



iQ7 ACTUATOR & Control
Installation & Operating Instructions
For use with Motion Sensing Brake Controllers

AL-KO INTERNATIONAL

ABN 96 003 086 813

*FOR DETAILS OF YOUR NEAREST AL-KO AUTHORISED SERVICE AGENT
PLEASE CONTACT OUR STATE OFFICES AS LISTED BELOW:*

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This information **MUST** be distributed with the AL-KO iQ7 trailer braking system
and be kept with the towing vehicle for future reference.

General Operation

The AL-KO iQ7 has been designed to operate in all 'normal' environmental conditions and it has been left to the discretion of the installer as to the location of the actuator. Although the AL-KO iQ7 housing is partly sealed to protect the internal components from the external environment, when exposed to corrosive environments such as salt water, fertiliser, and other caustic materials, care must be taken to protect the unit at all times. Although water-resistant, the AL-KO iQ7 unit is NOT waterproof and should NEVER be submerged at any time. It is therefore suggested that the AL-KO iQ7 unit be mounted towards the front of the towed vehicle and as high as practical (i.e. the bow post if used in the marine environment. Refer Fig. 1, Page 2).

WARNING:

Never submerge the AL-KO iQ7 actuator at any time. Submerging may cause system malfunction resulting in possible serious or fatal injuries and/or property damage. Submerging will void warranty.

WARNING:

Never apply solvents or adhesives (including brake fluid) to the actuator housing as this may weaken the housing resulting in possible serious or fatal injuries and/or property damage. Brake Fluid will damage any painted surfaces.

Installation

Actuator

IMPORTANT!

Under no circumstances should any control system, other than approved AL-KO iQ7 controllers, be used in conjunction with the AL-KO iQ7 Actuator.

Mounting Bracket

The AL-KO iQ7 actuator incorporates four mounting holes on the base of the unit (Refer figure 3, Page 2). In order to attach the unit securely to the trailer and to minimise vibration, a sturdy mounting bracket must be fabricated.

Use a 6mm or 1/4" bolt with a suitable locking nut to fix the actuator to the trailer.

It is important to ensure the mounting bolts are not over tightened during installation.

If the rubber mounting grommet appears oval shaped (Refer figure 2, Page 2) it has become over tightened. When choosing a location for the mounting bracket, consider positioning of additional trailer accessories, such as a winch etc.

Figure 1. Mounting Position Actuator Bow post

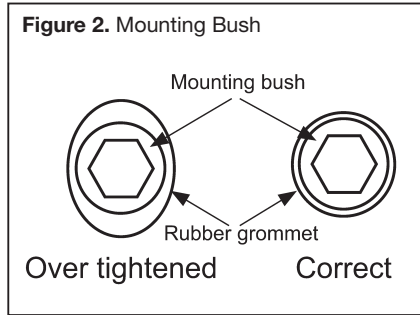
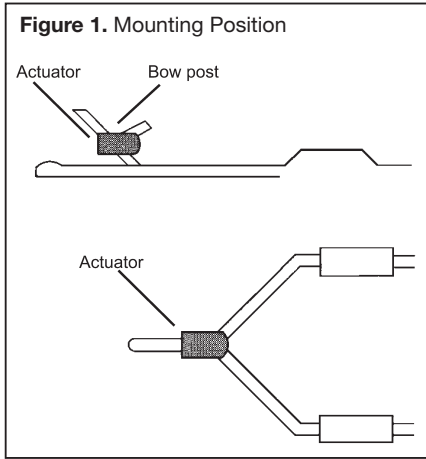


Figure 3. Mounting Bracket

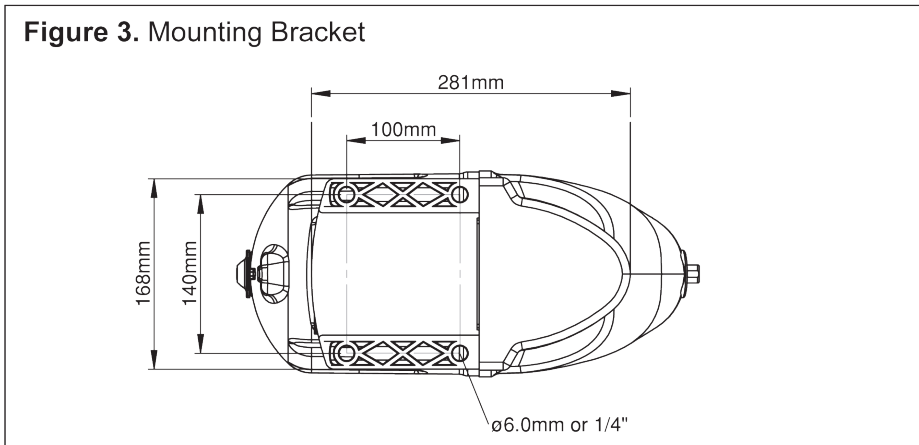
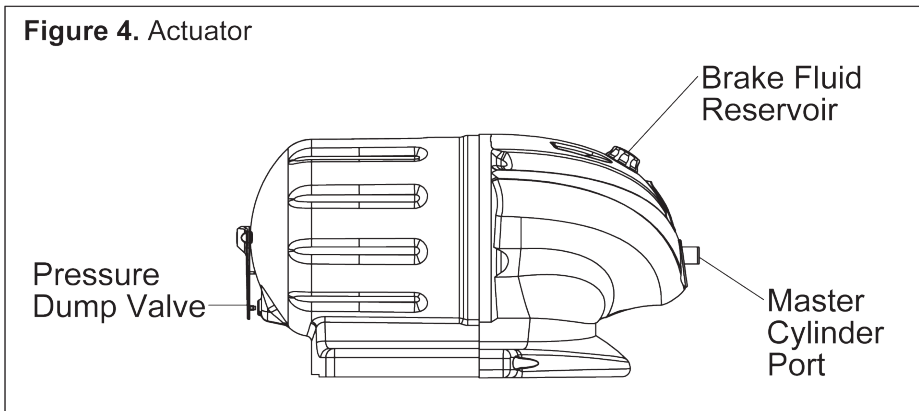


Figure 4. Actuator



HYDRAULIC CONNECTION

Connect the hydraulic brake line from the brake system on the towed vehicle to the brake port on the AL-KO iQ7 actuator unit using a 3/8" UNF Brass Long Series Tube Nut.

Carefully fill the brake fluid reservoir by removing the filler cap. Always use new brake fluid. Never attempt to reuse brake fluid. The reservoir is full when the fluid reaches the bottom of the reservoir neck (the top of the sight glass). **Do not over fill the reservoir. Be careful not to spill brake fluid between the reservoir and the front cover.** The brake fluid level must never fall below the 'minimum' line indicated on the sight glass.

Bleeding

Bleeding instructions using AL-KO iQ7 Pressure Bleed Gun

1. Fill reservoir with clean Dot 4 brake fluid to just below the top of the sight glass.
2. Place the pressure bleed gun (available from AL-KO p/n 350045) socket gently over the neck of the reservoir applying gentle pressure to locate the bleed socket O Ring in place.
3. Do not push on with excessive force or damage may be caused to the reservoir or the O ring on the pressure bleed gun socket. Rub a small amount of brake fluid around the inside of the reservoir neck to assist fitting. Screw the cap fully closed.
4. Attach the bleed gun to the actuator fluid reservoir (as shown in diagram 1.) and place the other end in a bottle of new brake fluid



Bleeding

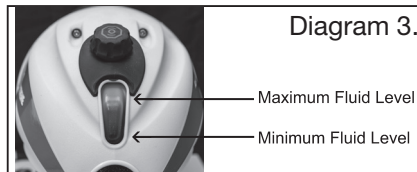


(Diagram 2)

5. Open the bleed screw on the trailer brakes (start with the closest calliper/brake) at least one full turn. Place a clear flexible hose over the bleed screw and immerse the other end into a container partially filled with brake fluid.
6. Squeeze the pressure bleed gun repeatedly (not too fast or cavitation may occur) ensuring that the bulk brake fluid tank and the reservoir do not run out of brake fluid or air will enter the hydraulic system. At no stage let the fluid level in the reservoir fall below the minimum fluid level indicator.

7. Continue squeezing the pressure bleed gun until the brake fluid in the flexible hose attached to the bleed screw is free of air bubbles and tighten the bleed screw.
8. Repeat the process for any other callipers/brakes on the same side of the trailer working away from the actuator.
9. Bleed the other side of the trailer starting with the closest calliper/brake to the actuator first as above.
10. Connect the trailer to the tow vehicle and start the vehicle to activate the actuator. Allow the compressor to fully charge the actuator (approx 120 seconds). Once the compressor has stopped, apply the brakes and hold on for a 5 second period and release. Repeat this 4 times.
11. Check the brake fluid level in the reservoir. It should not exceed the top of the sight glass maximum level. (see diagram 3).
12. Insert and tighten the fluid reservoir cap.

IMPORTANT: Before removing the pressure bleed gun from the reservoir, make sure that there is no pressure in the system (pressure bleed gun has fully returned to the rest position) or brake fluid spillage will occur causing paint damage.



WARNING:

Correct bleeding of the actuator is critical as trapped air greatly reduces the efficiency of the brakes. When the bleeding process is complete, check all bleeder screws to ensure that they are secure and do not leak.

Failure to properly install, bleed, operate and maintain your AL-KO iQ7 braking system can cause malfunction resulting in possible serious or fatal injuries and/or property damage. The IQ7 actuator should never be used to bleed the braking system as this may damage the compressor

Drum Brakes

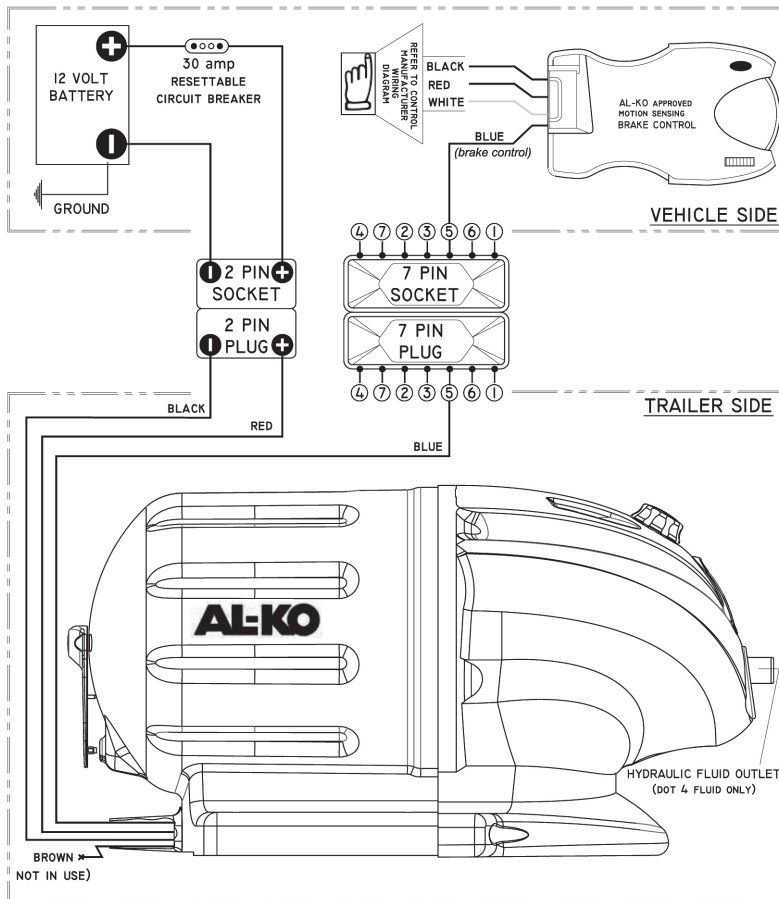
If drum brakes are being used, a residual line pressure valve (obtain from a brake specialist) must be installed in the hydraulic line. This must be located BEFORE any split in the hydraulic line immediately after or as close as practical to the master cylinder port.

Note:

Monitor the brake fluid level in the reservoir so that the actuator is not run without fluid. Running the unit without fluid will ingest air into the brake system that must be removed by bleeding.

Wiring Loom

The AL-KO iQ7 Wiring Loom has been designed to simplify the installation process.



Testing (Hydraulic AL-KO iQ7 actuator version designed for use with Motion Sensing Brake Controllers only)

After the vehicle brake controller installation has been completed, test the system set up as follows:

- a. Turn on ignition. The compressor inside the AL-KO iQ7 Actuator will be heard running. Wait a least 30-40 seconds before attempting to drive or move the vehicle. This will allow for at least 50% braking power to become available.
- b. Wait a further 60 seconds before undertaking brake proportionality testing. Find an appropriate stretch of road where brake testing can be undertaken without the disruption of other road users.
- c. Follow the motion sensing brake controller instructions as supplied by the manufacturer to establish smooth proportional braking.

Approved AL-KO iQ7 Motion Sensing Controllers:

- Hayes Energiser III
- Tekonsha Primus IQ
- Tekonsha Prodigy P2
- Tekonsha P3

Contact AL-KO for verification of all other controllers prior to use. iQ7 used in conjunction with a Tekonsha P3 brake controller fulfills the requirements of providing visible warning of low operating pressure or break away by flashing a red 'No Connection' display from the front of the controller. This feature is required in some Australian states.

IMPORTANT! WARNING:

Please ensure trailer plug/socket is mounted in a position that does not enable water contact or pooling around terminals. The trailer plug/socket should be regularly sprayed with water dispersing agent or corrosion preventative compound.

OPERATION

Warning

Always ensure the towed vehicle and its load is secured. Failure to do so could result in possible serious damage or fatal injuries and/or property damage.

To ensure that the AL-KO iQ7 system is functioning correctly, the brake actuator should be tested every time the towing vehicle is re- attached to the towed vehicle (Refer 'Testing' – page 6).

Air Pressure Dump Valve

The AL-KO iQ7 reservoir incorporates an air pressure dump valve. As soon as the braking system is deactivated (i.e. ignition is turned off/trailer breaks away from the vehicle) the trailer brakes are automatically activated. In order to release the trailer brakes the air pressure dump valve must be pressed.

CAUTION: The service brake is not intended to be used as a park brake. Under no circumstances should the trailer be left detached from the vehicle with only the service brake activated. Either the wheels should be blocked or an independent park brake applied and then the actuator reservoir air dumped. Failure to do so could result in serious damage or injury.

Breakaway System

A breakaway system is often required on a braked trailer. The breakaway system must be designed to automatically apply the brakes to the towed vehicle in the event that the trailer becomes separated from the tow vehicle.

The AL-KO iQ7 does NOT require a separate power source for the activation of the breakaway system. In the event of a breakaway situation the disconnection of the power supply results in the trailer service brake being activated automatically.

In order to deactivate the brakes press the 'air pressure dump valve'. Please check regulations in your area as to the requirements of trailer breakaway systems.

MAINTENANCE

The AL-KO iQ7 is an intelligent trailer braking system.

This does not however mean that the system should not regularly be maintained.

It is recommended that before each use:

1. Check the brake fluid level of the AL-KO iQ7 system.
2. Check all electrical leads and connectors for broken wires, damaged or corroded connectors etc. It is suggested that an appropriate corrosion preventive compound be periodically applied to all exposed wiring and connectors.
3. Brake fluid should be replaced annually or more frequently in heavy use.

WARNING

When not in use over extended periods of time, please ensure the actuator is activated periodically (approximately every four weeks) to ensure moving components remain in good condition and seals remain lubricated. Failure to do so may result in incorrect product performance and could result in serious damage or injury.

AL-KO INTERNATIONAL PTY LTD WARRANTY

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

AL-KO International Pty Ltd (ABN 96 003 066 813) ("AL-KO") provides the following warranty in relation to its AL-KO iQ7 XTREME Actuator, AL-KO iQ7 Actuator and In Car Kit ("Product").

The benefits of this warranty are in addition to any rights and remedies imposed by Australian State and Federal legislation that cannot be excluded. Nothing in this warranty is to be interpreted as excluding, restricting or modifying any State or Federal legislation applicable to the supply of goods and services which cannot be excluded, restricted or modified.

WARRANTY

AL-KO warrants that, subject to the exclusions and limitations below, the Product will be free from defects in materials and workmanship for a period of 12 months from the date of installation.

This warranty is not transferable to a subsequent person if the Product is sold by the original purchaser during the warranty period.

If a defect appears in the Product before the end of the warranty period and AL-KO finds the Product to be defective in materials or workmanship, AL-KO will, in its sole discretion, either:

- (a) replace or repair the Product or the defective part of the Product free of charge; or
- (b) cause the Product or the defective part of the Product to be replaced or repaired by a qualified repairer free of charge.

AL-KO reserves the right to replace defective parts of the Product with parts and components of similar quality, grade and composition where an identical part or component is not available.

Goods presented for repair may be replaced by refurbished goods of the same type rather than being repaired. Refurbished parts may be used to repair the goods.

WARRANTY CLAIMS

1. If a fault covered by warranty occurs the customer must first contact AL-KO at the contact address listed below, or the retailer from which the Product was purchased.
2. Any warranty claim must be accompanied by:
 - (a) proof of purchase;
 - (b) full details of the alleged defect; and
 - (c) any relevant documentation (such as maintenance records).
3. The customer must make the Product available to AL-KO or its authorised repair agent for inspection and testing. If inspection and testing finds no defect in the Product, the customer must pay AL-KO's costs of service work and testing.
4. AL-KO will bear the cost of the transport of the Product to and from AL-KO or the authorised repair agent where the defect is covered by this warranty. AL-KO will organise for the transport at the time the claim is made. The customer must bear the cost of the transport from AL-KO or the

authorised repair agent where the claim is not covered by this warranty.

EXCLUSIONS

The warranty will not apply where:

- (a) the Product has been repaired, altered or modified by someone other than AL-KO or an authorised repair agent;
- (b) AL-KO cannot establish any fault in the Product after testing and inspection;
- (c) the Product has been used other than for the purpose for which it was designed;
- (d) the defect in the Product has arisen due to the customer's failure to properly use and maintain the Product in accordance with AL-KO's instructions, recommendations and specifications (including maintenance);
- (e) the Product has been subject to abnormal conditions, including environment, temperature, water, fire, humidity, pressure, stress or similar;
- (f) the defect has arisen due to abuse, misuse, neglect or accident; or
- (g) unauthorised parts or accessories have been used on or in relation to the Product.

LIMITATIONS

AL-KO makes no express warranties or representations other than set out in this warranty.

The repair or replacement of the Product or part of the Product is the absolute limit of AL-KO's liability under this express warranty.

EXTENDED AL-KO WARRANTY

AL-KO International will extend the warranty for a further 24 months (therefore the warranty will be valid for 36 months from date of installation) where the following conditions are satisfied:

- (a) the Brake Controller/In Car Kit has been installed by an AL-KO International approved installer*;
- (b) the customer has completed the warranty form on the Product instruction manual and sent it back to AL-KO International for registration;
- (c) the customer has attached to the completed warranty form a copy of the original installation invoice provided to the customer by the AL-KO International approved installer*;
- (d) the copy of the original installation invoice clearly shows the date of installation and the details of the AL-KO International approved installer*;
- (e) The Brake Controller is an AL-KO approved Motion Sensing Controller (see page 6); and the Actuator AL-KO iQ7 has been installed by an approved OEM manufacturer.

If anything listed in (a) to (f) above is not complied with then AL-KO International reserves the right to limit the warranty to a 12 month period.

(* A list of the approved installers is available at www.alkoiQ7.com.au

Failure to comply with the installation and verification instructions may result in incorrect operation or premature product failure that could lead to serious injury, accident, or death and will also void this product warranty.

CONTACT

AL-KO International Pty Ltd
67 Nathan Road, Dandenong South, VIC, 3175
Phone: (03) 9767 3700. Email: info@alko.com.au



Product Warranty Registration Card

To register your purchase, please complete the form below and return to the AL-KO address below.

Model _____ Serial No. ALK _____ Date Purchased _____ Installed by Dealer Yes No

Where did you learn of IQ7?
 Dealer Owned before Friend Recommended
 Other _____

Type of tow vehicle: Make _____ Model _____

Type of trailer: Boat Transport Horse Caravan Other _____

Prior brand if this is a replacement: _____

Average km per year towing trailer _____ Gross Vehicle Mass (GVM) of towed vehicle _____

Name _____ Address _____

City _____ State, Province _____ P/Code _____

Dealer Name _____ Dealer Address _____

City _____ State, Province _____ P/Code _____

Return to:
AL-KO International Pty Ltd
ABN 96 003 066 813
67-91 Nathan Road
Dandenong South Victoria 3175
Australia
Phone: 61 3 9767 3700
Fax: 61 3 9792 0877
Email: info@aliko.com.au
Web: www.aliko.com.au



Further information can be obtained by visiting:
www.alko.com.au

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