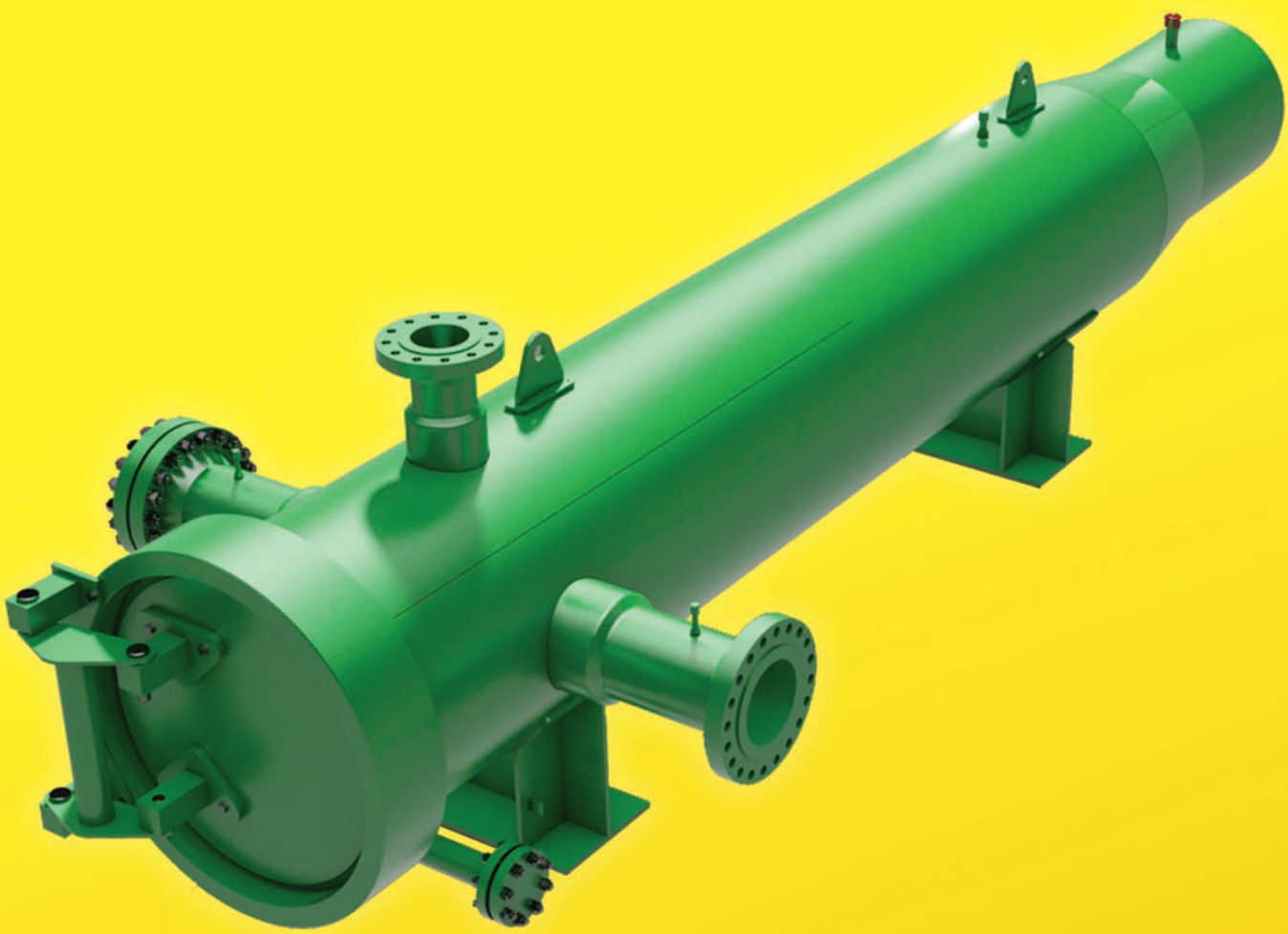
LAUNCHER & RECEIVER TRAPS

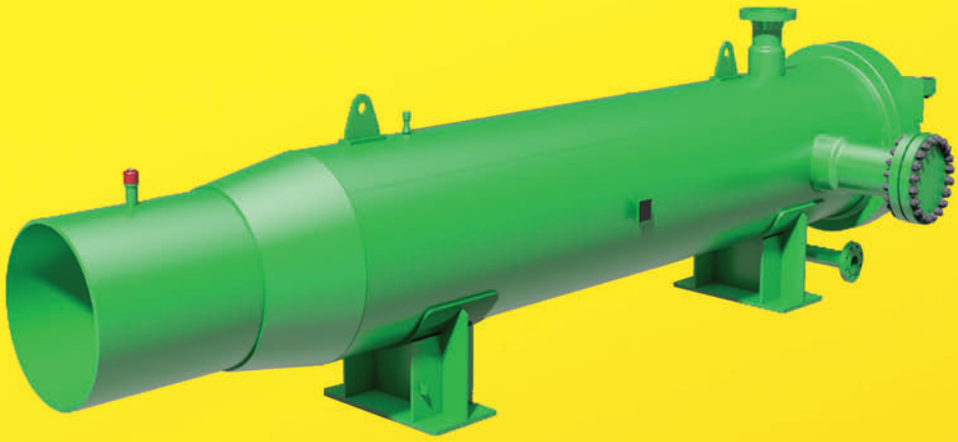


DELTA ENGINEERING

Natural Gas &
Water Treatment

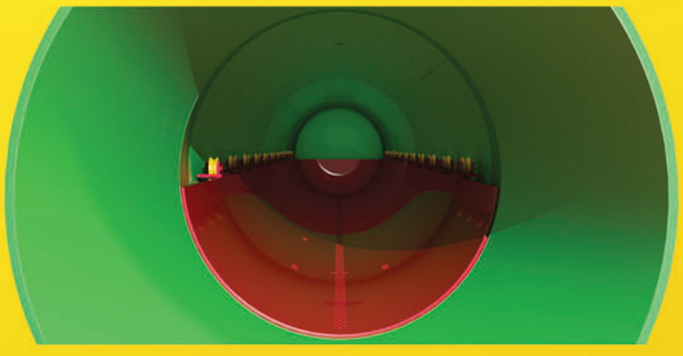
COMPANY OVERVIEW

Delta Engineering is a world Italian manufacturing company, internationally oriented and active in all five continents in the design, manufacturing and selling components, packages and plants for the Oil & Gas industry. Since the beginning back in 1980, the Delta Engineering activity has always been focused on quality as the only possibility of success in a field where safety is fully related to reliability of products. Pioneering the field of quality organization, it has been introduced in the early eighties the Quality Assurance System. Total quality has always been one of the most important targets for Delta Engineering which was one of the first in Italy in obtaining the ISO 9001 Certificate.
Delta Engineering is also achieved the ASME certificate (American Society of Mechanical Engineering) allowing the manufacture of equipment with ASME Stamp.
The headquarter and production facility are based in Dalmine BG, Italy.



DESCRIPTION

Pig Launcher and Receiver Traps are custom manufactured for sub-sea, off-shore and onshore applications. Pig launcher is used to launch the pig into the pipeline, and pig receiver is used to receive the pig after they have made a successful launch. The choice of these pig traps will depend on the type of pig to be run and pipeline design conditions.



All equipment are designed and manufactured according to pipeline and vessel Code Standard (NACE, ASME VIII, BS 5500 and ANSI ASME B31.3, B31.4, B31.8, etc).
Our capacity of production allows matching pipe ranging from 3" to 56" with ANSI Ratings of 150# to 2500#, using carbon steel, stainless steel and alloy steel materials.

ACCESSORIES & OPTIONS

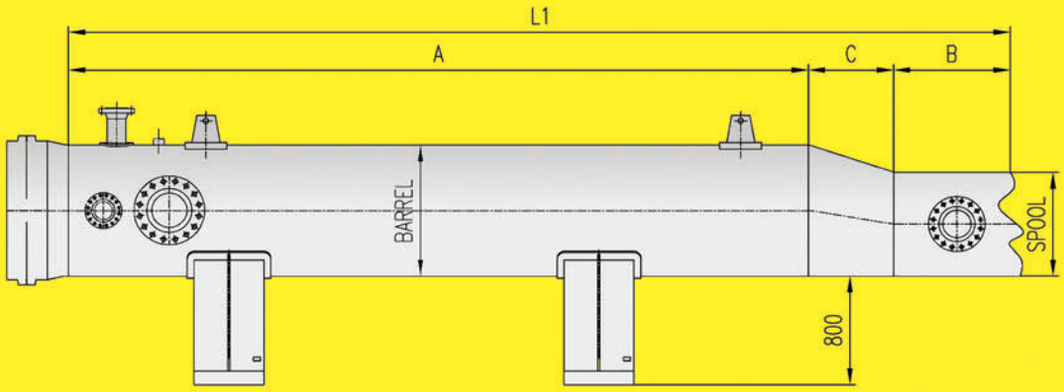
Optional features and accessory equipment include:

- Baskets
- Bi-directional Trap Systems
- Pig signalers (manual/automatic, remote/local)
- Saddle Supports
- Pig Launching Systems (manual or automatic)
- Inclined, Declined or Vertical Construction
- Pig Storage
- All Controls, Drives and Instrumentation
- Liquid Handling System

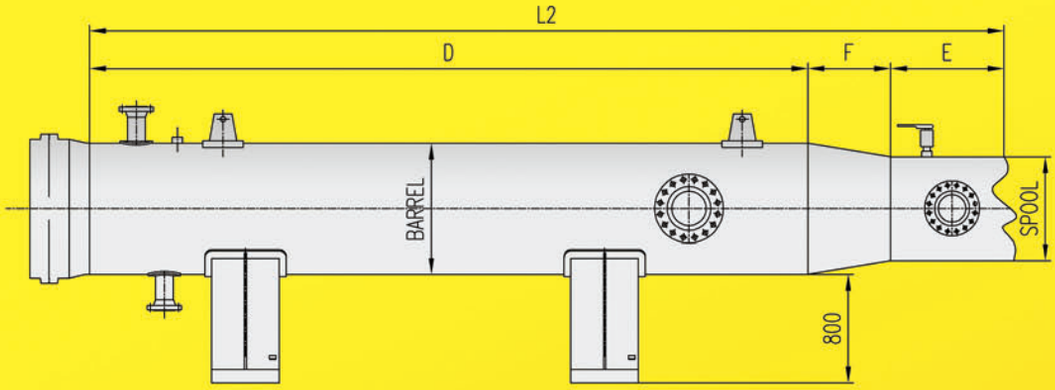
DELTA ENGINEERING

Natural Gas & Water Treatment

PIG LAUNCHER AND RECEIVER DIMENSIONS FOR GAS PIPELINE



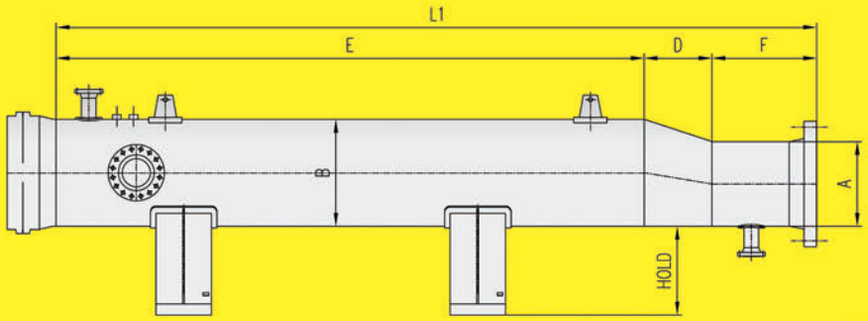
Pig Launcher



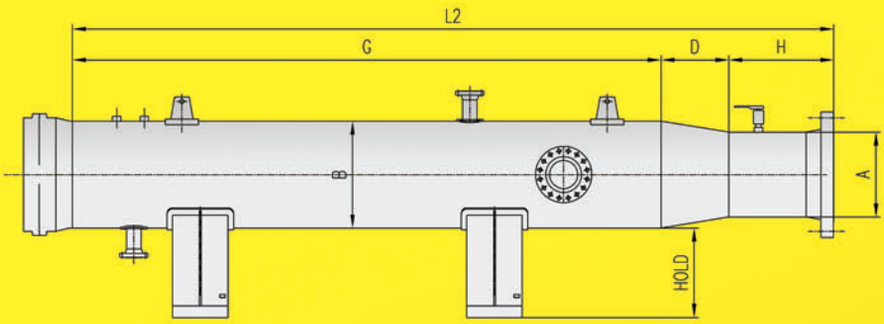
Pig Receiver

BARREL (in)	10	12	16	16	20	24	30	36	42	48	48	56	64
MAIN LINE (in)	6	8	10	12	16	20	24	30	36	40	42	48	56
A (mm)	3230	4100	4050	4050	4300	3000	3400	3550	3850	3800	3800	3580	3650
B (mm)	500	500	500	600	600	1000	1000	1000	1500	1500	1500	1500	1500
C (mm)	178	203	356	356	508	508	610	610	610	711	711	915	915
L1 (mm)	3908	4803	4906	5006	5408	4508	5010	5160	5960	6011	6011	5996	6065
D (mm)	2000	2300	4300	4360	4360	3650	3950	4000	4000	4000	4900	5000	4800
E (mm)	500	500	500	600	600	1000	1000	1000	1500	1500	1500	2000	2000
F (mm)	178	203	356	356	508	508	610	610	610	711	711	915	915
L2 (mm)	2678	3003	5156	5316	5468	5158	5560	5610	6110	6211	7111	7915	7715
KICKER (in)	4	4	4	4	6	8	8	10	12	16	16	16	20
P.G. (in)	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
PIG SIG. (in)	2	2	2	2	2	2	2	2	2	2	2	2	2
VENT (in)	2	2	2	2	4	4	4	4	4	4	4	4	4
DRAIN (in)	4	4	4	4	4	4	4	4	6	6	6	6	6
TROLLY	-	-	-	-	-	yes	yes	yes	yes	yes	yes	yes	yes
JIB CRANE	-	-	-	-	-	yes	yes	yes	yes	yes	yes	yes	yes
CAPACITY (ton)	-	-	-	-	-	1	1	1	2	2	2	3	3
BASKET	-	-	-	-	-	yes	yes	yes	yes	yes	yes	yes	yes

PIG LAUNCHER AND RECEIVER DIMENSIONS FOR OIL PIPELINE



Pig Launcher



Pig Receiver

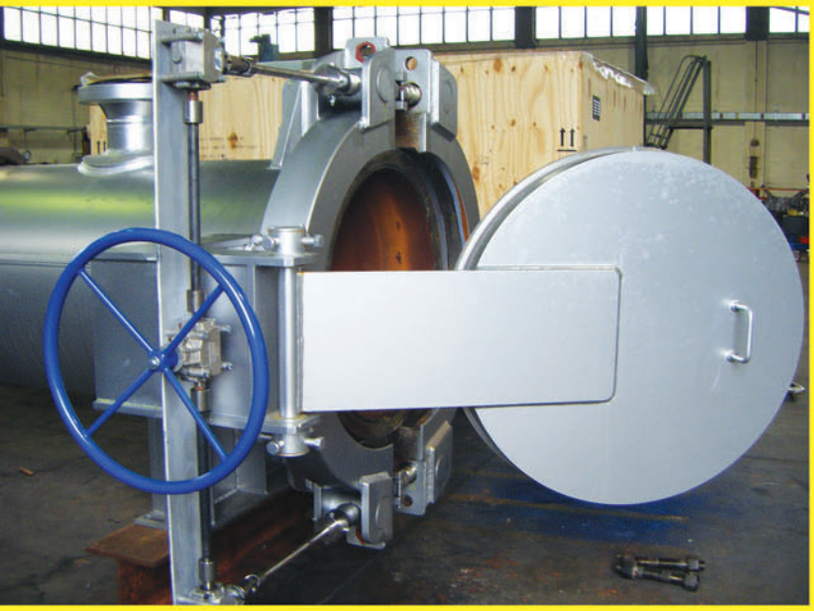
SIZE		DIMENSION OF PIG LAUNCHER & RECEIVER TRAP ACCORDING TO IPS-D-PI-111					DIMENSION OF PIG LAUNCHER & RECEIVER TRAP FOR INTELLIGENT PIG ACCORDING TO S4L-6516					OTHER				
A (in)	B (in)	E (mm)	G (mm)	H (mm)	L1 (mm)	L2 (mm)	E (mm)	G (mm)	H (mm)	L1 (mm)	L2 (mm)	F (mm)	D (mm)	Kicker (in)	Vent (in)	Drain (in)
6	8	1000	2000	600	2152	2752	2800	2800	2800	3952	5752	1000	152	2	2	2
8	10	1000	2000	600	2178	2778	4100	3900	3900	5278	7978	1000	178	2	2	2
10	12	1000	2000	600	2203	2803	4300	4300	4300	5503	8803	1000	203	3	2	2
12	16	1000	2000	600	2356	2965	4300	4300	4300	5656	8956	1000	356	4	2	2
14	18	1000	2000	600	2381	2981	4800	4800	4800	6181	9981	1000	381	4	4	2
16	20	1000	2000	600	2508	3108	5100	5100	5100	6608	10708	1000	508	4	4	2
18	24	1500	3000	600	3508	4108	5100	5380	5380	7108	10708	1500	508	6	4	2
20	24	1500	3000	600	3508	4108	5380	5700	5700	7388	11268	1500	508	6	4	4
24	30	1500	3000	600	3610	4210	5700	5800	5800	7810	12010	1500	610	8	4	4
26	30	1500	3000	600	3610	4210	5800	6000	6000	7910	12210	1500	610	8	4	4
30	36	1500	3000	600	3610	4210	6000	6600	6600	8110	12610	1500	610	10	4	4
32	36	1500	3000	600	3610	4210	6600	6600	6600	8710	13810	1500	610	10	4	4
36	42	2000	4000	600	4610	5210	6600	6600	6600	9210	13810	2000	610	12	4	4
42	48	2000	4000	600	4610	5210	6600	6600	6600	9210	13810	2000	610	12	4	4
48	56	2000	4000	600	4610	5210	6600	6600	6600	9210	13810	2000	610	16	4	4
48	60	2000	4000	600	4610	5210	6600	6600	6600	10710	13810	2000	610	16	4	4
52	60	2000	4000	600	4710	5310	8000	8000	8000	10710	16710	2000	710	16	4	4
52	64	2000	4000	600	4710	5310	8000	8000	8000	10710	16710	2000	710	16	4	4
56	64	2000	4000	600	4710	5310	8000	8000	8000	10710	16710	2000	710	16	4	4
56	68	2000	4000	600	4710	5310	8000	8000	8000	10710	16710	2000	710	16	4	4

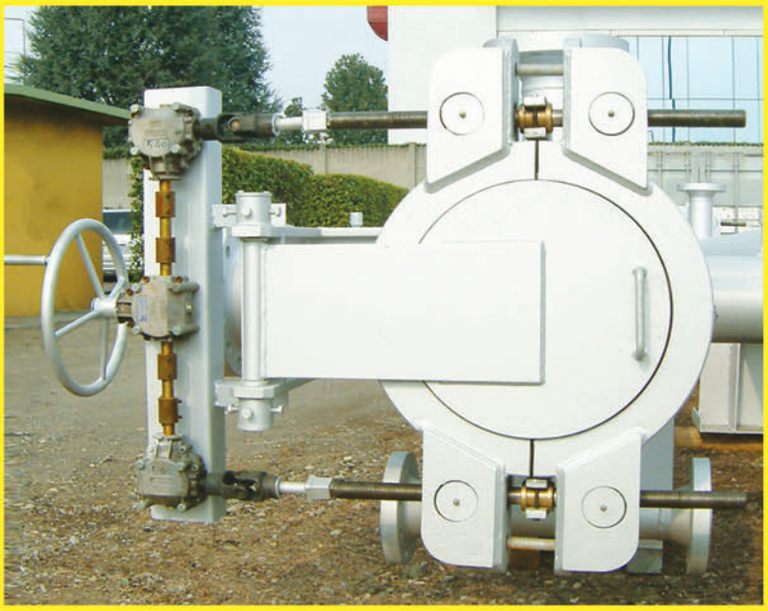
QUICK OPENING CLOSURE

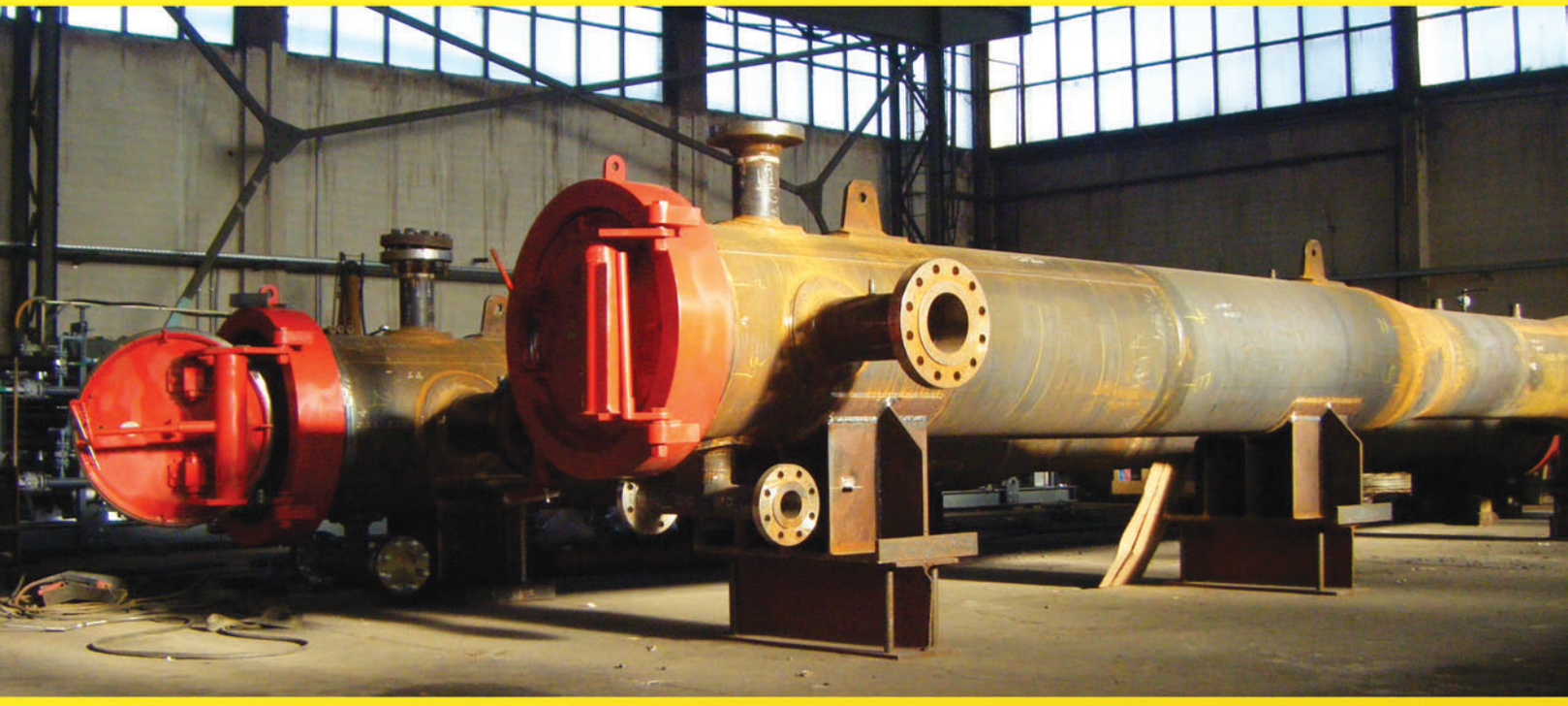
Delta Engineering closures provide horizontal or vertical access to pipeline pig traps, filters, coalescers, strainers, separators, meter skid systems, hydro cyclones, or any other type of pressure vessel.
Our quick opening closures can be operated safely at remarkable speed; any size of closure can be opened or closed by one person in less than one minute, with no special tools required.
The closures are available to suit a wide variety of vessel sizes and pressures, from 6" to 64" diameter and any pressures from Class 150 up to Class 2500 or higher upon request.
The closures are designed to meet requirements of ASME VIII Div. I or II. Also PD5500 and EN13445 can be accommodated if requested. The locking mechanism incorporates a hand operated pressure warning screw, which prevents the door being unlocked until there is no residual pressure inside the vessel. The closure hub and door are manufactured from materials that fully comply with the requirements of ASME SEC. II / ASTM and NACE MR 01-75 / ISO 15156 Latest Edition upon request.

DELTA ENGINEERING

Natural Gas & Water Treatment







Process
Mechanical
Structural
Electrical & Instrumental

Design & Engineering

Project Management

Job Scheduling
Supply Chain Management
Team Management
Cost Control

NDE Examination
Inspection
Testing
Certification

Quality

Manufacturing

Material Procurement
Pre-fabrication
Welding
Assembly

ISO 9001
BUREAU VERITAS
Certification

Total Area: 8.000 m2
Covered Area: 3.000 m2
Open Area: 5.000 m2
Capacity Crane: 20 tons

Headquarter & Workshop #1

Total Area: 4.000 m2
Covered Area: 2.000 m2
Open Area: 2.000 m2
Capacity Crane: 50 tons

Workshop #2

DELTA ENGINEERING

our Brands

COSMEC

ELFORCONTROLS
Actuator and Valves Automation

Via Sabbio, 93 - 24044 Dalmine (BG) - Italy
Tel +39 035 561140 - Fax +39 035 563541www.deltaeng.it - info@deltaeng.it