

Cty XNK HUỠ PHÁT- 0909 65 11 67
Web: phukienapluc.com.vn

BOTH - WELL

HIGH PRESSURE FITTINGS

**FORGED
CARBON ALLOY
STAINLESS STEEL
THREADED SOCKETWELD**



BOTH-WELL STEEL FITTINGS CO., LTD.

NO.303 Ren-sin Road, Ren-wu District, Kaohsiung City,
Taiwan, R.O.C. (814020)

TEL : 886-7-371-1536 ● 371-0497 ● 372-0260

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INTRODUCTION

BOTH-WELL is equivalent to Win-Win, existing in between both consumers and manufacture, both devoted employers and valued employees, a bilateral satisfaction.

Ever since its establishment in 1985, with the spirit of pursuing most advanced technology and striving for the ultimate quality-oriented products, the company is continuously utilizing the most up-to-date hi-tech facilities and most sophisticated manufacturing techniques, on the basis of skilled manpower and accumulated experiences. BOTH-WELL has been well-recognized among customers worldwide for the excellence of Quality and Services which has enabled us to win the unrivaled reputation in our industries.

QUALITY ASSURANCE

It is our indelible belief in Quality First.

BOTH-WELL's Quality Management System has been certified with ISO 9001:2015, PED, together with all major international-recognized certificates and being granted as an approval vendor for ARAMCO, also being listed on the Approval Supplier List of major domestic refineries, petro-chemical factories in Taiwan.

BOTH-WELL prides itself in having the best service performance in our industries which can only attribute it to the quality of people we employ and the amicable relationship and close partnership we have built-up with all our customers, and the company will continue its ultimate efforts to satisfy all its customers' demands by providing top quality products and high efficient services by anticipating the continued encouragement and supports from all its customers in the years ahead.

PRODUCTION RANGE AND SPECIFICATION :

TYPE	: A. ELBOW, TEE, COUPLING, HALF COUPLING, CAP, PLUG, BUSHING, UNION, OUTLET, SWAGE NIPPLE, BULL PLUG, REDUCER INSERT AND HEX. NIPPLE, STREET ELBOWS, BOSS...ETC. B. SOCKET-WELD, THREADED (NPT, and PT, and BSP (ISO7-1, ISO228-1)), BUTT-WELDING.
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SIZE	: NPS 1/8" ~ 4" DN 6 ~ 100
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RATING	: PRESSURE : THREADED END - 2000 / 3000 / 6000 LBS. SOCKET-WELD END - 3000 / 6000 / 9000 LBS. BUTT WELD END - SCH40 / SCH80 / SCH160 / XXS.
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SPECIFICATIONS	: A. DIM. SPEC. : ASME B16.11 MSS SP - 79, 83, 95, 97 and BS3799. B. MATERIAL SPEC : ASME/ASTM SA/A105, SA/A350 LF2, SA/A106, SA/A312, SA/A234, SA/A403, ASME/ASTM SA/A182 (F304, F304L, F316, F316L, F304H, F316H, F317L, F321, F5, F9, F11, F22, F44, F51/60, F53, F91). C. SIZE of RAW MATERIAL : DIA. 19 ~ 120mm ROUND BAR.
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MARKING	: A. CARBON and ALLOY STEEL : MARKED BY STAMPING or LASER MARKING. B. STAINLESS STEEL : MARKED BY JET PRINTING or STAMPING or LASER MARKING. C. 3/8" UNDER : BRAND ONLY. D. 1/2" to 4" : MARKED WITH BRAND, MATERIAL, HEAT CODE, B16 (FOR ASME B16.11 PRODUCT), RATING and SIZE.
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FINISHING	: CARBON STEEL - GALVANIZED, PHOSPHATE, or ANTI-RUST OIL COATING. LOW ALLOY STEEL - PHOSPHATE, or ANTI-RUST OIL COATING. STAINLESS STEEL - PICKLED.
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PRODUCTION PROCESS CHART

(1) FORGING



(2) MACHINING - SOCKET WELD



(3) MACHINING - THREADED



(4) DELIVERY



簡要作業流程圖

一、鍛造



二、套焊加工



三、牙口加工



四、交貨處理





THE EQUIPMENT



沖床及感應加熱設備鍛造設備操作現場 ▲
HIGH SPEED PNEUMATIC PRESS EQUIPPED WITH INDUCTION HEATER

▼熱處理設備
FURNACE FOR HEAT TREATMENT





THE EQUIPMENT

CNC車床加工操作現場▶
CNC MACHINES



◀ 鑽孔機設備操作現場
▼ SPECIALIZED DRILLING MACHINES



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THE ENVIRONMENT



◀ 量具校驗區
Gage and Calibration area



倉庫區 ▶
Warehouse Area



◀ 毛坯區
Rough Forgings Area

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ISO17025 LABORATORY

TESTING LABORATORY



- ◀ 洛氏硬度試驗
ROCKWELL HARDNESS TESTING
ASTM E18
JIS Z2245
(40 to 100)HRBW
(20 to 65)HRC



- ◀ 勃氏硬度試驗
BRINELL HARDNESS TESTING
ASTM E10
JIS Z2243
(100 to 440) HBW 10/3000



- ◀ 拉伸試驗
TENSILE TESTING
ASTM E8/E8M
JIS Z2241
(1000 to 30000) KGF



- ◀ 水壓試驗
HYDROSTATIC TESTING
ASME B31.1
ASME B31.3
BS 3799
JIS B2316
Max to 30000 psi



- ◀ 晶界腐蝕試驗
INTERGRANULAR CORROSION TESTING
ASTM A262 Practice E
JIS G0575

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INSPECTION APPARATUS



▲ 分光分析儀
OPTICAL EMISSION SPECTROMETER



▲ 手持式分光分析儀
POSITIVE MATERIAL
IDENTIFICATION (PMI)



▲ 精密光學投影機
PRECISION PROJECTOR



▲ 磁力檢測設備
MAGNETIC PARTICLE
TESTING (MT) EQPT.



▲ 液滲檢測工具
LIQUID PENETRATE
TESTING (PT) EQPT.

金相設備 METALLURGICAL EQUIPMENT



切割
CUTTING



鑲埋
MOUNTING PRESS



研磨和拋光
GRINDING & POLISHING



金相顯微鏡
METALLOGRAPHIC MICROSCOPE



BOTH-WELL



HEADQUARTER

MACHINING SHOPS



FORGING SHOP



CERTIFICATION

**We Have Obtained The Following Internationally
Recognized Approvals With Certificates:**



Management
System
ISO 9001:2015
ISO 14001:2015
www.tuv.com
ID: 2100010421

An ISO 9001 Registered Manufacturer

Certificate No. 01 100 126923



Management
System
ISO 9001:2015
ISO 14001:2015
www.tuv.com
ID: 2100010421

TÜV Rheinland

ISO 14001:2015

Certificate No. 01 104 822 1633216



Lloyd's Register of Shipping

Certificate No. MD00/0208/0008/3



**AMERICAN BUREAU OF SHIPPING
TAIWAN CO., LTD**

Certificate No. 18-KS3509090



CERTIFICATION

We Have Obtained The Following Internationally
Recognized Approvals With Certificates:



中國驗船中心
China Corporation Register of Shipping
Certificate No. 472-20-012



Management
System
ISO 9001:2015
ISO 14001:2015
www.tuv.com
ID: 910201467

Quality-Assurance System for Manufacturer of Materials
acc.to Directive 2014/68/EU

Certificate No. 01 202 TWN/Q-12 0247



BUREAU VERITAS OF MARINE DIVISION

Certificate No. SMS.W.II./51004/E.0



TAIWAN ACCREDITATION FOUNDATION

ISO/IEC 17025:2017 ; CNS 17025:2018

Certificate No. L3189-200203



DIMENSIONS OF SEAMLESS STEEL PIPE AND SEAMLESS STAINLESS STEEL PIPE

(ASME B36.10M-2018 , ASME B36.19M-2018)

Unit : mm

TOLERANCES			NPS IN	STEEL PIPE																	STAINLESS STEEL PIPE			
A53 A106 O.D.	API 5L O.D.	A530 O.D.		Outside Dia.			SCHEDULE NUMBER(SCH) AND WALL THICKNESS														5S	10S	40S	80S
				STD	MAX	MIN	10	20	30	40	STD	60	XS	80	100	120	140	160	XXS					
+1/64" -1/32"	+1/64" -1/32"	+1/64" -1/32"	1/8	10.3	10.7	9.9	1.24	-	1.45	1.73	1.73	-	2.41	2.41	-	-	-	3.15	4.63	1.7	1.2	1.7	2.4	
			1/4	13.7	14.1	13.3	1.65	-	1.85	2.24	2.24	-	3.02	3.02	-	-	-	3.68	6.05	1.7	1.7	2.2	3.0	
			3/8	17.1	17.5	16.7	1.65	-	1.85	2.31	2.31	-	3.20	3.20	-	-	-	4.01	6.40	1.7	1.7	2.3	3.2	
			1/2	21.3	21.7	20.9	2.11	-	2.41	2.77	2.77	-	3.73	3.73	-	-	-	4.78	7.47	1.7	2.1	2.8	3.7	
			3/4	26.7	27.1	26.3	2.11	-	2.41	2.87	2.87	-	3.91	3.91	-	-	-	5.56	7.82	1.7	2.1	2.9	3.9	
			1	33.4	33.8	33.0	2.77	-	2.97	3.38	3.38	-	4.55	4.55	-	-	-	6.35	9.09	1.7	2.8	3.4	4.6	
			1-1/4	42.2	42.6	41.8	2.77	-	2.97	3.56	3.56	-	4.85	4.85	-	-	-	6.35	9.70	1.7	2.8	3.6	4.9	
			1-1/2	48.3	48.7	47.9	2.77	-	3.18	3.68	3.68	-	5.08	5.08	-	-	-	7.14	10.15	1.7	2.8	3.7	5.1	
			2	60.3	60.9	59.7	2.77	-	3.18	3.91	3.91	-	5.54	5.54	-	-	-	8.74	11.07	1.7	2.8	3.9	5.5	
			±1%	±0.75%	±1/32"	2-1/2	73.0	73.7	72.2	3.05	-	4.78	5.16	5.16	-	7.01	7.01	-	-	-	9.53	14.02	2.1	3.1
3	88.9	89.8				88.0	3.05	-	4.78	5.49	5.49	-	7.62	7.62	-	-	-	11.13	15.24	2.1	3.1	5.5	7.6	
3-1/2	101.6	102.6				100.6	3.05	-	4.78	5.74	5.74	-	8.08	8.08	-	-	-	-	-	2.1	3.1	5.7	8.1	
4	114.3	115.4				113.2	3.05	-	4.78	6.02	6.02	-	8.56	8.56	-	11.13	-	13.49	17.12	2.1	3.1	6.0	8.6	
5	141.3	142.7				139.9	3.40	-	-	6.55	6.55	-	9.53	9.53	-	12.70	-	15.88	19.05	2.8	3.4	6.6	9.5	
6	168.3	170.0				166.6	3.40	-	-	7.11	7.11	-	10.97	10.97	-	14.27	-	18.26	21.95	2.8	3.4	7.1	11.0	
8	219.1	221.3				216.9	3.76	6.35	7.04	8.18	8.18	10.31	12.70	12.70	15.09	18.26	20.62	23.01	22.23	2.8	3.8	8.2	12.7	
10	273.0	275.8				270.4	4.19	6.35	7.80	9.27	9.27	12.70	12.70	15.09	18.26	21.44	25.40	28.58	25.40	3.4	4.2	9.3	12.7	
12	323.8	327.1				320.7	4.57	6.35	8.38	10.31	9.53	14.27	12.70	17.48	21.44	25.40	28.58	33.32	25.40	4.0	4.6	9.5	12.7	
14	355.6	359.2				352.0	6.35	7.92	9.53	11.13	9.53	15.09	12.70	19.05	23.83	27.79	31.75	35.71	-	4.0	4.8	9.5	12.7	
16	406.4	410.5	402.3	6.35	7.92	9.53	12.70	9.53	16.66	12.70	21.44	26.19	30.96	36.53	40.49	-	4.2	4.8	9.5	12.7				
18	457.0	461.8	452.6	6.35	7.92	11.13	14.27	9.53	19.05	12.70	23.83	29.36	34.93	39.67	45.24	-	4.2	4.8	9.5	12.7				
20	508.0	513.1	502.9	6.35	9.53	12.70	15.09	9.53	20.62	12.70	26.19	32.54	38.10	44.45	50.01	-	4.8	5.5	9.5	12.7				
22	559.0	-	-	6.35	9.53	12.70	-	9.53	22.23	12.70	28.58	34.93	41.28	47.63	53.98	-	4.8	5.5	-	-				
24	610.0	615.7	603.5	6.35	9.53	14.27	17.48	9.53	24.61	12.70	30.96	38.89	46.02	52.37	59.54	-	5.5	6.4	9.5	12.7				
26	660.0	-	-	7.92	12.70	-	-	9.53	-	12.70	-	-	-	-	-	-	-	-	-	-				
28	711.0	-	-	7.92	12.70	15.88	-	9.53	-	12.70	-	-	-	-	-	-	-	-	-	-				
30	762.0	-	-	7.92	12.70	15.88	-	9.53	-	12.70	-	-	-	-	-	-	-	6.4	7.9	-	-			
32	813.0	-	-	7.92	12.70	15.88	17.48	9.53	-	12.70	-	-	-	-	-	-	-	-	-	-				
34	864.0	-	-	7.92	12.70	15.88	17.48	9.53	-	12.70	-	-	-	-	-	-	-	-	-	-				
36	914.0	-	-	7.92	12.70	15.88	19.05	9.53	-	12.70	-	-	-	-	-	-	-	-	-	-				

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PACKING LIST

Carton Size : 28 x 20 x 18 cm (L x W x H)

Unit : PC

SIZE NPS	90° Elbow				45° Elbow				Tee				
	2M NPT 3M SW	3M NPT	6M SW	6M NPT	2M NPT 3M SW	3M NPT	6M SW	6M NPT	2M NPT 3M SW	3M NPT	6M SW	6M NPT	9M SW
1/4"	150	100	100	80	150	100	100	80	100	80	80	50	50
3/8"	100	80	80	50	100	80	80	50	80	50	50	35	35
1/2"	80	50	50	25	80	50	50	25	50	35	35	20	15
3/4"	50	25	25	20	50	30	30	20	35	20	20	12	15
1"	30	20	20	12	30	20	20	12	20	15	15	10	10
1-1/4"	20	15	15	5	20	15	15	5	15	10	10	5	6
1-1/2"	15	6	6	4	15	8	8	4	10	5	5	4	4
2"	8	5	5	2	10	6	6	2	6	4	4	2	2
2-1/2"	4	2	2	1	5	2	2	2	3	2	2	1	-
3"	2	2	1	1	2	2	1	1	2	1	1	1	-
4"	1	1	1	1	1	1	1	1	1	1	1	1	-

SIZE NPS	Cross				Full Coupling				Half Coupling			
	2M NPT 3M SW	3M NPT	6M SW	6M NPT	3M SW	3M NPT	6M SW	6M NPT	3M SW	3M NPT	6M SW	6M NPT
1/4"	40	40	80	40	350	250	250	200	400	600	300	150
3/8"	40	40	40	30	250	200	200	100	250	500	150	80
1/2"	40	30	30	20	120	100	100	60	120	250	80	80
3/4"	30	20	20	12	80	70	70	35	80	150	50	50
1"	20	12	12	6	50	35	35	20	50	80	30	35
1-1/4"	10	6	6	4	30	20	20	15	30	35	25	25
1-1/2"	6	4	4	2	25	15	15	10	25	30	15	20
2"	4	4	2	1	15	10	10	5	15	20	10	6
2-1/2"	2	1	-	-	10	5	5	3	10	12	5	4
3"	1	1	-	-	6	3	3	2	6	6	3	2
4"	-	-	-	-	4	2	2	1	4	4	-	1

SIZE NPS	Cap			Boss				Street Elbow		Insert	
	3M SW/NPT	6M SW	6M NPT	3M SW	3M NPT	6M SW	6M NPT	3M NPT	6M NPT	3M SW	6M SW
1/4"	300	200	250	250	200	200	150	150	80	300	250
3/8"	250	150	130	200	150	150	100	80	50	300	200
1/2"	130	80	80	90	80	80	60	50	25	150	120
3/4"	80	50	50	70	40	40	35	30	20	100	80
1"	50	30	30	35	30	30	20	20	12	80	60
1-1/4"	30	25	25	30	20	20	15	15	5	60	50
1-1/2"	25	15	15	25	15	15	10	8	4	40	40
2"	15	8	10	15	10	10	5	5	2	25	20
2-1/2"	10	5	4	10	5	-	-	4	-	12	10
3"	4	3	3	6	3	-	-	2	-	10	8
4"	3	2	2	4	2	-	-	1	-	4	2

SIZE NPS	OutLet		Union		Hex Plug	Round Plug	Square Plug	Bushing	Hex Nipple	Swage Nipple
	3M SW/NPT	6M SW/NPT	3M SW/NPT	6M SW/NPT	NPT	NPT	NPT	NPT	NPT	S40/S80 S160/XXS
1/4"	200	100	70	-	800	250	800	600	500	200
3/8"	150	100	70	50	600	200	500	500	400	150
1/2"	150	100	50	30	250	150	300	400	200	100
3/4"	100	50	30	20	150	100	200	200	100	70
1"	50	30	20	14	100	80	150	100	65	50
1-1/4"	35	25	14	10	35	50	80	60	35	30
1-1/2"	25	15	10	6	25	30	50	50	25	20
2"	15	10	6	2	20	15	30	25	15	8
2-1/2"	10	5	2	-	8	10	15	15	5	4
3"	6	2	2	-	6	5	10	10	3	3
4"	3	1	1	-	3	3	3	5	2	1

PLYWOOD CASE SIZE : 109x94x86cm / 60 CARTON

PLYWOOD CASE SIZE : 93x90x85cm / 48 CARTON

PLYWOOD CASE SIZE : 93x90x68cm / 36 CARTON



WEIGHT LIST

Unit : KG

SIZE NPS	90° Elbow					45° Elbow					Tee				
	2M NPT	3M SW	3M NPT	6M SW	6M NPT	2M NPT	3M SW	3M NPT	6M SW	6M NPT	2M NPT	3M SW	3M NPT	6M SW	6M NPT
1/8"	0.10	0.10	0.09	0.10	0.17	0.09	0.10	0.10	0.09	0.11	0.13	0.13	0.13	0.14	0.20
1/4"	0.09	0.08	0.15	0.15	0.33	0.08	0.08	0.12	0.14	0.27	0.11	0.11	0.22	0.20	0.41
3/8"	0.13	0.12	0.29	0.29	0.45	0.10	0.11	0.24	0.26	0.39	0.17	0.15	0.38	0.43	0.63
1/2"	0.25	0.25	0.42	0.44	0.80	0.20	0.20	0.37	0.36	0.63	0.31	0.32	0.56	0.56	0.98
3/4"	0.35	0.32	0.64	0.73	1.31	0.27	0.29	0.56	0.57	1.07	0.43	0.46	0.92	0.94	1.65
1"	0.52	0.53	1.14	1.17	1.61	0.45	0.43	0.94	1.01	1.27	0.69	0.65	1.49	1.49	2.17
1-1/4"	0.90	0.84	1.42	1.48	2.93	0.68	0.69	1.03	1.11	2.24	1.07	1.04	1.76	1.93	3.74
1-1/2"	1.06	1.07	2.63	2.79	3.79	0.82	0.79	2.05	2.22	2.54	1.39	1.35	3.27	3.37	4.71
2"	1.70	1.50	2.92	3.28	7.31	1.41	1.35	2.23	2.52	4.82	2.16	2.04	3.53	3.95	6.87
2-1/2"	3.61	3.20	5.99	8.11	11.18	2.60	2.53	4.19	-	8.16	4.11	3.98	6.99	10.05	13.11
3"	4.81	5.38	8.88	18.10	17.73	4.23	5.10	6.15	14.54	14.16	6.12	5.90	10.19	22.00	21.70
4"	10.21	10.95	14.85	16.77	15.76	8.96	9.41	11.67	-	-	13.27	12.53	19.13	-	18.00

SIZE NPS	Cross				Full Coupling				Half Coupling			
	2M NPT	3M SW	3M NPT	6M SW	3M SW	3M NPT	6M SW	6M NPT	3M SW	3M NPT	6M SW	6M NPT
1/8"	0.17	0.16	0.29	0.17	0.05	0.04	0.05	0.08	0.04	0.02	0.06	0.07
1/4"	0.14	0.13	0.26	0.26	0.05	0.05	0.07	0.10	0.05	0.03	0.09	0.05
3/8"	0.21	0.20	0.44	0.45	0.07	0.07	0.11	0.20	0.07	0.03	0.12	0.09
1/2"	0.40	0.35	0.76	0.67	0.13	0.14	0.20	0.32	0.15	0.06	0.19	0.16
3/4"	0.54	0.47	1.06	1.07	0.19	0.23	0.27	0.45	0.21	0.11	0.31	0.24
1"	0.83	0.73	1.79	1.82	0.33	0.45	0.44	0.87	0.34	0.23	0.51	0.45
1-1/4"	1.24	1.12	2.13	2.26	0.41	0.73	0.66	1.09	0.48	0.37	0.65	0.55
1-1/2"	1.75	1.58	3.93	3.96	0.59	1.18	1.11	1.94	0.56	0.54	0.91	0.96
2"	2.65	2.25	4.27	4.42	0.86	1.40	1.62	2.87	1.09	0.70	1.92	1.39
2-1/2"	5.26	4.37	8.47	-	1.40	2.29	-	4.20	1.63	1.13	-	2.10
3"	7.58	7.24	12.61	-	1.78	3.38	-	6.10	2.18	1.68	-	3.05
4"	16.00	14.58	20.25	-	2.85	5.65	-	10.04	3.71	3.11	-	5.02

SIZE NPS	Reducing Coupling				Cap				Union				Street Elbow	Hex Nipples	Square Head Plug
	3M SW	3M NPT	6M SW	6M NPT	3M SW	3M NPT	6M SW	6M NPT	3M SW	3M NPT	6M SW	6M NPT	3M NPT	3M NPT	
1/8"	0.04	0.05	-	0.08	0.03	0.03	0.05	0.06	0.28	0.28	-	-	0.12	0.07	0.01
1/4"	0.05	0.05	-	0.06	0.04	0.04	0.08	0.06	0.25	0.25	-	-	0.11	0.03	0.02
3/8"	0.07	0.08	-	0.18	0.06	0.05	0.10	0.09	0.25	0.26	0.38	0.35	0.24	0.04	0.03
1/2"	0.16	0.15	0.24	0.35	0.13	0.11	0.16	0.25	0.33	0.34	0.60	0.55	0.34	0.08	0.05
3/4"	0.25	0.18	0.29	0.53	0.16	0.18	0.23	0.40	0.49	0.48	0.91	0.92	0.55	0.12	0.08
1"	0.43	0.32	0.58	1.01	0.25	0.33	0.44	0.71	0.74	0.77	1.57	1.28	1.02	0.24	0.16
1-1/4"	0.67	0.97	1.37	1.05	0.45	0.62	0.64	0.90	1.10	1.14	1.79	1.82	1.24	0.39	0.27
1-1/2"	0.85	1.49	1.07	2.30	0.59	0.72	0.94	1.44	1.61	1.39	3.37	2.85	2.01	0.38	0.38
2"	1.66	2.20	1.83	3.86	0.96	1.09	1.55	2.25	2.16	2.43	5.24	4.70	2.91	1.00	0.63
2-1/2"	2.60	3.22	-	4.20	1.62	1.92	-	3.68	3.97	3.63	7.84	-	-	1.29	1.08
3"	3.14	4.82	-	6.10	2.68	2.91	3.60	5.12	5.94	5.27	-	-	-	1.87	1.53
4"	5.50	8.97	-	10.04	3.82	4.84	-	8.60	12.79	12.00	-	-	-	3.37	3.36

SIZE NPS	Hex Head Plug	Round Head Plug	Bushing	Reducing inserts											
				SIZE	3M	6M	SIZE	3M	6M	SIZE	3M	6M	SIZE	3M	6M
1/8"	0.01	0.02	-	3/8X1/4	0.05	0.06	1-1/4X1/2	0.29	0.34	2X1/2	0.79	0.87	4X2-1/2	3.23	-
1/4"	0.03	0.06	0.01	1/2X3/8	0.07	0.09	1-1/4X3/8	0.32	0.36	2-1/2X2	1.03	1.43	4X2	3.72	-
3/8"	0.05	0.08	0.01	1/2X1/4	0.07	0.08	1-1/4X1/4	0.34	0.37	2-1/2X1-1/2	1.16	1.26	4X1-1/2	4.20	-
1/2"	0.07	0.12	0.03	3/4X1/2	0.12	0.15	1-1/2X1-1/4	0.37	0.53	2-1/2X1-1/4	1.45	1.38	4X1-1/4	4.39	-
3/4"	0.14	0.22	0.05	3/4X3/8	0.08	0.12	1-1/2X1	0.29	0.52	2-1/2X1	1.52	1.56			
1"	0.25	0.34	0.09	3/4X1/4	0.10	0.13	1-1/2X3/4	0.36	0.48	2-1/2X3/4	1.63	1.65			
1-1/4"	0.43	0.55	0.25	1X3/4	0.17	0.27	1-1/2X1/2	0.41	0.52	3X2-1/2	1.38	2.41			
1-1/2"	0.57	0.71	0.34	1X1/2	0.13	0.22	1-1/2X3/8	0.45	0.55	3X2	1.39	1.76			
2"	1.03	1.47	0.45	1X3/8	0.16	0.21	2X1-1/2	0.59	0.87	3X1-1/2	1.41	2.08			
2-1/2"	1.62	2.34	0.60	1X1/4	0.19	0.22	2X1-1/4	0.51	0.61	3X1-1/4	2.12	2.21			
3"	2.60	3.26	1.16	1-1/4X1	0.30	0.40	2X1	0.72	0.75	3X1	2.31	2.39			
4"	5.20	6.24	3.20	1-1/4X3/4	0.25	0.30	2X3/4	0.73	0.83	4X3	2.29	-			

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