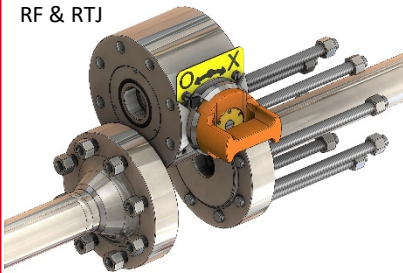


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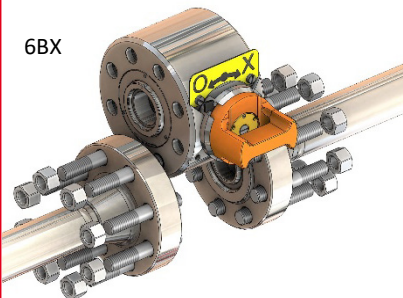
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## FLANGE KIT, KHS SUBSEA BALL VALVE

RF & RTJ



6BX



### MODEL CODE

(ordering example)

KHS - F - [ ] - DN [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ]  
 KHS - FO - 1 - DN 46 - WN 2 160 - BL - 155 - CC

#### Designation, mating valve

KHS = Subsea ball valve

#### Flange interface, mating valve

O = O-ring, Raised Face  
 B = BX Ring Type Joint  
 6 = 6BX acc. to API6A / 17H  
 X = Special Requirements

#### ISO 10423 / API6A Product Specification Level (PSL)

1 = PSL 1 3G = PSL 3G  
 2 = PSL 2 4 = PSL 4  
 3 = PSL 3 X = Special Req.

#### Normal Bore, mating valve [mm]

DN = .. / 46 / ..

#### Connection end

BL = Blind flange TF = Test flange  
 WN = Weld Neck X = Special Requirements

*If weld neck, add mating nominal pipe size and schedule, from table*

VALVE SIZE	NOMINAL SIZE [inch]			PIPE SCHEDULE [SCH]					
DN 46	1	2	3	4 0	8 0	1 6 0	S T D	X S	X X S
TBA	2	3	4	4 0	8 0	1 6 0	S T D	X S	X X S
TBA	3	4	5	4 0	8 0	1 6 0	S T D	X S	X X S
Bore [mm]	Pipe diameter [inch]			ANSI B36.10			API 5L		

#### Material

##### FLANGE

1 = API 5L X52 / S355J0  
 2 = API 5L X60 / S420 N  
 3 = AISI 316, MDS S01  
 4 = API 5L X65 / S450J0  
 5 = 6 Mo, MDS R17  
 6 = 22 Cr Duplex, MDS D47  
 7 = 25 Cr Duplex, MDS D57  
 X = Special Requirements

##### STUD / BOLTS ( 2 )

1 = ISO 898-1 Gr. 8.8  
 2 = ISO 3506-1 Gr. A4-80  
 3 = ISO 3506-1 Gr. A4-70  
 4 = ASTM A193/A320 Gr. B7/L7  
 5 = ASTM A193/A320 Gr. B7M/L7M  
 X = Special Requirements

##### NUT ( 3 )

1 = ISO 898-2 Gr. 8  
 2 = ISO 3506-2 Gr. A4-80  
 3 = ISO 3506-2 Gr. A4-70  
 4 = ASTM A194 Gr. 2H/7  
 5 = ASTM A194 Gr. 2HM/7M  
 X = Special Requirements

##### BX - If Ring Type Joint [UNS number]

1 = S31600  
 2 = S31254  
 3 = N08904  
 4 = N06625  
 5 = S31803  
 X = Special Req. use UNS number

#### Surface Protection / Coating

##### FLANGE

A = NORSOK M-501  
 C = XYLAN  
 D = ZINC-plated, chrome free  
 X = Special Requirements

##### STUD / BOLTS ( 2 )

B = PTFE  
 C = XYLAN  
 D = EZn, Electrodeposited zinc  
 X = Special Requirements

##### NUT ( 3 )

B = PTFE  
 C = XYLAN  
 D = EZn, Electrodeposited zinc  
 X = Special Requirements

##### BX - If Ring Type Joint

B = PTFE  
 C = XYLAN  
 S = SILVER Plated  
 X = Special Requirements

### Flange kit, contents

- Two Flange
  - Stud / bolt
  - Nut
  - if RTJ sealing, two seal rings
- To fit one valve

### Delivery of Flange kit

- Flange kit, is not fitted to valve
- Kit is send with valve shipment

### Additional service, can be agreed prior contract start

- Kit to be fitted on valve
- Kit shipped in front of valve supply, for welding in system
- Material certificate to be send for approval, prior flange mfg.
- Other request.

### Order data

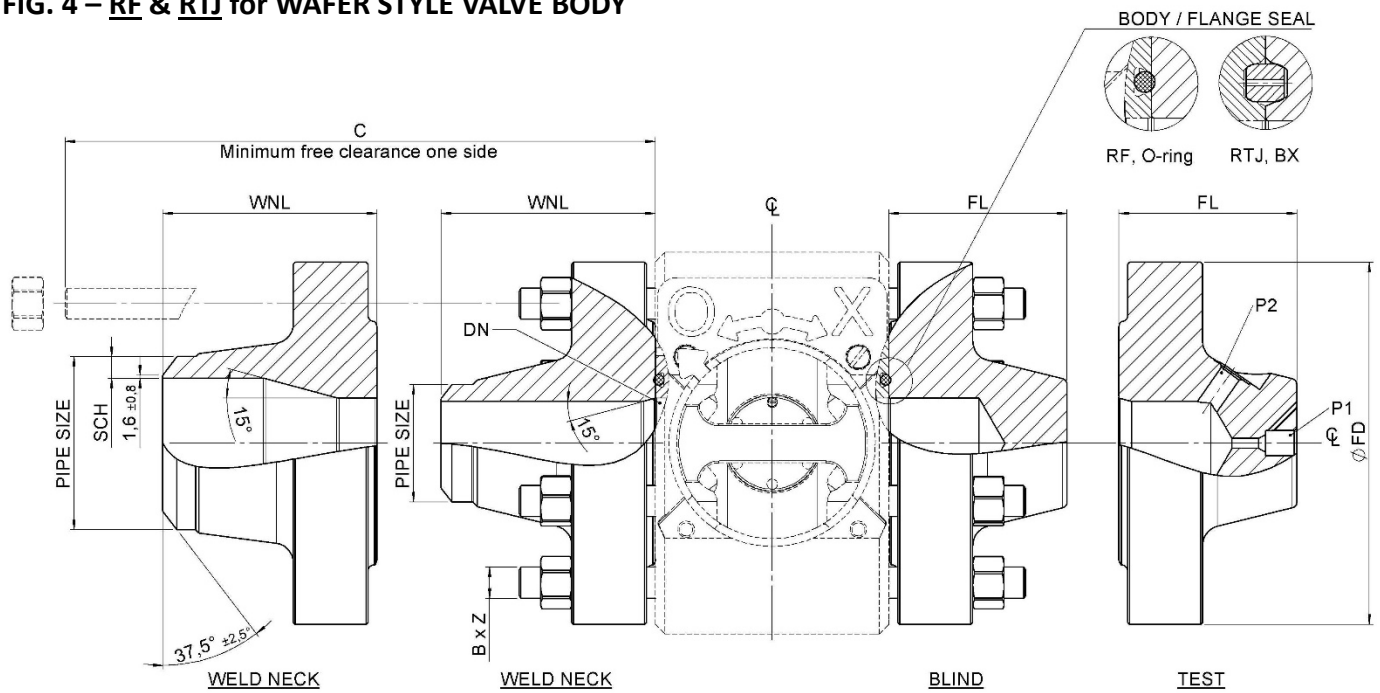
- Valve nominal size
- Connection end
- Pipe nominal size
- Pipe schedule
- Material
- Surface protection / Coating



# Technical specifications

Design	<ul style="list-style-type: none"><li>• Compact direct fit to valve envelope or standard 6BX flange</li><li>• Flange kit has been design in line with ISO 10423 - API 6A and ISO 13628-4 - API 17D</li><li>• The unique pick and chose modular design system employed by HYDAC employ, allow fully customized solution.</li><li>• Bolt joint design load <math>\leq 66,7\%</math> of Specified Minimum Yield Strength (SMYS)</li></ul>
Applicable design codes and guideline	<ul style="list-style-type: none"><li>• ISO 10423 / API6A</li><li>• ISO 13628-4 / API 17D</li><li>• ISO 14723 / API6DSS</li><li>• BS PD 5500 &amp; ASME VIII</li><li>• DNVGL-RP-F112 – Design against HISC (duplex)</li></ul>
Product Specification Level (PSL)	ISO 10423 – PSL 1 to PSL 4
Nominals valve bore diameter (DN)	.. / 46 / .. /
Weld Neck connection end	Selectable to meet ANSI B36.10 or API5L, nominal pipe size and schedule
Material	<ul style="list-style-type: none"><li>• Flange material, selectable from NORSOK M630 MDS or API5L, inspection certificate to EN 10204-3.1.</li><li>• Stud / bolt and nuts, selectable from ISO or ASTM, inspection certificate to EN 10204-3.1.</li></ul>
Typical operating media <i>(But not limited to)</i>  <i>Depends on material selection</i>	<ul style="list-style-type: none"><li>• Seawater</li><li>• MEG</li><li>• Glycol</li><li>• Oil</li><li>• Gases ...etc.</li></ul>
Temperature range	-18 °C to+121 °C <i>(Depends on material selection)</i>
Options Special connection ends.	<ul style="list-style-type: none"><li>• Swivel flange</li><li>• Intermit flange for stacking, of multi block configuration</li><li>• Pup pieces</li><li>• Face to Face dimensions, to your requirements</li><li>• Etc.</li></ul> <p>Contact HYDAC, for more information and option, to fit you requirements</p>
Other technical product advantages	<ul style="list-style-type: none"><li>• Broad material selection, to fit your requirements.</li><li>• Adaptive to customize, your applications</li></ul>
NOTE.:	<ul style="list-style-type: none"><li>• Valve ordered separately, from own product key</li><li>• Seal kit available on request</li><li>• Subject to technical modifications</li></ul> <p><i>Material selection tables, is a guide line to flange &amp; fasteners material versus pressure, it cover the valve interface and does not take in to account pipe load nor special environmental conditions.</i></p>

**FIG. 4 – RF & RTJ for WAFER STYLE VALVE BODY**



**DIMENSION**

DN	FD [mm]	B x Z	C [mm]	BLIND & TEST FLANGE				WELD NECK FLANGE			If RTJ
				FL [mm]	P1	P2	Mass [kg]	WNL [mm]	SIZE [inch]	Mass [kg]	RING TYPE- SIZE
46	186	M16 x 8	280	91,5	G3/8"	G1/4"	~9,1	110	1"	~8,7	BX-151 SBX-151 HBX-151
									2"	~9,0	
									3"	~9,3	
TBA	-	-	-	-	-	-	-	-	2"	-	-
									3"	-	
									4"	-	
TBA	-	-	-	-	-	-	-	-	3"	-	-
									4"	-	
									5"	-	

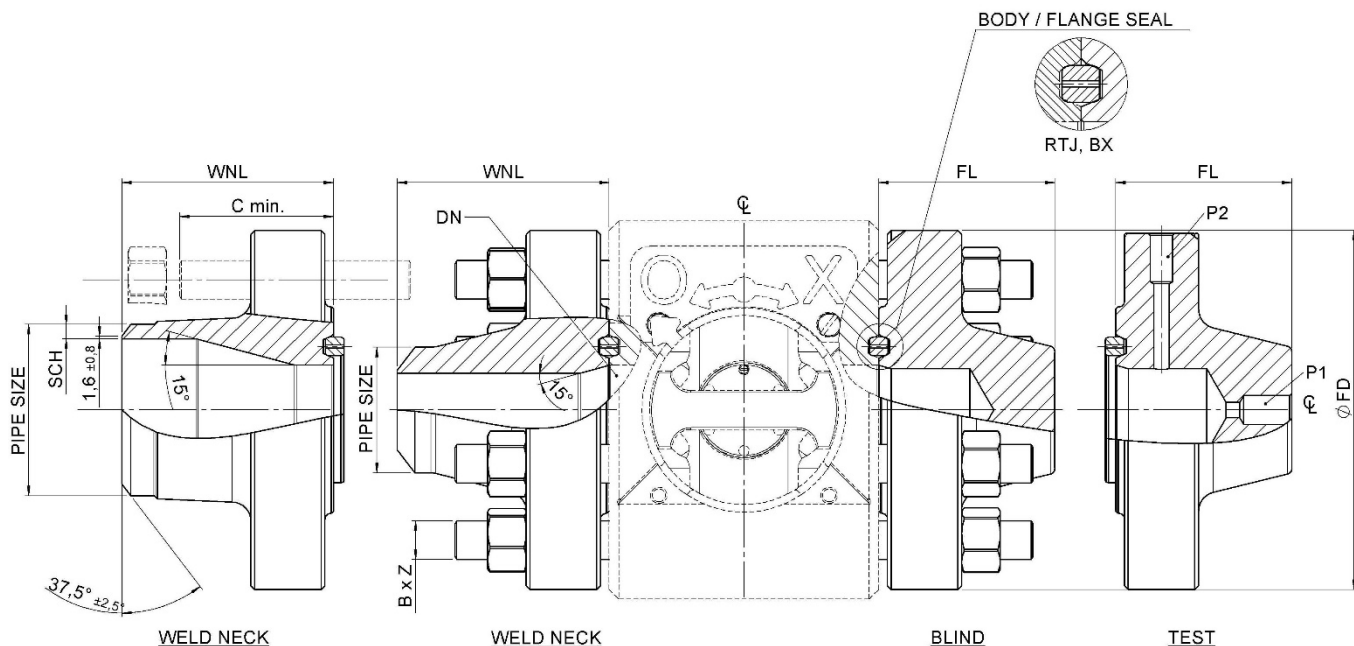
**MATERIAL SELECTION FLANGE and FASTNERS**

PN	FLANGE MATERIAL							STUD BOLT & NUT –MATERIAL				
	API 5L			NORSOK M630 MDS				ISO			ASTM	
	X52 / S355J0	X60 / S420 N	X65 / S450J0	S01 / AISI 316	R17 / 6Mo	D47 / 22 Cr DUPLEX	D57 / 25Cr DUPLEX	898-1 Gr. 8.8	3506-1 Gr. A4-70	3506-1 Gr. A4-80	A193/A320 Gr. B7M/L7M	A193/A320 Gr. B7/L7
NORMAL PRESSURE [bar]								898-2 Gr. 8	3506-2 Gr. A4-70	3506-2 Gr. A4-80	A194 Gr. 2HM/7M	A194 Gr. 2H/7
≤345	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
≤517	OK	OK	OK	NA	OK	OK	OK	OK	NA	OK	OK	OK
≤690	NA	OK	OK	NA	NA	OK	OK	OK	NA	NA	NA	OK

**NOTE:**

- Bolt joint maximum design load - 67% of SMYS
- Weld neck flange, typical follow the pipe material, to insure good weldability and equality in strength.
- Blind and test flange, should as minimum have same yield strength, as the selected valve body, to ensure durability.

**FIG. 5 – RTJ 6BX for STUDED / THREADED VALVE BODY**



**DIMENSION**

DN	FD [mm]	B x Z	C [mm]	BLIND & TEST FLANGE				WELD NECK FLANGE			RTJ
				FL [mm]	P1	P2	Mass [kg]	WNL [mm]	SIZE [inch]	Mass [kg]	RING TYPE-SIZE
46	186	M20 x 8	80	91,5	G3/8"	G1/4"	~8,6	110	1"	~8	BX-151 SBX-151 HBX-151
									2"	~8,6	
									3"	~9	
TBA		-	-	-	-	-	-	-	2"	-	-
									3"	-	
									4"	-	
TBA		-	-	-	-	-	-	-	3"	-	-
									4"	-	
									5"	-	

**MATERIAL SELECTION FLANGE and FASTNERS**

PN  NORMINAL PRESSURE  [bar]	FLANGE MATERIAL							STUD BOLT & NUT -MATERIAL				
	API 5L			NORSOK M630 MDS				ISO			ASTM	
	X52 / S355J0	X60 / S420 N	X65 / S450J0	S01 / AISI 316	R17 / 6Mo	D47 / 22 Cr DUPLEX	D57 / 25Cr DUPLEX	898-1 Gr. 8.8	3506-1 Gr. A4-70	3506-1 Gr. A4-80	A193/A320 Gr. B7M/L7M	A193/A320 Gr. B7/L7
≤345	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
≤517	OK	OK	OK	NA	OK	OK	OK	OK	OK	OK	OK	OK
≤690	NA	OK	OK	NA	NA	OK	OK	OK	NA	OK	OK	OK

**NOTE:**

- Bolt joint maximum design load - 67% of SMYS
- Weld neck flange, typical follow the pipe material, to insure good weldability and equality in strength.
- Blind and test flange, should as minimum have same yield strength, as the selected valve body, to ensure durability.