

# FLAP VALVES



# CAST IRON AND DUCTILE IRON FLAP VALVES 4" TO 24"

## GENERAL DESCRIPTION

Ham Baker flap valves (gates) are used for surface water drainage associated with rivers, estuaries, and irrigation, and flood control, seawater outfalls, in sewage and water treatment plants, to prevent reverse flow conditions.

## DUCTILE IRON PROPERTIES

Ductile Iron is an iron/carbon/silicon alloy. In 1948 it was discovered that with the addition of Magnesium to the molten iron, the graphite in the iron forms in spheres rather than flakes. Thus the brittleness is eliminated and the material is strong and ductile. The material retains all of cast iron's attractive qualities in terms of durability and corrosion resistance with the added benefits of strength and toughness, giving a high degree of dependability.

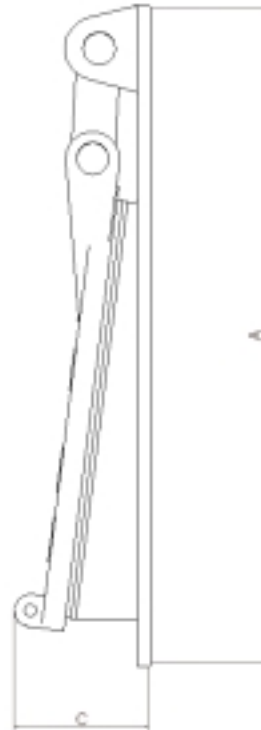
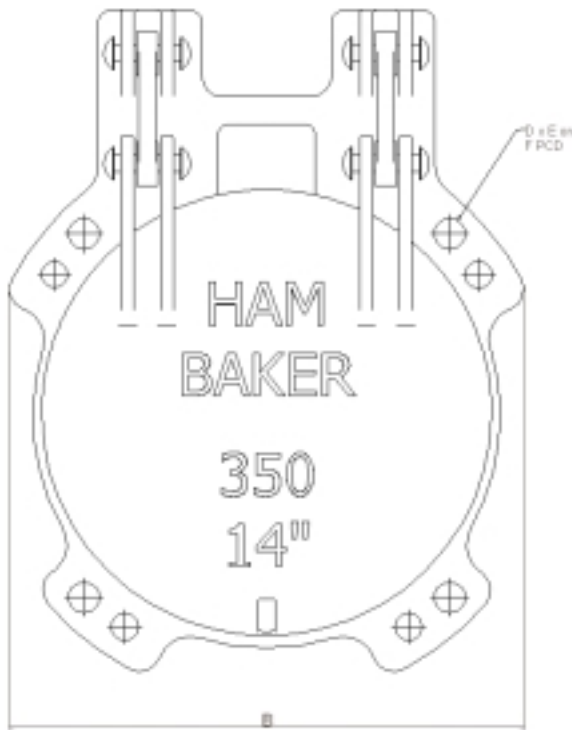


## FEATURES OF THE HAM BAKER RANGE

FEATURE	BENEFIT
Inherent strength	High safety factor incorporated into design. Ability to withstand exceptional loadings.
Excellent impact resistance	Minimizes risk of damage due to impact or sudden surges of water. High resistance to vandalism.
Light weight	Ductile Iron is lighter in weight to cast iron.
Phosphor bronze & resilient faces	Phosphor bronze has excellent resistance to erosion by grit. Resilient face extremely durable and provides a quiet operation.
Double hung door hinges	Ensures full-face seating and low leakage rates.
Excellent coating standards	Available in extremely durable powder coat and epoxy finishes to NSF61.
All materials used are	In conformance with ASTM standards.

## TIDAL AND SEA WATER APPLICATIONS

Turbulence of flow across flaps due to severe wave action may cause the doors to be disturbed from their equilibrium, and could result in damage to the sealing faces. Consideration should be given to the building of baffles across the valve, or situating the valve in a chamber with a flexible rubber flap valve situated on the seaward side of the chamber.



### DIMENSIONS SHOWN IN INCHES FOR TYPICAL WALL MOUNTING BOLT PATTERN

### SPECIFY BOLT PATTERN NEEDED

SIZE	DIM "A"	DIM "B"	DIM "C"	SIZE	DIM "A"	DIM "B"	DIM "C"
3	7.87	9.49	2.95	14	18.66	24.02	4.96
4	9.02	10.51	3.03	15	17.09	23.70	5.04
6	11.22	12.64	3.23	16	20.55	26.14	5.12
8	12.60	14.21	3.46	18	21.97	27.91	4.61
9	12.24	14.57	3.66	20	22.17	29.72	4.80
10	13.07	15.47	3.86	24	25.98	35.04	5.12
12	15.00	17.40	4.21				

## GENERAL

Flap valves (gates) shall be of the size, construction and material specified here in. They shall be manufactured by the Ham Baker Group and distributed through:

Ham Baker Inc. 5000 Askins, Houston, Texas, 77339, USA.  
Tel. (866) 579-1500

## FRAME, DOOR & HINGE LINKS

As standard up to 24" the frame is manufactured from ductile cast iron equivalent to ASTM A536 grade 65/45/12, which is as cast. This grade provides a high tensile strength of 65,000psi, a yield of 45,000 and an elongation of 12%. This material is chosen as standard to ensure the flap valve is extremely durable and shock resistant in the environments intended. Above 24" flap valves are manufactured in ASTM A126 Class B as standard. As standard we use double hung hinge arrangement using stainless steel (316) hinge pins. We can also offer ASTM 436 Ni-Resist when needed.

Frame backs are flat, which enables easier installation to a flange or onto a wall-using anchor bolts for fixing, with the addition of a non shrink grout to fill the void between the frame back and the wall. The use of mastic as a replacement for the non-shrink grout is not recommended or warranted by us.

## SEATING FACES

As standard we offer Phosphor Bronze ASTM B21, faces to both the door and frame that are mechanically fixed into position. Ham Baker insists on the mechanical fixing to ensure the face is securely fixed into position rather than relying solely on a groove. The faces are machined to give a near water tightness as possible, in many cases drip tight is achieved. Alternatively, the quieter operating resilient face can be fitted. This material is extremely durable, a shore hardness of 70, provides a near perfect sealing surface. As a maximum, the leakage rate should be no more than 0.1 to 0.2 gpm/ft. of seal perimeter; the higher the seating head the lower the leakage.

Remember in many installations zero leakage is not uncommon when operated and maintained correctly.



## CORROSION PROTECTION

As standard up to 24" diameter the valves are protected with a very durable Plascoat material. This is a powder coat application, which can offer better adhesion and protection properties to that of a paint system. It is applied directly onto a shot blast surface, no more than 2 hours after preparation to ensure an excellent key is made to the surface. Above 24" as standard Ameron 400 paint system is used which conforms to NSF61 requirements.

## FASTENERS

All fasteners are supplied using stainless steel (316) and of sufficient size and quantity for the flap valves intended application and design requirements. Remember for pipe flange installations only a portion of the boltholes is provided in our frame and therefore only these bolts are used for mounting.

## INSTALLATION

Installation must be conducted all in accordance with the installation instructions provided and in full conformance and compliance with any in country health and safety policies, material handling, confined space directives, relevant laws etc. Any deviation must be requested in writing and approved in writing or otherwise acknowledged by Ham Baker. All installation must be carried out in a safe and workmanlike manner.

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**HAMBAKER**

**HAM BAKER INC**

5000 Askins  
Houston  
Texas  
77093

**Tel** +1 281 590 1500

**Fax** +1 281 590 1506

**www.hambaker.us**

**HAMBAKER**

**FlowControl**

**HAM BAKER FLOW CONTROL LTD**

Garner Street  
Etruria

Stoke-on-Trent  
Staffordshire  
ST4 7BH

**Tel** +44 (0) 1782 202300

**Fax** +44 (0) 1782 203639

**www.hambaker.co.uk**



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