

Hughes External Flush

Size	A	B	C	D	E	F	G	H	J	K
	in.	in.	in.	in.	in.	in.	in.	(TPI)	in.	(TPF)
2-3/8	2-3/8	2-1/2	2-7/64	1-23/32	2-1/16	3-1/4	1	6	2-1/64	2
2-7/8	2-5/8	3	2-1/2	2-1/16	2-17/32	3	1-1/16	6	-	2
3-1/2	3-1/4	3-5/8	3	2-29/64	3-1/32	4	1-1/2	4	-	2
		3-11/16								
4-1/2	3-3/8	4-11/16	3-13/16	3-1/4	3-7/8	4-1/4	2-3/16	4	-	2
		4-17/32								

Size	Note
2-3/8	Threaded part same as or interchanges with 2-3/8" HOMCO (External Flush) "Little Inch"
3-1/2	Threaded part same as or interchanges with 3-1/2" FH Reed External Flush
4-1/2	Threaded part same as or interchanges with 3-1/2" Hughes Extra Hole, 3-1/2" Reed Extra Hole, 4" Hughes Slim Hole, 4-1/2" FH Reed External Flush

- Straight Counterbore

Rotary Shouldered Connection Interchange List

Common Name		Pin Base Diameter (Tapered)	Threads Per in.	Taper	Thread Form▲	Same As Or Interchanges With
Style	Size			in./ft		
Internal Flush (IF)	2-3/8"	2.876	4	2	V-0.065 (V-0.038 rad)	2-7/8" Slim Hole NC 26■
	2-7/8"	3.391				3-1/2" Slim Hole NC 31■
	3-1/2"	4.016				4-1/2" Slim Hole NC 38■
	4"	4.834				4-1/2" Extra Hole NC 46■
	4-1/2"	5.250				5" Extra Hole NC 50■ 5-1/2" Double Streamline
Full Hole (FH)	4"	4.280	4	2	V-0.065 (V-0.038 rad)	4-1/2" Double Streamline NC 40■
Extra Hole (XH) (EH)	2-7/8"	3.327	4	2	V-0.065 (V-0.038 rad)	3-1/2" Double Streamline
	3-1/2"	3.812				4" Slim Hole 4-1/2" External Hole
	4-1/2"	4.834				4" Internal Flush NC 46■ 4-1/2" Internal Flush NC 50■
	5"	5.250				5-1/2" Double Streamline
Slim Hole (SH)	2-7/8"	2.876	4	2	V-0.065 (V-0.038 rad)	2-3/8" Internal Flush NC 26■
	3-1/2"	3.391				2-7/8" Internal Flush NC 31■
	4"	3.812				3-1/2" Extra Hole 4-1/2" External Flush
	4-1/2"	4.016				3-1/2" Internal Flush NC 38■
Double Streamline (DSL)	3-1/2"	3.327	4	2	V-0.065 (V-0.038 rad)	2-7/8" Extra Hole
	4-1/2"	4.280				4" Full Hole NC 40■
	5-1/2"	5.250				4-1/2" Internal Flush 5" Extra Hole NC 50■
Numbered Conn (NC)	26	2.876	4	2	V-0.038 rad	2-3/8" Internal Flush 2-7/8" Slim Hole
	31	3.391				2-7/8" Internal Flush 3-1/2" Slim Hole
	38	4.016				3-1/2" Internal Flush 4-1/2" Slim Hole
	40	4.280				4" Full Hole 4-1/2" Double Streamline
	46	4.834				4" Internal Flush 4-1/2" Extra Hole
	50	5.250				4-1/2" Internal Flush 5" Extra Hole
External Flush (EF)	4-1/2"	3.812	4	2	V-0.065 (V-0.038 rad)	4" Slim Hole 3-1/2" Extra Hole

▲ Connections with two thread forms shown may be machined with either thread form without affecting gauging or interchangeability

■ Numbered connections (NC) may be machined only with the V-0.038 radius thread form

Data provided by API from table 12, sixteenth edition, API RP7G; August, 1998

Small Diameter Tool Joints Dimension and Strength Data

Size	Connection	Box OD	Pin ID	Yield Torque	Recommended Make-Up Torque	Tensile Yield Load at 0 Make-Up Torque
		in.	in.	ft-lb	ft-lb	lb
1	MT (API Reg)	1-9/16	3/4	690	410	61,870
			13/16	590	350	52,590
	MT DSI■		3/4	920	550	61,870
1-1/4	MT	1-3/4	1	780	470	63,090
			7/8	1,060	630	85,180
			13/16	1,100●	660	95,040
			3/4			104,320
	FJ (Reg)	2-3/16	5/8	2,230	1,330	162,020
MT DSI■	1-3/4	7/8	1,290	770	85,180	
1-1/2	MT (API Reg)	2	1	1,600	960	115,290
			1-5/32	1,160	700	83,590
			1-1/8	1,260	750	90,250
			1-1/16	1,430	860	103,040
	MT DSI■		1	2,150	1,290	115,290
1-9/16	Homco Slimline	1-9/16	15/16	900●	540	71,120
1-5/8	Baash Ross	1.660	3/4	1,050●	630	89,370
1-13/16	Homco Slimline	1-13/16	1	900●	540	111,000
	Homco FJ		3/4	1,600●	960	113,000
	Wilson FJ			1,220●	730	103,860
2-1/16	MT DSI■	2.330	1-1/4	2,490	1,490	121,940
2-3/8	PAC	2-7/8	1-3/8	4,930	2,960	244,720
	PAC DSI■		1-1/2	5,920	3,550	210,840
	Reg DSI■	3-1/8	1	7,280●	4,370	365,260
	Homco FJ	2-1/2		3,350●	2,010	203,100
	Wilson FJ			1-1/16	3,180	1,900
2-7/8	AM OH	3-7/8	2.151	8,900	5,340	345,360
	AM OH - LW	3-3/4	2.441	5,700	3,420	223,680
	PAC	3-1/8	1-1/2	6,010	3,610	279,720
	PAC DSI■			8,660	5,200	
3-1/2	PAC	3-3/4	2	9,110	5,470	361,540

Torque and tensile values based on material minimum yield strength of 120,000 psi

Check applicable pipe for comparative values

Recommended make-up torque = 60% of yield torque

Factor of safety = 1 for yield torque and tensile yield load calculations

■ Double Shoulder Internal

● Box weak in torsion, all other connections listed are pin weak in torsion

PRT Connections Dimension and Strength Data

Size	Connection	Box OD	Pin ID	Yield Torque	Recommended Make-Up Torque	Tensile Yield Load
		in.	in.	ft-lb	ft-lb	lb
1-13/16	PRT	1-13/16	3/4	2,160	1,080	74,520
2-1/4	PRT	2-1/4	3/4	4,440	2,220	132,090
3-1/8	PRT	3-1/8	1	10,470	5,230	284,760
4-1/4	PRT	4-1/4	2	21,290	10,640	447,630

Torque and tensile values based on material minimum yield strength of 110,000 psi

Check applicable pipe for comparative values

Recommended make-up torque = 50% of yield torque

Factor of safety = 1 for yield torque and tensile yield load calculations

Large Diameter Tool Joints Dimension and Strength Data

Size	Connection	Box OD	Pin ID	Yield Torque	Recommended Make-Up Torque	Tensile Yield Load at 0 Make-Up Torque
		in.	in.	ft-lb	ft-lb	lb
2-3/8	API Reg	3-1/8	1	5,810●	3,480	362,660
	API IF (NC26)	3-3/8	1-3/4	6,870●	4,120	303,790
2-7/8	API Reg	3-3/4	1-1/4	11,080	6,650	478,540
	API FH	4-1/4	2-1/8	13,310●	7,980	539,780
	API IF (NC31)	4-1/8		11,870	7,120	435,220
	Hughes SH	3-3/8	1-3/4	6,870●	4,120	313,280
	Hughes X-Hole	4-1/4	1-7/8	13,580	8,150	504,580
3-1/2	API Reg	4-1/4	1-1/2	15,140●	9,080	679,870
	API FH	4-5/8	2-1/8	16,270●	9,760	775,890
	API IF (NC38)	4-3/4	2-11/16	18,090	10,850	572,690
	Hughes DSL	3-7/8	1-13/16	10,290●	6,170	514,940
	Hughes SH	4-1/8	2-1/8	12,180	7,300	446,650
	Hughes X-Hole	4-3/4	2-7/16	17,470	10,480	570,160
		5	2-3/4	23,570	14,140	648,660
5-1/4	23,710	14,220				
4	API FH (NC40)	5-1/4	2-13/16	23,470	14,080	695,940
	API IF (NC46)	6	3-1/4	33,620	20,170	883,580
	Hughes SH	4-5/8	2-9/16	15,550	9,330	511,250
	Hughes H-90	5-1/2	2-13/16	35,430	21,260	897,540
4-1/2	API Reg	5-1/2	2-1/4	29,900●	17,940	1,186,440
	API FH	5-3/4	3	34,380	20,630	950,330
	API IF (NC50)	6-5/8	3-3/4	38,060	22,830	919,880
	Hughes X-Hole	6-1/4	3-1/4	34,020	20,410	883,580
		Hughes H-90	6	3	45,260	27,150
	3-1/4			39,020	23,410	921,230
5	Hughes X-Hole	6-3/8	3-3/4	38,440	23,060	938,600
5-1/2	API Reg	6-3/4	2-3/4	61,330●	36,790	1,678,810
	API FH	7	4	55,930	33,550	1,244,530
	API IF	7-3/8	4-13/16	61,670	37,000	1,264,360
6-5/8	API Reg	7-3/4	3-1/2	83,380	50,020	1,770,500
	API FH	8	5	73,680	44,210	1,423,990
	API IF	8-1/2	5-29/32	83,460	50,070	1,476,870
7-5/8	API Reg	8-7/8	4	133,650	80,190	2,495,960
8-5/8	API Reg	10	4-3/4	189,880	113,930	3,132,570

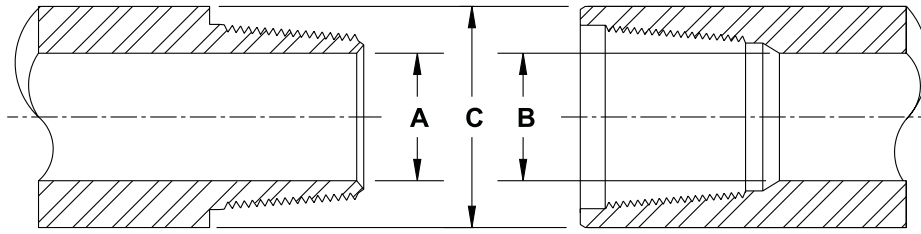
Torque and tensile values based on material minimum yield strength of 120,000 psi

Check applicable pipe for comparative values

Recommended make-up torque is equal to 60% of yield torque

Factor of safety = 1 for yield torque and tensile yield load calculations

● Box weak in torsion, all other connections listed are pin weak in torsion



Recommended Maximum and Minimum Tool Joint Dimensions

Size	Joints		Nom OD in.	Nom ID in.	A	B	C	
	Type	Max			Max	Min	Max	
2-3/8	API Reg	3-1/8	1	1-1/8	1-5/8	2-15/16	3-1/4	
	API IF	3-3/8	1-3/4	1-3/4	2	3-3/16	3-5/8	
2-7/8	API Reg	3-3/4	1-1/4	1-3/8	1-7/8	3-1/2	4	
	FH	4-1/4	2-1/8	2-1/8	2-3/8	4-1/16	4-5/8	
	API IF	4-1/8			2-1/2	3-7/8	4-3/8	
	Hughes Extra Hole	4-1/4	1-7/8	1-7/8	2-1/8	4	4-5/8	
3-1/2	API Reg	4-1/4	1-1/2	1-3/4	2-1/4	4	4-5/8	
	API FH	4-5/8	2-1/8	2-7/16	2-3/4	4-1/2	5	
	API IF	4-3/4	2-11/16	2-11/16	3			
	Hughes Extra Hole		2-7/16	2-7/16	2-3/4			
4	API FH	5-1/4	2-13/16	2-13/16	3-1/4	5	5-3/8	
	API IF	6	3-1/4	3-5/16	3-1/2	5-1/2	6	
4-1/2	API Reg	5-1/2	2-1/4	2-5/8	3-1/4	5-3/8	6	
	API FH	5-3/4	3	3-5/32	3-1/2	5-1/2		
	API IF	6-5/8	3-3/4	3-3/4	4-1/8	5-7/8	6-3/4	
	Hughes Extra Hole	6-1/4	3-1/4	3-1/4	3-3/8	5-5/8	6-1/4	
5-1/2	API Reg	6-3/4	2-3/4	3-1/4	3-7/8	6-3/8	7	
	API FH	7	4	4	4-1/2	6-1/2	7-1/4	
	API IF	7-3/8	4-13/16	4-13/16	5-1/4	7-1/8	7-7/8	
6-5/8	API Reg	7-3/4	3-1/2	4	4-3/4	7-1/8	7-7/8	
	API FH	8	5	5	5-1/2	7-1/2	8-1/4	
	API IF	8-1/2	5-29/32	5-29/32	6-1/4	8-3/8	9	
7-5/8	API Reg	8-7/8	4	4-1/4	5-1/4	8-1/8	9	
8-5/8	API Reg	10	4-3/4	5-1/4	6-1/4	9	10-1/8	