



INSTALLATION, OPERATION AND MAINTENANCE MANUAL OF FABRICATED STOP LOG GATE

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INTRODUCTION -

This manual describes the recommended procedures for installation, operation, maintenance and safety precautions for DURGA stop gates. Please read thoroughly all the instructions in the manual prior to installation, and contact DURGA representative in case of any questions. The manual makes reference to the "General Arrangement Drawing" (GAD). The GAD is the drawing that is sent to and approved by the customer prior to the production of the gate. **DURGA assumes no responsibility or liability if the Stop Gate is not installed, operated and maintained in strict accordance to the procedures described in this manual.**

HANDLING & STORAGE -

Standard safety procedures should be followed to prevent personal injury or equipment damage. Additionally, the following instructions shall be followed during handling and storage to prevent any damage to the product:

- Special care shall be taken on any machined surface when lifting the gate.
- Equipment shall be stored in a dry, clean and even area on a raised even wood surface to prevent distortion of the frame. Do not stack slide gates.
- Stop Gates are packed with a wooden strip between both frame guides. Do not remove the strip before the gate is properly installed in order to avoid any damage or distortion to the frame.
- Lift the gate from the frame guides. For bigger gates, the frame guides comes with hoist rings specially arranged for handling purposes.

INSTALLATION: EMBEDDED IN CONCRETE -

Required Materials:

As a standard, DURGA Stop Gates are mounted Embedded in Concrete (EC). Field adjustment hex bolts are required to center the gate in the appropriate recess prior to embedding in concrete. For detailed information about the type, size and quantity of the



required bolts, or any other specific installation notes or materials, please refer to the notes on the "General Arrangement Drawing".

INSTALLATION PROCEDURE

Step 1: Concrete construction inspection

- The concrete construction shall be flat, level and plumb, and shall be in accordance to standard. If necessary, use non-shrink grout in order to meet the specified standard. The minimum concrete strength shall be 3,000 PSI (20.7 MPa).

Step 2: Align the stop gate in the wall recess

- Position and center the channel gate in the recess of the wall, using the field adjustment bolts screwed in the "Side Centering Fittings" and "Bottom Leveling Brackets" (see Figure 1). Make sure that the channel gate is centered in the channel.

NOTE: the smaller DURGA Stop Gates do not come with "Bottom Leveling Brackets". If this is the case, follow Step 2B (page 6) prior to starting with "Step 2" in order to be able to align the gate vertically.

- Align the gate vertically adjusting the bolts on the "Bottom Leveling Brackets" (see Figure 2). Make sure that the frame invert is flush with the invert of the channel.
- Align the gate horizontally adjusting the bolts on the "Lateral Centering Fittings" (see Figure 3). Make sure that the Frame Guide is flush with the side wall of the channel. Additionally, make sure that the gate is perpendicular to the side walls of the channel.

Step 3: Embed the stop gate in the wall recess

- Pour the second phase of concrete. Take special care not to damage the seals.

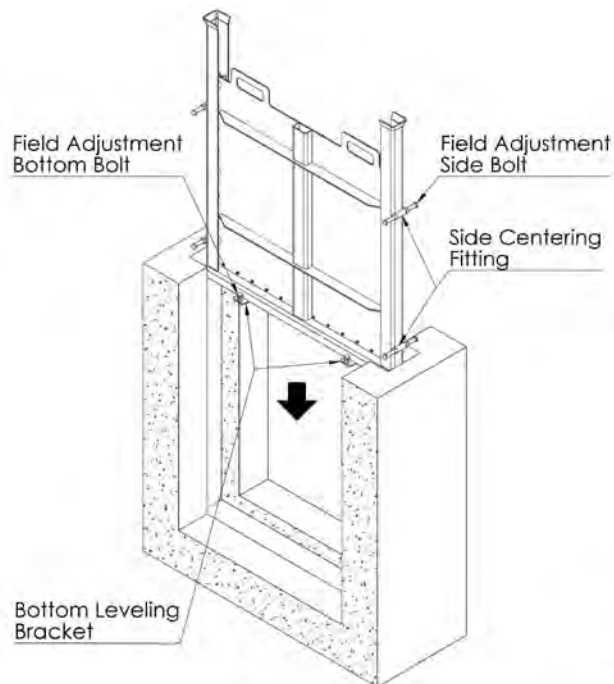


Figure 1

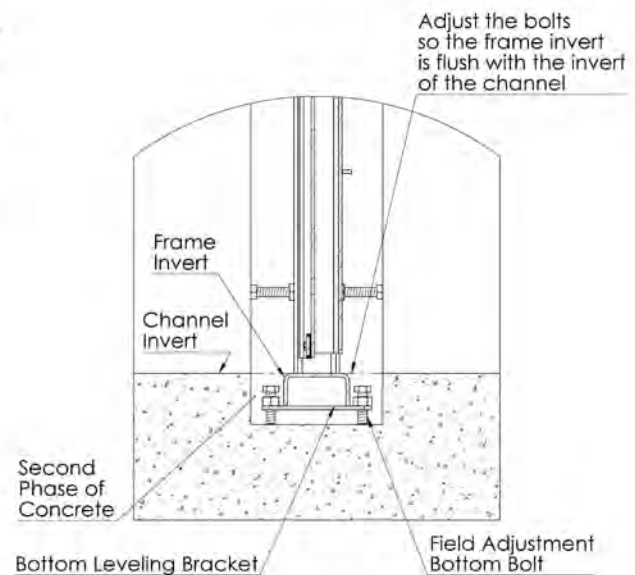


Figure 2

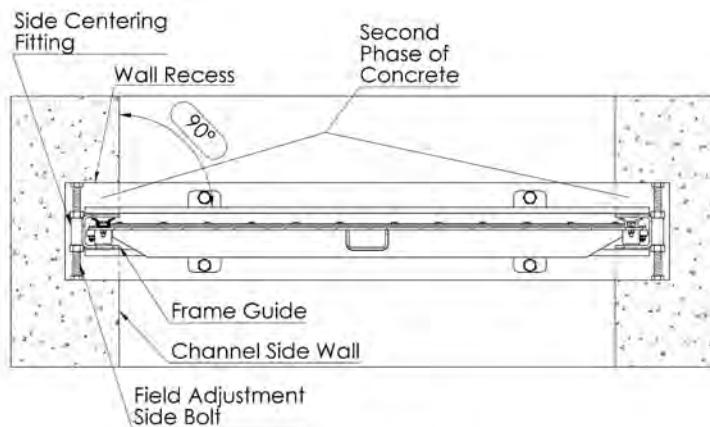


Figure 3

Step 2B: Align the gate vertically (without the Bottom Leveling Brackets)

Smaller DURGA Stop Gates do not come with "Bottom Leveling Brackets". Therefore, the following procedure shall be followed to align the gate vertically (After "Step 1").

- Get two pieces of wood or metal ("Supports").

- Raise the slide enough to fit the two supports and secure the supports by closing the slide (See Figure 4).
- Proceed with "Step 2". When the gate is positioned in the recess, the supports will maintain the frame invert flush with the invert of the channel (See Figure 5).

CAUTION: Do not use pieces of wood or metal with sharp edges or with rough surfaces in order to avoid any damage to the bottom seal.

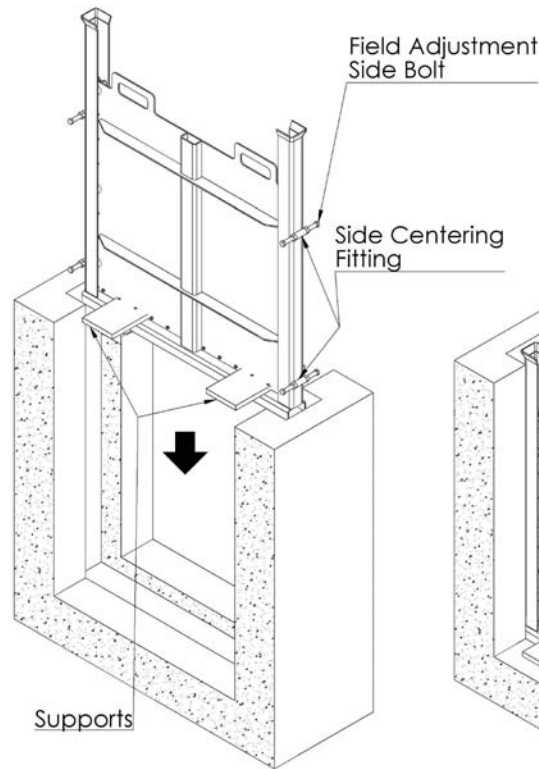


Figure 4

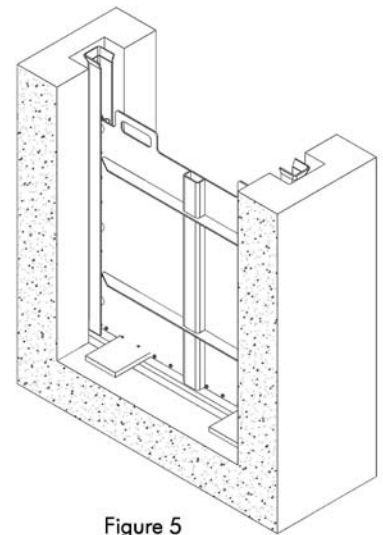


Figure 5

INSTALLATION: FACE MOUNTED IN EXISTING CHANNEL

Required Materials:

For the Face Mounted in Existing Channel mounting option, the DURGA stop gate is installed by means of mechanical anchor bolts. All the gaps shall be grout filled afterwards and shaped in order to get a smooth transition.

For detailed information about the type, size and quantity of the required anchor bolts or any other specific installation notes or materials, please refer to the notes on the 'General Arrangement Drawing'.

INSTALLATION PROCEDURE

Step 1: Concrete construction inspection

- The concrete construction shall be flat, level and plumb, and shall be in accordance to standard. If necessary, use non-shrink grout in order to meet the specified standard. The minimum concrete strength shall be 3,000 PSI (20.7 MPa).

Step 2: Anchor the gate to the channel

- Position the stop gate in the existing channel. Make sure that the gate is perfectly aligned and centered in the channel (see Figure 6).
- Install the bottom anchor bolts, and then the lateral anchor bolts (see Figure 7).

Step 3: Grout fill

- Grout fills the remaining voids (See Figure 8), both at the bottom (See Figure 9) and laterals of the gate (See Figure 10). Remember that the objective of the grout fill twofold:
- Fill the voids between the frame, frame invert and the channel.
- Make a smooth transition for water flow. Therefore, the grout shall be built-up to the level of the frame as shown in Figures 9 and 10.

CAUTION! Make sure not to get grout or any other foreign material on the gate's seals or guides as this may cause leakage or damage.

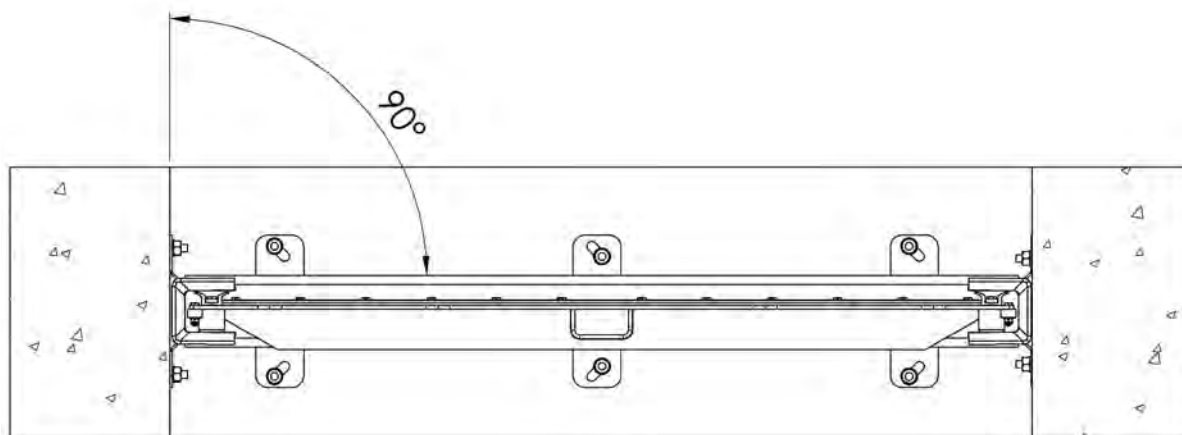


Figure 6

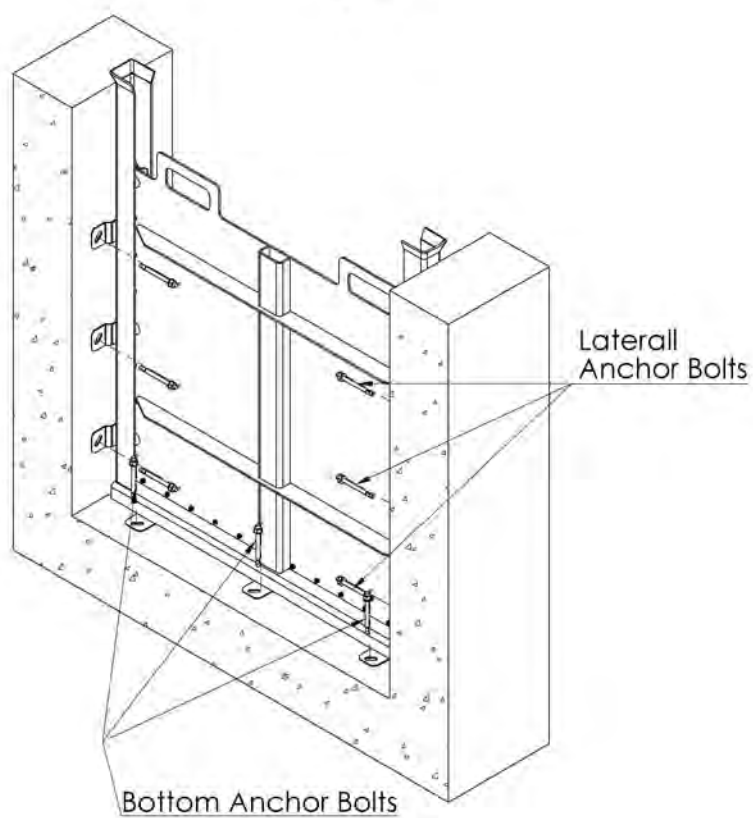


Figure 7

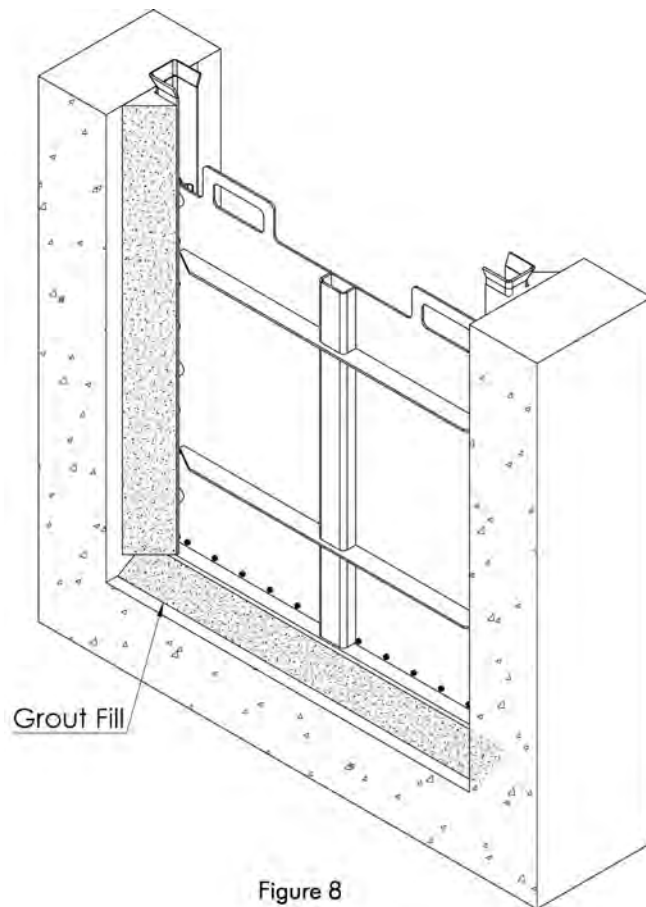


Figure 8

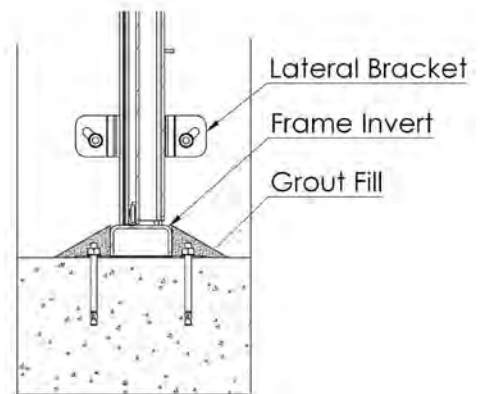


Figure 9

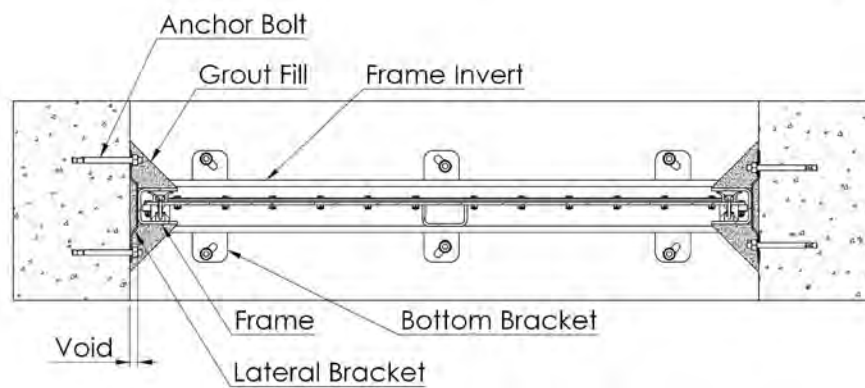


Figure 10

INSTALLATION: WALL MOUNTED –

Required Materials:

For the Wall Mount mounting option, the DURGA stop gate is installed by means of mechanical anchor bolts and construction sealant. Note that as standard, anchor bolts and construction sealant are not supplied with the gate.

For detailed information about the type, size and quantity of the required anchor bolts, or any other specific installation notes or materials, please refer to the notes on the 'General Arrangement Drawing'.

INSTALLATION PROCEDURE

Step 1: Concrete construction inspection:

- The concrete construction shall be flat, level and plumb, and shall be in accordance to standard. If necessary, use non-shrink grout in order to meet the specified standard. The minimum concrete strength shall be 3,000 PSI (20.7 MPa).
- The wall surface shall be dry.

Step 2: Pre-installation of the stop gate

- Position the stop gate against the wall and line up with the opening (See Figure 11). The gate shall be in the closed position.
- Drill and install an anchor bolt on each side of the gate. After installing the first anchor bolt, and prior to drilling the hole on the other side, make sure the frame is perfectly leveled (see Figure 12).

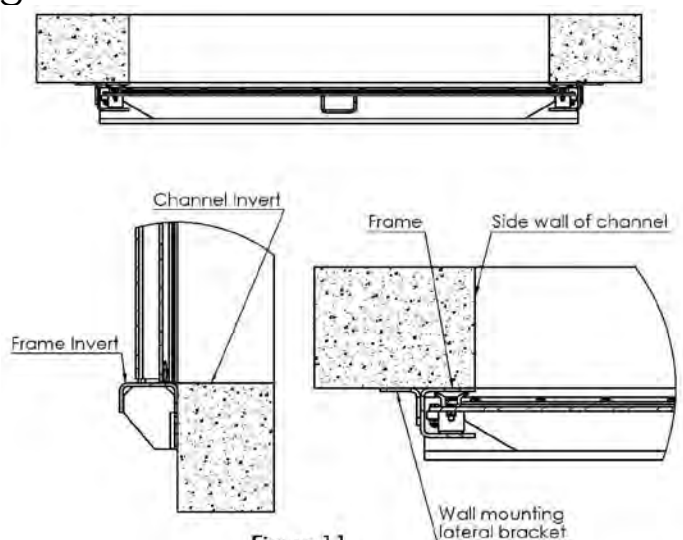


Figure 11

Step 3: Construction sealant application

In order to avoid leakage between the frame and the wall, construction sealant shall be applied on the back side of the frame:

- Remove the stop gate from the wall (first remove the nuts of the anchor bolts).
- Apply construction sealant all around the perimeter of the frame, where it will be in contact with the wall. Construction sealant shall be used (See Figure 13). Be sure not to get sealant on the gate's seals or guides as this may cause leakage or damage.

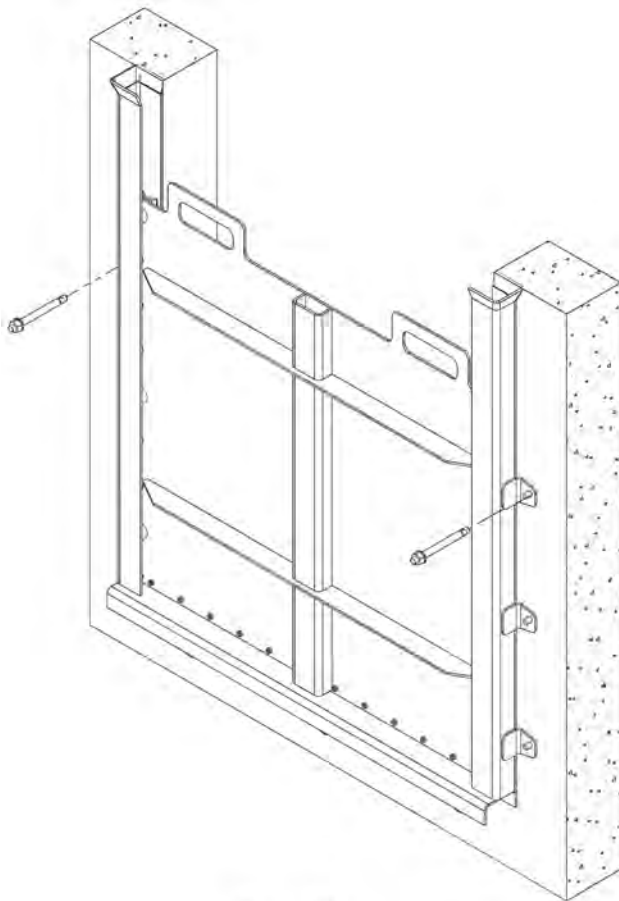


Figure 12

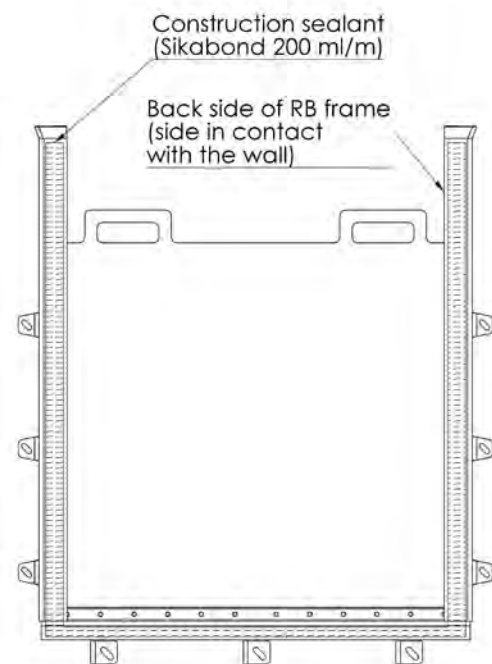


Figure 13

Step 4: Final installation of stop gate

- Drill and install the rest of the anchor bolts (see Figure 14).

CAUTION!: If the stop gate is not completely in contact with the wall, do not over-tighten the anchor bolts. Over tightening may bend or distort the frame. If the wall flatness and

levelness is according to the specified standards, the construction sealant will fill in the remaining void (see Figure 15).

- Apply construction sealant around the frame in order to fill in any existing gap between the wall and the frame (this step is only for esthetics). Wipe away the excess sealant to leave a smooth finish.

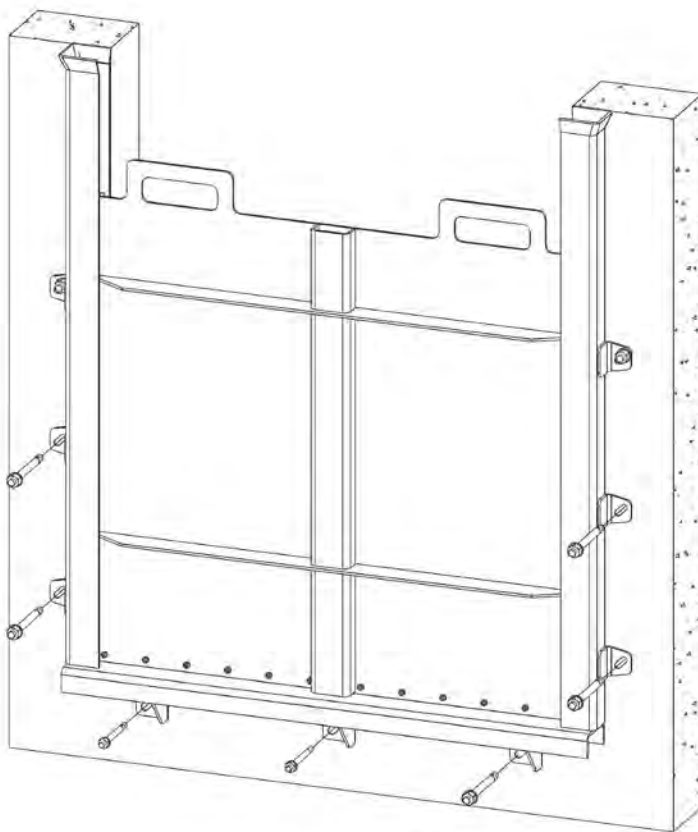


Figure 14

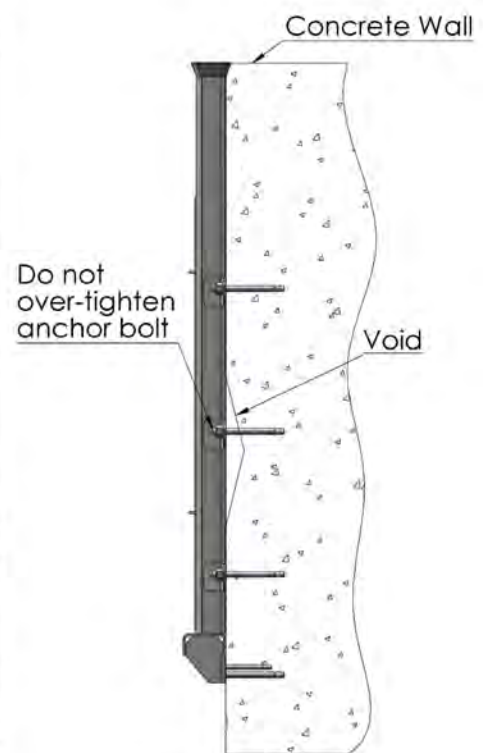


Figure 15

OPERATION –

Initial Operation:

Before operating the stop gate, make sure there are no foreign deposits or materials on the seals, guides or sealing area. Gate seals could be damaged if the area is not cleaned and coated with light grease. Please refer to section “Materials needed for maintenance and seal replacement” on page 14 for detailed information about the required grease type.

Operation:

The DURGA Stop Gate is operated externally, pulling up the slide using one of the following methods:

- Manual operation. As standard, smaller DURGA Stop Gates are operated manually and the slide incorporates hand-holds. Please refer to the GAD for detailed information about the force required to lift the slide.
- External crane. As standard, bigger DURGA Stop Gates are prepared to be lifted with an external crane. Please refer to the GAD for detailed information about the force required to lift the slide.
- Lifting Device. The DURGA Stop Gate may be operated using a "Lifting Device", which hooks and releases the slide automatically.

MAINTENANCE: CLEANING & OPERATION –

DURGA Stop Gates need practically no maintenance. In order to assure maximum performance of the stop gate, the following maintenance inspections shall be carried out periodically every 6 months:

- Clean the gate with clear water and remove any deposits, especially on the seals and in the guides.
- Check the seals and make sure they are not damaged. Seals shall be replaced if damaged. See section 'Maintenance: Seal Replacement' for detailed procedures about seal replacement.
- Seals shall be wet while operating. If the slide gate has not been used for a long period of time under dry conditions, the seals shall be wetted with clear water before operating the gate. Operating the gate with dry seals may damage the seals. Additionally, more force may be required to operate the stop gate.

Spare parts:



DURGA does not recommend stocking any spare parts by the owner of the equipment as the stop gates are designed for a very long life cycle. If a repair part is required, please contact DURGA representative and provide the following information:

- DURGA Sl. number.
- “DURGA General Arrangement Drawing” number.
- Project name (if applicable).
- Vendor’s company name.

MAINTENANCE: SIDE SEALS AND BOTTOM SEA REPLACEMENT –

The following procedure describes how to replace the AG Stop Gate’s lateral seal, bottom seal or both seals. Note that in any case, first the slide shall be removed from the frame. The frame does not need to be removed.

Side seals replacement (See Figure 16)

- Step 1: Remove bolts, washers and nuts (items 3, 6 and 7) from the gate and remove retainers (items 2), lateral guides (items 4) and front guides (items 5).

- Step 2: Remove side seals (item 8) and replace it by the new seal

Note 1: Apply glue where the bottom seal and side seals join.

Note 2: After installing the new seal, apply grease on it to ease operation.

Bottom seal replacement (See Figure 16)

- Step 1: Remove bolts and nuts (items 10 and 12) and remove bottom retainer (item 9).
- Step 2: Remove bottom seal (item 13) and replace it by the new seal.

Note 1: Apply glue where the bottom seal and side seals join.

Reassembly:

- Follow Steps 2 to 1.

MAINTENANCE: SEAL REPLACEMENT –

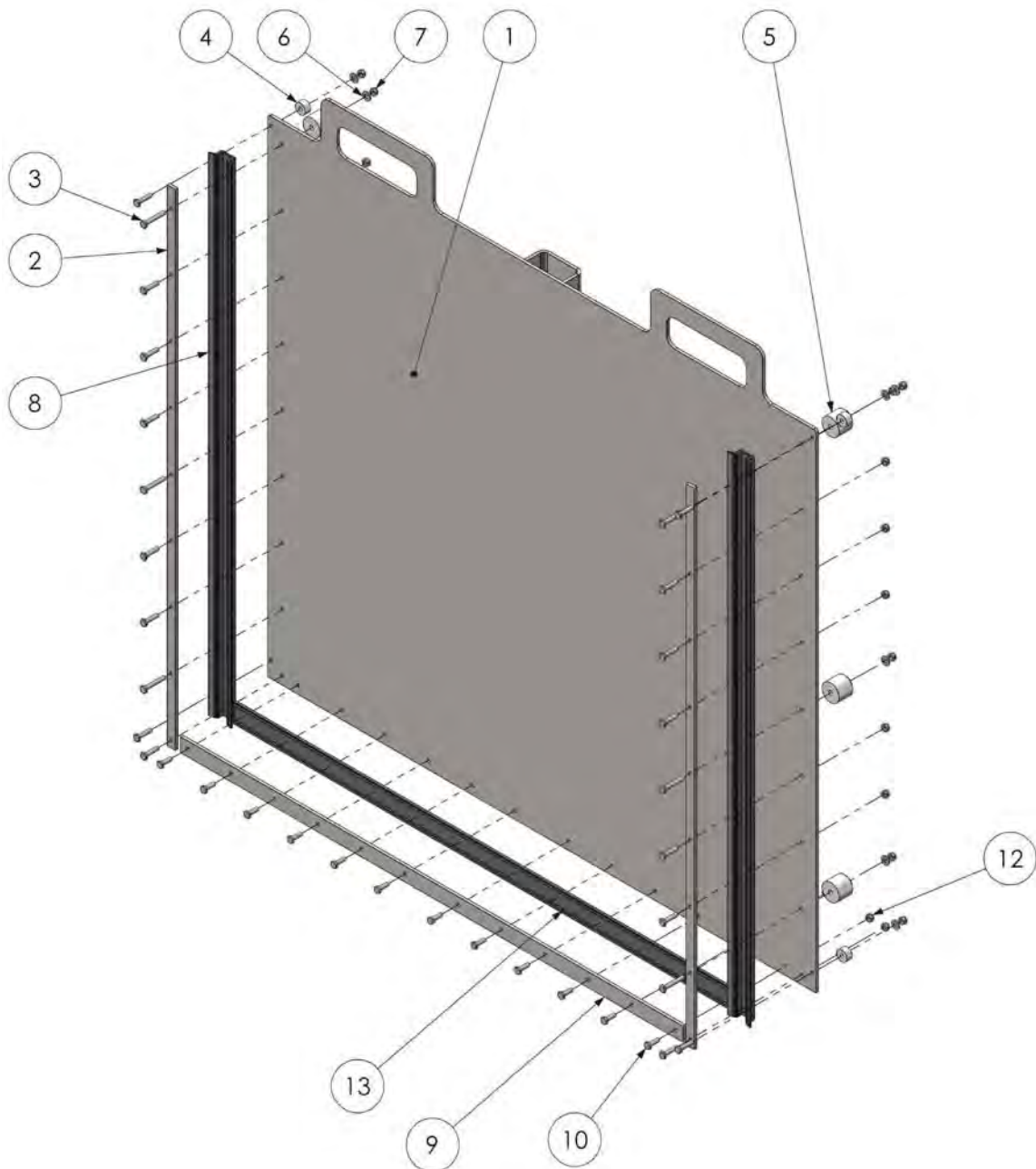
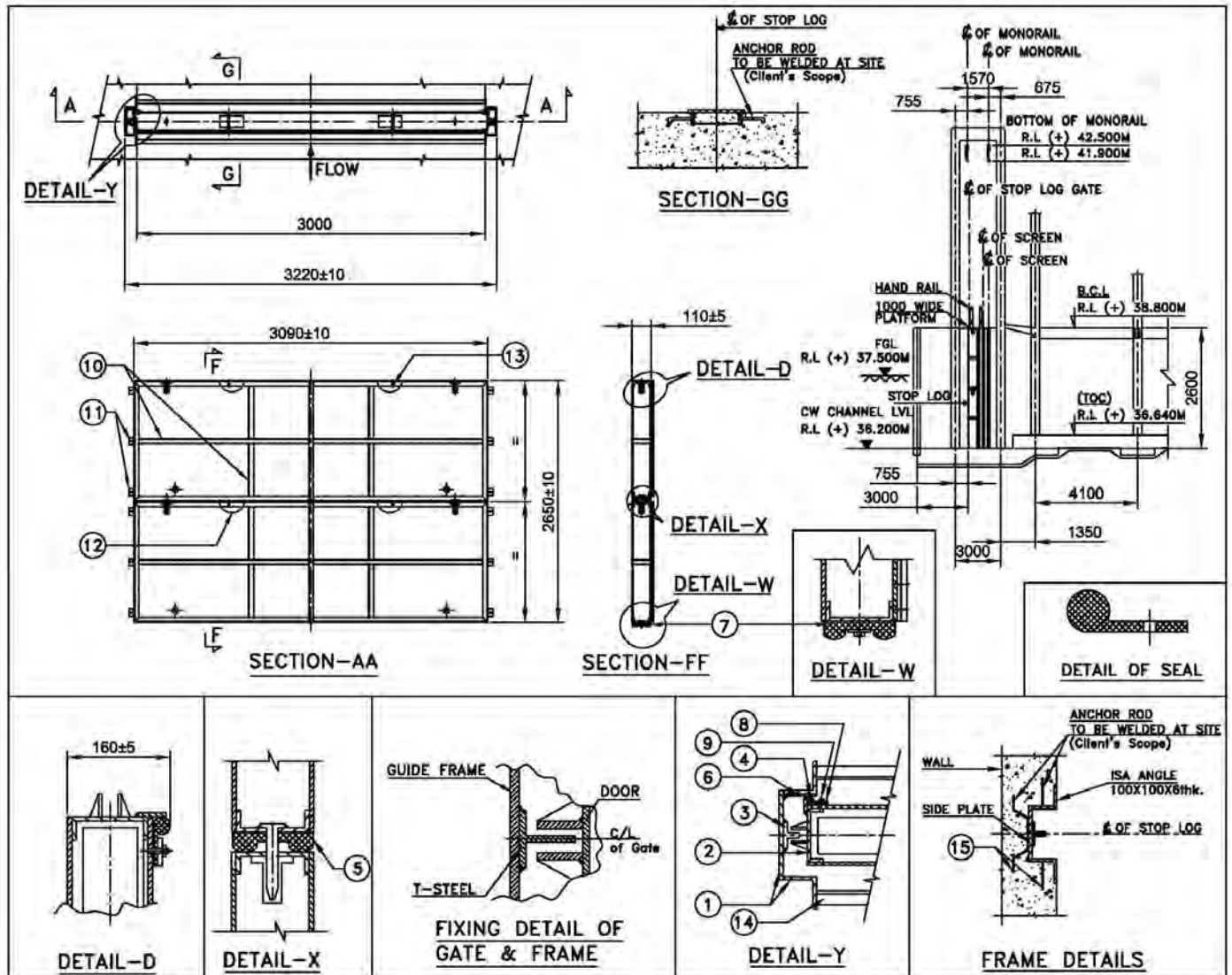


Figure 16: Side Seal and Bottom Seal replacement

TYPICAL SKETCH OF STOP LOG GATE –



TROUBLE SHOOTING –

SYMPTOM	CAUSE	SOLUTION
Leakage between stop gate and concrete wall (for Face Mounted In Existing Channel Configuration)	Gaps between frame and face of wall due to misapplication of grout fill.	Grout Fill remaining gaps.
	Loose anchor bolts.	Tighten anchor bolts.
	Incorrect anchor bolts	Check the 'General Arrangement Drawing' and make sure the right anchor bolts have been installed.
Leakage between stop gate and concrete wall (for Wall Mounted Configuration)	Concrete wall does not meet the required std.	Un-install the slide gate and fix the wall.
	Not enough construction sealant.	Un-install the slide gate, clean the wall and apply a new layer of construction sealant.
	Loose anchor bolts.	Tighten anchor bolts.
	Incorrect anchor bolts.	Check the 'General Arrangement Drawing' and make sure the right anchor bolts have been installed.
Leakage through the side Seals	Damaged seal.	Replace seal.
Leakage through the bottom Seal	Foreign material trapped between frame invert and slide.	Remove the foreign material. Check if there is any damage to the seal.
	Damaged seal.	Replace seal.

If there any complaint retailed to DURGA regarding wrong supply or damage or revise the order kindly Communicate with the JOB NO. That helps us to track cause of the problem.

Our Contact office & e-mail id:

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