



**Forged Gate, Globe & Check Valve**

### **Forged Valve**

**Forged Gate Valve - Model 1300**  
**Forged Globe Valve - Model 3100**  
**Forged Check Valve - 6300**

BS 5352 / API 602

Size - 1/2" to 2" ( 15mm to 50mm)

Rating - Class 800 to Class 2500

Forged Steel Valves

Socket Weld Design

Butt-Weld Design

Screwed ( F - NPT) Design

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**#GGC – Gate, Globe & Check Valve**

**# Forged Gate Valve – Model 1300**

**# Forged Globe Valve – Model 3100**

**# Forged Check Valve – Model 6300**

## Company Overview

“INVACO” (Industrial Valve Company) founded and promoted by the technocrats having experience of 18 years in National and International valve industry. INVACO PRIVATE LIMITED (Industrial Valve Company) is registered experience company in Design, Development, Fabrication & Manufacturing of Industrial Valves. Our mission is to produce high quality and reliable Valves to our national & international clients / customers. Our proactive approach to technical issues enables to understand and implement cost-effective solutions to our valuable customers.

“INVACO” (Industrial Valve Company) committed to excellence by manufacturing top quality valves to exceed customer’s needs with low cost, on-time delivery & providing finest service in industry. “INVACO” manufacture Ball valves (Floating & Trunnion Mounted), Butterfly Valves (Damper, Sleeved, Double offset & Triple Offset), Gate Valves, Globe Valves , Check Valves, Strainers, Flap Valves, Penstock / Sluice Gate, Dismantling Joints, Flange Adaptor & Flange Couplings, for Oil & Gas, Petrochemicals, Refineries, Power Plants, Water Treatment Plants, Chemical, Paper & Pulp, Sugar, Steel, Pharma, Pipeline Transmission and other process industries.

“INVACO” (Industrial Valve Company) is specialized in design, manufacturing & testing of FORGED Steel Gate, Globe & Check Valves. All Forged GGC valves are designed as per ASME B16.34, API 600, API 602, BS 1414 and follows ISO 9001:2015 Quality Management Systems. INVACO, manufacture of Cast Steel Gate, Globe & Check valve size from 1/2” to 2” (15mm to 50mm) with pressure range from Class 150 to Class 2500 and equivalent EN pressure ratings. Gate , Globe & Check valves produced from FORGED materials like A105N, F304, F304L, F316, F316L, F51, F53, F55, 904L, Alloy 20, Inconel, Monel, Hast Alloys, and other special materials.



INVACO (Industrial Valve Company) aims to produced a zero defect valves for long life and reliable services. Making continual improvements aims towards to minimize the Total Ownership Cost for valued customers. Also aims to established sales and services of valves & actuators worldwide

This catalog provides basic information of Forged GGC Valves. Every effort has been made to maintain technical accuracies however INVACO has reserve rights to make any change in design and materials without prior notice.

## Quality Policy

At “INVACO”, we established this comprehensive Quality Management System to implement a strategy of continual improvement and compliance with the requirements of the ISO 9001:2008 Quality Assurance standard and other industrial valves standards by:

### Customer Focused:

- Make commitments we fully understand and believe we can meet and deliver.
- Meet all commitments to customers on time.
- Satisfy our customer’s needs and exceed their expectations.

### Performance Driven:

- Verify that our products and services meet customer requirements.
- Monitor benchmark and continuously improve our business, products, and services, organization and employee’s performance.

Entire “INVACO” stick to the spirit and intent of this policy to ensure customer satisfaction is achieved at all respects and times.



## Quality Standard for Forged Gate, Globe & Check Valves

- ❖ Forged Gate Valve - Model 1300
- ❖ Forged Globe Valve - Model 3100
- ❖ Forged Check Valve - Model 6300

### American Petroleum Institute (API)

API 600                      API 602  
 API 598                      API Spec Q1

### American Society of Mechanical Engineers

ASME B16.25              ASME B16.11  
 ASME B1.20.1            ASME B16.10  
 ASME B16.34

### British / European Standards

BS 1414                      BS 5154  
 BS 1868                      BS 5352  
 BS 1873                      BS EN 12266  
 EN 10204                    BS EN 6364

### International Organization for Standardization (ISO)

ISO 9001:2015              ISO 5208  
 ISO 5211                      ISO 14313  
 ISO 10434                    ISO 15761

### Manufacturers Standardization Society (MSS - SP)

MSS SP-6                      MSS SP-25  
 MSS SP 44                      MSS SP 45  
 MSS SP 55                      MSS SP 61  
 MSS SP 72                      MSS SP 82

### National Association of Corrosion Engineers (NACE)

NACE MR 01-75    NACE TM 01-77  
 NACE TM 02-84    NACE MR 01-03

### Materials and Equipment Standards and Code (MESCC)

MESCC SPE 77/101    MESCC SPE 77/102    MESCC SPE 77/105    MESCC SPE 77/160    MESCC SPE 77/300  
 MESCC SPE 77/302    MESCC SPE 77/312    MESCC SPE 77/200

## Manufacturing Range for GGC (Gate, Globe & Check Valve)

Valve	ASME CLASS / Size - in ( mm)						
	150	300	600	800	900	1500	2500
Gate Valve	2" - 48" (50 - 1200)	2" - 48" (50 - 1200)	2" - 48" (50 - 1200)	----	2" - 24" (50 - 600)	2" - 12" (50 - 300)	2" - 12" (50 - 300)
Globe Valve	2" - 24" (50 - 600)	2" - 24" (50 - 600)	2" - 24" (50 - 600)	----	2" - 18" (50 - 450)	2" - 16" (50 - 400)	2" - 12" (50 - 300)
Check Valve	2" - 48" (50 - 1200)	2" - 48" (50 - 1200)	2" - 48" (50 - 1200)	----	2" - 16" (50 - 400)	2" - 14" (50 - 350)	2" - 10" (50 - 250)
Forge Valve ( GGC )	----	----	----	1/2" - 2" ( 15 - 50 )	1/2" - 2" ( 15 - 50 )	1/2" - 2" ( 15 - 50 )	----



**Features of Forge Gate Valve (Model – 1300)**



**Quality Standards:-**

Design Standards	- API 600 /API 602 / ASME B16.34 / MESC SPE 77-101,302,300,312.
Testing Standards	- API 598 / EN 12266
End to End Standards	- Maker's Standard
Socket Weld End	- ASME B16.11.
Butt-Weld	- ASME B 16.25
Screwed End (F-NPT)	- ASME B1.20.1
Fugitive Emission Test	- MESC SPE 77 - 312 / ISO 15848
Cryogenic Services	- BS 6364, MSS SP 134
Valve Marking	- MSS SP 25 / ASME B 16.34
Visual Inspection	- MSS SP 55
Material Testing	- NDE / NACE MR 01- 75 / NACE MR 01- 03 Compliance available.

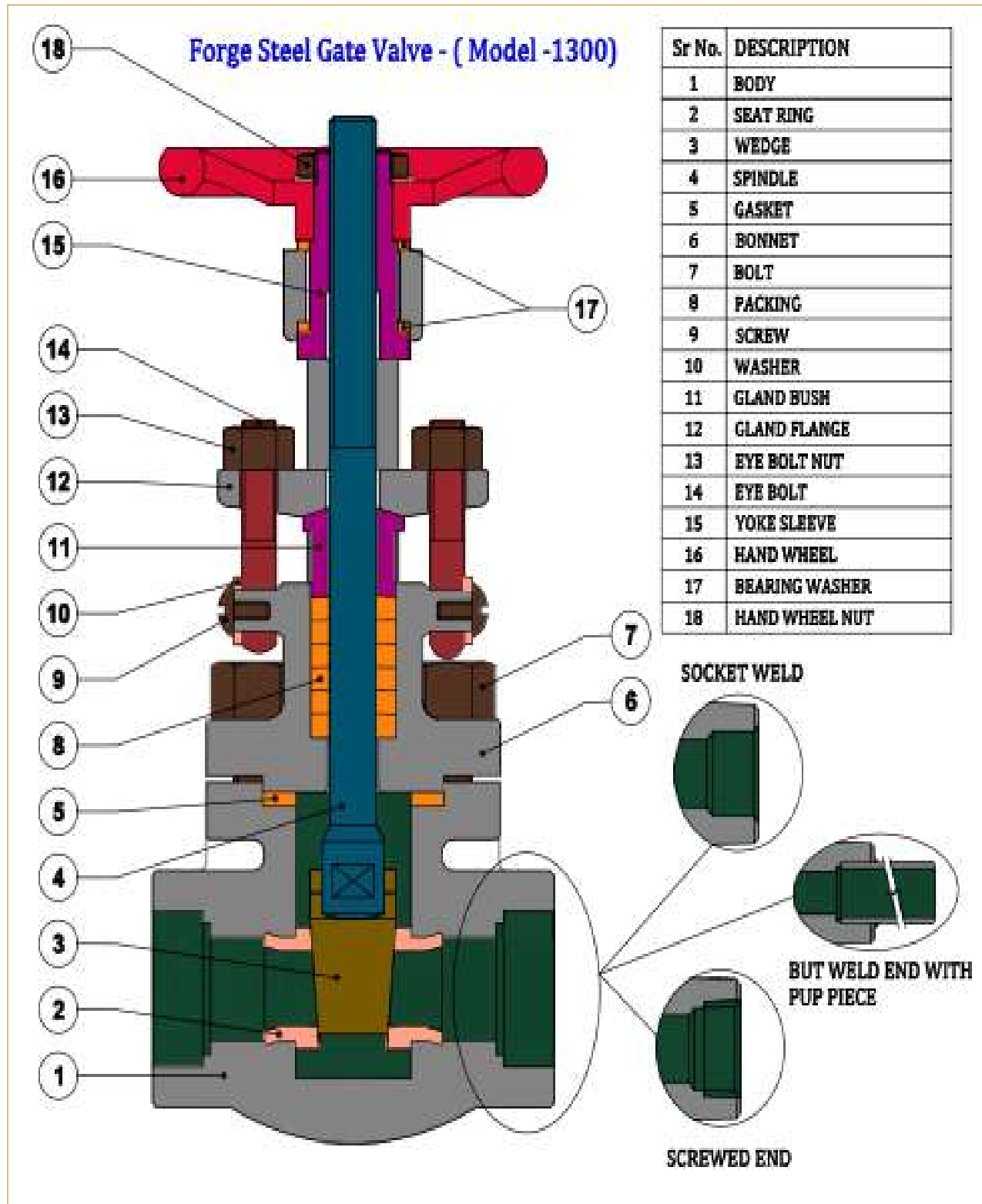
**Key Features:-**

- Size :- 1/2" to 2" (15mm to 50mm)
- Hard Face, Stallite
- Extended Bonnet & Extended Stem
- Solid Wedge , Flexible Wedge options
- Rating:- 150# to 2500# & Equiv. DIN Rating
- All API Trim available
- OS & Y, BB, Rising Stem.
- Low Emission Design

**Materials** - Carbon Steel, Low Temperature Carbon Steel, Stainless Steel, Duplex, Super Duplex, Incoloy, Inconel, Monel, Aluminum Bronze, Hastalloy, and other materials.

**Applications** - Offshore / Onshore Oil & Gas, Chemical, Petrochemical & Allied Process, Power Plant, Water Treatment Plant, Liquefied Natural Gas, Sugar, Paper & Pulp, Steel, Piping & Process Industries.

**GA Drawing for Forged Gate Valve (Model - 1300)**



## Material of Construction for Forged Gate Valve (Model – 1300)

<b>Bill Of Material ( Forged Gate Valves)</b>				
<b>Sr. No.</b>	<b>Part</b>	<b>Carbon Steel</b>	<b>Low Temperature Steel</b>	<b>Stainless Steel</b>
1	Body	ASTM A 105N	ASTM A 350 Gr. LF2	ASTM A 182 Gr. F316 / F304
2	Seat Ring	AISI410/ SS304 / SS316	SS316	SS304, SS316
3	Wedge	AISI410/ SS304 / SS316	SS316	SS304, SS316
4	Spindle	AISI410 / SS304 / SS316	A182 Gr. F316	A 182 Gr.F316 / F304
5	Gasket	SPWG + (SS304 /SS316)	SPWG + SS316	SPWG + ( SS316 / SS304)
6	Bonnet	ASTM A 105N	ASTM A 350 Gr. LF2	ASTM A 182 Gr. F316 / F304
7	Bolt	A193 Gr. B7 , B7M	A 320 Gr. L7M , L7	A193 Gr.B8M , B8
8	Packing	Graphite	Graphite	Graphite
9	Screw	A193 Gr. B7 , B7M	A 320 Gr. L7M , L7	A193 Gr.B8M , B8
10	Washer	Carbon Steel (Galvanized)	Carbon Steel (Galvanized)	Stainless Steel
11	Gland Bush	AISI 410 / SS 304 / SS316	SS316	SS 316/304
12	Gland Flange	A 105N	A 350 Gr. LF2	SS 316/304
13	Eye Bolt Nut	A194 Gr 2H , 2HM	A 194 Gr. 4L ,7M, 4	A 194 Gr. 8MA ,
14	Eye Bolt	A193 Gr B7 , B7M	A 320 Gr. L7M , L7	A193 Gr.B8M , B8
15	Yoke Sleeve	S.G. Iron	S.G. Iron	S.G. Iron
16	Hand Wheel	Malleable Iron	Malleable Iron	Malleable Iron
17	Bearing Washer	Carbon Steel	Carbon Steel	Stainless Steel
18	Hand Wheel Nut	A194 Gr 2H , 2HM	A 194 Gr. 4L ,7M, 4	A 194 Gr. 8MA , 8M

NOTE:

\*\* All API Trims are available as per customer requirement.

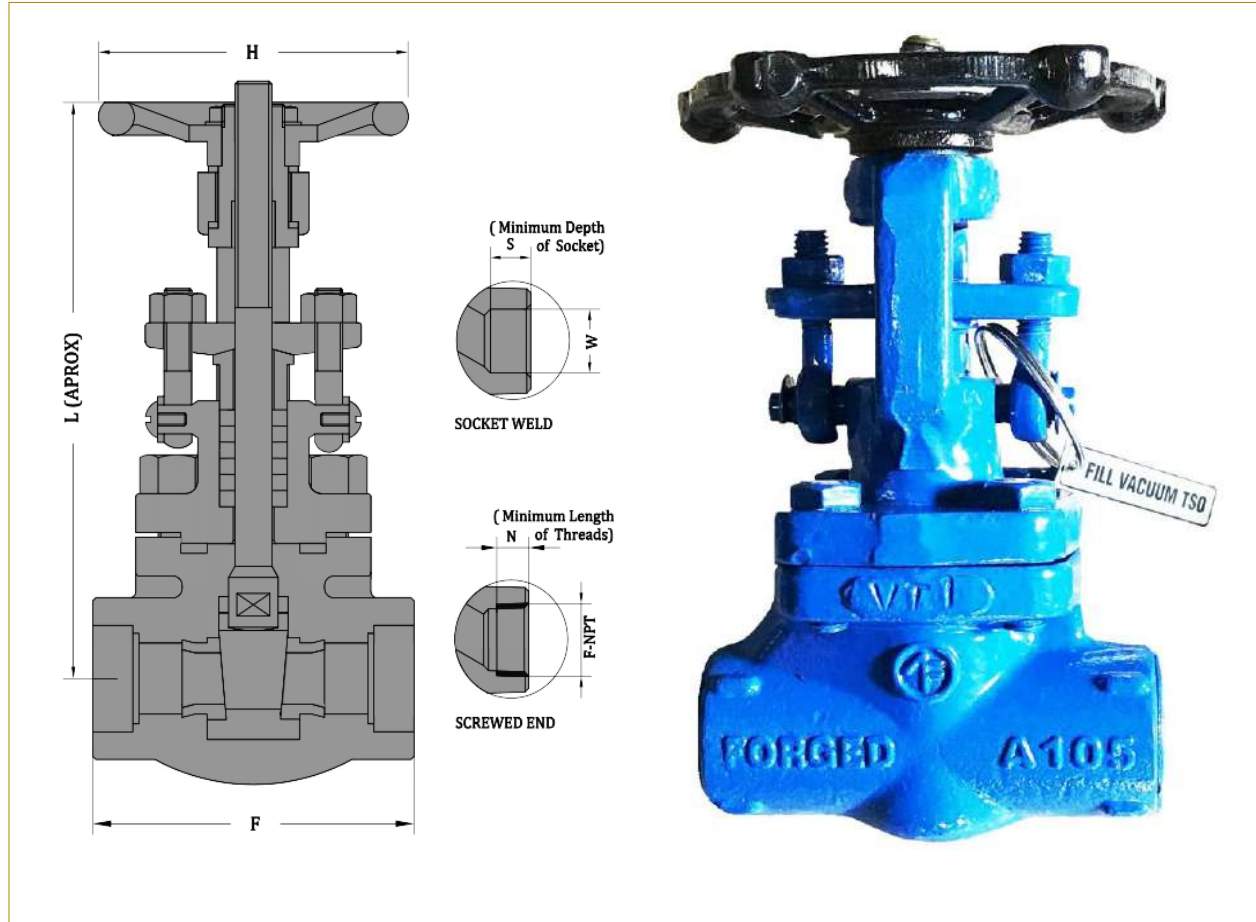
\*\* Stellite or Hardface are optional and as per customer requirement.

\*\* "INVACO" reserve rights to change MATERIALS & DESIGN anytime without prior notice.





**Dimensions for Forged Gate Valve (Model 1300)**

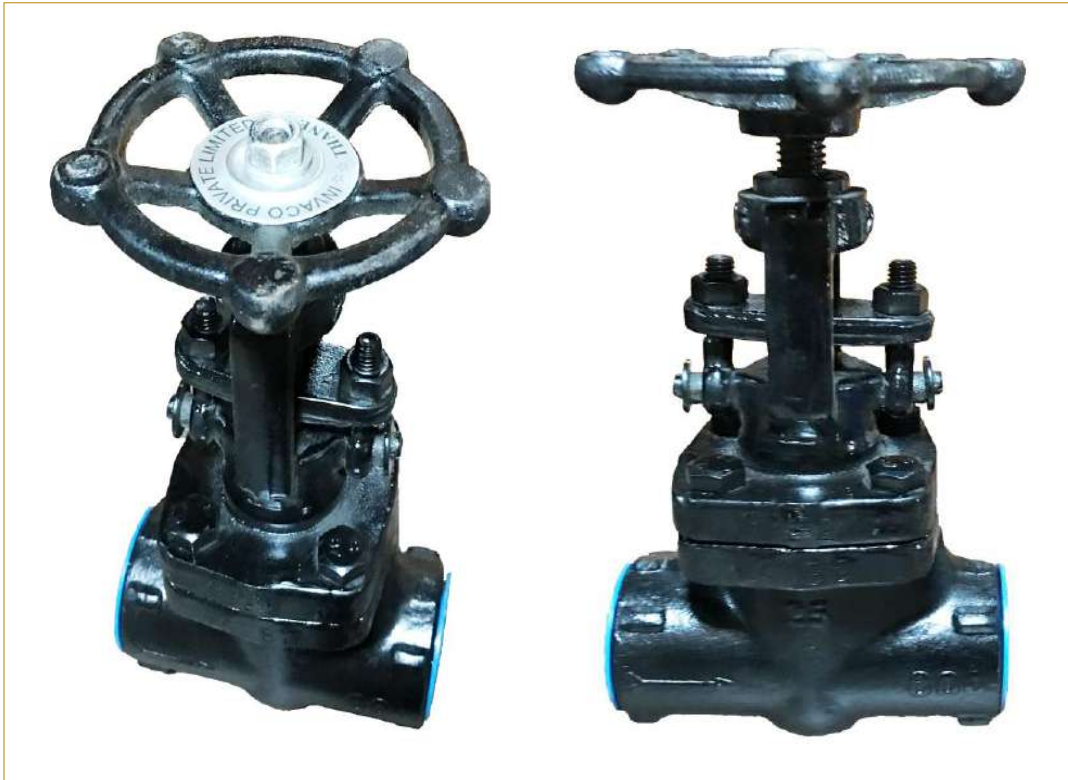


Size		F (mm)	L (mm)	H (mm)	Socket End		Screwed End (F-NPT)		But-Weld End
in	mm				W(mm)	S(mm)	F-NPT	N(mm)	
½	15	85	165	95	21.8	9.5	½	13.5	As per Standard
¾	20	90	175	95	27.2	12.5	¾	14	
1	25	103	215	105	33.9	12.5	1	17.3	
1½	40	128	275	150	48.8	12.5	1½	18.3	
2	50	142	285	150	61.2	16	2	19.3	

Note:-

\*\* INVACO reserves the right to change the dimensions, materials, design & other information anytime without prior notice.

**Features of Forge Globe Valve (Model – 3100)**



**Quality Standards:-**

Design Standards	- API 600 /API 602 / ASME B16.34 / MESC SPE 77-102,302,300,312.
Testing Standards	- API 598 / EN 12266
End to End Standards	- Maker's Standard
Socket Weld End	- ASME B16.11.
Butt-Weld	- ASME B 16.25
Screwed End (F-NPT)	- ASME B1.20.1
Fugitive Emission Test	- MESC SPE 77 - 312 / ISO 15848
Cryogenic Services	- BS 6364, MSS SP 134
Valve Marking	- MSS SP 25 / ASME B 16.34
Visual Inspection	- MSS SP 55
Material Testing	- NDE / NACE MR 01- 75 / NACE MR 01- 03 Compliance available.

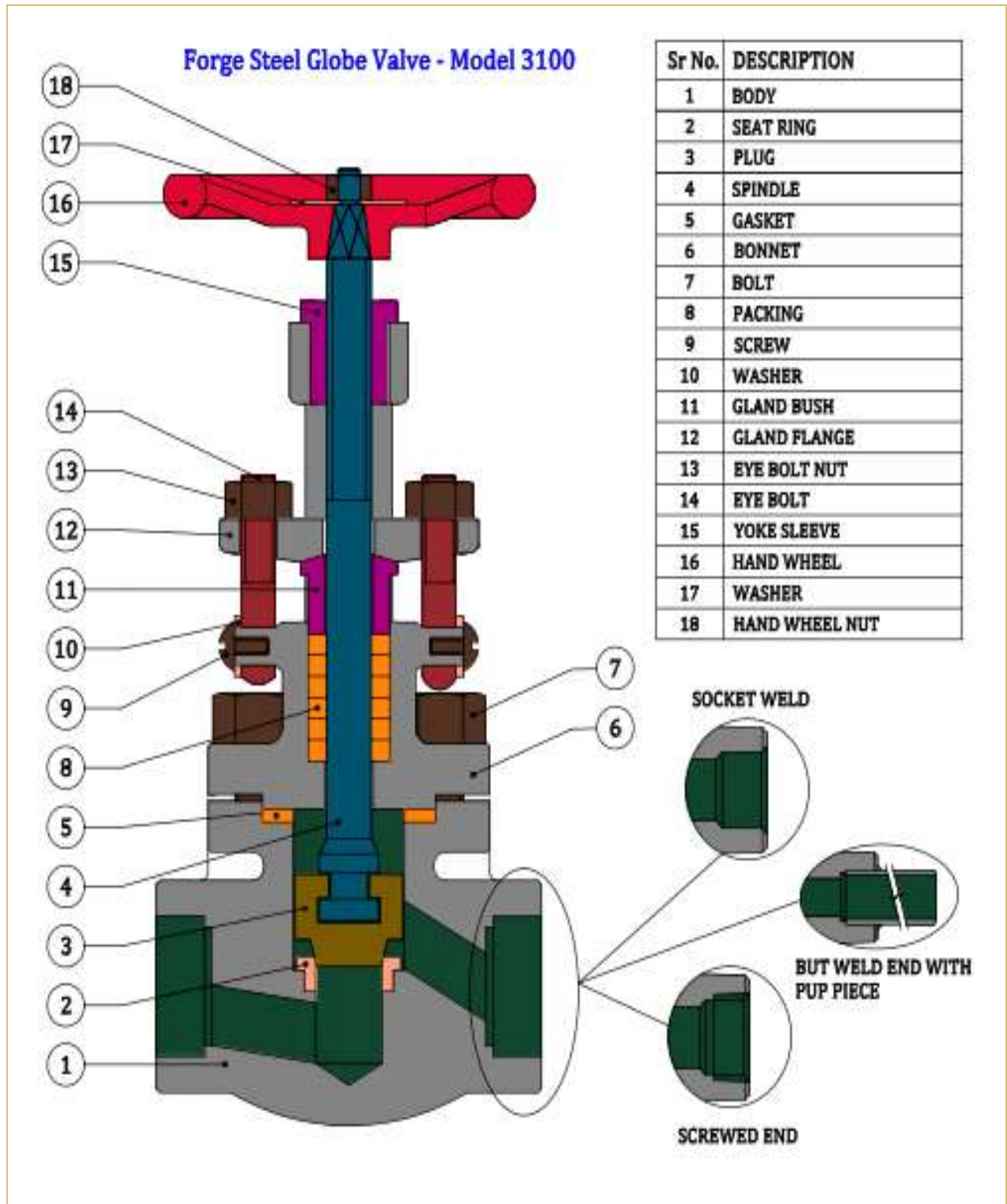
**Key Features:-**

• Size :- 1/2" to 2" (15mm to 50mm)	• Rating:- 150# to 2500# & Equiv. DIN Rating
• Hard Face, Stallite	• All API Trim available
• Extended Bonnet & Extended Stem	• OS & Y, BB, Rising Stem.
• Solid Wedge , Flexible Wedge options	• Low Emission Design

**Materials** - Carbon Steel, Low Temperature Carbon Steel, Stainless Steel, Duplex, Super Duplex, Incoloy, Inconel, Monel, Aluminum Bronze, Hastalloy, and other materials.

**Applications** - Offshore / Onshore Oil & Gas, Chemical, Petrochemical & Allied Process, Power Plant, Water Treatment Plant, Liquefied Natural Gas, Sugar, Paper & Pulp, Steel, Piping & Process Industries.

**GA Drawing for Forged Globe Valve (Model - 3100)**



## Material of Construction for Forged Globe Valve (Model – 3100)

<b>Bill Of Material ( Forged Globe Valves)</b>				
<b>Sr. No.</b>	<b>Part</b>	<b>Carbon Steel</b>	<b>Low Temperature Steel</b>	<b>Stainless Steel</b>
<b>1</b>	Body	ASTM A 105N	ASTM A 350 Gr. LF2	ASTM A 182 Gr. F316 / F304
<b>2</b>	Seat Ring	AISI410/ SS304 / SS316	SS316	SS304, SS316
<b>3</b>	Plug	AISI410/ SS304 / SS316	SS316	SS304, SS316
<b>4</b>	Spindle	AISI410 / SS304 / SS316	A182 Gr. F316	A 182 Gr.F316 / F304
<b>5</b>	Gasket	SPWG + (SS304 /SS316)	SPWG + SS316	SPWG + (SS316 /SS304)
<b>6</b>	Bonnet	A105N	A 350 Gr. LF2	A 182 Gr. F316 / F304
<b>7</b>	Bolt	A193 Gr. B7 , B7M	A 320 Gr. L7M , L7	A193 Gr.B8M , B8
<b>8</b>	Packing	Graphite	Graphite	Graphite
<b>9</b>	Screw	A193 Gr. B7 , B7M	A 320 Gr. L7M , L7	A193 Gr.B8M , B8
<b>10</b>	Washer	Carbon Steel (Galvanized)	Carbon Steel (Galvanized)	Stainless Steel
<b>11</b>	Gland Bush	AISI 410 / SS 304 / SS316	SS316	SS 316/304
<b>12</b>	Gland Flange	A 105N	A 350 Gr. LF2	SS 316/304
<b>13</b>	Eye Bolt Nut	A194 Gr 2H , 2HM	A 194 Gr. 4L ,7M, 4	A 194 Gr. 8MA , 8M
<b>14</b>	Eye Bolt	A193 Gr B7 , B7M	A 320 Gr. L7M , L7	A193 Gr.B8M , B8
<b>15</b>	Yoke Sleeve	S.G. Iron	S.G. Iron	S.G. Iron
<b>16</b>	Hand Wheel	Malleable Iron	Malleable Iron	Malleable Iron
<b>17</b>	Washer	Carbon Steel	Carbon Steel	Stainless Steel
<b>18</b>	Hand Wheel Nut	A194 Gr 2H , 2HM	A 194 Gr. 4L ,7M, 4	A 194 Gr. 8MA , 8M

**NOTE:**

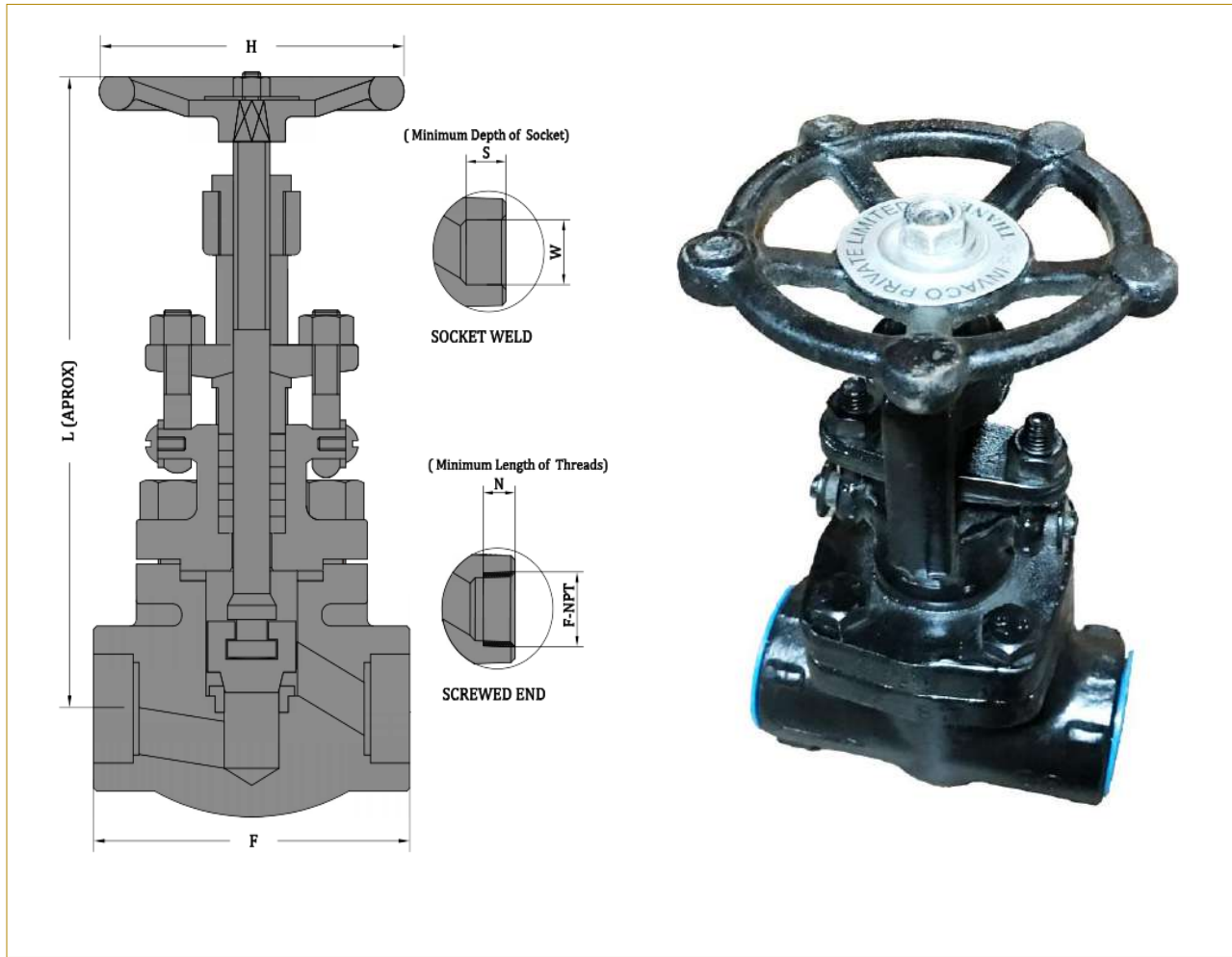
\*\* All API Trims are available as per customer requirement.

\*\* Stellite or Hardface are optional and as per customer requirement.

\*\* "INVACO" reserve rights to change MATERIALS & DESIGN anytime without prior notice.



**Dimensions for Forged Globe Valve (Model 3100)**



Size		F (mm)	L (mm)	H (mm)	Socket End		Screwed End (F-NPT)		But-Weld End
in	mm				W (mm)	S (mm)	F-NPT	N (mm)	
½	15	85	145	95	21.8	9.5	½	13.5	Available on Request
¾	20	90	155	95	27.2	12.5	¾	14	
1	25	103	210	105	33.9	12.5	1	17.3	
1½	40	128	265	150	48.8	12.5	1½	18.3	
2	50	142	275	150	61.2	16	2	19.3	

Note:-

\*\* INVACO reserves the right to change the dimensions, materials, design & other information anytime without prior notice.

**Features of Forge Check Valve (Model – 6300)**



**Quality Standards:-**

Design Standards	- API 600 / API 602 / ASME B16.34 / MESC SPE 77-103,302,300,312.
Testing Standards	- API 598 / EN 12266
End to End Standards	- Maker's Standard
Socket Weld End	- ASME B16.11.
Butt-Weld	- ASME B 16.25
Screwed End (F-NPT)	- ASME B1.20.1
Valve Marking	- MSS SP 25 / ASME B 16.34
Visual Inspection	- MSS SP 55
Material Testing	- NDE / NACE MR 01- 75 / NACE MR 01- 03 Compliance available.

**Key Features:-**

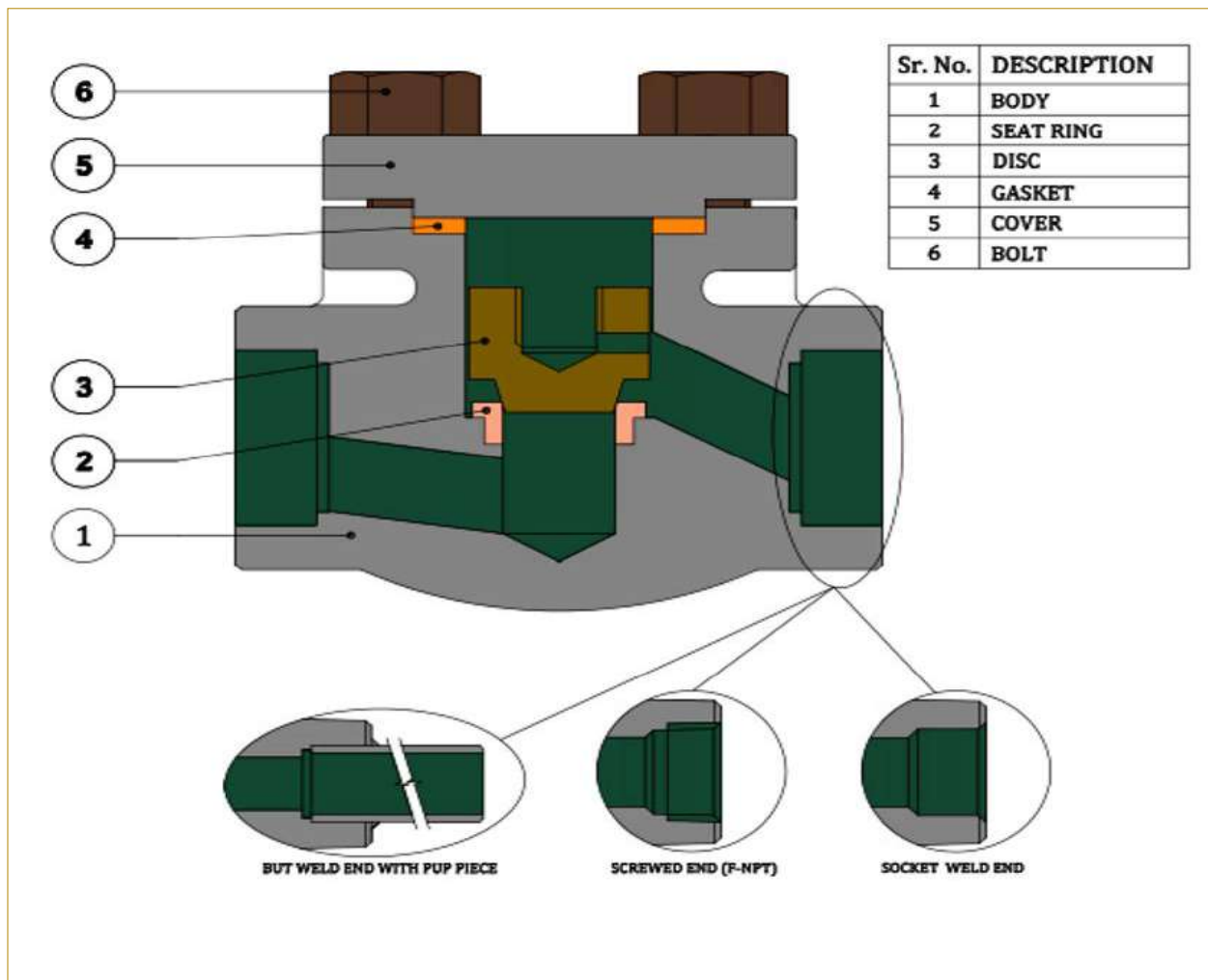
- Size :- 1/2" to 2" (15mm to 50mm)
- Rating:- 150# to 2500# & Equiv. DIN Rating
- Hard Face, Stallite
- All API Trim available
- Piston or Spring Design available
- Bolted Cover / Welded cover Design.

**Materials** - Carbon Steel, Low Temperature Carbon Steel, Stainless Steel, Duplex, Super Duplex, Incoloy, Inconel, Monel, Aluminum Bronze, Hastalloy, and other materials.

**Applications** - Offshore / Onshore Oil & Gas, Chemical, Petrochemical & Allied Process, Power Plant, Water Treatment Plant, Liquefied Natural Gas, Sugar, Paper & Pulp, Steel, Piping & Process Industries.



**GA Drawing for Forge Check Valve (Model - 6300)**



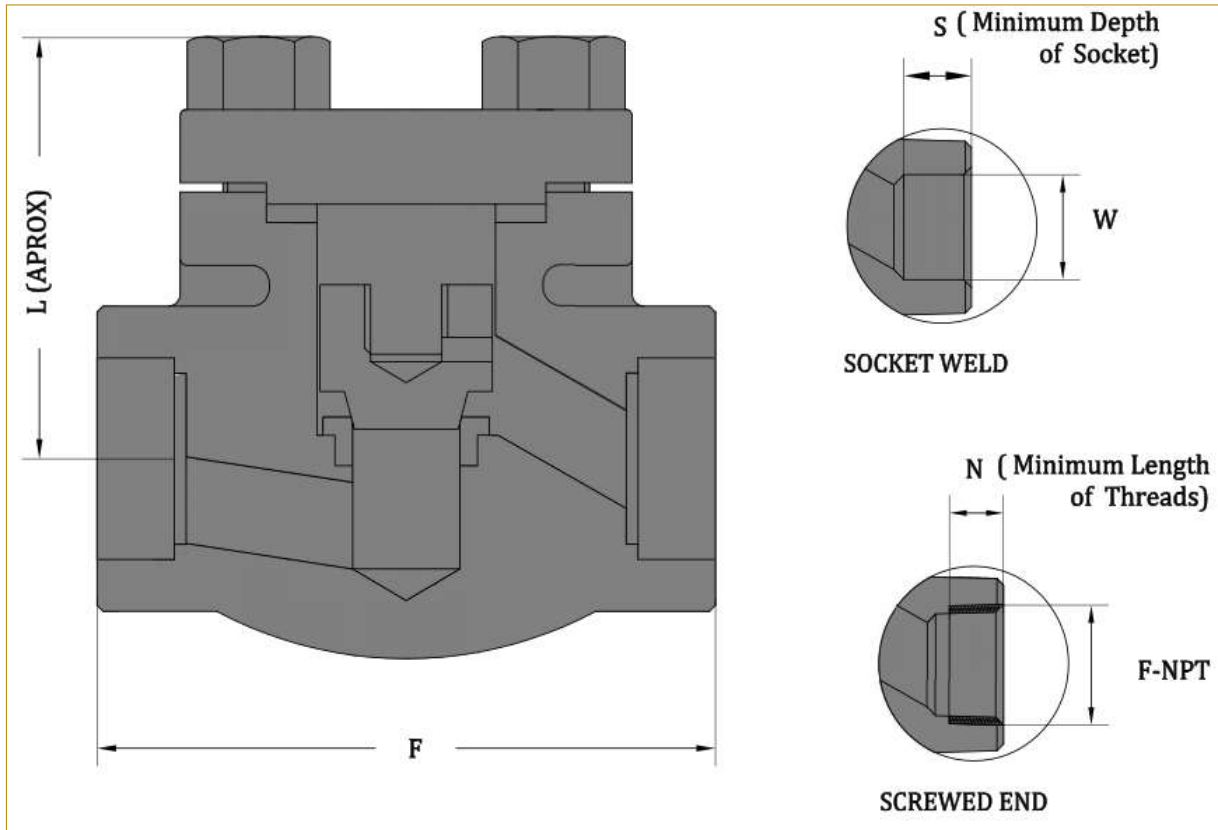
**Material of Construction for Forged Check Valve (Model - 6300)**

<b>Bill Of Material ( Forged Check Valves)</b>				
Sr. No.	Part	Carbon Steel	Low Temperature Steel	Stainless Steel
1	Body	ASTM A 105N	ASTM A 350 Gr. LF2	ASTM A 182 Gr. F316 / F304
2	Seat Ring	AISI410/ SS304 / SS316	SS316	SS304, SS316
3	Disc	AISI410/ SS304 / SS316	SS316	SS304, SS316
4	Gasket	SPWG + (SS304 /SS316)	SPWG + SS316	SPWG + (SS316 /SS304)
5	Cover	ASTM A 105N	ASTM A 350 Gr. LF2	ASTM A 182 Gr. F316 / F304
6	Bolt	A193 Gr. B7 , B7M	A 320 Gr. L7M , L7	A193 Gr.B8M , B8

**NOTE:**

- \*\* All API Trims are available as per customer requirement.
- \*\* Stellite or Hardface are optional and as per customer requirement.
- \*\* "INVACO" reserve rights to change MATERIALS & DESIGN anytime without prior notice.

**Dimensions for Forged Check Valve (Model - 6300)**



Size		F (mm)	L (mm)	Socket End		Screwed End (F-NPT)		But-Weld End
in	mm			W(mm)	S(mm)	F-NPT	N(mm)	
½	15	85	66	21.8	9.5	½	13.5	Available on Request
¾	20	90	75	27.2	12.5	¾	14	
1	25	103	84	33.9	12.5	1	17.3	
1½	40	128	106	48.8	12.5	1½	18.3	
2	50	142	142	61.2	16	2	19.3	

Note:-

\*\* INVACO reserves the right to change the dimensions, materials, design & other information anytime without prior notice.



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Forged Gate Valve - Model 1300  
Forged Globe Valve - Model 3100  
Forged Check Valve - Model 6300

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