Penstock & Valve Specialists

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INSTALLATION AND MAINTENANCE RECOMMENDATIONS FOR STOPLOGS

Please read the following notes prior to commencing installation of the stoplogs..

Handling and Storage

Stoplogs should be stored in the 'vertical' position wherever possible, provided this can be achieved safely. In situations where stoplogs are stored horizontally, particular care should be taken to avoid introducing twist or distortions to the frame.

When stoplog frames are supplied in three sections (two side members and invert one member), the frame sections should be stored on a flat horizontal surface and covered to protect the seals from contamination.

If chains or slings are to be used for handling purposes the frame should be protected from damage with cloth sacking or similar material. Never use hooks unless eyebolts are fitted.

General Notes

These installation guidelines apply to Express Valve Services Limited standard stoplog product range using competent, trained personnel working with suitable equipment under safe site conditions to carry out the work, and the installation will take place on concrete having a minimum strength of 25 N/mm^2.

Due to civil work tolerances mounting of the stoplog unit must be effected by grouting between the wall and frame without contact between the frame and wall avoiding distortion. Attempts to seal between the frame and wall using mastic or resilient compounds may result in leakage.

Generally, all stoplog units are despatched with the log(s) assembled in the frame. Where possible install with the logs fitted into the frame until the stoplog unit is securely wedged in to the pre-formed channel rebates or bolted to the wall.

Pressure from any locating jacks must be spread evenly using timber. Avoid point or concentrated loading to any part of the frame, and never apply jacking loads to the log(s).

Installation Sequence

Stoplog installation avoiding frame distortion and consequent leakage can be achieved using the following recommendations.

Channel Mounted Stoplogs

1. Support the stoplog unit in its required position in the pre-formed channel rebates (sides and invert). Ensure that the invert of the frame is flush with final invert of the channel.
2. When possible install the frame and log(s) assembled to add rigidity to the stoplog unit and prevents contamination of the seals during grouting.
3. Locate the stoplog unit in its final correct position by setting the frame in the pre-formed rebates using jacks and/or packing pieces to the recommended grout thickness between the frame and concrete rebate.
4. Check for plumb and level in all directions with at least on log fitted in the frame, and if necessary adjust the packing thickness to compensate for irregularities in the civil work.
5. Check seal faces with a feeler gauge for non-acceptance of 0.1mm (0.004") around the full perimeter of the aperture. Adjust the packing only where this tolerance is exceeded and sufficient only to close the gap.
6. Grout in accordance with 'Shuttering and Grouting' in this procedure.

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Wall Mounted Stoplogs – Expanding Anchor Bolts

1. Present the stoplog unit into its required position ensuring the frame invert is flush with the 'civils' invert. Support the stoplog unit along the whole length of the frame bottom cross member.
2. When possible install the frame and log(s) assembled to add rigidity to the stoplog unit and prevents contamination of the seals during grouting.
3. Using the using the stoplog frame as a template drill all holes to the diameter and depth specified for the anchor bolts to be used.
4. During the drilling cycle anchor bolts may be inserted into the top two holes to prevent movement of the stoplog unit, place packing/jacking pieces local to the bolts to the recommended grout thickness. Tighten the anchor bolts sufficiently to hold the packing/jacking pieces in position.
5. The protective coating inside the frame fixing holes may be damaged during the drilling operation. Any damage should be made good immediately after drilling in accordance with the paint specification to prevent corrosion.
6. Blow/remove dust or debris from the drilled holes.
7. Insert the remaining anchor bolts, place packing pieces or jacks of the required grout thickness as close as possible to the fixing. Tighten the anchor bolt sufficiently to 'nip' the packing piece or jack.
8. Check for plumb and level in all directions and adjust jacks or insert additional packing pieces to compensate for irregularities in the civil work.
9. Check seal faces with a feeler gauge for non-acceptance of 0.1mm (0.004") around the full perimeter of the aperture. Adjust the packing only where this tolerance is exceeded and sufficient only to close the gap.
10. Tighten all of the anchor bolts sufficiently to ensure movement of the stoplog unit does not occur during grouting. If movement is suspected when tightening the anchor bolts the feeler gauge check and possible adjustment must be repeated.

Wall Mounted Stoplogs – Chemical/Resin Anchor Bolts

1. Present the stoplog unit into its required position ensuring the frame invert is flush with the 'civils' invert. Support the stoplog unit along the whole length of the frame bottom cross member.
2. When possible install the frame and log(s) assembled to add rigidity to the stoplog unit and prevents contamination of the seals during grouting.
3. Using the stoplog frame as a template drill all holes to the diameter and depth specified for the anchor bolts to be used.
4. The protective coating inside the frame fixing holes may be damaged during the drilling operation. Any damage should be made good immediately after drilling in accordance with the paint specification to prevent corrosion
5. Blow/remove dust or debris from the drilled holes.
6. Follow the recommendations and instruction provided separately with the chemical/resin anchor bolts.
7. Support the studs in the centre of each mounting hole square to the stoplog unit mounting face until the resin is fully cured. If the studs are not kept square then the stoplog unit may become 'wedged' by the misaligned studs.
8. Fit washers and nuts to the anchor studs, place packing pieces or jacks of the required grout thickness as close as possible to the fixing. Tighten the anchor bolt sufficiently to 'nip' the packing piece or jack.
9. Check for plumb and level in all directions and adjust jacks or insert additional packing pieces to compensate for irregularities in the civil work.

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10. Check seal faces with a feeler gauge for non-acceptance of 0.1mm (0.004") around the full perimeter of the aperture. Adjust the packing only where this tolerance is exceeded and sufficient only to close the gap.
11. Tighten all of the anchor bolts sufficiently to ensure movement of the stoplog unit does not occur during grouting. If movement is suspected when tightening the anchor bolts the feeler gauge check and possible adjustment must be repeated.

Notes: Anchor Bolts

1. The anchor bolts manufactures installation guidelines must be followed for safe application and use of their products.
2. When 'plated' mild steel anchor bolts are used the exposed portion of the bolt a protective coating should be applied to avoid corrosion.

Shuttering and Grouting

1. Shutter up around the external profile of the frame and the internal aperture using timber faced with a thin neoprene type sponge material to ensure a good, clean seal without undue pressure.
2. Check again for plumb and levels, and non-acceptance of a 0.01mm (0.004") feeler gauge at the seal faces. If correct mix and pour a fluid grout in proportions of 50 Kg of Ordinary Portland Cement, 50 Kg of silver sand and one small tub (0.227 Kg) of Conbex or equivalent non-shrink additive between the handstop frame and wall or pre-formed rebates.
3. Leave the installation undisturbed for the duration of the grout curing cycle as recommended by the Conbex or equivalent additive manufacturer. When the grout is fully cured, check that the anchor bolts are still tight in sequence (i.e. when one bolt has been checked follow on with the bolt diagonally or diametrically opposite).
4. If all anchor bolts are tight then remove the shuttering and generally clean up and remove any excess grout or debris from the handstop unit. Pay particular attention to the sealing faces to ensure they are not damaged to minimise leakage.
5. If 'excessive' tightening of any of the anchor bolts was required during the above checking procedure re-check the sealing faces for non-acceptance of a 0.1mm (0.004") feeler gauge.
6. Exposed portions of plated steel anchor bolts should be painted on completion of the installation.
7. Do not cut off protruding threads on chemical anchor studs when fitted.

Operation

Raising and lowering the door within the frame should be smooth provided the installation procedure has been implemented correctly.

1. Clean the stoplog unit to remove excess grout before removing/inserting log(s) for the first time. Remove the log(s) from the frame and check all sliding surfaces including the invert and remove any debris.
2. The stoplog frame seals are resilient/flexible and may take a slight 'compression set' after a short period in service. This will not detract from correct performance of the unit.
3. When inserting logs into the frame lower evenly to avoid 'crabbing'. Before releasing the log ensure it has seating on the frame invert or on top of the previously inserted log.
4. When removing logs from the frame lift evenly to avoid 'crabbing'. As the log emerges from the media be aware of the increase in weight due to the buoyancy of the log in water.
5. Stoplogs are not intended to provide 'drop tight' leakage performance. However, operating under normal service conditions up to 6 metres head leakage should not exceed 1.25 litres/minute/metre of individual log periphery.

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Inserting and Removing Logs

There are two recommended methods for inserting and removing the log(s) from the frame:

- Lifting Poles – Manufactured from aluminium with a stainless steel hook for use with logs weighing less than 25 kilograms. Two lifting poles are required for lifting the log(s). Each log incorporates two lifting pins for location on the lifting pole hooks.
- Semi-Automatic Lifting Beam – For use log(s) weighing in excess of 25 kilograms. Inserting and removing log(s) using the lifting beam is described below.

Operation of Semi-Automatic Lifting Beams

The lifting beam is a reliable and safe method of operation providing the following guidelines are used;

Removing Logs

1. Attach the lifting beam to a lifting device using a sling assembly.
2. Lower the lifting beam into the stoplog frame. Continue lowering until the lifting beam sits on top of the upper most log. The lifting hooks will automatically engage the lifting pins fitted to each log.
3. Raise the lifting beam and the attached log fully out of the stoplog frame and transfer to a safe storage area.
4. The lifting beam is removed from the log using the hooks disengagement rope, continue holding the hooks in the disengaged position by means of the rope until the hooks are clear of the log lifting pins. Lift beam clear of the log.
5. Store the log in a rack or similar to avoid damage to the invert seal.
6. Repeat the procedure for removal of additional logs.

Inserting Logs

1. Attach the lifting beam to a lifting device using a sling assembly.
2. Attach the lifting beam to log ensuring all hooks are fully engaged on the log lifting pins.
3. Lower the lifting beam and attached log into the stoplog frame. Continue lowering the log it locates the frame invert or on top of a previously inserted log.
4. The lifting beam is removed from the log using the hooks disengagement rope, continue holding the hooks in the disengaged position by means of the rope until the hooks are clear of the log lifting pins. Lift beam clear of the log.

Safe Working Load

The semi-automatic lifting beam is a lifting device provided with a Test Certificate for the Safe Working Load clearly marked on the equipment. It has been designed, manufactured and tested for a specific application and must not be used for other purposes.

Maintenance Schedule – Stoplog Unit

Frequency of maintenance is dependent on the frequency of use and operating duty, in view of this the following recommendations must be considered as minimum requirements.

Every Six Months

- Check the equipment for signs of wear or damage, with particular attention to the frame seals, invert seal and inter-log seals if operation procedures allow access to the stoplog unit.
- Visually check the equipment for signs of corrosion or damage to the paint system and repair as required.
- Check and adjust the tightness of fasteners that are accessible including the anchor bolts.
- Check for signs of leakage between the stoplog frame and civils, make good any faults.

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Maintenance Schedule – Semi Automatic Lifting Beam

Every Time Used

- Prior to returning the lifting beam to storage clean by hosing down with clean water to removed any grit or debris especially from around the hook pivot assembly and disengagement assembly.
- Moving parts should be lightly oiled or greased.

Every Three Months

- Check the lifting hooks for freedom of movement and lubricate if necessary.
- Check the hook disengagement ropes for wear and tear, and replace if necessary.
- Check the lifting sling for wear and tear, and replace if necessary.

Every Twelve Months

- Re-load test the lifting beam and sling for the safe working loads and obtain a new Test Cerfificate.

Recommended Lubricants

- For general lubrication purposes under normal operating conditions we recommend Shell Alvania R2 (or equivalent)..
- For high duty or aggressive effluent applications we recommend Rocol Tuflube Allweather grease..
- For seawater applications we recommend Rocol Tuflube Allweather grease.
- For potable water applications we recommend using Rocol MX22 or Rocol MX66 grease.