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مصنع سهيـل للـمـسـبـوكـات المـعدنيـة SUHAIL FACTORY FOR METAL CASTINGS

CATALOGUE 2022

SUHAIL FACTORY FOR METAL CASTINGS

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PROFILE

ABOUT US

As the first metal casting foundry in the State of Qatar, Suhail Factory for Metal Castings was built in the city of Mesaieed in 2022. It has two facilities that adopt the advanced technology in two different methods of metal casting. The first facility is a state-of-the-art sand-casting foundry using European technology, while the second facility is an investment-casting that is using the latest technology of robotic shelling process to achieve a perfect and consistent quality.

WHAT WE DO

- 1. The green sand-casting foundry at Suhail Factory for Metal Casting, metal is melted in either of three induction furnaces then molten metal is poured into sand molds that are formed using forming machines that mix sand materials, fill and press them onto patterns bearing the shape of the final product.
- 2. On the other hand, at the Investment Casting Facility, the patterns are shaped using wax injection machines, then the patterns are assembled and moved to the robotic shelling system where the shells are automatically prepared before moving them to dewaxing then shell firing and finally to metal pouring area.

Covering an area of 22,500 m², SFMC is capable to produce up to 40,000 Tons/ Annum of:

- Engineering Castings
- · Automobile Cast Parts
- Oil and Gas Castings

VISION

To be a leading local manufacturer and dependable partner for our clients, offering engineered

goods and solutions

MISSION

Supporting Qatar's social and economic development

• Improve local content by transferring technologies and developing human capital.

• Assist in the development of oil and gas, water, and other prospective industrial sectors.

Proactively involved with our major stakeholders

- Taking care of our people, our community, and the environment.
- Focus on operational excellence in engineered product manufacture.



FACILITIES

ENGINEERING CAPABILITIES

- · Design, Research and Development.
- · Reverse Engineering
- · 3D Scanning and 3D Modeling.
- · Full Dimensional Analysis.
- · Tooling and Patterns Designing (CNC Router, milling).
- · Casting Solidification Simulation

MANUFACTURING CAPABILITIES

Sand casting Foundry

- · Fully automatic DISA Flex molding line.
- · Semi-Automatic DISA ARPA line.
- Induction Melting Furnace 3 tons x 3 nos.
- · OMEGA core shooters.
- Fully automatic sand plant DISA
- · DISA shot blasting.
- · Automatic coating line.

Investment casting

- · Robotic Shelling System
- Semi-Automatic wax Injection Machines
- · Dual track Induction Furnace

TESTING CAPABILITIES

- · Advanced sand testing Laboratory.
- Metallurgical testing laboratory (Thermal Analysis, Spectrographic Analysis and Metallographic analysis with image Analyzer)
- Mechanical Testing Laboratory (UTM, Hardness testing and manhole cover Load Testing)
- NDT (RT, UT, MPI, LPT)

CERTIFICATIONS

• ISO 9001, ISO 14001, ISO 45001 and BSI Kitemark (EN 124-2)

MATERIAL SPECIFICATIONS

SI.No	Material	International Standard	Reference products
1	Cast Iron	ASTM A48, ASTM A278, EN 1561, SAE J431	Automobile - Brake Drum, Disc Pump Parts - Intermediate Bowl, Impeller, Suction Bell, Suction Case, Discharge Case. Manhole covers and gully tops
2	Ductile Iron	ASTM A536, ASTM A 395, EN 1563, SAE J434	Automobile - Steering knuckle, Brake Calipers, Arm, Brake calipers and Carriers. Pump Parts - Intermediate Bowl, Impeller, Suction Bell, Suction Case, Discharge Case Engineering Parts - Valve Bodies, Bonnets, Yoke. Manhole covers and gully tops
3	Compacted Graphite Iron	ASTM A842, EN 16079	Turbo Housings, Break discs, Exhaust Manifold,
4	Steel	ASTM A351 & A 743 - Austenitic Stainless steel (CF3-304L, CF8-304, CF3M-316L, CF8M-316) ASTM A352 - LCA, LCB, LCC, CA6NM A 216 - WCA, WCB, WCC A 217- WC6	Pump Parts - Intermediate Bowl, Impeller, Suction Bell, Suction Case, Discharge Case Engineering Parts - Valve Bodies, Bonnets, Yoke.
		A128 - Hadfield austenitic manganese steel castings	Mining Industry, Jaw Crusher die, Steel Hammers, Crawler treads,
		A 890/A 890M - Duplex Stainless Steel	Pump Parts - Intermediate Bowl, Impeller, Suction Bell, Suction Case, Discharge Case
5	Copper Alloys	ASTM B584 - Silicon Bronze, Manganese Bronze, High-lead tin bronze ASTM B148 - Aluminum Bronze, Nickel Aluminum Bronze	Pump Parts - Intermediate Bowl, Impeller, Suction Bell, Suction Case, Discharge Case Engineering Parts - Valve Bodies, Bonnets
6	Aluminium alloys	ASTM A356	Pump housings, impellers



CIRCULAR COVERS AND FRAMES
SQUARE/RECTANGULAR COVERS AND FRAMES
GULLY GRATES AND FRAMES
CHANNEL GRATES
SURFACE/VALVE BOXES

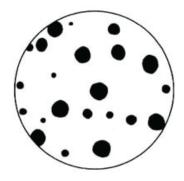


MANHOLE MATERIAL SELECTION

Suhail metal casting manufacture a range of high-performance cast-iron products including manhole covers/gully tops. We recognize the need to provide a material that is capable of combating the wear characteristics inherent with the increasing amount of vehicular traffic on our roads today.



Grey Cast Iron



Ductile/Spheroidal Iron

THE DIFFERENCE BETWEEN DUCTILE AND GREY IRON

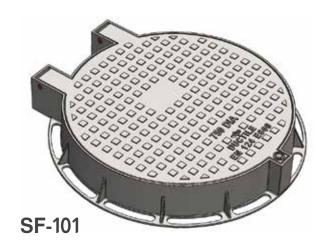
The addition of magnesium at the molten stage transforms the flakes of graphite, which are common with the grey iron casting process, into spheroidal or nodular form. The spheroidal structure provides a higher tensile strength as well as a higher 'Strength to weight' ratio when compared with the properties inherent with grey.

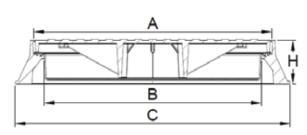
PRODUCT CLASS(LOAD)

CLASS	LOAD BEARING REQUIRED	APPLICATION IN APPROPRIATES AREAS	
A 15	15 KN (3400 lbf)	FOR USE IN PEDESTRIAN AREA	
B 125	125 KN (28200 lbf)	FOR USE IN FOOTWAYS, PEDSTRIAN AREAS AND CAR PARKS	
C 250	250 KN (56300 lbf)	FOR USE IN KERBSIDE CHANNELS OF ROADS AND CAR PARKS.	
D 400	400 KN (90000 lbf)	FOR USE IN CARRIAGEWAYS, HARD SHOULDERS AND PARKING AREAS.	
E 600	600 KN (134900 lbf)	FOR USE IN HIGH WHEEL LOADS AREAS LIKE DOCKS AND AIRCRAFT PAVEMENT.	
F 900	900 KN (202400 lbf)	FOR USE IN VERY HIGH WHEEL LOADS AREAS AIRCRAFT PAVEMENTS.	



CIRCULAR COVERS AND FRAMES





Product No.	BØ(mm)	AØ(mm)	CØ(mm)	H (mm)	Load Class	Material
SF-101	750	823	950	150	EN 124: E600	DUCTILE IRON

FEATURES

Features

- · Hinged cover
- · Cover locked with frame (SS Bolt)
- · Cushion insert (Rubber gasket)

Options

- . GRP seal plate provision
- Grease seal

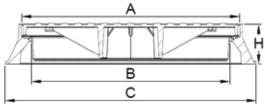
FEATURES

Features

- · Hinged cover
- · Cover locked with frame (SS Bolt)
- Cushion insert (Rubber gasket)

Options

- GRP seal plate provision
- · Grease seal

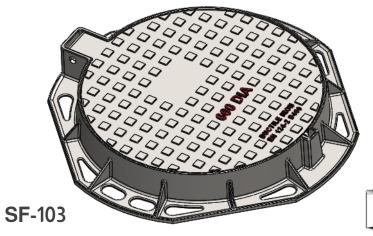


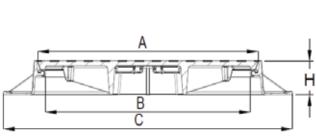


Product No.	BØ(mm)	AØ(mm)	CØ(mm)	H (mm)	Load Class	Material
SF-102	750	823	950	100	EN 124: D400	DUCTILE IRON



CIRCULAR COVERS AND FRAMES





FEATURES

Features

- · Hinged cover.
- · Cover Self locked with frame
- · Cushion insert (Rubber gasket)

Options

- · Additional lock.
- Anti-theft Hook

Product No.	BØ(mm)	AØ(mm)	CØ(mm)	H (mm)	Load Class	Material
SF-103	600	650	850	100	EN 124:D400	DUCTILE IRON

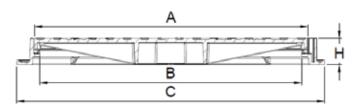
FEATURES

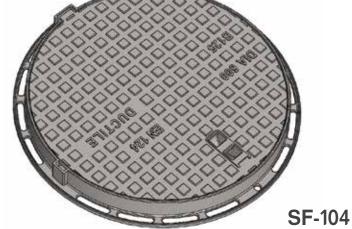
Features

- · Cover Self locked with frame
- . Seal

Options

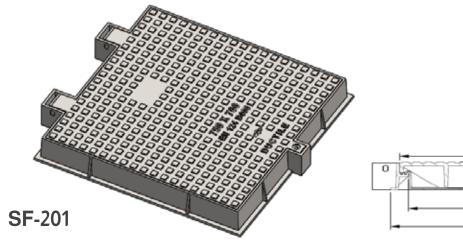
Additional lock





Product No.	BØ(mm)	AØ(mm)	CØ(mm)	H (mm)	Load Class	Material
SF-104	600	617	710	60	EN 124:B125	DUCTILE IRON

SQUARE/RECTANGULAR COVERS AND FRAMES



AXB	ı
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CXD	1
EXF	

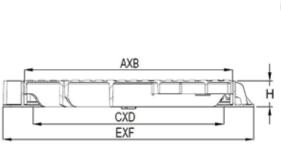
Product No.	CXD (mm)	AXB (mm)	EXF (mm)	H (mm)	Load Class	Material
SF-101	750X750	815x815	950X950	100	EN 124: D400	DUCTILE IRON

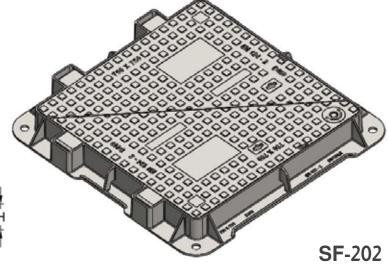
FEATURES

Features

- · Hinged covers.
- Double triangular covers
- · Cover locked with frame

Options





FEATURES

. Cover locked with frame (SS Bolt)

· Cushion insert (Rubber gasket)

• GRP seal plate provision

Features

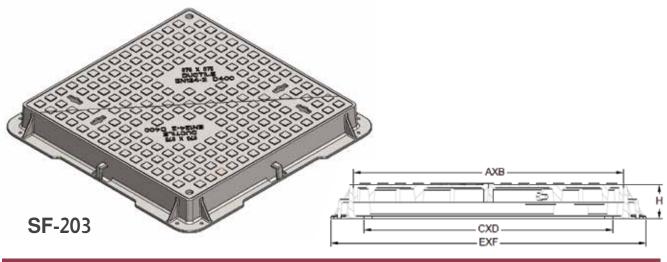
Hinged cover

Options

Product No.	CXD (mm)	AXB (mm)	EXF (mm)	H (mm)	Load Class	Material
SF-202	750X750	805X805	970X970	100	EN 124: D400	DUCTILEIRON



SQUARE/RECTANGULAR COVERS AND FRAMES



Product No.	CXD (mm)	AXB (mm)	EXF (mm)	H (mm)	Load Class	Material
SF-101	675x675	730x730	855X855	100	EN 124: D400	DUCTILE IRON

FEATURES

Features

- · Double Triangular covers
- · Covers connected with SS bolts
- · Cover locked with frame

Options

. GRP seal plate provision

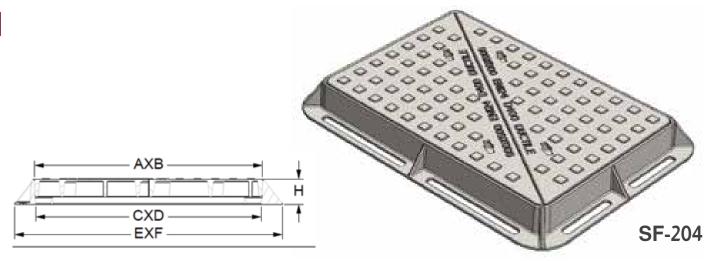
FEATURES

Features

- Double Triangular covers
- · Covers connected with SS bolts

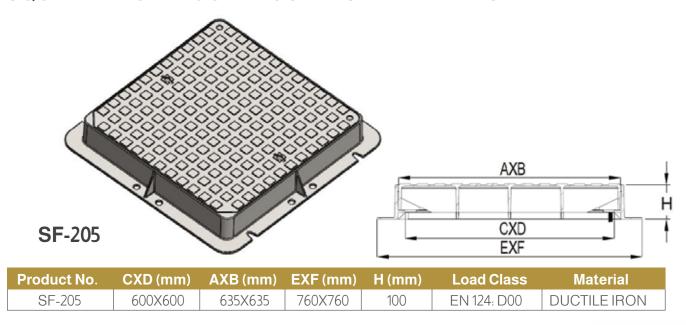
Options

· Cover locked with frame



Product No.	CXD (mm)	AXB (mm)	EXF (mm)	H (mm)	Load Class	Material
SF-204	900x600	895X895	1050x750	100	EN 124: D400	DUCTILE IRON

SQUARE/RECTANGULAR COVERS AND FRAMES



FEATURES

Features

- · Cover locked with frame
- · Slide out cover

Options

Cushion insert

GULLY GRATES AND FRAMES

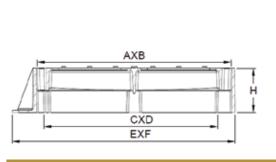
FEATURES

Features

· Hinged Grate

Options

. Lockable



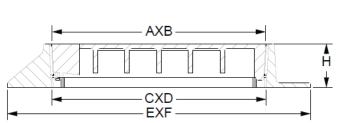


Product No.	CXD (mm)	AXB (mm)	EXF (mm)	H (mm)	Load Class	Material
SF-401	400X400	435X435	500X550	100	EN 124: D00	DUCTILE IRON



GULLY GRATES AND FRAMES





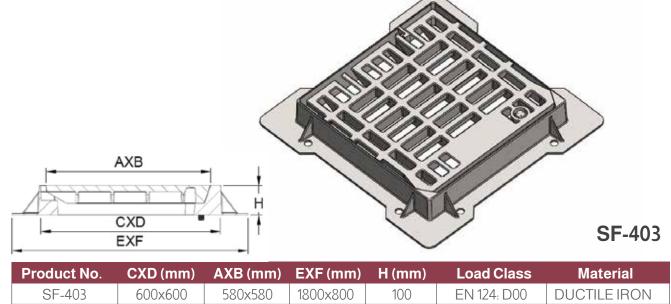
Product No.	CXD (mm)	AXB (mm)	EXF (mm)	H (mm)	Load Class	Material
SF-402	380X400	370X390	525X495	75	EN 124: C250	DUCTILE IRON

FEATURES

SF-402

Options

- · Hinged Grate
- · Grate locked with frame

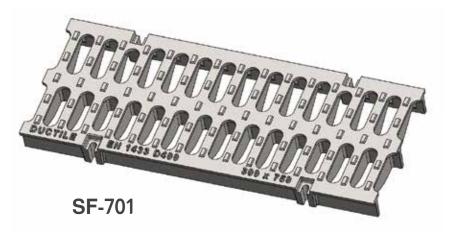


FEATURES

Features · Hinged Grate

Options . Lockable

CHANNEL GRATES



H (mm)

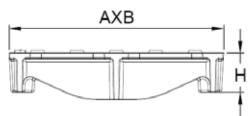
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Load Class

EN 1433: D400

AXB (mm)

300X750



Material

DUCTILE IRON

FEATURES

Features

· Lockable Channel grate

Options

· With side Frames

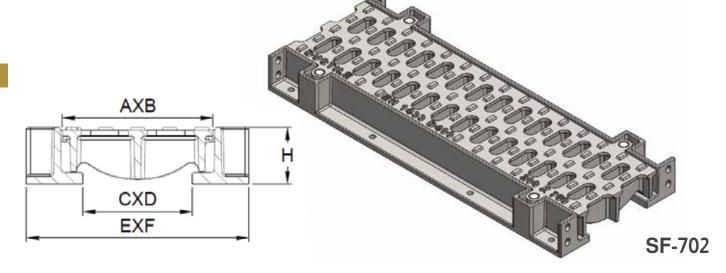
FEATURES

Product No.

SF-701

Features

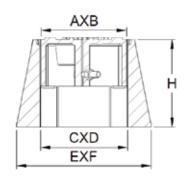
- · Lockable channel grate.
- . Side frames

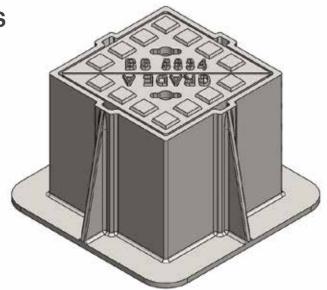


Product No.	CXD (mm)	AXB (mm)	EXF (mm)	H (mm)	Load Class	Material
SF-702	145X750	200X750	295X750	75	EN 1433: D400	DUCTILE IRON



SURFACE/VALVE BOXES





SF-501

Product No.	CXD (mm)	AXB (mm)	EXF (mm)	H (mm)	Load Class	Material
SF-501	150×150	145×145	230x230	150	BS 5834 GRADE A	DUCTILE IRON

FEATURES

Features

- · Double Triangular cover
- · Covers connected with SS bolt

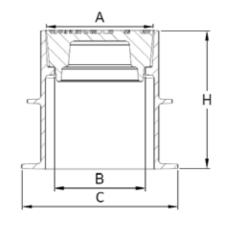
Options

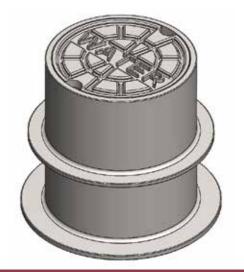
· Cover secured with chain

FEATURES

Options

- · Cover secured with chain.
- · Adjustable cover.



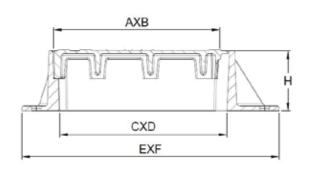


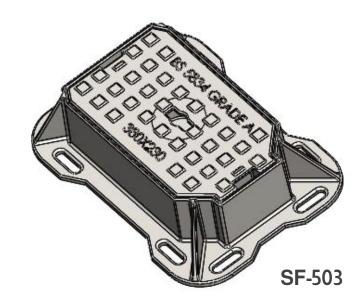
SF-502

Product No.	BØ(mm)	AØ(mm)	CØ(mm)	H (mm)	Load Class	Material
SF-502	160	185	270	240	BS 5834 GRADE A	GREY CAST IRON



SURFACE/VALVE BOXES





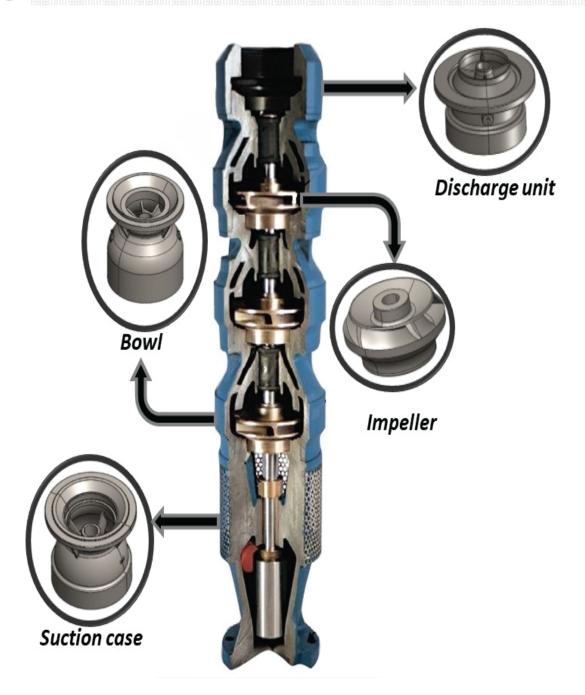
Product No.	CXD (mm)	AXB (mm)	EXF (mm)	H (mm)	Load Class	Material
SF-503	380X230	405X235	535X385	125	BS 5834 GRADE A	DUCTILE IRON

FEATURES

Features

- · Covers connected with SS Chain.
- Wedge seating

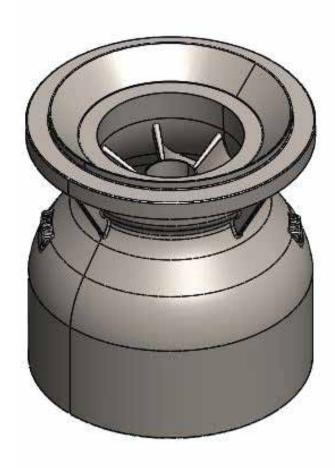
PUMP PARTS

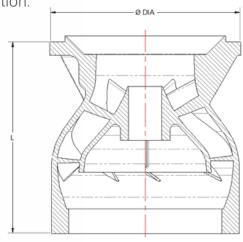




INTERMEDIATE BOWL

PUMP BOWLS shall be of close grained, produced with different materials as per application requirement. It should be free from blow holes, sand defects, or other detrimental faults and shall be accurately machined and fitted to close tolerances. The bowls shall have vitreous enamel lined waterways to reduce friction losses and provide a maximum efficiency and wear protection.

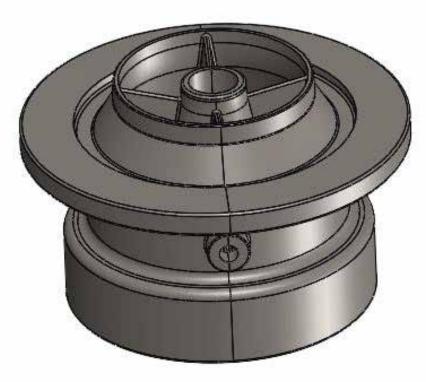


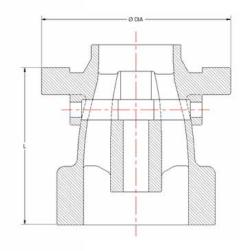


BOWL SIZES	Ø DIA (inch)	L (inch)	MATERIAL
5"	5.20	4.625	
6"	5.5	4	
7"	7	6.75	Cast iron - ASTM A48, ASTM A278
8"	8.13	7.25	Ductile iron-ASTM A536, ASTM A395
9"	9	8	Steel-ASTM A216, ASTM A351/A743
10"	10.13	9.63	Bronze-ASTM B584, ASTM B148
12"	11.5	10.5	,
14"	14.13	13.25	
16"	15.63	14.69	

DISCHARGE CASE

DISCHARGE CASE shall be cast with by-pass ports to allow release of fluids through the throttle bearing. The discharge case shall be fitted with a Bowl Adapter Tube for connection to the enclosing tube and threaded for connection to the discharge column pipe. The Bowl Adapter Tube will have a bronze sleeve bearing in the bottom and threaded for a bronze line shaft bearing on top.

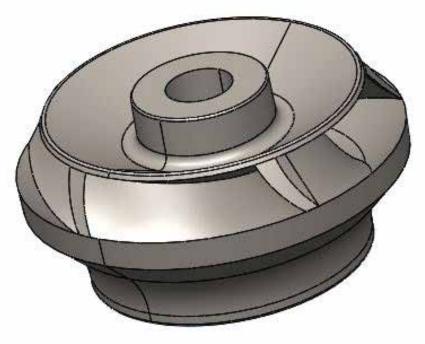


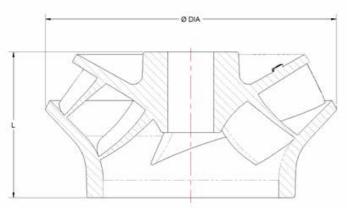


DIS.CASE SIZES	Ø DIA(inch)	L(inch)	MATERIAL
5"	5.20	4.75	
6"	5.5	5.25	
7"	7	6.75	Cast iron - ASTM A48, ASTM A278
8"	8.13	8.85	Ductile iron-ASTM A536 ASTM A395
9"	9	8.85	Steel-ASTM A216, ASTM A351/A743
10"	10.13	7.5	Bronze-ASTM B584, ASTM B148
12"	11.5	10.9	BIOTIZE-AOTIVI B304, AOTIVI B140
14"	14.13	10	
16"	15.63	9.7	

IMPELLER

IMPELLERS shall be, produced with different materials as per application requirement and shall be enclosed type accurately machined, balanced, and filed for optimum performance. They shall be securely fastened to the shaft with a taper split collet of C1215 steel or SS316 stainless steel.



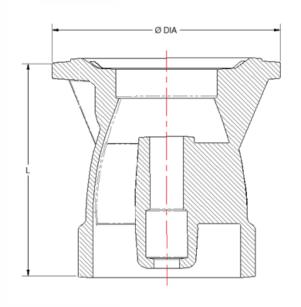


IMPELLER SIZES	Ø DIA(inch)	L(inch)	MATERIAL
5"	4	2.5	
6"	4.84	2.75	
7"	5.68	3.25	Cast iron - ASTM A48, ASTM A278
8"	6.88	4.4	Ductile iron-ASTM A536, ASTM A395
9"	6.85	3.74	Steel-ASTM A216, ASTM A351/A743
10"	8.25	4.13	Bronze-ASTM B584, ASTM B148
12"	8.75	4.68	
14"	11	6.1	
16"	12.98	6.5	

SUCTION CASE

SUCTION CASE shall be fitted with a replaceable wear ring of bismuth bronze C89835, grease packed bismuth bronze C89835 bearing and protected by a bismuth bronze C89835 sand collar.

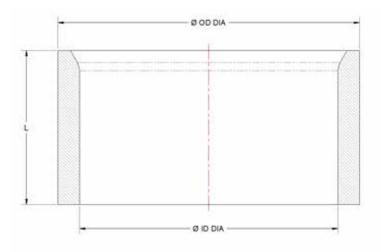




SUC.CASE SIZES	Ø DIA(inch)	L(inch)	MATERIAL
5"	5.20	6.5	
6"	5.5	7.06	
7"	7	8.25	
8"	8.13	8.38	Cast iron - ASTM A48, ASTM A278
9"	9	8.38	Ductile iron-ASTM A536, ASTM A395
10"	10.13	10.69	
12"	11.5	10.88	
14"	14.13	12.25	
16"	15.63	13	

PIPE COUPLING



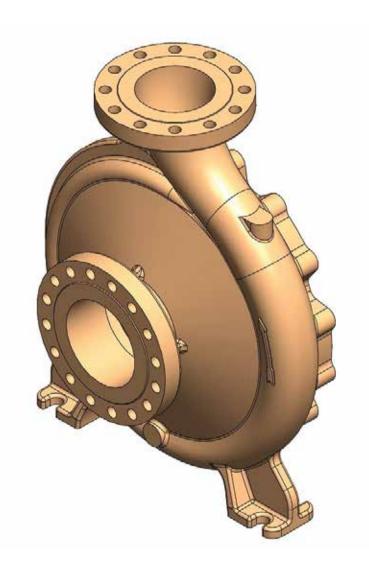


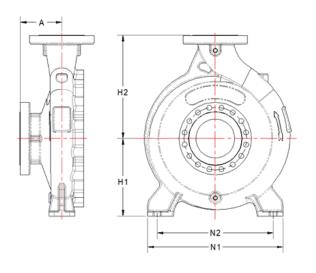
COUPLING SIZE	Ø OD DIA(inch)	Ø ID DIA(inch)	L(inch)	MATERIAL
3"	3.875	3	3.5	
4"	5.063	4	3.94	
5"	6.325	5.25	4.375	Ductile Iron - ASTM A536, EN 1563
6"	7.412	6.2	4.375	Bronze - ASTM B584, ASTM B148
8"	9.562	8.2	4.875	BIOIIZO - NOTIVI BIO-, NOTIVI BI0
10"	11.787	10.25	6.373	
12"	14.063	12.37	6.25	

END SUCTION PUMP PARTS

PUMP CASE

The casing is back pull-out design to allow pulling out the internal components (rotating parts) for inspection and /or replacement without disturbing the pipe work. The volute made of fine grain cast iron equipped with Integrated support feet.

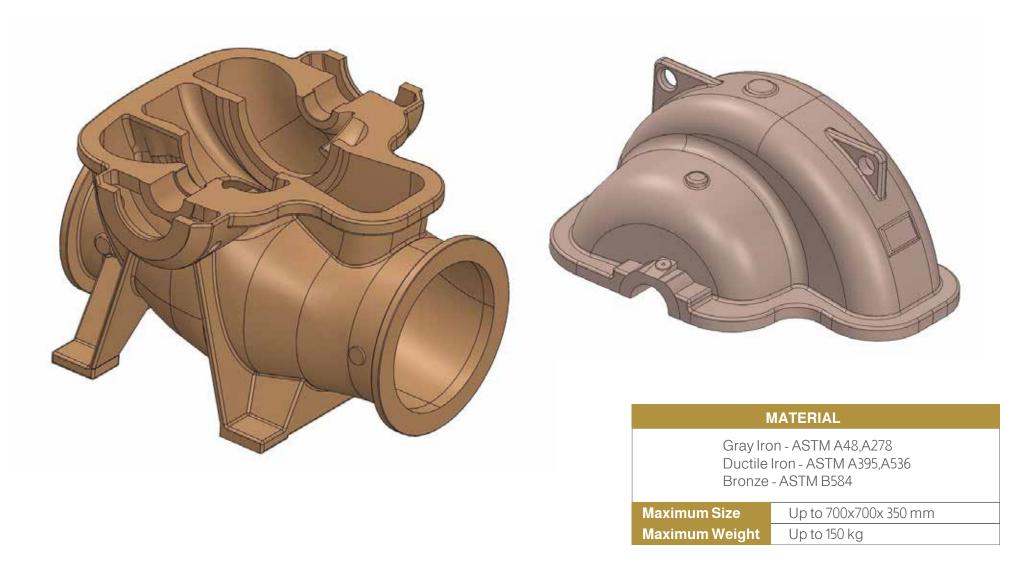




PUMP CASING SIZES (MM)	DNa	DNm	Α	H1	H2	N1	N2
40-200	65	40	100	160	180	265	212
40-250	65	40	100	180	225	320	250
65-250	80	65	100	200	250	360	280
65-315	80	65	125	225	280	400	315
80-250	100	80	125	200	280	400	315
MATERIAL							
Gray Iron - ASTM A48,A278 Ductile Iron - ASTM A395,A536 Bronze - ASTM B584							
Maximum Size	Up	to 700x	(700x	350 m	m		
Maximum Weight	Up	Up to 150 kg					

END SUCTION PUMP PARTS

SPLIT CASE PUMP CASING TOP AND BOTTOM



GENERAL PUMP PARTS

STATOR HOUSINGS, END SHIELDS, FLANGE BEARING SHIELDS & TERMINAL BOXES





Gray Iron - ASTM A48

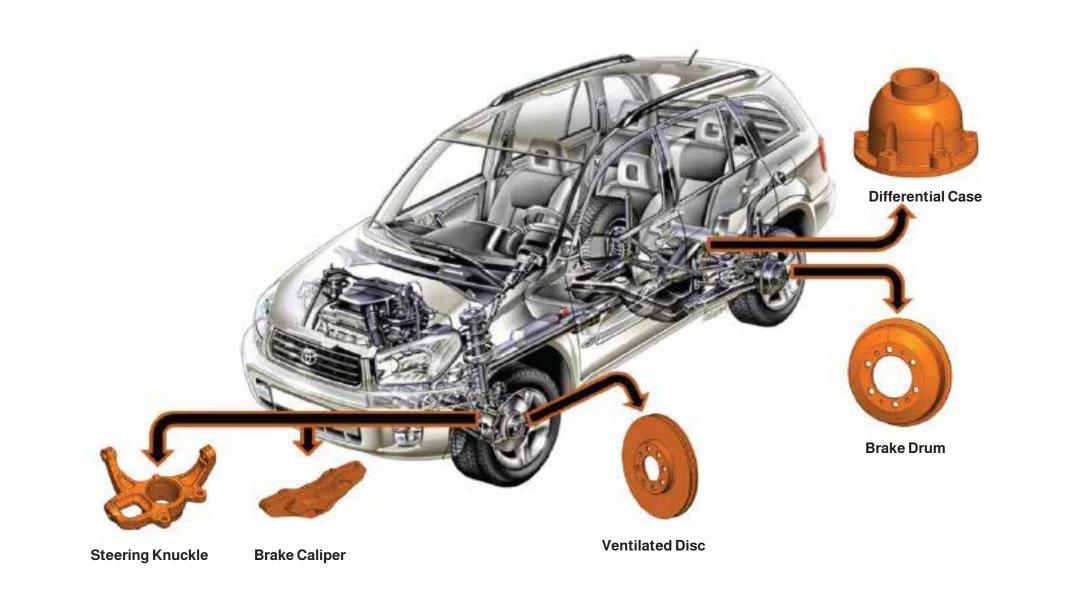
Maximum Size
Maximum Weight

Up to 700x700x 350 mm

Up to 150 kg









STEERING KNUCKLES

MATERIAL

Ductile Iron - (ASTM A536,EN 1563,SAE J434) with different grades

Maximum Size Up 1
Maximum Weight Up 1

Up to 350 x 350 mm

Up to 25 kg

BRAKE CALIPER AND CARRIER

MATERIAL

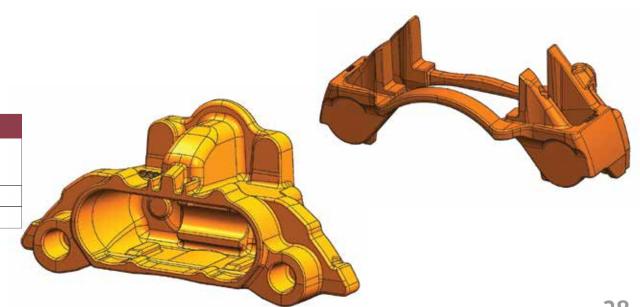
Ductile Iron - (ASTM A536,EN 1563,SAE J434) with different grades

Maximum Size

350 mm Length

Maximum Weight ∪

Up to 50 kg









BRAKE DRUM AND BRAKE DISC

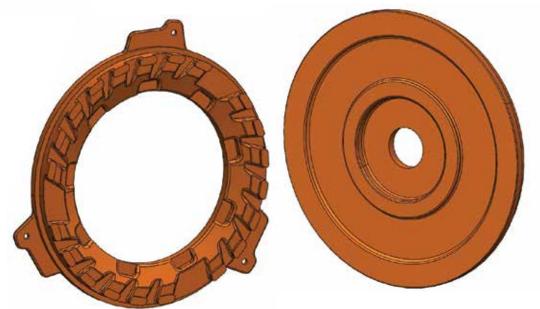
	MATERIAL
Grey Iron - AST different grade	M A48, EN 1561, SAE J431 with s
mum Size	Outside Diameter of 600 mm

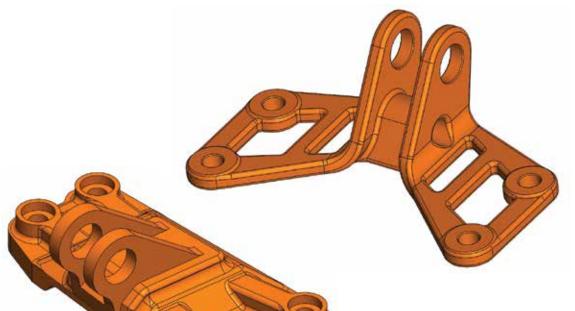
Maximum Weight Up to 100 kg

Maxi

CLUTCH-PRESSURE PLATES AND FLYWHEELS

MATERIAL Grey Iron - ASTM A48, EN 1561, SAE J431 with different grades Maximum Size Outside Diameter of 600 mm Maximum Weight Up to 150 kg





BRACKETS

MATERIAL

Ductile Iron - ASTM A536, EN 1563, SAE J434 with different grades

Maximum Size
Maximum Weight

Up to a length of 700 mm

Up to 100 kg

DIFFERENTIAL CASE AND UPPER ARM

MATERIAL

Ductile Iron - ASTM A536, EN 1563, SAE J434 with different grades

Maximum Size

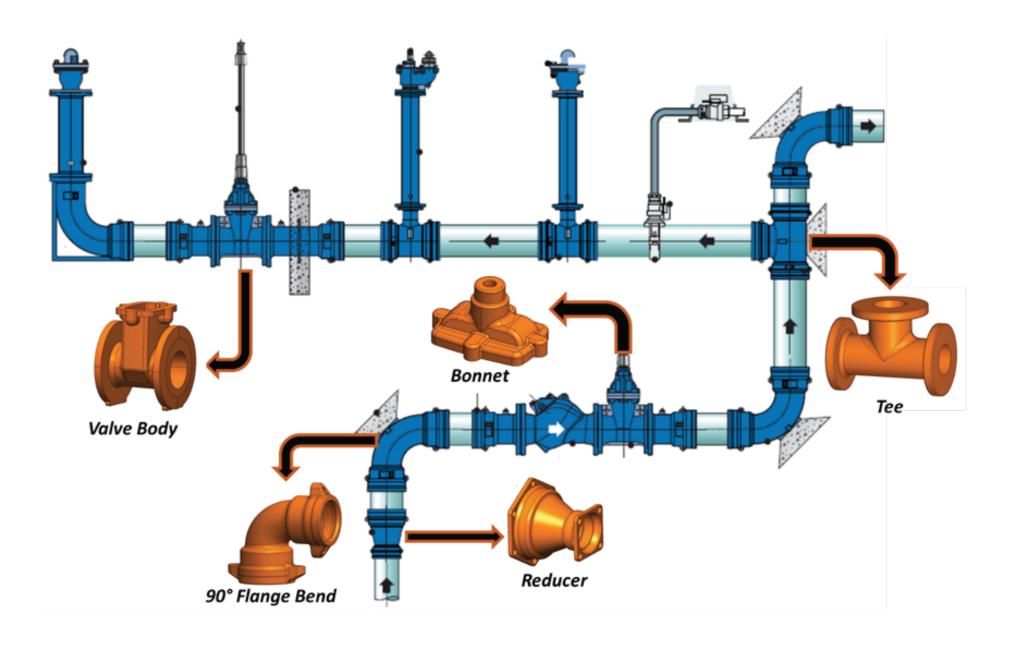
Up to a length of 350 mm

Maximum Weight Up to 50 kg





PIPE FITTINGS AND VALVES



PIPE FITTINGS AND VALVES



TEE AND CROSS

MATERIAL			
Ductile Iron - ASTM A536, A395			
Pressure Rating	350 PSI OR As per required		

TYPES	DESCRIPTION	SIZE (INCH)
Tee	Flange Tee	2 x 2, 4 x 4, 6 x 6, 8 x 8, 10 x 10
CROSS	MJ CROSS	2 x 2, 4 x 4, 6 x 6, 8 x 8, 10 x 10
REDUCER	CONCETRIC	4 X3, 6 X3, 6 X4

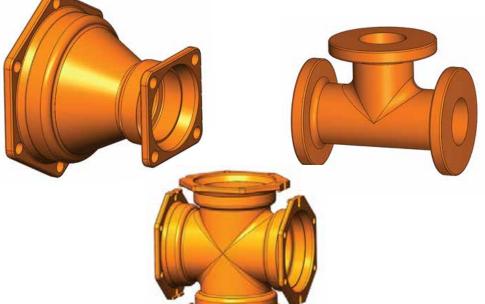
 $\label{pressurized} \mbox{Above Tee and Cross are used to divert the high pressurized water.}$



Above bends are used to transfer high pressurized water.

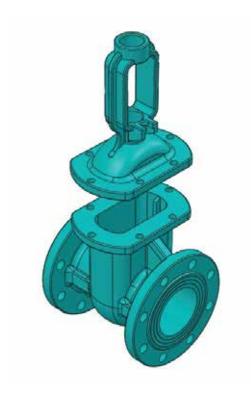
MATERIAL		
Ductile Iron - ASTM A536, A395		
Pressure Rating 350 PSI OR As per required		

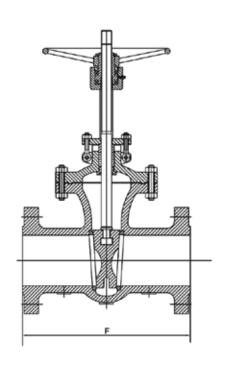
TYPES	DESCRIPTION	SIZE (INCH)
PUSH ON BEND	45 DEGREE	4, 6, 8
PUSH ON BEND	90 DEGREE	4,6,8
FLANGE BEND	45 DEGREE	4, 6, 8, 10
FLANGE BEND	90 DEGREE	4, 6, 8, 10
MJ BEND	45 DEGREE	4, 6, 8, 10
MJ BEND	90 DEGREE	4, 6, 8, 10

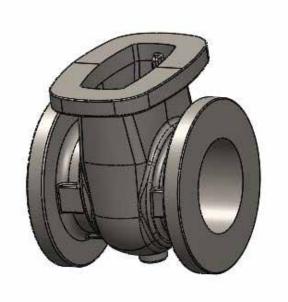


PIPE FITTINGS AND VALVES

VALVES







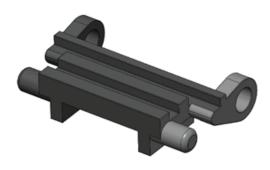
OD Diameter mm	50	65	80	100	125	150	200	250	300
F, mm	292	330	356	432	508	559	660	787	838
H Approx.	370	450	480	530	635	635	870	1130	1320

MATERIAL			PRESSURE RATINGS
Body, Bonnet	Body (Seat), Ring	Hand Wheel	350 PSI OR as per
ASTM A395, EN 1563	ASTM A395, EN 1563		Customer requirements

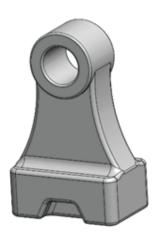
MINING AND CRUSHER PARTS



MINING AND CRUSHER PARTS



TRACK SHOE



STEEL SHREDDER HAMMER



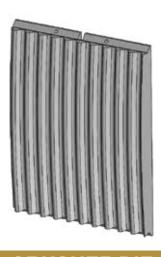
Parts are used for High wear resistance required areas

Material

Steel - Hadfield Manganese Steel - ASTM A 128



TEETH



CRUSHER DIE

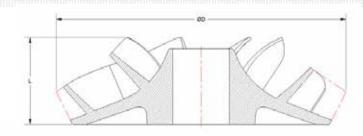
INVESTMENT CASTING

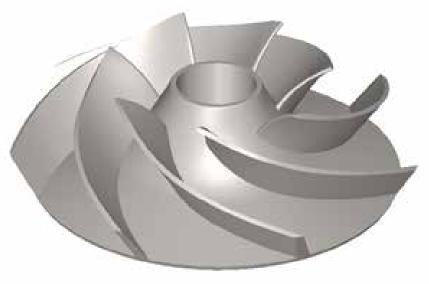


INVESTEMENT CASTING PARTS

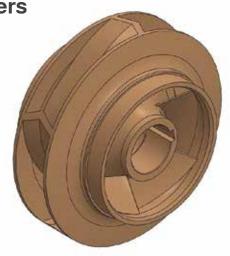
Open Type Impeller

IMPELLER SIZE	Ø DIA	L
5"	4	1.25
6"	4.84	1.5
7"	5.68	1.75
8"	6.88	2
9"	6.85	2.25
10"	8.25	2.5
12"	8.75	3
14"	11	3.25
16"	12.98	3.5





Other type of Impellers



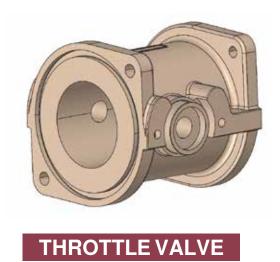




INVESTEMENT CASTING PARTS

Other Parts













TRACTOR PART (VALVE)



FUEL PUMP HOUSING



INVESTEMENT CASTING PARTS

Other Parts







Material	International Standard		
	ASTM A351 & A 743 - Austenitic Stainless steel (CF3-304L, CF8-304, CF3M-316L, CF8M-316)		
Steel	ASTM A352 - LCA, LCB, LCC, CA6NM		
	A 216 - WCA, WCB, WCC		
D	ASTM B584 - Silicon Bronze, Manganese Bronze, High-lead tin bronze		
Bronze	ASTM B148 - Aluminum Bronze, Nickel Aluminum Bronze		



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