



KING GATE

OPERATING SAFELY AND RELIABLY

DUCTILE IRON STEAM VALVES



6D-1580
602-0070



<http://www.kinggate.com.tw>



DUCTILE IRON STEAM VALVES CHARACTERISTIC EXPLANATION

KING GATE has been firmly established as a supplier DUCTILE IRON STEAM VALVES for several decades. Energy – an increasingly valuable resource from year to year – is used by the manufacturing industry in the form of heat, for example to heat products or for evaporation processes, sterilisation, and food processing or energy facilities including power generation plants, gas and oil plants. Steam is the media employed in many of these applications. KING GATE 's proven expertise and reliability whenever steam, hot water or condensate applications from 10K, 16K to 20K need to be controlled SAFELY and RELIABLY

Field

Industry: Food and beverages, Power plants & renewable energy, Steelworks, District heat, Building materials, Wood, pulp and paper, Tyres, Boilers, Refrigeration

Chemical Industry: Organic chemicals, Alcohols, Polymers

Plant engineering: Power plants, Oil & gas, Metallurgy, Paper, Engineered wood manufacturing

Shipbuilding: Cooling water systems, Ballast water systems, Exhaust gas and auxiliary boilers, HVAC systems

HVAC: Heating, Air conditioning and cold water, District heat, Hot water & steam

Applicable plant

- Piping for steam or Hot water or Thermal oil supply
- Air conditioning and cold water & heating systems
- High pressure gaseous service in general
- piping for poisonous gas service



● KING GATE high quality Ductile Iron castings use DISA vertical sand moulding machines to produce.



Service Recommendation

Ductile iron valves are highly re-commended for higher mechanical shock resistance under high or low temperature services, and better tensile strength and elongation characteristics than those of ordinary gray iron valves, some- times replace of cast steel valves.

Ductile Iron features suited to valves

Gray iron, ductile iron and malleable iron are the three kinds of iron used for valve construction. Unlike gray iron, which has thin, flake-like molecular formations, the metallic structures of both ductile and malleable iron contain nodular graphite. (Refer to the microscopic views) This structure provides ductile and malleable iron with mechanical properties which exceed those of gray iron. It almost equals the properties of cast steel, which is an expensive material for industrial valves. Furthermore, their superior castability and machinability help to increase their suitability as a valve material.

Ductile iron outperforms malleable iron due to its better mechanical characteristics to build valve body, which is a kind of pressure containing device. For example, it has a 20% higher tensile strength and 70 to 80% better elongation. This difference comes from different formation process of nodulated graphite molecules.

Ductile iron also has better abrasive resistance, corrosion resistance and oxidizability properties than cast steel, so ductile iron castings have wide application in urban construction fields, and in the environments of water, saline water and steam. So, it is suitable for producing valve parts, moreover, ductile iron costs are much lower than stainless steel.

KING GATE ductile iron valves are made of JIS FCD450-10 (FCD-S on request) or ASTM A536-65-45-12 (ASTM A395 on request) ductile iron. The history of the introduction of ductile iron valves on the market is rather short, however, the demand is steadily increasing as a result of their economic advantage as well as the fact that their wide range of service applications is comparable with cast steel valves.

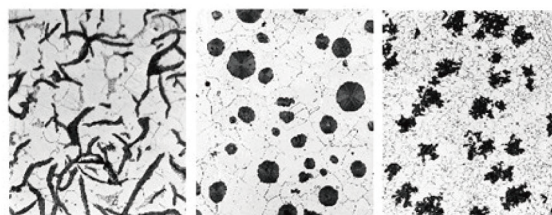
JIS G 5502: 2001 Grade FCD450-10 Spheroidal graphite iron castings

1. Chemical composition :

Carbon (C) : 2.50% minimum
Phosphor (Mg) : 0.09% maximum
Silicon (S) : 0.02% maximum

2. Mechanical properties :

Tensile strength : 450N/mm² minimum
Yield strength : 280N/mm² minimum
Elongation : 10% minimum
Brinell hardness : 140 to 210



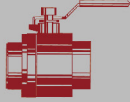
Gray iron

Ductile iron

Malleable iron

● Horizontal Machining Center with hydraulic jig fixture, ensuring machining precision for stable machining dimension.





DUCTILE IRON STEAM VALVES INTRODUCTION OF KING GATE PRODUCTS

KING GATE ductile iron valves Design Specification:

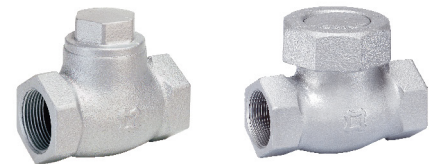
- Design and manufacture acc. to JV(Japan Valve Manufacturer's Association Standard)
- JV4-2 : Cast iron valves-Blackheart malleable iron and spheroidal graphite (ductile) iron small sized valves. 1991
- JV4-3 : Cast iron valves-Blackheart malleable iron and spheroidal graphite (ductile) iron valves. 1991
- JV4-4 : Cast iron valves-Special grade blackheart malleable iron and spheroidal graphite (ductile) iron small sized valves. 1991
- JV4-5 : Cast iron valves-Special grade blackheart malleable iron and spheroidal graphite (ductile) iron valves. 1991
- Shell wall thickness acc. to JIS 2031 : Gray cast iron valves 2013
- Face to face dimensions acc. to JIS B 2011 : Bronze, gate, globe, angle, and check valves 2010
JIS B 2002 : Face-to-face and end-to-end dimensions of valves 1987
- End to end dimensions acc. to JIS B 2051 : Malleable iron and ductile iron valves 2013
- Flanges dimensions acc. to JIS B 2239 : Cast iron pipe flange 2013
- Thread dimensions acc. to JIS B 0203 : Taper pipe thread. 1999
- Test pressure Dimensional inspection acc. to JIS B 2003 : General rules for inspection of valves 2013



Ductile Iron Globe Valve
JIS-10K / JIS-16K / JIS-20K / Class 150 / Class 300
Flanged
SIZE: 1/2"~2"



Ductile Iron Globe Valve
JIS-10K / JIS-16K / JIS-20K / Class 150 / Class 300
Flanged
SIZE: 2"~10"



Ductile Iron Lift Check Valve
JIS-10K / JIS-16K / JIS-20K / Class150 / Class300
Flanged
SIZE: 1/4"~2"



Ductile Iron Globe Valve
JIS-10K / JIS-16K / JIS-20K
Threaded
SIZE: 1/4"~2"



Ductile Iron Lift Check Valve
JIS-10K / JIS-16K / JIS-20K / Class 150 / Class 300
Flanged
SIZE: 1/2"~2"



Ductile Iron Lift Check Valve
JIS-10K / JIS-16K / JIS-20K / Class 150 / Class 300
Flanged
SIZE: 2"~10"



DUCTILE IRON STEAM VALVES INTRODUCTION OF KING GATE PRODUCTS



Ductile Iron Vertical Spring Loaded Check Valve
JIS-10K
Threaded
SIZE: 1/2"~2"



Ductile Iron Ball Valve
JIS-10K
Threaded
SIZE: 1/4"~2"



Ductile Iron Ball Valve
JIS-10K / JIS-16K / JIS-20K
Flanged
SIZE: 2"~8"

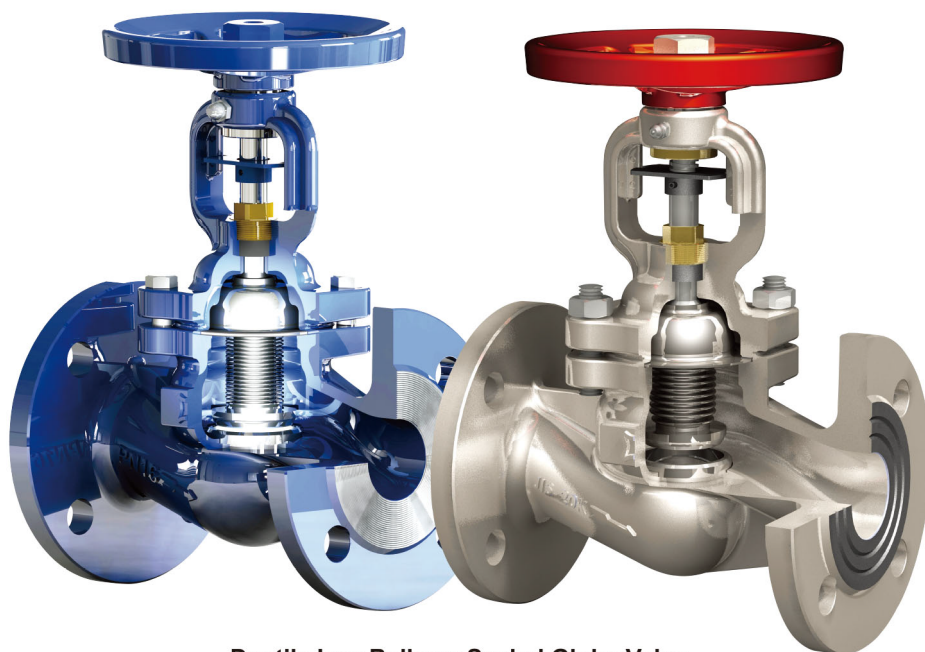


Ductile Iron Gate Valve
JIS-10K / JIS-16K
Flanged
SIZE: 1/2"~2"

Ductile Iron Gate Valve
JIS-10K / JIS-16K
Threaded
SIZE: 1/2"~2"



Ductile Iron Y-Strainer
JIS-10K / JIS-16K
Threaded/ Flanged
SIZE: 1/4"~2"



Ductile Iron Bellows Sealed Globe Valve
PN16 / PN25 / JIS-10K / JIS-20K
Flanged
SIZE: 1/2"~8"