



THE ONE STOP DESTINATION FOR
**THE FINEST
DUCTILE IRON
PIPE FITTINGS**

SETTING THE QUALITY STANDARDS

- Only foundry to receive National Trophy Awards for “Export Excellence” twice from the Honourable President of India.
- Production Capacity of 78,000 MT per annum .
- Three generations service in casting industry (More than 50 years of Experience).
- Outstanding quality with system & product conformity certificates by British Standard Institute, UK.
- Advanced Machineries, Technologies & Skilled Manpower.
- Shortly our lab will get NABL accreditation.
- KISWOK checks the total incoming raw materials quality in its in-house laboratories as per standard specification before production.
- Our R&D is engaged in developing best quality castings.
- KISWOK runs a customized ERP system to manage all its data and information.



for Total Quality Management system for the manufacture of ductile and grey iron castings



for Quality Management system for Product designing & Development



for Environmental Management system



for Occupational Health & safety management system



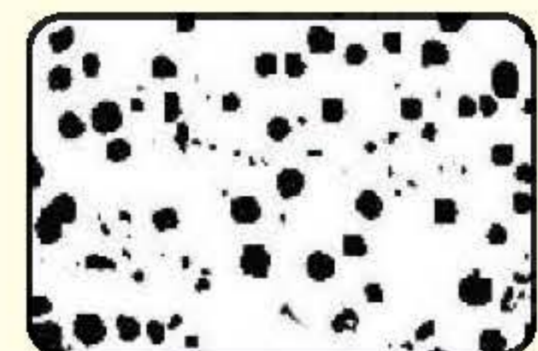
for Ductile Iron Pipe Fittings as per IS 9523



for Manhole Frame and Cover

PHYSICAL & MECHANICAL PROPERTIES OF FOUNDRY GRADE CAST & DUCTILE IRON

Properties	Cast Iron	Ductile Iron
Tensile Strength Mpa	Max 300 Mpa	Max 900 Mpa
Bending Strength Kg/mm ²	Over 34	Over 50
Elongation %	Nil	Min 5%
Elastic Co efficiency Kg/mm ²	1.2x10 ⁴	1.7x10 ⁴
Hardness	Below 230 BHN	Below 230 BHN
Poisson's ratio	0.25	0.28
Impact Value Kg, M/cm ²	Izod below 0.5	Charpy over 0.713
Specific Gravity	7.15	7.15
Thermal Expansion Coefficient	1.0x10 ⁻⁰⁵	1.0x10 ⁻⁰⁶



The spheroidal shape of graphite in ductile iron optimizes the distribution of force lines in between the material.

BENEFITS OF USING DUCTILE IRON

- **Lower Weight:** Due to its ductility, it is possible to make Ductile Iron Pipe Fittings with lower wall thickness when compared to Cast Iron.
- **Easier Jointing:** With flexible push-on joints, installation is simpler and quicker. Lead joints used for C.I. fittings are cumbersome, time consuming and costly. Lead is often pilfered, thereby increasing the chances of leaking. In case of push-on fittings, it is virtually impossible to pilfer.
- **Total Cost Economy:** Due to lower weight and jointing by rubber gaskets, instead of lead (for C.I.), the total cost of installation of D.I. fittings is economical when compared to C.I. fittings. D.I. fittings are compatible with C.I. pipes also, hence it can be used to replace old and damaged C.I. fittings cost effectively. (Refer chart for detailed cost comparison between C.I. & D.I. fitting)
- **Superior Strength:** A sound D.I. fittings will never burst and offers a high factor of safety.

- **Easier Handling:** The lower weight of Ductile Iron fitting facilitates easier handling at all stages of laying and jointing. Transportation costs are lower and lesser.
- **Close Dimensional Tolerance:** Machine molding process casting technique ensures proper dimension and thickness. C.I. fittings made by manual molding fails to maintain proper critical dimension.
- **Longer Life:** Corrosion Resistance of Ductile Iron is as good as or better than that of Cast Iron

. In additional, uniform spreading of spheroidal graphite of Ductile Iron makes it less susceptible to deep localized pitting than Cast Iron pipe fittings. When we evaluate relative resistance to failure by perforation, Ductile Iron is Superior. Rubber joints makes the pipeline electrically discontinuous thereby avoiding long line corrosion current.

- **Impact Resistance:** Ductile Iron being impact resistant is unlikely to get damaged during transportation, installation and servicing. Impact resistance and toughness make it less vulnerable to damage.

D.I. - IS.9523 PUSHON JOINT VS C.I. - IS.1538 LEAD JOINT-COST COMPARISON

D. S. Bend 100mm Push-on bend 22.5°	CI	DI
Weight(kg.)	21.00	9.00
Rate(kg.)	41.00	66.00
Basic Price	861.00	594.00
Excise	88.68	61.18
Sales Tax	37.99	26.21
Freight	42.00	18.00
Total	1,029.67	699.39
Savings before Jointing	47%	
Jointing/Socket Total	283.50	33.00
	1,596.66	765.39
Savings after Jointing	109%	

D/S Reducer 100x80	CI	DI
Weight(kg.)	18.00	8.00
Rate(kg.)	41.00	66.00
Basic Price	738.00	528.00
Excise	76.01	54.38
Sales Tax	32.56	23.30
Freight	36.00	16.00
Total	882.57	621.68
Savings before Jointing	42%	
Jointing	283.50	33.00
Jointing	226.80	29.00
Total	1,392.87	683.68
Savings after Jointing	104%	

All socket tee 200x200	CI	DI
Weight(kg.)	81.00	40.00
Rate(kg.)	41.00	66.00
Basic Price	3,321.00	2,640.00
Excise	342.06	271.92
Sales Tax	146.52	116.48
Freight	162.00	80.00
Total	3,971.59	3,108.40
Savings before Jointing	28%	
Jointing	1786.02	237.00
Jointing	00.00	00.00
Total	5,757.61	3,345.40
Savings after Jointing	72%	

INTRODUCING KISWOK FAST FIX

KISWOK Fast Fix is a product developed keeping in mind the need for faster laying of push-on joints and to overcome the cumbersome handling of fittings due to their odd shape. During the present era of rapid development & growth, KISWOK Fast Fix range of fittings save a lot of manpower & time which is required to fit the conventional push-on type fittings. The features which have been introduced are as follows:

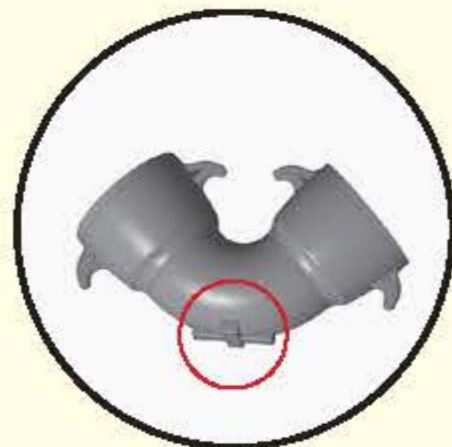
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Side Lugs



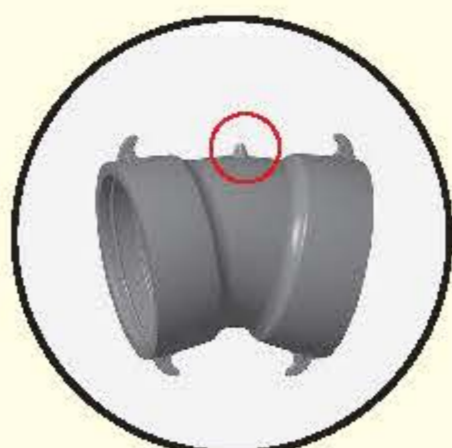
Each socket fitting is provided with two Side Lugs. This lug is available across all sizes and types of socket fittings. This enables fastening of wire rope & offers a firm grip for pulling machines while laying and jointing. This can be used to either push the pipe in the fitting socket or the fitting socket into the pipe. Without the lugs, the wire rope tied on the socket mouth tends to slip because of lack of any firm grip. Thus, the provision of side lugs speeds up laying & jointing considerably. In cases where a crowbar is used to anchor the fittings firmly in place while jointing, the lugs provide useful support.

Thrust Pad



Thrust Pad has been provided on bends of 90 & 45 deg for sizes DN 80 & DN 100. Bends face the maximum surge pressure in any pipeline and tend to turn when pressure is applied. The thrust pad provides more surface area for the thrust block to grip the fitting.

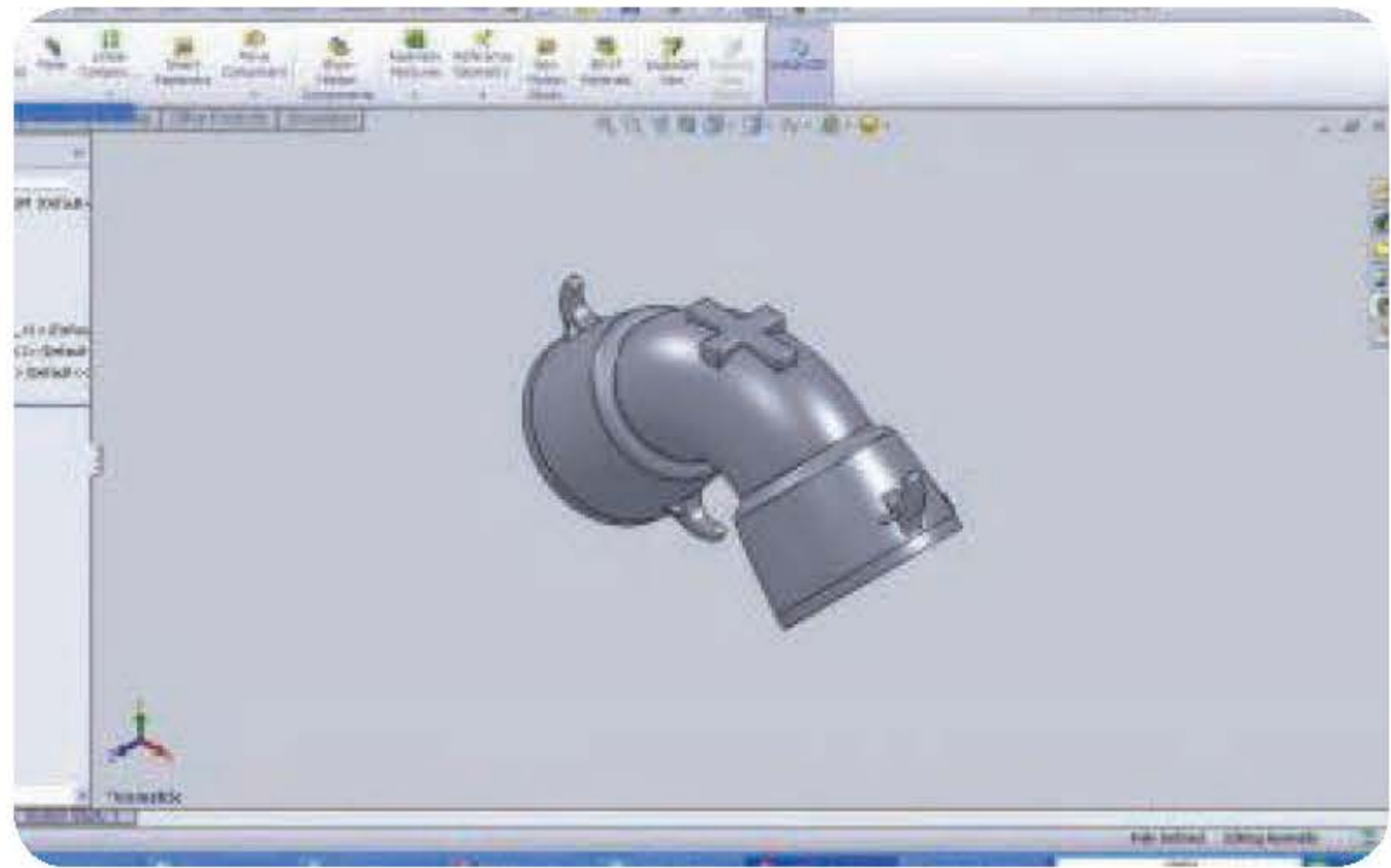
Lifting Loops



Lifting Loops have been provided on fittings from size DN 400 & above. This enables easy lifting of the fitting from trucks and lowering into the trench. These loops have been computer aligned & placed at such points that the centre of mass and centre of gravity match, thus keeping the fitting in horizontal position. During lifting the fitting doesn't oscillate thus, enabling alignment (which is critical for fitting of higher sizes) with the pipe during placement in the trench.

THE KISWOK ADVANTAGE

- Own design facility using softwares like AutoCAD, Creo-Parametric, Creo Simulate, NovaFlow, SolidWorks and DELCAM.
- Pattern shop equipped to manufacture accurate metallic and non-metallic patterns in-house with the help of VMC and CNC machines.
- In-house Inspection Facilities including two ARL optical emission spectrometer, leica microscope, tensile testing machine, hardness testing machine and digital universal strength testing machine.
- Automatic Laempe cold box core shooting centre of 40 litre, 10 litre and 5 litre capacity and a Laempe mixture of capacity 4.2 MT.
- Two high pressure moulding lines: DISA FLEX 70 (900x700x300/300mm) and HFM 70 (820x820x280/280mm) with a capacity of a maximum speed of 90 moulds per hour.
- Two semi automatic jolt squeeze moulding lines: ARPA 900 (1000x1000x300/300 mm) and DEMAN 450 (650x650x250/250 mm).
- 2 nos, continuous mixture with 5.0 mt./hr. capacity Furan Resin nobake moulding system to make bigger castings of weight upto 3000Kg.



THE KISWOK ADVANTAGE



- Induction furnaces to produce grey iron and ductile iron with a total melting capacity of 10 MT/hour.
- Two shot blasting continuous hanger type machines with speed synchronization to the moulding speed (130 casting per hr).
- State-of-the-art in-house machining facilities including 70 lathe machines, 9 CNC VTL machines and 3 multi-head drilling units.
- In-house testing facilities including 3 hydraulic testing machines, 2 load testing machines, horizontal balancing machine, balancing machine and coordinate measuring machine.





Double Socket
Concentric Reducer



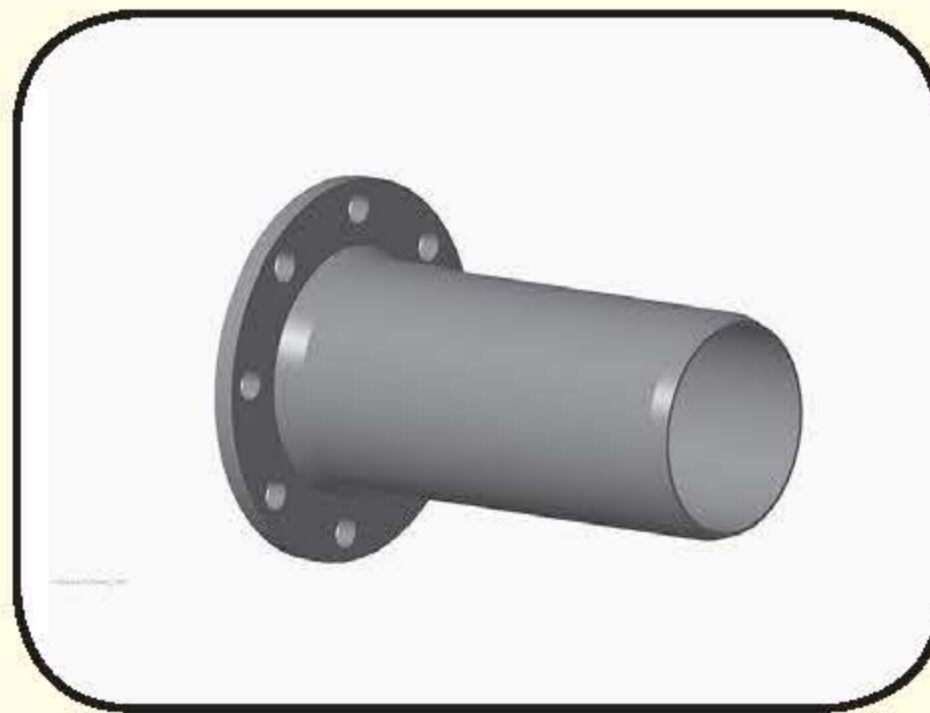
Dismantling Joints



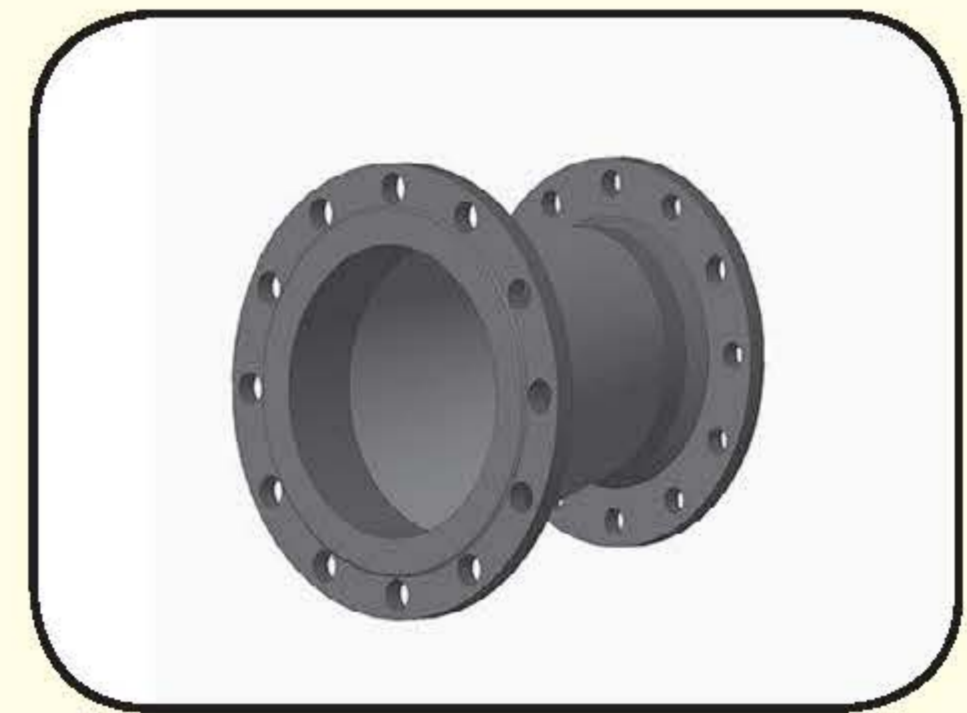
Double Socket
90° Duck Foot Bends



Double Flanged
90° Duck Foot Bends



Flanged Spigot



Concentric & Eccentric
Reducers



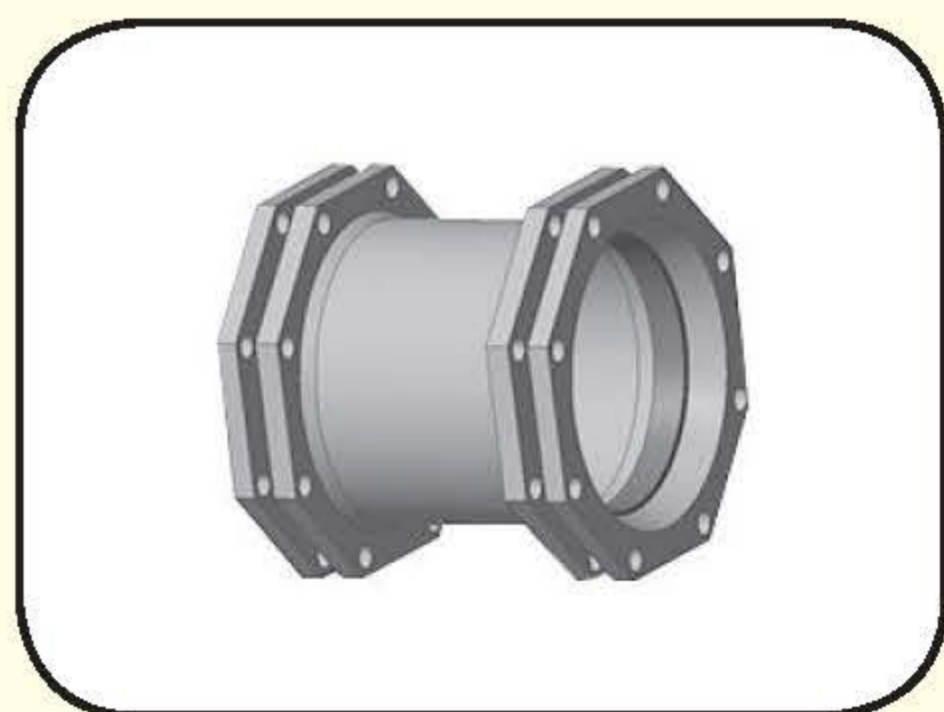
Flanged Socket



All Flanged Tees



Double Socket
Tees With Flanged Branch



Mj Collar Couplings



All Flanged Scour Tees



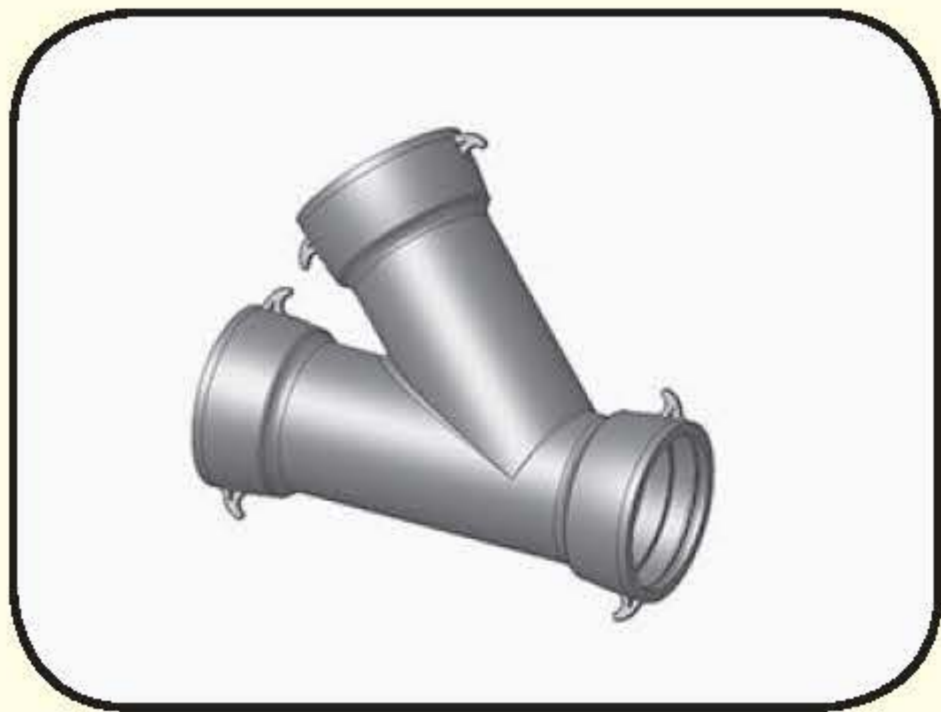
Double Socket
90° Bends



All Flanged Crosses



Double Socket
11.25° Bends



All Socket 45° Angle Branches /
Y Tees



All Socket Crosses



All Socket Tees



All Flanged Y Tees



Cast Puddle
Flanged Pipes



Double Flanged
45° Bends



Double Flanged
90° Bends



Double Flanged
90° Long Radius Bends



Double Flanged
Semi Circular Bends



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