

YAHWANT INDUSTRIAL WORKS PVT. LTD.

Sluice Gates

Stop Logs

Bar Screens

YASHWANT



Introduction

Established in 1947, Yashwant Industrial Works Pvt. Ltd., is delivering various sluice gates with customized solutions, quality and in time deliveries. We are committed to continuous improvements and product excellence with materials, trends and demands.

We manufacture this range of Sluice Gates as per Indian Standard, American standards (AWWA), British Standard and also customized to non-standard Gates for Water supply, sewage treatment plants, thermal power plant effluent plant etc. Our products are competitively priced and represent excellent performance over the life-time.

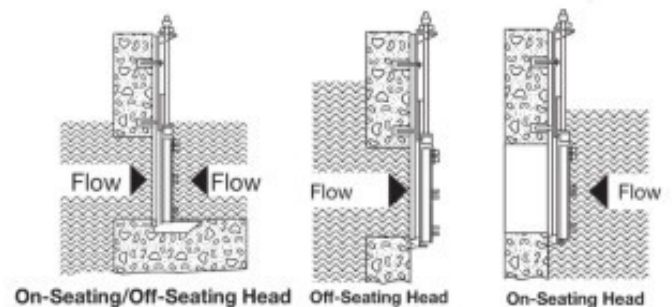
Experienced, technically reliable professional management with global spread business we offer world class products with the best in class products to perform & durable.

Selection considerations

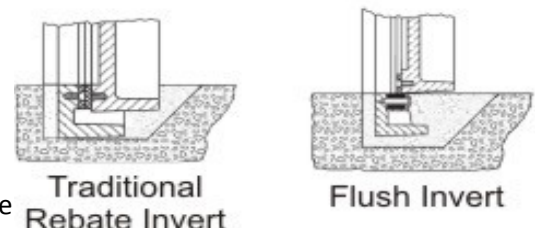
1. Flow material to decide Gate type, Material of construction, Coating requirements etc
2. Size of Gate according to opening at well or channel etc
3. Direction of flow and
4. Fluid head on both sides
5. Mounting Conditions- wall/ channel/ pipe/ thimble
6. Distance of operating head to Gate
7. Operation frequency & operation area height
8. Method of operation

Varieties of options are to be considered before choosing sluice gate

- a. **Flow Direction:** *On Seating head* - Pressure forcing the door onto the frame
Off seating head- Pressure forcing the door away from frame
Seating/ off-seating Head- Pressure forcing the door from both sides of frame



- b. **Bottom sealing:** traditional rebate invert type. And Flush invert Available with resilient sealing strip to produce laminar flow, improved hydraulics, efficiency.



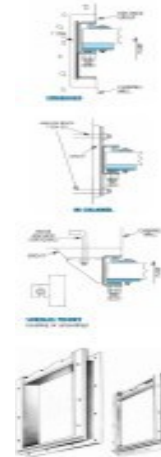
- c. **Type of Mounting-** depending on availability of surface where gate is to be mounted.

Wall Mounting: Flat Back- Gate frame fixed with wall directly with foundation nut bolts.

Thimble Mounted: When high sealing pressure is specified, careful consideration is needed for fixing the gate in the structure. Gates fixed on wall with wall thimble. Ease of gate installation & removal for re-sitting or cleaning.

Spigot Mounted: When high sealing pressure is specified, careful consideration is needed for fixing the gate in the structure. Here gates frame is with spigot back. Once fixed in wall these cannot be removed for maintenance.

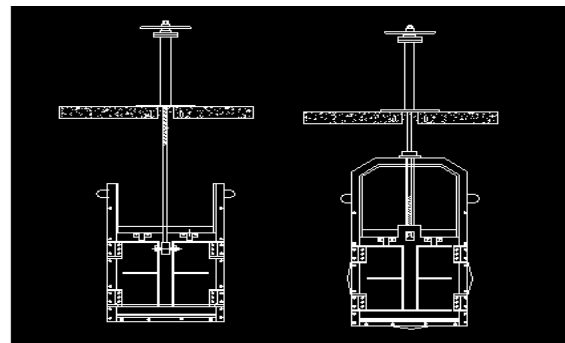
Channel Mounting: Sluice Gates can be mounted in open channel. These channels are grouted with Gate Frame.



d. **Spindle Movement:**

Rising Spindle- non rotating spindle. Threaded Nut is provided on hand-wheel. Here spindle rises above while opening gate & lowers when gate closes.

Non-rising spindle- Rotating spindle. Threaded stem nut provided on Gate plate. Here spindle does not move in vertical direction. These are used where limited head room is available.



e. **Mounting Position of lift mechanism:**

Platform mounted Head: Used where distance between gate & platform is more than 2 times.

Flange mounted

Self contained



f. **Method of operation: (see last page)**

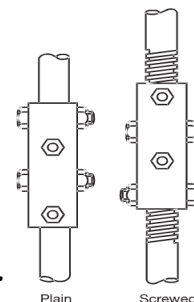
Manual: Direct drive, Geared- Worm/ Bevel

Motorized: Pneumatic/ Hydraulic/ Electrical Actuated.

g. **Extra fittings:**

Stem extensions & guides
coatings & linings- Epoxy , Rubber, FRP etc

and many more as per requirements.....



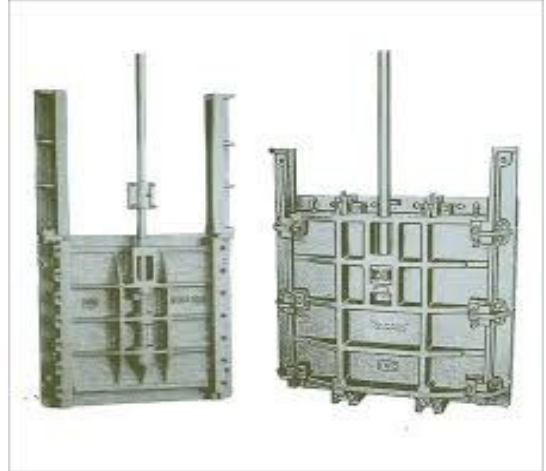
CAST IRON SLUICE GATES AS PER IS: 13349 OR AWWA-C560 OR BS:7775

Introduction

This is a rectangular Sluice Gate suitable for Wall mounting with unseating head up to 30 Meter and off seating head up to 20 Meter as standard with modification higher head is also available.

Features and benefits

- This Sluice Gate is very robust and can be mounted on pipe flange, wall with flange back or flat back mounted with or without thimble. Due to wall thimble is grouted in concrete. This gate can be easily mounted and dismantled with nut bolts fitted on thimble.
- This sluice gate is used where least leakages are desired. This gate gets verified at shop for the desired water pressure on wall for actual leakages as per quality standards..
- F type or E type wall thimble can be used as per requirement.
- Adjustable wedges with non corrosive wedge plates helps to seal the faces.
- Stem guide is provided if the operating height is more than 2 Mts. the gate height along with the couplings if required.



CAST IRON SLUICE GATE AS PER IS:3042

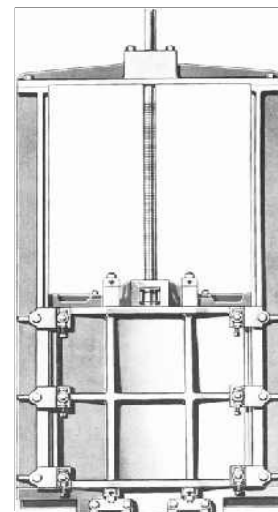
Introduction

These gates are Single faced rectangular or Circular Sluice Gates suitable for wall mounting on seating head of 15 Mtr. These gates are suitable for seating head application only.

The standard opening size of these gates is from 200 to 1200 mm. size of different shape with rising and non rising spindle. These are suitable for wall mounting.

Optional features

- Where small and medium volume of raw filtered, Storm water or sewage is to be controlled.
- For water supply drop of and purification work, sewage plants, drainage water, irrigation, canals. Hydro electric collection, aqua ducts and tail racks. These can be operated by manually hand wheel, with or without gears, pneumatically or with electrical actuators.



- For extension rod above 2 Meter long guide bracket are necessary to provide for spindle height for non rising spindle thrust bearing shall be provide. Yoke of frame for safe transmission while opening and closing the door.
- Painting specifications can be selected from Chart 2.
- Optional features & Accessories can be selected as per requirement.
- Manual lift is suitable for effort load less than 20 Kg.

Fabricated Stainless Steel / Aluminium / Mild Steel Slide gates as per IS:5620, IS:4633 AWWA C:561, C:562, C:563

Introduction

These slide gates are single faced, consisting of fabricated open frame and slide. These are light weight gates embedded on wall or in channel useful in low pressure reservoir or tank hydroelectric water tank.

Optional features

- These gates are suitable for seating and non seating head. The gate leaf or operating member is rigid structure confirming suitable ribs in cross direction.
- The sluice gate seals are provided with rubber or metal led depending on the working pressure.
- Provision of adjustable wedges is used to reduce seal wear, while operation of slide gate couplings and stem guide are provided as per requirement according to operating height.
- The slide gates can be operated manually by hand-wheel with and without gears and mechanically by means pneumatic and electric actuators for operational ease depending on operating conditions and frequency.
- These slide gates can be provided with flush bottom wall mounted invert bottom arrangement.
- This gate can be self content with direct lifting arrangement fixed on gate frame.



Open Channel Sluice Gates Cast Iron / Mild steel / Stainless Steel / Aluminium

Introduction

These gates are generally used in open channel of water or sewage. These gates are fixed between two parallel walls used to isolate the flow to and from the open channel. These are light weight, economical Gate assemblies for faster erection.

Optional features

- These sluice gates are suitable for seating and unseating water head.
- The important factor consider during design is the height of water in closed condition should be less than height of gates.
- These gates can be self content with operating head fixed on the gate frame.
- These gates can be provided with flush bottom wall mounted invert bottom arrangement.
- Depending on the operating pressure and operation frequency rubber seals, metal seals neoprene/ Natural / EPDM Rubber seals with rubber retaining bar are used.
- These gates are provided with Pin and Knuckle type stem connection for gate plates with spindle for rising spindle arrangement.
- For corrosion resistance, weather resistance, and saline water resistance suitable coating shall be adopted for long life.



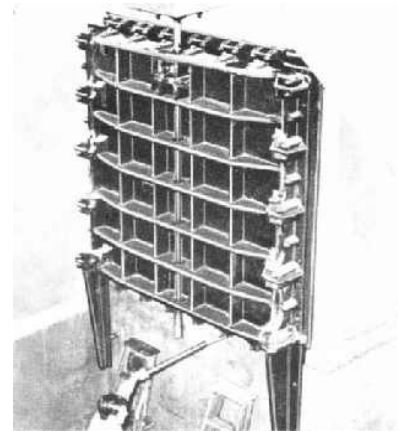
WEIR GATES

Introduction

Weir gates are down word operating sluice gates used in many treatment plants to control the effluent level on one side of the gate. These gates open when gate plate is moved in down word direction to flow the water top of plate.

Optional features

- The weir gates features with neoprene rubber seals mounted so as not to interface with water flow. This provides better sealing.
- UHMW (Ultra High Molecular Weight) Polyethylene seals are provided to reduce friction.
- These gates are provided with manual lifting provisions or electric motor, Hydraulic or Pneumatic Actuator as per requirement.



STOPLOG GATES

Introduction

Stoplogs are generally used to isolate equipments such as pumps, screens, service gates for maintenance and repairs where absolute sealing out of water is not necessary.

Water front stoplogs are designed to suit industrial and domestic effluent environments to work against corrosion, ease of operation.

Optional features

- Stoplogs are open channel level controlling gates where single multiple logs (Beams) are inserted in channel. Logs can be of Mild Steel, Stainless Steel, Aluminium, Wood, HDPE
- Material and coatings are carefully selected to suit the requirements of environment such as saline water, alkalies and acidic water etc.
- Coatings available such as FRP Epoxy Zinc Galvanizing etc.
- Adjustable lifting beam can be provided. Chain Pulley crane can be used for beam or gate lifting.
- Seals can be mechanically fixed and replaced. EPDM neoprene rubber used as per requirements.
- These have low maintenance and low installation cost.



Chart : 1

DEPENDING ON THE FLUID CONDITIONS FOLLOWING PAINTING SPECIFICATIONS IS USED.

1	Normal or Fluid water	One Coat of Red Oxide primer and finish coat of bitumen paint.
2	Sewage application water	Primer of Epoxy Red Oxide or Epoxy Zinc with finish coat of coal-tar epoxy
3	Alkaline water condition	One Coat of Red Oxide primer and finish coat of bitumen paint
4	Corrosive and Acidic effluent	primer of epoxy red oxide with FRP coating with finish coat of coal-tar epoxy

Chart : 2

GENERAL "IN HOUSE TESTS" CARRIED OUT

	TESTS	IS:13349 , AWWA BS	IS:3042	IS:5620, IS:4633, AWWA: C561, 562	OPEN CHANNE L	WEIR GATES	STOPLOGS
1	Leakage Test at pressure of operating head	✓					
2	Floor Leakage Test		✓	✓		✓	
3	Seat Clearance	✓	✓	✓		✓	
4	Movement Test	✓	✓	✓	✓	✓	✓
5	Dimensional Check	✓	✓	✓	✓	✓	✓

Chart : 3

Some Benefits of Materials**Cast Iron Sluice Gates**

- Robust construction
- High impact resistance
- Useful for all sewage, water treatment plants.
- More life

Fabricated S.S. / Aluminium/M.S. Sluice Gates

- Lesser operating load
- Lesser leakage
- Wall, channel, side wall fixing arrangements
- Non standard designs accommodated

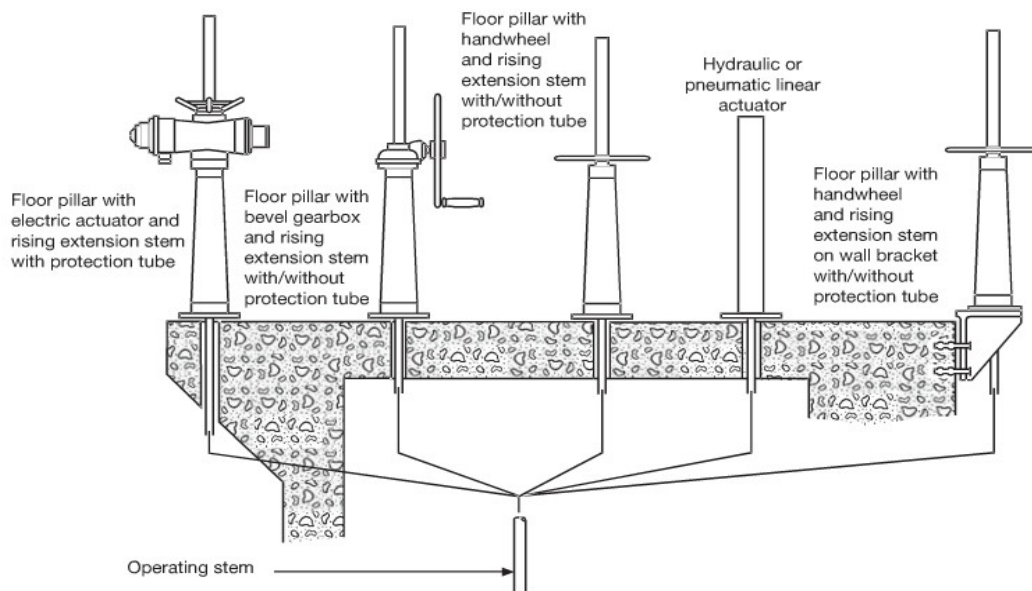
FIGURE 1: OPERATING METHODS- MANUAL AND MOTORIZED

Chart: 4
Standard Material of Constructions

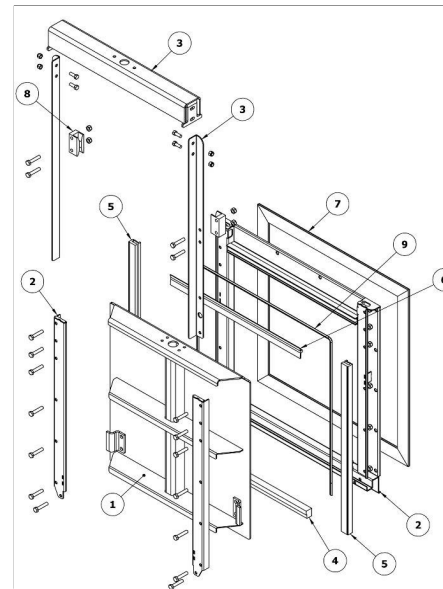
Sr No	Components	C.I. Sluice Gates IS 13349, IS 3042 & non-standard C.I. gates		Fabricated Sluice Gates		Stoplogs	
		Material	Specification	Material	Specifications	Material	Specifications
1	Gate Frame, Gate Plate, Shutter	Cast Iron	IS:210, BSEN 1561, ASTM A 126	Stainless Steel, Aluminium Alloy, UIIMWPE	ASTM A 240/276	Stainless Steel	ASTM A 240/276
	Wall Thimble, Headstock, Stem Guide bracket, Flush bottom seal support bar	Cast Iron	IS:210, BSEN 1561, ASTM A 126	Cast Iron	IS:210, BSEN 1561, ASTM A 126		
2	Wedges, Wedge facings, Sealing faces / Seat facings, Nut bolts	Naval brass,	IS:291,	Naval brass,	IS:291,		
		Phosphor Bronze,	IS:7814	Phosphor Bronze,	IS:7814		
		Leaded Tin Bronze	IS:318	Leaded Tin Bronze	IS:318		
		Bronze	ASTM B21	Bronze	ASTM B21		
		Leaded Gun Metal,	BS:1400	Leaded Gun Metal,	BS:1400		
		Stainless Steel	ASTM A 240/276	UIIMWPE			
				Stainless Steel	ASTM A 240/276		
3	Resilient rubber seal	Natural Rubber	ASTM D 2000	Natural Rubber		EPDM Rubber	ASTM D2000
		EPDM Rubber	ASTM D 2000	EPDM Rubber	ASTM D2000	Neoprene Rubber	ASTM D2000
		Neoprene Rubber		Neoprene Rubber	ASTM D2000	Polyurethane	
		UHMWPE					
4	Rubber seal retainer bar	Mild Steel	IS:2062	Stainless Steel	ASTM A 240/276	Stainless Steel	ASTM A 240/276
		Stainless Steel	ASTM A 240/276			IIDPE	
5	Connecting Block /Stem Block / Thrust Nut	Cast Iron	IS:210	Leaded Tin Bronze	IS : 318		
		Leaded Tin Bronze	IS:318	Leaded Gun Metal	BS : 1400		
		Leaded Gun metal	BS:1400	Bronze	ASTM B584		
		Bronze	ASTM B584				
6	Stem / Spindle, Lifting Pins	Mild Steel,	IS:2062	Stainless Steel	ASTM A 276	Stainless Steel	ASTM A 276
		Stainless Steel,	ASTM A276		BS : 970 Part I	Aluminium	
		Stainless Steel	BS:970 Part I				
7	Coupling	Cast Iron	IS:210	Stainless Steel	ASTM A 276		
		Mild Steel	IS:2062		ASTM A 351		
		Stainless Steel	ASTMA276				
		Stainless Steel	ASTM A331				
8	Operating Nut / stem Nut	Leaded Tin Bronze	IS:318	Leaded Tin Bronze	IS : 318		
		Leaded Gun Metal	BS:1400	Leaded Gun Metal	BS : 1400		
		Bronze	BS:2874	Bronze	BS : 2874		
			ASTMB584		ASTM B584		

9	Head Stock, Fasteners & Studs	Mild Steel	IS:2062	Mild Steel	IS : 2062	Stainless Steel	AISI
		Stainless Steel	AISI	Stainless Steel	AISI		
10	Anchor Bolts	Mild Steel	IS:2062	Mild Steel	IS : 2062		
		Stainless Steel	AISI	Stainless Steel	AISI		
11	Yoke	Mild Steel	IS:2062	Mild Steel	IS : 2062		
		Cast Iron	IS:210	Stainless Steel	ASTM A 240/276		
		Stainless Steel	ASTM A240/276				
12	Stoplogs					IIDPE	
						Aluminium	
						Stainless Steel	ASTM A240/276
						Wood	

Alternative material can be supplied for operating nut, stem, sealing faces and fasteners.

TABLE 1 – Parts and Materials

No.	Part	Material
1 & 2	Gate & Frame	Stainless steel ASTM A-240 Type 316L
3	Upper frame & Head	Stainless steel ASTM A-240 Type 316L
4	Bottom seal	Neoprene ASTM D-2000 Grade 2 BC-510
5	Guides & Side seals	Ultra high molecular weight polyethylene (UHMWPE) ASTM D-4020
6	Top seal	Ultra high molecular weight polyethylene (UHMWPE) ASTM D-4020
7	Frame seal	EPDM
8	Gate guide	Ultra high molecular weight polyethylene (UHMWPE) ASTM D-4020
9	Compression cord	Nitrile ASTM D-2000 M6BG 7/16 in (11mm)



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