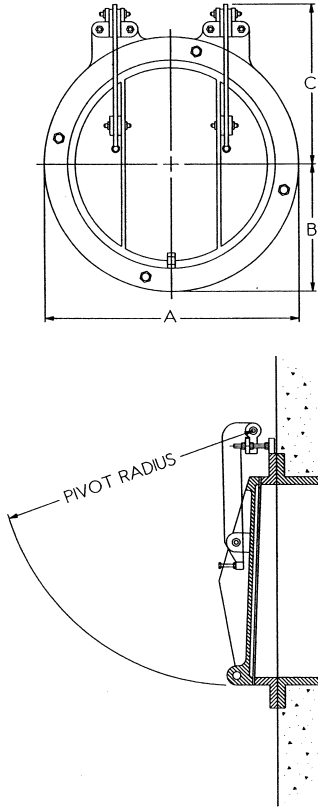


# Dimensional Data

## Model 50C Round Opening for Heads to 50 Ft



Opening Size Dia. (In.)	Dimensions (In.)			Pivot Radius (In.)
	A	B	C	
4	9.00	4.50	5.25	7.31
6	11.00	5.50	8.25	11.75
8	13.50	6.75	9.50	14.00
10	16.00	8.00	9.75	15.25
12	19.00	9.50	10.25	16.75
14	21.25	10.63	12.50	19.75
15	22.25	11.13	12.50	20.31
16	23.50	11.75	13.00	21.25
18	24.75	12.50	15.75	25.00
20	27.50	13.75	16.25	26.25
21	28.00	14.00	16.50	27.38
24	32.00	16.00	19.25	31.25
27	34.75	17.38	21.25	36.00

Opening Size Dia. (In.)	Dimensions (In.)			Pivot Radius (In.)
	A	B	C	
30	38.75	19.38	23.25	38.50
36	46.00	23.00	27.50	45.50
42	53.00	26.50	32.50	53.50
48	59.50	29.75	37.75	61.75
54	66.25	33.25	39.75	67.25
60	73.00	36.50	46.00	76.00
66	80.00	40.00	50.00	83.00
72	86.50	43.25	54.25	90.00
78	93.50	46.75	58.25	97.00
84	100.00	50.00	62.25	104.25
90	106.50	53.25	65.50	111.25
96	113.25	56.63	65.50	117.25
108	125.00	62.50	75.13	129.75

Figure 6-2 Heavy-Duty Flap Gate (Model 50C)

## Model 50 Square and Rectangular Openings for Heads to 50 Ft

Opening Dia. (In.)	Dimensions (In.)			Pivot Radius (In.)
	A	B	C	
12 x 12	18.00	9.00	11.25	18.25
18 x 18	25.00	12.50	15.75	25.00
24 x 24	32.00	15.00	19.25	31.25
30 x 18	37.00	12.50	15.75	25.00
30 x 30	40.50	18.75	25.75	40.25
36 x 24	44.00	16.00	21.00	31.25
36 x 36	44.00	22.00	27.50	45.25
42 x 30	52.00	19.25	23.25	38.25
42 x 42	52.00	25.00	32.50	53.25
48 x 24	56.00	16.00	19.00	29.25
48 x 36	56.00	22.00	27.50	46.50
48 x 48	58.00	29.00	37.75	61.75
54 x 36	63.00	22.50	27.50	47.50
54 x 54	64.00	32.00	39.75	66.75
60 x 30	68.00	19.00	24.25	39.75

Opening Dia. (In.)	Dimensions (In.)			Pivot Radius (In.)
	A	B	C	
60 x 36	70.00	23.00	29.00	48.75
60 x 48	70.00	29.00	37.75	61.75
60 x 60	70.00	35.00	45.75	75.75
66 x 42	76.00	26.00	32.75	53.50
66 x 66	76.00	38.00	52.00	85.00
72 x 48	82.00	29.00	37.75	61.75
72 x 60	82.00	35.00	45.75	75.75
72 x 72	82.00	41.00	54.75	90.50
84 x 60	94.00	35.00	46.00	75.75
84 x 84	94.00	47.00	62.25	104.00
96 x 60	108.00	36.00	46.00	76.00
96 x 84	108.00	48.00	62.50	104.00
96 x 96	108.00	54.00	69.00	117.00
108 x 108	120.00	60.00	76.00	138.00
120 x 120	132.00	60.00	81.00	149.00

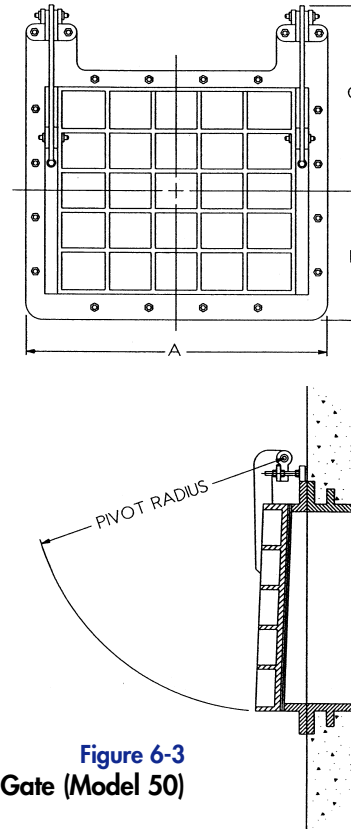


Figure 6-3 Heavy-Duty Flap Gate (Model 50)

# Specifications for Heavy-Duty Flap Gates

## General

Flap gates and accessories shall be of the size, material and construction shown on the drawings and specified herein. They shall be Hydro Gate heavy-duty flap gates or approved equal, with circular, square or rectangular openings. Similar installations shall have operated successfully for five years or more. All component parts shall be of the type material shown in the “Materials” section of this specification. The Material Combination Number applicable to each gate shall be shown in the “Gate Schedule.”

## Seat

The seat shall be flat back and shall be cast in one piece with a raised section around the perimeter of the waterway opening to mount the seating faces. The raised section shall provide a seating plane diverging top to bottom from the plane of the mounting flange to assist in positive closure of the cover. The seat shall be shaped to provide two bosses extended above the top of the waterway opening for mounting the pivot lugs. Pivot lug bosses shall be drilled and tapped for mounting studs. The back of the seat shall be machined to a plane and drilled to mate the anchor or stud layout. Gates attached to concrete shall be mounted on anchor bolts and grouted in place.

## Cover

The cover shall be cast in one piece with necessary reinforcing ribs, a lifting eye for manual operation, and with bosses to provide a pivot point connection with the links. Bosses shall be designed to place the hinge pins in double shear when the gate is assembled.

## Seating Faces

A full-width, dovetail slot shall be machined around the perimeter of the cover and the seat. Corrosion-resistant dovetail seating faces shall be mounted in the slot and held securely without use of screws or other fasteners. The seating faces shall be machined to a plane with a minimum 63 micro-inch finish.

Flap gates subjected to pump discharge slamming action shall have a rubber seating face on the seat. Rubber seating faces shall be mounted in a dovetail slot and held securely without use of pins or screws. The seating face on the cover shall be as specified in the previous section.

## Pivot Lugs

Each pivot lug shall be cast in one piece. Lugs shall have double bosses to place the top hinge pins in double shear when they are assembled through the link. The lugs shall be adjustable in the horizontal plane without removal of the cover from the gate links. The adjustment shall allow the top pivot point to be moved toward the gate seat for reduced sensitivity of the cover, or moved away from the gate seat to provide opening with minimum differential head. Two corrosion-resistant studs shall be used to connect each pivot lug to the gate seat.

## Links

The links connecting the cover and pivot lugs shall be heavy duty and cast in one piece. Each link shall be provided with commercial grade, corrosion-resistant bushings at each pivot point. The bottom of the links shall be provided with an adjusting screw to properly align seating faces on the cover with respect to the seat. The links shall be designed to limit the double hinge

action, preventing the cover from rotating sufficiently to become wedged in the open position.

## Fasteners

All anchor bolts, assembly bolts, screws, studs and nuts shall be of ample size to safely withstand the forces created by operation of the gate under the heads shown in the “Gate Schedule”. Quantity and size of the fasteners shall be recommended by the manufacturer. Anchor bolts shall be furnished with two nuts each to facilitate installation and alignment of the gates when attached to concrete.

## Painting

Machined surfaces shall be coated with a water-resistant, rust-preventive compound. All cast iron parts shall be shop cleaned and painted in accordance with the manufacturer’s standard practice.

## Drawings for Approval

Drawings showing the dimensions and details required to locate and install the component assemblies shall be submitted for the engineer’s approval prior to fabrication.

## Installation

Installation of all parts shall be done by the contractor in a workmanlike manner and in accordance with the manufacturer’s instructions. It shall be the contractor’s responsibility to handle, store and install the gate in strict accord with the manufacturer’s drawings and recommendations.

## Materials

Hydro Gate Flap Gates are manufactured in one standard material combination, as listed below. Various components of the flap gate are available in other materials when absolutely required by the customer. Any material variations are subject to additional costs. Optional materials listed below are not necessarily all inclusive. Please contact Hydro Gate engineering for any additional clarification on optional materials.

### Seat and Cover

*Standard Material:* Cast Iron, ASTM A126, Class B

*Optional Materials:* Austenitic Gray Iron (Ni-Resist), ASTM A436

Ductile Iron, ASTM A536 Grade 80-55-06

### Seating Faces

*Standard Material:* Silicon Bronze, ASTM B98, Alloy 651

*Optional Materials:* Neoprene, ASTM D2000, Grade 1BE625

### Pivot Lugs

*Standard Material:* Ductile Iron, ASTM A536 Grade 80-55-06

*Optional Materials:* Austenitic Gray Iron (Ni-Resist), ASTM A436

### Links

*Standard Material:* Ductile Iron, ASTM A536 Grade 80-55-06

*Optional Materials:* Austenitic Gray Iron (Ni-Resist), ASTM A436

Stainless Steel, ASTM A276, Type 304 or 316

### Bushings

*Standard Material:* Bronze, ASTM B584, Alloy 932

*Optional Materials:* Self-Lubricating Bronze, (various)

Stainless Steel, ASTM A276, Type 304 or 316

### Fasteners

*Standard Material:* Stainless Steel, ASTM F593 (Bolts), Alloy Group 2, Type 316