



INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS SLIDE GATES & SLUICE GATES

INSTALLATION RECOMMENDATIONS CHANNEL OR WALL MOUNTED SLIDE GATES

HANDLING AND STORAGE

- If chains or slings are used for handling purposes, the frame should be protected with cloth sacking or similar material.

- NEVER USE HOOKS UNLESS EYEBOLTS ARE FITTED

- Slide Gates should be stored in the vertical position whenever possible, provided this can be done safely.

NOTES:

1. Pressure of any locating jacks must be spread evenly using timber. AVOID point loading to any part of the frame and NEVER apply jacking pressure to the door.

2. The anchor bolts are of stainless steel construction. Anchor bolts should ALWAYS be tightened, using a torque wrench to the correct setting. Please refer to the anchor bolt manufacturers literature for specific recommendations.

3. All slide gates units leave the factory with the doors set in the correct closed position and pre-adjusted for operation within the frame. It is preferable that the door is not opened or moved within the frame until the frame is securely wedged into a channel, or bolted on to a wall.

INSTALLATION SEQUENCE

- The installation of slide gates, avoiding distortion and consequent leakage, is not difficult providing these recommendations are followed.

- Prior to commencing installation, check civil work is correct to all appropriate drawings and that there is no obvious obstruction or undulations on concrete surfaces.

CHANNEL MOUNTED FRAME LOCATION

1. Support the unit in its required position, relative to the flow, in the prepared recess making sure that the invert of the frame is flush with the final invert of the channel.

2. Locate the unit in its correct final position by wedging the frame in the recess using jacks and packing pieces, of suitable thickness. Carefully check for plumb and Level in all directions and check that the invert to coping dimension is correct.

WALL MOUNTED FRAME LOCATION USING ANCHOR BOLTS

1. Supporting the frame along the whole of its bottom cross member, or by hanging from a crane, present the unit to its required position.

2. Using the frame as a template, drill holes to accept the anchor bolts specified.

3. Insert the top two anchor bolts. Tighten the bolts sufficiently to hold the frame in position.
4. Insert the remaining anchor bolts and locate the frame in its correct final position. Carefully check for plumb and level in all directions and check that the invert to coping dimensions is correct.
5. Having checked for plumb, correct level, alignment and location finally tighten all bolts securely to ensure no movement of the frame during grouting.





OPERATING EQUIPMENT

1. Whenever possible, units are dispatched completely assembled with their operating gear. However, if units have to be dispatched in separate section, each section will be labeled with the Tag Reference Number.
2. Separate 'Installation, Operation and Maintenance Recommendations' are provided for the electric actuators (refer to manufactures own web sites: - Auma Actuators @ www.auma.com and Rotork Actuators @ www.rotork.com)
3. When required, coping brackets or guide brackets for extension spindles, or floor pillars for operating gear, should also be bolted to the wall, coping or floor, in the manner previously described for the type of anchor bolts specified. Refer to the appropriate Arrangement Drawing as necessary.
4. When fitting extension spindles on single spindle slide gates, it is essential that the door and the remote operating equipment, through the spindles, are in perfect vertical alignment.

INSTALLATION RECOMMENDATIONS FOR MANUAL GEARBOXES

HANDLING

- If chains or slings or used for handling purposes, the unit should be protected with cloth, sacking or similar material.

-NEVER USE HOOKS UNLESS EYEBOLTS ARE FITTED Combined units i.e. slide gate with a gearbox fitted direct on the frame, should NEVER be slung from the gearbox.

STORAGE

1. If gearboxes are supplied separately they should be stored in a clean, dry warehouse. If supplied unpacked, the gearboxes should be stored on a shelf or wooden pallet. Other materials must not be stored on top of the gearboxes.
 2. If gearboxes must be stored outside (because they are fitted direct on a slide gate frame), they should be covered by a suitable waterproof sheet.
 3. Input shafts should be rotated every three months to mix the lubricant.
 4. Most standard gearboxes are weatherproof to IP67 after correct installation and are capable of operating within a temperature range of at least minus 20 degrees Centigrade to plus 70 degrees Centigrade.
- If gearboxes are required for submerged use in a liquid or, for use outside the quoted temperature range, they must be specifically ordered for that purpose.
- The installation of gearboxes is not difficult providing these recommendations are followed.
1. CHECK that you have the correct gearbox with the correct ratio to fit the unit, which is being installed.



2. CHECK that the gearbox is properly lubricated. Most gearboxes are factory lubricated 'for life' with grease. If the unit has been dismantled, the base plate must be resealed, with a silicone sealant, or other gasket compound, on re-assembly and any thrust elements or bearing cavities must be greased.
3. If the gearbox drive nut is supplied separately, on the spindle, care must be taken when fitting it into the gearbox to make sure that the thrust bearings are also fitted correctly.
4. If the gearbox has been supplied with a hand wheel it is recommended that
5. On a KEYED NON-RISING SPINDLE, once the key and keyway are lined up, the gearbox can be rotated until a positive engagement occurs. Rotate the gearbox to the correct orientation and align fixings. Bolt gearbox to mounting flange. NOTE: - With gearboxes designed to be thrust taking with non-rising stems, the drive sleeve will be fitted to the stem. Insert the stem through the bottom bearing set and the thrust plate and lower into position. You may have to screw the stem into the door nut or fit to muff coupling. Either way screw stem down to lightly grip and locate the lower bearing set (pre-greased) and plate. Position the top bearing set on to the drive sleeve (pre-greased) and lower the gearbox over the top, the gearbox will need rotating until it engages on the drive sleeve. Rotate the gearbox to the correct orientation and align fixings.
6. On a SCREWED RISING SPINDLE, once the threaded nut and spindle are lined up, the gearbox can be rotated until a positive engagement occurs. Rotating the hand wheel will then screw the gearbox down the spindle and when in the correct position, the gearbox can be bolted down on to the mounting flange. With this arrangement the gearbox may well have the drive sleeve fitted, if not repeat as for non-rising for the assembly of drive sleeve, bearings (1 set either side of the drive sleeve collar/shoulder) to gearbox and screw onto stem.
7. Refer to Manufacturers Instruction Manual for Installation Procedure.

INSTALLATION RECOMMENDATIONS FOR ELECTRIC ACTUATORS

HANDLING

- If chains or slings are used for handling purposes, the unit should be protected with Cloth sacking or similar material.
- NEVER USE HOOKS UNLESS EYEBOLTS ARE FITTED. Combined units, i.e. slide gate with an electric Actuator fitted direct on the frame should NEVER be slung from the actuator.

STORAGE

1. If electric actuators are supplied separately, they should be stored in a clean, dry warehouse. The internal heaters (if supplied) should be connected up to the power supply. If necessary, a suitable desiccant can be placed in the switch compartment.
2. Plastic plugs or caps, fitted for transportation, should be replaced with metal pipe plugs or caps and all covers fastened tight.
3. Drive shafts should be rotated at least every three months to mix the lubricant.
4. If actuators must be stored outside (because they are fitted direct on a slide gate frame), the slide gate unit must be stored vertically, so that the actuator motor and switch compartment is horizontal



and well off the ground. The actuator unit should be covered by a suitable waterproof sheet. Paragraphs 1, 2, and 3 above also apply.

5. Most standard actuators are weatherproof to at least IP67 BUT ONLY AFTER correct installation. They are usually capable of operating within a temperature range of at least minus 20oC to plus 70oC.

INSTALLATION SEQUENCE

- The installation sequence is not difficult providing these recommendations are followed:

1. READ these instructions AND the actuator manufacturers instruction book, which has either been supplied to you separately, or may be found attached to, or inside the switch compartment.

2. CHECK that you have the correct actuator to fit the unit which is being installed.

3. It is recommended that all the actuators be inspected for proper lubrication, in accordance with the manufacturer's instructions, before being operated, especially if they have been in storage for a long time.

4. If the actuator drive nut is supplied separately, on the spindle, care must be taken when fitting it into the actuator, to make sure that the thrust bearings are also fitted correctly.

5. With the DETACHABLE actuator thrust base and a KEYED NON-RISING spindle, when the key and keyway are lined up the thrust base can be lowered onto the mounting flange and bolted down. The actuator can then be fairly easily located onto the thrust base and bolted down.

6. With a DETACHABLE actuator thrust base and a SCREWED RISING spindle the thrust base must be rotated until a positive engagement occurs. The thrust base can be rotated down the spindle onto the mounting flange and bolted down. The actuator can be fairly easily located onto the thrust base and bolted down.

7. With an INTEGRAL actuator thrust base and a KEYED NON-RISING spindle; the actuator must be supported during the engagement operation. Engage "HAND OPERATION" and offer up the actuator to the spindle, and then turn the hand wheel until the key and keyway are lined up. Finally, bolt down onto the mounting flange.

8. With an INTEGRAL actuator thrust base and a SCREWED RISING spindle; the actuator must be supported during the engagement operation. Engage "HAND OPERATION" and rotate until a positive engagement occurs. Rotating the hand wheel will then screw the actuator down the spindle, and when in the correct position, the actuator can be bolted down onto the mounting flange.

9. After the actuator has been fixed into position engage "HAND OPERATION" and check for freedom of movement and correct operation BEFORE connecting up all electrics.

10. The 'torque cut out switch', designed to protect the unit, is normally set by the actuator manufacturer based on information previously supplied. If, adjustment is necessary, please refer the actuators manufacturers' instruction book.

11. The 'geared limit cut out switch', designed to protect the unit, is normally set by the slide gate manufacturer in the factory, for actuators which are fitted direct on the frame. Actuators which are supplied separately will have to set on site after installation. Please refer to the manufacturer's instruction book.

COMMISSIONING

1. BEFORE switching on power to the actuator, engage "HAND OPERATION" and move the slide gate door well away from its end of travel position.

2. AFTER switching on power, check the results using the local open and close switches, and make sure that you have the correct rotation of the spindle. Finally check the cut-out switches by fully opening and closing the unit. Be prepared to stop the unit quickly, if it does not stop automatically at the end of travel position.

3. CHECK any remote operation of the unit to make sure that it is also correct.

OPERATION RECOMMENDATIONS FOR CHANNEL OR WALL MOUNTED SLIDE GATES

OPERATION

- Operation of the slide gate is simple and straightforward, providing the Installation recommendations have been carried out correctly.

1. The seals on a slide gate are specially designed to give the best degree of water tightness, assuming that the unit is installed correctly. However, whilst many units will be nearly drop-tight, a leakage tolerance has to be applied, and this is: 'The maximum leakage rate under normal operating and on-seating conditions, up to a 6.0 meters head, is 1.25 liters per minute per meter of periphery. For off-seating conditions, the figure is 2.5 liters.

2. If excessive leakage occurs, the most likely explanations are: (a) That the frame has been distorted during installation. (b) That the door adjusters have been moved prior to, during, or after installation. (c) That there is grout or debris between the door and the frame at the invert. (d) That the seals have been scored or damaged in some way. (e) That any limit or torque switches may need re-setting. (f) That the operating equipment is out of alignment.

3. The majority of slide gates are fitted with wedging or pressure devices, to ensure contact between the frame and door sealing faces in the fully closed position, in order to achieve water tightness, particularly, in the off-seating condition. These wedging or pressure devices can be either self-adjusting or are fully adjustable in-situ by means of adjusting screws and locking nuts or pins.

4. DO NOT use excessive force when opening or closing a slide gate door, as damage could occur.

WALL MOUNTED SLIDE GATE OPERATING EQUIPMENT - GEARBOX OPERATION OF THE GEARBOX ----

-Operation of the gearbox is simple and straightforward providing the installation recommendations have been carried out correctly.

1. For ease of operation, the input effort is usually limited to about 250N on the crank handle, 'T' key or hand wheel.



2. If the gearbox is stiff to operate, find out the cause. DO NOT apply any additional leverage to create a higher input torque, or you may damage the unit or the equipment it is operating.

OPERATION RECOMMENDATIONS

OPERATING EQUIPMENT - ELECTRIC ACTUATORS OPERATION

- Operation of the electric actuator is simple and straightforward providing the installation and commissioning recommendations have been carried out correctly.

1. An electric actuator can be operated locally either manually or by power. Remote operation can be either by direct power connection or by a control signal.
2. Standard electric actuators are normally supplied fitted with a 15 minute rated motor, unless otherwise specified at the time of ordering.
3. If the actuator proves difficult, or fails to operate, check that there is a power supply and that it is at the correct voltage on a continuous basis. If the power supply is alright, check the individual local and/or remote control systems and the fuses on the internal circuit board and the "cut-out" switches. Finally, check that the motor has not overheated.
4. If there is no apparent electrical or "cut-out" fault, engage "hand operation" and check for freedom of movement. If there is free movement by manual operation, then there is still a fault in the power supply or in the actuator, and you should refer to the actuator manufacturer's instruction book.
5. If the unit is difficult to operate manually, refer to the manufacturer's recommendations for checking the unit which is being operated.

MAINTENANCE RECOMMENDATIONS CHANNEL OR WALL MOUNTED SLIDE GATES

- The slide gate should give years of trouble-free operation, providing the following simple inspection procedures are adopted.

- THE FREQUENCY OF INSPECTION SHOULD BE BASED ON THE PARTICULAR REQUIREMENTS OF THE INSTALLATION.

1. Clean the unit by hosing down to remove any grit or debris.
2. Check for leakage between the frame and the concrete wall. Correct any faults.
3. Check the tightness of the bolts and nuts.
4. Check there is no damage to the frame, door or seals.
5. Check the operating equipment for damage and freedom of movement, and check to ensure that there are no damaged or worn parts.
6. Moving parts should be lightly oiled or greased as appropriate.
7. When carrying out any maintenance work with the slide gate door in the open position, ALWAYS ENSURE that the door is securely and independently supported from underneath.

WALL MOUNTED SLIDE GATE MAINTENANCE OF GEARBOXES

- The gearbox should give years of trouble-free operation providing the following simple inspection procedures are adopted.

- THE FREQUENCY OF INSPECTION SHOULD BE BASED ON THE PARTICULAR REQUIREMENTS OF THE INSTALLATION.

1. Under normal operating conditions no maintenance is required other than to keep the unit clean.
2. Check the tightness of all bolts and nuts.
3. If the equipment which is being operated is taken out of service for an overhaul, the gearbox base/thrust plate may be removed and the grease changed, using one of the recommended lubricants. The base/thrust plate must be sealed on re-assembly.
4. Refer to the gearbox manufacturers recommendations.

MAINTENANCE RECOMMENDATIONS OPERATING EQUIPMENT WITH ELECTRIC ACTUATORS

- The electric actuator should give years of trouble free operation, providing the following simple inspection procedures are adopted.

- THE FREQUENCY OF INSPECTION SHOULD BE BASED ON THE PARTICULAR REQUIREMENTS OF THE INSTALLATION/OPERATION

1. Clean the actuator and CHECK for oil leaks. If oil leaks are present, take out of service, flush out, renew seals and refill with fresh oil to the actuator manufacturers recommendation. NEVER mix one type of oil or grease with another.
2. Check the tightness of all bolts and nuts.
3. If the actuator is normally only used very occasionally, a routine operation plan should be established.
4. Refer to the actuator manufacturers recommendations.
5. DO NOT CARRY OUT ANY MAINTENANCE WORK WITH THE POWER CONNECTED.

- Whilst every care is taken that the information given herein is reliable Ross Valve cannot accept responsibility for any damage resulting from the application of these recommendations intended for guidance only.