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PP-GF PNEUMATIC AND COMPRESSED AIR PIPING SYSTEMS

With a service life of atleast 50 years once installed, tight and safe.

**Pioneers in India to have PPR-C Range
from 16mm to 400mm**



connection heating & cooling



wall heating



chilled water technology



application in the field of ship building



swimming-pool technology



district heating pipeline systems



chemical transport



geothermal



irrigation

ADVANTAGES OF PNEUMATO PIPES

1. Very less heat loss due to lesser thermal conductivity.
2. Lesser sagging because of very less thermal expansion.
3. High temperature and high pressure with stand capacity due to inbuilt GFR reinforcement layer.
4. Since having 0.1micron RA value and mirror finish inner surface, 40% to 60% lesser friction compared to other pipe.
5. Reduced thermal expansion will reduce clamping.
6. Style fittings offer a tight, leak free fit.
7. As a result of socket Fusion joint, 0% leakage.
8. 60% layer of glass fiber reinforcement in the pipe.
9. Excellent performance with long life in direct sunlight having UV resistant on the upper layer.
10. Reduced linear expansion coefficient, only 1/3 of that of normal PP-R
11. Higher strength and stability of dimension. It can stand 25% more pressure than PP-R at the same condition
12. Improved resistant to impulse under low temperature. It can used in 90 °C for a long time
13. With the same condition of pressure, wall thickness of PPR fiberglass pipe is thinner, increasing inner diameter of the pipe, bigger of the air flow.
14. Direct connect with water table within the health of non-toxic, good scalability, no formation of sphagnum.

Technical Data of K.P.T. Pneumato Pipes:

S.No.	PROPERTY	(KPT-GF) PIPE
1	Thermal Conductivity	0.024
2	Coefficient Linear Thermal Expansion	1.0×10^{-4}
3	Flexural Modulus	1260
4	Tensile Strength at break	45
5	Melting Temperature Rate	160-165
6	Vicat Softening Temperature	145.3

PNEUMATIC AIR AND COMPRESSED AIR PLUMBING PIPING SYSTEM

KPT Pneumato Pipes combine the advantages of FRP and plastic pipes and eliminate the disadvantages of both materials at the same time. The FRP is absolutely diffusion tight and reliably prevents oxygen or gases from permeating into the pipe. It compensates and reduces snap-back forces and heat expansion with changes in temperature. KPT Pneumato pipes are being produced with latest German technology at its state of the art manufacturing unit at Dehradun, Uttarakhand, India. KPT Pneumato pipes has been specially designed for the creation of primary and secondary network for compressed air, neutral gases & Vacuum. The FRP allows KPT Pneumato Pipes to withstand high working pressure and prevent oxygen and gases from permeating into the pipe. KPT Pneumato pipes are safe and reliable choice for compressed air, gas and oxygen supply.

KPT Pneumato Pipes consist of an overlapped FRP with an inner and outer layer of Polypropylene Random Copolymer (PPR-C). All the layers are permanently bonded together by intermediate adhesive layers. The FRP thickness of KPT Pneumato pipes has been selected to meet compressive and flexural strength requirements. Most of the industries are now slowly moving away from MS/GI piping system for compressed air transportation owing to following problems:

Reinforcement Glass Fiber - The Sandwich Glass Reinforcement technology processed on Pneumato enables to withstand more pressure even in high temperature. Since Glass is non-conductor of heat, so there is lesser thermal expansion, this reduces sagging.

U.V. Resistant - New Pneumato technology being developed with carbon content blue layer which protects the pipes from UV rays in open sky.

Glass Insulation - Glass acts as non-conductor of heat. So the Sandwich Glass Reinforcement technology reduces the condensation, thus reduces the chances of moisture in Pneumato technology getting least.

Leaking zero - in fusion welded joints.

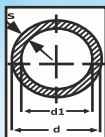
Rusting - Water condensation in compressed air system leads to rust formation even in joint areas of GI pipe welding, affecting costlier pneumatic equipments.

Installation Time - Threaded joints consume more time in existing repair work as well as in new projects where as fusion joints once conducted require no maintenance.

Pressure Drop - Rough inner surface in the above pipes leads to slight increase in pressure drop.

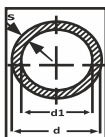
Cost - Aluminium/MS/GI piping systems are conventionally more expensive.

Atmospheric effects - Aluminium also reacts with most of the chemicals. If some chemicals are present in compressed air, that can equally effect aluminium pipes. Often aluminium pipes are available at the maximum size of 110mm only. Most of the fittings are in plastics material. These areas are then rendered mechanically weaker in the line.



**KPT PIPE SDR 11/
S 5 / PN 10**

Pipe		Diameter	Wall Thickness	Internal Diameter	Water Content
Dimension	Packing Unit	d(mm)	S(mm)	di(mm)	l/m
20mm	250m	20	1.9	16.2	0.206
25mm	180m	25	2.3	20.4	0.327
32mm	120m	32	2.9	26.2	0.539
40mm	75m	40	3.7	32.6	0.834
50mm	45m	50	4.6	40.8	1.307
63mm	30m	63	5.8	51.4	2.074
75mm	21m	75	6.8	61.4	2.959
90mm	15m	90	8.2	73.6	4.252
110mm	12m	110	10.0	90.0	6.359
160mm	6m	160	14.6	130.8	13.430
200mm	3m	200	18.2	163.6	21.010
250mm	3m	250	22.7	204.6	32.861
315mm	3m	315	28.6	257.8	52.172
355mm	3m	355	32.2	290.6	66.292
400mm	3m	400	36.3	327.4	84.145

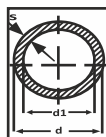


**KPT PIPE SDR 7.4/
S 3.2 / PN 16**

Pipe		Diameter	Wall Thickness	Internal Diameter	Water Content
Dimension	Packing Unit	d(mm)	S(mm)	di(mm)	l/m
16mm	300m	16	2.2	11.6	0.106
20mm	240m	20	2.8	14.4	0.163
25mm	180m	25	3.5	18.0	0.254
32mm	120m	32	4.4	23.2	0.423
40mm	75m	40	5.5	29.0	0.660
50mm	45m	50	6.9	36.2	1.029
63mm	30m	63	8.6	45.8	1.647
75mm	21m	75	10.3	54.4	2.323
90mm	15m	90	12.3	65.4	3.358
110mm	9m	110	15.1	79.8	4.999
160mm	6m	160	21.9	116.2	10.599
200mm	3m	200	27.4	145.2	16.550
250mm	3m	250	34.2	181.6	25.888
315mm	3m	315	43.4	228.2	40.879
355mm	3m	355	49.0	257	51.848

**KPT PPR SDR 9/
S 4 PN 12.5**

Pipe		Diameter	Wall Thickness	Internal Diameter	Water Content
Dimension	Packing Unit	d(mm)	S(mm)	di(mm)	l/m
20mm	240m	20	2.2	15.6	0.190
25mm	180m	25	2.8	19.4	0.297
32mm	120m	32	3.6	24.9	0.486
40mm	75m	40	4.4	31.1	0.760
50mm	45m	50	5.6	38.9	1.187
63mm	30m	63	7.0	49.0	1.885
75mm	21m	75	8.3	58.3	2.671
90mm	15m	90	10.0	70.0	3.847
110mm	9m	110	12.2	85.6	5.746
160mm	6m	160	17.8	124.4	12.157
200mm	3m	200	22.2	155.6	18.995
250mm	3m	250	27.8	194.4	29.680
315mm	3m	315	35.0	245.0	47.120
355mm	3m	355	39.4	276.1	59.846
400mm	3m	400	44.4	311.1	75.980



**KPT PIPE SDR 6/
S 2.5 / PN 20**

Pipe		Diameter	Wall Thickness	Internal Diameter	Water Content
Dimension	Packing Unit	d(mm)	S(mm)	di(mm)	l/m
16mm	240m	16	2.7	10.6	0.088
20mm	210m	20	3.4	13.2	0.137
25mm	150m	25	4.2	16.6	0.216
32mm	60m	32	5.4	21.2	0.353
40mm	36m	40	6.7	26.6	0.556
50mm	24m	50	8.3	33.4	0.876
63mm	21m	63	10.5	42.0	1.385
75mm	12m	75	12.5	50.0	1.963
90mm	9m	90	15.0	60.0	2.827
110mm	3m	110	18.3	73.4	4.229
160mm	3m	160	26.6	106.8	8.954
200mm	3m	200	33.2	133.6	14.011

PERMISSIBLE WORKING PRESSURE

The below table list is the allowable working pressure for pipes with different pressure class under specific temperature and work life. Under normal work pressure and conditions, the life of KPT PPR Piping system is guaranteed to be 50 years at least.

Temperature in C	Years of Service	Allowable working pressure, in bar for			
		PN-10 (SDR 11)	PN-12.5 (SDR 9)	PN-16 (SDR 7.4)	PN-20 (SDR 6)
10°C	1	17.6	24.0	27.8	35.0
	5	16.6	23.2	26.4	33.2
	10	16.1	22.9	25.5	32.1
	25	15.6	22.5	24.7	31.1
	50	15.2	22.2	24.0	30.3
	100	14.8	21.6	23.4	29.5
20°C	1	15.0	20.9	23.8	30.0
	5	14.1	20.2	22.3	28.1
	10	13.7	19.9	21.7	27.3
	25	13.3	19.6	21.1	26.5
	50	12.9	19.3	20.4	25.7
	100	12.5	18.7	19.8	24.9
30°C	1	12.8	18.1	20.2	25.5
	5	12.0	17.4	19.0	23.9
	10	11.6	17.2	18.3	23.1
	25	11.2	16.9	17.7	22.3
	50	10.9	16.6	17.3	21.8
	100	10.6	16.0	16.9	21.2
40°C	1	10.8	15.5	17.1	21.5
	5	10.1	15.0	16.0	20.2
	10	9.8	14.7	15.6	19.6
	25	9.4	14.4	15.0	18.8
	50	9.2	14.2	14.5	18.3
	100	8.9	13.7	14.1	17.8

Temperature in C	Years of Service	Allowable working pressure, in bar for			
		PN-10 (SDR 11)	PN-12.5 (SDR 9)	PN-16 (SDR 7.4)	PN-20 (SDR 6)
50°C	1	9.1	13.3	14.4	18.2
	5	8.5	12.8	13.5	17.0
	10	8.2	12.6	13.1	16.5
	25	8.0	12.3	12.6	15.9
	50	7.7	12.1	12.2	15.4
	100	7.4	11.5	11.8	14.9
60°C	1	7.6	11.2	12.1	15.5
	5	7.2	10.8	11.4	14.3
	10	6.9	10.6	11.0	13.8
	25	6.7	10.4	10.5	13.3
	50	6.4	10.2	10.1	12.7
70°C	1	6.5	9.4	10.3	13.0
	5	6.0	9.1	9.5	11.9
	10	5.9	8.9	9.3	11.7
	25	5.1	7.6	8.0	10.1
	50	4.3	6.3	6.7	8.5
80°C	1	5.5	7.9	8.6	10.9
	5	4.8	7.5	7.6	9.6
	10	4.0	6.2	6.3	8.0
	25	3.2	5.0	5.1	6.4
95°C	1	3.9	5.9	6.1	7.7
	5	2.5	3.8	4.0	5.0
	(10)'	(2.1)'	(3.1)'	(3.4)'	(4.2)'

STANDARDS	FIELDS
DIN2999	Whitworth pipe threads for tubes and fitting
DIN 4109	Sound insulation in building constructions
DIN 8077	Polypropylene (pp) pipes dimensions
DIN 8078	Polypropylene (pp) pipes general quality requirements and testing.
DIN 16962	Polypropylene (pp) pipes fitting
DIN 16928	Pipe connections and components-pipes of thermoplastic materials: pipe joints, element for pipe, laying: general directions.
DIN 16928(6-9)	Pipe joints and elements for polypropylene (pp) pressure pipelines, types 1 and 2; injection molded elbows for socket - welding, dimension.
DIN 16925.5	Pipe joins and elements for polypropylene (pp) for pipes under, -part 5; general quality
DIN 2207.11	Welding regulations for plastic pipes.
DVS 2203	Test of thermoplastic pipe fitting for weld
DVS 2208.1	Machines and devices for welding thermoplastic pipes.
EN ISO 1587 4(1-7)	Plastic piping systems for hot cold water installations polyprppylene(pp)

Testing

We have well equipped in house testing facility for the control of quality by

- Testing of incoming Raw material.
- Final inspection and dispatch.
- Inspection and testing during production as per standards.
- Periodical calibration of testing equipments

GF-PPR Composite Topilene R200P-G20N(GF 20%) ND R200P-G40N(GF 40%)

Property	Method (ASTM)	Units	R200P	R200P-G20N (GF 20%)	R200P-G40N (GF 40%)
Density	D792	g/cm ³	0.9	1.03	1.21
Ash content	D2584	%	0	20	40
M.I	D1238	g/10min	0.25	0.3	0.3
Tensile Strength at Yield	D638	kg/cm ²	270	420	530
Flexural Modulus	D790	kg/cm ²	9,000	20,000	7,000
Notched Izod Impact Strength	23°C	kg·cm/cm	N.B	14	14
	-10°C		5.0	5.0	5.0
Hardness	D785	R-scale	75	85	90
Heat Deflection Temp.	D648	°C	90	125	135

*These data listed here are typical values not for the specification warranty

TESTING EQUIPMENT & QUALITY CONTROL

1 Density	Weighing Balance		IS: 15801/2008 IS:13360(Part 3/section 1 IS: 12235 (Part 14)	This test is carried out to know the density of pipe, specially for green pipe which are used in hot and cold water supply. Density should be 900 to 925 kg/m ³
2 M.F.R	M.F.I Machine		IS: 15801/2008 IS:13360 (Part 4 section 1)	This test is carried out to know the melt ow rate of Material used in manufacturing of pipe. M.F.R Value should be Less or equal to 1.5 GM /1 0 Minutes
3 Visual appearance	Manually		DIN:8077/8078	This test is carried out to know the Visual appearance of pipe It includes smooth and clean internal and external surface of pipe as well as square cutting of pipe ends
4 Reversion test	Hot air Oven		DIN:8077/8078	This test is carried out to know the longitudinal reversion of pipe . Its value shall not be more then 2%
5 Fusion Compatibility	Hydrostatic Machine & Hot water bath		IS: 15801/2008	This test is carried out to know about fusion strength of pipe and fittings to bear the hydraulic characteristic in accordance 9.1 & TABLE 3 Serial No (iii)
6 Impact test	Charpy Impact Testing machine		DIN:8077/8078	This test is carried out to know the specific internal strength of the pipe as per standard
7 Hydralic characteristic (Internal creep rupture)	Hydrostatic Machine		DIN:8077/8078	This test is carried out to know the internal hydrostatic pressure applied by fluid under specific temperature and pressure
8 Outsider Diameter and Ovality	vernier Caliper and pie tape		DIN:8077/8078	This test is carried out to know the specific outside diameter and ovality of pipe as per standard
9 Wall Thickness	Micrometer		DIN:8077/8078	This test is carried out to know the specific wall thickness of pipe as per standard
10 Length of straight pipe	Measuring tape		DIN:8077/8078	This test is carried out to know the specific length of pipe as per standard

KPT is having in-house testing facility to do above tests as per the DIN & IS standard.



Linear expansion of KPT Pipes and fittings

Pipe Length	Temperature Difference DT (°C)									
L(m)	10	20	30	40	50	60	70	80	90	95
1	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
2	2.0	4.0	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0
3	3.0	6.0	9.0	12.0	15.0	18.0	21.0	24.0	27.0	30.0
4	4.0	8.0	12.0	16.0	20.0	24.0	28.0	32.0	36.0	40.0
5	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0
6	6.0	12.0	18.0	24.0	30.0	36.0	42.0	48.0	54.0	60.0
7	7.0	14.0	21.0	28.0	35.0	42.0	49.0	56.0	63.0	70.0
8	8.0	16.0	24.0	32.0	40.0	48.0	56.0	64.0	72.0	80.0
9	9.0	18.0	27.0	36.0	45.0	54.0	63.0	72.0	81.0	90.0
10	10.0	20.0	30.0	40.0	50.0	60.0	70.0	80.0	90.0	100.0

Note: Linear expansion unit in mm.

Support Intervals

Pipe Diameters mm	Temperature									
Size	0°C	20°C	30°C	40°C	50°C	60°C	70°C	80°C	95°C	110°C
16mm	80	60	60	50	50	45	40	30	25	30
20mm	90	65	65	60	60	55	50	40	35	40
25mm	110	80	75	70	70	65	60	50	45	50
32mm	120	95	95	85	80	75	70	60	55	65
40mm	145	110	110	90	90	85	80	70	60	75
50mm	170	130	120	110	110	100	95	75	70	90
63mm	190	150	140	130	120	110	100	90	75	105
75mm	210	160	150	140	130	120	110	100	85	110
90mm	220	160	160	150	150	140	125	105	90	110
110mm	250	180	180	170	170	160	140	125	110	110
160mm	300	210	210	190	180	170	150	135	120	120
200mm	330	230	220	200	190	180	160	145	130	160
250mm	360	260	250	220	200	190	170	155	135	210
315mm	490	420	395	355	355	345	335	310	290	270
355mm	550	480	455	415	415	405	395	370	350	330
400mm	620	550	525	485	485	475	465	440	420	400

Support Intervals (CM)

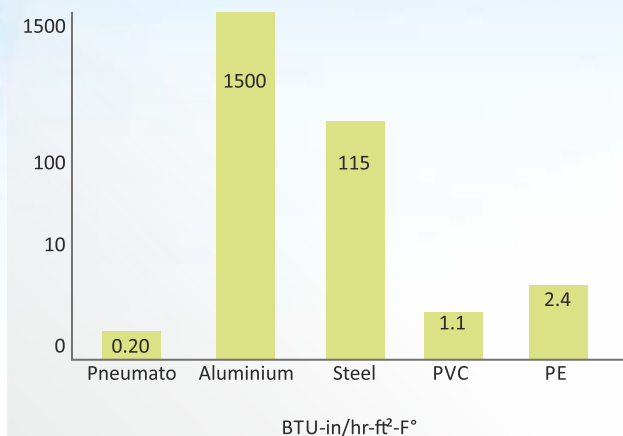
For all size of KPT Pneumato Pipe and Fittings

Allowable working pressure for KPT Pneumato Pipe and Fittings

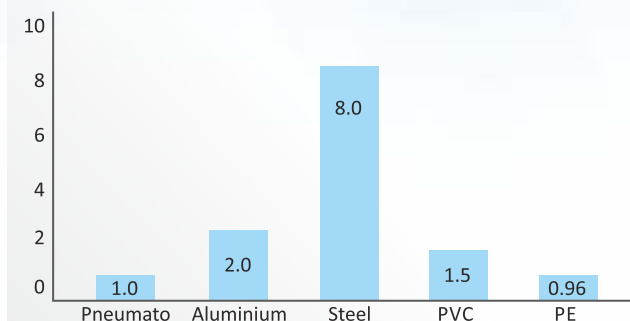
Temprature, in °C	Years of Service	Standard Dimension Ratio (SDR)			
		11	9	7.4	6
		PN-10	PN-12.5	PN-16	PN-20
		Allowable working pressure, in bar			
10	1	20.5	28.8	34.8	43.8
	5	19.1	27.8	33.0	41.5
	10	18.5	27.5	31.9	40.1
	25	17.8	27.0	30.9	38.9
	50	17.3	26.6	30.0	37.9
20	1	18.8	25.1	29.8	37.5
	5	17.6	24.2	27.9	35.1
	10	17.1	23.9	27.1	34.1
	25	16.6	23.5	26.4	33.1
	50	16.1	23.2	25.5	32.1
30	1	16.0	21.7	25.3	31.9
	5	15.0	20.9	23.8	29.9
	10	14.5	20.6	22.9	28.9
	25	14.0	20.3	22.1	27.9
	50	13.6	19.9	21.6	27.3
40	1	13.5	18.6	21.4	26.9
	5	12.6	18.0	20.0	25.3
	10	12.3	17.6	19.5	24.5
	25	11.8	17.3	18.8	23.5
	50	11.5	17.0	18.1	22.9
50	1	11.4	16.0	18.0	22.8
	5	10.6	15.4	16.9	21.3
	10	10.3	15.1	16.4	20.6
	25	10.0	14.8	15.8	19.9
	50	9.6	14.5	15.3	19.3
60	1	9.5	13.4	15.1	19.1
	5	9.0	13.0	14.3	17.9
	10	8.6	12.7	13.8	17.3
	25	8.4	12.5	13.1	16.6
	50	8.0	12.2	12.6	15.9
70	1	8.1	11.3	12.9	16.3
	5	7.5	10.9	11.9	14.9
	10	7.4	10.7	11.6	14.6
	25	6.4	9.1	10.0	12.6
	50	5.4	7.6	8.4	10.6
80	1	6.9	9.5	10.8	13.6
	5	6.0	9.0	9.5	12.0
	10	5.0	7.4	7.9	10.0
	25	4.0	6.0	6.4	8.0
95	1	4.9	7.1	7.6	9.6
	5	3.1	4.6	5.0	6.3
	10	2.6	3.7	4.3	5.3
110	1	2.9	3.7	5.0	5.6
	5	2.0	2.6	3.0	3.5

The bracketed values apply where testing can be shown to have been carried out for longer than one year at 120°C.

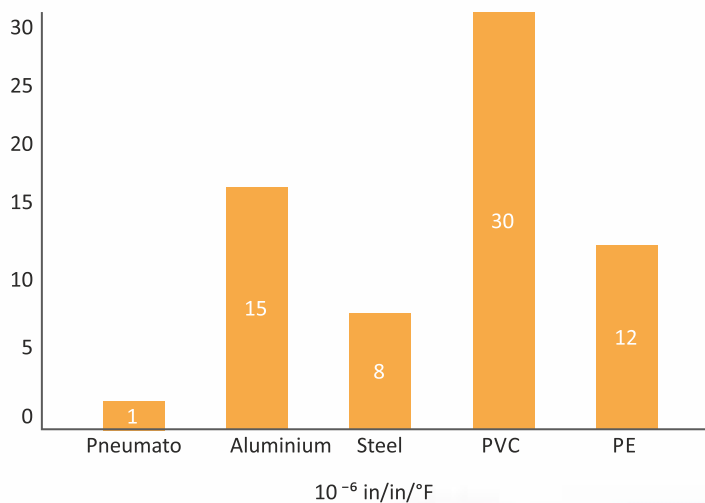
KPT Pneumato Thermal Conductivity



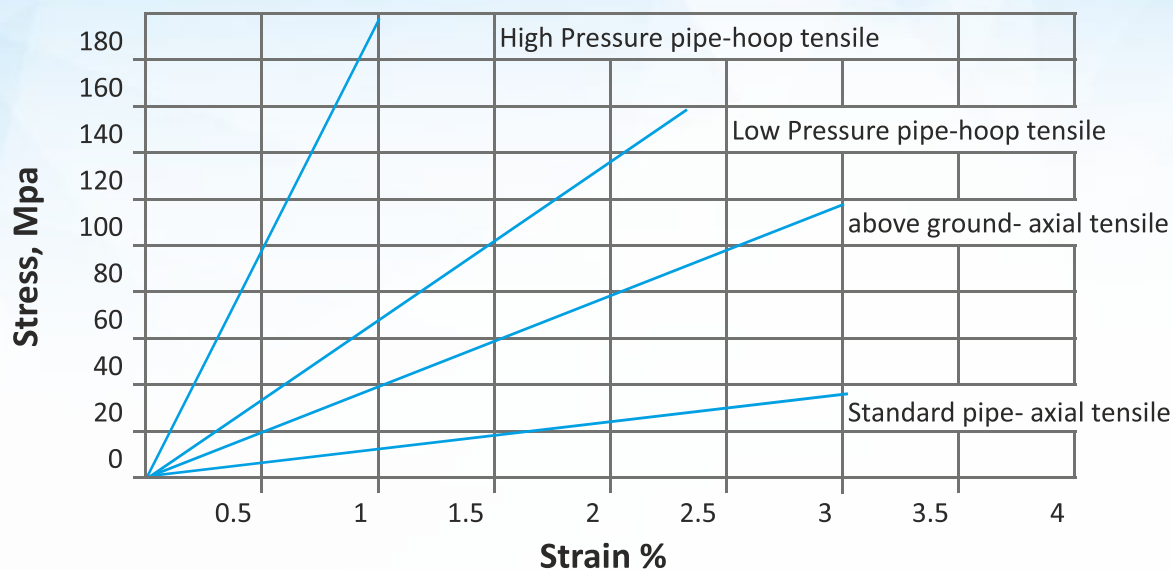
KPT Pneumato pipe Wall- Specific Gravity



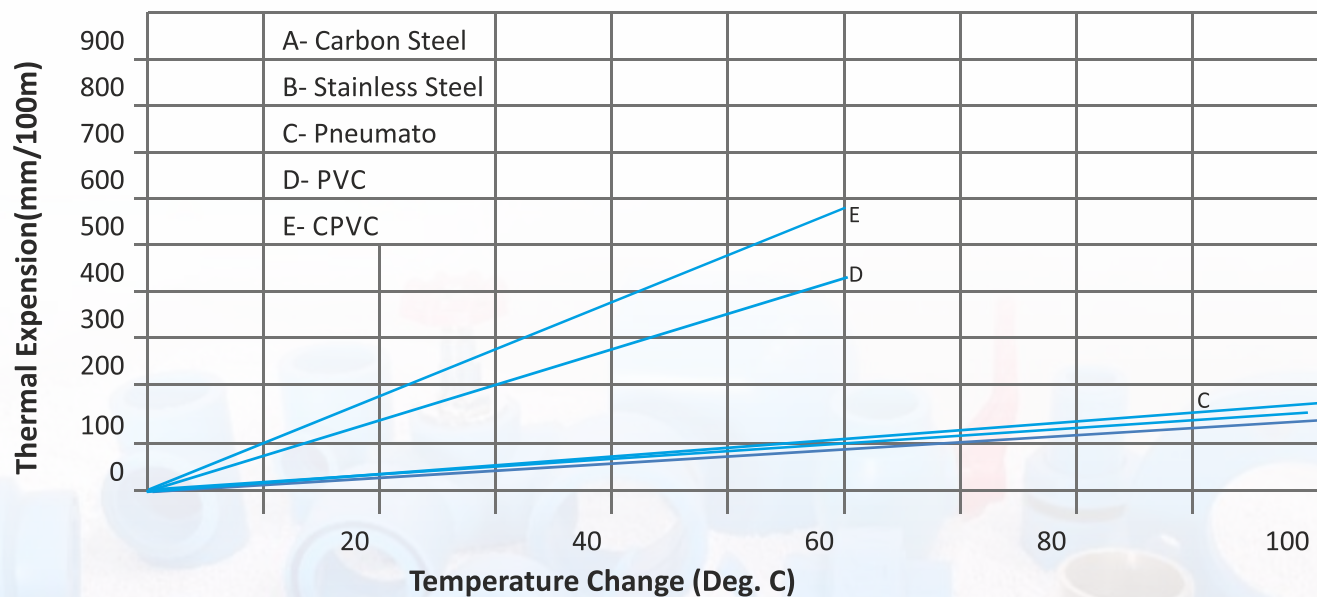
KPT Pneumato pipes and fitting coefficient of thermal expansion 1.0×10^{-4}



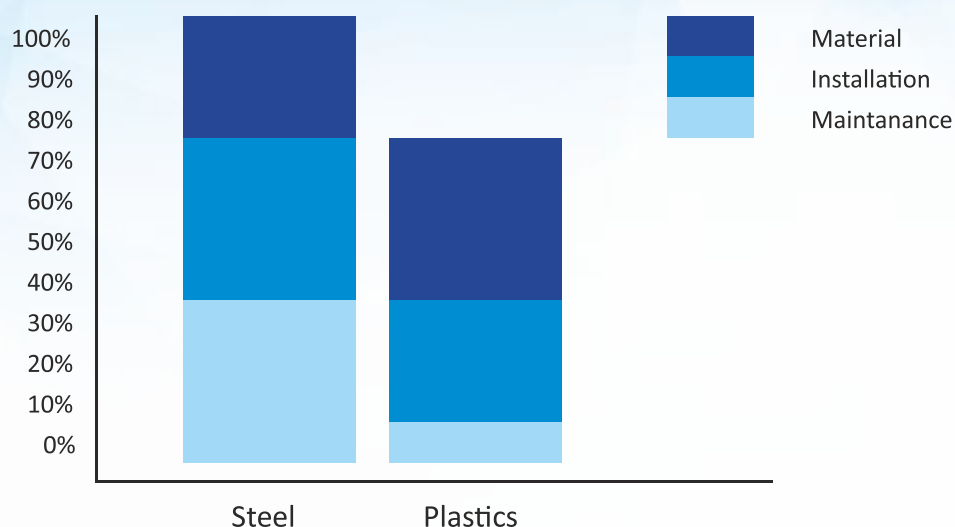
KPT Pneumato pipe Stress - Strain



KPT Pneumato pipes and fitting coefficient of thermal expansion



Saving Time and Money-Life Cycle Cost



Applications

1. Compressed Air lines for hot and cold air
2. Solar Heaters, under floor heating
3. Effluent Treatment Plants (ETP)
4. Vacuum pipelines
5. Chilled Water Application and air conditioning
6. Instrument Air
7. Nitrogen Gas
8. Chemical Plants and aggressive fluids
9. Industrial Water and Wastewater
10. Flue-gas Desulfurization
11. Pulp and Paper Mills
12. Irrigation
13. Wall Heating
14. Application in the field of ship building
15. Pharmaceuticals
16. Suitable usage for more than 400 chemicals
17. Industrial waste applications
18. Water transmission lines
19. Pressure/forced mains sewers
20. Rehabilitation applications
21. Water distribution systems
22. Storm water Drainage
23. Above ground piping
24. Sewage Drainage
25. Re-lining, Slip-lining applications
26. Desalination Plants

Conclusions and Recommendations

1. KPT brand pipes and fittings are suitable for all applications better than other traditional thermoplastics.
2. KPT brand pipes and fittings are most suitable for potable hot and cold water in building services.
3. No maintenance, **Install it forget it**
4. Commercially viable
5. Adopted in various applications

Jointing method of KPT piping systems

CUTTING

1. Cut the pipe right angle to its axis using burr free cutter.
2. Ensure that pipes is free from burrs or cutting chip
3. Clean the pipe & fitting perfectly before welding.
4. Mark welding depth at the end of pipes.

HEATING

1. Mount the suitable dies on heating element of welding machine according to the diameter of Pipe and fitting to be welded.
2. Connect the welding machine to 220/230 volts A.C. power supply.
3. Select 260 Deg. C. temperatures on the welding machine thermostat.
4. Wait for reaching the required working temperature.
5. Insert the pipe and the fitting in the dies by exerting light pressure.
6. For heating time, refer the table given for different sizes of Pipes.

WELDING

1. After heating, quickly insert pipe into the fitting by exerting light pressure.
2. Any misalignment should be corrected immediately after insertion to avoid any Stress in the weld.
3. Allow the joint to cool as per cooling time given in table. This type of connection ensures perfect sealing even under the severe working Conditions.

Recommended Time For PPR Systems Fusion Joints

PIPE DIA. (MM)	WELDING DEPTH (MM)	HEATING TIME (SEC)	WELDING TIME (SEC)	COOLING TIME (MIN)
16	14.00	6	4	2
20	14.50	6	4	2
25	16.00	7	4	2
32	18.00	8	6	4
40	20.50	12	6	4
50	23.50	18	6	4
63	27.50	24	8	6
75	30.00	30	8	6
90	32.50	40	8	6
110	37.00	50	10	8
160	42.00	60	15	10

Recommended Time For PPR Systems Butt Joints

PIPE DIA. (MM)	WELDING MACHINE TEMPERATURE °C	HEATING TIME (MIN)	WELDING TIME (SEC)	COOLING TIME (MIN)
200	220-240	30	180	15-20
250	220-240	30	240	16-24
315	225-240	30	300	20-25
355	225-240	30	360	25-30
400	223-240	30	420	30-35

FUSION METHOD

The process of joining PPR-C pipes and fittings is very simple and results in inseparable watertight joints. It is carried out using a simple welding machine that fuses the internal surface of the fitting and the external surface of the pipe, so that the material of the pipe and the fitting will be bonded together.

THE FOLLOWING DESCRIBE THE STEPS OF THE WELDING PROCESS

Prepare the welding machine by fitting it with the welding dies of the diameters to be welded. Connect the plug to the 220V power supply socket and wait until the green light on the machine goes out indicating the welding machine has reached the working temperature.

- Cut the pipe at right angles to the pipe axis using suitable pipe cutter.
- Remove any burrs or cutting chips by deburring the cutting area.
- Mark the welding depth on the pipe using suitable marker.
- Insert the end of the pipe without turning into the heating sleeve up to the marked welding depth and at the same time slide the fitting without turning into the other side of the heating tool up to the stop. It is essential to observe the mentioned heating times (refer to the below table)
- Leave the pipe and fitting into the heating tool until the heating time is elapsed.
- At the end of the heating time, remove the pipe and fitting from the heating tool and push them immediately against each other up to the mark indicating the welding depth. At this stage the depth mark will be covered with the welding bead.
- During this process, do not rotate the pipe and fitting relative to each other.
- Allow the joint to cool fully before using.

STEP 01



STEP 02



RESULT



HOLE REPAIRING

If a hole is accidentally made in the pipe (with a drill bit or screws) and if the hole is in on ly one side of the pipe, it can be repaired using the hole repairing die, bearing in mind that the pipe size must be compatible with the die diameter.

THE REPAIR PROCEDURE IS AS FOLLOWS:

- Clean and dry the part to be repaired.
- Fit the male part of the Hole repairing die into the hole; it must melt the surface to be adjusted by the operator to suit the pipe thickness, to ensure that the die cannot be inserted too far and melt the other side of the pipe. To make this adjustment, undo the screw which fixes the bush and then move it along the die.
- At same time as the male part of the die melts the area around the hole, the female part melts the repair bar usually supplied with die. Once the heating time has passed (5sec.) the repair bar must be inserted in the hole. When this operation is complete, wait for everything to cool and then cut of the excess part of the repair bar.
- If the diameter of the hole to be repaired is greater that of the die, or both sides of the pipe are punctured, the piece of pipe must be cut out and the repair made using normal pipe fittings.

STEP 01



STEP 02



RESULT



FUSION TECHNIQUE II

WELD-IN SADDLE TECHNIQUE

Branches can easily be made by weld-in saddles, even at a later stage of installation. By using weld-in saddles you save material and time. Whereas in case of tees three joints have to be welded, installation of saddle is restricted to mounting the saddle and branch pipe only.

Steps Follows

- Drill the pipe
- Warm up the saddle
- Pipe wall and outside pipe
- Connect the elements

STEP 01



STEP 02



RESULT



ADVANCED BUTT WELDING TECHNOLOGY

KPT is having advanced US and Italian made machines to perform butt welding procedures on sizes above 110MM. Internationally butt jointing is the most suitable and acceptable procedure for sizes like 160MM, 200MM, 250MM and beyond to adhere to the best quality and durable international standards

Step 01



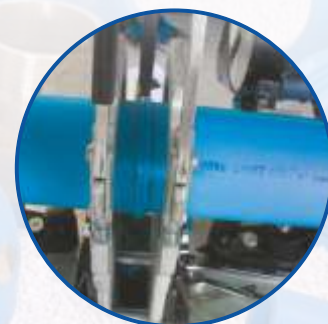
Step 02



Step 02

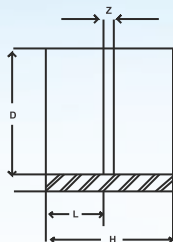
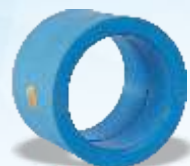


Result



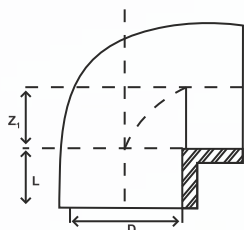
KPT PPR C FITTINGS

Coupling



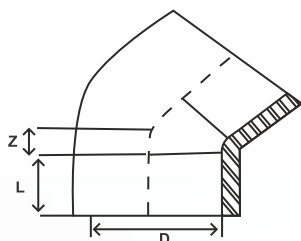
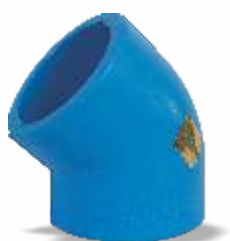
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P-KPT C-0001	16MM	15.4	16.0	1.6	33.6
P-KPT C-0002	20 MM	19.2	14.5	3.9	32.9
P-KPT C-0003	25 MM	24.1	18.0	2.6	38.6
P-KPT C-0004	32 MM	31.0	18.4	3.0	39.8
P-KPT C-0005	40 MM	38.9	20.7	3.4	44.8
P-KPT C-0006	50 MM	48.0	24.4	3.1	51.9
P-KPT C-0007	63 MM	60.7	28.2	8.2	64.6
P-KPT C-0008	75 MM	71.9	31.5	4.0	67.0
P-KPT C-0009	90 MM	86.4	32.5	6.1	71.1
P-KPT C-0010	110 MM	106.8	38.8	3.0	80.6
P-KPT C-0011	160 MM	153.0	42.5	5.4	90.4

Elbow 90°



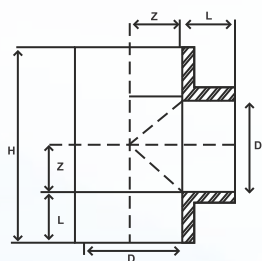
CODE	SIZE	D	L	Z	H
P-KPT E90-0020	16MM	15.5	14.4	8.5	34.3
P-KPT E90-0021	20 MM	19.1	15.5	10.9	40.0
P-KPT E90-0022	25 MM	24.2	16.9	14.1	47.4
P-KPT E90-0023	32 MM	31.1	18.0	16.4	54.2
P-KPT E90-0024	40 MM	39.5	20.0	20.0	66.2
P-KPT E90-0025	50 MM	48.4	23.8	26.2	80.3
P-KPT E90-0026	63 MM	60.5	27.4	32.2	98.2
P-KPT E90-0027	75 MM	72.6	31.5	38.0	115.4
P-KPT E90-0028	90 MM	86.8	33.0	44.7	130.6
P-KPT E90-0029	110 MM	106.5	39.0	54.8	160.6
P-KPT E90-0030	160 MM	153.6	45.0	78.7	220.8
P-KPT E90-0031	200MM	...	...	...	...
P-KPT E90-0032	250MM	...	...	...	...
P-KPT E90-0033	315MM	...	...	...	...
P-KPT E90-0034	355MM	...	...	...	...
P-KPT E90-0035	400MM	...	...	...	...

Elbow 45°



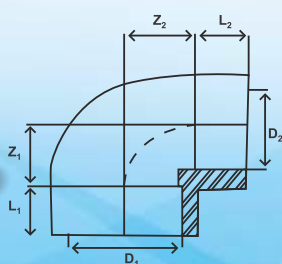
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P-KPT E45-0041	20 MM	19.3	15.5	6.0
P-KPT E45-0042	25 MM	23.7	17.6	7.0
P-KPT E45-0043	32 MM	30.6	16.5	8.0
P-KPT E45-0044	40 MM	38.2	21.3	9.0
P-KPT E45-0045	50 MM	47.7	22.5	12.0
P-KPT E45-0046	63 MM	60.0	26.0	13.0
P-KPT E45-0047	75 MM	72.5	26.7	20.0
P-KPT E45-0048	90 MM	86.8	34.5	32.0
P-KPT E45-0049	110 MM	106.2	35.3	40.0
P-KPT E45-0050	160 MM	154.9	48.2	50.0
P-KPT E45-0051	200 MM	...	...	...
P-KPT E45-0052	250 MM	...	...	...
P-KPT E45-0053	315 MM	...	...	...
P-KPT E45-0054	355 MM	...	...	...
P-KPT E45-0055	400 MM	...	...	...

Equal Tee



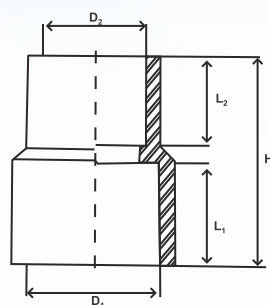
CODE	SIZE	D	L	Z	H
P-KPT ET-0060	16MM	15.3	14.6	8.9	46.9
P-KPT ET-0061	20 MM	19.3	15.8	10.5	52.6
P-KPT ET-0062	25 MM	24.2	18.0	12.7	61.4
P-KPT ET-0063	32 MM	31.4	20.2	16.1	72.5
P-KPT ET-0064	40 MM	39.0	20.3	20.9	82.4
P-KPT ET-0065	50 MM	48.6	24.4	24.5	97.8
P-KPT ET-0066	63 MM	61.7	27.4	32.6	120.0
P-KPT ET-0067	75 MM	72.2	31.3	36.7	136.0
P-KPT ET-0068	90 MM	86.9	32.9	47.1	160.0
P-KPT ET-0069	110 MM	106.7	38.8	55.3	188.2
P-KPT ET-0070	160 MM	153.7	45.0	85.0	260.0
P-KPT ET-0071	200MM	...	...	...	...
P-KPT ET-0072	250MM	...	...	...	...
P-KPT ET-0073	315MM	...	...	...	...
P-KPT ET-0074	355MM	...	...	...	...
P-KPT ET-0075	400MM	...	...	...	...

Reducing Elbow



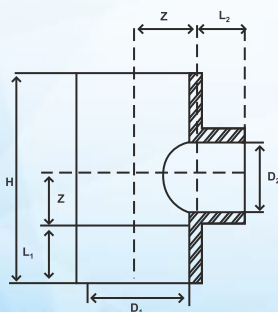
CODE	SIZE	D1	D2	L1	L2	Z1	Z2
P-KPT RE-0121	25/20	24.0	19.2	18.5	16.0	17.8	14.4
P-KPT RE-0122	32/20	31.3	19.2	21.1	16.0	18.3	18.0
P-KPT RE-0123	32/25	31.3	24.2	20.0	17.8	22.2	20.7
P-KPT RE-0124	40/20	38.7	19.2	21.6	16.3	19.6	24.2
P-KPT RE-0125	40/25	38.7	24.2	21.6	17.8	21.4	20.7
P-KPT RE-0126	40/32	38.6	31.2	21.9	19.8	24.2	25.3

Reducer



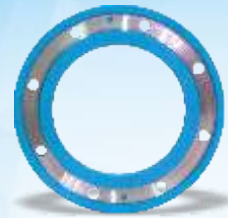
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P-KPT R-0081	25/20	24.0	19.2	18.5	15.7	38.1
P-KPT R-0082	32/20	31.3	19.2	20.0	15.7	39.3
P-KPT R-0083	32/25	31.4	24.4	21.0	18.4	41.7
P-KPT R-0084	40/20	38.7	19.3	22.9	16.9	48.0
P-KPT R-0085	40/25	39.0	24.2	24.2	18.0	48.5
P-KPT R-0086	40/32	38.6	31.0	21.1	18.8	44.9
P-KPT R-0087	50/20	48.0	18.8	24.6	16.6	44.5
P-KPT R-0088	50/25	48.0	23.8	24.5	16.2	45.6
P-KPT R-0089	50/32	48.0	31.1	24.4	18.0	48.1
P-KPT R-0090	50/40	48.2	38.8	24.3	20.9	48.2
P-KPT R-0091	63/20	60.9	19.2	28.2	15.9	48.3
P-KPT R-0092	63/25	60.7	24.1	28.2	18.0	49.5
P-KPT R-0093	63/32	60.6	30.7	28.0	18.0	48.0
P-KPT R-0094	63/40	60.8	38.3	25.3	25.5	56.8
P-KPT R-0095	63/50	60.9	48.2	29.2	25.8	64.8
P-KPT R-0096	75/20	72.5	19.0	42.7	21.1	63.8
P-KPT R-0097	75/25	72.5	24.3	42.7	21.1	63.8
P-KPT R-0098	75/32	72.5	31.0	42.7	21.1	63.8
P-KPT R-0099	75/40	72.2	38.7	31.6	22.5	63.6
P-KPT R-0100	75/50	72.1	48.4	31.7	27.0	63.2
P-KPT R-0101	75/63	71.8	60.9	31.4	30.0	67.0
P-KPT R-0102	90/20	87.3	19.0	43.5	27.0	70.5
P-KPT R-0103	90/25	87.3	24.1	43.5	27.0	70.5
P-KPT R-0104	90/32	87.3	31.0	42.5	27.0	70.5
P-KPT R-0105	90/40	87.3	38.9	42.5	27.0	70.5
P-KPT R-0106	90/50	86.5	48.1	33.0	26.3	70.0
P-KPT R-0107	90/63	86.6	60.9	32.8	29.9	68.8
P-KPT R-0108	90/75	86.7	72.7	37.2	31.5	71.7
P-KPT R-0109	110/20	106.8	19.0	58.1	19.5	76.0
P-KPT R-0110	110/25	106.8	24.0	53.3	19.2	76.0
P-KPT R-0111	110/32	106.8	31.0	57.6	19.5	76.0
P-KPT R-0112	110/40	106.8	39.0	56.6	19.3	76.0
P-KPT R-0113	110/50	106.8	48.4	38.9	26.0	76.0
P-KPT R-0114	110/63	106.8	61.2	38.9	30.1	76.0
P-KPT R-0115	110/75	106.8	72.6	38.9	31.8	76.0
P-KPT R-0116	110/90	106.8	86.6	38.9	33.0	76.0
P-KPT R-0117	160/20	155.3	18.9	61.8	29.5	91.2
P-KPT R-0118	160/25	155.3	23.9	61.8	29.5	91.2
P-KPT R-0119	160/32	155.3	30.6	61.8	29.5	91.2
P-KPT R-0120	160/40	155.3	38.7	61.8	29.5	91.2
P-KPT R-0121	160/50	155.3	48.5	61.8	29.5	91.2
P-KPT R-0122	160/63	155.3	61.8	61.8	29.5	91.2
P-KPT R-0123	160/75	155.3	73.5	61.8	29.5	91.2
P-KPT R-0124	160/90	155.3	86.5	61.8	29.5	91.2
P-KPT R-0125	160/110	155.3	106.3	61.8	29.5	91.2

Reducing Tee



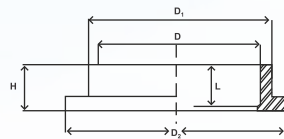
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P-KPT RT-0143	32/25/32	31.4	24.2	20.0	17.8	13.4	66.8
P-KPT RT-0144	40/20/40	39.0	19.1	21.4	16.5	11.1	65.0
P-KPT RT-0145	40/25/40	38.8	24.2	21.4	17.6	13.5	69.8
P-KPT RT-0146	40/32/40	38.8	31.0	21.4	19.5	16.8	76.4
P-KPT RT-0147	50/20/50	48.4	19.1	24.4	18.1	24.5	97.7
P-KPT RT-0148	50/25/50	48.6	24.1	24.3	17.9	24.7	98.0
P-KPT RT-0149	50/32/50	48.6	30.5	24.3	18.8	24.6	97.8
P-KPT RT-0150	50/40/50	48.6	38.7	22.4	22.0	26.1	96.9
P-KPT RT-0151	63/20/63	61.2	19.0	27.5	16.2	32.2	119.4
P-KPT RT-0152	63/25/63	61.3	23.8	27.5	19.4	32.2	119.4
P-KPT RT-0153	63/32/63	61.3	30.8	27.5	19.3	32.2	119.4
P-KPT RT-0154	63/40/63	61.3	38.9	27.3	22.5	32.4	119.4
P-KPT RT-0155	63/50/63	61.2	48.0	27.4	25.8	32.3	119.4
P-KPT RT-0156	75/20/75	72.5	19.0	31.4	15.9	26.4	115.5
P-KPT RT-0157	75/25/75	72.5	24.0	31.4	17.6	26.4	115.5
P-KPT RT-0158	75/32/75	72.5	30.9	31.4	19.7	26.4	115.5
P-KPT RT-0159	75/40/75	72.3	38.4	31.4	20.3	26.4	115.5
P-KPT RT-0160	75/50/75	72.3	47.9	31.4	29.8	26.4	115.5
P-KPT RT-0161	75/63/75	72.2	60.2	31.4	29.8	26.4	115.5
P-KPT RT-0162	90/20/90	86.5	19.0	32.8	15.6	31.3	128.1
P-KPT RT-0163	90/25/90	86.5	24.0	32.8	17.6	31.3	128.1
P-KPT RT-0164	90/32/90	86.5	31.0	32.8	19.5	31.3	128.1
P-KPT RT-0165	90/40/90	86.5	38.6	32.8	21.2	31.3	128.1
P-KPT RT-0166	90/50/90	86.5	48.1	32.8	26.0	31.3	128.1
P-KPT RT-0167	90/63/90	86.5	61.2	32.8	30.1	31.3	128.1
P-KPT RT-0168	90/75/90	86.5	72.4	32.9	31.7	46.9	159.5
P-KPT RT-0169	110/20/110	106.5	19.0	38.7	15.8	38.5	154.3
P-KPT RT-0170	110/25/110	106.5	24.2	38.7	17.7	38.5	154.3
P-KPT RT-0171	110/32/110	106.5	31.0	38.7	19.7	38.5	154.3
P-KPT RT-0172	110/40/110	106.5	38.9	38.7	21.5	38.5	154.3
P-KPT RT-0173	110/50/110	106.5	48.6	38.9	26.2	38.3	154.3
P-KPT RT-0174	110/63/110	106.7	61.3	39.0	30.2	38.2	154.3
P-KPT RT-0175	110/75/110	106.4	72.5	39.0	32.0	38.2	154.3
P-KPT RT-0176	110/90/110	106.7	87.1	38.9	33.0	54.8	187.4
P-KPT RT-0177	160/20/160	155.4	19.0	45.0	15.8	80.9	251.8
P-KPT RT-0178	160/25/160	155.4	23.8	45.0	18.5	80.9	251.8
P-KPT RT-0179	160/32/160	155.4	31.0	45.0	19.5	80.9	251.8
P-KPT RT-0180	160/40/160	155.4	38.9	45.0	21.5	80.9	251.8
P-KPT RT-0181	160/50/160	155.4	48.8	45.0	25.4	80.9	251.8
P-KPT RT-0182	160/63/160	157.5	61.9	45.0	27.6	80.9	251.8
P-KPT RT-0183	160/75/160	157.5	73.9	45.0	32.1	80.9	251.8
P-KPT RT-0184	160/90/160	157.5	88.5	45.0	33.0	80.9	251.8
P-KPT RT-0185	160/110/160	157.5	107.4	45.0	44.9	80.9	251.8

PPR-C With Steel Inlay Flanges



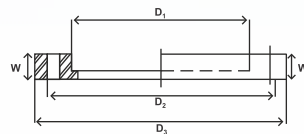
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P-KPT F-0221	90 MM	...	...	...	...
P-KPT F-0222	110 MM	...	...	...	...
P-KPT F-0223	160 MM	...	...	...	...
P-KPT F-0224	200 MM	217.0	292.1	24.5	8
P-KPT F-0225	250 MM	267.0	355.0	27.5	8
P-KPT F-0226	315 MM	323.0	406.4	32.6	12

Flange Core(Stub End)



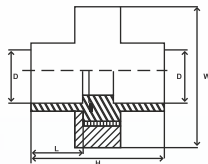
CODE	SIZE	D	D1	D2	L	H
P-KPT FC-0201	32 MM	31.1	42.9	50.5	19.9	23.3
P-KPT FC-0202	40 MM	31.1	49.6	60.2	20.3	25.8
P-KPT FC-0203	50 MM	48.1	62.6	72.3	22.2	27.2
P-KPT FC-0204	63 MM	61.0	80.7	95.0	20.9	35.4
P-KPT FC-0205	75 MM	72.6	95.0	111.3	31.9	39.0
P-KPT FC-0206	90 MM	87.1	111.8	129.4	24.2	42.1
P-KPT FC-0207	110 MM	106.8	133.3	151.0	25.4	43.3
P-KPT FC-0208	160 MM	155.0	194.4	214.0	31.0	52.8
P-KPT FC-0209	200MM	166.1	211.0	251.5	54.8	80.3
P-KPT FC-0210	250MM	213.8	261.4	312.0	80.5	84.4
P-KPT FC-0211	315MM	253.5	310.5	380.0	71.0	94.0
P-KPT FC-0212	355MM	300.0	355.0	427.0	63.8	119.0
P-KPT FC-0213	400MM	352.0	400.0	477.0	70.0	117.0

Slip-on(PPR Flanges)



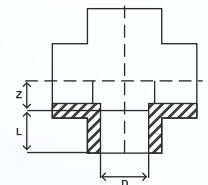
CODE	SIZE	D1	D2	D3	W
P-KPT F-0221	32 MM	43.6	97.0	115.7	20.6
P-KPT F-0222	40 MM	50.0	109.0	128.0	21.6
P-KPT F-0223	50 MM	62.5	122.0	140.7	22.5
P-KPT F-0224	63 MM	83.0	141.4	157.4	24.3
P-KPT F-0225	75 MM	97.0	175.3	172.3	26.2
P-KPT F-0226	90 MM	113.7	178.3	194.8	26.4
P-KPT F-0227	110 MM	135.7	197.9	216.0	30.6
P-KPT F-0228	160 MM	195.8	266.0	292.0	35.5

Plain Union



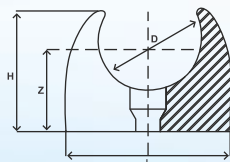
CODE	SIZE	D	L	W	H
P-KPT U-0241	20 MM	19.2	17.7	52.2	44.4
P-KPT U-0242	25 MM	24.2	18.6	51.4	55.2
P-KPT U-0243	32 MM	31.2	22.1	61.5	67.5
P-KPT U-0244	40 MM	39.2	29.2	79.0	79.9
P-KPT U-0245	50 MM	47.7	23.6	78.0	96.1
P-KPT U-0246	63 MM	60.7	27.7	89.0	107.6

4Way/Cross Tee



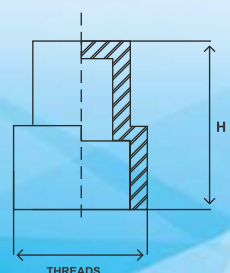
CODE	SIZE	D	L	Z
P-KPT CT-0261	20 MM	18.8	15.5	15.4
P-KPT CT-0262	25 MM	24.1	17.1	24.9
P-KPT CT-0263	32 MM	30.6	17.8	32.2
P-KPT CT-0264	40 MM	38.0	20.8	39.2
P-KPT CT-0265	50 MM	48.0	21.3	52.2
P-KPT CT-0266	63 MM	60.7	23.3	63.6

Pipe Clamp



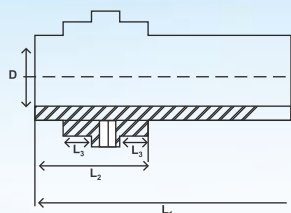
CODE	SIZE	D	L	Z	H
P-KPT PC-0281	20 MM	18.9	27.0	19.2	31.0
P-KPT PC-0282	25 MM	24.0	32.0	21.0	36.0
P-KPT PC-0283	32 MM	30.7	39.5	27.5	43.5
P-KPT PC-0284	40 MM	39.1	48.3	30.9	49.8
P-KPT PC-0285	50 MM	50.0	60.0	37.3	61.5
P-KPT PC-0286	63 MM	63.0	74.7	45.0	75.3

Long Plug



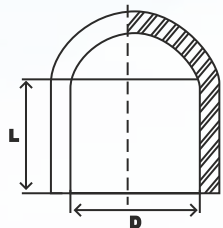
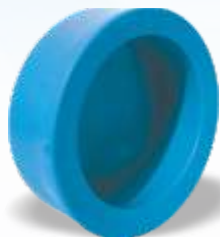
CODE	SIZE	THREADS	H
P-KPT LP-0301	1/2"	1/2"	69.7
P-KPT LP-0302	3/4"	3/4"	62.2
P-KPT LP-0303	1"	1"	73.6

Tank Connector



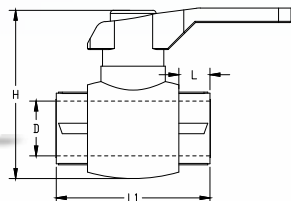
CODE	SIZE	D	L1	L2	L3
P-KPT TC-0321	20 MM	19.2	69.0	43.6	15.2
P-KPT TC-0322	25 MM	24.1	69.0	52.5	19.5
P-KPT TC-0323	32 MM	30.6	74.3	54.5	21.5
P-KPT TC-0324	40 MM	38.4	88.4	55.3	25.6
P-KPT TC-0325	50 MM	48.3	96.7	58.4	24.6
P-KPT TC-0326	63 MM	60.7	101.5	65.5	27.0

End Cap



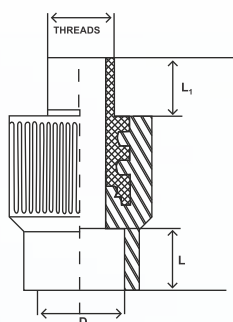
CODE	SIZE	D	L
P-KPT EC-0181	20 MM	18.9	16.2
P-KPT EC-0182	25 MM	24.0	18.3
P-KPT EC-0183	32 MM	30.6	20.2
P-KPT EC-0184	40 MM	38.7	24.3
P-KPT EC-0185	50 MM	48.0	26.4
P-KPT EC-0186	63 MM	60.9	29.7
P-KPT EC-0187	75 MM	72.3	34.0
P-KPT EC-0188	90 MM	86.1	35.0
P-KPT EC-0189	110 MM	106.1	38.5
P-KPT EC-0190	160 MM	154.0	41.2

Ball Valve Plastic (Single Lever)



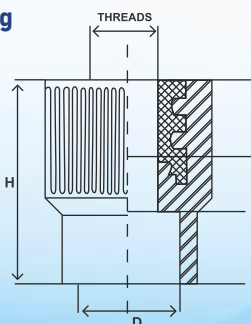
CODE	SIZE	D	L	L1	H
P-KPT BV-0351	20 MM	19.4	66.0	17.0	65.0
P-KPT BV-0352	25 MM	24.4	73.2	17.3	75.9
P-KPT BV-0353	32 MM	31.5	85.3	20.9	83.9
P-KPT BV-0354	40 MM	39.4	111.8	24.5	112.6
P-KPT BV-0355	50 MM	49.5	116.3	27.5	120.0
P-KPT BV-0356	63 MM	61.7	149.0	37.0	141.7
P-KPT BV-0357	75 MM	...	...	...	...
P-KPT BV-0358	90 MM	...	...	...	...
P-KPT BV-0359	110 MM	...	...	...	...

Male Threaded Coupling



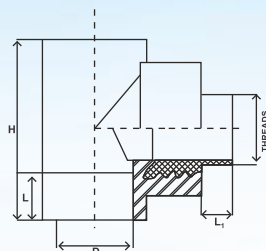
CODE	SIZE	THREADS	D	L	L1	H
P-KPT MTC-0360	16*1/2	1/2"	15.7	17.0	13.9	57.3
P-KPT MTC-0361	20*1/2	1/2"	19.2	16.2	14.2	57.0
P-KPT MTC-0362	25*1/2	1/2"	23.8	18.3	14.2	56.0
P-KPT MTC-0363	25*3/4	3/4"	24.1	18.2	14.1	59.1
P-KPT MTC-0364	32*1/2	1/2"	31.1	19.8	14.0	64.5
P-KPT MTC-0365	32*3/4	3/4"	31.1	20.3	14.2	67.8
P-KPT MTC-0366	32*1	1"	31.1	20.2	28.0	71.8
P-KPT MTC-0367	40*1	1"	38.7	21.6	28.0	76.0
P-KPT MTC-0368	40*1-1/4	1 1/4"	38.8	22.1	14.1	76.0
P-KPT MTC-0369	50*1-1/2	1 1/2"	48.9	25.5	21.3	80.0
P-KPT MTC-0370	63*2	2"	62.2	29.5	26.3	95.2
P-KPT MTC-0371	75*2-1/2	2 1/2"	72.0	32.4	24.9	100.5
P-KPT MTC-0372	90*3	3"	86.4	38.2	24.6	109.2
P-KPT MTC-0373	110*4	4"	104.9	38.1	25.5	119.0

Female Threaded Coupling



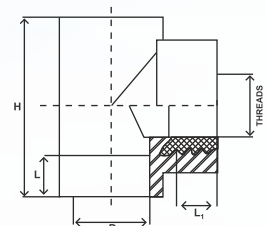
CODE	SIZE	THREADS	D	L	L1	H
P-KPT FTC-0390	16*1/2	1/2"	15.7	17.0	15.0	43.4
P-KPT FTC-0391	20*1/2	1/2"	19.2	16.0	15.0	43.2
P-KPT FTC-0392	20*3/4	3/4"	23.6	18.0	14.9	41.8
P-KPT FTC-0393	25*1/2	1/2"	23.6	18.0	14.9	41.8
P-KPT FTC-0394	25*3/4	3/4"	24.1	18.1	15.7	45.0
P-KPT FTC-0395	32*1/2	1/2"	31.1	20.0	15.0	50.5
P-KPT FTC-0396	32*3/4	3/4"	31.1	20.4	16.0	52.0
P-KPT FTC-0397	32*1	1"	31.1	20.2	17.8	54.7
P-KPT FTC-0398	40*1	1"	38.7	21.6	27.0	62
P-KPT FTC-0399	40*1-1/4	1 1/4"	38.8	22.1	18.0	62.0
P-KPT FTC-0400	50*1-1/2	1 1/2"	48.8	25.3	18.5	58.0
P-KPT FTC-0401	63*2	2"	61.5	28.6	25.6	68.1
P-KPT FTC-0402	75*2-1/2	2 1/2"	71.8	31.7	20.2	89.2
P-KPT FTC-0403	90*3	3"	86.5	38.0	21.9	101.5
P-KPT FTC-0404	110*4	4"	106.1	38.2	26.3	116.8

Male Threaded Tee



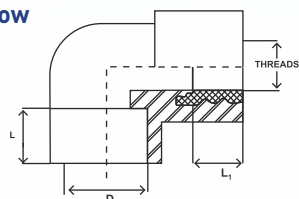
CODE	SIZE	THREADS	D	L	L1	H
P-KPT MTT-0441	20*1/2	1/2"	19.2	16.5	14.0	58.2
P-KPT MTT-0443	25*1/2	1/2"	24.2	18.2	14.0	62.2
P-KPT MTT-0444	25*3/4	3/4"	24.2	17.6	13.9	63.8
P-KPT MTT-0445	32*1/2	1/2"	31.3	20.0	14.2	78.0
P-KPT MTT-0446	32*3/4	3/4"	31.3	20.0	14.2	78.2
P-KPT MTT-0447	32*1	1"	31.2	20.0	15.8	77.8
P-KPT MTT-0448	40*1-1/4	1 1/4"	39.0	21.4	15.2	91.0

Female Threaded Tee



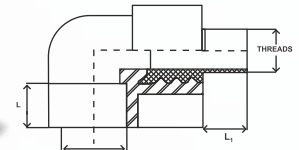
CODE	SIZE	THREADS	D	L	L1	H
P-KPT FTT-0421	20*1/2	1/2"	19.2	15.0	14.0	58.2
P-KPT FTT-0422	20*3/4	3/4"	19.2	15.0	14.0	58.2
P-KPT FTT-0423	25*1/2	1/2"	24.2	14.9	14.0	62.2
P-KPT FTT-0424	25*3/4	3/4"	24.2	16.2	13.9	63.8
P-KPT FTT-0425	32*1/2	1/2"	31.3	15.0	14.2	78.0
P-KPT FTT-0426	32*3/4	3/4"	31.3	16.2	14.2	78.2
P-KPT FTT-0427	32*1	1"	31.2	17.7	15.8	77.8
P-KPT FTT-0428	40*1-1/4	1 1/4"	39.0	17.6	15.2	91.0

Female Threaded Elbow



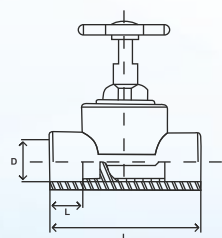
CODE	SIZE	THREADS	D	L	L1
P-KPT FTE-0461	20*1/2	1/2"	19.2	16.1	16.0
P-KPT FTE-0463	25*1/2	1/2"	24.1	17.9	15.0
P-KPT FTE-0464	25*3/4	3/4"	24.2	17.9	16.0
P-KPT FTE-0465	32*1/2	1/2"	31.2	20.2	15.0
P-KPT FTE-0466	32*3/4	3/4"	31.2	20.2	16.1
P-KPT FTE-0467	32*1	1"	31.2	20.3	18.3
P-KPT FTE-0468	40*1-1/4	1 1/4"	39.1	21.3	17.9

Male Threaded Elbow



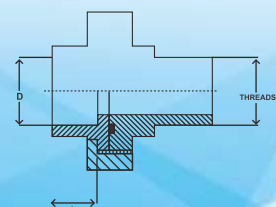
CODE	SIZE	THREADS	D	L	L1
P-KPT MTE-0481	20*1/2	1/2"	19.2	16.1	15.0
P-KPT MTE-0483	25*1/2	1/2"	24.1	17.9	15.0
P-KPT MTE-0484	25*3/4	3/4"	24.2	18.0	14.2
P-KPT MTE-0485	32*1/2	1/2"	31.3	21.0	14.3
P-KPT MTE-0486	32*3/4	3/4"	31.3	20.4	15.2
P-KPT MTE-0487	32*1	1"	31.3	20.1	27.0
P-KPT MTE-0488	40*1-1/4	1 1/4"	39.0	24.5	21.8

Gate Valve



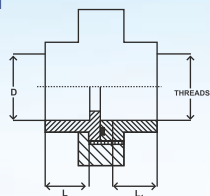
CODE	SIZE	D	L	L1
P-KPT GV-0501	20 MM	19.0	15.0	60.5
P-KPT GV-0502	25 MM	24.0	16.8	69.2
P-KPT GV-0503	32 MM	31.1	20.0	79.5
P-KPT GV-0504	40 MM	39.0	21.4	92.5
P-KPT GV-0505	50 MM	48.0	24.0	112.2
P-KPT GV-0506	63 MM	60.6	26.0	119.1

Male Threaded Union



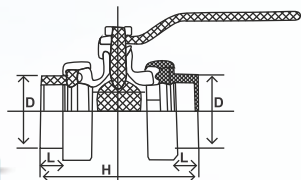
CODE	SIZE	THREADS	D	L
P-KPT MTU-0521	20*1/2	1/2"	19.2	17.8
P-KPT MTU-0522	25*3/4	3/4"	24.2	19.0
P-KPT MTU-0523	32*1	1"	31.3	23.5
P-KPT MTU-0524	40*1-1/4	1 1/4"	39.2	28.5
P-KPT MTU-0525	50*1-1/2	1 1/2"	47.6	24.6
P-KPT MTU-0526	63*2	2"	60.6	28.1

Female Threaded Union



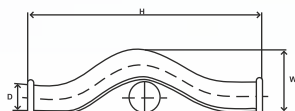
CODE	SIZE	THREADS	D	L	L1
P-KPT FTU-0541	20*1/2	1/2"	19.2	17.5	18.0
P-KPT FTU-0542	25*3/4	3/4"	24.2	19.0	18.5
P-KPT FTU-0543	32*1	1"	31.2	23.6	20.4
P-KPT FTU-0544	40*1-1/4	1 1/4"	39.2	28.4	23.0
P-KPT FTU-0545	50*1-1/2	1 1/2"	47.7	23.6	31.5
P-KPT FTU-0546	63*2	2"	60.6	28.4	28.7

Double Union Ball Valve



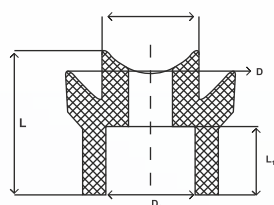
CODE	SIZE	D	L	H
P-KPT DUBV-0561	20 MM	18.7	16.3	84.1
P-KPT DUBV-0562	25 MM	23.8	17.4	95.7
P-KPT DUBV-0563	32 MM	30.8	21.8	107.3
P-KPT DUBV-0564	40 MM	38.9	25.2	125.3
P-KPT DUBV-0565	50 MM	48.7	27.3	147.0
P-KPT DUBV-0566	63 MM	61.4	29.0	168.5

By Pass Bend



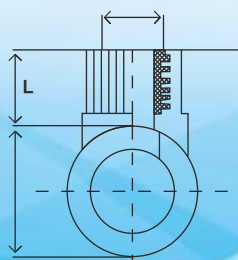
CODE	SIZE	D	W	H
P-KPT BPB-0581	25 MM	23.9	47.0	94.9
P-KPT BPB-0582	32 MM	31.2	58.0	106.0

Weld in Saddle Reducer



CODE	SIZE	D	D1	L	L1
P-KPT WIS R-0629	63/32	48.8	30.8	40.2	19.9
P-KPT WIS R-0630	75/32	48.8	30.8	40.2	19.9
P-KPT WIS R-0631	90/20	78.5	19.1	62.1	15.5
P-KPT WIS R-0632	90/25	78.5	24.2	62.1	17.5
P-KPT WIS R-0633	90/32	78.5	31.0	62.1	19.1
P-KPT WIS R-0634	90/40	79.2	38.9	62.1	21.4
P-KPT WIS R-0635	90/50	79.2	48.8	62.1	21.7
P-KPT WIS R-0636	90/63	79.2	62.7	62.1	27.5
P-KPT WIS R-0637	110/20	88.0	19.0	66.7	15.5
P-KPT WIS R-0638	110/25	88.0	24.0	66.7	17.3
P-KPT WIS R-0639	110/32	88.0	31.0	66.7	19.3
P-KPT WIS R-0640	110/40	88.0	39.1	66.7	21.5
P-KPT WIS R-0641	110/50	88.0	48.8	66.7	25.2
P-KPT WIS R-0642	110/63	88.0	62.4	66.7	27.4
P-KPT WIS R-0643	160/20	89.8	19.0	62.0	15.6
P-KPT WIS R-0644	160/25	89.8	23.9	62.0	17.3
P-KPT WIS R-0645	160/32	89.8	31.2	62.0	19.4
P-KPT WIS R-0646	160/40	89.8	38.8	62.0	21.3
P-KPT WIS R-0647	160/50	89.8	49.1	62.0	21.5
P-KPT WIS R-0648	160/63	89.8	62.5	62.0	27.3
P-KPT WIS R-0649	200/20	90.2	19.1	66.0	15.6
P-KPT WIS R-0650	200/25	90.2	24.1	66.0	17.7
P-KPT WIS R-0651	200/32	90.2	31.2	66.0	19.4
P-KPT WIS R-0652	200/40	90.2	39.0	66.0	21.4
P-KPT WIS R-0653	200/50	90.2	48.8	66.0	25.0
P-KPT WIS R-0654	200/63	90.2	62.5	66.0	27.3

Weld in Saddle Female Threaded Coupling



CODE	SIZE	THREADS	L	L1	H
P-KPT WIS M-0671	160*1/2	1/2"	16.3	49.2	41.3
P-KPT WIS M-0672	110*1/2	1/2"	16.3	49.2	41.3
P-KPT WIS M-0673	90*1/2	1/2"	16.3	49.2	41.3
P-KPT WIS M-0674	75*1/2	1/2"	16.3	49.2	41.3
P-KPT WIS M-0675	63*1/2	1/2"	16.3	49.2	41.3
P-KPT WIS M-0676	160*3/4	3/4"	16.0	49.1	41.3
P-KPT WIS M-0677	110*3/4	3/4"	16.0	49.1	41.3
P-KPT WIS M-0678	90*3/4	3/4"	16.0	49.1	41.3
P-KPT WIS M-0679	75*3/4	3/4"	16.0	49.1	41.3
P-KPT WIS M-0680	63*3/4	3/4"	16.0	49.1	41.3

PRODUCT INSTALLATION



PNEUMATIC PIPES & FITTINGS

SOME OF OUR PRESTIGIOUS CLIENTS



CERTIFICATES & APPRECIATIONS

