEE D.** Remove nozzle (4). Clean delivery valve &, spring and nozzle fluid hole. Reassemble.





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		Inlet valve spring is missing.	**SEE B.** Replace inlet valve spring (19).
		Inlet valve and spring incorrectly assembled.	**SEE C.** Reassemble valve and spring (19) correctly (as shown in the top photo).
		Foreign matter lodged under delivery valve.	**SEE D.** Remove nozzle (4), valve and spring (7). Clean valve seat located in front of cylinder by rinsing and wiping with a soft cloth. Clean valve and spring (7) and reassemble ensuring valve and spring are oriented correctly.
2.	**Product leaking out of the nozzle or air being drawn into the cylinder from the nozzle end.**	Nozzle seal ring damaged.	**SEE E.** Replace nozzle seal ring (5).
		Delivery valve and spring incorrectly assembled.	**SEE E.** Reassemble valve and spring (7) correctly (see parts illustration).
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3.	**Fluid dripping out of nozzle when not in use.**	Applicator is hanging at end of feed tube when not in use.	**SEE F.** Hang applicator at same height or higher than off take point of feed tube on container of product. This ensures the delivery valve is free of load which can cause the product to leak past the valve assembly.
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