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drilling data handbook

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EIGHTH EDITION

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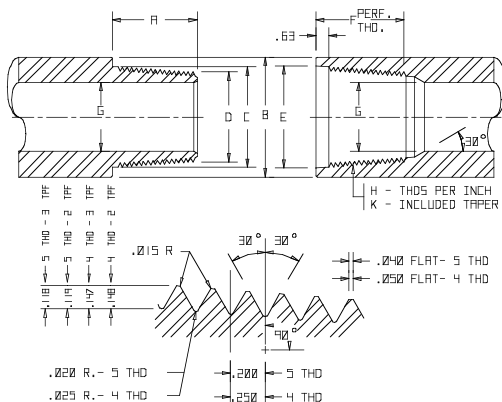
The numerical values and characteristics of the equipment and procedures described in this book are for guidance purposes only, and are not the responsibility of the authors or the companies and organizations mentioned. Further information can be obtained directly from the companies and manufacturers concerned.

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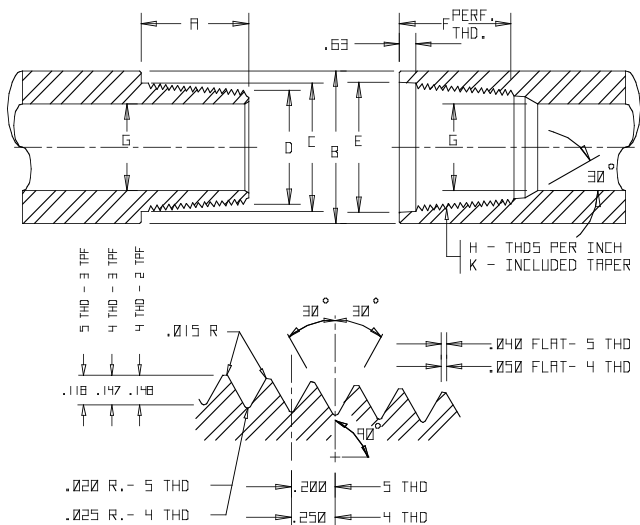
API REGULAR THREAD DIMENSIONS

SIZE	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H TPI	K TPF
1-1/4	2-5/8	2-3/16	1-23/32	1-5/16	1-3/4	3	5/8	7	2
2-3/8	3	3-1/8	2-5/8	1-7/8	2-11/16	3-3/8	1	5	3
2-7/8	3-1/2	3-3/4	3	2-1/8	3-1/16	3-7/8	1-1/4	5	3
3-1/2	3-3/4	4-1/4	3-1/2	2-9/16	3-9/16	4-1/8	1-1/2	5	3
4-1/2	4-1/4	5-1/2*	4-5/8	3-9/16	4-11/16	4-5/8	2-1/4	5	3
5-1/2	4-3/4	6-3/4	5-33/64	4-21/64	5-37/64	5-1/8	2-3/4	4	3
6-5/8	5	7-3/4	6	5-5/32	6-1/16	5-3/8	3-1/2	4	2
7-5/8	5-1/4	8-7/8	7	5-11/16	7-3/32	5-5/8	4	4	3
8-5/8	5-3/8	10	7-61/64	6-37/64	8-3/64	5-3/4	4-3/4	4	3

SIZE	NOTES
1-1/4	Non-API.
4-1/2	*5-3/4" Optional O.D.
6-5/8	Threaded portion same as 5-1/2" Union Tool Full-Hole.
7-5/8	Obsolete API connection.
8-5/8	Obsolete API connection.

UNION TOOL REGULAR (OBSOLETE CONNECTIONS)

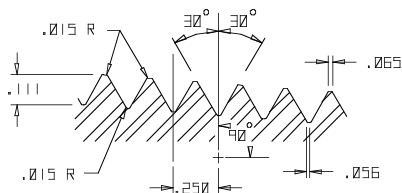
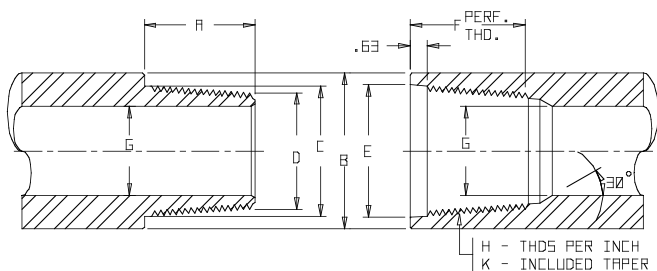
SIZE	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H TPI	K TPF
3	3-3/4	4-1/4	3-1/4	2-5/16	3-5/16	4-1/8	1-1/2	5	3
4	4-1/4	5-3/4	4-1/2	3-51/64	4-9/16	4-5/8	2-1/4	5	2
5	4-5/8	6-3/4	5-33/64	4-21/64	5-37/64	5-1/8	2-3/4	4	3
6	5	7-3/4	6	5-5/32	6-1/16	5-3/8	3-1/2	4	2



API FULL HOLE

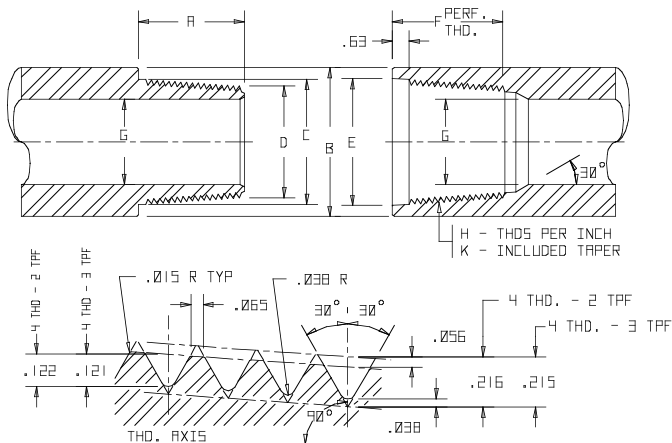
SIZE	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H TPI	K TPF
2-7/8	3-1/2	4-1/4	3-5/8	2-3/4	3-11/16	3-9/16	2-1/8	5	3
3-1/2	3-3/4	4-5/8	4	3-1/16	4-3/64	4-3/8	2-1/8*	5	3
4	4-1/2	5-1/4	4-9/32	3-17/32	4-11/32	5-1/8	2-13/16	4**	2
4-1/2	4	5-3/4	4-51/64	3-51/64	4-7/8	4-5/8	3	5	3
5-1/2	5	7	5-53/64	5	5-29/32	5-5/8	4	4	2
6-5/8	5	8	6-3/4	5-59/64	6-27/32	5-5/8	5	4	2

SIZE	NOTES
2-7/8	Not API standard.
3-1/2	* I.D. changed from 2-7/16", May 1979 (API).
4	** Thread form same as API I.F. joint.



API INTERNAL FLUSH

SIZE	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H TPI	K TPF
2-3/8	3	3-3/8	2-7/8	2-3/8	2-15/16	3-5/8	1-3/4	4	2
2-7/8	3-1/2	4-1/8	3-25/64	2-13/16	3-29/64	4-1/8	2-1/8	4	2
3-1/2	4	4-3/4	4-1/64	3-11/32	4-5/64	4-5/8	2-11/16	4	2
4	4-1/2	5-3/4	4-53/64	4-5/64	4-29/32	5-1/8	3-1/4	4	2
4-1/2	4-1/2	6-3/8	5-1/4	4-1/2	5-5/16	5-1/8	3-3/4	4	2
5-1/2	5	7-3/8	6-25/64	5-9/16	6-29/64	5-5/8	4-13/16	4	2

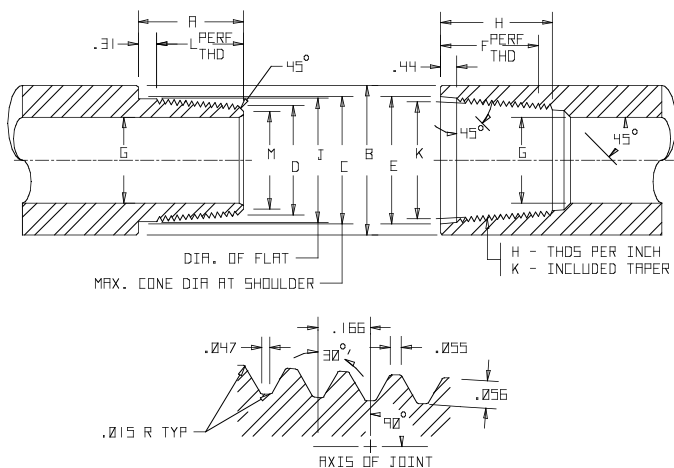


API NUMBERED CONNECTIONS

O.D.'S AND I.D.'S LISTED DENOTE API STANDARD FOR
DRILL PIPE CONNECTIONS

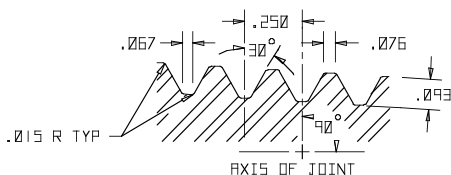
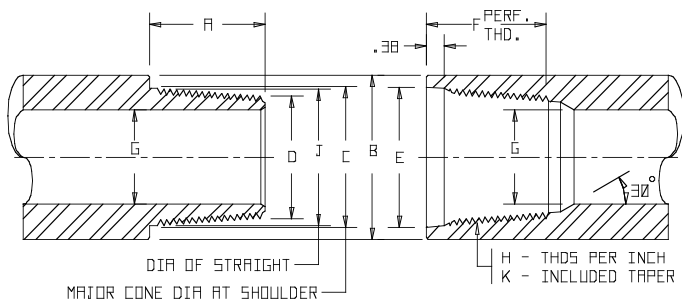
SIZE	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H TPI	K TPF
NC 10	1-1/2	1-3/8	1.190	1.002	1.204	2-1/8	0.719	6	1-1/2
NC 12	1-3/4	1-5/8	1.392	1.173	1.406	2-3/8	0.906	6	1-1/2
NC 13	1-3/4	1-13/16	1.518	1.299	1.532	2-3/8	0.937	6	1-1/2
NC 16	1-3/4	2-1/8	1.736	1.517	1.751	2-3/8	1.000	6	1-1/2
NC 23	3	3-1/8	2.563	2.063	2-5/8	3-5/8	1-1/4	4	2
NC 26	3	3-3/8	2.876	2.376	2-15/16	3-5/8	1-3/4	4	2
NC 31	3-1/2	4-1/8	3.391	2.808	3-29/64	4-1/8	2-1/8	4	2
NC 35	3-3/4	4-3/4	3.739	3.114	3-13/16	4-3/8	2-1/4	4	2
NC 38	3-3/4	4-3/4	4.016	3.349	4-5/64	4-5/8	2-11/16	4	2
NC 40	4-1/2	5-1/4	4.280	3.530	4-11/32	5-1/8	2-13/16	4	2
NC 44	4-1/2	5-3/4	4.625	3.875	4-11/16	5-1/8	3-1/8	4	2
NC 46	4-1/2	6	4.834	4.084	4-29/32	5-1/8	3-1/4	4	2
NC 50	4-1/2	6-3/8	5.250	4.500	5-5/16	5-1/8	3-3/4	4	2
NC 56	5	7	5.876	4.626	6-15/16	5-5/8	3-3/4	4	3
NC 61	5-1/2	8	6.438	5.063	6-1/2	6-1/8	4	4	3
NC 70	6	9-1/4	7.313	5.813	7-3/8	6-5/8	4-1/2	4	3
NC 77	6-1/2	10-3/4	8.000	6.376	8-1/16	7-1/8	4-3/4	4	3

SIZE	NOTES
NC 10	DIMENSIONS ARE TENTATIVE.
NC 12	DIMENSIONS ARE TENTATIVE.
NC 13	DIMENSIONS ARE TENTATIVE.
NC 16	DIMENSIONS ARE TENTATIVE.
NC 23	DIMENSIONS ARE TENTATIVE.
NC 77	DIMENSIONS ARE TENTATIVE.



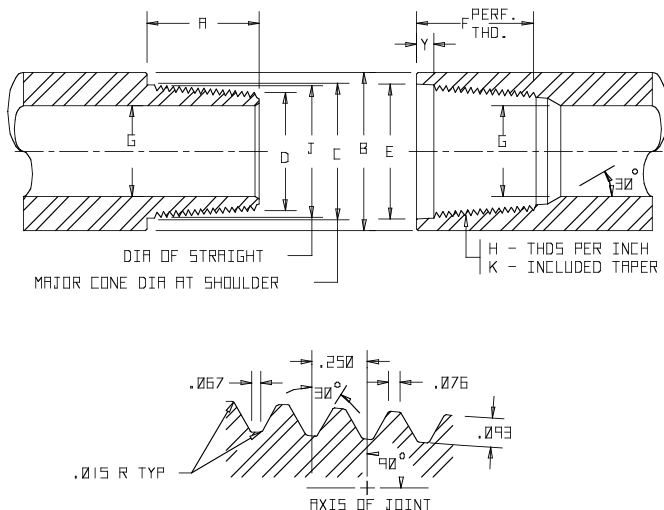
AMERICAN MT

SIZE	A	B	C	D	E	F	G	H	J	K	L	M
1	1-1/2	1-9/16	1.281	1.093	1.301	1-1/2	3/4	2	1.233	1.183	1-1/8	61/64
1-1/4	2	1-3/4	1.469	1.218	1.489	2	3/4	2-1/2	1.421	1.371	1-5/8	1-3/32
1-1/2	2	2	1.668	1.418	1.688	2	1	2-1/2	1.621	1.570	1-5/8	1-9/32



AMERICAN P.A.C.

SIZE	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H TPI	J (in.)	K TPF
2-3/8	2-3/8	2-7/8	2-23/64	2-1/16	2-27/64	2-1/2	1-3/8	4	2-5/16	1-1/2
2-7/8	2-3/8	3-1/8	2-17/32	2-15/64	2-19/32	2-1/2	1-1/2	4	2-31/64	1-1/2
3-1/2	3-1/4	3-3/4	3-3/64	2-41/64	3-7/64	3-3/8	2	4	3	1-1/2

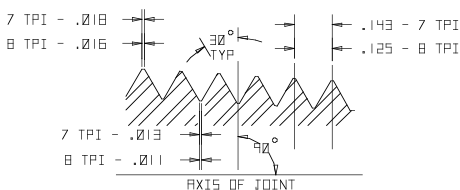
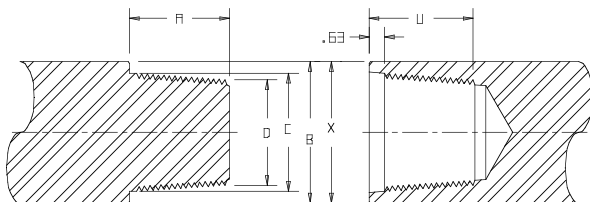


AMERICAN OPEN HOLE

SIZE	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H TPI	J (in.)	K TPF	Y (in.)
2-3/8	2-3/8	3-1/4	2-3/4	2-29/64	2-13/16	2-1/2	1-13/16	4	2-45/64	1-1/2	3/8
2-7/8	2-7/8	3-7/8	3-9/64	2-25/32	3-7/32	3	2.151	4	3-7/64	1-1/2	3/8
3-1/2	3-1/4	4-3/4	3-57/64	3-31/64	3-61/64	3-3/8	2-11/16	4	3-27/32	1-1/2	5/8
4	4	5-1/2	4-37/64	4-5/64	4-41/64	4-1/8	3-1/4	4	4-17/32	1-1/2	5/8

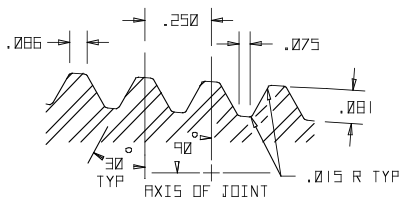
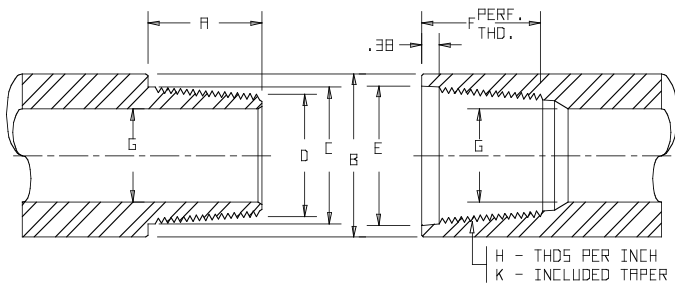
AMERICAN OPEN HOLE LIGHTWEIGHT AND TUBING

SIZE	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H TPI	J (in.)	K TPF	Y (in.)
2-3/8	2-3/8	3-1/8	2-3/4	2-29/64	2-13/16	2-1/2	1.995	4	2-45/64	1-1/2	3/8
2-7/8	2-1/2	3-3/4	3-9/64	2-53/64	3-7/32	3	2.441	4	3-7/64	1-1/2	3/8
3-1/2	3-1/4	4-1/2	3-57/64	3-31/64	3-61/64	3-3/8	2.992	4	3-27/32	1-1/2	5/8
4	3-1/2	5-1/4	4-37/64	4-9/64	4-41/64	4-1/8	3.476	4	4-17/32	1-1/2	5/8
4-1/2	3-3/4	5-3/4	4-59/64	4-29/64	4-63/64	3-7/8	3.958	4	4-7/8	1-1/2	5/8



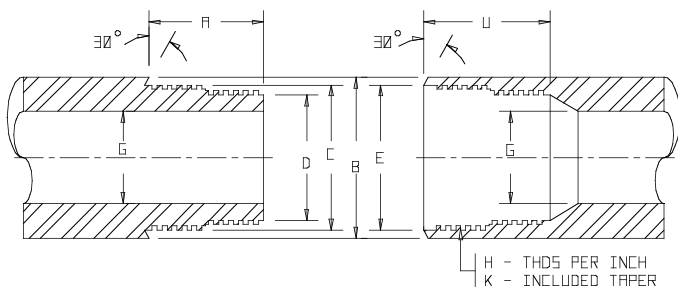
CABLE TOOL JOINTS

SIZE	A (in.)	B (in.)	C (in.)	D (in.)	H TPI	K TPF	U (in.)	X (in.)
7/8 X 1-1/4-10	2-1/4	1-7/8	1-5/16	15/16	10	2	3	1-15/16
7/8 X 1-1/2-10	2-5/8	2-1/4	1-19/32	27/32	10	3-7/16	3-3/8	2-3/8
1 X 1-1/2-8	2	2	1-31/64	61/64	8	3	2-3/4	2-1/16
1-1/8 X 1-3/4-8	2-1/2	2-1/2	1-47/64	1-7/64	8	3	3-1/4	2-5/8
1-1/8 X 1-3/4-8	2-1/2	2-1/2	1-49/64	1-7/32	8	2-5/8	3-1/4	2-5/8
1-1/2 X 2-1/4-8	3	3-1/8	2-15/64	1-31/64	8	3	3-3/4	3-1/4
1-5/8 X 2-1/2-8	3-1/2	3-1/2	2-1/2	1-5/8	8	3	4-1/4	3-5/8
1-5/8 X 2-5/8-7	3-1/2	3-5/8	2-43/64	1-51/64	7	3	4-1/4	3-3/4
1-3/4 X 2-3/4-8	3-1/2	3-3/4	2-3/4	1-3/4	8	3-7/16	4-1/4	3-7/8
2 X 3 -7	4	4-1/4	3-7/64	2-7/64	7	3	4-3/4	4-3/8
2 X 3 -7	4	4-1/4	3-1/16	2	7	3-3/16	4-3/4	4-3/8
2-1/4 X 3-1/4-7	4	4-1/2	3-5/16	2-17/64	7	3-1/8	4-3/4	4-3/4
2-1/4 X 3-1/4-7	4	4-1/2	3-9/32	2-9/32	7	3	4-3/4	4-3/4
2-1/2 X 3-1/2-7	4-1/4	5	3-37/64	2-33/64	7	3	5	5-1/4
2-3/4 X 3-3/4-7	4-1/2	5-1/4	3-13/16	2-11/16	7	3	5-1/4	5-1/2
3 X 4 -7	4-3/4	6	4	2-13/16	7	3	5-1/2	6-1/4
3 X 4 -7	4-3/4	6	4	2-47/64	7	3-3/16	5-1/2	6-1/4
3-1/4 X 4-1/4-7	5	6-1/4	4-19/64	3-3/64	7	3	5-3/4	6-1/2
3-1/2 X 4-1/2-7	5-1/2	6-1/2	4-21/32	3-9/32	7	3	6-1/4	6-3/4
4 X 5 -7	5-1/2	7	5-1/16	3-11/16	7	3	6-1/4	7-3/8
4 X 5 -7	5	7	5-1/16	3-13/16	7	3	5-3/4	7-3/8
4 X 5-1/2-7	6-1/2	7-1/2	5-1/2	3-7/8	7	3	7-1/4	7-7/8
4-1/4 X 6 -7	7	8-1/4	6	4-1/4	7	3	7-3/4	8-5/8



GULF TUBING TOOL JOINTS

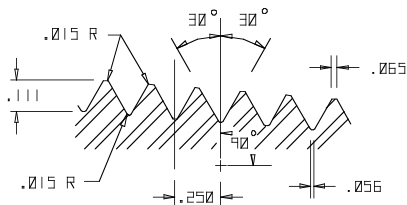
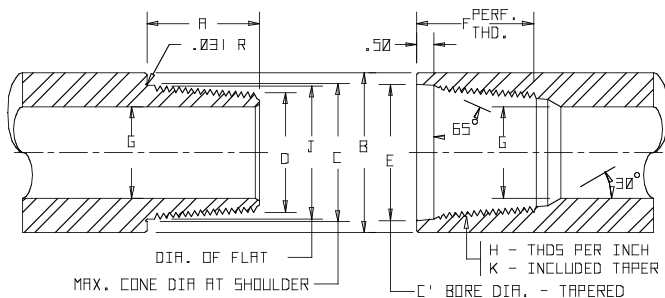
SIZE	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H TPI	K TPF
A-200 2-3/8	2-3/8	3.060	2.720	2.423	2.739	2-3/4	1.995	4	1-1/2
A-250 2-7/8	2-3/8	3.668	3.294	2.997	3.314	2-3/4	2.441	4	1-1/2
A-300 3	2-3/4	4.500	3.978	3.634	4.000	3	2.992	4	1-1/2



HYDRIL JOINTS

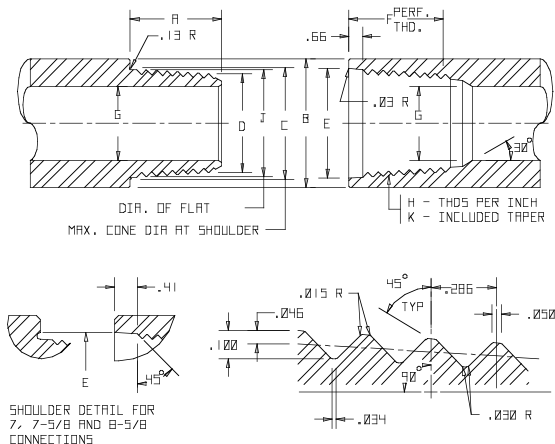
TYPE	SIZE	WEIGHT (lbs./ft.)	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	G (in.)	H TPI	K TPF	U (in.)
IF	2-3/8	6.65	3-15/16	3-3/8	2-13/16	2-21/64	2-13/16	1-3/4	3	1/2	3-59/64
	2-7/8	10.40	3-57/64	3-7/8	3-3/16	2-45/64	3-3/16	2-7/64	3	1/2	3-59/64
	2-7/8	11.80	3-57/64	3-7/8	3-3/16	2-45/64	3-3/16	2	3	1/2	3-59/64
	3-1/2	13.30	3-61/64	4-1/2	3-27/32	3-23/64	3-27/32	2-3/4	3	1/2	3-31/32
	3-1/2	15.50	3-61/64	4-1/2	3-27/32	3-23/64	3-27/32	2-9/16	3	1/2	3-31/32
	4-1/2	16.60	4	6	5-13/64	4-35/64	5-7/32	3-3/4	3	1/2	4-1/64
	4-1/2	20.00	4	6	5-13/64	4-35/64	5-7/32	3-3/4	3	1/2	4-1/64
	*5	20.50	4-23/32	6-5/8	5-25/32	5-1/64	5-51/64	4-3/16	2	1/2	4-3/4
F	2-3/8	6.65	2-5/8	2-3/8	1-59/64	1-43/64	1-15/16	1	4	1/2	2-15/32
	2-7/8	10.40	3-21/32	2-7/8	2-23/64	1-29/32	2-3/8	1-1/16	4	1/2	3-1/2
	3-1/2	13.30	4-1/16	3-1/2	2-13/16	2-21/64	2-13/16	1-1/2	3	1/2	3-59/64
	4	14.00	3-59/64	4-1/16	3-5/16	2-55/64	3-11/32	2	3	1/2	3-29/32
	4-1/2	16.60	3-61/64	4-1/2	3-27/32	3-23/64	3-27/32	2-3/16	3	1/2	3-31/32
	*5	19.50	4-5/16	5	4-3/16	3-35/64	4-13/64	2-5/16	3	1/2	4
	5-1/2	21.90	4-1/4	5-9/16	4-21/32	4-1/64	4-43/64	2-3/4	3	1/2	4-1/32
	*6-5/8	25.20	5-5/16	6-5/8	5-11/16	4-29/32	5-45/64	3-1/2	2	1/2	5-1/8
EIU	3-1/2	13.30	4-1/4	4-5/8	3-47/64	3-17/64	3-3/4	2-7/16	3	1/2	4
	4	14.00	4-5/16	5-9/16	4-21/64	4-1/64	4-43/64	3-1/8	3	1/2	4-1/32
	4-1/2	20.00	4-7/16	5-3/4	4-47/64	4-3/32	4-3/4	3-5/32	3	1/2	4-1/8
	5-1/2	21.90	5-1/2	7	5-53/64	5-1/16	5-27/32	4	2	1/2	5-1/8
	*6-5/8	25.20	5-1/2	8	6-7/8	6-7/64	6-57/64	5	2	1/2	5-1/8

* OBSOLETE HYDRIL CONNECTION.



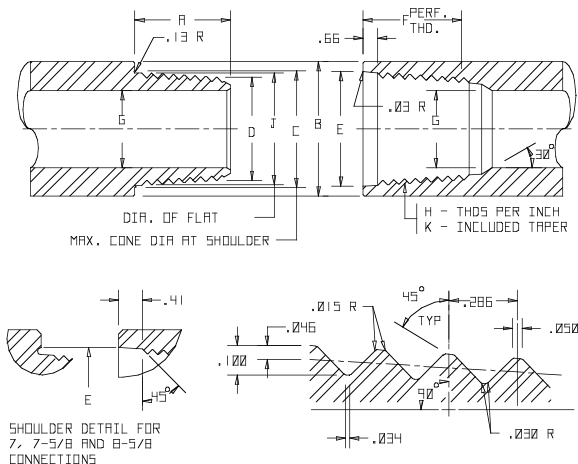
HUGHES DOUBLE STREAMLINE

SIZE	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H TPI	J (in.)	K TPF
3-1/2	3-7/8	3-7/8	3-21/64	2-11/16	3-23/64	4-14	1-13/16	4	3-15/64	2
4	4	4-1/2	3-57/64	3-7/32	3-59/64	4-3/8	2-3/8	4	3-51/64	2
4-1/2	4-1/2	5	4-9/32	3-17/32	4-5/16	4-7/8	2-11/16	4	4-3/16	2

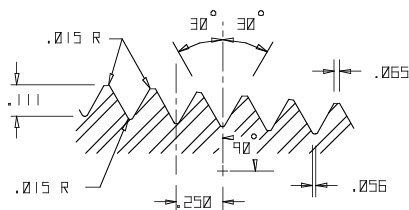
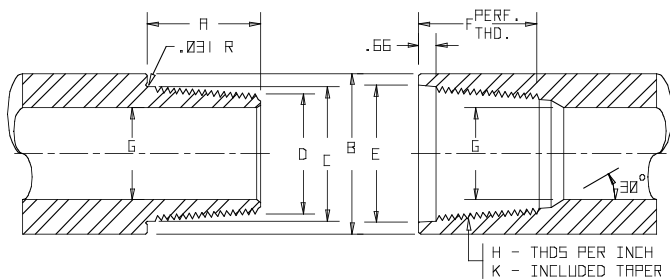


HUGHES H - 90

SIZE	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H TPI	J (in.)	K TPF	L (in.)
3-1/2	3-7/8	5	4-1/8	3-31/64	4-3/16	4-7/16	2-5/8 - 2-3/4	3-1/2	3-15/16	2	4-13/16
		5-1/8					2-1/2 - 2-3/4				4-13/16
		5-1/4					2 - 2-5/8				5
		5-3/8					2 - 2-1/4				5
		5-1/2					2 - 2-1/8				5
4	4-1/8	5-1/2	4-1/2	3-13/16	4-9/16	4-11/16	2-7/8 - 3	3-1/2	4-5/16	2	5-5/16
		5-5/8					2-1/2 - 2-7/8				5-5/16
		5-3/4					2-1/4 - 2-7/8				5-1/2
		5-7/8					2 - 2-3/4				5-1/2
		6					2 - 2-1/2				5-12
4-1/2	4-3/8	6	4-53/64	4-7/64	4-57/64	4-15/16	3 - 3-1/4	3-1/2	4-41/64	2	5-3/4
		6-1/8					2-3/4 - 3				5-3/4
		6-1/4					2-1/2 - 3				6
		6-3/8					2 - 3				6
		6-1/2					2 - 2-3/4				6
5	4-5/8	6-1/2	5-7/64	4-21/64	5-11/64	5-3/16	2-7/8 - 3-1/4	3-1/2	4-59/64	2	6-1/8
		6-5/8					2-1/2 - 3				6-1/8
		6-3/4					2-1/4 - 3				6-3/8
		6-7/8					2-1/4 - 2-3/4				6-3/8
		7					2-1/2			6-3/8	
5-1/2	4-5/8	6-3/4	5-3/8	4-39/64	5-7/16	5-3/16	3-1/8 - 3-3/8	3-1/2	5-3/16	2	6-3/8
		6-7/8					3 - 3-1/4				6-5/8
		7					2-3/4 - 3-1/4				6-5/8
		7-1/8					2-1/4 - 3-1/4				6-5/8
		7-1/4					2-1/4 - 3				6-5/8
		7-3/8					2-1/4 - 2-3/4				6-5/8
		7-1/2					2-1/4 - 2-1/2				6-5/8



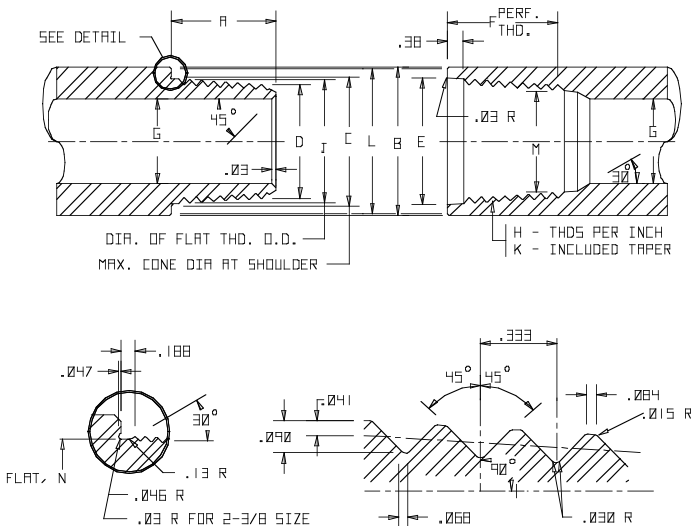
SIZE	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H TPI	J (in.)	K TPF	L (in.)
6-5/8	4-7/8	7-5/8 7-3/4 7-7/8 8 8-1/8 8-1/4	6	5-3/16	6-1/16	5-11/16	3-3/8 - 3-5/8 3-1/4 - 3-1/2 3 - 3-1/2 2-1/2 - 3-1/2 2-1/2 - 3-1/4 2-1/2 - 3	3-1/2	5-13/16	2	7-1/4 7-1/2 7-1/2 7-1/2 7-1/2
7	5-3/8	8-1/4 8-3/8 8-1/2 8-5/8 8-3/4 9	6-1/2	5-5/32	7-1/8	5-15/16	3-1/2 - 3-3/4 2-3/4 - 3-3/4 2-3/4 - 3-3/4 2-3/4 - 3-1/2 2-3/4 - 3-1/4 2-3/4 - 3	3-1/2	6-3/8	3	8 8 8-1/4 8-1/4 8-1/4 8-5/8
7-5/8	6	9-1/2 9-5/8 9-3/4 9-7/8 10 10-1/4	7-25/64	5-57/64	8	6-9/16	3-1/2 - 4 3 - 4 3 - 4 3 - 4 3 - 3-3/4 3 - 3-1/4	3-1/2	7-17/64	3	9-1/4 9-1/4 9-1/4 9-5/8 9-5/8 9-5/8
8-5/8	6-1/2	10-3/4 11 11-1/4 11-1/2	8-17/64	6-41/64	9-3/8	7-1/16	3-1/2 - 4 3 - 4 3 - 4 3 - 3-1/4	3-1/2	8-9/64	3	10-1/2 10-1/2 10-3/4 10-3/4



HUGHES SLIM HOLE

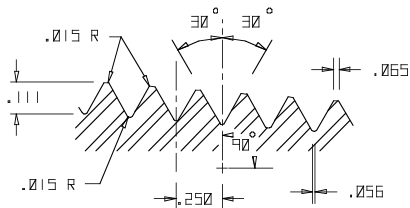
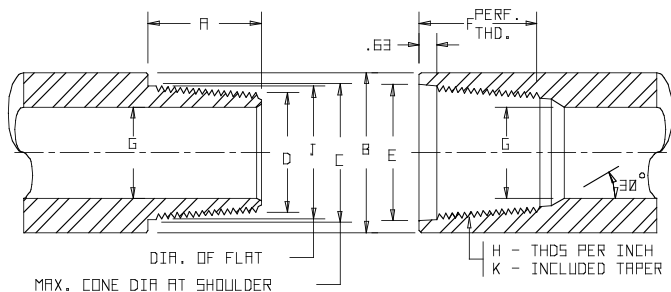
SIZE	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H TPI	K TPF
2-3/8	2-7/8	2-7/8	2-7/16	1-31/32	2-1/2	3-1/4	1-13/16	4	2
2-7/8	2-7/8	3-3/8	2-7/8	2-25/64	2-15/16	3-1/4	1-3/4	4	2
3-1/2	3-3/8	4-1/8	3-25/64	2-53/64	3-29/64	3-3/4	2-1/8	4	2
4	3-3/8	4-5/8	3-13/16	3-1/4	3-7/8	3-3/4	2-7/16	4	2
4-1/2	3-7/8	5	4-1/64	3-3/8	4-5/64	4-1/4	2-11/16	4	2

SIZE	NOTES
2-3/8	OBSOLETE CONNECTION.



HUGHES SLIMLINE H - 90

SIZE	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H TPI	J (in.)	K TPF	L (in.)	M (in.)	N (in.)
2-3/8	2-3/4	3-1/8 3-1/4	2.725	2.439	2-49/64	3-1/16	1-1/2	3	2-43/64	1-1/4	3-1/16 3-3/16	2-1/4	2-5/8
2-7/8	2-7/8	3-3/4 3-7/8 4 4-1/8 4-1/4	3.196	2.897	3-15/64	3-3/8	2-1/8 - 2-1/4 2-1/8 - 2-1/4 2 1-3/4 - 2 1-1/2 - 1-3/4	3	3-5/32	1-1/4	3-5/8 3-23/32 3-13/16 3-13/16 3-29/32 4	2-45/64	3-3/32
3-1/2	3-1/8	4-5/8 4-3/4 4-7/8 4-7/8 5 5-1/8	3.835	3.509	3-7/8	3-3/8	2-3/8 - 2-3/4 2-1/2 - 2-3/4 2-5/8 2-3/8 - 2-1/2 2 - 2-3/8 1-3/4 - 2-1/8	3	3-25/32	1-1/4	4-7/16 4-17/32 4-5/8 4-5/8 4-23/32 4-13/16	3-11/32	3-47/64



HUGHES EXTRA HOLE

SIZE	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H TPI	J (in.)	K TPF
2-7/8	3-7/8	4-1/4	3-21/64	2-11/16	3-23/64	4-1/2	1-7/8	4	3-15/64	2
3-1/2	3-3/8	4-3/4	3-13/16	3-1/4	3-7/8	3-15/16	2-7/16	4	—	2
4-1/2	4-3/8	6-1/4	4-53/64	4-7/64	4-29/32	4-15/16	3-1/4	4	—	2
5	4-1/2	6-3/8	5-1/4	4-1/2	5-5/16	4-7/8	3-3/4	4	—	2