

PERFECT ENGINEERING SERVICES



(Suppliers of Valves for High Pressure and High Temperature Services)

Ball Valves



Type	Single/Two and Three Piece		
Size	MM	15 mm to 300mm	
Pressure Rating	Class	#150/ 300/ 600	
End Connection	Flanged/ Screwed/ Socket Weld/ Wafer/ Triclover		
MOC	Body	CI/CS/FS/SS-304/ SS-316	
	Internals	Ball	SS-304/ SS-316
		Seat	PTFE/ PEEK/Glass Filled PTFE
Operation	Manual/ Gear/ Actuator		
Manufacturing Standard	BS 5351		
Testing Standard	API 598 / BS6755		

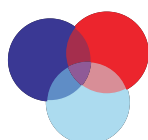
**BALL VALVES AVAILABLE IN FIRE SAFE DESIGN, TRUNION MOUNTING
BLOW OUT PROOF STEM AND FLOATING BALL DESIGN**

Actuated Ball Valves

Type	Single/Two and Three Piece		
Size	MM	15 mm to 200mm	
Pressure Rating	Class	#150/ 300/600	
End Connection	Flanged/ Screwed/ Socket Weld/ Wafer/ Triclover		
MOC	Body	CI/CS/ FS/ SS-304/ SS-316/	
	Internals	Ball	SS-304/ SS-316
		Seat	PTFE/ PEEK/Glass Filled PTFE
Operation	Actuator - Pneumatic/ Electrical		
Manufacturing Standard	BS 5351		
Testing Standard	API 598 / BS6755		



**BALL VALVES AVAILABLE IN FIRE SAFE DESIGN, TRUNION MOUNTING
BLOW OUT PROOF STEM AND FLOATING BALL DESIGN**



Steam Traps



Thermodynamic Steam Traps

42bar/426°C
Available in CA40
Size:-15MM to 25MM
IBR/NIBR



High Pressure TD Steam Traps

230bar/537°C
Available in F22
Size:-15MM to 25MM
IBR/NIBR



Bimetallic Steam Traps

22bar/426°C
Available in A105
Size:-15MM to 25MM
IBR/NIBR



Inverted Bucket Steam Traps

25bar/427°C
Available in ASTM A216 GR. WCB
Size:-15MM to 50MM
IBR/NIBR



Inverted Bucket Steam Traps

63bar/510°C
Available in WC6
Size:-15MM to 50MM
IBR/NIBR



Ball Float Steam Traps

16bar/427°C
Available in ASTM A216 GR. WCB
Size:-15MM to 50MM
IBR/NIBR



High Capacity Float Operated Steam Traps

15bar/426°C
Available in ASTM A516 GR. 70
Size:-80MM to 150MM
IBR/NIBR



Liquid Drain Traps

16bar/220°C
Available in Cast Iron
Size:-15MM to 25MM
NIBR



Float Type Air Eliminator

16bar/220°C
Available in Cast Iron
Size:-15MM to 20MM
NIBR



Thermal Relief Valve

Extensively used in large Pipe Lines, Small Reactors / Vessels to release Pressure generated by thermal expansion.

Sizes	15 x 25NB, 20 x 25NB & 25 X 40NB 40 X 50NB & 50 X 50NB
Rating	Suitable for Working Pressure upto 200 bar
Material	Forged Steel & Investment Cast Stainless Steel
End Connection	Screwed & Socket Weld
Orifice	7mm, 10mm, 12mm, & 16mm



Safety Relief Valve

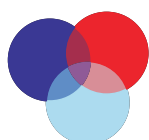
(IBR Approved)

Open Bonnet, Conventional Design, Open Cap with Lever. Designed as per API 526/ API 520 and also as per ASME Section VIII.

Ideally suitable for Steam Services. Set pressure varies from 0.7 Kg/cm²

More than 15000 valves installed on boilers across the country.

Valve Size	25 x 50NB to 250 x 350NB
Rating	BS 10 Table H, Class 150 to Class 900
Orifice Size	G(20.0 mm) to V(181.0 mm)
End Connection	Flanged
Material	Carbon Steel, Stainless Steel & Alloy Steel



Robotrol operated Pressure Control Valve

This design of Pressure Regulating Valve is according to latest development and highly in demand for accurate downstream pressure control.

This is an ideal replacement of self regulating PRV where high flow & high accuracy are required.



Turn Down Ratio	1:40 (For Flow)
	1:20 (For Pressure)

Size	40NB - 200NB
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End Connection	Flanged
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Material	Carbon Steel & Alloy Steel
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Outlet Pressure Range	1.5 to 14Kg/cm ² (MAX)
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Pressure Reducing Valve - Steam Service

Self Acting, Pilot & Piston operated Pressure Reducing Valve are most popular for pressure reduction of STEAM in all types of Industries. The Valve operates on Spring Balance principal.

The Downstream pressure is sensed below stainless steel diaphragm which is balanced by the spring tension. Increasing spring tension, increases outlet pressure and vice versa.

The Valve has additional external sense Line provision also, which improves performance and accuracy of outlet pressure.

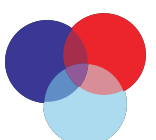
Turn Down Ratio	1:20 (For Flow)
	1:05 (For Pressure)

Size	15NB - 200NB
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Rating	BS-10 Table H, Class 150 & 300
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End Connection	Flanged, Screwed
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Material	Carbon Steel & Alloy Steel
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Control valves

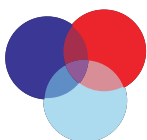
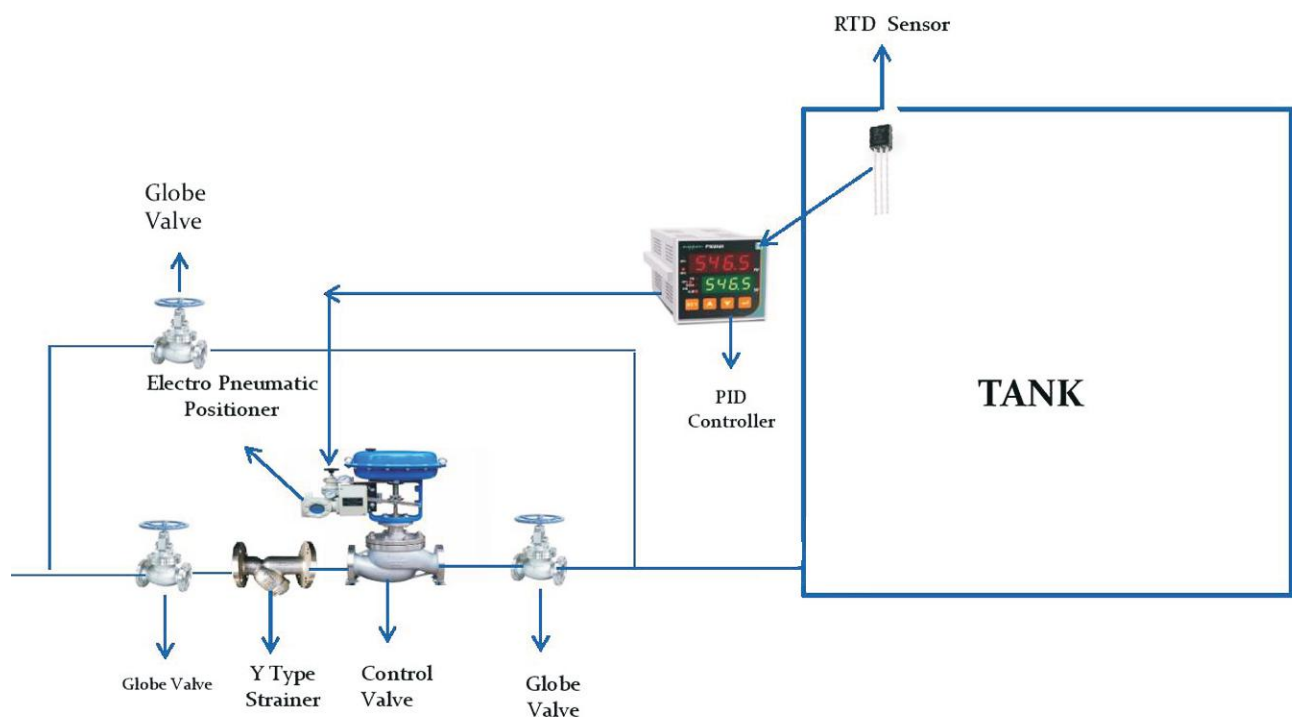
Pneumatic Control Valve

Globe type Control Valves are available for any control application. Built to take the punishment imparted by many processes, including extreme pressure drop, the value is backed by the most respected name in the valve industry.

Size	25NB - 400NB
Rating	Class 150, 300, 600, 900 & 1500
End Connection	Flanged, Buttweld & Socketweld
Material	Cast Steel, Stainless Steel, Alloy Steel, Hastalloy, etc.
Trim Characteristics	Linear, Equal %
Actuator	Reverse Acting & Direct Acting
Type	2 Way & 3 Way



AUTOMATIC TEMPERATURE CONTROLLING SYSTEM



Pressure Reducing Stations

Pressure Reducing Station for Steam (with IBR approval and certification)

Complete assembled unit of pressure reducing station, sized and selected based on Customer's requirement of Flow Rate, Pressure, Temperature, etc.



Size	25NB X 50NB to 250NB X 350NB
Pressure Range	150 psig - 450 psig
Pressure Rating	Class 150 , 300, 600, BS 10 Table H, etc.
Material	Cast Steel and Alloy Steel

Steam Trap Modules

We specialize in manufacturing of Steam Trap Modules. Tailor made as well as of standard version - IBR/NIBR for Vacuum to High Pressure Range.



Piston Valve and Bellow Sealed Valve

Piston Valve

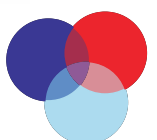
- Seatless & Grandless Valve
- Economic, easy to service
- Leak-tight across port and to atmosphere
- No erosion of sealing surface
- Saves energy, environment friendly
- Maintenance free



Size (MM)	15 MM TO 200MM	
Pressure Rating	Class	#150/ 300
End Connection	Flanged/ Screwed/ Socket Weld/BW	
MOC	Body	CS/ FS/ SS-304/ SS-316
	Piston	SS-410 /SS-304/ SS316
	Stem	SS-410 /SS-304 / SS316
	Rings	Graphite
Certification	IBR/ NIBR	

Bellow Sealed Valve

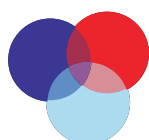
Size	MM	15MM TO 1100MM
Pressure Rating	Class	#150/300/600/800/900/1500/2500
End Connection	Flanged/ Screwed/ Socket Weld/ BW	
MOC	Body	CS/ FS/ SS-304/ SS-316/WC6/ WC9/ F22
	Internals(Trim)	13% cr. / SS-410/ SS-304/ SS-316
	Bellow	AISI 316 TI - 2PLY - 3PLY
Operation	Manual/ Gear/ Actuator	
Certification	IBR/ NIBR	



Gate, Globe, Check Valves



Size	MM	15MM TO 1100MM
Pressure Rating	Class	#150/ 300/ 600/ 800/ 900/ 1500/ 2500
End Connection		Flanged/ Screwed/ Socket Weld/BW
MOC	Body	CS/ FS/ SS-304/ SS-316/ WC9/ WC6/ F22
	Internals(Trim)	13% cr. / SS410/ SS-304/ SS-316
	Option	Stellited
Operation		Manual/ Gear/ Actuator
Certification		IBR/ NIBR
Manufacturing Standard		API 600
		BS 1873
		BS 1868
Testing Standard		API 598
		API 598
		API 598



Disc Check Valves



Size	MM	15 mm to 200mm	
Pressure Rating	Class	150/300	
SOFT SEATING OPTION AVAILABLE.			
End Connection		Wafer	
MOC	Body	SS-304/ SS-316	
		Disc	SS304/SS316
	Internals(Trim)	Spring	SS304/SS316
		Spring Washer	AISI304/ AISI316
Certification		IBR/ NIBR	
Testing Standard		API 598	

Wafer Check Valves



Size	MM	40MM TO 750MM	
Pressure Rating	Class	#150/300/600	
End Connection		Wafer	
MOC	Body	CI/CS/SS-304/ SS-316/ PI. Specify	
	Internals(Trim)	Disc	CI/CS/SS-304/ SS-316/ PI. Specify
		Ring	EPDM/ PTFE/ PI. Specify
	Manufacturing Standard	API 6D	
Testing Standard		API 598	



Dual Plate Check Valves



Size	MM	50mm to 600mm
MOC		CI/CS/SS304/SS316
Pressure Rating	Class	#150/300/600
End Connection		Wafer Type
INSP & Testing STD.		GENERALLY CONFORMING TO API 6D API 598
Mfg. STD.		GENERALLY CONFORMING TO API 6D API 594

Butterfly Valves



Size	MM	50mm to 1200mm
Type		Soft Seated/Double offset/ Triple Offset/ Metal Seated
Pressure Rating	Class	#150/300/600/900
End Connection		Wafer/Flanged/ Double Flanged/ LUG Type
MOC	Body	CI/CS/SS-304/ SS-316/ PI. Specify
	Internals(Trim)	Disc SS-304/ SS-316/ Nylon Coated(NDI)/ PI. Specify
		Seat EPDM/ PTFE/ Metal Seated /PI. Specify
Operation		Manual/ Gear/ Actuator
Manufacturing Standard		API 609
Testing Standard		API 598



Strainers

Y Strainers

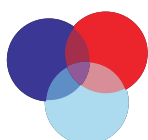


Type	Y - Strainer	
Size (mm)	15 mm to 400 mm	
Pressure Rating	Class	# 150 / 300 / 600
End Connection	Flanged / Screwed / SW / BW	
Body	CI / CS / SS-304 / SS-316 / PI.Specify	
Internals	SS-304 / SS316	
MOC	Mesh / Perf.Sheet	SS-304 (10 mesh to 120 mesh)
Certification	IBR / NBR	

Basket Type Strainers



Type	Basket Strainers	
Size (mm)	50 mm to 1200 mm minimum 50 mm	
Pressure Rating	Class	# 150 / 300 / 600
		Flanged
	Body	CS / SS-304 / SS-316 / PI.Specify
MOC	Internals	SS-304 / SS316
	Mesh / Perf. Sheet (10 mesh to 120 mesh)	SS-304 / SS316
Certification	NIBR	



Flame Arresters



Flame Arresters are safety device that prevents flame from propagating inside the storage and transportation systems carrying flammable liquid. These arresters are designed to quench the flame and prevent fire penetration, explosion or detonation in the system.

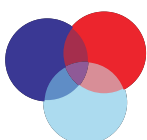
Size	MM	15MM TO 800MM
Pressure Rating	Class	#150/300/600
End Connection		Flanged, Threaded
MOC	Body	CS/SS-304/ SS-316/ Pl. Specify
Type		End of Line, In Line
Manufacturing & Testing Standard		BS 7244, EN 12874, API 2000

Breather Valves

To provide safety to storage tanks against Pressure & Vacuum built up due to Process, Thermal/Climatic changes, a Breather Valve is installed.



Size	MM	15MM TO 500MM
Pressure Rating	Class	#150/300/600
End Connection		Flanged, Threaded
MOC	Body	CS/SS-304/ SS-316/ Pl. Specify
Manufacturing Standard		API 2000



Flow Elements

These are widely recognized & used as Primary elements/devices. In conjunction with 'smart' transmitters they continue to be suitable for wide variety of applications. They can provide many advantages including versatility, cost simplicity, absence of moving parts & low maintenance cost.

Compact Orifice Plate Assembly (Flow Meter)

Easy installation, less expensive than DP Flow meters
Integral manifold head allows direct mounting of DP transmitter
Direct mounting capability up to ANSI 600#
No straight length requirement
Reduces substantial leakage points over traditional DP Flow meters
Accurate & Repeatable
Ideal Fluid type – Liquid, gas & Steam
Turn Down Ratio 8:1, Repeatability $\pm 0.1\%$
Size: 50 to 300 MM
Rating: #150/#300/#600



Orifice Plate Assembly

An orifice plate assembly provides maximum economy with minimum maintenance. It consists of orifice plate, flanges, studs, nuts, jack bolts & gaskets. Flangers are according to ANSI, DIN, JIS standards. Type of orific flanges includes weld neck, slip on WNRTJ and T & G.

Line size : 15 mm-1500 mm (1/2" - 60")
Pressure tap : Flange tap, Corner tap, Radius tap (D & D/2 TAP)
Accuracy : $\pm 1\%$
Materials of flange : A 105, A 182-F316, A 182-F304, A 182-F5,
A 182-F-11, A182-F22, other on request.
Materials of gasket : CAF, SWG, P.T.F.E., other on request.



Condensate Recovery System



Condensate Recovery System is an essential part of a steam system wherein the condensate is efficiently taken back to the Boiler Feed Water Tank. Higher the temperature of boiler feed water lower the oxygen content. It increases the life of boiler by reducing the corrosion. Saving of precious fuel. 6°C rise in boiler feed water will save 1% fuel. Efficient removal of condensate increases the drying efficiency reducing the cycle time. Recovery of heat energy from the flash steam further gives huge savings including saving of electric energy.

Size available : 25 NB, 40 NB, 50 NB, 80 NB, 80 NB (Duplex)



Vacuum Breaker

Vacuum Breaker is best suited on Steam inlets to heat exchangers, jacketed kettles, liquid process lines, chilled water lines, boiler feed water lines and air coils, to admit air whenever vacuum condition is developed in the system

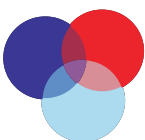
Size available : 15 NB



Thermostatic Air Vent

Thermostatic Air Vent is designed to remove air and non-condensable gases from steam systems. The removal of these gases is important of achieving better start-up efficiency and heat transfer in normal running

Size available : 15 NB, 20 NB



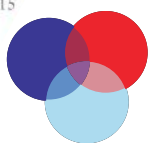
ASME B 16.34

Maximum Allowable Non-Shock Pressure in psig

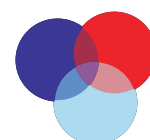
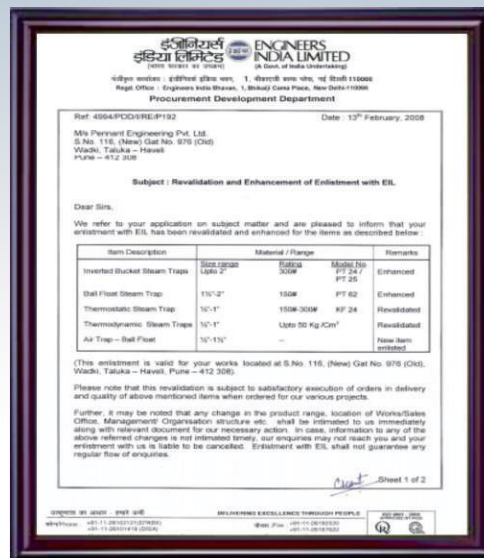
Service Temperature		Class 150					Class 300					Class 600				
Deg. F	Deg. C	WCB(a)	WC1(b)(c)	WC6(c)(d)	WC9(c)(d)	C5(e)	WCB(a)	WC1(b)(c)	WC6(c)(d)	WC9(c)(d)	C5(e)	WCB(a)	WC1(b)(c)	WC6(c)(d)	WC9(c)	C5(c)
-20 to	-29 to															
100	38	285	365	290	290	290	740	695	750	750	750	1480	1395	1500	1500	1500
200	93	260	255	260	260	260	680	660	750	750	750	1360	1320	1500	1500	1500
300	149	230	230	230	230	230	655	640	720	730	730	1310	1275	1445	1455	1455
400	204	200	200	200	200	200	635	645	695	705	705	1265	1230	1385	1410	1410
500	260	170	170	170	170	170	605	585	665	665	665	1205	1175	1330	1330	1330
600	316	140	140	140	140	140	570	550	605	605	605	1135	1105	1210	1210	1210
650	343	125	125	125	125	125	550	535	590	590	590	1100	1065	1175	1175	1175
700	371	110	110	110	110	110	530	510	570	570	570	1060	1025	1135	1135	1135
750	399	95	95	95	95	95	505	475	530	530	530	1015	955	1065	1065	1065
800	427	80	80	80	80	80	410	390	510	510	510	825	780	1015	1015	1015
850	454	65	65	65	65	65	320	300	485	485	485	640	595	975	975	975
900	482	50	50	50	50	50	230	200	450	450	375	460	405	900	900	745
950	510	35	35	35	35	35	135	135	320	385	275	275	275	640	755	550
1000	538	20	20	20	20	20	85	85	215	265	200	170	170	430	535	400
1050	566			20	20	20			145	175	145			290	350	290
1100	593			20	20	20			95	110	100			190	220	200
1150	621			20	20	20			65	70	60			130	135	125
1200	649			15	15	15			40	40	35			80	80	70

Note: (a) Permissible, but not recommended for prolonged usage above 8000F. Upon prolonged exposure to temperature above 8000F, the carbide phase of Carbon Steel may be converted to Graphite.
 (b) Permissible, but not recommended for prolonged usage above 8750F.
 (c) Use normalized and tempered material only.
 (d) Not to be used over 11000F.
 (e) For welded and valved only. Flanged end ratings terminate at 1,0000F, for WC6, WC9, & C5 materials.
 (f) 1 psi = 0.070 kg./Sq. cm.

Service Temperature		Class 900					Class 1500					Class 2500				
Deg. F	Deg. C	WCB(a)	WC1(b)(c)	WC6(c)(d)	WC9(c)(d)	C5(e)	WCB(a)	WC1(b)(c)	WC6(c)(d)	WC9(c)(d)	C5(e)	WCB(a)	WC1(b)(c)	WC6(c)(d)	WC9(c)(d)	C5(c)
-20 to	-29 to															
100	38	2220	2090	2250	2250	2250	3705	3480	3750	3750	3750	6170	5805	6250	6250	6250
200	93	2035	1980	2250	2250	2250	3395	3300	3750	3750	3750	5655	5505	6250	6250	6250
300	149	1965	1915	2165	2185	2185	3270	3190	3610	3640	3640	5450	5315	6015	6070	6070
400	204	1900	1845	2080	2115	2115	3170	3075	3465	3530	3530	5280	5125	5775	5880	5880
500	260	1810	1760	1995	1995	1995	3015	2930	3325	3325	3325	5025	4885	5540	5540	5540
600	316	1705	1655	1815	1815	1815	2840	2755	3025	3025	3025	4730	4595	5040	5040	5040
650	343	1650	1600	1765	1765	1765	2745	2665	2940	2940	2940	4575	4440	4905	4905	4905
700	371	1590	1535	1705	1705	1705	2665	2560	2840	2840	2840	4425	4270	4730	4730	4730
750	399	1520	1430	1595	1595	1595	2535	2385	2660	2660	2660	4230	3970	4430	4430	4430
800	427	1235	1175	1525	1525	1525	2055	1955	2540	2540	2540	3430	3255	4230	4230	4230
850	454	955	895	1460	1460	1460	1595	1490	2435	2435	2435	2655	2485	4060	4060	4060
900	482	690	605	1350	1350	1120	1150	1010	2245	2245	1870	1915	1685	3745	3745	3115
950	510	410	410	955	1160	825	685	685	1595	1930	1370	1145	1145	2655	3220	2285
1000	538	255	650	650	800	595	430	430	1080	1135	995	715	715	1800	2230	1655
1050	566			430	525	430			720	875	720			1200	1455	1200
1100	593			290	330	300			480	550	495			800	915	830
1150	621			195	205	185			325	345	310			545	570	515
1200	649			125	125	105			205	205	170					



Certification and Approvals



OUR CLIENTS



M/S SRF Ltd.



M/S Godrej Consumer Products Ltd.



M/S Jubilant Life Sciences Ltd.



M/S Good Year (I) Ltd.



INDIA GLYCOLS LIMITED

M/S India Glycols Ltd.



M/S Ruchira Papers Ltd.



M/S Haldiram Food (I) Pvt. Ltd.



M/S Simbhaoli Sugar Ltd.



M/S Mil India Ltd.



M/S KRBL Ltd.



M/S Merino Industries Ltd.



M/S Shree Cement Limited



M/S Bikaji Foods (I) Ltd.



M/S Bhushan Steel Ltd.



M/S Hero Moto Corp Ltd.



M/S Shreyans Industries Limited

PERFECT ENGINEERING SERVICES

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