NEEDLE SELECTION
Needles are measured two ways: Length and Gauge (diameter). When determining the correct gauge, remember that the higher the number, the smaller the diameter. Example: an 18 gauge needle is smaller than a 16 gauge needle.

<table>
<thead>
<tr>
<th>GAUGE</th>
<th>LENGTH</th>
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<tbody>
<tr>
<td>POULTRY</td>
<td>22</td>
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**INJECTION SITES**
Please refer to the sample chart.
- IM (intramuscular) - neck area
- SUBQ (subcutaneous) - preferred method in cattle
- IV (intravenous) - professional route; results in faster blood level

**CONSIDERATIONS WHEN CHOOSING A SYRINGE**
When choosing a syringe to use, consider the type animal, what type of product will be used, how many animals will be treated, and also consider the person who will be using the syringe.

**THE PRODUCT:** Some syringe parts are adversely affected by medication carriers or solvents such as alcohol and some pour-on formulations. There are certain vaccines and antibacterials which contain oil-based adjuvants which will slow the injection and auto-fill speeds.

**THE NUMBER OF ANIMALS:** When dosing large numbers of animals, you may want a syringe or drencher with large-capacity back-pack reservoirs in order to dose without interruption.

**THE PERSON:** Hand fatigue can be avoided by fitting a syringe to the person using the syringe. Grips and grip sizes vary among syringes. V-Shaped syringes or pistol-grip syringes may feel more comfortable to some people. Some syringes offer a soft grip cover, or some users prefer a metal grip. Choose a grip that is not too wide or too small for the user.

**OPERATING INSTRUCTIONS**
- Set dose desired by turning dosage dial.
- Twist needle into luerlock turning clockwise until tight.
- Draw medication into syringe.
- Expel trapped air.
- Administer medication. It is recommended to obtain proper instructions from a veterinarian.

**UNIVERSAL CLEANING INSTRUCTIONS**
- After each use or switching medications, draw hot soapy water into syringe. Avoid anti-bacterial soap when using live virus vaccine.
- Set on maximum dose and flush system by pumping six to ten times.
- Soak if needed.
- For automatic tubing syringes, pump the hot soapy water solution through the feed tube.
- Always rinse well with clear water.

**EXTEND THE LIFE OF THE O-RING**
- Lubricate with vegetable oil.
- Do not use petroleum-based products.

**GLASS BARRELS**
- If the glass barrel breaks, loosen knurled knob, remove barrel carefully and check plunger for cuts. Replace plunger if needed.
- Lubricate o-ring or rubber piston with vegetable oil and reinset piston into new glass barrel.