

# **R&D** Multiples

GROWTH THROUGH INNOVATION

Corporate Presentation
March 2016

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Tel: +91 22 40044425/26/27/28/29/30

## One of the premier valve companies in India

#### Key product offerings:

- Butterfly valves
- Sluice valves (metal seated)
- Air Release valves
- **Resilient Seated Gate** valves
- Non Return valves (DPCV & swing check)
- Anti Vacuum valves
- Axial Flow Control valves

Among the top 2 players for the design, development, manufacture of various types of valves used in waterworks applications all over India

Manufacturing plants in Pardi, Gujarat: built up area > 10,000 sq meters

Established in 1986 and owned privately by the Bagaria family

Current workforce of >300

Among the fastest growing companies in the industry:

- Sales have grown >8x
- Employee strength has grown >5x
- Manufacturing area has grown >4x





All in the last 10 years



# A Proven History (~3 decades of existence)

#### 1986-1995

#### Entrepreneurial start

Single product focus (butterfly valves)

Initial problems in Tarapur, Maharashtra led to our move to Pardi, Gujarat

#### 1996-2005

Diversification into new products (SLV, DPCV, ARV, NRV etc)

Increased acceptance level by customers

#### 2005-2015

Expansion into newer regions and subsegments (e.g power sector)

Establishment of Engineering center in Pune

Expansion of manufacturing area in Pardi by >4x

#### **Key priorities:**

- Expansion into other regional markets outside India
- Continuous refinement of product designs in-line with the customer requirements & latest technology
- Implementation of a companywide ERP system
- Transform the company into a lean enterprise



# Our goal is to be the top valve manufacturer in the region







## We are now expanding to other emerging sectors like Sea-Water



Irrigation & water supply



Power generation



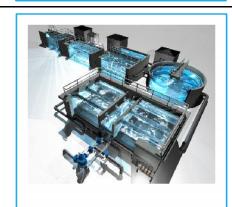
Process plant water





Sea water





Effluent & sewage





# Acceptance level among almost all large infra companies in India..



































































## ..as well as the major consultants & third party inspection agencies

- TCE Bangalore
- Kirloskar Consultants
- Mecon / MN Dastoor / STUP
- SGS
- CEIL
- DCPI
- Mc. Do1

- Shah Tech Services
- BVIQ
- Avant Garde
- RITES
- PDIL
- DESEIN
- NTPC / NPCIL / IRS



# Key Products



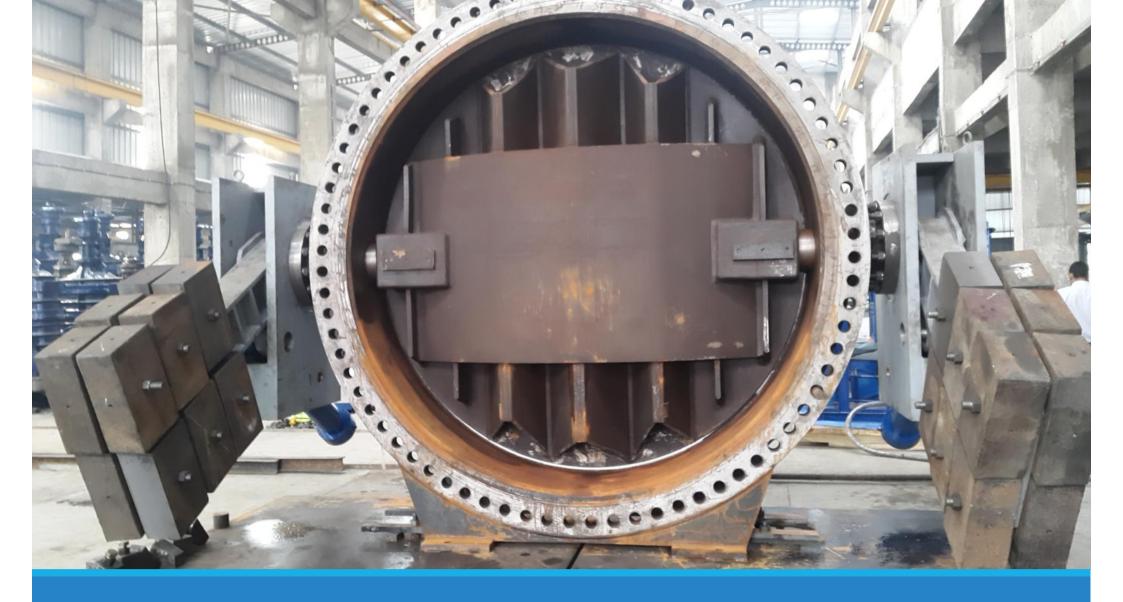
# Butterfly Valves

- Sizes: 50-3000mm, Rating: PN 10, 16, 25
- Ends: Flanged, Wafer, LW,BWE. Types: Single/ Double/Triple Eccentric
- Standards: IS 13905, BS EN593, AWWA C504 & 516. Ref.:AWWA M49
- Pressure activated resilient seat on disc: very low seal torque
- Construction: Cast: D.I. Gr. 500/7& 400/15. Steel Fab. Cast Steel



2000mm BFV – ready to be shipped from our works in Pardi, Gujarat

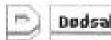


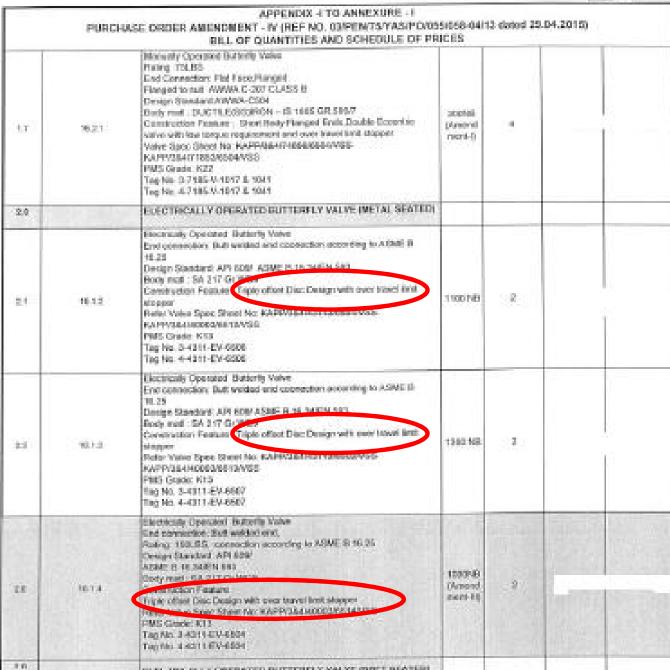


## 2800mm HOPD\* BFV – under testing

\* HOPD: Hydraulically operated pump discharge







We recently bagged our first major order for metal-seated triple offset butterfly valves



#### Metal Seated Gate Valves

Sizes: 50-1800mm, Rating: PN 10, 16, 25

Ends: Flanged

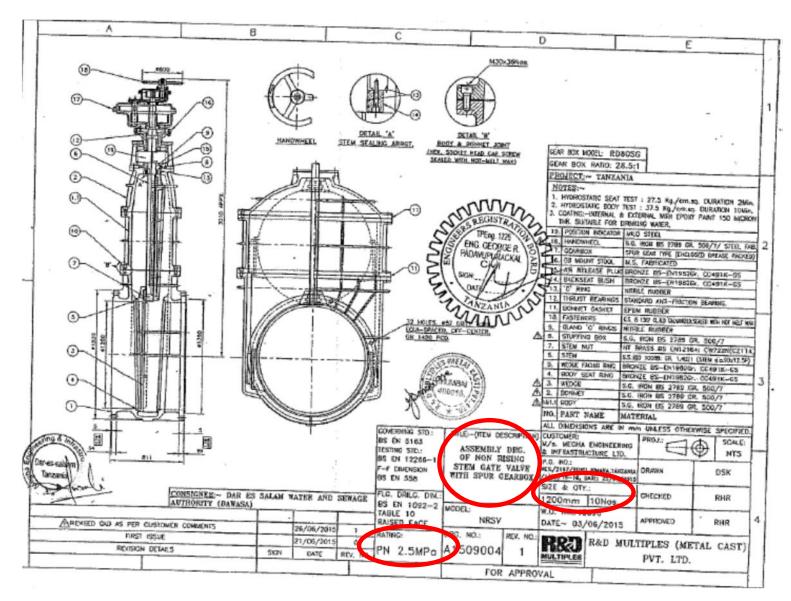
Standards: IS 14846

- Non rising / rising stem construction available
- Accessories such as gearing, thrust bearing, actuators, bypass, position indicator, channel & shoe, chain-wheel can be offered
- Construction: Shell: CI, SGI, CS (WCB), D2, SS, Trim: Bronze, SS



This is a photo of the largest sized (1800mm) metal-seated gate valve to have been built in India till date, ready to be shipped from our works in Pardi, Gujarat





We recently executed an order for a project in Tanzania involving 1200mm/48" gate valves with PN 2.5MPa/350psi



## Resilient Seated Gate Valves

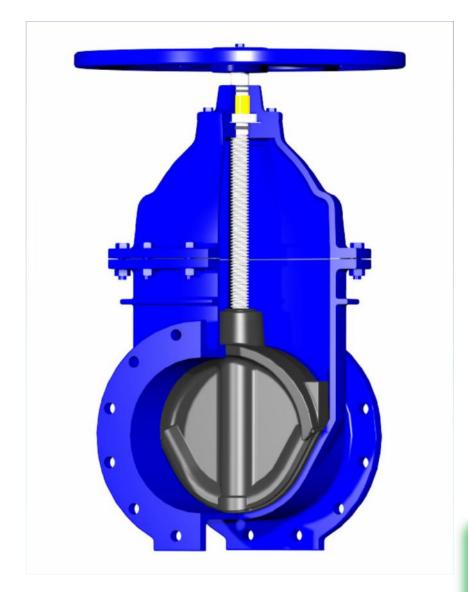
Sizes: 50-1200mm, Rating: PN 10, 16, 25

Ends: Flanged

Standards: AWWA C509/515

Construction: Cast: D.I. Gr. 500/7 & 400/15

- Through, clear, straight flow passage: no pockets / obstructions
- Resilient seat: drop-tight seats accommodative to wear & tear
- FBE coated shell & encapsulated wedge. Minimal contact & corrosion





Ref. No.: 14004-2

Joint Inspection Report

Date: 30.07.2015

Client : Mis. PHED EPC Contractor : Mis. NCC

Sub Contractor : M/s. JYOTI LTD. VADODARA

L.O.I. No. : 7/C00/R1096/600412/253954/2014-2015 Date: 25/02/2015 Project : NCC-CHAMBAL BHILWARA WSP-PHED RAJASTHAN

Date of Inspection: 29.07.2015 & 30.07.2015.

Place of Inspection: M's. R & D Multiples (Metal Cast) Pvt. Ltd.

G.I.D.C. Killa Pardi Dist.: Valsad Gujarat. (Plant-2)

Inspection by : PHED & JYOTI LTD.

Valve Details :

Sr. No.	Valve Size	vaive or. Nos.	QIT.	Seat Hydro Test	Hydro Test	Remarks
Valve	Location : TILSAVA PS					
1	600mm Non Rising Stem Resilient Seated Gate Valve with Spur Gearbox & Electrical Actuator- PN 2.5Mpa	RT07699 to RT07607	Nos.	25 'Kg/om*	37.5 Kg/om*	OK
2	700mm Non Rising Stern Resilient Seated Gate Valve with Spur Gearbox & Electrical Actuator- PN 1.6Mpa	RT07617 to RT07625	Nos.	16 Kglom²	24 Kg/cm²	OK
Valve	Location : INTAKE PS					
1	500mm Non Rising Stem Resilient Seated Gate Valve with Spur Gearbox - PN 2.5Mpa	RT07579	01 No.	25 Kg/cm²	37.5 Kg/cm²	OK
2	500mm Non Rising Stern Resilient Seated Gate Valve with Spur Gearbox & Electrical Actuator- PN 2.5Mpa	RT07581 to RT07589	Nos.	26 Kg/om²	37.6 Kg/cm <sup>a</sup>	OK
Valve	Location : BHUNJARKALL PS					
1	500mm Non Rising Stem Resilient Seated Gate Valve with Spur Gearbox - PN 2 5Mps	RT07580	01 Na	25 Kg/om <sup>3</sup>	37.5 Kg/cm²	OK
2	600mm Non Rising Stem Resilient Seated Gate Valve with Spur Gearbox & Electrical Actuator - PN 2.5Mpa	RT07590 to RT07598	Nos.	25 Kg/cm*	37.5 Kg/cm²	OK
3	700mm Non Rising Stem Resilient Seated Gate Valve with Spur Gearbox & Electrical Actuator- PN 1.6Mpa	RT07608 to RT07616	Nos.	16 Kg/cm²	24 Kg/cm²	OK

Joint Inspection report of 500/600mm RSLVs with PN 2.5MPa/350psi for a project in Rajasthan, India

- Hydro test carried out (as per approved QAP) on above mention Valves. Results found satisfactory.
- Visual & Dimensional checks carried out and found satisfactory for all above valves.
- Valve operation test carried out and found satisfactory for all above valves.
- Internal test reports & test certificates reviewed and found in order for all above valves.
- · All above Valves are cleared for Dispatch after painting.

Naeem Shalkh-QA

COLUMN CONTROL DAY

Shallesh Mali

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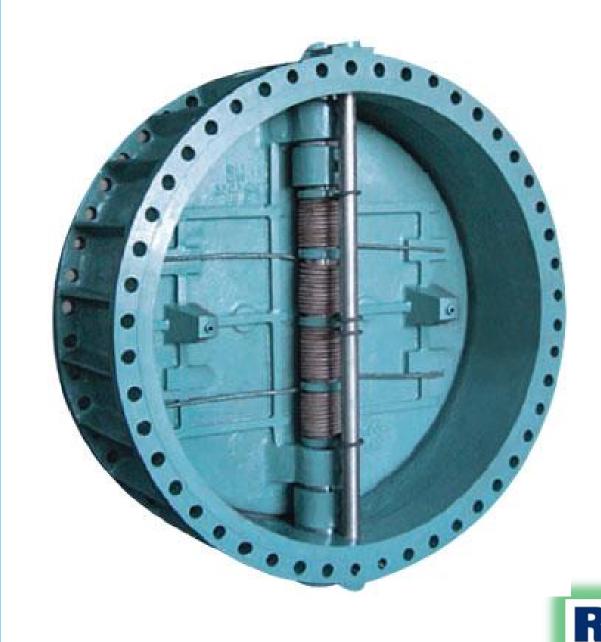
Sr. Engineer Jyoti Ltd. Karni Pratap Singh

Executive Engineer ,PHED Project Div. Rawatbhata



#### Dual Plate Check Valves

- Sizes: 50-3000mm, Rating: PN 10, 16, 25
- Ends: Flanged, Wafer, LW, BW
- Standards: API 594/598, AWWA C518
- Construction: Cast: D.I. Gr. 500/7& 400/15. Cast Steel, Steel Fab
- Independent Plates suspension.
  Shock Dampers
- Resilient Seat: On site replaceable. Drop-tight seats
- Unique spring design: Twist angle half of conventional designs
- Slam-less closing performance: Options of : Standard, Low Torque & Tight Springs to get different COP



# Recently awarded a prestigious order for the supply of DPCV

12<sup>th</sup> Sep, 2015: Larsen & Toubro has awarded the contract for the supply of Dual Plate Check Valves for the experimental ITER project in France to R&D Multiples. R&D's scope includes detailed engineering, procurement, manufacture and testing of the valves. This will be executed by the first half of 2016.

Once the project is fully completed, ITER will demonstrate the infinite potential of fusion technology to generate energy.

The highlights of the fusion process used in the reactor are –

- a) High Efficiency Output power will be ten times the input,
- b) Clean Energy No release of carbon dioxide or radio active wastes, and
- c) Abundant Fuel Hydrogen isotopes –deuterium & tritium, which can be extracted from sea-water.

**Background:** ITER will be the world's largest experimental facility to demonstrate the scientific and technical feasibility of fusion power. It is an international collaborative project involving "in-kind" contributions from Seven Parties (China, European Union, India, Japan, S.Korea, Russia and U.S.A.). It is being built at Cadarache, South of France. India is one of seven partners and is responsible to supply systems and equipment for ITER.

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				DESIGN STANDARI														
				SIZE: PRESSURE RATING:					P. O. NO.:	MEIL/5117/GDWSS P	ACKAGE-2 PART 20/15-16 DATE: ~ 09/09/2015				12015			
Killa-Pardi		Dist.: Valsad Gujarat 3961	25	PRESSURE RATING.	PN 20					CTVIL/HWWY30.30F902	6 DATE ~ 09/09/2015				ŀ			
		.: (0260) 3254539 ardi@rdmultiples.com					W. O. No. : 15152											
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	Door (Plate) [For Fabricated]	Chemical properties	Major	Chemical Analyses		lakin.	Approved Data Sheet.		Certificate					Thiai	aurranth.			
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1.2	[ For Casting ]	Chemical properties	Major	Chemical Analyses	Towns	ernea				roundly rest definate	,	-		*	Lunda	execution		
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1.4	Bar stock for Hinge	Chemical properties	Major	Chemical Analyses	10	ole / Lot	Laboratory Test		Laboratory Test	4	P	v	v					
	Pin & Stop Pin	Mechanical properties	Major	Mechanical Test	15 amp	sie / Lot	do			Certificate	,	P	V	·				
1.5	Spring	Chemical properties	Major	Chemical Analyses	1Samp	ole / Lot	do			Laboratory Test Certificate	4	P	v	٧				
		Dimensions	Major	Measurement	1Sample / Lot 100 % 1Sample / Lot		MANUFACTURING DRAWING.			Inspection Report	_	Р	٧	_				
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3.0 F	INAL INSPECTION:							•					:					
	Complete Valve	Visual & Dimensions Major Hydrostatic Body Test Critical		Measurements	100 % 10 %		Applicable Design Std. / Approved Drawing / Data Sheet			Final Inspection Report	4	P	W	W				
3.1				Hydro Test	100 %	10 %	do			do		Р		W				
		Hydrostatic Seat Test	Critical	Hydro Test	100 %	10 %	do			do	V	P	W	W				
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MANUFACTURER / MAIN-SUPPLIER			C: PURCH	A: MANUFACTURER/SUB-SUPPLIER B: MAIN SUPPLIER/REPRESENTATIVE :: PURCHASER / PURCHASER REPRESENTATIVE														
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## Bi-Stream Air Release Valves

Sizes: 50-200mm, Rating: PN 10, 16, 24

Ends: Flanged

Standards: AWWA C512

Construction: Combination type, dual function

Clear, large air flow passage: Min. bends & obstructions

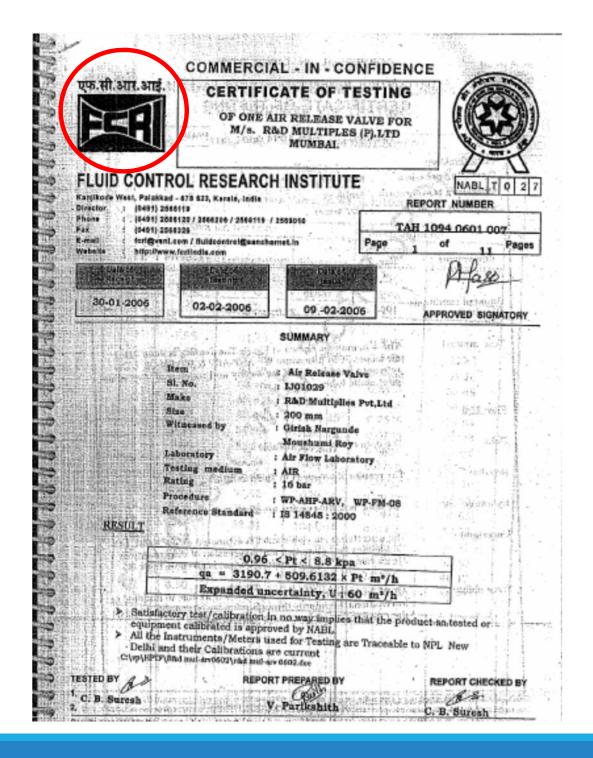
Resilient Seat: Drop-tight seats

FBE Coated DI (500/7)/ (400/15)body & cover & all internal parts: St. Steel

Specially designed aerodynamic& tamper-proof cover







Test report for our Bi-Stream Air Release Valves from Fluid Control Research Institute, India



#### Axial Flow Control Valves

- Sizes: 80-1600mm, Rating: PN 10, 16, 24
- Shell Material Options:
  Ductile Iron (GGG 50), Cast
  Steel (WCB)
- Piston movement parallel to flow direction ("Axial")
- Piston guides: precision machined bronze overlay
- Hydro-dynamically circularly balanced valve
- Flow regulation: 10-90% with stable performance
- Resilient / Metal seated options



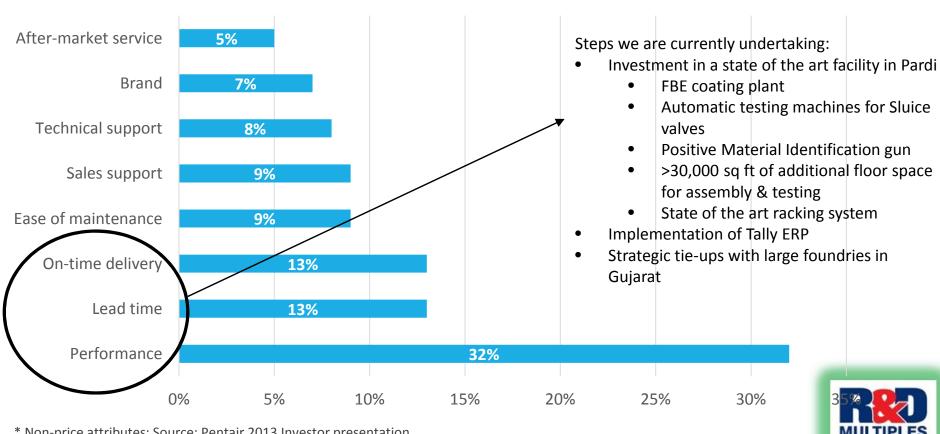


# Infrastructure



## Our strategy takes into account the key customer requirements

#### Key buying criteria for customers\*



<sup>\*</sup> Non-price attributes; Source: Pentair 2013 Investor presentation

# Total area under manufacturing >10,000 sq meters

#### Machining

- Turning (4.5m), Boring, Milling
- Planing, Drilling & Shaping
- Machining is done in-house as far as possible, also have long-term tie-ups with trusted vendors
- Fabrication
  - Mild Steel & Stainless Steel
- Assembly our recent expansion will increase area for assembly by >2x
- Inspection & Testing
  - Hydrostatic, Air, NDT
  - Adhesion, coating thickness, hardness, material identification, ultrasonic thickness, shore hardness
- Others
  - Proof of design
  - FBE coating (new addition)
  - Torque capacity





## Plant 1: Machining & Assembly area



## Fusion Bonded Epoxy Plant (new)

One of the only valve manufacturers in India to have this capability

- Comprises of shot blasting, pre-heating & FBE coating
- Coating thickness of >300μ
- Enhanced corrosion protection capabilities
- Improved fluid flow characteristics reducing energy requirements









## FBE-coated Air Valve bodies



# Automatic testing machines (new)

- Continuous & precise without any human intervention
- SCADA based controls
- Large memory
- Commissioned in Sep'15

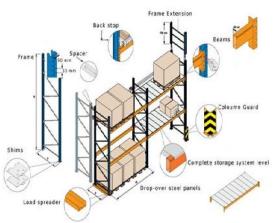






## Other New Developments





#### **Bruker S1 Titan: Positive Material Identification Gun**

- Acquired the lightest portable tube-based XRF analyzers available in the market
- Designed to quickly & accurately report the elemental analysis of the sample
- Helping us in eliminating costly mix-ups
- Improve product quality & vendor accountability

#### Nilkamal: State of the art racking system

- Appointed the leader in industrial storage to design a racking system specifically to suit our needs
- Plan to store in process and finished components
- Will further drive efficiency and reduce lead times



## Outsourced Facilities

- All castings
- CNC Machining
- Testing: Radiography, Destructive tests
- Pattern making: Wooden & aluminium
- Rubber lining / encapsulation on metal parts, moulded components
- Plating & coating: Zn, Cr & Ni plating
- Heat treatment: Annealing, Normalizing, Tempering, Case Hardening etc

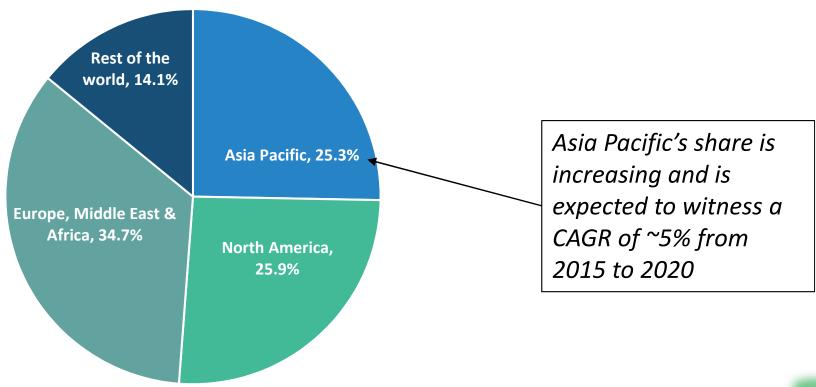


# Industry overview



## 1/4<sup>th</sup> demand currently from APAC

Geographical Segmentation of the Global Valves & Actuators Market, 2014



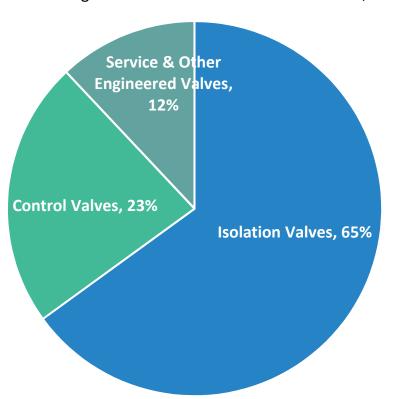
Source: Frost & Sullivan

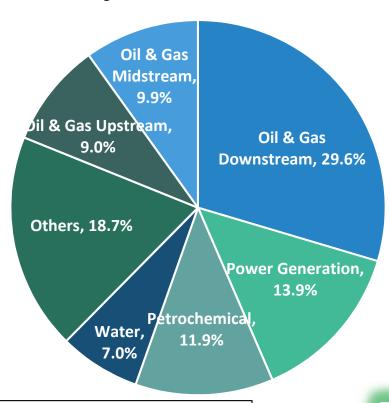


## Indian valves market

Product Segmentation of the Indian Valves market, 2014

End-User Segmentation of the Indian Valves market, 2014





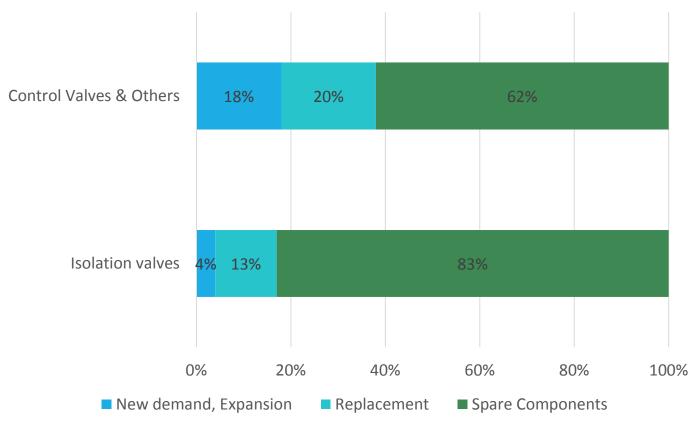
Total market size: INR 10,100 Cr (~US\$1.5bn)

Source: Frost & Sullivan Source: Frost & Sullivan



# Most of the isolation valves are used for their entire lifetime

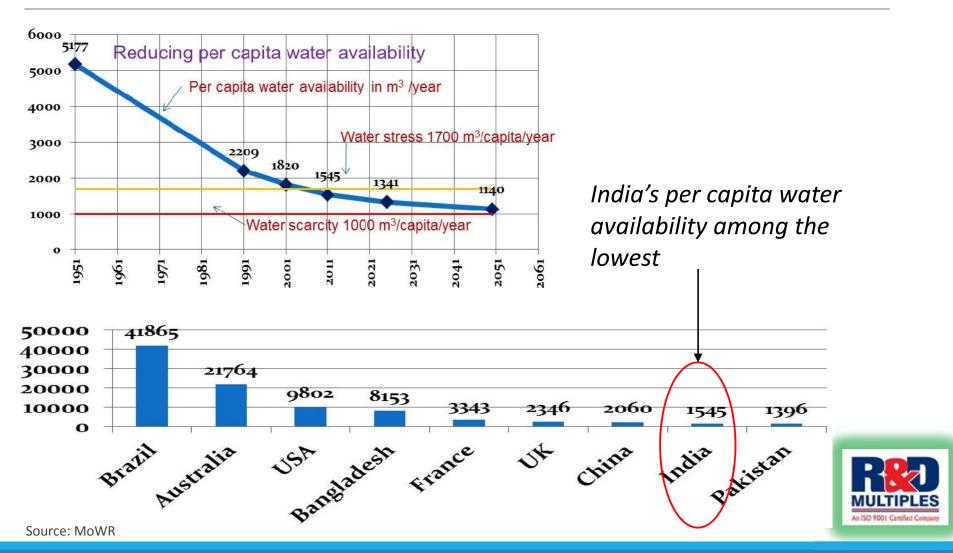
#### Valve Replacement & Spares Procurement, India 2014



Source: Frost & Sullivan



# Water is already becoming a precious commodity



# "Investors are mining for water, the next hot commodity"



Drip-irrigated lemon orchards at the Cadiz water project in the Mojave Desert. Monica Almeida/The New York Times

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CADIZ, Calif. — Gazing out of a turboprop high above his company's main asset — 34,000 acres in the Mojave Desert with billions of gallons of fresh water locked deep below the sagebrush-dotted land — Scott Slater paints a lush picture that has enticed a hardy band of investors for a quartercentury.

Yes, Mr. Slater admits, his company, <u>Cadiz</u>, has never earned a dime from water. And he freely concedes it will take at least another \$200 million to dig dozens of wells, filter the water and then move it 43 miles across the desert through a new pipeline before thirsty Southern Californians can drink a drop.

Source: The New York Times

- Nelson Schwartz, The New York Times (24<sup>th</sup> Sep, 2015)



# Appendix

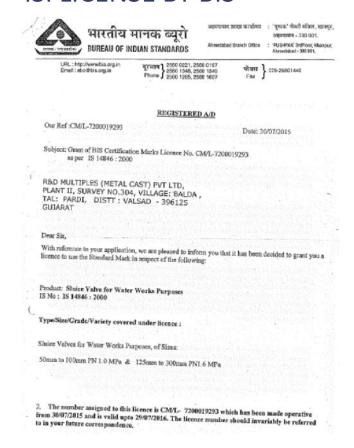


# We are a ISO 9001: 2008 company

#### ISO CERTIFICATION BY TUV NORD

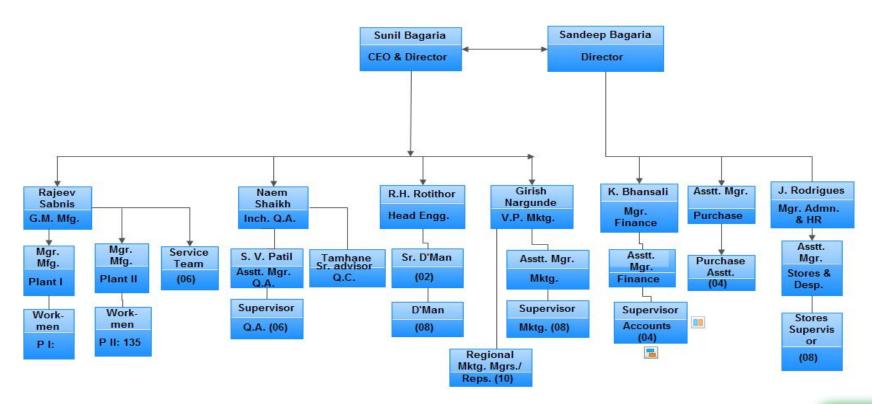


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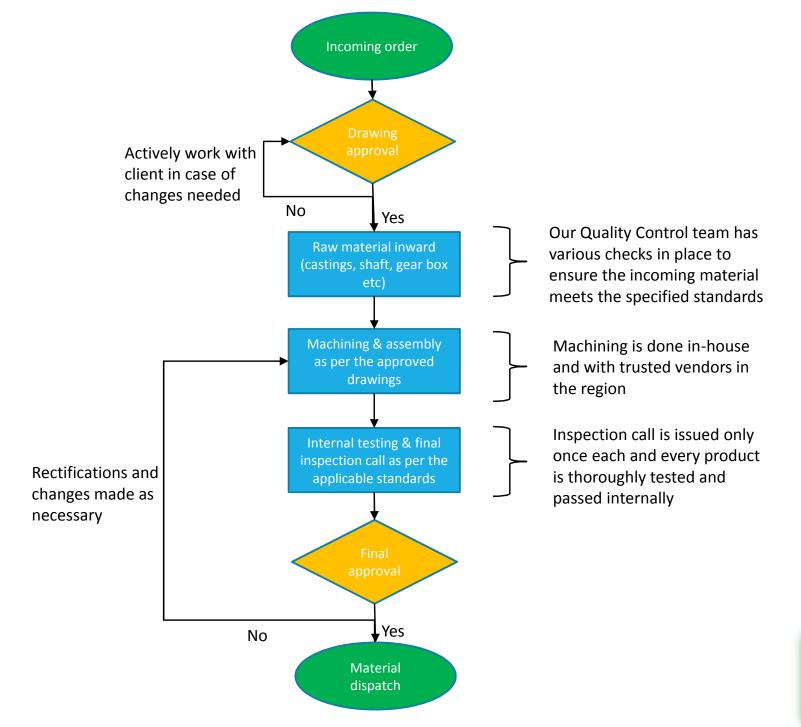




## Organization chart









## Contact Us

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E-mail: <a href="mailto:mumbai@rdmultiples.com">mumbai@rdmultiples.com</a>

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Plant 2: Survey No. 304, Village Balda, Pardi - 396 125, District Valsad, Gujarat

E-mail: <a href="mailto:pardi@rdmultiples.com">pardi@rdmultiples.com</a>

#### **ENGINEERING OFFICE:**

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