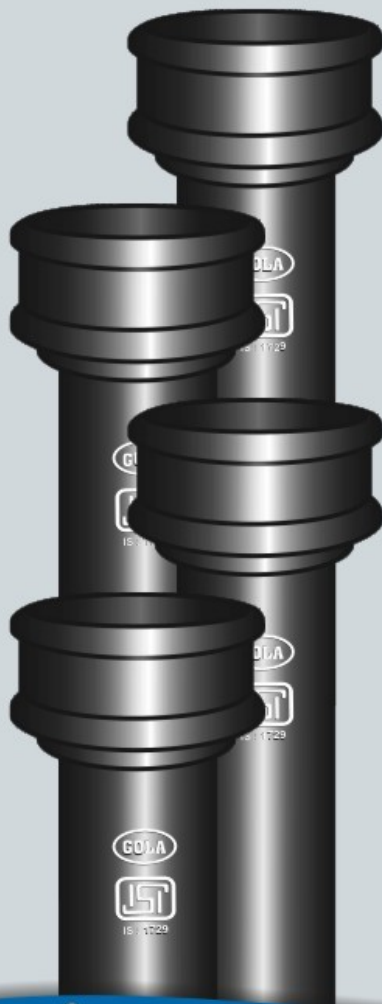




The Ultimate,  
Preferred  
**Cast Iron**  
**Soil Pipes, Fittings**  
for **Soil Waste, vent**  
& **rainwater.**



IS : 1729



An ISO Certified Company  
ISO 9001 : 2000



**FROM THE HOUSE OF THE**





Group is in the foundry industry since the last 7 decades, producing Cast Iron Soil Pipes, Fittings, Manhole Covers, Hand Pump castings and various other items in our plants in Punjab, Agra in U.P and Dholpur in Rajasthan. The products have already been approved by all the nodal agencies. Besides meeting the domestic market requirement, a substantial quantity of our production is being exported since 1965 to countries like America, Europe, Meditararian countries, Middle East, Africa, South East Asia, Member countries of SAARC and Afghanistan . Our proven quality has placed us in the most preferred place amongst :

- a. Exporter of Castings and
- b. Overseas buyers

Our products are the first choice of all the Architects/Builders/Contractors/Plumbers/Dealers and above all, quality conscious customers and consumers. Our motto has always been "QUALITY FIRST AND QUALITY-ALWAYS. We also manufacture Hand pumps, Ornamental castings in Cast Iron, Graded Cast Iron and Automobile castings and other value added castings. In addition, we produce Cast Iron Centrifugally Cast (Spun) pipes for Soil/Sewage purposes to meet the growing market demand.

We have the confidence and unlimited support of our customers which is achieved, by relentless upgrading of technology and quality of the process by constant research and technical excellence supported by foreign experts and backed by 7 decades of inherited Casting experience, by a fully motivated professional group of committed team and management. This has helped in ensuring and maintaining our products as one of the leading brands amongst its peers.

Our dynamic and professional management realises the importance of participation in over all Industrial-Information and knowledge exchange and therefore participates as member in the activities of ITPO, EEPC, AIFA, PHD Chamber of Commerce and Industries, Federation of Industries and Indo German Chamber of Commerce to mention a few.

We have a great deal of responsibility to our esteemed customers without whose unstinted support and insistence. could have taken up our expansion programme.

- Our Company is member of following institutes
- PHD Chamber of Industries and Commerce, New Delhi
  - Federation of Industries of India (FII) New Delhi
  - Agra Iron founders Association, Agra
  - National Chamber of Industries and Commerce, Agra
  - Laghu Udyog Bharti, Agra
  - Engineering Export Promotion Council, New Delhi
  - Indian Trade Promotion Organization
  - Builders Association of India, Agra
  - Indian Plumbing Association, New Delhi
  - All India Confederation of Small and Mico Association (AICOSMIA), New Delhi
  - Indo-German Chamber of Commerce, Mumbai
  - Foundry Nagar Association, Agra
  - Institute of Indian Foundrymen, Calcutta
  - Indian Industries Association (U.P.)

***Our range of products cover the following specifications.***

- |                                |  |
|--------------------------------|--|
| 1. C.I. FITTINGS AS PER        | IS 3989/ISO 6594/<br>DIN EN - 877/CISPI-301/<br>ASTMA - 888 & ASTMA - 74 |
| 2. C.I. MANHOLE COVERS         | IS 1726/ISO 185<br>BSEN 124  |
| 3. C.I. SOIL PIPE AND FITTINGS | IS 1729  |
| 4. C.I. SOIL PIPE              | IS 3989/ISO 6594/DIN EN<br>877/CISPI-301/ASTMA-888<br>ASTMA-74           |
| 5. AUTOMOBILE CASTINGS         | Grated CI as per customers' specification                                |
| 6. HAND PUMPS                  |  |

Besides, we also take up any special and value added castings as per customers drawing and specification.



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## SALIENT FEATURES IN THE FLOW CHART OF THE PROCESS.

### RAW MATERIALS AND OTHER INPUTS.

1. Every receipt of raw materials like Pig Iron, Cast Iron, Steel and Ferro alloys are analysed in our well equipped "Wet Lab" and then stacked with appropriate marking based on compositions. Charges for melting are worked out and taken from suitable stacks to ensure the required chemical analysis and properties.
2. Other consumables like Sand, Bentonite, Coal dust etc are duly tested in modern Sand testing laboratories before unloading. Various sand sieves and mesh sizes are used to select the appropriate sand size for both mould and core for a particular type of casting to ensure smooth surface and quality.



### Metal

We use Ferro Lab, Digital temperature indicator and optical pyrometers etc to measure the temperature of metal from Cupola is constantly taken and recorded to ensure proper quality of metal. Chemical analysis of metal from the furnace is checked and corrected to ensure consistent chemical composition for uniform physical properties, appropriate to the grade of casting which ensures quality of the various variety of castings produced by us.

### Process

- 1) Patterns, Dies and Core Boxes are checked thoroughly for dimensions and otherwise, before releasing for production.
- 2) Temperature of liquid metal is checked with Digital pyrometers and Ferro Labs before pouring the castings. Digital crane weighing balance and Balances on load cells ensure correct weight of the liquid metal and castings.
- 3) Moulds are made by conventional method and also with modern moulding machines. The entire moulding, castings and fettling processes have been made semi automatic with Shot-Blast, Bench grinders and drilling machines etc.



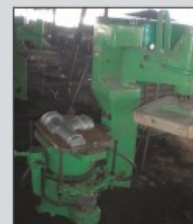
Cores are made by latest processes in collaboration with Foreign companies. All the equipments required have been procured with the latest state of the art technology from both Domestic and Foreign collaborators.

- 4) All castings are knocked out, shot blasted, extra material ground by swivel and Bench Grinders and processed for hydrostatic Pressure testing. All Castings are dipped in Coal tar.



### Quality Control and Assurance

- 1) Materials like Coal tar, Paint, Black Japan etc are thoroughly checked before releasing to production.
- 2) Quality checking and assurance is done at every stage of operation to make sure that the product is as per customers specification and requirement. Besides checking the dimensions and physical properties, care also is taken to ensure smooth internal and external surface of the castings by use of material like soap stone power, mould and core wash etc.
- 3) A fully trained and dedicated quality control team ensures, the correct product to the customer. To achieve this goal, they use extensively the following machines/equipments like, Wet Lab, Ferro Labs, Digital Indicating Pyrometers, UTS machine, Hardness testing, Digital thickness measuring instrument, Digital coat meters, weighing Balances of Digital display with load cells, Sand Testing equipments, Load testing equipment. Dimensional accuracy is also maintained with equipments like Thickness indicators, Pistol Calipers, Verniers, GO/NO GO gauges, inside/outside calipers etc.



In addition, we also conduct special tests as required by the customers.



Paint Thickness being Checked



Pipe Cutting Machine



Hydro Testing Machine for Bends



Hydro Testing Machine for Larger Dimension fittings



Load Testing Machine



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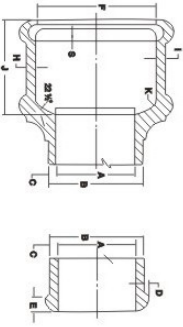




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### DIMENSIONS OF STRAIGHT PIPES, SOCKETS AND SPIGOTS

(All dimensions in millimetres)



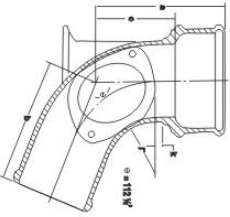
Dimension	Nominal Size, A			
Pipe :	50	75	100	150
External diameter, B	60	85	110	160
Thickness, C				
* Projection of spigot head, D	5	5	5	5
* Width of spigot head, E	3	3	3	3
Socket :	10	15	15	15
Internal diameter, F	76	101	129	181
Thickness, H	6	6	6	6
Internal depth, F	60	65	70	75
Overall Length				
Nominal Mass of 1500mm Pipe	9.56	13.83	18.14	26.70
1800mm	11.41	16.52	21.67	31.92
(density of cast iron) 2000kg/m <sup>3</sup>	12.65	18.37	24.15	35.66

## CAST IRON PIPES & FITTINGS

### SHORT RADIUS BENDS WITH AND WITHOUT ACCESS DOORS

(All dimensions in millimetres)

Dimension	$\phi = 97\frac{1}{2}$				$\phi = 100^*$				$\phi = 135^*$			
	Nominal Size				Nominal Size				Nominal Size			
a	50	75	100	150	146	167	186	213	139	160	178	204
b	149	170	187	218	140	162	172	206	140	162	181	206
c	140	162	181	206	86	102	116	138	79	95	110	127
k	89	105	117	143	8	10	10	10	6	6	10	10
l	38	38	38	38	38	38	38	38	38	38	38	38



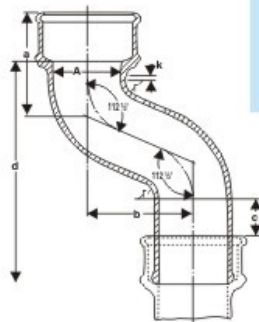
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### OFF SETS

(All dimensions in millimetres)



Projection b	Dimension				Nominal Size, A			
	50	75	100	150				
a	121	135	148	171				
r	25	25	25	25				
76, 114, 152	c	55	55	55	55			
229 and 305	k	6	6	6	6			

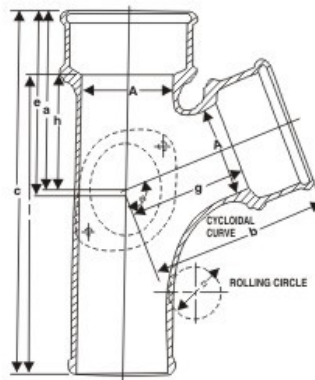
Projection b	Dimension d for Nominal Size, A			
	50	75	100	150
76	246	267	285	319
114	263	284	304	343
152	279	300	322	360
229	311	330	352	393
305	342	361	385	423

### EQUAL BRANCHES WITH AND WITHOUT OVAL ACCESS DOORS

(All dimensions in millimetres)



Dimension	$\theta = 92\frac{1}{2}^\circ$			
	Nominal Size, A			
	50	75	100	150
a	121	143	165	200
b	152	181	206	263
c	295	351	400	494
d	38	48	57	75
e	154	178	197	235
f	235	286	330	419
g	92	116	146	198
h	61	78	95	125



CAST IRON PIPES & FITTINGS



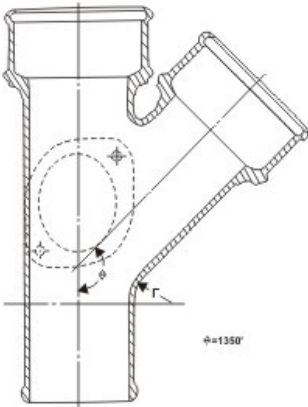
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**UNEQUAL BRANCHES WITH AND WITHOUT OVAL ACCESS DOORS**

(All dimensions in millimetres)



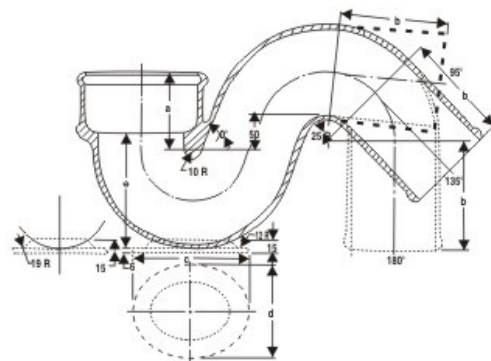
Dimension	$\phi=95^{\circ}$ Nominal Size			
	75	100	150	200
A	75	100	150	200
A1	50	50	75	100
a	135	141	156	184
b	164	175	190	229
c	325	349	362	418
d	38	38	48	57
e	165	179	186	222
f	260	279	292	343
g	104	115	125	159
h	70	71	86	109
$\phi=112\frac{1}{2}^{\circ}$				
a	156	167	184	222
b	156	168	184	225
c	325	349	362	418
d	38	38	48	57
e	165	179	186	222
f	260	279	292	343
g	96	108	119	135
h	91	97	114	147
$\phi=135^{\circ}$				
a	200	217	241	298
b	197	216	241	295
c	325	349	362	418
d	165	179	186	222
e	260	279	292	343
f	137	156	176	225
g	135	147	171	223
h	38	38	38	38

CAST IRON PIPES & FITTINGS

	Nominal Size			
	50	75	100	150
a	80	85	90	95
b	114	121	127	140
c	102	117	133	152
d	86	98	108	127
e	84	118	135	186

**TRAPS**

(All dimensions in millimetres)



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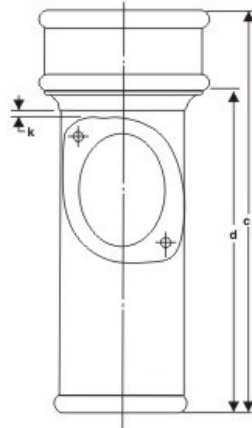




### STRAIGHT INSPECTION PIECES

(All dimensions in millimetres)

Dimension	Nominal Size			
	50	75	100	150
c	298	337	362	413
d	238	272	292	338
e	6	6	6	6

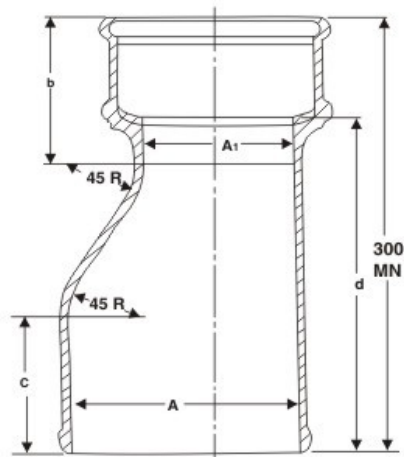


### DIMINISHING PIECES

(All dimensions in millimetres)



Dimension	Nominal Size			
A	75	100	100	150
A1	50	50	75	100
b	86	86	95	102
c	76	83	83	95
d	240	240	235	230



CAST IRON PIPES & FITTINGS



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## RAJ IRON FOUNDRY

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