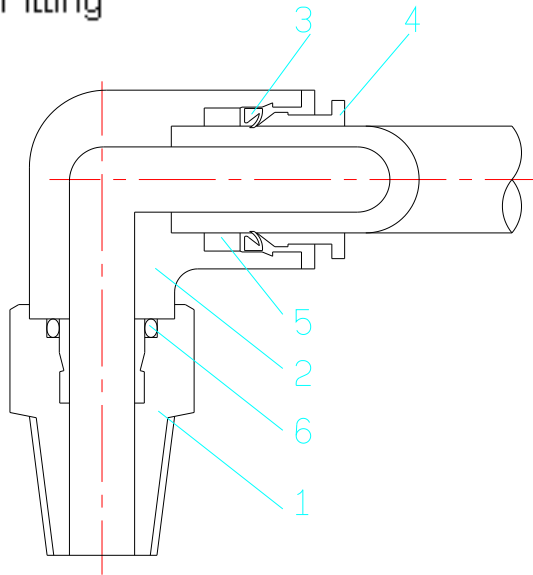
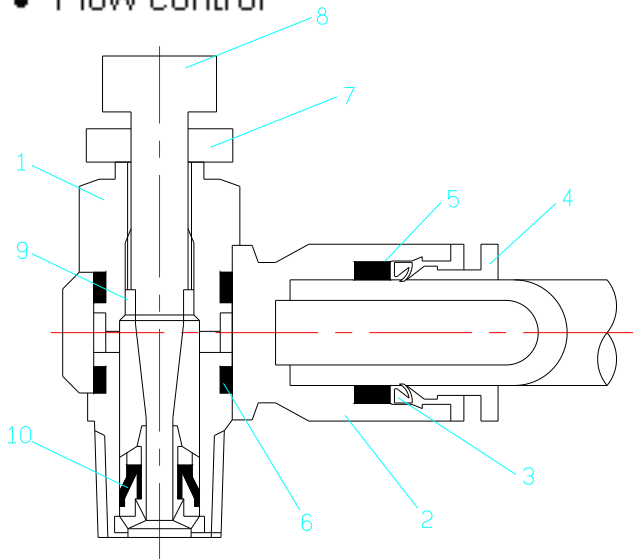


Internal Constructions:

• Fitting



• Flow control



Part lists:

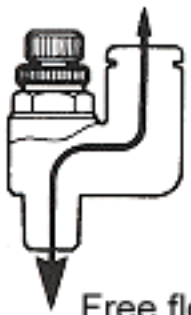
No.	Description	Material
①	Metallic body	Brass (Nickel plated)
②	Resinous body	Polyethylene terephthalate
③	Lock claw	Stainless steel
④	Open ring	Polyacetal
⑤	Elastic body sleeve	NBR
⑥	O-ring	NBR

No.	Description	Material
①	Metallic body	Brass (Nickel plated)
②	Resinous body	Polyethylene terephthalate
③	Lock claw	Stainless steel
④	Open ring	Polyacetal
⑤	Elastic sleeve	NBR
⑥	O-ring	NBR
⑦	Lock nuts	Aluminum
⑧	Needle	Brass
⑨	V packing	NBR
⑩	Diaphragm	

A: Meter-out control

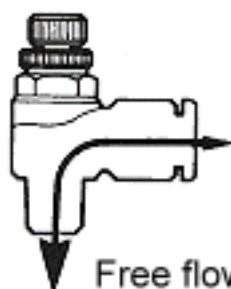
Straight type ZB 640

Controlled flow



Free flow

Elbow type ZB 660



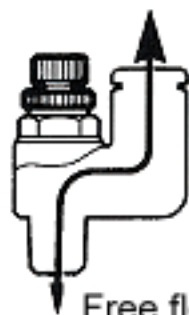
Free flow

Controlled flow

B: Meter-out control

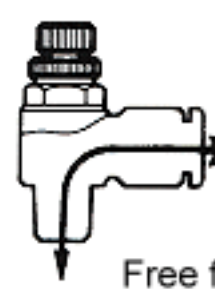
Straight type ZB 649

Controlled flow



Free flow

Elbow type ZB 668

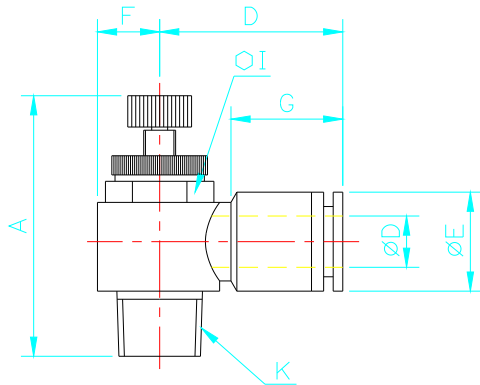


Free flow

Controlled flow

Elbow Flow Control

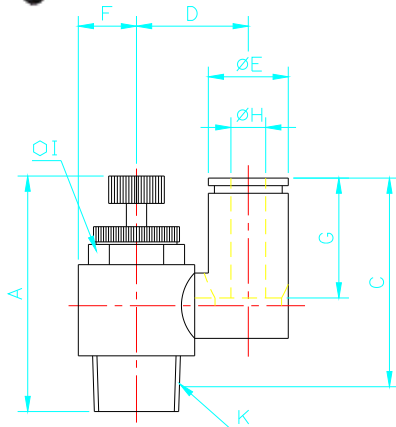
• ZB 660



MODEL	øH	K	A		D	øE	F	G	I	Weight(g)
			MAX	MIN						
ZB660-04-M5	4	M5	29.9	27.1	20.2	9.9	4.9	14.9	8	8.5
ZB660-04-01		1/8	40	34	21.7	10	7.2		10	17.8
ZB660-06-M5	6	M5	29.9	27.1	24.2	12.6	4.9	17	8	9.5
ZB660-06-01		1/8	40	34	23.7	12.7	7.2		10	18.7
ZB660-06-02		1/4	47.5	41.5	25.7	12.9	9.2		14	35.8
ZB660-06-03		3/8	54.7	47.7	29.2	11	19		65.3	
ZB660-08-01	8	1/8	40	34	27.1	14.6	7.2	18.1	10	20.1
ZB660-08-02		1/4	47.5	41.5	28.6		9.2		14	37.2
ZB660-08-03		3/8	53.5	46.5	29.1		11		19	65.7
ZB660-10-02	10	1/4	47.5	41.5	31.2	18	9.2	20.2	14	40.5
ZB660-10-03		3/8	53.5	46.5	31.5		11		19	69.2
ZB660-10-04		1/2	61	53.5	36.5		17.9		14	23.3
ZB660-12-03	12	3/8	53.5	46.5	37.1	21.3	11	23.3	19	72.7
ZB660-12-04		1/2	60	52.5	36.6		14		24	104

Straight Flow Control

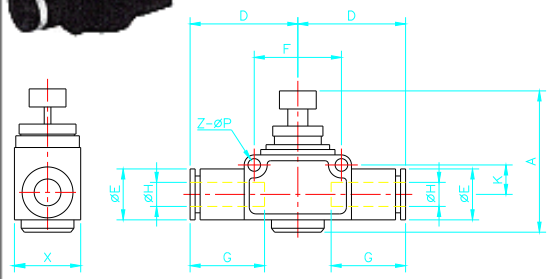
• ZB 640



MODEL	øH	K	A		D	øE	F	G	I	Weight(g)	
			MAX	MIN							
ZB640-04-M5	4	M5	29.9	27.1	10.5	10.2	4.9	14.9	8	9.2	
ZB640-04-01		1/8	40	34	13	10			10	19.1	
ZB640-04-02		1/4	-	-	-	-			-	-	-
ZB640-06-M5	6	M5	29.9	27.1	12.2	12.6	4.9	17	8	9.9	
ZB640-06-01		1/8	40	34	14.2	12.7			7.2	10	19.9
ZB640-06-02		1/4	47.5	41.5	17.2	12.7			9.2	14	37.2
ZB640-06-03		3/8	-	-	-	-			-	-	-
ZB640-08-01	8	1/8	40	34	15.2	14.6	7.2	18.1	10	21.4	
ZB640-08-02		1/4	47.5	41.5	18.2		9.2		14	39	
ZB640-08-03		3/8	53.5	46.5	19.2		11		19	68.1	
ZB640-10-02	10	1/4	47.5	41.5	19.8	18	9.2	20.2	14	42.5	
ZB640-10-03		3/8	53.5	46.5	20.8		11		19	71.6	
ZB640-10-04		1/2	-	-	-		-		-	-	-
ZB640-12-03	12	3/8	53.5	46.5	22.5	21.3	11	23.3	19	75.2	
ZB640-12-04		1/2	60	52.5	22.5		14		24	110	

Union Straight

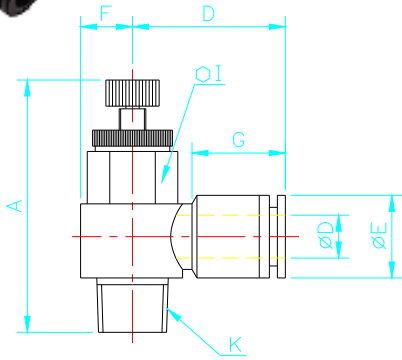
• ZB 770



MODEL	øH	A		D	øE	F	G	K	P	X	Weight(g)
		MAX	MIN								
ZB770-04	4	28.8	26	20.7	10.5	14	14.9	6.5	3.2	11	12.4
ZB770-06	6	41.6	36	25.1	13	20	17	8.5	4.3	15	28.5
ZB770-08	8	47.4	42.9	27.6	15	22	18.1	9.5	4.3	18	43.1
ZB770-10	10	52.4	45.7	32	18	26	20.2	11	4.3	21	68.7
ZB770-12	12	56.3	49.2	37.4	21	32	23.3	13	4.3	28	115

Elbow Flow Control

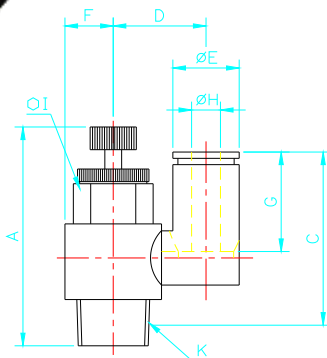
• ZB 668



MODEL	øH	K	A		D	øE	F	G	I	Weight(g)
			MAX	MIN						
ZB668-04-M5	4	M5	29.9	27.1	20.2	10	4.9	14.9	8	8.5
ZB668-04-01		1/8	40	34	21.7		7.2		10	17.8
ZB668-06-M5	6	M5	29.9	27.1	24.2	12.9	4.9	17	8	9.5
ZB668-06-01		1/8	40	34	23.7		7.2		10	18.7
ZB668-06-02		1/4	47.8	41.8	25.7		9.2		14	35.8
ZB668-06-03		3/8	-	-	-		-		-	-

Straight Flow Control

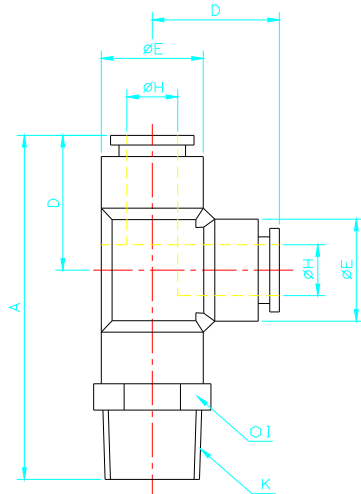
• ZB 649



MODEL	øH	K	A		D	øE	F	G	I	Weight(g)
			MAX	MIN						
ZB649-04-M5	4	M5	29.9	27.1	10.5	10.3	4.9	14.9	8	9.2
ZB649-04-01		1/8	40	34	13		7.2		10	19.1
ZB649-04-02		1/4	-	-	-		-		-	-
ZB649-06-M5	6	M5	29.9	27.1	12.2	12.9	4.9	17	8	10
ZB649-06-01		1/8	40	34	14.2		7.2		10	19.9
ZB649-06-02		1/4	47.8	41.8	17.2		9.2		14	37.2
ZB649-06-03		3/8	-	-	-		-		-	-

Branch Tee

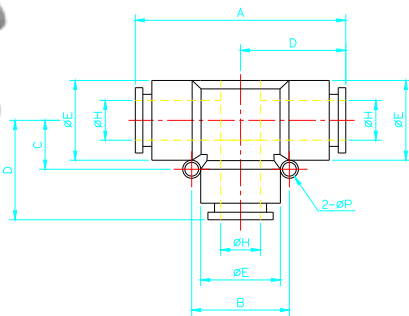
• ZB 103



MODEL	ϕH	K	A	D	ϕE	I	Weight(g)	
ZB103-04-M5	4	M5	38.7	17.2	10	10	11.3	
ZB103-04-01		1/8	44.7				10.1	14.3
ZB103-04-02		1/4		17	10	14	23.5	
ZB103-06-M5	6	M5	43.2	20.2	13	12	15.7	
ZB103-06-01		1/8	46.2				17	
ZB103-06-02		1/4	49.2				14	26
ZB103-06-03		3/8	51				17	38.5
ZB103-08-01	8	1/8	50.5	22.2	15	14	22.6	
ZB103-08-02		1/4	53.5				28.5	
ZB103-08-03		3/8	55.3				17	41.1
ZB103-10-01	10	1/8	-	-	-	-	-	
ZB103-10-02		1/4	62	26	18	17	41.4	
ZB103-10-03		3/8	63				50.6	
ZB103-10-04		1/2	66			21	72	
ZB103-12-02	12	1/4	66			28	21.5	21
ZB103-12-03		3/8	67	62.4				
ZB103-12-04		1/2	70	77.5				

Equal Tee

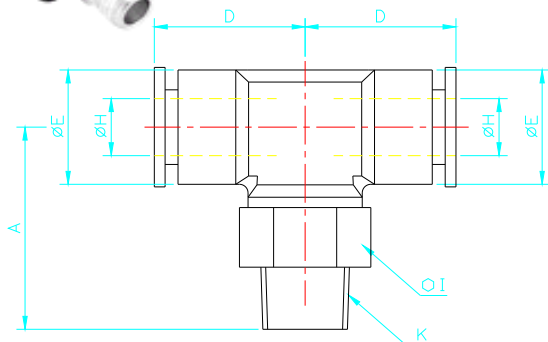
• ZB 104



MODEL	ϕH	A	B	C	D	ϕE	ϕP	Weight(g)
ZB104-04	4	34.4	13	6.5	17.2	10	3.2	7.5
ZB104-06	6	40.6	16	8	20.3	13	3.2	11
ZB104-08	8	44.8	18	9	22.4	15	3.2	15.4
ZB104-10	10	51	24	12	25.5	17.5	4.2	24.7
ZB104-12	12	57.2	28	14	28.6	21	4.2	35.7

Branch Tee

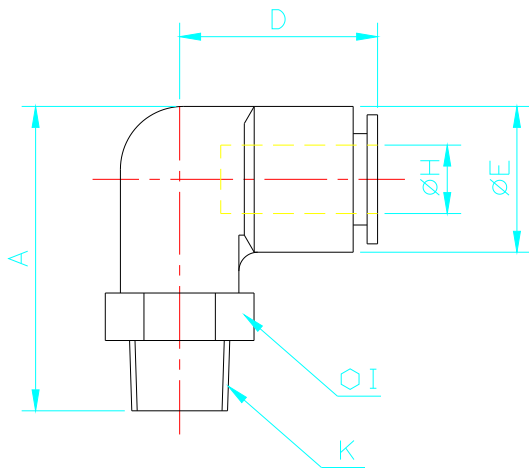
• ZB 108



MODEL	ϕH	K	A	D	ϕE	I	Weight(g)
ZB108-04-M5	4	M5	26.7	17.2	10.2	10	11.5
ZB108-04-01		1/8	28.4				13.2
ZB108-04-02		1/4	32.8	17		14	23.9
ZB108-06-M5	6	M5	29.6	20.4	13.2	12	15.6
ZB108-06-01		1/8	32.6	20.3			17.5
ZB108-06-02		1/4	35.6				14
ZB108-06-03		3/8	37.4	17			38.7
ZB108-08-01	8	1/8	34.2	22.7	15.4	14	22.5
ZB108-08-02		1/4	37.2				28.2
ZB108-08-03		3/8	39.1				17
ZB108-10-01	10	1/8	-	-	18.4	-	-
ZB108-10-02		1/4	44.7	26.4		17	41.4
ZB108-10-03		3/8	45.8				50.3
ZB108-10-04		1/2	48.9			21	72.4
ZB108-12-02	12	1/4	48.8		28.2	21.6	21
ZB108-12--3		3/8	49.8	61.5			
ZB108-12-04		1/2	52.7	77.2			

Elbow

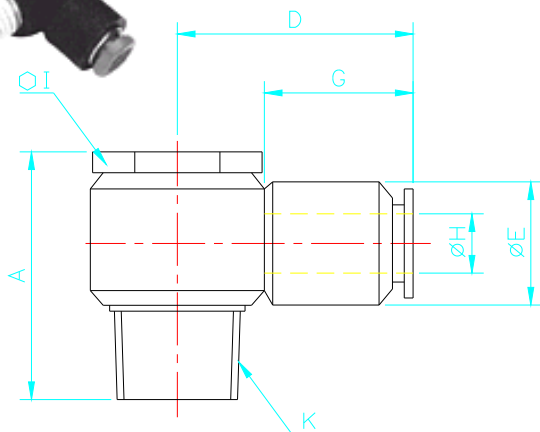
• ZB 109



MODEL	øH	K	A	D	øE	I	Weight(g)
ZB109-04-M5	4	M5	25.4	18	10.2	10	8
ZB109-04-01		1/8	28.4				10.7
ZB109-04-02		1/4	31.4				20.2
ZB109-06-M5	6	M5	28.5	19.6	12	12	12.1
ZB109-06-01		1/8	31.5	20			12.7
ZB109-06-02		1/4	34.5	19.6	13	14	21.9
ZB109-06-03		3/8	36.3			17	35
ZB109-08-01	8	1/8	35.5	22.9	15	14	17.9
ZB109-08-02		1/4	38.6	22.4			24
ZB109-08-03		3/8	40.4				37
ZB109-10-01	10	1/8	42	26.4	18	17	31.2
ZB109-10-02		1/4	45				34.2
ZB109-10-03		3/8	46				42
ZB109-10-04		1/2	49			21	63.8
ZB109-12-02	12	1/4	48.4	29.3	21.6	21	50.3
ZB109-12-03		3/8	49.6				51.5
ZB109-12-04		1/2	52.5				66

Swing Elbow

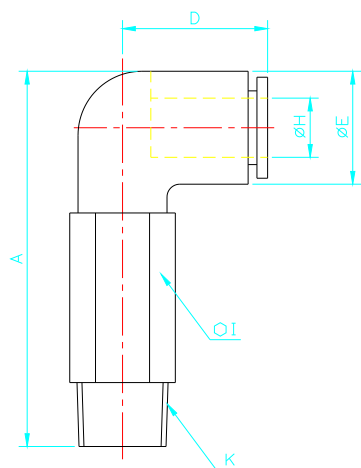
• ZB 118



MODEL	øH	K	A	D	E	G	I	Weight(g)
ZB118-04-M5	4	M5	17.2	21.6	10.2	14.9	8	7.5
ZB118-04-01		1/8	27.1	21	10	15	14	20.2
ZB118-06-M5	6	M5	17.2	23.4	12.7	17	8	8.4
ZB118-06-01		1/8	27	24.2	12.5	17	14	21.1
ZB118-06-02		1/4	31.5	27	12.8		17	35.5
ZB118-06-03		3/8	-	-	-	-	-	-
ZB118-08-01	8	1/8	27	26.2	14.5	18.1	17	32.4
ZB118-08-02		1/4	31.6	28.6	15			37
ZB118-08-03		3/8	36.1	30.3	21		59.6	
ZB118-10-02	10	1/4	31.5	30.5	18	20.2	21	54.7
ZB118-10-03		3/8	36	33.1	18.5			62.5
ZB118-12-02	12	1/4	-	-	-	23.3	24	-
ZB118-12-03		3/8	36	35.2	21			66
ZB118-12-04		1/2	40.3	38.1	21.5			97.5

Long Elbow

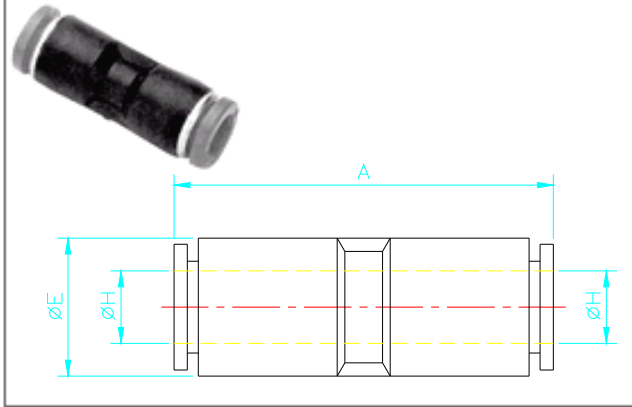
• ZB 129



MODEL	øH	K	A	D	E	I	Weight(g)
ZB129-04-M5	4	M5	37.4	18.3	10.2	10	17.3
ZB129-04-01		1/8	40.4				17.8
ZB129-06-M5	6	M5	-	-	-	-	-
ZB129-06-01		1/8	44.4	19.8	12.8	12	26
ZB129-06-02		1/4	47.4			14	38.8
ZB129-06-03	3/8	49.8	12.9		17	61.2	
ZB129-08-01	8	1/8	50.9	22.7	14.8	14	36.4
ZB129-08-02		1/4	53.9				42.3
ZB129-08-03		3/8	55.8		15		65.5
ZB129-10-02	10	1/4	63.4	26.2	17.8	17	65
ZB129-10-03		3/8	64.4				73.2
ZB129-12-02	12	1/4	70.8	29.4	21.5	21	112
ZB129-12-03		3/8	71.8				107
ZB129-12-04		1/2	74.8				122

Union Straight

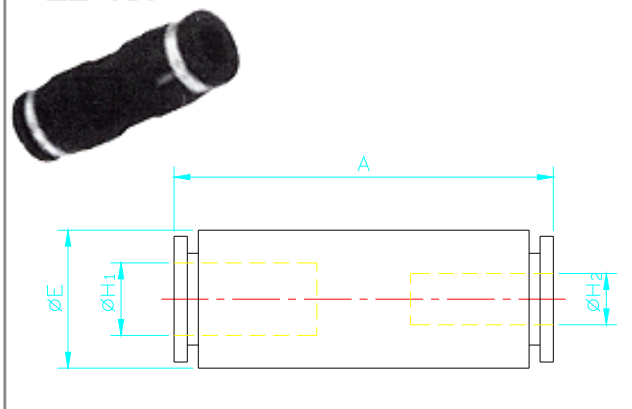
• ZB 106



MODEL	$\varnothing H$	A	$\varnothing E$	Weight(g)
ZB106-04	4	30.8	10.1	4
ZB106-06	6	35	12.8	6.7
ZB106-08	8	38.1	14.8	9.4
ZB106-10	10	44.2	17.8	15.8
ZB106-12	12	52.8	21.2	22

Union Straight With Different Bore

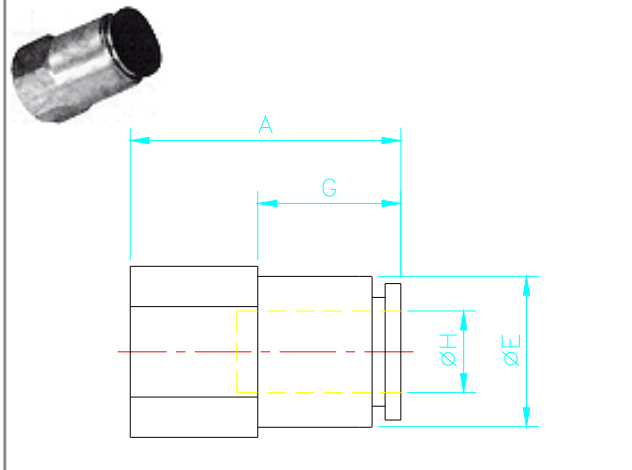
• ZB 107



MODEL	$\varnothing H_1$	$\varnothing H_2$	A	$\varnothing E$	Weight
ZB107-06-04	6	4	34.7	12.7	6.4
ZB107-08-06	8	6	38.3	14.8	9.1
ZB107-10-08	10	8	43.8	18	14.5
ZB107-12-10	12	10	53.3	21.3	22.7

Female Straight

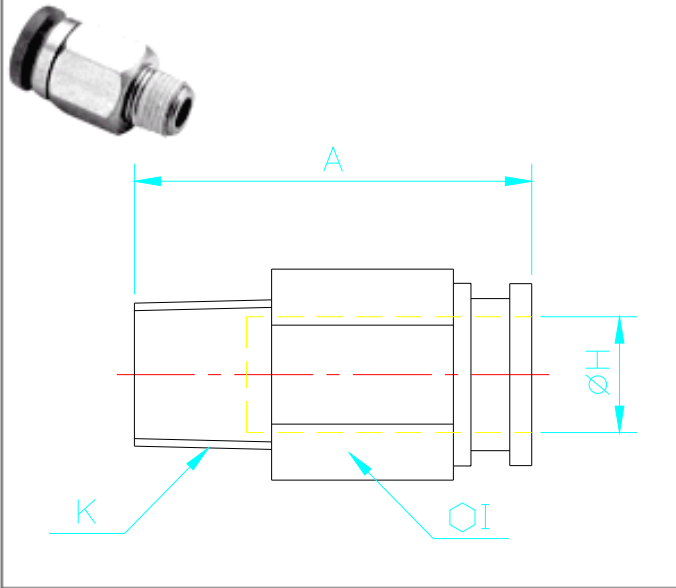
• ZB 114



MODEL	$\varnothing H$	K	A	$\varnothing E$	G	I	Weight(g)
ZB114-04-M5	4	M5	-	-	-	-	-
ZB114-04-01		1/8	24.5	11	14.9	14	15.3
ZB114-06-M5	6	M5	-	-	-	-	-
ZB114-06-01		1/8	26.5	13	17	14	18
ZB114-06-02		1/4	29.2			17	25
ZB114-06-03		3/8	-	-	-	-	-
ZB114-08-01	8	1/8	28.1	14.5	18.1	14	19.5
ZB114-08-02		1/4	31	15		17	27
ZB114-08-03		3/8	32.1	15		21	36
ZB114-10-02	10	1/4	33.9	17.5	20.2	17	32
ZB114-10-03		3/8	34.9			21	41
ZB114-12-02	12	1/4	36	20.8	23.3	21	56.2
ZB114-12-03		3/8	36.8				51.5
ZB114-12-04		1/2	-				-

Straight

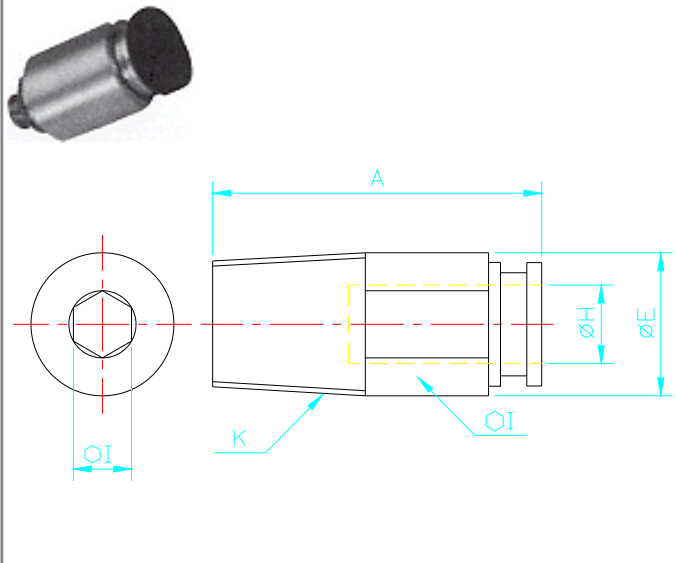
• ZB 175



MODEL	øH	K	A	I	Weight(g)
ZB175-04-M5	4	M5	20.1	10	6.3
ZB175-04-01		1/8	21.2		8
ZB175-04-02		1/4	21	14	17
ZB175-06-M5	6	M5	22.2	12	9.1
ZB175-06-01		1/8	22.6		9
ZB175-06-02		1/4	24.6	14	17
ZB175-06-03		3/8	23.6	17	27
ZB175-08-01	8	1/8	27.9	14	15
ZB175-08-02		1/4	26.6		
ZB175-08-03		3/8	24	17	23
ZB175-10-01	10	1/8	30.3	17	22.7
ZB175-10-02		1/4	30		20
ZB175-10-03		3/8	29.5		25.8
ZB175-10-04		1/2	30.5	21	49.2
ZB175-12-02	12	1/4	35.9	21	43
ZB175-12-03		3/8	31.9		35.5
ZB175-12-04		1/2	33.9		49.5

Hexagon Socket Head Straight

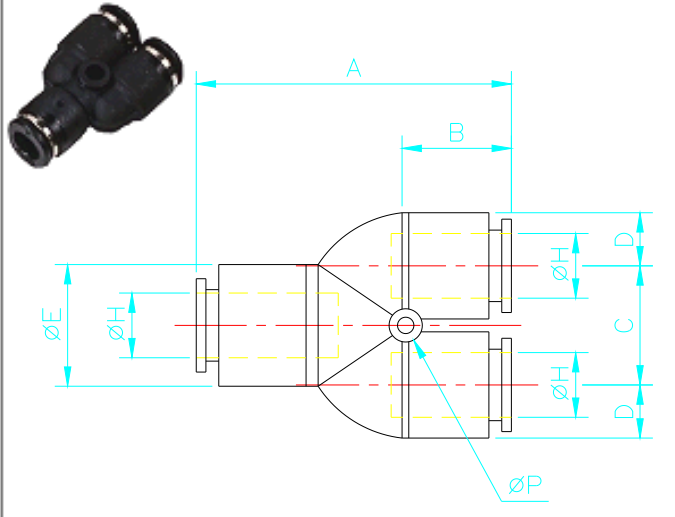
• ZB 176



MODEL	øH	K	A	øE	I	Weight(g)
ZB176-04-M5	4	M5	20	9.7	2.5	5.5
ZB176-04-01		1/8	21			8
ZB176-06-M5	6	M5	23	11.8	2	8.2
ZB176-06-01		1/8	27.1			4
ZB176-06-02		1/4		14	14.2	
ZB176-06-03		3/8	-	-	-	-
ZB176-08-01	8	1/8	28	14	5	14.1
ZB176-08-02		1/4	26.6			
ZB176-08-03		3/8	23.9	16.8	6	22
ZB176-10-01	10	1/8	-	17.8	6	-
ZB176-10-02		1/4	30			22
ZB176-10-03		3/8	29.5			27
ZB176-12-02	12	1/4	-	20.8	8	-
ZB176-12-03		3/8	31.9			33.7
ZB176-12-04		1/2	33.9			48

Union Y

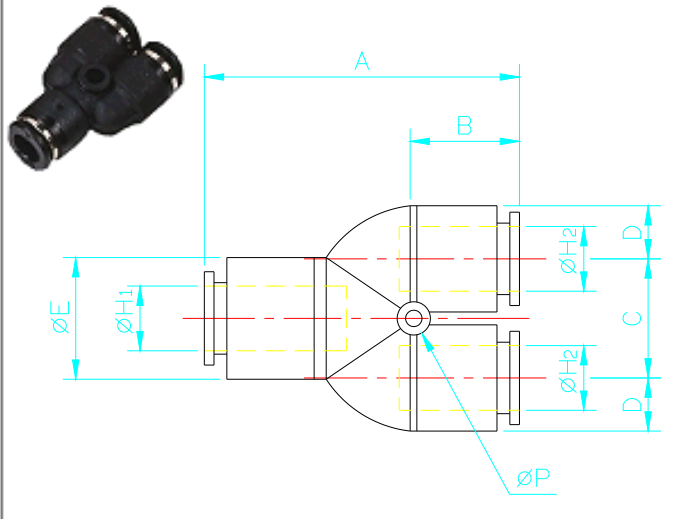
• ZB 140



MODEL	øH	A	B	C	D	øE	øP	Weight(g)
ZB140-04	4	32.5	14.1	11	5.1	10.1	3.4	7.8
ZB140-06	6	38	15.8	12	6.5	13	3.4	10.5
ZB140-08	8	42.8	17.2	14	7.6	15.3	3.4	15.3
ZB140-10	10	49	19.8	18	8.75	18	4.5	19
ZB140-12	12	55.2	22.4	20	10.5	21.5	4.5	28

Union Y With Different Bore

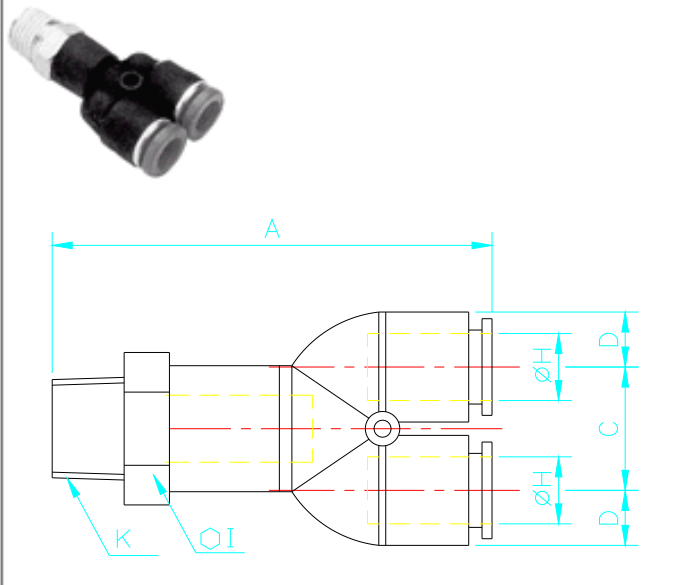
• ZB 144



MODEL	øH1	øH2	A	B	C	D	øE	øP	Weight(g)
ZB144-06-04	6	4	37.5	15.2	12	6.4	13	3.2	10.3
ZB144-08-06	8	6	42.7	17.3	14	7.4	15	3.2	14.4
ZB144-10-08	10	8	48.6	19.4	18	8.75	18	4.5	23
ZB144-12-10	12	10	55.1	22.3	20	10.5	21.5	4.5	35.6

Branch Y

• ZB 148



MODEL	øH	K	A	C	D	I	Weight(g)
ZB148-04-M5	4	M5	37.9	11	5	10	12
ZB148-04-01		1/8	41				15
ZB148-04-02		1/4	44				23
ZB148-06-M5	6	M5	41.5	12	6.3	12	15.8
ZB148-06-01		1/8	44.5				18
ZB148-06-02		1/4	47.5				25
ZB148-06-03		3/5	49.5				39
ZB148-08-01	8	1/8	48.9	14	7.3	14	23.3
ZB148-08-02		1/4	52				29.3
ZB148-08-03		3/8	53.7				42.4
ZB148-10-01	10	1/8	-	18	8.75	17	-
ZB148-10-02		1/4	58.6				43
ZB148-10-03		3/8	59.6				51.5
ZB148-10-04		1/2	62.6				73
ZB148-12-02	12	1/4	63.7	20	10.5	21	63.4
ZB148-12-03		3/8	64.7				64.5
ZB148-12-04		1/2	67.7				79.7