TGD-L (LP)™

Tank Gauging Device
TGD-L™ (Level)
TGD-LP™ (Level Pressure)

API MARINE

Product data sheet



Main features:

- Automatic self-calibration every 2 seconds
- Less cabling – only 2 wires
- Non-contact level gauge with high accuracy
- Customized variations
- Easy maintenance

General description

The TGD-L™ sensor is a non-contact level gauge that has been developed for measuring the level of liquids, slurries and sludge including solvents, acid and caustics, waste chemicals, oils, liquefied natural gas, liquefied petroleum gas, food products and most water based solutions. TGD-L™ uses the patented principle of Guided Low Frequency (GLF™) wave propagation, which allows for equally precise measurement accuracy along the tank height for any shape of tank and at nearly any conditions in the tank.
The principle of operation of the TGD-L™ is based on the emission of an impulse acoustic signal to the liquid surface and receiving the signal reflected from the surface. The level in the tank is calculated based on the measured signal transit time to the surface of the liquid and back. The level in the tank is measured by using a number of reference points, located along the height of the tank.

To avoid a negative influence from other acoustic signal reflectors in the tank, the acoustic signal is guided in a steel pipe going all the signal is guided in a steel pipe going all the way down to the bottom of the tank. The tank geometry and objects inside the tank, such as ladders, heating pipes, etc., do not affect the signal. Reference points are located along the pipe.
The level sensor system includes a receiving and emitting unit (antenna), a system of reference points located between the antenna and the liquid's surface, an electronic unit and a processing unit. The antenna emits an acoustic signal to the surface and receiving signals reflected from the liquid surface, as well as the reference points. A processing unit can then calculate the distance to the liquid surface based on the 2-wire output signals enhanced by an amplifier circuit of the electronic unit.

TGD-LP™ is a TGD-L™ level sensor with a pressure sensor installed in the same housing. The sensor can be easily serviced and maintained from the sensor housing without the necessity to access the tank.



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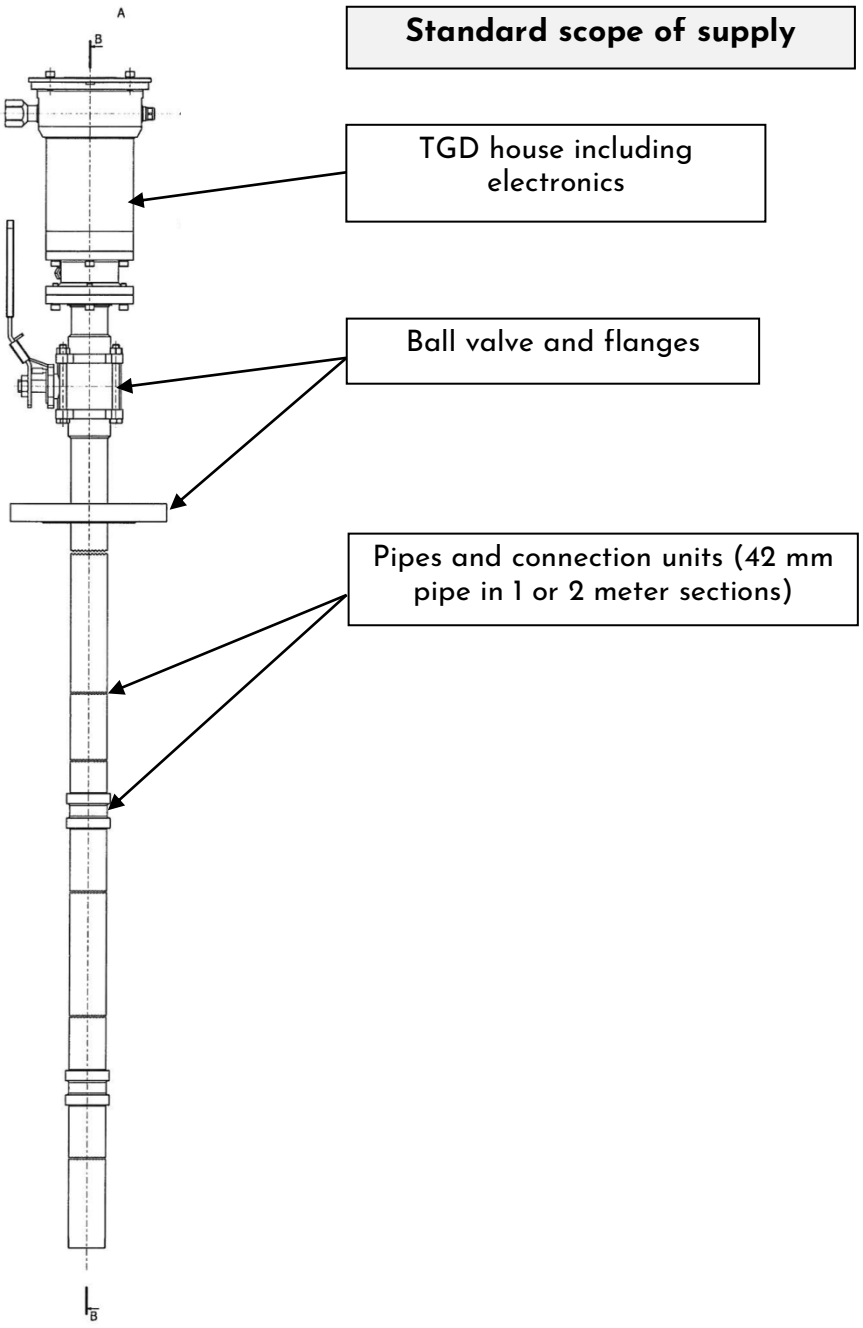
API MARINE

Technical specifications

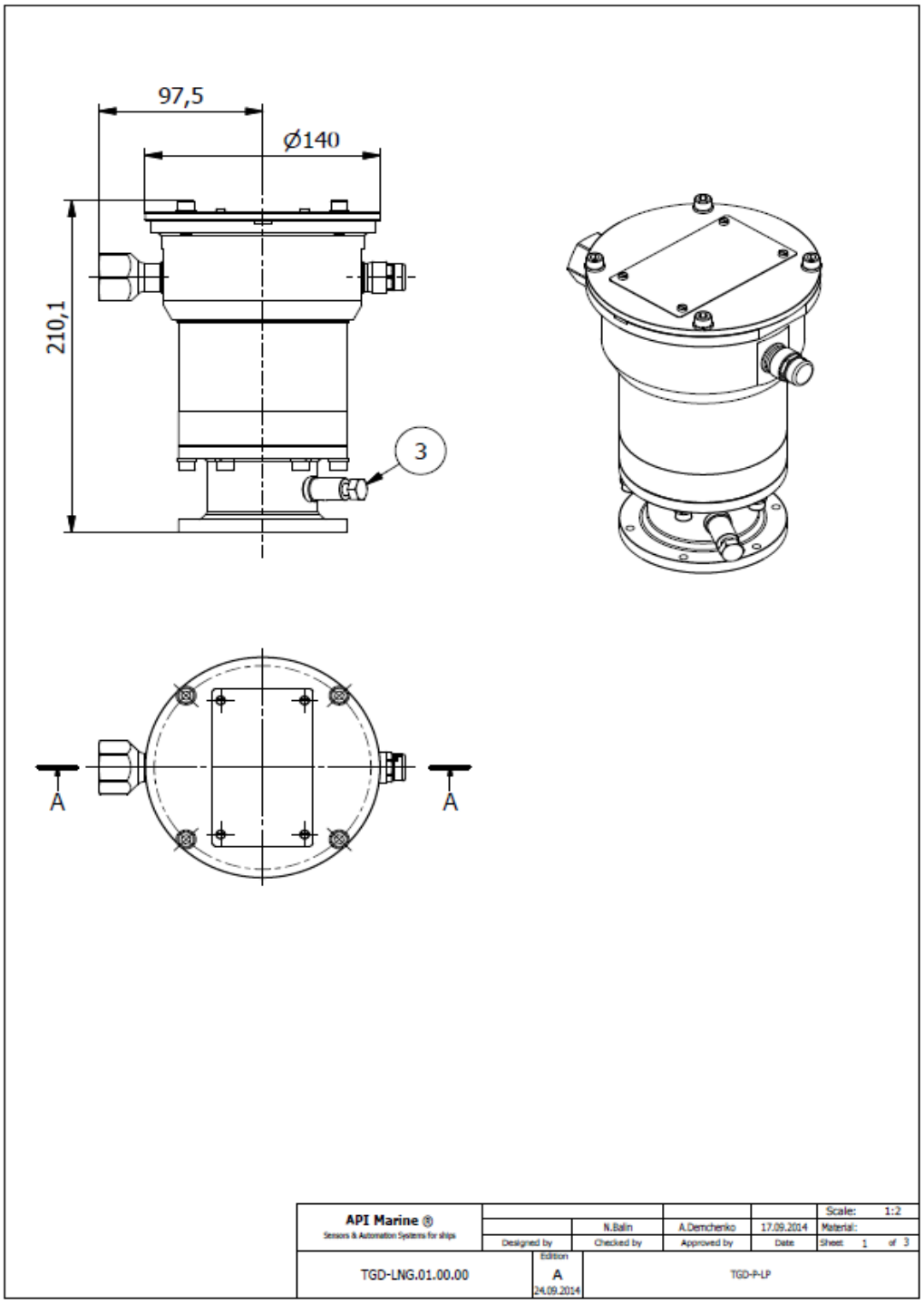
Output signal:	HART (2 wire)
Accuracy: - Level	+/- 2mm (at optimal meteorological conditions)
Power supply voltage:	16-31 VDC
Power consumption:	Less than 0,5 W
Pipe/waveguide:	42 mm stainless steel pipe in sections of 1 or 2 meters
Operating temperature:	-40°C to +80°C; -40°C to +40°C (ATEX T6) -40°C to +60°C (ATEX T5) -55°C to +80°C special API applications
Relative ambient humidity:	Up to 98% at 50°C
Protection rate:	IP67
Housing type:	AISI316L
Wetted parts:	AISI316L (other on request)
Process connection:	Flange from DN50
Cable entry:	M20, M24, PG 13,5 and other as requested. Protected hoze optional supply
Media conditions:	
a) Temperature:	Flange temperature: -40°C to +100°C Liquid temperature: -200°C to +200°C Thermal shock resistance: 100°C/min
b) Pressure:	Operating pressure: -1 to 40 bar
c) Density:	Density above 0,3 g/cm^3
Ex protection:	Ex ia IIC T5 (T6)

Drawings

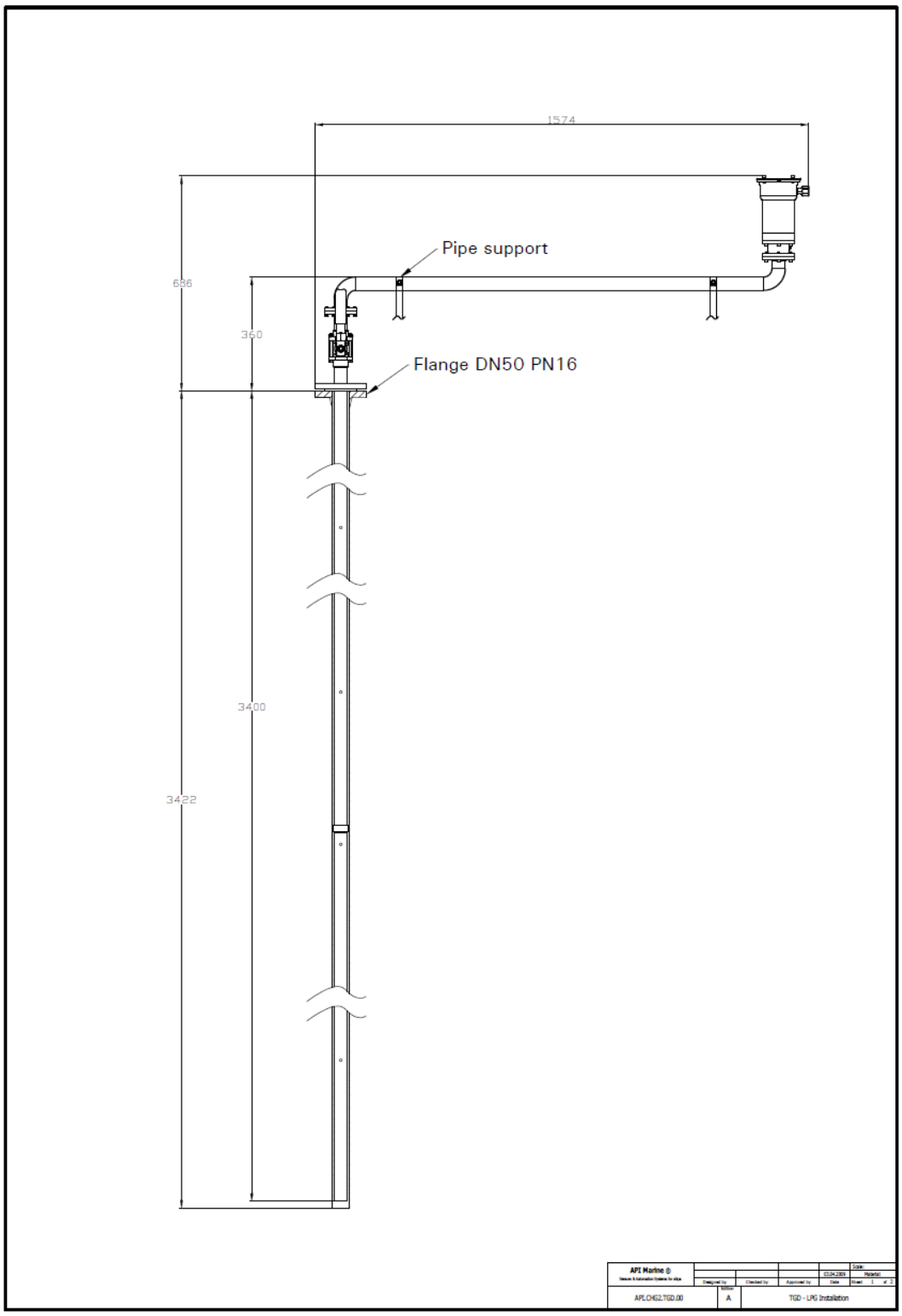
(Drawings are for illustration only and only to be used as guidance)



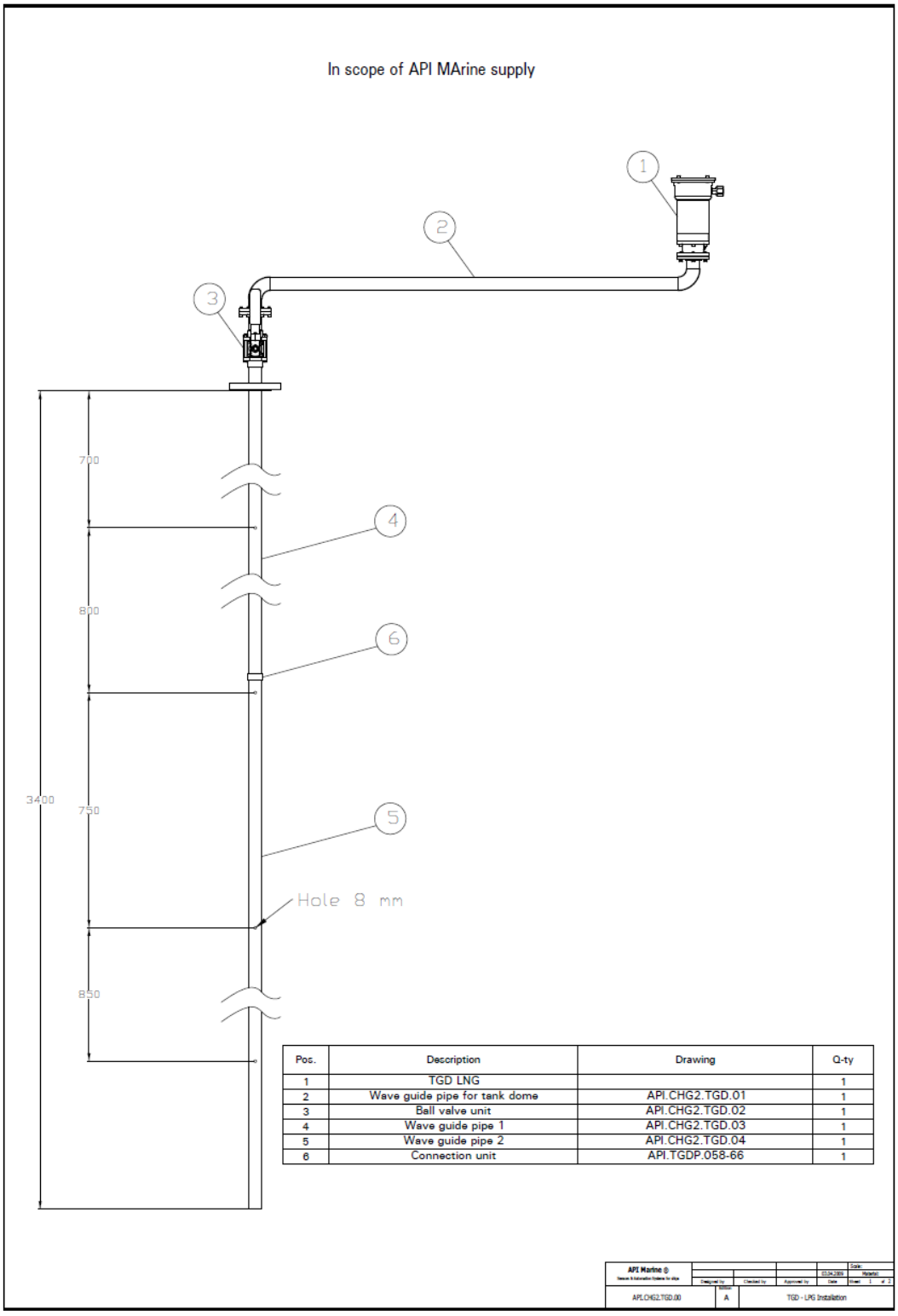
(Example/illustrations only)



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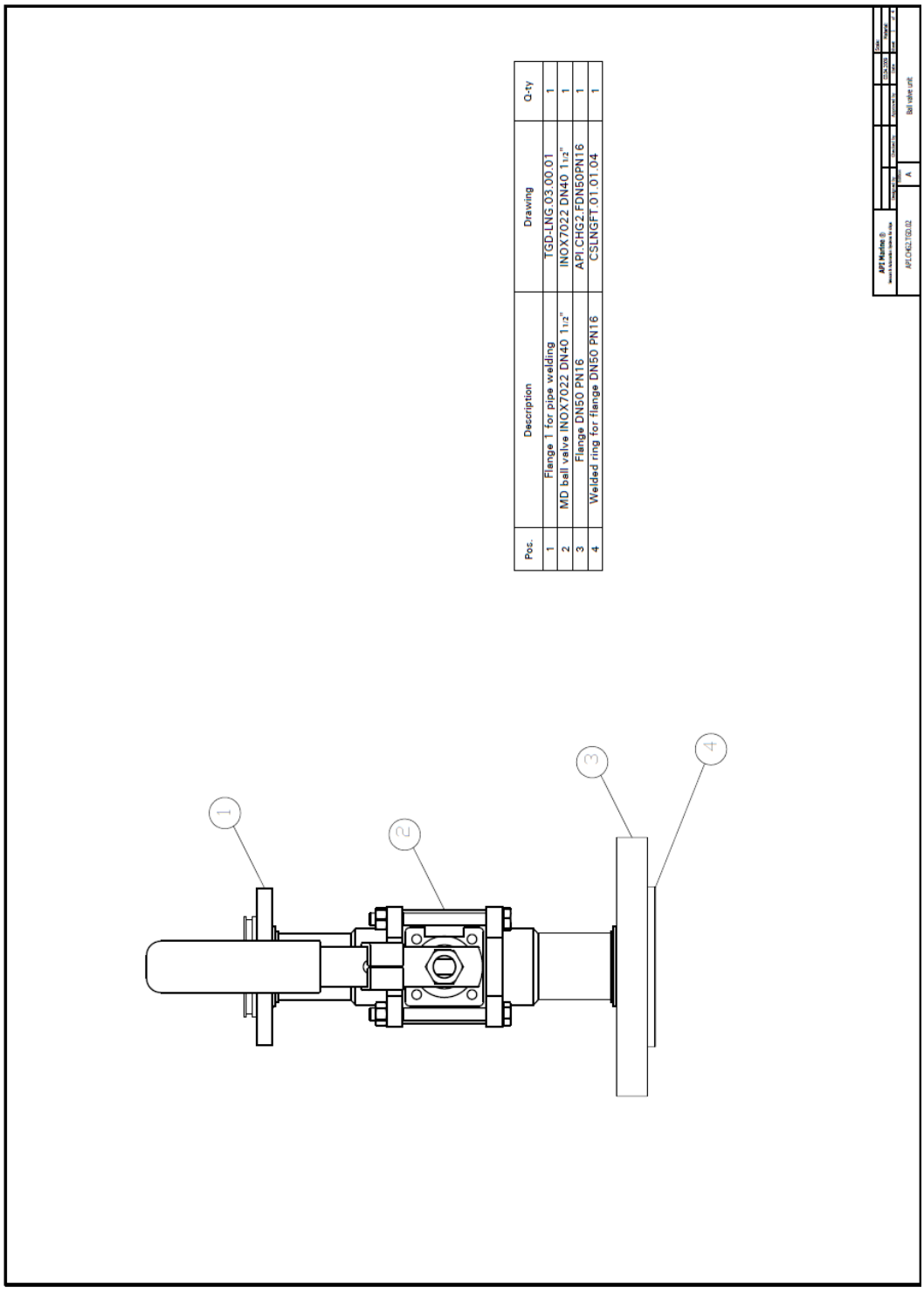


(Example/illustrations only)

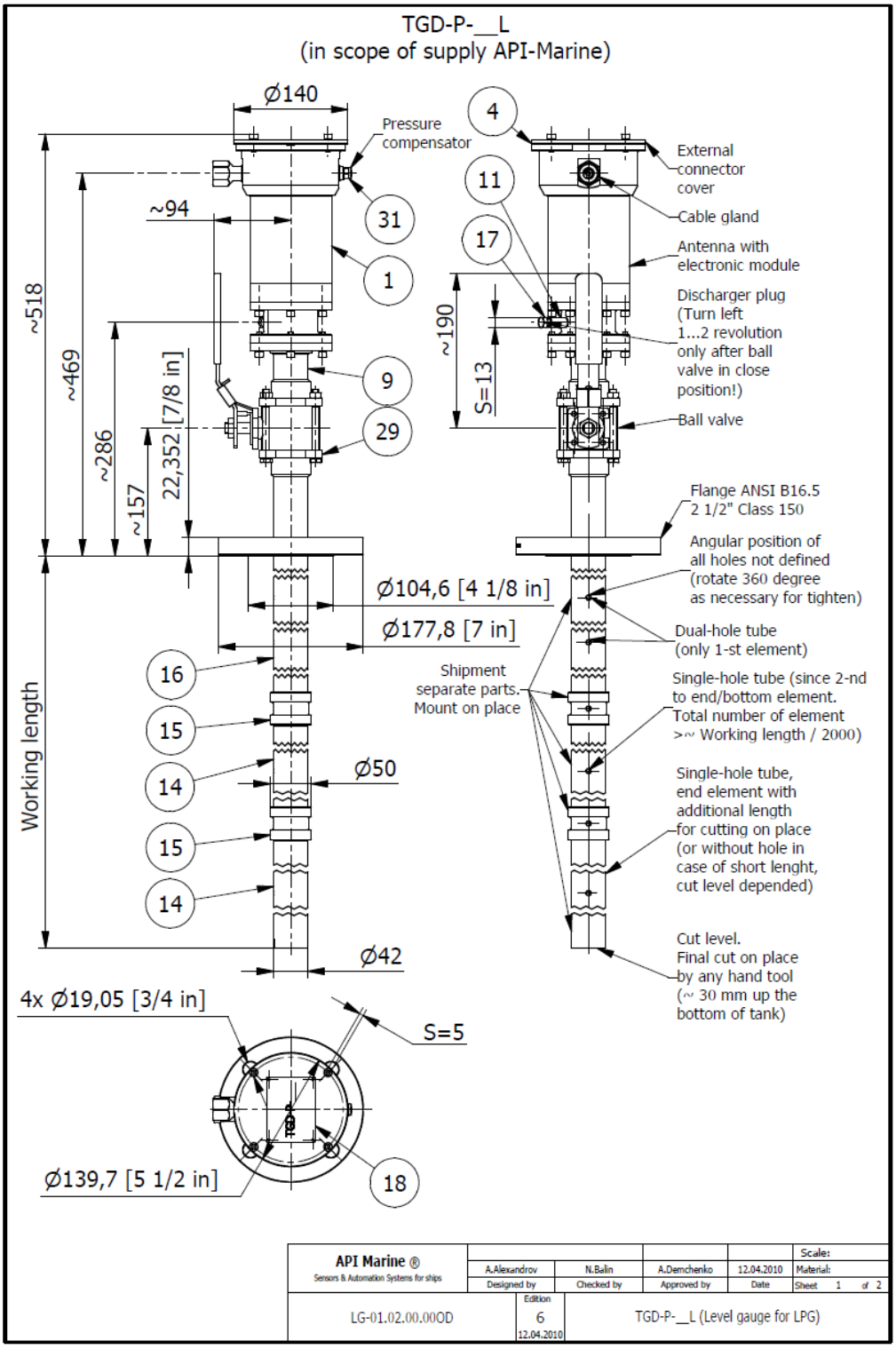


Pos.	Description	Drawing	Q-ty
1	TGD LNG		1
2	Wave guide pipe for tank dome	API.CHG2.TGD.01	1
3	Ball valve unit	API.CHG2.TGD.02	1
4	Wave guide pipe 1	API.CHG2.TGD.03	1
5	Wave guide pipe 2	API.CHG2.TGD.04	1
6	Connection unit	API.TGDP.058-66	1

(Example/illustrations only)



(Example/illustrations only)



(Example/illustrations only)