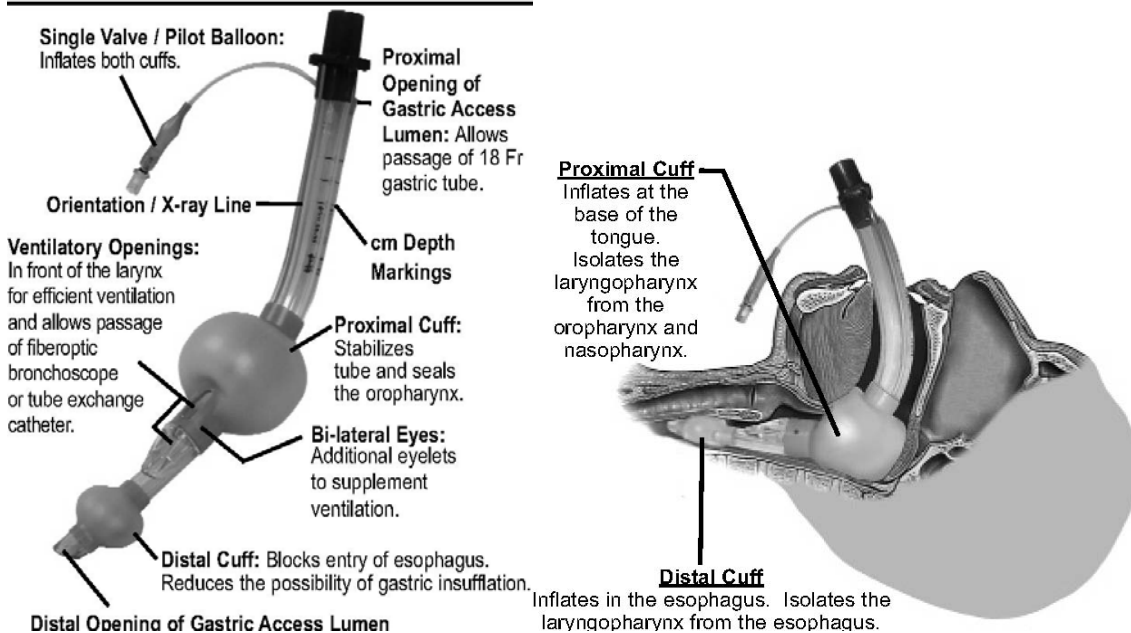


**REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
EMT – Basic/ Paramedic**

SMO: KING LTS-D Airway

OVERVIEW: The KING LTS-D is a sterile, single use device intended for airway management. It consists of a curved double-lumen tube with separate pathways for ventilation and access to the stomach. The ventilation lumen ends between the two inflatable cuffs with a variety of openings intended to align with the laryngeal inlet. Attached to the proximal end of the ventilation lumen is a 15 mm connector for attachment to a standard breathing circuit or resuscitation bag. The gastric access lumen is a separate conduit that allows passage of up to an 18 Fr standard gastric tube from its external proximal opening to the distal tip of the KING LTS-D, which, is intended to be positioned in the upper esophagus. This allows the gastric tube to be easily inserted into the stomach for removal of fluids. In the absence of a gastric tube, the gastric access lumen allows channeling of gases and fluids from the esophagus and stomach to a point outside the patient’s mouth. The KING LTS-D has two cuffs that are inflated with a single valve/pilot balloon. The distal cuff is designed to seal the esophagus, while the proximal cuff is intended to seal the oropharynx. Sterilization is by ethylene oxide.



INDICATIONS FOR USE

The KING LTS-D is intended for airway management in patients over 4 ft in height (122 cm) for controlled or spontaneous ventilation. It is also indicated for difficult and emergent airway cases and is well suited for ambulatory and office-based anesthesia.

CONTRAINDICATIONS

The following contraindications are applicable for routine use of the KING LTS-D:

- Responsive patients with an intact gag reflex.
- Patients with known esophageal disease.
- Patients who have ingested caustic substances.

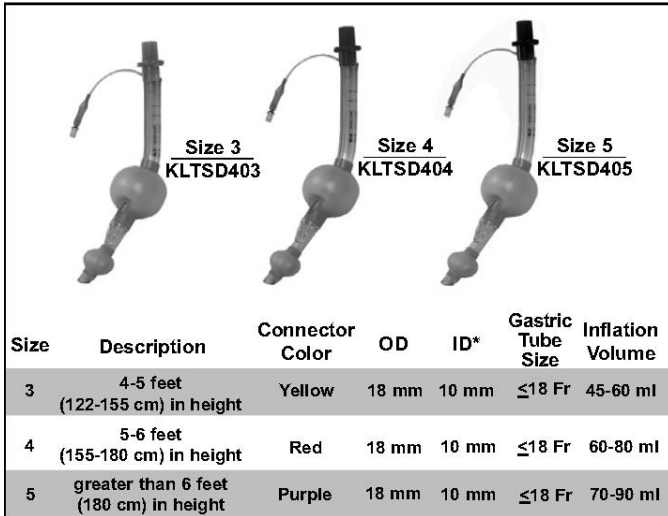
WARNINGS/PRECAUTIONS

- The KING LTS-D does not protect the airway from the effects of regurgitation and aspiration.
- High airway pressures may divert gas either to the stomach or to the atmosphere.
- Intubation of the trachea cannot be ruled out as a potential complication of the insertion of the KING LTS-D.
- After placement, perform standard checks for breath sounds and utilize an appropriate carbon dioxide monitor as required by protocol.
- Lubricate only the posterior surface of the KING LTS-D to avoid blockage of the ventilation apertures or aspiration of the lubricant.
- The KING LTS-D is not intended for reuse.

During transition to spontaneous ventilation, airway manipulations or other methods may be needed to maintain airway patency.

LATEX-FREE

The KING LTS-D is 100% latex-free and should be considered safe to use on patients who are latex sensitive.



*Equivalent ID of Ventilation Lumen

KING LTS-D INSERTION INSTRUCTIONS

1. Using the information provided, choose the correct KING LTS-D size, based on patient height.
2. Test cuff inflation system by injecting the maximum recommended volume of air into the cuffs (size 3 – 60 ml; size 4 – 80 ml; size 5 – 90 ml). Remove all air from both cuffs prior to insertion.

11/07

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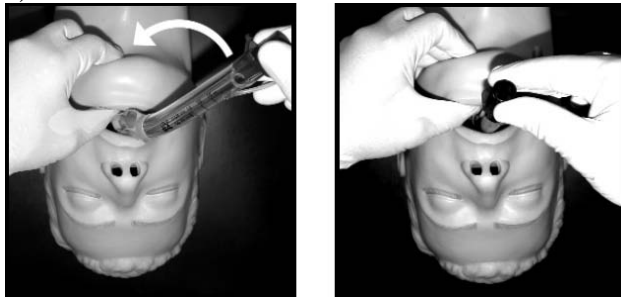
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EMS/ Region1 SMOs

3. Apply a water-based lubricant to the beveled distal tip and posterior aspect of the tube, taking care to avoid introduction of lubricant in or near the ventilatory openings.
4. Have a spare KING LTS-D ready and prepared for immediate use.
5. Pre-oxygenate.
6. Ensure gag reflex is not intact.
7. Position the head. The ideal head position for insertion of the KING LTS-D is the "sniffing position". However, the angle and shortness of the tube also allows it to be inserted with the head in a neutral position.
8. Hold the KING LTS-D at the connector with dominant hand. With non-dominant hand, hold mouth open and apply chin lift.
9. With the KING LTS-D rotated laterally 90° such that the blue orientation line is touching the corner of the mouth, introduce tip into mouth and advance behind base of tongue. Never force the tube into position.



10. As tube tip passes under tongue, rotate tube back to midline (blue orientation line faces chin).



11. Without exerting excessive force, advance KING LTS-D until proximal opening of gastric access lumen is aligned with teeth or gums.



12. Inflate cuffs with the minimum volume necessary to seal the airway at the peak ventilatory pressure employed (just seal volume). Typical inflation volumes are as follows:
 - Size 3 45-60 ml
 - Size 4 60-80 ml
 - Size 5 70-90 ml

13. Attach the breathing circuit or resuscitator bag to the 15 mm connector of the KING LTS-D. While gently bagging the patient to assess ventilation, simultaneously withdraw the airway until ventilation is easy and free flowing (large tidal volume with minimal airway pressure).



14. Depth markings are provided at the proximal end of the KING LTS-D which refers to the distance from the distal ventilatory openings. When properly placed with the distal tip and cuff in the upper esophagus and the ventilatory openings aligned with the opening to the larynx, the depth markings give an indication of the distance, in cm, from the vocal cords to the upper teeth.
15. Confirm proper position by auscultation, chest movement and verification of CO₂ by capnography if available.
16. Readjust cuff inflation if needed to just seal cuff.
17. Secure KING LTS-D to patient using tape or other accepted means. A bite block can also be used, if desired.

DO NOT COVER THE PROXIMAL OPENING OF THE GASTRIC ACCESS LUMEN.

18. The gastric access lumen allows the insertion of up to an 18 Fr diameter gastric tube into the esophagus and stomach. Lubricate gastric tube prior to insertion.



REMOVAL OF THE KING LTS-D

1. Once it is in the correct position, the KING LTS-D is well tolerated until the return of protective reflexes.
2. KING LTS-D removal should always be carried out in an area where suction equipment and the ability for rapid intubations are present.
3. For KING LTS-D removal, it is important that both cuffs are completely deflated

USER TIPS

1. The key to insertion is to get the distal tip of KING LTS-D around the corner in the posterior pharynx, under the base of the tongue. Experience has indicated that a lateral approach, in conjunction with a chin lift, facilitates placement of the KING LTS-D. Alternatively, a laryngoscope or tongue depressor can be used to lift the tongue anteriorly to allow easy advancement of the KING LTS-D into position.
2. Insertion can also be accomplished via a midline approach by applying a chin lift and sliding the distal tip along the palate and into position in the hypopharynx. In this instance, head extension may also be helpful.
3. As the KING LTS-D is advanced around the corner in the posterior pharynx, it is important that the tip of the device is maintained at the midline. If the tip is placed or deflected laterally, it may enter the piriform fossa and the tube will appear to bounce back upon full insertion and release. Keeping the tip at the midline assures that the distal tip is placed properly in the hypopharynx/upper esophagus.
4. Depth of insertion is key to providing a patent airway. Ventilatory openings of the KING LTS-D must align with the laryngeal inlet for adequate oxygenation/ventilation to occur. Accordingly, the insertion depth should be adjusted to maximize ventilation. Experience has indicated that initially placing the KING LTS-D deeper (proximal opening of gastric access lumen aligned with teeth or gums), inflating the cuffs and withdrawing until ventilation is optimized results in the best depth of insertion for the following reasons:
 - It ensures that the distal tip has not been placed laterally in the piriform fossa (see item #3 above).
 - With a deeper initial insertion, only withdrawal of the tube is required to realize a patent airway. A shallow insertion will require deflation of the cuffs to advance the tube deeper (several added steps).
 - As the KING LTS-D is withdrawn, the initial ventilation opening exposed to or aligned with the laryngeal inlet is the proximal opening. Since the proximal opening is closest to and is partially surrounded by the proximal cuff, airway obstruction is less likely, especially when spontaneous ventilation is employed.
 - Withdrawal of the KING LTS-D with the balloons inflated results in a retraction of tissue away from the laryngeal inlet, thereby encouraging a patent airway
5. Ensure that the cuffs are not over inflated. Inflate cuffs with the minimum volume necessary to seal the airway at the peak ventilatory pressure employed (just seal volume). Note that nitrous oxide is known to diffuse into cuffs and increase pressure; accordingly, if using nitrous oxide, cuff pressures should be monitored periodically to avoid over-inflation.

6. Removal of the KING LTS-D is well tolerated until the return of protective reflexes. For later removal, it may be helpful to remove some air from the cuffs to reduce the stimulus during wake-up.

Documentation of adherence to protocol:

- ___ Evidence of respiratory distress without gag reflex
- ___ Successful insertion of King Airway
- ___ Note patient respiratory status post- insertion

Medical Control Contact Criteria

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| ___ If any question exists as to the best option for the patient. |
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PRECAUTIONS AND COMMENTS

- At the BLS level, the KING Airway is used as an alternative airway device if unable to secure airway with oral airway and BVM.
- At the ILS/ ALS level, the KING Airway is used as an alternative airway device if unable to secure airway with ETT.
- If Cuff Pressure Gauge is available inflate cuffs to 60 cm H₂O.