



NTB GROUP
ISO 9001:2015
DNV CERTIFIED

NTB HITECH CERAMICS

(A Division of NTB International Pvt. Ltd.)

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Chokes, Seats, Stems & Gate Valve Components

NTB Hitech Ceramics, India offers Quality Forgings and Precision machined parts and components designed to reliably control the flow rate of fluids discharged from an Oil and Gas well. Forgings are available in Stainless Steel, Carbon Steel, Alloy Steel, 17-4 PH and Non-Ferrous materials. Special capabilities include Gate/Segment Machining, Nitriding, Heat-Treatment, Teflon Insertion in Valve Seats and Precision Machining of valve body, slab and expanding gates, seats, stems etc., all in one location. We are also equipped with CNC Turning, Horizontal and Vertical Machining Centers. Lastly, we are an ISO-9001:2015 certified organization, managed by a team of qualified professional with 25 plus years of experience in this business. See Material Specs, heat treatment and mechanical properties below.

	AISI 4130	SS 410	SS 17-4PH	SS 316	AISI 1018	AISI 1040
Chemistry						
Carbon %	0.28/0.33	0.08/0.15	0.07 max	0.03 max	0.32 max	0.37/0.44
Manganese %	0.40/0.80	0.1 max	1.00 max	2.0 max	1.5 max	0.6/0.9
Phosphorus %	0.025 max.	0.025 max	0.040 max	0.045 max	0.040 max	0.040 max
Sulfur %	0.025 max.	0.025 max	0.030 max	0.03 max	0.050 max	0.040 max
Silicon %	0.15/0.35	1.0 max	1.00 max	1.0 max		0.1/0.4
Chromium %	0.80/1.10	11.5/13.5	15.0/17.0	16.0/18.0		0.25 max
Molybdenum %	0.15/0.25	0.60 max		2.0/3.0		0.20 max
Nickel %	0.50 max	1.0 max	3.0/5.0	10.0/14.0		0.25 max
Vanadium %	0.035 max					
Copper %	0.35 max		3.0/5.0			
Iron	Balance	Balance	Balance	Balance	Balance	Balance
Columbium+Tantalum			0.15/0.45			
Heat Treatment						
Normalising	871°C min				871°C min	
Hardening	843-885 C	927 C min				817-927
Tempering 1	649-704 C	677 C min	607-635			593 min
Tempering 2		619 C min	607-635			
Solution Annealing			1024-1052	1038 min		
Oil Quench						B 27 - A104
Water Quench	B 38 - A49 C	B 38 - A49	B 35 - A 60			B 37 - A 49
Mechanical Properties						
Tensile Strength	95000 PSI	95000 PSI	125000	70000	60000	85000
Yield Strength 2%	75000 PSI	75000 PSI	105000	36000	36000	60000
Elongation	18%	18%	16%	21%	22%	18%
Reduction Area	35%	35%	50%		30%	35%
Brinell Hardness	207-237 BHN	207-237 BHN	311 max	140-237	250 BHN max	174-235
Impact Value (Joule)	20 min Avg 27	20 min Avg	20 min Avg 27			20 min Avg 27
Impact Temp	-60	-46-29	-60	-60		-29
Lateral Exp.	0.015" min	0.015" min	0.015" min	0.015" min		

NTB Hitech Positive or Adjustable Choke parts and components are built to the highest standards using advanced manufacturing techniques and materials, in pressure ratings up to 15,000 psi. This ensures optimal performance and reliability. On valve bodies, standard connections are flanged or union. Other end-connections (API/ANSI, Flanged/Threaded) can be supplied as per orders.

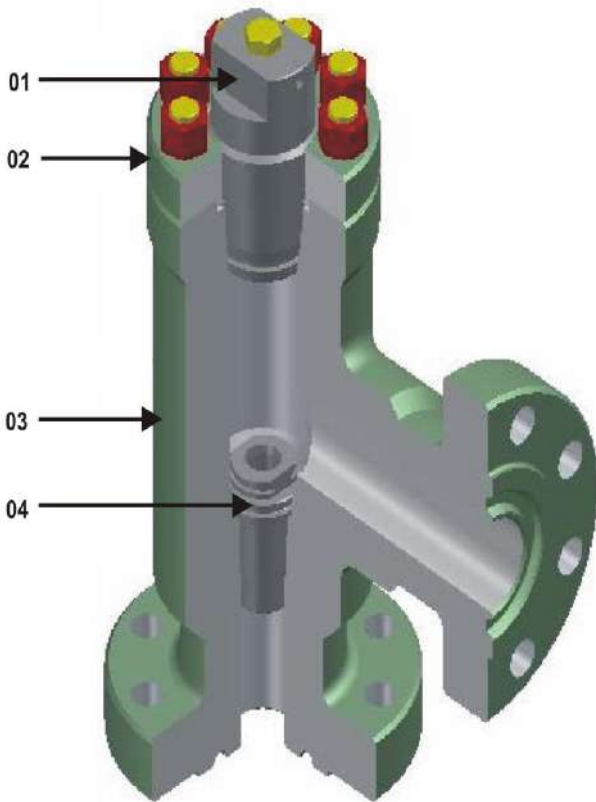
NTB Choke and valve components are lined with Cobalt/Nickel bonded Tungsten Carbide hard metals of fine/medium grain carbides sintered to 95-99% theoretical density. **NTB Choke and valve components conform to NACE standards.**

NTB Positive Chokes - NTB Positive Chokes accept replaceable fixed orifice flow beans (Ceramic or Carbide lined for severe applications) that are measured in 64th. of an inch. All Adjustable Chokes can be converted into Positive Chokes by replacing the bonnet assembly with an appropriate blanking plug and choke bean assembly. Positive Choke beans range from 4/64" to 48/64" for ¾" beans and from 50/64" to 64/64" for the 1" Positive Chokes. NTB positive bean chokes are manufactured with SS410 or Other Steels (see above chart) and are brazed with highly wear resistant Tungsten Carbide Cores with suitable orifices.



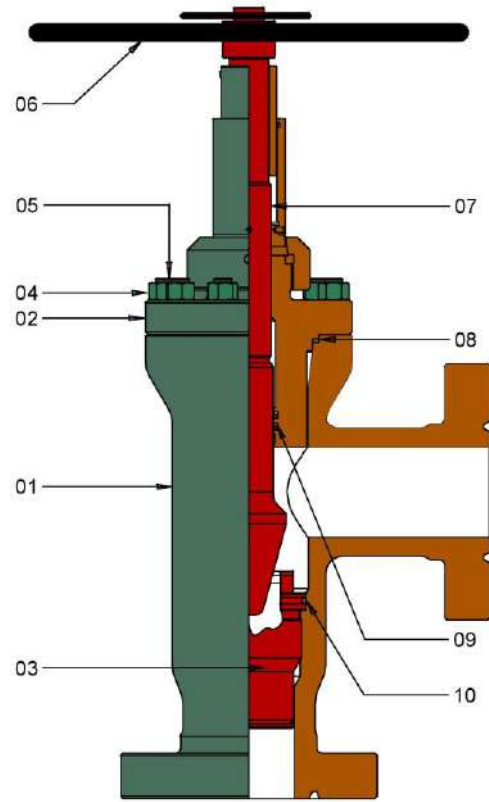
NTB Adjustable Chokes - NTB Adjustable choke parts and components exhibit these features:

- Conventional tried and tested Carbide or Ceramic Needle and Seat design available with Orifice sizes of ¾" to 2"
- The stems are Stainless Steel with Carbide Cone tips
- Parts are interchangeable to construct a positive, adjustable or combination Choke
- Bonnet nuts have rugged forged lugs that can be hammered loose.



Positive Choke

Part N°	Description
01	Plug
02	Bonnet
03	Body
04	Choke Bean



Adjustable Choke

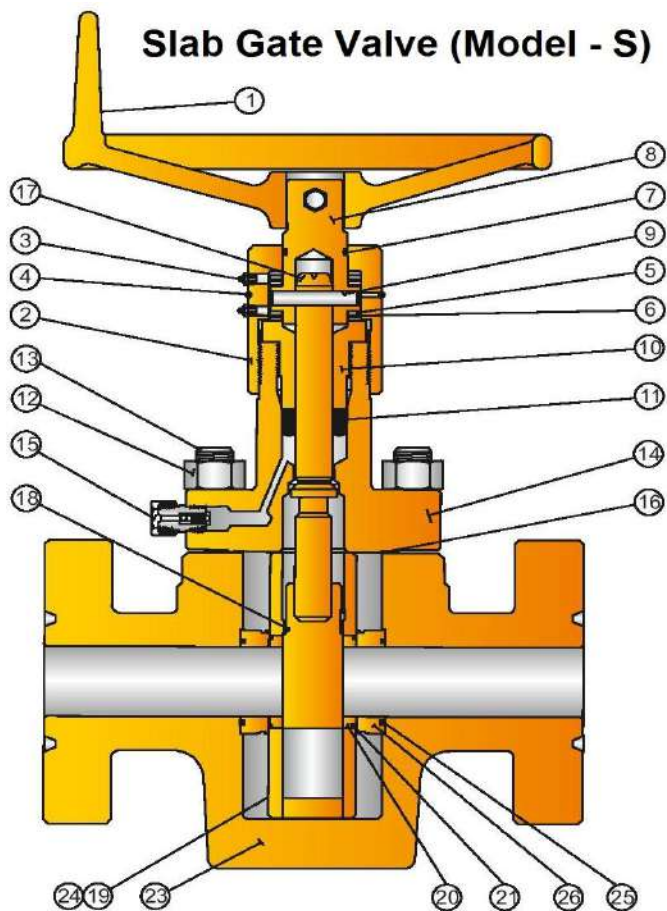
Part N°	Description	Part N°	Description
01	Body	06	Handwheel
02	Bonnet	07	Stem + Needle
03	Seat	08	Body Gasket
04	Body studs nuts	09	Stem Gasket
05	Body studs	10	Seat Gasket

NTB Stems & Seats - These are manufactured in various sizes like $\frac{3}{4}$ " , 1" and 2" in Conventional tried and tested Carbide or Ceramic Needle and Seat design. NTB Stems can also be offered in full alloy steel and SS17-4PH construction. Stems are available with Carbide seats in partially or fully lined designs.





NTB Gate Valves - Gate valves are primarily designed to start or stop a flow when straight line flow of fluid with minimum flow restriction is needed. In usage these valves are kept either fully opened or fully closed. NTB can offer the various components of Gate Valves.



Part List Slab Gate Valve (Model - S)		
ITEM	DESCRIPTION	Qty.
1	HANDWHEEL ASSEMBLY	1
2	BEARING CAP	1
3	GREASE FITTING	2
4	O-RING	1
5	BEARING RACE	4
6	THRUST BEARING	2
7	O-RING	1
8	STEM ADAPTER	1
9	STEM PIN	1
10	PACKING GLAND	1
11	'J' PACKING	1
12	NUT	8
13	STUD	8
14	BONNET	1
15	GREASE FITTING	1
16	GASKET	1
17	STEM	1
18	GATE	1
19	RETAINER PLATE	2
20	SEAT RING	2
21	SEAL RING (SEAT RING)	2
22	PIN (Not shown)	2
23	BODY	1
24	GUIDE	2
25	SEAL RING (BODY BUSHING)	2
26	BODY BUSHING	2
27	NAME PLATE (Not shown)	1