



A Fluid Control Business of IMI
Your Italian partner for valves



...From Ancient History

It all started a while ago.....



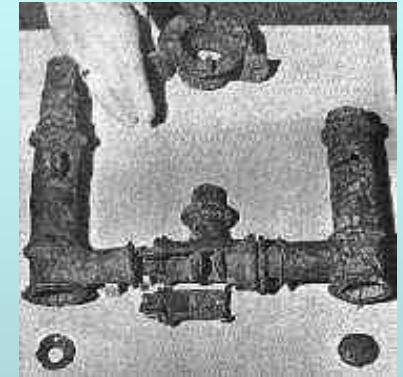
*..... with Italy already
excelling in valve technology*





Ancient Roman's Time

2000 Years ago the Romans invented valves, pipes, fittings, for water transmission

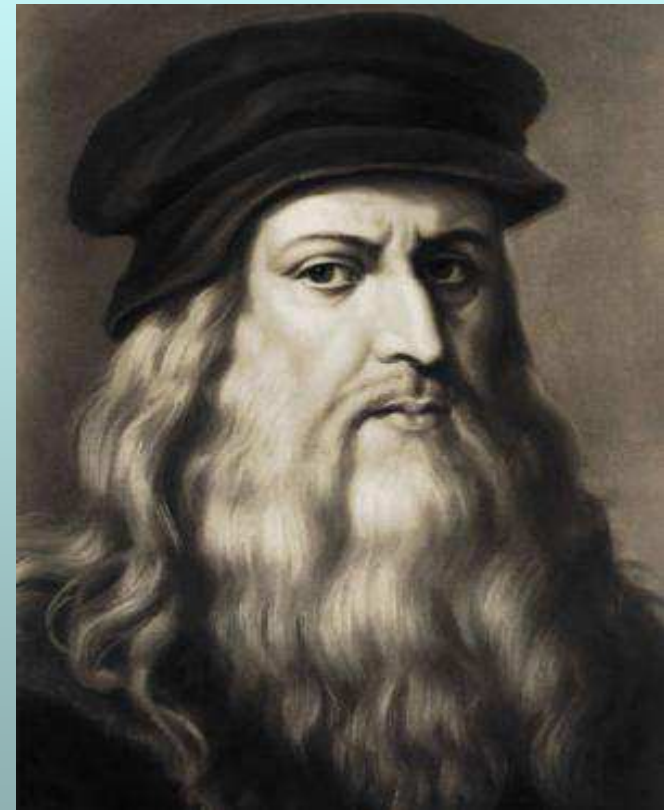
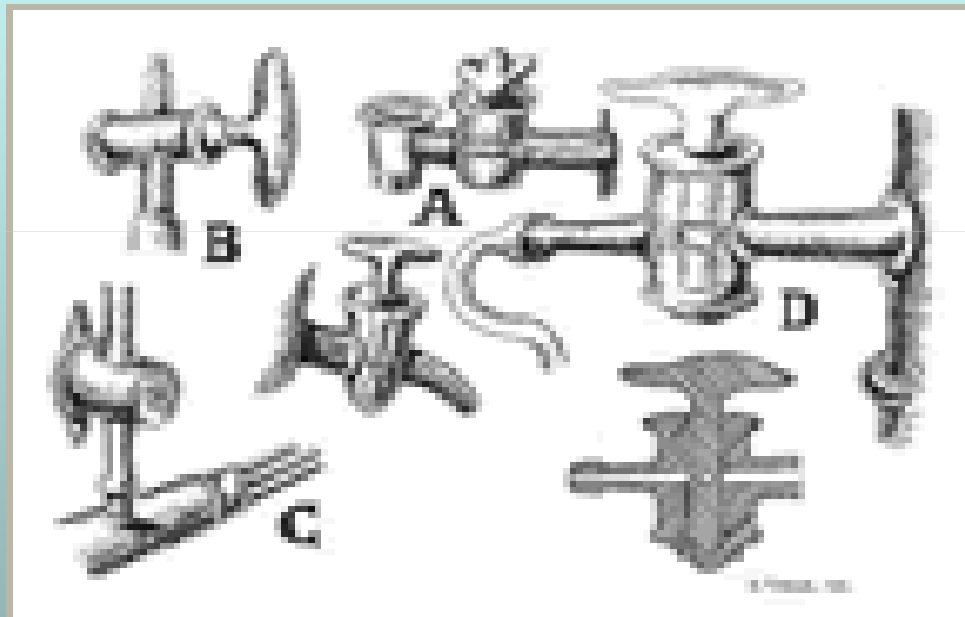


“Frontino” curator aquarum, Standards , ASTM B67 , “Approved Manufacturer List”



....To Renaissance

Leonardo da Vinci invented and designed valves





...To recent history

An Holistic System combined with a flexible business model



$$1 + 1 + 1 = 5 !!$$



Why the valve - actuators industry is concentrated in Italy?

Year

50's

GVM – SELLA – ORION – PETROLVALVES PARCOL

Italian industry is booming large users as Montecatini, ENI, ENEL, Fincantieri are fuelling the growth of the few existing valve companies

60's

**OMS – WAGI – ORTON – DAFRAM - OMB
GALLI & CASSINA - STI – BIFFI - REMOSA**

Valve companies start to export and be approved by major international end users and EPCs.

70's

**GROVE - BFE – VANESSA – ZAVERO - ITALVALV
MASONEILLAN – STARLINE - BRED A ENERGIA
DOUGLAS CHERO – SERVOVALVE - MECAIR**

New valve companies are growing like mushrooms.

80's

**PBVS - LVF – LCM – DELLAFOGLIA – FIV – RMT NOVASFER –
BARDIANI – LEDEEN – OMAL FLUID SYSTEM**

Several knowledgeable and entrepreneurs individuals start their own business, either driven by market opportunities and / or dissatisfaction with previous employment

90's

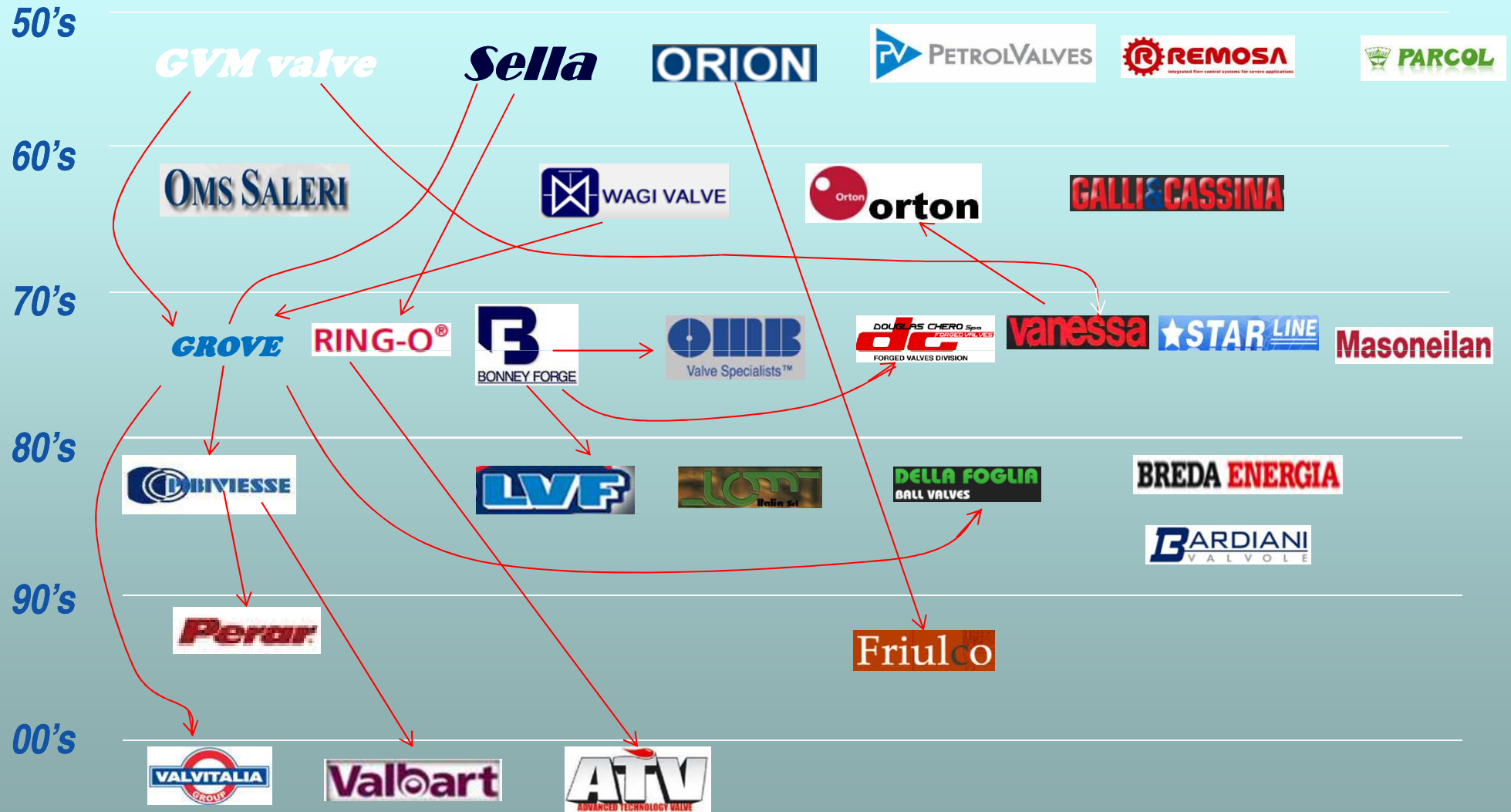
PERAR - VIAR – FRIULCO - VALBIA - SOLD O

00's

**VALVITALIA – VALBART – ATV - PROCONTROL DVG - VIRGO –
NSSL**



Italian Valve Manufacturers genealogical tree





Padana Valley is the valve's "Silicon Valley"

VALVINOX S.r.l.

Perar

Valbart

LOM

BONNEY FORGE

ATV
ADVANCED TECHNOLOGY VALVE

RING-O®

LVF

OMB
Valve Specialists™

STAR LINE

DELLA FOGLIA
BALL VALVES

Fasani

PETROLVALVES

RAIMONDI

ZAVERO
INDUSTRIAL VALVES

Pietro Fiorentini

PARCOL

DIVIESSE

GALLI CASSINA

VALNOMEC

BREDA ENERGIA

CAMERON

VALVITALIA
GROUP

ITALVALV
INDUSTRIAL VALVES

orton

REMOVA

DOUGLAS CHERO SpA
FORGED VALVES DIVISION

vanessa

BARDIANI
VALVOLE

NENCINI

CHIBSON
valves

DRESSER
Masoneilan

OMS SALERI

TORMENE
gas technology

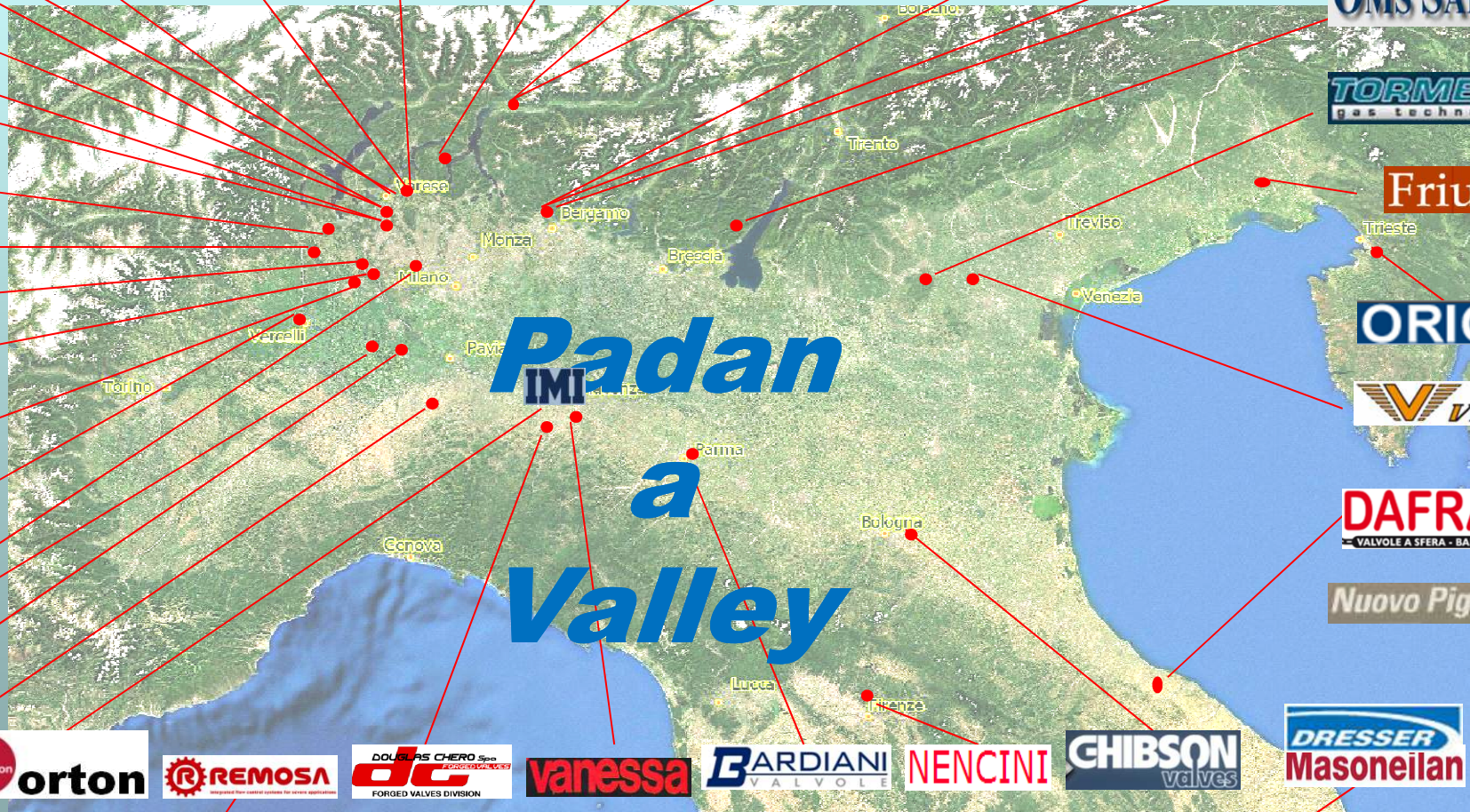
Friulco

ORION

VITAS

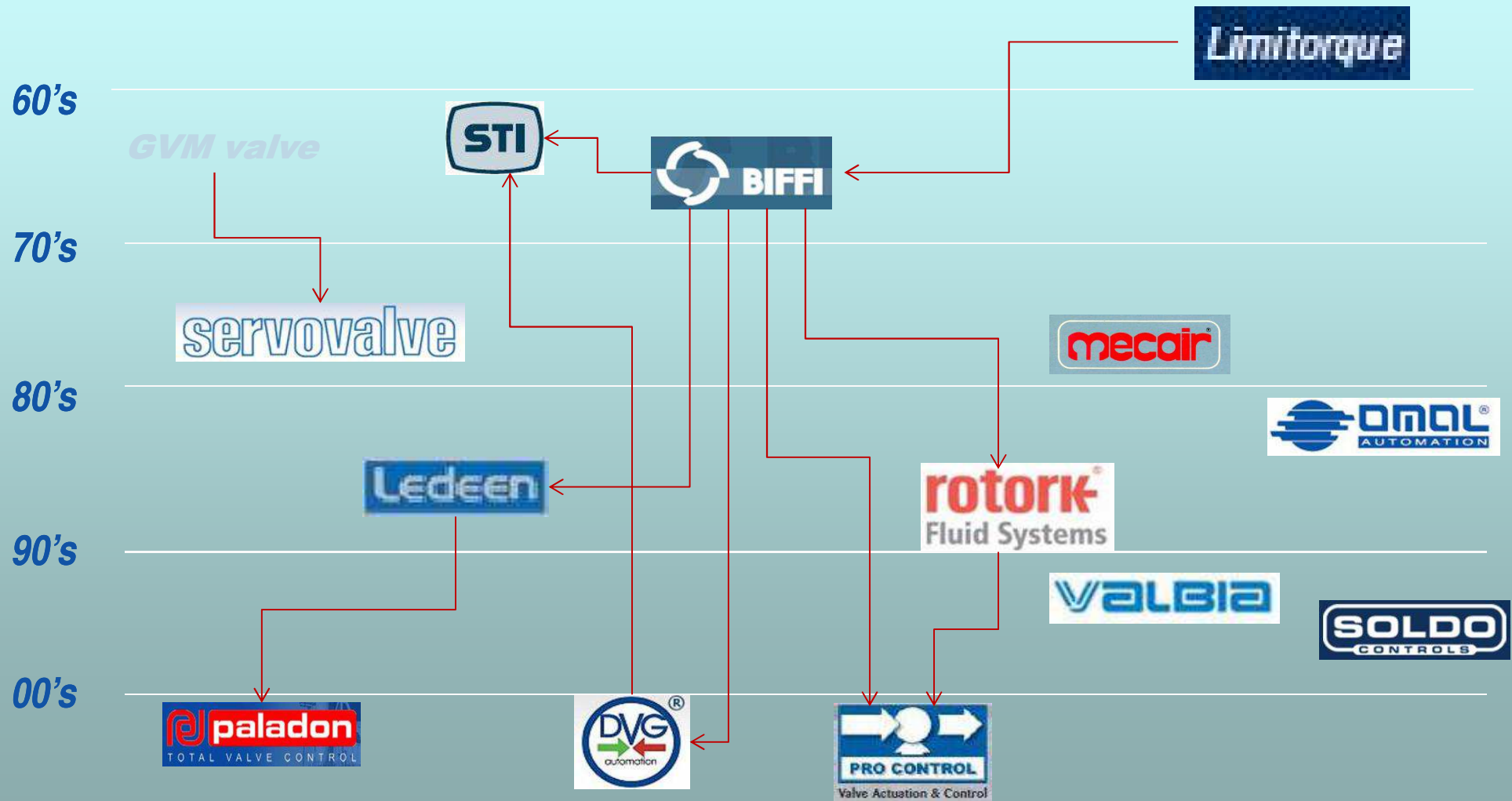
DAFRAM
VALVOLE A SFERA - BALL VALVES

Nuovo Pignone



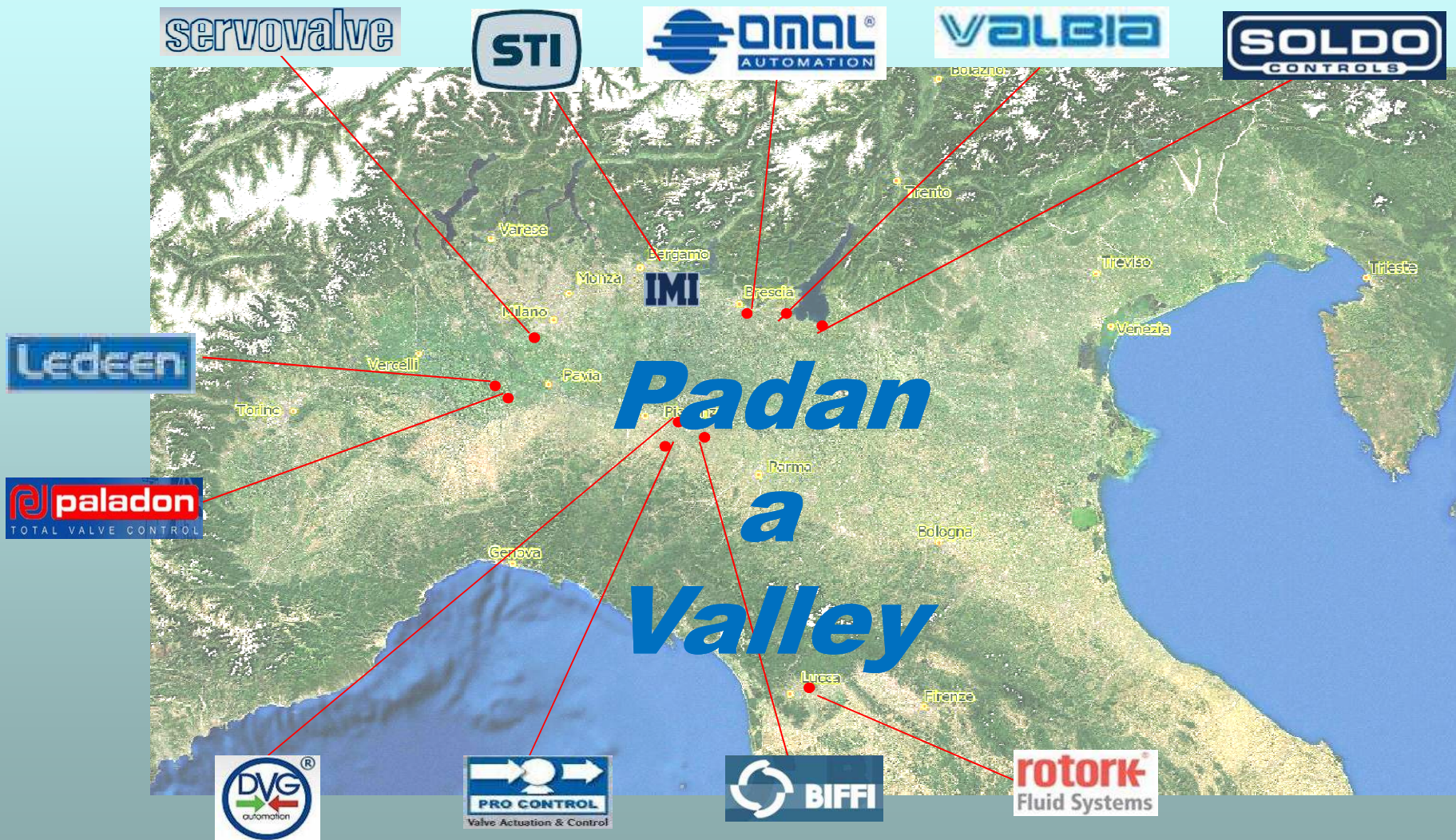


Italian Actuator Manufacturers genealogical tree





Italian Actuator Manufacturers Location





A large Business for Valves, Actuators & Sanitary Taps

- *64 Companies producing Industrial Valves & Actuators*
- *6,300 Direct Employees*
- *Industrial Valves sales = €2,55BB*

- *214 Companies producing Sanitary Taps and other valves (i.e. domestic heating)*
- *18,700 Direct Employees*
- *Other Valve sales = €3,88BB*

- *Sub-Suppliers (i.e. forging, casting, machining, welding, cladding, ball lapping, gaskets, boltings) = €2,22BB*

- *Sector Total Employees = 25,000 Total Sales = €8,55BB*



North Italy...

Not just valves but a strong metal industry

Over 1,000 companies, 190,000 employees, sales > €41B (2010)



51% direct export
77% total export





Inverting trend to set footprint... To get best expertise

FLowsERVE - 2011

**Alexin Joint Stock Company
Tyazhpromarmatura (Russia) 2011**

“NSSL Italia SRL is a 100% subsidiary of NSSL Ltd. It was formed to expand NSSL’s horizon into manufacturing of Ball valve from quarter inches to 60 inches made out of forging and casting in any of the grade ranging from A105 to titanium”

NSSL (India) - 2010

VIRGO (India) - 2009



Orton History

1963

→ ***Founded as Manufacturer of Concentric Lined Butterfly Valves under license of DEMCO USA***

1987

→ ***Production Launch of Double Eccentric Rubber Seated Butterfly Valve***

1988

→ ***Production Launch of Triple Offset Metal Seated Valves***

1993

→ ***Acquired by British Group FCX Truflo International***

2000

→ ***Launched metal seated valve with replaceable seat***

2006

→ ***Acquired by IMI plc - IMI Fluid Control Division
– Severe Service***

2008

→ ***Move to a new facility of 57.000 sq/mt for further expansion.***



ORTON Plant Location

The Orton manufacturing facility is located at Piacenza in the northern part of Italy, 70 Km South-East from Milano



Orton factory and office's building



Who is ORTON today?

Customized Solutions



Innovation



ORTON
Employees: 167
OI 2008: 50 M EUR
Sales 2008: 60 M EUR

Development



Reliable partnership



ORTON Workshop



TITAN 4000 Vertical turning and drilling machining, capability up to DN 160" (4,000 mm.)

Horizontal milling machining, capability up to DN 160" (4,000 mm.)





ORTON Final Testing Area

**Hydraulic vertical
press**



**1500 Tons
of force**



**Installed in April
2006
to test valves
up to 100"**





Cryogenic and High Pressure Testing Area



**Bunker for Cryogenic and High Pressure
Gas test for valves up to 160"**



Quality and Certification

TUV
ITALIA

pag. 1 of 2

CERTIFICATE

This certificate with Nr. I-095885 is the result of the Helium leak tests performed for:

**ORTON Butterfly Valve
MV Series DN 200 (8") ANSI 150
RF Flanged Web + Actuator
AS PER DRAWING MV 200171**

with reference to the requirements of TA LUFT (Technische Anleitung zur Reinhaltung der Luft) Point 3.1.8.4

• Company:	ORTON FC
• Test location:	ORTON FC production site at S. Nicolò (PC) - Italy
• Time of testing:	9 th and 10 th February, 2000
• Requirements:	Equivalence criteria of sealing systems according to TA LUFT ed. 27-02-86 under Point 3.1.8.4
• Leak Detection Method:	Helium mass spectrometer vacuum method
• Sealing system:	Double packing with interbraided graphite rings
• Results:	The described valve sealing system has leaks with inside pressures of 20 bar, which satisfy the equivalence criteria of TA LUFT.

This certificate is valid only if referred to our Test Report No. PVF 7 AND OMECO Test Report No. SPS/0006/00

Date of issue, 15.02.2000

Place of issue, Cinisello Balsamo (MI)

TUV Italia Srl
Ing. H. Oberhofer
The Inspector
H. Oberhofer

DNV

DET NORSKE VERITAS

QS CERTIFICATE OF ASSESSMENT-EC

Application of the Council Directive 87/23/EEC of 29 May 1987 on Pressure Equipment, as amended.

CERTIFICATE NO. PED-H-6
This Certificate consists of 1 page + appendices.

This is to certify that the quality system of
Orton S.r.l.
Via Grilli, 2/A - S. Nicolò a Trebbia - 29010 Rottofreno (PC) - Italy
for design, manufacture and testing of
VALVES
as specified in the Appendix 1 to this certificate, in full compliance with the requirements of the Pressure Equipment Directive.

The manufacturer's Quality System for the equipment has been assessed with respect to the procedure of conformity assessment described in module H of the Directive.

*Applications/Limitations:
Refer to Appendix*

Place and date
Hovik, 06 August 2001
for DET NORSKE VERITAS
REGION NORGE AS

CE

*This Certificate is valid until
06 August 2004*

Notified Body No.:
0434
Local Office
DNV Milan

Unger Handtsh
Manager, Certification of Products
and Personnel

Hans Øystdal Rasmussen
Principal Engineer

Notice: This certificate is subject to terms and conditions, if any, covering any significant change in design or construction of the product, the quality system or amendments to the Directive or standards referenced herein may render this certificate invalid. The product liability rests with the manufacturer or the representative in accordance with the Council Directive, as amended.

The certificate holder is responsible for ensuring that the product continues to conform to the conditions of approval of this certificate. The certificate holder shall ensure that the product continues to conform to the conditions of approval of this certificate. The certificate holder shall ensure that the product continues to conform to the conditions of approval of this certificate. The certificate holder shall ensure that the product continues to conform to the conditions of approval of this certificate.

DET NORSKE VERITAS AS - VERITASHVERN 1, N-1322 HØVIK, NORWAY - TEL: (+47) 87 87 89 00 - FAX: (+47) 87 87 88 11
Form No. 25.05a Issue: January 08 Page 1 of 4

DET NORSKE VERITAS

DNV

Orton s.r.l.
Via Vittor Pisani, 27
20124 Milano
ITALY
Att: A. Gneocchi

Our ref.: bjspo/aacaufj
Date: 2004-01-08

Receipt of technical file, ATEX

DNV, appointed as notified body with number 0575 in accordance with Article 9 of Council Directive 94/9/EC of 23 March 1994, confirms the receipt and storage of the mentioned technical file, in accordance with directive 94/9/EC Article 8.1.(b)(ii), category 2 non-electrical equipment.

Technical File: ST 04-100

This confirmation is valid until 2007-01-08.

Yours faithfully
for DET NORSKE VERITAS CERTIFICATION AS

Line Gangeskär
Head of Section
Testing, Product & Pers. Certification

Bjorn Spongsveen
Principal Engineer

Testing, Product & Pers. Certification
Veritashvern 1
30 1322 HØVIK, Norway
Tel: +47 87 87 89 00
Fax: +47 87 87 88 10
http://www.dnv.com

TUV NORD
Certificate

The Certification Body TÜV NORD Italia S.r.l. hereby certifies

ORTON S.r.l.
Via Vittor Pisani, 27
I-20100 Milano (MI)

That the product
**Triple Eccentric Metal Seated Butterfly Valves
Series MV**

Meets the below mentioned requirements:

IEC 61508: 2000, part 1 in 7
Functional Safety of electrical/electronic/programmable electronic safety related systems; Type A, Low Demand Mode

λ_1 [1/h]	λ_2 [1/h]	λ_{SFFM} [1/h]	SFF (Partial Failure Mode)	SFF (No Partial Failure Mode)
5,80·10 ⁻⁶	5,3·10 ⁻⁶	4,37·10 ⁻⁶	98,5 %	91,6 %

PFDA_{avg} values for different values of TI and TI₂: see Annex 1

As per these values, based on TÜV NORD Assessment Report No. 274J06002 in the valid version, the Orton Triple Eccentric Metal Seated Butterfly Valves Series MV can be used up to SIL 3 as a single device.

Date: 2006-11-02

Carlo Taranola
Carlo Taranola

Certificate No. 274J06002
Expiry date: 2006-12-30

TUV NORD Italia S.r.l.
Via Piacenza, 46 - I-20025 Legnano

TA LUFT since
Feb 2000

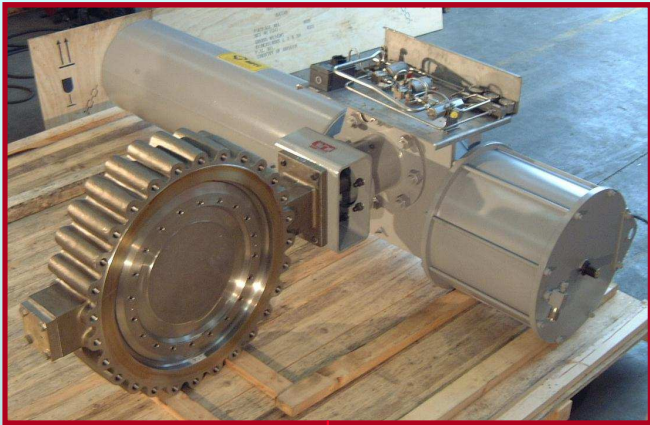
PED CE-MARK
since August 2001

ATEX
since August 2004

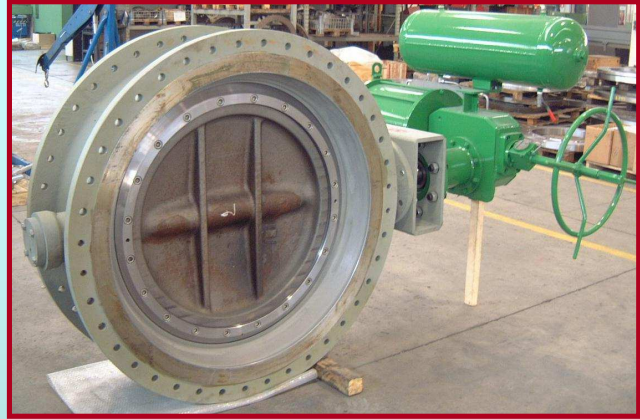
**Orton MV series is
SIL 3
certified since
November 2006**



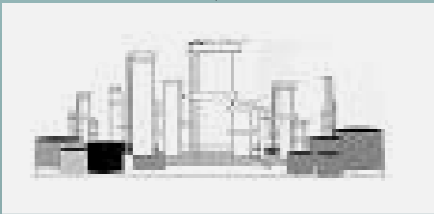
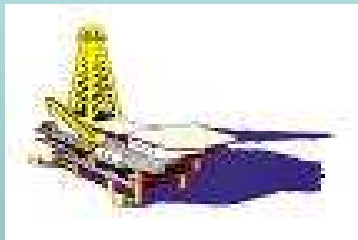
MV Series valve in LNG Chain



Reserves



End Users: Power Generation & City Gas Industrial

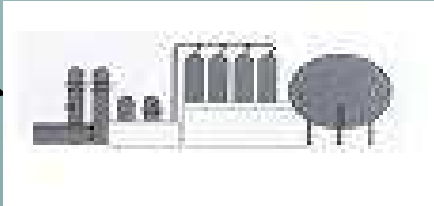


LNG Liquefaction facility



Transportation

**Overview physical LNG chain
MV valve at each stage**



LNG Receiving terminal & Regasification facilities



MV valves – How to design LNG valve?



35m !





Main Customers in LNG

*TECHNIP
TECNIMONT
ARAMCO
BLACK & VEATCH
SAIPEM
CHICAGO BRIDGE & IRON
CHIYODA
JGC
HYUNDAI E&C
HYNDAY HEAVY INDUSTRY
MITSUBISHI HEAVY INDUSTRY
SICON OIL & GAS
GUANGDONG DAPENG*

*SHELL
TECNICAS REUNIDAS
KBR
BECTHEL
MUSTANG ENGINEERING
MW KELLOGG
SNAMPROGETTI
CNOOC
SAIPEM
FLUOR DANIEL
GS E&C
PETRONET LNG
PTT*



MV valves – Cryogenic Test

Lng Application



**QG XII - 70" cl. 150 on MR Vapour
@ 10.4 barg, -104 °C**



**CLP4 - 34" cl. 300 on LNG
@ 26.5 barg, -162 °C**



Thank You