



Welding Machine Mould		WX802		Welding Machine		WX800	
		Description D16* D90* D20* D63* D25* D75* D32* D90* D40* D110*				Description D20-32* D20-63* D75-110*	

Welding Machine Saddle Mould		WX9015		Repairing Stick Mould		WX9016	
		Description D50-25* D63-25* D75-25* D90-25* D110-25*				Description D7* D11*	

Repairing Stick		WX9016	
		Description D7/11	

PP-R Pipe

Standard: DIN7077/78;ISO15874;GB/T18742

Diameter DN, mm	Wall Thickness S (20°C Pressure,MPa)			
	S5(PN1.25)	S4(PN1.6)	S3.2(PN2.0)	S2.5(PN2.5)
16	---	2.0	2.2	2.7
20	2.0	2.3	2.8	3.4
25	2.3	2.8	3.5	4.2
32	2.9	3.6	4.4	5.4
40	3.7	4.5	5.5	6.7
50	4.6	5.6	6.9	8.3
63	5.8	7.1	8.6	10.5
75	6.8	8.4	10.3	12.5
90	8.2	10.1	12.3	15.0
110	10.0	12.3	15.1	18.3

PP-R/Aluminum composite pipe

Standard: DIN7077/78;ISO15874;GB/T18742;CJ/T210-2005

Outside Diameter (mm)	Inner Pipe Parameter		Thickness of Aluminum Layer(mm)	Thickness of Outside Layer(mm)
	Wall Thickness (mm)	Wall Thickness (mm)		
20	S3.2	2.8	0.15	0.55
	S4	2.3	0.15	0.55
	S5	2.0	0.15	0.55
25	S3.2	3.5	0.15	0.65
	S4	2.8	0.15	0.65
	S5	2.3	0.15	0.65
32	S3.2	4.4	0.15	0.65
	S4	3.6	0.15	0.65
	S5	2.9	0.15	0.65
40	S3.2	5.6	0.15	0.75
	S4	4.5	0.15	0.75
	S5	3.7	0.15	0.75
50	S3.2	6.9	0.15	0.75
	S4	5.6	0.15	0.75
	S5	4.6	0.15	0.75
63	S3.2	8.7	0.15	0.75
	S4	7.1	0.15	0.75
	S5	5.8	0.15	0.75

PP-R fiber composite pipe

Standard: DIN8077/78;ISO15874;GB/T18742;Q/TJSG 2-2004

Diameter	20	25	32	40	50	63	75	90	110	125	160	
Wall Thickness S	S3.2(PN2.0)	2.8	3.5	4.4	5.5	6.9	8.6	10.3	12.3	15.1	17.1	21.9
S	S2.5(PN2.5)	3.4	4.2	5.4	6.7	8.3	10.5	12.5	15.0	18.3	20.8	26.6



ADVANTAGES

PP-R pipes, made from polypropylene random copolymer in 1990s, are applied in cold and hot water supply in new or old buildings. The main advantages are listed as follows:

- Light weight: The density of the pipes is only 0.89-0.91g/cm³, which is only one ninth of steel pipes and one tenth of copper ones. The freight and working intensity will be lowered greatly!
- Good heat resistance: It can be used over 50 years under the temperature of 70°C and for a short period, it can be used in up to 95°C. The softening point is 131.3°C.
- Long service life: When the working temperature is 70°C and working pressure is 10kg/cm², its service life can reach over 50 years.
- Good corrosion resistance: WeiXing PP-R pipes are resistant to corrosion from most of chemical mediators, bacteria-free and good for health.
- Heat melting connection: The pipe and fitting made from the same materials are joined together by electrofusion. The pulling, bending and impact strength in joint are all higher than the pipe itself, which prevents the danger of leakage. Our application of the advanced heat welding technology in the world makes the installation much easier, quicker and safer.
- Nonpoisonous and harmless: PPR pipes fully contain two elements, viz. carbon and hydrogen. The sanitary properties of the materials have passed the tests from national authority.
- Good thermal insulation property: It's unnecessary to use insulating materials when WeiXing PP-R pipes are used in hot water systems. As a kind of energy-saving product, it is more popular among the customers.
- Smooth inner surface: PPR pipes have smooth inner surface, which ensures fast running of the water.
- Real green building material: The pipes are made from thermoplastic material with good function of environmental protection. During their production, installation and application, no pollution will be caused to the environment. Meanwhile, the materials can be recycled, and then resource wasting can be minimized.



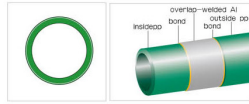
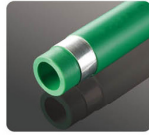
APPLICATION FIELDS

Because of the advantages above, PP-R pipe systems can be widely used in the pipe system installation and replacement of the new building projects. The application fields mainly contain:

- Cold and hot water supply for civil buildings, such as residence, hospitals, hotels, offices, schools and buildings on ship, etc.
- Industrial pipe networks for foodstuff, chemical and electric industry, etc like the transportation of some corrosive fluids (acid or alkaline water and ionized water, etc.)
- Pipe networks for purified water and mineral water.
- Pipe networks for air conditioning equipment.
- Pipe networks for floor heating system.
- Pipe networks for rainwater utilization system.
- Pipe networks for swimming pool facilities.
- Pipe networks for agriculture and horticulture.
- Pipe networks for solar energy facilities.

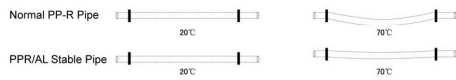
Weixing PP-R/AL STABLE COMPOSITE PIPES

As a kind of high-quality and high-performance pipe, the product has a construction of five layers (To see the pictures above). The inside and outside layers are made of PP-R, tightly bonded with PP-based adhesive to the mid-layer of aluminum core, which is well welded in an overlapping way. Such pipe is a kind of perfect combination of metal pipe and plastic pipe.

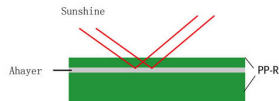


Advantages

- Greatly reduced linear expansion coefficient, only 1/4 of that of PP-R, which means the composite pipes have stable dimensions.




- 100% oxygen tightness, suitable for heating system.
- Improved resistant to impulse under low temperature, resistant to UV-rays.




- Working under higher temperature and higher pressure for cool and hot water system.
- Easily detected by detector when embedded, owing to the metal layer.
- Good performance of heat preservation and low heat conduction coefficient of 0.45W/m.k.
- Smooth and sanitary, being good selection for drinkable water system.


Applications




Distribution for cool and hot water;




Duct for drinkable water system;




Industrial transportation for chemical liquids;




Pipes for kinds of high-temperature and low-temperature heating system;



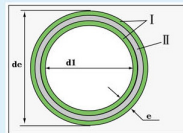
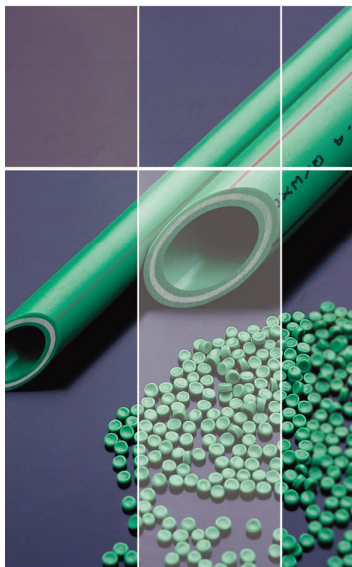
Connecting pipe for air conditioners;



Pipes for heating and cooling settings in solar energy system;

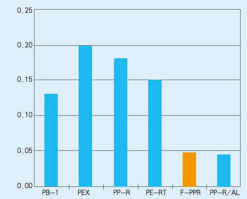


Pressure pipe for irrigation system.



Advantages

- Greatly reduced linear expansion coefficient, 30% of that of PP-R, which is close to that of the stable composite pipes.
- Higher strength and stability of dimension.
- Greatly improved resistant to pressure. It can bear 25% more pressure load than PP-R under the same service condition.
- Improved resistant to impulse under low temperature.
- Excellent resistance to high temperature. It can be used in 90°C for long term.
- Socket fusion connection with PP-R fittings, credible and convenient.
- Smooth and sanitary, being good selection for drinkable water system.



WEIXING PP-R/FIBER COMPOSITE PIPES

As a kind of three-layer composite pipe, fiber/PP composite pipe is a really improver of normal PP-R pipe. Inside and outside layer of the pipe are made of pure polypropylene random copolymer resin, which ensures the pipe sanitary and healthy when used for water supplying. The high-performance fiber/PP composite material of mid-layer greatly improve the characters of such pipes as used in hot water system. This newly-typed pipe has higher strength, higher tenacity, higher rigidity and lower linear expansion coefficient.



Applications

- Distribution for cool and hot water;
- Duct for drinkable water system;
- Pipes for kinds of high-temperature and low-temperature heating system;
- Pipes for heating and cooling settings in solar energy system;
- Connecting pipe for air conditioners.



PRODUCT STANDARDS

WEIXING PP-R pipe system conforms to the following standards:

DIN8077	Specifications of PPR Pipes
DIN8078	General quality requirements and property tests for PPR Pipes
DIN4725/4726/4728	PPR Pipes floor heating system
ISO/DIS15874	Thermoplastic pipe system for hot and cold water supply
DIN16962	PPR Pipe connections and fitting specifications
DIN12202	PPR pipe system for hot and cold water supply
DVS2203	Fabricated rules for thermoplastic materials
DVS2207	Fabricated property test for thermoplastic materials
DVS2208	Fabrication of thermoplastic materials, PPR Pipe system

DIMENSIONS AND SPECIFICATIONS

Pressure grade: PN 10

Pipe series: SDR 11/S 5

Standards: DIN8077/78&ISO15874

Length supplied: 4m as a rule, or as customers require

Packing unit: in meter/roll

Color: green/grey/white

Pipe Diameter	diameter mm	wall thickness mm	internal diameter mm	water content L/m	unit weight kg/m
16mm	16	1.8	12.4	0.121	0.072
20mm	20	1.9	16.2	0.206	0.107
25mm	25	2.3	20.4	0.327	0.164
32mm	32	2.9	26.0	0.531	0.267
40mm	40	3.7	32.6	0.834	0.412
50mm	50	4.6	40.8	1.307	0.638
63mm	63	5.8	51.4	2.075	1.010
75mm	75	6.8	61.2	2.941	1.420
90mm	90	8.2	73.6	4.254	2.030
110mm	110	10.0	90.0	6.362	3.101

Pressure grade: PN20

Pipe series: SDR 6/S 2.5

Standards: DIN8077/78&ISO15874

Length supplied: 4m as a rule, or as customers require

Packing unit: in meter/roll

Color: green/grey/white

Pipe Diameter	diameter mm	wall thickness mm	internal diameter mm	water content L/m	unit weight kg/m
20mm	20	3.4	13.2	0.137	0.172
25mm	25	4.2	16.6	0.216	0.226
32mm	32	5.4	21.2	0.353	0.434
40mm	40	6.7	26.6	0.556	0.671
50mm	50	8.3	33.2	0.866	1.050
63mm	63	10.5	42.0	1.385	1.650
75mm	75	12.5	50.0	1.963	2.340
90mm	90	15.0	60.0	2.827	3.360
110mm	110	18.3	73.2	4.208	5.040

JOINING BY HEAT FUSION

Joining by heat fusion is suitable for the connections of thermoplastic polyolefin pipe systems. Heat fusion connection belongs to a physical process: when pipe and fitting are heated for a certain period, whose molecular chains are melted against original arrangements, they can be connected firmly under a stable pressure. Then the joint pressure in the fusion zone makes the melting molecular chains cool with materials and connect again to become a new unity. Therefore, temperature, heating time and joint pressure are three important factors in heat fusion connection.

According to DVS2207/2208, heat fusion connection includes socket-fusion, electro-fusion and butt-fusion connections. The first two are adopted for small-bore water pipe systems. It is recommended that Weixing PP-R pipeline adopts socket-fusion connection.

When the pipe diameter is less than 63mm, they are connected by hand-held welding machine. When the pipe diameter is over 63mm, it is recommended that welding machine with large power should be adopted.

Pressure grade: PN 12.5

Pipe series: SDR 9/S 4

Standards: DIN8077/78&ISO15874

Length supplied: 4m as a rule, or as customers require

Packing unit: in meter/roll

Color: green/grey/white

Pipe Diameter	diameter mm	wall thickness mm	internal diameter mm	water content L/m	unit weight kg/m
20mm	20	2.3	15.4	0.186	0.115
25mm	25	2.8	19.4	0.296	0.176
32mm	32	3.6	24.8	0.483	0.299
40mm	40	4.5	31.0	0.755	0.452
50mm	50	5.6	38.8	1.184	0.703
63mm	63	7.1	48.8	1.870	1.122
75mm	75	8.4	58.2	2.660	1.582
90mm	90	10.1	69.8	3.826	2.282
110mm	110	12.3	85.4	5.736	3.398

Pressure grade: PN 16

Pipe series: SDR 7.4/S3.2

Standards: DIN8077/78&ISO15874

Length supplied: 4m as a rule, or as customers require

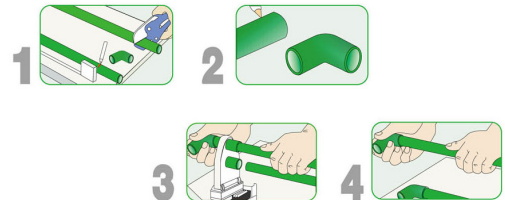
Packing unit: in meter/roll

Color: green/grey/white

Pipe Diameter	diameter mm	wall thickness mm	internal diameter mm	water content L/m	unit weight kg/m
16mm	16	2.2	11.6	0.106	0.086
20mm	20	2.8	14.1	0.163	0.149
25mm	25	3.5	18.0	0.254	0.228
32mm	32	4.4	23.0	0.415	0.375
40mm	40	5.5	28.8	0.651	0.575
50mm	50	6.9	36.2	1.029	0.862
63mm	63	8.6	45.6	1.633	1.379
75mm	75	10.3	54.2	2.307	1.964
90mm	90	12.3	65.0	3.318	2.824
110mm	110	15.1	79.6	5.674	4.320

Heat fusion Procedures:

- The pipe must be cut perpendicularly to its axis by the special cutter.
- Clean the jointing parts of the pipe and the fitting to avoid sand, dust, etc which would influence the quality of the joints.
- Make sure the corresponding heating head to the dimension of the pipe to be welded. Connect the welding machine and put on the power supply. Wait until the temperature of the heating head reaches the optimal one (260±10°C), which can be indicated by a flashing green lamp.
- Use a pencil to mark the depth of fusion on the pipe. (see the table attached);
- Insert the pipe and the fitting into the welding machine at the same time. Heat according to the specified time.
- After the heating time, pull out the pipe and the fitting and immediately join them together. Minor modifications can be done during connection but the twist angle should not exceed 5°.
- When the connection is over, hold the pipe and the fitting tightly and keep enough cooling time.



Heating and cooling time cycle

Diameter Mm	Depth Mm	Heating time Sec.	Welding time Sec.	Cooling time Min.
20	14.0	5	4	2
25	15.0	7	4	2
32	16.5	8	6	4
40	18.0	12	6	4
50	20.0	18	6	4
63	24.0	24	8	6
75	26.0	30	8	8
90	29.0	40	8	8
110	32.5	50	10	8

When the outdoor temperature is below 5°C, the heating time will be increased by more or less 30%.

INSTALLATION PRINCIPLES

Linear Expansion

The linear expansion of pipes depends on the heat subjected to the pipe material. Generally speaking, cold water pipes have practically no linear expansion and consequently expansion need not be considered. Because of the heat dependent expansion of the material, the linear expansion must be specially considered in hot water and heat supply. There will be three types of installations:

- concealed installation
- installation in ducts
- open installation

Concealed Installation

Concealed installations generally do not need to consider the expansion of PP-R pipes.

The insulation acc. to DIN19988 or the Decree for the installation of Heating Systems gives enough expansion space for the pipe. In case that the expansion is greater in the insulation, the material absorbs every stress arising from a residual expansion. The same applies to pipes, which do not have to be insulated acc. to current regulations. A temperature dependent linear expansion is prevented through the embed-ding in the floor, concrete or plaster. The compressive strain and tensile stress arising from this are not critical as they are absorbed through the material.

Installation in Ducts

The installation of risers of PP-R pipes requires a branch pipe, which is elastic enough to take the linear expansion of the riser.

- They can be ensured by a favorable fix of the riser in the duct.
- An adequate pipe liner also gives sufficient elasticity to the branch pipe.
- Furthermore, the installation of a spring leg gives the appropriate elasticity.

Open Installation

The coefficient of linear expansion of PP-R pipes is

$$\alpha = 15.00 \times 10^{-5} [K^{-1}]$$

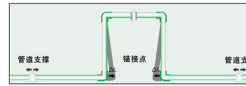
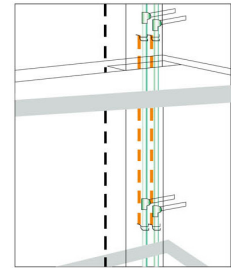
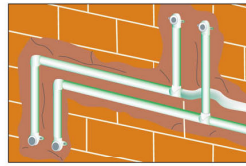
Therefore, it is suggested to plan and install visible PP-R pipes, where linear expansion has to be considered.

Calculation of the Linear Expansion

The linear expansion is calculated according to the following formula:

$$\Delta L = \alpha \cdot L \cdot \Delta t$$

The linear expansion is fully described in following tables. This facilitates a simple and quick reference of linear expansion and the expansion below.



Pressure Test/Test control

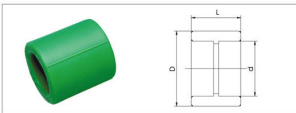
Acc. to the Technical Rules for Potable Water Installations DIN 1998, the test pressure has to be 1.5 times of the working pressure for pipe systems.

When carrying out the pressure test, the material properties of PP-R pipes lead to an expansion of the pipe, which influences the test result. A further influence to the test result can be caused by the coefficient of thermal expansion of PP-R pipes. Different temperatures for pipe and test medium lead to alterations of pressures. A temperature change of 10K corresponds to a pressure difference of 0.5 to 1 bar. Therefore, the highest probable constant temperature of the test medium has to be ascertained at the hydraulic pressure test of installations with PP-R pipes.

The hydraulic pressure test requires a preliminary, principal and final test. For the preliminary test, a test pressure of 1.5 times of the highest probable working pressure has to be produced. This test pressure has to be re-established twice within 30 minutes within an interval of 10 minutes. After a test time of further 30 minutes, the test pressure must not drop more than 0.6 bar and no leakage will appear.

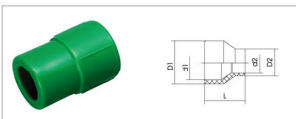
The preliminary test is to be followed directly by the principal test. The test time is 2 hours. On doing so, the test pressure may not fall more than 0.2 bar. When the preliminary and principal tests are completed, the final test follows, which has to be effected with a test pressure of alternate 10 and 1 bar in a rhythm of at least 5 minutes. Between each test, the pressure has to be removed. No leakage may appear at any point.

Socket WX100



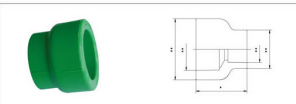
Description	
D16	D50
D20	D63
D25	D75
D32	D90
D40	D110

Reducer WX110



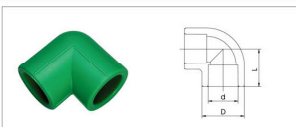
Description		
D20/16	D50/20	D63/50
D25/20	D50/25	D75/63
D32/20	D50/32	D90/63
US4/25	US6/40	US6/75
D40/20	D63/25	D110/63
D40/25	D63/32	D110/75
D40/32	D63/40	D110/90

Bushing WX120



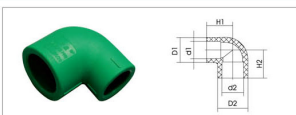
Description		
D25/20	D50/25	D75/63
D32/20	D50/32	D90/63
D32/25	D50/40	D90/75
D40/20	D63/25	D110/63
D40/25	D63/32	D110/75
D40/32	D63/40	D110/90
D50/20	D63/50	

Elbow 90 WX200



Description	
D16	D50
D20	D63
D25	D75
D32	D90
D40	D110

Reducing Elbow 90 WX210



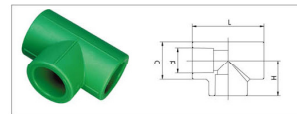
Description	
D25/20	
D32/20	
D32/25	

Elbow 45 WX220



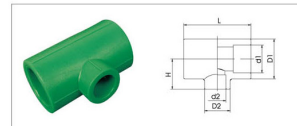
Description	
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D20	D63
D25	D75
D32	D90
D40	D110

Tee WX300



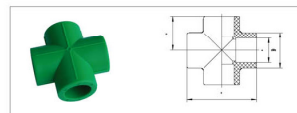
Description	
D16	D50
D20	D63
D25	D75
D32	D90
D40	D110

Reducing Tee WX310



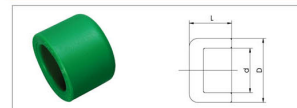
Description		
D20/20/32	D50/40/50	D90/52/90
D25/20/20	D63/25/63	D90/40/90
D25/25/32	D63/32/63	D90/50/90
D25/20/25	D63/40/63	D90/63/90
D32/20/32	D63/50/63	D90/75/90
D32/25/32	D75/20/75	D110/25/110
D40/20/40	D75/25/75	D110/32/110
D40/25/40	D75/32/75	D110/40/110
D40/32/40	D75/40/75	D110/50/110
D50/20/50	D75/60/75	D110/63/110
D50/25/50	D75/63/75	D110/75/110
D50/32/50	D90/25/90	D110/90/110

Cross WX4000



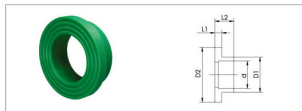
Description	
D20	
D25	
D32	

End Cap WX500



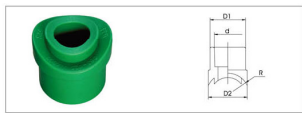
Description	
D16	D50
D20	D63
D25	D75
D32	D90
D40	D110

Flange Adaptor WX400



Description
D40
D50
D63
D75
D80
D110

Saddle WX600



Description
D50/25
D63/25
D75/25
D90/25
D110/25
D110/32

End Cap With Thread WX502



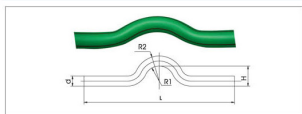
Description
R1/2
R3/4

Cross Fitting WX003-1



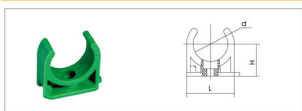
Description
D20
D25
D32

Cross Pipe WX003



Description
D20
D25
D32

Small Plastic Clip WX8001



Description
D16
D20
D25
D32

Large Plastic Clip WX8000



Description
D20
D25
D32

Clip With Thread WX8003



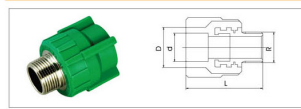
Description
D16
D20
D25
D32

Metal Clip WX8002



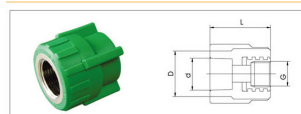
Description
D20
D25
D32
D40
D50
D110

Male Thread Connector WX101



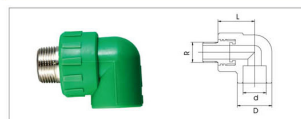
Description
D16+1/2
D20+1/2
D25+1/2
D32+1/2
D32+3/4
D32+1
D40+1/4
D50+1/2
D63+2

Female Thread Connector WX102



Description
D20+1/2
D25+1/2
D32+1/2
D32+3/4
D40+1/4
D50+1/2
D63+2

Male Thread Elbow WX201



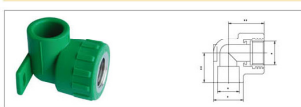
Description
D16+1/2
D20+1/2
D25+1/2
D32+1/2
D32+3/4
D32+1

Female Thread Elbow WX202



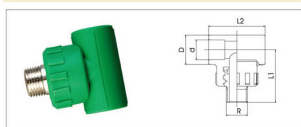
Description
D16+1/2
D20+1/2
D25+1/2
D32+1/2
D32+3/4
D32+1

Female Thread Elbow With Ear WX202-1



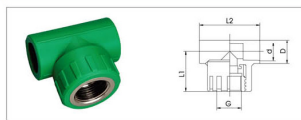
Description
D20+1/2
D25+3/4

Male Thread Tee WX301



Description
D16+1/2+16
D20+1/2+20
D25+3/4+20
D25+3/4+25
D32+1/2+32
D32+3/4+32
D32+1+32

Female Thread Tee WX302



Description
D16+1/2+16
D20+1/2+20
D25+3/4+20
D25+3/4+25
D32+1/2+32
D32+3/4+32
D40+1+40

Male Thread Union (Metal/Plastic) WX103-1



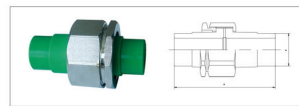
Description
D20+1/2
D25+3/4
D25+1
D32+1
D40+1/4
D50+1/2
D63+2

Female Thread Union (Metal/Plastic) WX103-2



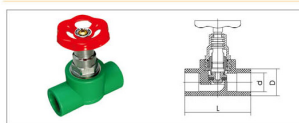
Description
D20+1/2
D25+3/4
D32+1

Union (Plastic/Plastic) WX103-3



Description
D20
D25
D32
D40

Stop Valve WX9012-B



Description
D20
D25
D32
D40
D50
D63

Single Union & Male Thread Ball Valve WX9021



Description
D20+1/2
D25+3/4
D32+1

Single Union & Female Thread Ball Valve WX9022



Description
D20+1/2
D25+3/4
D32+1

Double Union Ball Valve WX9020



Description
D20
D25
D32
D40
D50
D63

Flange Plate WX900



Description
D40*
D50*
D63*
D75*
D90*
D110*