Through Conduit Gate Valves (PHGT,PT/EK,PBTT)

General parameters of through conduit gate valves

The through conduit slab gate valve (PHGT and PHGT/K) line developed by DKG-EAST Co. are special valves for closing the flow which are used in specifically in oil and gas industrial technologies and built in pipelines transmitting hydrocarbon. Through conduit gate valves can be used for flow in both directions. Valves are simple construction with the same sealing system as ball valves, and with long operating lifetime coupling with favorable cost-value rate.

Demands of clients

DKG-EAST provides professional assistance to compile technical data of special gate valves in favour of identifying clients' demands properly. The valves satisfy particular requirements, due to which its unique feature traces the process of manufacture and marketing from design to installation.

Solutions

DKG-EAST proposes the delivery of special valves in accordance with clients' requirements, mostly as per user's specification, and often in extreme conditions. The line of through conduit valves mean a tight scale of products due to user's specification. Design and manufacture are according to international and local directives, together with purchaser's regulations.

Scope

- natural gas transmisson
- oil and gas wells
- natural gas storage
- crude oil rafinery
- offshore drilling points

Main references

- E.ON Földgáz Storage ZRT., Hungary
- KVV Kőolajvezetéképítő ZRT., Hungary
- Magyar Olaj- és Gázipari Nyrt. (MOL Nyrt.), Hungary
- MOL Földgázszállító ZRT., Hungary
- OLAJTERV Fővállalkozó és Tervező ZRT., Hungary
- Turbo Tech Group Turbo Team Kft., Hungary
- Enex, Turkmenistan
- Gazkomplektimpex, Russia
- Novatek-Yurkharovneftegaz, Russia
- Novatek-Tarkosaleneftegaz, Russia
- Rostransmash Trade Ltd., Russia
- Tomskgazprom, Russia

Design Characteristics

DKG-EAST's PHGT-PT gate valves are always designed according to the relating international standards.
The forged or plate products are sized for the nominal pipeline pressure.
The construction of the products meets the following requirements:

Generally:	API 6D, ISO 14313, ISO10423,PED
Basic material:	ASTM, AISI, EN, GOSZT
Welding procedures:	ASME Code IX. fej.; EN ISO 15614-1
Welding preparation:	ASME B 31.4 - 31.8
Welded extensions:	“C”-EN 12627, “WE”-ASME B 16.25
Flanges:	ASME B 16.5, 16.47, EN 1092, GOSZT 12821
Sealing surface of flanges:	ASME B 16.5, 16.47, EN1092, GOSZT 12815
Face to face dimension:	ASME B 16.10, API 6D
Marking:	API 6D - MSS SP 25
Resistance to H2S corrosion:	NACE MR 01. 75

Type:

PHGT – Through conduit slab gate valve. (PHGT 2, -5, -7)

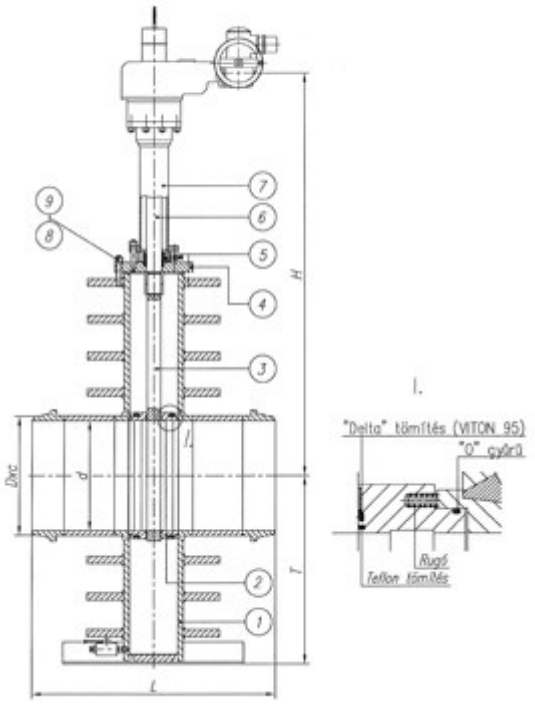
Size range:	DN 200 – 1200 mm
Pressure range:	PN 16 – 100 bar
Type selection:	Buriable, Method of drive.
Temperature range:	- 60 -- +150 C°

PT --Parallel through conduit slab valve expanding from casted body. (PT 1,-2,-3)

Size range:	DN 50 – 150 mm
Pressure range:	PN 25 – 160 bar
Type selection:	Extended, Buriable, Electric motor operated
Temperature range:	- 60 -- +150 C°

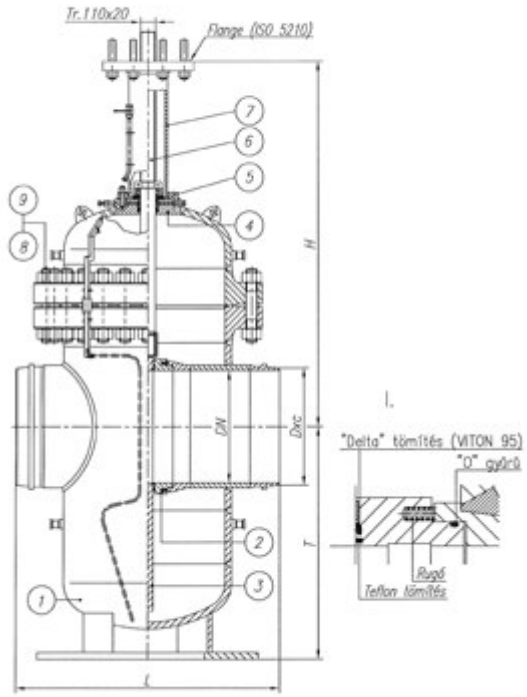
Type assortment

PHGT



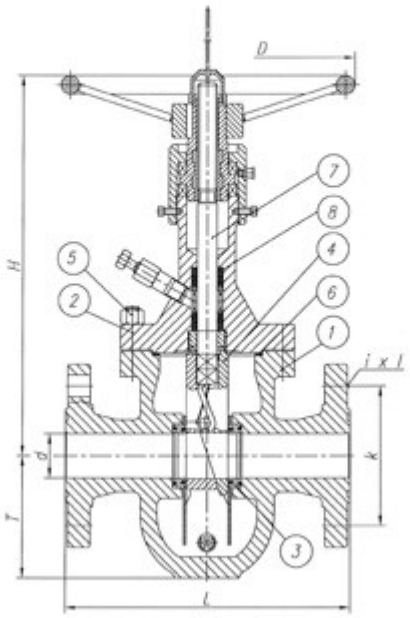
1	Body
2	Seat ring
3	Gate
4	Bonnet
5	Stuffing box sealing
6	Stem
7	Neck
8	Stud
9	Nut

PHGT/K



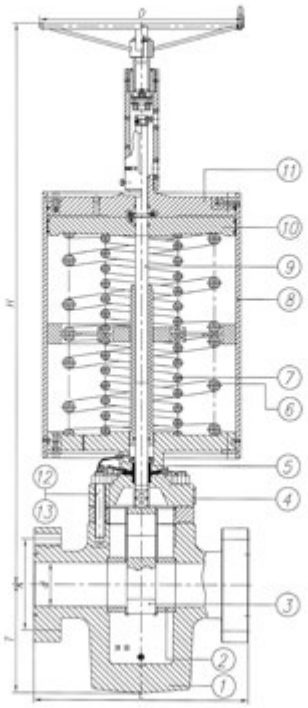
1	Body
2	Seat ring
3	Gate
4	Bonnet
5	Stuffing box sealing
6	Stem
7	Neck
8	Stud
9	Nut

PT/EK



1	Body
2	Bonnet
3	Seat ring
4	Gate
5	Nut
6	Body-bonnet sealing
7	Stem
8	Stuffing box sealing

PBTT



1	Flanged body
2	Seat ring
3	Gate
4	Neck
5	Stuffing box sealing
6	Outside spring
7	Inside spring
8	Barell
9	Stem
10	Piston
11	Bonnet
12	Stud
13	Nut

PHGT, PHGT/K

Through conduit seal gate valve:

The PHGT gate valve, a closing armature for closing the flow is built into technological lines and pipelines of the oil- and gas industry. The gate valve can be equipped with explosion-proof electrical actuator, so remote control of the operation can be solved. The gate valve can be applied for bi-directional flow.
The body reinforced with welded ribs has the closing structure of the gate valve. The closing structure of delta cross-section is made of teflon, it consists of seats of packing ring prestressed with screw springs and plain wedge moving between the seats.

Construction:	DIN, EN	API, ISO
Size:	DN 200 – 1200 mm	8”-48”
Pressure range:	PN 16 – 100 bar	Class150-600
Temperature range:	- 60 -- +150 C°	
Type variations:	- buriable execution - gate valve equipped with electrical actuator - gate valve equipped with buriable and electrical actuator	

Temperature range:
- PHGT-2: -29℃ - +150℃
- PHGT-5: -46℃ - +80℃
- PHGT-4,7: -60℃ - +80℃

Supplied medium:
- carbon-hydrogen,
- corrosive medium,
- H2S „NACE” medium, etc.

≤DN1000 ≤PN100, >DN1000 ≤PN25 constructions

PHGT Gate Valve

Size and pressure range:
- ≤DN1000 mm ≤PN100 bar
- >DN1000 mm ≤PN25 bar
- ≤40” ≤Class600
- >40” ≤Class150

Advantages of the construction:
- unbending body
- the adjustable stuffing box anchors the long-life-double block and bleed type
- unaffected by pollution
- sureness
- long life

Closing element with prestressed spring and delta rubber ring:
- reliable closing is guaranteed by the latest materials
- springforce ensures the sealing at low pressure
- the abrasion resistance and corrosion protecion of the closing and moving elements can be achieved with up-to-date ENP procedures

DN500 - DN1200, PN63 - PN100 construction

PHGT-K Gate Valve
- size range : DN500 - DN1200 mm / 20" - 48”
- pressure range: PN63 - PN100 bar / Class300 - Class600

Advantages of the construction:
- standard austere body with cylinndric and flanged bonnet-bonding
- equable voltage distribution in body
- economic even if high size and pressure
- can be repaired in the field
- change sealing in the field
- converse gate-hole, falling of closing torque
- foolproof operation is 30 years

Size and pressure:

PHGT

PN	DN=d	L_1=L_2	T	H	k	l	i	D
2 MPa	1200	1600	2060	3700	1422	42	44	-
	200	500	380	852	310	27	12	300
	250	550	460	977	370	30	12	300
	300	610	535	1129	430	30	16	400
2,5 MPa	350	680	610	1273	490	33	16	400
	400	760	685	1380	550	36	16	400
	500	1150	865	1998	660	36	20	900
	600	1350	1025	2020	770	39	20	300
	700	1550	1170	2270	875	42	24	400
	200	550	380	852	320	30	12	300
	250	650	460	977	385	33	12	400
4,0 MPa	300	750	535	1129	450	33	16	400
	350	850	610	1273	510	36	16	400
	400	950	685	1370	585	39	16	500
	200	550	380	852	345	36	12	400
	250	650	460	977	400	36	12	400
	300	750	535	1129	460	36	16	500
6,4 MPa	350	850	610	1273	525	39	16	900
	400	950	685	1398	585	42	16	900
	500	1150	865	1720	705	48	20	400
	600	1350	1025	2001	820	56	20	800
	700	1550	1170	2270	935	56	24	700
	1000	2145	1670	3250	-	-	-	1000
7,5 MPa	800	1778	1408	2717	-	-	-	700
	200	550	380	862	360	36	12	500
	250	650	460	984	430	39	12	500
10,0 MPa	300	750	535	1157	500	42	16	1000
	400	950	690	1436	620	48	16	1000
	500	1195	867	1720	760	56	20	700
	700	1550	1200	2270	935	56	24	700
	1000	2145	1680	3250	-	-	-	1000

PHGT/K

PN	DN=d	L_1=L_2	T	H	k	l	i	D
8 MPa	1200	2500	2300	3707	-	-	-	-

PT/EK

PT/EK

The PT/EK gate valve is a kit of oil- and gas lines. It is mainly used for gas receiver and distributive stations, as well as a safety closing valve of technological pipeline systems at the length according to DIN 3202. The valve has a gate consisting of parallel and two half pieces with a rising stem.

Body: casted design with the use of seat ring, filled with grease, no flow through body space.
Gate: segmental, nicotral surface.

Size:	DN 50 – 150 mm
Pressure:	PN 25 – 160 bar
Temperature:	- 20 -- +150 C°
Design:	with electro-motor, buriable

PBTT

Safety gate valve with pneumatic actuator:

The pneumatic safety gate valve is an isolating valve controlled directly or indirectly which turns the pipeline off without external intervention at a value of pressure defined by the customer (for ex.: pipeline break, higher pressure than normal).
Transportable medium: crude oil, natural gas or other product, also available for agressive agent with H_2S and CO_2 contamination.

Main characteristics:

Size:	DN 150 mm
Pressure:	PN 160 / 250 bar
Temperature:	- 25 -- +120 C°, (in case of order: -60°C to +81°C)

Identification system

The notation of PHGT gate valve:

Identifying characters:

1	2	3	4	-	5	6	-	7	8	-	9	10	11	12	13	/	14
P	H	G	T	-	7	A	-	A	X	-	G	K	E	2	2	/	R

Details of identifying characters:

1st- 4th characters: Gate valve identifier

Code: Type:
PHGT Through condruit slab gate valve from welded body and soft sealing

5th character: Temperature identifier

Code	Temperature range
2	- 29 °C ~ + 150 °C
5	- 46 °C ~ + 80 °C
52	- 46 °C ~ + 150 °C
4,7	- 60 °C ~ + 80 °C

6th character: Medium, TRIM identifier

Code	Medium, TRIM identifier
A	Normal Carbon hydride
S	Middling corrosive agent
K	Hard corrosive agent
D	Normal Carbon hydride + H_2S "NACE"
E	Carbon hydride + middle corrosion + H_2S "NACE"
F	Carbon hydride + hard corrosion + H_2S "NACE"
T	Sea water, salt water
CO	Co2
PB	Propane-Butane
V	Water
A1	Nickel-plated design

7th character: Connection identifier

Code	Connection type by DIN
A	Flange with raised sealing surface
E	Flange with raised sealing surface
H	Flange with groove sealing surface
C	Butt welding end
Code	Connection type by **ANSI B 16.5:**
F	Flange (RF type) with raised sealing surface
J	Flange (RTJ type) with Ring Joint sealing surface
W	Butt welding end (WN type)

8th character: Connection design identifier

Code	Connection design
X	Counterflange (both sides)
Y	Counterflange (one side)

9-10th characters: Actuator identifier

Code	Actuator type
O	Free end of stem
GK	Manually operated gear
GM	Electro-motor operated gear

11-12-13th characters: burying size identifier

Code: Size in mm/100
E22 **22**

14th character: Other special design identifier

Code: After sign " / " , uniquely given identifier
/R Different length

Example for notation:

Nominal diameter: DN 600, Nominal pressure: PN 64, Gate valve type: PHGT, Temperature range: -60℃~ +80℃, Medium: non-corrosive agent, Connection: flange with raised sealing surface, Connection designe: counterflanges on the both sides, Actuator type: Manually operated gear, Other designs: buriable valve, Length of extended stem: 2200 mm.

Short notation:
DN 600; PN 64 Bar PHGT-7A-AX-GKE22

The notation of PT gate valve :

Identifying characters:

1	2	-	3	4	-	5
P	T	-	2	A	-	L

Details of identifying characters:

1-2nd characters: Gate valve identifier. **PT**

3rd character: Temperature identifier

Code	Temperature range
1	- 20 -- + 80 C°
2	- 20 -- + 150 C°
3	- 20 -- + 300 C°

4th character: Connection type
A Flanged design

5th character: Type version
L Extended length
E Buriable design
M Electromechanical design

Sensible variations of types can be ordered.
e.g.: L-M Extended length with electromechanical design

Gallery