

**KNIFE GATE VALVE  
TESTING SPECIFICATION**

REF.NO.	KGTS0002		00 REV.NO.
DATE	21 MAY 2009		
SHEET	01	OF	02



1.0 GENERAL

1.1 SCOPE:

SPECIFIES PRESSURE TESTING REQUIREMENTS OF KNIFE GATE VALVES MANUFACTURED AND TESTED AT BDK ENGINEERING INDUSTRIES LTD.

1.2 REFERENCE STANDARDS:

THIS SPECIFICATION MEETS THE TESTING REQUIREMENTS OF STANDARD MSS SP-81.

2.0 PRESSURE TESTS:

2.1 TEST RIG:

SUITABLE RIG WHICH DOES NOT SUBJECT THE TEST VALVE TO EXTERNALLY APPLIED STRESSES AFFECTING THE TEST RESULTS.

2.2 PRESSURE GAUGES

THE PRESSURE GAUGES SHALL BE OF CLASS II ACCURACY OF INDUSTRIAL PRESSURE GAUGES AS PER IS : 3624 AND SHALL HAVE A FULL SCALE READING OF NOT MORE THAN 4 TIMES AND NOT LESS THAN 1.5 TIMES THE TEST PRESSURE. THE GAUGES SHALL BE CALIBRATED AT INTERVALS NOT EXCEEDING 6 MONTHS.

2.3 TESTS:

EACH VALVE SHALL BE PRESSURE TESTED TO FOLLOWING TESTS

2.3.1 HYDRO SHELL

2.3.2 HYDRO SEAT

2.4 TEST FLUID:

TEST FLUID SHALL BE WATER AND MAY CONTAIN A WATER SOLUBLE OIL OR A CORROSION INHIBITOR. THE TEMPERATURE OF THE WATER SHALL NOT EXCEED 50°C. FOR TESTING OF AUSTENITIC STAINLESS STEEL VALVES, WATER WITH CHLORIDE CONTENT NOT EXCEEDING 100 PARTS PER MILLION (PPM) SHALL BE USED.

2.5 TEST PRESSURES:

TEST	PR. CLASS	
	PN 6	PN 10
HYD-SHELL	9	15
HYD-SEAT	6.6	11
PN-SEAT	7	

2.6 TEST DURATION:

THE TEST SHALL BE CARRIED OUT FOR DURATIONS AS BELOW STARTING FROM THE POINT WHEREIN THE VALVE IS FULLY PRESSURISED TO THE REQUIRED PRESSURE:

TEST DURATION IN SECONDS (MINIMUM)

VALVE SIZE	TEST	
	SHELL	SEAT
DN 50	15	15
DN65 TO DN200	60	30
DN250 TO DN450	180	60
DN500 & LARGER	180	120

PREPARED BY :

APPROVED BY :

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2.7 LEAKAGE RATE:

2.7.1 SHELL TEST:

THERE SHALL BE NO VISIBLE LEAKAGE THROUGH THE SHELL. LEAKAGE THROUGH THE PACKING OR GATE SEAL SHALL NOT BE CAUSE FOR REJECTION.

2.7.2 SEAT TEST:

- a) SOFT SEATED VALVES - BUBBLE TIGHT SHUT OFF
- b) METAL SEATED VALVES - 40 ML/MIN/NPS (1.6 MM/MIN/DN)  
(CS/AS/SS ONLY) MAXIMUM

2.8 TEST PROCEDURE:

2.8.1 GENERAL CONDITIONS:

- a) VALVES AND CONNECTIONS SHALL BE PURGED OF AIR WHEN TESTING WITH WATER.
- b) THE TEST VALVE UNDER PRESSURE SHALL NOT BE SUBJECTED TO ANY FORM OF SHOCK LOADING.
- c) VALVE SHALL NOT BE PAINTED/COATED PRIOR TO SHELL TEST.

2.8.2 SHELL TEST:

- a) BLANK - OFF THE ENDS OF THE ASSEMBLED VALVE.
- b) ENSURE THAT THE SHELL IS FULLY PRESSURISED WITH THE TEST FLUID.
- c) KEEP THE PACKING GLAND SUFFICIENTLY TIGHT TO MAINTAIN THE TEST PRESSURE.
- d) APPLY THE SPECIFIED PRESSURE AND MAINTAIN FOR THE SPECIFIED DURATION.
- e) CHECK THE SHELL FOR ANY LEAKAGE/ SEEPAGE

2.8.3 SEAT TEST:

- a) CLAMP THE UPSTREAM SIDE OF THE VALVE TO TEST PLATE, THE OTHER SIDE BEING OPEN TO ATMOSPHERE. ENSURE THE "SEAT" MARKING ON THE BODY IS ON THE DOWNSTREAM.
- b) FILL THE VALVE WITH TEST FLUID.
- c) CLOSE THE VALVE.
- d) APPLY THE SPECIFIED PRESSURE AND MAINTAIN FOR THE SPECIFIED DURATION.
- e) CHECK THE LEAKAGE RATE.

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