

#### **TECHNICAL SPECIFICATIONS SUBMITTAL FORM**

Job Name:	Submittal Date:	Wholesaler:
Job Location:	Engineer/Architect:	Contractor:

#### **Product Use:**

Black Malleable Fittings for use in HVAC, Refrigeration, and Plumbing Applications.

#### Design and Features:

- Made of black steel and are used to connect lengths of pipe together or to change direction of pipe.
- Typically used in high-pressure applications such as gas lines, steam lines, and water lines. Also used in applications where pipes are exposed to corrosive elements, such as industrial settings.
- Often used in conjunction with black pipes, which are also made of black steel. Black coating on both pipe and the fittings helps protect them from rust and corrosion.
- Commonly used in plumbing and gas applications

## Certifications and Approvals:

- ASTM A197/A197M Materials standard
- FM approved Factory Mutual approvals
- ASME B16.39 Union dimensions standard
- ASME B16.3, ASME B16.14 Dimensions standard
- UL/cUL certified Underwriter Laboratories certification
- NSF 61 Drinking Water System Components standard / certified
- NSF 372 Safe Water Drinking Act (SDWA) lead-free plumbing requirements







This specification and all information contained herein is the confidential and exclusive property of NDL Industries, Inc., and shall not be disclosed to others without the written consent of NDL Industries, Inc. This specification must be returned to NDL Industries, Inc. if requested.



#### Black Hex Bushings Dimensions and Selection

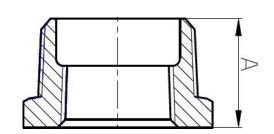
PART #	OD - DESCRIPTION	вох оту	A (IN)	WT (LB)	WT (G)
BPF100-42	1/4" x 1/8" Black Hex Bushing	120	0.583"	0.033	15.0
BPF100-62	3/8" x 1/8" Black Hex Bushing	75	0.642"	0.047	21.3
BPF100-64	3/8" x 1/4" Black Hex Bushing	75	0.642"	0.038	17.2
BPF100-82	1/2" x 1/8" Black Hex Bushing	150	0.748"	0.086	39.0
BPF100-84	1/2" x 1/4" Black Hex Bushing	150	0.748"	0.082	37.2
BPF100-86	1/2" x 3/8" Black Hex Bushing	150	0.748"	0.065	29.5
BPF100-122	3/4" x 1/8" Black Hex Bushing	75	0.850"	0.151	68.5
BPF100-124	3/4" x 1/4" Black Hex Bushing	75	0.850"	0.144	65.3
BPF100-126	3/4" x 3/8" Black Hex Bushing	75	0.850"	0.135	61.2
BPF100-128	3/4" x 1/2" Black Hex Bushing	75	0.850"	0.112	50.8
BPF100-166	1" x 3/8" Black Hex Bushing	50	1.051"	0.2	90.7
BPF100-168	1" x 1/2" Black Hex Bushing	50	1.004"	0.223	101.2
BPF100-1612	1" x 3/4" Black Hex Bushing	50	1.004"	0.183	83.0
BPF100-208	1-1/4" x 1/2" Black Hex Bushing	30	1.138"	0.322	146.1
BPF100-2012	1-1/4" x 3/4" Black Hex Bushing	30	1.079"	0.366	166.0
BPF100-2016	1-1/4" x 1" Black Hex Bushing	30	1.079"	0.277	125.6
BPF100-244	1-1/2" x 1/4" Black Hex Bushing	25	1.201"	0.371	168.3
BPF100-246	1-1/2" x 3/8" Black Hex Bushing	25	1.201"	0.352	159.7
BPF100-248	1-1/2" x 1/2" Black Hex Bushing	25	1.201"	0.389	176.4
BPF100-2412	1-1/2" x 3/4" Black Hex Bushing	25	1.201"	0.435	197.3
BPF100-2416	1-1/2" x 1" Black Hex Bushing	25	1.142"	0.451	204.6
BPF100-2420	1-1/2" x 1-1/4" Black Hex Bushing	25	1.142"	0.308	139.7
BPF100-328	2" x 1/2" Black Hex Bushing	20	1.291"	0.523	237.2
BPF100-3212	2" x 3/4" Black Hex Bushing	20	1.291"	0.587	266.3
BPF100-3216	2" x 1" Black Hex Bushing	20	1.291"	0.616	279.4
BPF100-3220	2" x 1-1/4" Black Hex Bushing	20	1.220"	0.74	335.7

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# Black Hex Bushings - Continued

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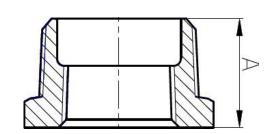
PART #	OD - DESCRIPTION	BOX QTY	A (IN)	WT (LB)	WT (G)
BPF100-3224	2" x 1-1/2" Black Hex Bushing	20	1.220"	0.616	279.4
BPF100-408	2-1/2" x 1/2" Black Hex Bushing	15	1.512"	0.905	410.5
BPF100-4012	2-1/2" x 3/4" Black Hex Bushing	15	1.512"	0.985	446.8
BPF100-4016	2-1/2" x 1" Black Hex Bushing	EA	1.512"	1.041	472.2
BPF100-4020	2-1/2" x 1-1/4" Black Hex Bushing	15	1.512"	1.045	474.0
BPF100-4024	2-1/2" x 1-1/2" Black Hex Bushing	15	1.512"	1.14	517.1
BPF100-4032	2-1/2" x 2" Black Hex Bushing	15	1.441"	1.101	499.4
BPF100-4816	3" x 1" Black Hex Bushing	12	1.610"	1.422	645.0
BPF100-4820	3" x 1-1/4" Black Hex Bushing	12	1.610"	1.533	695.4
BPF100-4824	3" x 1-1/2" Black Hex Bushing	12	1.610"	1.633	740.7
BPF100-4832	3" x 2" Black Hex Bushing	12	1.610"	1.889	856.8
BPF100-4840	3" x 2-1/2" Black Hex Bushing	12	1.531"	1.824	827.4
BPF100-6416	4" x 1" Black Hex Bushing	5	1.819"	2.602	1180.2
BPF100-6420	4" x 1-1/4" Black Hex Bushing	5	1.819"	2.746	1245.6
BPF100-6424	4" x 1-1/2" Black Hex Bushing	5	1.819"	2.569	1165.3
BPF100-6432	4" x 2" Black Hex Bushing	5	1.819"	2.596	1177.5
BPF100-6440	4" x 2-1/2" Black Hex Bushing	5	1.819"	2.982	1352.6
BPF100-6448	4" x 3" Black Hex Bushing	5	1.720"	2.814	1276.4

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#### **Black Caps Dimensions and Selection**

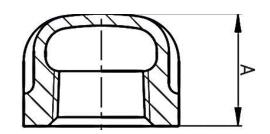
PART #	OD - DESCRIPTION	вох оту	A (IN)	WT (LB)	WT (G)
BPF104-2	1/8" Black Cap	120	0.531"	0.03	13.6
BPF104-4	1/4" Black Cap	80	0.630"	0.049	22.2
BPF104-6	3/8" Black Cap	60	0.740"	0.077	34.9
BPF104-8	1/2" Black Cap	75	0.870"	0.113	51.3
BPF104-12	3/4" Black Cap	40	0.969"	0.183	83.0
BPF104-16	1" Black Cap	25	1.161"	0.306	138.8
BPF104-20	1-1/4" Black Cap	20	1.280"	0.451	204.6
BPF104-24	1-1/2" Black Cap	18	1.331"	0.554	251.3
BPF104-32	2" Black Cap	12	1.449"	0.878	398.3
BPF104-40	2-1/2" Black Cap	20	1.701"	1.57	712.1
BPF104-48	3" Black Cap	EA	1.799"	2.209	1002.0
BPF104-64	4" Black Cap	6	2.079"	3.811	1728.6

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## **Black Couplings Dimensions and Selection**

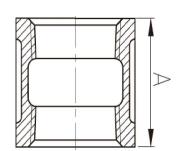
PART #	OD - DESCRIPTION	BOX QTY	A (IN)	WT (LB)	WT (G)
BPF99-2	1/8" Black Coupling	70	0.961"	0.054	24.5
BPF99-4	1/4" Black Coupling	40	1.059"	0.084	38.1
BPF99-6	3/8" Black Coupling	40	1.161"	0.122	55.3
BPF99-8	1/2" Black Coupling	60	1.339"	0.176	79.8
BPF99-12	3/4" Black Coupling	50	1.520"	0.279	126.6
BPF99-16	1" Black Coupling	25	1.669"	0.434	196.9
BPF99-20	1-1/4" Black Coupling	16	1.929"	0.694	314.8
BPF99-24	1-1/2" Black Coupling	18	2.150"	0.927	420.5
BPF99-32	2" Black Coupling	12	2.531"	1.387	629.1
BPF99-40	2-1/2" Black Coupling	8	2.882"	2.35	1065.9
BPF99-48	3" Black Coupling	EA	3.181"	3.37	1528.6
BPF99-64	4" Black Coupling	3	3.661"	5.602	2541.0

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## **Black Reducing Couplings Dimensions and Selection**

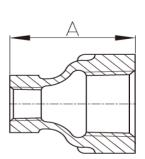
PART #	OD - DESCRIPTION	вох оту	A (IN)	WT (LB)	WT (G)
BPF98R-42	1/4" x 1/8" Black Reducing Coupling	50	1.000"	0.068	30.8
BPF98R-62	3/8" x 1/8" Black Reducing Coupling	35	1.130"	0.093	42.2
BPF98R-64	3/8" x 1/4" Black Reducing Coupling	30	1.130"	0.106	48.1
BPF98R-82	1/2" x 1/8" Black Reducing Coupling	150	1.252"	0.128	58.1
BPF98R-84	1/2" x 1/4" Black Reducing Coupling	150	1.252"	0.134	60.8
BPF98R-86	1/2" x 3/8" Black Reducing Coupling	60	1.252"	0.149	67.6
BPF98R-122	3/4" x 1/8" Black Reducing Coupling	70	1.441"	0.181	82.1
BPF98R-124	3/4" x 1/4" Black Reducing Coupling	45	1.437"	0.204	92.5
BPF98R-126	3/4" x 3/8" Black Reducing Coupling	45	1.441"	0.217	98.4
BPF98R-128	3/4" x 1/2" Black Reducing Coupling	60	1.441"	0.244	110.7
BPF98R-164	1" x 1/4" Black Reducing Coupling	45	1.689"	0.287	130.2
BPF98R-166	1" x 3/8" Black Reducing Coupling	30	1.689"	0.304	137.9
BPF98R-168	1" x 1/2" Black Reducing Coupling	30	1.689"	0.349	158.3
BPF98R-1612	1" x 3/4" Black Reducing Coupling	25	1.689"	0.387	175.5
BPF98R-208	1-1/4" x 1/2" Black Reducing Coupling	25	2.059"	0.494	224.1
BPF98R-2012	1-1/4" x 3/4" Black Reducing Coupling	25	2.059"	0.538	244.0
BPF98R-2016	1-1/4" x 1" Black Reducing Coupling	15	2.059"	0.589	267.2
BPF98R-246	1-1/2" x 3/8" Black Reducing Coupling	20	2.311"	0.644	292.1
BPF98R-248	1-1/2" x 1/2" Black Reducing Coupling	20	2.311"	0.614	278.5
BPF98R-2412	1-1/2" x 3/4" Black Reducing Coupling	15	2.311"	0.681	308.9
BPF98R-2416	1-1/2" x 1" Black Reducing Coupling	25	2.311"	0.759	344.3
BPF98R-2420	1-1/2" x 1-1/4" Black Reducing Coupling	12	2.311"	0.818	371.0
BPF98R-328	2" x 1/2" Black Reducing Coupling	12	2.811"	0.996	451.8
BPF98R-3212	2" x 3/4" Black Reducing Coupling	12	2.811"	0.974	441.8
BPF98R-3216	2" x 1" Black Reducing Coupling	12	2.811"	1.033	468.6
BPF98R-3220	2" x 1-1/4" Black Reducing Coupling	9	2.811"	1.129	512.1

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# Black Reducing Couplings - Continued

## **Black Reducing Couplings Dimensions and Selection**

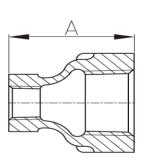
PART #	OD - DESCRIPTION	вох дту	A (IN)	WT (LB)	WT (G)
BPF98R-3224	2" x 1-1/2" Black Reducing Coupling	9	2.811"	1.242	563.4
BPF98R-408	2-1/2" x 1/2" Black Reducing Coupling	EA	3.252"	1.631	739.8
BPF98R-4012	2-1/2" x 3/4" Black Reducing Coupling	10	3.252"	1.696	769.3
BPF98R-4016	2-1/2" x 1" Black Reducing Coupling	10	3.252"	1.77	802.9
BPF98R-4020	2-1/2" x 1-1/4" Black Reducing Coupling	10	3.252"	1.819	825.1
BPF98R-4024	2-1/2" x 1-1/2" Black Reducing Coupling	7	3.252"	1.906	864.5
BPF98R-4032	2-1/2" x 2" Black Reducing Coupling	7	3.252"	2.119	961.2
BPF98R-4816	3" x 1" Black Reducing Coupling	6	3.689"	2.49	1129.4
BPF98R-4820	3" x 1-1/4" Black Reducing Coupling	6	3.689"	2.556	1159.4
BPF98R-4824	3" x 1-1/2" Black Reducing Coupling	6	3.689"	2.706	1227.4
BPF98R-4832	3" x 2" Black Reducing Coupling	6	3.689"	2.783	1262.3
BPF98R-4840	3" x 2-1/2" Black Reducing Coupling	5	3.689"	3.156	1431.5
BPF98R-6416	4" x 1" Black Reducing Coupling	3	4.382"	4.004	1816.2
BPF98R-6420	4" x 1-1/4" Black Reducing Coupling	3	4.382"	4.148	1881.5
BPF98R-6424	4" x 1-1/2" Black Reducing Coupling	3	4.382"	4.224	1916.0
BPF98R-6432	4" x 2" Black Reducing Coupling	3	4.382"	4.348	1972.2
BPF98R-6440	4" x 2-1/2" Black Reducing Coupling	3	4.382"	4.829	2190.4
BPF98R-6448	4" x 3" Black Reducing Coupling	3	4.382"	5.446	2470.3

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#### **Black Crosses Dimensions and Selection**

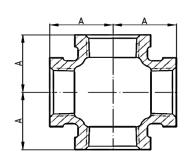
PART #	OD - DESCRIPTION	BOX QTY	A (IN)	WT (LB)	WT (G)
BPF314-2	1/8" Black Cross	30	0.689"	0.115	52.2
BPF314-4	1/4" Black Cross	60	0.811"	0.179	81.2
BPF314-6	3/8" Black Cross	50	0.949"	0.259	117.5
BPF314-8	1/2" Black Cross	30	1.122"	0.377	171.0
BPF314-12	3/4" Black Cross	20	1.311"	0.606	274.9
BPF314-16	1" Black Cross	15	1.500"	0.935	424.1
BPF314-20	1-1/4" Black Cross	10	1.752"	1.507	683.6
BPF314-24	1-1/2" Black Cross	8	1.941"	1.881	853.2
BPF314-32	2" Black Cross	5	2.252"	2.937	1332.2
BPF314-40	2-1/2" Black Cross	3	2.701"	5.221	2368.2
BPF314-48	3" Black Cross	2	3.079"	7.287	3305.3
BPF314-64	4" Black Cross	EA	3.791"	12.609	5719.3

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## Black 45° Elbows Dimensions and Selection

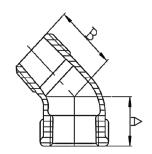
PART #	OD - DESCRIPTION	вох QTY	A (IN)	B (IN)	WT (LB)	WT (G)
BPF310-45-2	1/8" Black 45° Street Elbow	70	0.630"	0.827"	0.052	23.6
BPF310-45-4	1/4" Black 45° Street Elbow	40	0.728"	0.941"	0.081	36.7
BPF310-45-6	3/8" Black 45° Street Elbow	100	0.799"	1.031"	0.12	54.4
BPF310-45-8	1/2" Black 45° Street Elbow	75	0.882"	1.150"	0.173	78.5
BPF310-45-12	3/4" Black 45° Street Elbow	40	0.980"	1.291"	0.282	127.9
BPF310-45-16	1" Black 45° Street Elbow	25	1.122"	1.469"	0.452	205.0
BPF310-45-20	1-1/4" Black 45° Street Elbow	10	1.291"	1.709"	0.711	322.5
BPF310-45-24	1-1/2" Black 45° Street Elbow	10	1.429"	1.882"	0.914	414.6
BPF310-45-32	2" Black 45° Street Elbow	12	1.681"	2.220"	1.507	683.6
BPF310-45-40	2-1/2" Black 45° Street Elbow	6	1.949"	2.571"	2.632	1193.9
BPF310-45-48	3" Black 45° Street Elbow	3	2.169"	3.000"	3.908	1772.6
BPF310-45-64	4" Black 45° Street Elbow	EA	2.610"	3.701"	6.966	3159.7

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#### 90° Long Run Elbows Dimensions and Selection

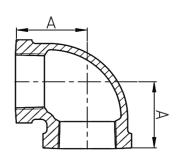
PART #	OD - DESCRIPTION	вох оту	A (IN)	WT (LB)	WT (G)
BPF309-2	1/8" Black 90° LR Elbow	50	0.689"	0.064	29.0
BPF309-4	1/4" Black 90° LR Elbow	35	0.811"	0.102	46.3
BPF309-6	3/8" Black 90° LR Elbow	90	0.949"	0.151	68.5
BPF309-8	1/2" Black 90° LR Elbow	50	1.122"	0.224	101.6
BPF309-12	3/4" Black 90° LR Elbow	35	1.311"	0.359	162.8
BPF309-16	1" Black 90° LR Elbow	20	1.500"	0.572	259.5
BPF309-20	1-1/4" Black 90° LR Elbow	20	1.752"	0.901	408.7
BPF309-24	1-1/2" Black 90° LR Elbow	15	1.941"	1.238	561.5
BPF309-32	2" Black 90° LR Elbow	8	2.252"	1.866	846.4
BPF309-40	2-1/2" Black 90° LR Elbow	EA	2.701"	3.369	1528.2
BPF309-48	3" Black 90° LR Elbow	EA	3.079"	5.225	2370.0
BPF309-64	4" Black 90° LR Elbow	EA	3.791"	8.885	4030.2

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# Black 90° Reducing Elbows Dimensions and Selection

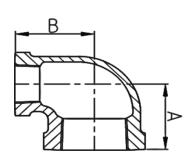
PART #	OD - DESCRIPTION	BOX QTY	A (IN)	B (IN)	WT (LB)	WT (G)
BPF309R-62	3/8" x 1/8" Black 90° Reducing Elbow	105	0.807"	0.850"	0.107	48.5
BPF309R-64	3/8" x 1/4" Black 90° Reducing Elbow	90	0.882"	0.902"	0.127	57.6
BPF309R-82	1/2" x 1/8" Black 90° Reducing Elbow	60	0.866"	0.906"	0.142	64.4
BPF309R-84	1/2" x 1/4" Black 90° Reducing Elbow	60	0.969"	0.980"	0.164	74.4
BPF309R-86	1/2" x 3/8" Black 90° Reducing Elbow	60	1.039"	1.031"	0.184	83.5
BPF309R-124	3/4" x 1/4" Black 90° Reducing Elbow	40	1.051"	1.079"	0.22	99.8
BPF309R-126	3/4" x 3/8" Black 90° Reducing Elbow	EA	1.122"	1.130"	0.256	116.1
BPF309R-128	3/4" x 1/2" Black 90° Reducing Elbow	40	1.201"	1.220"	0.305	138.3
BPF309R-168	1" x 1/2" Black 90° Reducing Elbow	25	1.260"	1.398"	0.415	188.2
BPF309R-1612	1" x 3/4" Black 90° Reducing Elbow	50	1.370"	1.449"	0.494	224.1
BPF309R-208	1-1/4" x 1/2" Black 90° Reducing Elbow	20	1.339"	1.531"	0.559	253.6
BPF309R-2012	1-1/4" x 3/4" Black 90° Reducing Elbow	10	1.449"	1.622"	0.647	293.5
BPF309R-2016	1-1/4" x 1" Black 90° Reducing Elbow	15	1.579"	1.669"	0.757	343.4
BPF309R-248	1-1/2" x 1/2" Black 90° Reducing Elbow	25	1.378"	1.634"	0.655	297.1
BPF309R-2412	1-1/2" x 3/4" Black 90° Reducing Elbow	15	1.520"	1.752"	0.753	341.6
BPF309R-2416	1-1/2" x 1" Black 90° Reducing Elbow	20	1.650"	1.799"	0.902	409.1
BPF309R-2420	1-1/2" x 1-1/4" Black 90° Reducing Elbow	15	1.819"	1.882"	1.032	468.1
BPF309R-328	2" x 1/2" Black 90° Reducing Elbow	10	1.476"	1.870"	0.953	432.3
BPF309R-3212	2" x 3/4" Black 90° Reducing Elbow	9	1.598"	1.969"	1.073	486.7
BPF309R-3216	2" x 1" Black 90° Reducing Elbow	14	1.728"	2.020"	1.252	567.9
BPF309R-3220	2" x 1-1/4" Black 90° Reducing Elbow	10	1.902"	2.098"	1.363	618.2
BPF309R-3224	2" x 1-1/2" Black 90° Reducing Elbow	10	2.020"	2.161"	1.56	707.6
BPF309R-4016	2-1/2" x 1" Black 90° Reducing Elbow	15	1.811"	2.311"	1.877	851.4
BPF309R-4020	2-1/2" x 1-1/4" Black 90° Reducing Elbow	8	2.047"	2.441"	2.099	952.1
BPF309R-4024	2-1/2" x 1-1/2" Black 90° Reducing Elbow	6	2.161"	2.512"	2.207	1001.1
BPF309R-4032	2-1/2" x 2" Black 90° Reducing Elbow	5	2.390"	2.598"	2.531	1148.0
BPF309R-4832	3" x 2" Black 90° Reducing Elbow	4	2.520"	2.890"	3.448	1564.0
BPF309R-4840	3" x 2-1/2" Black 90° Reducing Elbow	4	2.831"	2.988"	4.125	1871.1
BPF309R-6432	4" x 2" Black 90° Reducing Elbow	2	2.717"	3.425"	5.028	2280.7
BPF309R-6440	4" x 2-1/2" Black 90° Reducing Elbow	EA	3.071"	3.543"	5.805	2633.1
BPF309R-6448	4" x 3" Black 90° Reducing Elbow	EA	3.299"	3.598"	6.665	3023.2

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#### Black 90° Side Outlet Elbows Dimensions and Selection

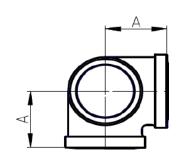
PART #	OD - DESCRIPTION	вох оту	A (IN)	WT (LB)	WT (G)
BPF1221-8	1/2" Black 90° Elbow Side Outlet	45	1.102"	0.271	122.9
BPF1221-12	3/4" Black 90° Elbow Side Outlet	40	1.299"	0.463	210.0
BPF1221-16	1" Black 90° Elbow Side Outlet	20	1.496"	0.688	312.1
BPF1221-20	1-1/4" Black 90° Elbow Side Outlet	15	1.772"	0.771	349.7
BPF1221-24	1-1/2" Black 90° Elbow Side Outlet	18	1.969"	1.44	653.2
BPF1221-32	2" Black 90° Elbow Side Outlet	12	2.283"	2.246	1018.8

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## Black 90° Street Elbows Dimensions and Selection

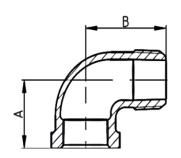
PART #	OD - DESCRIPTION	вох QTY	A (IN)	B (IN)	WT (LB)	WT (G)
BPF310-2	1/8" Black 90° Street Elbow	60	0.689"	1.000"	0.053	24.0
BPF310-4	1/4" Black 90° Street Elbow	35	0.811"	1.189"	0.097	44.0
BPF310-6	3/8" Black 90° Street Elbow	60	0.949"	1.441"	0.15	68.0
BPF310-8	1/2" Black 90° Street Elbow	60	1.122"	1.622"	0.208	94.3
BPF310-12	3/4" Black 90° Street Elbow	35	1.311"	1.890"	0.346	156.9
BPF310-16	1" Black 90° Street Elbow	45	1.500"	2.142"	0.54	244.9
BPF310-20	1-1/4" Black 90° Street Elbow	25	1.752"	2.449"	0.813	368.8
BPF310-24	1-1/2" Black 90° Street Elbow	9	1.941"	2.689"	1.18	535.2
BPF310-32	2" Black 90° Street Elbow	8	2.252"	3.260"	1.844	836.4
BPF310-40	2-1/2" Black 90° Street Elbow	5	2.701"	3.858"	3.275	1485.5
BPF310-48	3" Black 90° Street Elbow	EA	3.079"	4.512"	4.912	2228.0
BPF310-64	4" Black 90° Street Elbow	2	3.791"	5.689"	9.282	4210.2

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# Black Floor Flanges Dimensions and Selection

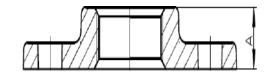
PART #	OD - DESCRIPTION	вох оту	A (IN)	WT (LB)	WT (G)
BPF321-6	3/8" Black Floor Flange	25	0.551"	0.25	113.4
BPF321-8	1/2" Black Floor Flange	25	0.551"	0.355	161.0
BPF321-12	3/4" Black Floor Flange	15	0.630"	0.494	224.1
BPF321-16	1" Black Floor Flange	15	0.669"	0.637	288.9
BPF321-20	1-1/4" Black Floor Flange	10	0.748"	0.834	378.3
BPF321-24	1-1/2" Black Floor Flange	8	0.866"	1.114	505.3
BPF321-11	2" Black Floor Flange	8	0.984"	1.549	702.6

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#### **Black Lock Nuts Dimensions and Selection**

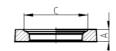
PART #	OD - DESCRIPTION	BOX QTY	A (IN)	B (IN)	C (IN)	WT (LB)	WT (G)
BPF319-2	1/8" Black Lock Nut	250	0.193"	0.689"	0.500"	0.015	6.8
BPF319-4	1/4" Black Lock Nut	125	0.252"	0.839"	0.661"	0.033	15.0
BPF319-6	3/8" Black Lock Nut	125	0.283"	1.000"	0.772"	0.045	20.4
BPF319-8	1/2" Black Lock Nut	150	0.311"	1.181"	0.969"	0.056	25.4
BPF319-12	3/4" Black Lock Nut	90	0.339"	1.429"	1.228"	0.088	39.9
BPF319-16	1" Black Lock Nut	60	0.382"	1.752"	1.500"	0.141	64.0
BPF319-20	1-1/4" Black Lock Nut	45	0.421"	2.098"	1.858"	0.197	89.4
BPF319-24	1-1/2" Black Lock Nut	45	0.469"	2.350"	2.118"	0.258	117.0
BPF319-32	2" Black Lock Nut	25	0.531"	2.882"	2.630"	0.405	183.7
BPF319-40	2-1/2" Black Lock Nut	20	0.591"	3.500"	3.181"	0.674	305.7

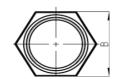
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# Black Square Head Solid Plugs

## Black Square Head Solid Plugs Dimensions and Selection

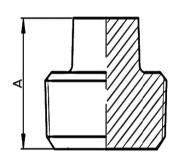
PART #	OD - DESCRIPTION	BOX QTY	A (IN)	WT (LB)	WT (G)
BPF101-2	1/8" Black Square Head Solid Plug	400	0.610"	0.016	7.3
BPF101-4	1/4" Black Square Head Solid Plug	150	0.720"	0.033	15.0
BPF101-6	3/8" Black Square Head Solid Plug	120	0.791"	0.048	21.8
BPF101-8	1/2" Black Square Head Solid Plug	50	0.941"	0.081	36.7
BPF101-12	3/4" Black Square Head Solid Plug	35	1.071"	0.131	59.4
BPF101-16	1" Black Square Head Solid Plug	20	1.252"	0.192	87.1
BPF101-20	1-1/4" Black Square Head Solid Plug	30	1.358"	0.314	142.4
BPF101-24	1-1/2" Black Square Head Solid Plug	30	1.453"	0.416	188.7
BPF101-32	2" Black Square Head Solid Plug	20	1.563"	0.644	292.1
BPF101-40	2-1/2" Black Square Head Solid Plug	24	1.811"	1.038	470.8
BPF101-48	3" Black Square Head Solid Plug	20	1.929"	1.592	722.1
BPF101-64	4" Black Square Head Solid Plug	6	2.539"	2.613	1185.2

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#### **Black Tees Dimensions and Selection**

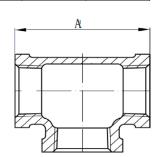
PART #	OD - DESCRIPTION	BOX QTY	A (IN)	WT (LB)	WT (G)
BPF311-2	1/8" Black Tee	120	1.378"	0.093	42.2
BPF311-4	1/4" Black Tee	75	1.622"	0.145	65.8
BPF311-6	3/8" Black Tee	45	1.898"	0.215	97.5
BPF311-8	1/2" Black Tee	40	2.244"	0.317	143.8
BPF311-12	3/4" Black Tee	35	2.622"	0.515	233.6
BPF311-16	1" Black Tee	20	3.000"	0.831	376.9
BPF311-20	1-1/4" Black Tee	14	3.504"	1.219	552.9
BPF311-24	1-1/2" Black Tee	12	3.882"	1.678	761.1
BPF311-32	2" Black Tee	8	4.504"	2.454	1113.1
BPF311-40	2-1/2" Black Tee	4	5.402"	4.509	2045.2
BPF311-48	3" Black Tee	EA	6.157"	6.546	2969.2
BPF311-64	4" Black Tee	EA	7.583"	11.362	5153.7

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# Black Reducing Elbows Dimensions and Selection

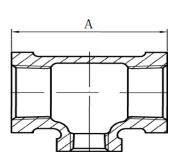
PART #	OD - DESCRIPTION	BOX QTY	A (IN)	WT (LB)	WT (G)
BPF311R-442	1/4" x 1/4" x 1/8" Black Reducing Tee	25	1.500"	0.124	56.2
BPF311R-662	3/8" x 3/8" x 1/8" Black Reducing Tee	90	1.661"	0.173	78.5
BPF311R-664	3/8" x 3/8" x 1/4" Black Reducing Tee	60	1.921"	0.193	87.5
BPF311R-882	1/2" x 1/2" x 1/8" Black Reducing Tee	40	1.772"	0.234	106.1
BPF311R-884	1/2" x 1/2" x 1/4" Black Reducing Tee	40	1.949"	0.245	111.1
BPF311R-886	1/2" x 1/2" x 3/8" Black Reducing Tee	40	2.071"	0.276	125.2
BPF311R-12124	3/4" x 3/4" x 1/4" Black Reducing Tee	25	2.130"	0.364	165.1
BPF311R-12126	3/4" x 3/4" x 3/8" Black Reducing Tee	25	2.252"	0.401	181.9
BPF311R-12128	3/4" x 3/4" x 1/2" Black Reducing Tee	20	2.421"	0.451	204.6
BPF311R-16164	1" x 1" x 1/4" Black Reducing Tee	20	2.323"	0.551	249.9
BPF311R-16166	1" x 1" x 3/8" Black Reducing Tee	15	2.461"	0.593	269.0
BPF311R-16168	1" x 1" x 1/2" Black Reducing Tee	15	2.657"	0.639	289.8
BPF311R-161620	1" x 1" x 1-1/4" Black Reducing Tee	11	3.248"	0.984	446.3
BPF311R-32328	2" x 2" x 1/2" Black Reducing Tee	10	3.374"	1.546	701.3
BPF311R-323212	2" x 2" x 3/4" Black Reducing Tee	10	3.567"	1.67	757.5
BPF311R-323216	2" x 2" x 1" Black Reducing Tee	10	3.748"	1.799	816.0
BPF311R-323220	2" x 2" x 1-1/4" Black Reducing Tee	8	4.000"	1.993	904.0
BPF311R-323224	2" x 2" x 1-1/2" Black Reducing Tee	8	4.181"	2.14	970.7
BPF311R-40408	2-1/2" x 2-1/2" x 1/2" Black Reducing Tee	6	3.858"	2.625	1190.7
BPF311R-404012	2-1/2" x 2-1/2" x 3/4" Black Reducing Tee	6	4.059"	2.672	1212.0
BPF311R-404016	2-1/2" x 2-1/2" x 1" Black Reducing Tee	5	4.240"	2.926	1327.2
BPF311R-404020	2-1/2" x 2-1/2" x 1-1/4" Black Reducing Tee	5	4.508"	3.092	1402.5
BPF311R-404024	2-1/2" x 2-1/2" x 1-1/2" Black Reducing Tee	5	4.673"	3.299	1496.4
BPF311R-404032	2-1/2" x 2-1/2" x 2" Black Reducing Tee	4	4.988"	3.655	1657.9
BPF311R-484812	3" x 3" x 3/4" Black Reducing Tee	3	4.480"	3.811	1728.6
BPF311R-484816	3" x 3" x 1" Black Reducing Tee	3	4.661"	4.04	1832.5
BPF311R-484820	3" x 3" x 1-1/4" Black Reducing Tee	3	4.909"	4.267	1935.5
BPF311R-484824	3" x 3" x 1-1/2" Black Reducing Tee	3	5.091"	4.462	2023.9
BPF311R-484832	3" x 3" x 2" Black Reducing Tee	3	5.409"	5.019	2276.6
BPF311R-484840	3" x 3" x 2-1/2" Black Reducing Tee	3	5.823"	5.698	2584.6
BPF311R-646416	4" x 4" x 1" Black Reducing Tee	2	5.512"	6.651	3016.8

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# Black Reducing Tees - Continued

## **Black Reducing Tees Dimensions and Selection**

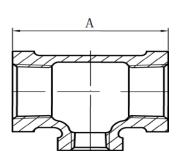
PART #	OD - DESCRIPTION	вох оту	A (IN)	WT (LB)	WT (G)
BPF311R-646420	4" x 4" x 1-1/4" Black Reducing Tee	2	5.709"	6.948	3151.6
BPF311R-646424	4" x 4" x 1-1/2" Black Reducing Tee	2	5.831"	7.133	3235.5
BPF311R-646432	4" x 4" x 2" Black Reducing Tee	EA	6.150″	7.74	3510.8
BPF311R-646440	4" x 4" x 2-1/2" Black Reducing Tee	EA	6.563"	8.702	3947.2
BPF311R-646448	4" x 4" x 3" Black Reducing Tee	EA	6.898"	9.525	4320.5

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## **Black Reducing Tees Dimensions and Selection**

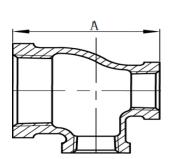
PART #	OD - DESCRIPTION	BOX QTY	A (IN)	WT (LB)	WT (G)
BPF311R-868	1/2" x 3/8" x 1/2" Black Reducing Tee	30	2.154"	0.291	132
BPF311R-1288	3/4" x 1/2" x 1/2" Black Reducing Tee	25	2.323"	0.394	178.7
BPF311R-12812	3/4" x 1/2" x 3/4" Black Reducing Tee	20	2.555"	0.459	208.2
BPF311R-1688	1" x 1/2" x 1/2" Black Reducing Tee	20	2.382"	0.51	231.3
BPF311R-168128	1" x 3/4" x 1/2" Black Reducing Tee	20	2.461"	0.563	255.4
BPF311R-12816	3/4" x 1/2" x 1" Black Reducing Tee	18	2.795"	0.579	262.6
BPF311R-16812	1" x 1/2" x 3/4" Black Reducing Tee	20	2.591"	0.591	268.1
BPF311R-161212	1" x 3/4" x 3/4" Black Reducing Tee	15	2.760"	0.628	284.9
BPF311R-2088	1-1/4" x 1/2" x 1/2" Black Reducing Tee	25	2.736"	0.633	287.1
BPF311R-20812	1-1/4" x 1/2" x 3/4" Black Reducing Tee	25	2.520"	0.679	308
BPF311R-16816	1" x 1/2" x 1" Black Reducing Tee	15	2.898"	0.689	312.5
BPF311R-161216	1" x 3/4" x 1" Black Reducing Tee	12	2.949"	0.742	336.6
BPF311R-2488	1-1/2" x 1/2" x 1/2" Black Reducing Tee	12	2.480"	0.746	338.4
BPF311R-201212	1-1/4" x 3/4" x 3/4" Black Reducing Tee	10	2.756"	0.746	338.4
BPF311R-20168	1-1/4" x 1" x 1/2" Black Reducing Tee	20	2.598"	0.755	342.5
BPF311R-20128	1-1/4" x 3/4" x 1/2" Black Reducing Tee	10	3.031"	0.786	356.5
BPF311R-20816	1-1/4" x 1/2" x 1" Black Reducing Tee	20	2.937"	0.815	369.7
BPF311R-21612	1-1/4" x 1" x 3/4" Black Reducing Tee	20	2.819"	0.858	389.2
BPF311R-201216	1-1/4" x 3/4" x 1" Black Reducing Tee	10	3.028"	0.875	396.9
BPF311R-24812	1-1/2" x 1/2" x 3/4" Black Reducing Tee	12	2.756"	0.893	405.1
BPF311R-20820	1-1/4" x 1/2" x 1-1/4" Black Reducing Tee	20	3.283"	0.951	431.4
BPF311R-24816	1-1/2" x 1/2" x 1" Black Reducing Tee	18	3.071"	0.987	447.7
BPF311R-201220	1-1/4" x 3/4" x 1-1/4" Black Reducing Tee	20	3.374"	1	453.6
BPF311R-201620	1-1/4" x 1" x 1-1/4" Black Reducing Tee	15	3.421"	1.101	499.4
BPF311R-201616	1-1/4" x 1" x 1" Black Reducing Tee	20	3.079"	1.119	507.6
BPF311R-24820	1-1/2" x 1/2" x 1-1/4" Black Reducing Tee	15	3.386"	1.149	521.2
BPF311R-321212	2" x 3/4" x 3/4" Black Reducing Tee	12	2.874"	1.167	529.3
BPF311R-24824	1-1/2" x 1/2" x 1-1/2" Black Reducing Tee	12	3.602"	1.242	563.4
BPF311R-201624	1-1/4" x 1" x 1-1/2" Black Reducing Tee	18	3.701"	1.256	569.7
BPF311R-321616	2" x 1" x 1" Black Reducing Tee	12	3.563"	1.401	635.5
BPF311R-322412	2" x 1-1/2" x 3/4" Black Reducing Tee	10	3.110"	1.445	655.4

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# Black Reducing Tees - Continued

## **Black Reducing Tees Dimensions and Selection**

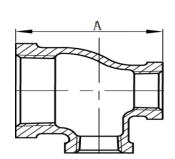
F	ART#	OD - DESCRIPTION	BOX QTY	A (IN)	WT (LB)	WT (G)
BPF3	1R-322016	2" x 1-1/4" x 1" Black Reducing Tee	8	3.307"	1.457	660.9
BPF3	1R-322416	2" x 1-1/2" x 1" Black Reducing Tee	10	3.378"	1.587	719.9
BPF3	1R-322020	2" x 1-1/4" x 1-1/4" Black Reducing Tee	8	3.654"	1.642	744.8
BPF3	1R-322420	2" x 1-1/2" x 1-1/4" Black Reducing Tee	8	3.709"	1.765	800.6
BPF3	1R-322024	2" x 1-1/4" x 1-1/2" Black Reducing Tee	8	3.878"	1.801	816.9
BPF3	1R-322424	2" x 1-1/2" x 1-1/2" Black Reducing Tee	8	3.961"	1.884	854.6
BPF3	1R-321232	2" x 3/4" x 2" Black Reducing Tee	8	4.220"	2	907.2
BPF3	11R-32832	2" x 1/2" x 2" Black Reducing Tee	8	4.134"	2.043	926.7
BPF3	1R-321632	2" x 1" x 2" Black Reducing Tee	8	4.272"	2.07	938.9
BPF3	1R-322032	2" x 1-1/4" x 2" Black Reducing Tee	8	4.350"	2.161	980.2
BPF3	1R-322432	2" x 1-1/2" x 2" Black Reducing Tee	8	4.409"	2.256	1023.3
BPF3	1R-403232	2-1/2" x 2" x 2" Black Reducing Tee	5	4.642"	3.256	1476.9
BPF3	1R-403240	2-1/2" x 2" x 2-1/2" Black Reducing Tee	4	5.299"	3.888	1763.6

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# Black Reducing Tees Dimensions and Selection

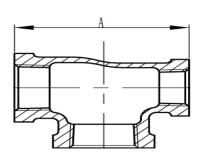
PART #	OD - DESCRIPTION	BOX QTY	A (IN)	WT (LB)	WT (G)
BPF311R-8812	1/2" x 1/2" x 3/4" Black Reducing Tee	30	2.421"	0.392	177.8
BPF311R-8816	1/2" x 1/2" x 1" Black Reducing Tee	25	2.622"	0.493	223.6
BPF311R-121216	3/4" x 3/4" x 1" Black Reducing Tee	40	2.819"	0.635	288
BPF311R-121220	3/4" x 3/4" x 1-1/4" Black Reducing Tee	20	3.071"	0.765	347
BPF311R-161620	1" x 1" x 1-1/4" Black Reducing Tee	11	3.248"	0.984	446.3
BPF311R-161624	1" x 1" x 1-1/2" Black Reducing Tee	9	3.449"	1.123	509.4
BPF311R-202024	1-1/4" x 1-1/4" x 1-1/2" Black Reducing Tee	EA	3.701"	1.363	618.2
BPF311R-161632	1" x 1" x 2" Black Reducing Tee	12	2.764"	1.457	660.9
BPF311R-202032	1-1/4" x 1-1/4" x 2" Black Reducing Tee	12	4.000"	1.699	770.7
BPF311R-242432	1-1/2" x 1-1/2" x 2" Black Reducing Tee	8	4.181"	1.977	896.8
BPF311R-242440	1-1/2" x 1-1/2" x 2-1/2" Black Reducing Tee	8	4.606"	2.589	1174.3
BPF311R-323240	2" x 2" x 2-1/2" Black Reducing Tee	4	4.988"	3.261	1479.2

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#### **Black Unions Dimensions and Selection**

PART #	OD - DESCRIPTION	BOX QTY	A (IN)	WT (LB)	WT (G)
BPF107-2	1/8" Black Union	60	1.260"	0.163	73.8
BPF107-4	1/4" Black Union	20	1.437"	0.224	101.4
BPF107-6	3/8" Black Union	40	1.614"	0.328	148.7
BPF107-8	1/2" Black Union	50	1.713"	0.395	179.0
BPF107-12	3/4" Black Union	35	1.949"	0.581	263.4
BPF107-16	1" Black Union	20	2.067"	0.842	381.7
BPF107-20	1-1/4" Black Union	15	2.264"	1.191	540.3
BPF107-24	1-1/2" Black Union	10	2.402"	1.716	778.4
BPF107-32	2" Black Union	6	2.756"	2.160	979.8
BPF107-40	2-1/2" Black Union	4	3.228"	3.745	1698.7
BPF107-48	3" Black Union	4	3.504"	4.676	2120.8
BPF107-64	4" Black Union	2	3.858"	8.393	3806.8

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