Áp suất làm việc cho phép của ống PP-R với hệ số an toàn SF = 1.5

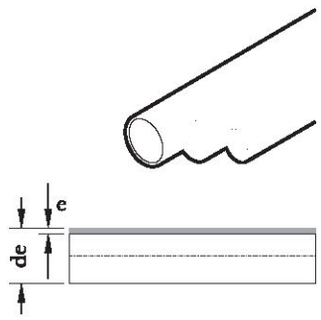
Allowable working pressure for PP-R pipes with SF = 1.5

Nhiệt độ Temperature (°C)	Số năm sử dụng Year of service	Dãy sản phẩm ống - Pipe series (S)			
		5 PN10	3.2 PN16	2.5 PN20	2 PN25
		Áp suất làm việc cho phép (Bar) - Allowable working pressure, in Bar			
10	1	17.6	27.8	35.0	44.2
	5	16.6	26.4	33.2	41.8
	10	16.1	25.5	32.1	40.4
	25	15.6	24.7	31.1	39.1
	50	15.2	24.0	30.3	38.1
	100	14.8	23.4	29.5	37.1
20	1	15.0	23.8	30.0	37.8
	5	14.1	22.3	28.1	35.4
	10	13.7	21.7	27.3	34.4
	25	13.3	21.1	26.5	33.4
	50	12.9	20.4	25.7	32.4
	100	12.5	19.8	24.9	31.4
30	1	12.8	20.2	25.5	32.1
	5	12.0	19.0	23.9	30.1
	10	11.6	18.3	23.1	29.1
	25	11.2	17.7	22.3	28.1
	50	10.9	17.3	21.8	27.4
	100	10.6	16.9	21.2	26.4
40	1	10.8	17.1	21.5	27.1
	5	10.1	16.0	20.2	25.4
	10	9.8	15.6	19.6	24.7
	25	9.4	15.0	18.8	23.7
	50	9.2	14.5	18.3	23.1
	100	8.9	14.1	17.8	22.4
50	1	9.2	14.5	18.3	23.1
	5	8.5	13.5	17.0	21.4
	10	8.2	13.1	16.5	20.7
	25	8.0	12.6	15.9	20.0
	50	7.7	12.2	15.4	19.4
	100	7.4	11.8	14.9	18.7
60	1	7.7	12.2	15.4	19.4
	5	7.2	11.4	14.3	18.0
	10	6.9	11.0	13.8	17.4
	25	6.7	10.5	13.3	16.7
	50	6.4	10.1	12.7	16.0
70	1	6.5	10.3	13.0	16.4
	5	6.0	9.5	11.9	15.0
	10	5.9	9.3	11.7	14.7
	25	5.1	8.0	10.1	12.7
	50	4.3	6.7	8.5	10.7
80	1	5.5	8.6	10.9	13.7
	5	4.8	7.6	9.6	12.0
	10	4.0	6.3	8.0	10.0
	25	3.2	5.1	6.4	8.0
95	1	3.9	6.1	7.7	9.7
	5	2.5	4.0	5.0	6.3
	10	2.1	3.4	4.2	5.3
110	1	3.4	5.3	6.7	8.5
	5	1.9	2.9	3.8	4.8

Trường hợp ống hoạt động trong điều kiện 110°C cần tuân thủ nghiêm ngặt các quy định của nhà sản xuất

ỐNG NƯỚC SẠCH HÀN NHIỆT (Độ dài: 4m)
Polypropylene (PP-R) Pipe System (Length: 4m)

SẢN XUẤT THEO TIÊU CHUẨN: DIN 8077 & DIN 8078; QCVN16:2017/BXD
Production according to: DIN 8077 & DIN 8078; QCVN16:2017/BXD



Ống nước lạnh PPR - PN10/PN16 - PPR pipe for cold water use - PN10/PN16

Mã số Code	de	e	Đơn giá Unit Price (VND/1m)
PR/PN10CW20/(X)	20	2.3	9.300
PR/PN10CW25/(X)	25	2.5	13.000
PR/PN10CW32/(X)	32	2.9	17.900
PR/PN10CW40/(X)	40	3.7	27.600
PR/PN10CW50/(X)	50	4.6	43.900
PR/PN10CW63/(X)	63	5.8	68.300
PR/PN10CW75/(X)	75	6.8	97.500
PR/PN10CW90/(X)	90	8.2	141.500
PR/PN10CW110/(X)	110	10.0	204.800
PR/PN10CW125/(X)	125	11.4	268.000
PR/PN10CW140/(X)	140	12.7	325.000
PR/PN10CW160/(X)	160	14.6	438.800

Mã số Code	de	e	Đơn giá Unit Price (VND/1m)
PR/PN16CW20/(X)	20	2.8	11.500
PR/PN16CW25/(X)	25	3.5	16.300
PR/PN16CW32/(X)	32	4.4	24.500
PR/PN16CW40/(X)	40	5.5	39.000
PR/PN16CW50/(X)	50	6.9	61.800
PR/PN16CW63/(X)	63	8.6	100.800
PR/PN16CW75/(X)	75	10.3	130.000
PR/PN16CW90/(X)	90	12.3	181.800
PR/PN16CW110/(X)	110	15.1	269.800
PR/PN16CW125/(X)	125	17.1	358.000
PR/PN16CW140/(X)	140	19.2	455.000
PR/PN16CW160/(X)	160	21.9	585.000

Ống nước nóng PPR - PN20/PN25 - PPR pipe for hot water use - PN20/PN25

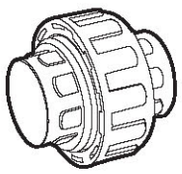
Mã số Code	de	e	Đơn giá Unit Price (VND/1m)
PR/PN20HW20/(X)	20	3.4	14.300
PR/PN20HW25/(X)	25	4.2	18.800
PR/PN20HW32/(X)	32	5.4	29.600
PR/PN20HW40/(X)	40	6.7	45.500
PR/PN20HW50/(X)	50	8.3	68.300
PR/PN20HW63/(X)	63	10.5	107.300
PR/PN20HW75/(X)	75	12.5	157.600
PR/PN20HW90/(X)	90	15.0	229.200
PR/PN20HW110/(X)	110	18.3	339.600
PR/PN20HW125/(X)	125	20.8	418.300
PR/PN20HW140/(X)	140	23.3	524.800
PR/PN20HW160/(X)	160	26.6	717.300

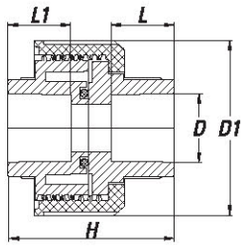
Mã số Code	de	e	Đơn giá Unit Price (VND/1m)
PR/PN25HW20/(X)	20	4.1	16.500
PR/PN25HW25/(X)	25	5.1	19.500
PR/PN25HW32/(X)	32	6.5	32.200
PR/PN25HW40/(X)	40	8.1	50.200
PR/PN25HW50/(X)	50	10.1	78.000
PR/PN25HW63/(X)	63	12.7	130.000
PR/PN25HW75/(X)	75	15.1	182.000
PR/PN25HW90/(X)	90	18.1	265.500
PR/PN25HW110/(X)	110	22.1	338.000
PR/PN25HW125/(X)	125	25.1	485.900
PR/PN25HW140/(X)	140	28.1	609.500
PR/PN25HW160/(X)	160	32.1	796.300

PHỤ KIỆN ỐNG NƯỚC SẠCH HÀN NHIỆT

Zắc co - Socket unions

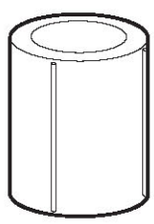
Mã số Code	Kích cỡ Size (D)	L	L1	D1	H	Đơn giá Unit Price (VND)
FPR/UA20/(X)	20	17.5	17.7	44.5	49.9	15.500
FPR/UA25/(X)	25	19.7	18.5	55.5	51.7	22.900
FPR/UA32/(X)	32	23.0	23.0	66.5	64.0	32.900
FPR/UA40/(X)	40	26.0	23.2	83.5	61.7	37.800
FPR/UA50/(X)	50	30.0	30.4	96	74.7	56.800
FPR/UA63/(X)	63	39.4	37.2	116	91.4	131.500

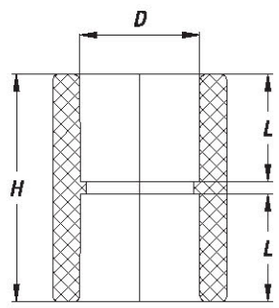




Khớp nối trơn (măng xông) - Sockets (plain)

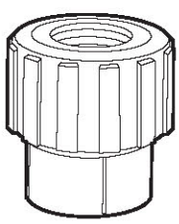
Mã số Code	Kích cỡ Size (D)	L	H	Đơn giá Unit Price (VND)
FPR/C20/(X)	20	16	34	1.300
FPR/C25/(X)	25	18	38	2.200
FPR/C32/(X)	32	20	42.5	3.300
FPR/C40/(X)	40	22	47	5.200
FPR/C50/(X)	50	25	53	9.500
FPR/C63/(X)	63	28	62	18.800
FPR/C75/(X)	75	32	66	31.500
FPR/C90/(X)	90	35	74	53.300
FPR/C110/(X)	110	38	83	86.500
FPR/C125/(X)	125	46	98	166.300
FPR/C160/(X)	160	48	105	332.500

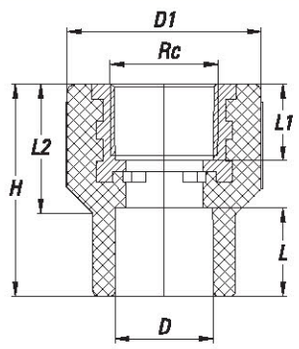




Khớp nối ren trong - Threaded Adaptor Female

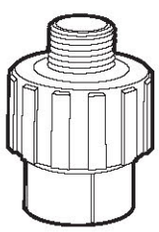
Mã số Code	Kích cỡ Size	Rc	D	L	D1	L1	L2	H	Đơn giá Unit Price (VND)
FPR/IA20 x 1/2/(X)	20 x 1/2"	1/2"	20	15	39	15	22.5	41	15.500
FPR/IA20 x 3/4(X)	20 x 3/4"	3/4"	20	15	44	15	24.5	41	16.800
FPR/IA25 x 1/2/(X)	25 x 1/2"	1/2"	25	16	38	15	23	42	19.000
FPR/IA25 x 3/4/(X)	25 x 3/4"	3/4"	25	16	44	15	24.5	42	21.200
FPR/IA32 x 1/(X)	32 x 1"	1"	32	18	58	18	27	44	34.500
FPR/IA40 x 1/(X)	40 x 1"	1"	40	-	-	-	-	-	85.000
FPR/IA40 x 1¼/(X)	40 x 1¼"	1¼"	40	21	70	20.5	27.5	66	85.500
FPR/IA50 x 1½/(X)	50 x 1½"	1½"	50	24	80	19.5	29	68	113.500
FPR/IA63 x 2/(X)	63 x 2"	2"	63	-	-	-	-	-	229.800

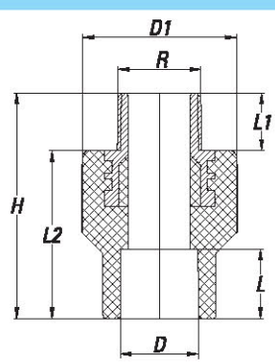




Khớp nối ren ngoài - Threaded Adaptor Male

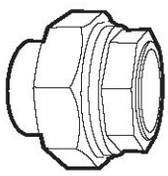
Mã số Code	Kích cỡ Size	R	D	L	D1	L1	L2	H	Đơn giá Unit Price (VND)
FPR/EA20 x 1/2/(X)	20 x 1/2"	1/2"	20	15	39	15	22.5	56	19.600
FPR/EA20 x 3/4(X)	20 x 3/4"	3/4"	20	15	44	15	24.5	56	21.900
FPR/EA25 x 1/2/(X)	25 x 1/2"	1/2"	25	16	39	15	23	58	22.800
FPR/EA25 x 3/4/(X)	25 x 3/4"	3/4"	25	16	44	15	24.5	58	27.500
FPR/EA32 x 1/(X)	32 x 1"	1"	32	18	58	18	27	70	40.500
FPR/EA40 x 1/(X)	40 x 1"	1"	40	-	-	-	-	-	
FPR/EA40 x 1¼/(X)	40 x 1¼"	1¼"	40	21	70	20.5	27.5	84	117.600
FPR/EA50 x 1½/(X)	50 x 1½"	1½"	50	24	80	19.5	29	82.5	147.000
FPR/EA63 x 2/(X)	63 x 2"	2"	63	-	-	-	-	-	249.000

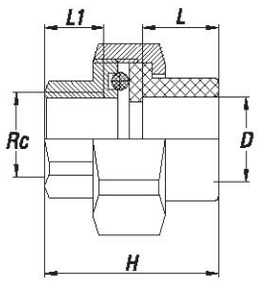




Khớp nối vạn năng ren trong - Hexagonal Unions Adaptor Female

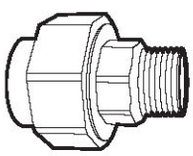
Mã số Code	Kích cỡ Size	Rc	D	L	L1	H	Đơn giá Unit Price (VND)
FPR/UAF20 x 1/2/(X)	20 x 1/2"	1/2"	20	16	13.3	41	37.000
FPR/UAF25 x 3/4/(X)	25 x 3/4"	3/4"	25	17	14.5	44	59.200
FPR/UAF32 x 1/(X)	32 x 1"	1"	32	20	16.5	50	86.800
FPR/UAF40 x 1¼/(X)	40 x 1¼"	1¼"	40	20	53	52	112.600
FPR/UAF50 x 1½/(X)	50 x 1½"	1½"	50	25	20	58	177.600
FPR/UAF63 x 2/(X)	63 x 2"	2"	63	28	22	75	247.800

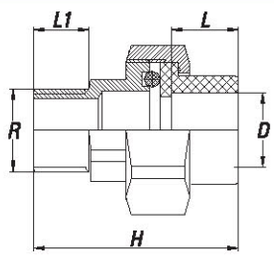




Khớp nối vạn năng ren ngoài - Hexagonal Unions Adaptor Male

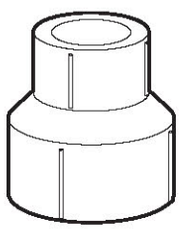
Mã số Code	Kích cỡ Size	R	D	L	L1	H	Đơn giá Unit Price (VND)
FPR/UAM20 x 1/2/(X)	20 x 1/2"	1/2"	20	16	14	54	39.500
FPR/UAM25 x 3/4/(X)	25 x 3/4"	3/4"	25	17	15	56	61.500
FPR/UAM32 x 1/(X)	32 x 1"	1"	32	20	16.5	66	96.600
FPR/UAM40 x 1¼/(X)	40 x 1¼"	1¼"	40	23	20	72	118.200
FPR/UAM50 x 1½/(X)	50 x 1½"	1½"	50	19	23	80	189.900
FPR/UAM63 x 2/(X)	63 x 2"	2"	63	28	26	97	267.600

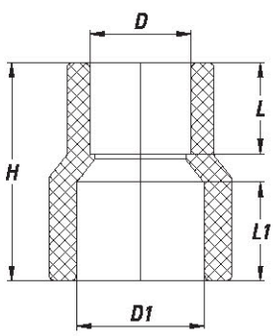




Cút thu (côn thu) - Reducing Sockets (plain)

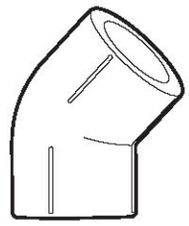
Mã số Code	Kích cỡ Size	D	L	D1	L1	H	Đơn giá Unit Price (VND)
FPR/RC25x20/(X)	25 x 20	20	15	25	16	37	2.000
FPR/RC32x20/(X)	32 x 20	20	15	32	18	42.5	2.800
FPR/RC32x25/(X)	32 x 25	25	16	32	18	42	2.800
FPR/RC40x20/(X)	40 x 20	20	15	40	21	49	4.300
FPR/RC40x25/(X)	40 x 25	25	16	40	21	48	4.300
FPR/RC40x32/(X)	40 x 32	32	18	40	21	47	4.300
FPR/RC50x20/(X)	50 x 20	20	15	50	24	56	7.800
FPR/RC50x25/(X)	50 x 25	25	16	50	24	57	7.800
FPR/RC50x32/(X)	50 x 32	32	18	50	24	55	7.800
FPR/RC50x40/(X)	50 x 40	40	21	50	24	53	7.800
FPR/RC63x20/(X)	63 x 20	20	-	63	-	-	12.900
FPR/RC63x25/(X)	63 x 25	25	16	63	28	70	14.900
FPR/RC63x32/(X)	63 x 32	32	18	63	28	65	14.900
FPR/RC63x40/(X)	63 x 40	40	21	63	28	63.5	14.900
FPR/RC63x50/(X)	63 x 50	50	24	63	28	61.5	14.900
FPR/RC75x40/(X)	75 x 40	40	23	75	35	65	27.800
FPR/RC75x50/(X)	75 x 50	50	23	75	30	63	27.800
FPR/RC75x63/(X)	75 x 63	53	27	75	30	63	27.800
FPR/RC90x40/(X)	90 x 40	40	23	90	41	72	38.600
FPR/RC90x50/(X)	90 x 50	50	26	90	40	73	38.600
FPR/RC90x63/(X)	90 x 63	63	27	90	35	71	49.200
FPR/RC90x75/(X)	90 x 75	75	31	90	36	74	49.200
FPR/RC110x50/(X)	110 x 50	50	28	110	43	84	75.000
FPR/RC110x63/(X)	110 x 63	63	27	110	43	86	100.900
FPR/RC110x75/(X)	110 x 75	75	34	110	44	87	100.900
FPR/RC110x90/(X)	110 x 90	90	38	110	43	89	100.900
FPR/RC125x90/(X)	125 x 90	90	38	125	47	147	108.500
FPR/RC160x110/(X)	160 x 110	110	44	160	49	105	342.300

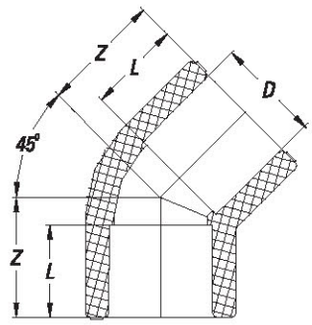




Nối góc 45° - Elbow 45°

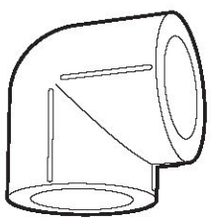
Mã số Code	Kích cỡ Size (D)	L	Z	Đơn giá Unit Price (VND)
FPR/45E20/(X)	20	17	22	2.000
FPR/45E25/(X)	25	18.5	24.6	3.200
FPR/45E32/(X)	32	20	28	4.800
FPR/45E40/(X)	40	22	32	9.500
FPR/45E50/(X)	50	27.5	39.5	18.000
FPR/45E63/(X)	63	29	42.5	41.200
FPR/45E75/(X)	75	32	49	63.500
FPR/45E90/(X)	90	35	56	75.500
FPR/45E110/(X)	110	42	58	131.500
FPR/45E125/(X)	125	47	-	
FPR/45E160/(X)	160	49	83	205.800

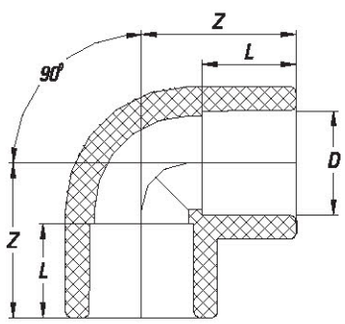




Nối góc 90° - Elbow 90°

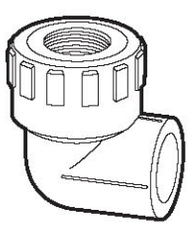
Mã số Code	Kích cỡ Size (D)	L	Z	Đơn giá Unit Price (VND)
FPR/90E20/(X)	20	16	27	2.500
FPR/90E25/(X)	25	18	32	3.200
FPR/90E32/(X)	32	20	36.5	5.500
FPR/90E40/(X)	40	22	43	9.000
FPR/90E50/(X)	50	13.3	49.3	15.800
FPR/90E63/(X)	63	28	59	48.300
FPR/90E75/(X)	75	32	71	63.000
FPR/90E90/(X)	90	35	80	97.200
FPR/90E110/(X)	110	42	95	198.000
FPR/90E125/(X)	125	47	109	321.000
FPR/90E160/(X)	160	48	130	641.900

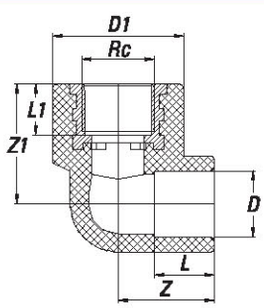




Nối góc 90° ren trong- Female Elbow 90°

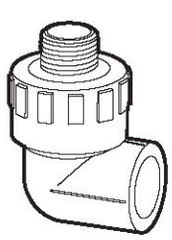
Mã số Code	Kích cỡ Size	Rc	D	L	Z	D1	L1	Z1	Đơn giá Unit Price (VND)
FPR/IT90E20 x 1/2/(X)	20 x 1/2"	1/2"	20	15	28	39	15	38	17.300
FPR/IT90E25 x 1/2/(X)	25 x 1/2"	1/2"	25	16	31.5	40	15	38	19.600
FPR/IT90E25 x 3/4/(X)	25 x 3/4"	3/4"	25	16	31.5	44	15	38	26.500
FPR/IT90E32 x 3/4/(X)	32 x 3/4"	3/4"	32	-	-	-	-	-	44.000
FPR/IT90E32 x 1/(X)	32 x 1"	1"	32	18	40	61	18	60	48.800

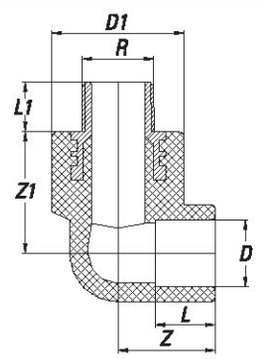




Nối góc 90° ren ngoài - Male Elbow 90°

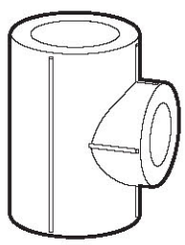
Mã số Code	Kích cỡ Size	R	D	L	Z	D1	L1	Z1	Đơn giá Unit Price (VND)
FPR/ET90E20 x 1/2/(X)	20 x 1/2"	1/2"	20	15	28	39	15	38	24.300
FPR/ET90E25 x 1/2/(X)	25 x 1/2"	1/2"	25	16	31.5	40	15	38	27.500
FPR/ET90E25 x 3/4/(X)	25 x 3/4"	3/4"	25	16	31.5	44	15	38	32.500
FPR/ET90E32 x 3/4/(X)	32 x 3/4"	3/4"	32	-	-	-	-	-	48.500
FPR/ET90E32 x 1/(X)	32 x 1"	1"	32	18	40	61	27	50	51.800

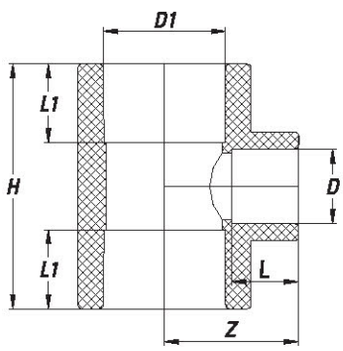




Cút T - Loại không đồng cỡ (thu nhỏ) - Tees 90° (reducing)

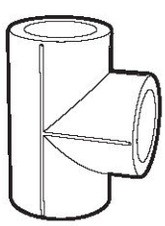
Mã số Code	Kích cỡ Size	D	L	Z	D1	L1	H	Đơn giá Unit Price (VND)
FPR/RT25x20/(X)	25x20	20	16	29.5	25	17	59.5	4.300
FPR/RT32x20/(X)	32x20	20	16	32	32	20	61.2	7.600
FPR/RT32x25/(X)	32x25	25	18.5	35.5	32	20	67	7.600
FPR/RT40x20/(X)	40x20	20	16	38	40	22	67	16.600
FPR/RT40x25/(X)	40x25	25	17	38	40	22	71	16.600
FPR/RT40x32/(X)	40x32	32	20	41	40	22	80	16.600
FPR/RT50x20/(X)	50x20	20	16	42	50	25	82	29.200
FPR/RT50x25/(X)	50x25	25	19	45	50	25	80	29.200
FPR/RT50x32/(X)	50x32	32	25	36.5	50	20	89	29.200
FPR/RT50x40/(X)	50x40	40	22	48.5	50	26	96	29.200
FPR/RT63x20/(X)	63x20	20	16	48.5	63	20	80	43.600
FPR/RT63x25/(X)	63x25	25	19	50	63	28	90	51.300
FPR/RT63x32/(X)	63x32	32	22	52	63	28	92	51.300
FPR/RT63x40/(X)	63x40	40	20	51.5	63	28	98	51.300
FPR/RT63x50/(X)	63x50	50	26	59	63	30	129	51.300
FPR/RT75x25/(X)	75x25	25	18	98	75	59	94	59.500
FPR/RT75x32/(X)	75x32	32	20	98	75	59	100	70.300
FPR/RT75x40/(X)	75x40	40	22	99.5	75	60	108	70.300
FPR/RT75x50/(X)	75x50	50	26	99.5	75	65	118	75.500
FPR/RT75x63/(X)	75x63	63	29	99.5	75	70	130	75.500
FPR/RT90x40/(X)	90x40	40	22	119	90	69	120	96.800
FPR/RT90x50/(X)	90x50	50	26	119	90	73.5	129	110.300
FPR/RT90x63/(X)	90x63	63	31	119	90	75.5	142	118.500
FPR/RT90x75/(X)	90x75	75	32.5	119	90	80	154	130.300
FPR/RT110x50/(X)	110x50	50	26	143	110	90	146	163.200
FPR/RT110x63/(X)	110x63	63	34	144	110	85	156	187.800
FPR/RT110x75/(X)	110x75	75	39	145	110	92	165	187.800
FPR/RT110x90/(X)	110x90	90	42	145	110	95	180	187.800
FPR/RT125x90/(X)	125x90	90	38	150	125	151	207	220.000
FPR/RT160x63/(X)	160x63	63	-	-	160	-	-	230.300
FPR/RT160x75/(X)	160x75	75	-	-	160	-	-	250.800
FPR/RT160x90/(X)	160x90	90	-	-	160	-	-	282.000
FPR/RT160x110/(X)	160x110	110	43	172	160	50	214	309.600

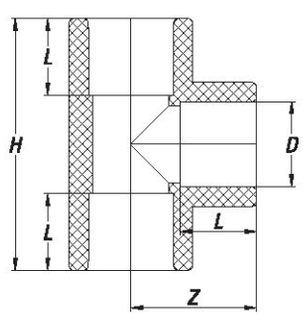




Cút T - Loại đồng cỡ - Tees 90°

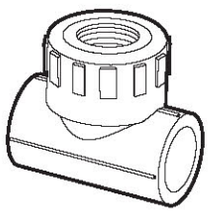
Mã số Code	Kích cỡ Size (D)	L	Z	H	Đơn giá Unit Price (VND)
FPR/ET20/(X)	20	16	26.2	52.5	2.800
FPR/ET25/(X)	25	18	31	62	4.300
FPR/ET32/(X)	32	20	36.5	73	7.200
FPR/ET40/(X)	40	22.5	43	86	11.000
FPR/ET50/(X)	50	26	59	103.5	21.600
FPR/ET63/(X)	63	28	80	123	54.300
FPR/ET75/(X)	75	32	93	142	81.500
FPR/ET90/(X)	90	35	104	163	126.600
FPR/ET110/(X)	110	44	101	203	196.000
FPR/ET125/(X)	125	46.5	110.5	222	416.600
FPR/ET160/(X)	160	49	130	263	763.800

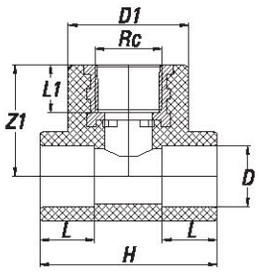




Cút T - Loại có ren trong - Threaded Tees Female

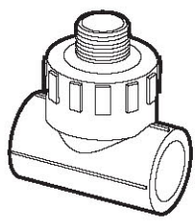
Mã số Code	Kích cỡ Size	Rc	D	L	D1	L1	Z1	H	Đơn giá Unit Price (VND)
FPR/ITT20 x 1/2/(X)	20 x 1/2"	1/2"	20	15	39	15	37	52	17.500
FPR/ITT25 x 1/2/(X)	25 x 1/2"	1/2"	25	16	40	15	38	60	18.600
FPR/ITT25 x 3/4/(X)	25 x 3/4"	3/4"	25	16	44	15	38.5	63	27.200
FPR/ITT32 x 3/4/(X)	32 x 3/4"	3/4"	32	-	-	-	-	-	58.800
FPR/ITT32 x 1/(X)	32 x 1"	1"	32	18	61	18	47	80.5	59.300

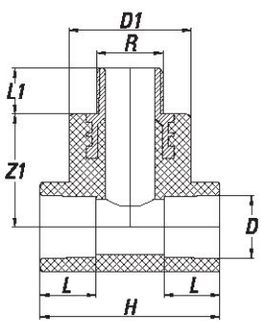




Cút T - Loại có ren ngoài - Threaded Tees Male

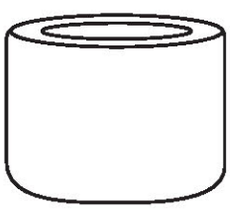
Mã số Code	Kích cỡ Size	R	D	L	D1	L1	Z1	H	Đơn giá Unit Price (VND)
FPR/ETT20 x 1/2/(X)	20 x 1/2"	1/2"	20	15	39	15	37	52	21.500
FPR/ETT25 x 1/2/(X)	25 x 1/2"	1/2"	25	16	40	15	38	60	23.300
FPR/ETT25 x 3/4/(X)	25 x 3/4"	3/4"	25	16	44	15	38.5	63	28.200
FPR/ETT32 x 3/4/(X)	32 x 3/4"	3/4"	32	-	-	-	-	-	58.800
FPR/ETT32 x 1/(X)	32 x 1"	1"	32	18	61	27	47	80.5	59.200

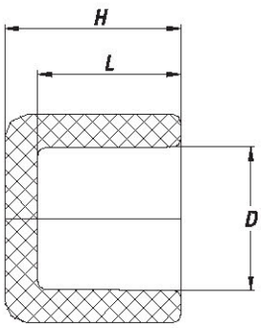




Nút bịt - Cap

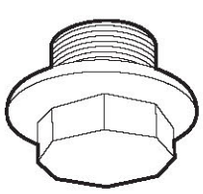
Mã số Code	Kích cỡ Size (D)	L	H	Đơn giá Unit Price (VND)
FPR/CAP20/(X)	20	21	25	1.200
FPR/CAP25/(X)	25	24	28	2.000
FPR/CAP32/(X)	32	26	32	2.800
FPR/CAP40/(X)	40	26	34	4.000
FPR/CAP50/(X)	50	26	36	7.600
FPR/CAP63/(X)	63	28.5	39	12.800
FPR/CAP75/(X)	75	35	48.5	65.300
FPR/CAP90/(X)	90	42	56.8	73.500
FPR/CAP110/(X)	110	-	-	80.900
FPR/CAP160/(X)	160	-	-	83.500

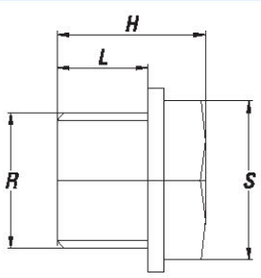




Nút bịt ren ngoài - Screw Cap

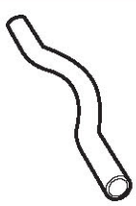
Mã số Code	Kích cỡ Size (R)	L	S	H	Đơn giá Unit Price (VND)
FPR/SCAP1/2/(X)	1/2"	12	22	21	3.600
FPR/SCAP3/4/(X)	3/4"	17	30	28	3.800

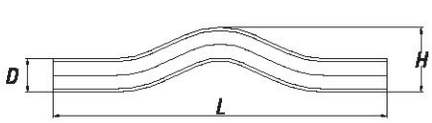




Ống cong (ống cầu vượt) - Cross-over pipe

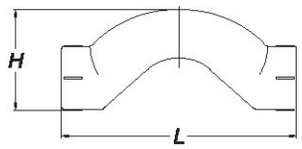
Mã số Code	Kích cỡ Size	H	L	Đơn giá Unit Price (VND)
FPR/COP20/(X)	20	50	140	8.000
FPR/COP25/(X)	25	50	141	15.900
FPR/COP32/(X)	32	50	142	27.800





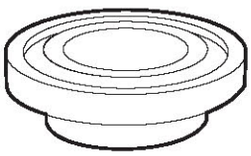
Ống tránh - Cross-over sockets

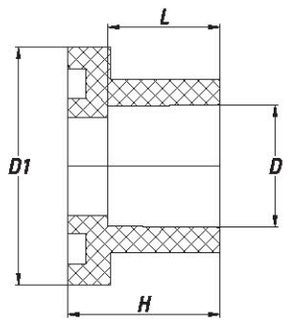
Mã số Code	Kích cỡ Size	H	L	Đơn giá Unit Price (VND)
FPR/COS20/(X)	20	47	106	7.600
FPR/COS25/(X)	25	56	131	11.500
FPR/COS32/(X)	32	67	147	23.900
FPR/COS40/(X)	40	80	179	38.300
FPR/COS50/(X)	50	102	212	70.900



Vòng măng xông (mặt bích nhựa) - Flange

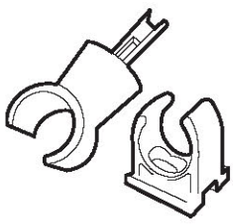
Mã số Code	Kích cỡ Size (D)	L	D1	H	Đơn giá Unit Price (VND)
FPR/FL20/(X)	20	16	34	24	5.200
FPR/FL25/(X)	25	17	40	22	5.800
FPR/FL32/(X)	32	20	49	27	9.000
FPR/FL40/(X)	40	22	77	27	11.000
FPR/FL50/(X)	50	25	85	30	12.200
FPR/FL63/(X)	63	29	107	32	15.900
FPR/FL75/(X)	75	33	121	40	26.500
FPR/FL90/(X)	90	34.5	135	44	39.800
FPR/FL110/(X)	110	45	169	54	59.500
FPR/FL160/(X)	160	-	-	-	114.600

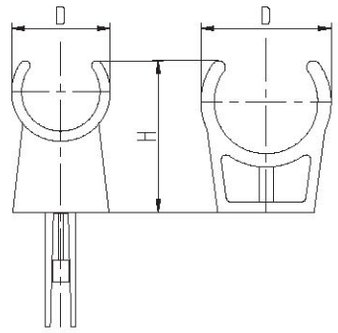




Kẹp đỡ ống - Pipe Single Screw Clip

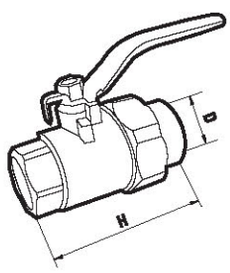
Mã số Code	Kích cỡ Size	D	H	Đơn giá Unit Price (VND)
FPR/PSC20/(X)	20	26	29	2.500
FPR/PSC25/(X)	25	31	34	3.600
FPR/PSC32/(X)	32	40	59	4.200
FPR/PSC40/(X)	40	41	46	5.500
FPR/PSC50/(X)	50	-	-	7.300
FPR/PSC63/(X)	63	67	82	9.200





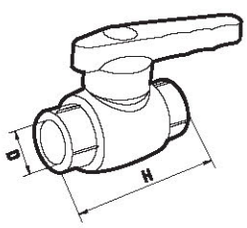
Van tay gạt có ren trong - Ball Valve Threaded Female

Mã số Code	Kích cỡ Size	D	H	Đơn giá Unit Price (VND)
FPR/BVF20 x 1/2/(X)	20 x 1/2"	20	67	103.500
FPR/BVF25 x 3/4/(X)	25 x 3/4"	25	75	129.500
FPR/BVF32 x 1/(X)	32 x 1"	32	-	147.900
FPR/BVF40 x 1¼/(X)	40 x 1¼	40	-	234.900
FPR/BVF50 x 1½/(X)	50 x 1½	50	-	405.300
FPR/BVF63 x 2/(X)	63 x 2"	63	-	620.800



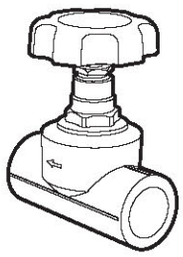
Van khóa nhanh - Quick Valve

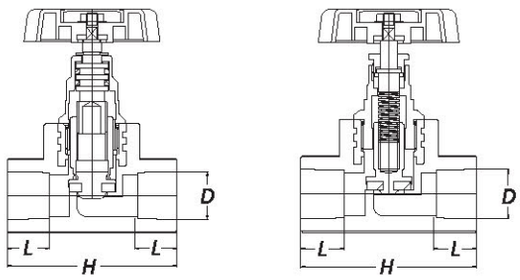
Mã số Code	Kích cỡ Size (D)	H	Đơn giá Unit Price (VND)
FPR/BVF20/(X)	20	68	103.500
FPR/BVF25/(X)	25	75	129.500
FPR/BVF32/(X)	32	84	147.900
FPR/BVF40/(X)	40	101	234.900
FPR/BVF50/(X)	50	118	405.300
FPR/BVF63/(X)	63	141	620.800



Van tay vặn - Stop Valve

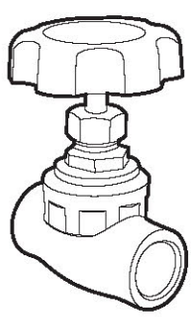
Mã số Code	Kích cỡ Size (D)	L	H	Đơn giá Unit Price (VND)
FPR/SV20/(X)	20	16.5	70.5	60.800
FPR/SV25/(X)	25	18	85	82.500
FPR/SV32/(X)	32	20.2	87.7	95.000
FPR/SV40/(X)	40	22.3	96	147.500
FPR/SV50/(X)	50	26	113	250.200
FPR/SV63/(X)	63	29	122	268.800

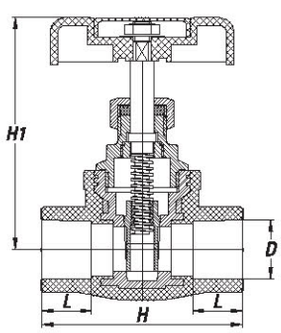




Van cửa - Gate Valve

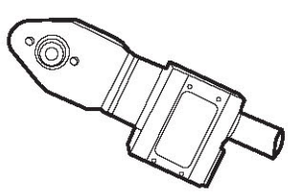
Mã số Code	Kích cỡ Size (D)	L	H	H1	Đơn giá Unit Price (VND)
FPR/BV20/(X)	20	16	65	75	81.800
FPR/BV25/(X)	25	18.5	75	83	93.900
FPR/BV32/(X)	32	20.5	78	87	134.800
FPR/BV40/(X)	40	23	91	102	226.800
FPR/BV50/(X)	50	26	105	111	353.800
FPR/BV63/(X)	63	28	129	124	545.000





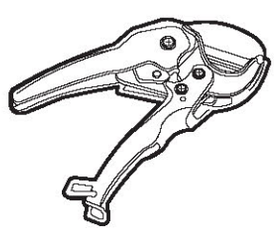
Máy hàn ống - Electric Welding Device

Mã số Code	Đơn giá Unit Price (VND)
PHL-S600	1.056.000
PHL-S800/900W	1.592.000
PHL-S1500	2.437.000

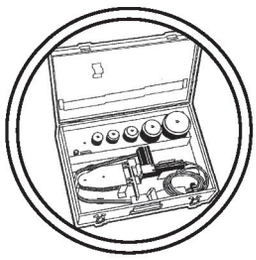


Kìm cắt ống - Pipe Shears

Mã số Code	Kích cỡ Size	Đơn giá Unit Price (VND)
PPR 1-5/8	1-5/8"	440.000



HƯỚNG DẪN HÀN ỐNG - *Operating Instructions for Welding Machine*



Bước 1: (*Part 1*)
Chuẩn bị dụng cụ nóng chảy bao gồm máy hàn nóng, vỏ gia nhiệt, kéo, thước, bút...

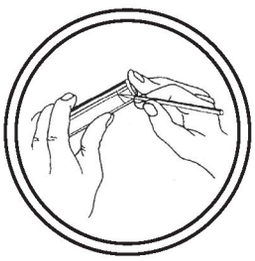
Prepare the welding device and make it ready for operation: electric welding device, pipe shears, pen...

Bước 2: (*Part 2*)
Dùng kìm cắt ống cắt theo chiều vuông góc với ống, mặt cắt cần thẳng không có ba via.

Cut the pipe at right angles to the axis of the pipe.

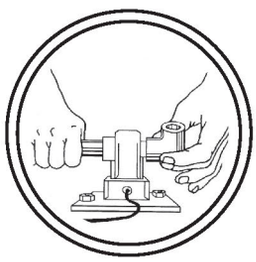
Bước 3: (*Part 3*)
Làm tròn đầu ống và vệ sinh chỗ hàn, phụ kiện nhằm tránh cát, bụi bẩn ảnh hưởng đến chất lượng đầu nối.

Remove any cutting chips and debur the pipe.



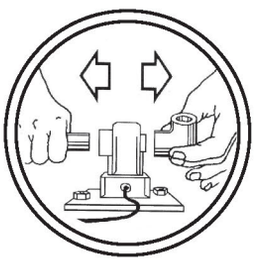
Bước 4: (*Part 4*)
Dùng bút đánh dấu chiều sâu điểm nối.

Mark the welding depth with a gauge and suitable marker.



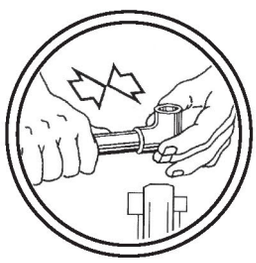
Bước 5: (*Part 5*)
Khi nhiệt độ của máy hàn đạt 260^{0}C, cắm ống và phụ kiện vào bình nóng chảy và gia nhiệt theo thời gian quy định.

Wait to get temperature of 260^{0}C, insert pipe and fitting to heating mandrel. Observe the heating time up as table 1.



Bước 6: (*Part 6*)
Để nguyên vài giây rồi rút mạnh vật cần hàn ra.

At the end of the heating up draw the pipe and fittingrapidly from the mandrel.

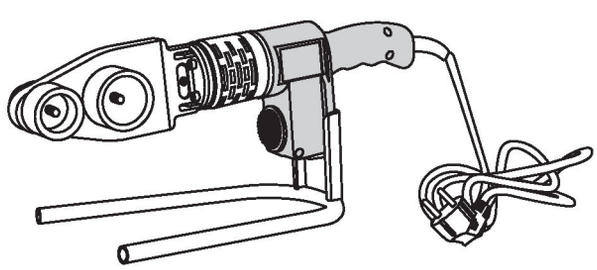


Bước 7: (*Part 7*)
Nối các bộ phận cần hàn với nhau, lưu ý không được xoay trong lúc nối. Duy trì đủ thời gian làm nguội sau đó kiểm tra lại mối hàn.

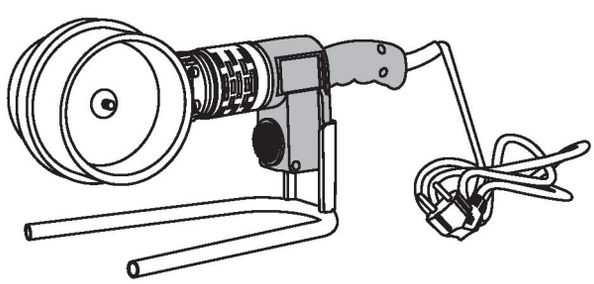
Put the heating pipe and fitting together immediately. During this process do not rotate pipe and fitting relative to one another. Keep enough processing time

Lưu ý:
- Khi hàn, các vạch xanh (đỏ) phải trùng với dấu đánh sẵn trên phụ kiện để chiều phụ kiện được quay đúng hướng.
- Tăng thêm 50% thời gian nếu lắp đặt ngoài trời

Attention:
- The mark indicate the rotate of pipe and fitting must be in a line.
- If welding is to be carried out outdoors the heating-up time should be increased by 50%.



Máy hàn ống 220V - 800W



Máy hàn ống 220V - 1200W

THỜI GIAN HÀN NHIỆT & THỜI GIAN ỔN ĐỊNH MỐI HÀN
Heating up time & Cooling time without moving jointing

THỜI GIAN HÀN NHIỆT - Heating up time

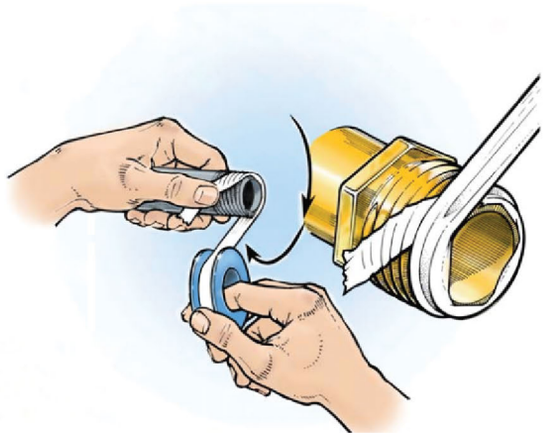
Đường kính ống Diameter DN (mm)	**Chiều dày ống min.** Min. Wall thickness (mm)	**Chiều dài mối hàn** Insert depth (mm)	**Thời gian gia nhiệt** Heating time (giây)	**Thời gian ghép nối** Jointing time (giây)	**Thời gian làm nguội** Cooling time (giây)
20	3.4	14.5	6	4	2
25	4.2	16	7	4	3
32	5.4	18	8	6	4
40	6.7	20.5	12	6	4
50	8.4	23.5	18	6	5
63	10.5	27.5	25	8	6
75	12.5	30	30	8	8
90	15	33	40	10	8
110	18.4	37	50	10	8
125	20.8				
140	23.3				
160	26.6				
200	33.2				

THỜI GIAN ỔN ĐỊNH MỐI NỐI - Cooling time without moving jointing

Đường kính ống Diameter DN (mm)	**Thời gian** Times (phút)	**Đường kính ống** Diameter DN (mm)	**Thời gian** Times (phút)
20	4	90	15
25	5	110	19
32	6	125	25
40	7	140	36
50	9	160	44
63	11	200	60
75	13		

HƯỚNG DẪN LẮP PHỤ KIỆN REN ĐỒNG - *Fittings with brass insert installation guide*

Phải sử dụng băng keo Teflon khi lắp ráp phụ kiện ren đồng để ngăn ngừa mối ghép bị rò rỉ
Must use Teflon tape sealant for PP-R fittings installation, which prevent leaks



Bước 1: Chỉ dùng băng keo Teflon để quấn cho ren ngoài. Giữ chặt một đầu băng keo, kéo căng băng keo để bám chắc vào ren, quấn băng keo theo hướng xoắn của ren (Cùng chiều kim đồng hồ) từ 5 vòng đến 5-1/2 vòng cho đến hết chiều dài ren. Đoạn đầu của ren được quấn băng keo để chống cho băng keo bị đẩy ra ngoài trong quá trình vặn chặt.
Step 1: *Apply Teflon sealant only to male thread. Hold end and pull tape tight into thread, wrap tape in direction of threads (clockwise) from 5 up to 5-1/2 wrap of tape until at the end of thread. Always cover end of thread at the start to prevent thread seizing prior to proper joint make-up.*

Bước 2: Vặn ren ngoài và ren trong với nhau bằng tay.
Step 2: *Assemble joint by hand.*

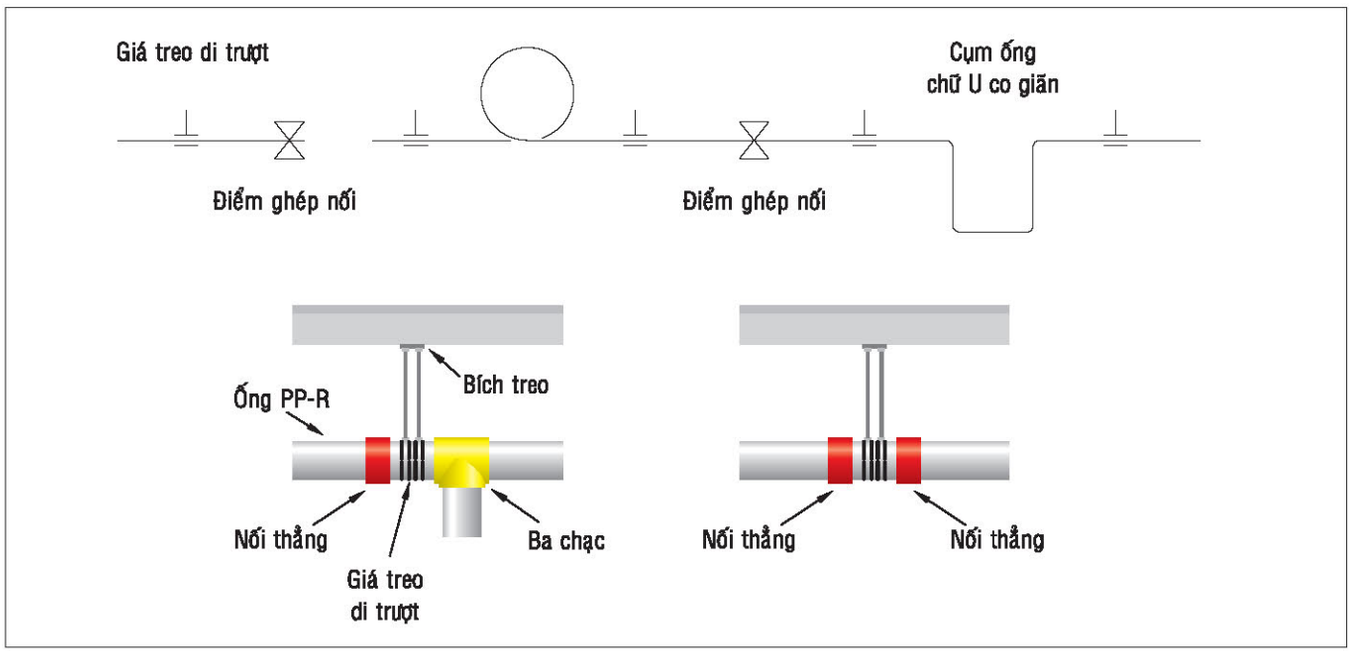
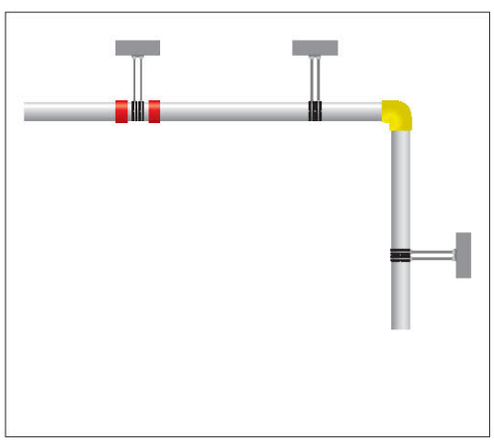
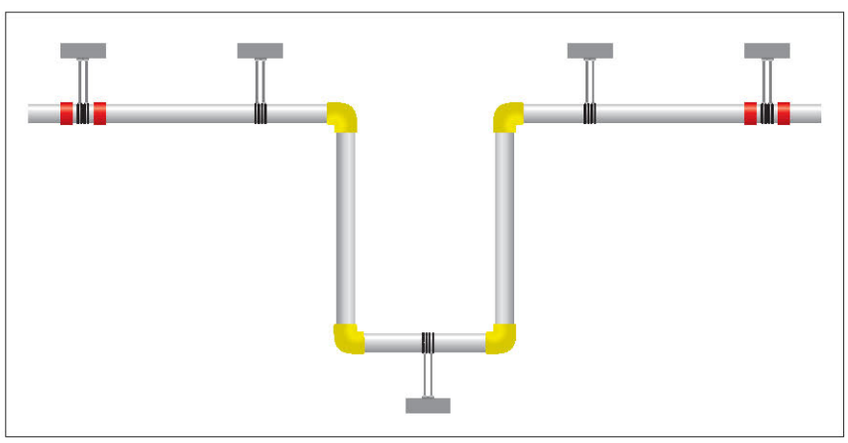
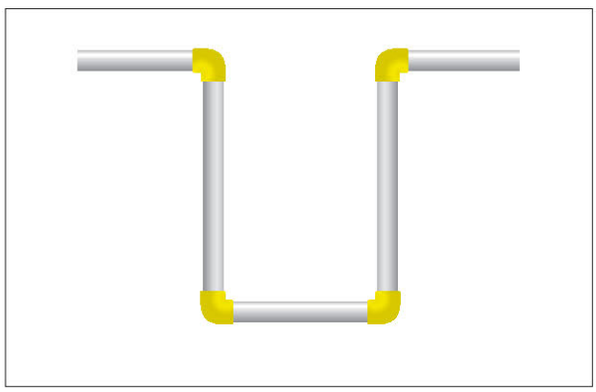
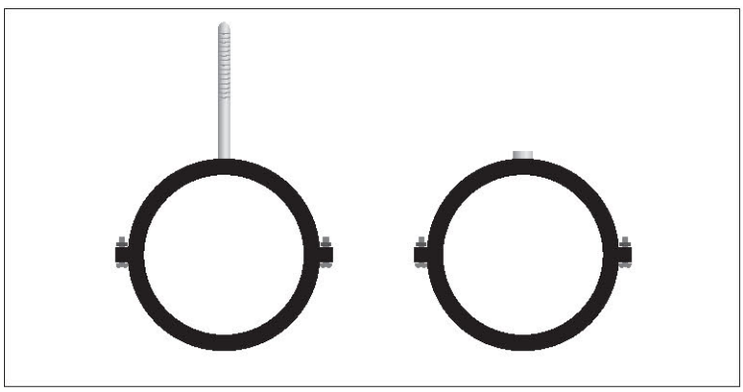
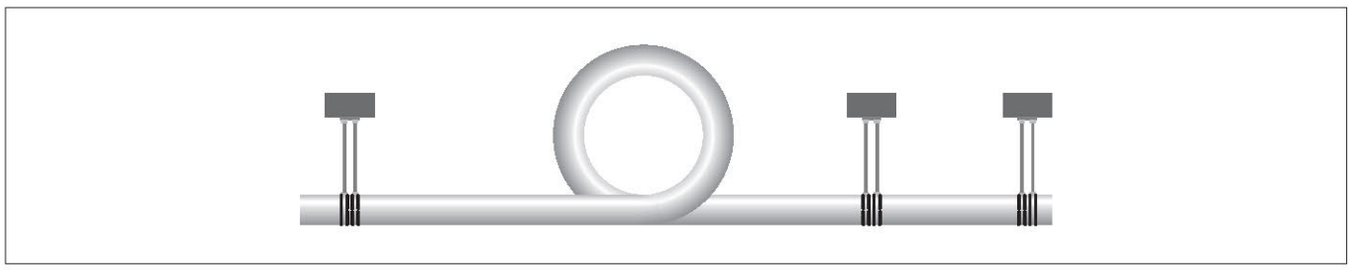
Bước 3: Vặn chặt ren bằng dụng cụ có đồng hồ lực hoặc dụng cụ tương đương khác. Chỉ nên vặn từ 1/2 đến 2 vòng, trong quá trình lắp ráp tránh vặn chiều tháo lỏng ren.
Step 3: *Wrench make-up, use and adjustable wrench or similar tools. General, wrench make-up of 1/2 to 2 turns, avoid backing-up the wrenched assembly.*

Lưu ý: Lực vặn ren bằng dụng cụ đối với ren đồng từ 14Nm đến 40Nm.
Nếu vặn quá lực cho phép sẽ gây phá hủy mối ghép.
Note: *Torqure by tool for Brass Thread is 14Nm - 40 Nm.*
Joint will be cracked due to overtorquing.

TUỔI THỌ CỦA ỐNG PP-R (HỆ SỐ AN TOÀN C = 1.25) - Life of PP-R pipes (Safety factor C = 1.25)

Nhiệt độ Temperature (°C)	**Tuổi thọ** Service life (Năm)	**Dãy áp suất** - Pressure Group		
		PN10	**PN20**	**PN25**
		Áp suất làm việc cho phép lớn nhất - Maximun permisible operating pressure (bar)		
20	1	18.0	36.0	45.3
	10	16.4	32.8	41.3
	50	15.5	30.9	38.9
30	1	15.3	30.6	38..5
	10	13.9	27.7	34.9
	50	13.1	26.1	32.9
40	1	12.9	25.8	32.5
	10	11.8	23.6	29.7
	50	11.0	22.0	27.7
50	1	11.0	22.0	27.7
	10	9.9	19.7	24.9
	50	9.3	18.5	23.3
60	1	9.3	18.5	23.3
	10	8.3	16.6	20.8
	50	7.7	15.3	19.2
70	1	7.8	15.6	19.6
	10	7.8	14.0	17.6
	50	5.1	10.2	12.8
80	1	6.5	13.1	16.4
	10	4.8	9.6	12.0
	50	3.8	7.6	9.6
95	1	4.6	9.2	11.6
	5	3.0	6.1	7.6

Ví dụ: Ống PP-R PN10 làm việc ở nhiệt độ 50°C, áp suất thực tế 9.3 bar thì tuổi thọ là 50 năm
Example: PP-R Pn10 operating temperature 50°C, reality pressure 9.3 bar, life of pipe is 50 years.

SƠ ĐỒ LẮP ĐẶT HỆ THỐNG ỐNG PP-R ĐẢM BẢO CO DÃN NHIỆT

Compensasion of expansion in PP-R pipes line