

PETROCHEMICAL STORAGE TANK

SAFETY & PROTECTION

Запорные предохранительные газовые клапаны DST

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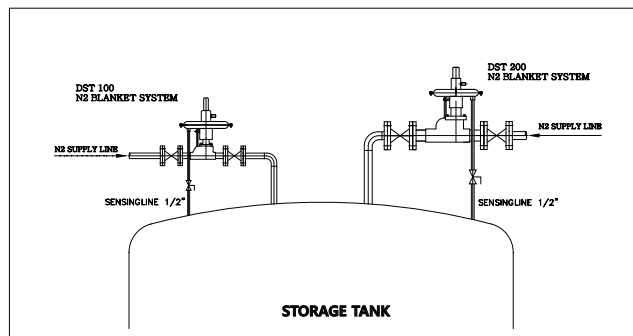
Единый адрес для всех регионов: kcs@nt-rt.ru || <https://kspc.nt-rt.ru/>

TANK SAFETY & PROTECTION DEVICE

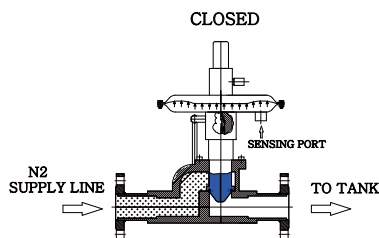
SECTION 6_N² BLANKETING VALVE

N² BLANKETING VALVE

NORMAL INSTALLATION

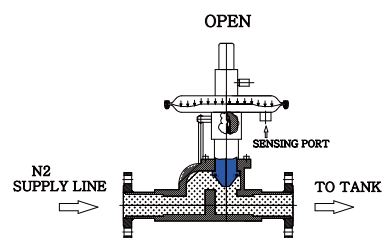


- 1 Surly clean the pipeline to completely remove the foreign bodies in it.
- 2 Check weather the inlet pressure is matched to the recommended pressure.
- 3 It is recommended to use of appropriate lifting jig for preventing the damage.
- 4 Flange connects the inlet and outlet of controller, in general Controller is installed in suit of The flow direction and rate indicated on main body.
- 5 Blanketing is connected to tank or vessel with a distant at least 1.5m from the Sensing Line.
- 6 Sending line should be always open for securing the monitor of the interior pressure of tank.



CLOSED POSITION

This occurs when the tank pressure satisfied or exceed the set pressure of the Tank Internal pressure.
The pilot will close and there is no flow out of the pilot.



OPEN POSITION

When the tank pressure below set point by pumping out or thermal effect.
The pilot will open and there is flow out of the pilot.

N² Blanketing Valve helps gas pressure to maintain in constant state in the vapor space of storage Tanks.
When liquid run out from storage vessel or vacuum state take place because of temperature dropping, N² Blanket gas controller has a ability of control desired pressure within the fixed limits.

DST-100

DST-200



CALCULATION REQUIREMENT

The calculation requirement of N² blanketing Valve have two factors, one is inbreathing due to Liquid (=Product) movement out of the tank and send is inbreathing due to contraction of the vapors/ because of weather changes.

API STD 2000 6th Edition, Calculation for Highest requirements with no flame arrester for Inert-gas-Blanketing (Refer Annex F Guidance for inert-as Blanketing of tanks for flashback protection)

A.INPUT	VALUE	UNIT
Tank Diameter. D	23.25	m
Tank Height or Length. H	12.6	m
Tank Volume. Vtk	5349	m ³ Use maximum capacity
Pump-Out Rate. Vpe	350.0	m ³ /h B
Latitude	23	° Below 42°
Avg. Storage Temp.	25	°C >=25 °C
VP range	Vp >= Hexane	
Ins. Thickness. lin	0	m
Insulation Type	-	
Selected Thermal Cond. of Insulation. Ain. s	0	W/m-K
Inside heat transfer coefficient. h	4	W/m2-K (Typical value for tank: 4 W/m2-K)
Total surface area. Atts	668	m ²
Insulated surface area. Ainp	0	m ² (Enter 0 if tank uninsulated)
B.CALCULATIONS	VALUE	UNIT
C-Factor	6.5	
Reduction factor. Ri	61.00	
Volume of Reserve Inlet Gas	641.93	m ³
Required Flow Rate	1,673.42	Nm ³ /h Calculated



SECTION 6.1_DST-100 / DST-200

N² BLANKETING VALVE

INTRODUCTION

The model DST-100 and DST-200, N² Blanket gas controller, helps gas pressure to maintain in constant state in the vapor space of storage Tanks. When liquid run out from storage vessel or vacuum state take place because of temperature dropping, N² Blanket gas controller has a ability of control desired pressure within the fixed limits.

Besides above subjects, prevents air and humidity from entering into storage vessel, So it can preserve products, and also protect from a fire. It protects the tank from explosion by restricting spark. It prevents the outflow of fluid by evaporation.

Blanketing Capacity

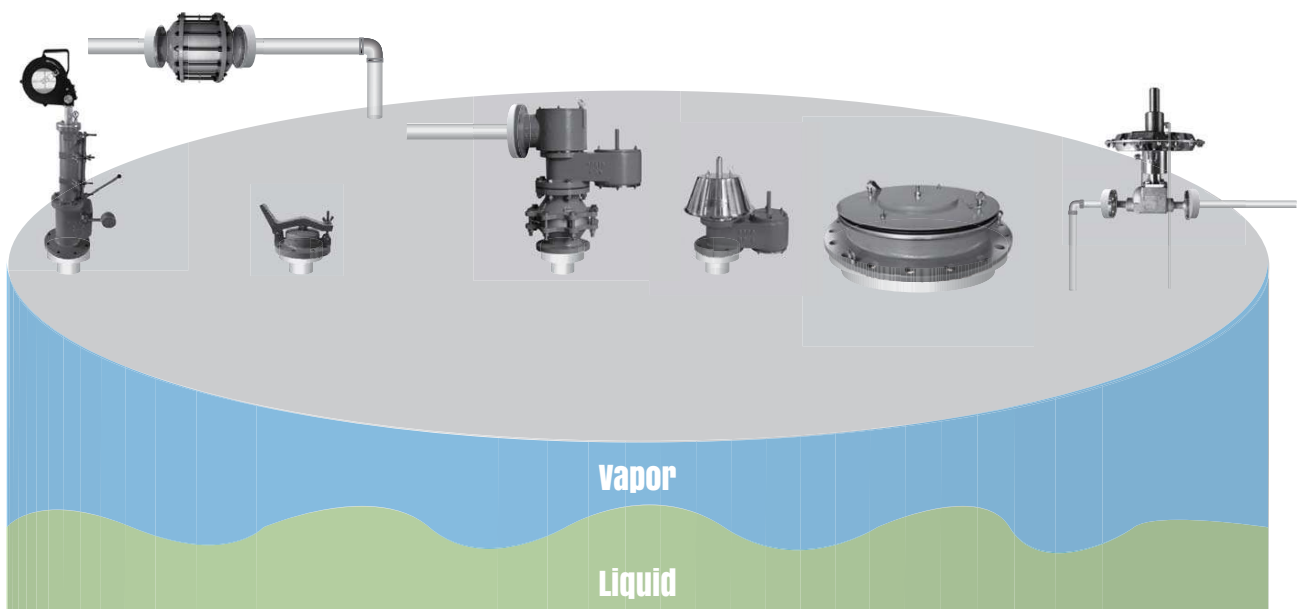
DST-100 (DN 15 ~ DN 25)	Min. 179 ~ Max. 1060 Nm ³ /hr for Nitrogen
DST-200 (DN 40 ~ DN 50)	Min. 465 ~ Max. 2760 Nm ³ /hr for Nitrogen

Body Materials SS304 and SS316 with various trims

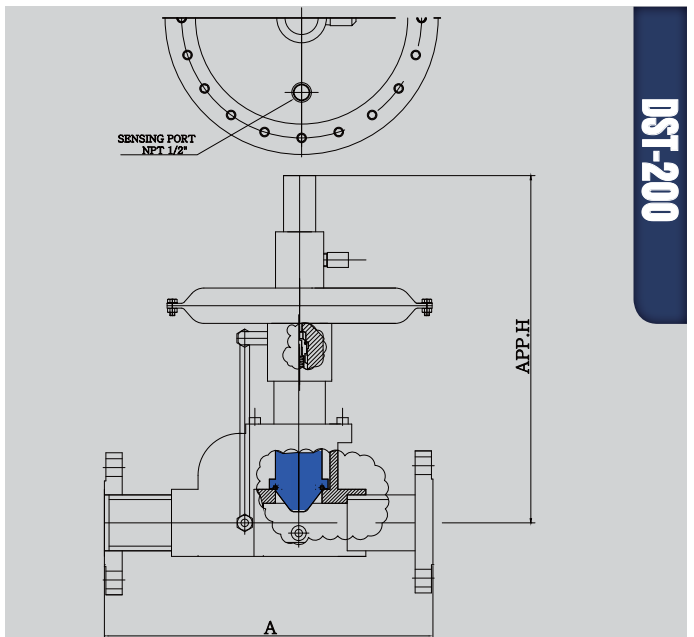
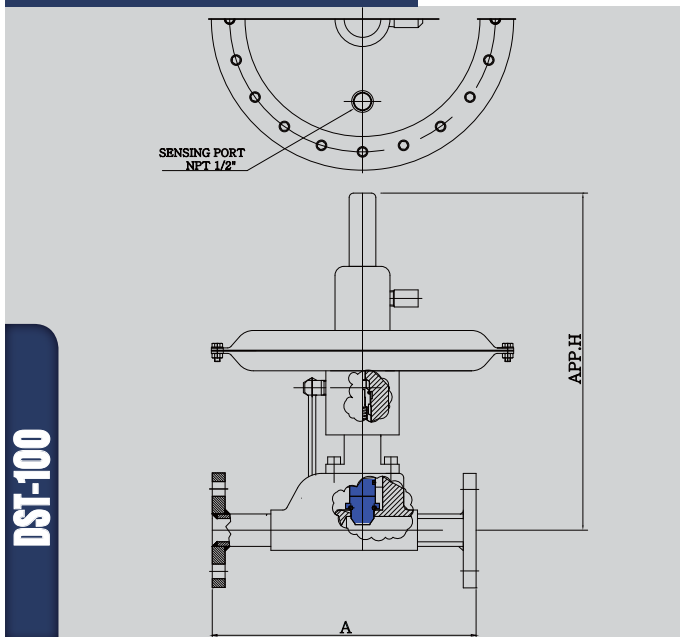
Sizes range DN 15, 20, 25, 40, 50 with ANSI 150lb flanges (Other connection all available)

Rules & Certifications API 2000 6th Edition - "Calculation for Highest requirements with no flame arrester for Inert-gas-Blanketing"

APPLICATION



OUTLINE DRAWING



DIMENSION TABLE

SIZE	DST-100			DST-200	
	1/2"	3/4"	1"	1 1/2"	2"
N.D	15	20	25	40	50
A	290	290	290	340	340
Approx. H	355	355	355	415	415

NOTE Standard Connection(ANSI 150LB flange) and JIS or different types are available upon request.

CAPACITY TABLE

INLET PRESSURE		1.5	2	2.5	3	3.5	4	4.5	5	6	6.5
Capacity in Nm ³ /hr for Nitrogen	DST 100 (1/2" ~ 1")	179	230	260	295	335	387	435	460	545	570
	DST 200 (1 1/2" ~ 2")	465	595	630	745	875	1005	1140	1280	1411	1460
INLET PRESSURE		7	7.5	8	8.5	9	9.5	10	11	12	13
Capacity in Nm ³ /hr for Nitrogen	DST 100 (1/2" ~ 1")	595	645	690	720	750	800	853	945	1000	1060
	DST 200 (1 1/2" ~ 2")	1546	1680	1780	1870	1950	2085	2220	2355	2490	2760

GENERAL SPECIFICATION

MODEL	DST-100	DST-200
SIZE	1/2" ~ 1"	1" ~ 2"
SET PRESSURE	30 ~ 5000mmW.C	
CONNECTION	FNPT / ANSI 150# & 300#, Etc	
MATERIAL	SS304, SS316, Etc.	
USED GAS	N2 (Nitrogen)	
SENSING PORT	NPT 1/2"	

TECHNICAL SPECIFICATION

SET PRESSURE		MINIMUM INLET PRESSURE	TEMP.
1.2 ~ 1.4" W.C	1.3 ~ 3.1 psi	22 psi (1.5 kg/cm ² G)	-20 to +149 °C
3.5 ~ 10" W.C	2.3 ~ 3.5 psi		
8 ~ 18" W.C	3.0 ~ 6.0 psi		

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